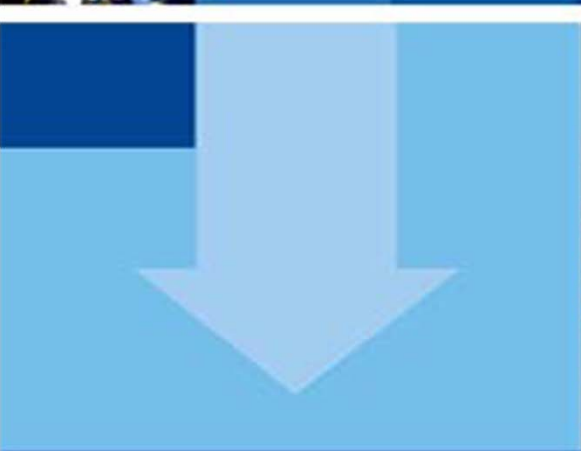




Verifacts Guild 21 Webinar

Mike Anderson Collision Advice





ANTITRUST / COMPETITION GUIDELINES



- ❑ In today's workshop, we will not discuss any issues that would violate antitrust guidelines. Surveys of prices, discounts and costs are permissible, but only under strict guidelines and only if they are not part of a conspiracy to fix prices or to otherwise restrain trade. Remember, the prices charges must be calculated and determined by the business owner alone. These prices should take into account the costs of doing business and include allowances for reasonable profit.

- ❑ All content of this program is based on standard economic and management principles. Profit margins, labor rates, etc., used in this presentation are to be taken as examples only. The intent of this workshop is to provide attendees with basic human resources management skills that will enable them to determine their own individual rates, profit percentages and other operation aspects of their businesses strictly on an individual basis, using generally accepted management principles.



So, How did we get here



While Self Driving Vehicles get all of the attention in the media.

The primary focus of the OEM's are as follows:

- *Prevent Fatalities*
- *Minimize Bodily Injuries*
- *Improve Fuel Economy*
- *Comfort Features*

*According to the World Health Organization, **1.24 million people die** in traffic accidents each year. On a global scale, traffic fatalities continue to increase steadily and are expected to become the fifth leading cause of death by 2030, unless countermeasures are implemented.*

****According to the National Safety Council, traffic deaths increased 6 percent to 40,200 — the first time since 2007 that more than 40,000 have died in motor vehicle crashes in a single year*



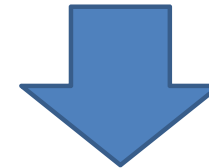
COLLISIONADVICE

We have gotten there faster than they predicted..... !!!!!!

MNT.  

4: Accidents (unintentional injuries)

- Deaths: 136,053
- Rate: 42.7
- Age-adjusted rate: 40.5
- Percentage of total deaths: 5.2 percent



Accidents, also referred to as unintentional injuries, are at present the 4th leading cause of death in the U.S. and the leading cause of death for those aged 1-44.

Possible prevention measures

By their very natures, accidents are unintentional, but there are many ways to reduce the risk of accidental death and injury. Some key components of accident prevention include those focused on road safety, such as seat-belt use, and improved awareness of the dangers of driving while intoxicated.



5: Stroke (cerebrovascular diseases)

- Deaths: 133,033



Main sources of traffic accident fatalities

Vehicle-on-vehicle collisions

Traffic lane departures

Poor night visibility



Toyota's Efforts

The Toyota Safety Sense active safety package was developed focused on three items to help prevent these types of incidents .



Collision Support Avoidance

Lane Deviation Prevention Support

Night Visibility Support



Recently I asked several OEM's.....?





The # 1 Answer was.....





Liability

- ❑ Liability is the biggest issue that keeps OEM's awake at night
- ❑ Let me tell you a story...
 - Toyota with Blind Spot Monitor (BSM)
 - Repaired rear quarter panel
 - Repair was off by 7 degrees
 - OEM documentation said couldn't be off by more than 5 degrees





2015 Toyota Avalon



Scan Readings
Initial Recorded Faults:
SRS Airbag
<ul style="list-style-type: none">• B1801 Open in Driver squib circuit• B1811 Open in Driver squib dual stage 2nd step circuit
Blind Spot Monitor Master
<ul style="list-style-type: none">• C1AC1 Master module horizontal axis misalignment ←
Snapshot Data
<ul style="list-style-type: none">• Freeze Frame Data not available:

Blind spot module indicating horizontal axis is misaligned: 5 degrees max deviation.





2015 Toyota Avalon



C1AC1 - Master Module Horizontal Axis Misalignment

DESCRIPTION

This DTC is stored when the angle of the blind spot monitor sensor LH deviates more than the allowable range from the horizontal axis.

HINT

If drum tester such as a speedometer tester, brake/speedometer combination tester or chassis dynamometer is used with the blind spot monitor main switch (warning canceling s

Zoom and Print Options		
DTC No.	DTC Detection Condition	Trouble Area
C1AC1	When the blind spot monitor sensor deviates 5 degrees or more from the horizontal axis when the system is activated.	Blind spot monitor sensor LH



5 Degrees MAX Deviation

INSPECTION PROCEDURE

NOTICE:

When checking for DTCs, make sure that the blind spot monitor main switch (warning canceling switch assembly) is on.

PROCEDURE

1. CHECK INSTALLATION CONDITION

(a) Check the installation condition of the blind spot monitor sensor LH [See: Collision Avoidance and Parking Assist Systems > Initial Inspection and Diagnostic Overview > Operation Check.](#)

HINT

Take the appropriate action in accordance with the result.

NEXT – Continue to next step.

2. PERFORM BEAM AXIS CONFIRMATION



Requires Toyota Specific Target

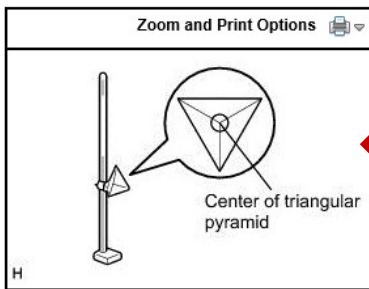




2015 Toyota Avalon



* The center of triangular pyramid is the reference point for the setting position and angle.



- * Set the reflector as shown in the illustration so that its center of triangular pyramid faces the blind spot monitor sensor.
- * Perform the operation as precisely as possible.

(c) Perform the blind spot monitor beam axis display.

- (1) Connect the Techstream to the DLC3.
- (2) Turn the engine switch on (IG).
- (3) Turn the blind spot monitor main switch (warning canceling switch assembly) on.
- (4) Turn the Techstream on.
- (5) Enter the following menu: Body Electrical / Blind Spot Monitor Master or Blind Spot Monitor Slave / Utility / BSM Master beam axis display or BSM Slave beam axis display.
- (6) Check the results displayed for the BSM beam axis display.

Allowable Range:

Zoom and Print Options		
Item	Blind Spot Monitor Sensor LH (Master)	Blind Spot Monitor Sensor RH (Slave)
Angle	-3.6 to +3.6 °	-3.6 to +3.6 °
Distance	2.0 to 3.0 m (6.56 to 9.84 ft.)	2.0 to 3.0 m (6.56 to 9.84 ft.)



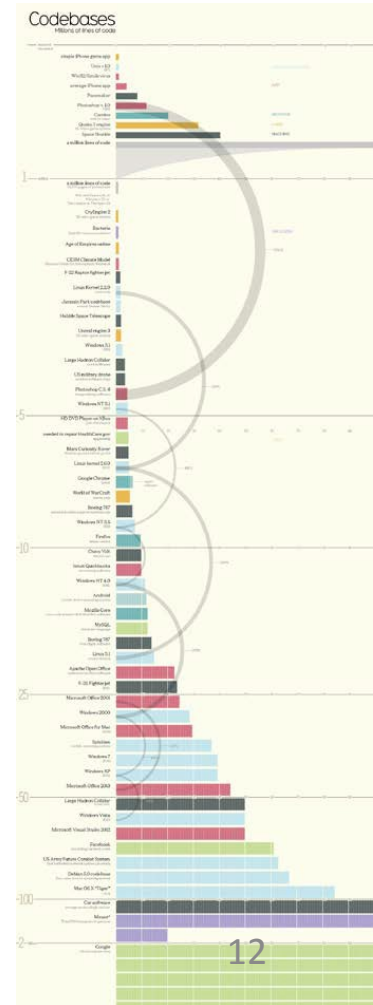


Lines of code

- ❑ Boeing 787 – 14 million lines of code
- ❑ F-35 Fighter Jet (2013) – 24 million lines of code
- ❑ Large Hadron Collider – 50 million lines of code
- ❑ Avg. high-end car – 100 million lines of code

This code controls everything from tire pressure to collision avoidance, braking, backup, steering and other systems

<http://www.informationisbeautiful.net/visualizations/million-lines-of-code>



OEM Scanning Position Statements



SCAN TOOL POSITION STATEMENT

FCA US LLC vehicles, systems and components are engineered, tested and manufactured to help protect vehicle occupants. They are engineered to meet or exceed government mandated and internal corporate requirements related to safety, without a vehicle's sensor and/or system failure. Use of the Mopar WiTECH vehicle diagnostic tool or Scan Tool is an important part of FCA US vehicle service and maintenance. This tool contains software that alternative tools may not contain and can assess whether any FCA US vehicle safety and security systems contain active or stored Diagnostic Trouble Codes (DTCs).

Safety and security related systems, such as anti-lock brakes, supplemental restraint systems (SRS), air bags, occupant restraint control (ORC), lane keep, active head restraints, forward facing camera and radar, blind spot monitoring, and other advanced electronic driver assistance systems, MUST be tested for their codes (DTCs) that could be active current or stored following a collision. Use of the Mopar WiTECH vehicle diagnostic tool is necessary before and after collision repair.

All of the following conditions could trigger a DTC prior to or during collision repair, which could result in poor vehicle performance:

- Vehicle is involved in an accident or collision, even though the damage may appear minor
- Vehicle has been in an accident with or without air bag deployment
- Vehicle has air bag deployment, disconnects and/or air bag disabling
- Significant vehicle disassembly including, but not limited to, bumpers, door handles, headlamps and mirrors
- Interior trim repair or removal
- Glass removal and replacement operations

Any repair performed without using Mopar parts and the following outlined repair guidelines and procedures may impact current or future vehicle safety and occupants' unnecessary risk.

If faults were stored by the OEM for any safety or security systems, these systems MUST be scanned according to the repair procedure in Service Information. After performing repairs, recheck the system to determine if any active or stored DTCs remain. If so, take appropriate service action to ensure proper function.

TOYOTA LEXUS SCION

CRIB COLLISION REPAIR INFORMATION BULLETIN FOR THE COLLISION REPAIR PROFESSIONAL

TITLE: Scanning for Electrical System Faults **2016 1/1**

SECTION: Electrical **Page 6 of 11**

APPLICABLE VEHICLES: All Toyota, Lexus and Scion Models

DATE: July 2016

Toyota, Lexus and Scion onboard vehicle electrical systems are designed to control and communicate with engine, drivetrain, body electrical, navigation, audio, handling and safety systems. In the event of a collision, electronic control modules, actuators, sensors, or wiring can be damaged. Damage related to these systems may cause them to not perform properly during future operating conditions including subsequent collisions.

These electrical systems are designed to set fault codes known as DTCs (Diagnostic Trouble Codes) if a fault is detected. Not all DTCs illuminate a MIL (Malfunction Indicator Light). Toyota's "Technician" and "Technician Lite" scan tool and software can retrieve and report all DTCs for all Toyota, Lexus, and Scion vehicles.

Considering the fact that a capable scan tool is the only way to identify some DTCs, Toyota requires that repairs perform a "Health Check" diagnostic tool if a vehicle has sustained damage as a result of a collision that may affect electrical systems. Additionally, Toyota strongly recommends that repairs perform a "Health Check" diagnostic scan before and after every repair to identify and document DTCs. If DTCs are identified any repair, then they will be considered to enable a complete vehicle damage analysis report. If DTCs are identified post-repair, then they can be diagnosed and addressed before returning a vehicle to the customer.

DTCs Found during Health Check



NISSAN

Collision Position Statement- Pre- and Post-Repair Scanning

Reference: NSB-16-001
Date: June, 30, 2016

TO: COLLISION REPAIR INDUSTRY

POSITION STATEMENT: Pre- and Post-Repair System Scanning

FRANKLIN, TN- Nissan vehicles today have more technology and electrical components than ever before. Today, it is necessary in most repair situations for the vehicle to have a pre- and post-repair system scan so that the repairer is informed of any trouble codes present, even in cases where there are no indicator lights on the dash.

A pre-repair custom scan can identify items up front that are manufacturing on a vehicle. This helps the repair facility to fully understand the scope of the collision repair, even before starting. The post-repair system scan will confirm that trouble items have been properly repaired and systems are calibrated, helping to ensure our customers' safety and satisfaction.

It is the stance of Nissan North America, that all of our vehicles be scanned following a collision repair to help ensure the vehicles' systems are communicating properly with no trouble codes outstanding. It is also recommended that, where appropriate, a pre-repair scan also be completed for reasons mentioned above. The safety of our customers is our number one priority, and we believe these pre- and post-repair scans are more and more integral to a safe, quality repair. We ask the general repair industry to adhere to these strict guidelines going forward.

For additional information, please see service manual section "BC".

American Honda Position Statement

HONDA

Issue: July 2016

SUBJECT: POST-COLLISION DIAGNOSTIC SCAN AND CALIBRATION REQUIREMENTS FOR HONDA AND ACURA VEHICLES

It is the position of American Honda that all vehicles involved in a collision must have the following diagnostic scans, inspections, and/or calibrations done to avoid improper repair:

- A preliminary diagnostic scan during the repair estimation phase to determine what Diagnostic Trouble Codes (DTCs) may be present, so proper repair may be initiated. See Background On-Scan Requirements paragraph for more information.
- A post-repair diagnostic scan to confirm that no DTCs remain.
 - Any repair that requires disconnection of electrical components in order to perform the repair will require a post-repair diagnostic scan to confirm if the component is reconnected properly and functioning.
 - Damage that requires body panel replacement will always require a post-repair diagnostic scan.
 - Some safety and driver assistance systems will require inspection, calibration, and/or energy after collision or other body repairs. See page 1 for additional information.

Background On-Scan Requirements
Honda and Acura vehicles include numerous electronic control systems, including those that operate safety and driver assist systems. Most of these systems include onboard self-diagnostics that monitor for state of health and/or abnormality of input and output signals. When non-normal circuit values fall outside predetermined thresholds, DTCs may be set in one or more electronic control units (ECUs).

The mechanical forces encountered in a collision can damage electrical circuits and components in ways that are not easily diagnosed with visual inspection methods. Here is some other electronic control system self-diagnostic facts:



Mercedes-Benz

Mercedes-Benz USA, LLC
Collision Center

Position Statement

Reference: NSB-16-001
Date: June 30, 2016

SUBJECT: POST-COLLISION DIAGNOSTIC SCAN AND CALIBRATION REQUIREMENTS FOR MERCEDES-BENZ VEHICLES

It is the position of Mercedes-Benz that all vehicles involved in a collision must have the following diagnostic scans, inspections, and/or calibrations done to avoid improper repair:

- A preliminary diagnostic scan during the repair estimation phase to determine what Diagnostic Trouble Codes (DTCs) may be present, so proper repair may be initiated. See Background On-Scan Requirements paragraph for more information.
- A post-repair diagnostic scan to confirm that no DTCs remain.
 - Any repair that requires disconnection of electrical components in order to perform the repair will require a post-repair diagnostic scan to confirm if the component is reconnected properly and functioning.
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The mechanical forces encountered in a collision can damage electrical circuits and components in ways that are not easily diagnosed with visual inspection methods. Here is some other electronic control system self-diagnostic facts:



Service Information - Position Statement

Pre- and Post-Scan of Collision Vehicles

October 2016

General Motors takes the position that all vehicles being assessed for collision damage repair must be tested for Diagnostic Trouble Codes (DTCs) during the repair estimation in order to identify the required repairs. Additionally, the vehicle must be re-tested after repairs are completed in order to verify that the faults have been repaired and no new faults have not been introduced during the course of repairs.

Even minor body damage to glass replacement may result in damage to one or more safety-related systems on the vehicle. Any failure that results in loss of battery-powered voltage and disconnection of electrical circuits requires that the vehicle is subsequently tested to ensure proper electrical function.

Many safety and security-related components, sensors and Electronic Control Units (ECUs) require inspection and/or repairs when replaced. These systems must be repaired according to the corresponding GM repair procedures in Service Information (SI).

Technology Supported Diagnostic Aids

General Motors states that the method to correctly identify vehicle diagnostic trouble codes (DTCs) is by using the appropriate GM diagnostic software: **GM2 or Tech2 Tech2Win**, each of which can scan a vehicle for all DTCs in one operation. GM diagnostic software is supported by one of the GM approved diagnostic scan tools (MDI or a GM24 device). GM does not recommend the use of other scan tools and cannot guarantee their accuracy. For a list of vehicles covered by these applications, refer to the GM Technical Document (T-Body) Vehicles Supported by GM2 or Tech2Win.

GMBS is the factory source for all diagnostic and repair procedures, wiring diagrams and associated repair information. GM Service Programming System (SPS) is the ECU programming application that provides software updates and guides loan procedures where required. Any repairs performed without using Genuine GM Parts and not following published GM collision repair procedures may result in erroneous DTCs and expose vehicle owners and occupants to unnecessary risk. GM collision repair information can be accessed by those on www.gmrepair.com or available through a GMBS subscription.



These 6 manufacturers represent 61% of the market share!

13
SOURCE: EDMUNDS.COM



Quite often I get asked well what about the other OEM's?





Volkswagen Scan Tool Requirements

- ❑ Electronic Vehicle Systems
Safety related system such as:
ABS/Electronic Differential Lock (EDL),
Airbag, electronically regulated vehicle
systems; Electro-mechanical, Electro-
hydraulic steering and other driver
assistance **systems must be queried
for fault codes** that could possibly be
stored, using the vehicle diagnostic
tester. If faults were stored in the
Diagnostic Trouble Code (DTC)
memory for the system mentioned,
then these systems must be serviced
according to the specifications in the
repair manual. After performing
repairs, check the fault stored in the
DTC memory of the affected system
again, to make sure that proper
function can be ensured again.





2006 Jetta Electronic Control Module Procedures



Procedure for Electronic Control Units after Accident Repairs

It is only necessary to install new electronic control units after an accident where at least one of the following conditions is present:

- The housing is obviously deformed or damaged.
- The support surface or bracket is deformed; there is no visible external damage to the unit itself.
- The connector is damaged or corroded.
- The functional check or the unit self-diagnosis procedure indicates the fault "Control unit defective".



When electronic components, e.g. ABS control module, have been removed for the purpose of making repairs and are then reused, perform a functional check after installing as described in the existing technical literature, e.g. V.A.G self-diagnosis procedure.



2012 Audi A4 2008

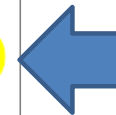


Electronic Control Modules, Handling After Collision Servicing

Electronic control modules only need to be replaced after a collision if the following condition is fulfilled:

- ◆ The function test results in the message "Control module faulty".

If electronic components, for example, ABS control modules, were removed and then reused, these are to be checked for function according to the available documentation after installing. To do this, check all DTC memories with a tester and correct any possible malfunctions present.





Who Pays for What Survey



How frequently do you research OEM repair procedures at the time you write an estimate?	1 Responses		Last Year
All the time	17.7%	92	16.3%
Most of the time	30.5%	159	26.4%
Some of the time	30.7%	160	31.9%
Only occasionally	18.0%	94	21.8%
Never	3.1%	16	3.6%

The percentage of repair facilities that said they research OEM procedures “all of the time” or “most of the time” increased slightly compared to last year.



Quite often I get asked..... ???

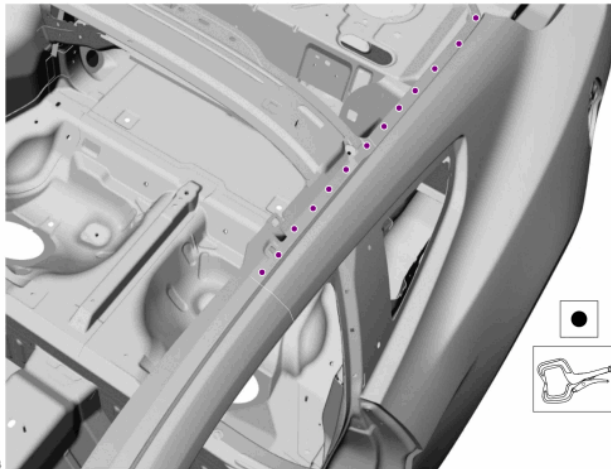


- Why do I need to research every car if I fix the same type of vehicle on a regular basis...

- Did you know that one OEM changed the way you install the bedside on their vehicles four times last year? YES 4 TIMES !!

- Just because you did it that way yesterday doesn't mean it is the same way today... Procedures change as more information becomes available !

For example.....



E188563

Ford requires Roof replacement and front and rear glass removal



2015 Ford Mustang Quarter Panel Procedure



E188552



New Vehicle | New TSBs | Toolbox ▾ | Quotes | Library Request | Vehicle Information | Community

Vehicle » Body and Frame » Quarter Panel » Service and Repair » Removal and Replacement » Quarter Panel - Coupe

2015 Ford Mustang V8-5.0L Save Article Select Print Option ▾

Quarter Panel - Coupe

Special Tool(s) / General Equipment

Resistance Spotwelding Equipment
 Hot Air Gun
 Air Body Saw
 8 mm Drill Bit
 MIG/MAG Welding Equipment
 Spot Weld Drill Bit
 Locking Pliers

Materials

Metal Bonding Adhesive TA-1
 Seam Sealer TA-2
 Fusor® Flexible Foam Repair - 121

Removal

1. If required, dimensionally restore vehicle to pre-accident condition.
2. Remove the following items:
 1. Refer to: [Roof Panel](#).
 2. Refer to: [Front Door](#).
 3. Refer to: [Luggage Compartment Lid](#).
 4. LH side
 Refer to: [Fuel Filler Door Assembly](#).
 5. LH side as equipped.
 Refer to: [Fuel Tank Filler Pipe](#).
 6. Refer to: [Rocker Panel Moulding](#).



OEM Specific panel adhesive, and detailed list of necessary R&I operations.

< 5 SAVED ARTICLES



It's Not just about the scanning....



**LOOK WHAT
I FOUND**



Audi Q5 2008



High Voltage Vehicle General Information - Edition 09 2015 - Audi

3. Park and observe the vehicle involved in a collision outside on the quarantine space. The following applies:

- do not park the vehicle near buildings.
- park the vehicle on a surface that has been sealed or place a catch tray under the vehicle where the lithium-ion high voltage battery is located.
- Place the Warning Sign - High Voltage - VAS6649- on the vehicles and secure the vehicle so that unauthorized persons cannot get access to the vehicle.
- Cover the vehicle with a waterproof tarp to protect the high voltage battery from the weather if the vehicle is going to stored outside.

4. Observe the mandatory report for vehicles involved in a collision.

5. Observe the mandatory report for high voltage vehicles components.

6. Perform the GFF test program for classifying the lithium-ion high voltage battery. The GFF test program can be found on the diagnostic unit under:

- Connect Vehicle Diagnostic Tester.
- Select the **High Voltage** mode and start the diagnostics.
- Select the tab **Exp. Plan**.
- Select **Exp. Individual Test** and choose the following sequence.

- Body
- Electrical Equipment
- 01 - OBD-capable systems
- 8C - Battery Regulation Control Module -J840
- 8C - Battery Regulation Control Module, functions
- A38 - Hybrid battery classification

7. If further action for the lithium-ion high voltage battery is necessary, the following applies:

7.1. Lithium-ion high voltage battery remains in the vehicle.

7.2. Inform the high voltage expert (HVE) at the importer.

7.3. Order recycling box or transport box for lithium-ion battery.

8. Observe the lithium-ion high voltage battery for five days in the vehicle. Check the temperature of the lithium-ion high voltage battery regularly, at least two times a day, using a temperature measuring device (for example Digital Thermometer - VAS6519-). Inform the high voltage expert of the lithium-ion high voltage battery condition on a regular basis.

9. If the condition of the lithium-ion high voltage battery does not stay constant, extend the quarantine five more days. Return to point 8.

10. When the condition of the lithium-ion high voltage battery is constant, the following applies:

10.1. The high voltage expert comes on site.

10.2. The high voltage expert escorts the transport from the quarantine space to the work area in the workshop.

8. Observe the lithium-ion high voltage battery for five days in the vehicle. Check the temperature of the lithium-ion high voltage battery regularly, at least two times a day, using a temperature measuring device (for example Digital Thermometer - VAS6519-). Inform the high voltage expert of the lithium-ion high voltage battery condition on a regular basis.

9. If the condition of the lithium-ion high voltage battery does not stay constant, extend the quarantine five more days. Return to point 8.

10. When the condition of the lithium-ion high voltage battery is constant, the following applies:

10.1. The high voltage expert comes on site.

10.2. The high voltage expert escorts the transport from the quarantine space to the work area in the workshop.





Audi Q5 2008



©2008 Audi Q5 2008
 -Audi- High Voltage Vehicle General Information - Edition 03/2015

Question: Is there anything special to do when an Audi high voltage vehicle must be put on a dynamometer?

Answer: Handle the Audi high voltage vehicles just like a normal vehicle. Select an operation mode on the Vehicle Diagnostic Tester so that the vehicle is being driven only by the internal combustion engine. Turn off the ESP using the button inside the vehicle.

Question: Is there anything special to do when an Audi high voltage vehicle must be brought into the paint shop?

Answer: The drying time for commercial paint repair work, depending on the material and the manufacturer, between 30 and 60 minutes at 60 °C (140 °F). Normally the temperature in the drying rooms is 80 °C (176 °F).

Audi high voltage vehicles are equipped with a powerful lithium-ion battery. This type of battery is functional only up to 55 °C (131 °F). The cells can get damaged when the temperature goes above 70 °C (158 °F).

In order to not exceed 70 °C (158 °F), do not leave an Audi high voltage vehicles longer than 60 minutes in the paint drying cabin.

If the materials being used for the repair need a drying time longer than 60 minutes, then find an alternative method to dry them such as infrared heat. Refer to Audi Paint Manual.

Question: Which maintenance and service work must the customer have performed on the Audi high voltage vehicle?

Answer: All maintenance work as on a conventional vehicle must be performed. Only a trained high voltage technician in an authorized dealership may work on the high voltage system following all the guidelines from Audi.

Question: Is there any additional work which must be performed during the delivery inspection?

Answer: In regards to the delivery inspection, there is no additional preparation work necessary for the high voltage components. Only the 12 V start battery needs to be checked during the delivery inspection. The Service Drive Battery -V148-, is used only as a generator when the vehicle is in transport mode. Therefore, it is not possible to drive electrically, to look to use the start-stop mode and the recuperation does not work. The high voltage battery is always being charged in the transport mode when the internal combustion engine is running.

Question: Is there anything special to do when an Audi high voltage vehicle is going to be stored?

Answer: There is a company-wide check list for vehicles that are going to be stored. All activities are described in detail here.

20 Rep. 03/08 - General Technical Data

Question: Is there anything special to do when an Audi high voltage vehicle must be brought into the paint shop?

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Audi Q7 2007 It is NOT just about scanning...



Audi Q7 2007
Body Exterior - Edition 05.2018 - Aud.

2 Rear Bumper

2.1 Rear Bumper Overview

Caution
On vehicles with lane change assist (Audi side assist), observe the following:
If rear bumper is removed and re-installed or changes are made to bumper, lane change assist (Audi side assist) calibration is necessary. Refer to ⇒ Electrical Equipment; Rep. Gr. 96 ; Lane Change Assistance.

1-Cover

- Remove the luggage compartment with part of the body interior. Rep. Gr. 70 ; Top.
- Disconnect the parking aid sensor at control module (under tail light, left side) if necessary.
- Remove the cap nuts 6 from the luggage compartment.
- Remove all screws in cover area of wheel housing liner and from lower bumper. Refer to ⇒ 0998.132.
- Unfold side pieces on sides of bumper.
- Remove cover toward back.

Note
If the vehicle has trim strips in the cover, then it is necessary to remove the cover behind!

2-Bolt
3-3 Nm
3-Left Chime Piece
4-Expanding Nut
5-Expanding Nut
6-Nut
4.5 Nm

2.1 Rear Bumper Overview



Caution

On vehicles with lane change assist (Audi side assist), observe the following.


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Audi Q7 2007

Audi Q7 2007
Body Exterior, Edition 06-2015, AWD

Removing the License Plate Holder on a vehicle with ACC

- Unclip the license plate holder toward the front in steps from the catches.
- Disconnect electrical harness connector to license plate holder.



Crossmember, Removing and installing

Caution

On vehicles with distance regulation (ACC), observe the following:

If impact member is removed and installed or changes are made to ACC bracket, distance regulation adjustment must be performed. Refer to - Suspension, Wheels, Steering; Rep. Gr. 44 - Adaptive Cruise Control.

erWin

1. Front Bumper 127



Crossmember, Removing and Installing



Caution

On vehicles with distance regulation (ACC), observe the following.

If impact member is removed and installed or changes are made to ACC bracket, distance regulation adjustment must be performed. Refer to - Suspension, Wheels, Steering; Rep. Gr. 44 - Adaptive Cruise Control.

2012 VW Passat NMS

Copyright VW AG
ElsaPro Job no.: 17362

Repair manual
DMS Repair Order number: undefined

Model year: 2012
Model description: Passat NMS
Transmission code: PDW
Final drive code:
Service advisor - name:

VIN:
Model code: A32
Engine code: CBUA
License plate:
User name: WIDEMAN

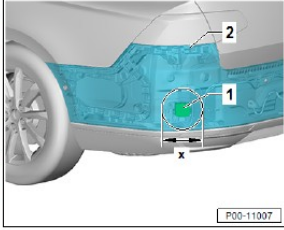
Bumper Cover Painting instructions in the Lane Change Assistance Control Module Area

Bumper Cover in the Area of the Lane Change Assistance Control Module

Left side shown the right side is a mirror image depending on the vehicle model and equipment

To avoid malfunctions of the control module (lane change assistance) -1- pay attention to the following parameter when painting the bumper cover -2-:

- Do not exceed the maximum paint coat thickness of 150 µm in the area of the control modules (lane change assistance) -1-.
- A plastic repair may not be performed in this area in a vicinity of minimum dimension -x- = 25 cm.
- Smoothing work may not be performed in this area in a vicinity of minimum dimension -x- = 25 cm.
- Triple painting is not permitted on the bumper cover -2-.
- Before beginning painting check using a grinding pattern in the adjacent area if the bumper cover -2- was already repainted.
- Spot repair of the area of the control modules (lane change assistance) -1- is not permitted.



P00-11007

◆ A plastic repair may not be preformed in this area in a vicinity of minimum dimension -x- = 25 cm.

◆ Spot repair of the area of the control modules (lane change assistance) -1- is not permitted.

VW Parking Aid Sensor and Adaptive Cruise Painting Instructions (Amarok 2017, Beetle 2012, CC 2012)



2.10 Parking Aid Sensor, Painting

The following parameters must be met when painting to avoid malfunctions in the parking aid sensor (parking aid system):

New Part, Painting

- Maximum coat thickness: 125 µm; the coat thickness must always be measured after painting.
- Maximum curing temperature: 1 hour at 90 °C (194 °F)

Old Part, Painting

- Only remove paint (sand down) to the primer.
- The minimum coat thickness of 9 - 10 µm coating must be maintained.
- Maximum coat thickness: 125 µm; the coat thickness must always be measured after painting.
- Maximum curing temperature: 1 hour at 90 °C (194 °F)

Electric Conductivity

- Paint or primer spray must not get into the connector; the pin contact must be guaranteed after painting.

Cleaning

- Clipping in cleaning solution without tapping off the connector pin if necessary is prohibited.

Function Test


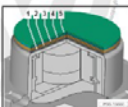
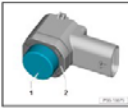
- Connect the Vehicle Diagnostic Tester and check the function. Refer to → Electrical Equipment General Information, Rep. Gr. 97.

Paint Structure and Coat Thickness, Repairing

- 1- Primed New Part with Replacement Part Primer Coat: 2 - 10 µm
- 2- Filler: 30 - 40 µm
- 3- Solid Base Coat: 10 - 20 µm
- 4- Metallic/Fluorescent Base Coat: 20 - 25 µm
- 5- Clear Lacquer: 35 - 50 µm

Paint Area

- 1- The paint area on the sensor is the front and side surface of the membrane. The side surface is painted a minimum 3 mm to a maximum 4 mm from the front side of the membrane toward the rear.
- 2- No paint is permitted in this area.

18 Rep. Gr. 97 - General Technical Data

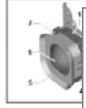

2.11 ACC - Adaptive Cruise Control

Note

- On vehicles with ACC, the trim in the right cover section of the front bumper must not be painted if paint repairs or component replacements are performed. The ACC system is located behind this section therefore a coat of paint would destroy its functionality.
- The cover for the distance regulation sensor in the bumper grille is composed of radar-penetrable material. The cover is heated to avoid functions being restricted from snow or ice.
- All changes to the surface such as additional painting, bonding and other supplementary applied objects can cause malfunctions.

Distance Regulation Control Module - J428-
The image shows the Distance Regulation Control Module - J428- on the GOLF. The image can vary on other vehicle models.

- 1- Adapter Plate
- 2- Bracket
- 3- Fastening Hole
- 4- Vertical Adjustment Bolt
- 5- Trim
- 6- Distance Regulation Sensor/ Distance Regulation Control Module
- 7- Horizontal Adjustment Bolt

2 General Information 19

2.11 ACC - Adaptive Cruise Control

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My friend's, It is NOT just about the Scanning !!!



- ***Recalibrations***
- ***Re Initializations***
- ***Reprogramming***
- ***Bumpers – Sensors – repairing – Refinishing***
- ***And so much more***

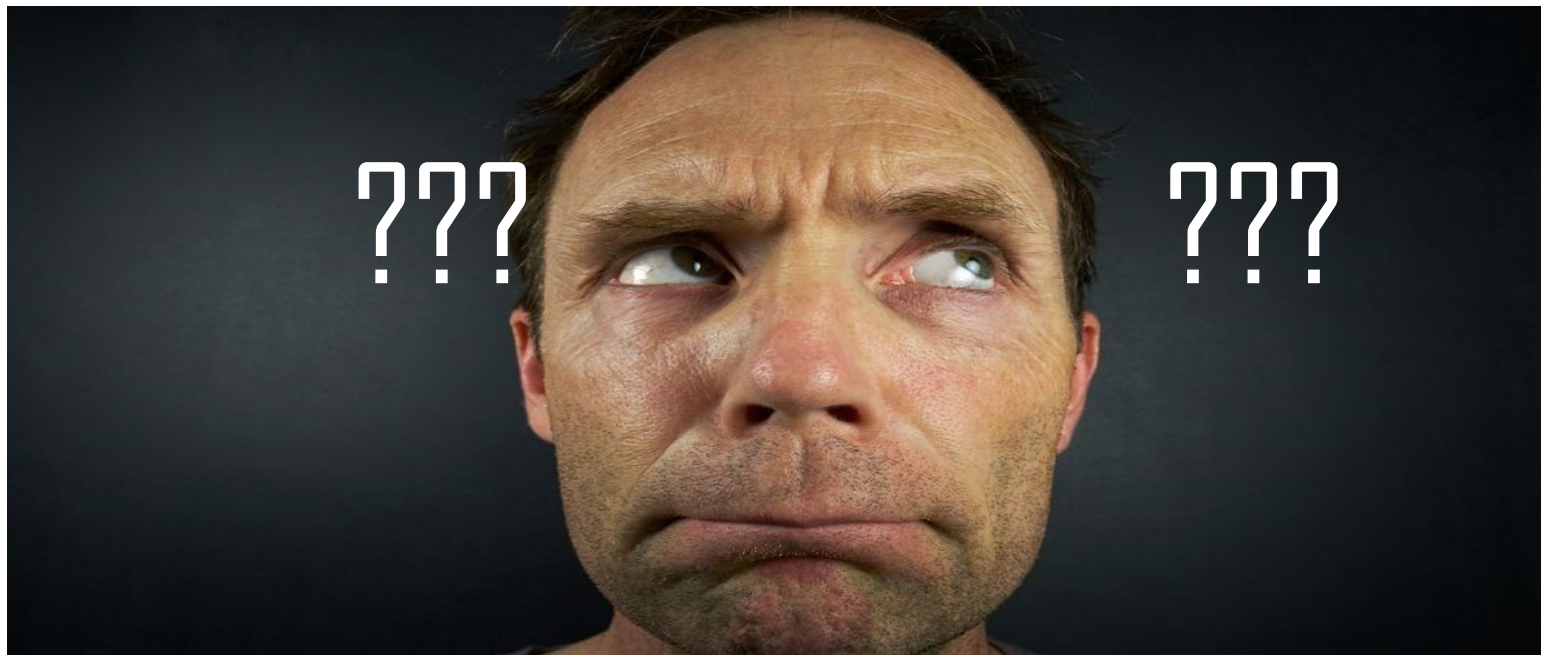


Other things to consider that require a Scan Tool. COLLISIONADVICE

- Initializing a check valve to bleed a coolant system.
- Test Driving a vehicle above 17 mph for 2 miles in a straight line for a Blind Spot Monitor
- Running the window up and down twice to re initialize the pinch protection on the window when you replace a door.
- How do you know if the Hands free is working, how do you know if the Adaptive Cruise Control is working, how do you know if



**Remember.....
We Don't Know what we don't Know !!**





Proceed with Caution!





Nissan Position Statement on Bumper Fascia Replacement with Sonar



NISSAN Collision Position Statement- Bumper Fascia Replacement

TO: COLLISION REPAIR INDUSTRY

POSITION STATEMENT: Bumper Fascia Replacement with Sonar

FRANKLIN, TN- As Nissan Safety Shield Technologies are incorporated into our vehicles, we want to bring to your attention important information about their function, and how to properly handle repairs regarding this technology.

Many electronic sonar sensors in front and rear bumper fascia are considered to be part of this Nissan Safety Shield Technology. These sensors are engineered to be in very exact positions within the bumper fascia, and if not properly installed, may not function as originally intended. For this reason, Nissan North America **DOES NOT** approve of the use of aftermarket, reconditioned, or recycled bumper fascia.

In contrast with original Genuine Nissan bumper fascia, aftermarket bumper fascia may:

1. In some cases, non-OEM fascia come with no pre-drilled holes for the sensors, relying on the shop technician to cut the holes using a rough template. This may lead to instances where the non-OEM bumper does not match the original Genuine Nissan bumper holes.
2. In some cases, build specifications are slightly different on aftermarket bumper fascia than on Genuine Nissan fascia, which may also cause issues with sensor alignment or performance.

In addition, reconditioned fascia, which was once damaged, may also not match the original undamaged Nissan bumper fascia, which may cause sensor alignment issues. There is currently no industry standard process for knowing the history of a used bumper fascia, so this is also not recommended to be used on Nissan vehicles. The general repair industry adheres to these recommendations.

For additional information, please see service manual section "SN".

Parts Warranty

Nissan North America's New Vehicle Limited Warranty, and Limited Warranty on replacement parts do not apply to any parts other than Genuine Nissan original equipment parts.

For additional collision information: <http://collision.nissanusa.com>.

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Honda Lane Departure System



Rear Vision Camera [TSB Title: 14-028 05/24/2014 Collision Avoidance - Required Spec... Page 1 of 7

14-028

May 24, 2014

ATB 51060 (1405)

Special Tools for Camera and Radar Aiming

Year	Model	Trim
2015-14	Accord	EX, EX-L, Touring
2014	Accord Hybrid	EX-L, Touring
2014	Accord Plug-in	EX-L
2015-14	Civic Hybrid	EX-L
2015	Civic	EX-L
2011-14	Odyssey	EX-L, Touring Elite

AFFECTED VEHICLES

INTRODUCTION

Many Honda vehicles have advanced safety driving support systems available but vehicles may be equipped with different systems. It is very important that you understand what systems the following safety driving support systems.

ACC (Adaptive Cruise Control) - ACC uses a radar unit.

BSI (Blind Spot Information) - Uses radar mounted at the rear quarter.

FCW (Forward Collision Warning) - If the vehicle is equipped with ACC, the FCW will also use the radar. If the vehicle does not have ACC, the FCW and LDW both use the camera mounted at the front windshield.

LDW (Lane Departure Warning) - Uses a camera mounted at the front windshield.

LW (LaneWatch) - Uses a camera mounted in the passenger's side mirror.

When you troubleshoot the various systems and remove and reinstall, or replace components, you'll need to do the aiming procedure. Use the following tables to determine which system the vehicle is equipped with, then go to TOOL AND SYSTEM INFORMATION.

Year	Model	Trim	ACC, FCW
2013	Accord	Touring (also refer to camera systems)	BSI
2014	Accord Hybrid	Touring (also refer to camera systems)	BSI
2014	Accord Plug-in	EX-L (also refer to camera systems)	BSI
2011-13	Odyssey	Touring Elite	BSI
2014	Odyssey	Touring Elite (also refer to camera systems)	BSI

Radar Systems



BSI (Blind Spot Information) - Uses radar mounted at the rear quarter on each side of the vehicle.

FCW (Forward Collision Warning) - If the vehicle is equipped with ACC, the FCW will also use the radar. If the vehicle does not have ACC, the FCW and LDW both use the camera mounted at the front windshield.

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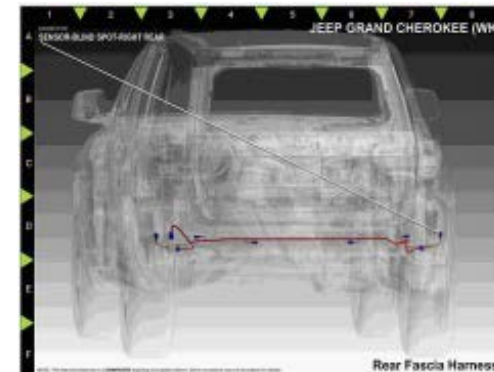
Did You Know...



2014 Jeep Grand Cherokee Blind Spot Monitor

If the vehicle has experienced any trauma in the outboard area at the end of the rear fascia behind the rear wheel openings where the sensors are located, even if the fascia is not damaged, the radar sensor may have become misaligned.

A misaligned radar sensor will result in the BSM system not operating properly.



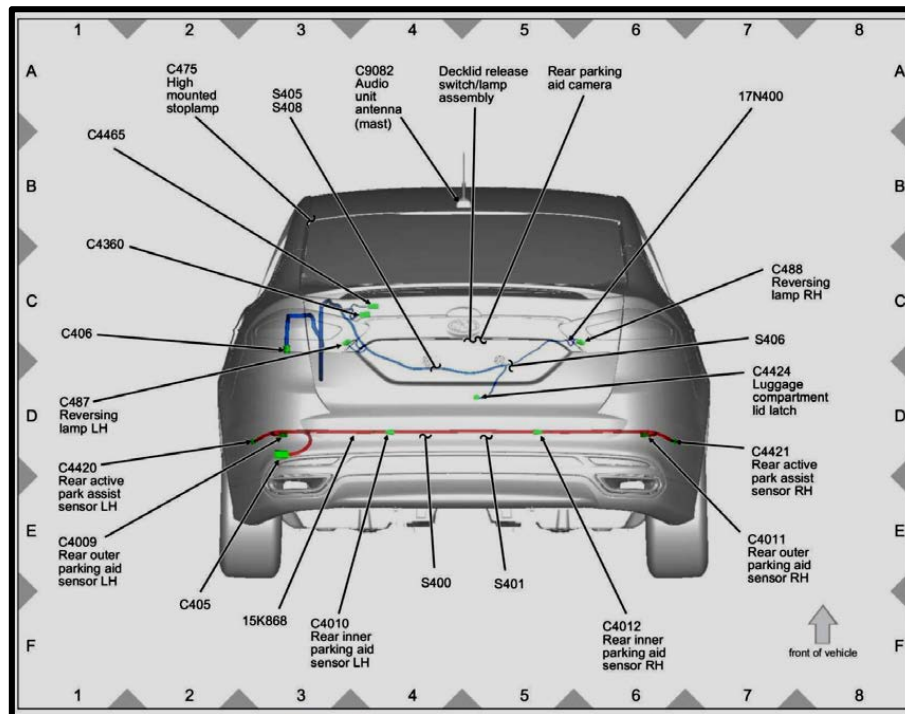
The blind spot sensors and control circuitry cannot be adjusted or repaired. If a sensor is damaged or ineffective, it must be replaced with a new unit. The sensor module software is flash programmable. **The mounting bracket for each sensor is serviced only as a unit with the rear bumper fascia.**



Did You Know...



2014 Ford Fusion Blind Spot Monitor and Cross Traffic Alert



NOTE: There should be no bumper stickers or body filler material used on the rear side bumper cover in the vicinity of the SODL (side obstacle detection control module LH) or SODR (side obstacle detection control module RH).



Did You Know...

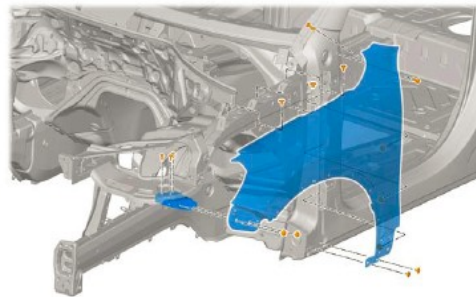
Did you know you have to remove the windshield on a Volkswagen Touareg to remove the fender?

Outer Body Structure Design

Fenders

The fenders on the 2011 Touareg are made from steel that is .65 mm thick. This is a departure from the previous model where the fenders were made from plastic. It is important to note that during fender removal, the upper fender bolt may be hidden by windshield adhesive. If this is the case, the windshield must be removed to remove the fender. The fenders are secured on the sides with retaining plates, specifically used for pedestrian protection.

On diesel vehicles, the auxiliary heater must first be removed before the fender can be removed. Also, parts of the tire pressure monitoring system are on the fender, so do not cut any wires to remove the fender. The fender on the right side has the windshield washer fluid reservoir fitted beneath it.

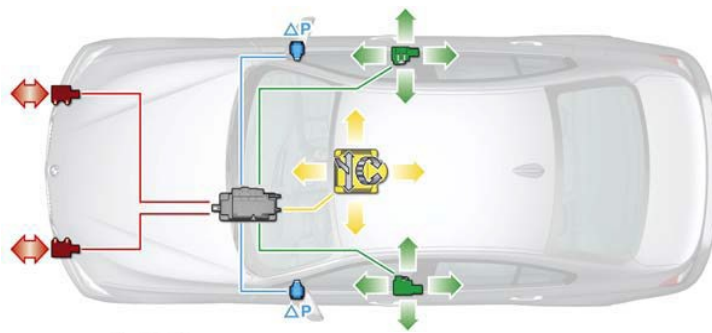


(Figure 5 – The fender removal process may require removal of the windshield if the upper bolt cannot be accessed.)

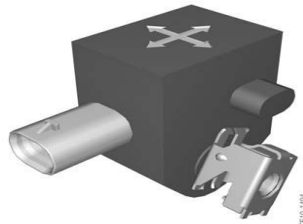
2011 Volkswagen Touareg – Front Fender service Procedure



ADVANCED TECHNOLOGIES. PASSIVE SAFETY SYSTEMS.



Door Pressure
Sensor



B-Pillar Sensor

TE11-0676

TE11-0668

TE10-5484

- ACSM- Crash Safety Module (Advanced Crash Safety Module)
- One Lateral and one longitudinal acceleration sensor in the B-pillars (green)
- One airbag sensor to monitor the pressure in each of the front doors (blue)
- One lateral and one longitudinal acceleration sensor in the ICM (yellow)
- One roll rate sensor in the ICM (yellow)
- One vertical acceleration sensor in the ICM (yellow)
- One front sensor on each of the engine supports (red)



SMARTEST F-150 EVER

The all-new Ford F-150 offers a host of technologies new to pickup trucks to help owners be more productive and feel more confident.

FIRST FOR PICKUPS
360-DEGREE CAMERA VIEW

FIRST FOR PICKUPS
INFLATABLE REAR SAFETY BELTS

FIRST FOR PICKUPS
8-INCH PRODUCTIVITY SCREEN

FIRST FOR PICKUPS
SMARTER TRAILER TOW MODULE (INDICATES TRAILER STATUS)

FIRST FOR PICKUPS
ALL-NEW 2.7L ECOBOOST WITH AUTO START-STOP

FIRST FOR PICKUPS
ACTIVE PARK ASSIST

FIRST FOR PICKUPS
LED HEADLAMPS

FIRST FOR PICKUPS
LED SIDEVIEW MIRROR SPOTLIGHTS

THE ALL-NEW
F-150





Some Final Thoughts !!



RESENTA

Nace Panel Discussion

Participants:

- 2 Insurers
- 6 OEMs



http://oemonestop.com/ Manufacturers | Oem1stop.... x

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Position Statements

CRASH REPAIR INFO For Consumer Collision Information
HELPING YOU THROUGH THE COLLISION REPAIR PROCESS



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Resources

asTech™ Resources

Get the latest information about the collision repair industry and the asTech™ remote diagnostic device on the asTech™ blog. Follow us on social media to ensure you never miss a post!

Parts information update from Honda
Posted on 06/13/14

Join Our Ask asTech



Call To ACTION !



- ***Researching OEM Repair Procedures is Mandatory ! IT is NOT optional***
- ***Get the Customer's authorization before you scan and/or Share the Data***
- ***Just because there is NOT a position statement doesn't mean the OEM doesn't say it somewhere ! RESEARCH is MANDATORY !***
- ***It is NOT just about scanning !***
- ***Educate your staff ! Debrief with them after this call !***



Next Call if there is an interest ?

Is there a difference between OEM and Aftermarket Scan Tools !



Questions & Answers



**Thank you for your time
and attention!**



COLLISIONADVICE

**For more information on Collision Advice Consulting Services
or speaking engagements, please contact:**

Mike Anderson
mike@collisionadvice.com
Cell 301-535-3333

Tiffany Driggers
tiffany@collisionadvice.com
Cell 703-898-0715

Check out Mike's New Consulting Calendar on our website!
www.collisionadvice.com



COLLISIONADVICE