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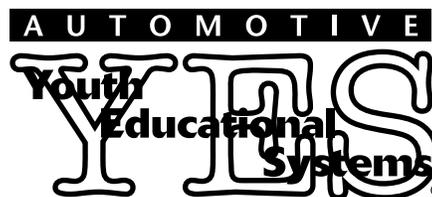
QUALITY DRIVEN® SERVICE



Technician Reference Booklet

2008 New Model Update

Module 917



October 2007

MSA5P0803C

Technical Training

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2008 IMPREZA INTRODUCTION

The 2008 model year for Impreza launches a new body style and introduces many of the refined systems that are equipped on Legacy and Tribeca to the Impreza model line up.



2008 2.5i Impreza 5 Door Front View



2008 2.5i Impreza 5 Door Side View



2008 2.5i Impreza Side View



2008 Impreza 2.5i 4 Door Side View

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2008 WRX Front View



2008 WRX Side View

1. Impreza

A: DIMENSION

Model			Sedan	Wagon	OUTBACK
Overall length		mm (in)	4,415 (173.8)		
Overall width		mm (in)	1,740 (68.5)		
Overall height (at C.W.)		mm (in)	1,475 (58.1)		
Compartment	Length	mm (in)	1,890 (74.4)	1,985 (78.1)	
	Width	mm (in)	1,475 (58.1)		
	Height	mm (in)	1,200 (47.2)		
Wheelbase		mm (in)	2,620 (103.1)		
Tread	Front	mm (in)	1,495 (58.9)		1,490 (58.7)
	Rear	mm (in)	Non-turbo model: 1,495 (58.9) Turbo model: 1,500 (59.1)		1,495 (58.9)
Minimum road clearance		mm (in)	155 (6.1)		

B: ENGINE

Model			2.5 L Turbo	2.5 L
Engine type			Horizontally opposed, liquid cooled, 4-cylinder, 4-stroke gasoline engine	
Valve arrangement			DOHC	SOHC
Bore x stroke		mm (in)	99.5 x 79 (3.92 x 3.11)	
Displacement		cm ³ (cu in)	2,457 (149.94)	
Compression ratio			8.4	10.0
Ignition order			1 — 3 — 2 — 4	
Idle speed at Park or Neutral position		rpm	700	MT: 650 AT: 700
Maximum output		kW (HP)/rpm	167 (224)/5,200	127 (170)/6,000
Maximum torque		N·m (kgf-m, ft-lb)/rpm	307 (31.3, 226)/2,800	230 (23.5, 170)/4,400

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Dimension Chart

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Option Codes and Equipment

There are 7 Manual Transmission Model option codes and 5 Automatic Transmission option codes.

2.5i STANDARD EQUIPMENT IMPREZA 2.5i 4 DOOR (FW)

STANDARD EQUIPMENT

2.5-Liter SOHC Engine

Electronic Throttle Control (ETC)
5-Speed Manual Transmission (Standard)
*Four Speed Electronic Direct Control Automatic with Sportshift (Optional)
5-MPH Impact-Absorbing Bumpers
*16X6.5JJ Steel Wheels with Covers
205/55 R16 All-Season Tires
Carpeted Floor Mats
ABS System: 4 Channel / 4 Sensor
Front Ventilated Disc Brakes
*Rear Drum Brakes
Electronic Brake Force Distribution (EBD)
Active Front Seat Head Restraints
*Side Curtain Airbags
Subaru advanced frontal airbag system (SRS)
Manual Air Conditioning
AM/FM 80 Watt Stereo with Single CD Player
4 Audio Speakers
*MP3/WMA Capability
*Pre-wired for XM/SIRIUS Satellite Radio
Cargo Area Cover (5 DOOR)
Cruise Control
“Cup Holder, Dual, Center Console “
Daytime Running Lights (DRL)
“Door Handles, Black Exterior “
Dual-Mode Digital Trip Odometer
“Exterior Mirrors, Foldable Black”
Fog Light Insert Covers
LATCH System
*Bottle Holder: Front and Rear Door Storage Pocket
Leather-wrapped Shifter Handle
*16.9 Gallon Fuel tank
Clock
Off-Delay Dome Light
Seatback pocket on front passenger seat
Illuminated Ignition Switch Ring
*Average Fuel consumption indicator
Power-Assisted Steering
Power Door Locks
Power Mirrors
Power Windows with Driver’s Auto-Down
Pre-Wired for Security System

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“*Rear Seatback, 60/40 Split Fold-Down”
Rear Seat Headrests for All Seating Positions
Remote Keyless Entry System with Answer Back Chirp
*Double Wishbone Rear Suspension
Tilt Steering Column
Rear Spoiler (5 DOOR)
Visor Vanity Mirrors: Dual with Sliding Cover
“Windshield Wipers, Variable Intermittent ” with Washers
Tricot Upholstery
“Sport-Design Front Seats
Ambient Temperature Gauge
*Engine Immobilizer

2.5i PREMIUM PACKAGE MODEL UPGRADE IMPREZA 2.5i

PREMIUM PACKAGE (IZ)

MODEL UPGRADE FROM IMPREZA 2.5i (FW)

AM/FM 80 Watt Stereo with 6-disc in-dash CD-changer
*10 Audio Speakers
Auxiliary Audio Jack
*MP3/WMA Capability
*16 Inch X 6.5 JJ 12-Spoke Aluminum Alloy Wheels
Rear Disc Brakes
*Leather-Wrapped Steering Wheel w/ Audio & Cruise Control Switches
Leather-wrapped Shift Knob
Front Fog Lights
Body-color Exterior Mirrors and Door Handles
*Vehicle Dynamics Control (VDC)
*Incline Start Assist (MT models Only)
*Brake Assist

2.5i SATELLITE RADIO & NAVIGATION PACKAGE MODEL UPGRADE IMPREZA 2.5i

SAT/NAV PACKAGE (VZ)

MODEL UPGRADE FROM IMPREZA 2.5i PREMIUM PACKAGE (IZ)

*Touch-Screen GPS Navigation System
AM/FM 100 Watt Stereo with Single CD Player
*Factory Installed SIRIUS Satellite Radio with Roof Mounted Antenna

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OUTBACK SPORT MODEL UPGRADE

IMPREZA OUTBACK SPORT (FW)

MODEL UPGRADE FROM 2.5i 5 DOOR (FZ)

- 12-Volt Cargo Power Outlet
- *17 Inch X 7 JJ 5-Spoke Aluminum Alloy Wheels
- Raised Suspension
- Rear Disc Brakes
- “Cargo Tray, Removable”
- Unique Cloth Upholstery
- Carrier Base
- Two-Tone Body Color
- *Vehicle Dynamics Control (VDC)
- *Incline Start Assist (MT models Only)
- *Brake Assist
- AM/FM 80 Watt Stereo with 6-disc in-dash CD-changer
- *10 Audio Speakers
- Auxiliary Audio Jack
- *MP3/WMA capability
- *Leather-Wrapped Steering Wheel w/ Audio & Cruise Control Switches
- Leather-wrapped Shift Knob
- Front Fog Lights
- *Heated Exterior Mirrors
- *Dual Mode Heated Front Seats
- *Windshield Wiper De-Icer
- *Front Bumper Under Guard
- *Rear Bumper Under Guard
- *Side Molding

WRX MODEL UPGRADE

IMPREZA WRX (FF)

MODEL UPGRADE FROM 2.5i (FW)

- 2.5-Liter DOHC Intercooled Turbo Engine
- *Vehicle Dynamics Control (VDC)
- *Incline Start Assist (MT models Only)
- *Brake Assist
- 205/50 R17 all-season tires
- 17 inch X 7 JJ 10-Spoke Aluminum Alloy Wheels
- Rear Solid Disc Brakes
- Rear Stabilizer Bar
- Performance Design seats
- Leather-Wrapped Steering Wheel
- Leather-wrapped Shift Knob
- Automatic Climate Control
- Body-Color Exterior Mirrors
- Body-Color Exterior Door Handles
- *Electroluminescent Gauges
- *Tilt and Telescope Steering Column

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WRX PREMIUM PACKAGE MODEL UPGRADE

IMPREZA WRX PREMIUM PACKAGE (KJ)

MODEL UPGRADE FROM IMPREZA WRX (FF)

AM/FM 80 Watt Stereo with 6-disc in-dash CD-changer

*10 Audio Speakers

*Auxiliary Audio Jack

*MP3/WMA Capability

*Heated Exterior Mirrors

*Dual Mode Heated Front Seats

*Windshield Wiper De-Icer

Front Fog Lights

*Leather-Wrapped Steering Wheel w/ Audio & Cruise Control Switches

*Aero Package

Front Lip Spoiler

Aerodynamic Side Ground Effects

Trunk Spoiler (4-Door)

Rear Diffuser (5-Door)

Note: Rear gate Spoiler Standard on all 5-door models

WRX SATELLITE RADIO & NAVIGATION PACKAGE MODEL UPGRADE

IMPREZA WRX SAT/NAV PACKAGE (UJ)

MODEL UPGRADE FROM WRX PREMIUM PACKAGE (KJ)

*Touch-Screen GPS Navigation System

*AM/FM 100 Watt Stereo with Single CD Player

*Factory Installed SIRIUS Satellite Radio with Roof Mounted Antenna

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INTERIOR



Steering Wheel

The steering wheel is equipped with audio and cruise control satellite switches.



Heater Switches

Two position seat heater switches are located behind the park brake lever.



HVAC and Navigation System



HVAC Controls

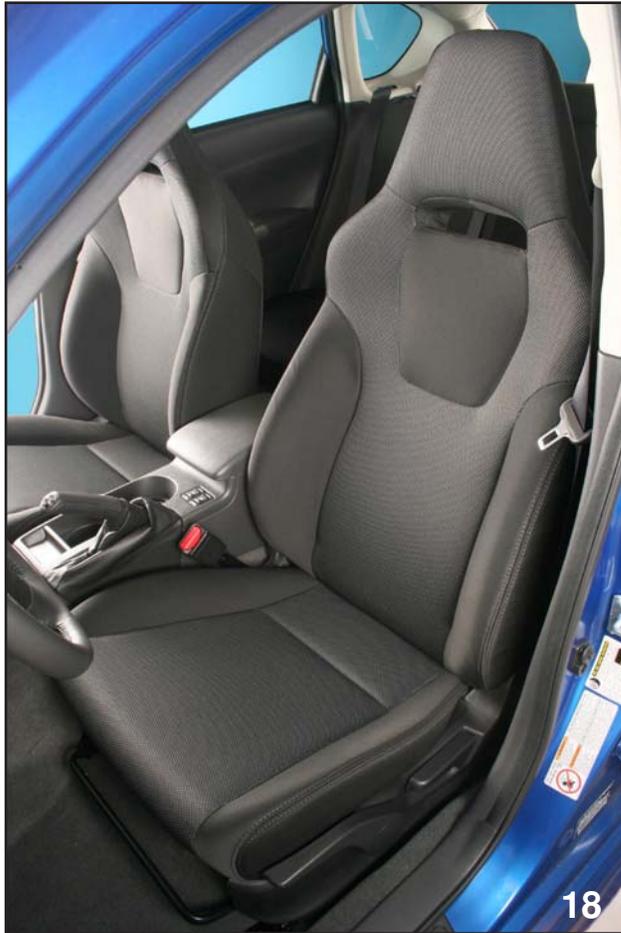


2008 Impreza Ignition Key - Laser Cut

2008 Impreza models' ignition keys are laser cut and require a special key cutting machine for duplication or replacement.

NOTE: THE PROCEDURE FOR OBTAINING A DUPLICATE OR REPLACEMENT KEY WILL BE POSTED ON SUBARUNET.COM IN THE NEAR FUTURE.

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Driver Seat

The front seats are equipped with side airbags and seat belt pretensioners. The seats are adjustable manual type.



Rear Seat

The rear seats are set at a 26° (degree) angle to provide additional leg room.



60/40 Split Seats



Cargo Space with Seats Backs Down

A 60/40 split and trunk through feature is provided.



Position of Luggage Cover

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Release Lever

The luggage cover is removed by pushing on the release lever on the right side.



Cargo Area Light with Switch

A cargo area light is provided on the 5 door on the driver's side rear trim panel and is controlled by the white colored switch.



Spare Tire Area

The spare tire and tool kit are accessed by removing the cargo area floor panel. The metal cover forward of the spare tire provides protection for the evaporative canister, evaporative hoses and drain valve.

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Navigation



Navigation Screen Starting Up



Navigation Screen Displaying Subaru Logo

The navigation system built by Kenwood contains the display, controls, audio unit and navigation computer. The system will display the Subaru logo at each engine start and then proceed to the start up screen.



Radio without Navigation



Agree Screen

The operation of the navigation system and the info display is the same as past models. (Except the controls are all located on the Navigation unit.)



INFO DISPLAY Main Screen



SET Functions

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Tilt /Eject Screen

The display of the Navi/Audio unit has a tilt function that allows the screen to be adjusted to 4 positions to allow for glare.



CD /DVD Drawer

Changing of the CDs is accomplished by pressing the DVD/CD button. This will tilt the display almost 90 degrees to allow for installing or removing music CDs or DVDs. (DVDs will only display while the vehicle is not moving.)

Pressing the map button will tilt the display 90 degrees and automatically eject the currently installed Map disc.

A navigation system software disc (shipped with the vehicle) must be installed before the controls of the Navi/Audio system will be displayed.

Press and **HOLD** the tilt button to open the unit for software installation.



Map DVD Drawer



Showing Sensitivity if Obstructed to Close

The word “close” on the now vertical panel of the display indicates that the close control is located on the now horizontal panel of the display. Pushing the button will close the display to the last tilt setting. The display close operation is load sensitive and will stop the close function if the display panel is obstructed.

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Navigation Diagnosis

The Navi/Audio Unit contains a built in diagnosis system. Start the engine and press the agree button on the start up screen.



Audio Off Screen

Next press the {Audio/Sat} button and turn the audio off.

NOTE: ALL OTHER FUNCTIONS MUST ALSO BE OFF.

Next tap the screen on the LEFT side and then the RIGHT.



Process of Activating Diagnostic Mode

THERE MUST BE A TOTAL OF SIX (6) ALTERNATING TAPS TO ACTIVATE DIAGNOSTIC MODE.

NOTE: WHEN THE VEHICLE IS PLACED INTO REVERSE GEAR THE RADIO VOLUME IS AUTOMATICALLY TURNED DOWN.



Dealer Diag Menu Screen

The Dealer Diagnostic Menu will now activate.

Next press {Vehicle Signal Info.}

NOTE: DIAGNOSTIC INFORMATION IS CURRENTLY ONLY AVAILABLE IN VEHICLE SIGNAL INFO. AND CONNECTION INFO.

Vehicle Signal Info. Provides the status of the connections between the Navi/Audio Unit and:

- Controller Area Network Signals
- CAN
- BCU - (BIU)
- METER - (Combination Meter)
- AIR-Con - (Air Conditioning)

- Vehicle Signals:
- Illumination Control
 - Speed Signal
 - Reverse
 - Ignition
 - Parking (Brake)

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Back of Navi/Audio System



Satellite Radio Receiver



Navi/Audio Fan

A cooling fan is installed on the back side of the unit.



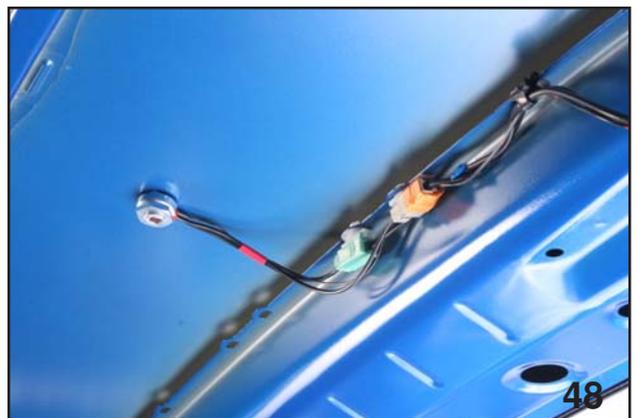
Placement of Satellite Receiver

The satellite radio receiver will be located above the Navi/Audio system.



Removing Navi/Audio System

When removing the Navi/Audio System it may be necessary to reach from under the center cooling vents to reach the electrical connectors. The locking tabs of the connectors are on the bottom side.



Antennae Wires Attached to Roof

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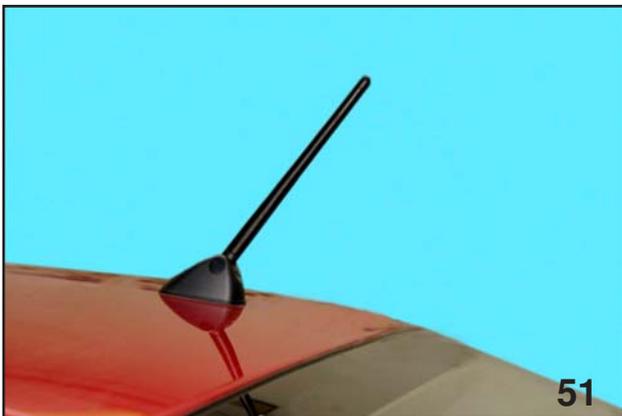
Antennae Attached to Roof

The antennae wires for the Audio and Satellite Radio are routed to the roof. The inner antenna is for the Audio and the outer antenna is for the Satellite radio receiver.

The antenna amplifier is built into the base of the antennae assembly.

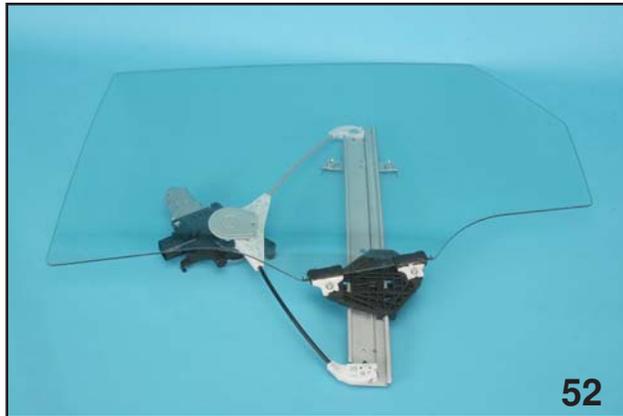


Satellite / Audio Antennae



Radio Antenna

Window



Window Assembly Top View



Window Assembly Bottom View

The power windows operate with an electric motor/cable assemble.



Cable Guide

The lubrication installed during construction and the low friction cable groove ensures smooth window operation.

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Window Switch Assembly

Removal of the power window assembly and window glass is accomplished by first removing the window switch assembly cover and screw. Remove the switch assembly and the two screws securing the door panel to the door.



Removing Outer Trim

Remove the window channel upper mounting nut.



Removing Inner Trim

Remove the inner and outer trim panel.

NOTE: THE POWER WINDOW MOTOR AND DRIVE SYSTEM CAN BE REMOVED WITHOUT REMOVING THE GLASS.



Door Panel



Locking and Latch Cables

Separate the door panel from the door and remove the locking and latch cable from the door lever.

2008 New Model Update (Module 917)



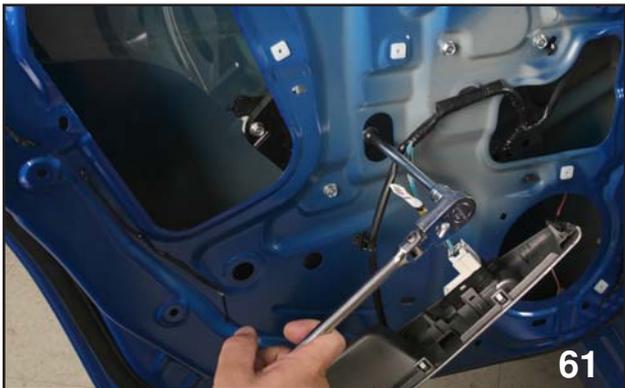
Door with Gasket in Place

Remove the speaker and separate the harness clips from the door. Remove the door gasket.



Bolts, Assist Tabs and Removal

The window motor/cable assembly can be removed by removing the bolts and disengaging the assist tabs from the door. Remove the assembly through the indicated opening.



Removing Window Bolts

Connect the window switch to the harness and raise the window so that the window mounting bolts can be removed.



Lower Window Channel Bolt

Remove the lower window channel bolt. The window can now be removed, guiding it to the outside of the door frame.

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Turbo Model Combination Meter

All warning lights are illuminated during the time the sequential sweep takes place.



Turbo Model Key On Engine Off

NOTE: THE ODOMETER AND TRIP METER A B ARE DISPLAYED SEPARATELY.

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Sedan Model (Naturally Aspirated)



Naturally Aspirated Model Combination Meter

All models are equipped with a sequential sweep and WRX models are equipped with sequential illumination. The combination meter has an available D check procedure. Turbo models are equipped with a temperature gauge and the Naturally Aspirated models are equipped with a temperature warning light.

Temperature warning light logic
< 50°C (122°F) Blue
113°C (235°F) Red Blink
120°C (248°F) Red On

The Red indicator will turn off after the temperature has dropped to 111°C (232°F). The light will change to blue after the temperature has dropped to 45°C (113°F). (BIU controlled)



HVAC Location

The air filter for the HVAC is located behind the glove box.



Air Filter

Push up on the filter to remove it from the blower housing.



Steering Support and Dash Assembly

The steering support beam and the dash assembly are removed as a unit.

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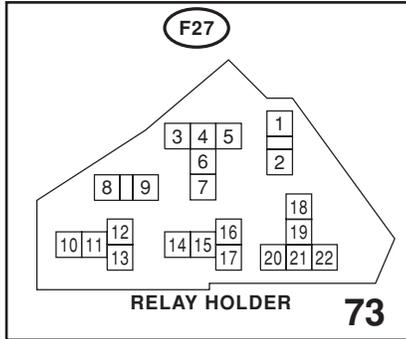
ELECTRICAL

Fuse Boxes and Relay Holders

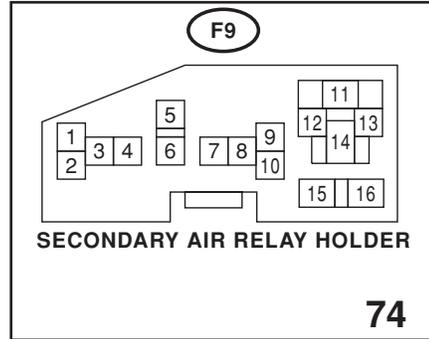
Fuses and Relays are located in 4 places on the 2008 Impreza.



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RELAY HOLDER 73



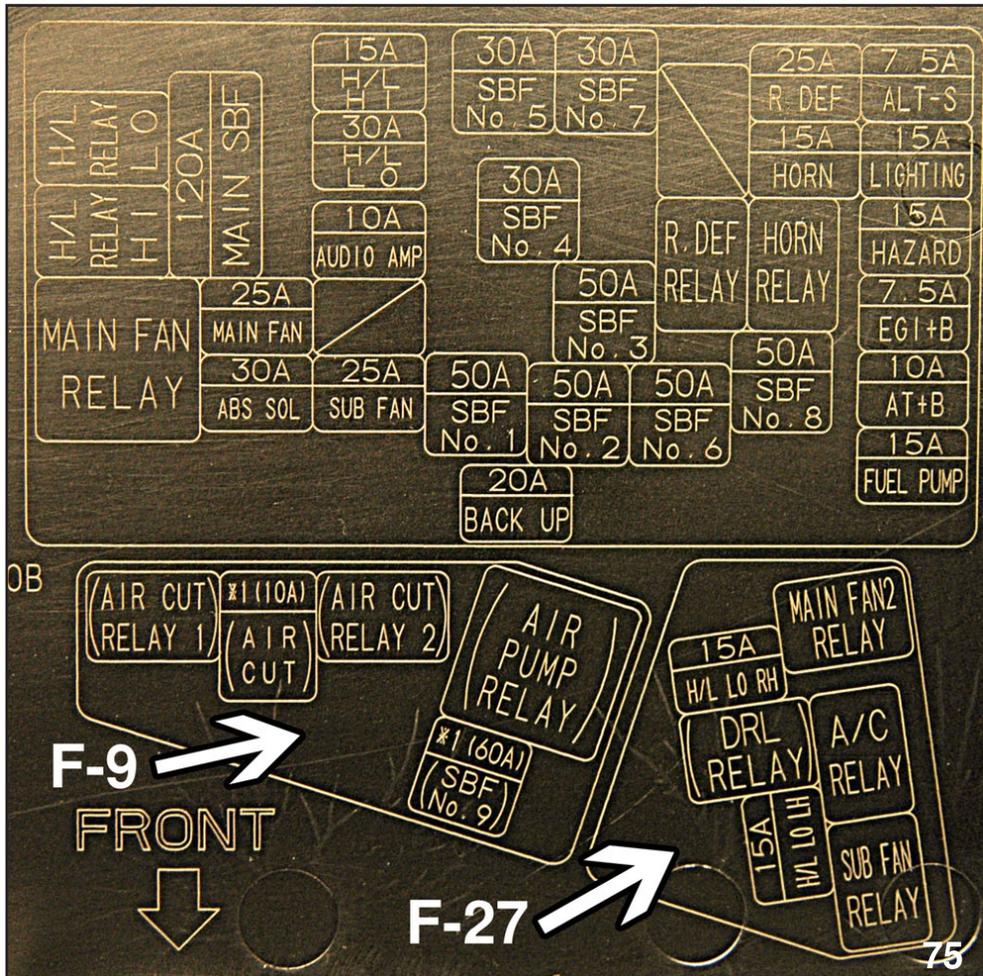
SECONDARY AIR RELAY HOLDER

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The main fuse box in the engine compartment has expanded to accept the F9 secondary air relay holder.

F-27 relay holder has been used on previous models.

F-9 will not be installed on naturally aspirated models.



F-9 FRONT

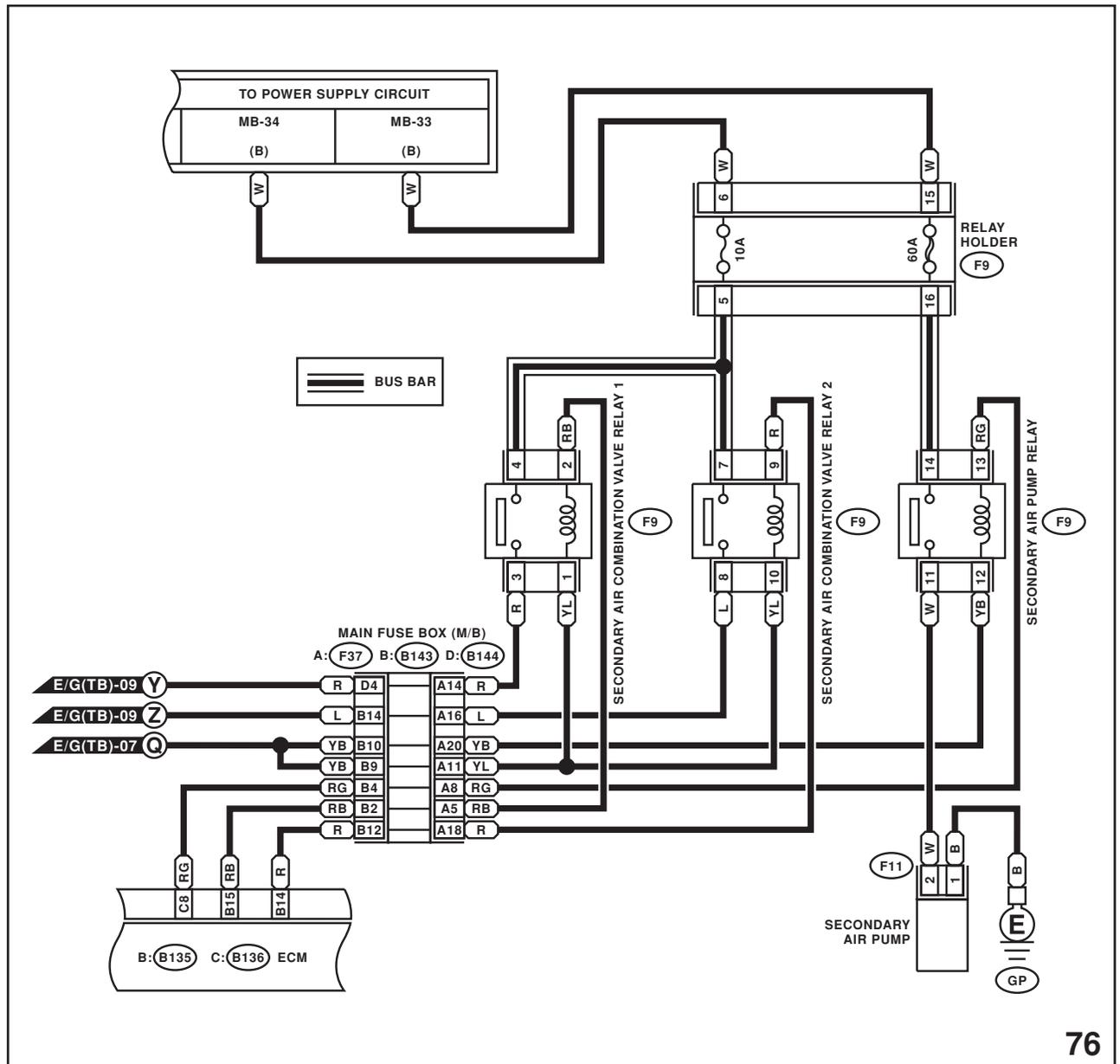
F-27

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Inside Main Fuse Box Cover

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The F-9 secondary air relay and circuits control the secondary air pump equipped on turbo models.

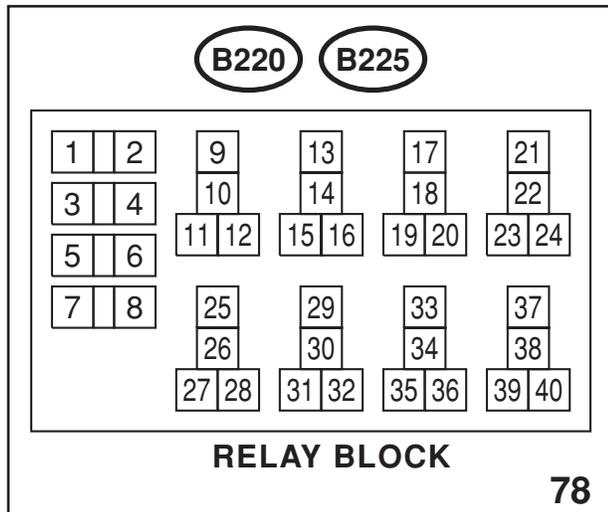


Engine Wiring Schematic Showing F-9

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Fuse Box Next to Hood Release



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Relay Block B220 and B225

The fuse box located next to the hood release houses the fuses below.

B225 has also been equipped on previous models and relay block B220 which is new has the same shape

指定したヒューズ以外使用しないで下さい。
ONLY USE FUSE OF SPECIFIED RATING.

ZR

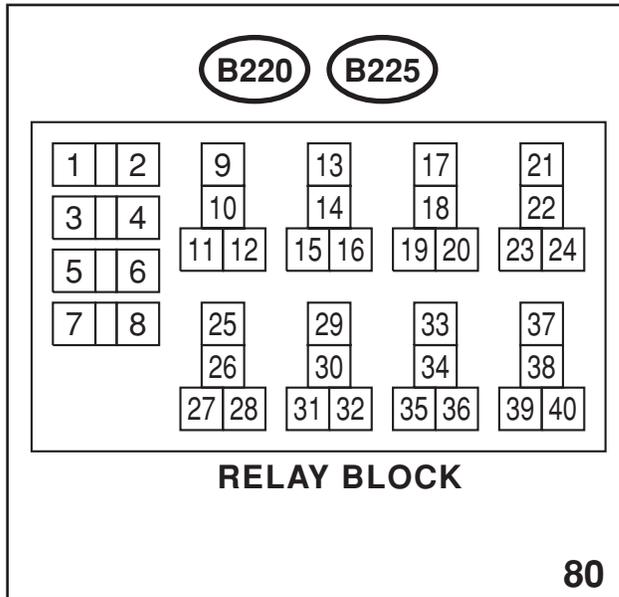
	20A R.FOG C.FAN TRAIL	/	15A DOOR LOCK	10A IG 2	10A METER IG
7.5A MIR	15A UNIT +B	20A STOP	15A WIPER DEICE	7.5A D-OP +B	7.5A TURN IG
15A UNIT IG1	20A	(FWD)	10A ILM	15A SEAT HTR	10A LAMP IG
20A 12V PLUG	15A TAIL CLEAR- ANCE		10A	15A	10A
10A CIGAR	7.5A START	15A A/C IG	15A R. WIPER WASHR	15A AUDIO NAVI	15A SRS AIR BAG
7.5A IG1	7.5A	7.5A	7.5A	7.5A	7.5A
15A BLOWER	15A BLOWER	15A F. FOG	30A F. WIPER (WASHR)	7.5A ACC	7.5A UNIT IG2

ヒューズプラーとスペアヒューズはエンジンルーム内のヒューズボックスにあります。
FUSE PULLER & SPARE FUSES ARE IN ENGINE ROOM FUSE BOX.

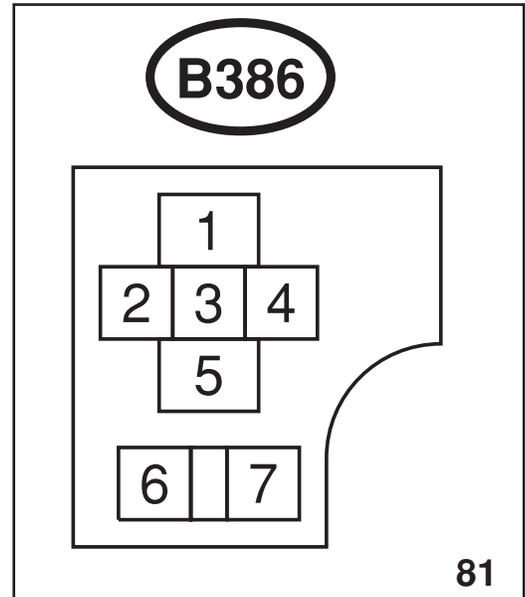
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Inside Fuse Box Cover

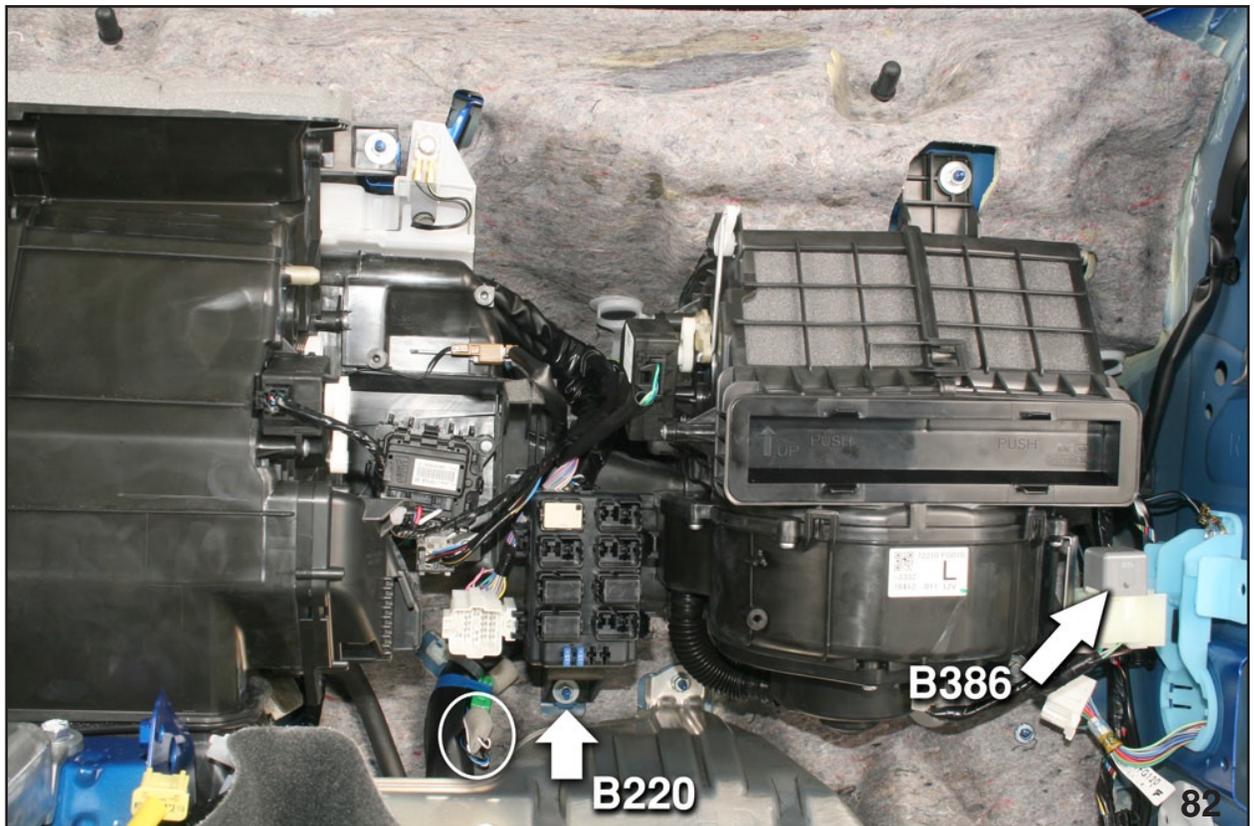
2008 New Model Update (Module 917)



Relay Block B220 and B225

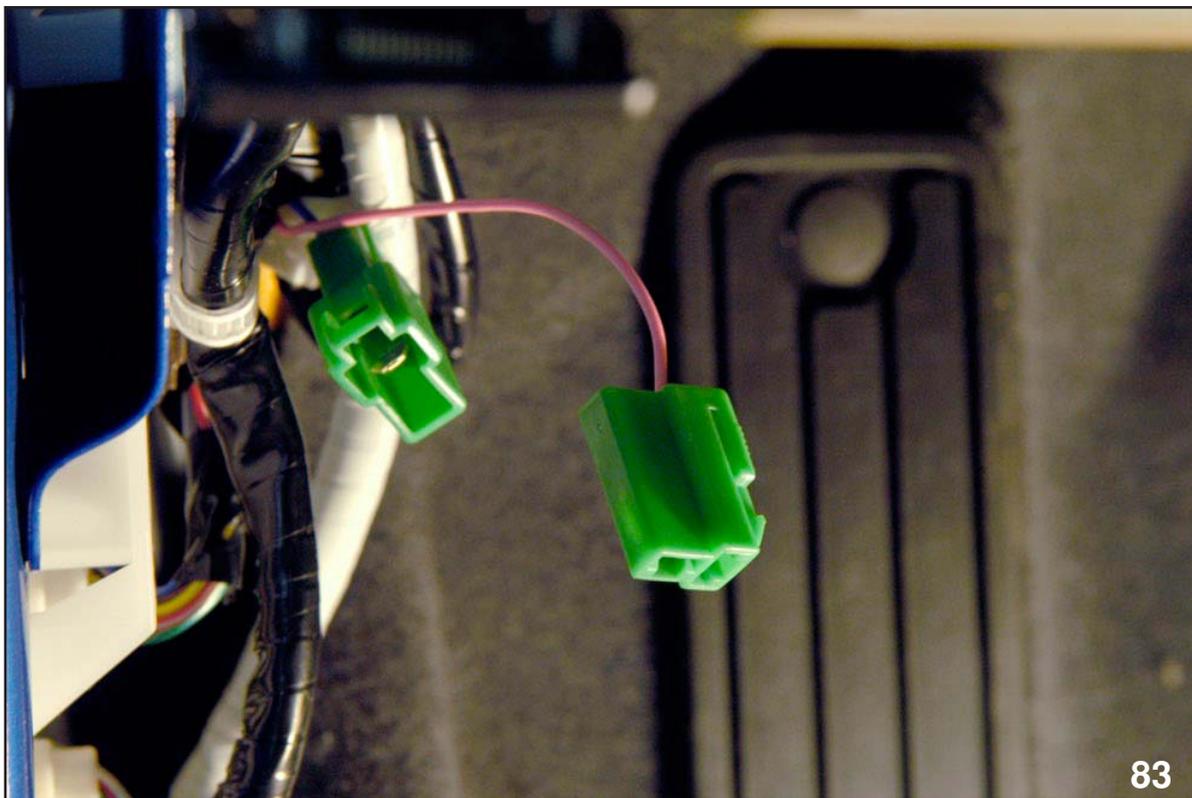


B386 Houses the Blower Relay



Location of B220

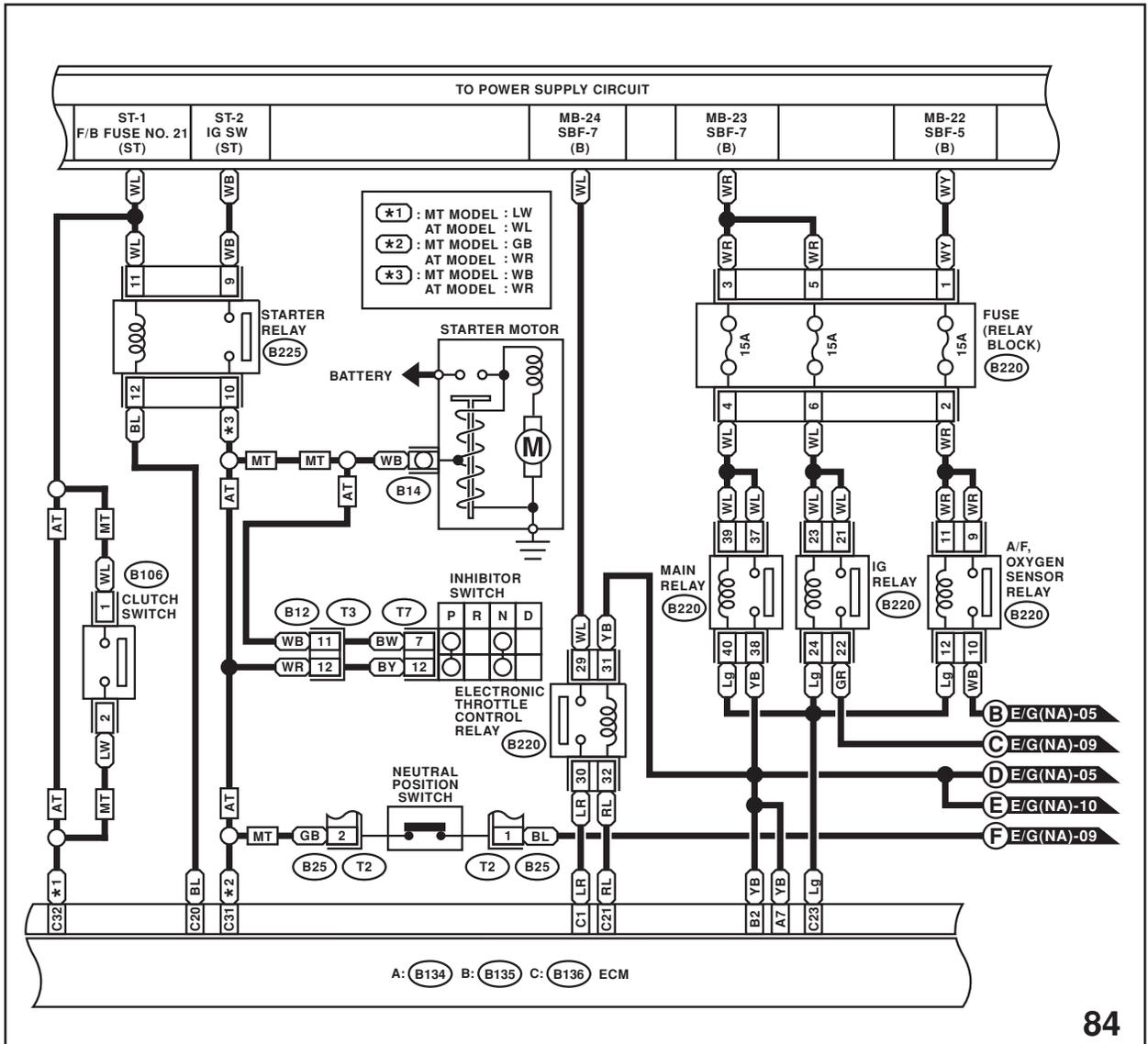
B220 is located behind the glove box and next to the left side of the blower motor housing.
NOTE: THE CIRCLED CONNECTOR IS THE INSPECTION MODE CONNECTOR.



Driver Side Kick Panel

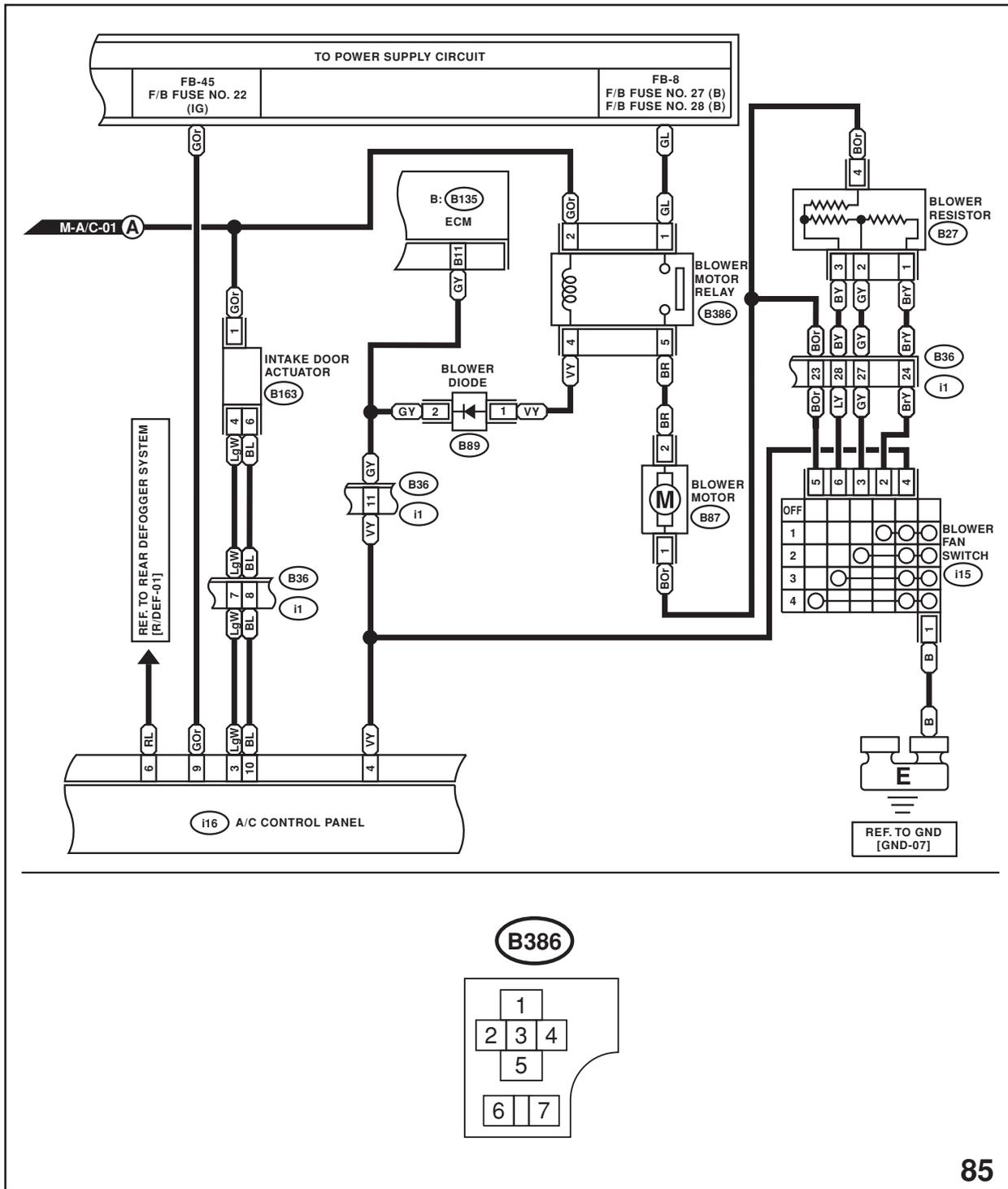
A set of connectors at the driver side kick panel looks identical to the inspection mode connectors but they must stay connected.

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B220 Relay Circuits

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B386 Blower Motor Relay Wiring Schematic and B386 Relay Circuit

BODY INTEGRATED UNIT (BIU)



BIU Location

The BIU is located to the lower side of the steering column.

Body Integrated Unit

- Location: steering shaft, position similar to current Legacy
- Hardware and functions based on Legacy
- CAN system
- Immobilizer operation
- Timer controls for wipers and room lamps
- Door lock control

Body Integrated Unit Customizing (New Items)

- MT / AT: disable or enable Key inter lock, shift lock
- 6 MT / Other than 6 MT: Allows speed sensor signal from 6 MT to serve as an input for VDC.
- Sedan / Wagon: disable or enable the electrical lock of R. Gate

2008 New Model Update (Module 917)

Lighting Switch

No parking switch is available.

During DRL operation only the front lights are illuminated. The DRL resistor is located under the right side head light.

Headlight Operation

Condition	Explanation of condition	Headlights switch condition needed to turn on headlights or parking lights
Normal	Ignition or Engine ON	Turn switch to ON
Key In	Ignition OFF	A. Lights turn ON when key is placed into the ignition switch. (Lights were on when the key was last removed.) B. Turn switch to ON
Key Out		A. Turn switch to On B. Turn switch OFF then ON NOTE: BUZZER SOUNDS IN THIS MODE WHEN THE DRIVER'S DOOR IS OPEN

Automatic Transmission models - DRLS DO NOT OPERATE IN PARK.

All models parking brake on - DRLS DO NOT OPERATE.

WRX models have a headlight on indicator, other models DO NOT.

Keyless Entry Unit

Construction: Same as Legacy
Application: Normal key model
The unit receives wireless signal.
Detected signal goes to BIU.

Keyless entry unit is located on the driver side C pillar (5 door) and on the top of the package shelf on sedan models.

MULTI JOINT CONNECTOR

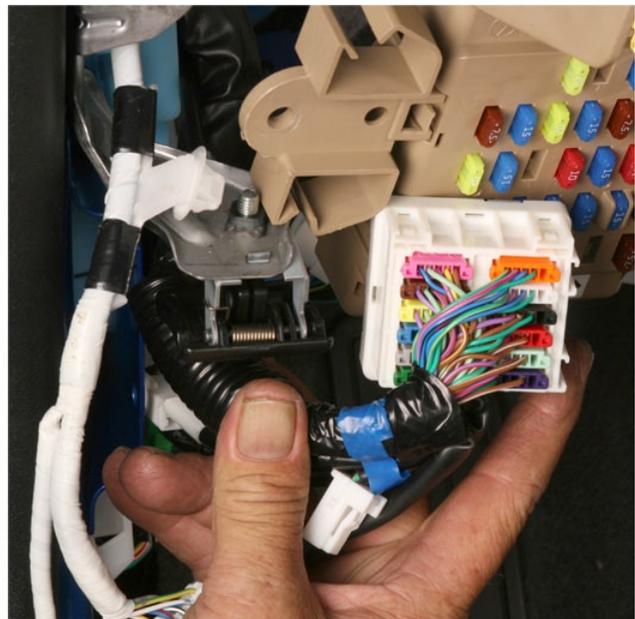


Location of Multi Joint Connector



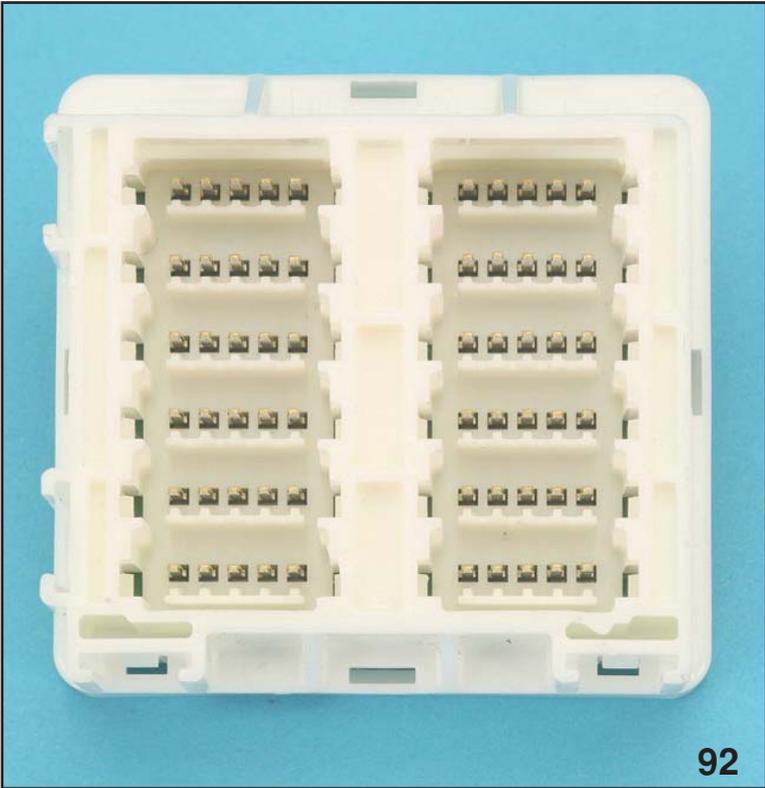
Releasing Multi Joint Connector

B434	5	Pink
B435	5	Brown
B436	5	Yellow
B437	5	Blue
B438	5	Gray
B439	5	Green
B440	5	Orange
B441	5	★
B442	5	Black
B443	5	Red
B444	5	Yellow green
B445	5	Violet
★ : White or natural color		



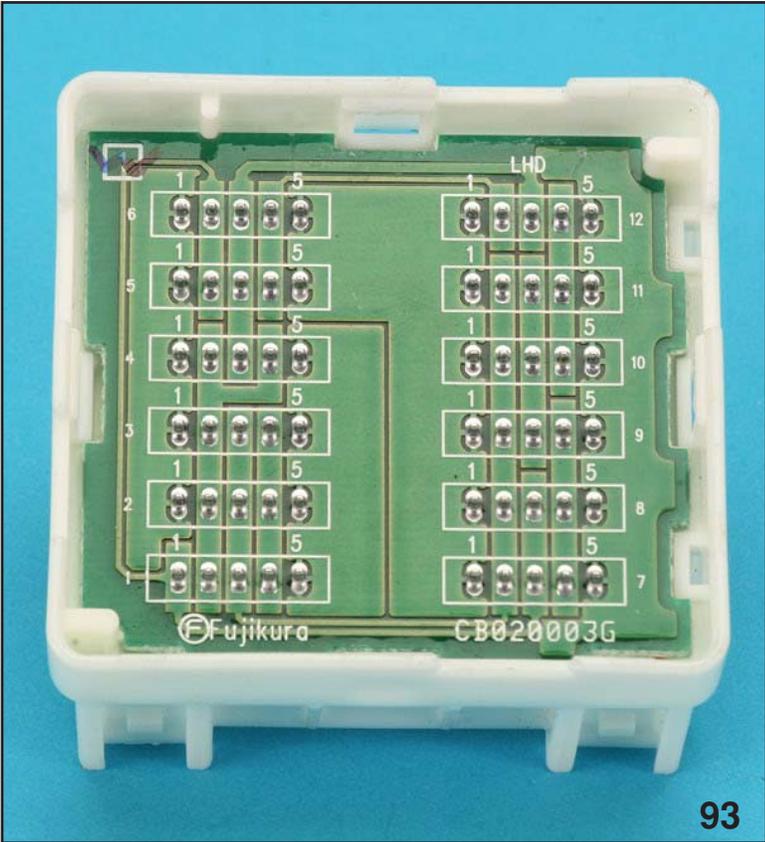
Connector Side of Multi Joint Connector

The 12 connector Multi Joint Connector is located on the top of the fuse box and is used on 2008 Impreza models that are not equipped with the Smart Start System. The Smart Start System is equipped on certain European and Japanese domestic models and provides a keyless entry and starting system.



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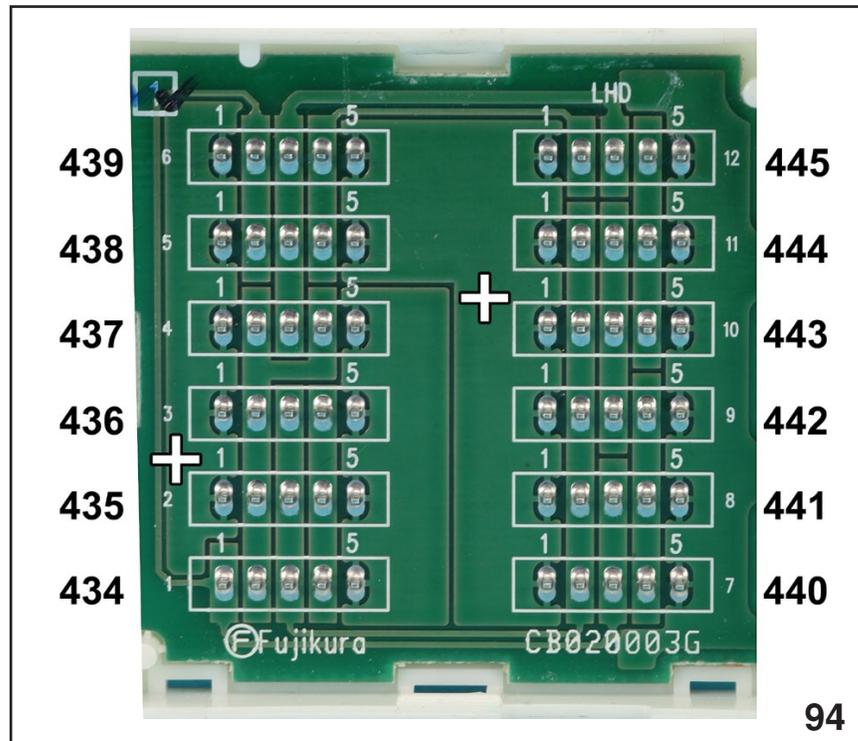
Front View-Multi Joint Connector



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Back Side Cover Removed-Multi Joint Connector

2008 New Model Update (Module 917)

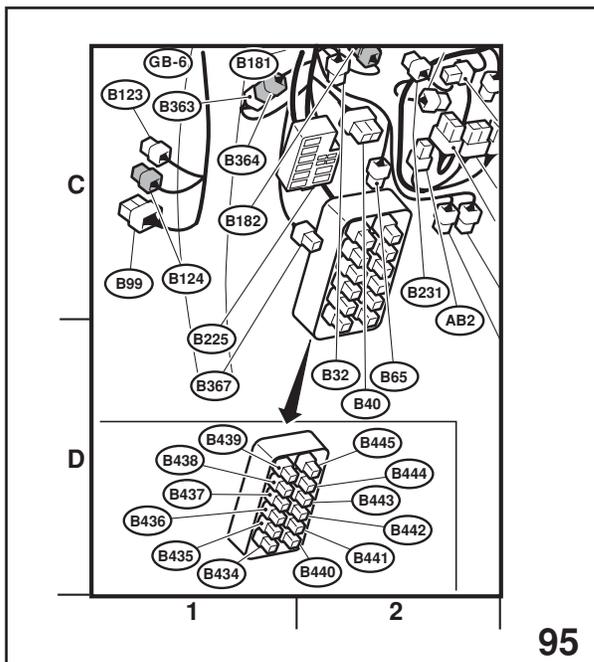


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Multi Joint Connector

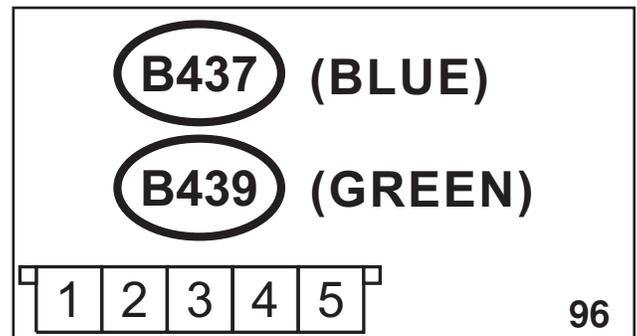
The Multi Joint Connector completes the circuits of many systems providing power and carrying signals.

There is currently no designation for the Multi joint connector.



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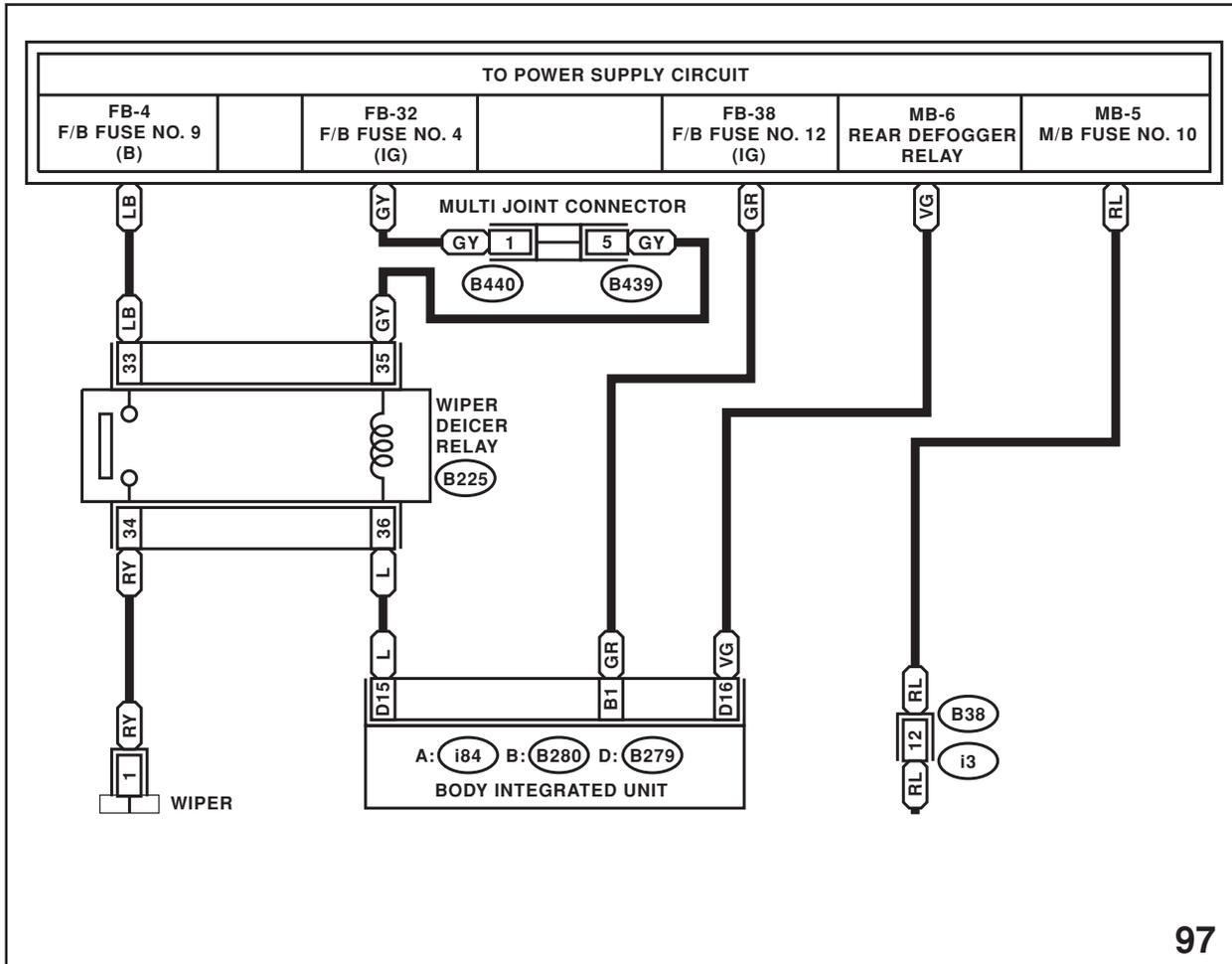
Multi Joint Connector (line Art)



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Connector Colors

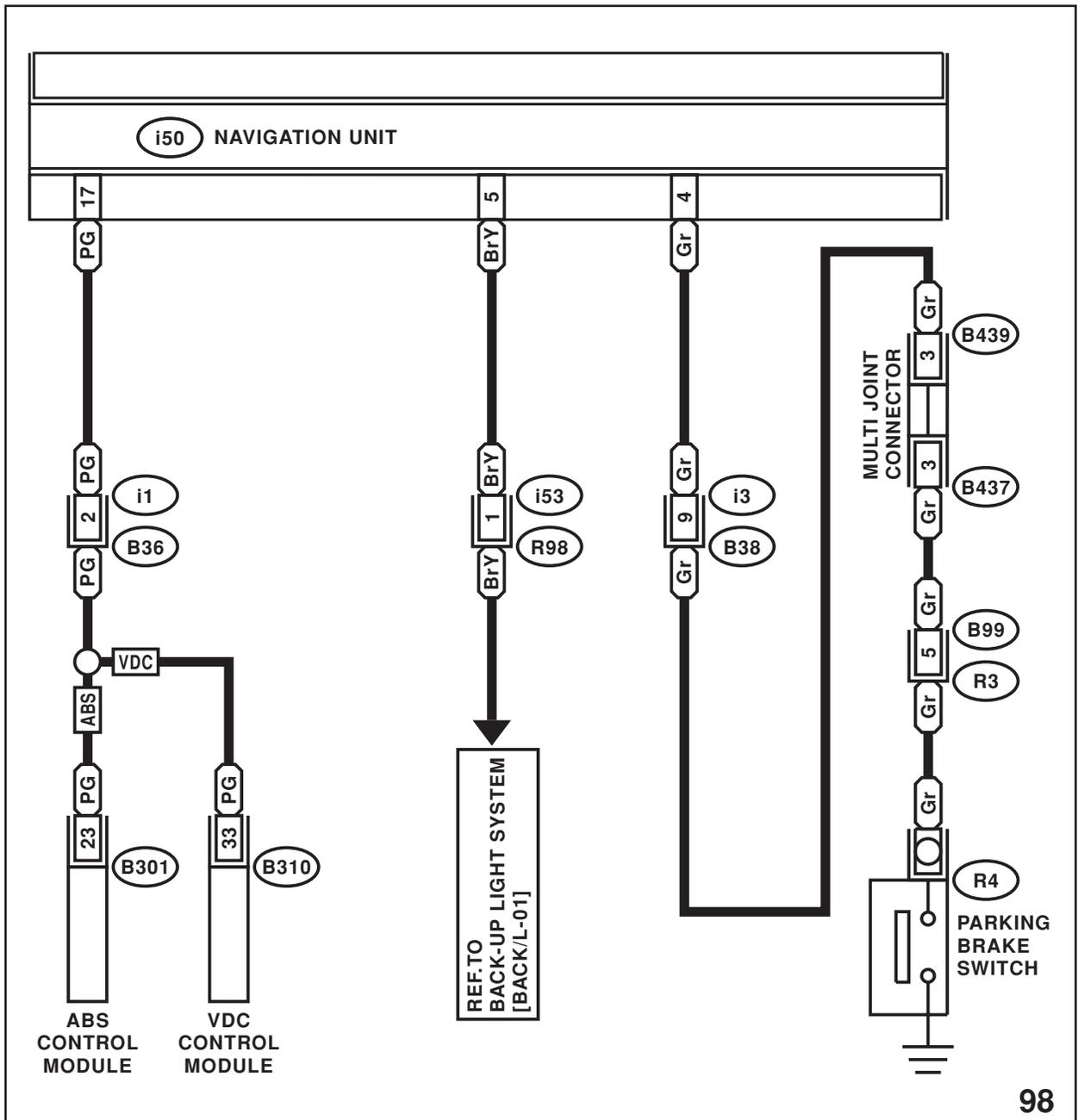
2008 New Model Update (Module 917)



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Wiper Deicer Wiring Schematic

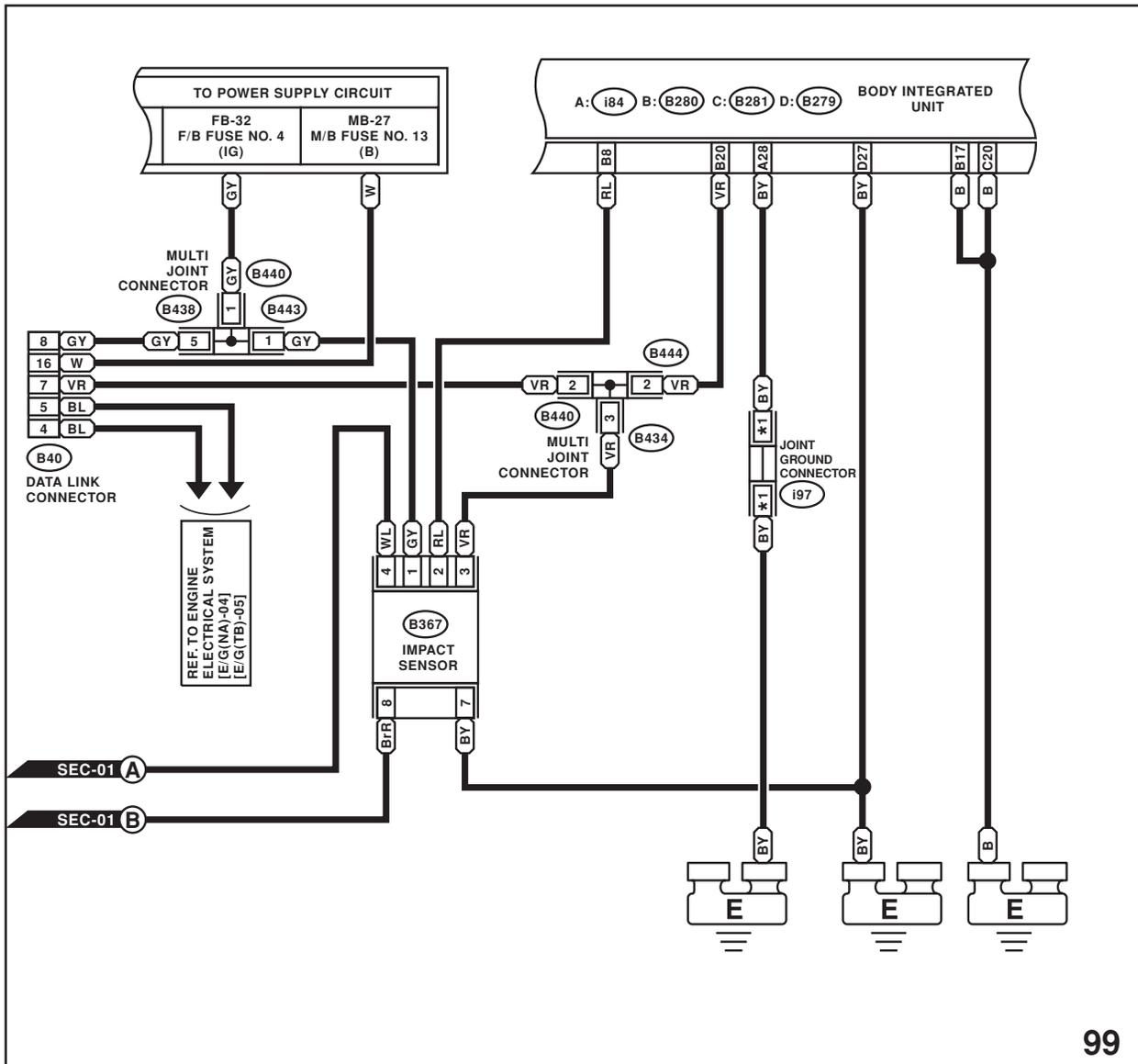
2008 New Model Update (Module 917)



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Navigation Unit Wiring Schematic

2008 New Model Update (Module 917)



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Security System Wiring Schematic

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

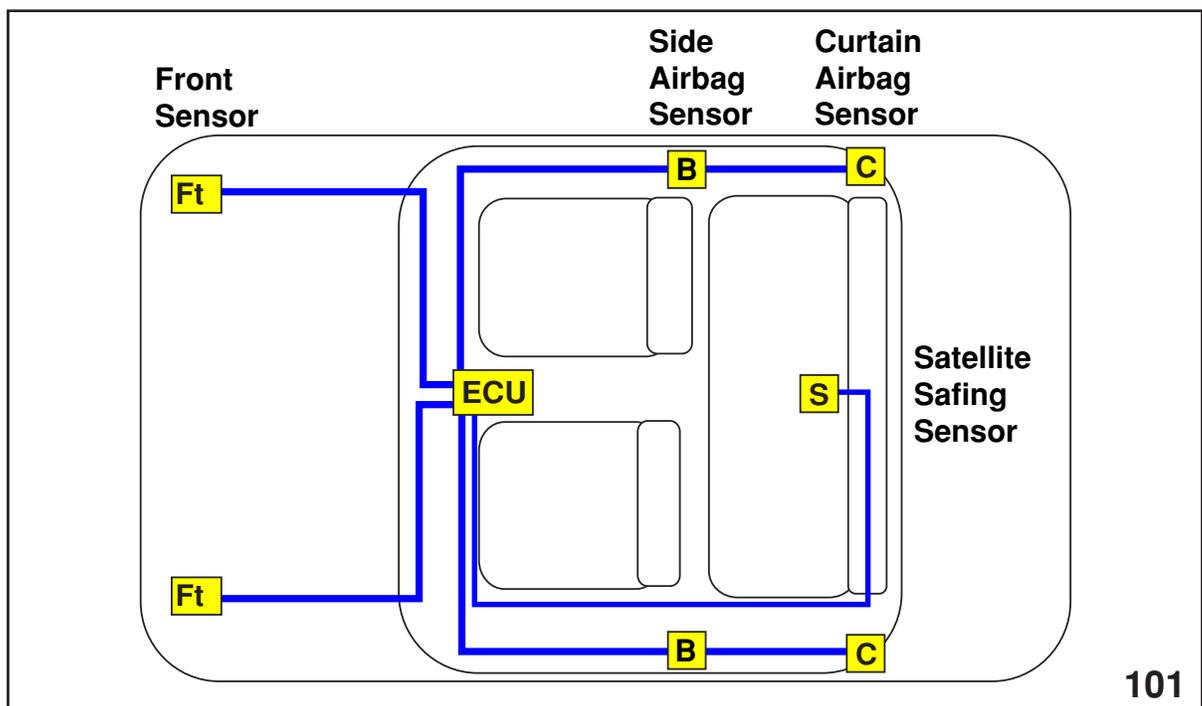
2008 Impreza SRS standard equipment includes frontal dual deployment airbags, side airbags, curtain airbags and front seat belt pretensioners. WRX models are equipped with front seat active headrest.

A new satellite safing sensor and the SRS sensor BUS improve the accuracy of collision judgment and SRS airbag system operation.

The SRS sensor BUS carries signals from all sensors to the SRS control unit. The signals, similar to CAN communications, provide circuit and sensor conditions to the SRS control unit.

As a result of the improved system operation new DTCs have become available.

(See next Page)



Satellite Safing Sensor Schematic



Satellite Safing Sensor Location

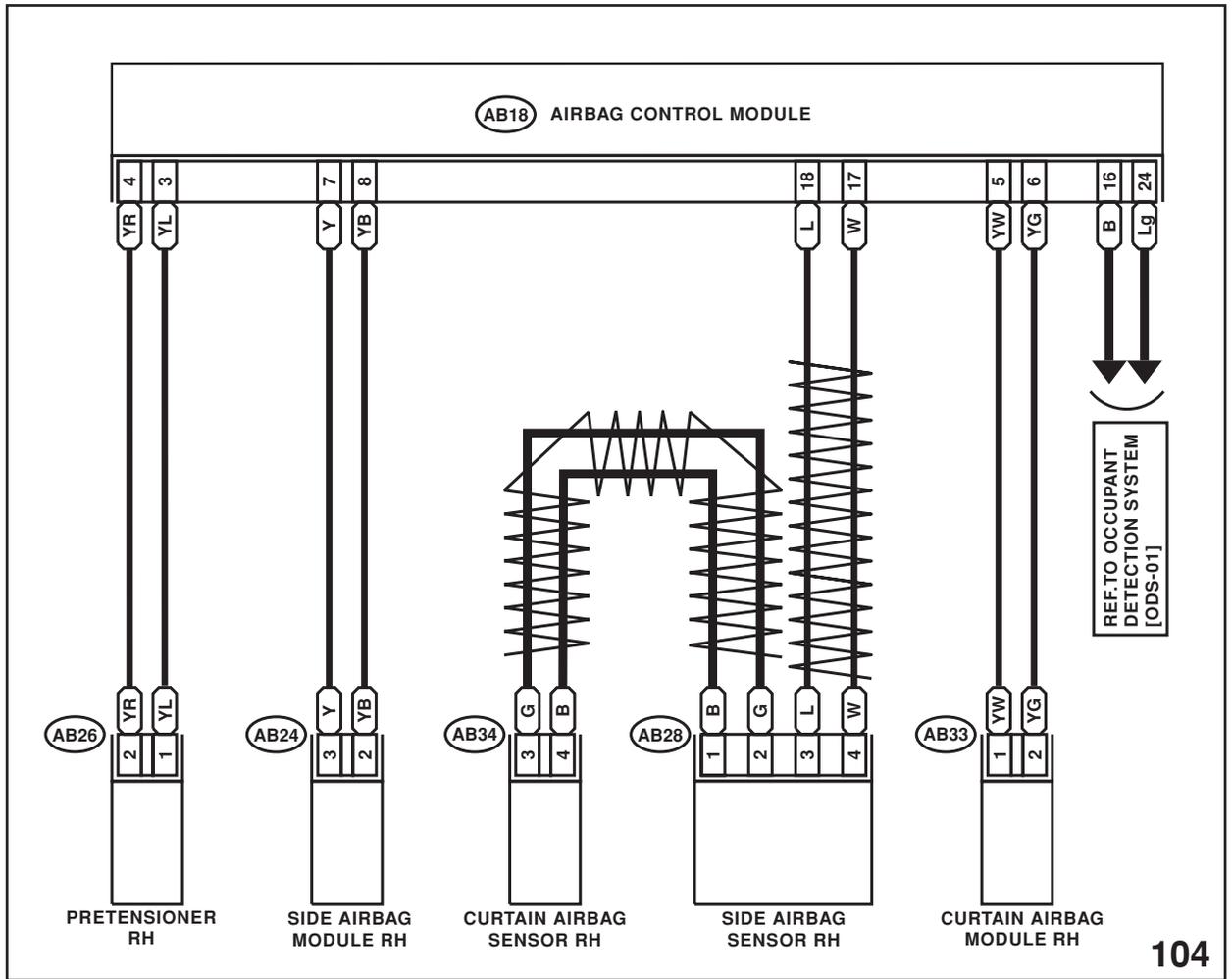
2008 New Model Update (Module 917)

DTC	Display	Diagnosis content
E2 E3 E4	Front Sensor Bus RH Communication error	<ul style="list-style-type: none"> • Open or short circuit in harness (RH) between airbag control module and front sub sensor. • Front sub sensor (RH) is faulty. • Airbag control module is faulty.
E6 E7 E8	Front Sensor Bus LH Communication error	<ul style="list-style-type: none"> • Open or short circuit in harness (LH) between airbag control module and front sub sensor. • Front sub sensor (LH) is faulty. • Airbag control module is faulty.
E9 EA EB EC	Side Sensor Bus RH Communication error	<ul style="list-style-type: none"> • Open or short circuit in harness (RH) between airbag control module and side sensor. • Side airbag sensor (RH) or curtain airbag sensor (RH) is faulty. • Airbag control module is faulty.
ED EE	Side Sensor Bus RH Communication error	<ul style="list-style-type: none"> • Open or short circuit in harness (RH) between airbag control module and side sensor. • Side airbag sensor (RH) or curtain airbag sensor (RH) is faulty. • Airbag control module is faulty.
F1 F2 F3 F4	Side Sensor Bus LH Communication error	<ul style="list-style-type: none"> • Open or short circuit in harness (LH) between airbag control module and side sensor. • Side airbag sensor (LH) or curtain airbag sensor (LH) is faulty. • Airbag control module is faulty.
F5 F6	Side Sensor Bus LH Communication error	<ul style="list-style-type: none"> • Open or short circuit in harness (LH) between airbag control module and side sensor. • Side airbag sensor (LH) or curtain airbag sensor (LH) is faulty. • Airbag control module is faulty.
F8 F9 FA	Satellite Sensor Bus Communication error	<ul style="list-style-type: none"> • Open or short circuit in harness between airbag control module and satellite safing sensor. • Satellite safing sensor is faulty. • Airbag control module is faulty.
3A	Front Sub Sensor RH False installation	<ul style="list-style-type: none"> • Front sensor (RH) is misinstalled. • Airbag control module is faulty.
3B	Front Sub Sensor LH False installation	<ul style="list-style-type: none"> • Front sensor (LH) is misinstalled. • Airbag control module is faulty.
3C	Satellite Sensor Bus failure	Satellite safing sensor is faulty.
3D	Satellite Sensor False installation	<ul style="list-style-type: none"> • Satellite safing sensor is misinstalled. • Airbag control module is faulty.
5A	Side Airbag Sensor RH False installation	<ul style="list-style-type: none"> • Side A/B sensor is misinstalled. • Airbag control module is faulty.
5B	Side Airbag Sensor LH False installation	<ul style="list-style-type: none"> • Side A/B sensor is misinstalled. • Airbag control module is faulty.
5C	Curtain Airbag Sensor RH False installation	<ul style="list-style-type: none"> • Curtain A/B sensor is misinstalled. • Airbag control module is faulty.
5D	Curtain Airbag Sensor LH False installation	<ul style="list-style-type: none"> • Curtain A/B sensor is misinstalled. • Airbag control module is faulty.

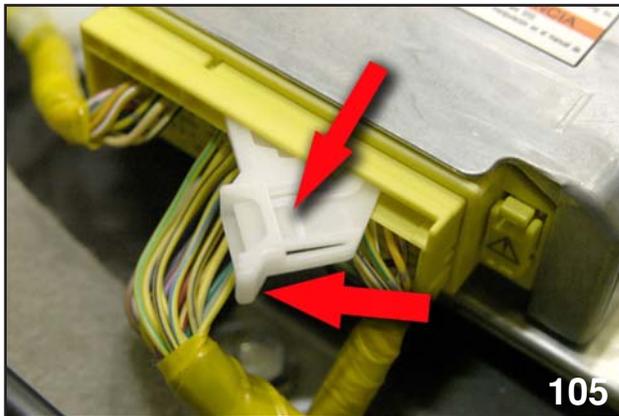
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2008 Airbag Trouble Codes

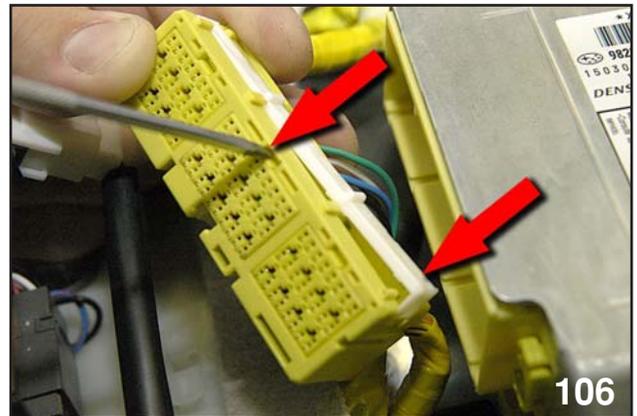
2008 New Model Update (Module 917)



Airbag Wiring Schematic



Connector Lock release tab



White Locking Plate

The connector at the SRS/Control unit unifies the body harness and the two SRS harnesses. Push down on the indicated tab and pull outward on the connector lock to release from the control unit.

Remove or loosen the white locking plate and apply pressure at the indicated release tab to disengage the connectors from the connector collar.

EVAPORATIVE SYSTEM



Carpet Location Tabs



Sliding Lock Tabs

When removing the carpet from the rear of the vehicle the right side is fastened with a sliding lock and left side by simple trim panel tabs. Releasing of the sliding locks is accomplished by pushing it to the right and sliding to the back.



WRX Rear of Vehicle with Carpet Removed



Sedan Trunk



Sedan Covers over Evaporative Canister and Evaporative Hoses

Removing the two metal covers from the cargo or trunk area will expose the evaporative canister, evaporative hoses and the drain valve. This applies to the 5 door and the Sedan models.



Drain Valve

The drain valve is equipped with an air filter, and cannot be serviced separately from the filter.



Quick Connectors

When disengaging the quick connectors of the evaporative system, slide them back about half way.

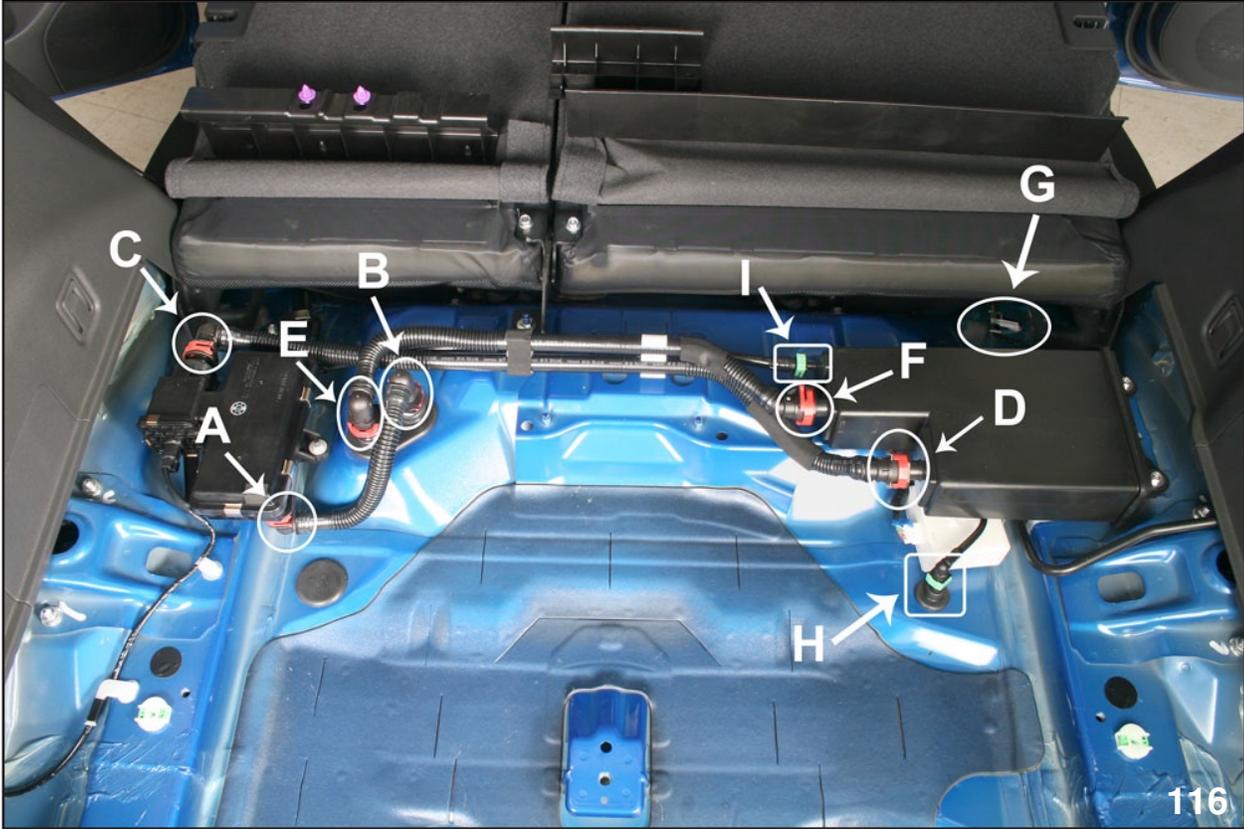


Evaporative System Hose Connection

Sliding them too far will require resetting the locking tabs into the channels made into the hose connection. The quick connector provides a locking action by placing one tab in front and one tab behind a locking collar. When beginning the release procedure use a small screw driver and gently pry each side away from the center of the quick connector while pulling back.

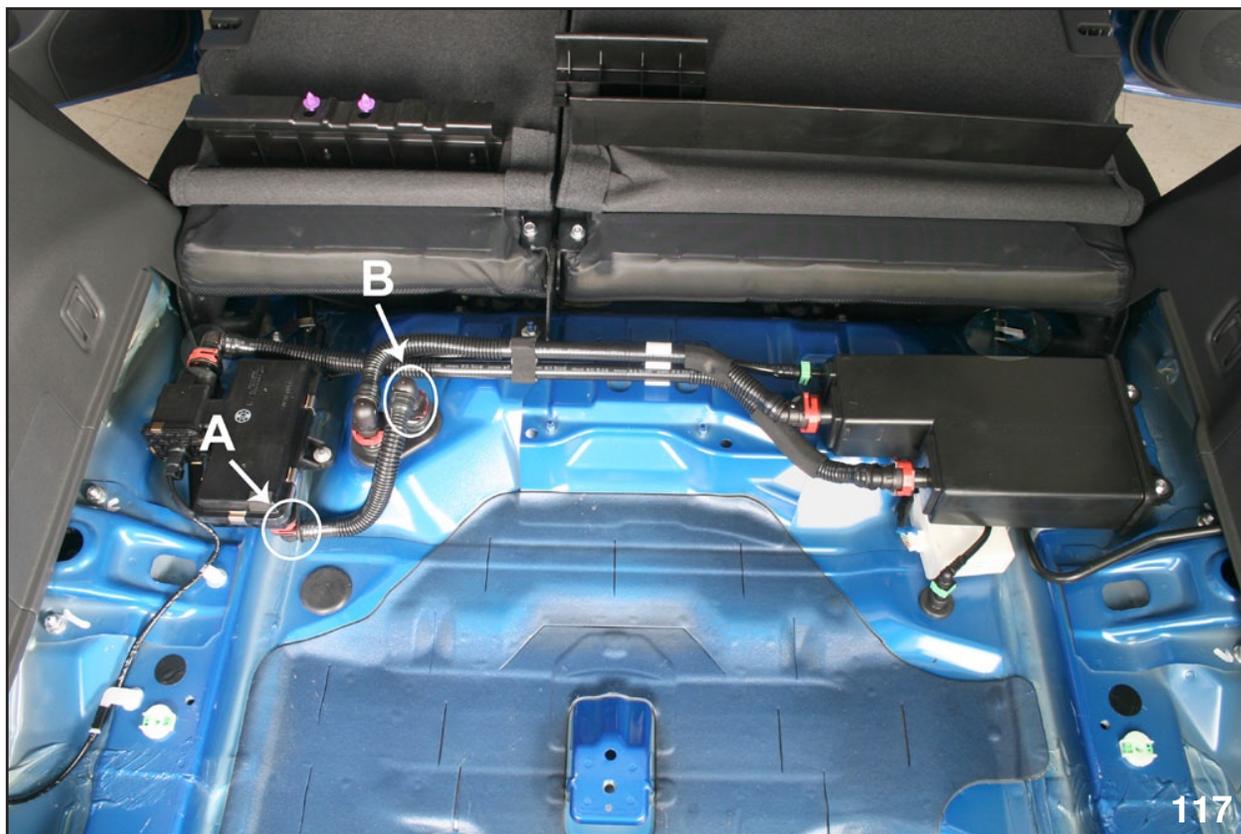
2008 New Model Update (Module 917)

Hose Connections

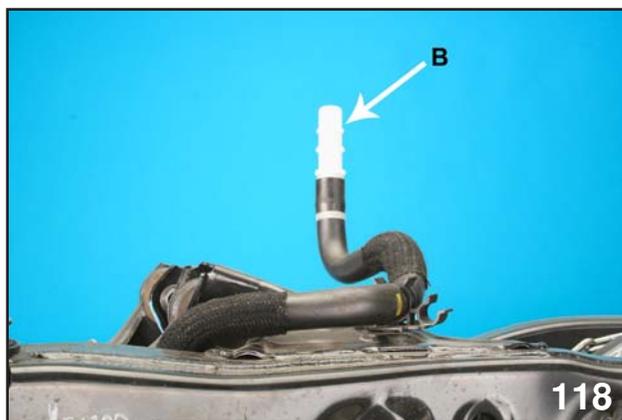


Hose Connections

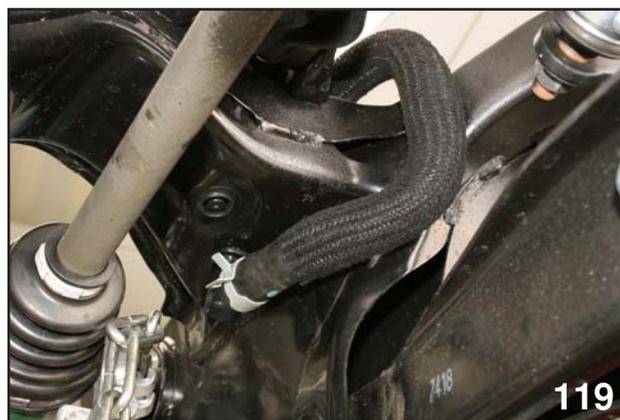
2008 New Model Update (Module 917)



Hose A and B



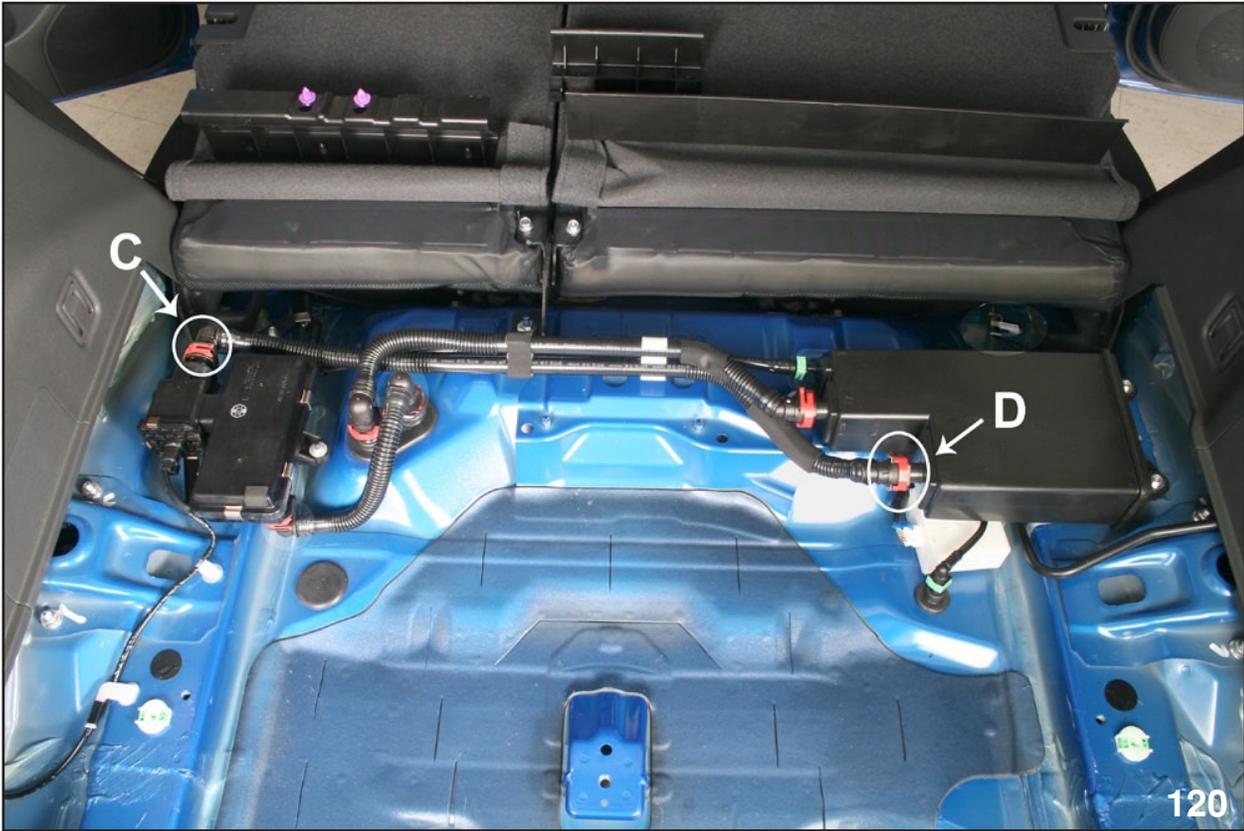
Hose B



Hose B

Hose A and B connect the drain valve to the atmosphere.

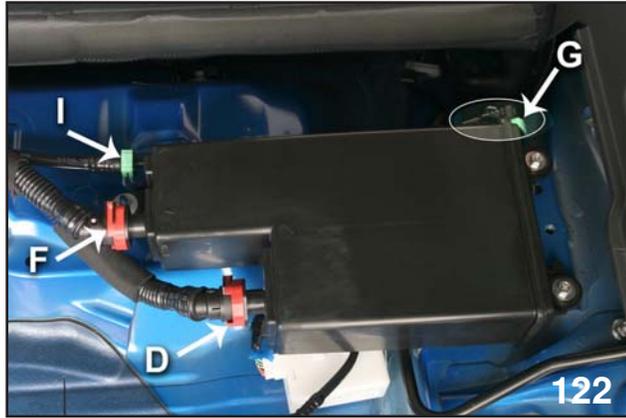
2008 New Model Update (Module 917)



Hose C and D



Hose C



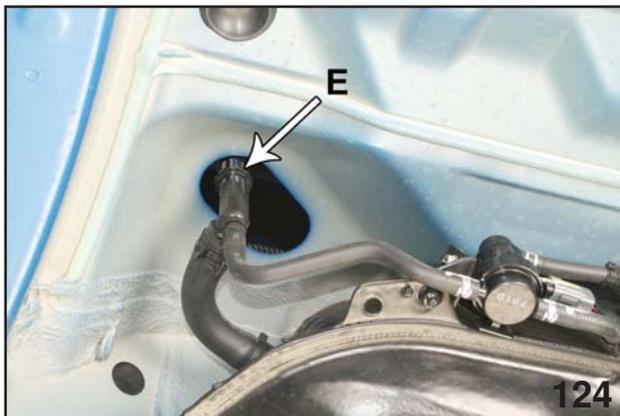
Hose D

Hose C and D connect the drain valve to the evaporative canister.

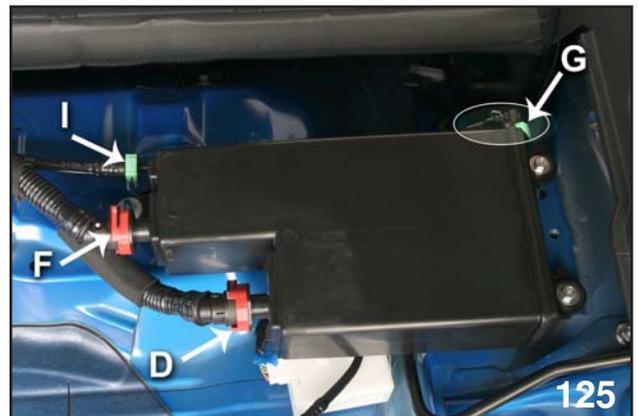
2008 New Model Update (Module 917)



Hose E and F



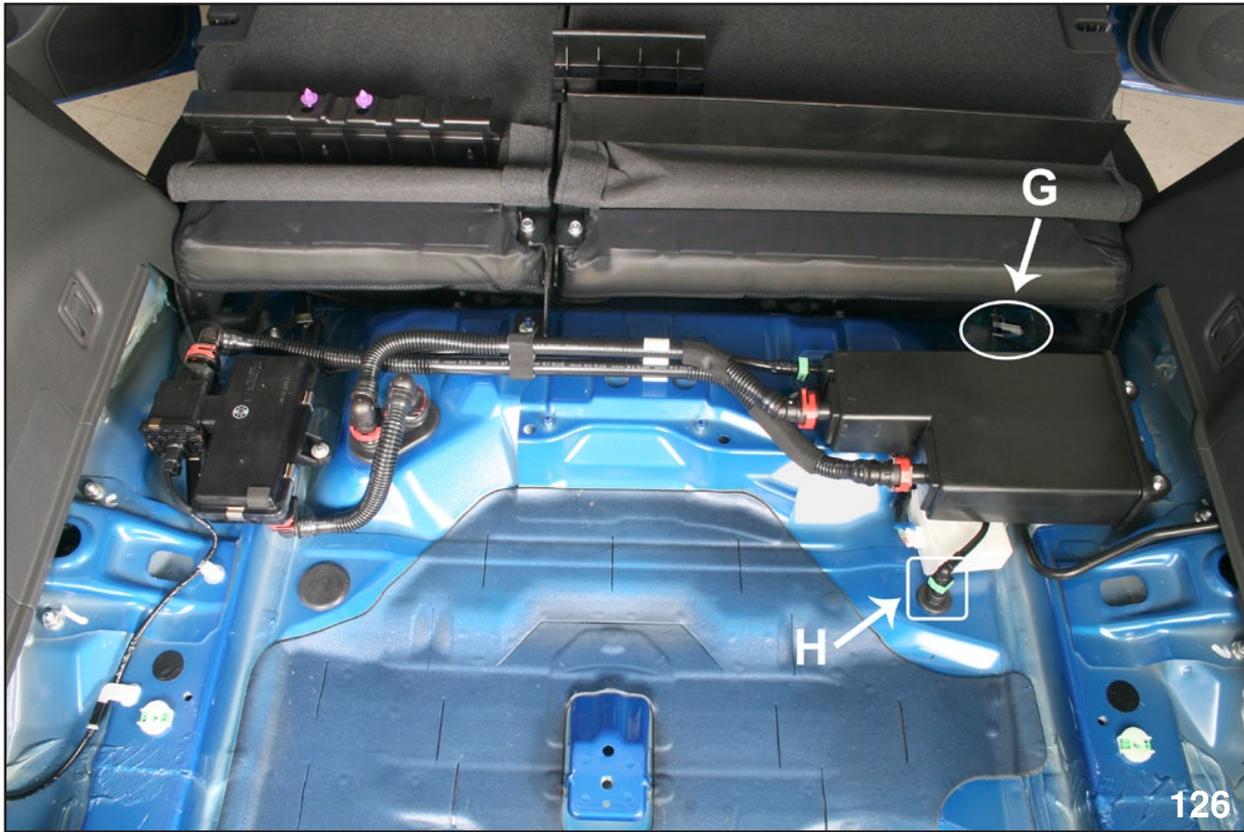
Hose E



Hose F

Hose E and F connect the evaporative canister to the fuel tank. (ORVR)

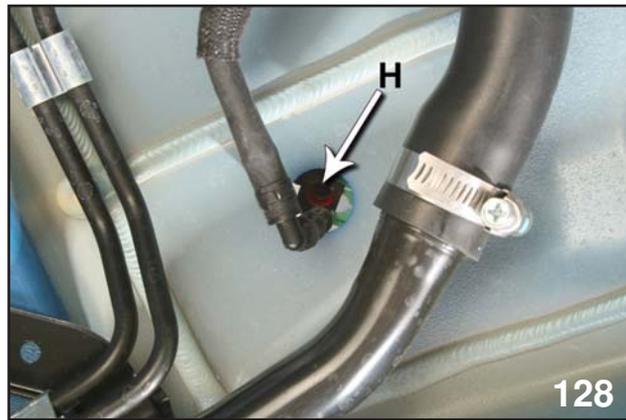
2008 New Model Update (Module 917)



Hose G and H

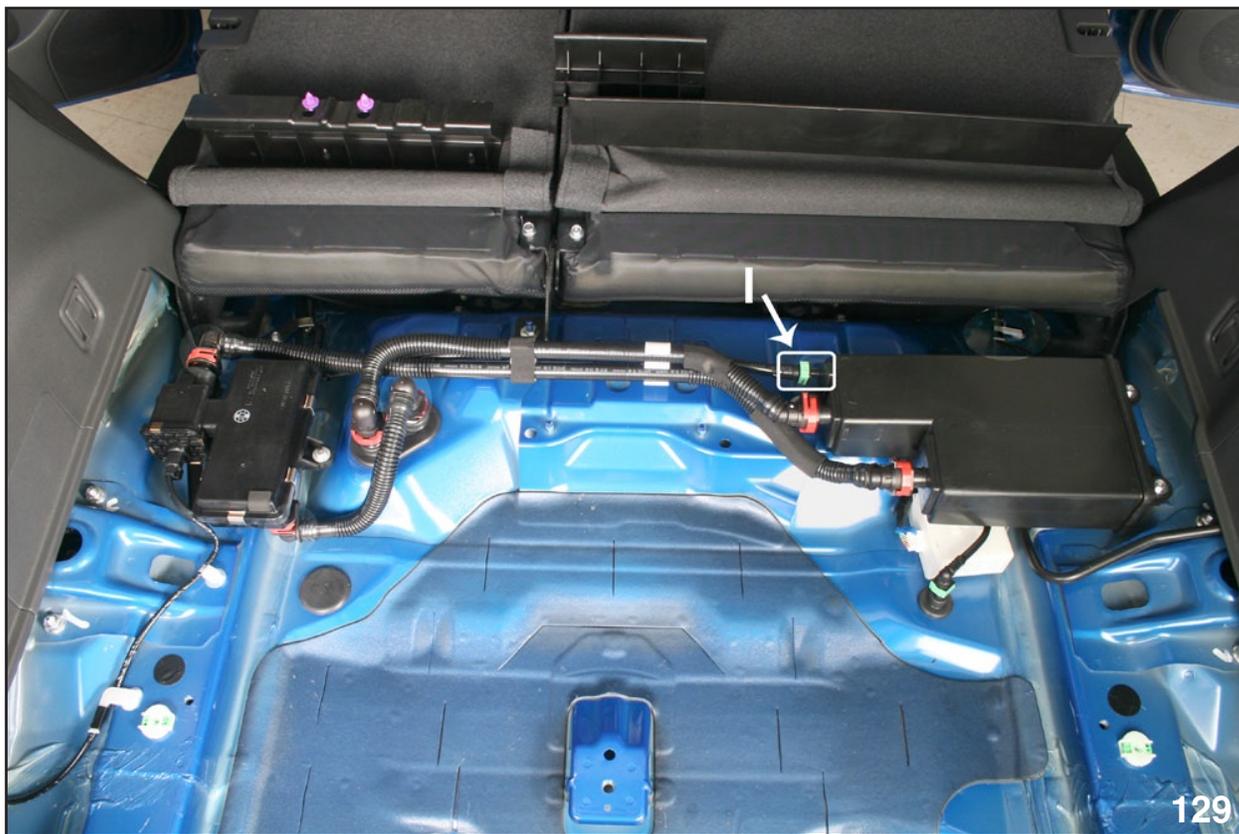


Hose G



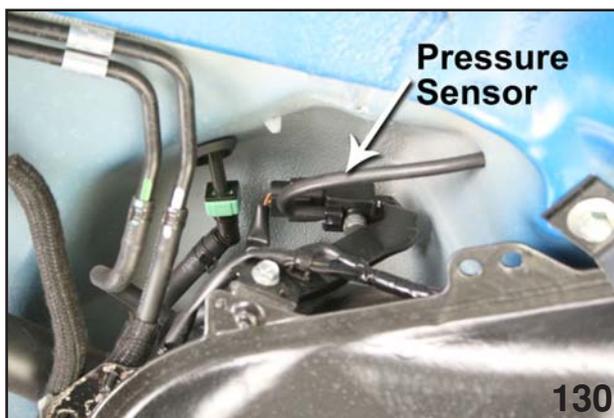
Hose H

Hose G and H connect the evaporative canister to the fuel tank. (Purge in to canister)



Hose I

Hose I connects the evaporative canister to the purge control valve.



Pressure Sensor

The fuel tank pressure sensor is located on the right rear of the fuel tank.

FUEL TANK



Main Fuel Pump



WRX Fuel Pump Control Unit



Fuel Tank

The fuel tank is equipped with a main and sub fuel pump. The fuel level must be lowered according to the service manual before the pumps can be removed. A fuel drain is not provided on the tank.

The fuel pump control unit (if equipped) is located behind the right rear cargo area trim panel.

AUTOMATIC TRANSMISSION

Changes/Enhancements

- Detent roller with needle bearing is newly adopted in order to reduce frictional force between the detent roller and the manual plate.
- Shifter inputs to BIU and BIU controls shift lock solenoid.
- All wheel drive has changed from Variable Torque Distribution (VTD) to Multiple plate Transfer (MPT).

Differential Gear Ratio		
2.5 NA	5 MT	3.900
	4 AT	4.111
2.5 Turbo	5 MT	3.900
	4 AT	3.900

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Differential Gear Ratio chart

Gear Ratio	
1st	2.785
2nd	1.545
3rd	1.000
4th	0.694
Reverse	2.272

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Gear Ratio chart

Air Bleeding Procedure (4AT without push start)

Condition

This procedure should apply after the services below.

- Replacement of transmission
- Replacement of control Valve body
- Overhaul of transmission

Conditions needed

- Lifting-up the vehicle and apply the parking brake.
- Turn on ignition key and connect SSMIII.
- Confirm No DTC and ATF temperature is less than 60°C (140°F) with SSMIII.

Confirm no electrical load (Headlight, A/C, Rear defogger, etc.)

Procedure

1. Shift the select lever to “P” position and apply parking brake firmly.
2. Lift-up the vehicle
3. Connect SSM to data link connector
4. IG switch ON, engine should not run.
5. Start SSMIII and select Transmission in Each system, Perform "Clear Memory 2".
6. Confirm there is no DTC.
7. Show “Normal Data Display” of transmission.
 - Confirm ATF temperature: below 60°C (140°F) with SSMIII.
8. Shift the selector lever to “R” position.
9. Turn the ignition switch to “OFF” position.
10. Wait until ACC power goes off and “Communication Failed!” is displayed on the display (aprox. 30 to 40 seconds)
 - Select “OK” and prompt appears to save data, please ignore.
 - Return to system selection menu.
11. Depress the brake pedal fully by left foot.
(Retain its position until the Air bleeding procedure is finished).
12. Turn on the ignition switch.
13. Shift the selector lever to “P” range and wait for 5 seconds.
14. Shift the selector lever to “R” range and wait for 5 seconds.
15. Shift the selector lever to “N” range and wait for 5 seconds.
16. Shift the selector lever to “D” range and wait for 5 seconds.
17. Shift the selector lever to “N” range and wait for 5 seconds.
18. Slowly depress the accelerator pedal fully.
19. Slowly release the accelerator pedal fully.
20. Start the engine.
21. Shift the selector lever to “D” position.
22. Start SSMIII and select “Transmission” in “Each system”.
23. The TCM starts the process, when the “SPORT” indicator light starts blinking at 2Hz.
 - When the air bleeding process is finished, the “SPORT” indicator light goes off.
 - If the “SPORT” indicator light does not start blinking or if blinking of the “SPORT” indicator light changes from 2Hz to 4Hz, repeat the procedure from step 4.
24. Turn off the ignition key and wait 20 second.
25. Shift the select lever to “P” position.

Initial-Learning Procedure (4AT without push start)

- This procedure should apply when there is shift shock or after the services below.
 - Replacement of TCU
 - Replacement of transmission
 - Overhaul of transmission
 - Replacement of control valve body
 - After performing “Memory clear 2”

Procedure

1. Shift the select lever to “P” position and apply parking brake firmly.
2. Lift-up the vehicle
3. Connect SSMIII to data link connector
4. IG switch ON, engine should not run.
5. Start SSMIII and select Transmission in Each system
6. Perform the "Clear Memory 2".
7. Confirm there is no DTC.
8. Show “Normal Data Display” of transmission.
Confirm ATF temperature: 60°C - 90°C (140°F - 194°F) by SSMIII.
9. Shift the selector lever to “R” position
10. Confirm no electrical load (Headlight, A/C, Rear defogger, etc.)
11. Turn the ignition switch to “OFF” position.
12. Wait until ACC power goes off and “Communication Failed!” is displayed. (aprox. 30 to 40 seconds)
 - Select “OK” and prompt appears to save data, please ignore.
 - Return to system selection menu.
13. Depress the brake pedal fully by left foot.
(Retain its position until the initial-learning procedure is finished).
14. Turn on the ignition switch and Start SSMIII
15. Select “Transmission” in “Each system” and select “Normal Data Display”.
16. Shift the selector lever to “P” range and wait for 5 seconds.
17. Shift the selector lever to “R” range and wait for 5 seconds.
18. Shift the selector lever to “N” range and wait for 5 seconds.

2008 New Model Update (Module 917)

19. Shift the selector lever to “D” range and wait for 5 seconds.
20. Shift the selector lever to “N” range and wait for 5 seconds.
21. Slowly depress the accelerator pedal fully.
22. Slowly release the accelerator pedal fully.
23. Start the engine.
24. Shift the selector lever to “D” position.
 - The TCM starts the process, when the “SPORT” indicator light starts blinking at 2Hz.
 - When the air bleeding process is finished, the “SPORT” indicator light goes off.
 - If the “SPORT” indicator light does not start blinking or if blinking of the “SPORT” indicator light changes from 2Hz to 4Hz, repeat the procedure from step 4.
25. Shift the selector to "N" position and turn off the ignition key.
26. Shift the selector lever to "P" position and wait 20 seconds.

MANUAL TRANSMISSION CHANGES/ ENHANCEMENTS

Model		Non-turbo model	Turbo model
Type		5-forward speeds with synchromesh and 1-reverse	
Transmission gear ratio	1st	3.454	3.166
	2nd	2.062	1.882
	3rd	1.448	1.296
	4th	1.088	0.972
	5th	0.780	0.738
	Reverse	3.333	
Front reduction gear	Final	Type of gear	Hypoid
		Gear ratio	3.900
Rear reduction gear	Transfer	Type of gear	Helical
		Gear ratio	1.000
	Final	Type of gear	Hypoid
		Gear ratio	3.900
Front differential	Type and number of gear	Straight bevel gear (Bevel pinion: 2, Bevel gear: 2)	
Center differential	Type and number of gear	Straight bevel gear (Bevel pinion: 2, bevel gear: 2 and viscous coupling)	
Transmission gear oil		GL-5	
Transmission gear oil capacity		3.5 ℓ (3.7 US qt, 3.1 Imp qt)	

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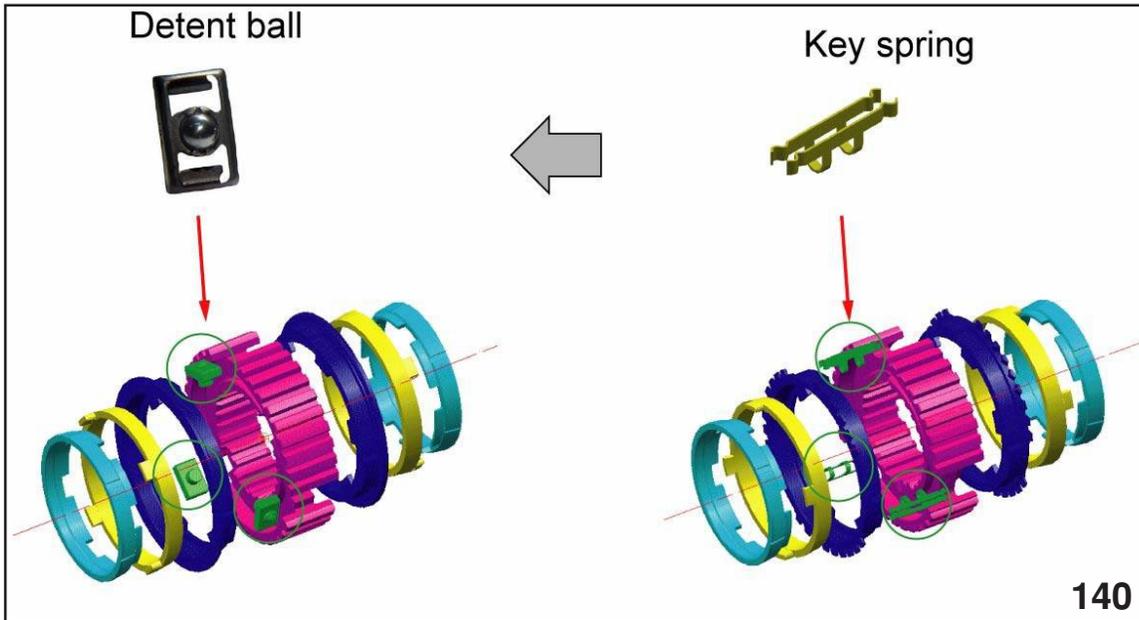
Manual Transmission Chart

5 MT Speedometer gear is deleted and wheel speed signal is taken from ABSCM.

2008 New Model Update (Module 917)

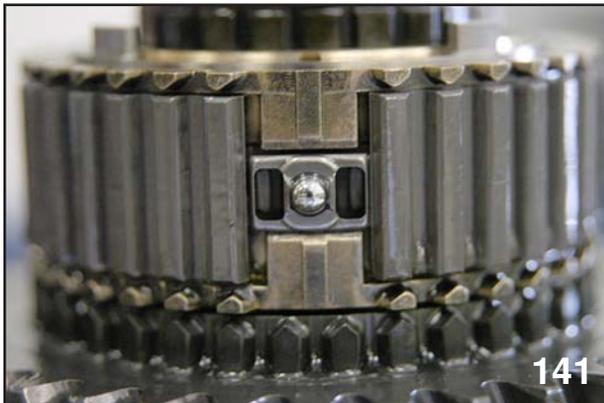
Improvement of 1st - 2nd gear shift feeling

In order to reduce shifting friction, two detent balls are used instead of key springs.

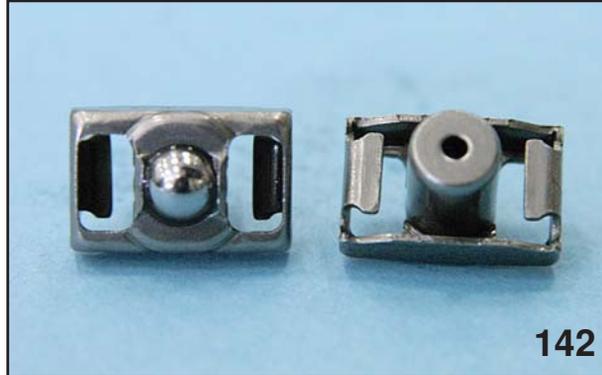


Difference of Detent Balls and Key Springs

NOTE: Only two detent balls are used on the 1st and 2nd gear hub.



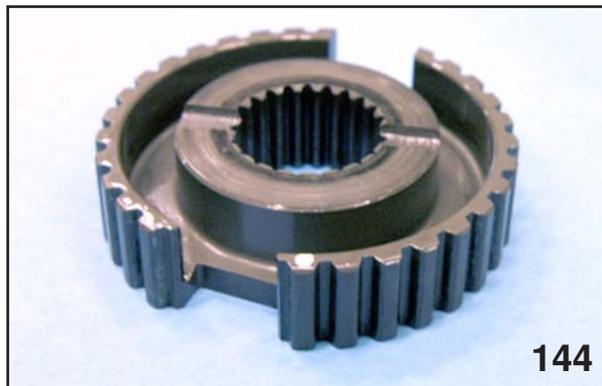
Detent Ball in place



Detent Ball front/rear view

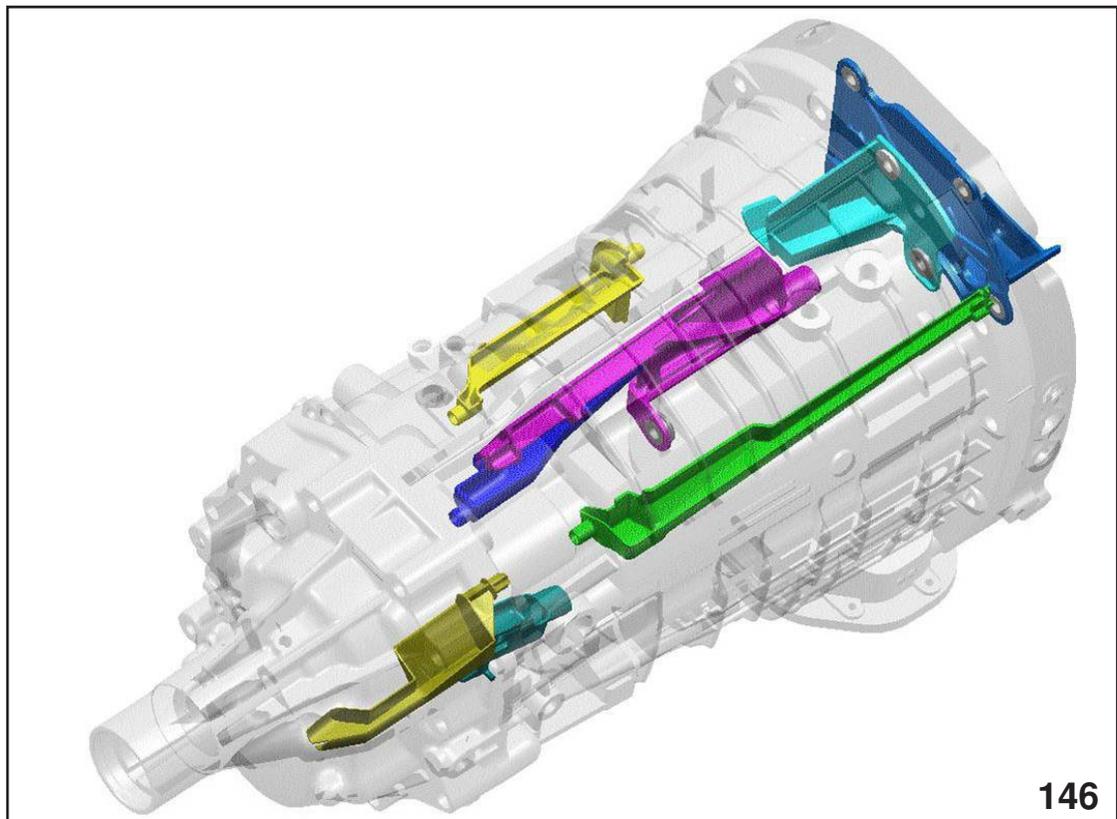


1st and 2nd slider



1st and 2nd Hub

6 SPEED MANUAL TRANSMISSION (2008)



Construction



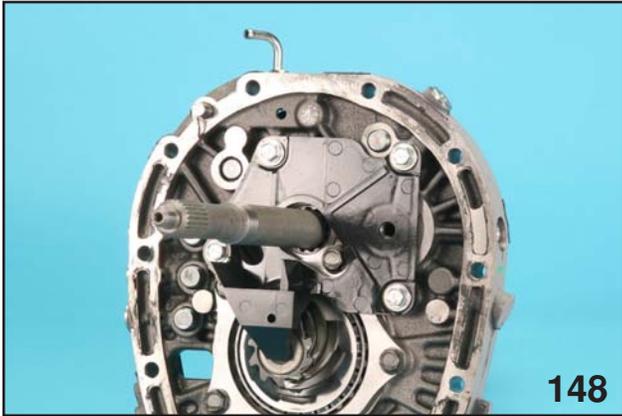
Oil Sump

The 6 MT for 2008 model year has replaced the oil pump with oil guides. The oil pump pick up screen has been deleted.

The oil guides are positioned to catch oil splashed by moving gears and provides a path for the oil to flow, lubricating bearings, bushings and all moving parts inside the transmission.

NOTE: THERE HAS BEEN NO CHANGE IN THE POSITION OF THE BUSHINGS AND THE OILING DELIVERY HOLES MACHINED IN THE MAIN AND HOLLOW SHAFTS.

2008 New Model Update (Module 917)



Front Oil Guides

Oil splashed in the differential is delivered from the pinion oil guide to the pinion bearing, 1st gear and 2nd gear bushings, sliders, gears and all moving parts of their gear sets.

The front main shaft bearing is lubricated by the front main case oil guide.



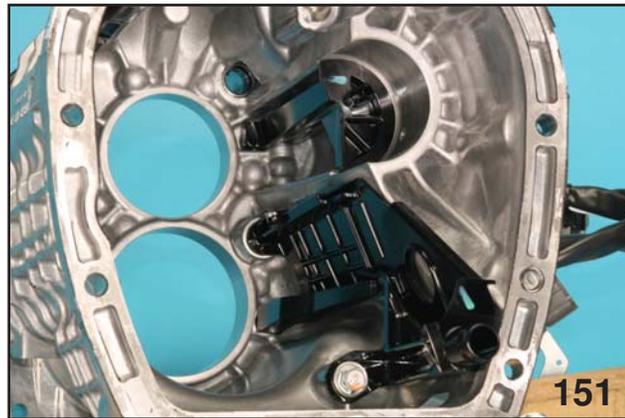
Previous Oil Pump

The main case is equipped with three (3) oil guides.



Main Case Oil Guides

The two (2) on the left side carry oil to the rear main shaft and hollow shaft bearings.



Main Case Oil Guides Close up

The one (1) on the right side carries oil to the extension housing. An oil guide in the extension housing routes oil to the transfer driven shaft bushing.



Extension Housing Oil Guide

2008 New Model Update (Module 917)



Friction Tab



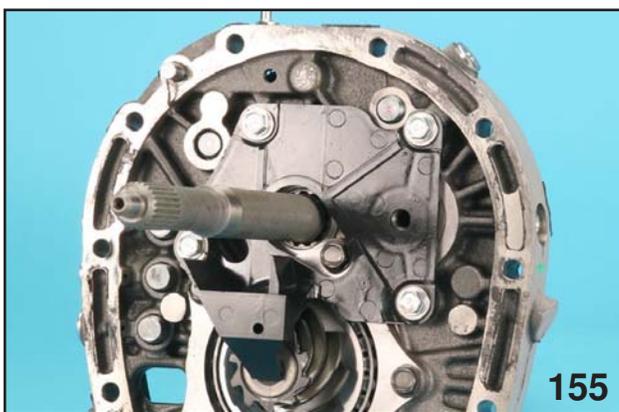
Main Case Oil Guides Bench Shot



Clip

The oil guides are positioned into place by friction, bolts and incorporated clips.

Use care when removing the oil guides from the transmission.



Bolts



Clip



End Plate

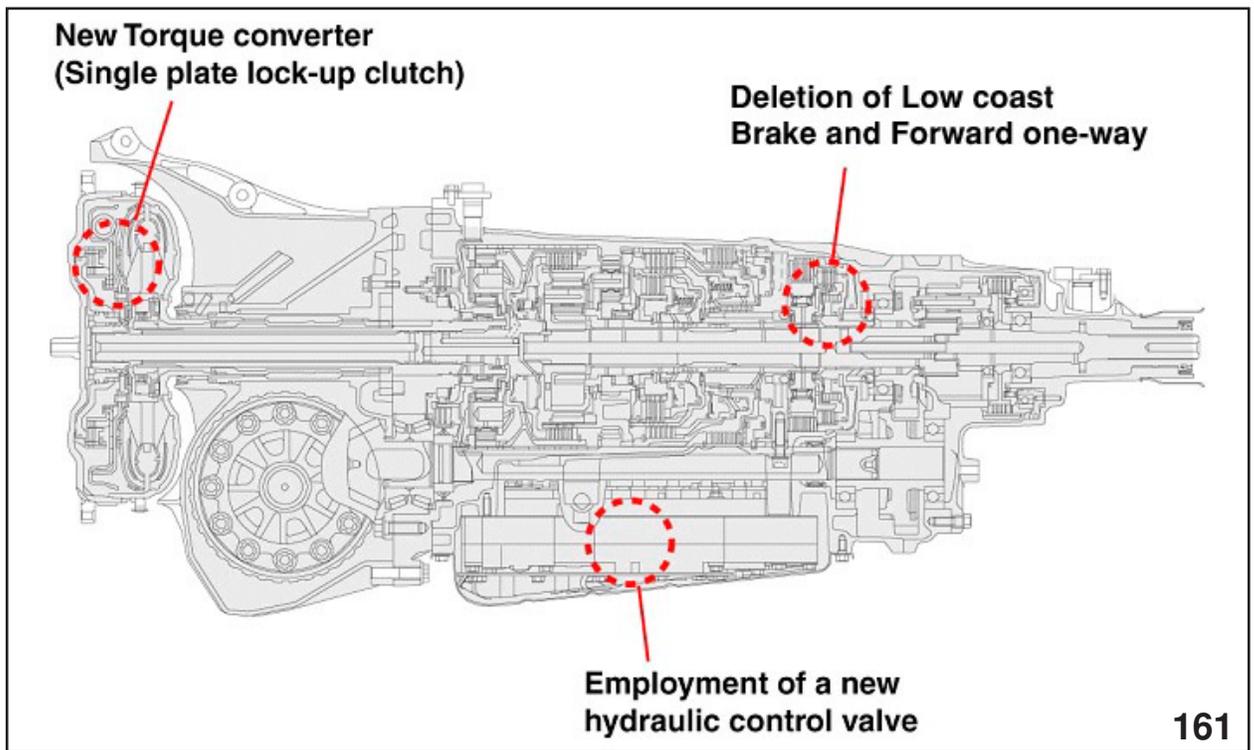
Bearing end plate, previously the oil pump cover.



Previous Oil Pump location

New case design, no oil pump.

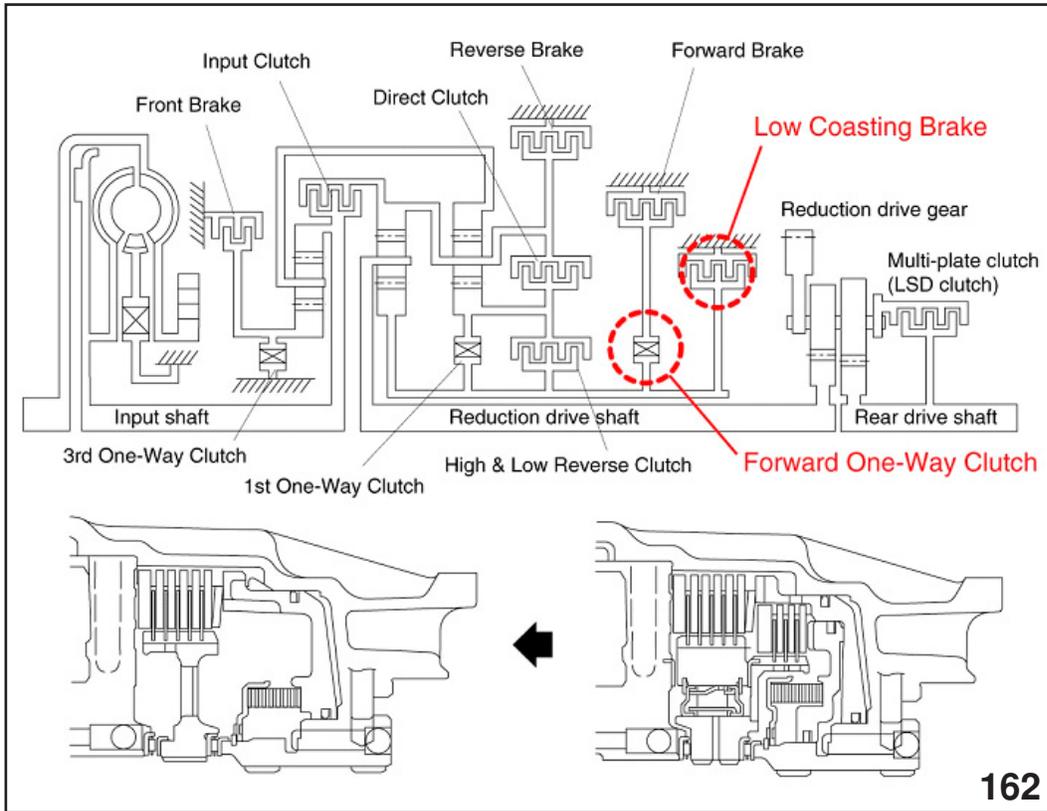
5AT MAJOR MODIFICATION POINTS



5 Speed Automatic Transmission

The 2008 5AT for Legacy and Tribeca has been redesigned to improve performance. The modification points include the Torque Converter, Hydraulic Control Valve assembly, Low Coast Brake and Forward one-way clutch.

2008 New Model Update (Module 917)



Artwork

Low Coasting Brake and Forward one-way clutch are eliminated for simplifying the system and improving shift quality

2008 New Model Update (Module 917)

Application Chart

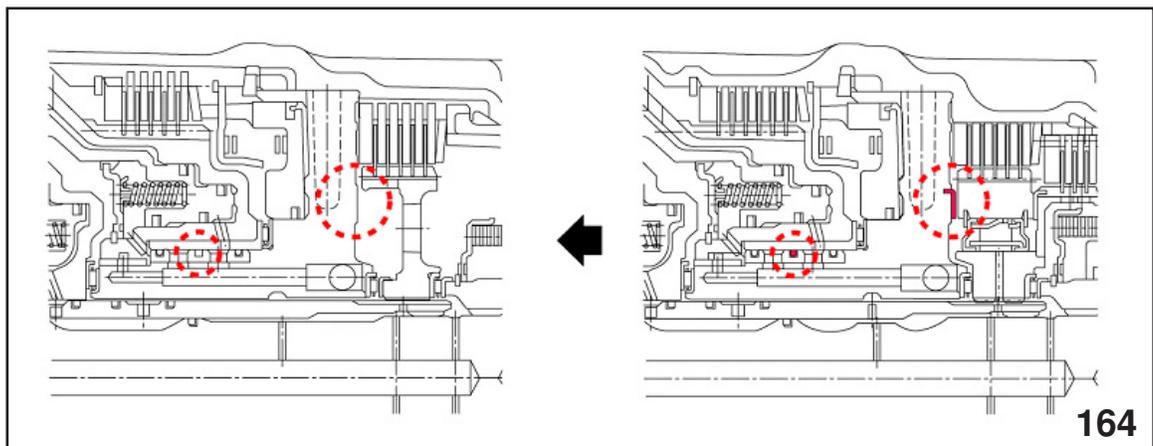
	Fr/B	In/C	H&LR	Di/C	Rev/B	FWD/B	OWC 1st	OWC 3rd	LC/B	OWC fwd
P	o		o							
R	o		o		o		o	o		
N	o		o							
1st	o		M			o	o	o	M	o
2nd	o			o		o		o	M	o
3rd	o		o	o		o	o	o		
4th		o	o	o		o	o			
5th	o	o	o			o	o	o		



	Fr/B	In/C	H&LR	Di/C	Rev/B	FWD/B	OWC 1st	OWC 3rd
P	o		o					
R	o		o		o		o	o
N	o		o					
1st	o		M			o	o	o
2nd	o			o		o		o
3rd	o		o	o			o	o
4th		o	o	o			o	
5th	o	o	o				o	o

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Application Chart

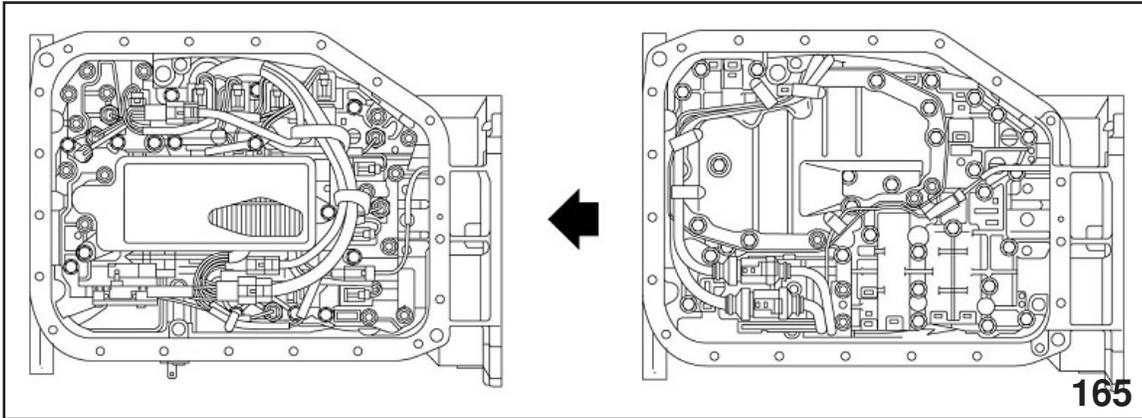


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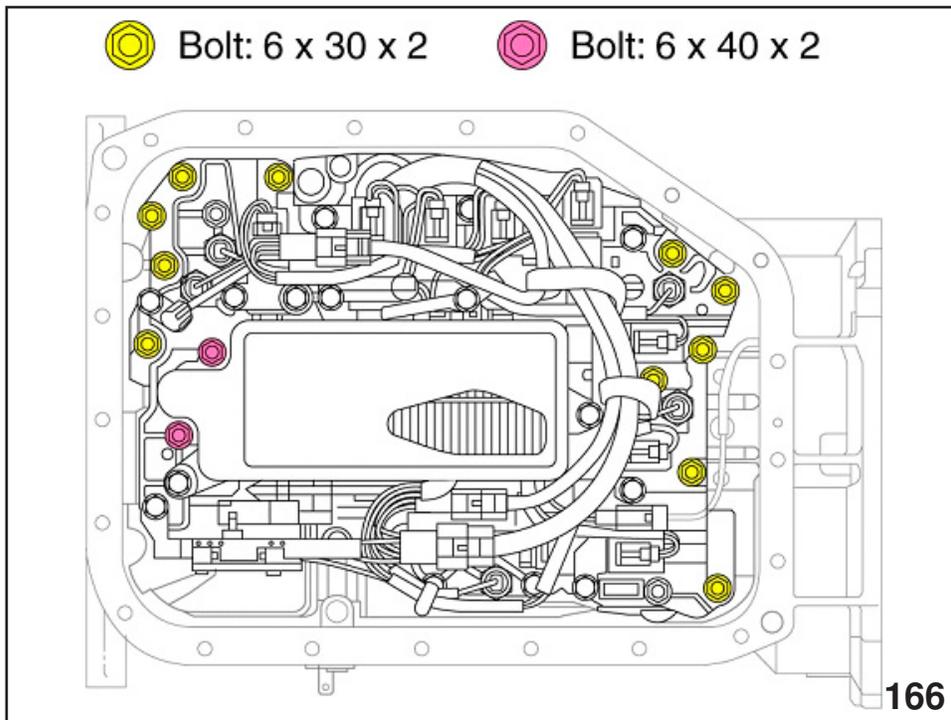
Artwork (showing differences in what is deleted)

A forward brake hub guide plate and a seal ring are deleted, due to deletion of Low Coasting Brake and Forward One-Way clutch.

2008 New Model Update (Module 917)

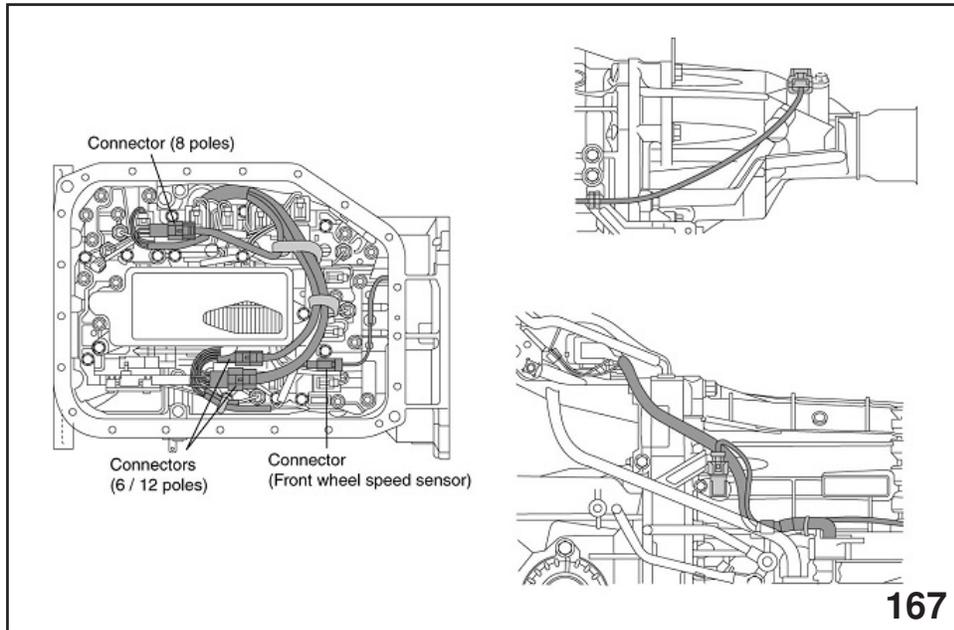


Hydraulic Control Valve

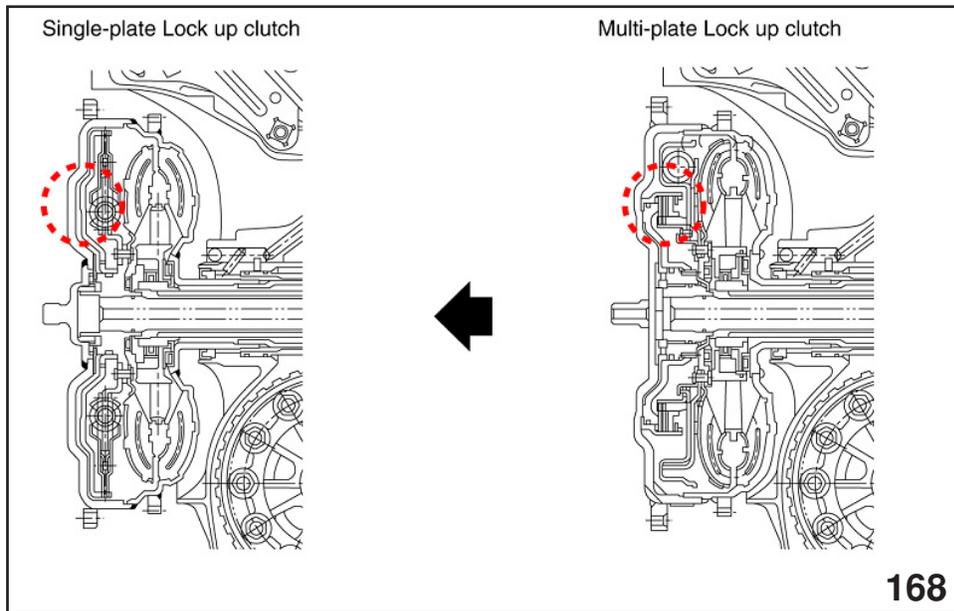


Mounting Bolts

The memory box has been deleted from the Hydraulic Control Valve Assembly. Memory box functions are now incorporated into the Transmission Control Module (TCM).

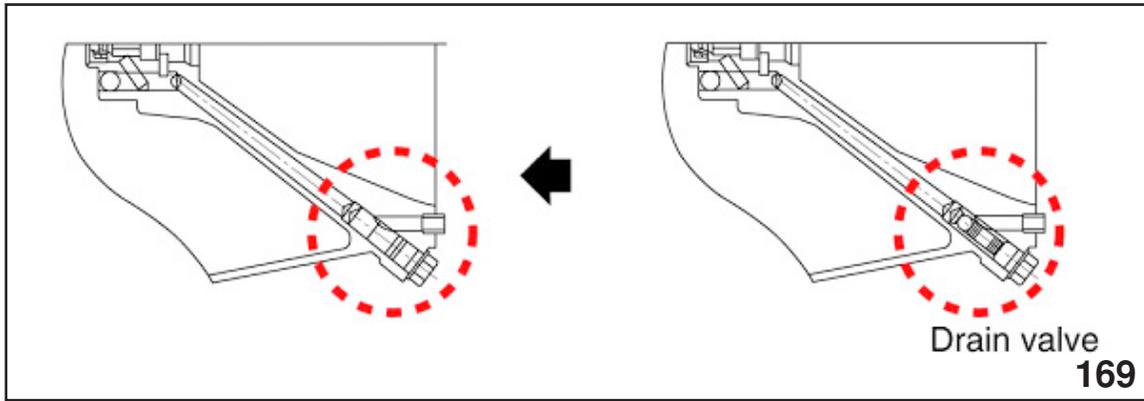


Transmission Harness



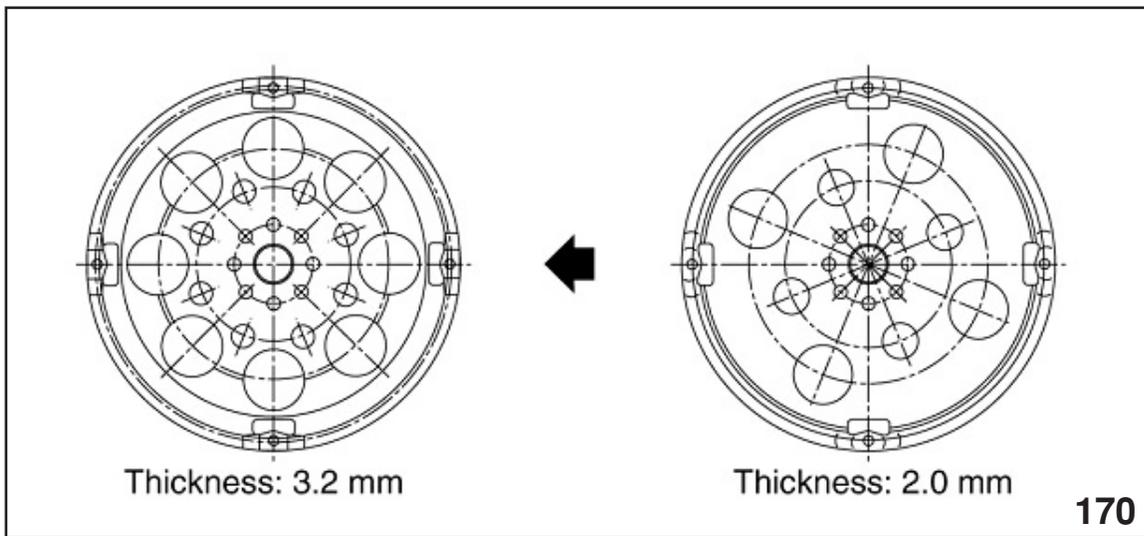
Torque Converter

2008 New Model Update (Module 917)



Differential Case cut view

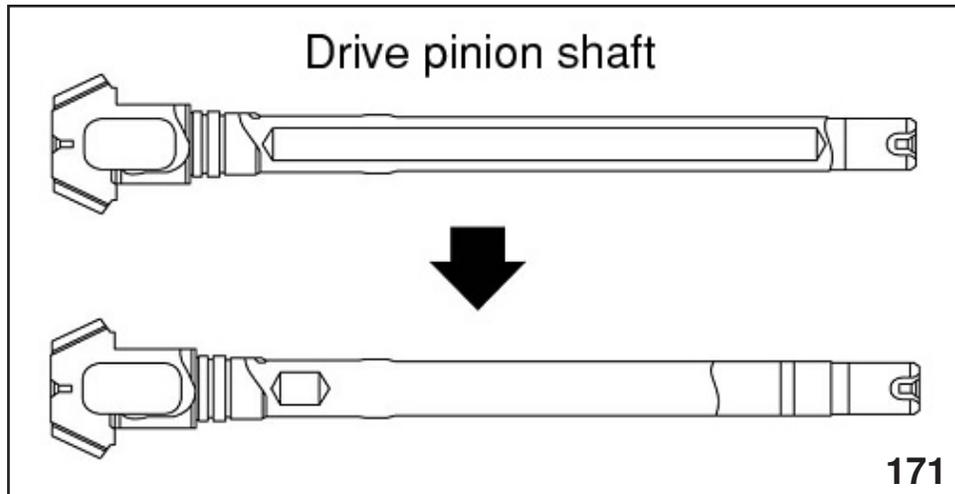
Drain valve is deleted due to change of converter.



Drive Plate

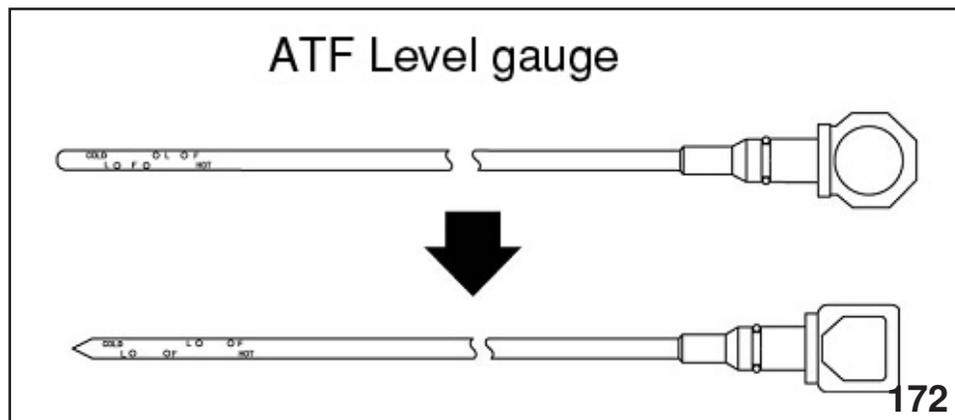
Drive plate is changed due to change of torque converter.

Drive Pinion Shaft and ATF Level Gauge



Drive Pinion Shaft

New type hollow pinion shaft is employed to improve rigidity. (Turbo charged engine vehicle)



ATF Level Gauge

ATF level gauge is changed due to change of hydraulic control valve.

Others

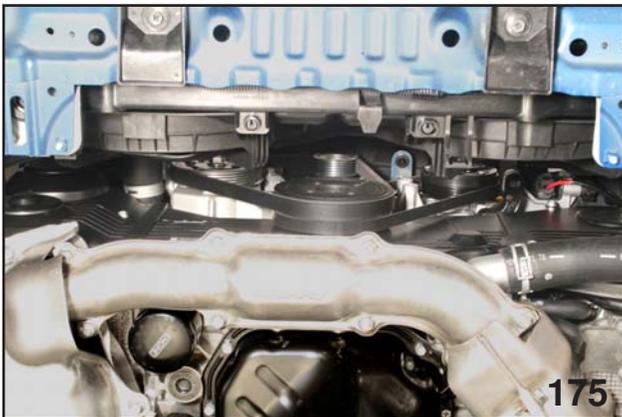
- Transmission Control Module (TCM)
- With the adoption of the new hydraulic control valve assembly, TCM is changed.
- Blipping control: (in Turbo charged engine vehicle)
- Blipping control range is enlarged
- TCM initial learning procedure.
- Procedure for TCM initial learning is simplified.

2.5 LITER AIR CONDITIONING BELT

The air conditioning compressor drive belt is a new stretch type belt. It is designed to be installed to the vehicle only once and must be replaced if it is ever removed. The use of this type belt makes it unnecessary to use a belt tensioner.



Air Conditioning Compressor Belt front View



Air Conditioning Compressor Belt from under car



WRX Engine



Sedan Engine

Servicing of the belt requires removing of the alternator/power steering belt (this belt has a tensioner) and then cutting the old air conditioner compressor drive belt with wire cutters of a similar tool. (Applicable to both Naturally Aspirated and Turbo models)

2008 New Model Update (Module 917)



Cutting off Air Conditioning Compressor Belt

The new belt is packaged with the tool needed to install the belt. This tool is designed to be used only once and can be discarded after belt installation.



Upper Belt Guide in position

Begin belt installation by routing the new belt around the compressor pulley. Install the upper belt guide with the packaged bolt. Ensure the positioning tab of the upper belt guide is inserted into the lower hole.



Lower Belt Guide in place with Retaining Clip

Next position the lower belt guide on the crankshaft pulley. The grooves on the bottom of the lower belt guide must rest in the grooves of the crankshaft pulley. The metal retaining clip is then inserted into one of the holes on the front side of the crankshaft pulley. The retaining clip has a short and long side. The longer side is placed over the lower built guide and over the belt.



22mm Socket and Ratchet in place

Rotate the crankshaft pulley with a 22mm socket and ratchet until the belt is fully engaged with the grooves on the crankshaft pulley.



Belt Fully Engaged on Crankshaft Pulley

Confirm belt is fully engaged on both pulleys.



Air Conditioning Compressor Belt Kit

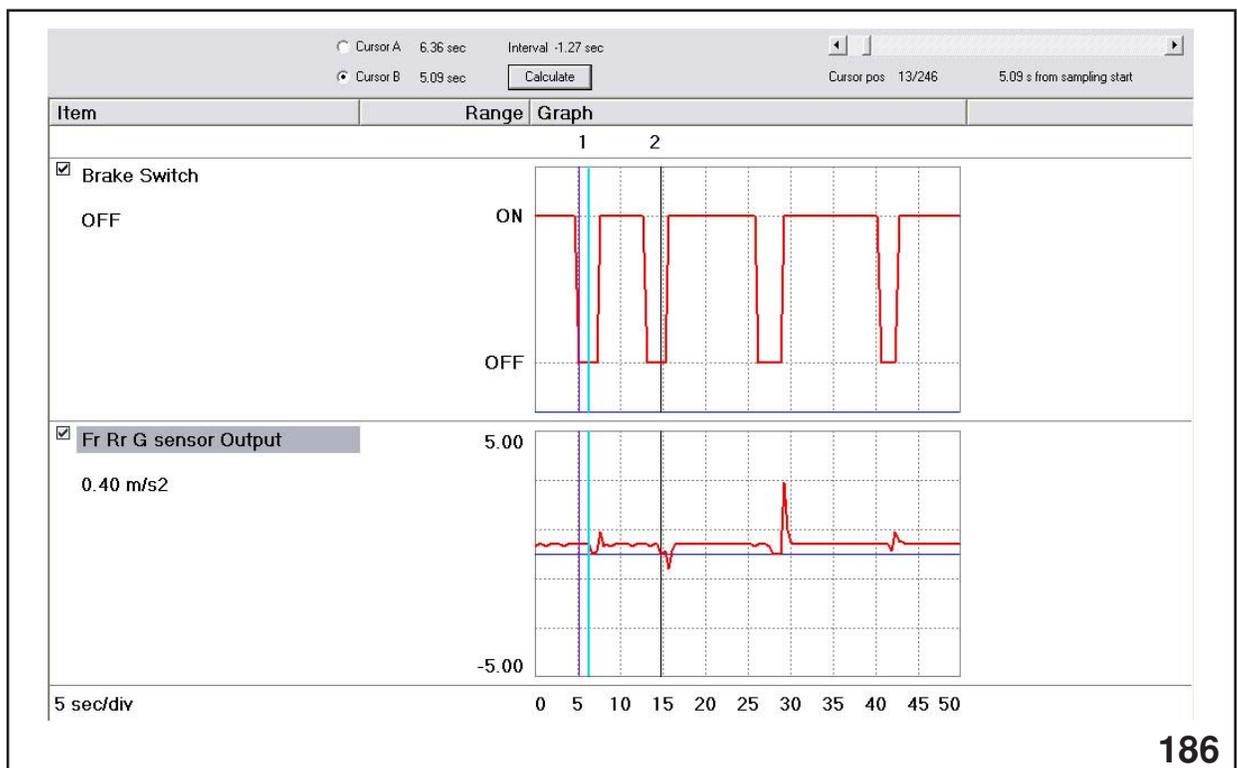
CHASSIS



G Sensor

Incline Start Assist

Impreza vehicles with manual transmission are equipped with “Incline Start Assist”. This is a type of hill holder but only stays active for approximately 1 second after the brake pedal has been released. This logic control affects the Hydraulic Control Unit, maintaining brake pressure at the wheels using the inlet and outlet solenoid valves. The G sensor will indicate the angle of the incline to the HCU and the brake pressure set by the driver will be held for approximately 1 second after releasing the brake pedal. This allows the driver to increase the throttle and engage the clutch. (Pressure is maintained on all four wheels).



Brake Pedal Off and Brakes Releasing

2008 New Model Update (Module 917)



Engine Undercover

The engine undercover must be removed to change the oil and or filter.



Under Cover Off

Suspension



Front Suspension

The front suspension is now a box type (same as Legacy) and the sub frame has been eliminated. The front axle inner joint is an AAR type (Angular Adjusting Roller) and the outer joint is unchanged from last year's model.



Rear Suspension

The rear suspension is a single wish bone type. (Same as Tribeca)

The rear axle inner joint is a DOJ (Double off set Joint) and the outer joint is an EBJ (Eight Ball Joint)



Muffler



Transverse Mounted Muffler

A transverse mounted muffler is used on the 5 door models due to the shortened body over hang.

Tire Pressure Monitoring System



Wheel with TPMS



Close up of TPMS

The Tire Pressure Monitoring System (TPMS) operates similar to past model year vehicles. The transmitter is now serviceable separately from the tire valve. Remove and install the screw connecting the tire valve to the transmitter with a T-10 Torx® bit.



TPMS under Canister

The TPMS control unit now identifies tires by numbers.

2008 New Model Update (Module 917)

Item	Valve	Unit
<input type="checkbox"/> Tire 1 FN code	LEARN	
<input type="checkbox"/> Tire 2 FN code	LEARN	
<input type="checkbox"/> Tire 3 FN code	LEARN	
<input type="checkbox"/> Tire 4 FN code	LEARN	
<input type="checkbox"/> Tire 1 air pressure	33.19	psig
<input type="checkbox"/> Tire 2 air pressure	31.79	psig
<input type="checkbox"/> Tire 3 air pressure	31.59	psig
<input type="checkbox"/> Tire 4 air pressure	31.79	psig
<input type="checkbox"/> Vehicle Speed	0	MPH
<input type="checkbox"/> Pressure warning	26.99	psig
<input type="checkbox"/> Return pressure	30.39	psig
<input type="checkbox"/> Transmitter power supply	ON MODE	
<input type="checkbox"/> DIAG sw	OFF	
<input type="checkbox"/> INDICATOR LAMP	OFF	

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TPMS Data

During shipment to the port the TPMS transmitters are turned off. The port turns the transmitters on with the tool number J-45295. This is the same tool used during tire registration.

Tow Hooks and Tail Light



Front Tow Hook

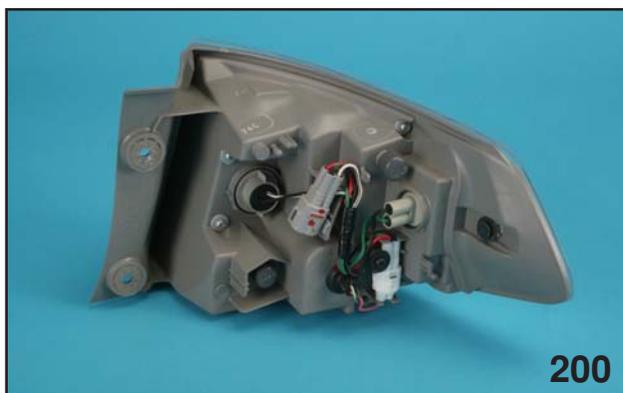
Front and Rear tow hook connections. The rear tie down hooks have been eliminated and vehicle is shipped to the port and to the dealer using the rear tow hook connection and tow hook. Place the tow hook back to the tool storage during PDI.



Rear Tow Hook



Front View of the 5 Door Brake Light



Back View of the 5 Door Brake Light

The brake light of the 5 door model is a 12 LED assembly that must be replaced as a unit.

The remaining lights are replaceable bulbs.

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