OnTarget

Ford

For Ford and Lincoln wholesalers and the collision repair industry

FORD PARTS



Ford Announces New Certified Glass Network

Ford Motor Company has announced the creation of the Ford Certified Glass Network (FCGN), an industry-leading, comprehensive OEM network dedicated to help ensure every Ford and Lincoln vehicle glass installation and calibration is completed to the highest quality standard, utilizing original equipment procedures and parts.

Ford original equipment windshields and glass are built and tested to function as part of a system, lending structural support in an accident and promoting clear, undistorted vision for advanced driver assistance systems (ADAS). The new network aims to prepare Ford-certified glass installers to meet today's requirements for quality glass installation.

"With ADAS technology now integrated directly into windshields, we need to ensure glass technicians are prepared to provide safe and proper installations and calibrations, especially as ADAS—as well as other features, including headup displays and SoundScreen® acoustic glass become more prominent," said Ford Collision Network Manager Dean Bruce. "Ford is dedicated to helping assure our customers have access to a network of glass installers who demonstrate a commitment to providing quality glass installation and calibration on Ford and Lincoln vehicles."

The FCGN offers a wide array of benefits, including:

Glass Installation and Calibration Procedures – Access to the Ford Workshop Manual is included in the annual enrollment fee through Motorcraftservice.com Glass Installation Process Assessment and Consultation – Assessment by a third-party specialist helps ensure the right tools, equipment, training and processes are in place; including industry-leading process coaching

Ford Glass Installer Locator – Guides customers to Ford Certified Glass Network facilities

Calibration Training – Virtual training on Ford-approved processes

Technical Support – Access to technical support for certified glass installers

Partner Vehicle Purchase Program – Purchase or lease eligible Ford or Lincoln vehicles at non-negotiated discounted rates approved by Ford

Signage – Ford Certified Glass Network signage to identify your facility as a Network participant

Repairers and glass installers are reminded that the FCGN and the Ford Certified Collison Network (FCCN) are two separate and distinct programs. Ford dealers and independent shops may be enrolled in both, or one or the other, depending on their specific business operations.



Becoming a member of the FCGN takes only a few steps, including:

- Creating an online profile
- Conducting a pre-assessment check of tools, equipment, training and facility
- Confirming membership status in the Auto Glass Safety Council™
- Scheduling an on-site assessment, where all items noted in the profile are verified to confirm the program requirements are met

The program includes a consultation at the repair facility, in which technicians are reviewed on the completion of essential tasks, such as scanning and calibration. A closing meeting will include a detailed action plan pertaining to the shop's glass installation strengths and opportunities for improvement, and identification of any actions required to complete certification.

For more information and program application, visit Collision.Ford.com/FordCertifiedGlassNetwork or call (833) 837-7694.

Ford Introduces Optional Certification for Advanced Driver Assistance Systems (ADAS)

The Ford Certified Collision Network (FCCN) supports our customer-first philosophy of providing Ford and Lincoln vehicle owners with quality, safe collision repairs utilizing original equipment repair procedures and parts. Ford is dedicated to delivering collision repair solutions that meet the complex needs of current vehicles through certification of proper equipment, trained professionals and necessary facility requirements. In its continuous efforts to provide FCCN centers with the tools, training and information needed, Ford is now offering an advanced driver assistance system (ADAS) certification.

Although the certification is optional, having dedicated, in-house ADAS calibration technicians to maintain the highest level of certification available is recommended. Collision repairers not ADAS-certified



must work with FCCN-certified third-party providers who have completed the Ford ADAS requirements for their calibration and diagnostic needs.

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Ford and Lincoln ADAS Job Aid Walkthrough

Late last year, Ford Motor Company unveiled a small collection of new job aids, including one on repairs involving Ford and Lincoln vehicles equipped with advanced driver assistance systems (ADAS), focusing specifically on how fixed glass components and ADAS work together (editor's note: see On Target - 2022, Vol. 1).

Here, we begin a detailed look at the job aid on ADAS and the attention that must be given when repairing vehicles with these systems to help ensure they are all working as intended.

These systems help warn drivers and mitigate road hazards. The components of these systems may require additional calibration steps or vehicle programming after the component or related components have been removed, replaced or serviced. The following information-excerpted directly from the job aid-covers numerous component systems, abbreviations and detailed descriptions.

The information in the job aids is intended for reference only and repairers are reminded that when servicing or calibrating any ADAS components, the detailed procedures contained in the Ford Workshop Manual (WSM)-accessible through Motorcraftservice.com or the Ford Professional Technician Society (PTS) site-should always be followed.

On Target plans to include additional job aid details in future volumes. These job aids-and much more-can be found on FordCrashParts.com.

ADAS Descriptions						
System		Abbreviation	Description			
360 Degree Cameras	Front Parking Aid Camera	_	The image starts with a 360° overhead view displayed on the Front Display Interface			
	Rear Parking Aid Camera		Some vehicles, including the 2021 Mustang Mach-E® SUV. F-150® & Bronco®, do not hav			
	RH Side Parking Aid Camera		 a FDIM. It is called an Audio System Display. The 360° view provides different camera views to assist the driver while maneuvering the vehicle no greater than 10mph. 			
	LH Side Parking Aid Camera					
Active Park Assist	Parallel Parking	APA	 The image processing module A (IPMA) uses input from the active park assist sensors, parking aid sensors and a geometrical equa- tion to determine whether the vehicle fits in the parking space. The system visually and/ or audibly instructs the operator to park the 			
	Parallel Park Out Assist		 vehicle through messages in the centerstack infotainment display and audio system warn- ing chimes. The system uses the following modules to help in parking the vehicle: 			
	Perpendicular Parking		 Parking Assist Control Module (PAM) Power Steering Control Module (PSCM) Steering Angle Sensor Module (SASM) Anti-lock Brake System (ABS) module Instrument Panel Cluster (IPC) The system also uses sensors such as the ultrasonic active park assist sensors. 			

For more information on electric vehicle repair, or ADAS calibration, contact the Ford Crash Parts Hotline at cphelp@fordcrashparts.com and visit I-CAR.com/ADAS.

I-CAR[®] Launches 2-Day Hands-On ADAS Training Course for Ford Certified Collision Network



ACCELERATION OF INDUSTRY TECHNICAL NEEDS DEMANDS FURTHER FCCN CREDENTIALING

In collaboration with I-CAR, Ford Motor Company has announced the creation of a new. optional ADAS (advanced driver-assistance systems) learning and certification path that is available for all Ford Certified Collision Network (FCCN) professionals, including a unique, Ford-specific, two-day ADAS hands-on skills development (HOSD) course at I-CAR's Chicago Technical Center, which features a state-of-the-art lab with all the proper Ford tools and equipment.

The new, 16-hour Ford ADAS HOSD course is focused on diagnostics and repairs specific to Ford ADAS. In a real-world shop environment, technicians will use Ford Service Information (PTS) and the Ford Diagnostic & Repair System (FDRS) to identify, investigate, diagnose, and repair various ADAS components on Ford vehicles. Technicians will apply a diagnostic process to understand ADAS operation, architecture, and features, and will learn about the relationships these systems have to one another and other vehicle systems.

If a shop in the FCCN network desires to perform ADAS calibrations internally, they must complete the eleven (11) I-CAR and five (5) Ford courses as prerequisites to the two-day HOSD course, which will provide the knowledge and skills unique to the dynamic calibration procedures of Ford vehicles.

Alternatively, if a shop outsources the calibration, then the outsourced service company technician must have completed the same requirements as the shop technician.

"I-CAR has developed an intensive two-day, hands-on course, utilizing current-model Ford vehicles, detailing proper OE calibration procedures, including how to diagnose, troubleshoot, and repair," said Ford Collision Network Manager Dean Bruce. "We have worked closely with I-CAR to ensure that this training accurately reflects real-world repair calibration examples. Our mutual goals are focused on restoring damaged vehicles to factory specifications."

A link to the prerequisites to the Ford two-day HOSD course can be found at I-CAR.com/Ford. For more information, call (844) 505-9557 to speak with a representative.



Ford Bronco[®] and Bronco Sport Body Construction Details

On Target brings more vehicle-specific body construction details on both the full-sized Ford Bronco—looking at the body-side panels for the five-door configuration—and the Bronco Sport—this time focusing on the front panels, aprons and side members.

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.

For more information on both vehicles, refer to their specific entries found in Section 501-26: Body Repairs – Vehicle Specific Information and Tolerance Checks, Description and Operation and Section 501-25: Body Repairs – General Information, Specifications.



BRONCO SPORT

Front Panels, Aprons and Side Members (Figure 1)

Item	Description	Steel Type		
1	Fender apron brace	Dual-phase (DP) 800 steel		
2	Side member outer	Dual-phase (DP) 600 steel		
З	Side member inner	Dual-phase (DP) 600 steel		
4	Reinforcement	High-strength low-alloy (HSLA) 420 steel		
5	Reinforcement	Dual-phase (DP) 800 steel		
6	Apron assembly	Boron steel		
7	Bracket	Boron steel		
8	Bracket	Boron steel		
9	Bracket	Mild steel		
10	Reinforcement	Dual-phase (DP) 800 steel		
11	Tower apron assembly	Mild steel		
12	Fender reinforcement	Mild steel		
13	Reinforcement	Dual-phase (DP) 800 steel		
14	Support	Dual-phase (DP) 800 steel		
15	Floor side member assembly	Dual-phase (DP) 800 steel		
16	Radiator support	Dual-phase (DP) 800 steel		
17	Bumper mounting bracket	High-strength low-alloy (HSLA) 420 steel		



On Target plans to include more construction details on the Bronco and Bronco Sport in future volumes, including sectioning guidelines.

For more information on the Bronco, Bronco Sport, 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.



BRONCO

Body Side Panels - 5 Door (Figure 2)

Item	Description	Steel Type
1	Quarter panel	Bake-hardened (BH) steel
2	Body side panel	Bake-hardened (BH) steel
З	B-pillar	Boron steel
4	Rocker panel reinforcement	Boron steel
5	A-pillar	Boron steel
6	A-pillar upper reinforcement	Boron steel
7	A-pillar upper outer panel	Mild steel
8	Roof side rail reinforcement	Boron steel
9	Roof side rail reinforcement	Boron steel
10	Roof side reinforcement	Boron steel
11	Reinforcement	High-strength low-alloy steel (HSLA)
12	Roof side reinforcement	High-strength low-alloy steel (HSLA)
13	Inner quarter reinforcement	High-strength low-alloy steel (HSLA)
14	Drain trough	High-strength low-alloy steel (HSLA)
15	Inner quarter panel	Mild steel
16	Inner quarter reinforcement	Mild steel
17	Inner quarter extension	Dual-phase (DP) 800 steel
18	Inner quarter upper reinforcement	High-strength low-alloy steel (HSLA)
19	B-pillar inner	Boron steel

Ford F-150[®] Box Assembly Procedure

The procedure to assemble an entire box assembly continues, utilizing the 2015 – 2020 Ford F-150 as an example vehicle.

This comprehensive procedure combines all 13 individual repair procedures into a chronological, step-by-step order. This specific build procedure can be found in Section 501-30: Rear End Sheet Metal Repairs, General Procedures, Pickup Bed Assembly, in the official Ford Workshop Manual, available on Motorcraftservice.com.

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

NOTE: To assure correct pickup bed component alignment, all steps must be performed working from a solid, stable and level support base.

In the last issue, the focus was on installing the outer body-side panels for the emerging box assembly, which is where this installment picks up.

- On both sides, apply NVH sealer, and install and clamp into place the B-braces, using the locking pliers. After installing the bolt, use the 6.5mm drill bit to drill the guide holes for the fasteners. If using self-piercing rivets (SPRs), do not drill framed fastener holes. [Figure 1]
- 2. On both sides, install the A-braces and clamp into place; use the 6.5mm drill bit to drill the guide holes for the fasteners. If using SPRs, do not drill framed fastener holes. [Figure 2]
- 3. On both sides, install the following fasteners: [Figure 3 and chart below]

Additional steps in this procedure will continue in future *On Target* installments. Questions on this, or the proper repair of any Ford or Lincoln vehicle, can be sent to cphelp@fordcrashparts.com.

Item	SPR Number	SPR Code	Henrob®, Car-O-Liner®, CMO®, Chief®, Spanesi®,Wielander and Schill® Mandrel	Pro-Spot® Mandrel	Blind Rivet	Solid Rivet	Rivnut®
1	-	_	-	-	W707638- S900C	_	-
2	W718595- S900	SU	DG07-12/H	SA-0400/ SA-0401	W707638- S900C	_	_

Proper Vehicle Diagnostic Methods

Over several earlier installments, *On Target* has detailed proper vehicle diagnostic methods, straight from the official *Ford Workshop Manual*, including how to check ground-providing circuits, checking circuit resistance, unintended continuity to other circuits, back-probing connections and more. In this final installment, we look at using module parameter identification, how to check modules and how to check module switching circuits.

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. Check back often as repair procedures could be updated with additional information without notice.

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. Ford diagnostics assume the vehicle concern described by the test title is currently present. Exceptions to this rule are noted in each test. Do not replace modules or other components as directed by a diagnostic if the concern is not present at the time of testing.

Using Module Parameter Identification (PID)

Electronic modules connected to a network usually offer diagnostic scan tool measuring of internal data or operating values. This data is known as a parameter ID or PID.

- Using a diagnostic scan tool, PID input values, output states and diagnostic states may be read.
- Monitoring PID information in the datalogger function of the diagnostic scan tool allows detailed, accurate testing without vehicle disassembly and cumbersome equipment.
- Datalogger displays are the "behind the scenes" information for almost every function on a modern vehicle.
- Controlling most module outputs with a PID is possible. For example, an output state command PID for a cooling fan, engine RPM, and many other module outputs are commonly available.

Checking Modules

Unnecessary replacement of a module is the result of improper or inadequate testing.

- Understand correct module function. Read
 Description and Operation for the system.
- Make sure programmable parameters are set correctly for the function in question



Figure 2

Figure 1





(Refer to Section 418-01, Module Configuration for more information).

- Resolve DTC first as directed by workshop manual diagnostics.
- Test all inputs, both hard-wired and networked.
- Test outputs (see "Checking module switching circuits" below).
- Check for module software updates (flash programming).

Checking Module Switching Circuits

- Using the diagnostic scan tool module Output State Control function to activate components is a fast way to confirm an output is capable of being switched on and off by the module. Testing that reveals normal module output function confirms the need to analyze the module inputs.
- Do not apply ground or power directly to module-switched components with jumper wires unless directed by a workshop manual procedure, as the component could be damaged by a direct connection to ground or power.

For previous installments on diagnostic methods, refer to past volumes of *On Target*, which can be found on FordCrashParts.com.

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 or visit I-CAR's RTS Portal at RTS.i-car.com.

Blind Spot Information System (BLIS®) Specifics

On Target continues providing more details on how Ford BLIS® operates—specifically with the Cross-Traffic Alert (CTA) system and detection zones—straight from the *Ford Workshop Manual*. For previous installments, refer to past issues of *On Target*, available on FordCrashParts.com.

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.

For more information, consult **Section 419-04: Side and Rear Vision** – **Description and Operation**.

Cross Traffic Alert (CTA) System

NOTES:

- The CTA system is only active when reverse gear is selected.
- If a trailer is electrically connected to the vehicle, the CTA is disabled.

When the transmission is in reverse, the CTA system can detect a vehicle or a bicycle that is approaching at a speed between 8 km/h and 60 km/h (5 mph and 37 mph) and time-to-impact between one and 2.5 seconds. The distance at which an alert is generated varies depending on the speed of the approaching vehicle, while the system response time and performance can degrade if vehicles are approaching at speeds greater than 60 km/h (37 mph).

An adjacent parked vehicle or object [Figure 1], parking at extreme angles [Figure 2] and backing toward a curved road [Figure 3] can also affect the system's ability to detect approaching vehicles or bicycles.

CTA Detection Zones

The CTA system is designed to detect any objects approaching the vehicle at a speed equal to or greater than 8km/h (5 mph), but it has some limitations due to the nature of the radar technology used by the side obstacle detection modules: left-hand side (SODL) and right-hand side (SODR). The system cannot normally detect stationary vehicles, humans, animals or objects such as fences, guard rails or trees.

Circumstances that may cause non-detection include:

- Debris build-up or damage to the rear lamp assemblies
- The rear quarter panel of the vehicle is obstructed or partially obstructed by an adjacently parked vehicle or object
- Vehicle approaching at speeds greater than 64 km/h (40mph)
- Driving in reverse faster than 12 km/h (8mph)
- Damage to sensor and/or sensor area

Due to the nature of radar technology, the CTA system may experience false alerts, with a rate of up to three percent of the time (three times out of 100 reversals) considered normal, but these are temporary and self-correcting. A false alert may occur when backing out of a garage or backing into a parking space while objects or vehicles are very close to the radar sensors.

Missed targets occur when a target is present, and the LED does not illuminate. A rate of up to one percent (one out of 100 targets) is considered normal operation.

Ford Introduces ADAS Certification

Continued from page 1

The following items are required to be ADAS-certified:

- A dedicated, in-house calibration technician
- Completion of all eleven (11) I-CAR training courses related to ADAS
- Completion of all five (5) Ford Motor Company training courses on ADAS and the Ford Diagnostic and Repair System (FDRS)
- Completion of Ford's 2-day, hands-on ADAS service and diagnosis training workshop
- Access to Ford's official Workshop Manual (included in FCCN)
- Proper tools and equipment, including Ford diagnostic hardware and software, and 360-degree camera calibration mats

"Driver assistance systems will continue to grow and expand," said Ford Collision Network Manager Dean Bruce. "ADAS technology features highly-sensitive equipment and components integrated into many vehicle systems. Ford's new ADAS certification option helps to ensure technicians are able to recognize, diagnose and calibrate all ADAS features to ensure proper functionality of every vehicle system."

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

For more information on I-CAR training classes, contact their customer care team at CustomerCare@I-CAR.com or call (800) 422-7872.

Circumstances that may cause missed alerts include:

- Debris build-up or damage to the rear lamp assemblies
- Certain maneuvering of vehicles entering and exiting the detection zone
- Vehicles passing through the detection zone at high rates of speed
- When several vehicles forming a convoy pass through the detection zone

Additional information on BLIS®—as well as information on proper ADAS functionality, features and proper repairs—will continue in future installments 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 or visit I-CAR's RTS Portal at RTS.I-car.com.

Figure 2





Sherwin-Williams[®] Launches New Digital Suite

Sherwin-Williams has launched a new e-solution for shops, featuring a suite of programs that address key body shop business operations, including inventory, production, quality, scorecard/diagnostics and color.

"Collision Core™ is a series of interconnected apps that provide visibility across all key business operations, supporting better decisions and accountability with real-time information," said Robert Mowson, vice president of marketing, automotive finishes division of Sherwin-Williams. "These e-solutions are easy to use and accessible with mobile platforms, keeping everyone connected, informed and productive."

Collision Core focuses on optimizing labor through connected metrics from production and cycle time to customer satisfaction and profitability. The five solutions, which can be adopted individually or all together are:

 Inventory – optimizes the inventory process, reduces unnecessary inventory, and eliminates the costly time it takes to maintain adequate stock levels and place orders.

- Production provides a real-time production and scheduling solution with unparalleled management insights surrounding utilization capabilities, with a focus on labor optimization through predictive and flexible scheduling.
- Quality provides in-process, post-process, timestamped, peer-to-peer quality verification and validation assurance, manageable data insights, cost savings and improved customer satisfaction.
- Scorecard provides an automatic key performance indicator (KPI) report that focuses on the most impactful lead and lag measures driving profitability and business improvement across all business functions and departments.
- Color offers 24/7 access to a continuously updated library of color formulas, accessible from any web-enabled device with fully optimized touchscreen technology and management system connectivity for an intuitive and instantaneous color retrieval user experience.

For more information, visit Sherwin-Williams/Collision Core.

Inside the Industry

Industry Mourns Pioneer

The collision industry is mourning longtime contributor Sheila Loftus, who passed away on May 11 at the age of 79. Loftus served as editor and publisher of *Hammer & Dolly* magazine for over 30 years, founded the weekly *CRASH Network* news update and co-founded the **Women's Industry Network**. She was inducted into The Collision Industry Hall of Eagles in 1996 and retired in 2008.

VMT Increases

The number of vehicle miles traveled (VMT) nationwide jumped 11.2 percent in December versus the same month a year ago. That's according to the Federal Highway Administration, which reports an estimated 268.4 billion miles for the month, marking the 10th consecutive increase over prior year.

ASE Adds ADAS Test

The National Institute for Automotive Service Excellence (ASE) has introduced a new advanced driver assistance system (ADAS) specialist certification test (L4). The test is designed to recognize those technicians who have the skill set to service, calibrate and diagnose radar, camera, ultrasonic and other ADAS-related components.

Average Vehicle Age Hits New Record

The average age of light vehicles still in operation has now reached 12.2 years, adding nearly two months to the previous record, according to S&P Global Mobility. 2022 also marks the fifth consecutive year that the average age of vehicles has increased.

Animal Collisions Jump

Vehicle-animal collisions are on the rise on U.S. roads, according to new data released by State Farm. The insurer reports between July 2020 and June 2021, drivers struck an estimated 2.1 million animals, a 7.2 percent increase over the previous 12 months. Pennsylvania claimed the most vehicle-animal collisions (166,404), followed by Michigan (132,387), Texas (131,973 – a 19 percent increase), California (104,767 – a whopping 65 percent increase) and North Carolina (98,409). Higher vehicle speeds are thought to be a factor behind the increase.

Road Deaths Reach Record Level; Pedestrian Deaths Also Increase

According to recently released preliminary numbers from the National Highway Traffic Safety Administration, 42,915 people died in traffic crashes last year, a 10.5 percent increase from the 38,824 deaths in 2020. The findings represent the largest percentage increase since the agency began recording fatality data in 1975, and the highest number of fatalities since 2005.

In a separate study, an estimated 7,485 pedestrian deaths occurred in 2021, a 12 percent increase from the same time a year earlier. That's according to the Governors Highway Safety Association, which noted continued dangerous driving; larger, heavier vehicles that are more likely to injure or kill; roads designed to prioritize fast-moving traffic and inadequate infrastructure as possible reasons behind the increase.





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:

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