

COLLISION REPAIR

GUIDE TO **COLLISION** **REPAIR TOOLS,** **SERVICE, AND BEST PRACTICES**

The Essentials

From hand tools to power tools: Products that pull double duty for general and collision repair.

Page 6

Welding repairs of today

Shops must be prepared to weld different material types

Page 8

SUPPLEMENT
BROUGHT TO YOU BY

Professional Distributor

PTEN

VEHICLE SERVICE PROSSM

SPONSORED BY:

AUTEL[®]



Polyvance
ADVANCING POLYMER REPAIR

TEXA

DENT FIX EQUIPMENT



PLASTIC

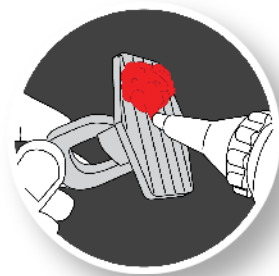


ALUMINUM

COLLISION REPAIR EXPERTS



STEEL



GPR & PDR

For more information visit VehicleServicePros.com/10094170



Collision repair presents new set of challenges and opportunities

It comes down to technology, training, and tenacity in this ever-changing field of repair.

by Sara Scullin, Editor, PTEN and Professional Distributor magazines

Today's collision repair involves a lot more than pounding out a dent and sending the vehicle on its way. As vehicle make-up and technology changes, so do repair procedures and business models. That's a fact shop owners and technicians are working through, and with. Collision work has grown infinitely more technical than in years past.

"I think the largest hurdle is making sure we're doing a safe, proper repair per OE [guidelines]," says Eric Shaffer, owner of Thomas E. Brown Auto Body Werks in Mechanicsburg, Pennsylvania. "That changes the dynamic of how you're doing business; it changes the dynamic of how the workflow happens through your shop. It's not just a thought process, but a whole business model change because [the way] you're processing that car through the shop now takes ten times longer what it normally would. Does it need calibration? Most of the time, yes. Are you subtleting it or doing it in-house? And if you're doing it in-house, can you stand behind [the repair] if you're not using an OE tool? There are a lot of things you have to look at."

The numerous sensors in today's vehicles have changed the collision-repair game (see page 10). This is a large part of the reason why continued training remains essential in this line of work – not just in matters of diagnostics and sensor calibration – but even when it comes to welding and working with the

aluminum and plastic components found on many of today's vehicles (see page 8).

Many collision repair methods, like surface prep, painting, glass replacement, grinding, and cutting remain essential components of collision repair work. These, too, require the proper attention, tools, and best practices.

Dave Gunderson, senior account executive of transportation with 3M, encourages shop owners and technicians engaged in collision work to stay relevant with all the changes taking place in the industry – from materials to ADAS and diagnostics and everything in between. Luckily, training can be found in traditional and non-traditional ways, with many classes and sessions heading online.

"We don't think instructor-led training will ever go away," Gunderson says. "But 2021 models are coming out ... and even with the Toyota Camry [for example] there's a whole new repair manual. [We're looking] at new types of training to address the complexity of repair."

In the Spring of 2020, in response to COVID-19, 3M opened its Collision Repair Academy virtual e-training with on-demand modules, in addition to how-to videos on social media and YouTube. Technicians are encouraged to log on from home to learn and review best practices.

It's never too late to learn a new skill, and for technicians tasked with collision repair, learning new skills is essential to stay ahead of the curve. **o**



ViewApart/iStock/Getty Images Plus

6 Essential tools for general and collision repair

From hand and specialty tools to power and air tools.

8 Welding repairs of today

Collision repair shops must be prepared to weld different material types.

10 The importance of asking "why?" with ADAS repairs

Highlighting key elements needed for a proper calibration.

14 Tool Reviews

- Polyvance 6067 Bumper Stabilizer
- Dent Fix Equipment MAXI DF-505/220V
- SATA Spray Equipment SATAminijet 4400 B

For more exclusive content, visit [VehicleServicePros.com/21148086](https://www.vehicle-service-pros.com/21148086) for a tool review of Autel's MaxiSYS ADAS Calibration Tool Package.

17 Products for collision repair

TARGET

YOUR NEW
REVENUE STREAM

MA600

AUTEL MAXISYS

ADAS

CALIBRATION

AFFORDABLE & PORTABLE



FOLDABLE CALIBRATION FRAME

DON'T JUST REPLACE WINDSHIELDS RECALIBRATE YOUR FUTURE

OE LEVEL CALIBRATION PROCEDURES FOR MORE THAN CAMERA BASED SYSTEMS

For more information visit [VehicleServicePros.com/10095724](https://www.vehicle-service-pros.com/10095724)



FIVE LINE LASER
1 PERSON PROCEDURE
QUICK & SIMPLE SETUP



YouTube
TRAINING
VIDEOS

@AutelTools



<https://www.youtube.com/auteltools>



Phone: (855) 288-3587 • USSUPPORT@AUTEL.COM
AUTEL.COM • MAXITPMS.COM • MAXISYSADAS.COM
© 2020 Autel U.S. Inc., All Rights Reserved



Follow Us @AutelTools
Facebook Instagram YouTube

AUTEL



Essential tools for both general and collision repair work

From hand and specialty tools to power and air tools, having multipurpose tools is beneficial to shops looking to expand their services.

by Kayla Oschmann, Assistant Editor

Whether looking to increase sales or take advantage of an opportunity within their service area, there are many reasons general repair shops may consider adding collision repair to their list of services. By already having a customer base built up, expanding a shop's services offers many benefits.

No matter the reason to expand, having the right tools for the job takes priority. Having the right tools that can be of service to both general repair and collision repair applications is key. Multipurpose tools save on space, time, and most importantly, cost.

Although collision repair often requires specific tools and equipment – such as dent pullers or paint stands – a number of power and air tools, hand tools, and specialty tools can be used for both services. Technicians can benefit by understanding the multipurpose value of some key products.

Here is a look at some essential tools for both general repair and collision work.

POWER AND AIR TOOLS

The right power and air tools can take a lot of grunt work out of both general and collision repairs. From cutting off rusted bolts or damaged door panels, to removing rust or welding seams, being able to move from one repair to another with the same tool is essential for technicians. Shops should consider tools that offer versatility in this category.

“You have to have a cut-off tool,” says Chris Hirsch, director of retail and automotive sales for AIRCAT, a division



Photo from AIRCAT

of Florida Pneumatic. “When [a vehicle] comes in damaged, you’re going to cut material off.”

Mark Kelly, product manager for Milwaukee Tool, agrees that a cut-off tool is ideal. “During service work, sometimes there are situations when technicians need to cut into an exhaust pipe, body panels, or any sort of sheet metal.”

Hirsch recommends shops have an extended reach cut-off tool, a reversible cut-off tool, and a flex head cut-off tool.

The thin cutting disc on an extended reach cut-off tool is ideal for cutting material, axles, and anything bent with a better reach. A reversible cut-off tool allows the user to redirect the sparks by changing the direction of the cutting wheel. A flex head cut-off tool has three positions, enabling the user to cut at an angle, he explains.

A die grinder is another essential tool for both general and collision repairs. A die grinder is used for various functions such as grinding, sanding, cutting, and polishing.

An extended reach cut-off tool, such as AIRCAT's 6275-A, is ideal for cutting material, axles, and anything bent with a better reach.

“[A] right angle die grinder is great for removing gaskets on things like oil pans and transmission cases,” Kelly says. “You can also attach a 2-inch cut-off wheel and use it to cut through body panels when needed.”

Milwaukee Tool's 1/4" Right Angle Die Grinder, No. 2485-20, is optimized for 2" accessories and is able to fit in tight places.

Hirsch also recommends a die grinder, with preference to the right angle die grinder, because they are mostly used with sanding accessories. Right angle die grinders are used for sanding, spot sanding, grinding down welds, and smoothing out and blending materials together, he says.

AIRCAT offers a 1hp Composite Angle Die Grinder, No. 6265, which comes with both 2" and 3" backing pads.

In addition to cut-off tools and die grinders, Hirsch also lists air saws (for

PRODUCTS RELATED TO THIS REPAIR



3M
File Belt Sander
For more information visit
VehicleServicePros.com/21001384



Lisle Corporation
Plastic Clip
Removal Pliers, No. 42810
For more information visit
VehicleServicePros.com/21111631



Milwaukee Tool
M12 FUEL 1/4" Right
Angle Die Grinder,
No. 2485-22
For more information visit
VehicleServicePros.com/21106636



Mueller-Kueps
Quick-Lock Razor
Scraper, No. 268 420
For more information visit
VehicleServicePros.com/21145712



AIRCAT
Flex Head Cut-Off
Tool, No. 6530
For more information visit
VehicleServicePros.com/21122917

quick straight and/or curved cuts) and sanders, both palm and block sanders, as essential tools for both general and collision repairs.

Kelly recommends technicians add an impact wrench, impact ratchet, and a polisher to the list of essential tools as well.

HAND AND SPECIALTY TOOLS

Similar to general repair, collision repair work requires technicians to access and remove parts on vehicles without damaging the surrounding area. For collision repairs, tools that remove clips, molding, trim, and panels are especially important.

"It is important to have tools that are versatile enough to do both types of vehicle repair, and tools that can be used for multiple purposes," says Eddie Lisle, sales manager at Lisle Corporation. "For instance, there are various types of plastic fasteners and clips found on vehicles today that [may] need to be removed or replaced."

Lisle offers a variety of tools that can pry, separate, turn, twist, and grip plastic fasteners and clips, for example, at different angles that are difficult to remove. Products include Lisle's Plastic Fastener

Remover, No. 35260; Double Ended Clip Lifter, No. 35460; and Plastic Clip Removal Pliers, No. 42810.

"These tools were made so they won't mark, scratch, dent, or damage surfaces on the vehicle," Lisle adds. "They were [also] designed specifically so you don't have to resort to using a screwdriver or something else that won't work as well or that could possibly damage the vehicle."

Mueller-Kueps agrees that tools needed to remove plastic clips and panels are essential.

"To properly service both collision and general repair customers, a technician should have some sort of panel and clip remover to access behind door or overhead panels," says Andre Van Lagen, sales manager, North America at Mueller-Kueps.

Mueller-Kueps offers a 5-pc Clip Lifter Set, No. 277 015, that is designed to quickly and easily remove plastic fasteners, plastics clips, upholstery, and door panels. The set is made from durable steel with a high-quality polished chrome finish.

Van Lagen would also recommend having scrapers in the shop to remove


glue, paint, stickers, or dirt. He suggests Mueller-Kueps' Quick-Lock Razor Scraper, No. 268 420, that features a quick-lock safety release mechanism and comes with five steel and five plastic blades.

Aside from specialty tools, hand tools such as pry bars, locking pliers, ratchets, and socket and wrench sets should be easily accessible.

"These are all core hand tools designed for a wide variety of jobs," Milwaukee Tool's Kelly says. "With these tools, technicians will be able to tackle the majority of jobs they come into contact with during collision repair."

Examples he provides include Milwaukee Tool's 32-pc Ratchet and Socket Set, No. 48-22-9008; 4-pc Pry Bar Set, No. 48-22-9214; and 10-pc Torque Lock Set, No. 48-22-3690.

CONCLUSION

Tools that can pull double-duty and not only be used from one repair job to the next, but also go from general repair work to a collision-specific job, are vital. Multipurpose tools are essential tools, saving shops and technicians time, space, and cost. 



Welding repairs of today: A myriad of materials

Collision repair shops must be prepared to weld different material types to successfully retain as much business in-house as possible.

by Tyler Fussner, Assistant Editor

Collision repair is changing. Most vehicles entering body shops today are comprised of various materials - whether they be different steels, aluminums, or plastics. Depending on the vehicles entering your shop, you may find opportunities to complete collision repair services on newer materials than you have in the past. From major welding jobs to pulling dents, most shops strive to retain business and service any vehicle that comes their way. Understanding the nuances of some of these materials that make up the vehicles on the road and in the bay, as well as the equipment and tools needed to complete such repairs, can help shops to establish and keep more business in-house.

STEELS, ALUMINUMS, AND PLASTICS – OH MY!

Body shops have handled steel for decades. However, today's vehicles are made of more than just one material. The most prominent material on the rise in vehicle construction is aluminum.

"The repair of aluminum [is] going to keep on being a strong trend in the marketplace where shops will have to become not only aware of it, but also more knowledgeable on that aspect," says David Swanson, director of business development, Dent Fix Equipment.

Material awareness as it relates to repairs is important for many reasons, the primary of those being that welding equipment and procedures vary



Cindy Goff/Dreamstime.com

depending on the material at-hand.

"In the past, everything was close to 100 percent steel," says Eric Sponhaltz, national sales and marketing manager at H&S Autoshot. "Steel car equals a steel repair procedure."

Sponhaltz continues speaking to the mixed materials technicians face today.

"The present and future [is comprised of] mixed metals. [For example,] the advent of aluminum, [and] high strength steel entering the mix of cars; the reason for that is they're much thinner and much easier to work with, but they require a different tool and a process than your traditional mild steel," Sponhaltz explains.

As the material awareness grows more prominent throughout the industry, an information gap may still exist regarding the tools and equipment that shops can utilize to handle the different materials pulling into their bays. Not only may different equipment be needed, but welding procedures themselves will be adjusted accordingly per the material

being repaired. Sponhaltz explains some of the differences to keep in mind when repairing aluminum and high strength steel versus traditional mild steel.

"That repair process is different because at least in our world, aluminum acts completely differently than steel," Sponhaltz says. "It contaminates easily. It breaks down easily. It corrodes easily. There are different procedures and techniques that have to be used in an aluminum repair than those [used] in a steel repair. High strength steel and aluminum in vehicles are thinner metals, so they're going to melt at lower temperatures, and the welding technique is going to be affected when putting the car back together."

Sponhaltz advises that a traditional steel stud gun will not be the answer for a technician welding a pin to an aluminum panel to pull a dent, as the heat applied from the gun will likely burn a hole through the panel of aluminum. H&S Autoshot utilizes a technology known as

➔ PRODUCTS RELATED TO THIS REPAIR



Dent Fix Equipment

MAXI DF-505/220V
For more information visit
VehicleServicePros.com/
21143383



Polyvance

Hot Spot Cordless
Plastic Stapler
For more information visit
VehicleServicePros.com/21039886



H&S Autoshot

Dual-Spotter Deluxe,
No. UNI-9700

For more information visit
VehicleServicePros.com/20844073

capacitive discharge in order to deliver the necessary power in short timeframes to avoid overheating the welded material.

Another difference when dealing with aluminum is that the metal oxidizes quickly. During preparations, the surface will need to be brushed with a stainless-steel brush dedicated to only aluminum repairs to avoid cross contamination, Sponhaltz recommends. Furthermore, aluminum does not have the same “memory” as mild steel, so a different technique will need to be utilized when pulling an aluminum dent versus a steel dent.

“In order for you to create a new memory, not only do you have to start pulling on it with a pulling tool, you have to also apply heat while you’re pulling so that you give it a new memory,” Sponhaltz says. “There’s a whole other tool, and a whole other bag of tricks you’re going to need to work with aluminum than you would to work with steel.”

As procedures and equipment adjust according to the metal at-hand, so are there changes to welding repairs when handling plastics. Kurt Lammon, president of Polyvance, explains that some shops may not be performing plastic repairs whatsoever, as they may perceive obstacles that prevent them from completing such repairs. A major reason shops may avoid repairing plastics is the belief that insurance will not pay enough to complete the repair. But in fact, shop owners who initialize welding services

for plastic repair may find they can avoid facilitating replacements and even bring more business in-house.

“Unfortunately for the shops, the profit margin on replacement parts is not as high as the labor profit margin,” Lammon says. “They need to look as much as possible for opportunities to sell labor, and plastic is a great place to look for that because plastics almost always are not structural items. Bumper covers, headlight tabs, inner fender liners, washer bottles ... you open the hood and probably 90 percent of what you see is made of plastic, other than the engine block itself. There is a lot of opportunity for plastic repair in collision damage. Shops just need to be able to have the right equipment and training to take advantage of that, so they can increase their gross profit margin overall by doing more labor and billing for more labor hours.”

THE MORE YOU KNOW...

A reason shops may turn to replacing parts, or subbing work out to nearby shops, or even turning business away, may be because they do not have the right training on the service requested. Not only that, but should insurance not allow for the necessary time to complete a repair, welding may not be fiscally worth the trouble for the shop. This is why welding equipment manufacturers emphasize providing education and training on their equipment and the welding services such equipment can render.

“We hold several clinics a year throughout the U.S.,” Swanson says. “It’s a clinic to show technicians and shop proprietors how the equipment works. It’s a clinic to review with them what that metal is, the characteristics of that metal, and our recommendations on how to work with that metal, using a lot of what we know, what OEMs have suggested, and what I-CAR has suggested.” Swanson continues to say that such education is not only intended to teach best practices, but that those armed and trained with such knowledge can defensibly dispute insurance time constraints.

“We’re giving them arrows for their quiver,” Swanson says. “When that [insurance] agent comes in and they want to be argumentative over a repair process, now they (the shop owners and/or technicians) have something.”

Swanson says explaining times and procedures needed to work with varying materials can assist in receiving more time to complete repairs and bill labor hours, ultimately yielding a more profitable collision repair shop.

It takes many elements woven together in order to successfully handle today’s collision repairs. Having the right tools and training for the shop can help avoid subbing repairs or steering work elsewhere. Educating and training can help a shop ensure more billable hours. Preparing the shop to handle more materials, more vehicles – old and new – can lead to more business. 🛠️

The importance of asking “why?” with ADAS repairs

Highlighting key elements needed for a proper calibration.

by Sean Guthrie, Contributing Editor

Technicians take note: Advanced driver assistance systems (ADAS) are here with more on the way. There is significant benefit to the general population with increased implementation and increased ability of these assistance systems. By all accounts, these systems will result in a decrease in the quantity of collisions, and hopefully reduce vehicle-related casualties. This will come with an increase in the cost and complexity of repairs, however, and it is vital to understand how crucial accuracy is in every aspect of the job.

As humans, we desire to understand. The question of “why?” is undeniably important now. In meetings with my team and/or with subtle vendors I like to play the part of an unwise, uneducated individual. I like to ask “why?” a lot. I want them to give me explanations beyond the textbook answers they simply memorized and are repeating. It is important that we all think for ourselves and seek answers; neither this article nor any other article can answer all of the “whys” we are going to have. What I am hoping for is that I can give some foundation that will allow for further answers.

THE ELEMENTS OF A PROPER REPAIR

When we dig deeper into the actual implementation of repairs on ADAS, there is a huge gap between the current status quo and a proper repair. We are asked to

spend more time performing operations that can be difficult to accomplish. It can be difficult to quantify the time required for such repairs, and a challenge to receive fair compensation. Along with time and expense, these operations demand more understanding to accomplish and subsequently teach to others, and they require more knowledge to negotiate.

The hurdles for shop estimators are three-tiered. First, they have to believe in the need to write for the operations;

In order for all the systems to work, all systems have to be in alignment. The body must be straight; tires must be straight to the body, and the sensors must be calibrated to the same straight line.

secondly, they then have to ensure the technicians understand and will perform the operation; and lastly, they have to be knowledgeable enough to negotiate payment.

Many times technicians are taking on the responsibility of the research aspect, knowing that they are held responsible for the repairs. For the technicians, their burden includes having to negotiate with their managers, teach

their fellow teammates, and overall raise awareness. Knowledgeable insurance adjusters have their own struggles; they face the difficulty of getting shops they work with to comprehend and acknowledge the need which will likely present enormous adversity.

As we continue to explore new territory, the foundation of accuracy will remain and the demand to do it just as the OEM specifies will be increasingly imperative. Currently, we know that most of these systems work in a similar fashion and so far, all of the new systems continue to work in the same way. As we all figure out how to create a process that works, we must also consider that it is feasible to believe that the way these systems function will evolve, just as the ability of these systems evolve. That may make some repairs easier and others more difficult. Regardless, the foundation of accuracy will be critical.

One step that is nearly always required to properly calibrate ADAS is ensuring correct suspension and body alignment. This step may not be listed on all the repair procedures for the ADAS calibration. A lack of alignment verification may be due to the assumption, made by manufacturers, that the calibration is being done on an undamaged vehicle.

Another reason why this may not be in the repair procedure for the ADAS calibration is because many OEMs have special procedures that must be performed on every repair. “Inspections required after a collision” is a prerequisite for every



Nitrogen Welding System
 Digital temperature controls, precision flow control, includes nitrogen generator, cart and accessories.
P/N: 8202



A) Bumper Pliers Kit
 Set of six slot tab dies & one hole die w/matching plier die for quickly welding slot tabs & clip holes in bumpers.
P/N: 6146

B) Bumper Rollers
 Set of three contoured, heavy-duty rollers for removing dents & reshaping body lines in plastic bumpers.
P/N: 6148



C) Bumper Bag Plus
 Used as a dolly on plastic bumpers for removing dents. Great for padding floor jacks & adjusting door and hood gaps.
P/N: 6450

D) Sensor Hole Cutter Kit
 Set of heavy duty, clean-cutting sensor hole cutters in the most popular sizes for installing sensors in bumpers.
P/N: 6149

For more information visit VehicleServicePros.com/11195663

To see more Polyvance products visit: www.polyvance.com

Polyvance
 (800) 633-3047
 (256) 638-4103 info
www.polyvance.com

Photo credit: J. Anello.

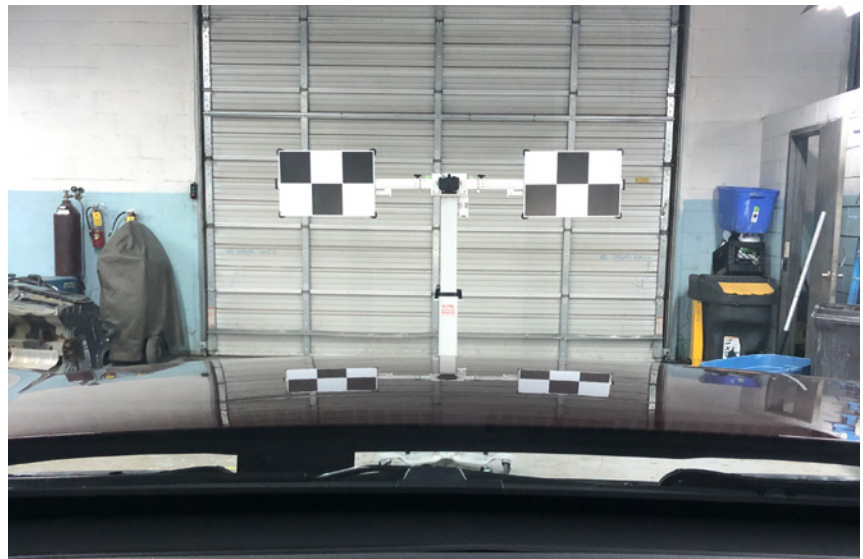
repair procedure. Many of those state that you must “perform four wheel thrust alignment and/or measure unibody or frame for structural alignment” after a collision. So why is this consideration so important?

In order for all the systems to work, all systems have to be in alignment. The body must be straight; tires must be straight to the body, and the sensors must be calibrated to the same straight line. If the alignment is straight but the body is sitting crooked, that will cause a problem. Some sensors are calibrated to the direction of travel while others are calibrated to the vehicle center line. Looking at and understanding how a car interacts with itself can often help you to further understand proper repair procedures.

Let’s assume the wheel alignment is perfect, steering wheel sits dead level when driving straight, and the steering angle sensor is calibrated to zero. Now imagine that the front structure is askew 5mm to the left. We adjusted the gaps, and the fender gap is good to the left door well within factory tolerances; hood gap is good, bumper looks good, our technician is proud of a job well done and doesn’t think twice that the adjustments are maxed out. After all, if the OEM didn’t want you to use that much adjustment room, why would they have made the part with that much?

We follow the OEM repair procedures for the ADAS calibration, hang a plumb bob off the front emblem and another off the rear, shoot a laser to intersect both, and mark the ground. Targets are set at the exact location that is required.

All measurements are checked and double-checked. The location of that target is square to the center line, but remember, that center line is unknowingly off 5mm to the left. Now the sensors aren’t 90 degrees to the back half of the body, and they are certainly not 90 degrees to the direction of travel (or if it’s a front camera calibration, it’s not



perfectly parallel to the direction of travel). Instead, whatever target we place will be off just slightly. At 100” (distance away for many targets) it may just be 1” off; it’s only off by 1 percent, but these sensors read 100 yards, which means that 1” turns into one yard. One yard off could miss seeing an object all together, and thus the system won’t operate correctly. The thrust alignment can create the same issue; a sensor can be aligned to a straight body, but a car going down the road just 1 degree off, due to a thrust alignment issue, at 100 yards is mathematically off nearly one yard.

OTHER FACTORS AFFECTING CALIBRATION

Many calibration procedures require that all the tires are checked and set to the correct pressure, are the correct size, that the car isn’t overloaded with personal items, and that the fuel load is at a specific level. Why? The angle of the height of the car front to back dictates where the sensor will look up and down. When the target is placed at the exact right distance from the sensor, at the exact right height, the computer is expecting the angle of the car to be exactly right. If the front tires are low, or the fuel load to low and those items are corrected at a later date, the car

While performing collision work involving sensor calibration, targets must be set at the exact location that is required for a proper repair.

will have an angle that the sensor cannot compensate for.

The sensors do have a range to operate in, and it’s just large enough for when all things are perfect. Alter that range by not checking all the boxes before performing the calibration and you may alter the vehicle’s angle by a degree or more. That could mean the sensor is looking at the sky or at the ground instead of at the object directly in front of it. Again, the same 1 degree at 100 yards translates to 2.5’ of misalignment. As the sensor is looking for the center of a car at 100 yards, 2.5’ of height misalignment could have it looking at the ground, or right above a normal size sedan.

Vehicles have a requirement that calibrations are performed with a bumper R&I (remove and install) or a windshield R&I, not just after a replacement or removal of the sensor itself, but after simply taking the components off directly in front of the sensors, why? When the sensors are looking through a bumper, an emblem, or the windshield it is like a human looking through a set of glasses. Glass lenses are cut in such a way that

➔ PRODUCTS RELATED TO THIS REPAIR



Autel

MA600 Mounting Plate Package, No. MA600RAP

For more information visit VehicleServicePros.com/21145921



CAS

Gscan-3 Scan Tool

For more information visit VehicleServicePros.com/21124537



CEMB

Wheel Alignment System with ADAS, No. DWA1000ADA

For more information visit VehicleServicePros.com/21069079

Chief Collision Technology

Mosaic Advanced Diagnostic Technology

For more information visit VehicleServicePros.com/21113768



the focal point of the lens is in line with the center of the eye. Moving the lenses one direction or another can alter the lens's shape and thus change the optics of the lens.

Think of a scope on a gun. If the scope is altered by a fraction of a millimeter on the gun barrel, then at 100 yards the target will be missed. Sighting in a scope requires that the target is hit dead-on the bullseye at close range in order to ensure that at maximum distance the target can still be hit. Altering the optics for the sensor less than an inch in front of it can cause the sensor to believe that center is in just a slightly different spot. The only way to ensure that its center is correct is to re-calibrate.

KEEPING WITH THE CHANGES

Bottom line, we are at a crossroads with

the current status quo. Manufacturers are rightly forging ahead with assistance packages to avoid a crash rather than trying to simply make a vehicle safer during a crash. However, they are lacking in providing methods to ensure all those systems are working correctly. The only way to ensure they will perform correctly after a repair is to properly calibrate the system. There is a huge need to follow procedures to be sure vehicles are being properly handled, repaired, and aligned. There is also a huge need for there to be more understanding between shops and insurance companies, and for all parties to have more knowledge regarding the entire process and the functionality of the vehicles that are being produced with these systems.

As we all move into new territory in this industry, it is going to be

imperative that we find a way to work together to ensure that vehicles are safe, all parties are being fairly compensated and educated, and that we are able to truly understand the “why” behind the questions. 🎯



Sean Guthrie is the director of operations for Car Crafters Collision Centers in Albuquerque, New Mexico. Guthrie oversees the seven locations handling their DRP and OEM relationships. He is I-CAR platinum, ASE certified, multiple OEM-trained, and sits on two advisory boards.

www.searchautoparts.com/abrn/author/sean-guthrie

To read the full article, go to <https://www.searchautoparts.com/abrn/commitment-training/importance-asking-%E2%80%9Cwhy%E2%80%9D-adas-repairs>

Polyvance 6076 Bumper Stabilizer

This technician says the unit speeds up the process and helps prevent damage during the repair.

by Sara Scullin, Editor



THE REVIEW:

Sheridan Bailey, a body technician at Honda World in Westminster, California, has been doing bumper work for close to 25 years. He knows the job is not always straightforward; additional care must be taken to avoid damage to these often-unwieldy pieces during the repair process.

"I used to work at a Dodge dealership years ago, and a lot of [those] two-piece bumpers are very difficult to put together," Bailey says. "Some of these pieces are five, six feet long, and they are very thin and flexible. It's difficult – especially when they've been painted – to put them back together on your own. You might struggle to do it yourself and it can result in scratching the bumper, or if it's a textured piece you're trying to put together, [one might] damage the texture."

Recently, Bailey has reached for Polyvance's Bumper Stabilizer to assist with disassembling and

reassembling bumpers.

At Honda World, Bailey still encounters two-piece and three-piece bumpers. He

says the Polyvance unit acts as "another pair of hands" as it holds parts in place and in a certain position while he works to put pieces together, disassemble, or do the repair.

"It's great for doing front or rear bumpers," he says.

"Some of those bumpers, once you take them apart, are very awkward. It's great just to be able to support them, get in there with a heat gun ... do the repair, and not have to worry about [bumper parts] moving around. This holds them in a very sturdy position so you're able to do the repairs and attach the two pieces together very simply," Bailey says.

The bumper stabilizer comes with a frame, clamps, bungee straps, and a manual. Bailey reports the stabilizer is

PRODUCT DESCRIPTION:


The **Polyvance 6076 Bumper Stabilizer** attaches to a common scissor stand and is designed to support the bumper from above using included bungee cords and adjustable anchor points. Six adjustable overhead anchor points support the included six adjustable bungee cords. The bungee cords are used to hold the bumper and trim components in their relative positions, eliminating the fear of accidentally dropping and damaging a freshly painted fascia. The bungee cords can also be used to hold a bumper in a position for better technician ergonomics and to hold a cracked bumper together, taking the tension off the plastic so the damage can be properly repaired.

very easy to use and setup is minimal, adding a lot of it comes down to personal preference – from the length of the elastic straps to the way the straps hang.

Because the unit helps keep large bumper sections stationary, Bailey says it cuts down on bumper damage after being painted, damage to textured pieces, and accidents to the bumper.

"Quite often [with] a conventional bumper stand, the bumper will get heavy on one side and roll off and you can end up scratching or damaging it. This just holds it in place and you don't have to worry about any of that. All the straps are adjustable, so you can adjust it to fit different, multiple styles and kinds of bumpers.

"Any body technician working on a multipiece bumper would benefit from this 100 percent; it just makes the job so much easier," he says.

"With the way the industry is going right now, it's coming down to getting the job done quicker, and to do quality work, and still making money at it," Bailey concludes. "Anything that can help make the job faster is definitely a bonus." 

Dent Fix Equipment MAXI DF-505/220V

The quick setup won over this tool reviewer.

by Kayla Oschmann, Assistant Editor

THE REVIEW:

Setup time can make all the difference when selecting which piece of equipment to use for a job. This holds true for Jack Thornton, autobody technician at Brennan Bodyworks in Orlando, Florida. Although he has another dent pulling station in the shop, he prefers the Dent Fix Equipment MAXI DF-505/220V because it's easier to set up and easier to maneuver around the shop.

"[The MAXI] doesn't come with a big, bulky station," Thornton says. "The other one we have pretty much does the exact same [work], but it's a lot harder to set up and speed-wise we obviously want to be efficient."

The setup time was just minutes, Thornton says. It's a matter of unrolling the cord, plugging it into the wall, and once the metal is cleaned, the machine is attached and ready to go. Once the metal work is done, technicians then sand it down and start on the filler work. Thornton noted that sometimes he didn't have to do filler work because the machine pulled the dents out nicely.

Brennan Bodyworks is a collision repair shop that specializes, and is certified, in Audi and Porsche. Thornton has used the MAXI on most, if not all, Audi's that have steel panels, as well as Porsche. "I've used it on any steel panel that you can repair; it's very versatile," Thornton says.

He did note that there are guidelines to follow from manufacturers to know what can be repaired versus what needs to be replaced. For example, if there is a kink in a rear body panel that has been dented but is in a certain crush zone, that panel needs to be replaced, he says. If it's a couple of dents that are pushed in a bit, then he will use the MAXI to pull them out.

His favorite feature is the handle. He likes how he can use the lifter bar and attach a welded rod (included) to pull out dents with leverage off another adjacent panel, or wheel, without causing any damage.

In addition, Thornton noted the MAXI has different settings that can be adjusted depending on the job and that it comes

PRODUCT DESCRIPTION:

The Dent Fix Equipment MAXI DF-505/220V is a 220V, single-phase steel dent pulling station that provides the technician with the power they need to shrink, pull rocker panels, hail damage, creases, dents in hard-to-access areas, and repair all types of metal damage. According to the company, the tool's efficiency increases productivity while producing a cleaner, better repair. With the addition of the Magnetic Key Electrode, the MAXI can now weld flat or twisted keys tightly together for a more controlled pull. Users can expand their pulling arsenal with the optional Bridge Puller (No. DF-505BP) and Ding Massager (No. DF-505DM).



with several attachments that can be easily changed.

Instructions were included. Although, he said the machine was easy to understand and that he was able to figure it out. He did read the precautionary items for safety.

"It's an advanced tool, but at the same time it's a simple tool," he says. "It's pretty self-explanatory."

He made one slight adjustment to the unit. He switched out the magnet on the grounding clamp with a magnet that he is able to turn on and off. The original magnet collected metal shavings and with the replacement magnet, he can drop the metal shavings easily.

"That's the only thing I changed on it, but that was just my preference," he says. "The magnet was fine."

According to Thornton, the Dent Fix Equipment MAXI DF-505/220V is a great tool, and he loves having it in the shop.

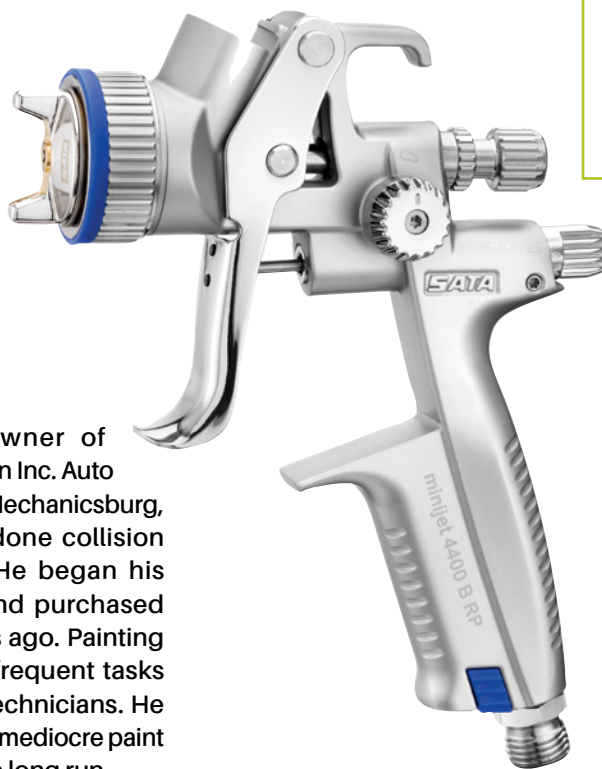
"Once you learn how the tool works and the settings [necessary for each job], it's a 'grab and go' tool to get your job done efficiently and effectively and still put out quality work," he says. ●

SATA Spray Equipment

SATAMinijet 4400 B

The compact paint gun is versatile, easy to clean, and performs a quick spot repair.

by Sara Scullin, Editor



THE REVIEW:

Eric Shaffer, owner of Thomas E. Brown Inc. Auto Body Werks in Mechanicsburg, Pennsylvania, has done collision work since 2004. He began his career at Browns and purchased the shop three years ago. Painting and refinishing are frequent tasks for Shaffer and his technicians. He learned quickly that a mediocre paint gun won't cut it in the long run.

"It comes down to atomization of product, function ... and overall usability," Shaffer says. "I'm not saying that you can't get a good result with an [inexpensive] gun ... but what's the longevity of it?"

He says the 4400 B is a "small gun with a huge impact," adding that the tool is "versatile, easy to clean, and can achieve spot repairs quickly with a flawless finish."

The SATAMinijet 4400 B arrived at Shaffer's shop with all the necessary parts

and accessories. He was pleased with the unit's high-quality packaging, additional gun tools, and RPS (Rapid Preparation System) cups. Before use, Shaffer placed a high flow air fitting on the unit and filled the SATA RPS cup. He said the paint gun fit in the palm of his hand and was easy to spray.

"What most people don't know [about the 4400 B] is it's really versatile; you can use it in the paint booth for a base coat,


PRODUCT DESCRIPTION:

The **SATAMinijet 4400 B** from **SATA Spray Equipment** is a compact spray gun that is ideal for large repairs to small detail work, especially in areas of difficult access. For users trying to touch up a small scratch on the edge of a panel or just small stone chips in a blend area, the fan size is flexible, functional, and easy to adjust, according to the company. It is designed to ensure finishes in various fields of application, and the SR nozzles are suitable for spot repairs on vehicles. The spray gun is balanced with its ergonomically shaped handle. The fan size and shape with the 1.2 SR nozzle size is also suitable for spraying UV primer.

you can put clear coat on with it, even down to priming small areas," Shaffer says. "So really, you can use it in every aspect of the business. You're not going to spray a bus with it; you're not going to spray a whole truck. That's not what it's for. But if you're focusing on spot repair or something small that you just need to get done, it's the perfect tool."

Shaffer also uses the gun as a UV primer, urethane primer, and sealer, in addition to base coat and clear coat applications. He notes the product fits all three sizes of SATA RPS cups, just like a full-size gun.

For Shaffer, the SATAMinijet 4400 B offers a lot of value in a small size.

"To put it in perspective, the 4400 B is a must-have gun that you can use in multiple areas of a repair ... and did I mention less waste?" Shaffer concludes. "When you find something that works well, you stick with it." 



USES OEM REPAIR PROCEDURES TO GUIDE TECHNICIANS

The **Chief Collision Technology Mosaic Advanced Diagnostic Technology (ADT)** is designed to help customers navigate the complex future of collision repair. ADT features self-diagnostic targets and vehicle sensor checks, as well as enhanced radar and laser information sequencing, which means no manual measurements or adjustments are required. It also offers automatic software updates with the latest OEM repair procedures, and specialized technician training and remote diagnostic support by an ASE-certified technician to help ensure an error-free calibration. In addition, it features a full recording of the calibration process and repair history of the vehicle to document that the OEM repair procedure was followed.

For more information visit
VehicleServicePros.com/21113768



ACCESS HARD-TO-REACH MOLDING CLIPS

The **S & G Tool Aid Corp. 4-pc Clip Removal Tool Kit**, No. 87850, is designed to assist with the removal of plastic wheel house, rocker, and door molding clips. The clips are not damaged and can be reused, says the company. Both the right angle and off-set angle clip removal tools have an overall length of 21" to access hard-to-reach molding clips. The Clip Removal Tools are patent pending and are designed for pulling and pushing to remove the clips.

For more information visit
VehicleServicePros.com/21128809

VARIABLE SPEED RANGES UP TO 3,000 SPM

The **Equalizer Extractor Mini** is a compact, cordless tool ideal for working comfortably and safely in tight, confined spaces. With variable speed ranging from 0–3,000 spm, the tool provides aggressive cutting action. The Extractor Mini works great for quarter glass and vent glass removals, as well as for removing insulated glass units, and more. The kit includes two 12V Li-ion batteries rated at 1.5A hours each, 120V 30 minute battery charger, two blades, and a plastic carrying case.

For more information visit
VehicleServicePros.com/21094202



RELEASE SEIZED PARTS AND PANEL BOND ADHESIVES

The **Induction Innovations ALFe 5.0 Induction Heating System** is designed for heavy duty applications and repair shops. Capable of heating aluminum and steel, the ALFe 5.0 is ideal for those that require high-end heat levels to release seized parts and panel bond adhesives. The tool can also be used in the straightening, hardening, curing, and annealing processes. It features 208V/20A/P3, 30-minute duty cycle, LED indicator, and a safety shut-off. The ALFe 5.0 machine delivers precise, safe, and reliable heat all while saving time, consumables, and salvaging parts normally discarded in the repair process.

For more information visit
VehicleServicePros.com/21121162



UPDATED REMOTE SUPPORT FUNCTION

The most recent **G-scan Software Update** from **CAS** adds 33 additional car line software updates for G-scan2, G-scan3, and G-scanTAB, including developments for domestic passenger cars, import vehicles, light trucks, vans, and commercial vehicles. Additionally, customers using G-scan3 are able to view on-tool videos providing guidance for multiple procedures. Customers under a current subscription are able to update their G-scan immediately to take advantage of all the latest additions and enhancements.

For more information visit
VehicleServicePros.com/21140855



FEATURES FULL-COLOR 2.8" SCREEN

The **Firepower FP Series Manual Plasma Cutting Machines** feature an advanced LCD interface that simplifies setup and operation. Operators are able to make all adjustments with just one knob. The FP-25i offers the convenience of connecting to standard 115V household current, produces a rated cut on 5/16" steel, and has a 25 percent duty cycle rating at 25A. The FP-35i and 45i connect to 230V current to deliver more cutting capacity and 35 percent duty cycle at 35A and 45A outputs, respectively. The FP-35i offers a rated cut on 1/2" steel, while the FP-45i delivers a rated cut on 5/8" steel. The series offers two trigger control modes and two cutting modes. They come with a 60A torch and 15' cable.

For more information visit
VehicleServicePros.com/21140628

ALLOWS USER TO ADJUST THE FLOW TO SUIT THE THICKNESS OF THE PLASTIC

The **Polyvance Nitrogen Plastic Welders 8000 Series** feature patent-pending technology created by Polyvance to make the welders easier to maintain and use. All welders offer automatic low-flow power cutoff protection, precision flow valves to allow the user to adjust the flow to suit the thickness of the plastic, and a direct-reading flow gauge for repeatable performance. The 8000-series welders also feature a quick-change hose and wiring assembly, which makes it easy to replace a damaged hose or torch handle, reducing downtime and increasing productivity. Each welder comes with unlimited access to Polyvance's online video training library, the Polyvance mobile app, and telephone technical support.

For more information visit
VehicleServicePros.com/21091734



INCLUDES SEVEN BODY AND FENDER REPAIR TOOLS

The **Body & Fender Fiberglass Set**, No. 647KFG, from **Martin Tool & Forge**, includes seven body and fender repair tools with fiberglass handles. The tools included are a Cross Chisel Curved Hammer, a Shrinking Hammer, a Utility Pick Hammer, a Light Dinging Spoon, a Toe Dolly Block, a Heel Dolly Block, and a General Purpose Dolly Block. Made in the U.S.A.

For more information visit
VehicleServicePros.com/21144787

DESIGNED TO ELIMINATE BURN-THROUGH

The **Spanesi PULL UP Repair System** utilizes various size suction cups and glue to restore the shape of damaged steel and aluminum panels. Repairs are performed by the use of slide hammers or an optional electro-puller tool. The repair system eliminates burn-through and repair times, parts, and materials are all decreased. The PULL UP Repair System is available in two packages: standard and full. Each package is designed to meet the requirements of automotive repair professionals.

For more information visit
VehicleServicePros.com/21129224



QUICK BLADE INSTALLATION AND REMOVAL

The **Makita Recipro Saw**, No. JR3051T, features a 12A motor that delivers up to 3,000 spm. The longer 1-3/16" stroke provides a faster cutting performance. Its large, two-finger variable speed trigger provides the correct amount of power for a variety of applications and is designed for convenience. The tool-less blade change allows quick blade installation and removal. A soft-grip handle and the well-balanced ergonomic design provides comfort and reduces operator fatigue. The JR3051T also features a pivoting fixed shoe and an on-board tool hook that secures the tool when not in use.

For more information visit
VehicleServicePros.com/21133434



LAYS FLAT FOR SMOOTHER SURFACES

The **Dent Fix Equipment Angled Finger Belt Sander**, No. DF-FBS20, is designed to lay flat on a panel while sanding and reach areas with limited access or maneuverability. The angled arm rotates 360-degrees to allow access into tight areas, and to fold the tool in half for storing. The sander also features speed control to allow the user to adjust the rpm according to the job and a removable arm guide allows the user to sand a specified distance from edges, flanges, and corners. For convenient storage, disengage the armlock to rotate the arm into a foldable position.

For more information visit
VehicleServicePros.com/21120939

PORTABLE WITH BUILT-IN COMPRESSOR

The **H&S Autoshot Nitro-Weld Plastic Welder**, No. UNI-8100, is designed to be an all-in-one solution for plastic repair needs in the shop with hot staple, hot iron, and plastic welding capabilities equipped. The system features a built-in air compressor and contaminate-free nitrogen hot iron/staple capabilities when reflowing or stapling, making it ideal for professionals. The built-in compressor eliminates hoses and noisy shop bleed air, while allowing the system to be completely portable. The system also offers digital control with two torches for both air welding and hot staple/reflow functions. It runs on 115V and features an easy-to-use interface panel, alarm indicator for low/no gas pressure, adjustable settings, power settings for both hot staple and hot melt/reflow, visual indicator nitrogen alert, and hot air mode for gas conservation.

For more information visit
VehicleServicePros.com/21133319



FEATURES A VARIABLE SPEED TRIGGER AND DIAL

The **DeWalt 20V MAX XR 5" Variable Speed Random Orbit Polisher**, No. DCM848, features a brushless motor and variable speed trigger and dial. It achieves a no-load speed range of 2,000-5,500 opm with a 15mm throw for a variety of applications including detail work on cars, headlights, windshields, and fiberglass. The tool is designed to be held either by its front-end gripping area or side handle. The battery housing is positioned away from the head of the tool and its rubber molding helps to protect the tool and the work surface, as well as helps the user grip the tool.

For more information visit
VehicleServicePros.com/21110244



FEATURES A LOW-PROFILE AND IS WATERPROOF

The **3M Automotive Precision Poly Tape** is designed to help users tape with ease, precision, and accuracy. The tape features a unique polyethylene formula that is low-profile, durable, waterproof, and highly conformable. With long-lasting UV resistance, it can stay outside for a full week before risk of adhesive transfer, the company says. The pliable backing gives the user control and maneuverability around curves and body lines, while the indicator lines show when it's stretched too far. A clean, straight tear helps reduce slivering and leaves a professional edge without the need for razor blades or tools.

For more information visit
VehicleServicePros.com/21137226



LOW-SPARK GRINDING WHEEL

The **Innovative Products of America 3" 3-in-1 Diamond Grinding Wheel**, No. 8151, is designed for grinding, deburring, surface prepping, cutting sheet metal, fiberglass, and more. With three different cutting areas on each wheel, the 3-in-1 Diamond Grinding Wheel grinds, cuts, and undercuts, providing access and versatility for many applications. Through the use of a unique core bonding technology, the grinding wheel offers low sparks, odor, and debris. It is available in three sizes: 4.5", 3", 2". The grinding wheel is for 1/4" and 3/8" arbor die grinders.

For more information visit
VehicleServicePros.com/21129298



MOUNTS ON WHEELS TO MOVE EASILY AROUND SHOP

The **TEXA Radar Camera Calibration System (RCCS2)** has a robust main support with electrically powered height adjustment and a practical knob to tilt the unit with respect to the vehicle. The horizontal bar is equipped with two distance meters and a sliding reflector plate with a central laser. An additional laser at the top of the structure locates the center of the vehicle simply pointing at its front badge. These combined technologies allow the system to be easily aligned by one operator. After positioning the unit, all calibrations can be performed simply following the step-by-step procedures of the TEXA software.

For more information visit
VehicleServicePros.com/21131893

COMES WITH FIVE DIFFERENT OFFSETS

The **Cal-Van Tools 5-pc Trim and Panel Clip Tool Set**, No. 113, is ideal for removing plastic fasteners, plastic clips, upholstery, and door panels. The set comes with five different offsets with a range of three spreads from 5mm, 7.5mm, and 11mm. The Trim and Panel Clip Tool Set features a high polished chrome finish and rubberized handles for additional gripping power, a foam organization tray for storage, and is backed by a limited lifetime warranty.

For more information visit
VehicleServicePros.com/21131602



FEATURES AN OVERALL LENGTH OF 13.8"

The **SP Air 4" Extended Reach Cut Off Tool**, No. SP-7234, has an overall length of 13.8" and weighs 3.3 lbs. The SP-7234 uses a disc size of 4", can reach a free speed of 14,000 rpm, and has an air consumption rate of 0.85m3 per minute. Features include a rear exhaust, a wheel cover, and a safety lever on the handle. Accessories included are one wheel wrench, one hex wrench, and one No. SP-7234-100 cutting wheel.

For more information visit
VehicleServicePros.com/21087160



NEW



ADAS CALIBRATIONS MADE EASY

TEXA has proudly introduced to North America its famous Radar Camera Calibration System (RCCS2) offering a complete range of functionalities for all ADAS systems. Also "2" identifies the second generation of this powerful tool that was engineered and launched by TEXA back in 2016. After 4 years of ADAS experience all over the world the company has introduced its professional system also in the US. TEXA has mastered all aspects of ADAS calibrations offering technical solutions and technologies that simplify the vehicle positioning and its calibration.

Working on ADAS systems has never been this easy thanks to an intuitive software, detailed step-by-step procedures, targets sized according to OE specifications, US based tech support and innovative solutions like laser meters and levels.



Reflector for blind spot radar calibrations



Mobile and easy "all around" system for Volkswagen 360° camera calibrations



Contact us for more information about our diagnostic solutions.

For more information visit
VehicleServicePros.com/10094929

TEXA USA Inc.
409 Joyce Kilmer Avenue
New Brunswick, NJ 08901
www.texausa.com
northamerica@texa.com
+1 855.200.8392

TEXA