Service Training

Self Study Program 890303

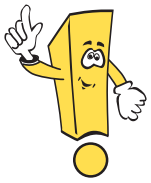
The 2011 Jetta

Volkswagen of America, Inc.
Volkswagen Academy
Printed in U.S.A.
Printed 07/2010

Course Number 890303

Contents

Note



Important!

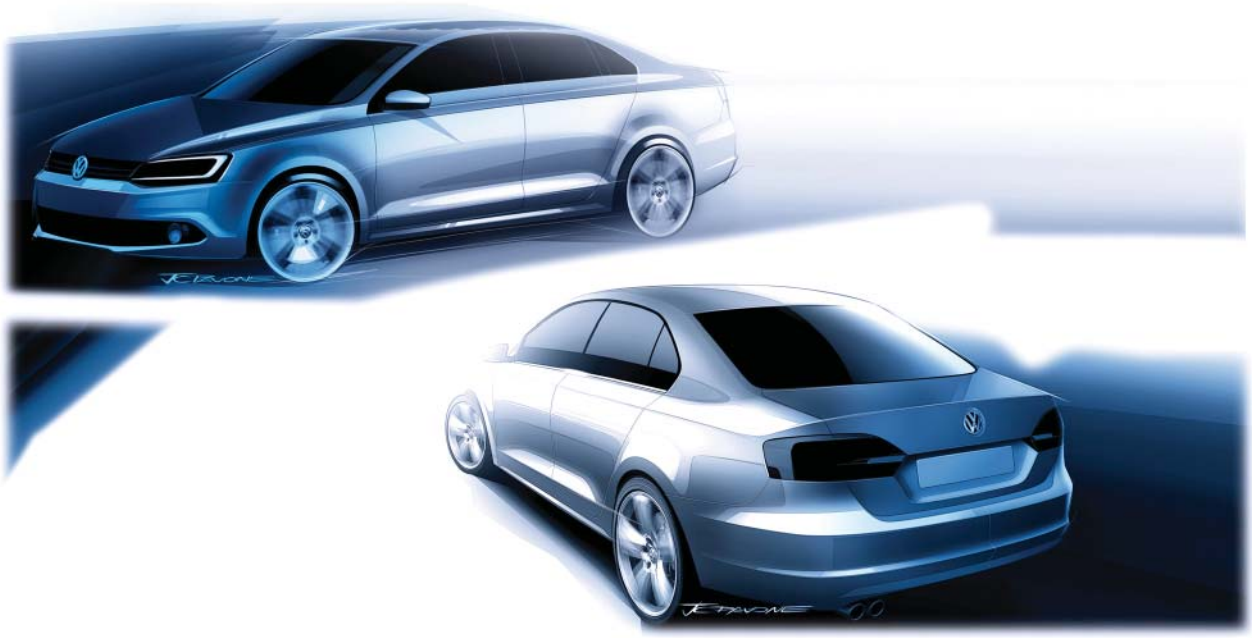
This Self-Study Program provides information regarding the design and function of new models.
This Self-Study Program is not a Repair Manual.

This information will not be updated.
For maintenance and repair procedures, always refer to the latest electronic service information.

Page intentionally left blank

2011 Jetta - Design - Technology - Comfort

The 2011 Jetta traces its beginnings in the USA, Canada and in Mexico and ties itself to the success of its predecessor. It continues in the modern stylistic tradition of Volkswagen by blending modern technology and high comfort. With its balanced relationship of technical equipment and comfort characteristics it is well-suited for varying markets and customer needs.



S468_002

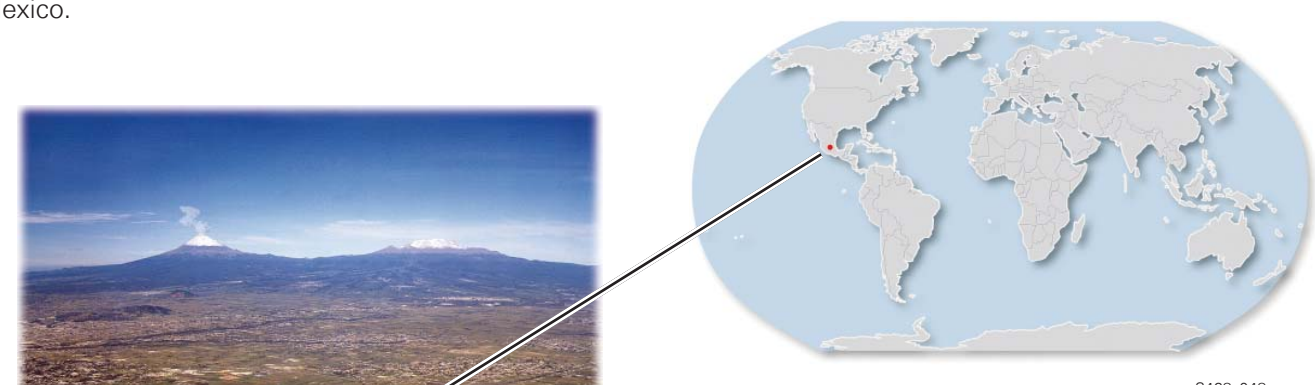
2011 Jetta Characteristics

- Elegant front headlight and rear tail lamp design
- Modern safety and convenience packages
- Highest quality
- Generous interior space
- Wider and longer dimensions
- New chassis
- New body structure

Introduction

Production

The 2011 Jetta is produced in the Volkswagen plant in Puebla, Mexico.



S468_048

S468_047

Puebla Plant

The 2011 Jetta is built at Volkswagen's Puebla, Mexico plant.

This plant began operation in 1964, manufacturing the old style Beetle.

Currently, the Puebla plant employs approximately 14,000 people and also produces the New Beetle, among other vehicles.

S468_049

Production Highlights

A high standard of quality is ensured by the ultramodern equipment in the Puebla factory.

Engineers and factory workers collaborated during the development of the new Jetta to assure the production process would go smoothly.

Modern assembly lines and modular manufacturing also help to produce a high quality product.

Production of the 2011 Jetta has made the Puebla factory a model for production plants.

S468_053

S468_054

Introduction

The 2011 Jetta

The 2011 Jetta sets new standards in many areas in its class:

- Security
- Design
- Quality
- Comfort
- Spaciousness
- Functionality

Radio antennas in the back window, telephone antenna (GSM), navigation system antenna (GPS) and antenna for satellite tuner (SAT) in the roof antenna

New tail lamp design

Single switch in the rear center console allows rear seat occupants to operate door locks

Fender designed audio system (optional)

S468_055

Vehicle access and starting system KESSY (optional)

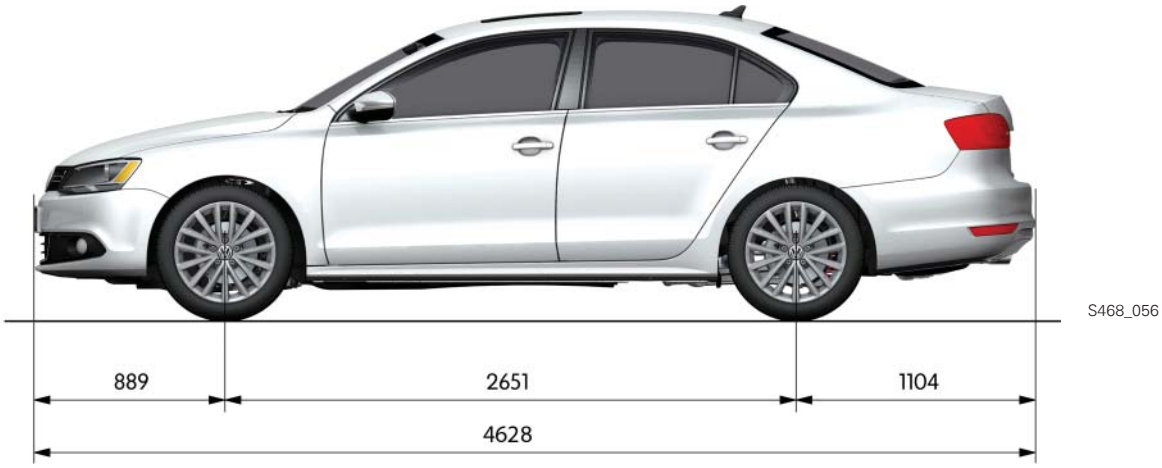
Wider front and rear track for improved driving dynamics

Manual air conditioning system or
2- zone Climatronic

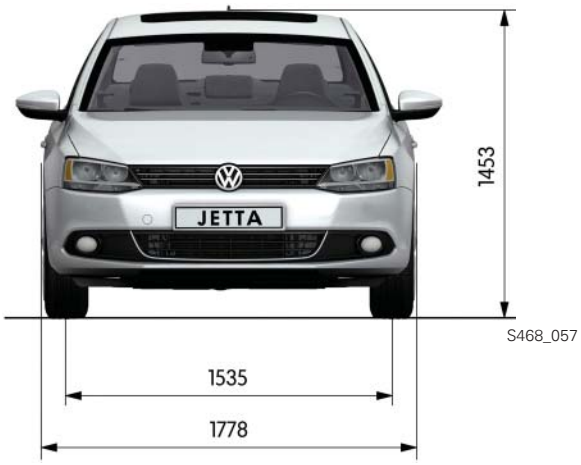
Introduction

Technical Data

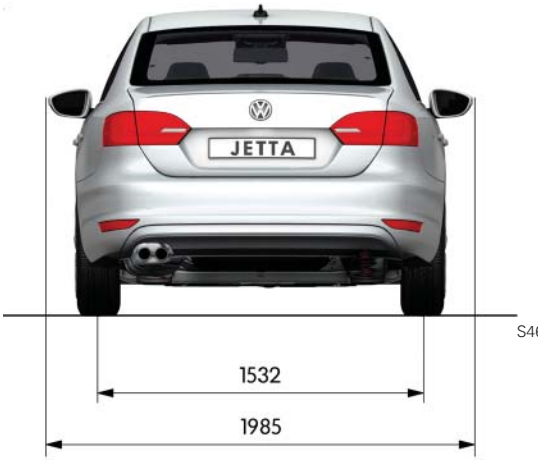
2011 Jetta



S468_056



S468_057

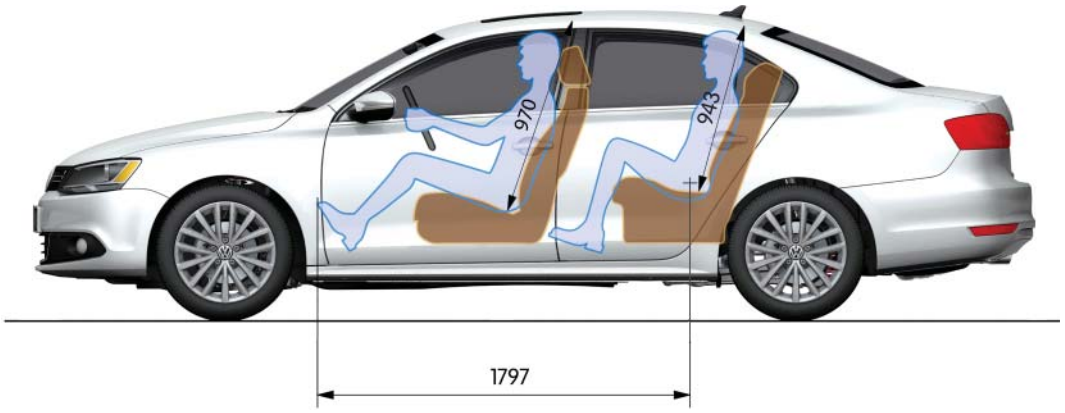


S468_058

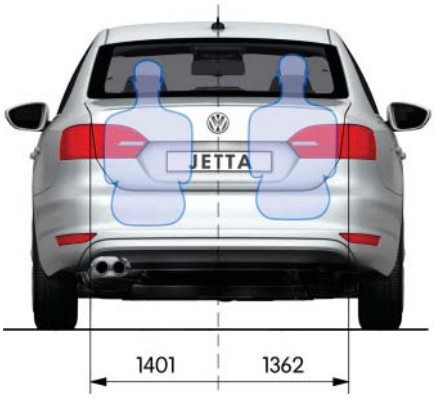
Length	4628 mm (182.2 in)
Width	1778 mm (70 in)
Width incl. Mirrors	1985 mm (78.2 in)
Height	1453 mm (57.2 in)
Wheelbase	2651 mm (104.4 in)

Front Track Width	1527 mm (60.1 in)
Rear Track Width	1533 mm (60.35 in)
Unloaded Weight	1271 - 1441 kg (2804 - 3177 lb)
Payload	494 - 519 kg (1089 - 1166 lb)
Drag Coefficient	0.30 c_w

Interior Dimensions



S468_059



S468_061

Front Headroom	970 mm (38.2 in)
Rear Headroom	943 mm (37.1 in)
Front Shoulder Room	1401 mm (55.2 in)
Rear Shoulder Room	1362 mm (53.6 in)
Passenger Compartment Length	1797 mm (70.75 in)

Fuel Tank Capacity	55 liters (14.5 gallons)
Trunk Volume	0.4 m^3 (15.5 cubic feet)

Body

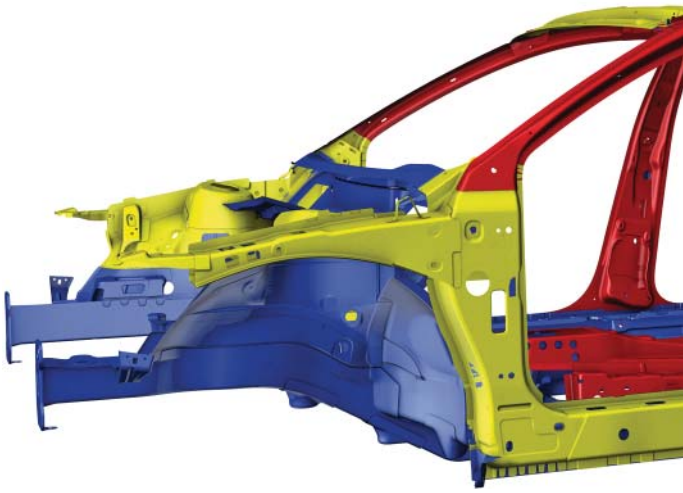
Body Structure

The 2011 Jetta body was designed for advances in the following:

- Lightweight construction
- Vehicle safety
- Handling
- Comfort
- Quality

S468_079

The 2011 Jetta is lighter than the A5 Jetta. At the same time the new body structure offers high crash safety and body rigidity. The weight reduction supports the efforts of Volkswagen toward the reduction of CO_2-emissions.



Lightweight Construction

The lightweight construction is accomplished through:

- Optimal employment of various strength steel types
- Reduction of steel wall thicknesses where possible
- Sophisticated computer-optimized construction

The weight reduction can be divided into three groups:

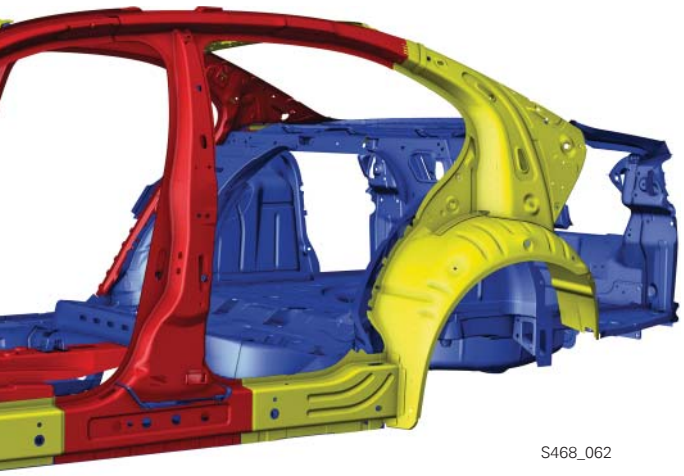
1. Primary Reduction - wide use of warm-transformed steel parts in the base chassis, at the B-pillar and at the roof frame. In addition, tailored blanks were used.
2. Secondary Reduction - reduction of the material thicknesses of less stressed body parts like outer skin parts. The performance characteristics of these parts is preserved.
3. Third Reduction - in the design phase, the placement of the body parts and steel types are focused toward weight reduction. This means that weight is saved by using accurate part design and smaller reinforcements in the correct areas.

Welding Method

The primary method of joining the body parts is spot welding.

- Blue = frame structure ≤ 220 MPa pressure resistance
- Yellow = occupant cell ≤420 MPa pressure resistance
- Red = impact zones >1000 MPa pressure resistance

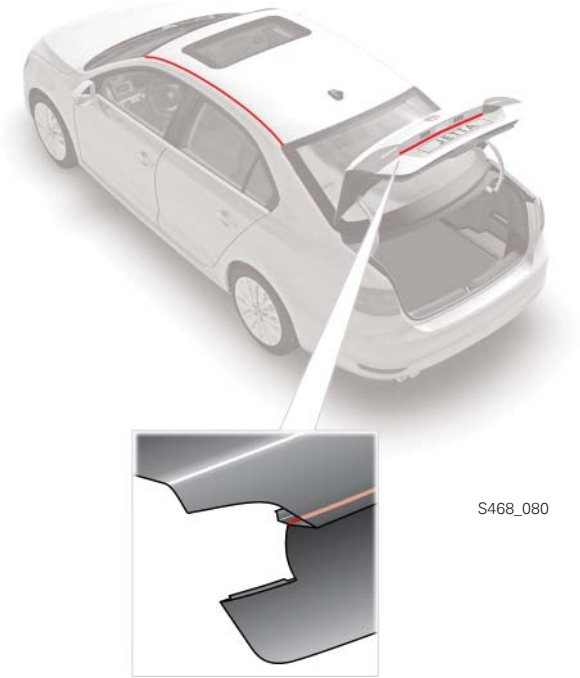
1 Megapascal (MPa) = 145 Pounds per Square Inch (PSI)



S468_062

Laser-Welding

The laser welding is used on the roof and trunk for a strong bond and a smooth aesthetic appearance.



S468_080

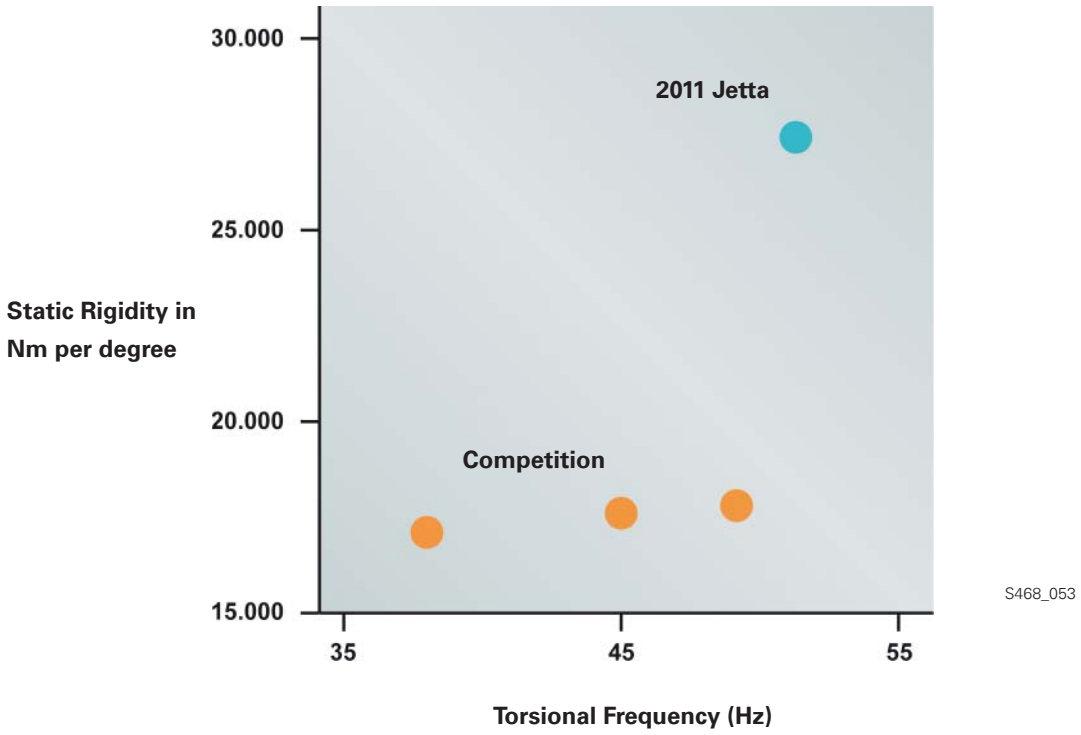
Body

Body Structure

The body structure of the 2011 Jetta is particularly rigid, yet meets the target acoustic and vibration levels.

These goals were achieved using:

- Purposeful structural design with regard to the points of force application and optimal use of materials
- A passenger compartment that is surrounded by computer-optimized profiles



The body structure of the 2011 Jetta has outstanding static torsional and dynamic rigidity. These are what sets apart the 2011 Jetta from its competitors.

These rigidity requirements benefit the acoustics, vibration responses and the outstanding travelling comfort.

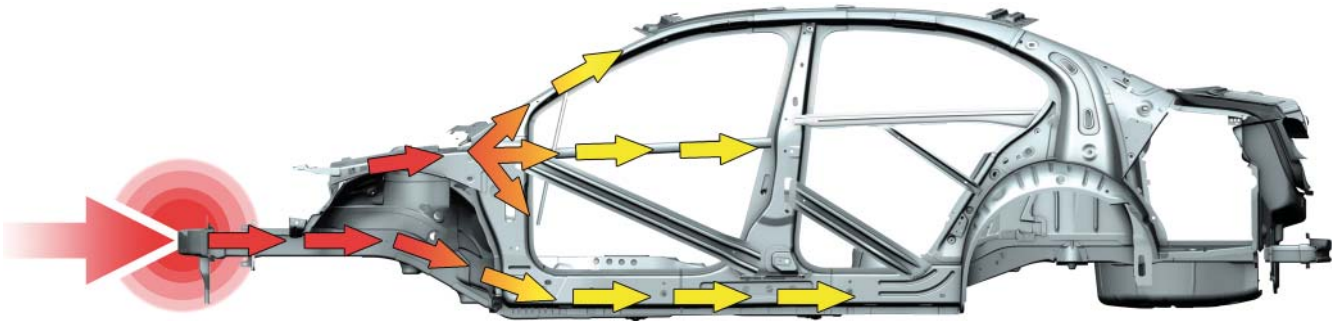
Crash Safety

A primary focus was to ensure an increase in the body rigidity as well as high crash safety.

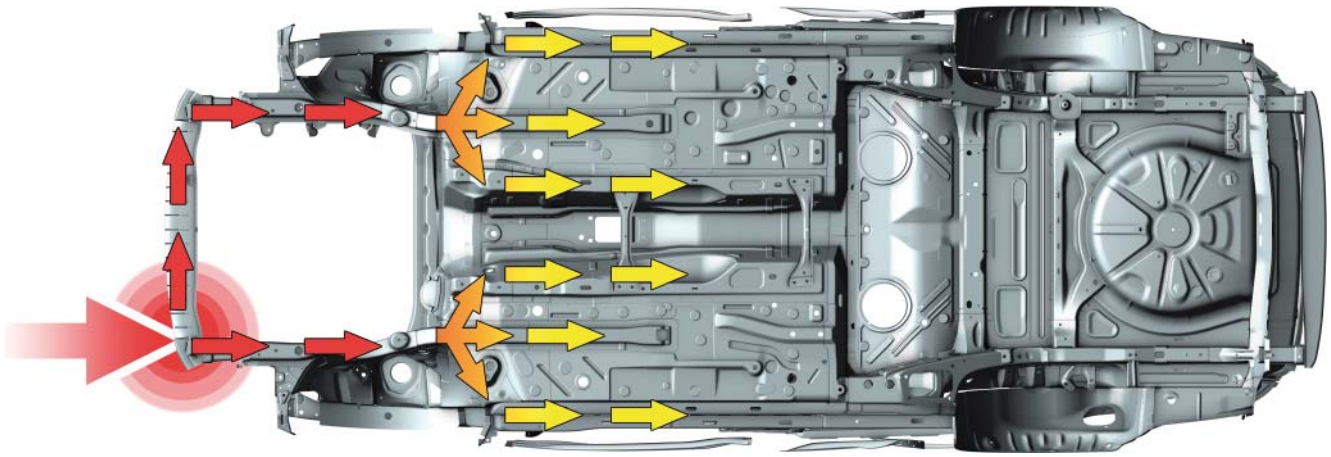
This was accomplished using lightweight construction-methods that mix differing ductile material strengths depending on the area of the body where they will be applied.

The body force application paths are coordinated to each other (along with crash deformation zones) to apply the force of a crash around the occupant area.

The two images show the force application for a frontal impact.



S468_064



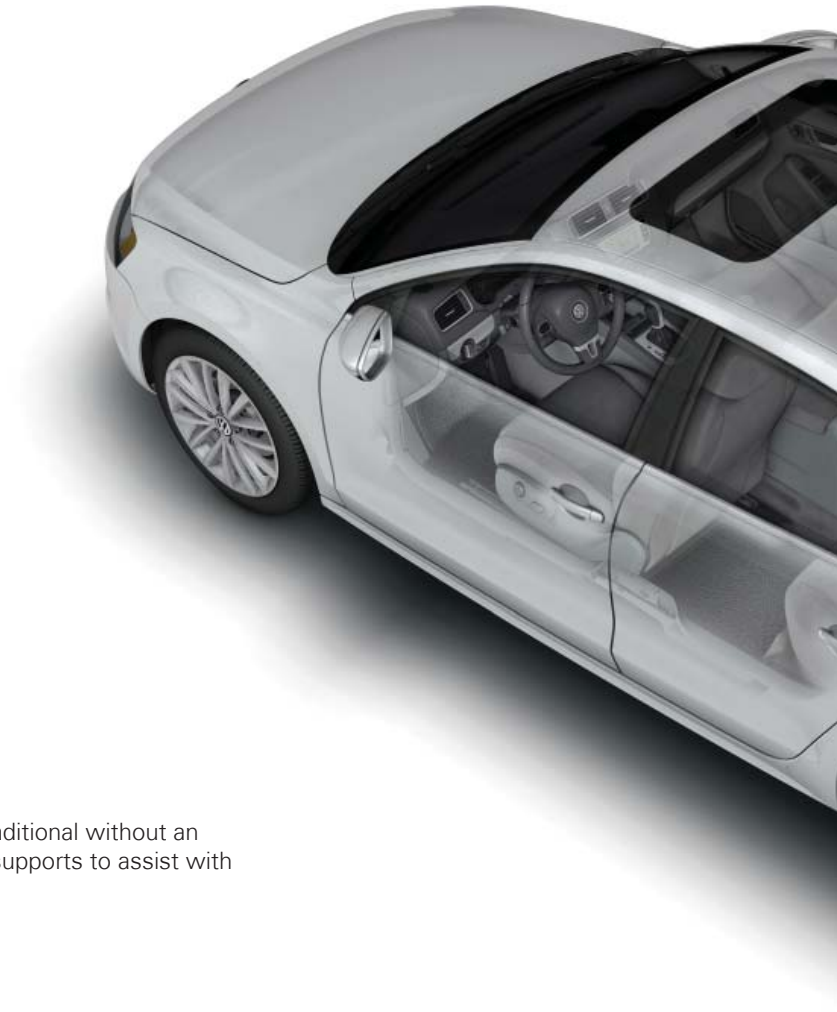
S468_065

Body

Characteristics

Front Seats
The front seats of the 2011 Jetta can be either mechanically or electrically adjustable, depending on the equipment level.

Hood
The bowden cable to open the hood is placed in a protective area in the engine compartment.



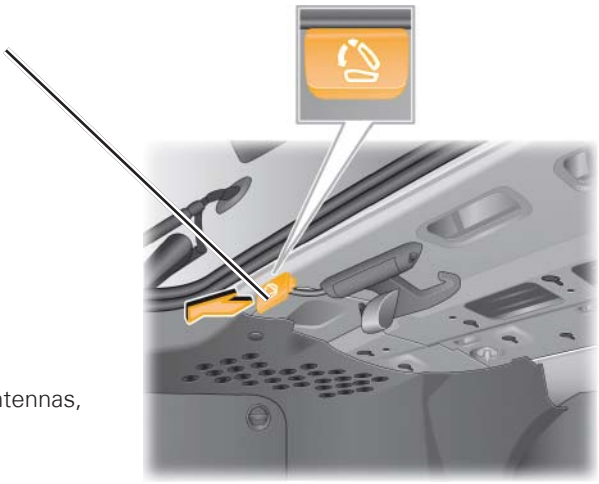
Space Concept
The design of the interior creates a feeling of more space. This is made possible by the larger vehicle length, larger wheel base and larger width.

Headlight
The running lamps and turn signals are integrated into the headlight assembly.

Doors
The construction of the doors is traditional without an outer skin. All doors have impact supports to assist with crash safety.

Roof
The roof structure will accommodate an optional sunroof as well as the antenna for the telephone, GPS and satellite reception.

Level to release the rear seats for folding



Rear Seat
The rear seat has a 60:40 split. The rear seats can only be released for folding from the release handles in the trunk.

Rear Window
The rear window has integrated AM and FM antennas, as well as the rear window heater grid.

Trunk
The trunk can be opened either by the remote or by a microswitch above the license plate lamp. There is no lock cylinder to unlock the trunk.

Tail Lamps
The tail lamps are a new design and are split by the trunk lid.

S468_056

Passenger Protection

Safety Equipment

The 2011 Jetta has essentially the same safety equipment as the A5 Jetta:

- Front airbags for the driver and passenger
- Side airbags for the front seats
- Curtain airbag for the front and rear passengers
- Seatbelt tensioners for the front passengers

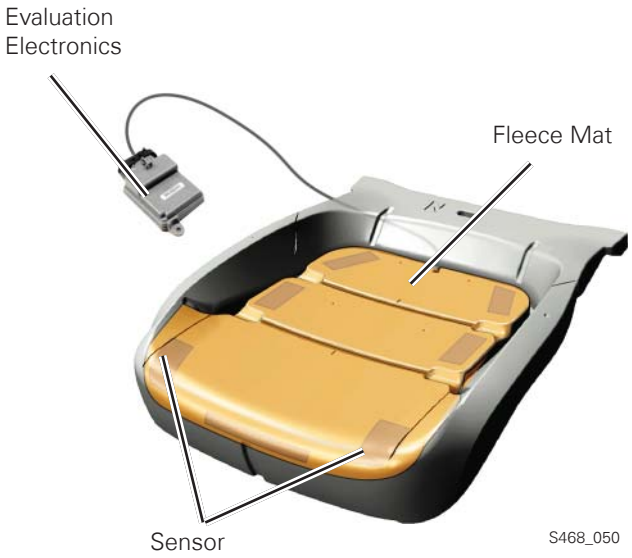
To detect side impacts, the front doors have pressure sensors and acceleration sensors are located at the base of the C-pillar.

The package shelf has tether anchors for each rear seat position.

Passenger Protection

The rear outside seats are equipped with Lower Anchors and Tethers for CHildren (LATCH) anchors.

S468_068



S468_050

The 2011 Jetta has a new passenger seat occupant sensor system. This new system uses the electronic capacitive principle to detect occupants and occupant weight.

The sensor system consists of a fleece mat between the seat foam and seat cover, a sensor system in the fleece mat and a control module with evaluation electronics.

When the seat is occupied, the electrostatic field between the sensor system in the fleece mat and the body is compared. The control module processes this information and the appropriate front passenger airbag setting is applied.

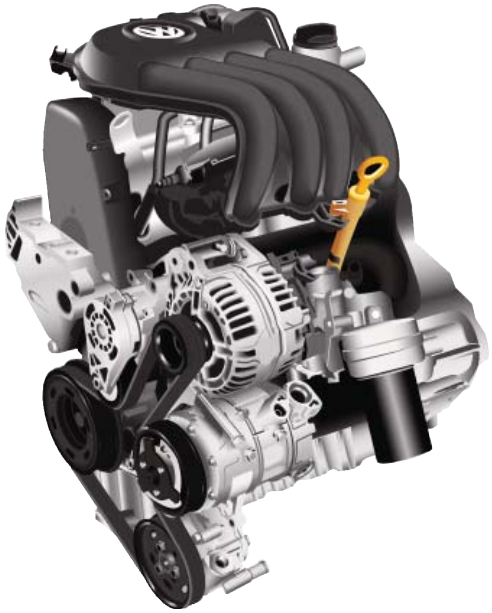
Engines

2.0L Naturally-Aspirated Engine

The 2.0L engine for the 2011 Jetta is equipped with only a few slight modifications.

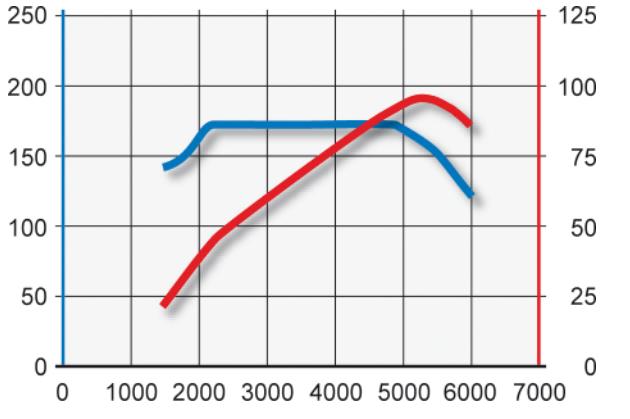
Technical characteristics:

- Pistons cooled by oil spray nozzles
- Oil pump driven by a crankshaft chain
- Secondary air system for emissions
- Intake manifold now composite where it meets the cylinder head
- Waste spark ignition system



S468_016

Engine Configuration	Inline 4-Cylinder
Displacement	1981 cm^3 (120.9 in^3)
Bore	82.5 mm (3.25 in)
Stroke	92.8 mm (3.7 in)
Valves per Cylinder	2
Compression	10.3:1
Maximum Power	115 hp (85kW) at 5,200 rpm
Maximum Torque	125.4 lb/ft (170 Nm) at 4000 rpm
Engine Management	Bosch Motronic ME 17
Fuel Requirement	Regular Unleaded
Emission Rating	ULEV2



S468_017

2.0L Common-Rail TDI Engine

The 2.0L Common-Rail TDI engine has been available in the North American market in vehicles such as the Jetta and Jetta SportWagen.

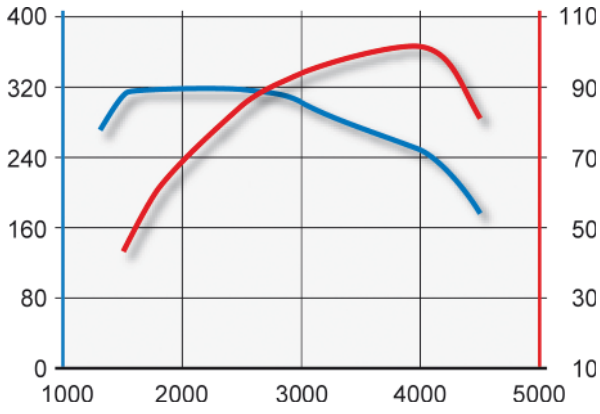
Technical characteristics:

- Common rail injection system with piezo injectors
- Diesel particle filters with upstream oxidation catalyst
- Electrically-controlled recycling of exhaust gases at both low and high temperatures
- Variable turbocharger
- Balance shafts reduce vibrations and noises

S468_018

Detailed information regarding this engine and its operation can be found in the 2.0L TDI Common Rail BIN5 ULEV Engine SSP 826803.

Engine Configuration	Inline 4-Cylinder
Displacement	1968 cm^3 (120.1 in^3)
Bore	81.0 mm (3.19 in)
Stroke	95.5 mm (3.74 in)
Valves per Cylinder	4
Compression	16.5:1
Maximum Power	140 hp (103kW) at 4,000 rpm
Maximum Torque	236 lb/ft (320 Nm) at 1,750-2,500 rpm
Engine Management	Bosch EDC 17
Fuel Requirement	Ultra-Low Sulfur Diesel (under 15ppm)
Emission Rating	BIN 5



S468_019

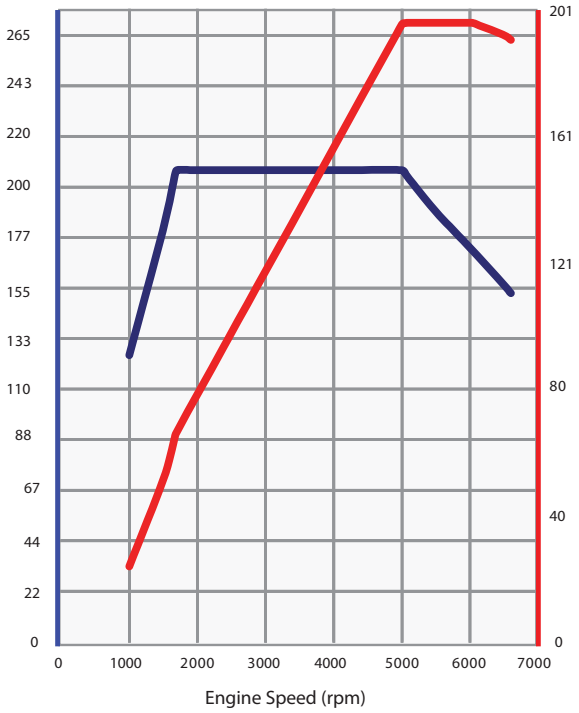
Engines

2.0L TSI Turbocharged Engine

The completely redesigned 2.0-Liter TSI Turbocharged was first used in the Tiguan for North America.

Technical Features:

- Chain-driven camshafts
- Balance shafts integrated into block
- Belt-driven coolant pump
- New oil filter location
- Piston cooling jets bolted to crankcase
- New crankcase breather
- Spur teeth on crankshaft, gear wheel module, and vibration damper
- Intake camshaft with continuously variable valve timing
- New high-pressure fuel pump
- Direct fuel injection



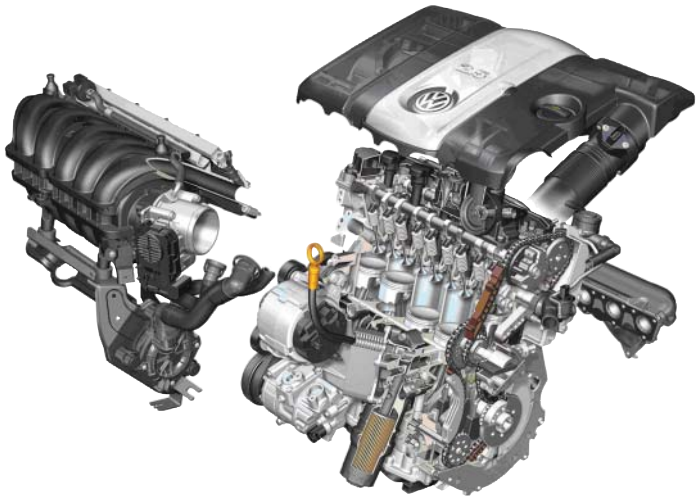
Engine Configuration	Inline 4-Cylinder, Turbocharged
Displacement	1984 cm^3 (121 $in^{3)}$
Bore	82.5 mm (3.25 in)
Stroke	92.8 mm (3.7 in)
Valves per Cylinder	4
Compression	9.6:1
Maximum Power	200 hp (147kW) at 5,100 - 6,000 rpm
Maximum Torque	207 lb/ft (280 Nm) at 1,700 - 5,000 rpm
Engine Management	Bosch Motronic MED 17.5
Fuel Requirement	Premium Fuel
Emission Rating	BIN8

2.5L Engine

The 2.5L engine was first used in the 2005 Jetta. It has been optimized for the 2011 Jetta.

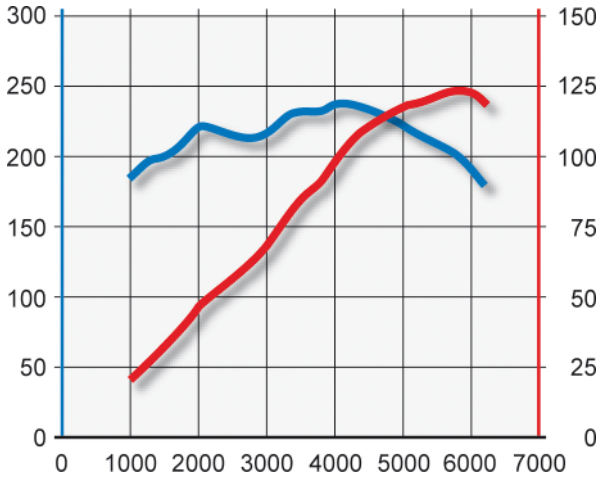
Technical Characteristics:

- Variable oil pump for the lowering of the fuel consumption
- Exhaust manifold redesigned to reduce weight
- Spark plugs switched to Bosch from NGK



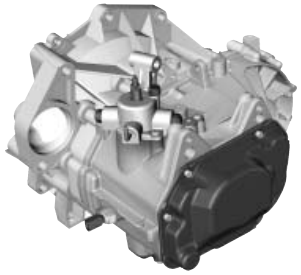
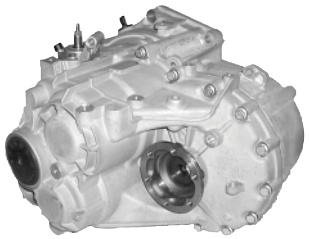
S468_020

Engine Configuration	Inline 5-Cylinder
Displacement	2480 cm^3 (151 $in^{3)}$
Bore	82.5 mm (3.25 in)
Stroke	92.8 mm (3.7 in)
Valves per Cylinder	4
Compression	9.5:1
Maximum Power	170 hp (125kW) at 5,700 rpm
Maximum Torque	177 lb/ft (240 Nm) at 4,250 rpm
Engine Management	Bosch Motronic ME 17.5
Fuel Requirement	Regular Unleaded
Emission Rating	PZEV



S468_021

Transmissions

Manual Transmissions	Technical Information
	5-Speed Manual Transmission 0A5 (2.0L Engine) Advancements from the 02T: • Stronger transmission housing • Housing adapted for installation position • No speedometer drive gear
	5-Speed Manual Transmission 0A4 (2.5L Engine) Advancements from the 02J: • Stronger final drive • Housing adapted for installation position • No speedometer drive gear
	6-Speed Manual Transmission 02Q (2.0L TSI Engine) Advancements from the 02M: • Control shaft optimization • Shift forks mounting • No speedometer drive gear
Automatic Transmissions	**Technical Information**
	6-Speed Direct-Shift Transmission (DSG) 02E (2.0L TDI and 2.0L TSI Engine) • Manual transmission design with automatic transmission operation • Uses a double-clutch system for shifting • Additional information regarding this transmission can be found in SSP 851403
	6-Speed Automatic Transmission 09G (2.0L and 2.5L Engine) • New ATF and redesigned valve body from previous 09G. • Additional information regarding this transmission can be found in SSP 851503.  This transmission uses a different transmission fluid than the previous 09G/09M. The previous fluid and this fluid CANNOT be mixed! Please find the correct part number in ETKA.

Page intentionally left blank

Chassis

The 2011 Jetta chassis offers high comfort and dynamics like the A5 Jetta. Two versions of the rear axle are available, depending on the vehicle equipment level. Also, two different braking designs are offered. One has front disk and rear drum. The other has four-wheel disk brakes.

Continental Teves MK60 ABS

Electromechanical Power Steering for TDI and GLI

Hydraulic Power Steering for 2.0L and 2.5L engines

McPherson Strut Front Suspension System

Dual-Rate Brake Booster

ABS-Based Tire Pressure Monitoring

S468_071

Independent Rear Suspension for GLI

Transverse Link Rear Suspension for
all Models Except GLI

Brake Assistant

Contactless Accelerator Pedal with
Redudant Signal

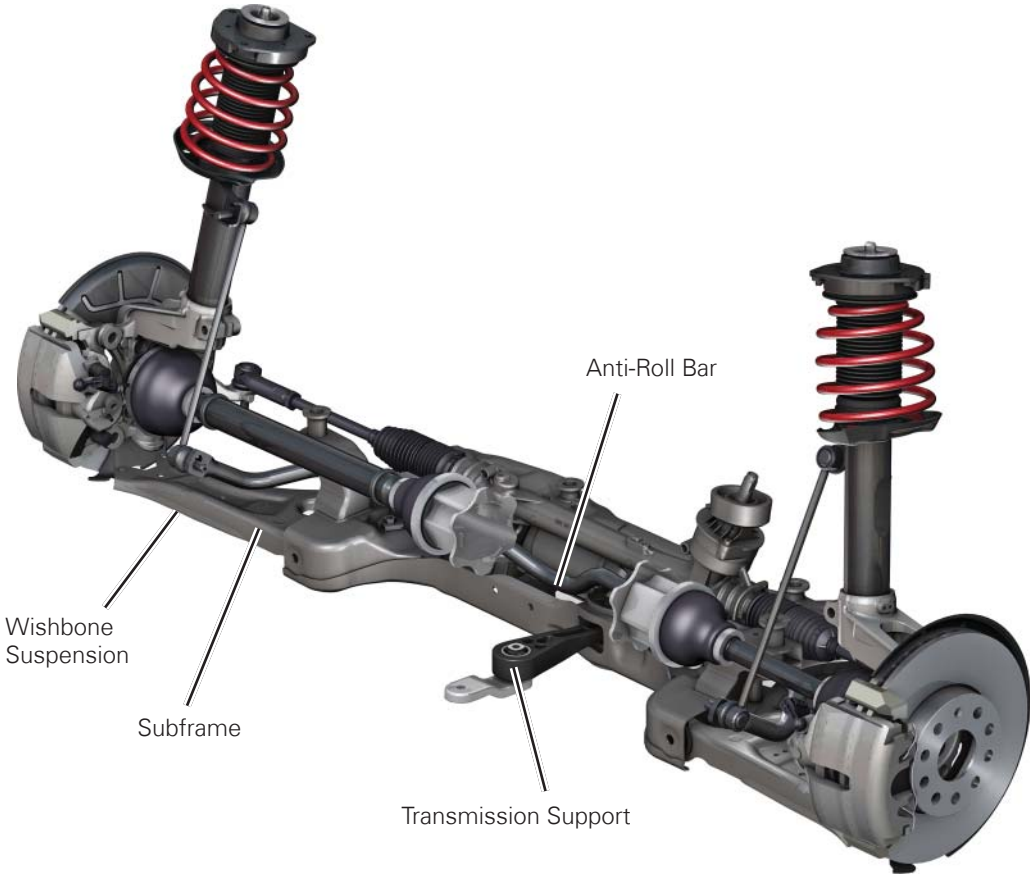
Chassis

Front Axle

The front axle of the 2011 Jetta was redesigned.

Technical Characteristics:

- Stamped steel subframe
- Stamped steel wishbones
- Rubber damped transmission support



Brakes

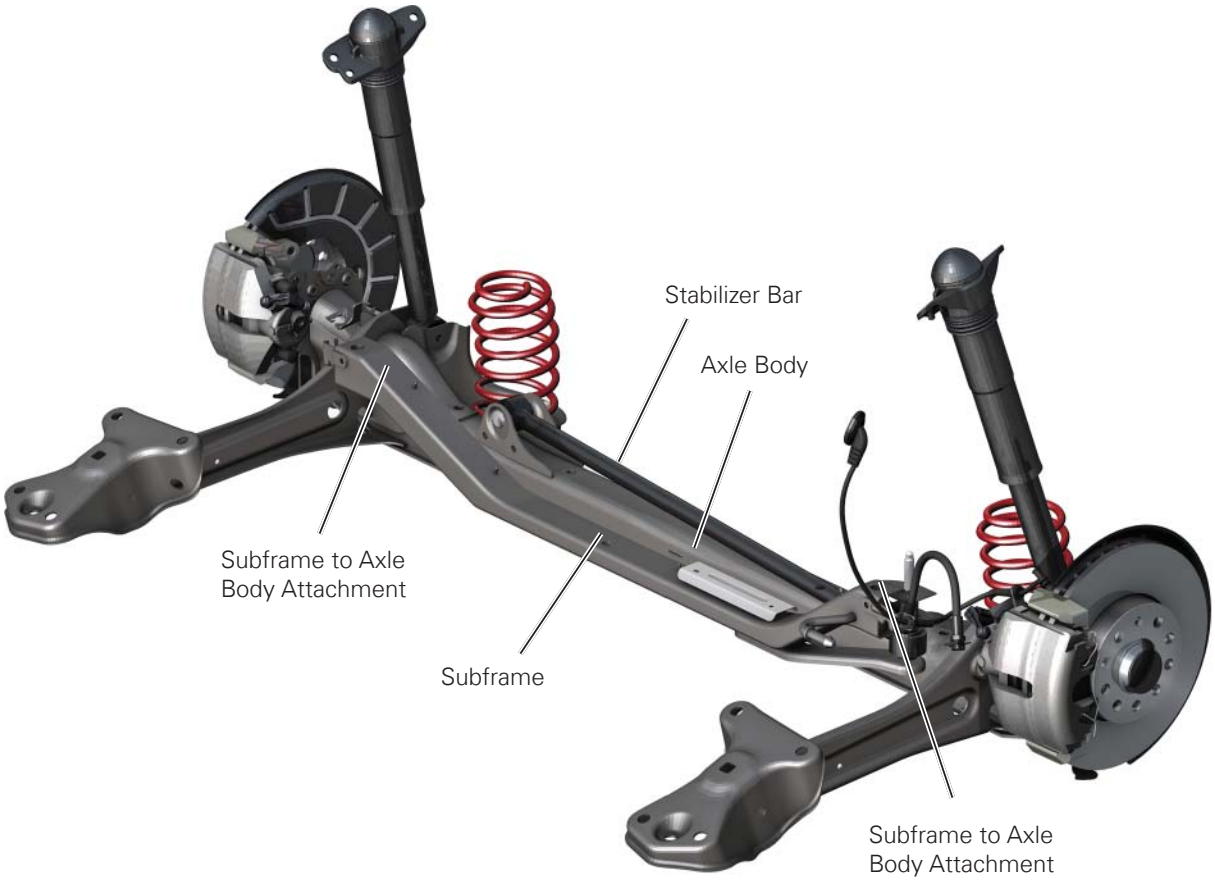
- All models have front disk brakes
- The GLI has larger front disk brakes

Rear Axle

Two different rear axle options are available for the new Jetta, depending on the equipment level and engine. It can have either a transverse link or independent rear suspension. The independent rear axle is the same as in the A5 Jetta.

Transverse Link Specifications:

- The axle is made up of welded steel
- Stabilizer bar controls lateral movement



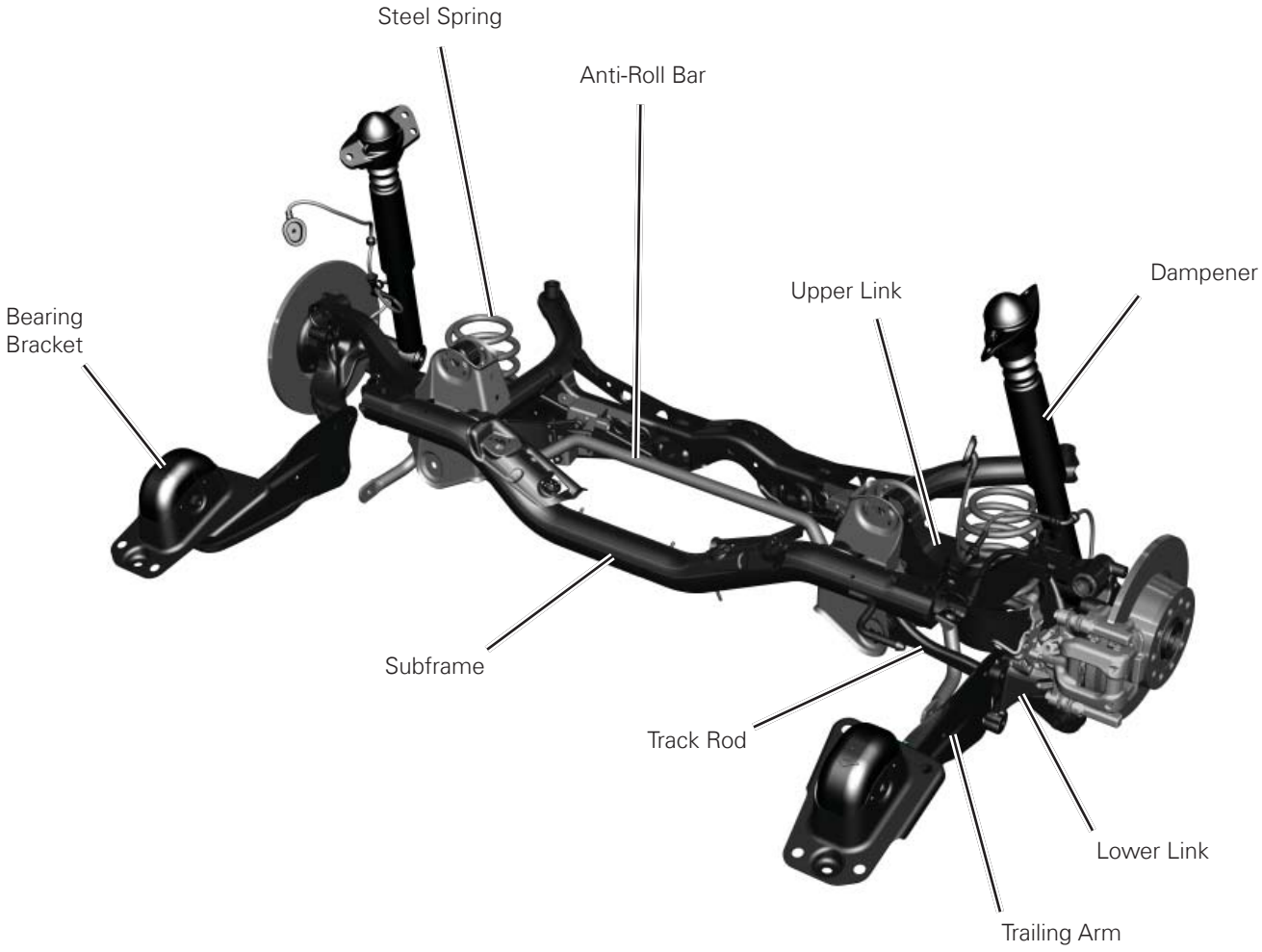
Brakes

- The rear axle may have either drum or disk brakes, depending on the vehicle model

Drum Brakes

Chassis

The multilink rear axle is the same axle that was used on the A5 Jetta. Each side consists of three suspension links: lower link, track rod and upper link, and a trailing arm. This design greatly enhances stability and ride comfort.



Steering

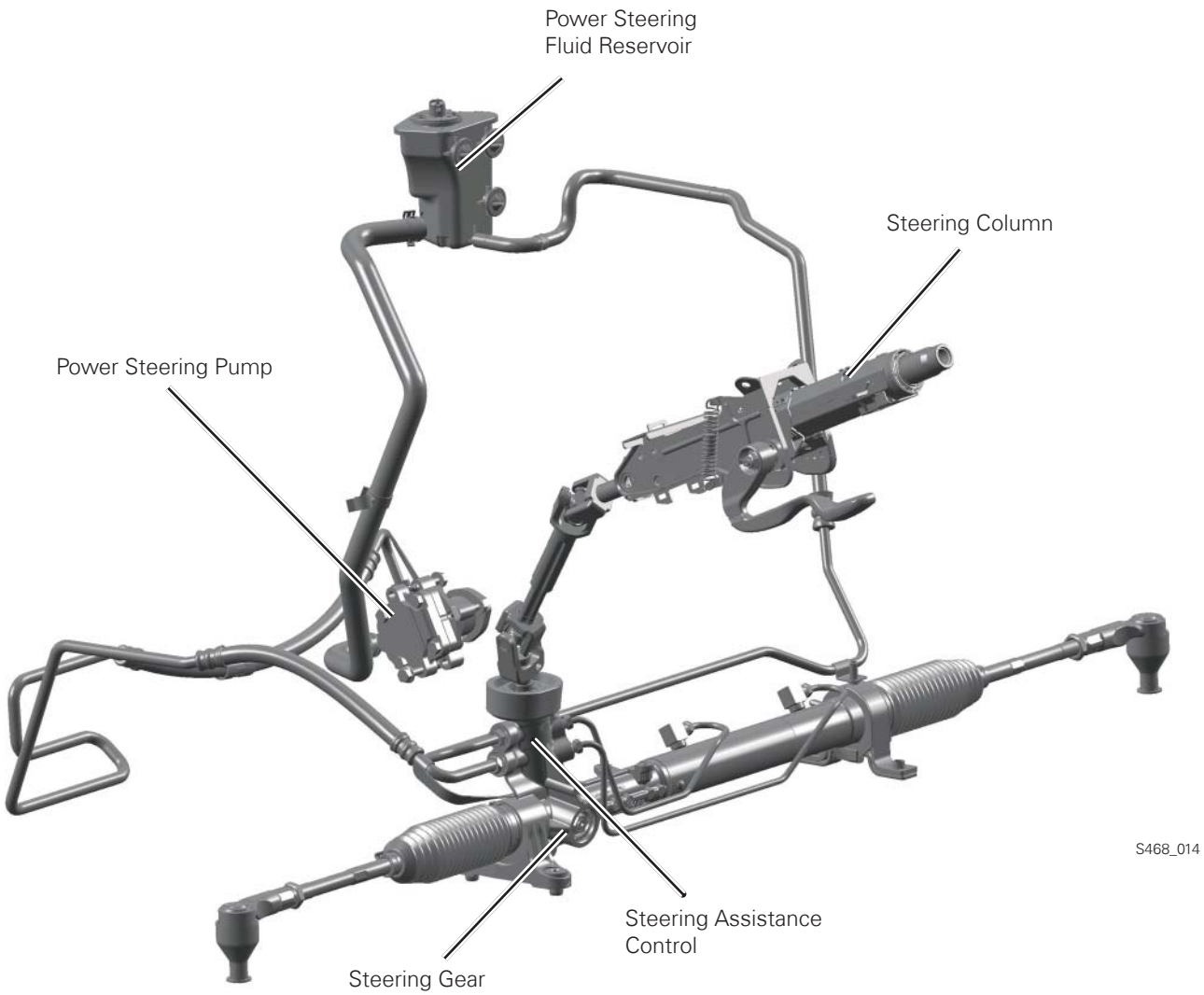
Two different steering systems are used on the new Jetta.

Hydraulic Power Steering

Hydraulic power steering is used on the 2.0L and 2.5L engine vehicles. The power assist (servo effect) produced by an engine-driven power steering pump.

The steering column from the A5 Jetta is used.

The oil circulation circuit includes a power steering fluid reservoir located in the left side of the engine compartment.



Electromechanical Power Steering

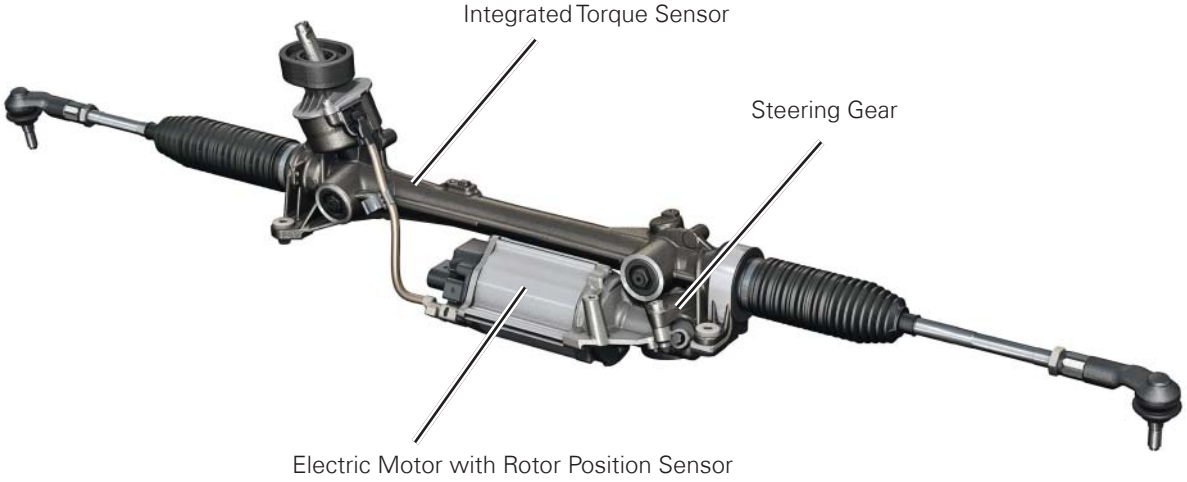
The electromechanical power steering from the A5 Jetta is used for TDI and GLI models. This is a 3rd generation electromechanical power steering from ZF Engineering.

Substantial characteristics are:

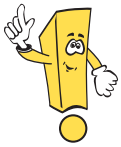
- Integration of the steering angle sensor into the steering rack assembly. This allows for deletion of the steering angle sensor at the top of the steering column
- Use of the same steering column as the hydraulic power steering system

Steering Angle Determination

The signals of the steering angle sensor are compared with the electric motor rotor position sensor. The amount of assistance is then computed by the control module and the electric motor is controlled accordingly.



S468_015



For more information regarding the Electromechanical Power Steering System, reference SSP 892403 - Electromechanical Power Steering Design and Function.

ABS/ESC

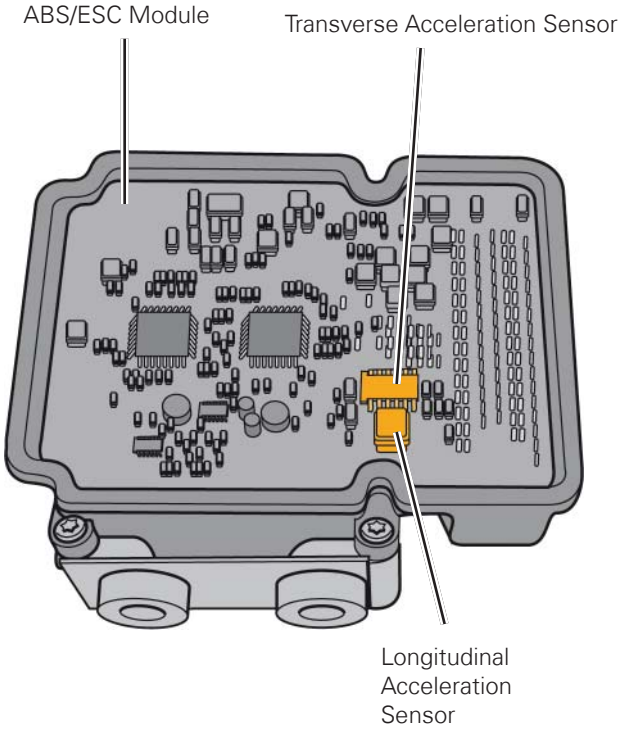
The North American Jetta is equipped with the Continental Teves MK60 ABS/ESC unit. This unit has been used extensively in other North American vehicles.

Technical Highlights:

- Electronic Stability Control (ESC)
- Electronic Differential Lock (EDL and XDS)
- Brake Assistant
- The ESC function cannot be deactivated.

S468_011

The longitudinal and transverse motion sensors are now integrated into the ABS/ESC control module.



S468_012

Tire Pressure Monitoring System (TPMS)

The Tire Pressure Monitoring System no longer uses pressure sensors and antennas. Instead, new software has been written into the ABS/ESP Control Module which monitors the number of wheel revolutions for each wheel and compares it to a basic setting and other wheel speeds to determine low tire pressure.

Detailed information regarding the Tire Pressure Monitoring System is located in the Owner's Manual.

Function

A basic setting or calibration is stored in the ABS/ESP control module regarding wheel revolution characteristics. This data is gathered from the wheel speed sensors and compared to the vehicle road speed and the other wheels to determine if there is a difference.

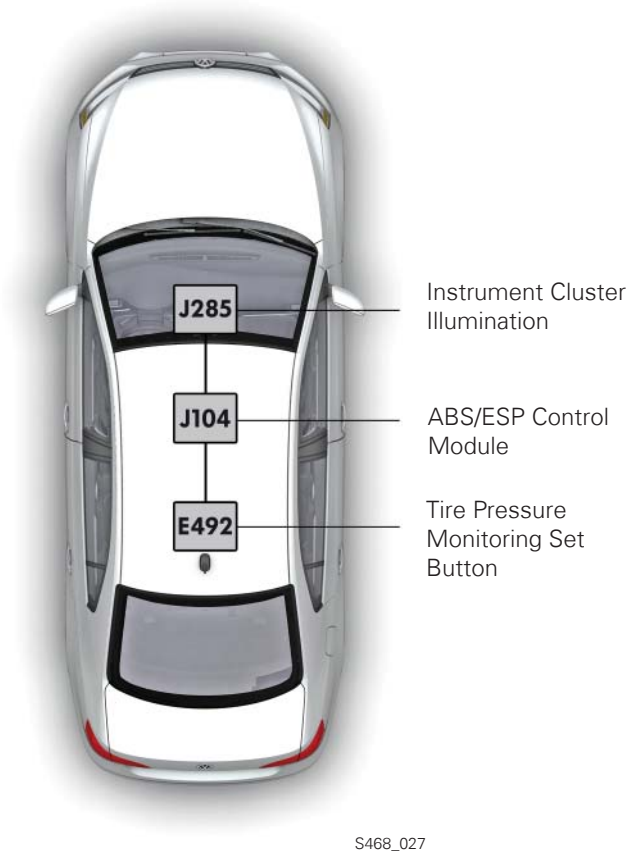
If a difference is detected, a lamp illuminates in the instrument panel and an audible alarm sounds, warning the driver to check the tire pressures. This system does not have the capability to inform the driver which tire has low pressure.

In addition to the wheel revolution detection, the wheel vibrations are also measured to give a more exact picture of the actual wheel speeds.

Each tire has a slightly different size and resonant frequency. Therefore, the characteristics of each wheel are stored in the ABS/ESP Control Module. If all wheels lose pressure evenly the loss of pressure is still detected.

For the system to work properly, the calibration must be performed after filling or changing tires.

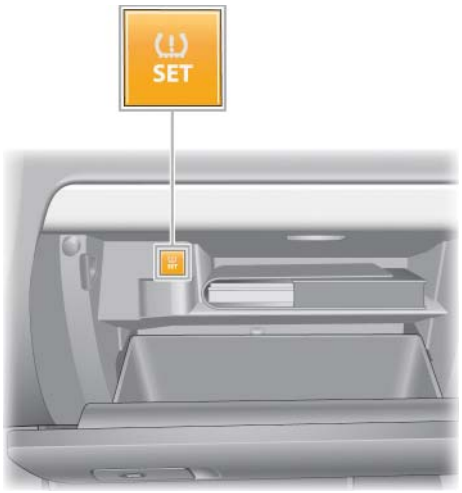
This system can recognize if tire chains are installed and will deactivate the system.



Calibration

Calibration is essential for the ABS/ESP Control Module to properly monitor wheel speeds. A SET button is located in the glove compartment. When the ignition is ON the button can be pressed to recalibrate the tire pressures.

If a TPMS warning has set, the system may not allow a recalibration for one or two minutes. This is approximately the minimum time that a person could check the tire pressures.



S468_025

Announcement - Warning

If the TPMS senses tire pressure loss, a lamp illuminates in the instrument cluster and an audible signal is heard. The lamp stays illuminated until the system is recalibrated.

S468_026

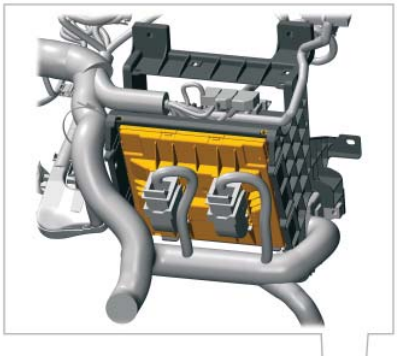
The customer is ultimately responsible for correct tire pressures. The TPMS is an information display system which uses a reference to determine tire pressure loss. This does not dismiss the driver from making sure that the tires have the correct amount of air. Use the vehicle information label to determine the correct tire pressure for the vehicle.

Electrical System

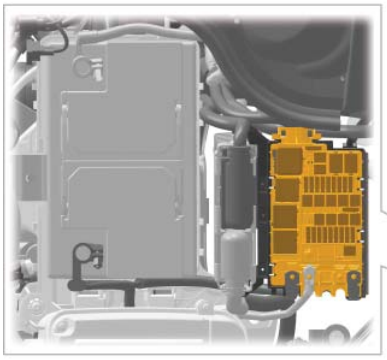
Electrical System Locations

Many electrical system component locations have changed for the 2011 Jetta. There are two electrical systems, a Low version and a High version. The Low version is displayed on this page and the next page. The High version is similar to the A5 Jetta.

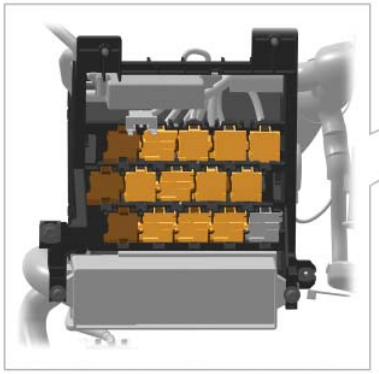
The Vehicle Electrical System Control Module J519 and the Data Bus Onboard Diagnostic Interface (Gateway) J533 are located under the left side of the instrument panel.



The electrical box in the engine compartment is located to the left of the battery and contains SA (front) and SB (top) fuse panels



Relay Panel in the Plastic Housing



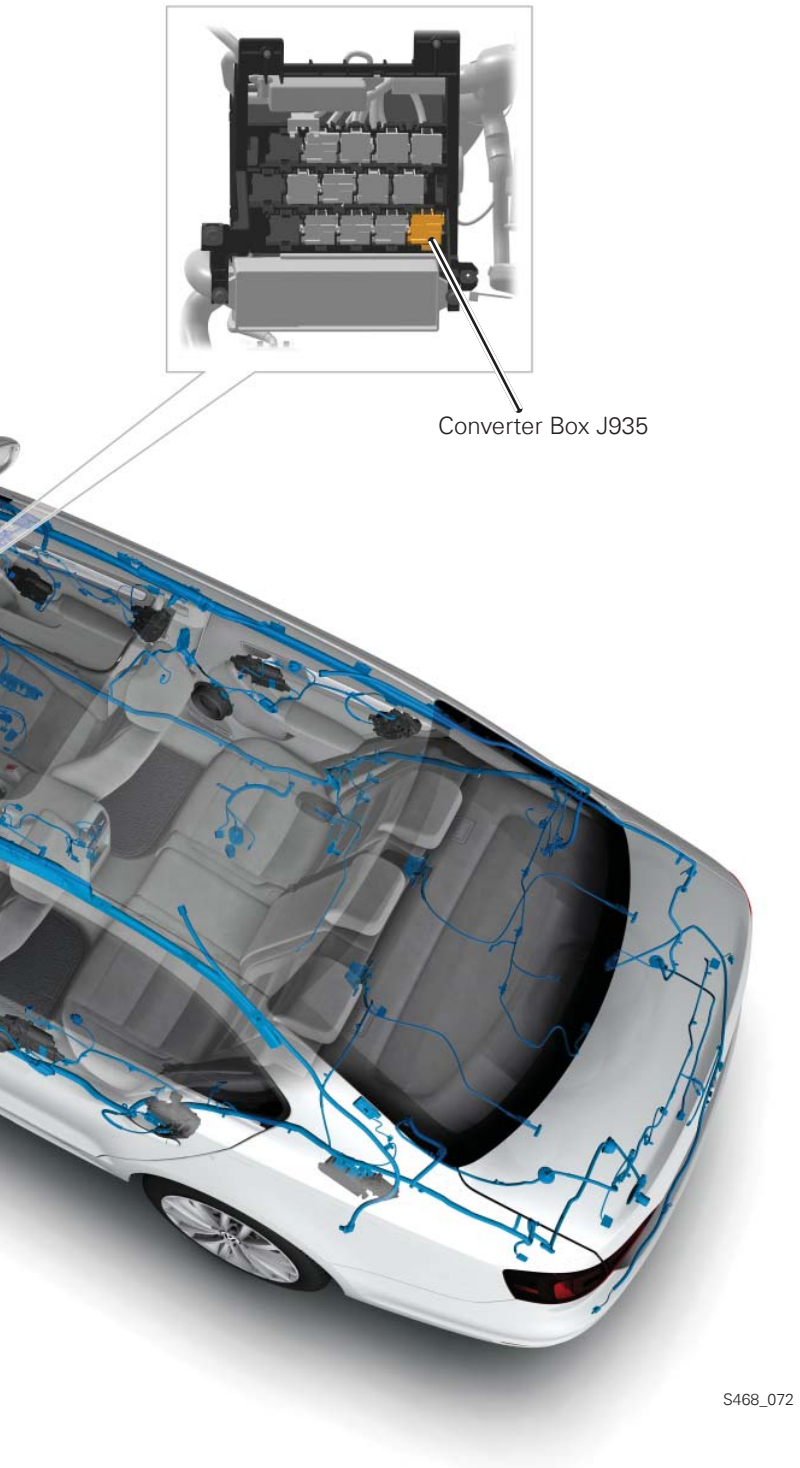
Fuse Panel SC in the Plastic Housing

Low Version Electrical System Architecture

The Low electrical system of the new Jetta is based on the Polo. The Polo has been available in other countries for many years, but not in North America.

The Converter Box J935 is a Master Relay on the relay panel. The purpose of J935 is to operate other power supply relays such as:

- J329: Terminal 15 Power Supply Relay
- J680: Terminal 75 Power Supply Relay 1
- J681: Terminal 15 Power Supply Relay 2
- J682: Terminal 50 Power Supply Relay



Vehicle Electrical System Control Module J519

The A5 Jetta SportWagen had already integrated some function of the Comfort and Convenience Control Module J393 into J519. The new Jetta takes an additional step and integrates the Data Bus Onboard Diagnostic Interface (Gateway) J533 into J519.

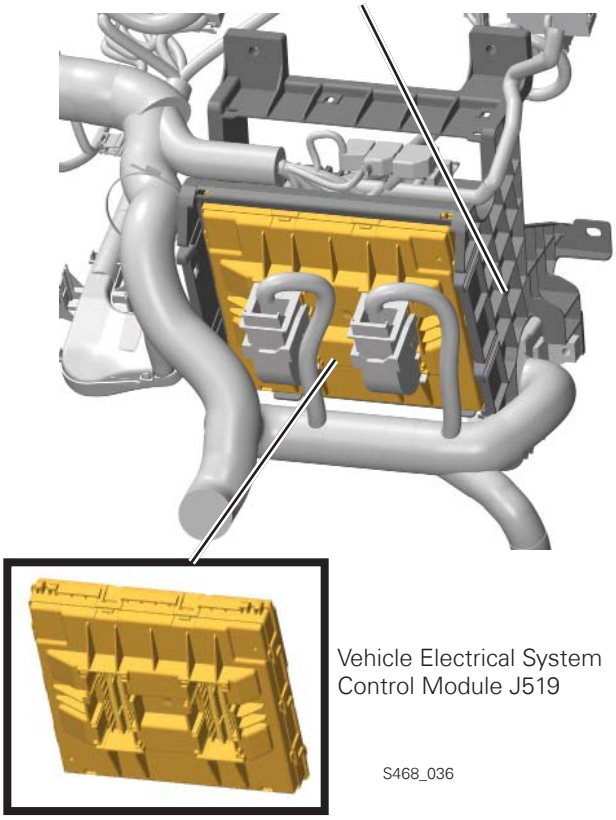
J519 may be referred to the Body Control Module in some Service Information.

The Vehicle Electrical System Control Module J519 is available in two configurations, Low and High. The Low version is applied to all vehicles with the 2.0L and 2.5L engine. The High version is used on the TDI and GLI models.

J519 has either two or three plugs attached. The image to the right shows two plugs. If the system has two plugs, it is a Low electrical system. Three plugs indicate a High electrical system.

The Vehicle Electrical System Control Module J519 is located under the instrument panel, above the brake pedal.

Housing for relays and the Vehicle Electrical System Control Module J519



Vehicle Electrical System Control Module J519

S468_036

J519 Functions

- Acoustic feedback when locking and unlocking
- Interior lighting
- Emergency flashers
- Automatic unlocking upon ignition key removal
- Automatic locking at 15 km/h
- Lock confirmation LEDs
- Automatic locking of the fuel tank flap at 5 km/h
- Side marker light activation/deactivation
- Rain and light sensor deactivation when applicable
- Turn signal control
- Outside mirror heating control
- Door unlocking control
- Rear window heater control
- Radio remote key acknowledgement
- Deactivation of factory mode
- Indicator light for door locking and unlocking
- Acknowledge service position front wiper

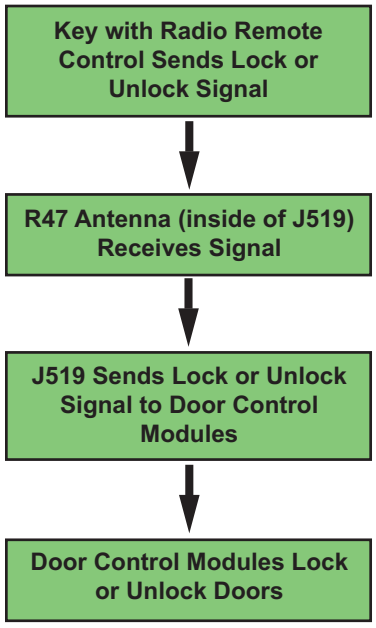
Keyless Access and Start System KESSY

The 2011 Jetta as an optional keyless access and starting system. Variations of this system have been used on the Phaeton and Touareg. The benefit of this system is that the key can be left in a pocket or purse while the vehicle is locked, unlocked and started.

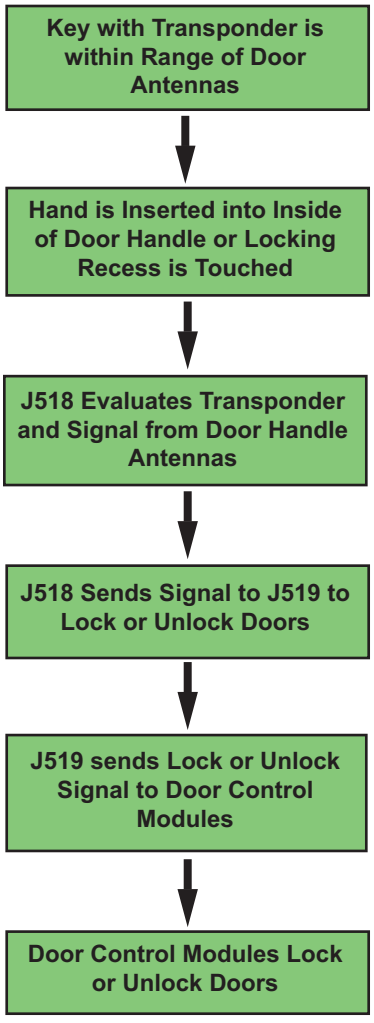
Architecture

All Jettas have the basic radio remote control locking and unlocking functions. The chart below shows the signal path through a system with and without KESSY.

Radio Remote Key Operation with and without KESSY



Vehicle Access with KESSY



Electrical System

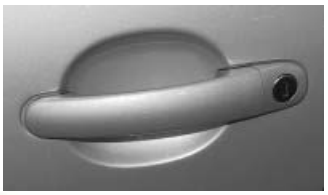
The Keyless Access and Start System KESSY

The Access/Start Authorization Control Module J518 controls all functions of the KESSY system. It is located inside of the instrument panel above the foot pedals so that it can easily be integrated into the CAN-Bus system, regardless of a Low or High electrical system architecture.

The ELV communicates with J518 through the CAN-Bus. This assures secure locking and unlocking operation. In addition, the ELV transmits the signal from the Start/Stop button to J518 to facilitate engine start.

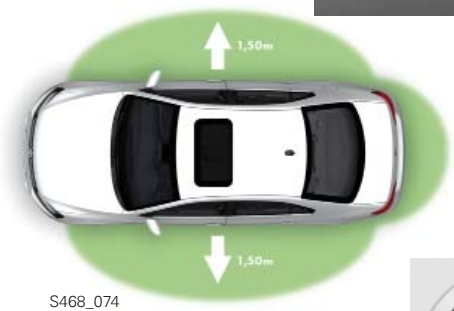
Key Reception

The KESSY system can determine the location of the key whether it is inside or outside of the vehicle:



S468_077

- External area - allows for keyless entrance of the driver by receiving the signal from the key by the antenna in the front door handles. The vehicle unlocks when a hand is sensed inside of the door handle using the capacitance principle.



S468_074

- Internal area - antennas in the vehicle determine the location of the key inside of the vehicle. This allows for the Start/Stop button to be used.

S468_075

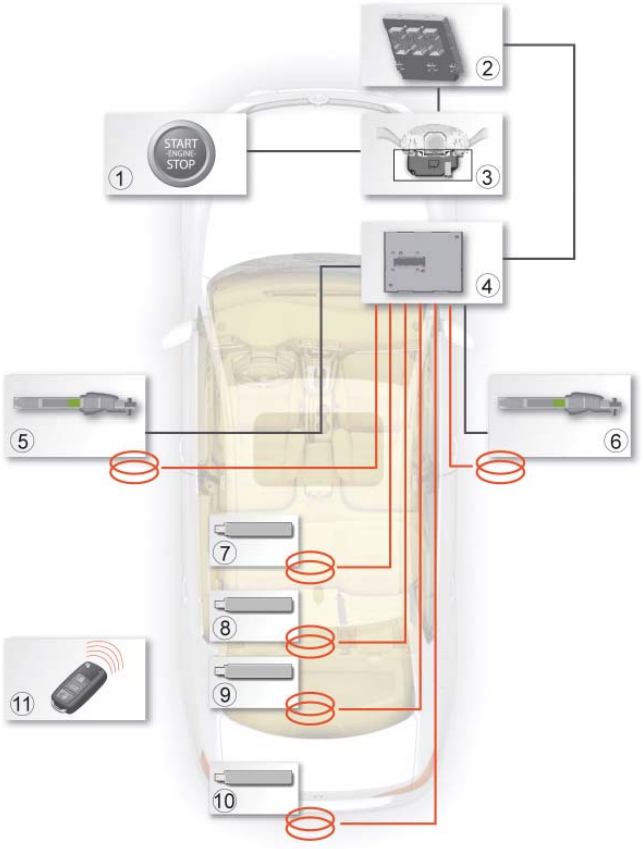
If the battery in the key fob is dead, the key must be brought near the steering column transponder coil to operate the KESSY system.

KESSY System Function

For the KESSY system to operate, the key must be within the correct range. The system recognizes the following functions with the use of the key:

- Keyless entry - locking and unlocking of the vehicle remotely, using the front door handles or the trunk switch.
- Keyless Go - allows for engine start and drive. A valid vehicle key must be in the vehicle. To start the vehicle, the clutch and/or brake must be pressed. This allows for the unlocking of the steering column and engine start when the Start/Stop button is pressed.
- Keyless Exit - locking of the vehicle can be performed when leaving the vehicle by placing a finger over the oval recess in the driver or passenger door handle.

1. E378 Start/Stop Button
2. J519 Vehicle Electrical System Control Module
3. J764 Electric Steering Column Lock Control Module
4. J518 Access Authorization Control Module
5. G415/R134 Driver Door Handle Touch Sensor/ Antenna
6. G416/R135 Passenger Door Handle Touch Sensor/Antenna
7. R139 Access Start Antenna
8. R138 Access Start Antenna
9. R137 Access Start Antenna
10. R136 Access Start Antenna
11. Vehicle Key



S468_078

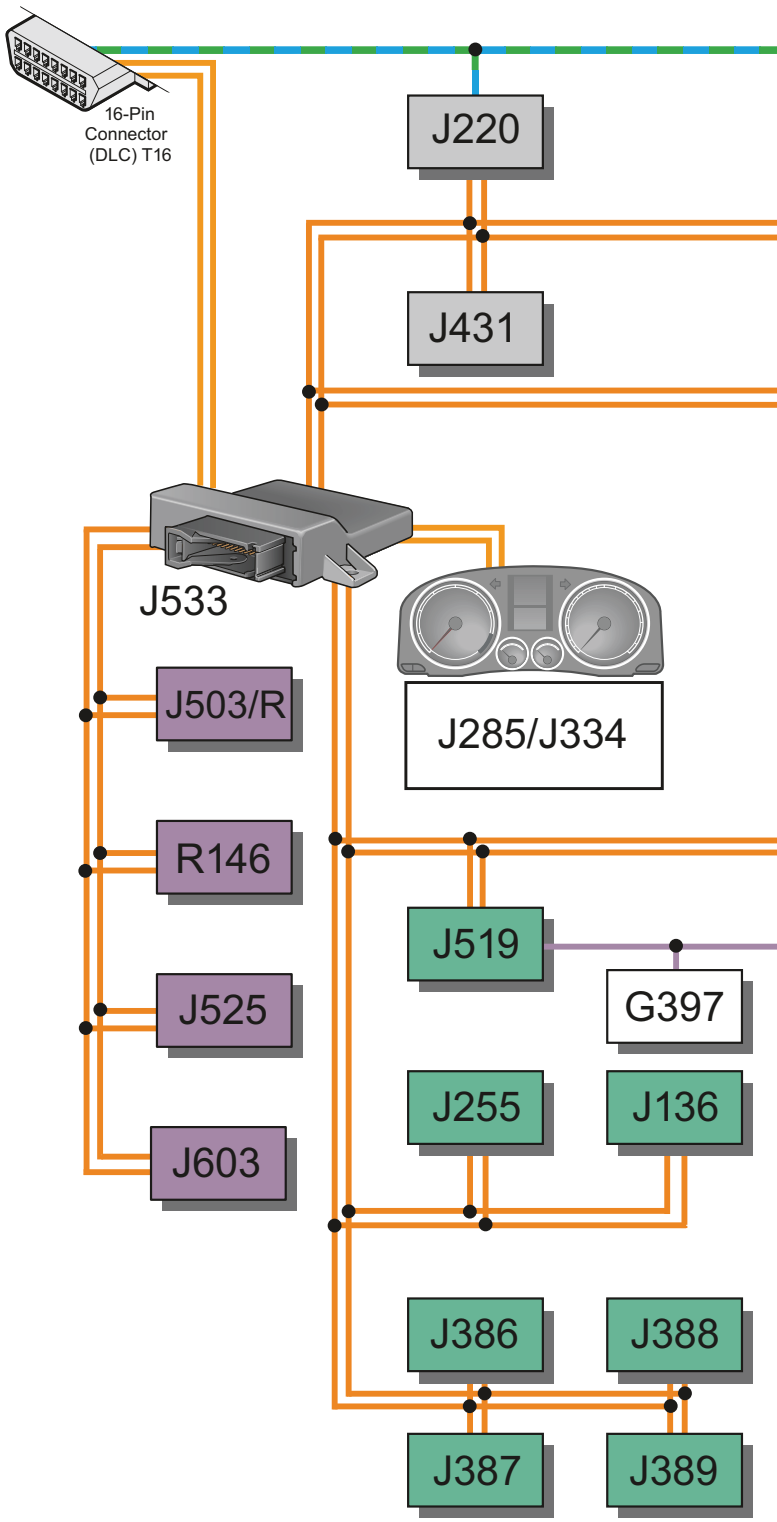
Electrical System

The High System Networking Concept

The data-bus system allows messages to be shared between control modules and between the various data-bus networks.

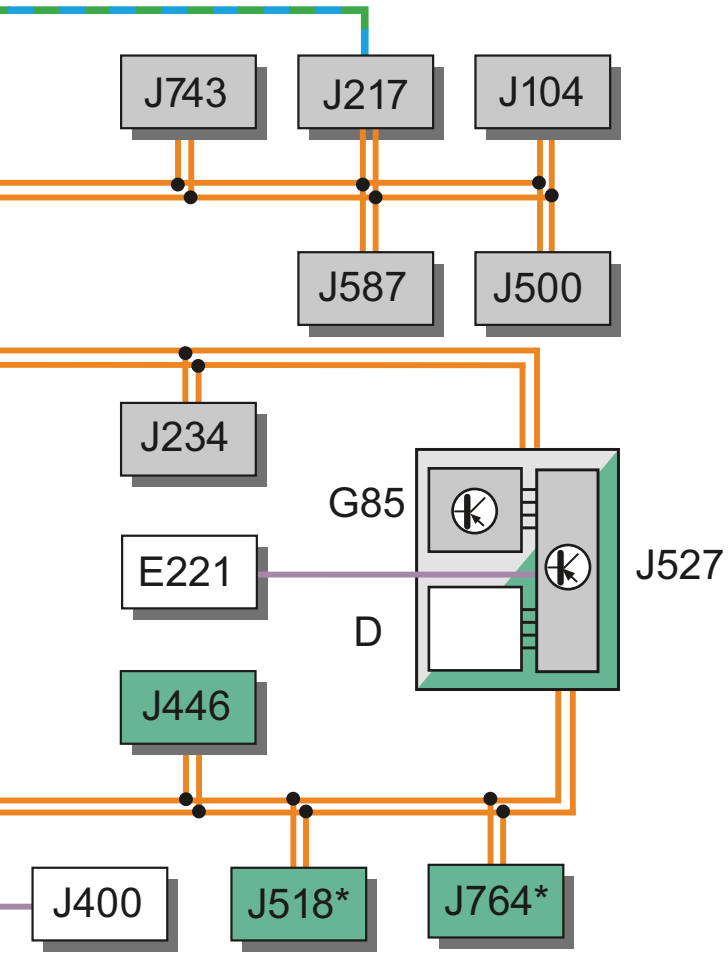
The Diagnostic Interface for Data Bus J533 (gateway) forms the interface for the data bus systems:

- CAN data bus drivetrain
- CAN data bus comfort and convenience
- CAN data bus infotainment
- CAN data bus instrument cluster
- CAN data bus diagnosis



Legend

- **Can - Databus Drivetrain**
- **Can - Databus Comfort/infotainment**
- **Can - Databus Sensor**
- **Lin - Databus Component**
- **Data Bus Line**
- **Lin - Data Bus Line**
- **K- Line**



D Ignition
E221 Steering Wheel Control Module
G85 Steering Angle Sensor
G397 Rain/Light Recognition Sensor (LIN)
G419 ESP Sensor
H8 Alarm Horn (LIN)
J104 ABS/ESP Control Module
J136 Memory Seat/Steering Control Module
J234 Airbag Control Module
J255 Climatronic Control Module
J285 Instrument Cluster Control Module
J334 Immobilizer Control Module
J386 Driver Door Control Module
J387 Front Passenger Door Control Module
J388 Left Rear Door Control Module
J389 Right Rear Door Control Module
J400 Wiper Motor (LIN)
J431 Headlamp Range Control Module
J446 Parking Aid Control Module
J500 Power Steering Control Module
J518 Access/Start Authorization Control Module (KESSY vehicles only)
J519 Vehicle Electrical System Control Module
J533 Data Bus Diagnostic Interface
J525 Digital Sound System Control Module
J527 Steering Column Electronic Systems Control Module
J587 Selector Lever Sensor Control Module
J623/J220 Engine Control Module
J743 DSG Mechatronics
J764 Electronic Steering Column Lock Control Module (KESSY vehicles only)
R Radio
R146 Satellite Radio Control Module

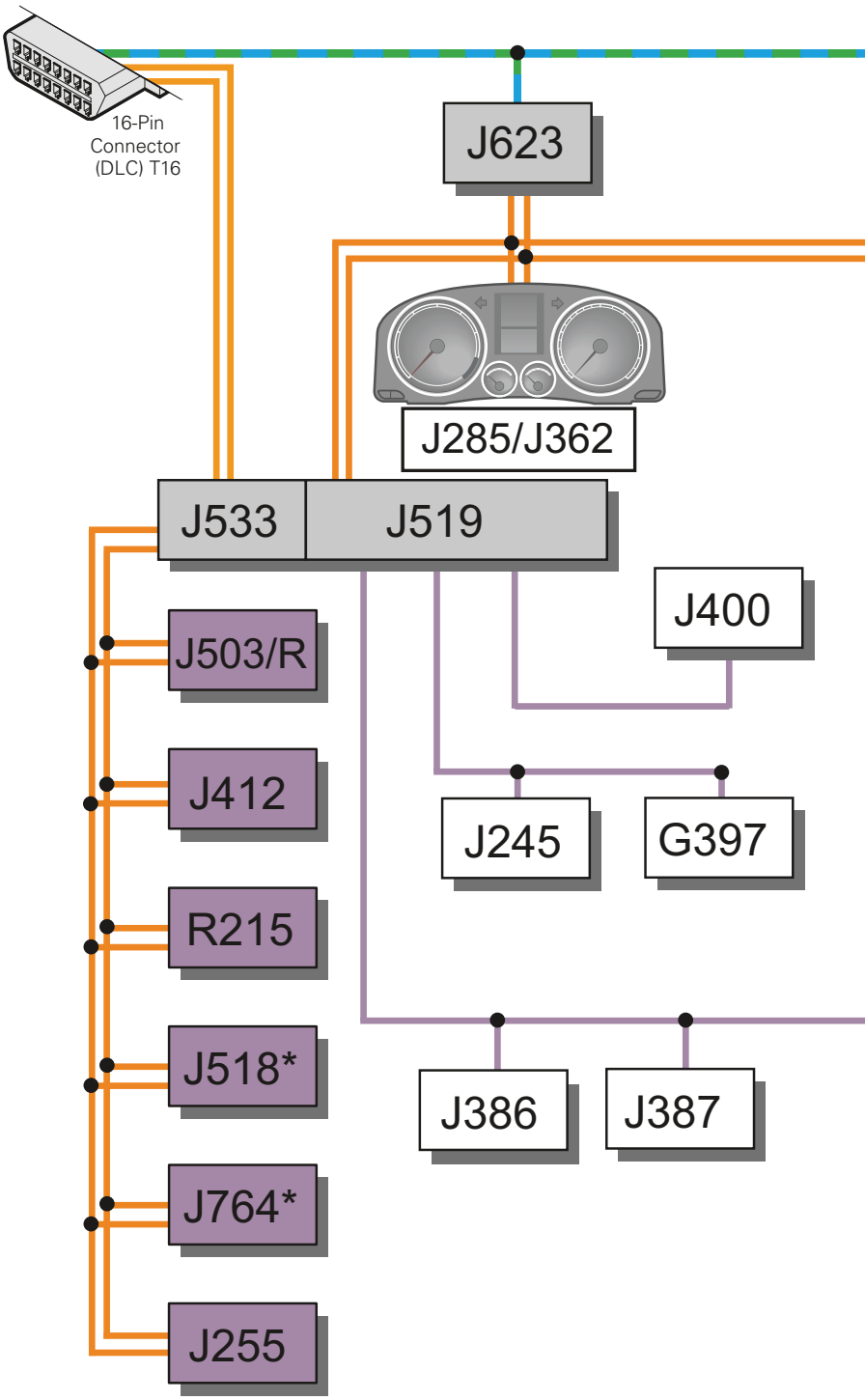
* indicates vehicle equipped with KESSY

Electrical System

The Low System Networking Concept

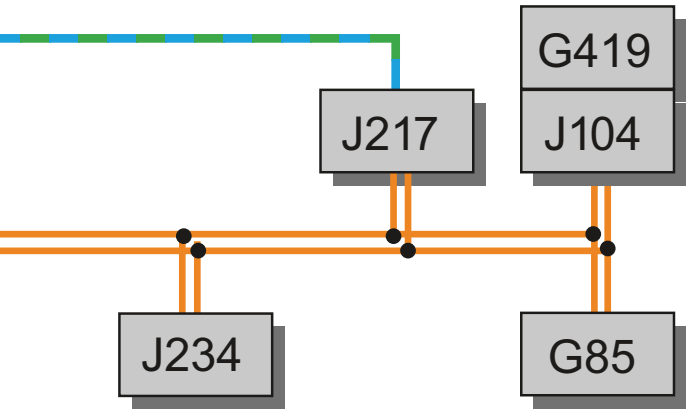
The data exchange on the Low electrical system uses fewer components and data buses:

- CAN data bus drivetrain
- CAN data bus infotainment
- CAN data bus diagnosis

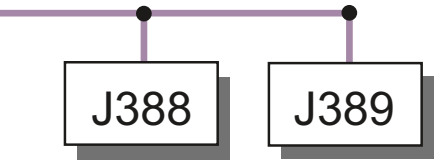


Legend

- Can - Databus Drivetrain
- Can - Databus Comfort/infotainment
- Can - Databus Sensor
- Lin - Databus Component
- Data Bus Line
- Lin - Data Bus Line
- K- Line



G85 Steering Angle Sensor
G397 Rain and Light Sensor (if applicable)
G419 ESP Sensor
J104 ABS/ESP Control Module
J217 Transmission Control Module
J234 Airbag Control Module
J245 Sunroof Control Module
J255 HVAC Control Module
J285 Instrument Cluster Control Module
J362 Immobilizer Control Module
J386 Driver Door Control Module
J387 Front Passenger Door Control Module
J388 Left Rear Door Control Module
J389 Right Rear Door Control Module
J400 Wiper Motor Control Module
J412 Cell Phone Operating Electronics Control Module
J503 Navigation Control Module
J518 Access/Start Authorization Control Module (KESSY vehicles only)
J519 Vehicle Electrical System Control Module
J587 Selector Lever Sensor Control Module
J623 Engine Control Module
J764 Electronic Steering Column Lock Control Module (KESSY vehicles only)
R Radio
R215 Multimedia Interface

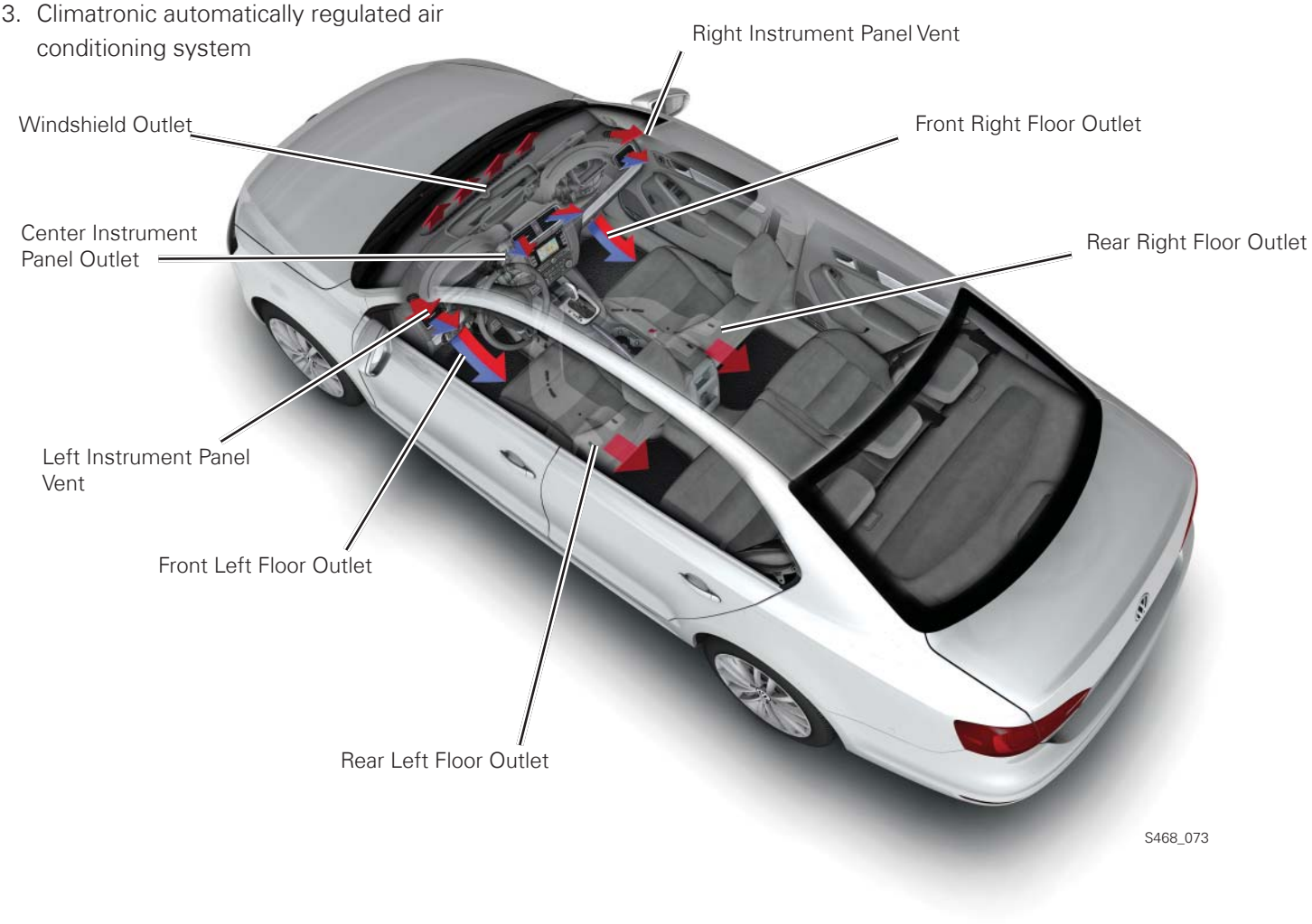


* indicates vehicle equipped with KESSY

Heating and Air Conditioning

Three different ventilation systems are available in the Jetta:

1. Heating system with blower and circulating air circuit (no air conditioning)
2. Manually-controlled air conditioning system with blower and circulating air circuit
3. Climatronic automatically regulated air conditioning system

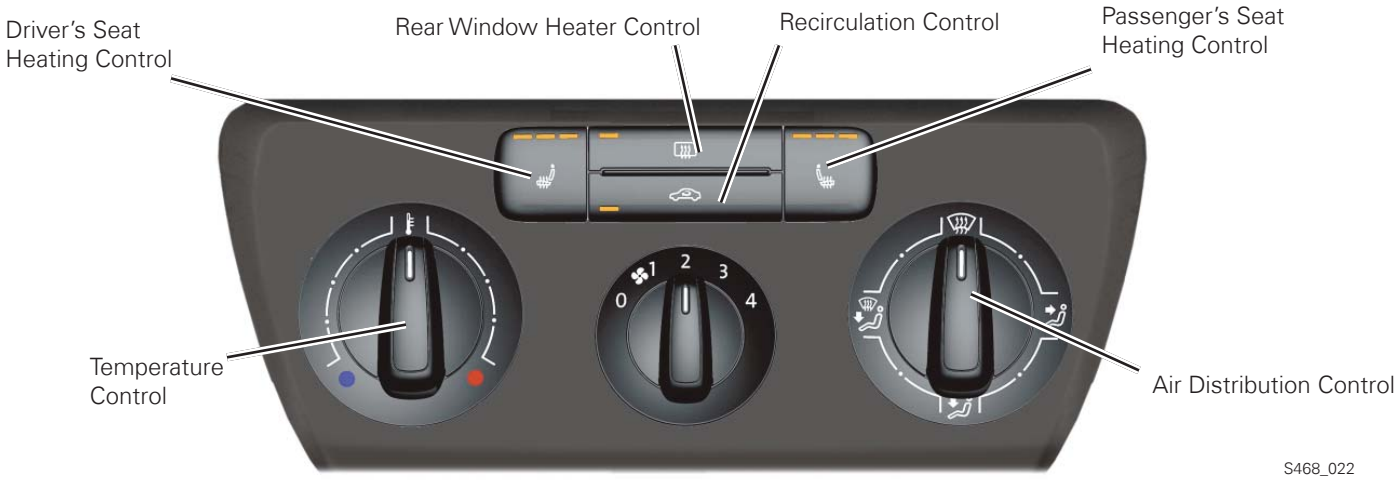


The manual air conditioning system is controlled by a series of cables and flaps. These cables and flaps are operated by the distribution and cooling knobs on the HVAC interface.

The Climatronic air conditioning system allows for separate temperatures to be set for each side of the vehicle. The front and rear areas of each side receives the same temperature setting.

Operation

Heating System Controls



S468_022

Manual Air Conditioning System Controls

S468_023

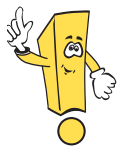
Climatronic Air Conditioning System Controls

S468_083

Radio, Telephone and Navigation

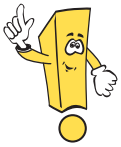
Radios

RCD 310



The radio capabilities are listed following the radio identification images.

RCD 510/Premium 8



The buttons displayed on these radios may change.

RNS 315

RNS 510

Radio, Telephone and Navigation

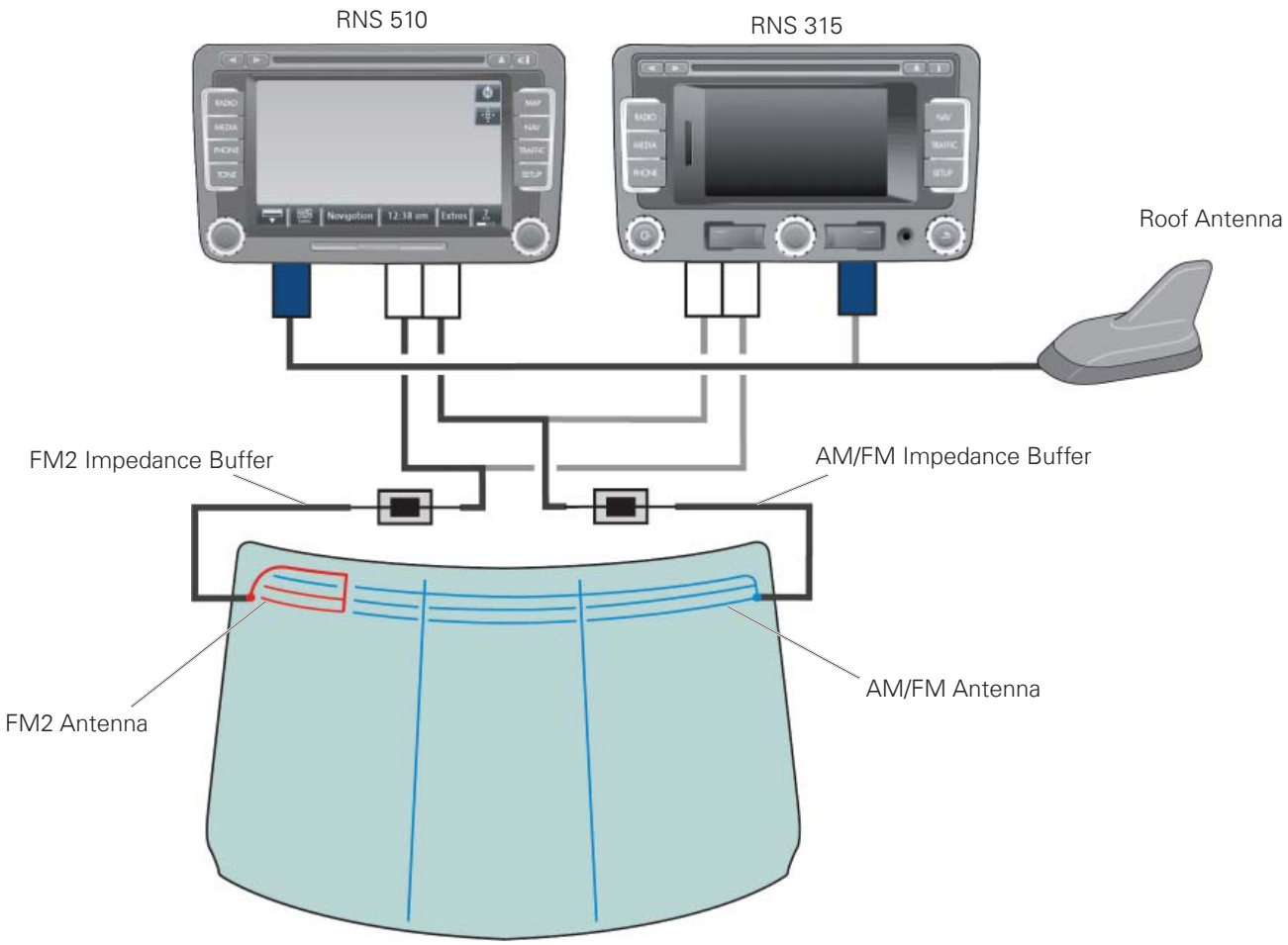
Feature	RCD 310	Premium 8	RNS 315	RNS 510
Optical Drive Type	CD	CD	CD	DVD
CD Changer Function	N/A	6-Disk Internal	N/A	Hard Drive
Color Display	N/A	6.5" 800 X 480 Pixel	5" 400 X 240 Pixel	6.5" 800 X 480 Pixel
Touch Screen	N/A	√	√	√
Car Menus (Climate Control, Optical Parking System)	N/A	√	√	√
MDI Compatible	√	√	N/A	√
Steering Wheel Control Compatible	√	√	Radio/Media/ Phone	Radio/Media/ Speech
Cluster Display Compatible	√	√	√	√
Display Vehicle Information (Climatronic, Park Distance Control)	N/A	√	√	√
Connection for Rearview Camera	N/A	√	√	√
Audio/Media	CD-Audio, MP3, WMA	CD-Audio, MP3, WMA	CD-Audio, MP3, WMA	CD-Audio, MP3, WMA
Video/DVD Playback	N/A	N/A	N/A	√
Diversity AM/FM Tuner	√	√	√	√
Sirius SDARS Tuner	Internal/Optional	Internal	Internal	Internal
CD Ripping	N/A	N/A	N/A	N/A
AUX-In	√	√	1 Front Included, 1 Back	√
External Amplifier Interface	√	√	√	√
External Media with No CD Changer	UHV NAR, BT Audio, MDI	UHV NAR+ (late intro), MDI	UHV NAR, BT Audio, MDI	UHV NAR/High+, BT Audio, MDI
Real-Time Traffic	N/A	N/A	N/A	√ Sirius
Home Destination (Direct Route Back to Home)	N/A	N/A	√	√
Map Display	N/A	N/A	2D and 2.5D Map	2D and 2.5D Map
Phone Support	Automatic Mute	Phone Book, Touchdial (late intro)	Handsfree, Touchdial, BT	Handsfree, Touchdial, BT

BT = Bluetooth

Antenna Concept

Several antennas (AM, FM and FM2) are integrated into the rear window. The antennas for navigation (GPS) and satellite reception (SDARS) are located in a separate roof antenna. The FM impedance buffers are located under the C-pillar trim at the rear window.

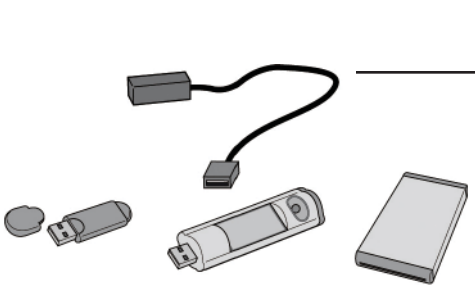
The antenna configuration for all radios is the same. The only difference between the radios is whether there is a roof antenna. The roof antenna will contain Satellite and/or GPS. The RNS 510 and RNS 315 pictured below are examples for the connections of all of the radios.



Media DEVICE Interface (MDI)

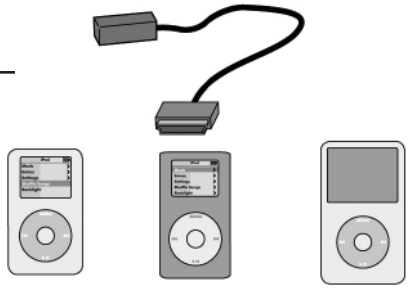
An optional MDI interface is available for all radios. The MDI allows the integration of multimedia components (such as an ipod or MP3 player) into the infotainment system. It also allows the device to be controlled by the radio. The MDI device is located in the glove box.

S468_037



S468_038

Adapter Cable



S468_039

S468_040

Connecting Multimedia Devices

The multimedia devices are connected to the MDI by special adapter cables. These cables are available from the dealership parts department. The following audio formats are supported:

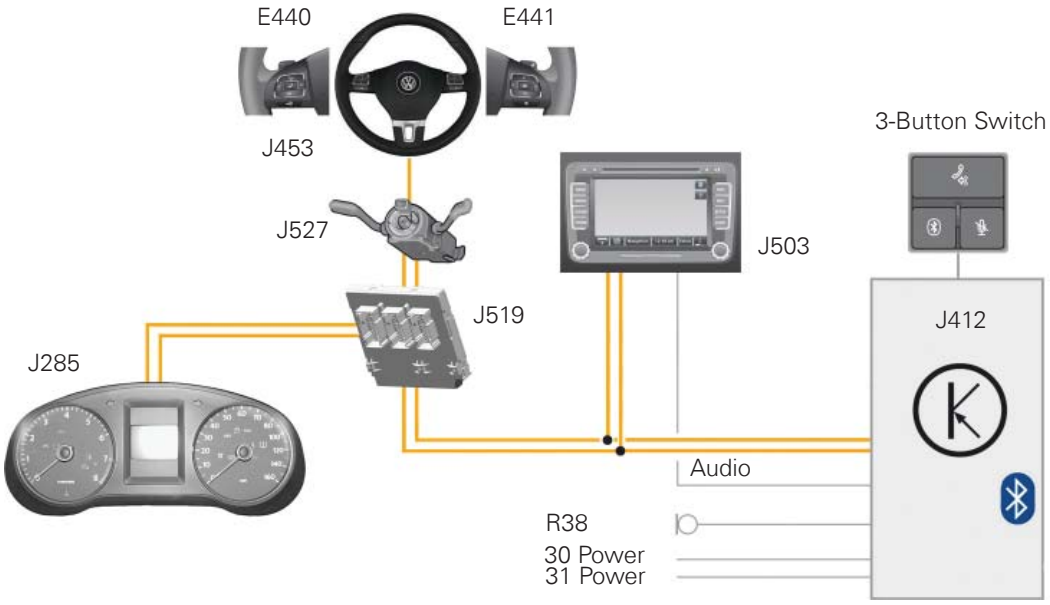
- MP3
- WMA and
- OGG Vorbis
- AAC is the licensed format of Apple.

Mobile Telephone Preparation

The mobile telephone preparation is designed for North American market.

Function

- Mobile phone operation using multifunction steering wheel buttons
- RNS 510, RCD 510 touch-screen control
- Telephone information audio
- Bluetooth integration
- Language muting
- Mobile telephone preparation diagnosis
- SIM data directory in the mobile telephone preparation



Legend

E440 Left Multifunction Buttons (on steering wheel)
E441 Right Multifunction Buttons (on steering wheel)
J285 Instrument Cluster Control Module
J412 Operating Electronics and Telephone Control Module
J453 Multifunction Steering Wheel Control Module
J503 Radio/Navigation Display Unit Control Module
J519 Vehicle Electrical System Control Module
J527 Steering Column Electronic Systems Control Module
R38 Telephone Microphone

Glossary

ABS – Antilock Braking System

ATF – Automatic Transmission Fluid

BAP – Bandwidth Allocation Protocol. This an operation and display protocol. A control module can send an image for display over the CAN-Bus in this protocol. The receiving control module will display the signal. This is how the climate control images can be displayed on the radio.

Bluetooth - Bluetooth communication protocol allows devices, such as cell phones, to transmit data a short distance to an onboard device to allow for hands-free talking and data transfer.

CAN-Bus – Controlled Area Network Bus. This is a communication protocol that allows control modules to share information in specially-coded message packets sent along a twisted two-wire circuit.

Capacitance – The measure of electrical energy stored in any given component. When this energy is disrupted by another component, voltage change can be measured.

DSG – Direct Shift Transmission. This transmission has the construction of a manual transmission with the operation of an automatic transmission.

EDL – Electronic Differential Lock. Transfers power on an axle from side-to-side by using the brakes to slow the spinning wheel.

ELV – Electronic Steering Column Lock

ESC – Electronic Stability Control. Also referred to as Electronic Stability Program (ESP) in some service information. Applies braking to specific wheels to assist the vehicle in emergency turning or swerving situations.

GALA – Function of the radio that increases volume with vehicle speed to compensate for wind and road noise.

GSM – Global System for Mobile communication (GSM).

HVAC – Heating, Ventilation and Air Conditioning

Impedance Buffer – Used to transfer a signal from a first circuit with high output impedance (rear window heater) to a second circuit with low input impedance (antenna system). It prevents unnecessarily loading the low-impedance circuit and interfering with its operation.

KESSY – Keyless access and Starting System

LED – Light Emitting Diode

LCD – Liquid Crystal Display

LIN-Bus – Local Interconnect Network. This is a slower network communication protocol when compared to CAN-Bus.

Megapascal (MPa) = 1 Megapascal = 145 Pounds per Square Inch (PSI).

MDI – Media Device Interface. This is a universal interface for external playback and storage media.

MP3 – Motion Pictures Expert Group Layer 3 (MPEG 3)

OPS - Optical Parking System

RBDS – Radio Broadcast Data System

SAT – Satellite radio.

SIM – Subscriber Identity Module. Contains a unique serial number to identify the subscriber on a mobile telephone. Can be removed and inserted into any other mobile telephone that accepts SIM cards.

Tailored Blanks – Steel sheets of varying thickness that are welded into a single flat blank before pressing. This allows for the creation of steel reinforcements that have the appropriate amount of strength in different areas.

TDI – Turbocharged Direct Injection

TPMS – Tire Pressure Monitoring System

TSI – Turbocharged Straight Injection

UHV – Universal Handsfree Preparation. This is used for communication between the vehicle and your Bluetooth-enabled cellular phone.

WMA – Windows Media Audio

XDS – A higher-performance version of the Electronic Differential Lock that allows for slightly more slip in certain situations.

Page intentionally left blank

Knowledge Assessment

An on-line Knowledge Assessment (exam) is available for this Self-Study Program.

The Knowledge Assessment may or may not be required for Certification.

You can find this Knowledge Assessment at:

www.vwwebsource.com

For Assistance, please call:

Volkswagen Academy

Certification Program Headquarters

1-877-791-4838

(8:00 a.m. to 8:00 p.m. EST)

Or, E-Mail:

concierge@volkswagenacademy.com

Volkswagen Group of America
2200 Ferdinand Porsche Drive
Herndon, VA 20171
August 2010