

PTEN

Professional Tool & Equipment News

The Independent Tool Authority



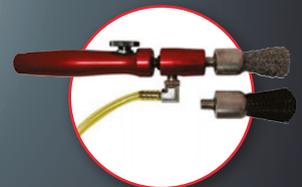
THE MAESTRO

by Power Probe Tek



EXCLUSIVE:
AAPEX & SEMA
Editor's Picks:
Check out some of the
newest tools and
equipment launched
at this year's shows
Page 30

Tool Briefing:
No-code misfires
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▲ Stainless steel and abrasive nylon brush heads



▲ Certified to SAE J2912 standards



▲ Angle head open end wrenches

Details on the cover products and other new tools
Page 12



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EXCLUSIVE

30 AAPEX/SEMA EDITOR'S PICKS

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Shop: InTown Auto Care
Location: Moorestown, NJ

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Power Probe Tek Maestro diagnostic tool



IN THE NEXT ISSUE

We'll kick off 2019 by covering the seasonal topic of air conditioning systems in the February Tool Briefing column.

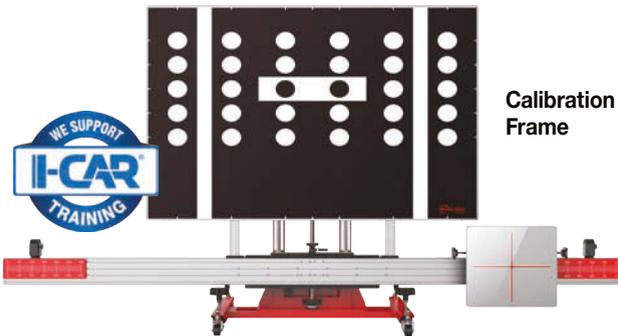
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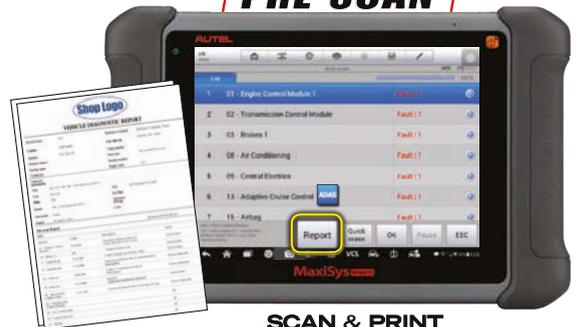
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ASK THE EXPERT



SHOULD TECHNICIANS USE CLAMP-IN OR SNAP-IN TPMS SENSORS?

There are two main styles of TPMS sensors that are offered in OE and the aftermarket that are part of the valve stem assembly:

clamp-in and snap-in style sensors. One type requires less equipment to install, and in domestic vehicles, is more common. To read more, visit: VehicleServicePros.com/21025314

GUEST BLOG



The NHTSA has emphasized that the industry must find ways to prevent unauthorized access to in-vehicle networks that could provide the ability to remotely control certain vehicle functions. OEM solutions may make routine diagnostics more complicated for technicians. To read more, visit:

VehicleServicePros.com/21026530

MEDIA GALLERY



Driver Doug Coby raced at the NASCAR Whelen Modified Tour Series. His crew made sure the vehicle was in optimal condition throughout the course of the day, and Vehicle Service Pros was invited to go behind the scenes. To view the photo gallery, visit:

VehicleServicePros.com/21025666

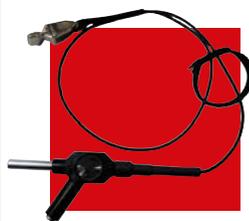
VIDEO



Cleaning clogged grease joints can be troublesome to technicians. IPA Tools demonstrates how the 7863 Grease Joint Rejuvenator Master Kit helps remove old, hardened grease, dirt and debris from clogged bearings. To watch the video demonstration, visit:

VehicleServicePros.com/21033722

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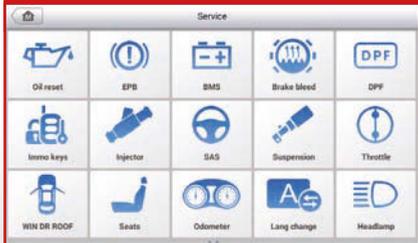
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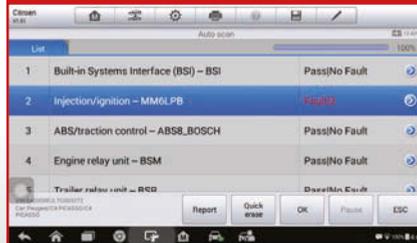
ADVANCED SERVICES



18 SERVICE FUNCTIONS



ALL SYSTEM DIAGNOSTICS



AUTOSCAN ALL MODULES



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VIEW ALL SENSOR INFO

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Has vehicle data got you down?

The path to deciphering who should own the data, how to accomplish this, and how to include more service providers is still in debate. But customers are in your corner.

By Sara Scullin, Editor
Sara@VehicleServicePros.com

I recently made the switch from a 2008 to a 2016 model car. It felt a bit like time travel. It's the first time I actually had to study how to change the temperature four ways or operate an infotainment system.

While we as consumers are pretty informed about a lot of the things we buy, studies indicate this is not the case with our vehicles. Rather, the more wireless amenities that are packed into cars, the more disconnected the average consumer becomes from the how's and why's of their vehicle's operations, and eventual repair needs. And it's not just the consumer – a lot of repair pros are in the dark, too.

But the thing is, we *want* to know.

A survey conducted this past August by an independent research company and released by the Auto Care Association found that the majority of vehicle owners (a whopping 88 percent) said they would prefer to have access to all that data — or telematics — captured on their car/truck/crossover/SUV. This includes information pertaining to things like maintenance, driving behavior, entertainment, collision avoidance and adaptive cruise control. What's more, consumers still want a say in who can access their data. You can read more about the survey results here: VehicleServicePros.com/21033369.

You don't know what you don't know

This survey went on to mention that, while consumers largely vote in favor

of owning their data, most people are not aware of what, exactly, "the data" consists of, or even the fact that their choices are limited when it comes to service.

Here's where you come in.

This mass of data in cars, including connectivity technology and service information, should be available to all service providers, not just automakers. No matter what capabilities you have or do not have in your shop at present time, stay the course. Advocate for your customers who have said they would like more governance over their cache of motor vehicle information. Do you utilize an OBD-II device in your business? If so, taking a few minutes to explain to customers in a concise, easy-to-understand manner how it works to transfer information can make a great impression.

Customer service includes education, and continued education is important for technicians, too.

You don't have to know all the answers. But, being transparent about vehicle systems, repair options and most importantly — your customers' concerns — can position you in a place of trust, which is no small thing.

It also pays to remember that smaller shops often have the autonomy to learn new things and adapt their business practices fairly quickly. So as new products tailored for the aftermarket and new legislation continue the move forward, you can remain on the forefront of change. **PTEN**



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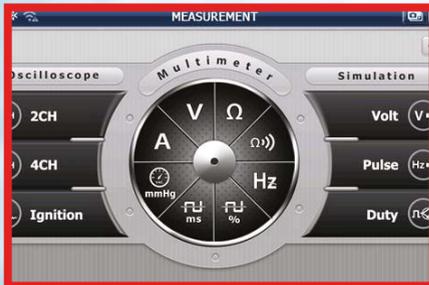
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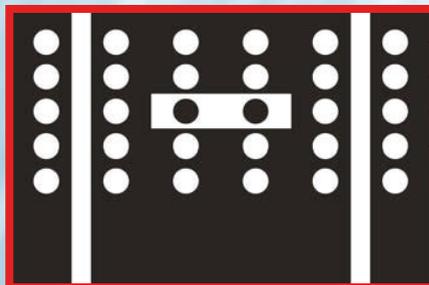
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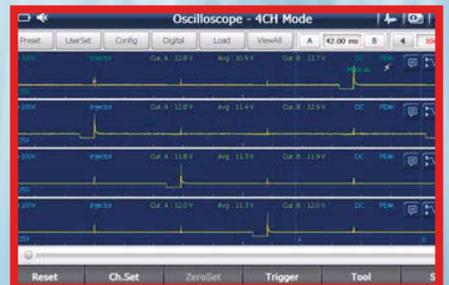
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FEATURED NEW PRODUCTS

Stainless steel and abrasive nylon brush heads

The **Innovative Products of America Flow-Thru System with Brush and Venturi**, No. 8091, features stainless steel and abrasive nylon brush heads, as well as a venturi that attaches to an ergonomic, anodized-aluminum handle with integrated flow-control valve to clean, restore and apply solvents under pressure. This system offers improved cleaning action in a parts-washing sink or portable cleaning anywhere air supply is available. This tool is ideal for applications including parts washing, degreasing, on-engine cleaning, fluid evacuation and more.

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For R-1234yf, R-134a and R-12 equipped vehicles

The **Neutronics Legend Series Refrigerant Analyzer** is designed to meet the service needs of R-1234yf, R-134a and R-12 equipped vehicles. Certified to the SAE J2912 standard, this tool connects directly to SAE J2843 and J3030 A/C service machines that have an external analyzer USB port. This analyzer offers 10 built-in languages, a 5" color display, soft touch input keys and a tough ABS display window with rubber bumper corner protection. Other features include an internal lithium battery, optional printer and Bluetooth output, as well as a rugged storage case. Software can be updated by simply downloading the latest version from the company's website and installing it using a flash drive. A one-year warranty is included on all product versions.

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For use in tight areas

The **Tekton Angle Head Open End Wrenches** are designed to improve access in tight areas, allowing users to work around obstructions with angled heads to turn fasteners and fittings in confined spaces. The wrenches' 30/60 angle head saves time by allowing users to work without dismantling equipment to access tight spots. These wrenches are available in sets or individual sizes, SAE and Metric. The wrenches are 100 percent USA-made.

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



Records visual traces of electrical issues

The **Power Probe Tek Maestro** is a diagnostic tool that is able to communicate with the Power Probe Tek App. Working in conjunction with the app, this tool allows users to data-log either screenshots or record visual traces of their customer's electrical issues. This tool has the ability to display oscilloscope-type measurements. In addition to the multimeter functions, guided diagnostics, testing of fuel-injectors and the ability to apply battery-supplied power and ground, the Maestro is compatible to connect with the majority of diagnostic scan tools on the market today, the company says.

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GW GEARWRENCH

New GEARWRENCH Mobile Work Station



This one's more than just a tool chest on wheels. It's purpose built from the ground up to help industrial mechanics and automotive techs keep their important tools and supplies organized. So when things need to get fixed fast, the guys who can do it are ready to rock and roll. With 19,000 cubic inches of volume, a 2,000 lb. load capacity, a built-in 6-outlet, 2 USB port power strip, and more, it's definitely the GEARWRENCH of mobile work stations.



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Huge 6X2 dual-lock polyurethane casters



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Can shelf and pegboard surface

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Offers automatic overflow protection

The **Lumax Manual/Pneumatic 2-in-1 Fluid Extractor**, No. LX1314, is designed for brake fluid, engine oil, gear oil, transmission fluid, water and more. This fluid extractor is ideal for extracting engine oils or lubricants for a variety of applications. This product offers durable, oil- and chemical-resistant polypropylene construction, automatic overflow protection, a quick-drain pour spout, decompression/exhaust valve for releasing negative pressure, and valve and safety cup for automatic cut-off extraction. This fluid extractor has a maximum fluid temperature of 176 degrees F.



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Ideal for fleet and heavy vehicle maintenance

The **ATEQ VT Truck TPMS Tool** is designed to meet fleet management and maintenance demands. The VT Truck checks tire pressure and sensor batteries to prevent under-inflation and reduce vehicle downtime due to tire blowouts. The tool is compatible with most truck and bus TPMS sensors, and has bimonthly updateable vehicle coverage. VT Truck displays and stores up to 22 wheels of vehicle data and can read TPMS sensors in twin wheels. The tool reads and activates the TPMS sensors by selecting vehicle brand and model, by sensor or simply by scanning all known protocols. The VT Truck comes with three years of free software and database updates.

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High speed motor and self-returning spring

RPG's **20-Ton Shorty Air Bottle Jack** offers a powerful, high speed motor and a self-returning spring for efficient, effortless operation. For added strength and durability, the air bottle jack has a welded cylinder and reservoir, as well as chrome-plated rams for resisting rust and wear. The axle jack features a built-in bypass device to protect the hydraulic system from over pumping damage, a built-in muffler to promote quiet operation, and a built-in in-line air filter for extended motor life. For ease of mobility and remote operation, a 1/4" quick connect feature is also included.

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Extra long 18" length for extended reach

The **Mayhew Tools ProPneumatic 4-pc Long Mix Set**, No. 37329, is designed specifically for long reach applications. This set includes a pneumatic 3/8" nut splitter, 1-1/4" wide scraper, 1/8" taper punch and 3/8" taper punch. All of the pneumatic tools are 18" in length and feature a 0.401 Turn Type Parker Shank. Each of the tools is made of an alloy steel that has been hardened and tempered, with a black oxide finish that helps prevent corrosion and rust. The set comes with a nylon carrying case for easy storage and access. All of the tools are made in the USA and are backed by a lifetime warranty.

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Up to 62 percent more turning power

The **Snap-on Tools 10-pc, 12-point Metric Flank Drive Plus Non-Reversing Ratcheting Combination Wrench Set**, No. SOXRM710, is designed to provide up to 62 percent more turning power, with an open-end wrenching profile that "bites" into fasteners to prevent slipping and rounding. The unidirectional, 0 degree offset design incorporates technology to deliver more power in less lateral space. The ratcheting gear, with up to 80 teeth and 8-tooth pawl, minimizes the swing arc needed to move fasteners in restricted spaces. This set of wrenches (sized 10 to 19mm) is manufactured, precision-forged and heat-treated in the Snap-on Elizabethton, Tennessee facility. The gears are cold-formed for improved durability.

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Lightweight, impact-resistant housing

The **Aircat Pneumatic 1" Drive Low Weight Impact Wrench**, No. 1870-P, offers 2,100 ft-lbs of maximum torque for an impressive power to weight ratio, according to the company. This impact wrench has a lightweight, impact-resistant housing, combined friction ring and through-hole socket retainers.

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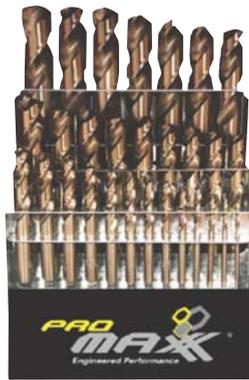
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Able to self-calibrate

The **ATD Tools Wheel Balancer**, No. ATDWB, is a high performing, self-calibrating wheel balancer with three centering cones. This balancer offers static balancing, and comes with hood included. A hummer speed nut and caliper come standard. The ATDWB has a max wheel diameter of 39", rim width of 1.5" to 20", rim diameter of 10" to 24" and wheel weight capacity of 150 lbs.

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Offers Rc55 drilling capacity

The **ProMAXX PowerDrill 29-pc Drill Set** is a drill bit kit with a variety of sizes. This set features precision ground points, flutes, clearance and drill diameters and a larger composition of cobalt to boost drilling capacity to an Rc55. Each bit is machine turned and ground for dead flatness, ensuring the bits won't "walk," according to the company. The sizes start at 1/16 to 1/2 by 64ths. This set is manufactured in the United States from American-made materials. The set includes free unlimited technical support.

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Designed for minimal shop footprint

The **John Bean Heavy Duty Tire Changer**, No. T8010TR, can service truck wheels up to 24.5" and tires as large as 47". This tire changer is designed to take up a minimal amount of shop floor space. Notable features include: integrated control panel that conveniently moves into any position, allowing one tech to operate the tire changer; unique dual roller is designed to service tubeless assemblies; suitable for trucks running cosmetically sensitive alloy wheels, including reverse drop center rims. This tire changer is designed for quick and easy installation.

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- Analyzing capacity up to 2000 Amps
- Test 12V batteries and electrical systems plus 24V starter and alternator systems
- Reverse polarity protected (if reverse hookup, will NOT turn on)
- Integrated thermal printer for direct print out of result after each test and customizable header on printout
- Internal memory storage of up to 70 tests allowing multi-vehicle testing
- Tests wide range of batteries including WET, AGM Spiral or Flat Plate, EFB (Stop-Start) and GEL
- Multiple rating system compatible (CCA/SAE, CA/MCA, DIN, EN1,EN2, IEC, JIS#)
- PC Link – connect laptop/computer via USB cable for printout
- Optional barcode scanner available to link battery tested to vehicle



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- Padded creeper seat with two side drawers, storage tray and screwdriver bracket
- Drawer size: 6.496" x 10.039" x 3.661"
- Four 2-1/2" dia. x 3/4" wide swivel casters
- Dimensions: 10.236" x 19.291" x 18.898"
- Covered by a 1-Year Warranty
- Ball-bearing slider drawers (2)
- Seat height: 18"
- Tray dimensions: 1/2" x 4-1/2" x 1"



MST30006

5-in-1 Pre-Set Torque Wrench

- Torque range from 80, 100, 120, 140, 160
- Accurate to 4% +/- torque setting



MST30001

Electronic Fractional Caliper

- Inch, Metric, and Fractional (1/64, 1/32, 1/16...) Readout
- Measuring range: 0-6"/0-150mm; Resolution: 0.01mm/0.0005"/1/64"

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Offers 300-lb weight capacity

The **Martins Canuck Tire Puck Trolley**, No. MCTP, is designed to prevent common workplace injuries and accidents by reducing the need for labor-intensive tire handling. With a weight capacity of 300 lbs and four easy-glide swivel caster wheels, technicians can use this trolley to move tires and wheels, or as an attractive tire display. Tires can be stacked on the trolley and easily moved from one location to the next.

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Cleans brake calipers

The **Mueller-Kueps 2-pc Brass Brake Caliper Brush Set**, No. 467 000, is designed for removing burned in brake dust and dirt from brake calipers. This set includes one brass brush for use on aluminum brake calipers, with soft brass bristles to ensure proper cleaning. The steel brush can be used on any other brake caliper. An ultra slim design features a two-component handle with a soft grip. The brushes are a total length of 8.5” and are made in Germany. This kit helps reduce time spent cleaning brake calipers to help improve shop efficiency.

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Automatic shut-off and overcharge protection

The **500 lm SABER Ball**, No. 80200, features a super-bright COB LED bulb that delivers a wider and brighter lighting area. The light offers two settings for varied brightness and run-times, automatic shut-off and overcharge protection to prolong the battery life, battery charging indicator light and is three-in-one charging system compatible, with an included mini USB cable and AC power adapter. The constant current design delivers rated light output throughout the battery charge cycle, and the ball swivels more than 180 degrees on a magnetic base.

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Lifts up to three tons

The **AMGO Portable Single Post Lift**, No. SML-6, rolls easily on a level concrete surface and can be used to lift up to three tons wherever a steady and even surface is available. This lift is ideal for commercial service shops that do not want to tie up more space when not in use.

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Absorbs a variety of liquid spills

The **Wurth USA Traction Mat**, No. 0713111120, is a non-slip absorbent mat that lays completely flat. With cling technology, Traction Mat is easy to install and ideal for absorbing a wide variety of liquid spills. Traction Mat comes in a lightweight 34” by 50’ roll.

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Assists companies with diesel emissions system issues

The **Redline Emissions Products Tech Support Hotline** is designed to assist companies and truck fleets experiencing issues with their diesel emissions systems. Tech support is provided by Steve “JR” Stratton, a diesel specialist trained in emissions systems. Stratton has 15 years of experience in a high volume diesel shop (10 years DPF), teaching techs how to effectively diagnose, repair, service and maintain diesel engines with aftermarket and OEM DPF systems.

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STEVE “JR” STRATTON



TECH SUPPORT LINE
888.834.0050

Features temperature compensating discs

The **Thexton Professional DEF Tester**, No. 108, is a Diesel Exhaust Fluid (DEF) tester that features urea concentrate testing and temperature compensating discs that test hot or cold DEF. If the mixture is 0.7 percent off, the manufacturer suggests replacing DEF and identifying why the concentrate is off. If the DEF concentrate is not correct, the injectors may become clogged and the DEF will not work properly.

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Four methods of MX-Sensor programming

The **Autel MaxiTPMS TS508WF TPMS Service Tool** is a non-tablet tool that provides Wi-Fi software updates. The tool features Quick and Advanced modes of TPMS service, and a TPMS status screen. It can read, activate and relearn all known sensors, has four methods of MX-Sensor programming and performs placard value resets on supported vehicles. The TS508WF displays on-tool MX-Sensor relearn procedures including OBD-II, and can do key fob signal tests. This tool includes an OBD-II cable, and a one-year tool warranty. Free lifetime software updates are available with purchase.

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Cut multiple wire types

The **KT Pro 8” Compact Bolt Cutters**, No. 6133-08, feature a center cut and an approximate hardness edge of 64 HRC. These cutters allow users to cut multiple types of wire with minimal hand force effort. These cutters offer professional-grade plastic grips designed to reduce stress on the user’s hands, and undergo a 19-step inspection process on every tool to ensure high quality.

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NEW PRODUCTS

Dozens of options to fit user needs

The **Homak RS Pro CTS (Centralized Tool Storage) Combo** offers a variety of options and solutions for the user's tool storage and organization needs. This unit offers dozens of possible combinations, so users can find the right solution. The CTS transforms the company's RS Pro and Pro II Roller Cabinets into a professional work station.

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Permanently marks tools to protect investment

The **Ullman Devices Metal Marker** allows technicians to permanently mark their tools, toolboxes or anything else metal with their name or a unique symbol, so they can protect their investment. Using this marker, all techs need to do is put a stencil on the device, pump the electrolyte, align the Metal Marker with their item and press the trigger. Within seconds, the item is permanently branded and easily identifiable.

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Offers Lamborghini enhanced support

The **AutoEnginuity Giotto 16.3** introduces Lamborghini enhanced support and finalizes the company's 18MY coverage to support the enhanced expansions and improve actuations speed. The update also offers enhanced US and Asian interface expansion ported to the J2534 hardware standard.

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**TRACE MODE WITH SCOPE-
LIKE GRAPHING FUNCTION**

Now you can read waveforms from any AC or pulsed DC sensor modules. This data can be saved or streamed and compared to "known-good" examples.

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**EZ LEARNING
AND GUIDED DIAGNOSTICS**

EZ Learning offers videos to teach the user how to use the tool to its maximum abilities.

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NEW TOOLS



65200 DEEP HOLE ALUMINUM HEAD M14X1.25 SPARK PLUG HOLE REPAIR KIT

Replaces stripped spark plug threads in aluminum heads with 14mm spark plugs. Installs a new solid steel spark plug thread insert in original thread location. Set includes one-piece drill tap, long tap holder, short tap holder, insert installer, swedger and handle. Includes four insert sizes: 5/16", 7/16", 11/16" and 1" (new size).



61150 FUEL FILTER WRENCH FOR RAM ECODIESEL

Fuel filter wrench for the 2014-current Ram 1500 EcoDiesel. Wrench is designed with four tabs that line up on the outside of fuel filter housing. Filter wrench is made of cast aluminum with a 3/8" square drive and 7/8" hex drive.



29090 TRUCK ANCHOR PIN BUSHING DRIVER, 2 PC.

Pneumatic bushing driver set removes and installs truck and trailer 1-3/8" anchor pin bushings and stuck anchor pins. The 11-1/2" long driver allows bushings to be driven straight without removing the hub assembly. Double-sided cone snaps onto driver to drive out and install bushings. Also removes truck leaf spring bushings.



64100 ACTUATOR MOTOR WRENCH SET

Toothless, infinite ratchet and hinged handle design make it easier to remove and replace fasteners on small, electric HVAC motors. These motors are commonly found in confined areas under the vehicle dash. Ratchet can be flipped from clockwise to counterclockwise drive. Includes 8mm socket and 1/4" Square Drive Adapter for use with 1/4" sockets and bit holders.



12320 LINE SOCKETS, 19MM & 22MM

Designed to replace fuel line fittings on Cummins ISB and ISX engines. The sockets reduce the possibility of fuel leaks and prevent damage to fitting, fuel rail, and fuel line. The 22mm is used on the newest ISX Cummins motors and the 19mm is found on 2011 and older diesel engines. Use with 3/8" square drive.



71400 GM



71500 Dodge



81810 5/8" CARBIDE SCRAPER, 5"

Designed to remove gasket residue from steel and aluminum heads and manifolds, along with carbon build-up and even rust. The carbide scraper features a shorter and narrower double-dip grip handle. Can be used to clean disc brake caliper slides. The tungsten carbide tip is brazed to the steel blade that is molded into the comfortable 5" long handle. The tip remains very sharp and is precision ground.



71400 MANIFOLD DRILL TEMPLATE - GM 4.8L, 5.3L & 6.0L

71400 removes broken exhaust manifold bolts on GM LS III 4.8L, 5.3L and 6.0L motors and 71500 removes broken exhaust manifold bolts on Dodge 5.7L Hemi motors without damaging the cylinder head. Tapered bolts center the base plate over bolt holes and slip fit bushing allows you to move from hole-to-hole without moving base plate. Includes bushing to drill to tap size when extractor cannot be used. Double sided drill depth gauge to make sure water jacket is not pierced.



12290 NOx & SOOT SENSOR SOCKET SET

Designed for easy access on NOx and soot sensors. Includes 24mm & 30mm offset sockets with 1/2" drive. Each socket has 6 and 12 point options. Works on 2014-current Ram 3.0L EcoDiesel V6 engines found in Jeep Grand Cherokee and Dodge Ram 1500 Trucks.



49040 TRUCK CAGE BOLT SOCKET, 1-1/16"

Extra deep alloy steel 1-1/16" socket works on 30/36 spring brakes on 2016-2017 Freightliner dump trucks and removes other types of clamps and bolts. Use with 1/2" drive and impact wrench. Socket is forged from alloy steel and heat treated. Also works on other 1-1/16" deep applications.



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Keep drinks, cans and more within reach

The **Master Magnetics Magnetic Cup Caddy Plus** is an efficient way to keep drinks, cans, spray paint, lubricant, small tools and more within reach. Powerful magnets attract to any ferrous surface, including toolboxes, cabinets and even stationary vehicles. The Cup Caddy Plus features a 4" by 5" metal plate that can be mounted to non-ferrous surfaces with the included screws or adhesive. The Cup Caddy Plus is available in a red or black design.

Circle 54 on card, or enter at "e-inquiry" on VehicleServicePros.com

Seven percent lighter than previous generation

The **Chicago Pneumatic 3/4" Impact Wrench**, No. CP7769, is designed to be more compact, ergonomic and seven percent lighter than its predecessor, the company says. This wrench provides up to 1,440 ft-lbs of maximum torque and is designed with a twin-hammer mechanism to improve durability. All controls, including a variable speed trigger, can be adjusted with one hand, in any position, to help reduce fatigue on the operator's wrist and arm, and improve use in tight spaces. This wrench is also available with a 6" anvil (No. CP7769-6), and in a 1" version (No. CP7779).



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Swivel handle rotates 180 degrees

The **Clore Automotive Light-N-Carry 800 lm COB LED Work Light**, No. LNC1841, is designed to be reliable, tough and compact. This light provides a maximum output of 800 lm from its high worklight setting and features both high and low settings. Its focus beam provides 60 lm to illuminate a specific location, and the swivel handle rotates 180 degrees and features magnet mounting to allow ideal positioning in the work area. The light has up to a 3.5-hour run-time on high and is IP54 rated dust/water ingress protection. The light includes a wall charger with braided cable, repair service coupon for one-time, fixed-fee repair after the warranty period and a one-year limited warranty.

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No-touch wheel measurement system

The **Hunter Engineering SmartWeight Pro Wheel Balancer** is a mid-range wheel balancer that offers upscale, premium features. The balancer is equipped with a no-touch wheel measurement system that allows technicians to easily determine weight placement using laser vision, helping to simplify the balancing process. Hunter's patented software, SmartWeight technology, is designed to improve balance, minimize weight usage and maximize productivity. SmartWeight Pro offers a user-friendly interface with single-knob activation, 3D graphics and on-the-job training that covers basic techniques and advanced procedures in multiple languages. Additional features include CenteringCheck, which ensures proper centering, and a space-saving hood design that allows the machine to be installed against the wall to maximize shop space.

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Offers increased gripping capacity

The **KNIPLEX 10" Pliers Wrench** has been redesigned with increased gripping capacity from 1-3/4" to 2", and laser marking guides on the product. These pliers

offer 15 percent less weight with the same box-joint stability, the company says. This wrench replaces a whole set of open-ended wrenches — metric and inch. The zero backlash jaw pressure helps prevent damage to edges, and parallel jaws evenly distribute force for secure grip. This tool is available with a black oxide finish or chrome plating. Pliers Wrenches are available in 5" to 16" lengths, with capacities from 7/8" to 3-3/8".

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**SILENCER™
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ON SINGLE-PHASE POWER**

Model FXS10V080V1 shown.

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Jump-N-Carry jump starters are ideal for use in a wide variety of jump starting environments, including automotive, marine, fleet and industrial. Extreme jump starting power, long cranking duration and extended service life are the key features of **Jump-N-Carry**.

New lithium jump starters bring dependable power, valuable features and trademark durability to this class of product. New capacitor driven models are unaffected by the cold and can deliver endless jump starts on a single charge. Our lead acid models have been delivering the goods for technicians and shops for 25 years.

Whether you rock it old school or prefer the new kid on the block, **Jump-N-Carry** means power, each time and every time you use it.



JNC318



JNC8550

12V Capacitor
Jump Starter

- 800 Start Assit Amps
- 68" #2 AWG Cables
- PowerJaw™ Clamps
- Not affected by cold

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n Carry®**
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NEW PRODUCTS



**Designed for
low-ceiling garages**

The **BendPak GrandPrix Two-Post Lift** is designed for low-ceiling garages. With an overall width of just over 10 feet, this lift saves space and fits where other lifts don't, the company says. Users can choose from three models, so garages with ceilings as low as 9' can comfortably hold the model that's right for them. The GrandPrix has full ALI certification and offers a five-year warranty.

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VehicleServicePros.com



**Retrieve TPMS
fault codes easily**

The **Bartec USA TPMS Software Update 58** offers updated features and coverages for Bartec TPMS tools. One notable feature, VINdicatE, is a fast and easy way to select the vehicle and retrieve the TPMS fault codes in one simple step. Simply connect the Bartec Pro Series tool to the OBD-II port and let the tool do the work. The VIN is detected and decoded, and with the make-model-year selected, the DTCs are also detected and decoded. Also included in the update is additional placard coverage for the Tech400 Pro.

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VehicleServicePros.com

**Dual-action
cleaning system**

The **WD-40 Specialist Fast-Acting Carb/Throttle Body and Parts Cleaner** is an all-in-one cleaner spray for cleaning the carburetor, throttle body and unpainted metal parts. The product's dual-action cleaning system breaks up tough, baked on carbon deposits and blasts away waste without leaving behind a residue. This spray is ideal for both old and new vehicles and equipment.

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enter at "e-inquiry" on
VehicleServicePros.com



**Offers 4.5-hour
run-time on high**

The **Streamlight Bandit Pro** is a lightweight, handsfree worklight that offers the convenience of USB recharging, and also signals to warn that the battery is low. This headlamp offers a 180 lm output and 4.5-hour run-time on High, and 35 lm output and 21-hour run-time on Low. A large top button allows for easy actuation and switching between the High, Low and Flash modes. This light uses a 950 mAh Lithium Polymer battery and is rechargeable via a micro USB charging point. Red and green LED lights indicate battery charging status. Featuring a polycarbonate body and lens, the Bandit Pro weighs 1.6 oz with the attached headband and measures 2.7" in length. The light is IPX4 rated for weather resistance and is impact resistance tested to two meters. The light includes a snap-in hat clip adapter to attach to the brim of a baseball cap, and is available in safety yellow and black.

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DF-EZAP

STATIC ELIMINATION TOOL

NEUTRALIZE THE STATIC CHARGE ELIMINATING DUST ATTRACTION

- HELPS METALLICS STAND UP TO GET THAT AWESOME SPARKLE
- EASY-TO-USE, JUST HOOK UP TO YOUR AIR HOSE AND GO
- LITHIUM ION BATTERY POWERED



Kit includes:

- Lightweight Durable Gun
- Rechargeable Lithium Ion Battery
- Two Emitter Pins
- Safety Keys
- Storage Case

The StaticZap incorporates the efficiency and power of an air amplifier with the proven technology of corona ionization to produce a highly effective anti-static blow-off gun.

Perform the anti-static blow off before starting and at every stage in the painting process to eliminate fisheyes and produce a finish that looks like glass. The two-minute anti-static cuts down the time needed for wet sanding and buffing which saves time on prep work and also cuts down on labor and materials.



GREAT FOR WINDOW TINTING AND VEHICLE WRAPS

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Fully textured for enhanced grip

The **SAS Safety Derma-Vue Extra Strength Hi-Vis Disposable Gloves** are designed to deliver high performance, outstanding wear, dexterity and offer the same formula as the company's Raven gloves. These gloves are fully textured for enhanced gripping power while working, and are brightly colored for high-visibility. There are 100 gloves per box.

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Flexible neck for hard-to-reach areas

The **Dent Fix Equipment Blind Rivet Adapter**, No. DF-SPR/BRAD, allows the company's SPR Riveters to install blind rivets. This adapter is compatible with the SPR Riveter (DF-SPR67) and Push Pull Riveter (DF-SPR69). A flexible neck allows for the tool to be positioned into hard-to-reach areas. The adapter allows the setting of blind rivets with diameters from 4.0 to 7.8mm for aluminum and 4.0 to 6.4mm for steel. It has a tensile force of 20 kN.

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Features Support On Demand app

The **Autoland Scientech iscan 3** is designed to make day to day repairs easier, the company says. This tool gives users full control of their scanner for remote guidance, training or support. The Support On Demand app in the main menu provides support for the user, with a remote pass through device when licensed OE software is necessary but not available in the shop. When equipped with OE software, the built-in, patented IMS2 and J2534 Pass-Thru functionality offers expanded coverage.

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ROTATING RING LUG NUT REMOVAL MADE EASY

LT4569 GERMAN VEHICLE ROTATING RING LUG NUT REMOVAL KIT

- Easily remove rotating ring lug nut locks from Audi, BMW, Mercedes Benz, Porsche, VW
- **SAFE, FAST & EASY** solution to rotating ring lug nuts
- Use LT4569A Silicon Welding Shield to protect wheel from heat damage while you use a Mig welder to apply weld slag at 4 corners of lug nut
- Now use LT4569B Twist Socket to grab weld slag and remove lug nut
- **Patent Pending** - LT4569A Silicone Welding Shield



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LT4995 GERMAN VEHICLE BRAKE CALIPER SOCKET AND BIT SET

- Works on all German vehicle brake caliper applications
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- Packaged in a custom blow molded case
- Every German vehicle brake caliper socket/bit when you need it
- Lifetime warranty
- Patent Pending
- Includes - 3/8" Drive Bits

7mm x 24mm	1/4" Drive Bits
8mm x 24mm	9mm x 20mm
9mm x 50mm	1/2" Drive Sockets
7mm x 65mm	11.5mm x 50mm
7mm x 92mm	AS22 x 48mm
11mm x 100mm	



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Lightweight design weighs 2.5 lbs

The **WeeGo 66 Jump Starting Power Pack** offers a 10 percent increase of true cranking amps compared to the company's previous version, to reach 660 amps. This jump starter offers a lightweight design of 2.5 lbs, and delivers a high powered jump starting charge that works on trucks, tractors, cars, boats and light duty equipment. The company's patented Smarty Clamps easily and firmly contact hard-to-reach terminals found in many commercial vehicle battery compartments. AutoBoost technology ensures dead batteries as low as 1/2V can be safely jumped without a built-in override button. This starter can charge personal electronics with 5V USB and 19V outputs, powers 12V portable accessories and provides ultra-bright light with a 600 lm dual LED flashlight. This product is backed by an 18-month warranty.



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24485



1/2" BRUSHLESS
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24486



1/4" BRUSHLESS
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24487



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*Maximum voltage after charging. Nominal voltage is 18 volts.

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2018 EDITOR'S PICKS

SEMA **aapec**
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We saw a number of products introduced at the AAPEX and SEMA shows again this year. Here you will find some of the tools and equipment selected by our editorial staff that piqued our interest.



Coast Features magnetic tail cap

The Coast Focusing LED Stretch Flashlight with COB Area Light, No. PX250, includes a COB area light with white, red and flashing red light modes. By sliding the body open, users can quickly access the 270 lm area light, which is ideal for illuminating the undercarriage of vehicles or dark spaces under the hood. The PX250 also features a magnetic tail cap, allowing the flashlight to be affixed to any metal surface. The 650 lm flashlight features patented Pure Beam Focusing Optic with Twist Focus, and an easy rotation of the bezel allows users to utilize a Wide-Angle Flood for area or a Bulls-Eye Spot Beam for distance. The flashlight and optic area light can be used at the same time to help make automotive tasks more efficient. *Editor's Note: This tool is basically two products in one. Whether used as a flashlight or work-light, the beam optics and focus of the PX250 are impressive, making it easy to zero in on the task at-hand.*

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Pinnacle Automotive Systems Align up to five axles simultaneously

The Pinnacle Automotive Systems Jumbo 3D Super Alignment System is an imaging aligner for multiple axle trucks, buses and trailers. Utilizing imaging technology, the Jumbo 3D Super is ideal for every environment, the company says. With one short runout compensation, users can have alignment readings on all five axles in less than three minutes. Features include an extensive database, easy to use intuitive software, the ability to align up to five axles simultaneously and an optional car/light truck add-on kit. *Editor's Note: The Jumbo 3D Super is designed to get accurate readings fast, and adjusts for light duty vehicles, too.*

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Chicago Pneumatic With four selectable forward positions

The CP8849 1/2" Cordless Impact Wrench from Chicago Pneumatic delivers 850 ft-lbs of torque and provides four settings in forward and one in reverse. This tool is designed for general maintenance on light and heavy vehicles. In addition to two shut-off modes, the CP8849 offers a 50 percent of maximum torque and a 100 percent of maximum torque forward setting, and a full-power reverse setting. Each operating mode is set by pressing the selected option of the brushless motor. A display at the back of the tool illuminates the selected mode. The CP8849 is available with either a 1" or 2" anvil, and comes equipped with two batteries and one charger, with 20V 4Ah or 20V 6Ah options. *Editor's Note: The slow mode setting is designed to replicate the subtle pressure of a hand tool, often used by technicians to set up the bolt when an impact wrench would otherwise force tightening action. The fast mode feature prevents under and over tightening of a bolt.*



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TEXA Offers a 50-lb tank

The TEXA Konfort 750R offers a 50-lb tank, a 4cfm vacuum pump and a 5.7" TFT display. This machine is designed to satisfy the needs of technicians looking for a professional, effective and fully automatic A/C service station. *Editor's Note: TEXA's first A/C machine for the American market is packed with features, including a steel frame for improved strength, oversized components for use in various climates and Wi-Fi capabilities for updates. It can be remotely monitored by Android/iPhone app.*

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Bosch

Community driven by technicians

Bosch Technician Nation is an online resource for responding to vehicle issues. This online and on-tool platform is designed to be community driven by technicians, and allows them to access service trends that can be segmented by geography, vehicle and code. Techs are able to access the platform regardless of whether they are using diagnostics powered by Bosch or not. The platform will show what vehicle issues are trending in their area, and help them identify if their service problem is trending locally or nationally. Knowing the geographic occurrence of specific vehicle codes allows technicians to plan for tool and equipment purchases and anticipate the training they will need, the company says. *Editor's Note: The user-friendly map that allow technicians to view most frequent repairs is a standout feature, providing usable research and applied knowledge at your fingertips.*

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Milton Industries

Accuracy of +/- 0.05 percent

The **Milton Industries 580e Series Precision Digital Inflator Gauge** is designed for improved accuracy. Using precisely engineered components, this gauge offers four units of measure: psi, kPA, BAR and kg/cm, with a range of 0 to 160 psi and an accuracy of +/- 0.05 percent. The Electrophoretic e-Paper screen is designed to make the tool easy to read at any angle or in any lighting condition. The anti-glare display automatically adjusts to portrait and landscape mode. This tool is suitable for both right-handed and left-handed users. *Editor's Note: Nice updates for a frequently used tool. The 580e Series gauge is built for better accuracy, easier reading and ergonomics. The flashlight LED on the end of the tool is a nice addition.*

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CarMD.com Corp

Scans every module of the vehicle in minutes

The **CarMD.com Corp CarMD Pro Scan Tool** is a turnkey aftermarket business solution that offers full network scan capabilities. This tool allows users to scan every module on the vehicle in minutes. When the scan is complete, a CarMD Pro Scan report displays an overview of freeze frame, I/M status, network scan results, OBD-II codes, pending DTCs, possible causes, upcoming maintenance and predicted diagnostics. Dashboard and reporting options allow shops to customize the customer reports with their logo, and offer coupons for upcoming maintenance and service needs. This solution includes Pro 14 hardware, mobile app syncing to transfer data to the repair shop portal, real-time data with customizable reports and marketing options, and a way to archive reports for future reference. *Editor's Notes: This is an affordable tool for small shops, but can accommodate larger shops, too. Reports are archived online.*

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Mitchell 1

Presents overview of ADAS-related components

The **Mitchell 1 ProDemand ADAS** feature allows technicians

to diagnose, calibrate and repair Advanced Driver Assistance Systems (ADAS) in today's high-tech vehicles. The Driver Assist - ADAS Quick Link button in the software delivers immediate access to a table consolidating all ADAS features for the selected vehicle and the specific components involved in those ADAS features. The dashboard view presents an overview of ADAS related components, including whether the components of an ADAS feature will require calibration, special tools like targets or a scan tool to complete the job. Having all of the details together in one location can help save time by providing a full picture of all ADAS-related features on the vehicle. *Editor's Note: As ADAS issues are hitting bays now, this offering will help busy techs keep ADAS considerations top-of-mind during maintenance and repairs.*

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Midtronics

Integrated Wi-Fi for easy results sharing

The **Midtronics CPX-900 Battery and System Analyzer** is a handheld diagnostic tool that features Conductance Profiling, a patented technology designed to provide more information about battery state of charge and state of health than other kinds of testing. This enables the CPX-900 to deliver battery reserve capacity warnings and significantly fewer charge and retest decisions, the company says. CPX-900 supports diagnostics for conventional lead-acid, AGM and EFB batteries and advanced vehicle systems. The product features a 3.5" full color and integrated IR temperature sensor, ergonomic shape, size and grip, and integrated Wi-Fi. Also includes field-replaceable clamp cables and an optional built-in printer. *Editor's Note: The integrated Wi-Fi feature allows techs to share test results with customers via email.*

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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 2018 Top 100 Products. For the full list of the 2018 Top 100 Products, visit: VehicleServicePros.com/2018Top100



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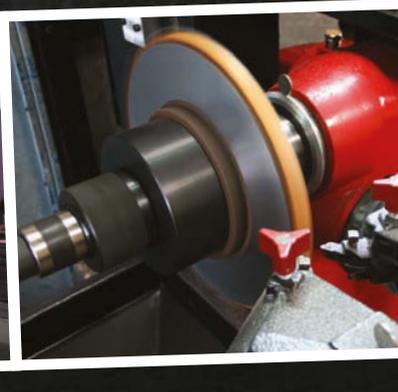
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Attacking **no-code misfires**

Possible causes of engine misfires can include fouled spark plugs or spark plug wires, bad fuel delivery, a vacuum leak or mechanical breakdown.

By *Barry Hoyland, Contributing Editor*

In most cases, today's engine management systems allow for a quick and accurate diagnosis when drivability issues are present. When symptoms exist and there are no codes, it becomes a little more difficult. And when there are no codes and the issue is intermittent, the difficulty factor grows exponentially.

In this Tool Briefing, we will discuss a multiple-symptom issue with no codes, and which tools you can use to determine the cause and correct the issue.

1 OBTAIN VEHICLE SPECIFIC INFORMATION

Whenever you are faced with any problem with a vehicle, you need to obtain as much understanding of the issue, and the potential causes, that you can. When dealing with an intermittent problem, acquiring as much specific information as possible will not only allow you to speed the diagnostic process up, but be more accurate in your diagnosis.

The best source of specific vehicle information is the driver of the vehicle. This may not necessarily be the person who brought the vehicle in. It could be a spouse, child, or even a co-worker that you need to speak with in order to get the details of what the conditions are when the issue occurred/occurs.

Some critical questions that will help to duplicate the issue include: What speeds and load are present when it happens? Is the engine warmed up or cold? How much fuel is in the tank? What type of fuel do you use? What type of driving when it occurs: highway or stop-and-go? Have any repairs been done to try to correct the issue?

These are just a few pieces of information that will allow the technician to duplicate the issue, which is one of the most critical steps to make sure the vehicle is repaired properly. In my opinion, if a technician cannot duplicate the issue, he or she should not repair or replace anything, mainly because they cannot repeat

the problem to see whether it is fixed.

A critical part of vehicle specific information includes details such as the VIN, mileage, and if any codes are present. Use your scan tool to check for current as well as history codes and monitor status. History codes can be an indicator of issues that the vehicle has, but are not present at this moment. This is the very definition of "intermittent." Monitors that are not complete may indicate that codes have been recently cleared.

In this case, I interviewed the customer and found they had been experiencing an intermittent rough idle, along with an occasional hesitation accelerating from a stop, mostly after the vehicle was warm. They also took the car to an auto parts store that advertises a "free diagnosis." The parts store connected their "computer" to the car and told them they needed spark plugs and ignition coils and maybe fuel injectors. The customer decided they needed a second opinion and brought the car into our shop.

No existing codes were found, but the scan did show that many of the monitors were not complete, indicating the codes had probably been cleared recently. When there are no codes, but there is a misfire that would typically trigger a code, use your vehicle information database to determine what the enabling criteria for setting a code is. In the case of a misfire, a P0300 (random or multiple cylinder misfire), or specific cylinder P0301-P0306, should have triggered.

We used Mitchell 1 to look up the information for setting a P0300. (Fig. 1) One of the conditions that is required to set the code is a fuel level over 11 percent.

TOOLS USED:

- Vehicle Repair Information
- Scan Tool
- Borescope
- Fuel Injection/ Induction Cleaner

During our initial inspection, we noted that the fuel level was well under a quarter tank on the gauge, which is why there may not be a current code.

We also checked for TSB's and pattern failures. There was a TSB for carbon build-up and the approved cleaning method, and another TSB for the use of "Top Tier" gasoline.

One other item of note on the initial inspection was the dash was indicating an oil change was due, and a scan of the oil life monitor also indicated zero life. The oil level was full and the oil appeared somewhat clean, but there are only 28,000 miles on the vehicle.

At this point we had a few ideas of what was wrong with the vehicle, but we decided another discussion with the customer was in order before proceeding. The answers to additional questions would likely reveal our next steps in order to confirm our thoughts.

Since the fuel level was low, it would be good to know if they usually keep the level low. Consistently driving the vehicle with low fuel levels can contaminate the fuel injectors and pump with sediment.

The customer revealed they do not usually fill the tank because they don't drive it that much. They also stated they use 87 octane fuel from the least expensive source they can find. It should be noted that GM recommends mid-grade, 89 octane fuel for this vehicle. They also

said the oil had not been changed for about a year.

Armed with as much information as we were able to obtain from the customer, an initial scan, TSB's, and additional data from Mitchell 1, we have a strong suspicion the problems this customer is experiencing are due to carbon buildup on the back side of the intake valves.

This is a Gasoline Direct Injection (GDI) engine; these engines have a propensity to build carbon on the valves, especially if the vehicle operates under many of the conditions we have found on this one. Consistently driving short trips does not allow the engine to reach and sustain a temperature that will burn off moisture in the crankcase. That, combined with extended interval oil changes, will allow oil to accumulate on the back side of the intake valves, eventually turning it into carbon. When carbon builds up, airflow past the valves is disturbed, which may cause either over- or under-fueling of the cylinders, therefore a misfire. Keep in mind this car is eight years old with only 28,000 miles, which calculates to only 3,500 miles per year.

2 TEST THE VEHICLE

Again, it is never a good idea to just jump into repairs without having duplicated the issue and performing various tests to complete a diagnosis. With no codes to start with, the next step is to drive the vehicle in order to duplicate the issue. After driving the vehicle for around 20 minutes, we were able to experience the issue, and confirm it only misses at idle.

A scan of the data stream showed a few interesting items. The bank 2 Oxygen sensor voltage was continually biased higher than bank 1 voltage. The scan tool also provides a PID for long-term fuel trim average for both banks. As seen in the image, the average for bank 2 is -99, meaning the injectors are being commanded to reduce the amount of fuel being delivered to that bank. (Fig. 2)

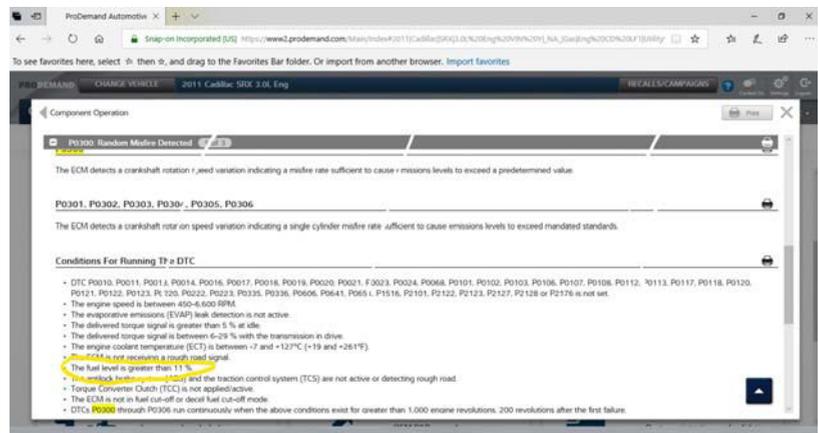
Based on the scan readings, it appears that bank 2 has either an injector leaking fuel into a cylinder, or a carbon build-up is disrupting airflow into the cylinders.

CONCLUSIONS

With the tendency of GDI engines to carbon up intake valves and either disrupt air flow or cause valves to stick, it is much more likely that a carbon buildup is the issue rather than a faulty injector. Being that the issue is intermittent and seems to be related to warm, not cold temperature,

it seems to be a reasonable assumption that it is not a sticking valve. Sticking valves will typically be an issue with a cold engine.

With the low mileage on the vehicle, the apparent poor maintenance, and the conditions the vehicle is operated in, it appears the most likely cause of the misfire is carbon buildup. 



▲ Fig 1. P0300 Enabling Criteria Image Courtesy of Mitchell 1

Name	Value	Standard	Unit
HO2S Bank 1 Sensor 1	0.12	0.00 - 1.27	V
HO2S Bank 2 Sensor 1	0.14	0.00 - 1.27	V
Long Term Fuel Trim Test Average Bank 1	0.39	-100.00 - 100.01	%
Long Term Fuel Trim Test Average Bank 2	0.39	-100.00 - 100.01	%

◀ Fig. 2 Launch Pad II scan tool image pre-repair note the high value of bank 2 oxygen sensor and long term fuel trim average.

Name	Value	Standard	Unit
HO2S Bank 1 Sensor 1	0.06	0.00 - 1.27	V
HO2S Bank 2 Sensor 1	0.74	0.00 - 1.27	V
Long Term Fuel Trim Test Average Bank 1	9.02	-100.00 - 100.01	%
Long Term Fuel Trim Test Average Bank 2	-99.7	-100.00 - 100.01	%

◀ Fig 3. Launch Pad II Scan tool readings post-repair. Note the oxygen sensors and fuel trims are in normal ranges and similar on both banks.

In order to help document our diagnosis, we removed the spark plugs to see how much, if any, carbon was on the plugs. We also used a borescope to check for carbon on the piston tops. Checking for carbon on the intake valves would require removing the intake plenum, which the customer did not want to do at this time.

As seen in Fig. 4, there was a substantial amount of carbon on the plugs, especially considering the low number of miles on the car. Interestingly cylinders on bank 1 all showed less carbon than bank 2. This can usually be explained by where PCV or vent hoses are introduced into the intake plenum.

3 THE REPAIR

Fuel injection flushes that are added into the fuel will not work to remove carbon from the valves, although it can help with cleaning the piston tops and in some cases, the injectors. Using a chemical flush that is introduced into the intake manifold will typically work on engines that have relatively low mileage like this one. We connected our injection cleaning machine to the engine and flushed the system. Our system uses a three-part chemical: one that is a solvent that loosens carbon, another to wash

the carbon out, and another that adds a cleaner to the fuel.

4 CONFIRM THE REPAIR

Since this was an intermittent issue, we wanted to make sure the vehicle was completely repaired. We have scan readings that showed an issue, carbon on the spark plugs, and a drive test where we experienced the problem. After cleaning the system, we drove the vehicle under the same conditions we experienced the misfire, and we did not feel a miss. We removed the plugs after we drove the car and they showed less carbon than they did previously. The image from the borescope also showed less carbon on the piston tops. Current scan tool readings (Fig. 3) also showed oxygen sensor and fuel trim readings in the normal range. Don't forget, if you are going to monitor PIDs like fuel trims after a repair, if the codes were cleared, your road test will need to include the proper drive cycle conditions to complete the monitor for that system, which in this case included adding fuel to the vehicle.

To sum it up, this diagnosis and repair was relatively straightforward, and it would have been very easy to just go straight to performing an injection clean-



▲ Fig 4. Note the carbon buildup on the spark plug removed from bank 2 is different from the bank 1 plug.

ing service. It would have cured the customer's issue. The problem with jumping to a repair, rather than performing a complete diagnosis is that your assumptions could be wrong and you do not fix the vehicle. Performing a complete diagnosis with supporting documentation before and after the repair allows you to share your findings with the customer and be sure the repair is complete. **PTEN**

RELATED TOOLS FOR THIS REPAIR



▲ **IPA's Diesel-Fuel Injection Cleaner and Primer, No. 9080**, allows technicians to fill the fuel tank reservoir with a fuel system cleaning fluid and clean fuel injectors. It also allows technicians to purge air from fuel lines while filling them with clean diesel.

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◀ **Mitchell 1 ProDemand 1Search Plus** scans the Mitchell 1 content database and returns only the specific information needed for the year/make/model. OEM and SureTrack real-world information are more tightly integrated and returned together in a graphical layout, organized in the same flow that auto technicians use when approaching a diagnosis and repair. Technology exclusive to Mitchell 1 makes it possible to deliver more targeted results in a card format, organized from code to real-world component diagnostics to OEM removal and replace.

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▼ **The Lisle Offset Spark Plug Wire Removal Pliers** can remove the toughest spark plug wires. The 5/8" opening of the pliers properly fits the plug wire boots, preventing damage. The offset design works great on boots with heat sleeves, such as those found on some GM engines. They are easy-to-use in tight places. The pliers can also be used on hoses or for holding other objects.

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▲ **The Launch Tech X-431 Torque Scan Tool** is a full function, full coverage tool that features an intelligent VIN acquisition, pre and post health reports and a decoding feature that allows vehicle access in seconds, the company says.

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Top tools of an ASE Certified Master Tech

This Texas-based ASE Certified Master Tech and shop owner shares his top 10 tools.

By Stefanie Von Rueden, Assistant Editor

TECHNICIAN: Jeff Buckley

LOCATION: Midlothian, Texas

SHOP: My Father's Shop Certified Automotive Repair

Jeff Buckley is an ASE Certified Master Technician and owner of My Father's Shop Certified Automotive Repair. Buckley has been in the automotive industry for 35 years, and has been running his shop in the same location for the past 25 years. A cornerstone of Buckley's business is educating the consumer in easy to understand terms. "My favorite part of the job is doing car care tips, trying to educate people and share some ideas for shops that are unable to do the video stuff," he says. "I don't do 'how to' videos. I try to educate people on areas of their vehicle that need to be maintained [and] new technology, so that people understand more about their car, and understand a bit more about what the shop's telling them."

Editor's Note: Jeff Buckley works with ATEQ TPMS and Redline Detection to produce videos and promotional materials.



Want to show off YOUR Top 10 Tools?
For more information, email
Editor@VehicleServicePros.com.

- 1 "This tool makes it quick and easy to check or reprogram TPMS sensors," Buckley says. The VT56 offers a Wi-Fi connection to transfer job data to a PC, which allows Buckley to show a data printout to the customer for transparency in repairs.
Circle 205 on card, or enter at "e-inquiry" on VehicleServicePros.com
- 2 This light has an anodized aluminum lightweight housing and offers a 500 lm output. Buckley appreciates that this light is small, portable and can illuminate whatever he needs to look at. "Personally, I can't get by without [this] light," he says.
Circle 206 on card, or enter at "e-inquiry" on VehicleServicePros.com
- 3 Mitchell 1 Teamworks is a bundle package that includes Manager SE and ProDemand. "I don't know how a modern shop in today's society could get by without having a computer with the customer's information," he says. "And this package also gives you access to ProDemand, which is all of the current, up-to-date information you need to be able to properly diagnose and repair vehicles."
Circle 207 on card, or enter at "e-inquiry" on VehicleServicePros.com
- 4 This leak locator is designed to diagnose all leaks, including low pressure for traditional EVAP/general repair and variable high pressure for turbo, diesel and heavy duty testing. Buckley appreciates that he is able to use this unit on all leaks, without the need for two separate systems.
Circle 208 on card, or enter at "e-inquiry" on VehicleServicePros.com
- 5 This screwdriver features a four-sided lobular design with textured grip for improved comfort and torque. Buckley says he uses this tool for working on small interior connectors, and pressing tabs to release connections and body clips when taking vehicles apart.
Circle 209 on card, or enter at "e-inquiry" on VehicleServicePros.com
- 6 "This is a great cordless tool with plenty of power and plenty of reserve," Buckley notes. "This tool will go all day, or even a couple of days."
Circle 210 on card, or enter at "e-inquiry" on VehicleServicePros.com
- 7 This voltmeter is designed to simplify the testing of fuse boxes and verify correct operation of motors, lights, relays and wires. "It's just a great tool for checking the electrical systems, checking the fuses - it's the fastest way to go through and test the fuse box," Buckley says.
Circle 211 on card, or enter at "e-inquiry" on VehicleServicePros.com
- 8 Buckley appreciates that this over-the-top engine creeper allows him to work over the engine compartment without leaning over the front of vehicles. "It's a faster way to work on the vehicles, and you're not worried about breaking the plastic and fiberglass pieces on the front of the vehicle," Buckley adds, also noting that it is a more comfortable way to work.
Circle 212 on card, or enter at "e-inquiry" on VehicleServicePros.com
- 9 Easy Intake is an inflatable block off bladder with a pressurized vapor pass-through that allows techs to test an entire intake or exhaust system. "It goes in so many different shapes, so it's a quick and easy way to use a smoke machine," Buckley says.
Circle 213 on card, or enter at "e-inquiry" on VehicleServicePros.com
- 10 "It's so quick and easy to just pull a vehicle up on there, raise it up and look underneath it," Buckley says. "It makes doing oil changes, brake jobs, that type of work, more efficient."
Circle 214 on card, or enter at "e-inquiry" on VehicleServicePros.com

1
ATEQ TPMS
VT56



2
GREATLITE PROFESSIONAL
RECHARGEABLE
FLASHLIGHT, NO. 32827



3
MITCHELL 1
TEAMWORKS



4
REDLINE DETECTION
DUAL PURPOSE LEAK
LOCATOR



5
MAC TOOLS 2" COMFORT-
GRIP POCKET SLOTTED
SCREWDRIVER, NO. PN2B



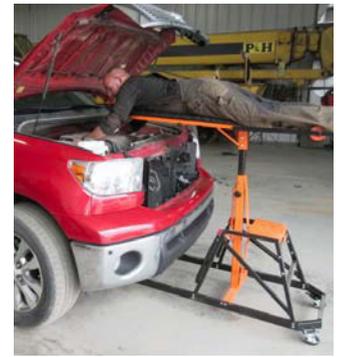
6

DEWALT 20V MAX
LITHIUM ION 3/8"
IMPACT WRENCH



7

POWER PROBE 3EZ



8
NOMAD MFG.
THE ELEVATOR

9

REDLINE
DETECTION
EASY INTAKE



10

CHALLENGER LIFTS
CLOSED FRONT DRIVE-
ON 4-POST LIFT



Mac Tools 20V MAX Hood Light

The reviewer appreciated that this light helped improve efficiency when working under the hood.

by Stefanie Von Rueden, Assistant Editor



When working in the shop, being able to see what you're working on is key to maximizing efficiency. Reviewer Ken Elzinga of Hilltop Auto Service in Byron Center, Michigan, appreciated the brightness and utility of the Mac Tools 20V MAX Hood Light.

"Even in a well-lit shop, there are always situations where you need more light," Elzinga says. "The Mac underhood light made it very easy to keep working with the engine bay fully illuminated."

Setup was simple: just charge the batteries, and the light was ready to use. The Mac Tools 20V MAX Hood Light, No. MCL045, comes with a bat-

tery charger, and a manual with clear, easy to understand instructions. Elzinga says that the light was so intuitive and easy to use, he didn't need to refer to the manual much.

The Michigan repair professional used this light mainly for underhood repairs, such as replacing head gaskets, intake gaskets and completing fuel injector replacements.

"We used it every time we had a major underhood repair that needed good lighting," he explains. "It worked great."

Previously, Elzinga had used a corded underhood light. He appreciated that the MAX Hood Light's cordless feature made the light easier to use in comparison, and he liked the way the light folded up for

convenient storage when not in use.

"It was very easy to use," Elzinga says. "Just attach [the light] to the underside of the hood and go to work."

A standout feature of this light was the long battery life, Elzinga notes.

"I like that the light turns off when you walk away from it, and automatically turns back on when you approach it," he says. "This saves battery life and saves the time of having to switch out a battery in the middle of a job."

Elzinga had no concerns or suggestions for improving this tool.

"It performs flawlessly in every aspect," he says. "It gives great underhood light, makes the job easier and faster and does what it is supposed to." **PTEN**

PRODUCT DESCRIPTION:

The Mac Tools 20V MAX Hood Light, No. MCL045, has 600 lm on low setting and 1350 lm on high setting. The light offers up to 10.5 hours of runtime on the low setting and up to six hours of runtime on the high setting using the 20V MAX 4Ah battery pack. Motion sensors turn the light off when no movement is detected for three minutes to extend battery life. The light offers 360 degrees of rotating on anti-marring padded hooks that extend to fit most SUV/truck hoods. The light also has replaceable protective lens, a detachable 80 lm flashlight and is fully compatible with all Mac Tools 20V MAX batteries. The light is IP55 rated. Mac Tools also offers the light in a kit, No. MCL045M1, which includes a detachable flashlight, battery and battery charger.

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Mayhew Tools

4-pc ProGrip Trim Tool Set

by Sara Scullin, Editor

For Audeliz Mejias of Five Star Automotive Specialists in Southbridge, Massachusetts, the Mayhew Tools 4-pc ProGrip Trim Tool Set helped him to complete a number of common automotive repair tasks using some uncommonly sized tools. The four-piece set was constructed to help technicians access tight spaces.

Mejias used the trim tool set for several applications in his shop. He used each of the various tools while working on door panels, under dash covers, bumper fascias and splash shields, to name a few applications.

“[The set] saves a significant amount of time, and allows the removal of push clips and various types of body clips with ease,” Mejias says.

He adds that no setup is required with the set of tools, and the packaging doubles as a holding tray. This helps keep the entire set neat and organized “right where you need them.”

“Just grab the one you feel best suits the job,” he says.

At first glance, Mejias was unsure about the tools’ thermoplastic handles, which are constructed of a harder material than some hand tools. But he was quickly won over by the benefits of this material.

“After using [the tools] I found the handles clean up great, and don’t hold greasiness like other ‘soft’ handled tools,” he says.



This technician particularly enjoyed the small, rounded trim tool and notes the item “fits perfectly under the stubborn plastic pins used in many splash shields and bumper fascias.” In the past, Mejias has used tools similar to the 4-pc ProGrip Trim Tool Set, but he says none of these previous sets had contained “the little rounded guy that comes in the kit ... which I just love.”

There was nothing Mejias disliked about the set.

“Each tool comes in handy and I use them daily,” he says. In addition, Mejias adds he would like to see a multi-length kit with longer reach/leverage options.

Mejias says the set is a very useful asset to his shop, as he can utilize each tool in the set for a number of everyday applications.

“[This set has the kind of] tool you need when dealing with any types of plastic clips and pins,” Mejias says. **PTEN**

PRODUCT DESCRIPTION:

The Mayhew Tools 4-pc ProGrip Trim Tool Set is designed for access into tight spaces and is ideal for lifting and extracting door panels and molding rivet fasteners without damage. The set includes both small and large “U” and “V” notch trim tools with the company’s ProGrip handle. The handle is made of polypropylene with an over-molded Thermoplastic Elastomer soft grip, has two patented ribs around its neck for maximum transfer of torque and a slip-free grip when pushing or prying. The rounded end rolls smoothly onto the heel of the palm, reducing friction and hand fatigue, according to the company.

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OEMTOOLS 20V MAX Li-ion Brushless Impact Wrench, No. 24486

Versatile for both professional and at-home use.

by Vesna Brajkovic, Assistant Editor

Eric Moore of DeMary Truck in Columbus, Ohio, used the OEM 20V MAX Li-ion Brushless Impact Wrench for wheel nut removal on light duty vehicles, including Ford C Series trucks and on some passenger cars.

“The [OEMTOOLS impact wrench] seemed well-suited for that task,” Moore says. “When installing the wheel nuts, [it] allowed for a quicker transition, since the highest setting isn’t likely to break any wheel studs, or over tighten the nuts to the point of causing damage. Any over torque can be easily remedied with a torque wrench.”

Moore says that the tool, which comes in a blow molded carrying case, including a battery, charger and easy-to-read manual, is simple to use and lightweight. Because of this, he says it is versatile enough to be an “excellent entry-level cordless option” for professional use or the do-it-yourself crowd.

“[The impact] has more than enough power and torque for occasional maintenance, or driving lag screws on fences and decks,” Moore says.

While in the shop, he found that once

dedicating the tool to one task, in his case removal and installation of lug nuts on light duty vehicles, the tool was “very capable and consistent.”

While the impact was easy to use overall, Moore says the setting selector can take some getting used to.

“I found [the setting selector] tends to default to the setting where it will break the fastener loose and then stop, requiring a double tap of the trigger to spin the fastener the rest of the way out or off,” Moore explains. “I tried pressing the selector before use, after tapping the trigger [and] changing directions, but couldn’t find any one way that got the results we wanted consistently.”

While Moore says he would prefer a more user-friendly setting selector, it didn’t hinder the tool’s usage.

“It didn’t keep us from using the tool at all, just required a double tap on the trigger to follow through,” he says.

Overall, Moore appreciated the light

PRODUCT DESCRIPTION:

The OEMTOOLS 20V MAX Li-ion Brushless Impact Wrench, No. 24486, is designed for high-torque applications, like loosening and tightening lug nuts. Encased within the rugged exterior, the brushless motor provides 300 ft-lbs of nut-busting torque, 260 ft-lbs of tightening torque and a variable speed of 0 to 2,600 rpm. An electric brake stops rotation when the trigger is released. The rechargeable 4.0 Ah Li-ion slide battery charges in two hours with the tool’s charging station. The impact wrench weighs 9.28 lbs.

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weight of the tool, which he says is on the lighter end of most other brushless impact wrenches he’s used, and its versatility for at-home use. **PTEN**



CAN OPERATE AS AN AIR HAMMER OR PULLER

The bidirectional **Lock Technology LT855-AH Texas Twister Air Hammer** can be used as a hammer or a puller. It is a double duty air hammer. The LT855-AH can be used with the LT855A Texas Twister Air Hammer Pulling Kit. Simply install the included air piston lock into the quick connect chuck in front of the gun to create a pulling force from the rear of the gun. The LT855-AH air hammer is versatile; it can be used from the front or from the rear, and offers technicians a choice. **Circle 218 on card, or enter at "e-inquiry" on VehicleServicePros.com**



PLANETARY-GEAR SYSTEM

The **Onyx 3" Geared Palm Polisher Kit**, No. 331, from **Astro Pneumatic Tool Co.**, was designed to provide high power, durability and reduced vibration. Its insulating thermo rubber protects against cold and helps to ensure a good grip. The one-hand orbital sander has an ergonomic design, and the polisher kit includes a built-in regulator for any speed. The 331 also includes a planetary-gear system with needle bearings for power and long-term working, as well as rear exhaust with a silencer for quiet operation. **Circle 221 on card, or enter at "e-inquiry" on VehicleServicePros.com**

REFINED DESIGN TWIN-HAMMER MECHANISM

The **AIRCAT 3/4" Super Duty Impact Wrench**, No. 1770-XL, from Florida Pneumatic, will break loose fasteners and bolts on trucks, trailers and heavy duty off-road vehicles with a loosening torque of 1,600 ft-lbs. The refined design twin-hammer mechanism increases blow frequency, according to the company. A power management switch provides three power settings, and molded-in buffers protect the tool from side impact. Push-button forward/reverse buttons are located at the back of the tool making control and operation convenient. Weighing 7.4 lbs, the 1770-XL features an ergonomically designed grip and trigger to provide operating comfort. This tool comes with a two-year warranty.

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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 impact wrenches also offer a high-efficiency air motor. The tools come with a one-year warranty.

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FREE SPEED OF 10,000 RPM

The **JET 1/2" Compact Impact Wrench**, No. JAT 107, offers a maximum torque of 500 ft-lbs, and a free speed of 10,000 rpm. The tool also offers an ergonomically designed grip that the company says absorbs vibration and reduces hand fatigue. Additional features include three-position forward and reverse power settings, a twin hammer impact mechanism and a lightweight aluminum construction that reduces weight.

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SEALED HOUSING AND ERGONOMIC GRIP

TorcUP's RAPTOR Non-Impacting Pneumatic Torque Wrench comes in five models with a torque range of 78 ft-lbs to 5,990 ft-lbs and has continuous and repeatable torque capabilities with an accuracy of +/- 5 percent. The RAPTOR's patented gear technology is designed to offer greater durability and lower operational temperatures. These features in combination with the wrench's sealed housing and ergonomic grip have ensured operator efficiency, comfort and safety, according to the company.

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FOR NARROW SURFACES

The **Hazet Belt Sander, No. 9033N-4**, offers a 10mm belt width for narrow surfaces. Users can regulate the rotational speed using a rotary controller on the back of the handle. This 420-watt pneumatic tool features a locking mechanism for belt changing, automatic belt adjustment and belt fine adjustment. The belt track can be rotated 360 degrees. A head wrench is integrated into the handle of the tool for belt fine adjustment and angle adjustment. Three 330 X 10mm abrasive belts with grain sizes 80, 100 and 120 are included.

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OFFERS 2,100 FT-LBS OF MAXIMUM REVERSE TORQUE

The **Ingersoll Rand 2850MAX 1" D-Handle Impact Wrench** offers 2,100 ft-lbs of maximum reverse torque to loosen stubborn lug nuts and delivers 5,500 rpm and 770 bpm. The 2850MAX is available with a 6" anvil or a standard anvil. The 6" anvil helps remove bolts from deep tire wells on large vehicles such as semitrailers, buses, trailers and tractors. The standard anvil is designed for a variety of heavy mechanical automotive applications. The tool weighs 21.5 lbs and features a 360-degree adjustable handle with an ergonomic grip, chemical resistant composite housing, steel nose and a swivel hose connection.

Circle 225 on card, or enter at "e-inquiry" on VehicleServicePros.com

THREE ADJUSTABLE STAGES OF SPEED

The **Zipp Air 3/4" Twin Hammer Mini Impact Wrench**, No. ZIW6511, has three adjustable stages of speed for forward and reverse operation. Providing 1,100 ft-lbs of torque, this impact is suited for both automotive and heavy truck applications. The ZIW6511 has a twin-hammer design and a hot forged alloy steel hammer cage and anvil to create more torque and provide longer life. The 5.8-lb tool offers 7,200 rpm of free speed, an operating air pressure of 90 psi and an average air consumption of 8.12 cfm.



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Congratulations TO OUR 2018 CONTEST WINNERS

More than \$42,000 in prizes won

The list of winners is as follows:

ATEQ VT56 TPMS Tool Kit with OBDII
Joe Denny, Lexington, SC

Bartec Master Bundle—Own the Wheel Well
John Coschignano, Oyster Bay, NY

Beta Tools C58P Steel Wall Cabinet
Tina Redman, Oakhurst, CA

Bosch Diagnostics ADS 625 Professional Diagnostic Scan Tool
Dawon Sanner, Fairfield, CT

Bullet Proof Diesel Gift Certificate
Gary Rainwater, Springfield, MO

Coast Automotive LED Lights and Knives Prize Pack
Jason Reinke, Columbus, NE

Homak Manufacturing 72" RS Pro Combo Toolbox
Luke Huotari, Iron Mountain, MI

KNIPEX Tools 17-pc Tool Set Prize Pack
Dennis Held, Champaign, IL

KT Pro 8-pc Tool Set Prize Pack
James Hoeft, Elgin, MN

Flexzilla Air Compressor with Silencer Prize Pack
Tom Hamscher, Pittsburgh, PA

Lumax RoboLuber-LX-1182
Peter Bu, Drexel Hill, PA

CAS G-Scan 2 Kit
Pete Anacabe, Castroville, CA

Monster \$7,000 Beast That Monster has Unleashed
Patrick Blaney, Tigard, OR

ProMaxx Difficult Repair Prize Pack
John O'Bourke, San Jacinto, CA

Streamlight Lights That Charge Prize Pack
Tim MacBrien, Grand Rapids, MI



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CATEGORY SPOTLIGHT

Power Tools



HIGH-PRECISION ELECTRIC DRIVER

Desoutter Industrial Tools offers an updated model of their **Nano Driver**. The transducerized electric screwdriver is ideal for industries that require high precision, low torque and traceability. This product is capable of delivering torque between 0.25 in-lbs and 7.08 in-lbs across three models. The Nano Driver is equipped with a newly developed seating detection function that ensures each fastener is applied perfectly, without causing damage to the host material. This is particularly useful when working with delicate or brittle materials.

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ALSO COMES IN A 2" EXTENDED ANVIL VERSION

The **Mac Tools 1/2" Drive Aluminum Impact Wrench**, No. MPF970501, features 1,100 ft-lbs of reverse breakaway torque and a twin-hammer mechanism for power and longevity. The tool also features a variable-speed trigger for speed control, reverse-bias motor for more reverse torque to remove stubborn bolts and a variable-valve design for dialed in speed control. The impact wrench also comes in a 2" extended anvil version, No. MPF970501. The tools are textured with an anti-slip comfort grip.

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LOW VIBRATION FOR REDUCED FATIGUE

The **Legacy Manufacturing Flexzilla Pro Reciprocating Air Saw Kit**, No. AT8565FZ, offers a lightweight, compact design and low vibration designed to reduce operator fatigue during extended use. The saw's high-speed, 9,500 rpm allows users to easily cut through tough materials. This kit includes the Flexzilla Pro Air Saw, a Flexzilla Custom Length Whip Hose with High Flow Ball Swivel, a 1/4" FNPT Coupler, a 1/4" MNPT Coupler and two 1/4" FNPT plugs.

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IMPROVED ACCESS IN TIGHT SPACES

The **Milwaukee M12 FUEL Stubby Impact Wrenches** are designed to allow improved access in tight spaces, while delivering the power to complete demanding tasks. These wrenches deliver up to 250 ft-lbs of breakaway torque to remove stubborn bolts and fasteners. A four-mode drive control feature gives users the versatility to switch between modes to match the power and speed needed for the application at hand. These impact wrenches offer an auto shut off mode to prevent over-fastening of bolts. The M12 FUEL Stubby Impact Wrenches are available in 1/4", 3/8" and 1/2" sizes.

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CATEGORY SPOTLIGHT

Power Tools



STABILIZER HELPS REDUCE VIBRATION

The **Walter Surface Technologies Ironman and Ironman PS Grinders** are designed for strenuous, prolonged use and feature an ergonomic rat-tail design, balance, 1,750 watts of power, 6" wheel capacity, a QUICK-R instant release function and Walter stabilizer to reduce vibration. The Ironman PS offers the same durability and performance as the Ironman, but with added safety features: a "deadman" switch and mechanical brake stop grinding wheels from turning within two seconds of relieving the trigger, and cutting wheels within 1.5 seconds to minimize workplace risks.

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DESIGNED FOR HIGH-TORQUE APPLICATIONS

The **OEMTOOLS 20V MAX Li-ion Brushless Impact Wrench**, No. 24486, is designed for high-torque applications, like loosening and tightening lug nuts. Encased within the rugged exterior, the brushless motor provides 300 ft-lbs of nut busting torque, 260 ft-lbs of tightening torque and a variable speed of 0 to 2,600 rpm. An electric brake stops rotation when the trigger is released. The rechargeable 4.0Ah Li-ion slide battery charges in two hours with the tools charging station. The impact wrench weighs 9.28 lbs.

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SEALED HEAD KEEPS OUT DIRT

The **SP Air Mini High Speed Sealed Flat Head Ratchet** features a patented high speed and sealed head mechanism and is designed to be up to four times faster than a standard ratchet. The tool offers one-handed operation for the forward and reverse lever, and the sealed head helps prevent the spread of the ratchet housing while protecting the tool's functionality from dirt and dust. The ratchet is available in 1/4" (SP-7260RP) and 3/8" (SP-7265RP) sizes.

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DUAL USE SQUARE DRIVE

The **Mighty Seven 3/8" Drive Air Ratchet Wrench**, No. NE-362, is designed with an innovative dual use square drive with a conventional male drive and a female 1/4" bit holder. This ratchet weighs 1.1 lbs and is just under 6-1/2" long, allow users easy access for tight and narrow applications. A variable speed trigger provides a working forward torque range from 10 to 35 ft-lbs and a max reverse torque of 37 ft-lbs. This ratchet is backed by a three-year warranty.

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DESIGNED TO GET INTO TIGHT SPACES

The **Monster 3/8" Angle Impact Wrench**, No. MST7015, was designed to get into tight spaces and be lightweight. Weighing 3.9 lbs, the MST7015 provides 160 ft-lbs of torque at 7,000 rpm. Monster products are available exclusively through the mobile tool distributor channel.

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VARIABLE SPEED TRIGGER AND A FORWARD AND REVERSE CONTROL TOP



The **RPG 1/4" Air Screwdriver** is ideal for general repair and body shop work. It is compact and powerful, with a free speed of 1,800 rpm and a net weight of 4.6 lbs. The tool features a variable speed trigger and a forward and reverse control top. It also offers an ergonomic handle design that helps reduce fatigue, and a built-in comfort grip that offers slip-free convenience. Other features include a rotating air inlet and a handle exhaust that directs air away from the workpiece and operator. The 1/4" air screwdriver is 7.7" in overall length, and has an average air consumption of 6 cfm. **Circle 242 on card, or enter at "e-inquiry" on VehicleServicePros.com**

INSTALLS FASTENERS THROUGH A 1/4" DIAMETER

The **FSI PT-4500H cordless riveter** uses the industry standard Huck style nose assemblies to install most industrial quality blind rivets and lockbolts (Huck MG and C6LB styles) through a 1/4" diameter. Powered by a slide-on 18V Li-Ion battery pack with fuel gauge, the PT-4500H's brushless motor drives a mechanical ball screw gear system that provides pull forces up to 5,000 lbs. Providing nearly a 1" stroke capability with speed comparable to most shorter stroke air operated riveters, the PT-4500H reduces cycle times even when using extended grip rivets, and a removeable rivet stem collector is provided to eliminate potential foreign object damage from spent mandrels in the work area. Special rotating adapters and nose assemblies such as right angle, offset, extended straight and closed edge distance versions adapt to the riveter. Weighing less than 5.75 lbs with a standard nose assembly attached, the PT-4500H also includes a LED lighting system for use in dimly lit areas.



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PATENTED ROTATING THROTTLE DESIGN

The **Matco Tools 3/8" Drive Sealed Flat Head Ratchet with Rotating Throttle**, No. MT2855R, features a patented rotating throttle design that provides eight available throttle positions, helping to save knuckles and increase productivity. The fully sealed head design with investment cast gearing helps increase accessibility and the life of the tool; the patented ratchet head grease fitting allows technicians to service the tool. The low profile forward/reverse lever is accessible with one hand for quick directional changes. This ratchet includes a two-year warranty and offers 90 ft-lbs of maximum torque.

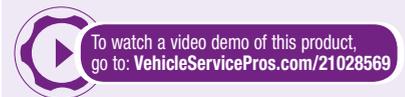
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HOW TO USE A GRINDER

This video offers training on how to prep a grinder for safer use. Watch for tips on: tool documentation, tool preparation, airline connection and user safety recommendations. Remember to always read the safety warning and documentation available with each tool before using the tools.

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GOT A FROZEN/DAMAGED LUG NUT?

LT1350 LUG RIPPER II

- Don't torch frozen/damaged lug nuts off just drill out the lug nut/stud threads only in 11 minutes or less
- **Available from your local mobile tool dealer**
- 16mm Tungsten steel drill bit with 4 carbide cutters allow for speed and durability
- LT1350-8 Water Bladder is available to purchase separately, keeping coolant flowing with six feet of hose and a water control valve for **one man operation**
- Includes 4 drill guides -

17mm - 11/16"	21mm - 13/16"
19mm - 3/4"	23mm - 7/8"

Drills out female/male threads on lug nut/stud only!

PATENT PENDING



LT1350-8 Water Bladder is portable and allows for one man operation!

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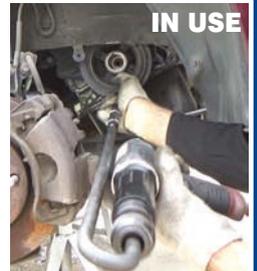
LT855A TEXAS TWISTER™ AIR HAMMER PULLING KIT

Use your air hammer to pull -

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RECHARGES IN 30 MINUTES

The **Arconic Marson BT-3 Cordless Rivet Tool** is designed to offer stronger pulling force, longer stroke and the ability to install larger fasteners. This rechargeable tool features a 3/16" to 1/4" capacity, 1.18" stroke length, 4,600 lbs pulling force and a recharge time of approximately 30 minutes. The BT-3 includes nose tips for 5/32", 3/16" and 1/4" rivet sizes, and is ideal for a wide range of uses including automotive, construction, trailer and more.

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ONE-HANDED OPERATION

The **1/2" Stubby Impact Wrench**, No. MP-7775, from **Michigan Pneumatic Tool** features a lightweight composite motor housing. The compact wrench allows for one-handed operation, has three speed settings and has left-handed or right-handed reverse options. This tool is ideal for tight applications. The tool runs at 9,000 rpm and delivers 500 ft-lbs of torque in forward and 900 ft-lbs in reverse. The MP-7775 is a durable tool with a jumbo clutch.

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SPEED CONTROL DIAL WITH SIX WORKING SPEEDS

The **Rupes Skorpio E Random Orbital Electric Sander** is a compact, quiet, brushless orbital sander designed to be lightweight and operate with low vibration levels to maximize user comfort and safety. Key features of this brushless sander include: central vacuum compatible, speed control dial with six working speeds, throttle lever, optimized ergonomics, 3mm or 6mm orbit size and multi-hole slim backing pad.

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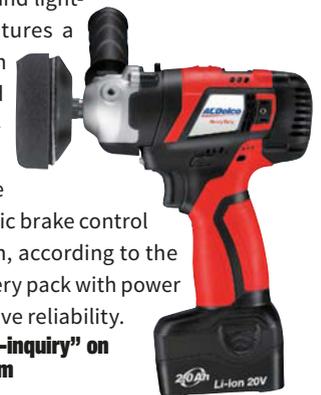
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ULTRA COMPACT AND LIGHTWEIGHT

The **ACDelco Li-ion 20V Brushless Two-speed Mini Polisher**, No. ARS2016, is ultra compact in size and lightweight, weighing 2.42 lbs. It features a switchable two-speed gearbox with no-load speed at 3,000 rpm and 8,500 rpm respectively. The two-positioned side handle is designed to reach tight spots. The variable speed with reversible and electronic brake control allows a finer craftsmanship finish, according to the company. The redesigned 20V battery pack with power level indicator built-in helps improve reliability.

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DESIGNED FOR TIGHT WORK SPACES

The **Makita 12V Max 3/8" Right Angle Drill**, No. XAD03Z, is a compact fastening solution for work in tight spaces. The XAD03Z has a keyed metal chuck for improved bit-gripping power and an angle head height of 2-1/2". This tool is also available with a keyless chuck. This drill is part of the company's 12V max CXT system and is powered by 12V max CXT 2.0Ah and 4.0Ah batteries.

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OFFERS ONE-HANDED AND REVERSE SELECTION

The **Snap-on PT650 Impact Wrench** features a new housing, nose piece, trigger and improved internals, according to the company. Cold forged hammers and precision machined frame and anvil help create tighter tolerances and load distribution. The PT650 features one-handed and reverse selection and a large four-position power level adjustment. This wrench offers a bolt breakaway torque of 950 ft-lbs, torque reverse of 650 ft-lbs, torque forward of 480 ft-lbs, rpm free speed of 5,600 and the ability to strike 1,100 bpm.

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FEATURES 270-DEGREE ADJUSTABLE GUARD

The **Cleco Right Angle Grinders** feature a 1.7 hp motor designed for increased power and productivity. The grinders are designed to fit all Type 27, Type 27 threaded hub and Type 1 abrasive discs. Notable features include quiet operation with rear exhaust overhose standard; ergonomic, anti-vibration handle; spindle lock for quick and easy abrasive changes; dual-layer, high-impact composite housing; and a 270-degree adjustable guard for improved access in tight spaces.

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FOR HIGH-VOLUME METAL CASTING

The **Chicago Pneumatic CP3550 Series Angle Grinders** are designed for high-volume metal casting and fabrication environments. These tools offer a 1,100-watt governed motor and are ideal for demanding tasks including grinding, chamfering, weld preparation, cleaning, cutting finishing and sanding. These angle grinders are available in different abrasive capacities: 4", 4.5" and 5". This series includes straight and angle die grinders with short or extended reach.

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PRECISION MACHINED COUNTER WEIGHT FOR SMOOTH OPERATION

The **Wizards Products Heavy Duty Big Throw 21mm Dual Action Polisher** offers 900 watts of power, providing a higher speed option for quick correction and defect removal, the company says. The polisher offers improved balance with precision machined counter weight for smoother operation, which helps allow for faster speeds with less vibration. The package includes a 20' durable but flexible cord and larger tote bag with shoulder strap.

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WRAPAROUND ANGLE OF 180 DEGREES

The **Suhner Cordless Tube Polisher**, No. ATC 7, is ideal for tubes up to 1-3/4" in diameter. A wraparound angle of 180 degrees helps ensure fast, efficient work, and the wraparound is not maintained by the contact pressure. Material can be removed under less pressure while maintaining maximum control, according to the company.

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TOOL REVIEW

**MAC TOOLS HIGH
PERFORMANCE
1/2" AIR IMPACT
WRENCH**
The Mac Tools High Performance 1/2" Air Impact



Wrench, No. MPF990501, is designed to help technicians perform engine, wheel, crank bolt, steering, suspension and axle bolt removal. This impact wrench offers 1,400 ft-lbs of torque and operates up to 6,500 max rpm in forward or reverse, and features a proprietary forged anvil for durability. At 6.4" long, this tool can reach tight areas, and a forward handle design is comfortable to use. Read the full review at:

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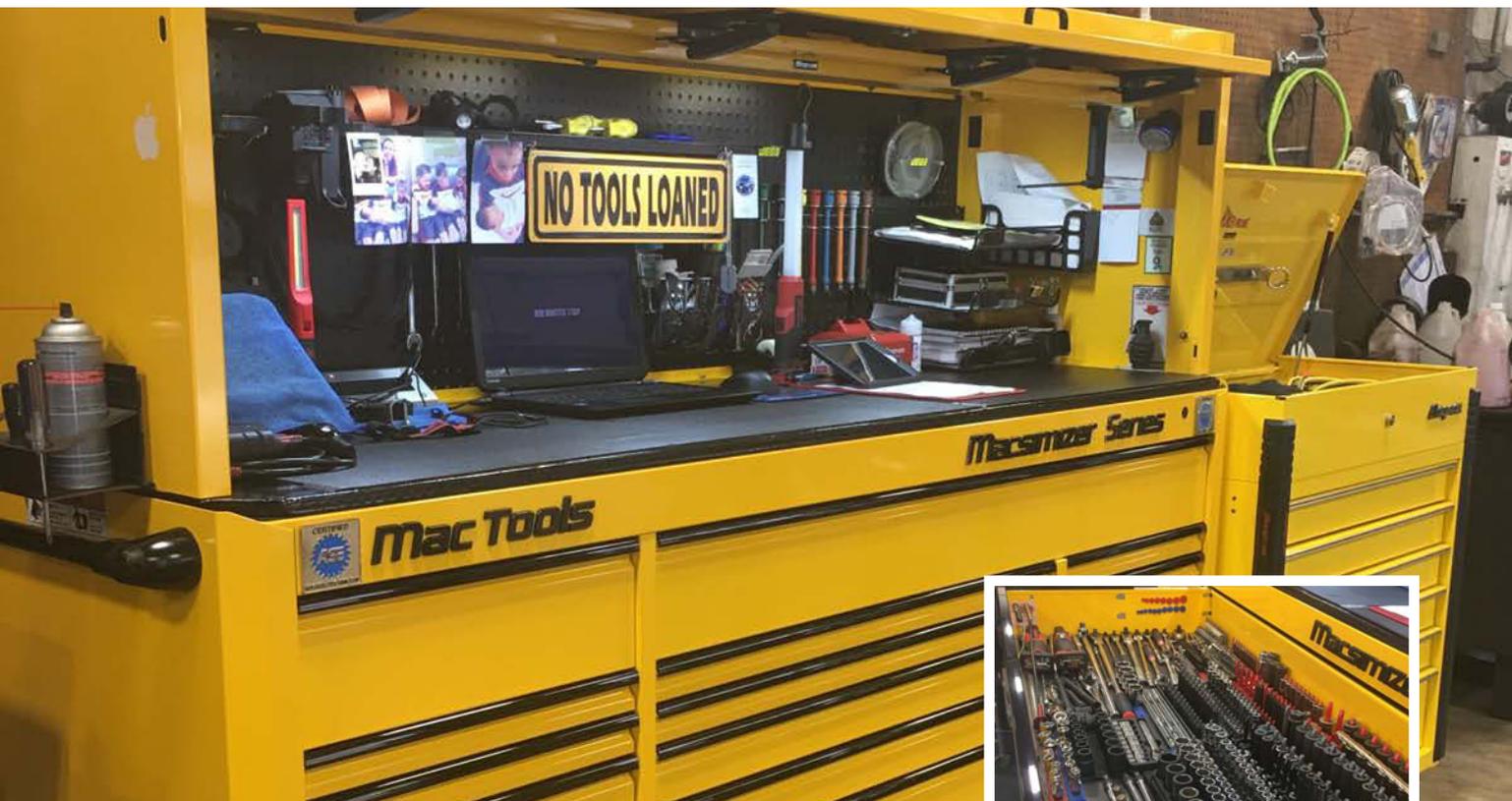


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BIG-TIME BOXES

READERS OFFER A PROUD LOOK AT THEIR AWESOME TOOL STORAGE SYSTEMS.



All in its place

This 15' long setup is equipped with motion sensors and security cameras.

by Vesna Brajkovic, Assistant Editor

Scott Fillius has been an automotive technician for 19 years, and for the past seven he's worked out of a bright yellow, 8' long by 6' high Mac Tools toolbox in his bay in New Jersey.

Each of the 20 drawers in the Macimizer Series box is full of tools and organized precisely using tool organizers. (Perhaps the secret to this Master Technician keeping organized is his "No Tools Loaned" sign that hangs in the hutch.)

In the main box, Fillius keeps the first drawer stocked with sockets, then screwdrivers, prybars, wrenches, pliers and air tools.

"All the main stuff," he says.

OWNER:

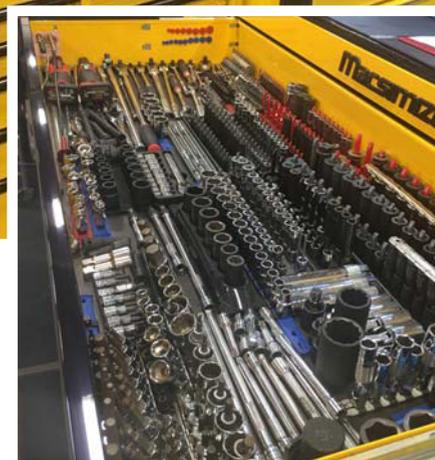
Scott Fillius

InTown Auto Care
Moorestown, New Jersey

He says the Mac Tools toolbox drawers are his favorite feature compared to other toolbox brands because "you don't have to do anything special to open the drawers ... [such as] lift the lever and all that stuff."

The drawers of the box are so full that in 2016, Fillius added on a matching yellow Snap-on tool cart that he dedicates entirely to his electronics and diagnostic equipment, including scopes and scanner accessories. But it doesn't stop there. He plans to add at

► Each of the 20 drawers of this box are "full to the max" with tools.



least one side locker to the setup eventually to keep up with his tooling.

"It's full to the max now," Fillius says.

Even so, Fillius keeps the workstation under his hutch mostly clear. His Snap-on Verus Pro diagnostic scanner has a station up top, along with his laptop, some battery chargers hooked up to a Mac Tools power strip and his work lights.

InTown Auto Care specializes in European vehicles, such as BMW, Mercedes, Volkswagen and Audi. **PTEN**

Want to see more photos of Fillius' box?
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