

# On Target



FORD PARTS

For Ford and Lincoln wholesalers and the collision repair industry

## Ford Releases New Position Statement on Repairing Bumper Fascias with ADAS

Continuing its effort to promote proper and safe repairs, Ford Motor Company has issued a new position statement on the importance of bumper fascias that feature advanced driver assistance systems (ADAS).

The statement notes that paint repairs not exceeding 12 mils in total thickness are the **only** approved repairs, while detailing the types of repairs that are not allowed on these components for both Ford and Lincoln vehicles. The statement reads as follows (some emphasis added):

### *Bumper Fascia Repair with Advanced Driver Assistance Systems (ADAS)*

*Ford vehicles contain many state-of-the-art features that provide occupant safety and enhance the driving experience. Bumper fascias play an integral role in the performance and functionality of these features. The original bumper fascias on Ford Motor Company vehicles are designed and manufactured to function with advanced driver assistance systems (ADAS) like those listed below:*

- Pre-Collision Assist with AEB
- Active Park Assist
- BLIS® with Cross-Traffic Alert
- Evasive Steering Assist
- Intelligent Adaptive Cruise Control
- BLIS® with Trailer Coverage
- Lane-Keeping System
- Pro Trailer Backup Assist



*During body repairs that involve front and rear bumper fascias, it is critical that the vehicle be restored to proper operating condition to ensure that these important safety systems function correctly. Repair of bumper fascias using fillers, reinforcement tape, hot staples or plastic welding can adversely affect ADAS operation. For this reason, Ford Motor Company is limiting repairs on front and rear bumper fascias on all Ford Motor Company vehicles equipped with any ADAS features to topcoat refinish only. Topcoat finish cannot exceed 12 mils (300 microns) in total thickness. Any bumper fascia damage that requires substrate repairs must be replaced.*

*Measurement of the topcoat finish requires the use of an ultrasonic paint thickness gauge, such as PosiTector 200 or Phase II UTG-2900, available through Rotunda.*

*The following points provide an overview of bumper fascia repairs:*

- **Paint repairs can be made if the material thickness does not exceed 12 mils (300 microns) in total thickness**
- **Use of any filler materials or reinforcement tapes to repair substrate damage is not permitted**

*Continued on page 2*



## New Ford Videos Focus on Counterfeit Parts, ADAS Camera Calibration and OEM Glass

Ford Motor Company has posted three more all-new Collision Report videos on [FordCrashParts.com](http://FordCrashParts.com), providing repairers with the most up-to-date, official OEM collision repair information straight from the source.

The latest topics include:

- The Dangers of Counterfeit Parts
- ADAS Camera Calibration after Windshield Replacement
- Original Equipment Glass—A Clear Difference

In the counterfeit parts video, Ford Senior Damageability Engineer Gerry Bonanni details the dangers these parts pose to vehicle owners and repairers. Entirely separate from aftermarket or reconditioned parts, counterfeit parts are fraudulently passed off as genuine OEM parts but are not made to OEM specifications or subject to any quality control tests, and won't perform as designed. In addition to being illegal at the state and federal level, counterfeit parts are usually poorly made and can be extremely dangerous, causing highly unpredictable results in the event of a collision.

The video notes that nearly every component of a vehicle is at risk for counterfeiting, including wheels, glass, brake pads, airbags, and even diagnostic hardware and software, just to name a few. The inferior quality and potential danger of these parts is exemplified in counterfeit brake pads that were found to be made of grass clippings and sawdust. Along with other unsettling examples, the video also offers repairers tips they can use to ensure they are using genuine Ford OEM replacement parts and resources available to them if they should come across suspected counterfeit parts, including:

*Continued on page 2*

### IN THIS ISSUE

F-150 Full Box Assembly Procedure

More on SRS Components

Bronco Sport Body Construction

Vehicle Diagnostics Methods

I-CAR Details Ford EV Courses

Inside the Industry

# Bumper Fascia Repair

Continued from page 1

- Use of hot staples or plastic welding to repair cracks or damage is **not permitted**
- Repair of any sonic-welded sensor retainer rings or tabs is **not allowed**, due to possible misalignment and incorrect operation of the sensor
- Note that vehicle wraps, bumper stickers and aftermarket accessories in the area of the fascia can create system operation concerns

Reconditioned, refurbished or salvage bumper fascias may have been repaired using substrate repairs, including the use of filler material, plastic welding and hot staples, which can interfere with ADAS operation. For this reason, Ford Motor Company does not approve the use of reconditioned, refurbished or salvage bumper fascias. Only by using Ford Original Equipment bumper fascias can you be assured of the fit, function and safety of the repair.

Ford recommends the use of the Integrated Diagnostic System (IDS) or Ford Diagnosis and Repair System (FDRS) to perform all vehicle diagnostic testing, and when performing module programming and system calibrations during collision repairs. Additionally, Ford factory diagnostic and repair procedures should be used when carrying out all collision repairs. Ford dealer-owned body shops can access service information, training and diagnostic scan tool support through the Professional Technician Society at [fordtechservice.dealerconnection.com](http://fordtechservice.dealerconnection.com) and independent collision repairers can find information at [motorcraftservice.com](http://motorcraftservice.com).



Paint thickness gauges can be found on [rotunda.service-solutions.com](http://rotunda.service-solutions.com).

“This position statement will help shops prevent a possible repeat repair,” said Ford Senior Damageability Engineer Gerry Bonanni. “The critical requirement here is a paint thickness gauge for these substrates, particularly with bumper repairs being among the most common in the industry. The guidelines established in this document will help shops repair the vehicle correctly and safely the first time.”

This position statement, with versions for Ford and Lincoln vehicles, as well as all other previously released statements, can be found on [FordCrashParts.com](http://FordCrashParts.com) and [OEM1Stop.com](http://OEM1Stop.com).

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



## COLLISION REPORT

Continued from page 1

- Ford Brand Protection, which can be contacted through their email [brandpro@ford.com](mailto:brandpro@ford.com), or by visiting [FordBrandProtection.com](http://FordBrandProtection.com).
- National Intellectual Property Rights Coordinator Center ([iprcenter.gov](http://iprcenter.gov))
- Automotive Anti-Counterfeiting Council® ([A2C2.com](http://A2C2.com))

The second new video details the procedure that must be conducted for camera calibration after replacing a vehicle’s windshield to ensure the proper functionality of advanced driver assistance systems (ADAS). Ford Motor Company requires that Image Processing Module A (IPMA) camera alignment must be performed after every windshield replacement.

The video covers the entire process of camera alignment, from connecting the vehicle to the Ford Diagnosis and Repair System (FDRS) and readying the camera for alignment mode, to conducting a careful road test at speeds over 40mph (64kmp) while avoiding lane changes and excessive changes in steering angle and vehicle speed. A camera malfunction warning will appear on the dash as the IPMA camera alignment test is being conducted.

Another important tip stressed by the video reminds technicians to print out screenshots of diagnostic self-tests performed before the calibration procedure—to act as a vehicle “pre-scan”—and to print final self-tests performed after a successful calibration, as a vehicle “post-scan,” which provides Ford vehicle customers with proof that a calibration took place.

Video number three—a condensed version of the OE glass video previously uploaded to the site—reminds repairers that Ford OEM glass represents the highest standard in replacement glass, offering dimensionally correct and distortion-free glass that meets strict Ford engineering specifications required for the proper performance of ADAS features.

“The goal behind every Collision Report video is to provide the support and timely, technical details that repairers need to make safe and quality repairs,” said Ford Collision Technical Operations Manager Chad Steed.

Suggestions for future *Collision Report* videos can be sent to [cphelp@fordcrashparts.com](mailto:cphelp@fordcrashparts.com), and please check back often for new content throughout the year.



# Ford Unveils Build Procedure for F-150 Full Box Assembly

Ford Motor Company has provided repairers with a new, official procedure on how to assemble a complete pickup bed assembly for the 2015–2020 F-150. The procedure, **Section 501-30: Rear End Sheet Metal Repairs, General Procedures, Pickup Bed Assembly**, has a date of 4/27/21 noted in the upper right-hand corner. It can be found in the official Ford Workshop Manual (WSM) on [Motorcraftservice.com](http://Motorcraftservice.com).

“While developing the overall repair plan for the F-150, keeping repairers in mind was one of our own important mandates,” said Ford Senior Damageability Engineer Gerry Bonanni. “That mandate continues as we work to develop repair procedure enhancements to help technicians tackle unique repairs that are high-quality, thorough and safe.”

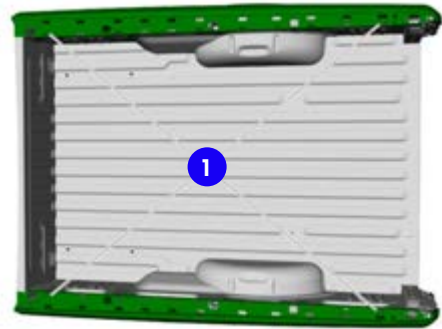
“This in-depth repair process will probably not be an everyday repair,” acknowledged Brad Krein, Ford Body/Electric Module Manager. “But we wanted to help ensure repairers have the procedures and information they need for any type of vehicle damage they may encounter.”

Ford Collision Technical Operations Manager Chad Steed agreed with the sentiment. “We want to provide safe and quality repairs to our Ford and Lincoln vehicle owners, and to that end, we want to guarantee that repairers have as much information as they need to accomplish that, including the necessary steps to build a complete box assembly in the rare occasion that a complete bed assembly is not available but the parts to build it are.”

The comprehensive build procedure combines all 13 individual repair procedures—**noted in the WSM under Section 501-30: Rear End Sheet Metal Repairs**—into a chronological order, beginning with a series of notes to the technician:

- Self-piercing rivet (SPR) fasteners may not be placed directly over original self-piercing rivet location. They must be placed adjacent to original location matching original quantity.
- Blind or solid rivets may be used in place of self-piercing rivet fasteners after drilling 6.5 mm fastener holes. Blind or solid rivets must equal factory fasteners in quantity.

- Factory spray-in bedliner (Tough Bed®) is made of a special highly durable multi-part resin. Repair cannot be performed using conventional body shop chemical or spray equipment. To ensure adhesion, correct surface texture and a lasting repair, all work must be done using products that have been tested and approved by Ford Motor Company. Refer to [www.fordbedlinerrepair.com](http://www.fordbedlinerrepair.com) for further information.
- Two methods of assembly are available. Rivet-bonding and plug welding. Plug welding will require 6.5 mm holes drilled in one of the mating panels prior to installation and welder set up for aluminum welding application. Plug weld quantities must equal suggested rivet installation in both location and quantity. All plug welds will require aluminum metal finishing prior to paint and corrosion protection application. The following procedure assumes rivet-bonding application. Adjust to meet repair needs.
- **To assure correct pickup bed component alignment, all steps must be performed working from a solid, stable and level support base.**



8-foot pickup bed shown. 5.5-foot and 6-foot pickup beds similar.

**On Target** plans to include further details in future volumes. Questions on this, or the proper repair of any Ford or Lincoln vehicle, can be sent to [cphelp@fordcrashparts.com](mailto:cphelp@fordcrashparts.com).

Pickup Bed Overhead Dimensions

Item	5 ½-Foot Pickup Bed	6-Foot Pickup Bed	8-Foot Pickup Bed
1	2041 mm	2225 mm	2573 mm

## Proper Vehicle Diagnostic Methods Continued

In a recent issue (2020 - Vol. 3), **On Target** detailed how to check for circuit continuity and electrical shorts.

In this final installment, we look at checking circuits by back-probing a connector.

Please note that the following steps (using the 2020 F-150 as an example) are intended as a general guideline and are not all-inclusive. For more in-depth repair information on this and other Ford and Lincoln vehicles, consult the Ford Workshop Manual at [Motorcraftservice.com](http://Motorcraftservice.com).

**Diagnostic Methods, Section 100-00: General Information – Description and Operation.**

### Effective Diagnostic Methods

Note: Do not use this document in place of Ford-prescribed Symptom-Based Diagnostics or Workshop Manual Diagnostics. Diagnostic methods are intended to provide Ford vehicle diagnostic information only for support of Ford-prescribed diagnostics.

The following diagnostic process is critical for consistently successful diagnoses. Random methods work inconsistently and often lead to multiple repairs.

### Checking Circuits by Back-Probing a Connector

- Back-probing should be the last-resort testing method. It should only be employed when a diagnostic step requires a circuit to be tested under actual operating conditions. Back-probing is a risky testing method due to the uncertainty of the probe connection and the possibility of damaging terminals.
- Do not force test leads or other probes into connectors. Adequate care must be exercised to avoid connector terminal damage while ensuring that good electrical contact is made with the circuit or terminal. Failure to follow these instructions may cause damage to the wiring, terminals, or connectors and subsequent electrical faults.
  - » Use back probes specifically designed to assist in making a good test connection and to prevent connector or terminal damage during back-probing.
- Do not test for the presence of voltage at a single point where zero volts is a possible result (you cannot tell the difference between a bad probe contact and a zero-volt result).

- Do not test for continuity/opens (using an ohmmeter) between two points (you cannot tell the difference between bad probe contacts and an open circuit).
- Back-probing may be used when the circuit must be analyzed with the voltage-drop method (if the circuit carries greater than 5 amperes and no other means of testing will eliminate circuit resistance as a possible fault). A zero-volt result indicates incorrect test conditions (no current flow) or bad back-probe connections.
- Occasionally, module failure mode behavior will change the operation of a circuit when it is opened for testing. Back-probing is an acceptable remedy for these testing dilemmas.

For previous installments on diagnostic methods, refer to past volumes of **On Target**, which can be found on [FordCrashParts.com](http://FordCrashParts.com). Additional information is planned for future volumes.

For questions on proper diagnostic methods, or the repair of any Ford or Lincoln vehicle, contact the Ford Crash Parts Hotline at [cphelp@fordcrashparts.com](mailto:cphelp@fordcrashparts.com) or visit I-CAR's RTS Portal at [RTS.i-car.com](http://RTS.i-car.com).



# Technical Specifics on SRS Airbag and Seatbelt Pretensioner System Operation

*On Target* resumes its detailed look at the Supplemental Restraint Systems (SRS)—straight from the official Ford Workshop Manual—utilizing the 2020 F-150 as an example.

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 [Motorcraftservice.com](http://Motorcraftservice.com).

## Section 501-20B: Airbag and Seatbelt Pretensioner System Component Location (Part 2 of 3)

Note: Early build shown; later build similar.

## Section 501-20B: Airbag and Seatbelt Pretensioner System Operation

### Occupant Classification System (OCS)

The OCS classifies the size of the front passenger seat occupant and provides this information to the restraints control module (RCM).

Pressure is applied to the OCS bladder when weight of any occupant or object in the front passenger seat is present. The pressure is then transferred through a tube and sensed by the OCS pressure sensor within the occupant classification system module (OCSM). The OCSM sends information concerning the weight of

any occupant or object on the front passenger seat to the RCM via the high speed controller area network (HS-CAN). The RCM uses this information when determining if the passenger airbag or side airbag needs to be deployed in the event of a crash.

The OCS is also used for operation of the passenger Belt-Minder®. (Refer to Section 501-20: Seatbelt Systems. To deactivate or reactivate the passenger Belt-Minder® feature, refer to Section 413-01: Instrumentation, Message Center and Warning Chimes, General Procedures.)

### Passenger Airbag Deactivation (PAD) Indicator

The RCM controls the PAD indicator through messages sent on the HS-CAN2 and medium-speed controller area network (MS-CAN), based on information provided by the OCS.

The PAD indicator illuminates to indicate the passenger airbag is disabled.

The RCM briefly activates the PAD indicator during prove out to verify the indicator function and confirm proper functional operation of the PAD indicator to the front occupants.

The table below indicates the passenger airbag and PAD indicator status based on the size of the front passenger occupant.

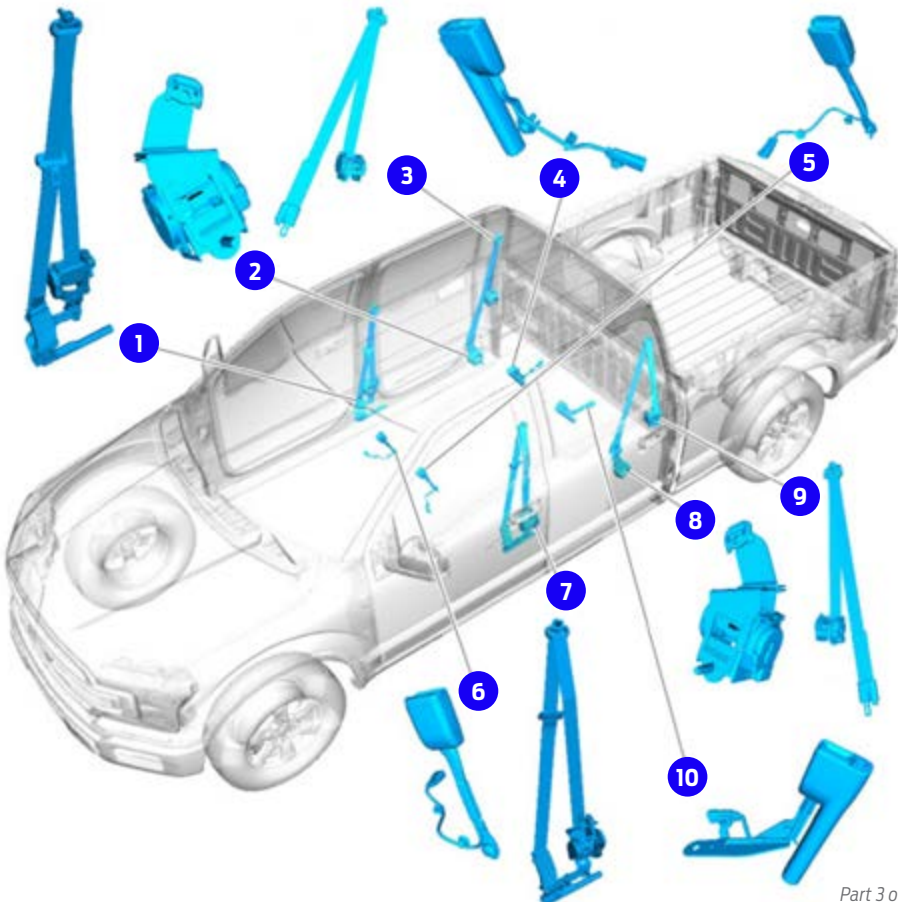
Additional installments on SRS components and operation will continue in future volumes of *On Target*.

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

Passenger Airbag and PAD Indicator Status			
Occupant Size	Passenger Seatbelt Buckle Status	Passenger Airbag Status	PAD Indicator Status
Empty	Buckled or Unbuckled	Disabled	OFF: Lit
			ON: Unlit
Small	Buckled or Unbuckled	Disabled	OFF: Lit
			ON: Unlit
Large	Buckled or Unbuckled	Disabled	OFF: Unlit
			ON: Lit

### SRS Component Locations

Item	Description
1	Front passenger seatbelt retractor
2	RH rear outer seatbelt lower retractor
3	RH rear outer seatbelt upper retractor
4	RH rear outer seatbelt buckle assembly
5	Driver seatbelt buckle
6	Front passenger seatbelt buckle
7	Driver seatbelt retractor
8	LH rear outer seatbelt lower retractor
9	LH rear outer seatbelt upper retractor
10	LH rear outer seatbelt buckle assembly



Part 3 of 3



# Bronco Sport Body Construction Details

Earlier this year, *On Target* began detailing vehicle-specific body construction on the all-new 2021 Ford Bronco Sport (2021 - Vol. 1). We continue that initiative here, focusing on the vehicle's center and rear floor (Figure 1), and cowl panel (Figure 2).

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 [Motorcraftservice.com](http://Motorcraftservice.com).

For more information, refer to Section 501-26: Body Repairs – Vehicle Specific Information and Tolerance Checks, Description and Operation.

*On Target* plans to include more construction details on the Bronco Sport in future volumes—including sectioning guidelines—and on the full-sized Bronco as well when information becomes available.

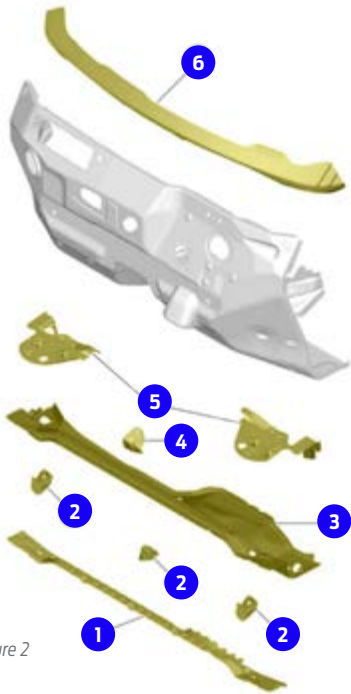


Figure 2

## Cowl Panel

Item	Description	Steel Type
1	Cowl reinforcement	Mild Steel
2	Bracket	Mild Steel
3	Cowl extension	Mild Steel
4	Bracket	Mild Steel
5	Upper dash panel reinforcement	Mild Steel
6	Outer top cowl assembly	Mild Steel

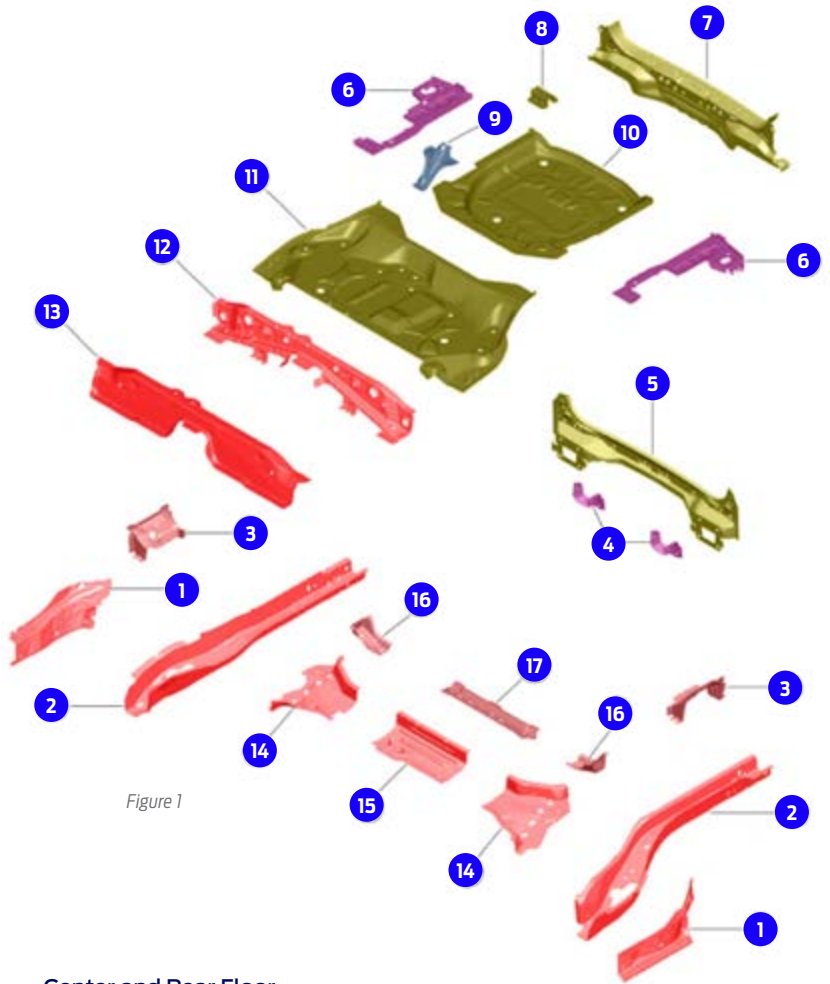


Figure 1

## Center and Rear Floor

Item	Description	Steel Type
1	Rear side member reinforcement	Boron steel
2	Rear side member	Boron steel
3	Floor side member	Solid solution strength steel
4	Rear side member bumper bracket	Dual phase (DP) 800 steel
5	Lower back panel assembly	Mild steel
6	Spare tire carrier bracket	Dual phase (DP) 800 steel
7	Back panel assembly	Mild steel
8	Spare tire carrier bracket	Mild steel
9	Spare tire carrier support	High-strength low-alloy (HSLA) 380 steel
10	Rear floor pan assembly	Mild steel
11	Center floor pan assembly	Mild steel
12	Center floor pan reinforcement	Boron steel
13	Center floor pan brace	Boron steel
14	Floor side gusset	Boron steel
15	Rear floor pan gusset	Boron steel
16	Floor side member	Solid solution strength steel
17	Cross member	Solid solution strength steel



For more information on the Bronco Sport, or any Ford or Lincoln vehicle, contact the Ford Crash Parts Hotline at [cphelp@fordcrashparts.com](mailto:cphelp@fordcrashparts.com) or visit I-CAR's RTS Portal at [RTS.i-car.com](http://RTS.i-car.com).

# I-CAR Charges-Up Ford EV Education

As Ford Motor Company continues rolling out its lineup of new hybrid and electric vehicles—including the F-150 and the Mustang Mach-E—I-CAR is providing timely education, training and collaborative support to Ford Certified Collision Network (FCCN) shops.

“I-CAR continues to aid our FCCN shops by providing the information and training required to help them carry out complete, safe and quality repairs, while also keeping technicians and estimators safe,” said Ford Collision Marketing Manager Dean Bruce.

I-CAR’s deep technical bench of subject-matter experts expanded in 2020, and earlier this year, its senior team conducted a roundtable discussion outlining the steps needed to stay on the forefront of vehicle electrification education.

A complete recording of their roundtable conversation, including insightful views on why adhering to OEM repair procedures and taking I-CAR EV courses is more critical than ever, can be found on [YouTube](#).

Additional I-CAR videos incorporated into the roundtable discussion cover such topics as:

- The Power of PPE
- Safety: Inside the Vehicle
- Safety: Under the Vehicle
- Safety through Electrical Bonding



A Ford EV Course Package, now available at [I-CAR.com](#), combines all eight (8) currently required courses into one purchase. Technicians can also select individual classes they need to attend from the course listing:

1. Hybrid, Electric, and Alternative Fuel Vehicle Service
2. Hybrid Vehicle Identification and Damage Analysis
3. Understanding High-Voltage Safety
4. Ford Service Information Navigation for Collision Repair
5. Ford 2021 Mach-E and New-Model Training Overview
6. Ford Battery Electric Vehicle (BEV) Components and Operation
7. Ford High-Voltage Systems Safety
8. Ford Intro to HV Battery Service for Collision Repair

Additional information, including I-CAR Gold Class renewals, can be found on [info.I-CAR.com/get-to-gold-class](#). For more details on the FCCN, visit [collision.ford.com/FordCertifiedCollisionNetwork](#).



## 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 *OnTarget* 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](mailto:cphelp@fordcrashparts.com)

## Inside the Industry

### Counterfeit Airbags Bill Approved in Colorado; Glass Bill in Utah

Colorado has become the 27th state to pass a law prohibiting the installation of counterfeit and nonfunctional airbags. HB 1193 was signed into law May 17th and will take effect 90 days after the end of this year’s general session.

In Utah, SB 78 was signed into law March 16th and took effect May 5th. It requires auto glass repairers to inform consumers if recalibration of ADAS features is required and whether it will be performed.

Some other notable collision repair-related bills around the country include:

#### NH – HB 310

**Defeated in committee.** Would have made it an unfair practice for an insurer to fail to pay for automaker-recommended scans and calibrations unless shown to be unnecessary.

#### NY – AB 1359

Requires use of OEM repair procedures unless written authorization otherwise.

#### NY – AB 1280

Requires the use of OEM parts for a vehicle’s first three years or new-vehicle warranty period, whichever is longer.

#### RI – SB 869

Requires used parts are equal to OEM in fit, quality, performance and warranty and come from a vehicle of the same year or newer; also specifies if a used part doesn’t return the vehicle to pre-loss condition the insurer is required to specify an OEM part.

### Associations Define Scanning and Qualified Scan Tools

The three national collision trade associations—The Alliance of Automotive Service Providers (AASP), Automotive Service Association (ASA) and Society of Collision Repair Specialists (SCRS)—have issued a joint position statement that includes definitions of the terms “scanning” and “qualified scan tools.”

The “Scanning Compensation Position Statement for Collision Repairs” defines scanning as “*A mechanical operation to connect a qualified diagnostic scan tool into an OBD-II port or other communication ports in order to retrieve all Diagnostic Trouble Codes (DTCs) using the most current, available OEM information to ensure a proper and safe repair.*”

The position goes on to define a qualified scan tool as “*A device approved by the vehicle’s manufacturer (OEM) to provide a repair technician access to the status of the vehicle’s sub-systems. OEM approved scan tools are specific to each OEM and have the complete suite of capabilities as determined by their service engineering groups.*”

The associations said the position, which also defines “qualified scanning personnel,” is intended to provide the industry with more clarity on the operation throughout the repair process.

### I-CAR Nears 9,000 Gold Class Shops

I-CAR says 961 collision repair facilities achieved Gold Class status for the first time last year, raising the total number of Gold Class shops to 8,880, a net increase of 521 from 2019. The organization says the count has more than doubled since 2015, when the number stood at 3,667.

