SUBARU

QUALITY DRIVEN® SERVICE

CERTIFIED SUBARU TECHNICIAN

Technicians Reference Booklet

2007 Subaru B9 Tribeca, Legacy, Forester and Impreza Introduction

AUTOMOTIVE Youth Educational Systems YES®

August 2006

MSA5P0602C

Technical Training

Subaru of America, Inc. reserves the right at any time to make changes or modifications to systems, procedures, descriptions, and illustrations contained in this book without necessarily updating this document. Information contained herein is considered current as of August 2006.

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INTRODUCTION

The 2007 model year Subaru B-9 Tribeca carries over many of the features and systems it was launched with last year. Enhancements have been made to the SRS Airbag, brakes and entertainment systems, providing more convenience and safety for the driver and all occupants.

In addition to the changes outlined above, a daytime running light indicator "DRL" has been added to the combination meter to alert the driver that the daytime running lights are on. The daytime running lights have been enhanced to include the license plate and tail lights.

The 3.0L engine output specifications have changed to 245 horsepower @ 6600 RPM and 215 LB-FT of torque @ 4200 RPM as directed by SAE specification J1394.

OPTION CODES AND EQUIPMENT

There are 7 option codes plus a special edition package that can be equipped to any model. The special edition package consists of a mesh grille, chrome wheels and XM satellite radio. The following describes the contents of the 7 option codes. The letters inside ( ) are the designation for the option code.

5-Passenger (DO)

3.0-Liter H6 Engine with Intake VVL
Electronic Throttle Control (ETC)
5-Speed Automatic Transmission w/SPORTSHIFT
12-Volt (x2) Center Console Power Outlets
12-Volt Outlet (x2) in Cargo/3rd Row Area
18-Inch 7-Spoke Aluminum Alloy Wheels
255/55 R18 M+S All-Season Tires
ABS System: 4-Channel /4-Sensor, Elec. Brake Force Distribution
Front/ Rear Ventilated Disc Brakes
Active Front Seat Head Restraints
Air Conditioning
Air Filtration System
Aluminum-Alloy Hood with as-strut support

100W AM/FM Stereo with Single disc CD Player / 6 Speakers and MP3 audio-file compatibility
Auxiliary Audio Input Jack, Center Console
7" Information Display Screen - Outside Temp, Audio, Trip Computer Display
Slate Gray High-Grade Cloth Upholstery
Painted & Body Color-Keyed Front/Rear Bumpers
Chrome Finish Exterior/Interior Door Handles
Cargo Tie Down Hooks (4)
Cargo Cover Anchor Points (4)
Cruise Control
Daytime Running lights (DRL)
Driver/Passenger Seats, manual Lumbar Support
Driver's Seat, 8-way Power Adjustable
Dual-Mode Digital Trip Odometer
Dual-Stage Deployment Driver's Air Bag (SRS)
Dual-Stage Deployment Passenger Front Air Bag (SRS)
Dual Elipsoid Bright Exhaust Tips
Front Seat Side-Impact Air Bags (SRS)
Grocery Hooks (2) in rear cargo area
Headlamp Auto-Off with Ignition Switch
Heated Outside Mirrors
HomeLink® (3x Memory Settings, Visor Mounted)
Interior Ambient Illumination - footwells, doors
Overhead Sunglasses Storage Console
Power-Assisted Steering
Power Door Locks
Illuminated Power Door Lock Switches
Dual Power Mirrors
Power Windows with Driver's Auto-Down
Illuminated Power Window Switches
Rear Seatback, 40/20/40 Split Fold-Down
Rear Set, 60/40 Split with 7.8" Slide function
Rear Seat Headrests for All three Seating Positions
Rear Window Defogger
Rear Window Wiper with Intermittent Function & Washer
Remote Keyless Entry System with Answer Back Chirp
Rear Seat Outboard LATCH Child Seat Anchors
Remote Starter Pre-wire
Rollover Sensor
Seatbelts, Front, Three Point Front with Height Adjustable Shoulder Belt Anchors
Seatbelts, Rear, Three Point for All Three Seating Positions with Height Adjustable
Tilt (Manual) Steering Column
Vanity Mirrors: Dual Illuminated with Lids
Visor, Textured Material
Windshield Wipers, Variable Intermittent
Front Windshield Wiper De-Icer
XM Satellite Radio pre-wire
Brake Assist

Limited 5-Passenger (GH)

Model Upgrade from Subaru B9 Tribeca 5-Passenger Standard Equipment

Desert Beige or Slate Gray Interior (tied to exterior color choice)
Leather Front and 2nd Row Seat Surface (vinyl bolsters, back & sides)
160 Watt AM/FM Stereo with 6 Disc CD Changer/8 Speaker and MP3 audio-file compatibility
Rear Sub-Woofer Speaker
Heated Front Seats (Three Mode)
2-Position Memory Driver's Seat Function
Power Moonroof
Interior Ambient Illumination footwells, doors, console area

Limited 5-Passenger w/ Navigation (GJ)

Model Upgrade from Subaru B9 Tribeca Limited 5-Passenger

Touch-Screen GPS Navigation System with 7" Hi-resolution Information Display with Rear Vision Camera

7-Passenger (IO)

Model Upgrade from Subaru B9 Tribeca 5-Passenger

7-Passenger Seating Capability
50/50 Split Fold-down 3rd Row Seat with 3 Point Safety Belts for Outboard seating positions
Heated Front Seats (Three Modes)
Power Moonroof
Interior Ambient Illumination - footwells, doors console area
Rear Cabin Air Conditioner with Rotary Fan Speed Control
Headliner - mounted Rear Seat Air Registers

7-Passenger (GH)

Model Upgrade from Subaru B9 Tribeca 7-Passenger

Desert Beige or Slate Gray Interior (tied to exterior color choice)
Leather Front and 2nd Row Seat Surface (vinyl bolsters, back & sides)
Vinyl 3rd Row Seat Material
160 Watt AM/FM Stereo with 6 Disc In-Dash CD Changer / 8 Speaker and MP3 audio-file compatibility
Rear Sub-Woofer Speaker
Heated Front Seats
2-Position Memory Driver's Seat Function

7-Passenger w/ Navigation (GJ)

Model Upgrade from Subaru B9 Tribeca Limited 7-Passenger

Touch-Screen GPS Navigation System with 7" Hi-resolution Information Display with Rear Vision Camera

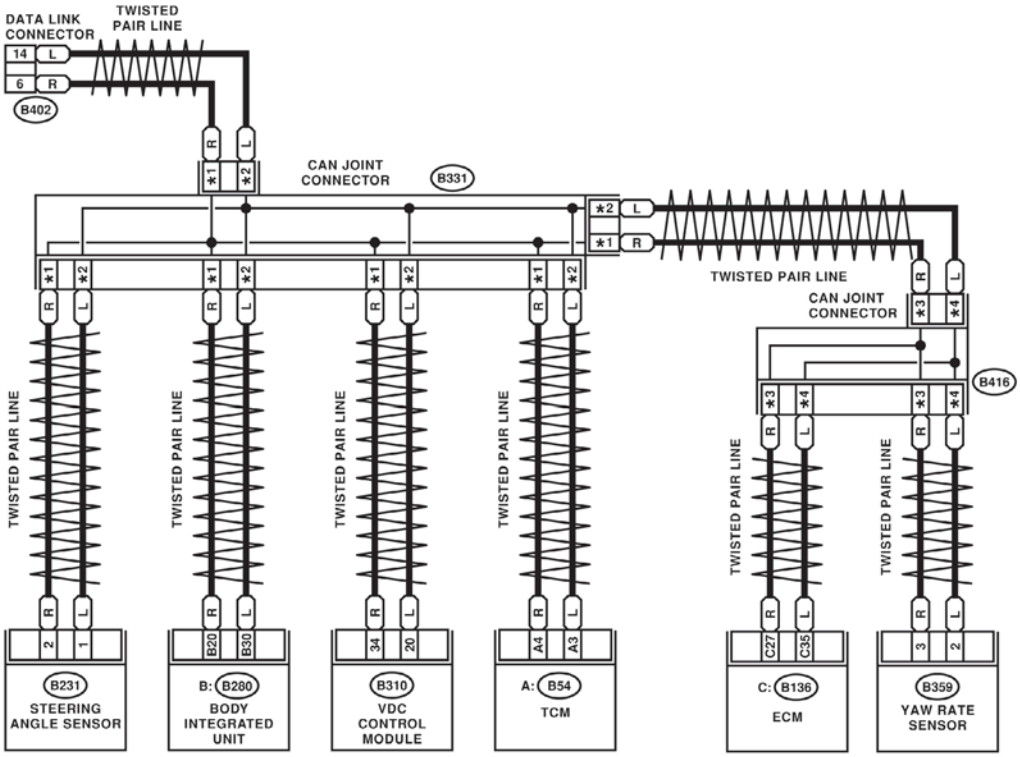
7-Passenger w/ Navigation & DVD Rear Seat Entertainment (GL)

Model Upgrade from Subaru B9 Tribeca Limited 7-Passenger

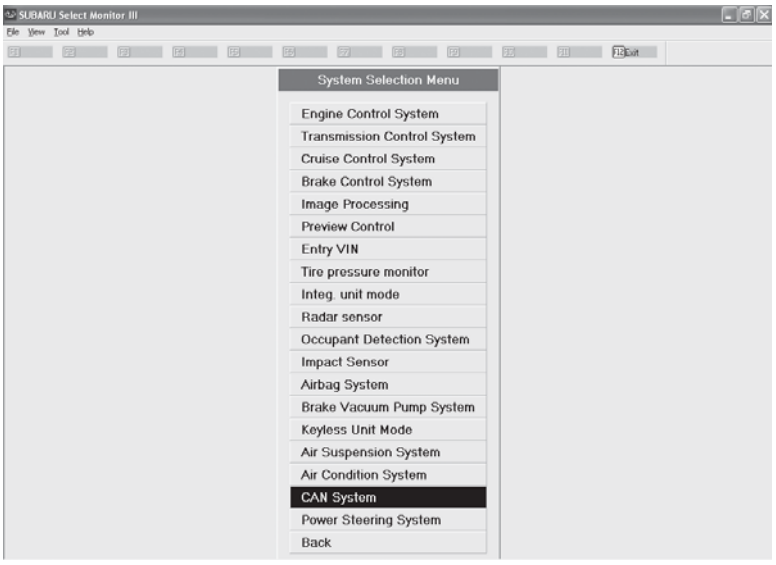
Touch-Screen GPS Navigation System with 7" Hi-resolution Information Display with Rear Vision Camera
Rear Seat DVD Entertainment System with 9" Wide-screen Display with Wireless Headset (x2) and Remote and Auxiliary Audio/Video
Input Jack in LH Rear Quarter Trim Panel

DIAGNOSTICS

Diagnostic communications for all systems have changed to ISO-15765, CAN communications protocol. This enhances communication speed and also allows for increased Select Monitor III usage for diagnostics.

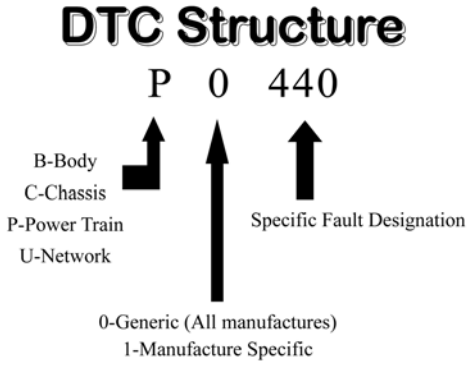


A new menu item, CAN diagnostics will be visible on the SMIII main menu. The CAN diagnostics will be able to determine problems in the LAN/CAN circuitry, identifying lack of communications from one part of the LAN/CAN to another.



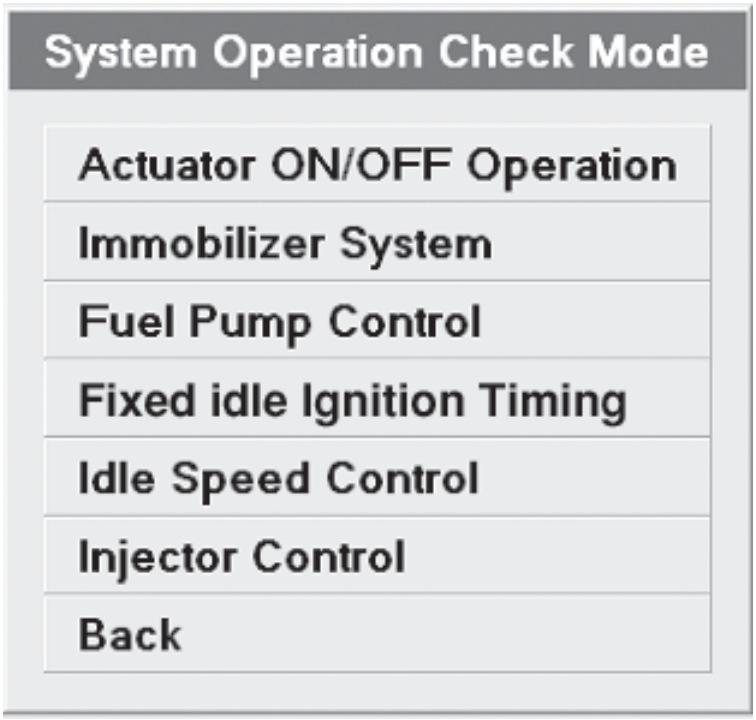
** Refer to STIS (Subaru Technical Infromation System)* **** New Feature*

A new set of DTCs is covered in the *Subaru Service Manual for this purpose. The description of the U codes is covered in the service Manual under Body, LAN/CAN diagnostics.

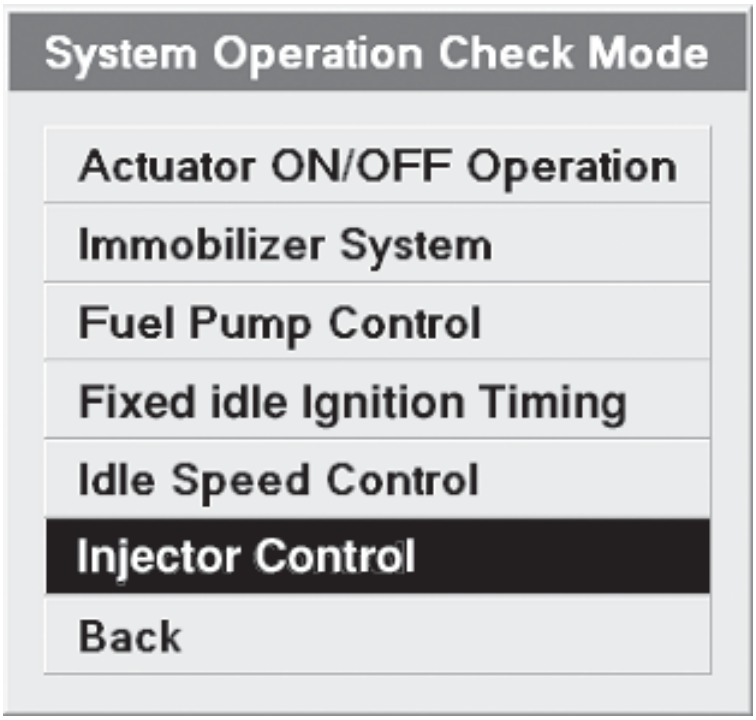


The Subaru SMIII offers new diagnostic options under the System Operation Check Mode.

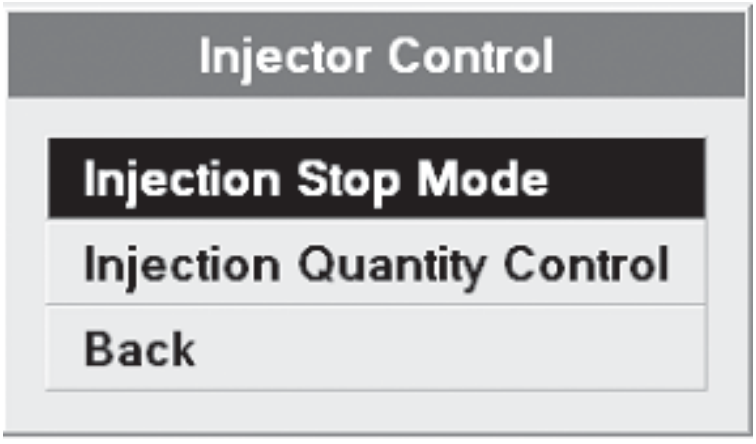
NOTE: DURING SYSTEM OPERATION CHECK MODE, ENGINE DATA IS NOT AVAILABLE.



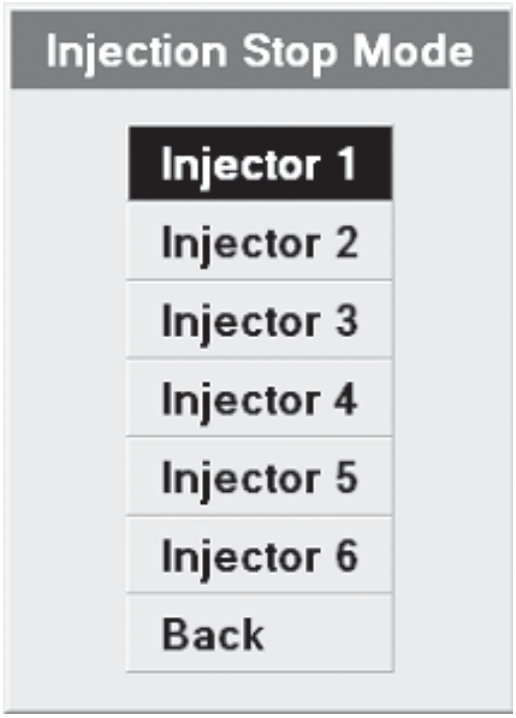
These items are new and are used to interpret changes in the engine performance with visual and audio perception of change.



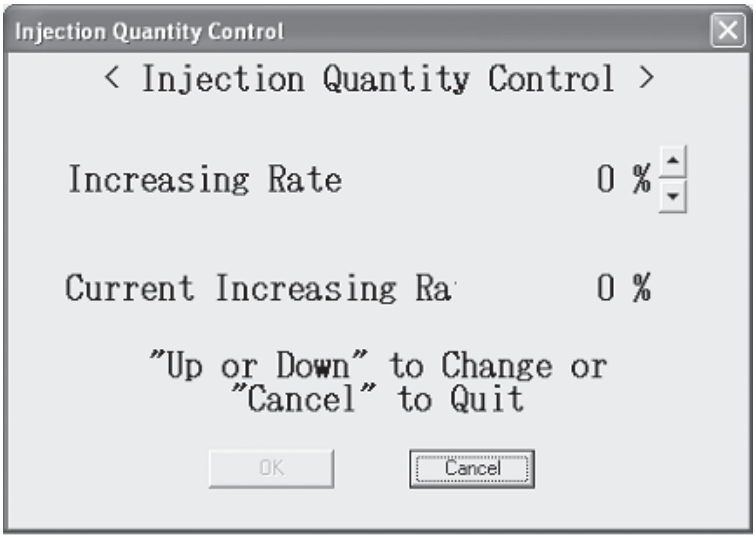
For example in the Injector control stop mode:



Turning off an injector and feeling no change in engine operation indicates a problem with that cylinder.

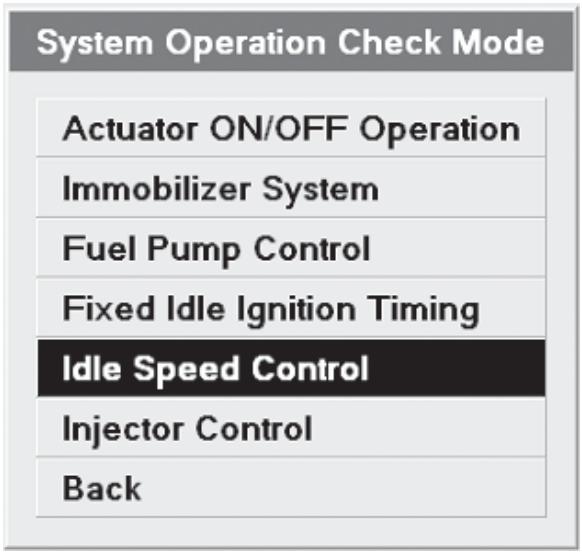


Clicking on the injector number will turn off that injector. This function is canceled by clicking the back button or by leaving this screen.

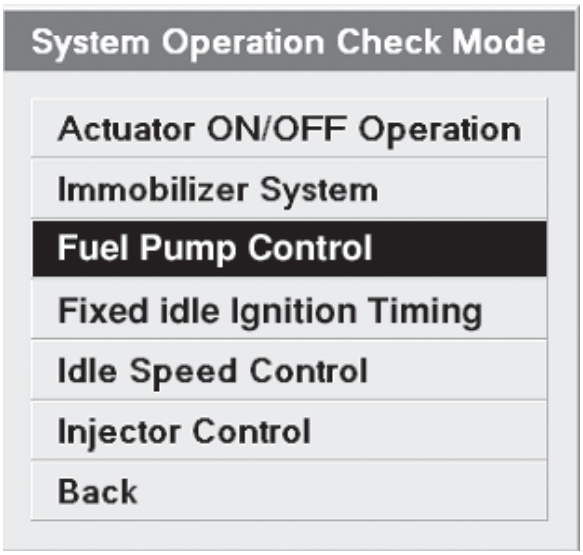


Injection quantity control allows the fuel injection rate to be increased by a maximum of 20% to determine if a rough idle is the fault of a lean condition.

NOTE: ANY CHANGES MADE IN THE SYSTEM OPERATION CHECK MODE WILL BE CANCELLED WHEN LEAVING THIS MODE.



Idle speed control allows the idle speed to be changed from 500 to 2000 RPM to allow for checking of noise and vibrations where specific engine speeds need to be duplicated.



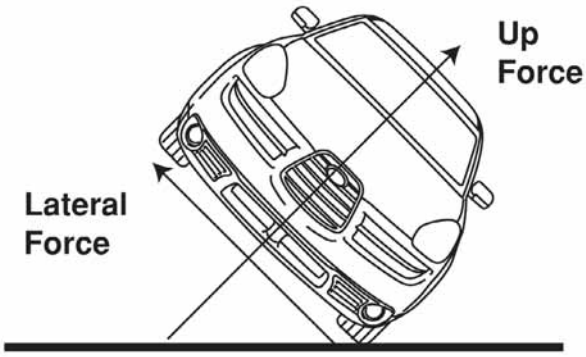
Fuel pump control allows the fuel pump to be turned off during engine operation to remove the fuel pressure from the fuel system. This procedure is normally done by removing or disconnecting the fuel pump fuse or connector, allowing for the system to be opened for component replacement. A procedure for turning on the fuel pump with the engine off is also provided. This allows the fuel to be drained from the fuel tank after all safety and environmental concerns are addressed.

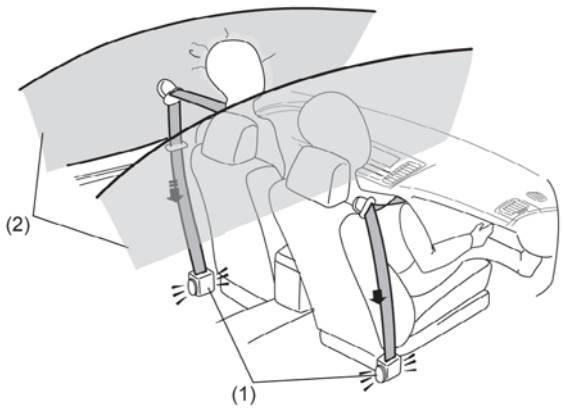
NOTE: ALWAYS CONSULT THE APPROPRIATE *SERVICE MANUAL BEFORE REMOVING FUEL OR FUEL SYSTEMS COMPONENTS FROM THE VEHICLE.

INTERIOR

SRS Airbag System

The SRS Airbag system has been designed to detect vehicle roll over.





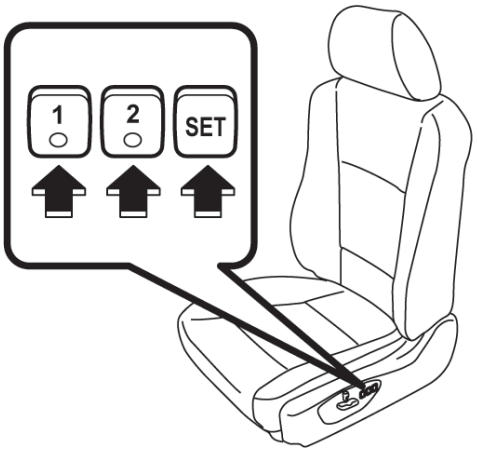
(1) Pretensioners
(2) Curtain Airbag

A roll over sensor, housed in the SRS ECU, detects vehicle rollover utilizing a lateral G sensor and a Z axis (detects up and down motion) sensor to differentiate rollover from driving on banked road surfaces. Rollover is identified when the combined output value of both sensors crosses a specific level. When rollover is detected the curtain airbags on both sides as well as the front seat belt pretensioners activate. This will provide additional crash protection for vehicle occupants.

WARNING: NEVER PERFORM ANY DIAGNOSTICS OR REPAIR TO THE SRS AIRBAG SYSTEM WITHOUT DISCONNECTING THE BATTERY AND WAITING AT LEAST 30 SECONDS. REFER TO THE APPROPRIATE *SUBARU SERVICE MANUAL FOR COMPLETE SERVICING PROCEDURES.

Driver's Seat Memory Function

(SEE PAGE 80 FOR POWER SEAT MEMORY CALIBRATION PROCEDURE)



Two seat positions can be registered. Register the seat position with button “1” or “2” and retrieve the seat position by pressing either button.

The following seat positions can be registered:

Forward/backward position of the seat
Angle of seatback
Angle of seat cushion
Height of seat

Registration of seat position:

1. With the transmission selector lever in the “P” position, adjust the seat position.
2. While pressing the “SET” button, press the desired button “1” or “2”.
3. The chime sounds once, and the seat position is registered.

Never retrieve the seat position while driving to avoid the possibility of loss of vehicle control and or personal injury.

Perform the seat position retrieval before driving. Be sure to confirm that the selector lever position is in the “P” position. Do not drive until the retrieval of the seat position is complete.

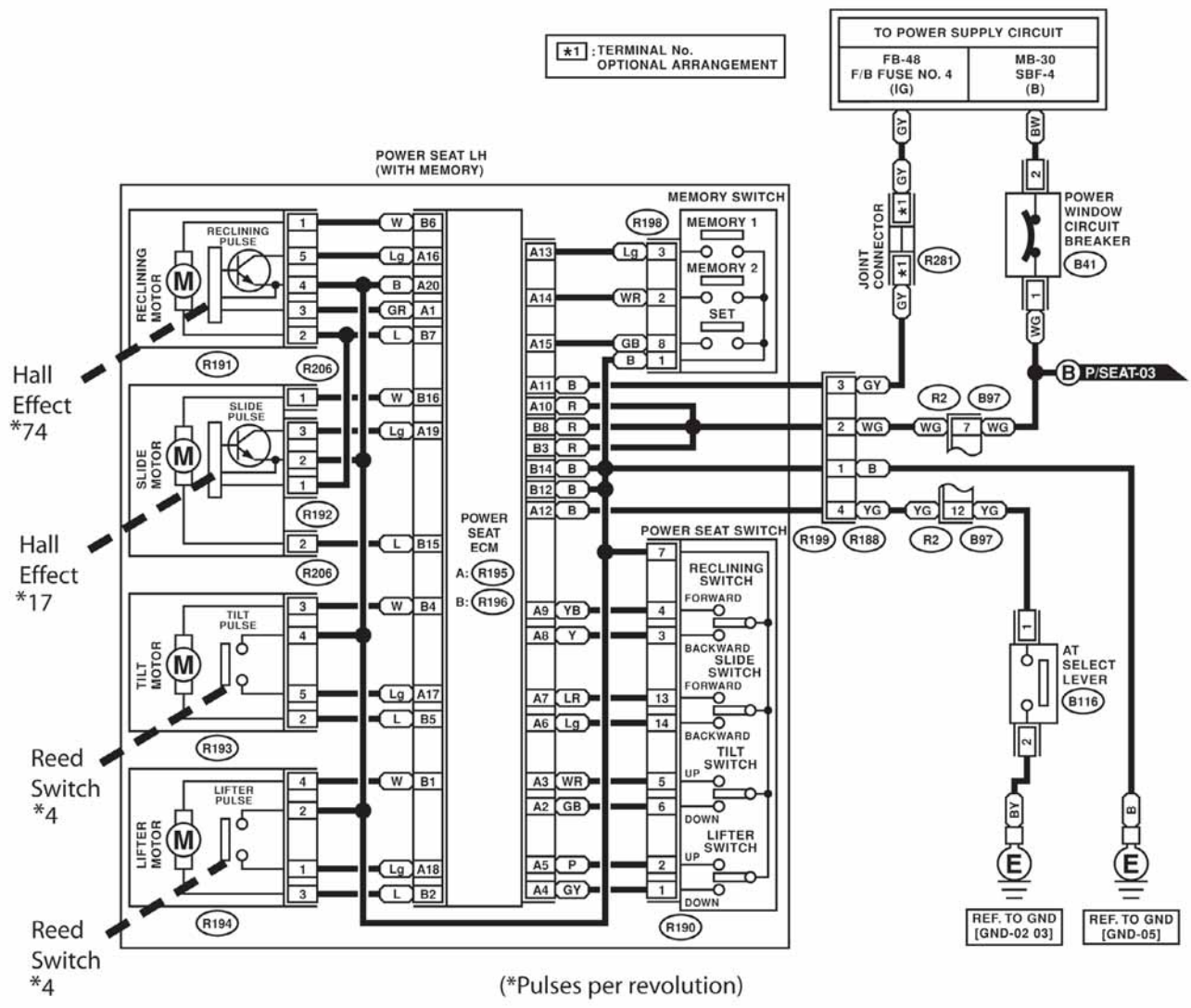
When retrieving a registered seat position, make sure the hands, feet and possessions of rear seat passengers are clear of the seat adjusting mechanism.

When any trouble or a malfunction occurs during the retrieval of the seat position, stop the retrieval of the seat position using any of the control switches for manual adjustment, seat memory set button, seat memory registered button 1 or 2.

1. With the transmission selector lever in the “P” position, press the desired button “1” or “2”.
2. The chime sounds once and the seat moves to the registered position.
3. When the seat moves to the registered position, the chime sounds twice.

NOTE: IF A NEW POSITION IS REGISTERED FOR THE SAME BUTTON, THE PREVIOUS SEAT POSITION IS DELETED.

EVEN IF THE BATTERY IS DISCONNECTED, THE REGISTERED SEAT POSITION IS NOT DELETED.



The reclining and slide motors are equipped with hall effect sensors and the tilt and lifter motors are equipped with reed switches.

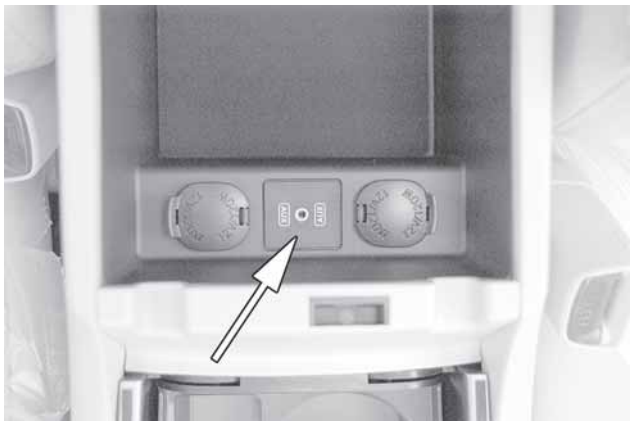
These sensors count the magnetic pulses created during operation and determine seat position during setting of the memory or when returning to a previous memorized position.

Audio/Entertainment

An auxiliary audio input jack for portable media players is standard on all Subaru B9 Tribeca models. It is located inside of the front center console box. Rear Seat Entertainment System equipped units also have an additional audio/video auxiliary jack mounted in the rear left-hand quarter trim panel. Both are activated via the 'AUX' button on the instrument panel.

All 2007 Subaru B9 Tribeca models are pre-wired for XM Satellite Radio.

XM Satellite Radio is offered standard on the Special Edition Package - as a port-installed accessory. It will also be offered as a dealer installed accessory for stand-alone installation on any model. A 'SAT' button has been added to the audio buttons (FM/AM is now one button).



The vehicle is ready for installation of an XM Satellite Radio receiver. The tuner and antenna are sold as SOA optional products, and the XM service is based on a paid subscription.

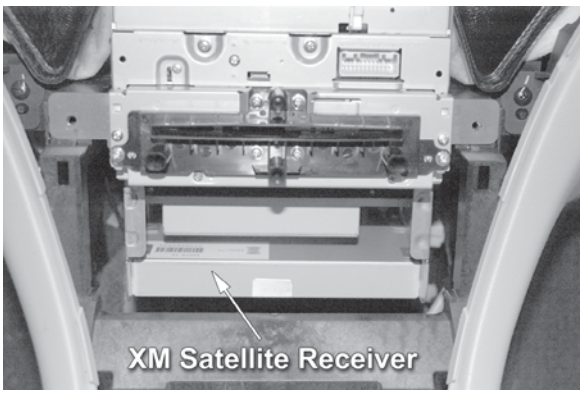
XM Satellite Receiver

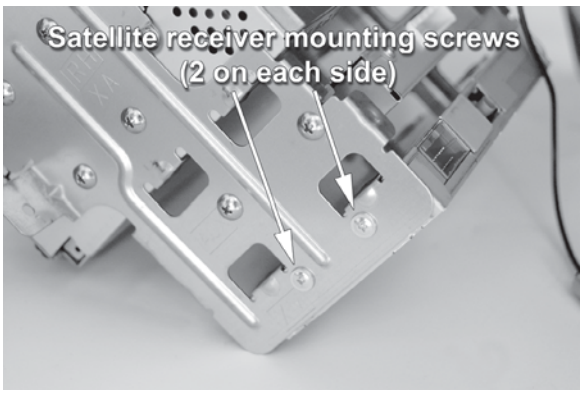
XM Antenna

NOTE: THIS SYSTEM CAN NOT BE INSTALLED ON 2006 MODEL YEAR VEHICLES.

** Refer to STIS (Subaru Technical Infromation System)* **** New Feature*

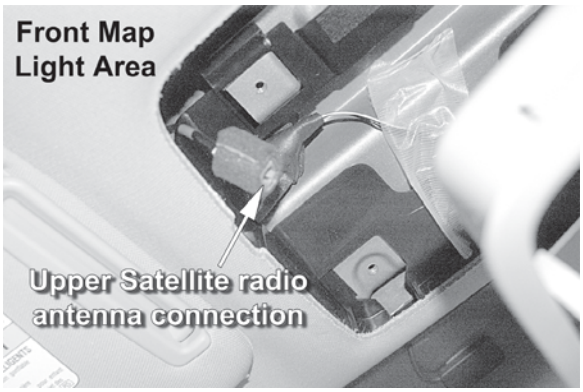
Satellite Radio

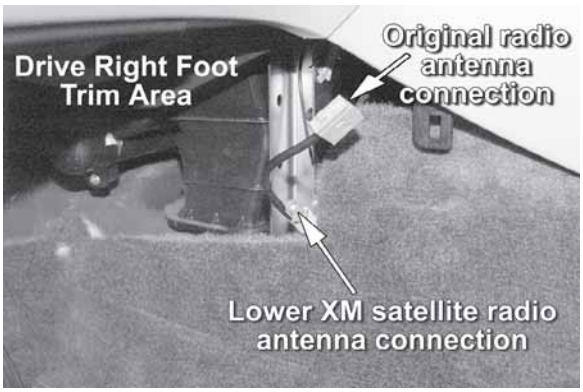




All Subaru B-9 Tribeca models are prewired for the installation of XM Satellite Radio. Installation is accomplished by removing the original radio chassis from the vehicle and adding the XM Satellite Radio receiver.

NOTE: VEHICLES WITHOUT NAVIGATION SYSTEM REQUIRE THE ADDITIONAL MOUNTING BRACKETS INCLUDED IN THE INSTALLATION KIT.





The antenna must also be mounted to the upper right corner of the windshield.

XM Satellite Radio service is based on a subscription plan. See the installation guide for details. All XM Satellite Radio receivers are equipped with a code number that must be used to activate the service. A label with the code number can be found on the receiver. A loose label is included in the installation kit. This label should be placed into the glove box for future reference.

NOTE: ALWAYS REFER TO THE APPROPRIATE INSTALLATION GUIDE AND *SERVICE MANUAL FOR INSTALLATION OF ANY ACCESSORY. AVAILABLE ON SUBARU NET.

Navigation

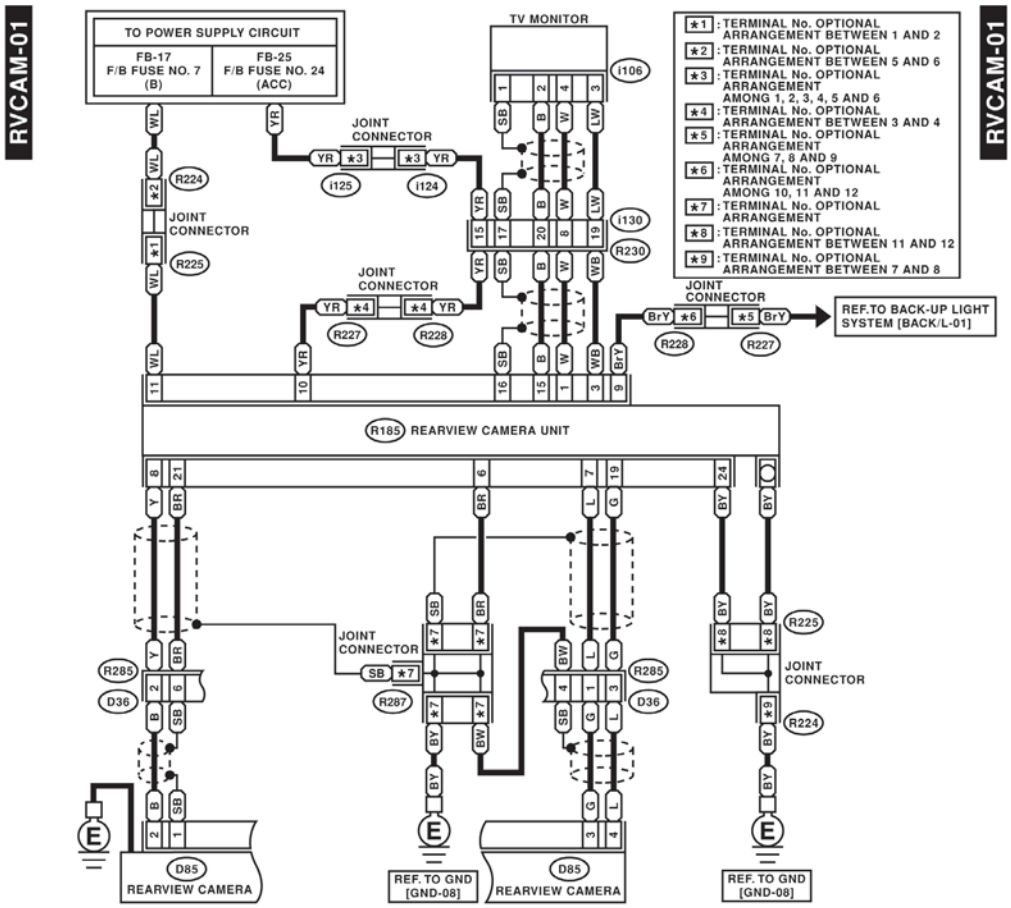
An outside temperature indicator has been added above the map display screen.

The scheduled maintenance program has been changed: “Battery” and “Timing belt” have been replaced by “Fluids check” and “Engine oil".

EXTERIOR

Rear Vision Camera

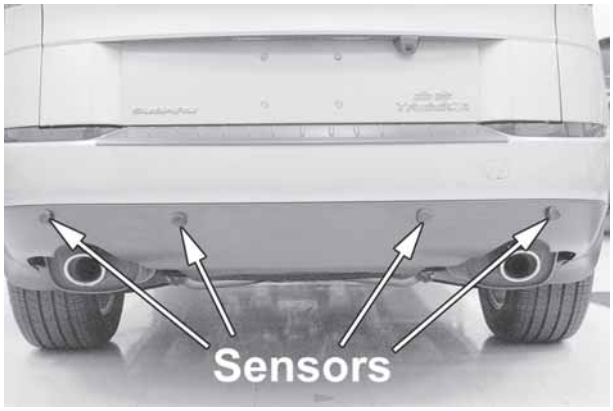
A rear vision camera is now standard on all 2007 navigation-equipped models. The system displays an image of behind the vehicle with reference lines to aid in backing up/parking. The image is shown on the high-resolution LCD screen only when the transmission is in reverse. This system will turn the LCD screen on when going into reverse even if the LCD screen has been turned off. This system is factory installed.

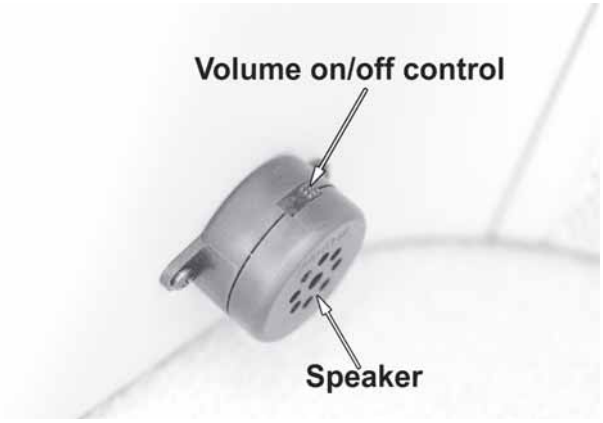


Back-up Sensor System

This Back-Up Sensor System is strictly a driver assistance device, and should not be relied upon as a substitute for safe driving practices. When driving in reverse always follow recommended safe driving guidelines from your state or local Department of Motor Vehicles regarding the engagement of reverse gear. To help prevent accidents, always use caution when driving in reverse by visually checking to ensure that your path is clear. When applicable, that may include conducting a visual check before you enter your vehicle. While driving in reverse, keep speeds under 5 MPH.

NOTE: THIS SYSTEM CAN BE INSTALLED ON 2006 MODEL YEAR VEHICLES.





(Speaker located on right rear trim panel)

Understanding Your Back-Up Sensor System's Audible Warning Zones

The Back-Up Sensor System emits and receives ultrasonic signals that are projected from the sensors mounted in the vehicle's rear bumper. As the signals reflect off of objects in the detection field, an audible warning tone will be heard inside the vehicle.

This warning tone alerts the driver to obstacles in the vehicle's path.
When the gearshift is put into reverse, the system will make one short 'beep' to verify system functionality. This alert serves multiple purposes:

1) Notification that the system is active and is scanning for objects in the detection field.

2) As a reminder that the vehicle is in reverse gear.

3) As an indication that the Back-Up Sensor System has performed a self-check.

NOTE: IF ADDITIONAL "QUICK BEEPS" ARE HEARD THE BACK-UP SENSOR SYSTEM MAY REQUIRE DIAGNOSIS. IF WARNING TONES CONTINUE AFTER REVERSE IS INITIALLY SELECTED, CHECK FOR OBSTACLES BEHIND THE VEHICLE.

The Back-Up Sensor System reverse scanning system will detect objects in three distinct "Zones", which correspond to the vehicle's distance from an object. When reversing towards an object, the Back-Up Sensor System audible alerts are as follows:

"Zone 1" - At a distance of approximately 48 to 72 inches the Back-Up Sensor System will begin to beep slowly indicating an obstacle is in the vehicle's path.

"Zone 2" - At a distance of approximately 24 to 48 inches, the Back-Up Sensor System will beep three times per second, indicating that an obstacle is in the vehicle's path.

"Zone 3" – If an object is within 24 inches of the vehicle's bumper a continuous warning tone will be heard.

NOTE: ALWAYS USE EXTREME CAUTION IN "ZONE 2" AND ALWAYS STOP WHEN A SOLID WARNING TONE INDICATING "ZONE 3" IS HEARD. IF A MOVING OBJECT ENTERS "ZONE 3", THE SYSTEM IS DESIGNED TO "LOCK" ONTO IT, MAKING THE "ZONE 3" TONE CONSTANT, UNTIL THE OBJECT MOVES TO A SAFE DISTANCE FROM "ZONE 3", (I.E., THE OBJECT MOVES 2 FEET OUTSIDE OF THE "ZONE 3" DETECTION AREA).

Situations Where Obstacles May Not be Detected or Which May Provide Momentary Detection Signals

The Back-Up Sensor System utilizes ultrasonic technology to locate objects in the vehicle's path when driving in reverse. Under some circumstances, however, an object may not be detected, so always exercise extreme caution when driving in reverse. Look behind the vehicle and maintain speeds of less than 5 MPH. Inclement weather may reduce performance or cause intermittent detection of rain or snow. "

"The back up sensors must be kept clean for optimum performance. Dirt, snow or ice accumulations may cause reduced performance."

A small object, under your bumper or too close to the vehicle may not be detected due to the angle of the sensor's signal.

When driving in reverse down a steep slope or driveway, gravel and/or the road surface may cause momentary detection signals due to the sensor's following the sloping angle of the vehicle.

In general, reversing at an angle towards a partial wall or other large flat surface may refract ultrasonic signals, causing the object not to be detected. Driving in reverse on loose gravel, rough surfaces and potholes may produce intermittent detection due to signal bouncing off of refractive surfaces behind the vehicle. Entering or exiting a garage may result in a brief detection signal as the vehicle passes through the doorway.

If driving in reverse towards a 90-degree angle, such as a corner of a wall or pillar, sensor detection pattern will refract until the vehicle is close enough to receive a signal back from corners. In such situations the vehicle could be very close to an object before it is detected.

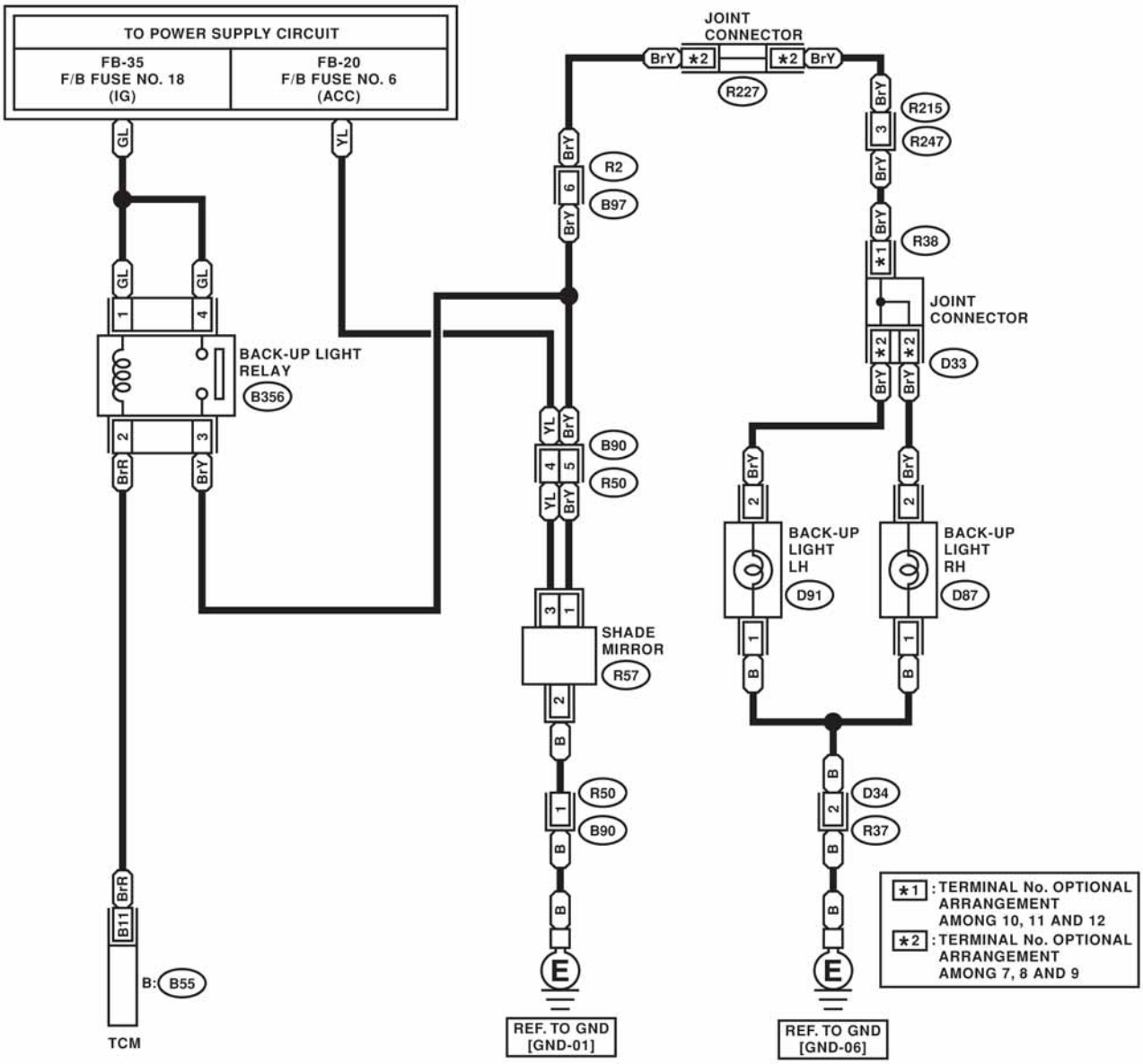
Adjusting the Back-Up Sensor System Speaker

The Back-Up Sensor System comes equipped with an adjustable warning indication speaker located in the rear passenger side of the vehicle. (On page 23)

The speaker has three controllable audio settings:

1) HI Volume setting: For individuals desiring a loud warning tone.
2) LOW Volume Setting: For individuals desiring a soft warning tone.
3) OFF: The speaker should be turned off when the vehicle is towing with a trailer hitch, a ball mount is installed, or when a hitch-mounted Bike Carrier is used. In all other instances, the speaker should remain on.

Adjusting the volume setting is easy. A fingertip slide switch is accessible and used to select the desired setting.
This system is port or dealer installed. Power for the back up sensor system is supplied by the power for the reverse light circuit.



** Refer to STIS (Subaru Technical Infromation System)* **** New Feature*

BACK UP SENSOR DIAGNOSTICS

Test the Back-Up Sensor System

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

Back-up Sensor System (Diagnostics)

Section 0 - System Function Check:

NOTE: In order to perform the system function check, the vehicle shall be parked in a level open area with no objects behind the vehicle for a minimum of ten feet. The parking brake must be applied and the trailer hitch ball mount must be removed.

	Step	Check	Yes	No
1	Active the vehicle parking brake. Turn the key to the run position. Do not start the vehicle. Step on the brake and shift the vehicle into reverse.	Did the system give a single beep?	Proceed to Step 2.	Proceed to Step 6.
2	Stand in front of the outermost sensor on the driver's side.	Does the system emit a constant tone	Proceed to Step 3.	Proceed to Step 6.
3	Stand in front of the driver's side center sensor.	Does the system emit a constant tone.	Proceed to Step 4.	Proceed to Step 6.
4	Stand in front of the passenger's side outermost sensor.	Does the system emit a constant tone?	Proceed to Step 5.	Proceed to Step 6.
5	Stand in front of the passenger's side center sensor.	Does the system emit a constant tone?	System Works. End Diagnostic Check	Proceed to Step 6.
6	Activate the vehicle parking brake. Turn the key to the run position. Do not start the vehicle. Step on the brake and shift the vehicle into reverse.	Does the system emit a multiple beeps?	Proceed to Section 3 (Multiple Beeps).	Proceed to Step 7.
7	Activate the vehicle parking brake. Turn the key to the run position. Do not start the vehicle. Step on the brake and shift the vehicle into reverse.	Does the system emit multiple beeps?	Proceed to Section 2 (Multiple Beeps).	Proceed to Step 6.
8	Active the vehicle parking brake. Turn the key to the run position. Do not start the vehicle. Step on the brake and shift the vehicle into reverse	Is the system silent?	Proceed to Section 1 (No Sound).	Return to Step 1.

NOTE: THE NEXT 8 PAGES DESCRIBE THE DIAGNOSTICS OF THE BACK UP SENSOR SYSTEM. THIS INFORMATION IS NOT INCLUDED IN THE SERVICE MANUAL.

Test the Back-Up Sensor System

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

Back-up Sensor System (Diagnostics)

Section 1 - No sound when system is turned ON.

NOTE: In order to perform the system function check, the vehicle shall be parked in a level open area with no objects behind the vehicle for a minimum of ten feet. The parking brake must be applied and the trailer hitch ball mount must be removed.

	Step	Check	Yes	No
1	Verify that the speaker switch is either in the "HI" or "LO" position.	determine if the speaker switch is either in the "HI" or "LO" position.	Proceed to Step 3.	Move the speaker switch from the "OFF position to either in the "HI" or "LO" position. Proceed to Step 2.
2	Turn the key to the run position. Press the vehicle parking brake and shift the vehicle into reverse gear. If the vehicle is already in reverse gear, shift the vehicle into park then to reverse.	Does the system emit a single beep?	continue System Function Check. (Section 0)	Proceed to Step 3.
3	Check that the 2-pin speaker connector is plugged into the 2-pin connector on the main power harness/ harness?	Is the 2-pin connector plugged into the 2-pin connector on the main	Proceed to Step 5.	Plug the 2-pin speaker connector into the 2-pin connector on the main power harness. Proceed to Step 4.
4	Turn the key to the run position. Press the vehicle parking brake and shift the vehicle into reverse gear. If the vehicle is already in reverse gear, shift the vehicle into park then to reverse.	Does the system emit a single beep?	Continue System Function Check. (Section 0)	Proceed to Step 5.
5	Disconnect the 2-pin speaker connector. apply 12 VDC to Pin 1 (green) terminal and Ground to Pin 2 (blue)	Did speaker emit a Constant tone?	Proceed to Step 7.	Replace a Speaker. Proceed to Step 6.
6	Turn the key to the run position. Press the vehicle parking brake and shift the vehicle into reverse gear. If the vehicle is already in reverse gear, shift the vehicle into park then to reverse.	Does the system emit a single beep?	Continue System. Function Check. (Section 0)	Proceed to Step 7.
7	Verify that the 4-pin connector on the main power harness is plugged into the 4-pin connector on the control module at "PWBZ".	Is the 4-pin connector on the main power harness plugged into the 4-pin connector on the control module at "PWBZ"?	Proceed to Step 9.	Plug the 4-pin connector on the main power harness into the 4-pin connector on the control module marked "PWBZ". Proceed to Step 8.
8	Turn the key to the Run position. Press the vehicle parking brake and shift the vehicle into reverse gear. If the vehicle is already in reverse gear, shift the vehicle into park then to reverse.	Does the system emit a single beep?	Continue system Function Check. (Section 0)	Proceed to Step 9
9	Verify that the 2 Amp fuse is not opened on the main power harness.	Is the 2 Amp good?	Proceed to Step 11.	Replace the 2 Amp fuse on the main power harness. Proceed to Step 10.
10	Turn the key to the run position. Press the vehicle parking brake and shift the vehicle into reverse gear. If the vehicle is already in to reverse.	Does the system emit a single beep?	Continue System Function Check. (Section 0)	Proceed to Step 11.

Test the Back-Up Sensor System

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

Back-up Sensor System (Diagnostics)

Section 1 - No sound when system is turned ON. (countinued)

NOTE: In order to perform the system function check, the vehicle shall be parked in a level open area with no objects behind the vehicle for a minimum of ten feet. The parking brake must be applied and the trailer hitch ball mount must be removed.

	Step	Check	Yes	No
11	Remove the 4-pin connectior on the control module and measure the input voltage between Pins 3 and 4 of the main connector. Was the input voltage +10 VDC or greater?	Is the voltage measured across pins 3 & 4 + 10 VDC or greater?	Proceed to Step 13	Check the Posi-Tap ® Connection. Proceed to Step 12.
12	Turn the key to the run position. Press the vehicle parking brake and shift the vehicle into reverse gear. If the vehicle is already in reverse gear, shift the vehicle into park then to reverse.	Does the sytstem emit a single beep?	Continue system Function check. (Section 0)	Proceed to Step 13.
13	Disconnect the 2-pin speaker connector. Place an object in fron of the sensors Measure the voltage between Pin 1 (green) and Pin 2 (blue).	Was the measured voltage + 10VDC or greater?	Replace Main Power Harness. Proceed to Step 14.	Replace a Control Module. Proceed to Step 14.
14	Turn the key to the run position. Press the vehicle parking brake and shift the vehicle into reverse gear. If the vehicle is already in reverse gear, shift the vehicle into park then to reverse.	Does the system emit a single beep?	Continue System Function Check. (Section 0)	

Test the Back-Up Sensor System

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

Back-up Sensor System (Diagnostics)

Section 2 - The system emits multiple beeps when shifted into reverse.

NOTE: In order to perform the system function check, the vehicle shall be parked in a level open area with no objects behind the vehicle for a minimum of ten feet. The parking brake must be applied and the trailer hitch ball mount must be removed.

	Step	Check	Yes	No
1	Active the vehicle parking brake. Turn the key to the run position. Do not start the engine. Step on the brake and shift the vehicle into reverse.	Did the system give a single beep?	Continue system Function Check. (Section 0)	Proceed to Step 2.
2	Activate the vehicle parking brake. Turn the key to the run position. Do not start the engine. Step on the brake and shift the vehicle into reverse.	Does the system emit multiple beeps?	The number of beeps relates to the number of problem sensors. Proceed to Step 3.	Proceed to Section 1 (No sound when system is turned on).
3	Verify that all sensors are connected into the correct connectors on the Control Module.	Check that all sensors are properly connected to the Control Module.	Proceed to Step 4.	Connect sensor(s) into the correct connector(s) on the Control Module. Proceed to Step 1.
4	Determine the number of problem sensors.	When activated does the system emit multiple beeps?	The number of beeps indicates the number of problem sensors. If the system emits 2 beeps, proceed to Step 5. If the system emits 3 beeps, proceed to Step 10. If the system emits 4 beeps, proceed to Step 12. If the system emits 5 beeps, proceed to Step 16.	Continue System Function Check. (Section 0)
5	The system emits two beeps when activated. determine the sensor that is not communicating properly with the control module.	Stand behind the vehicle and place an object behind each sensor. The malfunctioning sensor will not emit an audible tone.	If the L sensor is the suspect sensor, proceed to Step 6. If the CL sensor is the suspect sensor, proceed to step 7. If the CR sensor is the suspect sensor, proceed to Step 8. If the R sensor is the suspect sensor, Proceed to step 9.	The system emits a solid tone after an object is placed in front of each sensor. The system is functioning properly, continue system function check. (Section 0)

Test the Back-Up Sensor System

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

Back-up Sensor System (Diagnostics)

Section 2 - The system emits multiple beeps when shifted into reverse. (continued)

NOTE: In order to perform the system function check, the vehicle shall be parked in a level open area with no objects behind the vehicle for a minimum of ten feet. The parking brake must be applied and the trailer hitch ball mount must be removed.

	Step	Check	Yes	No
6	Sensor L is the suspect sensor. Unplug Sensors L & R from the control module. Plug the sensor marked L into the control module connector marked R. Plug the sensor marked R into the control module connector marked L.	Recycle power to the system. Stand behind the vehicle and place an object behind sensor L and then behind sensor R. Does the system emit an audible tone when an object is placed behind the sensor in position R and does not emit an audible tone when an object is placed behind the sensor in position L?	Sensor L has malfunctioned. Return Sensor R to its correct position on the control module. Replace Sensor L with a new sensor. Proceed to step 1 to retest the system with the new sensor installed.	The control module has malfunctioned.. Replace the control module. Proceed to step 1 retest the system with the new control module installed.
7	Sensor CL is the suspect sensor. Unplug Sensors CL & CR from the control module. Plug the sensor marked CL into the control module connector marked CR. Plug the sensor marked CR into the control module connector marked CL.	Recycle power to the system. Stand behind the vehicle and place an object behind sensor CL and then behind sensor CR. Does the system emit an audible tone when an object is placed behind the sensor in position CR and does not emit an audible tone when an object is placed behind the sensor in position CL?	Sensor CL has malfunctioned. Return Sensor CR to its correct position on the control module. Replace Sensor CL with a new sensor. Proceed to step 1 to restart the system with the new sensor installed.	The control module has malfunctioned. Replace the control module. Proceed to step 1 to retest the system with the new control module installed.
8	Sensor CR is the suspect sensor. Unplug Sensors CR & CL from the control module. Plug the sensor marked CR into the control module connector marked CL. Plug the sensor marked CL into the control module connector marked CR.	Recycle power to the system. Stand behind the vehicle and place an object behind sensor CR and then behind sensor CL. Does the system emit an audible tone when an object is placed behind the sensor in position CL and does not emit an audible one when an object is placed behind the sensor in position CR?	Sensor CR has malfunctioned. Return Sensor CL to its correct position on the control module. Replace Sensor CR with a new sensor. Proceed to step 1 to retest the system with the new sensor installed.	The control module has malfunctioned. Replace the control module. Proceed to step 1 to retest the system with the new control module installed.

Test the Back-Up Sensor System

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

Back-up Sensor System (Diagnostics)

Section 2 - The system emits multiple beeps when shifted into reverse. (continued)

NOTE: In order to perform the system function check, the vehicle shall be parked in a level open area with no objects behind the vehicle for a minimum of ten feet. The parking brake must be applied and the trailer hitch ball mount must be removed.

	Step	Check	Yes	No
9	Sensor R is the suspect sensor. Unplug Sensors R & L from the control module. Plug the sensor marked R into the control module connector marked L. Plug the sensor marked L into the control module connector marked R.	Recycle power to the system. Stand behind the vehicle and place an object behind sensor R and then behind sensor L. Does the system emit an audible tone when an object is placed behind the sensor in position L and does not emit an audible tone when an object is placed behind the sensor in position R?	Sensor R has malfunctioned. Return Sensor L to its correct position on the control module. Replace Sensor R with a new sensor. Proceed to step 1 to retest the system with the new sensor installed	The control module has malfunctioned. Replace the control module. Proceed to step 1 retest the system with the new control module installed.
10	The system emits three beeps when activated. The three beeps indicate that two sensors may not be working properly. Determine the sensors that are not communicating properly with the control module.	Stand behind each sensor. The malfunctioning sensors will not emit an audible tone.	Two sensors were found not emitting an audible tone when an object was placed in front of them. Proceed to step 11.	The system emits a solid tone after an object is placed in front of each sensor. The system is functioning properly, continue system function check. (Section 0)
11	Unplug one of the non-working sensors from the control module. Unplug one of the working sensors from the control module. Connect the first sensor into the second disconnected sensor connector. Connect the second sensor into the first disconnected sensor connector.	Recycle power to the system. Stand behind the swapped sensors. Does the system emit an audible tone when an object is placed behind the sensor in position 1 and does not emit an audible tone when an object is placed behind the sensor in position 2?	Sensor 1 has malfunctioned. Return Sensor 2 to its correct position on the control module. Replace Sensor 1 with a new sensor. Proceed to step 1 to retest the system with the new sensor installed.	The control module has malfunctioned. Replace the control module. Proceed to step 1 to retest the system with the new control module installed.
12	The system emits four beeps when activated. The four beeps indicate that three sensors may not be working properly. Determine the sensors that are not communicating properly with the control module.	Stand behind sensor. The malfunctioning sensors will not emit an audible tone.	Three sensors were found not emitting an audible tone when an object was placed in front of them The one sensor that emitted an audible tone shall be referred to as Sensor 1. Proceed to Step 13.	The system emits a solid tone after an object is placed in front of each sensor. The system is functioning properly, continue system function check. (Section 0)

Test the Back-Up Sensor System

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

Back-up Sensor System (Diagnostics)

Section 2 - The system emits multiple beeps when shifted into reverse. (continued)

NOTE: In order to perform the system function check, the vehicle shall be parked in a level open area with no objects behind the vehicle for a minimum of ten feet. The parking brake must be applied and the trailer hitch ball mount must be removed.

	Step	Check	Yes	No
13	Disconnect all sensor connectors from the control module. Plug Sensor 1 into the first non-working connector on the control module.	Recycle power to the system. Stand behind the vehicle and place an object in front of Sensor 1. Does the system emit an audible tone when an object is placed in front to Sensor 1?	The Sensor has malfunctioned. Reconnect Sensor 1 to its proper location and replace the malfunctioning sensor with a new one. Proceed to step 14.	The control module has malfunctioned. Replace the control module. Proceed to step 1 retest the system with the new control module installed.
14	Plug Sensor 1 into the second non-working connector on the control module.	Recycle power to the system. Stand behind the vehicle and place an object in front of Sensor 1. Does the system emit an audible tone when an object is placed in front of Sensor 1?	The sensor has malfunctioned. Reconnect sensor 1 to its roper location and replace the malfunctioning sensor with a new one. Proceed to step 15.	The control module has malfunctioned. Replace the control module. Proceed to step 1 to retest the system with the new control module installed.
15	Plug Sensor 1 into the third non-working connector on the control module.	Recycle power to the system. Stand behind the vehicle and place an object in front of Sensor 1. Does the system emit an audible tone when an object is placed in front of Sensor 1?	The sensor has malfunctioned. reconnect sensor 1 to its proper location and replace the malfunctioning sensor with a new one. Proceed to step 1.	The control module has malfunctioned. Replace the control module. Proceed to step 1 to retest the system with the new control module installed.
16	When activated, the system emits 5 beeps. The five beeps indicate that there are problems with all four sensors of the system.	The control module may be the cause of the system malfunction. Replace the control module and connect all sensors to the correct connectors. Power up the system and verify that the system no longer emits 5 beeps.	The system no longer emits 5 beeps, indicating that the control module malfunctioned. Proceed to step 1.	The system still emits 5 beeps after the control module was replaced and all sensors were connected. All of the sensors are malfunctioning. Replace all sensors and proceed to step 1.

Test the Back-Up Sensor System

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

Back-up Sensor System (Diagnostics)

Section 3 - The system emits constant tone

NOTE: In order to perform the system function check, the vehicle shall be parked in a level open area with no objects behind the vehicle for a minimum of ten feet. The parking brake must be applied and the trailer hitch ball mount must be removed.

	Step	Check	Yes	No
1	Activate the vehicle parking brake. Turn the key to the run position. Do not start the engine. Step on the brake and shift the vehicle into reverse.	Does the system emit a constant tone?	Proceed to Step 2. Check. (Section 0)	Continue System Function
2	Verify that there are no objects on the ground behind the vehicle.	Are there objects on the ground behind the vehicle?	Remove objects. Proceed to Step 1.	Proceed to Step 3.
3	Check if the vehicle has a trailer hitch.	Does the vehicle have a trailer hitch with anything installed (i.e. bike rack trailer adapter, ball mount etc.)	The trailer hitch attachment is causing the system to emit a constant tone. The user should turn the speaker off in this condition or remove the attachment.	The vehicle does not have a trailer hitch or an attachments. Replace the control module. proceed to Step 1.

NOTE: On vehicles equipped with a trailer hitch, the ball mount assembly should be stowed in the vehicle when unused.

REMOTE ENGINE START SYSTEM (RES)

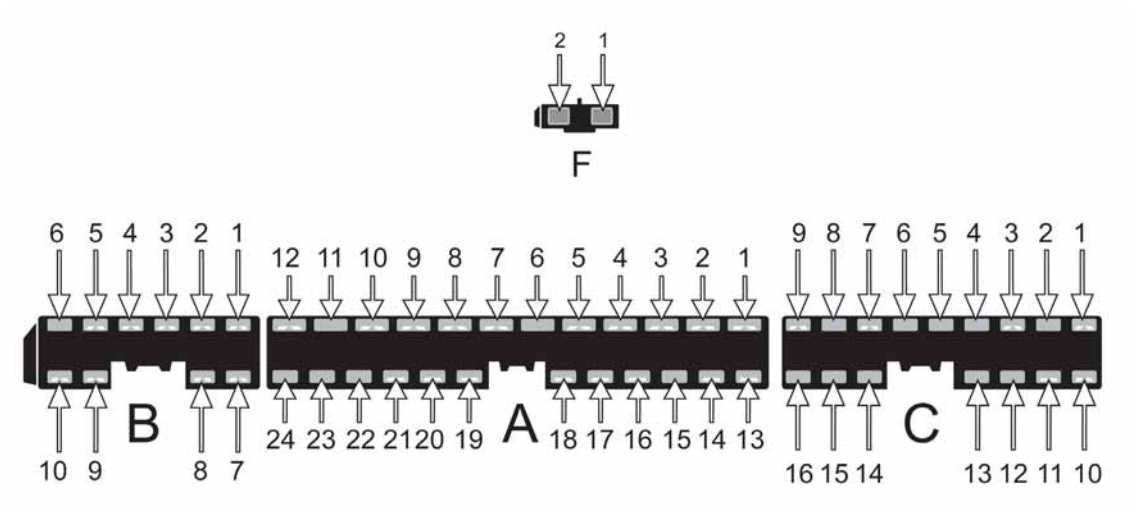
All 2007 Subaru B9 Tribeca models are pre-wired for a new Remote Starter accessory - available for port or dealer installation. This accessory includes an additional wireless key fob that can start/stop the engine. This allows the driver to pre-warm or cool the interior of the Subaru B9 Tribeca prior to entering the vehicle. The climate controls must be set to the on position before exiting the vehicle.

The Remote Engine Start system (RES) operates by commanding currently installed vehicle components with signals from the RES control module.
The RES is designed to operate the engine for **15 minutes**, after an RES start. Unless the engine speed drops below 500 R.PM. or increases to over 3000 R.P.M.

NOTE: (RES WILL NOT START THE VEHICLE IF THE BATTERY VOLTAGE IS BELOW NORMAL).

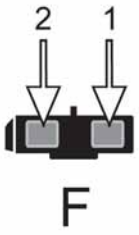
Pressing on the brake pedal will deactivate the RES and the engine will return to off.

The next five pages describes the four connectors connected to the RES control unit. Wire color, description and value for each terminal is also described.

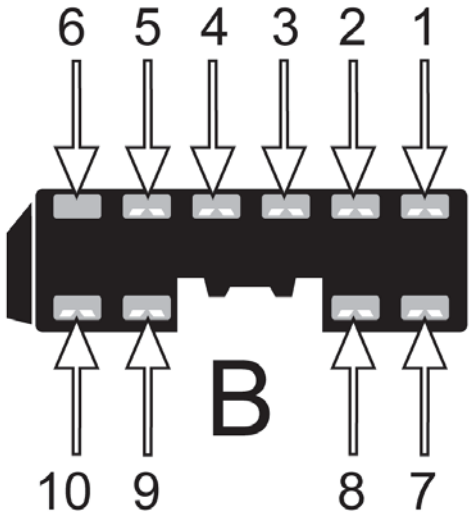


RES Connectors

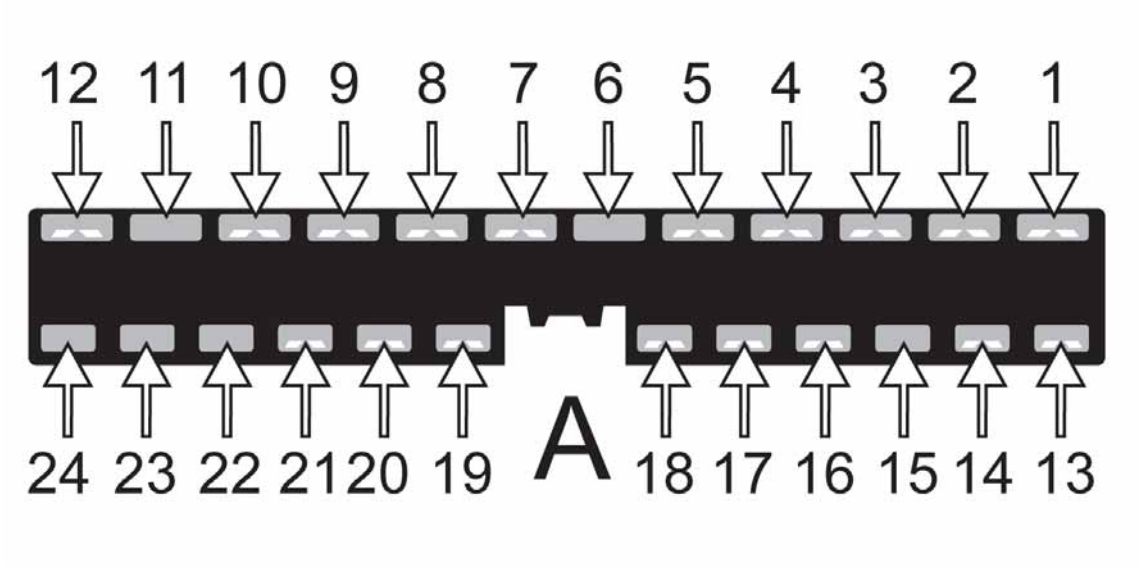
NOTE: THIS SYSTEM CAN NOT BE INSTALLED ON 2006 MODEL YEAR VEHICLES.



	Wire Color	Description	Value For Each Terminal
1.	Shielded	Antenna on Windshield	
2.	Insulated	Antenna on Windshield	



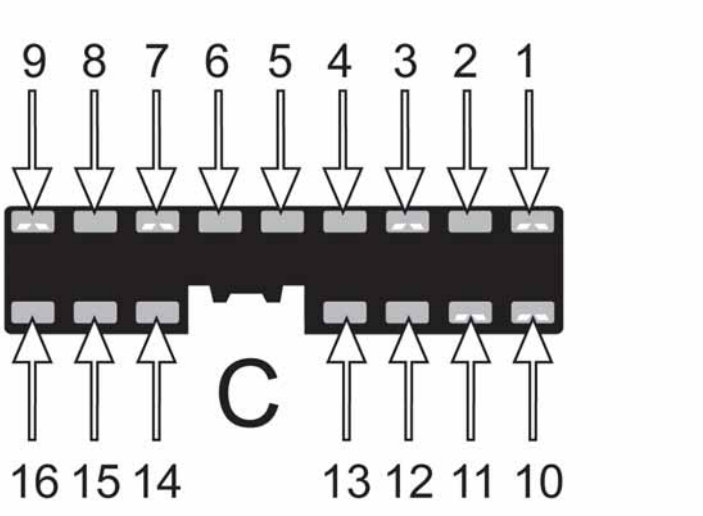
Wire Color	Description	Value For Each Terminal
1. White	Battery	Continuous Battery Voltage
2. White	Battery	Continuous Battery Voltage
3. Blue	Ignition 2	Battery voltage during RES operation Battery voltage during normal operation
4. Yellow	Acc 1	Battery voltage during RES operation Battery voltage during normal operation
5. Yellow	Acc 2	Battery voltage during RES operation Battery voltage during normal operation
6. Blank		
7. Brown	Brake Switch Input	0 voltage brake off
		Battery voltage brake on
8. Black/White Tracer	Key Sensor Input	Battery voltage key in for less than 10 seconds during RES start
9. Violet	Tachometer Circuit	Square wave pattern average 2.3 volts (5 volts)
10. Pink	Encryption output Immobilizer interface	Square wave pattern less than 5 seconds, prior to starter engagement



Wire Color	Description	Value For Each Terminal
1. Violet	Parking Lights	RES on. Battery voltage
2. White	Starter Motor-Normal	Battery voltage while turning key to start position.
3. Black/White	Key Sensor Output	Battery voltage for less than 10 second during RES cranking cycle. Battery voltage when key in ignition.
4. White	Battery	Continuous battery voltage
5. Black	Ground	Continuous ground
6. Blank		
7. Dark Green	Ignition 1	Battery voltage during and after RES start. Battery voltage during normal operation.
8. Black/White Tracer	Crank Output-RES	Battery voltage during RES start. Battery voltage during normal start.
9. Light Green	Driver Unlock Input	Battery voltage during pressing of the unlock door switch.
10. Blue	Door Ajar Input	9.4 volts door closed 0.62 volts door open
11. Blank		
12. Brown/Black	Unlock Switch Input	Battery voltage. 0 volts while pushing unlock switch.
13. Brown	Power Window Relay Interrupt	Ground for window lockout.
14. White/black Tracer	Starter Motor	Battery voltage during RES start. Battery voltage during normal start
15. Blank		

Continued on next page

16.	Orange	Security Recovery	Battery voltage. 10Hz square wave to ground for less than 10 second when security system activated during RES operation.
17.	Dark Brown	Program Button	Ground
18.	Dark Brown	Program Button	Battery voltage. When pushing program button value goes to ground.
19.	Gray	Hood Switch	Hood closed battery voltage. Hood open 0 volts
20.	White	Battery	Battery voltage.
21.	Red/White Tracer	Horn Output Horn Relay	Battery voltage. 0 volts when horn sounds



Wire Color	Description	Value For Each Terminal
1. Red/Black Tracer	Starter Motor	Battery voltage normal start only
2. Blank		
3. Red/Black Tracer	Starter Motor	Battery voltage normal start only
4. Blank		
5. Blank		
6. Blank		
7. White/Black Tracer	Rear Gate Motor Lock (Trunk Motor Lock)	Battery voltage during opening of Rear gate (trunk lock)
8. Blank		
9. Brown/Red	Battery voltage from Power Windows relay coils	Normal operation 0 volts RES operation battery voltage.
10. Brown/Yellow Tracer	Lock output	Battery voltage. Momentarily drops to 0 during locking of the doors for RES
11. Black/Brown	Immobilizer Interface	Greater than 11 volts, dropping .75 volts during RES start. After RES start greater than 9. Normal operation greater than 12.
12. Blank		
13. Blank		
14. Blank		
15. Blank		
16. Blank		

** Refer to STIS (Subaru Technical Infromation System)* **** New Feature*

This system has been designed to work with the Immobilizer system by registering the RES software card and immobilizer interface as one ignition key. These two parts must be replaced if the BIU is replaced, along with the ignition keys currently programmed to the immobilizer system.

A service mode is available that will deactivate the RES.

Tachometer Idle Speed Programming

NOTE: IF YOU DID NOT PROGRAM THE VEHICLE'S TACH IDLE SPEED AS INSTRUCTED IN THE INSTALLATION INSTRUCTIONS THE VEHICLE WILL NOT ATTEMPT TO START INSTEAD YOU WILL GET THREE ADDITIONAL BEEPS FROM THE HORN.

THE RES SYSTEM MUST LEARN A VALID IDLE SPEED PRIOR TO ATTEMPTING TO PROGRAM THE IMMOBILIZER INTERFACE.

1. Open driver's door (leave open throughout programming operation).
2. Turn the ignition key to the ON or RUN position.
3. Press and hold the momentary programming button for approximately 10 seconds until the vehicle's horn honks (3) times.

4. Release the momentary programming button.
5. Press and release the momentary programming button. The vehicle's horn will honk (4) times.
6. Press and release the vehicle's brake pedal (1) time. The horn will honk (1) time to indicate that the system has entered tachometer idle speed programming mode.
7. Start the vehicle with the ignition key. The RES system will begin honking the vehicle's horn 1 time every 3 seconds to indicate a valid tach signal.
8. When the engine has settled to a normal idle speed (normally 750-1000 RPM), press and release the brake pedal (1) time. The horn will honk (2) times to indicate the system has exited tach idle speed programming.

NOTE: BE SURE THAT THE VEHICLE HAS MAINTAINED 750-1000 RPM IDLE SPEED PRIOR TO EXITING TACHOMETER IDLE SPEED PROGRAMMING.

Immobilizer Interface Programing

NOTE: THE IMMOBILIZER INTERFACE WILL BE PROGRAMMED TO THE VEHICLE AS AN IGNITION KEY. THIS WILL TAKE UP ONE OF THE 4 SLOTS AVAILABLE IN THE BIU. THREE ADDITIONAL KEYS MAY BE PROGRAMED TO THE VEHICLE.

NOTE: ONLY ONE KEY FOB IS REGISTERED DURING THIS STEP BUT BOTH KEY FOBS WILL OPERATE THE RES.

Starting your Vehicle

The remote control start function activates by pressing the START (key icon) button twice within 3 seconds on your remote control transmitter. The system will check certain **preconditions before starting, and if all safety parameters are correct, the engine will start within 5 seconds. If the vehicle's starter cranks but does not start or starts and stalls, the remote engine start system will power off then attempt to start the vehicle an additional four times. If the remote start system shuts down 2 seconds after starting the vehicle, the vehicle has a battery problem.

WARNING: AVOID DANGER OF CARBON MONOXIDE, NEVER REMOTE START A VEHICLE IN A CLOSED SPACE SUCH AS A CLOSED GARAGE.

Turning Your Vehicle Off

Press and hold the START (key icon) button again to turn the vehicle off. If the vehicle is left running the remote start system will allow the vehicle to run for a total of **15 minutes** and then automatically turn off.

Entering the Vehicle While it is Running via Remote Start

1. Unlock the vehicle doors using the factory keyless remote. If the vehicle's doors are unlocked manually using the key, the vehicle's security system will trigger and the remote start system will turn off. Inserting the ignition key into the ignition cylinder and turning it to the ON or Run position will disarm the security system.
2. Enter the vehicle. Do not press the brake pedal.
3. Insert the key into the ignition and turn to the ON position. If the ignition key is accidently turned to the start position, the system's "starter anti-grind" feature will prevent the starter from re-cranking.
4. Press brake pedal. The RES disengages, the vehicle's power window features are re-enabled and the vehicle will operate normally.

To engage the service mode, turn the ignition key to the ON or Run position, depress and hold the brake pedal then, press and release the START (key icon) button on the remote control transmitter three (3) times. The system will pause for one second and then flash the parking lights three (3) times indicating the system is in service mode. When attempting to activate the remote start system while in service mode, the parking lights will flash three (3) times and will not start.

To disengage the service mode, turn the ignition key to the On or RUN position, depress and hold the brake pedal, then press and release the START (key icon) button on the remote control transmitter three (3) times. The system will pause for one second and flash the parking lights one (1) time indicating that the system has exited service mode.

** *Key in ignition or hood open, inspection mode connector connected*

IMPORTANT NOTE: WHEN TAKING YOUR VEHICLE IN FOR SERVICE, IT IS RECOMMENDED THAT YOU INFORM THE SERVICE PERSONNEL THAT YOUR VEHICLE IS EQUIPPED WITH A REMOTE START SYSTEM.

Remote (RES) Transmitter Programming Mode

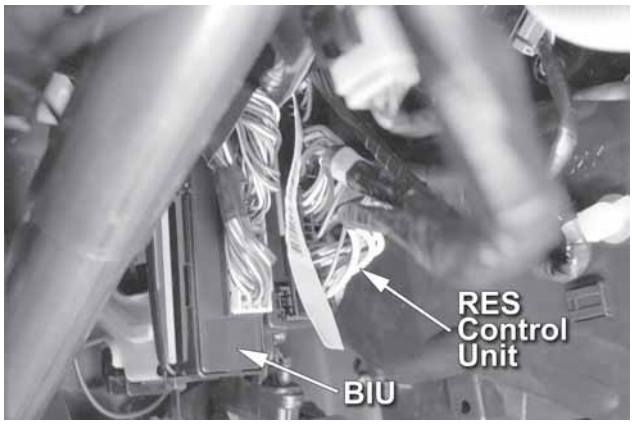
1. Open the driver's door (the driver's door must remain opened throughout the entire process).

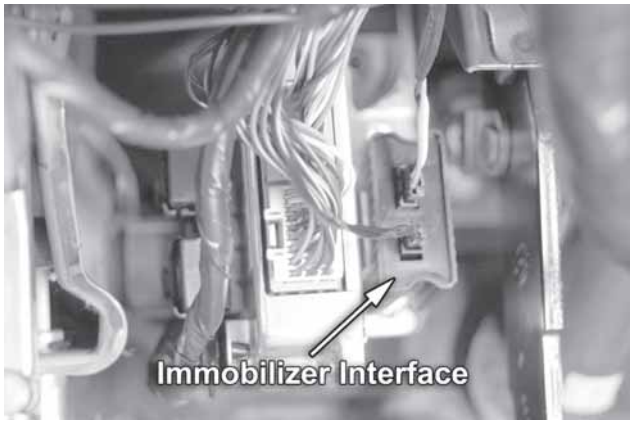
2. Insert the ignition key into the vehicle's ignition cylinder and turn to the ON or Run position.
3. Locate the small black programming button behind the fuse box cover on the left side of the driver's side lower dashboard. (Refer to page 39 for picture)
4. Press and hold the black programming button for 10-15 seconds. The horn will honk and the parking lights will flash three times to indicate that the system has entered transmitter programming mode.
5. Press and release the START (key icon) button on each transmitter. The horn will honk and the parking lights will flash one time to indicate a successful transmitter learn each time the START (key icon) button is pressed.
6. To exit transmitter programming mode, turn the ignition key to the OFF position, remove the ignition key from the ignition cylinder and test operation of the remote transmitter(s).

Enabling / Disabling Confirmation Horn Honks

1. Follow steps 1-4 in "Remote transmitter Programming Mode" above.
2. Pressing the vehicle's brake pedal will enable the confirmation horn honk feature. The vehicle's horn will honk 1 time to indicate that confirmation horn honks have been disabled and honk 2 times to indicate that confirmation horn honks have been enabled.
3. To exit programming mode, turn the ignition key to the OFF position, remove the ignition key from the ignition cylinder and test operation of the remote transmitter(s).

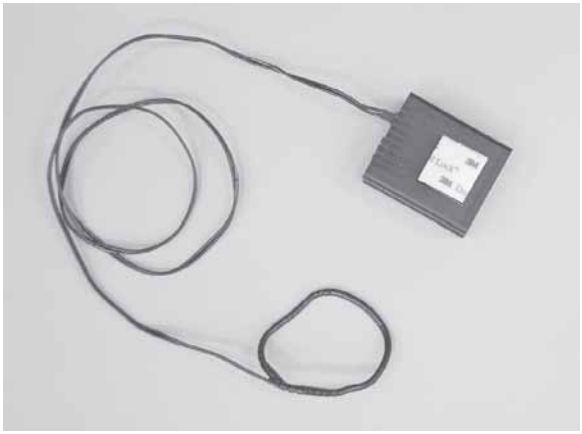
See your owner's manual for additional information on the remote engine start system.



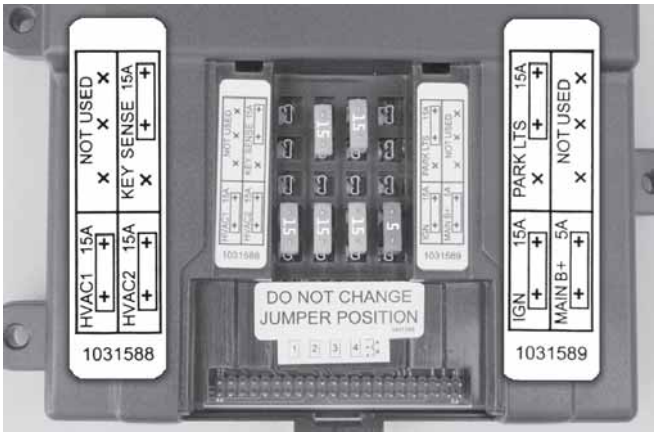


** Refer to STIS (Subaru Technical Infromation System)*

**** New Feature*



Immobilizer Interface



Inside RES control unit, under software care

NOTE: IF THE BIU IS REPLACED ALL KEYS, SOFTWARE CARD AND IMMOBILIZER BOX OF THE RES MUST BE REPLACED.

IMMOBILIZER INTERFACE PROGRAMMING

NOTE: The immobilizer interface will be programmed to the vehicle as an ignition key

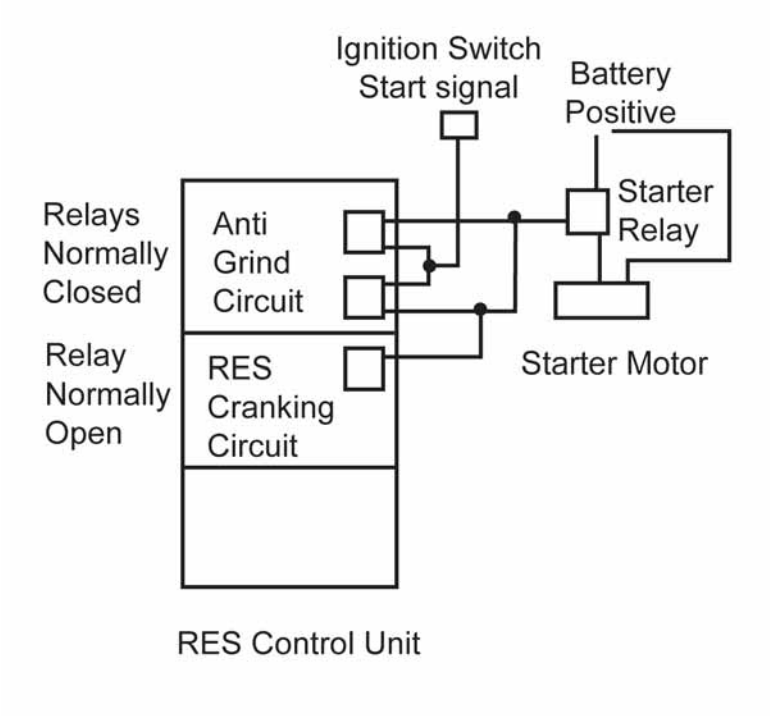
1. Plug the "Subaru Diagnostic Interface" (SDI) cable into the vehicle's diagnostic plug.
2. Turn one of the ignition keys to the RUN position.
3. Press the SDI Menu and C buttons until the SDI enters into "Stand Alone Mode".
4. Using the arrows on the SDI, select Subaru Vehicle and press enter.
5. On the SDI screen select "IMM Regist" using the arrows and then press enter.
6. The screen will display "Execute Key Reg?", press enter.
7. The SDI screen will prompt for the 4-digit teaching operation code (this is a number specific to the B9 Tribeca). Using the arrows, enter the teaching operation code and press enter.
8. The SDI screen will prompt for the 5-digit security ID (this number is vehicle specific and is located on the large metal tag attached to the vehicle's keys). Using the arrows, enter the vehicle specific security ID and press enter.
9. The SDI screen will display "Registering Key". After registration is complete, the SDI screen will display "Program 2nd Key", press enter.
10. The SDI screen will display "Key Change", turn the ignition OFF and turn the ignition ON using the 2nd key.
11. The SDI screen will display "Register Key?", press enter.
12. The SDI screen will display "Registering Key". After registration is complete, the SDI screen will display "Program 3rd Key", press enter.
13. The SDI screen will display "Key Change", turn the ignition OFF and turn the ignition ON using the 3rd key.
14. The SDI screen will display "Register Key?", press enter.
15. The SDI screen will display "Registering Key". After registration is complete, the SDI screen will display "Program 4th Key", press enter.
16. The SDI screen will display "Key Change", turn the ignition OFF and remove the 3rd key.
17. Press and release the remote start system programming button one time to access "Immobilizer Interface Registration Mode".
18. Activate the remote start system by pressing the transmitter START (key icon) button (2) times.
19. The ignition will power and the SDI will display "Register Key?", press enter.
20. The SDI screen will display "Registering Key". After complete, the SDI screen will display "Ending Key Reg", press the vehicle's brake pedal (1) time to exit "Immobilizer Interface Registration Mode" and turn the vehicle's ignition off.

NOTE: The above steps assume that all (3) vehicle ignition keys are available at time of installation. If any keys are not present during programming, they will not operate the vehicle after these steps are completed.

The RES (Remote Engine Start) controls and provides the following features.

- Starter motor operation
- Anti grind
- Power supply to the Acc circuit
- Power supply to IGN 1 and IGN 2 circuit
- Horn output
- Door locking
- Power window lock out
- Power supply for security system

These controls and features are only available during RES Operation.



Anti-Grind

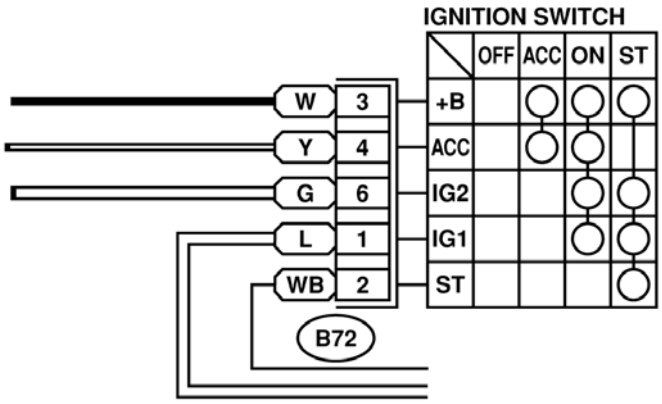
Two relays are used to provide redundancy.

Even when the engine is started with the ignition key, the power from the ignition switch is routed through the RES control unit. During RES operation these normally closed relays are opened and any power from the ignition switch (start signal) is prevented from going to the starter solenoid.

Starter Motor Operation

The RES cranking relay delivers power to the starter solenoid during RES operation.

The relay is deactivated when the engine speed signal from the ECM exceeds cranking speed.

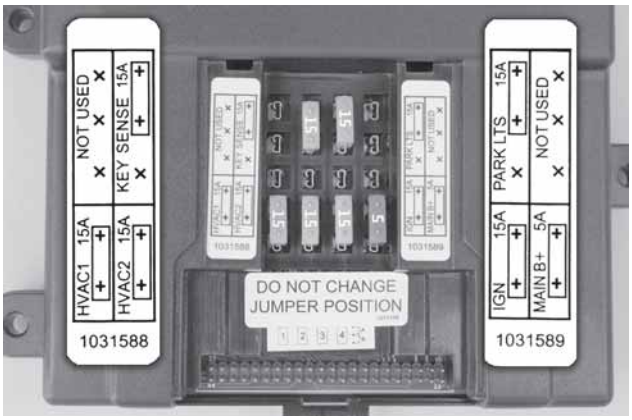


Accessory Power Supply

Two relays are used to deliver the amperage that may be required.

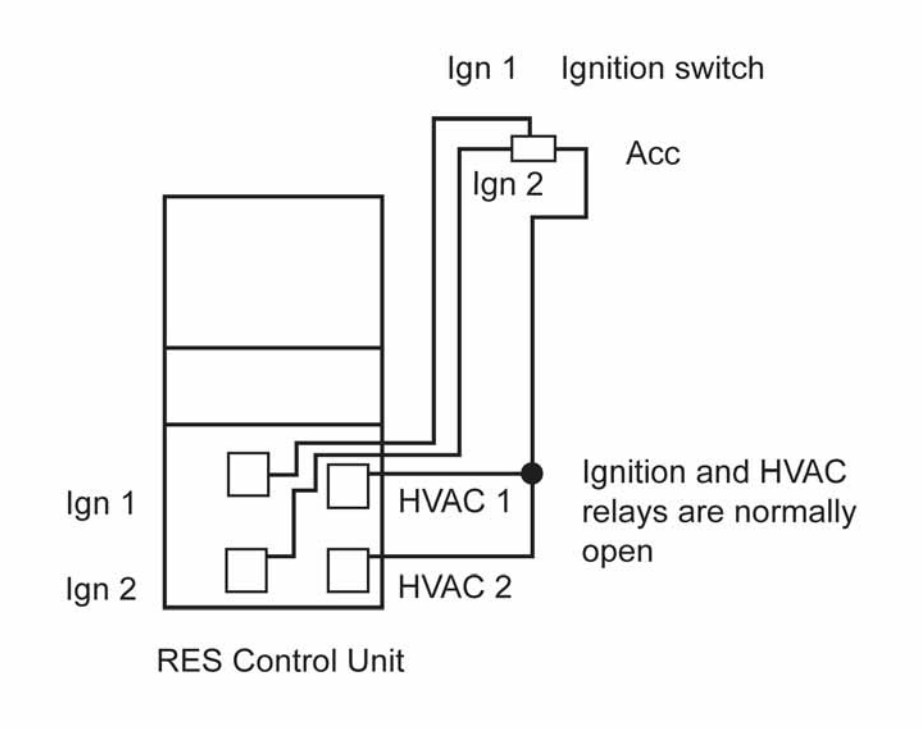
The accessory circuit power supply can be traced on STIS (Service Manual)

Currently the fuse labeling in the RES control unit marked HVAC 1 and HVAC 2 protect the RES accessory power supply circuits and Relays. Future production of RES control units will have these fuses labeled ACC 1 and ACC 2.



** Refer to STIS (Subaru Technical Infromation System)*

**** New Feature*



Additional RES information

NOTE: THE GROUND FOR THE POWER WINDOW RELAY IS PART OF THE RES CIRCUIT. (IF THE RES CONTROL UNIT IS REMOVED FROM THE VEHICLE, THE POWER WINDOWS WILL NOT OPERATE.)

RES Summary of events

- Installation-**(Close hood and open windows)**
- Idle speed learning
- Program Key fobs to RES
- Program all keys and key fob to Immobilizer.
  (Do not forget to push the programming button during key fob Immobilizer registration.)

RES DIAGNOSTICS

Prior to beginning the troubleshooting procedure below, verify the following:
1. The vehicle's battery is fully charged.
2. All remote engine start harness connections are secure.
3. Please have a copy of the remote engine start installation and owner's instructions for reference.

	Symptom	Check	Yes	No
1	Vehicle's horn honks an additional two times after remote start confirmation	A) Verify that the vehicle's hood is closed. B) Verify that the vehicle's brake pedal is not depressed. C) Verify that the ignition key was not left in the ignition cylinder. D) Verify that the remote start system is not in "Service Mode"	End	A) Replace the hood safety switch and hood safety switch jumper harness. B) Verify operation of the vehicle's brake pedal switch and replace if necessary. C) Take the system out of "Service Mode". Refer to Owner's Manual. D) Replace the remote start control module
2	Vehicle's horn honks an additional four times after remote start confirmation.	A) Follow the installation instructions for tach idle speed programming. B) Verify that the remote start harness 24-way connector is securely connected to the vehicle's pre-fit 24-way connector.	End	Replace the remote start control module.
3	The vehicle starts then stalls when the remote start system is activated and the dashboard security light remains on solid.	Verify that the immobilizer interface module is installed as per the installation instructions and programmed	End	Replace the remote start immobilizer interface module and software card.
4	The vehicle starts when the remote start system is activated but the air conditioning/heater does not turn on.	A) Verify that the vehicle's air conditioning/heater controls are pre-set prior to activating the remote start system.B) Verify that the remote start harness 6-way ignition switch connectors are properly seated.C) Verify that the remote start module 15AMP HVAC1 and HVAC2 fuses are not blown	End	A) Replace the 15AMP HVAC1 and HVAC2 fuses as necessary and test operation. Replace the remote start control module.
5	The remote engine start system does not turn on the vehicle's ignition after receiving remote start confirmation.	B) Verify that the remote start harness 6-way ignition switch connectors are properly seated. C) Verify that the remote start module 15AMP IGN fuse is not blown	End	Replace the 15AMP IGN fuse as necessary and test operation. Refer to Figure A.B) Replace the remote start control module.
6	The vehicle's ignition turns on when the remote engine start system is activated but does not crank the starter.	Verify that the remote start harness 6-way ignition switch connectors are properly seated	End	End. Replace the remote start control module.
7	The vehicle's power windows operate while the vehicle is operating by the remote engine start system.	Verify that the remote engine start 2-way connector is properly connected to the vehicle's pre-fit 2-way connector.	End	End. Replace the remote start control module.

Subaru Remote Engine Start Troubleshooting Guide

	Symptom	Check	Yes	No
8	The vehicle's perimeter security system triggers when the door is opened while running by the remote engine start system.	A) Was the driver's door unlocked using the remote keyless entry transmitter? The perimeter security system will not disarm when the doors are unlocked using the ignition key. B) Verify that the remote engine start harness 24-way connector is properly connected to the vehicle's 24-way pre-fit connector.	End	Replace the remote start control module.
9	The perimeter security feature does not arm when the vehicle is operating by remote engine start.	A) Verify that all vehicle doors are hatch/trunk are closed.B) Verify that the remote engine start harness 24-way connector is properly connected to the vehicle's 24-way pre-fit connector.	End	Replace the remote start control module.
10	The remote engine starter transmitter range is poor. (Normal operating range should be 500'-800' depending on vehicle angle and RF interference)	A) Test and replace batteries as necessary in the remote transmitters. B) Verify that the remote engine start antenna is properly mounted and plugged into the remote start control module.	End	A) Replace the remote start transmitters. B) Replace the remote start antenna
11	The vehicle's parking lights do not flash when the remote engine start transmitter button is pressed and do not turn on when the vehicle is operating by remote engine start.	A) Verify that the vehicle's parking lights turn on using the vehicle parking light switch.B) Verify that the vehicles parking light fuse is not blown and replace as necessary.C) Verify that the remote engine start system's 15AMP parking light fuse is not blown and replace as necessary (refer to Figure A). D) Verify that the remote start harness 24-way connector is properly connected to the vehicle's 24-way pre-fit connector.	End	Replace the remote start control module.
12	The vehicle's horn emits 1 long honk when the remote start system is activated.	Verify that the remote engine start system's 15AMP key sense fuse is not blown and replace as necessary	End	Verify operation of the vehicle's key-in warning switch and replace as necessary.
13	The remote start system shuts down 2 seconds after starting the vehicle.	Check vehicle's battery for a low voltage condition and replace as necessary.	End	

** Refer to STIS (Subaru Technical Infromation System)* **** New Feature*

Subaru Remote Engine Start Troubleshooting Guide

OPERATIONAL CONDITIONS

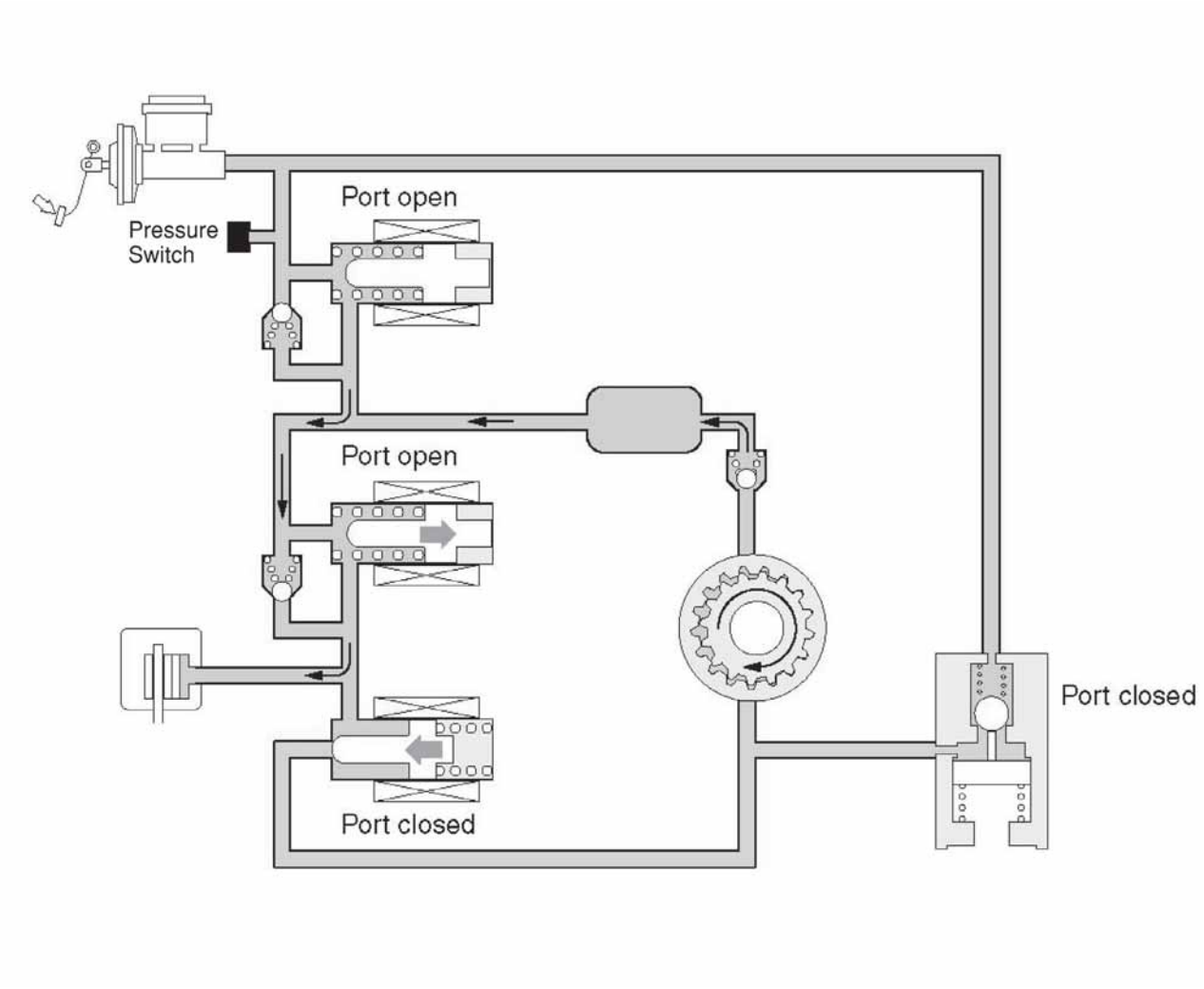
	Symptom	Check	Yes	No
14	The vehicle's power windows do not operate while the vehicle is operating by the remote engine start system.	The remote engine start system is equipped with a power window disable feature during remote start operation.	End	
15	The remote start system is activated while any door is open and then all doors are closed, the doors remain unlocked. If you open any unlocked door the security system triggers and the remote start shuts down.	This is a normal function. If a door is left open during remote start activation, the automatic lock feature is disabled for that cycle to prevent accidentally locking the ignition keys in the vehicle. While the vehicle is running by RES, once all doors are closed, the door security protection arms. If a door is opened at anytime, the security system will trigger and the RES system will shut down.	End	
16	The remote start system is activated while any door is open, the customer enters the vehicle and closes all doors (the door security protection arms and the vehicle's doors remain unlocked). The ignition key is turned to the ON or RUN position. Any door is opened causing the horn to honk one time and the vehicle will stay running	This is a normal function. When the ignition key is turned to the ON or RUN position the RES system is still in operation until the brake pedal is pressed, the transmitter button is held for 2 seconds or the door security protection is triggered. Because the RES system is still operating, opening any door will trigger the door security protection causing the horn to honk one time and the RES system will disengage and the ignition key will take over operation of the vehicle. Approximately 1 second after the RES system disengages, the system will recognize that the ignition key is in the ON or RUN position allowing the door security protection system to disarm	End	
17	If the RKE fob unlock button is pressed within 5 seconds of shutting down the remote start system, the doors will unlock but the door security protection will trigger when any door is opened.	This is a normal function. When the remote start system shuts down by any means (15 minute run time expires, transmitter shutdown, hood opened, engine over-rev or stall) the vehicle's security module will initiate a security monitor and re-arm process that will prevent security system disarm for approximately 5 seconds	End	

BRAKE ASSIST

Brake Assist is a system designed to recognize emergency braking operation and automatically enhance braking effort. Brake assist improves vehicle and occupant safety by reducing stopping distances.

A pressure switch mounted on the Hydraulic Control Unit (HCU) monitors the pressure increase from the master cylinder as the brakes are applied. When the pressure increases faster than normal, Brake Assist activates. The driver may feel a slight pulsation in the brake pedal as the hydraulic brake pressure applies maximum braking. (Pressure increase compared to time)

Releasing the brake pedal deactivates Brake Assist. (Brake switch and pressure switch input to HCU)



NOTES:

2007 LEGACY

The 2007 Legacy and Outback models are described from pages 53 to 78. Please review the material on these pages to become familiar with the systems equipped on each model. In cases where the systems are shared with the Subaru B-9 Tribeca, refer to the Subaru B-9 Tribeca chapter in the beginning of this reference booklet.

VDC System

The VDC system of the 2007 Legacy is very similar to past model years with the exception of the Hydraulic Control Unit (HCU). This year the HCU is designed to operate more than one type of vehicle. Upon installation, a new HCU must be initialized (*Selection of Parameter) to the vehicle in which it is installed. This process is accomplished with the SMIII using the procedure outline below. This information can also be found in the help section of the SMIII.

The SMIII is also used to confirm that a HCU has been previously initialized correctly to a vehicle (Confirm on Parameter). This would be performed during diagnosis when the operation of the HCU is in question.

*Selection of parameter is the process of selecting the operating parameters of the vehicle to the HCU.

Selection of Parameter

This function is used to select/register parameters when the VDC control module has been replaced with a normal spare part.

NOTE:

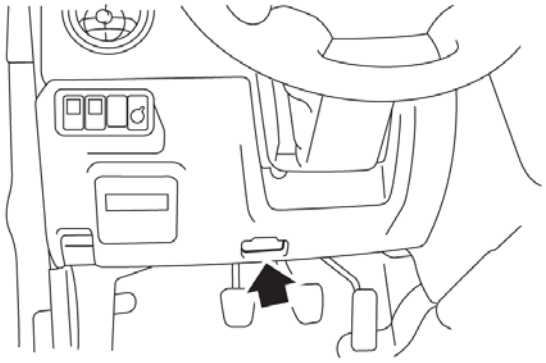
- Always execute “Clear Memory” after operating this function.
- This function cannot be used with a control module that is not a normal spare part.
- To confirm the applied model, refer to the “Model No. Plate” affixed to the vehicle. The location of the model No. plate is shown in the *Service Manual.

Registration Procedure

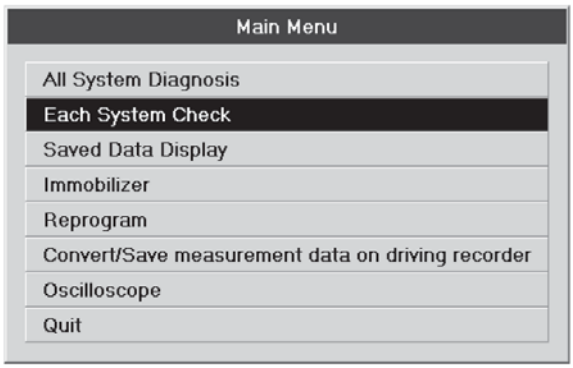
1. Prepare the SDI, diagnosis cable, USB cable, and a PC with the PC application installed.
2. Use the diagnosis cable to connect the SDI to the data link connector of the vehicle.

NOTE: SDI POWER WILL TURN ON AUTOMATICALLY WHEN THE DIAGNOSIS CABLE IS CONNECTED TO THE VEHICLE. IF THE PWR LED OF THE SDI DOES NOT LIGHT, TURN ON THE VEHICLE’S IGNITION SWITCH OR START THE ENGINE, AND THEN PRESS THE SDI [PWR] KEY AND CHECK AGAIN TO SEE IF THE PWR LED OF THE SDI LIGHTS.

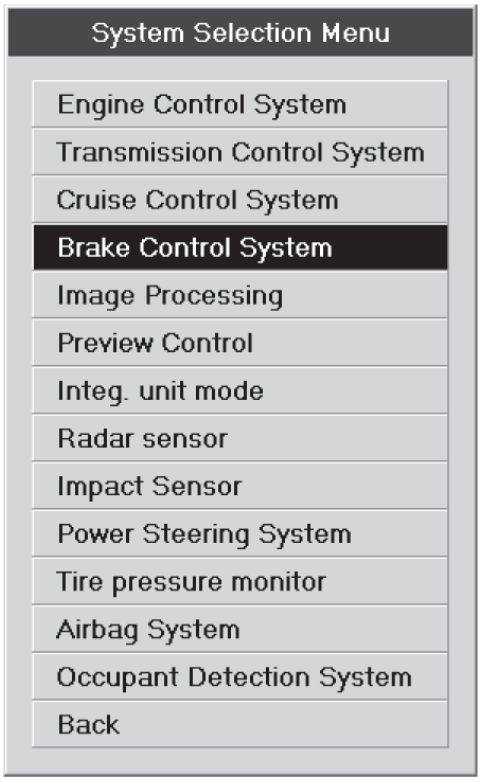
NOTE: SELECTION AND CONFIRMATION OF PARAMETER ONLY APPLIES TO VEHICLES EQUIPPED WITH VEHICLE DYNAMIC CONTROL (VDC).



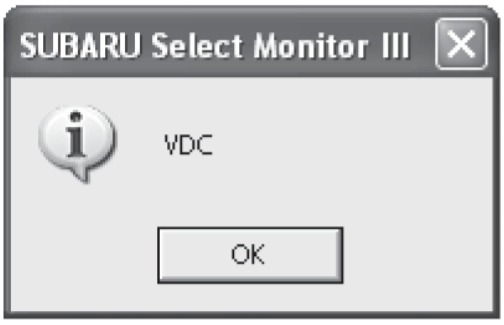
3. Use the USB cable to connect the SDI to the PC.
4. Turn on the vehicle's ignition switch.
5. Double-click the SSMIII icon on the PC screen to start up the application.
6. On the Main Menu that appears on the display, select [Each System Check] and then press the Enter key or left-click with the mouse.



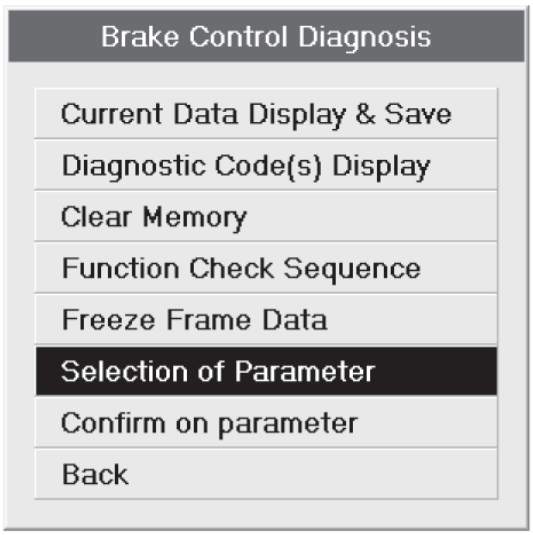
7. On the System Selection Menu, select [Brake Control System] and then press the Enter key or left-click with the mouse.



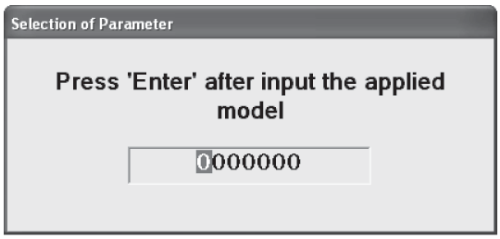
8. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



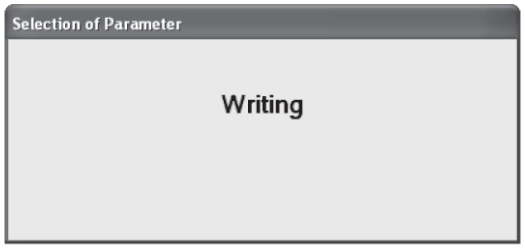
9. From the list of fault diagnosis, select [Selection of Parameter] and then press the Enter key or left-click with the mouse.



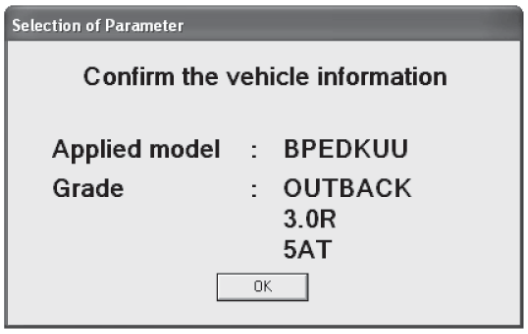
10. Input the applied model and press the Enter key. (See page XXX)



11. Stand by as the message below will appear on the screen.



12. The vehicle information check screen will be displayed. Make sure that the applied model and grade shown on the screen are correct and then click the [OK] button.



NOTE: IF THE APPLIED MODEL AND GRADE ARE DIFFERENT THAN THOSE OF THE VEHICLE, EXECUTE THE REGISTRATION PROCEDURE AGAIN AFTER CLICKING THE [OK] BUTTON.

Confirm on Parameter

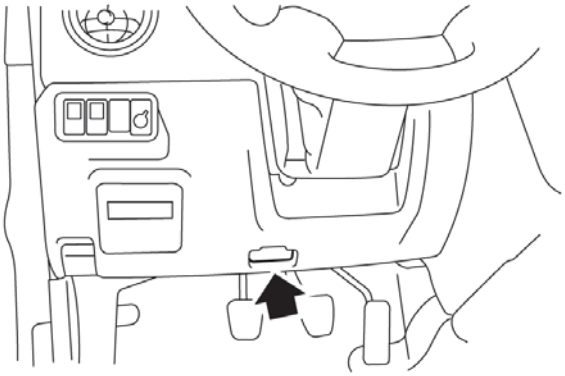
This function allows you to confirm the parameters registered in the VDC control module.

NOTE: THIS FUNCTION CAN BE USED EVEN IF THE VDC CONTROL MODULE IS NOT A NORMAL SPARE PART.

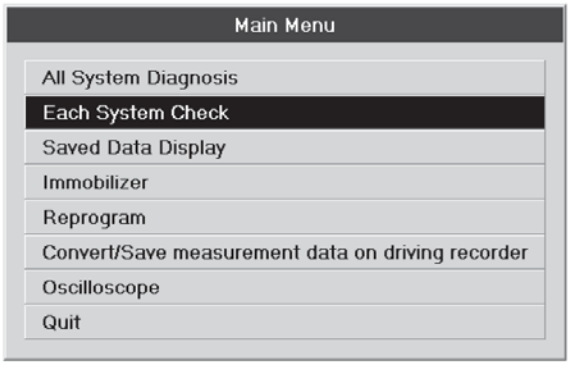
Confirm Procedure

1. Prepare the SDI, diagnosis cable, USB cable, and a PC with the PC application installed.
2. Use the diagnosis cable to connect the SDI to the data link connector of the vehicle.

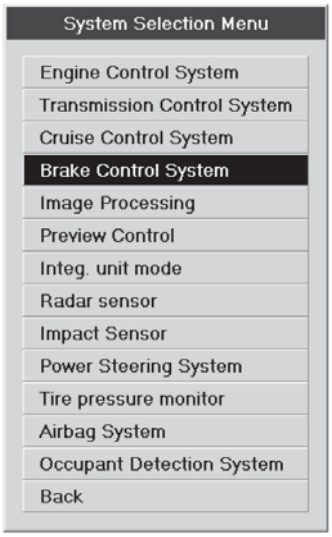
NOTE: SDI POWER WILL TURN ON AUTOMATICALLY WHEN THE DIAGNOSIS CABLE IS CONNECTED TO THE VEHICLE. IF THE POWER OF THE SDI DOES NOT LIGHT, TURN ON THE VEHICLE'S IGNITION SWITCH OR START THE ENGINE, AND THEN PRESS THE SDI [PWR] KEY AND CHECK AGAIN TO SEE IF THE PWR LED OF THE SDI LIGHTS.



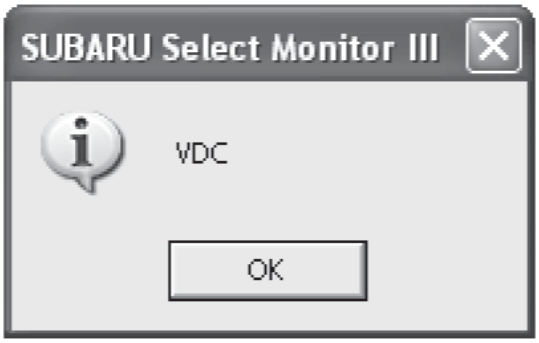
3. Use the USB cable to connect the SDI to the PC.
4. Turn on the vehicle's ignition switch.
5. Double-click the SSMIII icon on the PC screen to start up the application.
6. On the Main Menu that appears on the display, select [Each System Check] and then press the Enter key or left-click with the mouse.



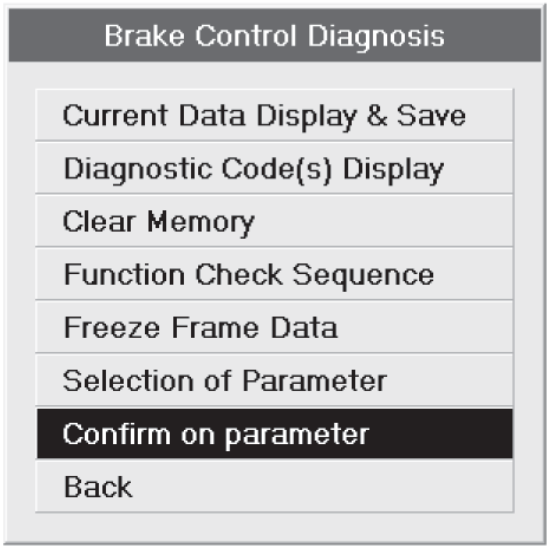
7. On the System Selection Menu, select [Brake Control System] and then press the Enter key or left-click with the mouse.



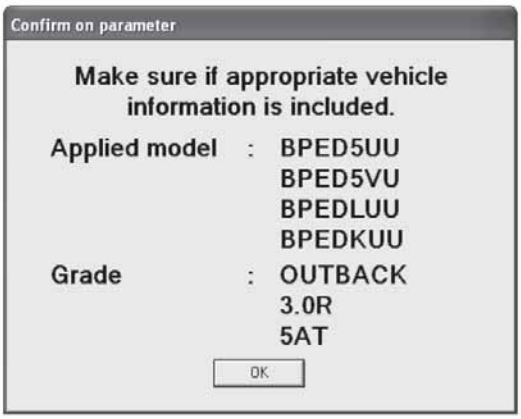
8. This displays a compliance verification message for the system being diagnosed. Click the [OK] button.



9. From the list of fault diagnosis, select [Confirm on Parameter] and then press the Enter key or left click with the mouse.



10. The parameter confirm screen will be displayed. Make sure the “Applied model” and “Grade” of the pertinent vehicle are displayed, and then click the [OK] button.

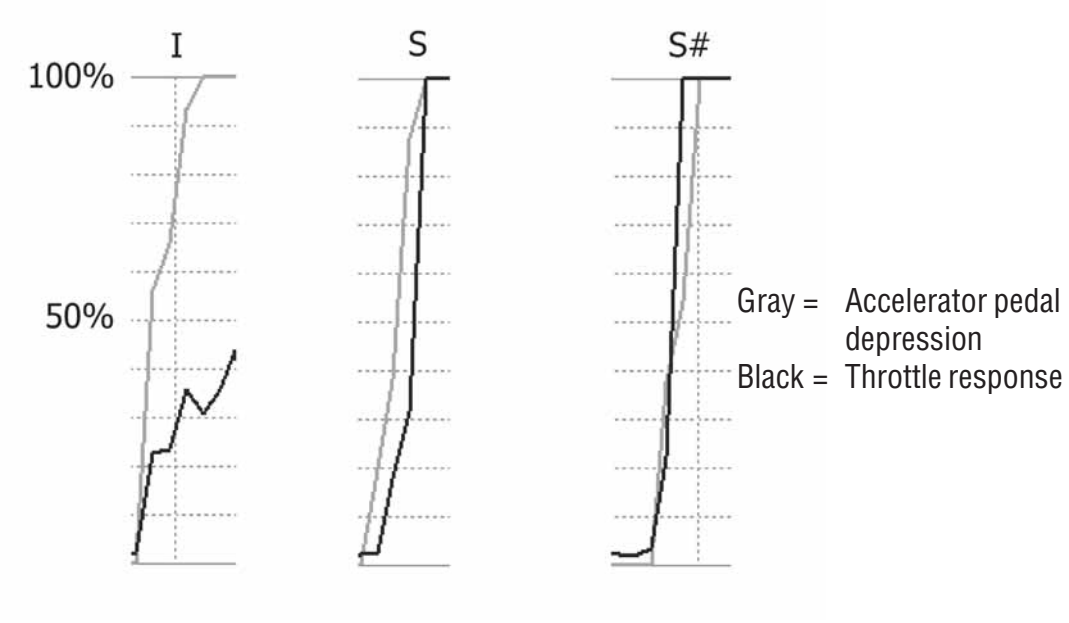


** Refer to STIS (Subaru Technical Infromation System)* **** New Feature*

SI-DRIVE (SUBARU INTELLIGENT DRIVE)

SI-DRIVE (Subaru Intelligent Drive) will be standard on all Legacy and Outback turbo models. SI-Drive enables three distinctively different modes of engine power characteristics by regulating the engine control unit (ECM) as well as the transmission control unit (TCU) on automatic transmission models, and by fine-tuning the electronically controlled throttle Torque command control with 3 settings (rotary switch is located in the center console). No other parts are required.

This graph shows the relationship of accelerator pedal movement to throttle response in each of the SI Drive modes. In each case the accelerator pedal is depressed 100%.



I mode: Throttle response provides efficient performance.

S mode: Throttle response is almost linear.

S# mode: Throttle response is fast, reaching 100% with approximately 54% of accelerator pedal movement.

** Refer to STIS (Subaru Technical Infromation System)* **** New Feature*

Intelligent Mode

The Intelligent mode provides well-balanced performance with greater fuel efficiency and smooth drive ability.

Power delivery is moderate during acceleration for maximum efficiency.

This is ideal for around-town driving and difficult driving conditions such as slick roads or loose surfaces.

When Intelligent mode is selected in vehicles equipped with a manual transmission, a shift-up indicator will blink to signal the best time to shift gears for maximum fuel efficiency.

Sport Mode:

The Sport mode provides the engine power desired by those who want to make the driving experience their own personal adventure .The linear acceleration characteristic of this versatile mode is ideal for driving on freeways and suburban streets or for climbing mountain roads.

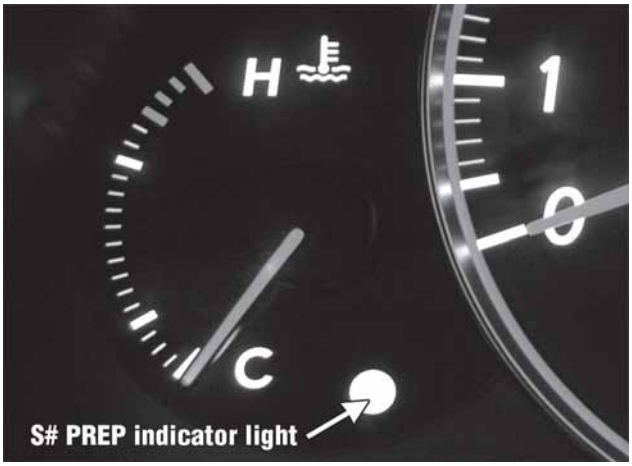
Sport Sharp Mode:

For spirited minded drivers, the Sport Sharp mode offers an exhilarating level of engine performance and control.

The throttle becomes more responsive regardless of engine speed.

Delivering maximum driving enjoyment, this mode is ideal for tackling twisty roads and for merging or overtaking other vehicles on the highway with confidence.

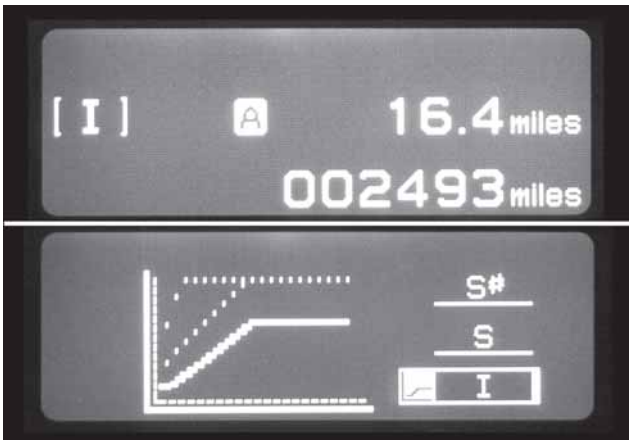
The multi-information display located in the tachometer provides the driver with the ability to monitor both vehicle performance and driving conditions.
In addition to trip computer functions, the current SI-DRIVE mode is exhibited along with an active torque curve display.



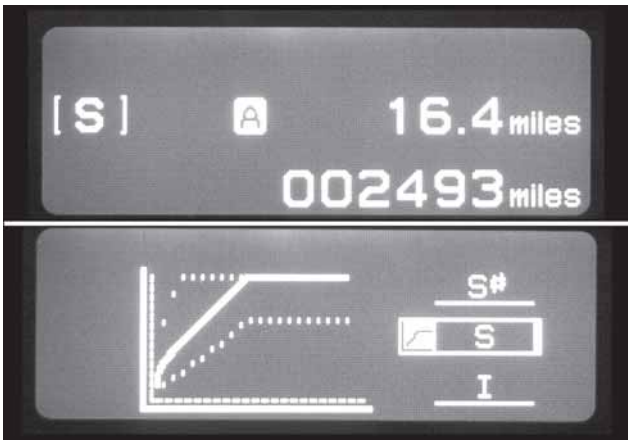
When this light is illuminated sports sharp mode is not available. This is due to low coolant temperature.

The ECO gauge located in the speedometer challenges the driver to drive more efficiently.

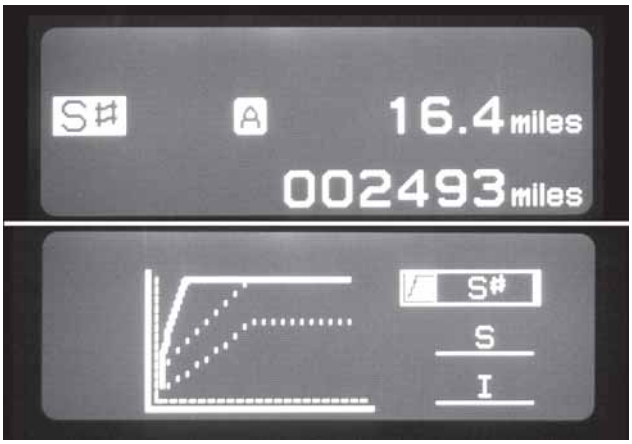
With the easy to read analog gauge, the driver can intuitively improve fuel economy by keeping the needle in the positive zone.



I Mode



S-Mode

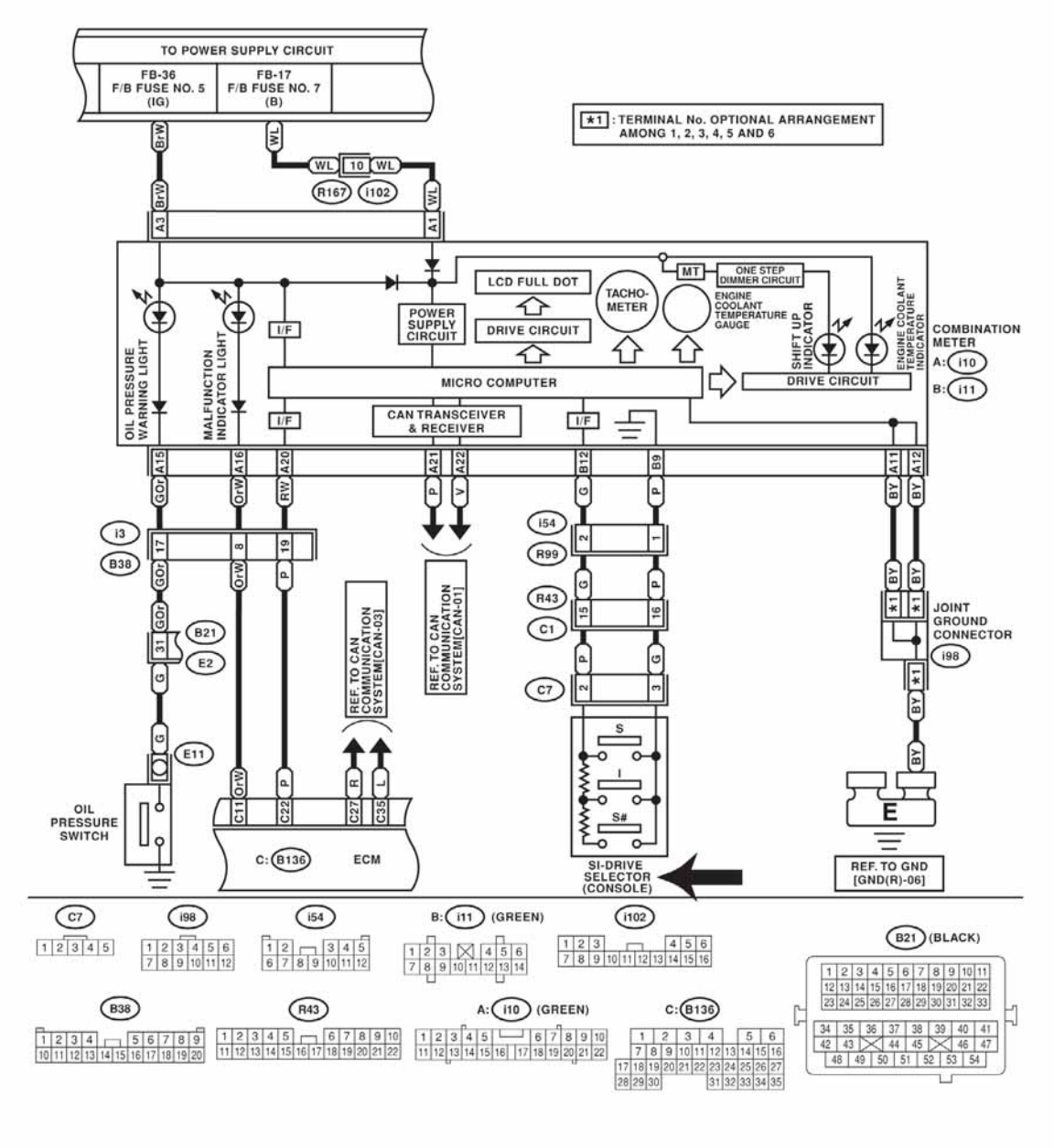


S#-Mode

** Refer to STIS (Subaru Technical Infromation System)* **** New Feature*

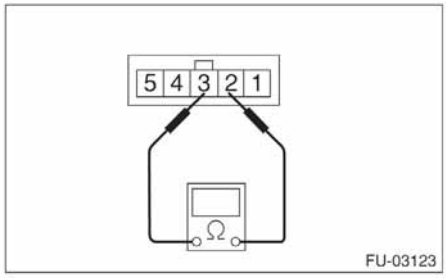
NOTE: TRIP METER FUNCTIONS ARE NOW DISPLAYED ON THE ODOMETER AND CONTROLLED BY PRESSING THE TRIP METER STALK.

THE CLOCK ON THE TRIP METER IS SET TO 24 HOUR TIME AND CANNOT BE CHANGED.



The control switch for the SI drive consists of a momentary contact switch that changes a voltage drop to ground.

** Refer to STIS (Subaru Technical Infromation System)* **** New Feature*



Switch position	Terminal No.	Standard
Sport (when turning the SI-DRIVE selector to the left)	2 and 3	Less than 10
Intelligent (when pushing the SI-DRIVE selector)		0.8 — 1.2 k
Sport Sharp (when turning the SI-DRIVE selector to the right)		2.14 — 3.2 k

This varied ground signal is sent to the combination meter and enters the Low Speed CAN circuit. The signal is then sent to the BIU and then all parts of the High Speed CAN. The ECU controlling the throttle and the TCU controlling the shift points and shifting logic.

NOTE: THERE ARE NO DTC'S FOR SI DRIVE.

THERE IS NO AVAILABLE DATA ON ANY VEHICLE SYSTEM PERTAINING TO SI DRIVE.

CHECK SI DRIVE SWITCH AND CORRESPONDING INDICATOR ON THE ODOMETER FOR PROPER OPERATION.

2007 SECONDARY AIR INJECTION SYSTEM

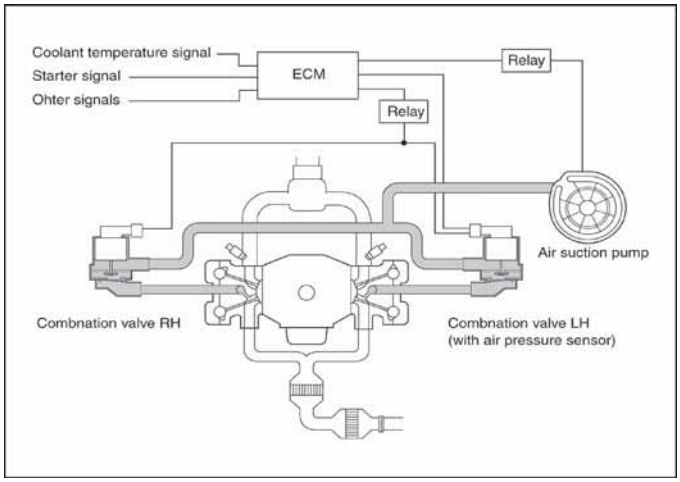
Turbo engines except the STi are equipped with a secondary air injection system.

The Secondary Air Injection System reduces harmful exhaust emissions by introducing a supply of fresh air into the exhaust before it reaches the catalytic converter. The fresh air mixing with the hot exhaust causes the unburned emissions to burn and brings the catalytic converter to operating temperature must faster.

The fresh air enters the exhaust from behind a fresh air port located behind each exhaust valve. An electric Secondary Air Pump provides the force necessary to supply the quantity of air needed for mixing with the exhaust. The air from the secondary air pump is divided between the left and right side of the engine. The fresh air is admitted into the exhaust by the action of a reed valve contained in the left and right side combination valves. A metal pipe carries the fresh air to each cylinder head. The pipe must be disconnected from the cylinder head before head removal.

Secondary Air Pump

The Secondary Air Pump compresses the fresh air which enters the pump from the bottom side through a non-serviceable air filter. The performance of the pump is monitored by a pressure sensor located in the top of the left hand combination valve. This check also monitors the performance of the solenoid valves and their ability to close off the passage to the reed valves.

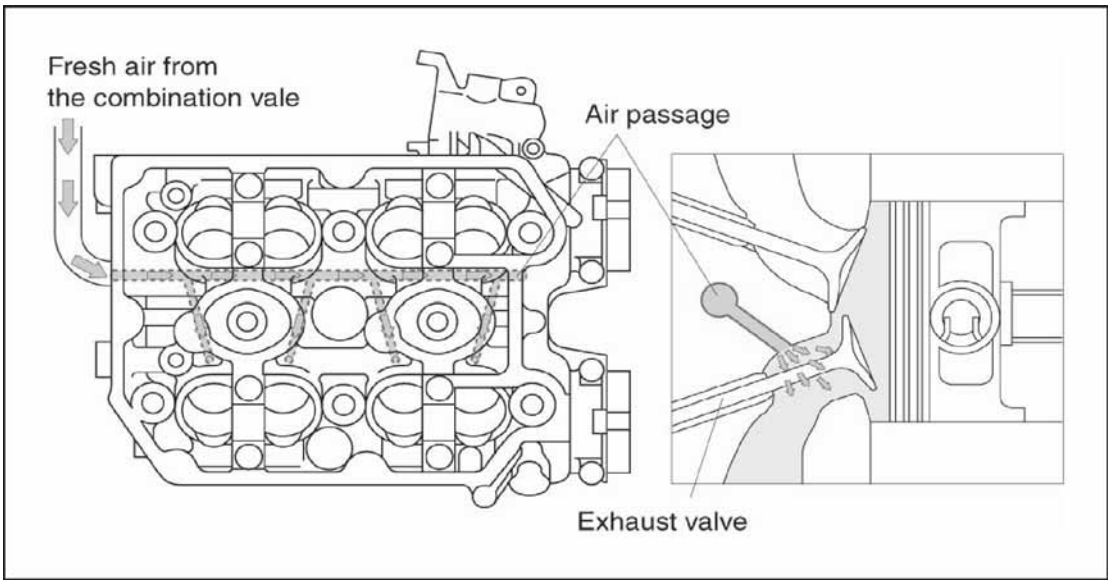


** Refer to STIS (Subaru Technical Infromation System)* **** New Feature*

Combination Valve

The Combination valve is composed of a solenoid, air valve and reed valve. The solenoid operates the air valve which allows fresh air from the secondary air pump to flow to the back side of the reed valve. The exhaust pulses of each cylinder control the reed valve. As the exhaust stroke begins the pressure of the exhaust closes the reed valve. As the exhaust pressure reduces, the reed valve opens, as the fresh air pressure is now higher than the exhaust pressure. Fresh air enters the exhaust stream and the ignition of unburned exhaust emissions begins. The reed valve will remain open until the exhaust pressure increases.

Cylinder head



Air passages are machined inside the cylinder head as shown below. The air compressed from the combination valve is emitted to the backside of the exhaust valve through the air passages.

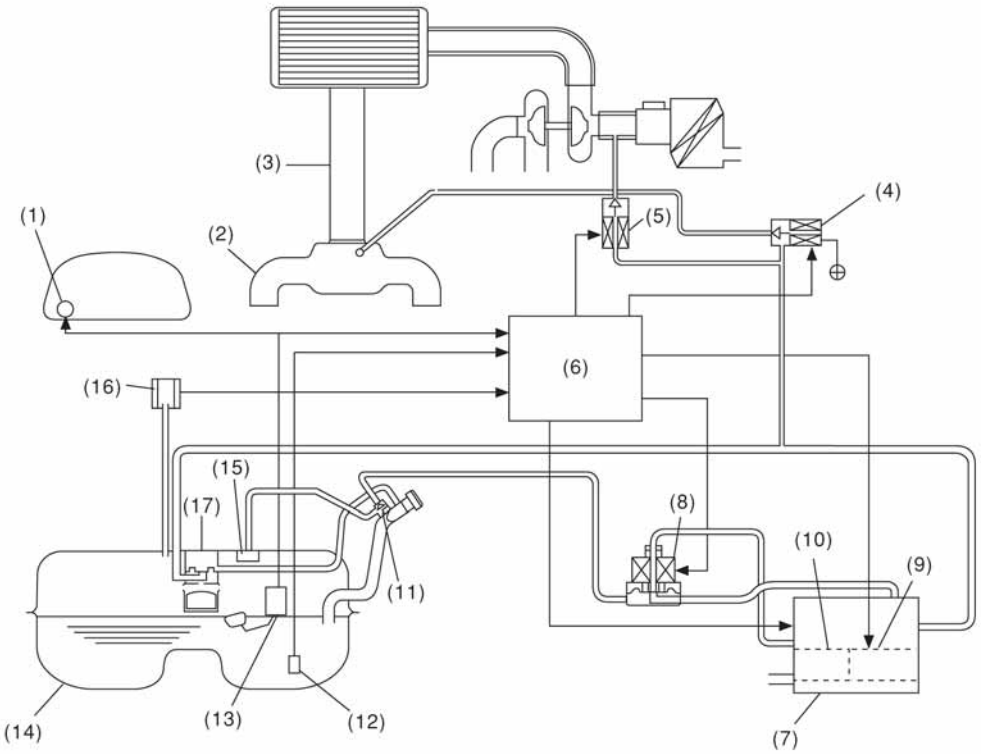
Control of ECM

ECM measures engine coolant temperature, starting condition from the starter signal and other signals, and activates air suction pump and combination valve according to the engine coolant temperature.

The ECM will activate the combination valve relays and the pump relay when the engine coolant temperature is below 150 degrees F (70 degrees C)

The system will operate for 90 seconds (varies according to the coolant temperature)

CPC-2



(1)	Fuel gauge	(7)	Canister	(13)	Fuel level sensor
(2)	Intake manifold	(8)	Pressure control solenoid valve	(14)	Fuel tank
(3)	Throttle body	(9)	Drain valve	(15)	Fuel cut valve
(4)	Purge control solenoid valve	(10)	Drain filter	(16)	Fuel tank pressure sensor
(5)	Purge control solenoid valve 2	(11)	Shut-off valve	(17)	Vent valve
(6)	Engine control module (ECM)	(12)	Fuel temperature sensor		

An additional canister purge duty solenoid, CPC 2, has replaced the mechanical type purge valve. CPC 2 will allow purge operation under boost conditions.

ADDITIONAL INFORMATION

The Tumble Generator Valve (TGV) motor and sensor have been combined into a single unit and is not serviceable. Replace as an assembly.

The TGV operation has been expanded and operates continuously. The TGVs remain closed until approximately 2,800 through 3,300 RPM, dependant on engine load.

In addition to the changes outlined above, a daytime running light indicator "DRL" has been added to the combination meter to alert the driver that the daytime running lights are on. The daytime running lights have been enhanced to include the license plate and tail lights.

LEGACY OPTION CODES AND EQUIPMENT

Legacy 2.5 i (Sedan and Wagon) Standard Equipment (7AA & 7AB)

2.5-Liter Engine
Electronic Throttle Control (ETC)
i-Active Valve Lift System Variable Valve Lift
5-Speed Manual Transmission, Standard
4-Speed Automatic Transmission, Opt. (Sedan)
SPORTSHIFT (Automatic Transmission)
12-Volt Center Console Power Outlet
5-MPH Impact Absorbing Bumpers
17-Inch Alloy Wheels
205/50 R17 all-Season Radial Tires
3-Spoke Urethane Steering Wheel
ABS system: 4 Channel / 4 Sensor
Electronic Brake-force Distribution System (EBD)
Four-Wheel disc Brakes
Active Front Seat Head Restraints
Aerodynamic Side Ground Effects, Body color
Air Conditioning
Air Filtration System
*** AM/FM Stereo with Ingle-Disc CD Player / MP3/WMA Playback, Aux input & 6 Spkr
*** Pre-wired for Satellite Radio
Ambient Temperature Gauge
body Side Molding, Body color
Cargo / Truck Area Grocery Bag Hooks (2)
Carpeted Floor Mats
*** Charcoal Tweed/Warm Ivory Tweed Flat Woven Upholstery
Cup Holder, Dual, Center Console
Cup holder, Rear, Dual Retractable
Cruise Control
Daytime Running Lights (DRL)
Door Handles, Body Color
Driver's Seat, Height Adjustable
Driver's Seat, Lumbar Support
Dual-Mode Digital Trip Odometer
Dual-Stage Deployment Driver's Air Bag (SRS)
Dual-Stage Deployment passenger Front Air Bag (SRS)
Engine Immobilizer
Exterior Mirrors: Foldable, Body Color
Front Door Courtesy Lights
Front Seat Side-Impact Air Bags (SRS)
Headlights Auto-Off with Ignition Switch
headlights, Four Beam
In-Glass Antenna
Internal Child Safety Trunk Release (Sedan)
LATCH System

Map Lights
Off-Delay Dome Light
Off-Delay Illuminated Ignition Switch Ring
Power-assisted Steering
Power Door Locks
Power Mirrors
Power Windows with Driver's Auto-Down
power Windows: Illuminated Window Switches
Pre-Wired for Auto-Dimming Rear View Compass Mirror
*** Pre-Wired for Remote Engine Starter
Rear Gate Spoiler (Wagon)
Rear Seat Arm Rest with Trunk Pass-Through (Sedan)
*** Rear Seatback, 60/40 Split Fold-Down
Rear Seat Headrests for All Seating Positions
Rear Window Wiper, Single Speed and Fixed Intermittent with Washer (Wagon)
Rear Window Wiper De-icer (Wagon)
Remote Keyless Entry System with Answer Back Chirp
Remote keyless entry Trunk Lid Release (Sedan)
Remote Keyless Entry Rear Gate Unlock (Wagon)
Roof Rails: Low Profile with Black Finish (Wagon)
Safety Brake Pedal System
Seatbelts, Front, Three Point with Pretensioners, Force Limiters and Height Adjustable Anchors
Seatbelts, Rear, Three Point for all Three Seating Positions
Side Curtain Air Bags (SRS)
Security System with Answer Back Chirp
Standard Design Instrumentation
Standard Suspension
Tilt Steering Column
Windshield Wipers, Variable Intermittent with Washers & Driver's side Wiper fin
Visor Vanity Mirror, Dual-Illuminated with Lids

Legacy 2.5i Special Edition (Sedan and Wagon) Upgrade from Legacy 2.5 i (7AC & 7AD)

Power Driver's Seat, 8-Way
Power Moonroof, Single (Sedan)
Power Moonroof, Dual: Glass to Glass (Wagon)
4-Speed Automatic Transmission, Standard (Wagon)

Legacy 2.5i Limited (Sedan and Wagon) Upgrade from Special Edition (7AE)

4-Speed Automatic Transmission, Standard
**** AM/FM stereo w/ 6-disc In-Dash CD Changer / MP3/WMA Playback, SRS WOW, Aux input & 6 Spkr
Automatic Climate Control System, Dual Zone
Taupe / Charcoal Leather-Trimmed Upholstery
Front Passengers Seatback Pocket (Net Type)
Leather-Wrapped Parking Brake Handle
Leather-Wrapped Shifter Handle
3-Spoke Leather-Wrapped Steering Wheel
Projector Beam Halogen Fog Lights
Windshield Shade Band
Wood grain Patterned Interior Trim Panels

ALL WEATHER PACKAGE

Four-Stage heated Front Seats
Heated Exterior Mirrors
Windshield Wiper De-Icer

Legacy 2.5 GT Limited (Sedan and Wagon) Upgrade from Special Edition (7AH)

215/45 ZR17 M+S All -Season Radial Tires
2.5 liter DOHC Intercooled Turbo Engine
Active Valve Control System (AVCS) Variable Valve Timing
No i-Active Valve Lift System Variable Valve Lift
5-Speed Heavy Duty Manual Transmission, Standard on Sedan, N/A on Wagon
5-Speed automatic transmission Optional on Sedan, Standard on Wagon
Variable Torque Distribution AWD)VTD) (Automatic transmission)
Aluminum Front Door Sill Plate Covers with Subaru 6 Star Logo
Aluminum Rear Gate Sill Plate Cover
Exterior Mirrors: foldable, Body Color with Integrated Turn Signals
Front Seat: Performance Design
Hood Scoop
3-Spoke Momo Brand Leather-wrapped Steering Wheel with Integrated SPORTSHIFT Controls (5AT Only)
Limited Slip Rear Differential
Larger Diameter 4-wheel Ventilated disc Brakes
Perforated Taupe / Charcoal leather-Trimmed Upholstery
Passengers Seat, lumbar Support
Power Front Passenger Seat, 4-way
Sport-Design Electroluminescent Instrumentation
Underbody Cover
*** SI-DRIVE
*** Tire Pressure Monitoring System (TPMS)

Legacy 2.5 GT Limited w/Navigation (Sedan) Upgrade from Limited (7AJ)

Navigation System
*** Vehicle dynamics Control (VDC) w/ Off Switch
5-Speed Automatic Transmission

Legacy 2.5 GT Limited w/Navigation Spec. B (Sedan) Upgrade from Limited (7AS)

215/45 R18 89Y Summer Tires
18-inch, 10-spoke aluminum-alloy wheels w/ High Luster Finish
Bilstein Sport Suspension with Inverted Front Struts, Aluminum-Alloy Front Control Arms, and Aluminum-Alloy Rear Arms and Upper Links
**** 6-Speed Manual Transmission
Continuous AWD
Standard Touch-Screen GPS Navigation System
Aluminum-Alloy pedal covers including footrest
Aerodynamic Side Ground Effects Molding w/Chrome Trim
3-Spoke Momo Brand Leather-Wrapped Steering Wheel with Integrated Audio Controls
Titanium Metallic Interior Trim Panels
*** Charcoal Gray Leather Trimmed Upholstery with Dusk Blue Alcantara Inserts
*** Special Spec.B charcoal Floor Mates with Dusk Blue piping
*** 8-WAY POWER DRIVER'S SEAT w/MEMORY FUNCTION
*** Torsen Limited Slip Rear Differential

Outback 2.5 i Basic (Sedan) (7DA & 7DB)

2.5-Liter Engine
Electronic Throttle Control (ETC)
i-Active Valve Lift System Variable Valve Lift
5-Speed Manual Transmission, Standard
4-Speed Automatic Transmission, Opt. (Sedan)
SPORTSHIFT (Automatic Transmission)
12-Volt Center Console Power Outlet
5-MPH Impact Absorbing Bumpers
*** 16-Inch Styled Steel Wheels
*** 225/60 R16 95V M+S Raised Black Letter Tires
3-Spoke Urethane Steering Wheel
ABS system: 4 Channel / 4 Sensor
Electronic Brake-Force Distribution System (EBD)
Four-Wheel Disc Brakes
Active Front Seat Head Restraints
Aerodynamic Side Ground Effects, Body color
Air Conditioning
Air Filtration System
*** AM/FM Stereo with Single-Disc CD Player / MP3/WMA Playback, Aux Input & 6 Spkr
*** Pre-wired for Satellite Radio
Ambient Temperature Gauge
Body Side Cladding
Body Side Molding, Body Color, OBK Type
Cargo / Tie-Down Hooks (4)

Cargo Area Grocery Bag Hooks (2)
Carpeted Floor Mats
Cup Holder, Dual, Center Console
Cup Holder, Rear, Dual Retractable
Cruise Control
Daytime Running Lights (DRL)
Door Handles, Black
Driver's Seat, Height Adjustable
Driver's Seat, Lumbar Support
Dual-Mode Digital Trip Odometer
Dual-Stage Deployment Driver's Air Bag (SRS)
Dual-Stage Deployment Passenger Front Air Bag (SRS)
Engine Immobilizer
Exterior Mirrors: Foldable, Black
Front Door Courtesy Lights
Front Passengers Seatback Pocket (Net Type)
Front Seat Side-Impact Air Bags (SRS)
Headlights Auto-Off with Ignition Switch
headlights, Four Beam
Heavy-Duty Raised Suspension
Hood: Raised Strake Type
In-Glass Antenna
LATCH System
Map Lights
Off-Delay Dome Light
Off-Delay Illuminated Ignition Switch Ring
Overhead Console
Power-Assisted Steering
Power Door Locks
Power Mirrors
Power Windows with Driver's Auto-Down
Power Windows: Illuminated Window Switches
Pre-Wired for Auto-Dimming Rear View Compass Mirror
*** Pre-Wired for Remote Engine Starter
Rear Bumper Step Pad, Integrated
Rear Gate Spoiler
Rear Window Wiper De-icer
Rear Window Wiper, Single Speed and Fixed Intermittent with Washer
*Rear Seatback, 60/40 Split Fold-Down
Rear Seat Headrests for All Seating Positions
Remote Keyless Entry Rear Gate Unlock
Remote Keyless Entry System with Answer Back Chirp
Roof Rails: Low Profile with Black Finish
Safety Brake Pedal System
Seatbelts, Front, Three Point with Pretensioners, Force Limiters and Height Adjustable Anchors
Seatbelts, Rear, Three Point for all Three Seating Positions
Side Curtain Air Bags (SRS)
Security System with Answer Back Chirp

Standard Design Instrumentation
Tilt Steering Column
*** Charcoal Tweed/Warm Ivory Tweed Flat Woven Upholstery
Windshield Wipers, Variable Intermittent with Washers & Driver's Side Wiper fin
Visor Vanity Mirror, Dual-Illuminated with Lids

Outback 2.5 i Basic (Sedan) Upgrade from Basic (7DC & 7DD)

Power Driver's Seat, 8-Way
Limited Slip Rear Differential
Multi-Reflector Fog Lights
Cargo Area Cover
Cargo Tray, Removable
12-Volt Cargo Power Outlet
Cross Bars
Splash Guards
17-inch 7-spoke alloy Wheels
225/55 R17 95V M+S Raised Black Letter Tires
** Tire Pressure Monitoring System (TPMS)

ALL WEATHER PACKAGE

Four-Stage Heated Front Seats
Heated Exterior Mirrors
Windshield Wiper De-Icer

Outback 2.5 i Limited (Wagon) Upgrade from Basic (7DE)

3-Spoke Leather-Wrapped Steering Wheel
** AM/FM stereo w/ 6-Disc In-Dash CD Changer / MP3/WMA Playback, SRS WOW, Aux input & 6 Spkr
Automatic Climate Control System, Dual Zone
Door Handles, Body Color
Exterior Mirrors: Foldable, Body Color
Taupe / Charcoal Leather-Trimmed Upholstery
Leather-Wrapped Shifter Handle
Leather-Wrapped Parking Brake Handle
No Overhead Console
Power Moonroof, Dual: Glass to Glass
Windshield Shade Band
Wood grain Patterned Interior Trim Panels
4-Speed Automatic Transmission, Standard

Outback 2.5 XT Limited (Wagon) Upgrade from 2.5 i Limited (7DI)

2.5 Liter DOHC Intercooled Turbo Engine
Active Valve Control System (AVCS) Variable Valve Timing
No i-Active Valve Lift System Variable Valve Lift
5-Speed Heavy Duty Manual Transmission, Standard
5-Speed Automatic Transmission, Optional AWD (VTD) (Automatic Transmission)
17-Inch 5-Spoke Alloy Wheels
3-Spoke Momo Brand Leather-wrapped Steering Wheel with Integrated SPORTSHIFT Controls (5AT Only)
Aluminum Front Door Sill Plate Covers with Subaru 6 Star Logo
Aluminum Rear Gate Sill Plate Cover
Exterior Mirrors: Foldable, Body Color with Integrated Turn Signals
Front Seats: Performance Design
Hood Scoop
Perforated Taupe / Charcoal leather-Trimmed Upholstery
Power Front Passenger Seat, 4-Way
Passengers Seat, Lumbar support
Rear Seat Center Arm Rest
Sport-Design Electroluminescent Instrumentation
*** SI-DRIVE
*** Vehicle Dynamics Control (VDC) w/ Off Switch

Outback 2.5 XT Limited W/Navigation (Wagon) Upgrade from 2.5 XT Limited (7DJ)

Navigation System
5-Speed Automatic Transmission, Standard

Outback 2.5 i Limited (Sedan) Upgrade from 2.5 i Limited (7CA)

4-Speed Automatic Transmission, Standard
17-Inch 7 Spoke Alloy Wheels
225/55 R17 95V M+S Raised Black Letter Tires
Aerodynamic Side Ground Effects
Body Side Cladding
Body Side Molding, Body Color, Outback Type
heavy-Duty Raised Suspension
Hood: Raised Strake Type
Limited Slip Rear Differential
Multi-Reflector Fog Lights
*** Tire Pressure Monitoring System (TPMS)

Outback 3.0 R L.L.Bean Edition (Sedan) Upgrade from 2.5i Limited (7CB)

3.0 Liter DOHC Engine
Active Valve Control System (AVCS) Variable Valve Timing
Active Valve Lift System (AVLS) Variable valve Lift
5-Speed Automatic Transmission, Standard
17-Inch alloy Wheels 3.0 R L.L.Bean Design
*** 3-Spoke Momo Brand Wood/ Black Leather-Wrapped Steering Wheel with Integrated Audio Controls
Aluminum Front Door Sill Plate Covers with Subaru 6 Star Logo
Front Bumper Underguard
Exterior Mirrors: Foldable, Body Color with Integrated Turn Signals
Auto-Dimming Interior Rear View Compass Mirror
Two-Tone Perforated Dark Taupe Leather-Trimmed Upholstery with Taupe bolsters
L.L.Bean Embroidered Floor Mats
L.L.Bean Emblem, Trunk Lid Mounted
L.L.Bean Logo Embossed Front Seats
*** Vehicle Dynamics Control (VDC) w/ Off Switch
Passengers Seat, Lumbar Support
Power Front Passenger Seat, 4-Way

Outback 3.0 R L.L.Bean Edition w/Navigation (Sedan) Upgrade from 3.0R L.LBean (7CC)

Navigation System

VDC-
Outback 3.0 R L.L.Bean Edition (Wagon) upgrade form Outback 2.5i Limited (7DM)

3.0 Liter DOHC Engine
Active Valve Control System (AVCS) Variable Valve Timing
Active Valve Lift System (AVLS) Variable Valve Lift
5-Speed Automatic Transmission, Standard
Variable Torque Distribution AWD (VTD), Standard
17-Inch Alloy Wheels 3.0 R L.L.Bean Design
Aluminum Front Door Sill Plate Covers with Subaru 6 Star Logo
Exterior Mirrors: Foldable, Body Color with Intergrated Turn Signals
Front Bumper Underguard
*** 3-Spoke Momo Brand Wood/ Black Leather-Wrapped Steering Wheel with Integrated Audio Controls
*** Vehicle Dynamics Control (VDC) w/ Off Switch
Auto-Dimming Interior Rear View Compass Mirror
Two-Tone Perforated Dark Taupe Leather-Trimmed Upholstery with Taupe Bolsters
L.L.Bean Embroidered Floor Mats
L.L.Bean Emblem, Trunk Lid Mounted
L.L.Bean Logo Embossed Front Seats
Passengers Seat, Lumbar Support
Power Front Passenger Seat, 4-Way
Aluminum Rear Gate Sill Plate Cover
Rear Seat Center Arm Rest

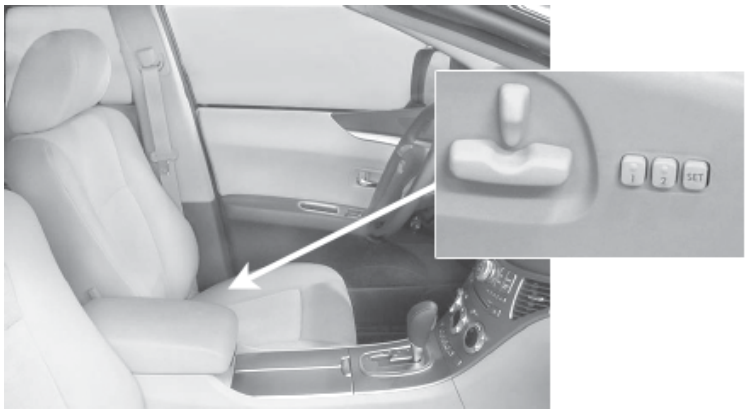
Outback 3.0 R L.L.Bean Edition w/ Navigation (Wagon) upgrade form Outback 3.0 L.L.Bean (7DN)

Navigation System
Models
HP and torque
Turbo
Secondary air injection
Purge control
TGV
RES
Stability control VDC
SI drive
Clutch
6 speed
Anti stall device
Differential
Lights
Instrumentation
Navigation
Audio system

NOTES:

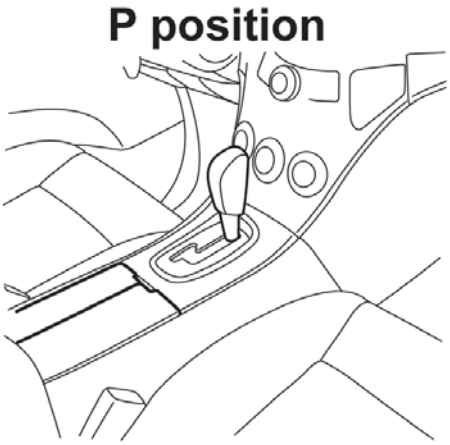
** Refer to STIS (Subaru Technical Infromation System)* **** New Feature*

POWER SEAT MEMORY CALIBRATION PROCEDURE



CALIBRATION PROCEDURE

If the seat is removed or replace with new one, Memory Power Seat System will need to be recalibrated.



1. With the transmission selector lever in the “P” position.
2. Press and hold the SEATBACK switch to the upright MOST position until the beep sounds once.
3. Press and hold the SLIDE switch to rear MOST position until the beep sounds once.
4. Press and hold the TILT switch to lower MOST position until the beep sounds once.
5. Press and hold the LIFTER switch to lower MOST position until the beep sounds once.
6. When you release the LIFTER switch, the beep sounds three times (OK signal).

2007MY FORESTER AND IMPREZA

The 2007 model year Forester and Impreza models maintain the same body style as the 2006 model year. Changes and enhancements to vehicle equipment make it necessary to review this material to maintain a current understanding of this year's product.

The next 14 pages review the changes and contents of equipment on the Forester and Impreza models. Key changes or enhancements include: Sirius satellite radio capability, engine power output specifications and the deletion of sodium filled exhaust valves (always consult the newest service bulletins and service information to stay current with vehicle or changes enhancements).

Also being introduced to Impreza turbo models is the Secondary Air Injection System. (Refer back to page 67)

2007 FORESTER

EMISSIONS

Partial Zero Emission Vehicle (PZEV) Standard

2.5 Liter (Non-Turbo) Engine models

The Partial Zero Emission Vehicle (PZEV) standard has been adopted for non-turbo 2007 model year Forester vehicles to comply with California Air Resources Board (CARB) Low Emission Vehicle (LEV) standards.

PZEV vehicles are required in the following states that have adopted the California Air Resources Board (CARB) Low Emission Vehicle (LEV) standards:

- California
- Massachusetts
- Vermont
- Maine
- New York

The 2.5 Liter (non turbo) engine models sold in the remaining 45 states are manufactured as Federal Specification U6: Tier II / Bin 5.

These models cannot be sold in CA, MA, ME, NY and VT states.

ENGINE

APPEARANCE

2.5XT Limited models: Engine cover 6-star logo will be in black paint (formerly silver)
Horsepower and Torque Ratings
Max horsepower and max torque ratings for the 2.5L Turbo engines change this year to comply with modifications to SAE spec J1394
Horsepower: 224 hp @ 6600 rpm
Torque: 226 lb-ft @ 3600 rpm
Cylinder Heads
2.5XT Limited models: Sodium filled exhaust valves have been deleted

BRAKES
2.5X base models: Electronic Brake Force Distribution (EBD) added

WHEELS & TIRES
2.5X L.L.Bean Edition model: Wheels will have a “gray gloss finish” instead of a “polished finish”
2.5XT Limited models: 17" 5-Spoke aluminum alloy wheels
2.5XT Limited models: P215/55 R17 93H Yokohama G900A Tires

CENTER CONSOLE / DASH

HVAC
All models (except 2.5X base): Hot/Cold indicators on rotary dials are white [formerly red (hot) and blue (cold)]

ASHTRAY
2.5X base models: Ashtray will now be a storage din

All models (except 2.5X base): Ashtray will be deleted, and area will become an auxiliary audio jack

GLOVE BOX
All models (except 2.5XT Limited): Glove box damper deleted

AUDIO SYSTEM
All models: Weatherband (WB) deleted

All models (except 2.5X base): Sirius Satellite Radio Capability
Note: Accessory kit required for activation (kit includes receiver and antenna)
All models (except 2.5X base): CD player can read MP3/WMA/CD-RW formatted discs
2.5XT Limited models: 155 watt audio - previously listed as 120 watt audio

AUXILIARY AUDIO JACK
All models (except 2.5X base): Auxiliary Audio Jack has been added

2007 FORESTER OPTION CODES AND EQUIPMENT

Forester 2.5X Standard (FK)

2.5-Liter SOHC w/i-Active Valve Lift System
Electronic Throttle Control (ETC)
5-Speed Manual Transmission (Standard)
4-Speed Electronic Direct Control
Automatic Transmission (Optional)
12-Volt Cargo Power Outlet
12-Volt Center Console Power Outlet
16-Inch Steel Wheels
215/60 R16 Tires
ABS System: 4-Channel / 4-Sensor
*** Electronic Brake Force Distribution (EBD)
Active Front Seat Head Restraints
Air Conditioning
Air Filtration system
Aluminum-Alloy Hood
AM/FM Stereo with Single-Disc CD Player / 4 Speakers
Ambient Temperature Gauge
Desert Beige or Graphite Gray Fabric Upholstery
Bumpers and Body Side cladding, Body color
C-Pillar: Body Colored
Cargo Area Cover
Cargo Area Grocery Bag Hooks (2)
Cargo Tie Downs (4)
Cup Holder, Dual Front; Dual in Center Armrest
Cup Holder, Rear, Dual Retractable
Cruise Control
Daytime Running Lights (DRL)
Driver's Seat, Lumbar Support
Driver's Seat, Height Adjustable
dual-Mode Digital Trip Odometer
Dual Front Air Bags SRS FMVSS 208
Floor Mats: Carpeted
Front Seat Head / Chest Side-Impact Air Bags (SRS)
Front Seatback net pocket (Passenger)
Headlights Auto-Off with Ignition Switch
Heavy-Duty Raised Suspension
Hill Holder System (Manual Transmission Models Only)
HVAC Control Panel: Silver Metallic Finish
LATCH System
Multi functional Center Console Box + Sliding Arm Rest
Multi-Reflector Fog Lights
Overhead Console
Power-Assisted Steering
Power Door Locks

** Refer to STIS (Subaru Technical Infromation System)* **** New Feature*

Illuminated Power Door Lock Switches
Power Mirrors
Power Windows with Driver's Auto-Down
Illuminated Power Window Switches
Rear Seatback, 60/40 Split Fold-Down
Rear Seat Armrest
Rear Seat Headrests for all Three Seating Positions
Rear Window Wiper De-Icer
Rear Window Wiper with Washer
Remote Keyless Entry System with Answer Back Chirp
Roof Rails with Cross Bars
Safety Brake Pedal System
Seatbelts, Front, Three Point Front with Pretensioners and Force Limiters and Height Adjustable shoulder Belt Anchors
Seatbelts, Rear, Three Point for All Three Seating Positions with Height Adjustable Outboard Shoulder Belt Anchors
Security System
Tilt Steering Column
Vanity Mirrors: Dual with Lids
Visor, Tricot Material
Windshield Wipers, Variable Intermittent

Forester 2.5X + Premium Pkg (SL) upgrade from Forester 2.5X (FK)

Automatic Climate Control System
AM/FM/ Stereo with 6 Disc (*** Plays MP3/WMA/CD-RW Discs)
*** SIRIUS Satellite Radio Capability
*** Auxiliary Audio Jack
Chrome Inner Door Handles
Larger Exterior Mirrors, Body color W/ Integrated Side Turn Lamp Signals
Exterior Door Handles, Body Color
Illuminated Ignition Switch Ring
Leather-Wrapped Parking Brake Handle
Leather-Wrapped Shifter handle
Leather-Wrapped Steering Wheel
Power Driver's Seat, 8 Way
16-Inch Alloy Wheels: 8-Spoke
Rear Disc Brakes
Limited-Slip Rear Differential
Dual-Mode Heated Front Seats
Heated Exterior Mirrors
Windshield Wiper De-Icer
Power Moonroof with Auto-Open and Close

Forester 2.5X L.L.Bean Edition (TL) upgrade from Forester 2.5X + Premium pkg (SL)

16-Inch Alloy Wheels: 10-spoke with a “Gray Gloss’’ Finish
4-Speed Electronic Direct control Automatic Transmission (Standard)
Auto-Dimming Interior Rear View Compass Mirror
Desert Beige Leather-Trimmed Upholstery with Perforated Alcantara Bolsters
Bumpers and Body Side Cladding: Platinum Silver Metallic or Urban Gray Metallic***
L.L.Bean Emblem, Rear Gate Mounted
L.L.Bean Embroidered Floor Mats
L.L.Bean Logo Embossed Front Seats
Rear Seatback and Cargo Floor and Side Trim: Durable Hard Surface
Rear Self-Leveling Suspension
Security System with Shock Sensor
Steering Wheel: Momo Leather Wrapped and Real Wood
Shifter: Leather Wrapped and Wood

Forester 2.5XT Limited (TL) upgrade from Forester 2.5X + Premium pkg (SL)

2.5-Liter DOHC Intercooled Turbo Engine
Active valve Control System (Variable Valve timing)
*** 17-Inch 5-Spoke Alloy Wheels
*** P215/55 R17 93H Tires
Aluminum Front Door Sill Plate covers with Forester Badging
AM/FM/ Stereo with 6 disc (*** Plays MP3/WMA/CD-RW Discs) In-Dash CD Changer / 7 Speakers
Sport-Design Gauges: Luminescent needles with Metallic Needle Caps
Rear Sub-Woofer Speaker
Anthracite Black or Desert Beige Leather-Trimmed Upholstery
Engine Immobilizer
Hood Scoop
2.5XT Chrome Badge with Red Outline
Engine Cover

2007 IMPREZA

ENGINE

2.5L SOHC: (NON-TURBO)
Horsepower: 173 HP @ 6000 RPM
Torque: 166 LB-FT @ 4400 RPM

2.5L INTERCOOLED TURBO
Horsepower: 224 HP @ 5600 RPM
Torque: 226 LB-FT @ 3600 RPM

2.5L INTERCOOLED HIGH-OUTPUT TURBO
Horsepower: 293 HP @ 6000 RPM
Torque: 290 LB-FT @ 4400 RPM

The WRX STI and WRX STI Limited now utilize solid rubber engine mounts
The Sodium filled exhaust valves have been deleted from the WRX STI and WRX STI Limited
The WRX STI and WRX STI Limited now have a revised cylinder head design to improve cooling

EMISSIONS
The WRX STI and WRX STI Limited now comply with the LEV 2 emissions rating
The WRX STI and WRX STI Limited now have a secondary air pump to improve emissions

TRANSMISSION
The WRX STI and WRX STI Limited now have new gear ratios in the 2nd, 3rd, and 4th gear for improved fuel economy and drivability

ELECTRICAL
The WRX STI and WRX STI Limited now utilize a 110A alternator

AWD SYSTEM
The WRX STI and WRX STI Limited now utilize a TORSEN Limited Slip Rear Differential in the for enhanced performance

WHEELS
17 inch 10-spoke aluminum-alloy wheels with 225/45R17 tires are standard on all WRX STI Limited models

SUSPENSION: ALL WRX SEDAN
Front:
Aluminum alloy lower L-Arms have been changed to steel on the front suspension of the WRX sedan

Rear:
Aluminum alloy lower parallel links have been changed to steel on rear suspension of the WRX sedan

SUSPENSION: STI AND STI LIMITED

Front:

The high caster settings used in 2006 have been changed to normal caster settings for 2007

Rear:

The 20mm rear stabilizer bar for 2006 has been changed to a 19mm stabilizer bar for 2007

WHEELBASE:

The wheelbase of the WRX STI and WRX STI Limited is 99.4 due to the normal castor settings of the suspension

BRAKES

The WRX STI Limited has black Brembo brake calipers with white lettering

AERODYNAMICS

The WRX STI Limited has a new trunk lip spoiler

INSTRUMENT PANEL

The WRX STI Limited has new Dark Gray metallic trim on the audio bezel, center HVAC vents and side HVAC vents
The WRX STI Limited has new red hazard button
The ashtray has been replaced with a storage pocket on 2.5i, WRX TR, and Outback Sport models
The ashtray has been replaced with an auxiliary audio input on WRX, WRX Limited, WRX STI, WRX STI Limited, and Outback Sport Special Edition
The lighter socket has been replaced with a standard power outlet on all Impreza models

SEATS

The WRX STI Limited models have Anthracite Black Perforated Leather Trimmed Seating with Embroidered Gray STI Logo in Front Seat

The WRX STI and WRX STI Limited models now have a rear seat center armrest with trunk pass-through as standard equipment

AUDIO SYSTEM

The WRX, WRX Limited, WRX STI, and WRX STI Limited receive the following new audio system
120 watt AM/FM Premium Audio System including 6-disc In-Dash CD Changer
6 Upgraded Speakers
Auxiliary Audio Input
MP3/WMA capability for the CD player
SIRIUS Satellite Radio Capability
Volume Memory when switching between audio modes
The Outback Sport Special Edition audio system includes all of the items listed above with the addition of the following items:
120 watt Subwoofer
SIRIUS Satellite Radio Receiver (Port Installed)

IMPREZA 2007 OPTION CODES AND EQUIPMENT

Impreza 2.5i Sedan (FG) Sport Wagon (NG) Standard Equipment

2.5-Liter SOHC Engine
Electronic Throttle Control (ETC)
5-Speed Manual Transmission (Standard)
4-Speed Electronic Direct Control Automatic Transmission (Optional)
5-MPH Impact-Absorbing Bumpers
16-Inch 5-Spoke Aluminum-Alloy Wheels
205/55 R16 89V M+S Tires
Carpeted Floor Mats
ABS System: 4 Channel / 4 Sensor
Four-Wheel Disc Brakes
Electronic Brake Force Distribution (EBD)
Active Front Seat Head Restraints
Front Seat Head / Chest Side Impact Airbags
Subaru Advanced Airbag System
Manual Air Conditioning
AM/FM Stereo with Single-Disc CD Player / 4 Speakers
In-Glass Antenna
*** Audio Face Plate: Gray Metallic Finish
Cargo Area Cover (Sport Wagon)
Cargo Area Grocery Bag Hook (1 Left Side Sport Wagon)
Cruise Control
Cup Holder, Dual, Center Console
Cup Holder, Rear, Dual Retractable
Daytime Running Lights (DRL)
Door Handles, Body Color
Dual-Mode Digital Trip Odometer
Exterior Mirrors, Foldable Black
Fenders, Wide Type
Fog Light Insert Covers
Headlights Auto-Off with Ignition Switch
LATCH System
*** Leather-wrapped Shifter Handle
Multi-Reflector Halogen Headlights, Four Beam
Off-Delay Dome Light
Seatback pocket on front passenger seat
Aerodynamic Side Ground Effects, (Sport Wagon)
*** Storage Pocket in place of ashtray
Illuminated Ignition Switch Ring
*** Interior Trim: Gray Metallic Finish
Power-Assisted Steering
Power Door Locks
Power Mirrors

Power Windows with Driver's Auto-Down
Pre-Wired for Security System
Rear Window Wiper De-Icer
Rear Window Wiper, Fixed Intermittent with Washer
Rear Seat Arm Rest with Trunk Pass-Through (Sedan)
Rear Seatback, 60/40 Split Fold-Down (Sport Wagon)
Rear Seat Headrests for all Seating Positions
Roof Rails (Sports Wagon)
Security System (Shock Sensor Optional)
Remote Keyless Entry system with Answer Back Chirp
Safety Brake Peal System
Seatbelts, Front, Three Point with Pretensioners, Force Limiters and Height Adjustable Anchors
Seatbelts, Rear, Three Point for all Three-Seating Positions with Height Adjustable Outboard Shoulder Belt Anchors
Sport-Tuned Suspension, Front Wide Track
Tilt Steering Column
Trailer Harness Connector (Sport Wagon)
Visor Vanity Mirrors: Dual with Lids
Windshield Wipers, Variable Intermittent with Washers
Woven Cloth Upholstery
Sport-Design Font Seats
Sport Tail Pipe, Large Single Outlet
Anthracite Black Seat Fabric with gray side bolsters
Aluminum-Ally Hood
Ambient Temperature Gauge

Impreza Outback sport (NG) Model upgrade from 2.5i Sport wagon (NG)

12-Volt Cargo Power Outlet
16-Inch 7-spoke Aluminum Alloy Wheels
*** Body Side Molding, Urban Gray Metallic
*** Bumpers and Lower Body Color, Urban Gray Metallic
Cargo Area Light
Cargo Tie Down Hooks (4)
Cargo Tray, Removable
Dual Overhead Map Lights
Desert Beige or Graphite Gray, Gray Tricot Upholstery
Heavy-Duty Raised Suspension
Projector Beam Halogen Fog Lights
Rear Bumper Step Pad
Two-Tone Body Color
Roof Rails with Cross Bars

** Refer to STIS (Subaru Technical Infromation System)* **** New Feature*

Impreza Outback Sport Special Edition (NG) upgrade from Outback Sport

*** Automatic Climate Control System
*** 240 Watt AM/FM Premium Audio System Including 6-Disc In-Dash CD Changer
*** 6 Upgraded Speakers and Subwoofer
*** Auxiliary Audio Input
*** MP3/WMA Capability
*** Sirius Satellite Radio Capability

Impreza WRX Sedan (FG) upgrade from 2.5i Sedan (FG)

2.5-Liter DOHC Intercooled Turbo Engine
17-Inch 7-Spoke Aluminum-Alloy Wheels
2145/45R17 All-Season Tires
Automatic Climate Control system
Electronic Throttle Control (ETC)
No Active Front Seat Head Restraints
Chrome Inner Door Handle
Dual Overhead Map Lights
Hood Scoop
Limited-Slip Rear Differential: Viscous type
Projector Beam Halogen Fog Lights
Aerodynamic Side Ground Effects, Body Color
Aluminum-Alloy Pedal Covers on Manual Transmission Models
*** 120 Watt AM/FM Premium Stereo with 6-Disc In-Dash CD Changer 6 Upgraded Speakers
*** Auxiliary Audio Input
*** MP3/WMA Capability
*** SIRIUS Satellite Radio Capability
Exterior Mirrors, Body Color
Front Seats: Performance Design with Integrated
Fixed Head Restraints
Leather-Wrapped Steering Wheel
Sport Design Instrumentation
Engine Immobilizer
4-Piston Front and 2-Piston Rear Fixed Brake calipers
Red Painted Brake Calipers with SUBARU in White Lettering
Active Valve Control System (AVCS) Variable Valve Timing

Impreza WRX TR Sedan (FG) upgrade from WRX Sedan (FG)

Manual Climate Control System
Sport-Design Front Seats
Active Front Seat Head Restraints
Black Inner Door Handle
STI Type Fog Light Insert Covers
Seatback Pocket on front Passenger Seat DELETE
Retractable Rear Cupholder DELETE
AM/FM Stereo wit Single-Disc CD Player
4 Speakers
Exterior Mirrors, Foldable Black
Polyurethane Hand Brake Lever
Projector Beam Halogen fog Lights DELETE
Aerodynamic Side Ground Effects DELETE

Impreza WRX Limited Sedan (GZ) upgrade from WRX Sedan (FG)

Anthractie Black Leather Seat Upholstery
Dual-Mode Heated Front Seats
Heated Exterior Mirrors
Windshield Wiper De-Icer
Power Moonroof
Truck Spoiler
4-Speed Electronically Controlled Automatic Transmission (Optional)

Impreza WRX Limited Sedan (GE) Exception from WRX Limited Sedan (GZ)

Desert Beige Leather Seat Upholstery

Impreza WRX Sport Wagon (NG) Upgrade from 2.5i Sport Wagon (NG)

2.5-Liter DOHC Intercooled Turbo Engine
17-Inch 7-Spoke Aluminum-Alloy Wheels
2145/45R17 All-Season Tires
Aluminum-Alloy Pedal Covers on Manual Transmission Models
*** 120 Watt AM/FM Premium Stereo with 6-Disc In-Dash CD Changer 6 Upgraded Speakers
*** Auxiliary Audio Input
*** MP3/WMA Capability
*** SIRIUS Satellite Radio Capability
Automatic Climate Control system
Electronic Throttle Control (ETC)
No Active Front Seat Head Restraints
Cargo Area Light
Cargo Tie Down Hooks (4)
Dual Overhead Map Lights
Exterior Mirrors, Body Color
Fenders, Standard Type
Front Seat: Performance Design with Integrated Fixed Head Restraints
Hood Scoop

** Refer to STIS (Subaru Technical Infromation System)* **** New Feature*

Illuminated Ignition Switch Ring
Leather-Wrapped Parking Brake Handle
Limited-Slip Rear Differential: Viscous Type
Map Lights
Leather-Wrapped Steering Wheel
Projector Beam halogen Fog Lights
Rear Gate Spoiler
Sport Design Instrumentation
Sport-Tail Pipe, Single Outlet
Sport-Turned Suspension
Engine Immobilizer
4-Piston Front and 2 Piston Rear Fixed Brake Calipers
Read Painted Brake Calipers with SUBARU i White Lettering
Active Valve Control System (AVCS) Variable Valve Timing

Impreza WRX Limited Sport Wagon (VI) Upgrade from 2.5i Sport Wagon (NG)

Anthracite Black Leather Trimmed Seat Upholstery
Dual-Mode Heated Front Seats
Heated Exterior Mirrors
Windshield Wiper De-Icer
Power Moonroof
4-Speed Electronically Controlled Automatic Transmission (Optional)

Impreza WRX Limited Sport Wagon (VH) Exception from WRX Limited Sport Wagon (VI)

Desert Beige Leather Trimmed Seat Upholstery

Impreza WRX STI Sedan (CG) upgrade from WRX Sedan (FG)

2.5-Liter DOHC Intercooled High Boost Turbo Engine
Intercooler Water Spray Cooler, Manually Operated
Electronic Throttle Control (ETC)
17 x 8 Inch BBS Aluminum-Alloy Wheels: Gold Painted
225/45 R17 90W Summer, Directional Tires
6-Speed Manual Transmission
Short Throw Shifter
AWD: Driver Control Center Differential (DCCD) With: mechanical Limited-Slip Center Differential and Steering Angle Sensor
ABS System: Super Sport 4-Channel / 4-Sensor
Four-Wheel Disc Brakes, Heavy-Duty, Brembo Brand
Blue Alcantara Upholstery with Black Knit Bolsters
Front Seat: Performance Design with Integrated Fixed Head Restraint and Embroidered STi Logo on Front Seatbacks
No Active Front Seat Head Restraints Option
headlights: High Intensity Discharge (HID), four-Beam with Smoke Tinted Lenses
Daytime Running Lights
Hood Scoop

Impreza WRX STI Sedan (CG) upgrade from WRX Sedan (FG)

Instrument Cluster: STI Type With Revolution Indicator
Key: Molded Plastic Type Master Key
Limited-Slip Front Differential: Helical
*** Limited-Slip Rear Differential: Torsen
Power Assisted Steering: Quick-Ratio
*** STI Brand Leather-Wrapped Steering Wheel
STI Type Fog Light Insert Covers
Sport-Tail Pipe, Large Single Outlet, STi Logo
Sport-Turned performance Suspension: Inverted Strut Type Suspension
Trunk Spoiler: Large Type
Underbody Cover
Windshield Wiper Fin, Driver's Side
Roof Vane Spoiler, Black Aluminum
Rear Diffuser, Underbody

Impreza WRX STI Sedan (TG) Exception from WRX STI Sedan (CG)

17 x 8 Inch BBS Aluminum-Alloy Wheels: Silver Painted

Impreza WRX STI Limited Sedan (CG) upgrade from WRX STI Sedan (FG)

17 x 8 Inch JJ Aluminum-Alloy: High Luster Silver Painted
*** New Truck Lip Spoiler
*** Roof Vane Spoiler Delete
*** Projector Beam halogen Fog Lights
*** High Mount Stop Light on Rear Shelf
*** STI Door Decal Delete
*** Dual Mode Heated Front Seats
*** Carpet with increased Sound Insulation
*** Driver/Passenger Fender Liner
*** New Dark Gray Metallic Interior Trim
*** New Dark Gray HVAC Controls with Silver Trim Rings
*** Red Hazard Button
*** Brembo Black Calipers with White Lettering
*** Black Gloss B-Pillar Trim
*** Power Moonroof: Tilt Up and Internal Retracting
*** Anthracite Black Perforated Leather Trimmed Seating
*** Embroidered Gray STI Logo in Front Seat
*** Dark Gray Surging on Floor mats to Match Gray STI Logo in Front Seat
*** Commemorative Numbering Plate #001/800
*** Auto-Dimming Compass Mirror (100% Port Installed Accessory)
*** Black Front Lip Spoiler with STI Logo (100% Dealer Installed Accessory)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