



1 General Information



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Removal and Installation

- ☐ Headlamp Switch (335140)
- ☐ Stoplamp Switch (335480)
- ☐ Front Fog Lamp (322810)
- ☐ Headlamp Assembly (321150)
- ☐ Headlamp Bulb (321470)
- ☐ High Mounted Stoplamp (323250)
- ☐ Rear Lamp Assembly (323050)
- ☐ Reversing Lamp (323330)
- ☐ Reversing Lamp Switch (335280)
- ☐ Trailer Module (TRM) (336830)



417-02 Interior Lighting

Diagnosis and Testing

- ☐ Interior Lighting



418 Electrical Distribution



418-00 Module Communications Network

Description and Operation

- ▢ Communications Network - Component Location
- ▢ Communications Network - Overview
- ▢ Communications Network - System Operation and Component Description



418-01 Module Configuration

Description and Operation

- ▢ Module Configuration - System Operation and Component Description



418-02 Wiring Harnesses

Removal and Installation

- ▢ Engine Wiring Harness (363280)
- ▢ Front Bumper Wiring Harness (364490)
- ▢ Rear Bumper Wiring Harness (364500)
- ▢ Front Door Wiring Harness (363340)
- ▢ Rear Door Wiring Harness (363350)
- ▢ Luggage Compartment Lid Wiring Harness
- ▢ Liftgate Wiring Harness (363450)
- ▢ Tow Ball Outer Wiring Harness
- ▢ Instrument Panel Wiring Harness (363330, 363334)
- ▢ Passenger Compartment Wiring Harness (363370, 363374)



419 Electronic Feature Group



419-01A Perimeter Anti-Theft Alarm

Diagnosis and Testing

- ▢ Perimeter Anti-Theft Alarm



419-01B Passive Anti-Theft System (PATS)

Description and Operation

- ▢ Passive Anti-Theft System (PATS) - Component Location
- ▢ Passive Anti-Theft System (PATS) - Overview
- ▢ Passive Anti-Theft System (PATS) - System Operation and Component Description



419-01D Passive Anti-Theft System (PATS)

Diagnosis and Testing

- ▢ Passive Anti-Theft System (PATS)

General Procedures

- ▢ Anti-Theft Key Programming - Scan Tool

Removal and Installation

- ▢ Passive Anti-Theft System (PATS) Transceiver



419-01E Emergency Call Systems

Removal and Installation

- ▢ Emergency Switch
- ▢ Telematics Control Unit (TCU) Module
- ▢ Telematics Control Unit (TCU) Module Antenna Coaxial Cable
- ▢ Telematics Control Unit (TCU) Module Backup Battery



419-03A Cruise Control

Description and Operation

- ▢ Cruise Control - Component Location
- ▢ Cruise Control - Overview
- ▢ Cruise Control - System Operation and Component Description

Diagnosis and Testing

- ▢ Cruise Control

General Procedures

Cruise Control Radar Alignment

Removal and Installation

Cruise Control Module (CCM)



419-03B Collision Warning and Collision Avoidance System

Removal and Installation

Head Up Display (HUD) Module (339100)



419-03C Active City Stop

Description and Operation

Removal and Installation

Front Distance Sensing Module (FDSM)



419-04 Side and Rear Vision

Removal and Installation

Side Obstacle Detection Control Module



419-07A Lane Departure Warning

Removal and Installation

Image Processing Module A (IPMA) (339030)



419-07B Lane Keeping System

Description and Operation

Lane Keeping System - Component Location

Lane Keeping System - System Operation and Component Description



419-10 Multifunction Electronic Modules

Description and Operation

Module Controlled Functions - Component Location

Module Controlled Functions - Overview

Module Controlled Functions - System Operation and Component Description

Removal and Installation

Body Control Module (BCM) (336260, 336265)

Driver Door Module (DDM)

Passenger Door Module (PDM)

Rear Door Module (RDM)



5 Body and Paint



501 Body and Paint



501-00 Body System - General Information

Description and Operation

Body - Component Location



501-02 Front End Body Panels

Description and Operation

Active Grille Shutter - Overview

Active Grille Shutter - System Operation and Component Description

Removal and Installation

Active Grille Shutter (432340)

Active Grille Shutter Actuator

Cowl Panel Grille (432300)

Fender (442460)

Fender Splash Shield

Hood (412140)

Radiator Grille Opening Panel (442633)

Disassembly and Assembly

Active Grille Shutter



501-03 Body Closures

- General Procedures
- ☐

Front Door Alignment
- ☐

Hood Alignment
- ☐

Liftgate Alignment
- ☐

Luggage Compartment Lid Alignment
- ☐

Power Liftgate Initialization
- ☐

Rear Door Alignment
- Removal and Installation
- ☐

Front Door (413160)
- ☐

Rear Door (413170)
- ☐

Luggage Compartment Lid (417140)
- ☐

Liftgate (416540)
- ☐

Power Liftgate Motor (416800)
- ☐

Fuel Filler Door Assembly (418190)
- ☐

Fuel Filler Door (418190, 418160)
- ☐

Rear Gate Trunk Module (RGTM)

☐

501-05 Interior Trim and Ornamentation

- General Procedures
- ☐

Panoramic Roof Panel Blind Initialization
- Removal and Installation
- ☐

A-Pillar Trim Panel
- ☐

B-Pillar Trim Panel
- ☐

C-Pillar Upper Trim Panel
- ☐

C-Pillar Lower Trim Panel
- ☐

D-Pillar Trim Panel
- ☐

Loadspace Trim Panel
- ☐

Headliner
- ☐

Parcel Shelf
- ☐

Steering Column Shrouds
- ☐

Front Door Trim Panel
- ☐

Rear Door Trim Panel
- ☐

Luggage Compartment Lid Trim Panel
- ☐

Liftgate Trim Panel
- ☐

Panoramic Roof Panel Blind (436260)

☐

501-08 Exterior Trim and Ornamentation

- Removal and Installation
- ☐

Front Door Upper Moulding
- ☐

Luggage Compartment Lid Moulding
- ☐

Rear Door Upper Moulding
- ☐

Rear Spoiler (393100)
- ☐

Rocker Panel Moulding (433540)
- ☐

Roof Rail (431100)
- ☐

Liftgate Moulding (433870)

☐

501-09 Rear View Mirrors

- Diagnosis and Testing
- ☐

Rear View Mirrors
- Removal and Installation
- ☐

Interior Rear View Mirror
- ☐

Exterior Mirror

☐

501-10A Front Seats

- Description and Operation
- ☐

Front Seats - Overview
- ☐

Front Seats - System Operation and Component Description
- Diagnosis and Testing
- ☐

Front Seats
- Removal and Installation
- ☐

Front Head Restraint Guide Sleeve
- ☐

Front Seat (401000, 401004, 401010)
- ☐

Front Seat Backrest Cover (401080)

- ☐ [Front Seat Backrest \(401066\)](#)
- ☐ [Front Seat Backrest Blower Motor](#)
- ☐ [Front Seat Climate Control Module \[SCME\]](#)
- ☐ [Front Seat Control Switch](#)
- ☐ [Front Seat Cushion Cover \(401050\)](#)
- ☐ [Front Seat Cushion Blower Motor](#)
- ☐ [Front Seat Lumbar Assembly \(401100\)](#)
- ☐ [Front Seat Power Lumbar Assembly](#)
- ☐ [Front Seat Track](#)
- ☐ [Front Seat Track Motor](#)



501-10B Rear Seats

Removal and Installation

- ☐ [Rear Double Seat Backrest Cover](#)
- ☐ [Rear Single Seat Backrest Cover](#)
- ☐ [Rear Head Restraint Guide Sleeve](#)
- ☐ [Rear Seat Armrest](#)
- ☐ [Rear Seat Backrest \(401280\)](#)
- ☐ [Rear Seat Backrest Latch](#)
- ☐ [Rear Seat Cushion \(401220\)](#)
- ☐ [Rear Seat Cushion Cover](#)



501-11 Glass, Frames and Mechanisms

Diagnosis and Testing

- ☐ [Glass, Frames and Mechanisms](#)

General Procedures

- ☐ [Power Door Window Initialization](#)

Removal and Installation

- ☐ [Windshield Glass \(421140\)](#)
- ☐ [Front Door Fixed Window Glass \(423180\)](#)
- ☐ [Front Door Glass Top Run](#)
- ☐ [Front Door Window Control Switch \(335320\)](#)
- ☐ [Front Door Window Glass \(423140\)](#)
- ☐ [Front Door Window Regulator \(423390\)](#)
- ☐ [Front Door Window Regulator Motor](#)
- ☐ [Panoramic Roof Panel \(421250\)](#)
- ☐ [Rear Door Glass Top Run](#)
- ☐ [Rear Door Window Control Switch \(335320\)](#)
- ☐ [Rear Door Window Glass \(423150\)](#)
- ☐ [Rear Door Window Regulator \(423400\)](#)
- ☐ [Rear Door Window Regulator Motor \(337830, 423400\)](#)
- ☐ [Rear Quarter Window Glass \(425140\)](#)
- ☐ [Rear Window Glass \(426140\)](#)
- ☐ [Liftgate Window Glass \(426140\)](#)



501-12 Instrument Panel and Console

Removal and Installation

- ☐ [Floor Console](#)
- ☐ [Glove Compartment](#)
- ☐ [Instrument Panel \(436440\)](#)
- ☐ [In-Vehicle Crossbeam](#)
- ☐ [Overhead Console](#)



501-14 Handles, Locks, Latches and Entry Systems

Diagnosis and Testing

- ☐ [Locks, Latches and Entry Systems](#)

General Procedures

- ☐ [Liftgate Latch Manual Release](#)
- ☐ [Staged Unlock Programming](#)

Removal and Installation

- ☐ [Ignition Lock Cylinder \(335130\)](#)
- ☐ [Door Lock Control Switch](#)
- ☐ [Door Lock Cylinder \(413360\)](#)

- ☐ [Exterior Front Door Handle \(413330\)](#)
- ☐ [Exterior Front Door Handle Reinforcement](#)
- ☐ [Exterior Rear Door Handle \(413330\)](#)
- ☐ [Exterior Rear Door Handle Reinforcement](#)
- ☐ [Interior Front Door Handle \(413340\)](#)
- ☐ [Interior Rear Door Handle \(413540\)](#)
- ☐ [Front Door Latch \(413510\)](#)
- ☐ [Rear Door Latch \(413410\)](#)
- ☐ [Hood Latch \(412320\)](#)
- ☐ [Hood Latch Release Cable \(412240\)](#)
- ☐ [Luggage Compartment Lid Latch \(416660\)](#)
- ☐ [Liftgate Latch \(416660\)](#)
- ☐ [Luggage Compartment Lid Release Switch \(335400\)](#)
- ☐ [Liftgate Release Switch \(335400\)](#)
- Disassembly and Assembly
 - ☐ [Ignition Lock Cylinder \(335138\)](#)
 - ☐ [Door Lock Cylinder](#)



501-16 Wipers and Washers

- Diagnosis and Testing
 - ☐ [Wipers and Washers](#)
- Removal and Installation
 - ☐ [Rain Sensor - Vehicles Without: Front View Camera \(333100\)](#)
 - ☐ [Rain Sensor - Vehicles With: Front View Camera \(333100\)](#)
 - ☐ [Rear Window Wiper Motor \(325300\)](#)
 - ☐ [Rear Window Wiper Pivot Arm \(325890\)](#)
 - ☐ [Windshield Washer Pump \(326240\)](#)
 - ☐ [Windshield Washer Reservoir \(326230\)](#)
 - ☐ [Windshield Wiper Motor \(325240\)](#)
 - ☐ [Windshield Wiper Pivot Arm \(325880\)](#)



501-17 Roof Opening Panel

- Diagnosis and Testing
 - ☐ [Roof Opening Panel](#)
- General Procedures
 - ☐ [Power Roof Opening Panel Initialization](#)
- Removal and Installation
 - ☐ [Roof Opening Panel Blind Motor \(337900\)](#)
 - ☐ [Roof Opening Panel Shield - 4-Door](#)



501-19 Bumpers

- Removal and Installation
 - ☐ [Front Bumper \(442742\)](#)
 - ☐ [Front Bumper Cover \(434270\)](#)
 - ☐ [Rear Bumper \(434484\)](#)
 - ☐ [Rear Bumper Cover \(434470\)](#)
- Disassembly and Assembly
 - ☐ [Front Bumper Cover](#)
 - ☐ [Rear Bumper Cover](#)



501-20A Seatbelt Systems

- ☐ [Specifications](#)
- Description and Operation
 - ☐ [Seatbelt Systems - Overview](#)
 - ☐ [Seatbelt Systems - System Operation and Component Description](#)
- Diagnosis and Testing
 - ☐ [Seatbelt Systems](#)
- Removal and Installation
 - ☐ [Front Seatbelt Buckle \(402320\)](#)
 - ☐ [Seatbelt Retractor and Pretensioner](#)
 - ☐ [Seatbelt Shoulder Height Adjuster \(402250\)](#)



501-20B Supplemental Restraint System

Description and Operation	
☐	Airbag and Seatbelt Pretensioner Supplemental Restraint System (SRS) - Component Location
☐	Airbag and Seatbelt Pretensioner Supplemental Restraint System (SRS) - Overview
☐	Airbag and Seatbelt Pretensioner Supplemental Restraint System (SRS) - System Operation and Component Description
Diagnosis and Testing	
☐	Airbag and Seatbelt Pretensioner Supplemental Restraint System (SRS)
General Procedures	
☐	Clockspring Adjustment
☐	Deployed Airbag Disposal
☐	Inspection and Repair after a Supplemental Restraint System (SRS) Deployment
☐	Scrapped Vehicle Airbag and Seatbelt Pretensioner Disposal - In-Vehicle Disposal
☐	Supplemental Restraint System (SRS) Depowering
☐	Supplemental Restraint System (SRS) Repowering
☐	Unserviceable Airbag Disposal
Removal and Installation	
☐	Clockspring (333920)
☐	C-Pillar Side Impact Sensor (406950)
☐	Driver Airbag (407000, 407050)
☐	Driver Knee Airbag (407100, 407110)
☐	Front Door Side Impact Sensor (406960)
☐	Front Impact Severity Sensor (406970)
☐	Passenger Airbag (407010)
☐	Passenger Airbag Deactivation (PAD) Indicator
☐	Passenger Knee Airbag (407200, 407210)
☐	Restraints Control Module (RCM) (336500)
☐	Side Airbag (407020)
☐	Side Curtain Airbag (407030)



501-25 Body Repairs - General Information

☐	Specifications
Description and Operation	
☐	Alignment Check
☐	Body Construction
☐	Body Sheet Metal
☐	Complete Panel Replacement/Partial Replacement
☐	Corrosion Damage/Corrosion Repair
☐	Corrosion Prevention
☐	Cutting Technique
☐	Description and Usage of Body Repair Literature
☐	Diagnosis and Damage Evaluation
☐	Environmental Regulations
☐	Establish Repair Method
☐	Health and Safety Precautions
☐	Impact of Insufficient Repair Quality
☐	Joining Techniques
☐	Noise, Vibration and Harshness
☐	Paintless Dent Removal
☐	Panel Beating Technique and Smart Repairs
☐	Plastic Repairs
☐	Sealer, Underbody Protection Material and Adhesives
☐	Special Repair Techniques
☐	Special Repair Techniques for High-Strength Steel
☐	Straightening
☐	Symbols
☐	Tools and Equipment for Body Repairs
☐	Water Leaks
☐	Wind Noise



501-26 Body Repairs - Vehicle Specific Information and Tolerance Checks

Description and Operation	
☐	Body and Frame
☐	Vehicle Specific Body Construction
General Procedures	

- ☐ Frame Tolerance Check
- ☐ Underbody Tolerance Check



501-27 Front End Sheet Metal Repairs

Removal and Installation

- ☐ Fender Apron Panel Reinforcement
- ☐ Front Side Member Section



501-28 Roof Sheet Metal Repairs

Removal and Installation

- ☐ Roof Panel



501-29 Side Panel Sheet Metal Repairs

Removal and Installation

- ☐ A-Pillar Outer Panel
- ☐ A-Pillar Outer Panel Section and Reinforcement
- ☐ Rocker Panel
- ☐ Rocker Panel Inner Reinforcement
- ☐ B-Pillar and Reinforcement
- ☐ B-Pillar Outer Panel



501-30 Rear End Sheet Metal Repairs

Removal and Installation

- ☐ Back Panel and Reinforcement
- ☐ Quarter Panel LH
- ☐ Rear Floor Panel Section
- ☐ Rear Lamp Mounting Panel
- ☐ Rear Side Member Section
- ☐ Rear Wheelhouse Outer



501-36 Paint - General Information

Description and Operation

- ☐ Additional Materials
- ☐ Color Identification and Chromatics
- ☐ Corrosion Prevention
- ☐ Description and Usage of Paint Literature
- ☐ Environmental Regulations
- ☐ Factory Paint Application
- ☐ Health and Safety Precautions
- ☐ Painting Plastic Parts
- ☐ Paint Repairs
- ☐ Paintwork Defects and Damage
- ☐ Refinishing Materials
- ☐ Spot Repairs
- ☐ Symbols
- ☐ Tips and Tricks
- ☐ Tools and Equipment for Paint Repairs



502 Frame and Mounting



502-00 Uni-Body, Subframe and Mounting System

Removal and Installation

- ☐ Front Subframe (142400, 142404)
- ☐ Rear Subframe - FWD (152130, 152134, 152136)
- ☐ Rear Subframe - AWD (152130, 152134, 152136)



502-02 Full Frame and Body Mounting

Removal and Installation

- ☐ Retractable Tow Ball Module