

# PTEN

Professional Tool & Equipment News

The Independent Tool Authority



▲ Roll over smooth or rugged surfaces



▲ Examine a vehicle's internal electronic system



▲ Identify noise and vibration concerns

## SOFTWARE UPGRADE 15.4

By Snap-on Diagnostics

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

### 2015 Top 100 Products:

See the 25 most requested items from this year's Top 100 Products selected by our readers page 54

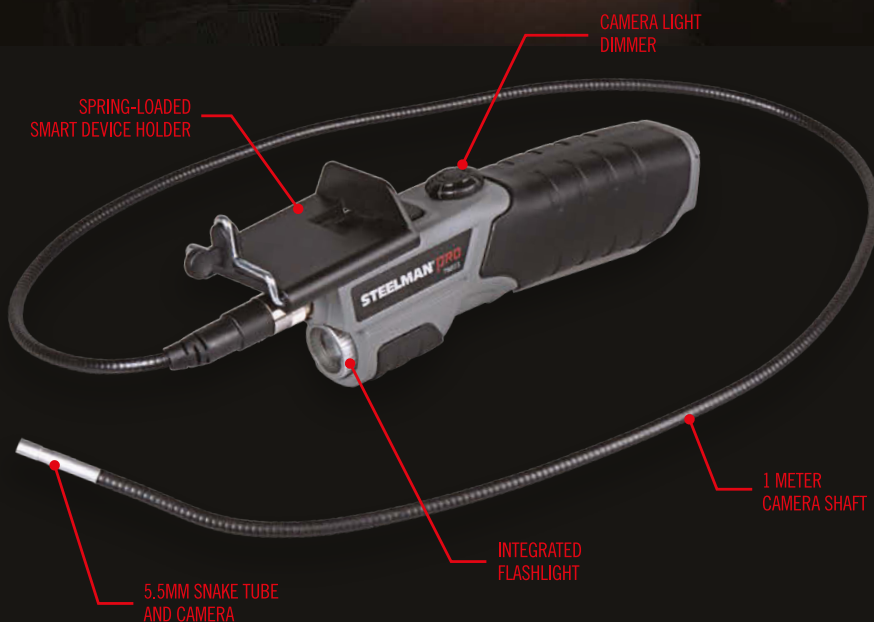
### AAPEX/SEMA 2015 Editor's Picks:

A list of newly introduced products from the big shows page 58

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IP65  
**WATERPROOF RATING**  
 DROP TESTED, DUST PROOF DESIGN

# PAD II



**THE PAD II IS A ROBUST, DROP-TESTED AND WATERPROOF ANDROID BASED SCAN TOOL TABLET WITH A 10.1 INCH HIGH RESOLUTION IPS TOUCH SCREEN.**

The **Pad II** boasts the same award winning software as previous Launch Pro-Line scan tools – including vast vehicle coverage, powerful special test functions, accurate and ultra-fast live data and graphing, along with module coding capabilities. Full system diagnosis is through a Class 1 Bluetooth 2.1 connector for optimum wireless connectivity. Also new in the **PAD II** is revolutionary *Customer Remote Diagnostics* called **GOLO** that allows the shop owner & technician to remotely analyze the customer vehicle data outside the shop!

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# DECEMBER

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**Shop:** Jones Collision Center  
**Location:** Lemoore, Calif.

## On Our Cover



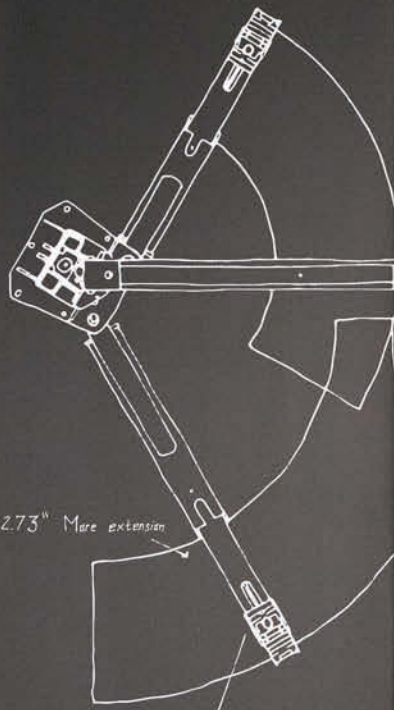
Snap-on Diagnostics Software Upgrade 15.4, as seen on the Ethos Tech scan tool

## In the Next Issue:

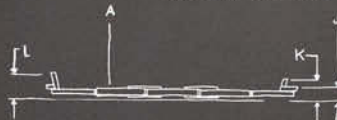
Get specs on dozens of different cordless tools, categorized by impact wrenches, impact drivers, ratchets and drill drivers.







Third stage adapter easily slides with pinpoint accuracy



$$W = 15,349 \text{ lb.}$$

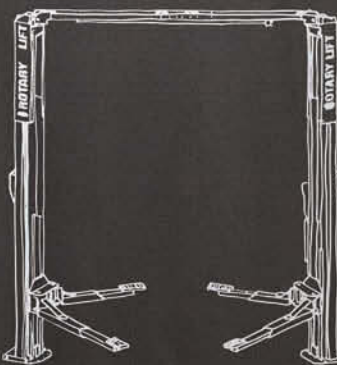
$$OC = 14,650 \text{ lb.}$$

$$SF_A = \frac{15,349}{15,349}$$

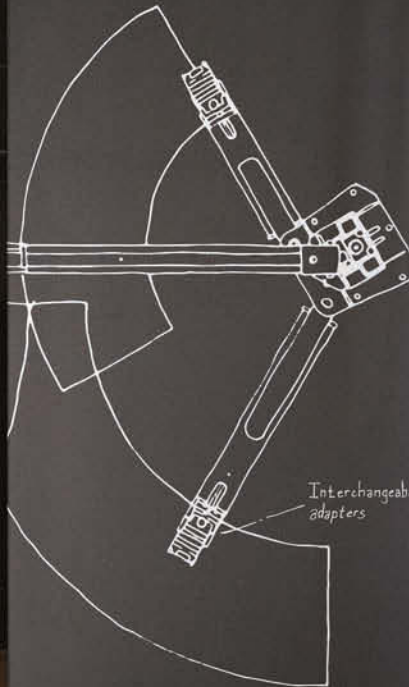
$$SF_B = \frac{6,500}{14,650}$$

$$SF_A = 4.24$$

$$SF_B = 4.44$$



TRIO Arms on SPOA10



AGM A572 UTS: 65,000 PSI

Section A

X-sec Area = 3.4 in<sup>2</sup>

I<sub>xx</sub> = 2.41 in<sup>4</sup>

CG (in) = 1.33 in

$$\sigma = \frac{2500(146)(119)}{2.41}$$

$$\sigma = 15,190 \text{ psi}$$

$$T = \frac{2500}{3.4}$$

Section B

X-sec Area = 3.91 in<sup>2</sup>

I<sub>xx</sub> = 3.01 in<sup>4</sup>

CG (in) = 1.19 in

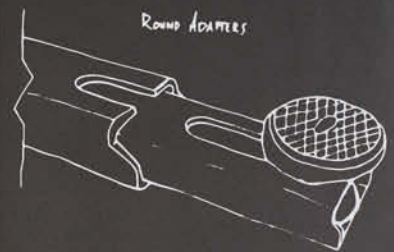
$$\sigma = \frac{2500(146)(119)}{3.01}$$

$$\sigma = 14,520 \text{ psi}$$

$$T = \frac{2500}{3.91}$$



Low-profile arm design  
Adapter height = 3.96"



ROUND ADAPTERS

Front Retraction = 20.17" Front Extension = 40.85"  
Rear Retraction = 34.52" Rear Extension = 58.25"



TRUCK ADAPTERS

Front Retraction = 20.17" Front Extension = 40.85"  
Rear Retraction = 34.52" Rear Extension = 58.25"



Keith Siddall  
Senior Design Engineer  
13 years of service

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**SMART EAR 3**  
JS Products, Inc.

## Toolbox Topics Video

VSP News: Toolbox Topics,  
Episode 4 - JS Products and Smart Ear 3.  
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## Video



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## Blog



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service opportunities? Don't  
leave your customers with a  
dead battery. To read, visit:  
[VehicleServicePros.com/12140851](http://VehicleServicePros.com/12140851)

## Tool Review



Our tool review panel weighs in on the Milwaukee Tool  
Line of Long Cut Snips. To read the full article, visit:  
[VehicleServicePros.com/12093411](http://VehicleServicePros.com/12093411)

## Featured Products



**AIRCAT 1/2" Impact  
Wrench, No. 1295-XL**  
Florida Pneumatic  
[VehicleServicePros.com/12097286](http://VehicleServicePros.com/12097286)



**Tech400Pro  
TPMS Scan Tool**  
Bartec USA  
[VehicleServicePros.com/12096251](http://VehicleServicePros.com/12096251)



**Swivel Slimline  
Plastic Riveter,  
No. DF-CT888**  
Dent-Fix Equipment  
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# PTEN

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The Independent Tool Authority

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## Gearing up for the new year

As 2015 comes to a close, PTEN continues its focus on providing tool and equipment product information.

By **Erica Schulz-Schuessler**, Editor  
Erica@VehicleServicePros.com

It's a whirlwind every year as our team hustles the aisles of AAPEX and SEMA to scope out the newest products to market. This year was no exception.

As the pre-cursor to 2016 product launches, many manufacturers feature their new tools and equipment for the coming year during these shows. We saw a number of new and innovative products at the show, including a number of scan tools, tools that utilize wireless, tablet or smartphone technologies from companies like Bartec and Hunter Engineering, an efficient handheld vacuum to clean up shop spills from Flo-Dynamics and more.

Did you get a chance to make it out to Las Vegas in November for the AAPEX and SEMA Shows? If not, we brought some of the best products to you. Check out our AAPEX/SEMA Editor's Picks section on page 58, which features product information on some of the new tools and equipment we spotted at the show.

Not all of the products we saw at the show would fit into this month's issue. You can find even more information from products at the show online: [VehicleServicePros.com/AAPEXSEMA2015](http://VehicleServicePros.com/AAPEXSEMA2015).

While it's always nice to see the new products to market, there's something to be said about the tried and true tools in the shop. That's why again this year, we compiled a list of

the Top 100 Products PTEN readers inquired about. In this issue, we feature the top 25 (page 54). For access to information on all 100 products, head to [VehicleServicePros.com/2015Top100](http://VehicleServicePros.com/2015Top100).

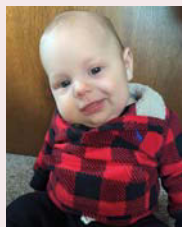
If that weren't enough; as always, we still feature new products throughout the pages of PTEN in every single issue. Turn to page 10 to find all of the new tool and equipment offerings available by product manufacturers.

While PTEN continues to evolve with helpful articles, like what tools to use for vehicle diagnosis such as Tool Briefing (page 50), or our reader-favorite Big-Time Boxes (page 74), we also strive to continue our commitment to bring you the latest tools and equipment. With these products you can complete vehicle repairs and maintenance quickly and efficiently, ultimately helping you run a successful business.

I look forward to what next year brings. **PTEN**

### NEW ADDITION

Editor Erica Schulz-Schuessler and her husband welcomed their first child, Everett, in August 2015.



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**Josh Smith**  
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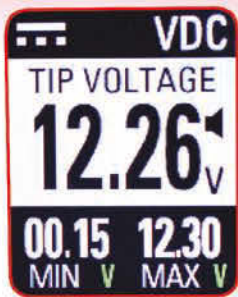
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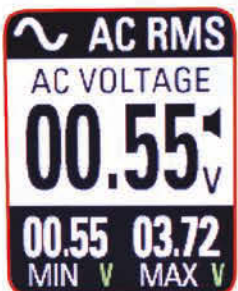
## VDC Mode

DC Voltmeter with the Ability to Activate Components with Battery Power or Ground



## Power Feed Test

Display Resistance in Ohms & Compares Battery Voltage to Tip Voltage



## AC Volts RMS

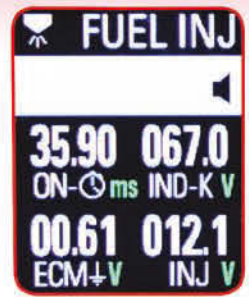
Standard AC Voltmeter RMS and Displays the Min/Max Values



## AC Volts P-P

Peak to Peak AC Voltmeter which Displays Total Voltage Between the Lowest-Highest AC Signal and Displays Min/Max Values

**Fuel Injector**  
Simultaneously Displays Injector On-Time, Inductive Kick Voltage, ECM Ground Voltage and Injector Supply Voltage



## Frequency Counter

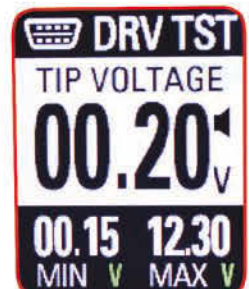
Display Hertz and Both Neg/Pos Pulse Width



**ECT Mode**  
Detects the ECT Transmitter Signal on Contact with Probe Tip



**Driver Tester**  
Verifies Proper Operation of a Pull Down Output Driver



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VIDEO



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# FEATURED New Products



## Examines a vehicle's internal electronic system

The Ease Diagnostics VehicleMRI is a quick, online tool that examines a vehicle's internal electronic system to assess the current health of the vehicle by using proprietary algorithms to reveal and forecast problems that other vehicle inspection methods cannot. According to the company, VehicleMRI performs hundreds of standard and dealer-level tests that would normally take technicians many hours, and is an effective alert system for serious problems and no-dash warning lights displayed. VehicleMRI is a performance based health check and is the first inspection system to analyze both OBD-II generic and enhanced data.

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## Roll over smooth or rugged surfaces

The Creepex Speedster can roll over floor grates, air hoses and even unpaved drive-ways. This creeper provides users with total displacement control for an ideal working position. The Speedster offers two 7" wheels in a "positive camber" configuration to provide the capability to spin precisely. The user gains more control because those wheels are repositioned at waist level. The wheels have a dual tread profile for both smooth or rugged surfaces, and the Speedster allows two-position ground clearance. The soft, ergonomic, polyurethane-reinforced uni-body shell has side-by-side convenient tool trays as well as a pair of detachable magnetic LEDs and the low center of gravity keeps it from tipping.

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## Identify noise and vibration concerns

The NVH Kit from Pico Technology works with PicoScopes to quickly identify the source of noise and vibration concerns. Sophisticated software pinpoints the source of the problem and the kit can be enhanced with accessories to also allow on-vehicle driveline balancing.

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## Extensive software update

Keeping a Snap-on scan tool's software up to date maximizes that investment, ensuring users always have the latest codes, tests and SureTrack expert information to handle every diagnostic challenge. With the Snap-on Software Upgrade 15.4, available for all current Snap-on diagnostic tools, technicians can now access the all-new Ford Passive Anti-Theft System (PATS) Key Programming, new Functional Tests for Ford 6.7L Diesels and expanded coverage for 99 domestic, Asian and European vehicle systems. This update features MY coverage through 2015 on select makes, and over 100,000 new codes, tips and data parameters; plus bi-directional controls and automated tests like emission system, sensor tests, transmission relearn, diesel DEF tests and EVAP controls.

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## Delivers 34 cfm of airflow

The Coilhose Pneumatics Typhoon Blow Gun and Typhoon Pro Blow Gun, Nos. typ-2500 and typ2501cs, employ a unique tip and trigger design. The tips on the pistol-grip blow guns use an engineering principle known as the Coanda Effect to generate air flow. Both the Typhoon Blow Gun and Typhoon Pro Blow Gun deliver 34 cfm of OSHA-compliant airflow, and assist with automotive cleanup. The Pro model is chrome-plated for easy cleanup in greasy environments.

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## Three touchscreen fingertips

The CLC Safety Viz Pro glove, No. L145, has reinforced textured palm pads and fingertips for better grip and durability as well as a padded palm and knuckles for added protection. The synthetic leather palm material resists abrasions and tears. The gloves have flexible, bright orange LED polymer strips around a rubberized safety cuff, which illuminates in a steady glow or in flash modes. The gloves offer three touchscreen fingertips, padded knuckles and a stretch spandex back. The terry-wipe thumb helps gently remove sweat or debris from face, and the stretch spandex back offers flexibility. The gloves are powered by included, replaceable 3V Lithium batteries (No. 2032).

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## Uses compressed-air-operated venturi

The OEM Automotive Tools Vacuum Brake Bleeder, No. 24440, works with an air compressor to quickly bleed clutches and brakes on most cars and trucks. It offers a 1-quart reservoir and a compressed-air-operated venturi that draws out fluid and air from hydraulic brake and clutch systems. According to the company, one person can perform a clean vacuum brake and clutch bleeding with this product, which includes a fill bottle, a master cylinder adapter set and a one-year limited warranty.

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## Three-position power setting option

The Monster D-Handle 3/4" Drive Mini Impact Wrench, No. MST7145, delivers 1,600 ft/lbs of max torque. The tools three-position power setting allows the user to adjust it as needed, depending on the job. The ultra-lightweight design along with the D-handle style provides the user with additional comfort, according to the company.

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## Available in 9.5" and 11.5" lengths

The Adenna Empower nitrile powder-free gloves comes with double the finger thickness of commonly used nitrile gloves. The 8-mil finger is more durable and allows for protection and safety against rougher, more demanding jobs. The glove is suggested for use in mechanic and industrial applications. The Empower is available in two lengths—9.5" (240mm) and 11.5" (290mm)—for additional coverage of the wrist.

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## Diamond coating increases contact area

The Steelman Pro Diamond Force tool program offers improved grip strength and torsional performance on fasteners. Each tool in the program has its contact points coated with industrial-grade diamonds. The diamond coating increases the contact area between the tools and fastener head, resulting in a significant torsional performance increase over standard tools, says the company. This increased contact area also reduces the risk of camming out fasteners and increases the chances of removing a fastener with a partially stripped head. Three different tamper-proof impact bit sets in hex and star drives (Nos. 78764, 78783 and 78880) are currently available. Additions to the Diamond Force program are planned.

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## Crimp and release specialized terminals

The S & G Tool Aid Corp. Master Terminals Service Kit, No. 18700, is a complete 11-pc kit to crimp and release the most popular automotive specialized terminals found on cars, trucks and other vehicles and equipment subject to excessive vibration and wherever an environmentally sealed connection is used. The kit is for use on Deutsch open and closed barrel terminals; weather pack terminals; metri pack terminals; and other open barrel terminals. The five Deutsch Release Tools have stainless steel shafts and knurled, aluminum color-coded handles for 6 to 22 gauge wire applications. All pieces are supplied in a durable, blow molded storage case with instructions.

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## Mid and low styles

The Keen Vero offers all-leather silhouettes in both mid and low styles. The boots are electro-static dissipative (ESD), helping reduce excess static electricity for the wearer. Crafted with waterproof, Nubuck leather uppers, the Vero features an oil- and slip-resistant non-marking rubber outsole along with asymmetrical steel toes nested in the boots low-profile silhouette.

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## Composite housing improves balance and reduces weight

The JET Tools 1/4" Air Screwdrivers, Nos. R12 JAT-660 and R12 JAT-661, have a composite housing that improves balance and reduces weight. The tools have durable ball-bearing construction and provide control with variable-speed triggers. The Air Screwdrivers feature a quick change chuck that accepts standard 1/4" hex bits, allowing the tool to easily adapt to any manufacturing or fabrication need. There also is a side-mounted forward/reverse switch. The R12 JAT-660 is capable of 800 rpm while the R12 JAT-661 is capable of 1,800 rpm.

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## Ceiling-mounted LED fixture

The Larson Electronics 100 Watt High Bay Explosion Proof LED Fixture, No. EPL-HB-100LED-RT-CM, a ceiling-mounted fixture, provides operators with a powerful and energy-efficient alternative to traditional hazardous location luminaires, according to the company. This fixture provides 8,667 lumens of light while drawing only 100 watts of power. The cast aluminum body and LED lamp offer durability and resistance to vibration and impact. The housing is specially designed to dissipate heat which increases the efficiency and lifespan of the LEDs and electronics. The copper-free aluminum alloy body is powdercoated for added durability. This explosion-proof LED light fixture is IP67 rated, dust-proof and protected against high-pressure jets and temporary submersion.

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## Picks fit in quick release handle

The Lisle 6-pc Hook and Pick Interchangeable Set, No. 82900, can be used to remove hoses, moldings, clips, clamps, seals, O-rings, cotter pins, gaskets and more. The set includes a hook pick, combination pick, straight pick, 90-degree pick, O-ring pick, angle hook pick and quick-release handle with a push-button release to easily exchange picks. The picks can be used without the handle and come in a fabric pouch for storage.

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## 670 ft/lbs of maximum torque

The Chicago Pneumatic 1/2" Metal Impact Wrenches, Nos. CP7736 and CP7736-2, to deliver durability, power and user comfort for tire changing or general applications, says the company. The compact tools offers 670 ft/lbs of maximum torque and the CP7736-2 includes a 2" anvil attachment. The twin hammer mechanism provides a working torque of 51 to 568 ft/lbs, and the tools feature three power settings in forward and full-power in reverse. The ergonomic, curved handle is balanced to reduce strain. A range of additional accessories, including impact socket sets and filter regulators, are available.

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# DIAGNOSTICS AND REPROGRAMMING

Use the same OE software as the dealerships

**#1**  
IN J2534



MongoosePro®

OR



CarDAQ-M®

In a recent independent survey conducted by ETI, Drew Tech was the largest J2534 tool manufacturer with the highest customer satisfaction. DrewTech's J2534 tools are also validated by more automakers than any competitor. When you are ready for J2534, work with the leader. DrewTech now supports full OE diagnostics using:

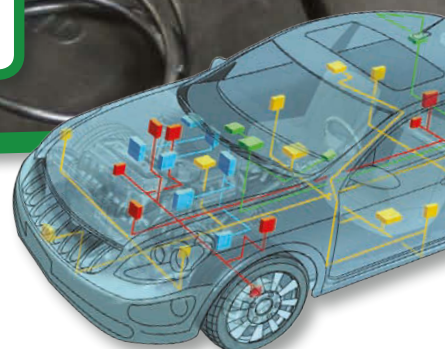
- **Toyota Techstream**
- **GM GDS2**
- **GM Tech2WIN**
- **VW/Audi ODIS**
- **Jaguar/Land Rover IDS**
- **BMW ISTA**
- **Honda HDS**
- **And more!**

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# AUTEL



**MaxiSYS Elite** boasts an enhanced version of its renowned diagnostics software, greater processor and communication speed, improved battery life and a convenient docking and charging station.



Grease & Water resistant	1.8GHz Quad-core	8MP Camera	2048x1536 Retina LCD	15 <sup>sec</sup> Quick boot-up	32G Solid state drive	AC 3X Faster	13600mAh Lithium-polymer battery	4.4.4 KitKat

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Only valid for tools purchased from authorized North American dealers.

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## MaxiSys® Elite

### INCLUDED ACCESSORIES AND OPTIONS

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- Complete Connector Kit and Case
- 2-Year Software Updates
- 2-Year Hardware Warranty

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MAXISYS-ELITE-FREE BLUETOOTH-2P-11172015

# AUTEL®

## New Products

### Adjust jaws without spreading handles

The Beta Tools Push-Button Slip-Joint Pliers,

No. 1047, can be adjusted to

the desired size without spreading the handles to open the jaws. The large section of the jaws is designed for gripping round, hex or square items, and the handles are coated for comfort and durability. The tool comes in 10" and 12" lengths.

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### Includes 12V and 120V charger adapters

The E-Z Red Solarus Rechargeable Sunlight, Nos. SL3350, offer paint-matching COB LEDs that provides 450 lumens for up to four hours on "high" and 250 lumens for as many as seven hours on "low." With over-charge protection, the USB-rechargeable light charges in six hours, and 12V and 120V charger adapters are included. Featuring ABS construction, the Solarus has an impact rating of 1.8m and a ratcheting hook. The Solarus Pocket Sunlight (No. SL1350) is also available, offering 150 lumens and a run-time of 14 hours. Powered by three AAA batteries, the pocket light has a beam distance of 7m and is IPX2 water-resistant. The pocket light also offers a pocket clip and magnetic base.

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### Safely acquire secondary ignition waveforms

The Hickok/Waekon Secondary Ignition Pickup, No. 75300, is a high-impedance active probe specifically designed to safely acquire detailed secondary ignition waveforms for viewing on the company's Autowave (No. 75000). The adjustable sensitivity allows the probe to acquire the most accurate waveform on a wide variety of ignition systems. The interchangeable probe adapter ends optimize the probes ability to work on spark plug wires and the coil on plug.

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# COMPLETE PACKAGE

## TPMS Total Solution



- ▶ Sensor ID and ECU ID match.
- ▶ ECU ID not registered. Sensor OK.
- ▶ Sensor ID does not match ECU ID location.
- ▶ ECU saved last known sensor ID. Sensor is faulty.
- ▶ ECU ID not registered. Sensor is bad.

Our all new **MaxiTPMS (TS501K)** Premium Total Kit includes everything needed for faster, simpler and cost effective repair with our new cloneable/programmable TPMS sensors.

- TS501
- 5 TPMS Sensor 315 MHz
- 3 TPMS Sensor 433 MHz
- User's Manual
- Magnet
- Case



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TPMS-TS501K-1P-11242015

**AUTEL**

## New Products

### Memory button saves tire diameter setting

The Hunter Auto34S tire changer offers a space-saving, functional design. The ergonomic Auto34S features an air powered, push-button control that operates all diameter functions from a single point. The memory button feature saves the tire diameter setting and returns the mount head to the same spot until reset, and an improved press head allows for better grip on all tires, especially extreme low-profile tires. With a lighter quick clamp, the Auto34S tire changer includes an integrated wheel lift to ease the service of large assemblies.

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### Supplies enough power for three electrical implements

The Reelcraft Tri-Tap Cord Reels supply enough power for up to three electrical implements. This accessory option is based on Reelcraft's current L4000 series reel platform. Models are available in 16/3 or 12/3 cord and either standard triple tap or GFCI protected triple tap.

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### Available for a limited time

The Monster 11-pc Fully Polished Metric Long Combination Wrench Set, No. MST9211, comes with patented colored laser etching and is packaged on a rack. The MST9211, available for a limited time, is designed ergonomically for comfort during use. This set includes the following

sizes: 8mm, 9mm, 10mm, 11mm, 12mm, 13mm, 14mm, 15mm, 16mm, 17mm and 19mm.

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**Snap-on**

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# The Mirage

Las Vegas, NV

January 25-28, 2016

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Live Tool & Equipment Demonstrations during HDAW for Distributors, Shop Owners and HD CV Service Managers

- HDAW'16 brings together more than 600 Shop Owners and distributors to meet with their supplier customers
- Monday morning T&E Hall preview extra at HDAW'16! Shop owners and management attending SOLD will be able preview the Tool & Equipment Expo hall and see live demonstrations. Don't miss it!
- Half of the HDAW audience are shop owners, 100% sell tools and equipment
- Distributors attending HDAW'16 – make time to visit the T&E Expo Hall to seek out new equipment, new technologies and see demonstrations first-hand during HDAW'16 Expo hours on Tuesday and Wednesday

**Monday, January 25th | 10:30 am - 1 pm**

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Or contact: Gordon Botts,  
ACOFAS, 815-338-0594

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**Visit [www.hdaw.org](http://www.hdaw.org) for details and registration information.**

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## New Products

### With a swivel air inlet

The SP Air Recipro Saw, No. SP-7610, designed with a swivel air inlet, rear air exhaust, air regulator, blade guide and safety lever is powerful enough to cut steel, FRP, rubber and resin objects such as bumpers. The SP-7610, 8.15" in length, weighs 1.3 lbs and has an air consumption of 2.7 cfm and sound level of 86.5 dB. This motor-driven saw is designed with a 0.47" stroke and operates at 5,300 strokes per minute. The SP-7610 is made in Japan.

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### Works with most DeWalt 18V tools

The DeWalt 20V MAX Battery Adapter works with most DeWalt 18V tools. With virtually no self-discharge, DeWalt's Li-ion compact and premium battery packs offer higher capacity and higher energy density compared to standard 18V NiCd and NiMH batteries without adding weight, says the company. With a collection of more than 40 tools in the DeWalt 18V system, the adapter makes it possible to continue to use fully-functional DeWalt tools on the Li-ion premium battery platform. Available DeWalt 20V MAX Li-ion battery capacities include the 1.3Ah, 1.5Ah, 2.0Ah XR, 3.0Ah, 4.0Ah XR, and 5.0Ah XR. With the adapter, these six battery options, along with DeWalt's 2.0Ah and 4.0Ah Bluetooth-enabled batteries, now all can be used with most DeWalt 18V tools.

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### Spiral drive fastener design

The Ken-Tool 5-pc MorTorq socket tool set, No. 30260, designed for use on MorTorq fasteners, offers a "spiral drive" fastener design where the driver engages into the four curved "wings" in the fastener head and allows the driver head to have complete contact with the fastener's recessed drive head. These features allow for uniform torque delivery, combating tool slippage, and fastener head and drive tool rounding out. This set 3/8" driver and M0, M1, M2, M3 and M4 drive heads and a steel storage rail. The MorTorq driver and drive heads are made from chrome-plated premium grade tool steel alloy, hardened to 60 Rockwell, providing shock resistance and durability.

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express high-test tire



THE FIRST



EASY



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PROFITABLE

THE WORLD'S FIRST  
DIAGNOSTIC TIRE CHANGER



## CORGHI DIDN'T INVENT THE WHEEL JUST HOW TO CHANGE & BALANCE THEM!

### New Product Features

- Laser line for easy & accurate weight positioning
- Led light assist prepping rim for weight
- Smart Arm - automatic selection of program

For Product or Promotional information contact Your Local Distributor or Corghi USA

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**All Corghi Tire changers are now High Performance 2 Speed**

**All Touchless**

**All Leverless**

**All Rim Clamp**



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## 8-gal and 18-gal models

The SKF Lincoln Low-Capacity Drains collect used fluids such as motor oil, transmission fluid and coolant from lift-mounted vehicles. Available in 8-gal and 18-gal models, these drains are designed for stability and efficiency. The low-capacity drains quickly and easily adjust to the proper height using an adjustment clamp and both models have an integrated oil filter drain shelf to eliminate the need for a secondary surface to drain the filter or to set tools. These drains have a durable polyethylene reservoir that prevents damage to vehicles and a splashguard to catch overspray.

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## Instantly removes buildup

Extra Strength Metal PreClean from Flitz International is designed to instantly remove rust, corrosion, salt water buildup, hard water stains, brake dust, mag chloride, grease, oil and more from aluminum, chrome automotive painted surfaces, fiberglass and stainless steel. Users simply spray it on, rinse with water and immediately wipe it off for quick and easy results.

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## Glow-in-the-dark handles

The Klein Tools Hi-Viz Drivers feature glow-in-the-dark handles to easily locate tools in dark or dimly lit places. The handles create a bright glow that lasts more than 30 minutes. The chrome-finished Hi-Viz Drivers come with the cushion-grip handle for better torque and less fatigue. Available models include: Hi-Viz No. 2 Phillips Screwdriver (No. 603-4GLW), Hi-Viz 1/4" Cabinet-Tip Screwdriver (No. 605-4GLW), Hi-Viz 6-in-1 Multi-Bit Screwdriver/Nut Driver (No. 32451GLW), No. 1 and No. 2 Phillips, 3/16" and 1/4" slot-ted and 5/16" and 1/4" hex.

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**Knucklehead® Flood**

**Protac HL® USB**

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# AUTEL®



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## MaxiSYS® Pro (MS908P)

Includes MaxiFlash J-2534 Passthru Device / VCI

- 9.7" 1024 x 768 LED capacitive touch screen

### Additional Accessories Sold Separately

- 4-channel oscilloscope MaxiScope MP408-Basic
- Vehicle Communication Interface (VCI)
- MaxiVideo MV105
- MaxiVideo MV108

## MaxiSYS® (MS908)

Includes Vehicle Communication Interface (VCI)

- 9.7" 1024 x 768 LED capacitive touch screen

### Additional Accessories Sold Separately

- 4-channel oscilloscope MaxiScope MP408-Basic
- MaxiFlash J-2534
- MaxiVideo MV105
- MaxiVideo MV108

## MaxiSYS® Mini (MS905K)

Includes Vehicle Communication Interface (VCI)

- 7.9" 1024 x 768 LED capacitive touch screen

### Additional Accessories Sold Separately

- 4-channel oscilloscope MaxiScope MP408-Basic
- MaxiFlash J-2534
- MaxiVideo MV105
- MaxiVideo MV108

# TRIPLE THREAT

WITH AMAZING SOFTWARE



▲  
MaxiSYS 908 Pro



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TripleThreat-2P-11232015

# AUTEL®

**PATENTED**

# Electronic Torque Clutch

*ETC = 6 Impacts in One Tool.  
with 5 preset torque settings plus Maximum,  
dialing in the pre-programmed ft-lbs  
now easily controls torque.*







**The Mechanic's choice.**

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# Over Torque



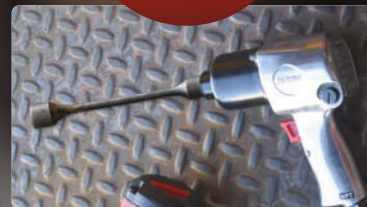
ETC tools will stop automatically when selected torque stage is reached. No more over-torqueing or under-torqueing.

# Calibration

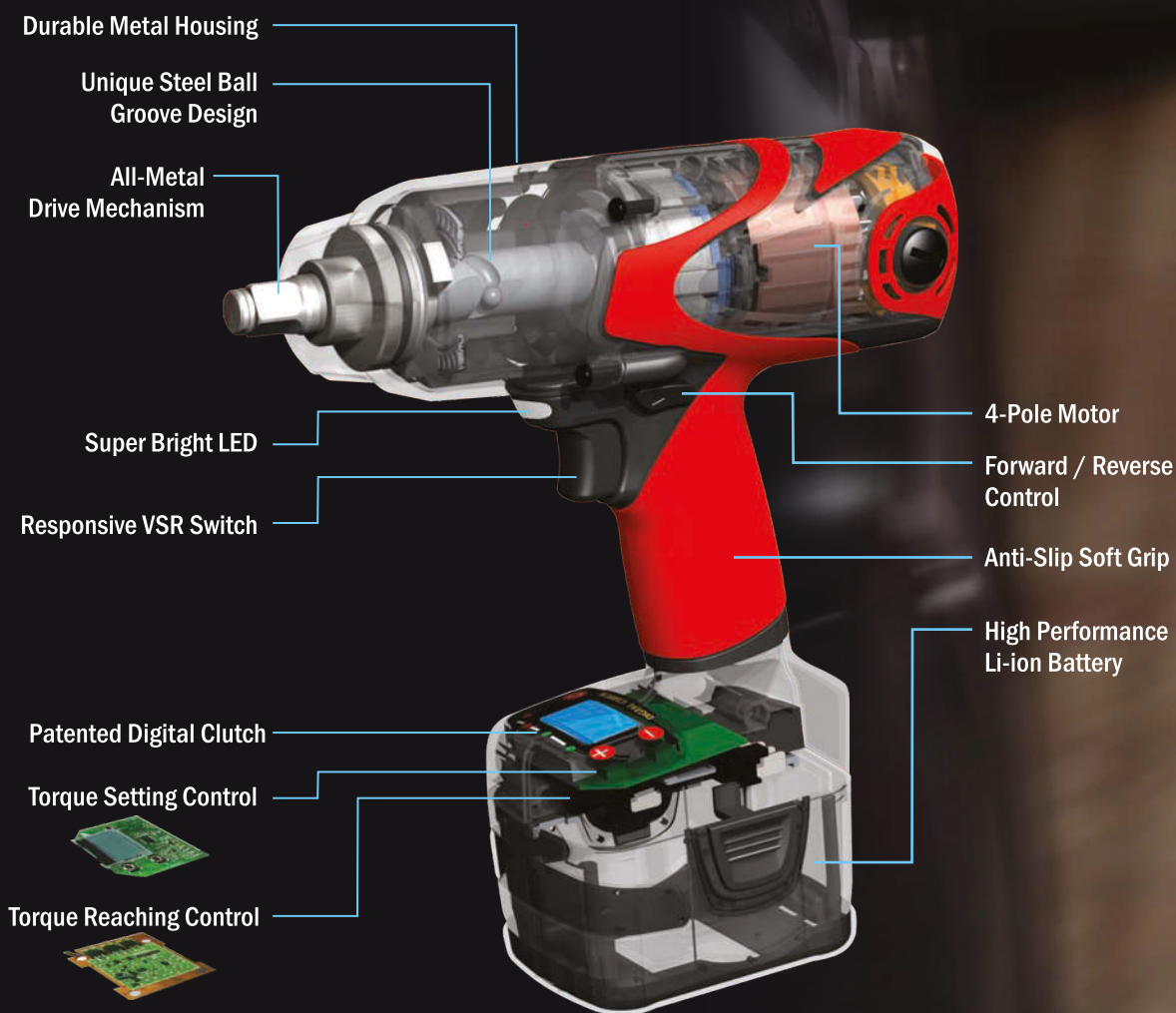


ETC tools innovative technology that simplifies the working processes. No calibration required.

# Torque Stick



Pre-programmed torque settings lead you to desired torque at your fingertips. No torque stick needed.







**6 Impacts**  
**in 1** ETC tools  
Simplify Your Jobs!



## 1/2" Impact Wrench

### ARI2060

Nut-busting 1100 ft-lbs breakaway and 500 ft-lbs forward torque for heavy duty wheel lugs, construction applications.

- 4-Pole high torque motor delivers high efficient torque.
- Patent-pending Electronic Torque Clutch (ETC) torque control.
- 1,700 RPM / 2,000 IPM Variable speed with reversible control.
- Durable aluminum gearbox housing.
- Built-in super bright LED.
- LCD display shows torque stage, battery indication, and torque stage memory functions.
- Utilizes most advanced technology of all 18V/20V impacts.

#### ETC Setting: 6 pre-programmed torque settings

ARI2060	Setting 1	Setting 2	Setting 3	Setting 4	Setting 5	Max. Torque
ft-lbs	60	80	120	160	220	500
Nm	80	110	160	215	300	680

▪ Accuracy can vary due to bolt size, grade, and various other factors.



## 1/2" Impact Wrench

### ARI2064B

Lightweight at only 3.63 lbs, provides a massive 625 ft-lbs breakaway and 300 ft-lbs forward torque for underbody, wheel, construction applications.

- 4-Pole high torque motor delivers high efficient torque.
- Patent-pending Electronic Torque Clutch (ETC) torque control.
- 2,000 RPM / 3,000 IPM Variable speed with reversible control.
- Durable aluminum gearbox housing.
- Built-in super bright LED.
- LCD display shows torque stage, battery indication, and torque stage memory functions.
- Utilizes most advanced technology of all 18V/20V impacts.

#### ETC Setting: 6 pre-programmed torque settings

ARI2064B	Setting 1	Setting 2	Setting 3	Setting 4	Setting 5	Max. Torque
ft-lbs	60	80	110	150	190	300
Nm	80	110	150	200	260	400

▪ Accuracy can vary due to bolt size, grade, and various other factors.



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**Li-ion 18V**

## 3/8" Impact Wrench

### ARI20120B

Compact and lightweight at only 3.63 lbs, delivers a notable 170 ft-lbs breakaway and 80 ft-lbs forward torque for TPMS installation, engine, narrow spaces.

- 4-Pole high torque motor delivers high efficient torque.
- Patent-pending Electronic Torque Clutch (ETC) torque control.
- 2,000 RPM / 3,000 IPM Variable speed with reversible control.
- Durable aluminum gearbox housing.
- Built-in super bright LED.
- LCD display shows torque stage, battery indication, and torque stage memory functions.
- Utilizes most advanced technology of all 18V/20V impacts.

#### ETC Setting: 6 pre-programmed torque settings

ARI20120B	Setting 1	Setting 2	Setting 3	Setting 4	Setting 5	Max. Torque
ft-lbs	15	22	33	41	52	80
Nm	20	30	45	55	70	110

\* Accuracy can vary due to bolt size, grade, and various other factors.

## 3/8" Angle Impact

### ARI2044B

90° right angle at only 2-3/8 inches wide, performs a remarkable 95 ft-lbs reverse and 60 ft-lbs forward torque for engine, narrow spaces.

- Patent-pending Electronic Torque Clutch (ETC) torque control.
- 2,000 RPM / 3,000 IPM Variable speed with reversible control.
- Durable aluminum gearbox housing.
- Built-in super bright LED.
- LCD display shows torque stage, battery indication, and torque stage memory functions.
- Utilizes most advanced technology of all 18V/20V impacts.

#### ETC Setting: 6 pre-programmed torque settings

ARI2044B	Setting 1	Setting 2	Setting 3	Setting 4	Setting 5	Max. Torque
ft-lbs	15	22	33	41	52	60
Nm	20	30	45	55	70	80

\* Accuracy can vary due to bolt size, grade, and various other factors.





## >> Lithium Ion Battery

- Thermal protection circuit prevents damage to battery cells caused by extreme temperature conditions.
- Li-ion battery cells provide excellent performance: higher cell capacity, low self-discharge, no memory effect.



## >> Patented Intelligent Charger ADC20US37-30

- Patented Air-Forced Cooling System (AFCS) designs with a cooling fan and air-forced heat-extraction vents.
- Well designed charging circuit maximizes run-time and overall life of battery cells.



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& free return

**3**  
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**1 Year Limited Warranty**

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Within One Year of Purchase by End User.

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Complete Terms of Warranty details can be found  
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## Jump start and power pack

The Matco MTXTREME is a 24,000 mAh jump start and power pack. Weighing less than 5 lbs, this unit jumpstarts large trucks, diesels, boats and other large automotive equipment. The MTXTREME includes two USB output ports for charging mobile devices, one 19V output port for laptop charging, one 12V/10A output port for DC powered devices and one 12V/24V jump start port. The MTXTREME features a 24,000mAh Li-ion battery, 600 cranking amps, 1,200 peak amps and 12V and 24V jump start modes.

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## O-ring seals to reduce leaks

The Ingersoll Rand UP6S Series Fixed Speed Rotary Screw Compressor offers Progressive Adaptive Control (PAC) protection, an O-ring face that seals to reduce leak points and a Totally Enclosed Fan Cooled (TEFC) motor. The unit's TEFC design reduces the risk of particulates entering the motor, while also keeping it cool, so the compressor can be used in harsh environments. The NEMA Type 4 rating allows it to be used indoors or outdoors, and the Tri-Voltage motor enables it to adapt to a variety of applications. The airtight, interconnecting piping and integral separation system features of the UP6S Series 15-30 hp help increase performance, reliability and ease of service.

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## Charge flashlight and a spare battery at one time

The Streamlight Strion PiggyBack Charger features dual power input via USB or AC/DC power sources and can double run-time by charging the Strion and a spare battery. The charger's integrated micro-USB interface is specifically designed to guide the plug into place for a secure connection. This tool is available sold separately, or included in the Strion LED with 120V AC/DC PiggyBack (No. 74353), the Pink Strion LED with 120V AC/DC PiggyBack (No. 74361), the Strion HPL with 120V AC/12V DC PiggyBack (No. 74536) and the Strion LED HL with 120V AC/12V DC PiggyBack (No. 74778).

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## Creates 5,000 lbs of force

The Ken-Tool Shark Fin Dual Wheel Separation Bag, No. 34555, is a rubber-coated, Kevlar bag that uses air pressure to create 5,000 lbs of force to separate and remove stuck dual wheels off the axle studs and hubs. It is safe for use on steel, aluminum or chrome wheels from 15" to 24.5" rim diameters. The Shark Fin is inserted between the tires after they are off the ground and the lug nuts are loosened. Compressed air is added the bag, using the attached 3' inflation hose. Rated at 150 psi, it delivers 2.5 tons of expansion force at 87 psi, breaking the corrosion.

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## Automatic firmware updates via USB

The Snap-on Pass Thru Pro III, No. EETA113C, offers automatic access to an updated reprogramming toolbox, now supporting Windows 8. The Pass Thru Pro III includes protocols for fault-tolerant CAN, CAN lines and access to additional late-model vehicle networks. The device allows automatic firmware updates via USB as a vehicle connection is no longer required for firmware updates. It allows technicians to update software/firmware in the vehicle's electronic control unit with software directly from the OEMs, fixing software-controlled drivability and emission issues. The device also can program emission-related ECUs on any J2534-compliant vehicle 2004-newer and other J2534 compliant controllers.

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## For indoor and outdoor use

The Coast Rechargeable Headlamp, No. HL8R, features the hands-free functionality of one of Coast's most popular and powerful headlamps (No. HL8), and adds the flexibility and convenience of a rechargeable system. This HL8R, designed for professional-level indoor and outdoor use, features three settings, produces up to 800 lumens and utilizes Coast's patented Pure Beam Focusing System. The lithium battery pack will recharge directly in the pack case, and also can be powered by four AA batteries in a separate pack that is included. It has a run-time of more than four hours in high mode and up to 62 hours on low mode—tested to ANSI standards. This product includes Coast's lifetime guarantee against defects in materials and workmanship.

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## MYTH:

The competition delivers routine service information faster than Identifix.

## TRUTH:

The "QUICK-HITS" section in Direct-Hit® was designed to provide the information you need every day, faster than any other system. You get brake specs, torque specs and fluids/capacities in a single click. You also get quick access to MOTOR and OEM specifications, in addition to our state-approved Emissions Control Guide (if needed), so you can save more time on routine service compared to any other system.



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## 44" extra-wide top drawer

The Mac Tools 2015 Breast Cancer Awareness Toolbox, No. MB1000A-BCA, is a Tech series box featuring a carbon gray cabinet with "BCA Pink" drawers that are accented with black casters, drawer pulls and decals. The 44" extra-wide top drawer offers room for storage and the Wrenching for a Cure branding. The goal of the Mac Tools' Wrenching for a Cure product line is to raise awareness for breast cancer research and to donate a portion of proceeds to the cause.

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## Diagnose both fluids' quality at once

The Phoenix Systems Coolant + Brake Fluid Test Strip is a double-ended test strip that can diagnose both coolant and brake fluid quality at once. Coolant + Brake Fluid combines the company's BrakeStrip and CoolantStrip.

BrakeStrip provides a visual reference for brake fluid copper corrosion levels. It is recommended for use with all DOT 3, 4 and 5.1 brake fluid and follows MAP guidelines. CoolantStrip follows MAP, ASL and ASTM guidelines for coolant specifications. It also uses an integrated Glycol color metric scale, making it compatible for use with all coolant colors. It provides a visual recommendation for when it is time to correct or replace coolant. Coolant + Brake Fluid come 100 double-ended strips to a bottle.

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## Four available sizes

The Access Tools Repairable Air Jack, available in four sizes: Mini Starter Air Jack, Standard Air Jack, Super Air Jack and Twin Air Jack, are all made of ballistic nylon and feature an internal stiffener. The Air Jack Air Wedge fits most vehicles. The most common issue causing a fault with any older, well-used Air Jack is the air valve and pump bulb portion of the Air Jack. The Air Wedge Repair Kit fits all sizes of the Access Tools Air Jack and allows the user to easily replace the valve and pump bulb portion of their aging air wedge, making it once again like new, according to the company.

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**MSRP: \$4250\***



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## Two-speed turn table feature

The Corghi Rim Clamp Tire Changer, No. A9220TI-HP, offers a high-performance two-speed turn table feature, generally found on premium level tire changers, on a 20" capable unit. The A9220TI-HP also offers the bead pressing tool (BPT) arm, which helps keep the bead in the drop center of the tire changer for difficult, low-profile and run-flat tires. This product works on 20" wheels (up to 12.5" wide, on tires up to 42" in diameter). **Circle 75 on card, or enter at "e-inquiry" on VehicleServicePros.com**



## Powers tools and equipment for hours

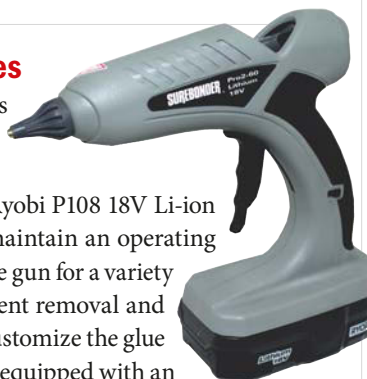
The Northern Tool and Equipment Powerhorse Portable Inverter Generator can operate at up to 2,000 surge watts, which allows it to power up power tools and other pieces of equipment for hours. It weighs 55lbs, and offers a removable side panel, which makes adding oil as easy as possible, says the company. The Engine Smart Control helps reduce fuel consumption, so the generator only uses the required engine power for the task at hand.

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## Supplies consistent working temperatures

The Surebonder Glue Gun, No. PRO2-60, supplies consistent working temperatures for up to one hour with a Ryobi P102 18V Li-ion compact-capacity battery. For 3-1/2 hours of cordless run-time, use with Ryobi P108 18V Li-ion high-capacity battery. The PRO2-60 is designed to maintain an operating temperature of 380 degrees F, making it an efficient glue gun for a variety of surfaces and applications, including automotive dent removal and more. Interchangeable nozzles (available separately) customize the glue output to fit any application. The cordless PRO2-60 is equipped with an on/off switch and comfortable ergonomic design for easy handling.

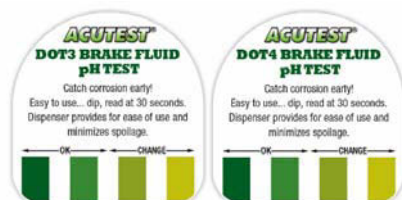
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## Repair collision damage

OTC designed the Power Body Tools Line to help increase technician productivity when repairing collision damage. The tool line includes pneumatic and drill-powered tools such as body shears, straight and quarter-panel shears, hemming tools, door skin removers and corrugated metal shears. Pneumatic tools are compatible with most existing air setups and require a minimum of 90 psi to operate. Drill-powered tools require a minimum 14.4V cordless or corded drill with 3/8" chuck.

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## Identify needed brake fluid service

The Acutrip Brake Fluid Test, No. 61000, evaluates the condition of brake fluid, often identifying needed brake fluid service. Service providers then can service the vehicle when it is in for routine maintenance helping their customers avoid unplanned service. According to the company, one "dip and read" test measures the protection level of the brake fluid, identifying when service is recommended. The Acutrip Brake Fluid Test is available in convenient dispensers of 100 tests that protects the tests strips until they are used.

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## Operates on 110V AC or 12V DC

The Cemb Portable Wheel Balancer, No. EZ29, will operate on standard 110V AC voltage as well as 12V DC. It offers automatic entry, split-weight program, quick nut mounting and more. With wheels and a standard lightweight battery pack, it can be used for mobile service or brought to the vehicle.

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## Polymer nylon rubber hybrid design

The Astro Pneumatic AstroFlex line of Hoses and Reels, are designed to lay flat and avoid binding, kinking and tangling. The reel, No. 3695, fits air hose sizes 3/8" by 50', an air inlet of 1/4" NPT (F), an air outlet of 1/4" NPT (M), a maximum pressure rating of 300 psi and a maximum air flow rating of 25 cfm. The hoses, Nos. AF3825B, AF3850B, AF3850R and AF1250R, offer a specially formulated, polymer nylon rubber hybrid design with a non-plastic feel and reduced stretch, all-weather flexibility to -40 degrees F, solid brass fittings and more.

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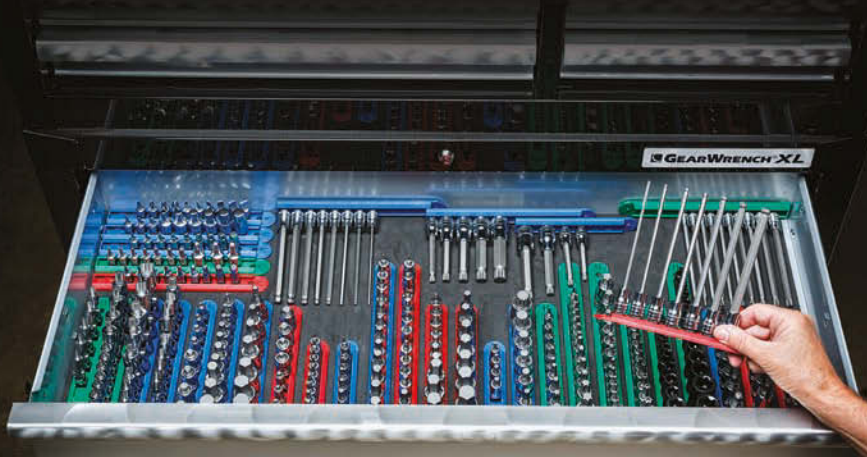


## Contains heavy duty, 15" tools

The Lisle 4-pc Hose Remover Set HD, No. 83000, contains a hook remover, combination remover, straight remover and 90-degree remover for removing hoses, moldings, clips, clamps, seals, O-rings, cotter pins, gaskets and more. The heavy duty tools are 15" long, and the shafts are 5/16" thick with heat-treated alloy steel for durability. The handles are dual-durometer material for comfort and grip.

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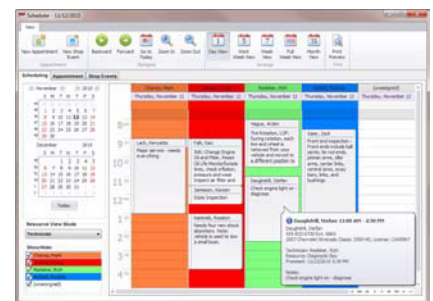


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and Phillips & Slotted

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## Updates to previous version

The Mitchell 1 Manager SE Version 7.0 enhancements will help auto repair shop owners work more efficiently, according to the company. Enhancements include: New scheduler, which helps shops improve workflow by maximizing available resources, including technicians, bays and equipment; Plate to VIN, allows shops to enter the license plate number and Manager SE automatically provides and decodes the VIN, quickly delivering vital vehicle information such as year, make, model, engine type, service history and account details to help speed up the estimating process for service writers; and User Interface Update. The 7.0 release has a new look and feel that is more modern in appearance and takes advantage of functionality in newer versions of the Windows operating system.

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## 3/8", 1/2" and 3/4" drives

The GearWrench 80 Series Air Impact Wrenches are available in 3/8" (No. 88030), 1/2" (No. 88050) and 3/4" (No. 88070) drives. Offering a powerful, twin-hammer impact mechanism as well as metal rear end plates, the 80 Series Air Impact Wrenches feature a variable speed trigger for precise control. These impacts also offer a high-efficiency air motor. The tools come with a one-year warranty.

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## Tool-free power adjustment

The Mac Tools Pneumatic Die Grinders, Nos. AG325S, AG325AH90, AG325AH120, AG325SE, AG525S and AG525AH90, provide comfort and control offered in six different units with two power options: 0.3 hp motors and 0.5 hp motors. The grinder features tool-free power adjustment so technicians can quickly adjust their speed for multiple applications. The newly designed throttle with lockout allows for precise control, and the comfort rubber grip keeps hands insulated from the tool, as it gets cold from use. The die grinders have a 360-degree rotating exhaust that allows the user to direct exhaust away from the body and or material. Mac Tools Die Grinders include a one-year warranty.

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## Pulls 3/16" and 1/4" lock bolts

The Zipp Air Tool 1/4" Lock Bolt Tool Kit, No. ZT2318HK, includes four noses and accessories. The kit is capable of pulling 3/16" and 1/4" lock bolts, and users can change the head to install 3/16" and 1/4" blind rivets. The forged and heat-treated aluminum alloy hydraulic assembly is packaged inside a composite clamshell housing for durability and to ease the maintenance process. The tool has a swivel air inlet design for maneuverability, weighs 5.6 lbs and offers a stroke length of 18mm.

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## NEW PRODUCTS

### LT4155

#### VW/AUDI 2nd GENERATION WHEEL LOCK MASTER KEY SET

- 20 piece wheel lock master key set
- Removes all 2nd generation 2012-present VW/Audi factory wheel lugnut locks
- Identical to factory set - uses same factory part numbers



### LT4165

#### BMW 2nd GENERATION WHEEL LOCK MASTER KEY SET

- 20 piece wheel lock master key set
- Removes all 2nd generation 2012-present BMW wheel lugnut locks
- Identical to factory set - uses same factory part numbers



**THESE KITS WORK ON 2ND GENERATION WHEEL LOCKS**



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### Features a stainless steel helmet clip

The Bayco Products Nightstick Dual-Light Multi-Function Headlamp, No. NSP-4608BC, features a durable stainless clip that mounts directly to existing helmet lamp brackets. With five lighting modes that include a spotlight for distance and floodlight for close-up illumination, the NSP-4608BC is powered by three AAA batteries (included). The Nightstick NSP-4608BC is water rated IP-X7 waterproof and weighs only 3.4 oz. Two independent and easy-to-access switches offer a choice between an independent high or low-brightness spotlight, an independent high or low-brightness floodlight, or combination of both light patterns in dual-light mode.

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## NEW PRODUCTS

### LT4150

#### VW/AUDI WHEEL LOCK KEY KIT

- 23 piece factory reproduced master wheel lugnut key/bolt kit
- Removes all 1st generation VW/Audi factory wheel lugnut locks
- 22 piece splined lugnut bolts with nylon sleeved 1/2" drive 17mm installer socket
- Identical to factory set - uses same factory part numbers



### LT4160

#### BMW WHEEL LOCK BOLT KIT

- 21 piece duplicate factory lugnut keys
- Removes all 1st generation BMW internal spline drive wheel locks
- Includes anti-scratch nylon sleeved installer socket
- Identical to factory set - uses same factory part numbers



**THESE KITS WORK ON 1ST GENERATION WHEEL LOCKS**



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### With an air-operated pump

The JDI Pro30 Plus Fuel Caddy, a 30-gal UL-listed steel fuel caddy with air-operated pump, can be used for gasoline, diesel, kerosene, bio-diesel or transmission fluid. The Caddy is designed with the professional technician in mind, according to the company. Cart style is compact and easy to move and complies with OSHA guidelines. This caddy features a four-way fuel diverter valve, an integral filter system and a UL-listed air diaphragm pump.

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SHIPPING**

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**Model BL-5000**  
5,000 lb. Capacity

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**Model BL-3500**  
3,500 lb. Capacity



The truly portable QuickJack™ is convenient to use and lightning fast allowing technicians to easily move the lift wherever it's needed. The QuickJack eliminates the need to bend over, kneel or squat when working on vehicles. A lowered height of just 3' means it goes where other jacks don't and an optional 12-volt power supply allows you to use it practically anywhere. Sturdy lock bars, a remote pendant control and adjustable rubber contact pads make it the perfect lifting system. Available in 5,000-lb. or 3,500-lb. capacity. Visit [www.quickjack.com](http://www.quickjack.com) to learn more.



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\*Free shipping on all BendPak and Ranger Products to most areas in the 48 contiguous states.

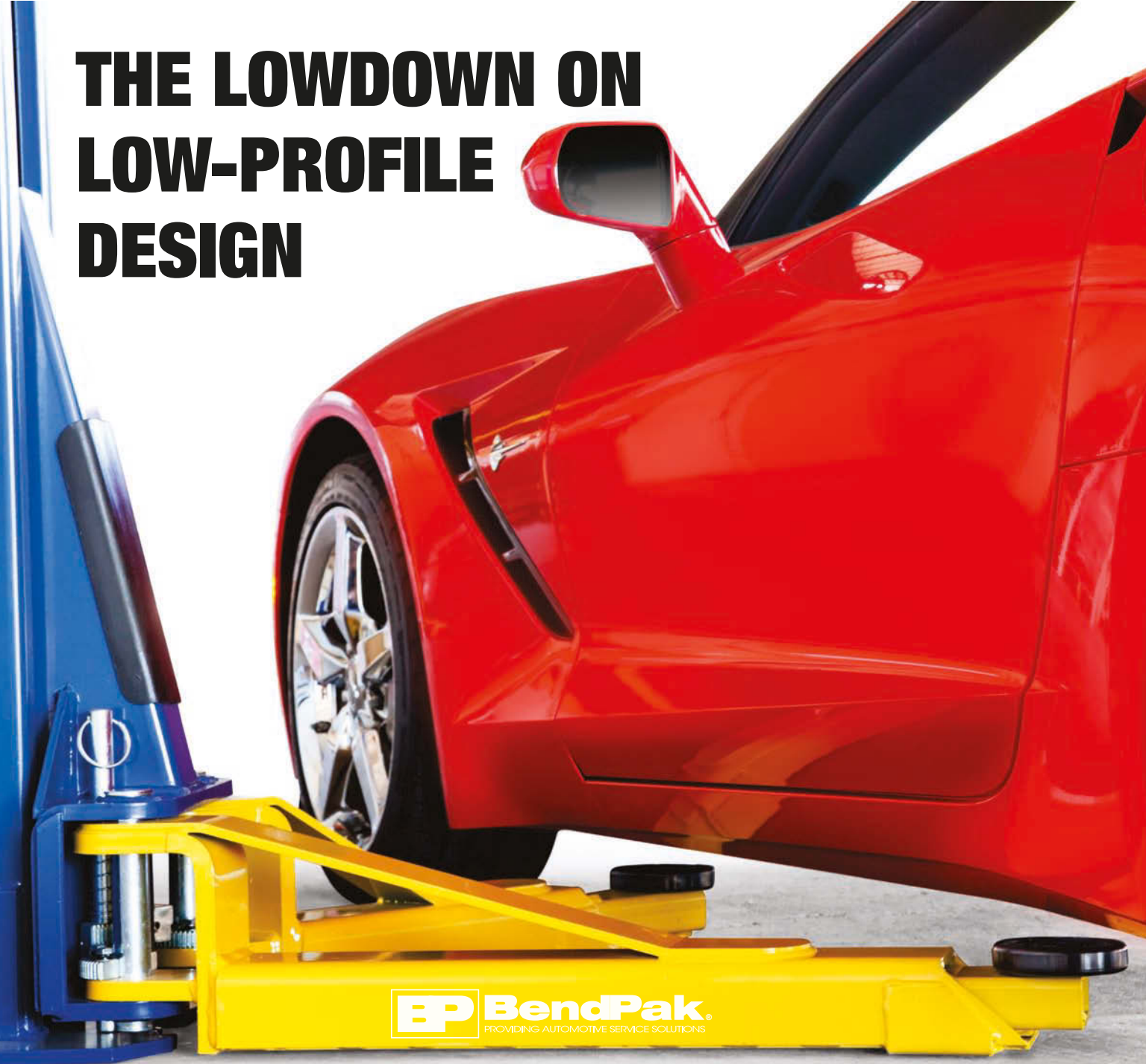
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## Hip and chest pockets for tool storage

The **Red Kap Classic Automotive Coveralls**, Nos. CT10 and CT16, made from poly/cotton blended twill for added comfort, are available in nine colors. These coveralls offer hip and chest pockets in addition to the right leg rule pocket for easy storage. The CT10 offers extra storage pockets to help keep frequently used tools at the ready, according to the company. The CT10 also offers SewStrong Bartacks with angled stitching to take additional strain and to help prevent rips. Double-stitched DuraSeams provide maximum strength.

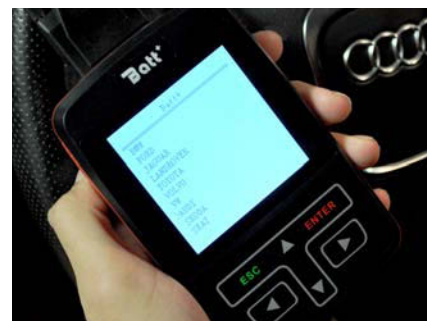
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## Designed to fit in and illuminate small areas

The **Cat® Lights Rechargeable Slim Light**, No. CT1205, which is designed to fit inside and illuminate even the smallest areas, generates 175 lumens of flood light and 100 lumens of beam light. This light is Micro USB rechargeable (cord included) and it offers three hours of run-time on flood and four hours on beam. The magnetic pocket clip offers easy, hands-free use. This light includes a protected charging port and battery charge indicator that will alert the user with a bright red light when it's time to recharge the 3.7V Li-ion rechargeable battery, and bright green when fully charged. The streamlined body design makes the light easy to hold, according to the company.

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## For quick and easy battery resets

Failure to reset battery life when replacing new vehicle batteries may result in overcharging the new battery, leading to shortened battery life and driveability issues. With the **CanDo Diagnostics Batt+ Battery Reset Tool**, technicians no longer need a complicated scan tool to perform a battery reset, according to the company. The Batt + makes quick and easy work of battery resets on the following manufacturers: BMW, MINI, VW/Audi, Jaguar, Land Rover, Ford and more.

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## For fluid-dispensing applications

The Lincoln Odometer-Style mechanical meters for fluid-dispensing applications are available in four different models with varying combinations of extensions and quart or liter measurements. Designed for indoor or outdoor use, these meters feature a non-resettable totalizer that keeps track of product usage over time, as well as a batch totalizer with push-button reset. The meters have an oval gear mechanism that provides accuracy across a wide range of viscosities and a trigger lock that enables hands-free dispensing for large volume delivery. The odometer-style meters feature a protective black shroud and are fully repairable for longer service life. Each meter has a trigger guard to protect both the operator and the vehicle from accidental damage, as well as an ergonomically balanced handle with non-slip grip. The meter packages include a mechanical oil meter, rigid or flexible extension with non-drip nozzle, trigger handle guard, black protective shroud, adapter for 90-degree extension configuration and an instruction manual.

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## Three files included

The Innovative Products of America Micro-Male Electrical Pin Cleaners, No. 8043, is a 3-pc set for cleaning small male pins commonly found on Deutsch, Cannon, Bullet and other round terminals. Each file features a diamond-abrasive coating on a concave-design that contours to the male pin. The Micro-Male Electrical Pin Cleaners scrape away corrosion to rejuvenate electrical connections while aiding in diagnostic troubleshooting. The Micro-

Male Electrical Pin Cleaner set includes three files, engineered to clean pin sizes 0.030" to 0.040", 0.060" to 0.065" and 0.090" to 0.098", in a custom, leather-type holster.

Circle 101 on card, or enter at "e-inquiry" on [VehicleServicePros.com](http://VehicleServicePros.com)

## Remove dirt, grease and grime

The Deb Group Extreme Wipes and Cherry Scrubbing Wipes are part of the company's line of KrestoGT heavy duty automotive hand cleansers, providing a solution when water isn't readily available. The Extreme Wipes were designed for general shop use to remove dirt, grease and grime. The Cherry Scrubbing Wipes neutralize petroleum odors on the hands and remove the heaviest of soils and substances like adhesives, sealants and tar. Additionally, a wall dispenser is available for use with all KrestoGT cartridges. The durable device comes with a lifetime guarantee.

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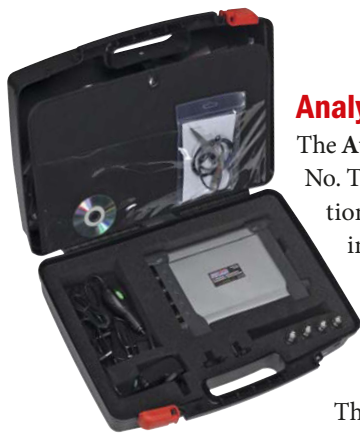


## Heavy duty, 1/2" square shank

The VIM Tools Bolstered Screwdriver, No. SD29, is 29" long, including 21-1/2" under the clear acetate handle. The tool has a heavy duty, 1/2" square shank and a heat-treated alloy shaft. It is chrome plated with a black, 1/2" flat tip. The Bolstered Screwdriver comes with a limited lifetime warranty.

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## Analyze automotive sensors and components

The Auto Workshop Supplies 4 Channel Digital Oscilloscope, No. TA4000, offers a high sample rate, multiple memory function and 4-channel display, making this unit capable of in-depth analysis of a variety of automotive sensors and components. Compatible for use on any laptop or PC, the scope also features a comprehensive collection of standard automotive diagnostic procedures, turning an otherwise complex process into a click of a button.

The system is loaded with specimen waveforms allowing the operator to compare actual results with those expected.

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## Resists all types of automotive fluids

The Permatex Copper Spray-A-Gasket is a sealant for gaskets. It is designed to help dissipate heat, improve heat transfer and prevent gasket burnout. Permatex Copper Spray-A-Gasket is ideal for sealing gaskets on exhaust manifolds, cylinder heads and turbocharger flanges as well as other high-temperature applications, according to the company. It is effective up to 500 degrees F and resists all types of automotive fluids, especially gasoline. Copper Spray-A-Gasket also helps fill minor irregularities in gaskets, seals non-absorbent surfaces and prevents seizing of base connections and threaded fittings.

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## Packaged in a durable tool case

The H&S Autoshot Paintless Dent Repair Glue Pulling Kit, No. GPR-7570, is an accessory to the Aluminum/Steel Dent Repair Station (No. UNI-9850) for fine dent finishing. The complete PDR kit includes a mini puller, slidehammer, suction cups, glue pulling knobs, glue gun and an assortment of glue. All items in the kit are packaged in a durable tool case.

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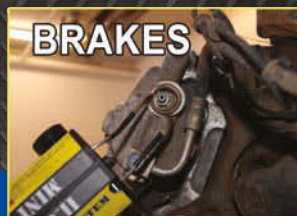
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## Consistent light output

The **SABER Tube Lights** from **ATD Tools** are available in 300 lumens (No. ATD-80373), 500 lumens (No. ATD-80375) and 700 lumens (No. ATD-80377). The SMD LED top light provides an additional 50-lumen flashlight function. The constant current design provides consistent light output, removable swivel hooks with magnets allow hands-free use and a rubberized handle provides a non-slip grip. The lights also offer impact-resistant ergonomic housing, IP54 dust and water resistance, a Li-ion rechargeable battery and automatic shut-off and overcharge protection for optimal battery life.

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The **Bar's Leaks Head Seal Blown Head Gasket Repair**, No. HG-1, features a professional-strength formula that permanently repairs blown head gaskets. Head Seal does not require the vehicle's cooling system to be drained or the thermostat to be removed prior to installation. In addition to blown head gaskets, Head Seal can be used to repair intake gaskets; plastic, cast iron, copper or aluminum radiators; heater cores; freeze plugs; cylinder heads; and engine blocks. It is compatible with all 50/50-mix coolants, including yellow, orange, pink, red, blue and green types. Head Seal Blown Head Gasket Repair is made in the U.S.A. It is available to distribution in case packs of four 33.8-oz bottles.

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## Provides longer seal life

The **Coilhose Pneumatics Six Ball Coupler**, No. 15x4f, offers six locking pawls that create a durable, stable connection. The increased locking area provides longer seal life and resistance to movement. Additionally, the Six Ball Couplers offer a compact package, are machined to close tolerances and are made in the U.S.A.

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### Allows for hands-free lighting

The Streamlight Siege AA with Magnetic Base attaches to steel surfaces, allowing for hands-free lighting. Like the company's Siege AA, the updated model features one white C4 LED and two red LEDs to provide five output modes, and a globe cover that provides 360 degrees of soft, even light. With its cover removed, the light also can illuminate large areas by attaching it to metal objects with the three magnets in its base. With the cover removed, the white C4 LED delivers a range of 50 to 200 lumens. Run-times for the white LED range from seven hours to 37 hours, and the red LEDs run for as many as 12 days.

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### For bulk fluid handling

The Alemite 1000 and 1300 Series Tank Packages designed for bulk fluid handling. These UL-listed tanks are ideal for motor oils and hydraulic oils and are available in single- or double-wall construction. The 1000 Series Tank Package includes a rectangular, bench-top tank that provides useable work space and a sight gauge. The 1300 Series Tank Package includes a horizontal or vertical rectangular tank with sight gauge. Both unit types come complete with a 5:1 ratio Alemite RAM pump, heavy duty reel with 50' delivery hose and more.

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### Accurately torque high pressure fuel lines

The SP Tools/Schley Products BMW Injector Line Socket Set, No. 13400, is designed for BMW's with N54, N63 and S63 engines. This set contains 14mm and 17mm sockets and works in tight engine spaces allowing accurate torquing of the high pressure fuel lines. The open side allows more than a 180-degree rotation, the sockets are thin enough to fit the injector with a wire loom attached and they are short enough to fit between the engine and fender well. Both the 14mm (No. 13420) and 17mm (No. 13410) sockets are available individually.

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## New Products



### Retracts at a safe and steady pace

The Coxreels EZ-Coil safety system, engineered and developed for the spring retractable line, retracts up to 80 percent slower than conventional reels, according to the company. EZ-Coil works uni-directionally without any increase to the amount of resistance when pulling out the hose, cord or cable. When engaged upon recoil, the EZ-Coil controls the aggressive spring motor energy resulting in a reel that retracts at a safe and steady pace. The EZ-Coil safety system enhances operator and workplace safety by significantly reducing retraction speeds. This feature acts as a control for hose, cord, and cable whip hazards.

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### Converts 480V to 120V and 240V

The Larson Electronics 50 KVA power distribution panel system, No. MGS-480.2X30A.2X60A-50K-4X240-6X120, converts 480V AC to single phase 120V and 240V AC. This transformer makes 120V available via six GFCI-protected, 20-amp receptacles with weatherproof covers and 240V available via four L6-30 receptacles with weatherproof covers. This portable power distribution system also provides two 30-amp, 480V receptacles and two 60-amp, 480V receptacles for welding. The transformer and distribution assembly are mounted onto a powder-coated, carbon steel frame with integrated skid pockets and a lifting eyelet that can be used with cable or chains.

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### Built-in, 2" bung adapter

The K-Tool International Lever Transfer Pump, No. KTI72210, is designed for use with high-viscosity oils. The materials used in the barrel pump construction allow for use with water-based media as well. Its built-in, 2" bung adapter allows the pump to be fixed on drums with a 2" opening. The lock nut incorporated in the pump body allows for the pump position to be adjusted. The siphon action can be broken by loosening the air vent cap that is fitted on the pump outlet. The supplied suction tube can be used with 15- to 55-gal drums and a 2m by 3/4" flexible corrugated discharge hose is also included. The Lever Transfer Pump should only be used with non-flammable liquids.

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### Compatible with all paint materials

The DeVilbiss Spray Gun Lube, No. 803888, contains no petroleum distillates or silicone and is compatible with all paint materials. Twelve bottles of the orange-colored lubricant are included in each display box. This lubricant replaces the company's previous Spray Gun Lube, No. SSL-10/181001.

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### Capable of continuous-use applications

DV Systems B Series Rotary Screw Air Compressors, Nos. B5 and B7.5, operate at a 100 percent duty cycle and are capable of continuous-use applications. The compact, quiet air system provides high-capacity air delivery and stable system pressure with minimal installation space. The 5hp B5 model and the 7.5hp B7.5 model feature fixed speed, belt drive technology and deliver 18 to 27 scfm of compressed air, respectively, at 145 psi.

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### Four styles available

The Black & Decker line of hand vacuums now includes four styles of Auto Vacs. Each vacuum plugs into the vehicle's DC outlet, and powers up when the vehicle's ignition is turned on, for easy and convenient use. The Flex Vac (No. BDH1200FVAV) features a 4' flexible hose to access hard-to-reach areas. The Pivot Vac (No. BDH1200PVAV) is compact and lightweight, and offers an extendable crevice for easy cleaning even in small areas. The Hand Vac (No. BDH1220AV) features a long crevice tool and a removable and translucent bowl, which helps to see when the vacuum needs to be emptied. The Compact Vac (No. BDH1200NVAV), the smallest option in the line, features a curved handle for comfort and a wide open mouth to easily suck up large debris. The translucent bowl features a quick-release latch that makes the canister easy to empty.

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## Non-marring and non-sparking

The ABC Hammers Dead Blow Hammer, No. ABC10DB, a one-piece, hot-cast polyurethane construction tool, is engineered to outlast rawhide, rubber, lead and other plastic type hammers by 10 to 20 times, according to the company. This soft-face hammer is non-marring and non-sparking, weighs 9 lbs and is 30" long.

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## Database supports more than 15K vehicles

The Car-O-Liner Vision2™ Electronic Measuring Software offers an enhanced, user-friendly interface that guides the repair workflow process through automatic centering, measuring and documentation. The improved design measures vehicles 20 percent faster than with previous software versions, according to the company. Additional enhancements to the software include detailed graphics through 3D presentation of the measuring points. Color photos allow for quick identification and verification of each measuring point. Comprehensive reports, including photos, can be printed or e-mailed. These features are supported by the growing database of vehicles now exceeding 15,400 worldwide.

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# HOW TO handle issues with fuel-related misfires

This misfire diagnosis with a 2003 Ford Expedition indicates a faulty fuel injector and fuel pressure regulator.

By Barry Hoyland, Contributing Editor

**I**n our previous misfire articles in this three-part series, we discussed using and maximizing the data from your scan tool in order to determine various causes of misfires. This month, we will concentrate on fuel-related misfires and ways to find the root cause. There are some things you must keep in mind when diagnosing misfires, especially fuel-related issues:

- Fuel-related misfires can be caused by too much fuel.
- Fuel-related misfires can be caused by too little fuel.
- Fuel-related misfires can be caused by incorrect atomization of the fuel by the injector.
- Fuel-related misfires can be caused by bad fuel.
- In some cases the customer will not bring the vehicle in with an initial problem, but when additional issues occur.

These items are necessary to keep in mind throughout your diagnostic routine, but it is to your benefit to consider them early in your procedure. For example, if your scan readings show the system is lean, the cause could be a fuel delivery issue or caused by a high concentration of alcohol on a vehicle that is not built to a flex-fuel specification. Understanding the possible causes early assists in performing a complete diagnosis by not overlooking some potential sources of a problem.

## 1 INTERVIEW THE CUSTOMER

This step may not seem necessary or be possible in some cases, but its importance cannot be overlooked. Customers may not notice, or be concerned with, issues that arise over a period of time such as a slight drop in power, but they will notice when a “check engine” light comes on. Because of this, it is possible to have multiple problems with opposing symptoms on a vehicle that comes in.

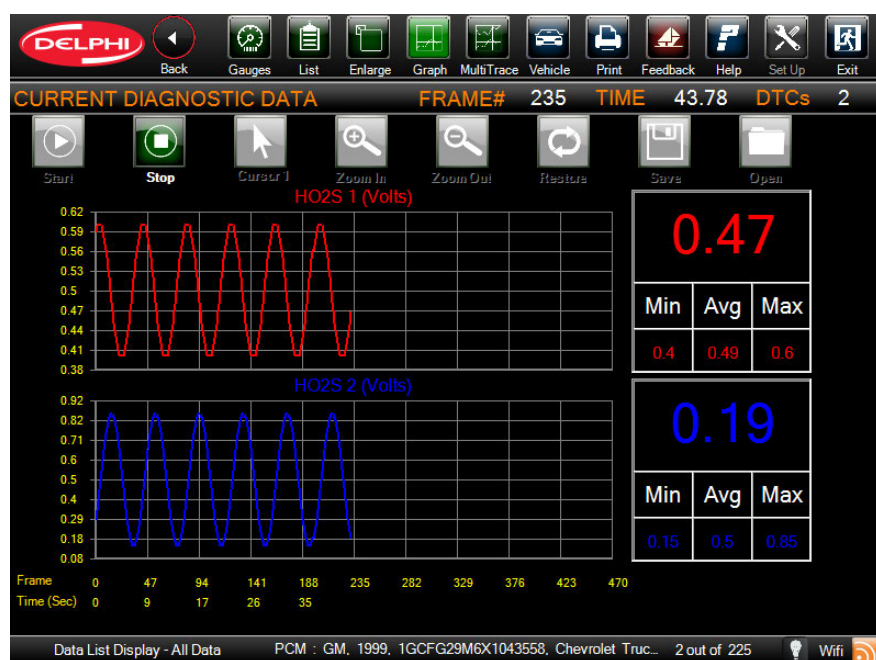
For example, if your customer has had a drop in fuel economy (a rich condition) for a period of time they did not notice or were not concerned with, but brought

the vehicle in with a “check engine” light and a lean code, you need to diagnose both a lean and rich condition without knowing there had been an issue causing the system to be rich. Asking questions of

the customer, such as their driving habits, if they run their fuel tank near empty and if they have noticed any other issues, will help you perform a complete diagnosis. The interview of our customer indicated no additional concerns or added any valuable information.

## 2 OBTAIN FAULT CODES AND FREEZE FRAME DATA

Using your scan tool, first check all modules for communication looking for “U” codes, meaning issues within the CAN system, and address those first. Next, you need to check for codes and obtain freeze frame data for all codes possible. Remember, some older scan



▲ **Fig 1:** Scan tool graphing shows the status of oxygen sensors on both banks. Be aware that scan data is not the same as you would see with a lab scope. If oxygen sensor readings on the scan tool are either a little slow, or the voltage range is not within 15 percent of either the high or low limits, it is a good idea to check the sensors with a lab scope.

tools only record freeze frame data for the first code, while newer tools allow you to see the information on multiple codes.

If codes were present, the freeze frame data will allow you to see what the PCM was seeing from various sensors on the vehicle. Make sure you print this information because you can use it to operate the vehicle in those exact conditions to either duplicate the issue during the diagnostic process or to confirm the repair was successful. The only fault code on this Expedition was a P1000, which on a Ford indicates that the monitor tests are incomplete, most likely due to someone clearing codes.

Another indication codes have been cleared is when there is a current misfire and no code is present. Since the code(s) have been cleared there will be no freeze frame data. Not having all the codes and freeze frame information may make our diagnostic process slightly more challenging, but not impossible.

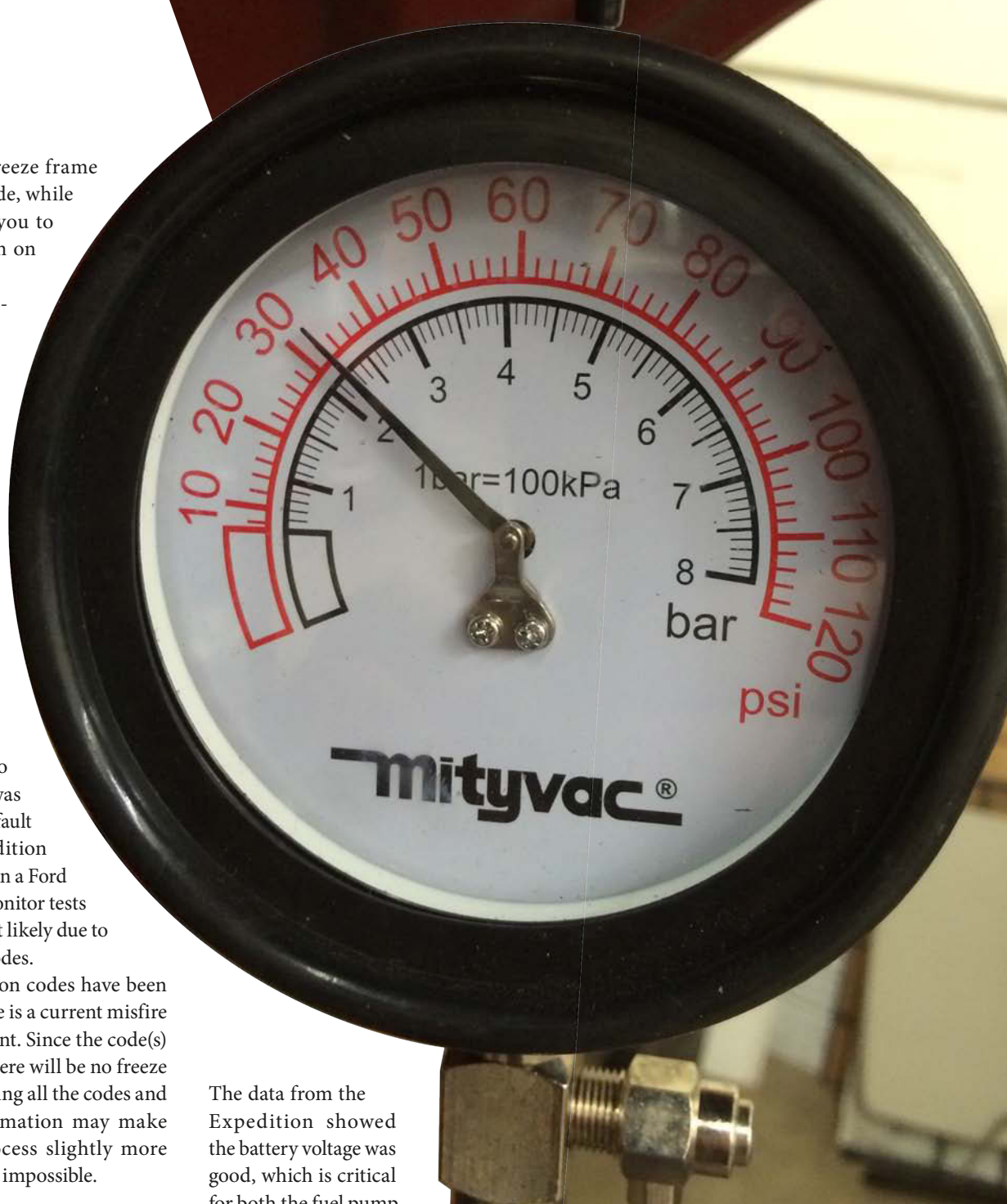
### **3** OBSERVE THE DATA STREAM

Observing the data stream from your scan tool is the next step, primarily the oxygen sensor and fuel trim data. One potential pitfall of fuel trim data is that fuel trim is based on oxygen sensor data and, if a sensor is faulty, the fuel trim information data can be false.

The data from the Expedition showed the battery voltage was good, which is critical for both the fuel pump and injectors to operate correctly. The engine temperature, mass air flow (MAF) and engine vacuum were all within normal operating ranges. The oxygen sensor data showed readings within normal ranges in both voltage and time (see Fig. 1). Be aware that scan data is not the same as you would see with a lab scope. If oxygen

sensor readings on the scan tool are either a little slow, or the voltage range is not within 15 percent of either the high or low limits, it is a good idea to check the sensors with a lab scope.

The fuel trims on the Expedition indicated no issues with either long- or ➔



▲ Fig. 2: The Mityvac Fuel Pressure Tester showed 33 psi, which is low end of spec.



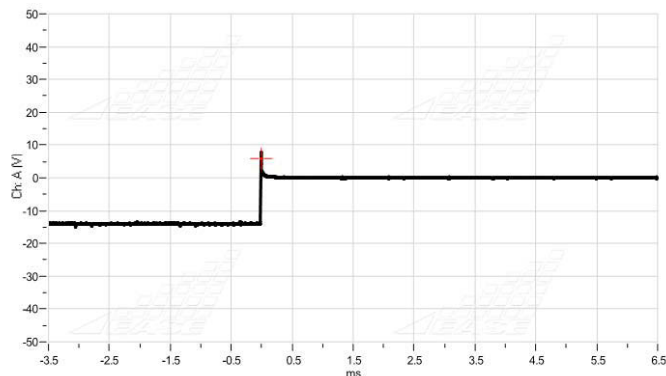
**VEHICLE ISSUE:**  
Vehicle misfires at cruise and idle

**VEHICLE AFFECTED:**  
2003 Ford Expedition 5.4L





▲ **Fig. 3.** The waveform showed normal and also indicated the added injector "on time" as indicated by the fuel trim numbers. Note the voltage spike at shut-off. Here, 20V indicates no resistance in the circuit.



▲ **Fig. 4.** Note the lower voltage at shut-off which indicates excessive resistance in the injector.

short-term on Bank 2. The short term trim on Bank 1 showed it was subtracting fuel at 5.5 percent, meaning the injectors were on for 5.5 percent less time. Normally -5.5 percent Short Term Fuel Trim is not an issue, but combined with the long-term addition of fuel will be something to keep in mind during the diagnosis.

Mode \$06 data indicated multiple misfires on Cylinder 2.

## 4 OBTAIN VEHICLE SPECS AND COMPLETE A DIAGNOSTIC WORKSHEET

Obtain the vehicle specifications for fuel pressure and other items pertinent to engine operation and proper fueling such as MAF value and engine temperature to complete a diagnostic worksheet.

We tested the fuel pressure and found an abnormal reading. The specification

is 35-45 psi. The regulated (with vacuum attached) reading at idle is 33 psi, which is slightly under the specification (see Fig. 2). The reading unregulated was 35 psi, which is quite a bit less than what is specified and would be required to operate properly at higher rpm.

Taken by itself, the fuel pressure being low typically will not cause a single cylinder misfire, but it is an indication of multiple problems. Based on the Mode \$06 data of a misfire on Cylinder 2, we installed a lab scope on the injector connector. The waveform showed normal and also indicated the added injector "on time" as indicated by the fuel trim numbers (see Fig. 3). If the injector had been faulty due to high resistance, the waveform voltage spike would have been lower as shown (see Fig. 4).

We then used a digital multimeter (DMM) to check for resistance in the injector. The resistance measured 14

ohms, which is well within spec of 11-18 ohms. Resistance testing with a DMM may be useful if the faulty injector is way out of specification. Remember that it is a comparative test to the other injectors on the same vehicle under the same conditions (engine temp, fuel quality, etc.) and small variances may affect injector function slightly, but will probably not cause a misfire (See Fig. 5 for small variances in resistance values).

We still believed we had a fuel-related misfire due to the fuel trim on Bank 1 so we wanted to check the fuel injector itself.

One way to determine if an injector is delivering fuel at the same rate of other injectors is to use an injector pulse tester and fuel pressure gauge. Begin with relieving fuel pressure in the system per the vehicle manufacturer's procedure. Next, install the fuel pressure tester according to the tester's instructions. Disconnect

▼ **The MityVac MV5545 Fuel Pressure Tester Kit includes a number of items for testing vehicle fueling systems, including a fuel pressure tester and fuel injector pulse tester needed for this diagnosis. For more information on this product, visit: [VehicleServicePros.com/10155417](http://VehicleServicePros.com/10155417)**

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## TOOLS USED:

- Vehicle information
- Diagnostic worksheet
- Scan tool
- Lab scope
- Digital multimeter
- Fuel pressure tester
- Fuel injector pulse tester

the fuel injector connector and install the fuel injector pulse tester on the injector. Pressurize the fuel rail by turning the key “on” for about 10 seconds, then turn the key “off.” Note the fuel pressure.

Next, you will energize the pulse tester which triggers the fuel injector a calculated number of pulses. This will drop the



◀ Fig. 5. One injector showed 14.1 ohms (right), while the other has 16.0 (left) ohms resistance. Even though this is a small amount of difference, it can affect the injector's performance, but generally does not indicate a misfire.

fuel pressure due to fuel flowing through the injector. Note the fuel pressure again.

Perform the same test with multiple cylinders cycling the key “on” and “off” each time to pressurize the fuel rail between tests. The fuel pressure drop should be the same for each injector. Lower amounts of pressure drops indicate an issue with an injector not flowing the same amount of fuel. Our test showed a pressure drop of 4 psi on Cylinder 2, and 8 psi on the other cylinders tested, indicating that Cylinder 2 was not flowing as much fuel.

## 5 THE REPAIR

We have determined we have a faulty injector on Cylinder 2. At this time there are a few things to consider, one being can or should you recommend replacing all of the injectors?

First, you can make a good case for replacing all of the injectors. They are all the same age and have the same num-

ber of miles on them as well as having had the same fuel quality going through them. In a perfect world, replacing them all would most likely benefit the customer, both in fuel economy and performing a complete repair with less likelihood of a future failure.

It is not always a perfect world due to cost considerations with many customers and it may be necessary to replace just the faulty injector in some situations. In the case of our Expedition, the customer says they will be replacing the vehicle soon and did not want to replace all of the injectors.

It is now time to take a few steps back and review our fuel trims and fuel pressure. Fuel trims that indicate rich short-term and lean long-term conditions in many instances are caused by a fuel pressure regulator

that is leaking. When the diaphragm within the regulator is faulty it allows fuel to be drawn into the vacuum hose at idle, causing unmetered fuel to

enter the intake manifold. The faulty regulator also prevents the system pressure to increase under load, causing a lean overall condition at higher rpm. The lower-than-expected fuel pressures observed during our testing procedures also can be attributed to a faulty pressure regulator.

Having multiple issues on this vehicle created a situation where it was necessary to look beyond just one or two of the symptoms. The misfire caused by a faulty injector should have created positive fuel trims, adding fuel and oxygen sensor readings showing lean.

Because there was also an issue with a fuel pressure regulator leaking fuel into the intake manifold, it created a situation where just observing scan data would not take you directly to the cause of the misfire. After replacing the faulty injector and pressure regulator the misfire was repaired and the fuel pressure and fuel trims returned to normal values. **P TEN**

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Every year, *PTEN* readers send in requests for more information on products featured in the magazine. At the end of the year, we compile a list of the top 100 products sought out by readers. The next few pages feature the top 25 products of the 2015 Top 100 Products. For the full list of the 2015 Top 100 Products, visit: [VehicleServicePros.com/2015Top100](http://VehicleServicePros.com/2015Top100)



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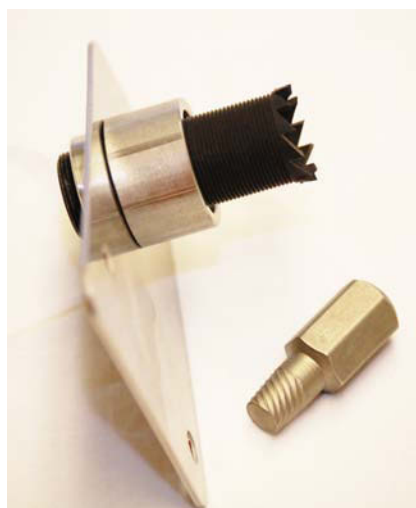


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**AGS Company**

FlareForce in-line flaring tool

Circle 143 on card, or enter at "e-inquiry"  
on VehicleServicePros.com



**Quickly helps replace damaged  
section of A/C blend doors**

**AirSept Inc.**

A/C Blend Door Repair Tool

Circle 145 on card, or enter at "e-inquiry"  
on VehicleServicePros.com



**For use on Ford gas engines**

**ProMaxx Tools**

Rocky exhaust manifold  
stud repair tool

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on VehicleServicePros.com



**Instant voltage  
drop testing**

**Power Probe**

Power Probe IV

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on VehicleServicePros.com



### Prevent wheel damage

**ATD Tools Inc.**

16-pc Locking Wheel Nut  
Master Key Set, No. ATD-3065

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on VehicleServicePros.com



### Quickly reduce dent sizes

**Mayhew Tools**

Flatpad Dent Repair Kit

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on VehicleServicePros.com



### Featuring Surface

**Drive Technology**

**GearWrench**

Pinless Universal

Impact Sockets

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on VehicleServicePros.com



### Three sizes of

**protective guides**

**Metal Edge Products**

Lug Ripper

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on VehicleServicePros.com



### Storage with USB and grounded outlets

**Matco Tools**

Power Toolboxes

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on VehicleServicePros.com



### Cushion grip for comfort

**Cornwell Quality Tools**

All-Purpose Pliers, No. CTG60

Circle 151 on card, or enter at "e-inquiry"  
on VehicleServicePros.com



### Six dual-opposing pawls

**SK Hand Tool, LLC**

X-FRAME ratcheting wrench

Circle 153 on card, or enter at "e-inquiry"  
on VehicleServicePros.com





**W**e saw a number of products introduced at the AAPEX and SEMA shows again this year. Here you'll find some of the tools and equipment selected by our editorial staff that piqued our interest. For product details on all the products we saw at the show, visit: [VehicleServicePros.com/AAPEXSEMA2015](http://VehicleServicePros.com/AAPEXSEMA2015)



## Autologic Diagnostics, Inc. **Autologic Assist**

**Autologic Assist** is believed to be the industry's first fully integrated diagnostic support system. It combines the expertise of more than 100 dealer-trained technicians with state-of-the-art technology and access to online third-party vehicle data that's delivered via a multifaceted, single-screen device. This simultaneous integration of these data resources and diagnostic tools, coupled with real-time access to technicians that specialize in European vehicles, gives repair shops a competitive edge, allowing technicians to detect and repair vehicles quickly with fewer mistakes.

*Editor's comments: Dominating the Euro market for aftermarket scan tools, Autologic delivers its newest product aimed at providing real-world feedback from other users of the Autologic scan tool system. Autologic Assist provides a tech support network hotline available if users gets stumped, with experts on hand to address any questions. The system scans the vehicle, retrieves codes, offers repair information and connects to tech support. The system is also capable of ordering necessary parts.*

**Circle 154 on card, or enter at "e-inquiry" on VehicleServicePros.com**

## GearWrench Electronic Torque Wrenches, Nos. 85076 and 85077

**GearWrench Electronic Torque Wrenches** offer additional features compared to other torque wrenches in the company's line, including Target Torque Alert, which can be set to give a warning as the target torque setting is approached. This allows more control so there is less chance of over-torquing a fastener. These torque wrenches can measure in ft/lbs, in/lbs or Nm to increase versatility. They feature a tolerance of +/-2 percent for clockwise tightening from 20 percent to 100 percent of their full scale and come in a blow molded case for secure storage. The 3/8" Electronic Torque Wrench, No. 85076, offers torque ranges between 7.4 and 99.6 ft/lbs. The 1/2" Electronic Torque Wrench, No. 85077, offers torque ranges between 25.1 and 250.8 ft/lbs.

*Editor's comments: It was best to see this tool in action, because it truly showed how the Target Torque Alert feature worked. Once the user comes close to the preset torque setting, the tool handle begins to vibrate. As the user gets closer to reaching the set torque, the tool vibrates more and will indicate when the torque is reached.*

**Circle 155 on card, or enter at "e-inquiry" on VehicleServicePros.com**



## SP Tools **11880 Pitman Arm Popper**

The **SP Tools 11880 Pitman Arm Popper** helps techs safely and efficiently remove large Pitman Arms on 3/4- to 1-ton pickup trucks. Constructed of large, forged components and quality material to resist corrosion, this tool remains secured and locked in place when in use. This forged design requires less torque and space compared to current tools and methods, according to the company, often eliminating the need to remove the steering box. With less force required, techs also do not need to use an impact gun for the procedure. For use on Ford F250/350, Dodge 2500/3500 and Chevrolet/GMC 2500/3500 vehicles.

*Editor's comments: This specialty tool serves to help a technician remove an arm off a steering gear box quickly and efficiently, and eliminates the need to remove the steering box from the vehicle. Designed to be durable and strong, the tool fits a wide range of vehicles.*

**Circle 156 on card, or enter at "e-inquiry" on VehicleServicePros.com**



### Induction Innovations

#### Mini-Ductor Venom

The **Induction Innovations Mini-Ductor Venom** heats ferrous and some non-ferrous metals without the danger of an open flame using invisible heat. This tool will turn a 3/4" nut red-hot in 15 seconds. This tool can be used to easily release seized nuts/bolts from corrosion or thread lock compounds; remove/release steering/suspension components, fuel tank straps, inline connectors, Zerk fittings, manifold bolts, truck bed bolts, seat belt bolts, U-bolts, tie rod sleeves/ends, soft hail dents, metal fabrication, soldering and heat treating. It can also be used to remove heavy undercoatings applied over hardware. The kit includes the Mini-Ductor Venom, manual, carrying case and three basic coils. It comes with a two-year parts and labor warranty.

*Editor's comments: Following up on the success of Mini-Ductor II, the Venom features an angled design and trigger, for easier access to tight spaces. The Venom works with all Mini-Ductor coils, and the new Coil Twist Lock feature locks coils in one simple turn. Also note the updated LED indicator lights: a green-lit LED means the tool is heating properly; a red-lit LED will light under fault conditions, which will protect the tool with a three-second lockout feature.*

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### Schaeffler Automotive Aftermarket REPERT 2.0

The **Schaeffler REPERT 2.0** website provides a complete resource including training, diagnostic and technical information, product information and customer news. The modular-based system is designed to enable users to locate detailed product information, vehicle system training offerings, proper installation

methods, diagnostics, as well as tips and best practices to help users improve work efficiencies, reduce bay time and complete jobs correctly. REPERT lists all Schaeffler products, including vehicle specific information, documents, videos, diagnostic materials and more. A complete electronic catalog provides information on all products for North American vehicle applications. REPERT includes diagnostic and technical training courses.

*Editor's comments: This modular-based website resource provides techs with the company's newest feature: training on demand. The system allows techs to diagnose problem, identify the needed part and gather repair knowledge all in one place. Users can browse product catalogs in real time and the site also offers diagnostic training/videos.*

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### AirSept Inc.

#### Smart Splice Hose-to-Hose Connector



The **AirSept Smart Splice Hose-to-Hose Connector** offers a permanent repair, using a threadless crimp-and-frame hose-fitting system. The crimp technology aligns and holds the hose and clamps in the proper position to ease installation, and it creates multiple crimps for a leak-proof seal. Rounded, rather than square cut, barb edges reduce the potential for damage to the inner hose lining during installation. With a handheld crimping tool, technicians can create leak-free connections between cut ends of A/C reduced barrier hose quickly, and repairs often can be made without line removal. Smart Splice Hose-to-Hose Connectors are available in standard sizes to fit Nos. 6, 8, 10 and 12 A/C reduced barrier hose.

*Editor's comments: This hose-to-hose connector extends AirSept's Smart Splice family into hose building and hose damage repair, allowing techs full hose repair capability. The connector is made of aluminum to help withstand temperatures and fits multiple applications. Available in four sizes and as kits.*

**Circle 159 on card, or enter at "e-inquiry" on VehicleServicePros.com**

### Bartec USA, LLC

#### Wireless Tread Depth and Pressure Tester, No. WTI100P

The **Bartec USA Wireless Tread Depth and Pressure Tester, No. WTI100P**, is designed to help technicians simplify the process of tire inspection. The WTI100P tool prompts the user with a bright and intuitive display, captures tread depth measurements in three places and features an optional pressure test. The WTI100 also features a light so the technician can easily see underneath the wheel arch or in low-light conditions. The WTI100 tool can measure and document tread condition and tire pressure without creating more paper or lists—the information is collected and sent via wireless Bluetooth to a PC or tablet, where users can then show customers the reports.

*Editor's comments: Using a color-coded system, this tool can help eliminate shop paperwork by collecting information and digitally supplying reports to the shop and the customer. According to experts at the company, this tool enables a shop to advise the customer how long he or she can keep running his tires before replacement is necessary. The results of the tread and pressure test can be uploaded via Bluetooth to a PC or tablet so that the color-coded warnings can be displayed for the customer.*

**Circle 160 on card, or enter at "e-inquiry" on VehicleServicePros.com**







## Alkota Cleaning Systems Infrared Heater, No. RH150

The Alkota Cleaning Systems Infrared Heater, No. RH150, offers clean, quiet, radiant heat with no odor or smoke and can be used indoors or outdoors. The RH150 is standard with a high/low heat setting, which offers users a choice of 100,000 BTUs or 150,000 BTUs. This heater also features an easy adjustable-tilt and fold-away handle, 14-gal fuel tank, 12" rubber wheels, fuel-level indicator, diagnostic lights for easy troubleshooting and the RH150 is also UL certified. This heater offers an optional remote thermostat for auto temperature control.

*Editor's comments: This portable heating system provides shops a way to heat areas using infrared technology. The unit can heat up to 10' away and at a width of 30'. According to company representatives, the RH150 is "very efficient, burning 0.72 gallons of fuel per hour at 100,000 BTUs." This translates to 18 hours of continuous heat with the unit's 14-gal fuel tank. This same technology means no smell or fuel oil fumes while operating. The diagnostic feature allows shops to verify misfire and ignition issues, low- and high-voltage issues, a weak flame or if the internal control unit is defective.*

**Circle 161 on card, or enter at "e-inquiry" on VehicleServicePros.com**

## Craftsman/Sears Line of industrial wrenches

The Craftsman Industrial line of wrenches are made to exact tool-specific standards for professional use. The line features Clinch Drive Wrenches, Satin Finish Wrenches and the Double Box End Ratcheting Wrench. Available in full-polish or combination styles, the **Clinch Drive Wrenches** feature an open end double clinch design for increased gripping power in either direction, and an extended beam for additional torque application. The open end with lead-in chamfer provides easy access to fasteners while the box end with relieved corners maximizes function with fasteners. Available in combination, ratcheting and stubby styles, the **Satin Finish Wrenches** include a 72-tooth ratcheting gear that enables a 5-degree swing arc and an enclosed box end that reduces dirt and debris infiltration. The thin-walled, low-profile ratcheting box allows easier access to confined fasteners. The **Double Box End Ratcheting Wrench** helps users break rusted, hard-to-remove grip with the standard box end, while allowing quick removal or tightening of fasteners with the ratcheting box end. The 72-tooth ratcheting gear enables a 5-degree swing arc and full polish provides a smooth finish and easy clean up. These tools are made in the U.S.A. and come with a lifetime warranty. Includes a broad assortment of the high quality industrial-grade tools.

*Editor's comments: Wrenches in this industrial line are designed specifically for the professional technician. Made in the U.S.A., these hand tools have longer handles for better leverage, greater strength and torque, improved reliability and easier clean up.*

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## MAHLE Service Solutions ArcticPRO ACX1185 and ACX1285 air conditioning service units

The MAHLE Service Solutions ArcticPRO ACX1185 air conditioning unit offers integration of the company's TechPRO diagnostic tool to service vehicles that use R-134a refrigerant and the ArcticPRO ACX1285 unit offers TechPRO integration to service vehicles that use the new R-1234yf refrigerant. Both units offer a larger 7" LCD touchscreen for ease of use. TechPRO is MAHLE's diagnostic scan tool that features the ability to decode a VIN in one second with one click. TechPRO was engineered so the vehicle

communication interface (VCI) and software can be used with a technician's current desktop, laptop or tablet, making it unnecessary to buy or lease extra hardware.

*Editor's comments: Launched last year at AAPEX, MAHLE introduced the TechPRO scan tool that quickly identifies a VIN and works with a tech's existing computer or tablet. Now this year, they've integrated other shop equipment for use with that same tool, to make it more versatile for shops. Integration with the TechPRO allows techs to diagnose A/C issues without a separate scan tool.*

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### Hunter Engineering Company Splashtop remote desktop application

Hunter Engineering's WinAlign wheel alignment consoles can now be

viewed and operated remotely from any mobile device. Using the **Splashtop remote desktop application**, Hunter aligner consoles can be accessed and operated on mobile devices when the screen is not visible to service technicians. Remote access to the WinAlign console enhances ease-of-use and saves the technician time and effort during every alignment, especially in on-site, heavy duty truck alignment service.

*Editor comments: As technology continues to evolve, more and more products utilize smartphones and tablets for vehicle maintenance and repair. Large shop equipment is no exception, with the introduction of Hunter's Splashtop app for the company's WinAlign wheel alignment equipment.*

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### Flo-Dynamics AirVac Handheld Shop Vac

The Flo-Dynamics AirVac Handheld Shop Vac helps shops clean up spills quickly and easily. The patented process can vacuum up all kinds of fluids, from anti-freeze to heavy duty hydraulic oils. To use, simply connect the unit to shop air, clean up the fluid and drain the unit into the included waste container. The AirVac requires no additional pellets, rags or pads to clean up spills. Made in the U.S.A.  
*Editor's comments: This handheld unit provides shops an efficient way to clean up spills. Instead of using absorbent pellets or rags to soak up spilled liquids, shops can use this air-powered vacuum to clean the area without messy clean-up.*

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# Top 10 Tools



## Go-to Tools

This fleet technician names the tools he uses to service a wide range of vehicles.

*By Josh Smith, Assistant Editor*

**TECHNICIAN:** Josh Mahtaban

**LOCATION:** Clifton, N.J.

**SHOP:** PSE&G

Josh Mahtaban has more than 20 years experience, getting his start as a technician in the Army from 1994 to 1999. He worked at a Ford dealership from 1999 to 2012, where he earned the Ford Senior Master Technician certification. An ASE Master Certified and L1 Advanced Level specialist as well as a Certified N.J. State Emissions Repair Tech, Mahtaban has been employed at PSE&G since 2012 as a fleet technician, working on everything from a Ford Focus to a Peterbilt truck. Diesel, hybrid, driveability and electrical work are among his specialties and he does hydraulic work, fabrication and welding, as well.



Want to show off YOUR Top 10 Tools?  
For more information, email  
[Josh@VehicleServicePros.com](mailto:Josh@VehicleServicePros.com).

**1** "This tool is a must-have for diagnosing any modern Ford Motor Company product, especially diesel and hybrid," Mahtaban explains. "The wireless connectivity and faster connection speeds are welcome improvements over the original VCM. It also does an excellent job with cylinder power balance, relative injector flow, relative compression and Mode 6 data."

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**2** "It's a real time-saver when diagnosing coolant leaks," Mahtaban says. He adds that the tool works especially well when diagnosing faulty EGR coolers.

**3** "I really like this small scope for its portability, speed and resolution," Mahtaban says. "It's a great 'first look' tool and, more often than not, it allows me to diagnose the fault without resorting to a more bulky scope."

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**4** "What's not to like about a 54" prybar?" Mahtaban says, noting the striking handle is useful for lining up engine mounts—particularly those found in diesel trucks. "It's also great for front-end work."

**5** Mahtaban says this device is very useful when diagnosing "no communication" issues. "It allows you to test the circuits without worrying about compromising the integrity of the pins and inadvertently creating new problems."

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**6** "I love the size, power, versatility and value of this tool. I rarely even use an air ratchet anymore," says Mahtaban. "This thing has taken a beating and is surprisingly powerful for its size and price. The light is a nice feature as well." Mahtaban says he has purchased several other M12 tools from Milwaukee and has not been disappointed with them.

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**7** Mahtaban says this kit is an "absolute must-have" tool for technicians looking to probe electrical connectors and pins on current vehicles without causing any damage to them. "I also find them useful for checking pin fit and terminal fretting," Mahtaban adds.

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**8** "This butane soldering kit heats up quickly and can be used anywhere," Mahtaban explains. "It seems to get hotter than most electric soldering guns and irons that I've used. Being able to also use this for heat shrink is an added bonus."

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**9** Mahtaban appreciates this headlamp's three levels of hands-free light that can be used under a vehicle or dashboard. "The battery life is excellent," Mahtaban adds. "It's very durable and, most times, I don't even need to tie up a hand by holding a flashlight."

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**10** Mahtaban recommends this tool for its "superior accuracy," and he says there is no need to worry about losing track of the torque angle when there isn't enough space for the full swing. "The tool will track the angle even if it takes multiple swings to achieve," he says, noting it is his first choice for torque to yield fasteners.



4





**1** FORD ROTUNDA IDS VCM II



**2** SNAP-ON COOLING SYSTEM PRESSURE TESTER - AIR POWERED, NO. SVTS263



**3** AESWAVE USCOPE



SNAP-ON 54" HEAVY DUTY PRYBAR, NO. SPBH540



**5** OTC CAN TEST BREAKOUT BOX AND PROTOCOL DETECTOR



**6** MILWAUKEE M12 CORDLESS 3/8" LITHIUM-ION RATCHET, NO. 2457-21



**7** FORD ROTUNDA FLEX PROBE KIT, NO. NUD105-R025E



**8** POWER PROBE BUTANE SOLDERING KIT, NO. PPSK



**9** STREAMLIGHT SEPTOR HEADLAMP, NO. 61052

**10** SNAP-ON TECHWRENCH 1/2" DRIVE TORQUE WRENCH





# Category Spotlight

Medium and Heavy Duty Vehicle Repairs and Service

In addition to product details on a specific category, this section now features a number of different resources on this subject. Use the key below to determine what type of content you're reading.



PRODUCT



VIDEO



ARTICLE



ASK THE EXPERTS



TECH TIPS



## REMOVES THREE-FINGER AND FOUR-FINGER CAPS

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

**Circle 175 on card, or enter at "e-inquiry" on VehicleServicePros.com**

## MAC TOOLS LINE OF 1" IMPACT VIDEO



To watch a video demo of this product, go to: [VehicleServicePros.com/12126907](http://VehicleServicePros.com/12126907)



## WORK WITHOUT THE HOSE

The **ACDelco Li-ion 18V 1/2" Super Torque Impact Wrench with Digital Clutch**, No. AR12060, offers 1,100 ft/lbs of maximum breakaway torque, 780 ft/lbs of reverse torque and 500 ft/lbs of maximum tightening torque. The clutch settings help the tool to be suited for use on assembly lines, and if the user wants to avoid stripping a lug. This tool allows users to complete tire rotations, brake work and other jobs that require an impact wrench with ease anywhere, without the hose.

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## FOR DODGE 5.7L AND 3.5L ENGINES

The **SP Tools Dodge Harmonic Damper Pulley Puller**, No. 13450, aids in the removal of the harmonic damper pulleys found on the Dodge 5.7L and 3.5L engines. The space allowed to insert the puller leg through the pulley is too small for a conventional universal puller to work without grinding away all of its strength. Then it may not have the correct geometry to stay on the puller landings cast into the back side of the pulley. This puller has a slender design to fit the small windows in the pulley, and its geometry increases the bite of the leg to the pulley as it is tightened.

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## INCLUDES FIVE SIZES OF FORKS

The **Lisle Corporation Stepped Pickle Fork Kit**, No. 41440, includes five forks in 11/16", 15/16", 1-1/8", 1-7/16" and 1-5/8" sizes. The stepped design on the forks keeps the tool from bouncing back when separating ball joints, steering dampeners, tie rods, pitman arms and other applications. The 1-7/16" fork is designed for Ford pickups and other medium duty trucks, while the 1-5/8" fork is for Chevy/GMC truck and SUV applications. The heavy duty, heat-treated forks, which can be sharpened if needed, are threaded to interchange with either the hammering handle or the pneumatic driver. The handles are heat-treated alloy steel.

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## EASY, 'PLUG-AND-PLAY' INSTALLATION

The **Continental VDO RoadLog OBD II Converter Installation Kit**, No. 3290-90100900, covers light and medium duty trucks, as well as 2014 and up Volvo and Mack vehicles. It offers an easy, 'plug-and-play' installation that allows the use of a single VDO RoadLog ELD platform for fleets with a variety of Class 1 through 6 trucks. The kit covers 2014 and up Volvo and Mack trucks with a passenger car style OBD-II port. All of the cable kits are supplied with mounting brackets. The VDO RoadLog ELD program also includes the following installation kit options for heavy duty vehicles: 6-pin and 9-pin direct connect, 6-pin and 9-pin Y-cable with plastic nut, 9-pin Y-cable with flange installation, and an open wire direct installation kit.

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## Category Spotlight

Medium and Heavy Duty Vehicle Repairs and Service



### MULTIPLE STANDARD WIDTHS

The **Torin Commercial Equipment 10,000-lb two-post lift** offers three-piece front and three-piece rear arms. The front arm has a full 180 degrees articulating capability, multiple widths standard, no exposed hydraulic hoses or cables and a single-point lock release that is very smooth and easy to operate, according to the company. This lift comes with a two-year parts and labor warranty, stackable height adapters and an optional 2' height kit for additional clearance, if needed.

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### INCLUDES OEM-MANDATED STAR TECHNOLOGY

The **Vacutec Heavy-Duty Smoke Machine**, No. WV711, features OEM-mandated STAR Technology, and is designed for testing turbocharged and other high pressure systems. This smoke machine delivers the densest smoke at any pressure, according to the company, using a contaminant-free UltraTraceUV smoke dye solution that finds high-pressure leaks that smoke alone may not find. The third generation variable-pressure machine's digital touchpad helps users avoid fumbling with regulators. Adjustable from 1 to 43.5 psi, it also quantifies leaks with pressure-decay and leak flow rate. The Heavy-Duty Smoke Machine includes a wireless remote.

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### FITS ALL MEDIUM DUTY LUG CONFIGURATIONS

The **Hunter Medium Duty Collet Kit** comes with a single flange plate designed to fit all medium duty lug configurations, which allows techs to use the same mounting process on every assembly. The kit further reduces training by decreasing adapter use, regardless of medium duty wheel size. The collet kit also comes with a comprehensive application chart to ensure proper mounting, reducing wheel damage and customer comebacks.

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## Ford to Freightliner, We Have You Covered.



### HD PRO

The HDPro Outperforms the competition by allowing the technician to properly diagnose Heavy Duty trucks without the need for other scan tools or OEM specific software.

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Automatic Protocol Search

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## ESPECIALLY FOR TURBO, DIESEL AND BOOSTED SYSTEMS

The **Redline Detection PowerSmoke PRO** is the only smoke machine available on the market that is both high pressure/variable pressure, says the company, and is specifically engineered to test the integrity of turbo, boosted, high pressure systems in one quick procedure, with the engine safely off. This tool works with light and medium duty vehicles. Variable pressure, variable flow replicate a full load and allow the technician to adjust flow as needed to find minuscule faults. This tool comes with a full professional accessory kit including: a durable accessory case; Easy Intake; Easy Block Off; a 60" Smoke Wand; smoke nozzle; cooling system adapter; NOX, O2 and Temp Port Adapters; smoke-producing fluid; spare quick connect couplers; and a halogen inspection light. In addition to being contaminant-free, the PowerSmoke PRO runs on compressed air; is powered by 110-250V AC or 12V DC; is free of dyes and contaminants; runs on 3-20 psi range; performs decay/leak down tests and weighs only 19 lbs.

**Circle 185 on card, or enter at "e-inquiry" on VehicleServicePros.com**

## VIDEO: TIGER TOOL HEAVY DUTY UNIVERSAL HUB PULLER



To watch a video demo of this product, go to: [VehicleServicePros.com/12081040](http://VehicleServicePros.com/12081040)



## VARIOUS AVAILABLE CAPACITIES

The **MAXIMA ML4030 heavy duty mobile column lift** can be used indoors or outdoors on truck, bus and RV applications. Each column lift can be moved by one individual from job to job. The ML4030 offers adjustable wheel supports for all sizes of wheels, a remote control handle with a 16' cable and an LCD screen that shows the exact operating status and conditions of the lift. This lift guarantees user safety with the hydraulic flow control and mechanical locks. There are various lifting capacities available depending on the application it is used for. This lift is ISO9001 and CE approved.

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## NEARLY 27K ADDITIONAL FAULT CODES

The **Cojali USA 15.2 software update of the Jaltest Multibrand Diagnostics tool** for commercial vehicles provides Jaltest users further functionalities, new makes, more systems and additional technical information. Some of the innovations presented in the 15.2 release include additional features, coverage and diagnostics systems, new technical information, new Jaltest Off-Highway vehicle module, faster VSS process for heavy duty (Deutsch 6- and 9-pin), improved Volvo and Mack US13 VSS, and the new User Accounts functionality for GRP. This version adds four brands, 40 models, 618 systems and more than 26,959 fault codes. Jaltest technical information provides 1,376 wiring diagrams and 2,000 troubleshooting guides by fault codes.

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## HANDLES TIRES UP TO 50" IN DIAMETER

The **Ranger Products Truck Wheel Balancer, No. RB24T**, is suited for high-volume commercial tire dealers and truck fleets. It handles tires up to 50" in diameter and 20" wide and rim sizes up to 30" in diameter. Although best suited for bus, truck and OTR wheels, it is equipped to accommodate automobiles and light duty truck wheels as well. Featuring Ranger's Drive Check technology, it is a powerful, vibration-detection balancing solution that simulates road and driving speed conditions and automatically measures computer generated imbalance of the tire and wheel assembly. The balancer recommends the most cost effective weight optimization correction as needed. An integrated wheel lift allows the heaviest wheel assemblies to be lifted for mounting.

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## HEAVY DUTY DIAGNOSTIC DEVICE

The **CanDo HD Pro** allows technicians to properly diagnose heavy duty vehicles without the need for other scan tools or OEM-specific software, according to the company. The HD Pro offers an 8" touchscreen display with built-in thermal printer, Bluetooth connectivity and a Windows CE operating system. This tool has HD coverage on most Class 4 to 8 trucks and industrial equipment with continuous software updates, free for one year, to expand vehicle coverage and functionality. Available tool functions are dependent on vehicle year, make and model.

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## Category Spotlight

Medium and Heavy Duty Vehicle Repairs and Service

### 18,000-LB CAPACITY PER COLUMN

The **Kar Lift Solutions by Omer Convoy** is an 18,000-lb capacity per column, 24V-powered mobile column lift. The Convoy uses 15.3" adjustable forks and can be used as a single or sets of up to 10 columns. The bright LCD color display is user friendly and includes a slow speed and double height control. The Convoy column is only 89" high and easy to maneuver. It uses a spring-loaded rear steering handle and "easy roll" nylon wheels. The low maintenance design uses steel flanged rollers and a fully powdercoated structure.

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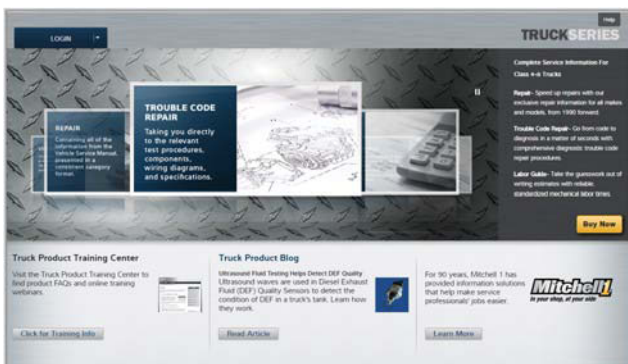
### SINGLE SCAN TOOL FOR HEAVY DUTY AND MEDIUM DUTY TRUCKS

**Bosch's Esitronic Truck**, a heavy duty (HD) truck scan tool, offers a solution to independent repair shops and fleets seeking a single scan tool for all heavy duty and medium duty (MD) trucks. The intuitive, easy-to-use Esitronic Truck covers all major HD truck, MD truck, engine, transmission and brake system combinations with diagnostics and embedded repair information. In addition to the Esitronic Truck running parameter resets, conducting bidirectional diagnostics and engine adjustments, the tool also includes wiring diagrams, component information, electrical specification and step-by-step troubleshooting for common causes on error codes for increased shop efficiency. It also includes basic OBD-II scan for light duty trucks 1996 and newer.

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### VIDEO: KEN-TOOL SHARK FIN DUAL WHEEL SEPARATION

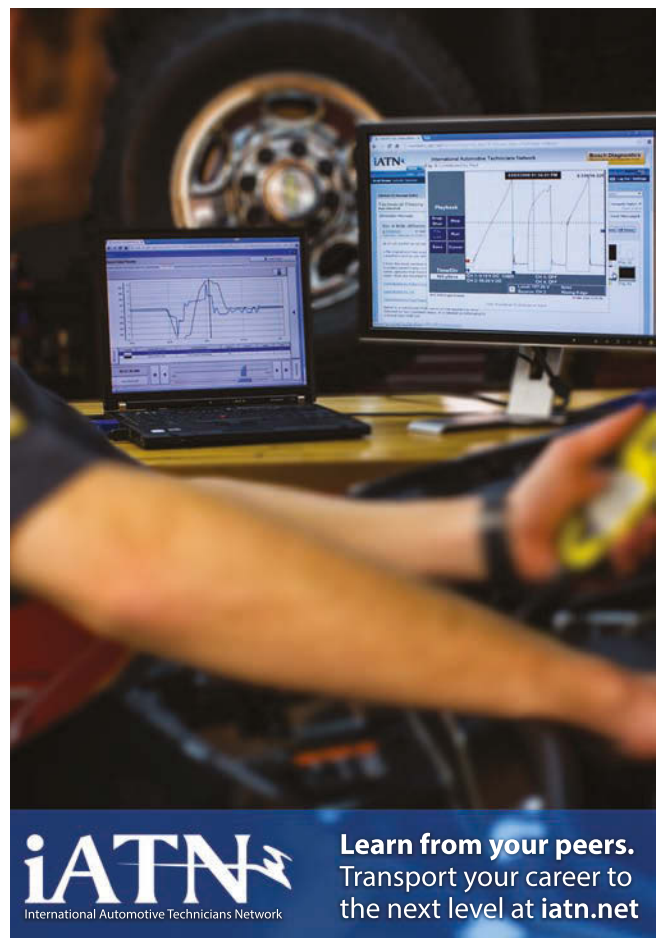
To watch a video demo of this product, go to: [VehicleServicePros.com/12132325](http://VehicleServicePros.com/12132325)



### REPAIR INFORMATION FOR CLASS 4-8 TRUCKS

**Mitchell 1 TruckSeries** software provides commercial truck service professionals with the fastest, most complete and accurate solutions for every stage of the repair process, says the company. Industry-leading labor estimating, diagnostic trouble code and repair information for Class 4 to 8 trucks is consolidated into a one-stop, single log-in, all-makes data resource. The TruckSeries repair information software suite gives truck technicians quick access to scalable wiring diagrams, component location photos, testing steps and procedures, DTC-to-diagnostics and more, all delivered in a user-friendly online application.

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## GTE MasterPry LED

Both reviewers liked the built-in light feature of the tool, in addition to others.

By Mattie Gorman, Assistant Editor

**T**he GTE MasterPry LED was the first “plastic clip tool” Philip Fournier had ever used. “I like it better than the metal ones that I have always used,” he says.

The plastic construction appealed to Fournier. “(It) makes the tool safer to use where a slip can cause a nasty scratch if using a metal tool. This is of particular importance on door panels where scratches are obvious and irritating to customers.”

Fournier, owner of Phil’s Auto Clinic in Hemet, Calif., also likes the light feature. “I’ve never even seen one with a light. The light is a nice feature and sets my hands free from having to hold a flashlight.”

Fournier recently used the MasterPry LED for hybrid battery work. Typically, he says, the batteries are covered with interior fabric panels and held “with multiple clips in dark places.”

“I used this tool on several battery installs. While I don’t worry about high voltage much anymore, as I have lots of experience around it, it is still a bit of a comfort to know that the plastic tool does not conduct electricity, should I slip and hit a high voltage circuit for some reason.”

He also used the tool on a Ford van. Fournier says, “I used the tool to pull panel clips on a Ford van in order to remove the

rear evaporator to replace the rear expansion valve. The tools worked very well to extract the tight clips.”

Lou Fort, lead technician at K.A.R.S. Inc. in Huntingburg, Ind., also provided feedback for the MasterPry LED.

The tool was “super easy” to use, says Fort. “There was some time savings with this tool set, freeing up one hand from having to hold a light, the amount varied by the job.”

Fort used the tool to help replace a heater core on a Ford F-250, to replace a radiator in a BMW 328i and to work on a timing belt and water pump on a Honda Accord. He found it most useful when faced with having to remove the interior of a Euro Van CV.

Both reviewers liked the built-in light feature of the tool. For Fournier, the LED offered additional benefits for his eyesight. “The LED lighting is definitely a help for an old guy like me. I can’t see well anymore, especially in trunks or inside the car where plastic clips have to be removed and the LED right on the subject is very helpful.”

Fort has used this tool before. “I own around a dozen, and use plastic pry tools every day, but have never used any with a built-in light or that have resisted marring as well as the GTE set has so far.”

To improve the tool, Fournier suggests a variety of end designs for a wider variety of clips. “I’d also like to suggest some kind of an automatic (light) shut-off,” he says. “I have problems with the battery life on battery-powered tools, as I forget to switch them off.”

Fournier found that the plastic wasn’t always strong enough to complete the job at hand. He says that the tool may bend and slip before the clip can be extracted.

He adds that it may not work with every clip due to the tool’s size and shape. “Sometimes a narrower tool is necessary and sometimes the rigidity of steel is necessary.”

An admirer of the tool’s quality, Fort says it is, “Well-made and innovative.” He adds, “They (the tools) should last a long time. The fork tipped one has a built-in step / wedge nicely placed back away from its end for added leverage. That comes in handy when dealing with push-type retainers and door panels when needed. The other tool has a wide, flat tip.”

As an improvement, Fort would like to see the tool with two working ends and a light for each. “There is only one working end on each of them. The other end does have a hole if one cares to hang (the tool),” he says. “Not having a timer for the light is also a drawback. It is far too easy to leave the light on unintentionally.”

“If that isn’t possible, a third, small-tipped, tool would be the next best thing.” Fort adds. **PTEN**

### PRODUCT DESCRIPTION:

The General Technician Equipment (GTE) MasterPry LED, is an interior/exterior trim panel tool set with 30 lumen onboard LEDs. This tool provides a straight edge and fork tip tool, precision edges for scraping and tight plastic panel separating, an angle wedge tip, an easy-grip ergonomic body, a no-slip knurled finish and batteries. This tool is made of military-spec advanced polymer plastic.

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## SP Tools Duramax LLY, LBZ and LMM Injector Puller Kit

The reviewer says the tool allowed for easier injector removal than other similar products.

By Mike Schmidt, Managing Editor

**T**he Schley Products Duramax LLY, LBZ and LMM Injector Puller, No. 13300, was rather straightforward, simple to assemble and easy to use, says Eric Moore, co-owner of DeMary Truck in Columbus, Ohio.

Moore employed the injector puller to replace two sets of injectors on vehicles, one on a 2005 Chevrolet Silverado 2500 HD and another on a 2008 Chevy Silverado 3500 series. After testing it out, Moore appreciated that the Schley tool allowed for easier removal than other similar products.

“The Schley Products Duramax LLY, LBZ, LMM Injector Puller worked very well and was consistent with the time savings experienced with other similar specialized tools by different manufacturers,” says Moore. “The bridge design was more sturdy, allowing for a straight approach. There wasn’t any obtuse angles obtained trying to remove.”

The tool arrived in a blow molded plastic case with a simple guide on the inside case cover. Moore says it was easy to follow the set-up directions.

“It did not have any elaborate setup involved, only assembling the pieces as needed for the task at hand,” he says. Once it was ready for use, Moore says the Schley Products Duramax LLY, LBZ and LMM Injector Puller did its job efficiently and effectively.

Moore says he and his technicians had no other suggestions for improving the tool. All in all, Moore says the Schley Products Duramax LLY, LBZ and LMM Injector Puller, No. 13300, was a solid offering.

### PRODUCT DESCRIPTION:

The SP Tools Duramax LLY, LBZ and LMM Injector Puller Kit, No. 13300, helps technicians remove the diesel injectors from GM vehicles produced from 2005 to 2010 with an LLY, LBZ or LMM Duramax engine. Over time and miles, the injectors become heavily coated with carbon between the tip and head, causing them to stick together. According to the company, a factory tool will rock the injector, binding it into the head. This may damage the injector end. The 13300 will pull the injector straight out without rocking, which reduces the possibility of damaging the injector or head.

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“This tool has a nice design and application,” he continues. “With the

better angle, it makes the injectors easy to remove.” PTEN

## AE Tools MicroPod II with WiTech software

The reviewer finds this scan tool and software are among his favorite factory tools due to the ease of use and the depth of coverage provided.

By *Mattie Gorman, Assistant Editor*

**M**artin Fay, president of The Motor Works of DeKalb in DeKalb, Ill., reviewed the AE Tools MicroPod II with WiTech software. Motor Works services and repairs domestic and imported vehicles, and Fay finds this scan tool and software are among his favorite factory tools due to the ease of use and the depth of coverage provided.

Fay says this tool offers him time savings when programming Chrysler vehicles. Before, when the shop needed to program Chrysler vehicle ECUs, they would make an appointment with a dealer a day or two ahead of time. Then, they would tow the vehicle to the dealership and wait at the dealership while the programming was performed. Now, they can perform the programming in-house, which can lead to days' worth of time savings.

"The diagnostic time-savings is equally as large due to the superior organization and logical navigation of WiTech," says Fay. In addition, the Chrysler MicroPod II with WiTech software supplies diagnostic repair information keyed to each trouble code.

He also likes the "ECU Not Built" function of WiTech software. "Knowing whether an ECU is communicating is critical to diagnosis," Fay says.

The most challenging job Fay used the MicroPod II with WiTech on was a 2007 Chrysler Pacifica. The vehicle, which was towed to the shop, had multiple dash warning lights on, the engine wasn't cranking and the owner had previously replaced the powertrain control module (PCM). Fay says, "Using the MicroPod II and WiTech, we found several modules not communicating.

The topology helped us determine which modules were talking on what buses. Having accurate code descriptions was also a great help."

To diagnose this issue, Fay removed the non-functioning PCM, checked power and ground feeds to the unit and made corresponding repairs. "Repairs now allowed the Pacifica to crank and start, but immediately die. WiTech topology now showed a repaired PCM, but several other modules still failed to communicate, including the wireless control module," says Fay.

"Removal of the wireless control module found a 12V feed wire missing. This had occurred when another party removed an aftermarket remote start. Wiring repairs now brought the remaining modules back online. The vehicle started and continued to run. The MicroPod II and WiTech software proved invaluable in this complicated diagnosis."

Fay also uses this tool to program keys, wireless control and other modules, and to perform general diagnostics on many Chrysler vehicles.

Even though he had not used a previous version of this tool, Fay says he found the MicroPod II scan tool and WiTech software easier to use than most factory scan tools currently on the market.


One of the tool's greatest strengths, according to Fay, is the company's support. "AE Tools will modem into your computer, install all the required files, perform the setup, ensure proper connection to the vehicle and then provide a mini lesson in the MicroPod II's and WiTech's use.



"Over time, Motor Works has experienced typical problems with scanner communication, programming, tool usage, etc," he adds. "All were solved with a call to AE Tools' support line. We did not have to wait for a call back. Immediate help was obtained by staff who know their product inside-out. Compared to other support organizations, this is a dream."

Even though the company offers support, Fay adds that it is up to the user to practice with the tool and maintain proficiency.

The MicroPod II comes in a hard shell case with all required cabling, but Fay also suggests that the Flight Recorder button and cable would be good accessories to have on-hand. "They allow one to program the MicroPod II with a list of specific PIDs for recording during a road test. Once programmed, the laptop is disconnected from the MicroPod II and a push button is installed.

"When the technician or customer feels a problem occur, the button activates 'recording' mode. This data is then 



# Tool Review

downloaded into the WiTech program for later viewing," he adds. "This recording can help locate problem areas like a miss or shudder, that only occur when driving the vehicle."

Although this tool ranks near the top of his personal list, Fay suggests the following adjustments could be made to improve the PID data graphing: "I would like to see cursors included for more accurate interpretation of data; the ability to move graph zero point (like Picoscope) would be a benefit; the ability to save graphs in video form and export them, without reliance on Flight Recorder would also be a great help," he says.

Finally, he adds, "The inclusion of Guided Fault Finding like that of European scanners would make this tool near perfect." **PTEN**

## PRODUCT DESCRIPTION:

The Chrysler MicroPod II diagnostic tool from AE Tools is small enough to fit in a shirt pocket and offers 100-percent CAN coverage for Chrysler, Dodge, Jeep and Fiat vehicle platforms, according to the manufacturer. This dongle-style, PC-based device can be used in place of the StarMobile, StarScan and WiTech Pod scan tools.

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# Big-Time Boxes

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## OWNER:

**Roberto Rodriguez Yanez**  
Jones Collision Center  
Lemoore, Calif.

## Constantly adding and improving

**T**wenty years ago, Roberto Rodriguez Yanez purchased his first toolbox—a yellow rolling box that measured smaller than his current rolling boxes. Five years later, he traded it in for one of the rolling boxes pictured. “Every time I get extra cash, I add to it,” he says.

Yanez started his career as a technician, working as an apprentice for his uncle, 21 years ago when he was just 18 years old. A year after starting his career, Robert’s

Collision Center extended Yanez a job offer for the painter technician position. Yanez says this position has opened doors to his future and given him the opportunity to learn multiple areas of the business. “I want Robert’s Collision to know I’m very grateful for the opportunity.”

Yanez is now shop manager for Jones Collision Center in Lemoore, Calif., a repair facility that specializes in collision. The facility also performs restoration and mechanical work on all vehicles types, and suspension work on motorcycles and RVs.

His Snap-on toolbox, which measures 17’ long, 7-1/2’ tall and 2-1/2’ wide, is comprised of three rolling cabs with double banks, a side cabinet with a storage chest, a top cabinet and a mini fridge. He also has an additional white tool cart, pictured above.

Yanez likes the amount of space the rolling boxes afford. Because most tools come in cases now, he says, he’s had to swap out some of his smaller drawers for deeper ones. “By doing that, not only do I

make it a one-of-a-kind box, but I gain lots of space for more tools.”

He also keeps his drawers extremely organized. “Anybody can walk to it and find the tool they need in a second.” He adds, “That’s how I know when something has gone missing.”

Yanez says he doesn’t have just one favorite tool. “I think they are all my favorite because they are there when I need them.”

In addition to the many traditional tools in his toolbox, Yanez has added a monitor to use in conjunction with his Snap-on SOLUS Plus. The center bank, where he keeps his monitor and battery charging station, is his favorite part of the toolbox. “It seems to be the spot where I always get to when I need to fill out paperwork or to take a look at something.” **PTEN**

*Want to see more photos of Roberto's box?*  
Go to: [VehicleServicePros.com/12141003](http://VehicleServicePros.com/12141003)



Want to show off YOUR Big-Time Box?  
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[Mattie@VehicleServicePros.com](mailto:Mattie@VehicleServicePros.com).



▲ Jones Collision Center performs collision repair, restoration, mechanical work on all types of vehicles, and suspension work on RVs and motorcycles. “I like to tell people we can fix anything but a broken heart!” says Yanez. “And that’s what alcohol is for, especially tequila.”



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