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On Target

Ford Parts

For Ford and Lincoln wholesalers and the collision repair industry

Ford and I-CAR® Discuss Variations in OEM Service Parts

Continuing to honor the Ford Motor Company mandate to provide important and timely collision repair information, Gerry Bonanni, senior damageability engineer for Ford, recently joined I-CAR® technicians Bud Center, Scot VanHulle and Jason Hauboldt on a new episode of I-CAR®'s *Repairers Realm* video series, to discuss the variations that can be found in OEM service parts.

Center noted that some of the challenges faced by today's technicians include service panel parts that may not have guide holes or markers in the same location as they appear on the production panel they are repairing or replacing.

VanHulle confirmed that sentiment, stating that collision repairers will have to adapt while also noting that sometimes the discrepancy may or may not be noted in repair information, depending on the OEM.

Gerry Bonanni

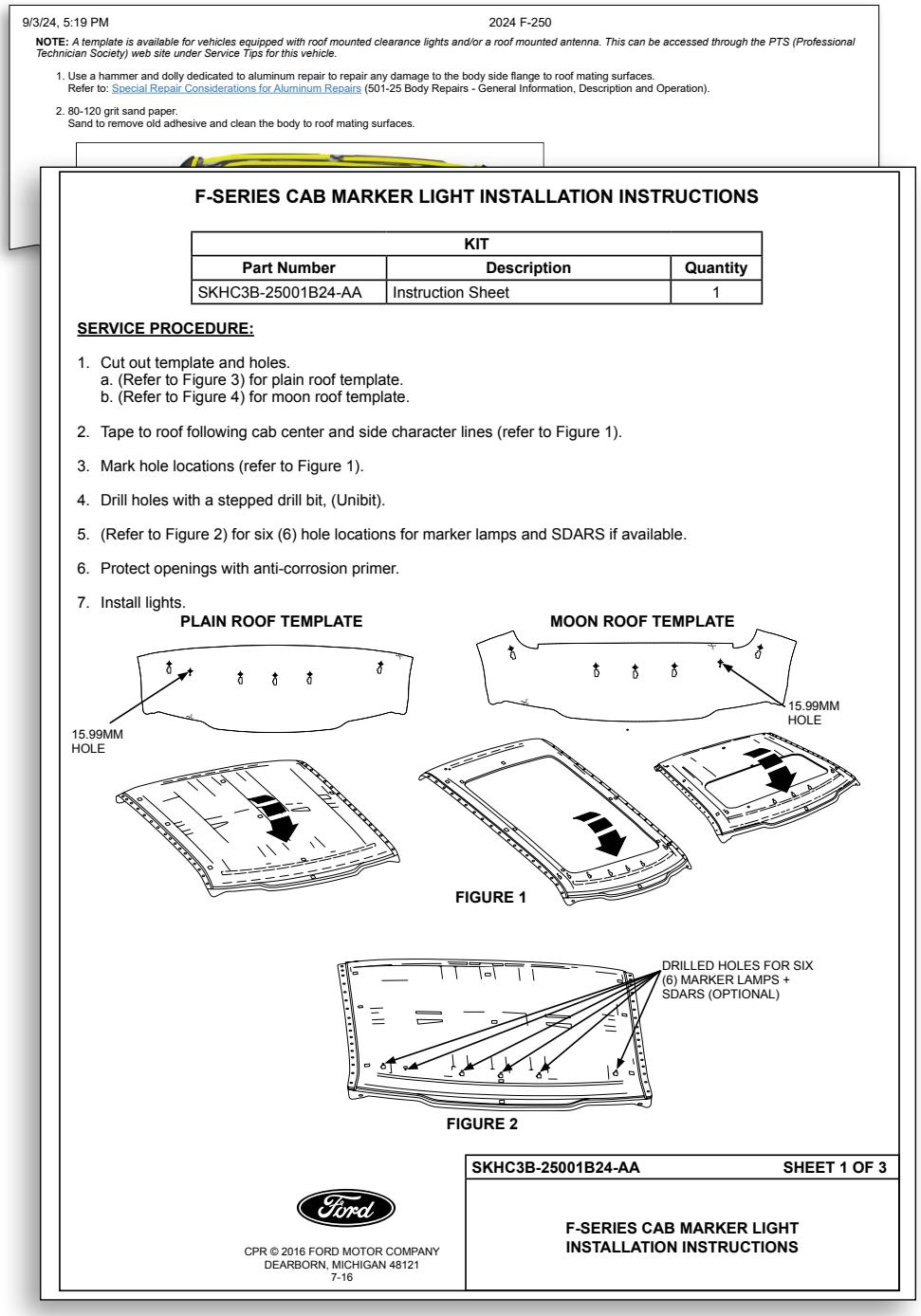
For Ford, Bonanni noted this is referred to as an "extraction point"—when a part is removed from tooling and the production line to be used as a replacement service part. The variation in the service part occurs because certain guide holes or other markers are pierced on the vehicle structure as part of its run on the assembly line *after* the extraction point for a particular part has occurred. The piercing operations are done when the vehicle is a completed body, just prior to the e-coat process.

As an example, Bonanni stated that the guide holes for grille opening reinforcements or apron attachments are pierced only after the body has been assembled to obtain tighter tolerances, which helps align bodylines. Because of that, repair technicians will need to cut the new guide holes.

"Commonly, if we have that situation, we include an instruction sheet, which tells the technician where to cut [and] how to modify the part," said Bonanni.

In addition to the instruction sheets, Bonanni noted that some service part templates are also available. "Basic body work 101," said

Continued on page 5



9/3/24, 5:19 PM 2024 F-250

NOTE: *A template is available for vehicles equipped with roof mounted clearance lights and/or a roof mounted antenna. This can be accessed through the PTS (Professional Technician Society) web site under Service Tips for this vehicle.*

1. Use a hammer and dolly dedicated to aluminum repair to repair any damage to the body side flange to roof mating surfaces.
   Refer to: Special Repair Considerations for Aluminum Repairs (501-25 Body Repairs - General Information, Description and Operation).
2. 80-120 grit sand paper.
   Sand to remove old adhesive and clean the body to roof mating surfaces.

F-SERIES CAB MARKER LIGHT INSTALLATION INSTRUCTIONS

KIT		
Part Number	**Description**	**Quantity**
SKHC3B-25001B24-AA	Instruction Sheet	1

SERVICE PROCEDURE:

1. Cut out template and holes.
   a. (Refer to Figure 3) for plain roof template.
   b. (Refer to Figure 4) for moon roof template.
2. Tape to roof following cab center and side character lines (refer to Figure 1).
3. Mark hole locations (refer to Figure 1).
4. Drill holes with a stepped drill bit, (Unibit).
5. (Refer to Figure 2) for six (6) hole locations for marker lamps and SDARS if available.
6. Protect openings with anti-corrosion primer.
7. Install lights.

PLAIN ROOF TEMPLATE

MOON ROOF TEMPLATE

15.99MM HOLE

15.99MM HOLE

FIGURE 1

DRILLED HOLES FOR SIX (6) MARKER LAMPS + SDARS (OPTIONAL)

FIGURE 2

SKHC3B-25001B24-AA SHEET 1 OF 3

F-SERIES CAB MARKER LIGHT INSTALLATION INSTRUCTIONS

IN THIS ISSUE

Ford and Lincoln Collision Assistance Remains with Customers Every Step of the Way

Ford Motor Company offers to its Ford and Lincoln customers "always-on" Collision Assistance through its FordPass® and The Lincoln Way® apps. The service provides step-by-step support from the onset of an accident and helps Ford deliver on its commitment to guide its vehicle owners as a trusted advisor through every facet of a collision.

The FordPass and The Lincoln Way apps include a helpful collection of Collision Assistance tools, making it easy for owners to navigate through the app or connect with an advisor for assistance. Both apps provide valuable benefits,* including:

- **Ford and Lincoln Collision Assistance Contact Center:** Speak with a trusted, knowledgeable advisor who can offer guidance throughout the entire collision repair process, 24 hours a day, 7 days a week, 365 days a year.
- **Locator:** Receive help in finding a collision repair center, including one of over 2,000 Ford Certified Collision Network (FCCN) centers. All FCCN centers utilize original equipment parts and repair procedures to deliver high-quality, safety-focused and Ford-approved repairs.
- **Towing:** Quickly and easily arrange a tow to an FCCN center, available any day or time.
- **Rental and More:** Arrange for a rental vehicle through Enterprise Rent-A-Car, or a ride home through Uber or Lyft.

Search Google Play or the iPhone App Store and download the FordPass or The Lincoln Way app today.

For more information on FCCN, visit collision.ford.com/fordcertifiedcollisionnetwork or call 833-837-7694.

*To receive full collision assistance capabilities through the FordPass or The Lincoln Way App on a Smartphone, it must be paired to vehicle's SYNC® system and AppLink™ enabled. In the app, go to Account / Help for details.

Supplemental Restraint System – Clockspring Adjustment

On Target presents details regarding the supplemental restraint system (SRS)—using the 2024 Ford Bronco® as an example vehicle—found in the official *Ford Workshop Manual*. In this installment we look at adjusting (centralizing) the clockspring.

Please note the following information is intended as a general guideline and is not all-inclusive. For more in-depth repair information on this and other Ford and Lincoln vehicles, consult the *Ford Workshop Manual*, found at FordServiceInfo.com. Check back often as repair procedures could be updated without notice. Always ensure you are looking up the correct model-year vehicle for proper collision repair information.

Section 501-20B: Supplemental Restraint System, General Procedures, Clockspring Adjustment

WARNING: If the clockspring is not correctly centralized, it may fail prematurely. If in doubt, repeat the centralizing procedure. Failure to follow these instructions may increase the risk of serious personal injury or death in a collision event.

Do not over-rotate the clockspring inner rotor. The internal ribbon wire—which is connected to the clockspring inner rotor—acts as a stop and can be broken from its internal connection. Failure to follow this instruction may result in component damage and/or system failure.

1. Turn the clockspring rotor *clockwise*, carefully feeling for resistance to turning.

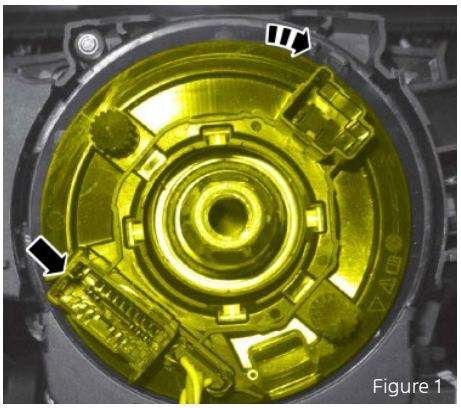


Figure 1

2. Turn the clockspring rotor so the electrical connector is in the 12 o'clock position. The clockspring rotor must stop at the first instance that the electrical connector meets this position.

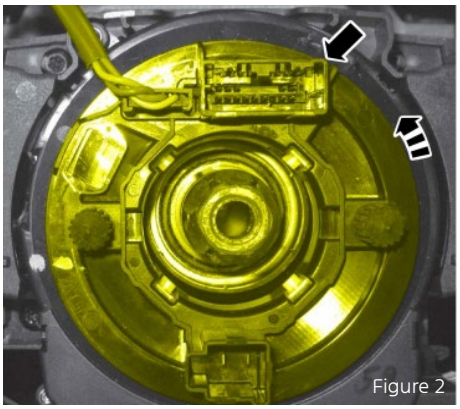


Figure 2

3. Turn the clockspring rotor *counter-clockwise* through three (3) complete turns, ending with the clockspring rotor electrical connector in the 12 o'clock position.

4. When the clockspring is correctly centralized, the wiring harness will be visible through the sight glass and the two (2) arrows on the left-hand side are aligned. Ensure the clockspring does not rotate from this position until after the steering wheel is installed.

Figure 3

5. Use adhesive tape to affix the inner rotor to the outer housing.

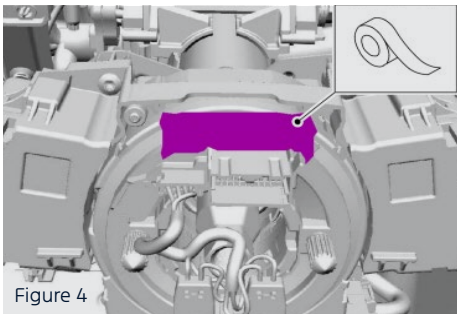
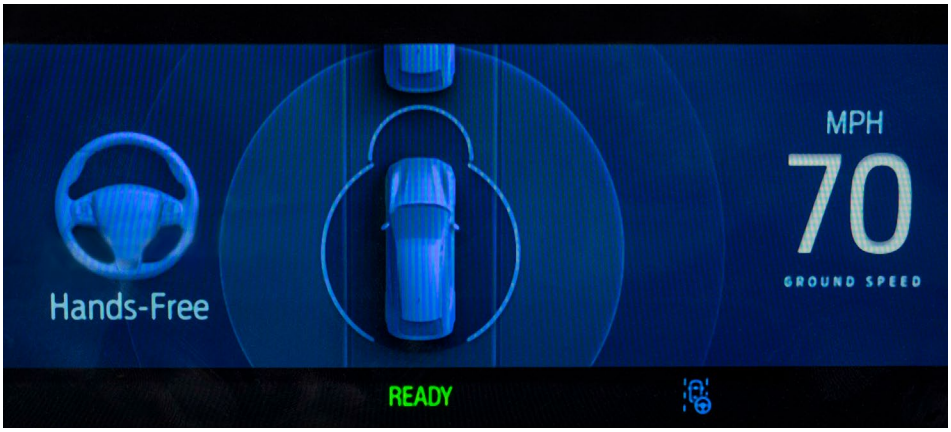


Figure 4

Additional details on SRS repairs will continue in future volumes of *On Target*, focusing on re-powering procedures, pyrotechnic device disposal and more.

For questions on this or the proper repair of any Ford or Lincoln vehicle, contact the Ford Crash Parts Hotline at cphelp@fordcrashparts.com.



Ford BlueCruise System: Component Descriptions

On Target concludes its series on technical details regarding Ford BlueCruise*technology, utilizing the Ford Mustang Mach-E® SUV as an example vehicle.

More information can be found in **Section 419-03A: Cruise Control, Description and Operation** of the official *Ford Workshop Manual*—accessible through FordServiceInfo.com or the Ford Professional Technician Society (PTS) site—where BlueCruise is referred to as Active Drive Assist with Intelligent Adaptive Cruise Control.

Please note the vehicle owner's guide contains important information on the active drive assist with intelligent adaptive cruise control (ACC) system, including complete illustrations and graphic displays on control indicators and numerous warnings that need to be reviewed and followed.

Based on vehicle options and availability, Intelligent ACC can contain several features, such as Lane Centering, Stop-and-Go, Speed Sign Recognition with Navigation and Highway Assist that contains active drive assist.

Component Descriptions

Cruise Control Module (CCM)
The CCM contains a radar sensing unit that measures the relative speed and the distance between the front of the vehicle and the vehicle being followed. The CCM is responsible for requesting the PCM to increase or decrease vehicle speed and the anti-lock brake system (ABS) module to brake, when necessary.

Driver Status Monitor Camera
Driver status monitor camera monitors the alertness of the driver and interacts with the driver through audible and message alerts if the driver shows inattentiveness. The driver status monitor camera is considered part of active drive assist. For additional driver status monitor camera information, refer to **Section 419-04B: Interior Camera System, Description and Operation**.

Electric Brake Booster (EBB)
When the brake pedal is applied, the cruise control deactivator switch, integrated in the EBB switch, opens and removes the ground signal from the PCM input circuit releasing the throttle, immediately deactivating the cruise control system. For additional EBB information, refer to **Section 206-09: Anti-Lock Brake System (ABS) and Stability Control, Description and Operation**.

Image Processing Module A (IPMA)
The IPMA is on the left-hand side of the vehicle below the instrument panel. The IPMA communicates on the flexible data rate controller area network (FD-CAN). On vehicles equipped with the adaptive cruise control and collision warning system, the IPMA shares information with the CCM on dedicated CAN circuits to assist the driver in avoiding a collision.

IPMA Camera
The lane keeping system contains an IPMA camera located on the windshield (above the interior rear-view mirror), which is used to detect the position of the vehicle within the lane. The IPMA camera requires a camera alignment when removed or replaced. For more information, refer to **Section 419-07: Lane Keeping System, Description and Operation**.

Steering Wheel Switches
The cruise control steering wheel mounted switches are momentary contact switches that toggle up and down for the switch state. The switches are an input to the steering column control module (SCCM) on vehicles without adaptive steering. On vehicles equipped with adaptive steering, the switches are an input to the steering angle sensor module (SASM). The switch signals are sent to the SASM on high-speed controller area network (HS-CAN) circuits. The SASM sends the switch signals to the SCCM on the HS-CAN2 .

Previous installments on BlueCruise can be found on FordCrashParts.com.

For more information, contact the Ford Crash Parts Hotline at cphelp@fordcrashparts.com.

**Available feature. Includes a three-year connected service plan with regular map updates after which purchase is required. Requires FordPass® App and modem activation. Driver-assist features are supplemental and do not replace the driver's attention, judgment and need to control the vehicle. Ford BlueCruise is a hands-free highway driving feature. Only remove hands from the steering wheel when in a Hands-Free Blue Zone. Always watch the road and be prepared to resume control of the vehicle. It does not replace safe driving. See Owner's Manual for details and limitations.*

I-CAR® Academy Expands to Body Shops

I-CAR—the Inter-Industry Conference on Auto Collision Repair—is proud to present a new element of its powerful, comprehensive solution to the repair technician shortage: expanding its innovative I-CAR Academy entry-level technician training program directly to auto body shops. This represents the second, tangible achievement of I-CAR's talent programming initiative, following the launch of last year's *CollisionCareers* industry-focused talent attraction platform.

I-CAR Academy equips new technicians with the essential skills and knowledge they need to thrive in the collision repair industry, ultimately boosting shop productivity and technician retention. It also marks the first industry-neutral, comprehensive, early-career program to educate and recognize entry-level technicians, and the schools and repair centers that train them.

Offering a consistent entry-level curriculum across schools and shops enables a smoother transition to the workforce, while bolstering onboarding and retention efforts. Best practices for shop culture are also integrated, aiding in the development of a motivating and engaging atmosphere that retains technicians. Furthermore, seamless integration ensures the program complements existing training initiatives within each shop.

I-CAR Academy equips shops with a trifecta of benefits: confident new hires adept in foundational skills ready for immediate contributions; enhanced productivity through accelerated onboarding; and improved technician retention facilitated by a supportive environment that promotes long-term career growth, including training in evolving technologies.

I-CAR Academy caters to various learning styles with a mix of engaging methods, including interactive online modules for self-paced knowledge building, hands-on skills training for practical experience, "gamified" learning to boost motivation and track progress, and even Spanish-language options to widen talent pools.

By adopting I-CAR Academy, auto body shops demonstrate their commitment to training and developing the next generation of collision repair professionals. This commitment not only benefits the shop itself but also helps strengthen the entire industry for the future.

For more information, visit I-CAR.com/AcademyShops.

Ford Provides Sectioning Options for 2024 Bronco® SUV

On Target is excited to offer sectioning repair information specific to the full-sized Bronco (including 3- and 5-door configurations) and the Bronco Raptor®.

Overall, the Ford Bronco and the Bronco Raptor share many similarities, including exterior body components. All repair information for the Bronco Raptor can be found inside the official Ford Workshop Manual (WSM) entry for the Bronco. Any repair material specific to the Raptor will be called out as such. The Bronco Sport® has its own specific entry with separate sectioning procedures.

Please note the following information is intended as a general guideline and is not all-inclusive. For more in-depth repair information on this and other Ford and Lincoln vehicles, consult the WSM, found at FordServiceInfo.com. Check back often as repair procedures can change without notice.

For more information, refer to **Section 501-26: Body Repairs – Vehicle Specific Information and Tolerance Checks, General Procedures, Body Panel Sectioning**

Special Tool(s) / General Equipment

- Resistance spot welding equipment
- Spherical cutter
- Air body saw
- MIG/MAG welding equipment
- Spot weld drill bit
- Locking pliers
- Seam sealer TA-2-B, 3M™ 08308, LORD Fusor® 803DTM

Do **not** begin removal of the body-side panel until the replacement panel is available for service.

Do **not** carry out body-side sectioning repairs in areas that include a door hinge, safety restraint or striker anchoring points. Welding within 50mm (1.96 in.) of a door hinge or striker location may compromise the vehicle's structural integrity during a collision.

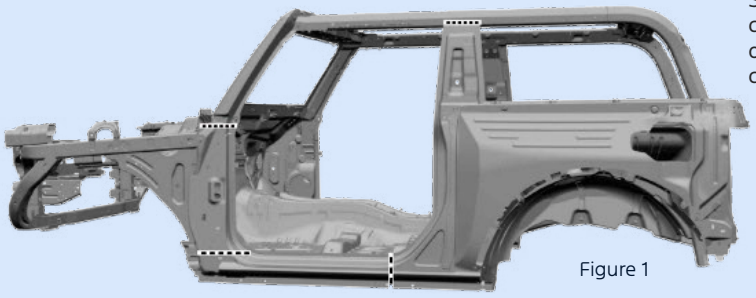
Sectioning within the door-hinge portion of the A-pillar, B-pillar or dog-leg portion of the quarter panel is **not approved** by Ford Motor Company.

Factory welds may be substituted with resistance or metal active gas (MAG) plug welds. Resistance welds may not be placed directly over the original location. They must be placed adjacent to their original location and match factory welds in quantity. MAG plug welds must equal factory welds in both location and quantity.

Generally, sectioning cut points should be chosen to result in the smallest repair area possible and technicians should only remove as much of the **outer** body side as necessary.

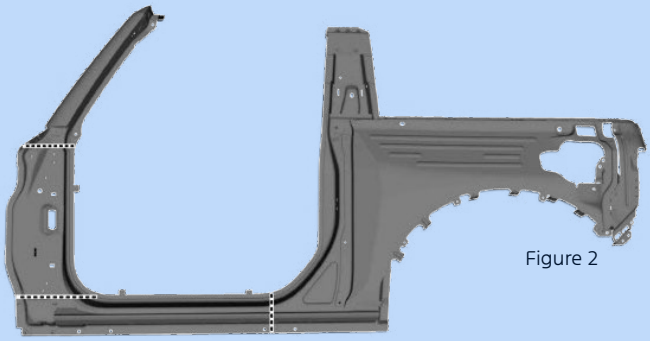
The following illustrations are intended as a general guideline and are not all-inclusive.

All diagrams: left-hand side shown; right-hand side similar.



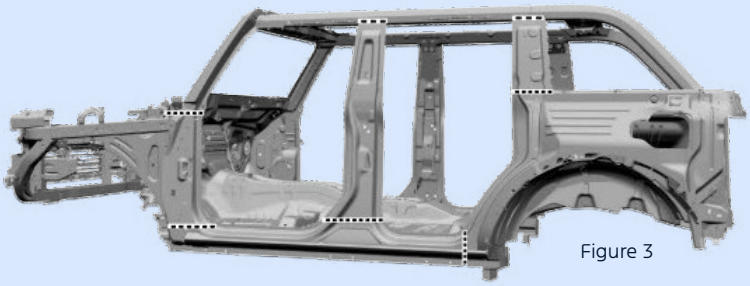
Suggested cutlines on 3-door configuration

Figure 1



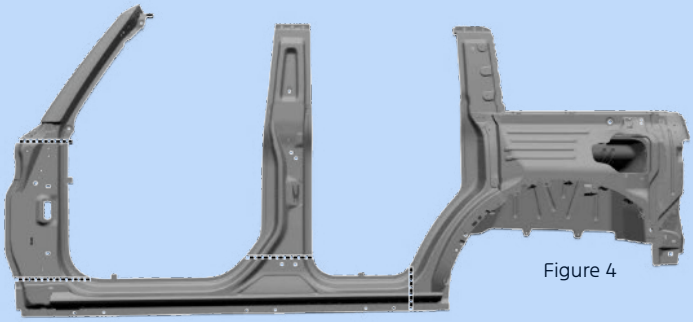
Available body-side service parts for 3-door configuration

Figure 2



Suggested cutlines on 5-door configuration

Figure 3



Available body-side service parts for 5-door configuration

Figure 4

On Target plans to include more construction details on the Bronco and Bronco Raptor in future volumes.

For more information on these, or any Ford or Lincoln vehicle, contact the Ford Crash Parts Hotline at cphelp@fordcrashparts.com or visit I-CAR's RTS Portal at RTS.i-car.com.

Collision Repair Education Foundation Announces Career Fair Calendar

The Collision Repair Education Foundation (CREF) is on a mission to shape the future of the collision industry by forming connections between donors, students, and collision repair schools and programs. As the new school year kicks off, CREF notes that any contributions made—such as sponsoring new uniforms for incoming students or supporting career fair initiatives—can have a very meaningful impact. That support can prove pivotal in molding the next generation of collision repair professionals.

By providing uniforms, students project confidence and professionalism as they learn their craft. Additionally, any support for career fairs can connect students with potential employers, offering them invaluable opportunities for hiring, industry awareness and building essential skill sets.

There are many ways to support CREF's students, including sponsorship or having a presence at any of their upcoming career fair events:

Phoenix, AZ - Monday, November 4th (Host: West-Mec High School - Northeast Campus)
Columbus, OH - Thursday, December 5th (Host: Fort Hayes Career Center High School)
Cleveland, OH - Friday, December 6th (Host: Ohio Technical College)

For more information, visit collisionrepaireducationfoundation.org.

Ford and I-CAR® Discuss Variations in OEM Service Parts (continued)

I-CAR technicians (left-to right) Jason Hauboldt, Bud Center and Scot VanHulle hosted the most recent Repairers Realm video.

Bonanni. "What I learned very, very early in my career is that the body man has to go in and utilize templates as they see fit." Bonanni used emblem holes and moulding holes as examples that may require a template.

Another example Bonanni provided is the roof-clearance lights on a Super Duty® truck. The roof skin is serviced *without* the clearance lights cut out, but if the vehicle in for repair is equipped with them, a template is available. "We offer templates which the technician can download, transfer them to the new service part, and make the cuts," said Bonanni. The template can be accessed through the Professional Technician Society (PTS) site under 'Service Tips' for the Super Duty.®

Doing it this way benefits the availability of inventory on specific service panel parts to aid in reducing cycle time.

In addition to instruction sheets and templates, VanHulle noted that some OEMs may provide very specific measurements as to where guide holes or cutlines need to be made.

A helpful tip Hauboldt offered is to begin building a library of known replacement service parts that require additional modifications before they can be placed on the vehicle, while remaining cognizant of the fact that the library you build can and will change in the future as well.

Having a good relationship with your parts department can also be very beneficial.

As the video neared its conclusion, the discussion turned to seam sealer and flutter foam.

"One of the things we say in the workshop manual is seal to production level," said Bonanni, referencing the official *Ford Workshop Manual*, which can be found at FordServiceInfo.com. "We're assuming that a technician is trained [and] understands the tools that he or she has available to them and those materials that they have in their system."

Bonanni pointed out the wealth of additional information that is also available to repairers from Ford-approved vendors, singling out 3M® and Parker Lord® for having "outstanding" online videos, best practices and other technical repair data to help duplicate the original factory look.

"By all means, utilize all of those reference materials," said Bonanni. "[It] helps you do your job the best you can do it."

Regarding flutter foam, Bonanni noted that both 3M and Parker Lord have videos that show the proper application of that material on the bumper of an F-150.® "We work with the adhesive companies to develop some of those repairs to make a repair complete and look original."

For more information, consult the *Ford Workshop Manual,* available at FordServiceInfo.com and check back often as repair procedures can change without notice. Specific questions on the proper repair of any Ford or Lincoln vehicle can be submitted to the Ford Crash Parts Hotline at cphelp@fordcrashparts.com or the Ask I-CAR feature on rts.I-CAR.com.

Additional information—including a list of Ford-approved adhesives, paint systems and more—can be found on FordCrashParts.com.

The Crash Parts Corner

Did You Know That ...

Ford Motor Company has reminded collision repairers for many years that vehicle fixed glass—including and especially the windshield—plays a critical role in the overall strength, stability and structure of the vehicle, and can affect how it performs in a collision event. The Ford Certified Glass Network was created in recognition of the growing importance of automotive glass.

With the implementation of advanced driver assistance systems (ADAS), the importance of using OEM glass and OEM-approved repair procedures—including proper preparation of the substrate or pinch weld to receive the new fixed glass—will only increase when it comes to helping ensure high-quality repairs.

The official *Ford Workshop Manual*—found on FordServiceInfo.com—provides lots of important details regarding windshield repairs and replacement. It should be referenced often, as repair procedures can change without notice.

"Like other repair procedures, we provide options for technicians and glass installers to choose the one that best fits the current job in front of them," said Gerry Bonanni, senior damageability engineer for Ford Motor Company. "In some instances, it should be noted that repair methods may be combined to achieve the best results."

To ensure the correct OEM replacement glass is being utilized, visit the Carlex OEM replacement glass search tool at Carlex.com/automotive-replacement-glass.

For more information on Ford OEM glass, including job aids, repair videos and more, visit FordCrashParts.com/Glass.

For more information on the Ford Certified Glass Network, or to join the program, visit Collision.Ford.com/FordCertifiedGlassNetwork or call (833) 837-7694.

PPG® *MoonWalk*® Advances Paint Mixing

While paint mixing has always been included within the collision repair process, traditional, manual paint mixing also remains a time-consuming and error-prone process, with overpouring and other human errors leading to product waste and additional correction time. The PPG *MoonWalk* mixing system seeks to eliminate all these pain points.

The PPG *MoonWalk* automated paint mixing system—launched in 2019—has helped transform collision centers by automating paint mixing, enhancing efficiency and reducing waste. It seamlessly integrates with PPG's advanced digital tools for increased productivity, with customers reporting a 10 percent reduction in waste.

Using advanced automation technology, the PPG *MoonWalk* solution allows precise mixing with high accuracy, minimizing product waste and errors. The system reduces the mixing time to two minutes, achieving nearly 100 percent accuracy. The *MoonWalk* system also saves a technician's time by eliminating the mixing step, allowing painters to spend more time spraying, avoiding messy mixing rooms and wasted overpours.

The *MoonWalk* system seamlessly integrates with PPG's LINQ™ digital ecosystem to create a powerful combination with several benefits. The suite of tools includes the PPG DIGITMATCH™ spectrophotometer—PPG's advanced multi-angle color camera for body shops both big and small—and PPG VisualizID™ advanced 3D visualization and color-matching tool.

According to PPG, to date their *MoonWalk* system has saved 900,000 hours in paint mixing and reduced volatile organic compounds (VOC) emissions across 1,600 repair centers in more than 40 countries. Customer feedback notes the PPG *MoonWalk* system allows them to contain the environmental impact of their body shops by reducing emissions and waste. Taken altogether, the many benefits of the PPG *MoonWalk* system all lead to better shop throughput, and ultimately, higher customer satisfaction.

For more information, visit us.moonwalkrefinish.com.

On Target

Scheduled to be published four times a year, *On Target* aims to provide Ford and Lincoln dealership parts departments and independent collision repair shops with the technical information needed to deliver efficient, high-quality repairs to Ford and Lincoln vehicle owners.

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On Target Digital

Download *On Target* for free at FordCrashParts.com, or by clicking the Ford page on OEM1Stop.com

Genuine Parting Thoughts

Have an idea? We'd love to hear from you. Your comments and article suggestions can be sent to **cphelp@fordcrashparts.com.**