VOLUME 2 - 2024 | fordcrashparts.com

On Target

Ford Parts

For Ford and Lincoln wholesalers and the collision repair industry

Refreshed Ranger Brings Sectioning Reminders

On Target is utilizing the opportunity of the new 2024 Ford Ranger® to reiterate the many options technicians have at their disposal regarding the proper repair of Ford and Lincoln vehicles. Ford Motor Company prides itself on designing and building its vehicles with repairers in mind and sectioning options are one example of that.

Here is a rundown of the sectioning options for the 2024 Ranger, as found in the official *Ford Workshop Manual (WSM)*, which can be found at FordServiceInfo.com. The WSM is an invaluable resource for repairers, and it should be consulted frequently before any repair work is started, as repair procedures could be updated without notice.

"Researching the repair ahead of time, utilizing the WSM will make for a much more efficient repair," said Gerry Bonanni, Ford senior damageability engineer. "The WSM will also provide any updates/changes to the repair as it is continuously updated. Aftermarket or off-brand manuals may not take this additional step."

Section 501-26: Body Repairs - Vehicle Specific Information and Tolerance Checks, General Procedures

Special Tools/Equipment:

- Spherical cutter
- Plasma cutter
- Air body saw
- MIG/MAG welding equipment
- Seam sealer TA-2-B, 3M™ 08308, LORD Fusor® 803DTM
- Body Sealant WSS-M4G451-A1

The procedure begins with a series of important notes, including:

- 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.

Staying away from hinge, striker and safety restraints is an important point Bonanni reiterated, while also noting the flexibility allowed to technicians while carrying out this repair.

"We allow the technician to decide the best place to cut on exterior components, based on their respective skill level and the specific type of damage on the vehicle," said Bonanni. "As long as you stay 50 millimeters away from striker or hinge points—which is an industry standard—you can choose where to section, with the cutlines provided in the WSM acting as helpful suggestions."

After dimensionally restoring the vehicle to pre-accident condition (refer to **Section 501-26 Body Repairs – Vehicle Specific Information and Tolerance Checks, Description and Operation**), de-trim the vehicle as necessary from the area to be repaired.

As a general rule, sectioning cut points should be chosen to result in the smallest repair area possible. Furthering that point, only remove as much of the outer body side as necessary.

"Laying the cut panel on top of the new one to act as a template while cutting will help obtain the best fit for the repair area," noted Bonanni.

Where possible, create a lap-joint backer plate from either an undamaged portion of the old panel or an unused portion of the replacement panel. This will create a stronger joint. (Refer to **Section 501-25 Body Repairs – General Information, General Procedure**s.)

Rough-finish all sectioning joints with a fiber-based body filler; use a conventional body filler to final-finish the sectioning joints and plug welds. Properly seal all joints to prevent moisture intrusion using an applicable sealer. Water/moisture migrates toward horizontal joints and corrosion tends to occur more rapidly in these areas.

Refinish the vehicle using a Ford-approved paint system (following their specific guidelines), restore corrosion protection and reinstall vehicle trim.

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

Figure 1

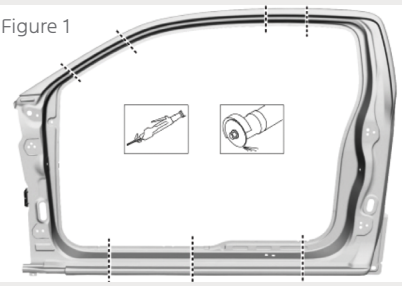
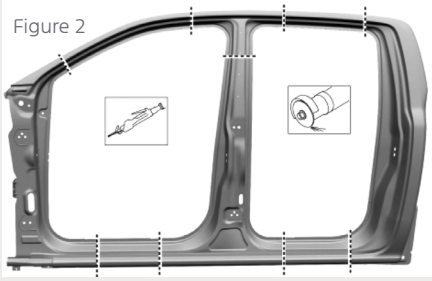


Figure 2



These illustrations are intended as a general guideline for door-opening panels (DOP) and are not all-inclusive. As a general rule, the grade of steel and location on the vehicle determines if structural components can be sectioned. Components constructed of dual-phase (DP 800) or higher strength/grade steel should **not** be sectioned.

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

IN THIS ISSUE

Ford and I-CAR® Expand Collision Repair Course Offerings

Building on the four new training courses introduced earlier this year (see *On Target* - 2024, Vol. 1), Ford Motor Company and I-CAR® (Inter-Industry Conference on Auto Collision Repair) are proud to announce that five more Ford-specific online courses are now available.

Industry experts created these courses to provide comprehensive, up-to-date knowledge that empowers automotive professionals to excel in their field and represent the pinnacle of vehicle-specific education, providing professionals with the knowledge and skills needed to uphold the highest standards of excellence in collision repair.

The five new courses include:

Ford F-150® New Model Training (75 mins):
Get a high-level overview of the features, powertrain and equipment of the Ford F-150.

2025 Ford Explorer® New Model Training (60 mins):
Dive into the new features and technologies of the 2025 Ford Explorer.

2025 Lincoln Aviator® New Model Training (60 mins):
Explore the 2025 Lincoln Aviator's features and technologies.

Ford Mustang® Mach-E® SUV Collision Repair (45 mins):
Discover safety protocols and repair techniques, including measuring and sectioning procedures, tailored for collision repair on the Mach-E.

Ford Mustang® Mach-E® SUV Electromechanical Repair (60 mins):
Gain the knowledge to diagnose and repair critical components contributing to the optimal performance and safety of the Mach-E.

The Mach-E courses represent an expansion of I-CAR's Vehicle and Technology Specific training curriculum. All of the new repair courses highlight Ford and I-CAR's dedication to providing comprehensive training, ensuring that repair professionals can accurately apply their expertise to the unique requirements of different OEMs and models while covering the essential knowledge and skills required for our industry credentialing programs.

For more information on all of the Ford repair courses offered through I-CAR—including the newly created ones—visit I-CAR.com/Ford.

Ford BlueCruise System: Active Drive Assist + Navigation

On Target continues providing more technical details regarding the 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 FordService-Info.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 valuable 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 High-way Assist that contains Active Drive Assist.

Active Drive Assist

Active Drive Assist—also known as Highway Assist when allowed to go active on certain highways—keeps the vehicle centered moving down the lane and monitors the vehicle's exact location from side to side in the lane following a desired path when using ACC.

Active Drive Assist is built upon ACC with Stop-and-Go and Lane Centering Assist, combining longitudinal support with continuous steering support.

The system uses cameras to monitor your vehicle position within a lane and applies steering support to keep your vehicle centered in the lane.

When engaged, Active Drive Assist uses a driver-facing camera and infrared lighting to monitor eyes and head position to detect if the driver is distracted. If the system determines the driver is distracted, it alerts the driver to return their eyes to the road with a "watch the road" alert on the IPC (instrument panel cluster) along with a chime. If, after 10 seconds, the system determines the driver is still not attentive, it will escalate the warning with a "resume control" alert on the IPC along with a sharper chime. If the driver does not resume control, the vehicle will begin to automatically slow down to 5 mph.

If the driver resumes control after the "resume control" alert but before the vehicle begins to slow down, the vehicle will resume normal operation and hands-free driving will still be available. If the driver resumes control after the vehicle has begun to slow down, the driver can resume driving but hands-free will be unavailable until the next time the driver presses the ACC or "resume" button on the steering wheel. For more information regarding the interior monitor system, refer to **Section 419-04B: Interior Camera System, Description and Operation.**

Active Drive Assist with Navigation (if equipped)

Active Drive Assist works with navigation to collect special map information for the Active Drive Assist (ADA) system module from Ford Cloud Services, recording road segments and classifying them as either blue zone or red zone. The map service stores and updates the data and can also deliver map database information to the advanced driver assist system module, for use by that system. The blue zone areas of limited-access freeways are deemed reasonable for hands-off driving, while the red zone areas—surrounding and including portions of limited-access freeways—are **not** deemed reasonable for hands-off driving.

Hands-free mode is enabled by the system when the vehicle is in a blue zone, and all other preconditions are met.

Continued on page 6

Ford Maverick® Exterior Components

On Target provides more vehicle-specific exterior component details on the Ford Maverick pickup, examining the dash panel, front and rear doors, and front bumper.

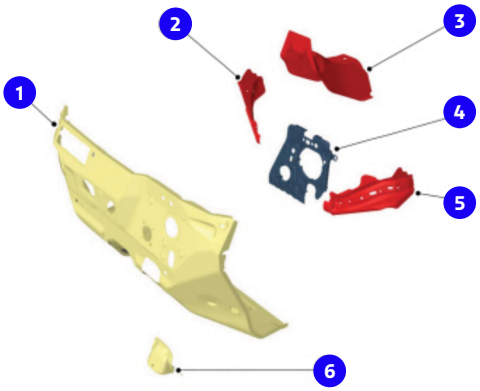
For previous installments, see *On Target,* 2022 - Vol. 1, *On Target,* 2023 - Vol. 3 and *On Target,* 2023 - Vol. 4.

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.

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

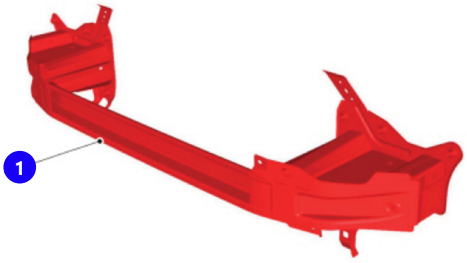
For more information on the Maverick, or any Ford or Lincoln vehicle, contact the Ford Crash Parts Hotline at cphelp@fordcrashparts.com or visit-CAR's RTS Portal at RTS.i-car.com.

Ford Parts



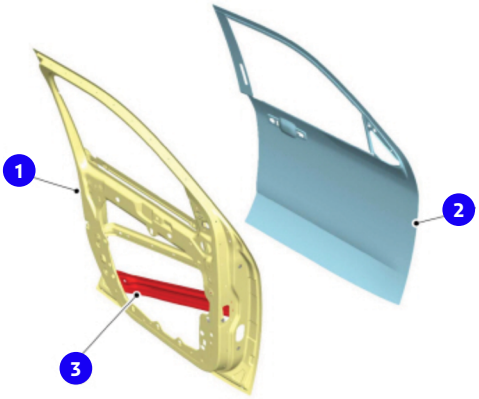
Dash Panel

Item	Description	Steel Type
1	Dash panel assembly	Mild steel
2	Reinforcement	Boron steel
3	Dash panel reinforcement	Boron steel
4	Brace	Mild steel
5	Reinforcement	Boron steel
6	Steering column guide tube	Mild steel



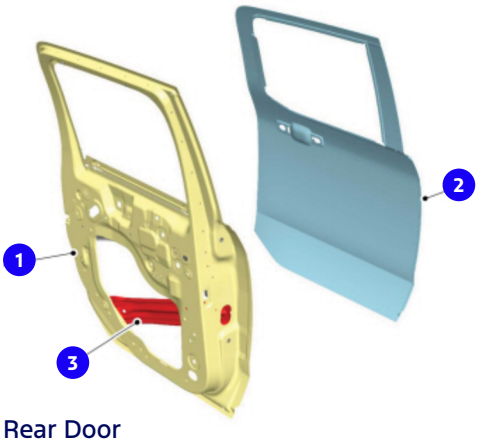
Front Bumper

Item	Description	Steel Type
1	Front bumper assembly	Boron steel



Front Door

Item	Description	Steel Type
1	Door shell assembly	Mild steel
2	Door outer panel	Bake-hardened (bh) 210 steel
3	Door intrusion beam (part of door shell assembly)	Boron steel



Rear Door

Item	Description	Steel Type
1	Door shell assembly	Mild steel
2	Door outer panel	Bake-hardened (bh) 210 steel
3	Door intrusion beam (part of door shell assembly)	Boron steel

I-CAR's Jim Guthrie presents the Chairman's Award to Chris Wallace, Collision & Global Brand Protection Manager at Ford Motor Company, who received the award on Ford's behalf.

Ford Honored as Part of I-CAR's 45 Years of Service

I-CAR

As I-CAR celebrates its milestone 45th anniversary, at a recent national meeting the not-for-profit organization honored those who have significantly contributed to help make I-CAR what it is today. Ford Motor Company—the first OEM to join I-CAR's Sustaining Partner Program—has now also become the first organization to receive the I-CAR Chairman's Award, in recognition of its commitment to excellence within the automotive and collision repair industry.

"Ford Motor Company has demonstrated its unwavering support for ongoing training, ensuring that automotive professionals are equipped with the knowledge, skills and information needed to meet the evolving challenges of repairing their vehicles to the highest standards," said Jim Guthrie, I-CAR Board Chair.

Supplemental Restraint System – Depowering Procedure

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

WARNING: Incorrect repair techniques or actions can cause an accidental SRS deployment. Never compromise or depart from these instructions. Failure to precisely follow all instructions could result in serious personal injury from an accidental deployment.

1. Before beginning any service procedure in this manual, refer to health and safety warnings in **Section 100-00: General Information**. **Failure to follow this instruction may result in serious personal injury.**
2. Determine if an SRS fault is present. Turn the ignition **OFF** and wait 10 seconds, then turn the ignition **ON** and monitor the airbag warning indicator. The airbag warning indicator illuminates continuously for approximately 6 seconds and then turns off. Continue to monitor the airbag warning indicator for approximately 30 seconds as this is the time required for the restraints control module (RCM) to complete testing of the SRS.
3. If the airbag warning indicator either fails to light, remains lit continuously or flashes, an SRS fault is present. The flashing may not occur until approximately 30 seconds after the ignition has been turned from **OFF** to **ON**. If this occurs, diagnose and repair any SRS faults before proceeding with other repairs. Go to step 5.
   - If the airbag warning indicator is inoperative and an SRS fault exists, a chime sounds in a pattern of 5 sets of 5 beeps or a message will display in the message center. If this occurs, diagnose and repair the airbag warning indicator and any SRS faults before proceeding with other repairs. Go to step 5.
   - If the ignition has been turned **ON** for over 30 seconds and the airbag warning indicator remains unlit with no chime or SRS message displayed in the message center, no SRS fault is present. Go to step 4.

No SRS Fault Present (with ignition ON, airbag warning indicator stays off after prove out)

4. Turn the ignition **OFF** and wait one minute to deplete the backup power supply. Ignition must remain **OFF** until repair is complete. Failure to follow this instruction may result in serious personal injury or death in the event of an accidental deployment.
   - Turn the ignition **OFF** and wait one minute before continuing vehicle service.

SRS Fault Present

5. Turn the ignition **OFF**.
6. Remove the body control module (BCM) power fuse(s) from the appropriate fuse panel/junction box. Refer to **Wiring Diagram Cell 11** for fuse and relay information.
7. Disconnect the battery. Refer to **Section 414-01: Battery, Mounting and Cables, General Procedures)**.
8. Wait at least one minute before continuing vehicle service

Additional details on SRS repairs will continue in future volumes of *On Target*, focusing on clockspring adjustments, 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.

Rotunda Equipment Offers Updated Hybrid and Electric Vehicle Equipment

Ford Motor Company and Rotunda remain dedicated to their efforts to help ensure collision repairers have the best equipment available to them to properly repair Ford and Lincoln vehicles. This remains true of hybrid and electric vehicles (EVs), which have their own unique set of safety and equipment requirements, including personal protective equipment (PPE) which is needed to help ensure safety when dealing with high-voltage batteries (HVBs).

Late last year, Rotunda updated its EV and hybrid service and safety repair catalog of equipment from supplier John Dow Industries™. The offerings include vehicle fire blankets, magnetic car toppers and area barricade kits to limit access to work areas with live electrical components and repairs, and a plethora of heavily insulated materials to help prevent electrical shocks, including gloves, shoes, overboots, aprons, mats and other options.

To order PPE or other repair equipment for hybrid, EV, or internal combustion Ford and Lincoln vehicles, visit onerotunda.com.

Another helpful resource for repairers when dealing with hybrid and electric vehicles is the EV/hybrid page of FordCrashParts.com. This page contains information on Ford's electric and hybrid vehicles including the Escape®/Corsair®, Maverick®, Explorer®, Aviator®, F-150® and the Mustang Mach-E®.

Clicking on the Mustang Mach-E at the bottom of the page will open a new window containing the emergency response guide (ERG). It contains a wealth of information, including large, easy-to-read color-coded diagrams, photos, precautions and other details, making it worthwhile reading for every repairer.

On Target will continue to provide additional valuable information on EVs in future volumes.

For more information on electric vehicles, or the repair of any Ford or Lincoln vehicle, visit FordCrashParts.com.

Additional information on EVs can also be found on FordServiceInfo.com. Under 'Free Resources,' click on 'Rescue Cards.'

3M™ RepairStack™ Helps Shops Navigate the Collision Repair Process

3M Science. Applied to Life.™

The importance of material management and its relationship with OEM repair procedures is crucial to validate proper vehicle repairs after a collision. 3M has released RepairStack into the collision market as a solution to help drive repair accuracy and manage a shop's profitability while also alleviating material shortages and tracking materials at the distributor, technician and vehicle level.

Inventory Management

3M RepairStack offers a live inventory management option—featuring actionable, real-time data by focusing on real-time inventory levels—to help shops streamline managing products to maintain OEM standards of repair and compliance.

The system helps shops create standard operating procedures, and guides them to use the correct products within those procedures. Additionally, RepairStack continues to report and highlight products the repair facilities do not use and can be removed, effectively reducing overall waste within a facility.

RepairStack's vast UPC-driven material database means it is also able to service non-3M materials, paint systems, shop supplies and parts.

With RepairStack, a facility can scan products out of inventory, allocate to a repair order (RO) and automatically reorder the products from the distributor. The shop has the autonomy to choose the product minimum and maximum inventory values to meet the demand of the repair facility. This provides a cyclical loop of product usage and restocking based on an agreed-upon order schedule by the shop and distribution partner. This reduces out-of-stock situations to assure repairs are moving forward.

Documentation/Invoicing

Documentation paired with OEM procedures alleviates some of the administrative burden required to negotiate OEM-compliant repairs. RepairStack provides the key resources to validate a safe repair. Additionally, the cloud-based Billables Invoicing Program allows a repair facility to document and invoice product usage without the need for a scanner. This standalone invoicing platform provides the same level of production documentation, and the program is adaptable based on specific business needs. Furthermore, RepairStack integrates with many leading management software programs to streamline the documentation process by RO.

RepairStack provides greater visibility into individual product usage through the inventory management system by creating material usage reports. These reports are key to proper documentation for the OEMs and insurance partners.

Performance Analytics

RepairStack provides real-time visibility into repair center performance, allowing collision centers to monitor quality metrics, identify trends and take corrective actions when necessary. This helps repair facilities maintain the OEM standard of repair while also upholding their brand reputation.

For more information, visit 3m.com/RepairStack.

I-CAR® Celebrates SkillsUSA National Competition

For the second year in a row, I-CAR retained its strong presence at the SkillsUSA National Leadership & Skills Conference (NLSC), the ultimate recognition of excellence in career and technical education.

Each year, the SkillsUSA National Conference brings together over 16,000 attendees, including 6,000 state champions, vying for national recognition in 115 competition categories, making it the largest gathering of America's future skilled workforce.

Held in Atlanta each June, the conference is a week-long celebration of the skilled trades and the accomplishments of career-ready leaders.

I-CAR and *CollisionCareers*—the online resource launched last July by I-CAR and the Collision Repair Education Foundation, dedicated to connecting individuals to opportunities in collision repair—provide dedicated industry professionals who volunteer their time as competition judges. These passionate I-CAR members leverage their expertise to set up and evaluate competitions, fostering a valuable learning experience for participants. In addition to volunteer support, I-CAR sponsors materials such as personal protective equipment for competitors to use. This long-standing collaboration highlights I-CAR's commitment to the future of collision repair.

I-CAR actively partners with SkillsUSA to connect with educators, students and parents. SkillsUSA helps display I-CAR's resources to attract talent, like *CollisionCareers*, and retain entry-level technicians in the industry through the upcoming Academy Program, set to launch later this summer.

"Participating in the SkillsUSA conference is a testament to I-CAR and *CollisionCareers*' commitment to fostering the next generation of skilled collision repair professionals," said Arianna Sherlock, senior marketing director, I-CAR. "We are there to ignite passion, encourage growth, and drive innovation in an industry that fuels mobility and progress."

Left: The I-CAR team at the 2024 SkillsUSA event. While this is the second year I-CAR had a booth presence at the event, their technical instructors have been volunteering at the local and national levels since the 1990s.

Right: Scott VanHulle—repairability technical support and OEM technical relations manager for I-CAR—receives the Collision Repair Technology Spirit Award at the 2024 SkillsUSA event.

The Crash Parts Corner

Did You Know That ...

Only by using Ford Original Equipment Carlex replacement glass can you be confident of the fit, function, safety and structural integrity of the repair since it is designed to fit the vehicle's specific needs and restore the vehicle to proper operating conditions.

Ford OE Carlex glass offers a wealth of helpful characteristics, including:

Visual Clarity: Many aftermarket windshields include visual distortions that would not have been accepted at the assembly plant or during installation. Carlex has installed on all the windshield-manufacturing lines a 100-percent laser-surface scan on all products they produce.

Multi-Purpose Camera Bracket: The bracket adhered to the windshield is designed and approved by the vehicle manufacturer product development team for the purpose of retaining and positioning the various cameras and sensors in relationship to the windshield surface. The design and materials specified for the camera bracket are developed and tested to validate not only camera function but proper retention of components to the windshield in the event

of a crash. Manufacturers typically own the tooling for the camera bracket and prohibit the sale of brackets to any supplier other than the OE glass supplier. Non-OEM camera brackets may not place the camera in the correct location, or in a secure fashion with the proper alignment, impeding its ability to work effectively with the safety and warning systems.

For more information on Ford/Carlex 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.

Carlex™

Ford BlueCruise System: Active Drive Assist + Navigation (continued)

Active Drive Assist uses a driver status monitor camera and a LH and RH driver status monitor LED to continually monitor driver alertness. For additional camera information, refer to **Section 419-04B: Interior Camera System, Description and Operation.**

The system only activates when all the following occur:

- Active Drive Assist is enabled in the information and entertainment unit display screen.
- Adaptive cruise control is on.
- The system detects both lane markings.
- Hands are on the steering wheel.
- Eyes are on the road.

Any of the following conditions could result in active drive assist not operating correctly:

- Vehicle is not centered in the lane.
- Lane is too narrow or too wide.
- The system does not detect at least one lane marking or when lanes merge or split.
- Limited steering torque input is applied.
- Driving area is under construction or new infrastructure.
- Modifications to the steering system are made.
- Spare tire is in use.

Switching Active Drive Assist ON:

- The controls are on the steering wheel.
- Using the ACC and lateral support buttons, ensure both systems are active. Active Drive Assist activates.

Switching Active Drive Assist OFF:

- Press either the lateral support or ACC button when the system is in standby mode.
- Active Drive Assist turns off through each ignition cycle.

For additional information on Active Drive Assist alerts, refer to owner's literature.

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.

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.

Editors

Gerry Bonanni
Brad Krein
Dean Bruce

Contributors

Steven Lubinski
Chris Caris
Travis Alber
Andrea Presnell

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.**