

The 2006 new GTI Introduction



**Self-Study Program
Course Number 892503**



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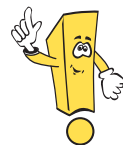
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This Self-Study Program covers information on the 2006 GTI.

**This Self-Study Program is not a Repair Manual.
This information will not be updated**

For testing, adjustment and repair procedures, always refer to
the latest electronic service information.

Note!



Warning!



Introduction

The new Volkswagen GTI

The new GTI is a fifth generation total redesign of the original “pocket rocket.” Always an incredibly fun car to drive, mating low vehicle weight and precise handling characteristics to a powerful engine package, the new GTI redefines its class.

A new chassis, body and electrical system complement the 2.0L turbocharged 200 hp engine. Best of all, 207 lbs-ft of torque give the new GTI remarkable grunt from the line and in all gears. The optional Direct Shift Gearbox (DSG) is a perfect match to the new GTI drivetrain.

To ensure optimum handling and driving characteristics, the new GTI’s static body rigidity is up 80 percent. This increased stiffness results in more direct use of power, greater stability, and enviable handling through corners.

Red painted brake calipers, black honeycomb grille, and a well-appointed interior make this new GTI stand out, not only against the competition, but alongside the GTI legacy of nearly three decades.



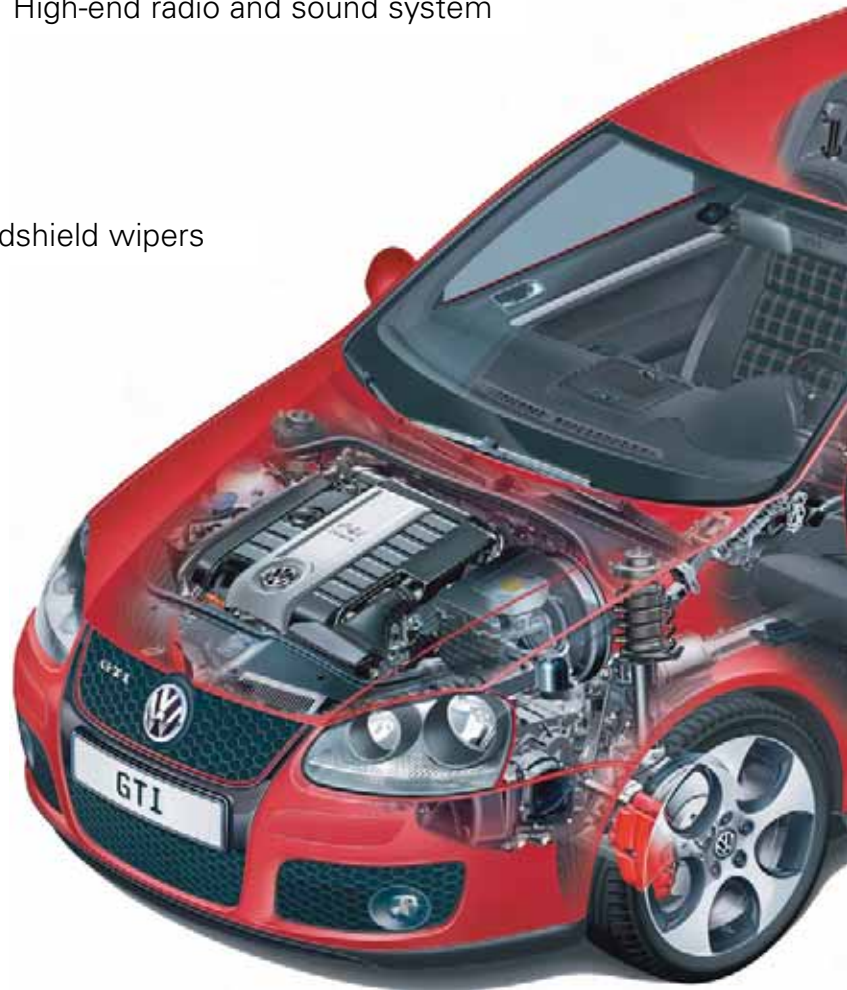
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Brief Overview

The new GTI

The new GTI sets new standards for its class in many areas, including:

- Design
- Handling dynamics
- Drivetrain technology
- Spaciousness
- Safety
- Quality
- High-end radio and sound system
- Variable intermittent windshield wipers
- Electro-mechanical power steering
- 2.0T FSI, 200 hp engine



Brief Overview



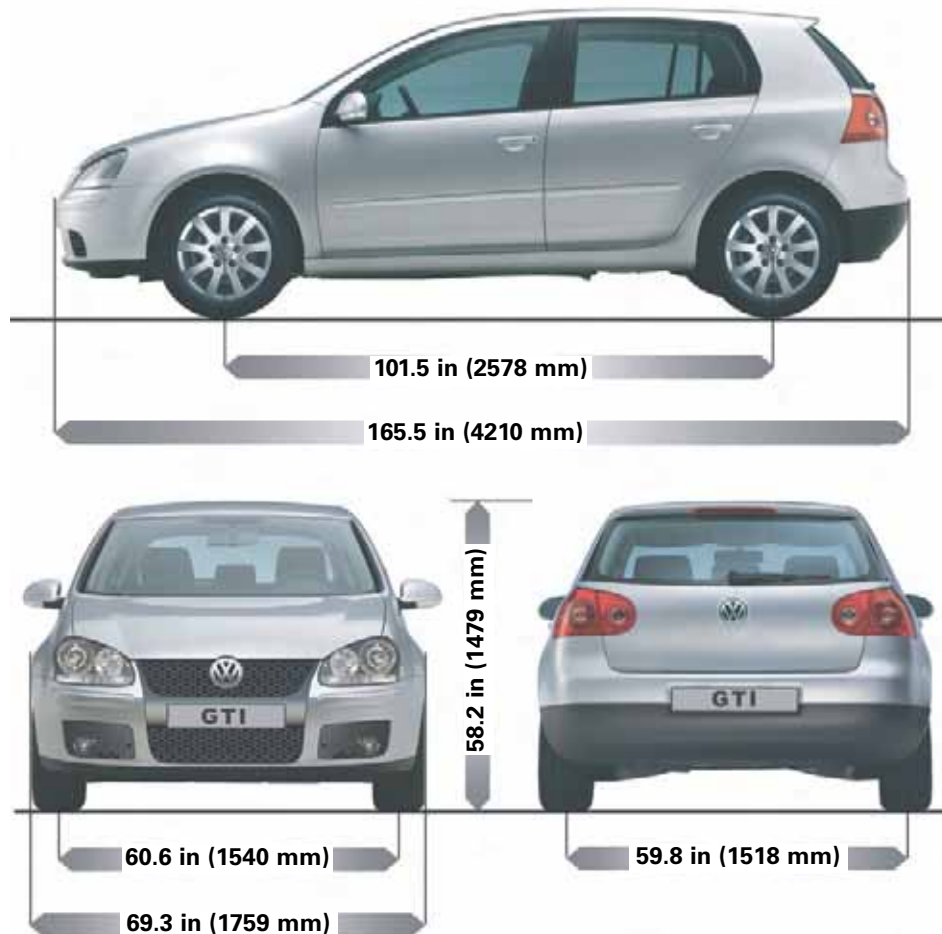
- Optional Dual-Zone Climatronic
- Various storage options, including an overhead console

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Brief Overview

Specifications

Weights and Exterior Dimensions

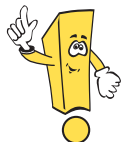


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Dimensions and Weights

Length	165.5 in (4210 mm)
Width	69.3 in (1759 mm)
Height	58.2 in (1479 mm)
Wheelbase	101.5 in (2578 mm)
Fuel Capacity	14.5 gal (55 l)

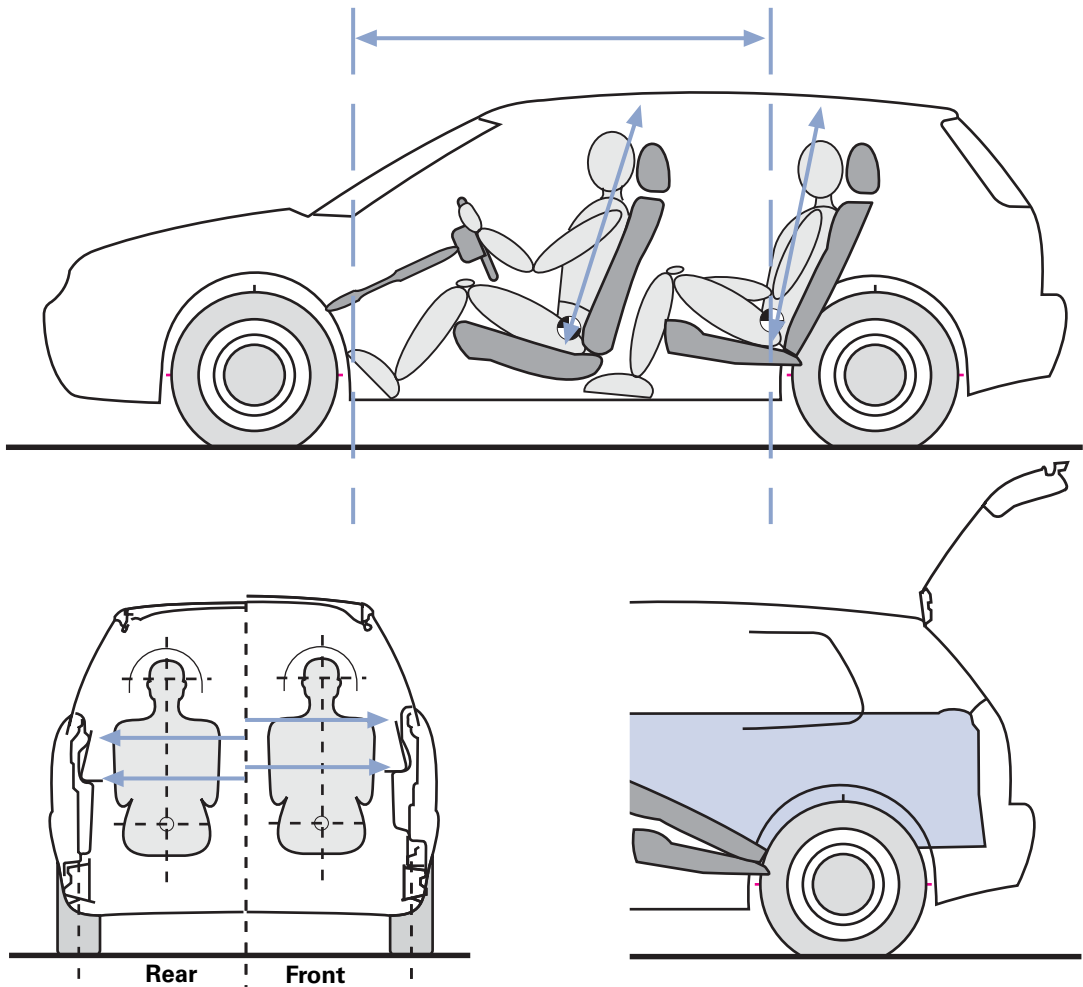
Front Track Width	60.6 in (1540 mm)
Rear Track Width	59.8 in (1518 mm)
Curb Weight	3308 lb (1500 kg)
Cargo Volume	15.1 cu ft (0.4 cu m)
Drag Coefficient	0.32



Four-door new GTI shown here will be launched in North America later in 2006.

Brief Overview

Interior Dimensions



892503_004

Dimensions

Front Head Room	39.3 in (998 mm)
Rear Head Room	approx. 38.5 in (979 mm)
Cabin Length	68 in (1736 mm)
Front Shoulder Room	approx. 54.7 in (1390 mm)

Rear Shoulder Room	54.6 in (1386 mm)
Cargo Capacity with rear seat folded	46 cu ft (1305 l)

Body

Chassis Construction

Static and Dynamic Rigidity

The new GTI sets new standards in its class for static and dynamic rigidity using lightweight design principles.

Fenders, doors, and side panels are all made of high strength steel.

Laser Weld Technology

The new GTI has 23 feet of laser-welded seams compared to 16 feet in the previous GTI. This increase in laser welds has resulted in significant improvements in chassis strength and rigidity.

Laser weld technology improves chassis quality by strengthening the welded surface while reducing sheet metal deformation typically caused by the heat and pressure of other welding methods.



Key:

Green = Side impact zone

Yellow = Occupant cell

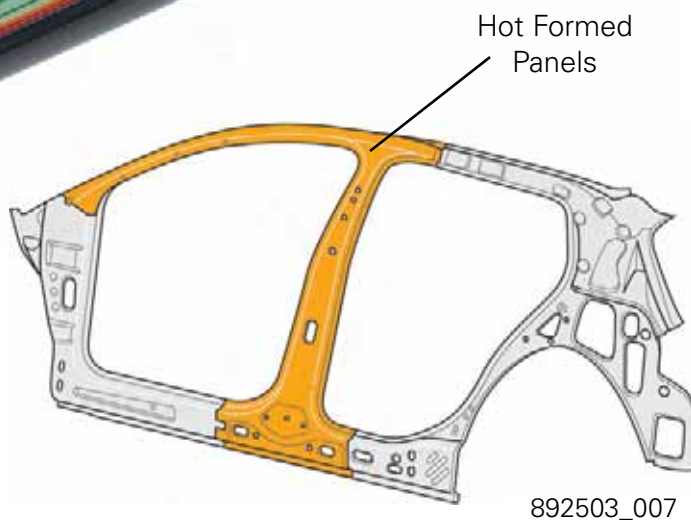
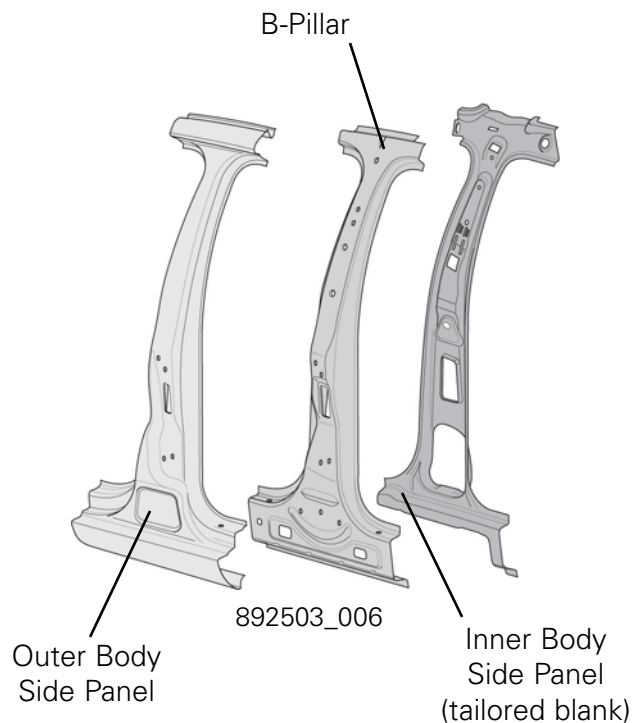
Blue = Frame structure

B-Pillar

The new GTI's B-pillar consists of three panels that provide improved passenger protection in the event of a side-impact collision.



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Hot Formed Panels

The B-pillar and adjacent portion of the body in the direction of the A-pillar are heat treated during the forming process to increase strength. These hot formed panels are stronger and weigh less than the panels on previous models.

Body

Exterior Parts

Front Bumper

An impact-absorbing foam element is integrated into the front bumper, reducing the risk of injury to pedestrians. This foam element allows compression of the front bumper during impact.

Headlights

Standard:

- Xenon headlights
- Halogen foglights
- Headlight washer system featuring polycarbonate lenses that are:
 - Clear
 - Lightweight
 - Chip resistant

The turn signals are located below the low and high beam headlights to improve their visibility to other drivers.



Exterior Mirror

LED turn signals are integrated into the exterior mirrors.



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Tail Lights

The new GTI has two-part tail lights. One part, with the brake light and turn signal, is on the body. The other part, with the reverse light, is on the tailgate.

Brake Light

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Turn Signal

Reverse Light



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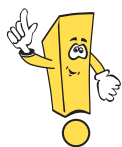
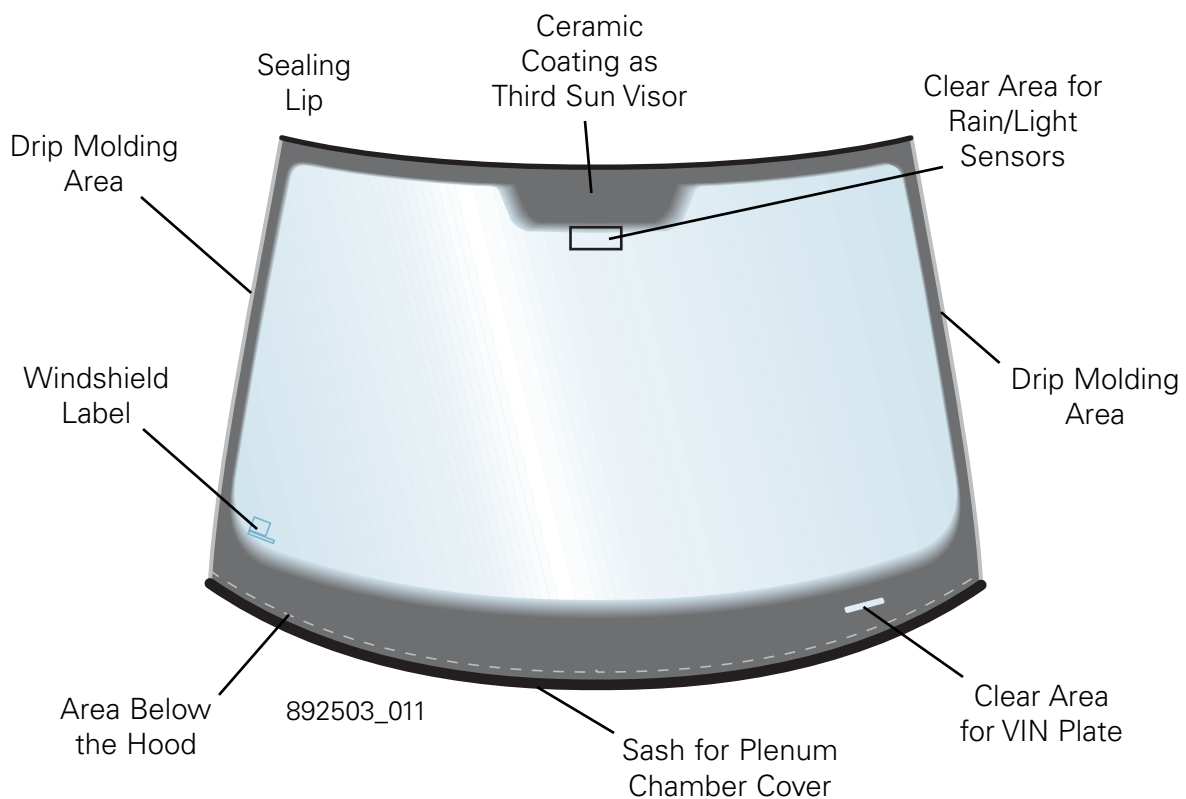
Body

Windows

The windows on the new GTI are blue-tinted heat insulated glass. Thickness of window glass depends on its location:

- Windshield glass is 0.17 in (4.4 mm)
- Front side windows are 0.14 in (3.5 mm)
- All other windows are 0.12 in (3.15 mm)

All fixed windows are bonded to the body.

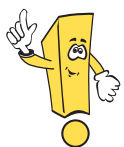
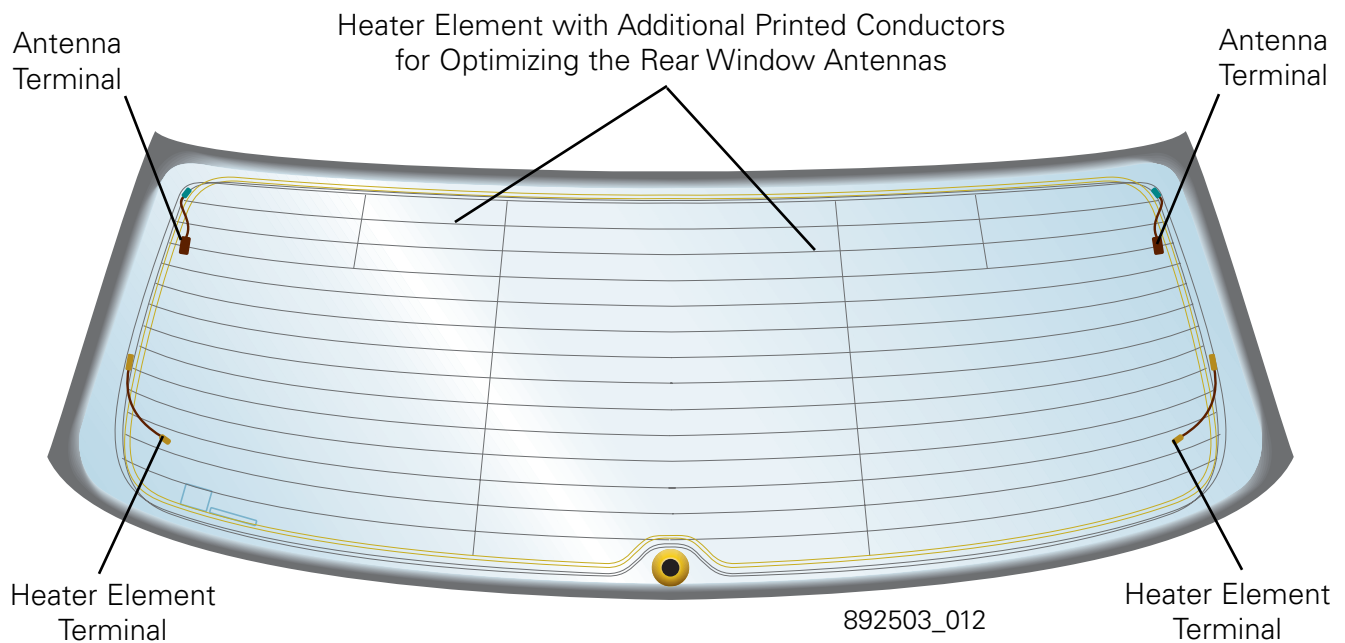


Always place the windshield on its side. Other placement may damage the sash at the bottom or the sealing lip at the top.

Rear Window

Rear windows are produced with integral diversity antennas. Diversity antennas connect to the diversity switching box through two terminals on the window.

Signals are relayed simultaneously from these terminals to the radio and the diversity switching box. Using both antenna signals significantly reduces interference and allows the radio to choose the strongest signal.



Be sure to order the correct replacement rear window to ensure all electrical terminals are present.

Body

Hood Latch Cable

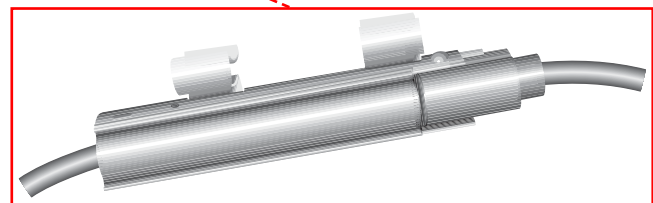
The hood latch cable (bowden cable) for releasing the hood latch from inside the passenger compartment is located in a protected area in the engine compartment.

The hood latch cable disconnect point is located under the hood behind the driver side headlight assembly. This allows front end service without removing the cable from the vehicle's interior.



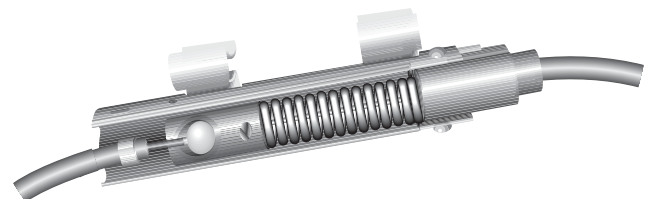
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Disconnect Point Closed



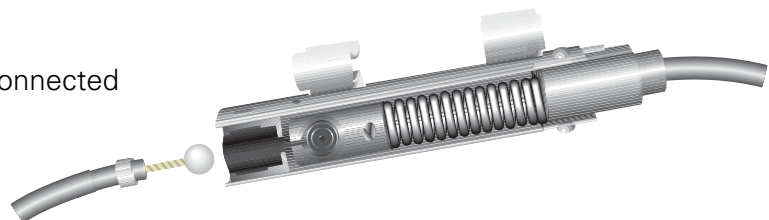
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Disconnect Point Open



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Bowden Cable Disconnected



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Trunk Lid

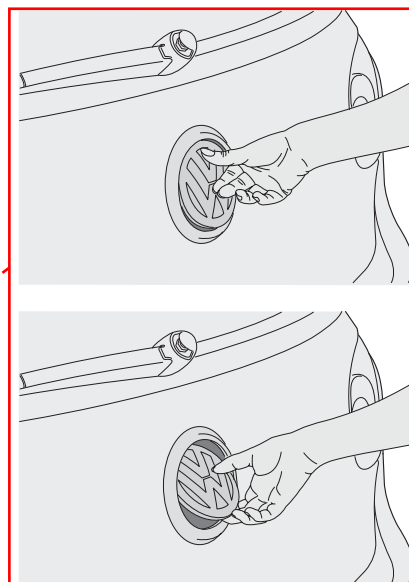
The trunk lid has a new locking mechanism. The Volkswagen badge swivels upward under gentle pressure, which is applied to the top third of the badge, to become a neat handle for opening the trunk lid. After that, the badge glides gently back into its original position.

Emergency Release Mechanism

Removing the interior trunk trim allows access to the locking linkage for emergency release of the trunk.



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892503_018

Body

Seat Design Features

Front Seats

The standard seat has the following features:

- 8-way manual adjustment
- Full recline
- Adjustable, lockable head restraints
- Easy Entry System (illustrated below)
- Adjustable lumbar support

The optional seat adds:

- Leather sport trim
- Electrically adjustable lumbar support
- Adjustable heated seating surfaces



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Optional Seat with Lumbar Support



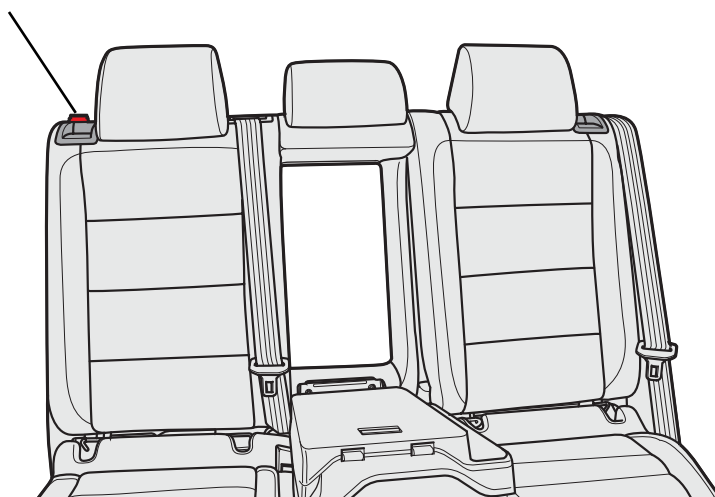
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Easy Entry System

Rear Seats

The rear seat cushion extends across the full width of the interior. The backrest is split 60/40 and can be folded down and locked, using a rotary latch. A red indicator shows if the backrests are locked or not.

Seat Locked Indicator



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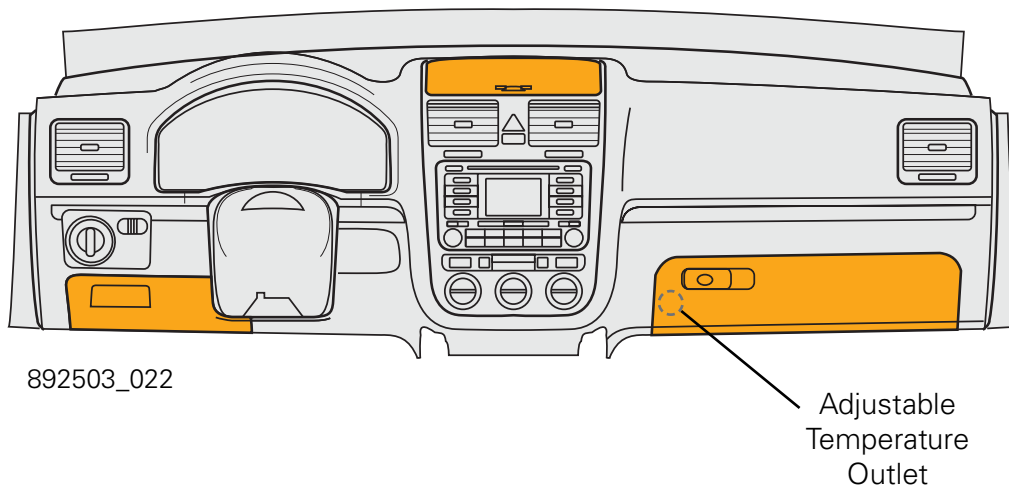
Body

Storage Areas

The new GTI features numerous convenient storage areas.

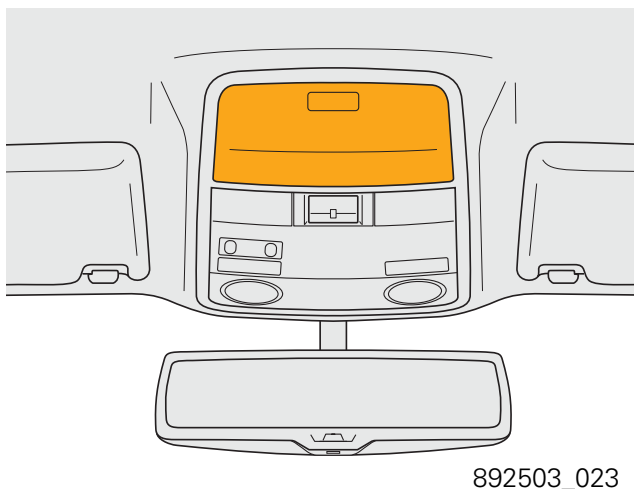
Front Storage

The spacious, lockable glovebox features an adjustable temperature outlet, so contents can be kept cool.



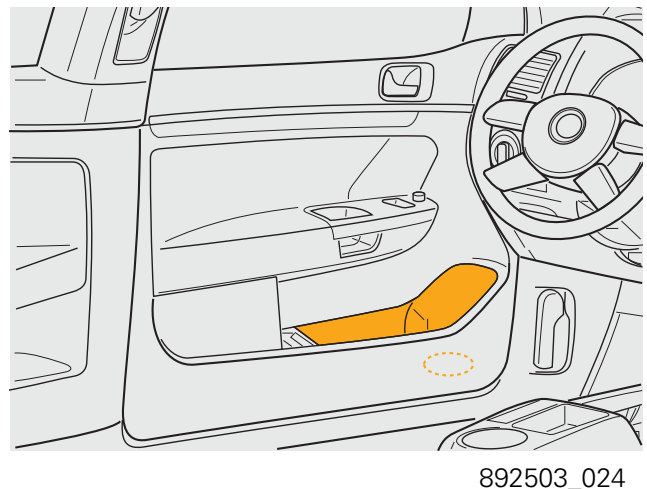
Overhead Storage

There is a standard open storage compartment in the overhead console of the new GTI.



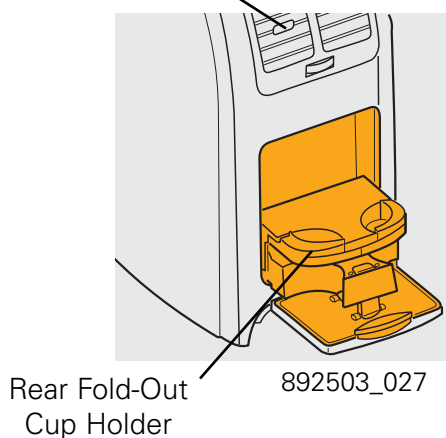
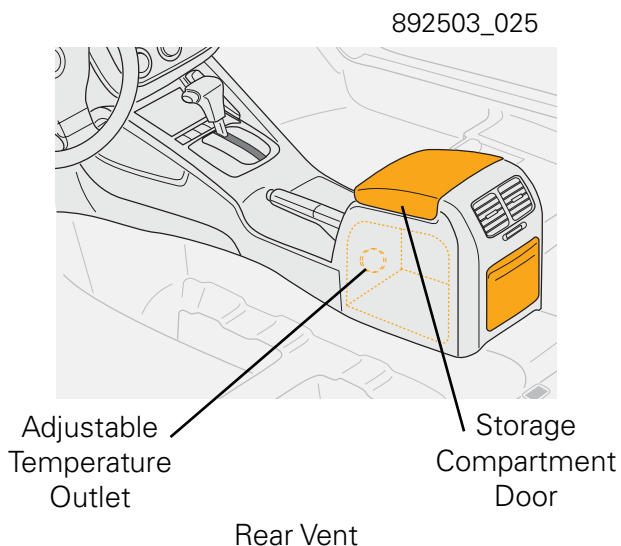
Door Storage

Storage compartments, and a cup holder for 1.6 quart (1.5 liter) bottles are located in the door panels.



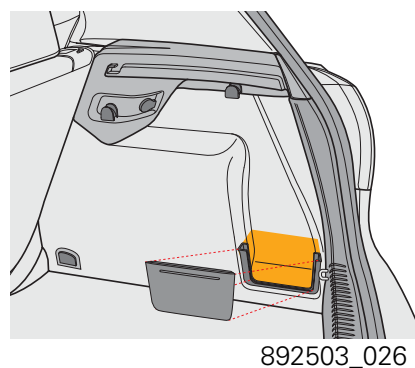
Center Console Storage

A new storage option includes an air-conditioned storage compartment in the center console and fold-out cup holders for the rear seats.



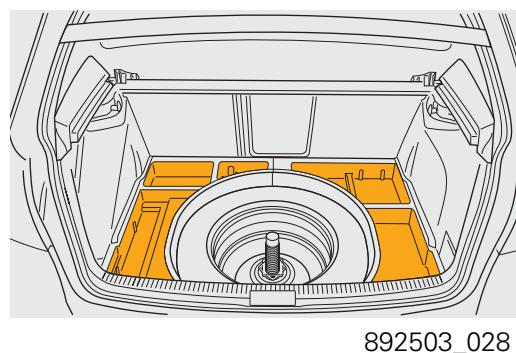
Trunk Storage

A sliding cover provides access to a side compartment for storing small objects. Removal of the sliding cover allows parallel storage of larger items such as a golf bag.



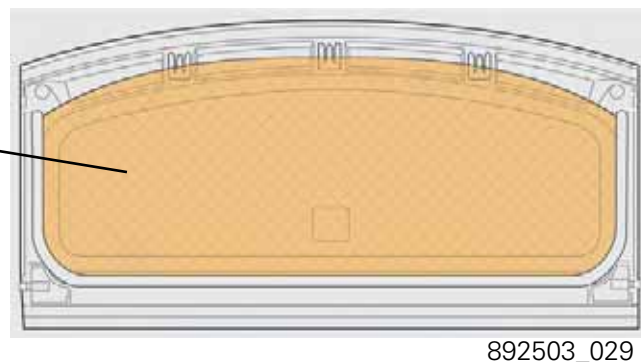
Spare Tire Area Storage

The steel spare wheel and 205/55R 16H all-season tire are located under the luggage compartment floor, to save storage space.



Storage Net on Rear Shelf

An optional storage net which attaches to the underside of the rear shelf stores small objects safely away.



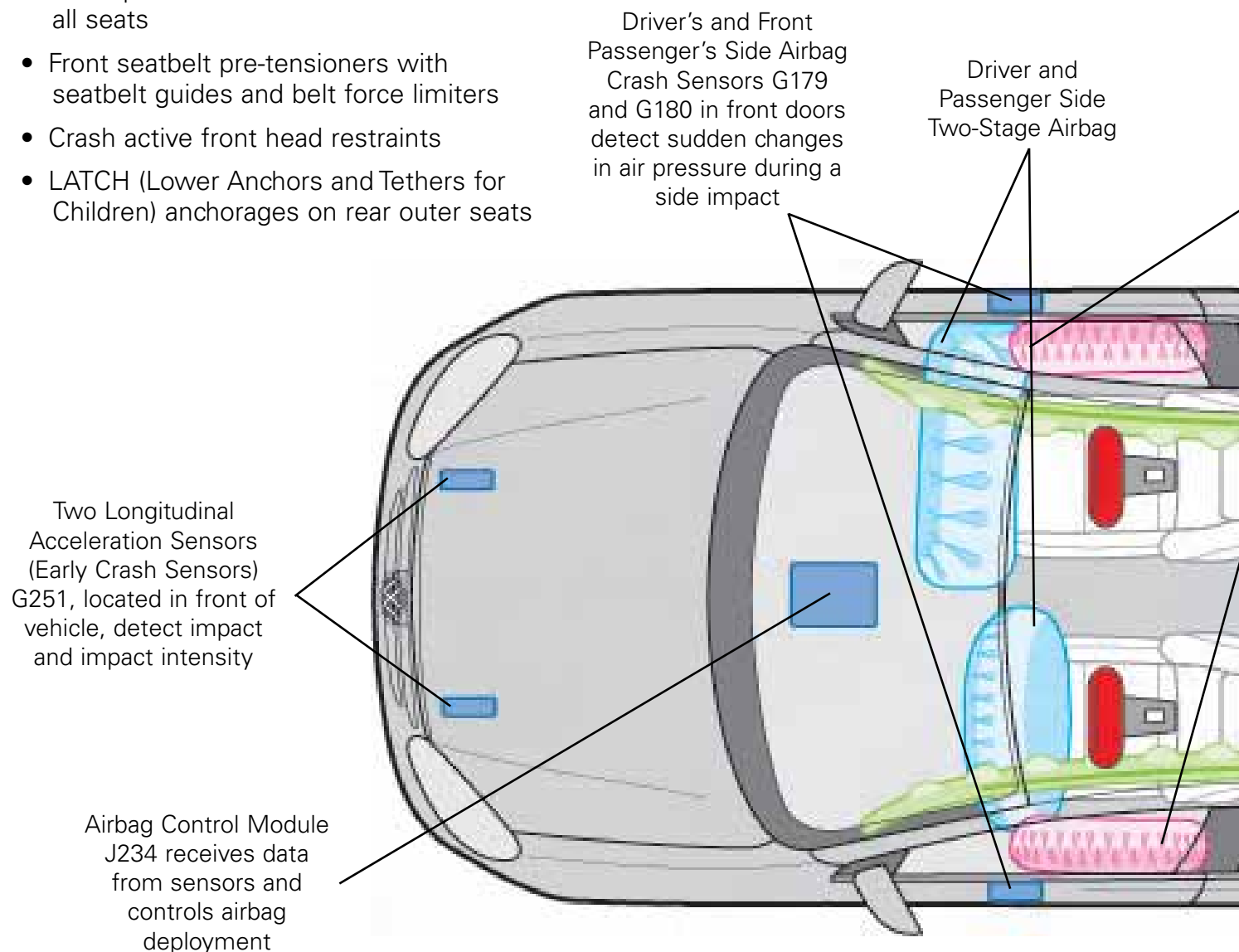
Occupant Safety

Introduction

The new GTI provides the following protection systems and devices.

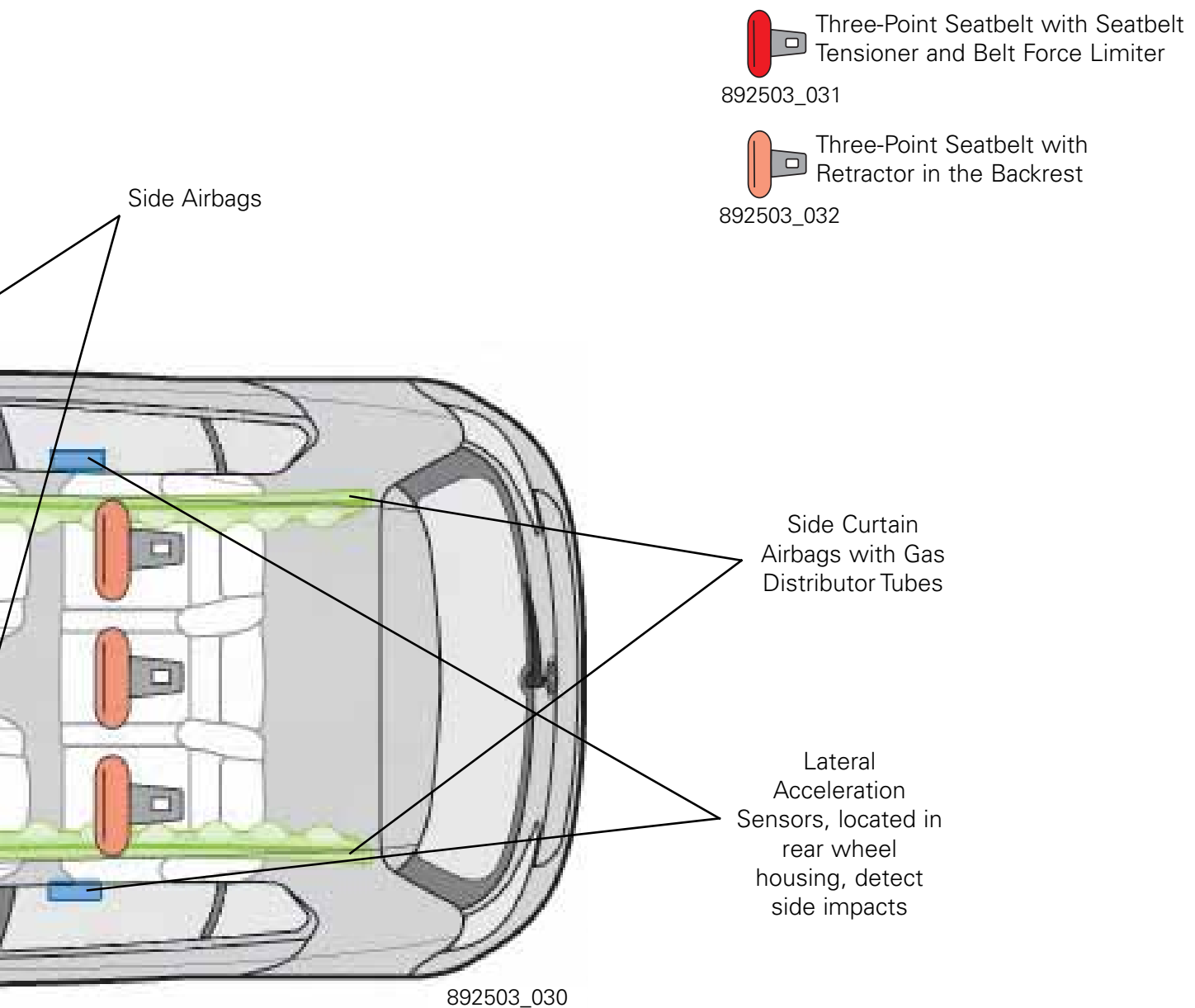
Standard protection equipment includes:

- Driver and front passenger airbags
- Driver and front passenger side thorax airbags
- Front to rear Side Curtain Protection airbags
- Three-point seatbelts with retractors on all seats
- Front seatbelt pre-tensioners with seatbelt guides and belt force limiters
- Crash active front head restraints
- LATCH (Lower Anchors and Tethers for Children) anchorages on rear outer seats



Occupant Safety

In the Side Curtain Protection airbags, which cover a window area extending from the A-pillar to the C-pillar, a gas distributor tube ensures uniform inflation of the airbags in the event of a crash.



Occupant Safety

Side Airbag Crash Sensors

Driver Side Airbag Crash Sensor G179 and Front Passenger Side Airbag Crash Sensor G180 replace the conventional acceleration sensors for side impact detection.

These new pressure sensors provide faster detection of side impacts in the door area.

Sensor Function

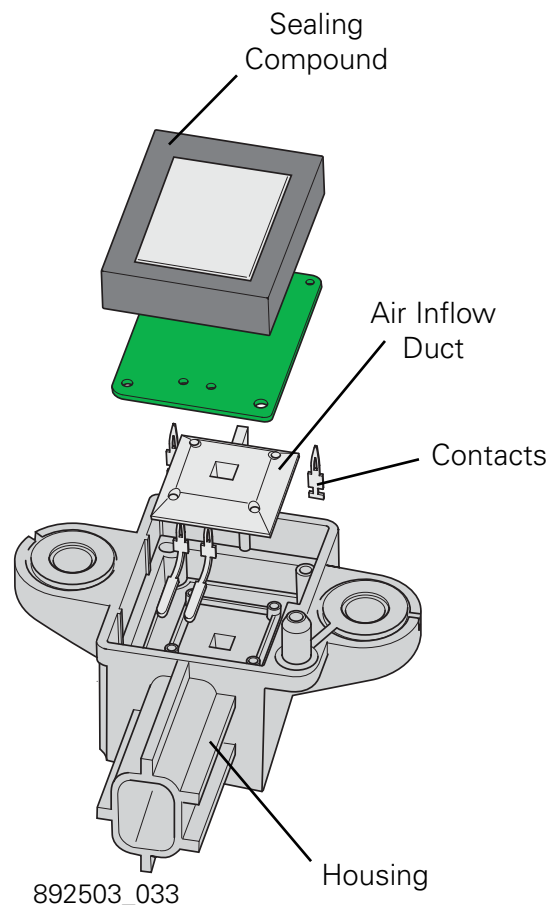
The side airbag crash sensors are located in the front doors between the inner and outer body panels. These sensors react to changes in air pressure in the door cavity. Air is directed through an inflow duct to a plate. The components on the plate react to rapid changes in air pressure that occur during a crash.

Sensor Signal

The sensor continuously monitors air pressure in the door cavity. If the sensor detects a rise in air pressure above a predetermined value, it sends a signal to the airbag control module.

Sensor Failure

If the sensor fails, the airbag warning lamp, located in the instrument cluster, will come ON.



2.0L FSI Turbocharged Engine

The 2.0T FSI engine combines the advantages of direct injection combustion with exhaust turbo charging technology. The result is an extremely responsive engine.

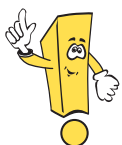
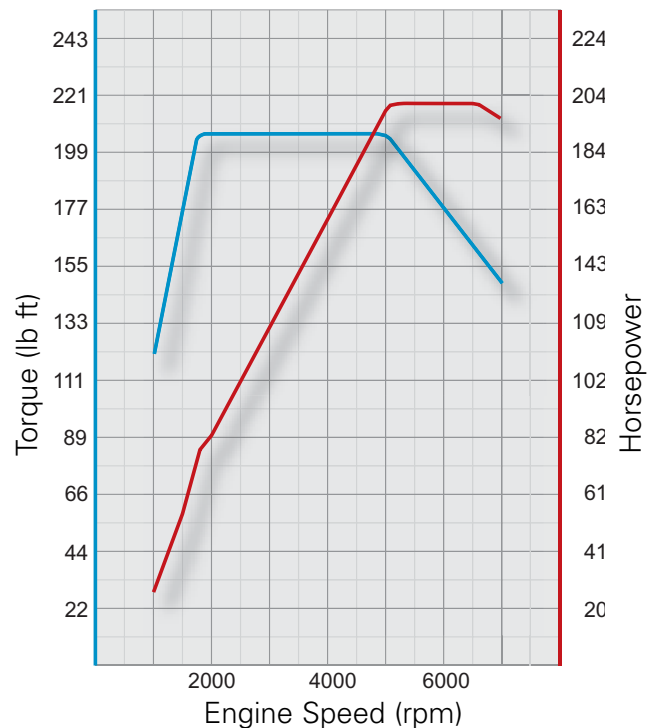
Type	4-cylinder in-line
Displacement	121 cu in (1984 cc)
Bore	3.2 in (82.5 mm)
Stroke	3.7 in (92.8 mm)
Valves Per Cylinder	4
Compression Ratio	10.5:1
Maximum Output	200 hp (147 kW) at 5100- 6600 rpm
Maximum Torque	207 lb ft (280 Nm) at 1800-4700 rpm
Engine Management	Bosch Motronic MED 9.1
Camshaft Adjustment	42° crank angle
Fuel	Premium Plus unleaded, Premium unleaded, Regular unleaded with slight reduction in power
Exhaust Gas Treatment	Two three-way catalytic converters with oxygen sensor regulation



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Torque and Power

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For additional information on the 2.0L FSI engine, please refer to SSP 821503 "The 2.0L FSI Turbocharged Engine Design and Function."

Powertrain

6-Speed Manual Transmission 02Q

The 02M transmission, previously used in the Golf, Jetta and New Beetle was used as a base for the 6-speed manual transmission 02Q.

This transmission has the following changes in comparison to the 02M:

- Selector switch modifications
- Stops in the housing to provide additional support for selector forks



892503_036

6-Speed Direct Shift Gearbox (DSG) 02E

The optional DSG transmission with Tiptronic and Sport mode combines the advantages of a manual transmission with those of an automatic transmission:

Manual:

- High efficiency
- Rugged design
- Sporty performance

Automatic:

- Comfort and convenience when changing gears

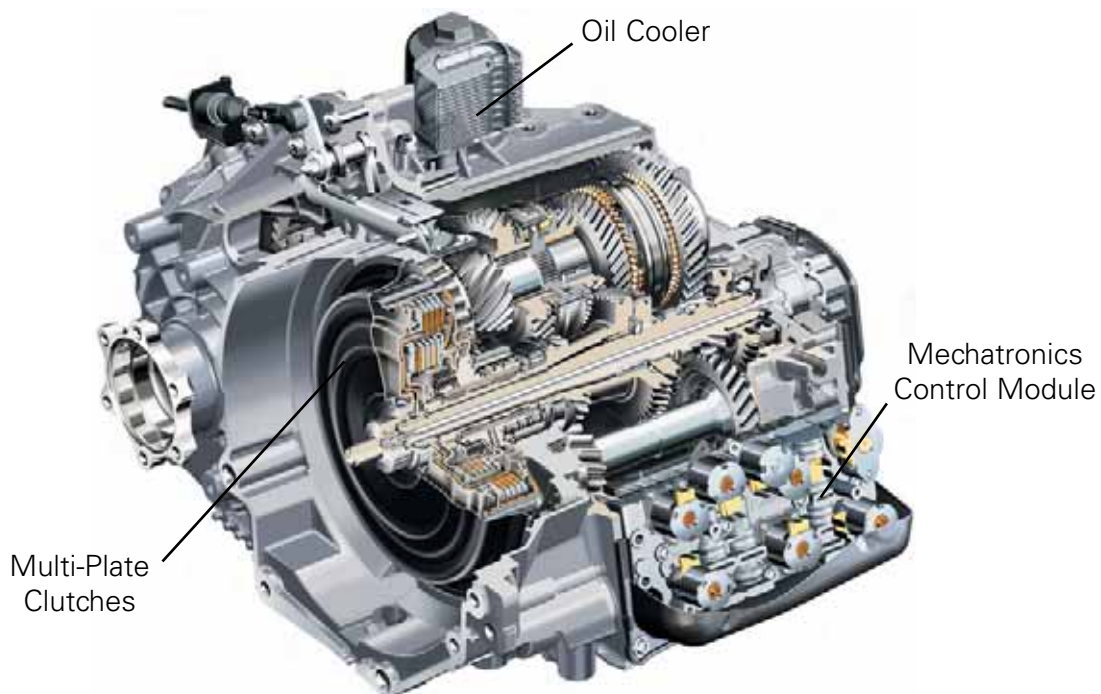
The DSG meets the high standards of comfort expected by automatic transmission users by using two multi-plate clutches and several automatic shift programs.

The DSG also provides pure driving enjoyment for manual transmission users by allowing the driver to control the gear selection and shifts with its quick, smooth gearshifts. The DSG delivers better fuel economy than typical manual transmissions.

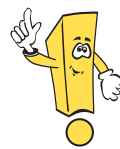
Powertrain

DSG features include:

- Six forward gears and one reverse gear
- Normal shift control program "D" and Sport shift control program "S"
- Tiptronic shift control and steering wheel shift control
- Mechatronics: electronic and hydraulic control modules in a single unit are integral to the transmission
- Oil cooler mounted on the transmission
- Torque capability of 258 lb-ft (349 Nm)



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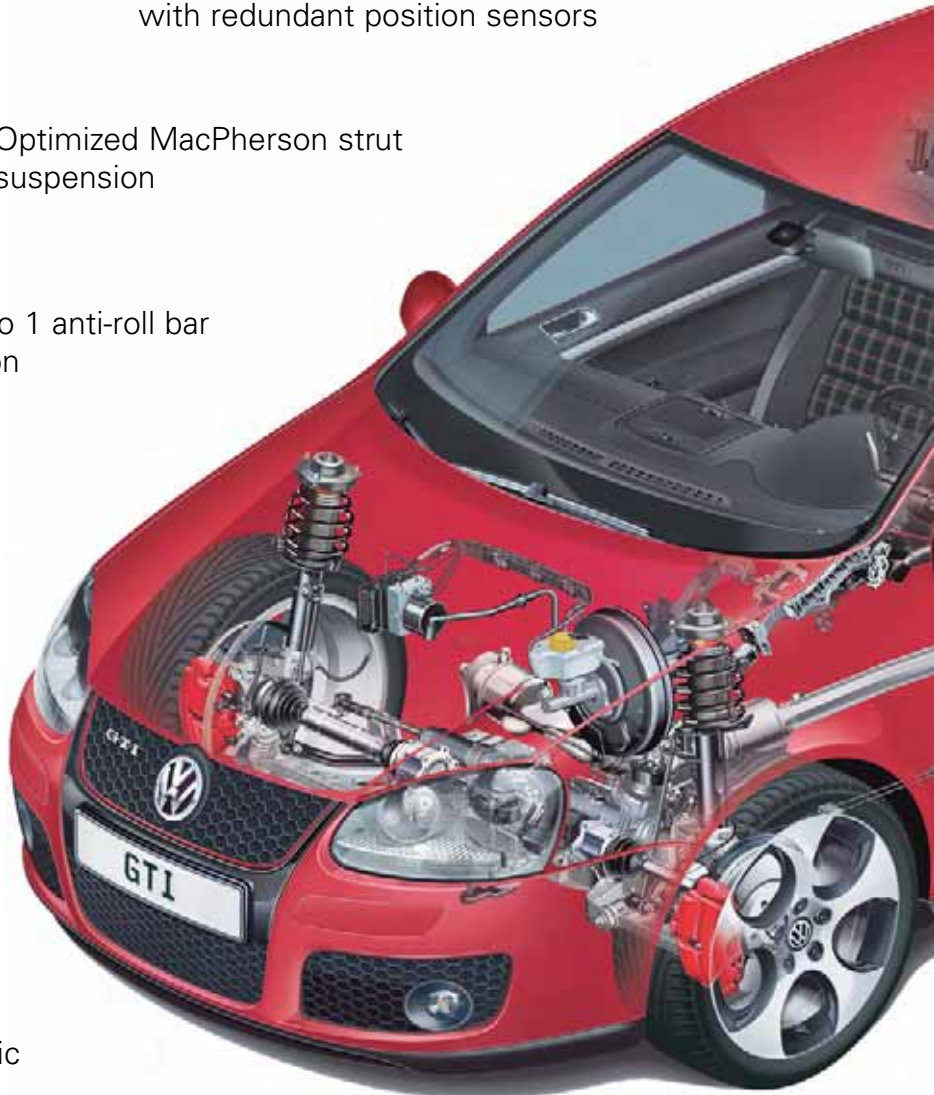
For additional information on the DSG, please refer to SSP 841403 "Volkswagen 02E Direct Shift Gearbox."

Running Gear

Suspension Features

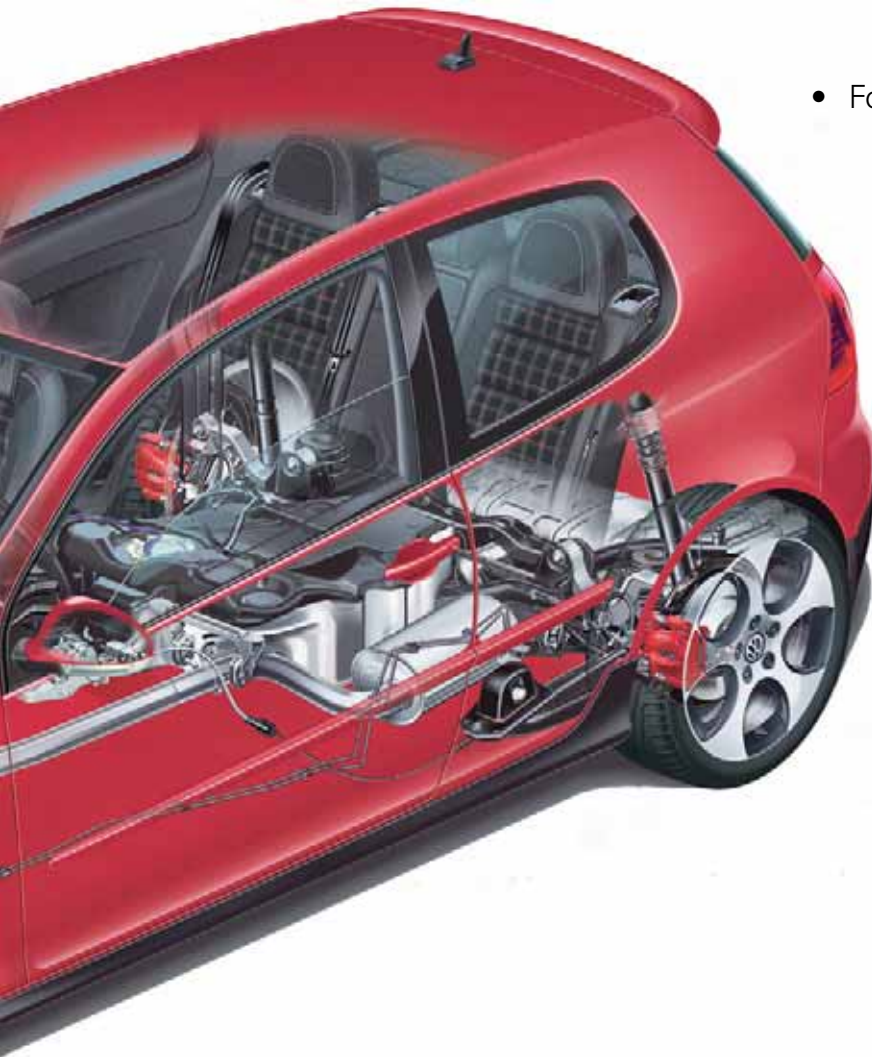
A front axle strut suspension provides the new GTI with state of the art handling characteristics. The new balanced four-link rear axle suspension complements the front suspension with its own superior performance characteristics.

- Floor-mounted accelerator pedal assembly with redundant position sensors
- Optimized MacPherson strut suspension
- Direct 1 to 1 anti-roll bar connection
- Electro-mechanical power steering
- Dual rate brake servo
- Continental/Teves MK 60 Electronic Stabilization Program (ESP)



Running Gear

Electro-mechanical power steering provides excellent handling assistance while maintaining road feel. This variable assist system also automatically adjusts the level of assist depending on vehicle speed.



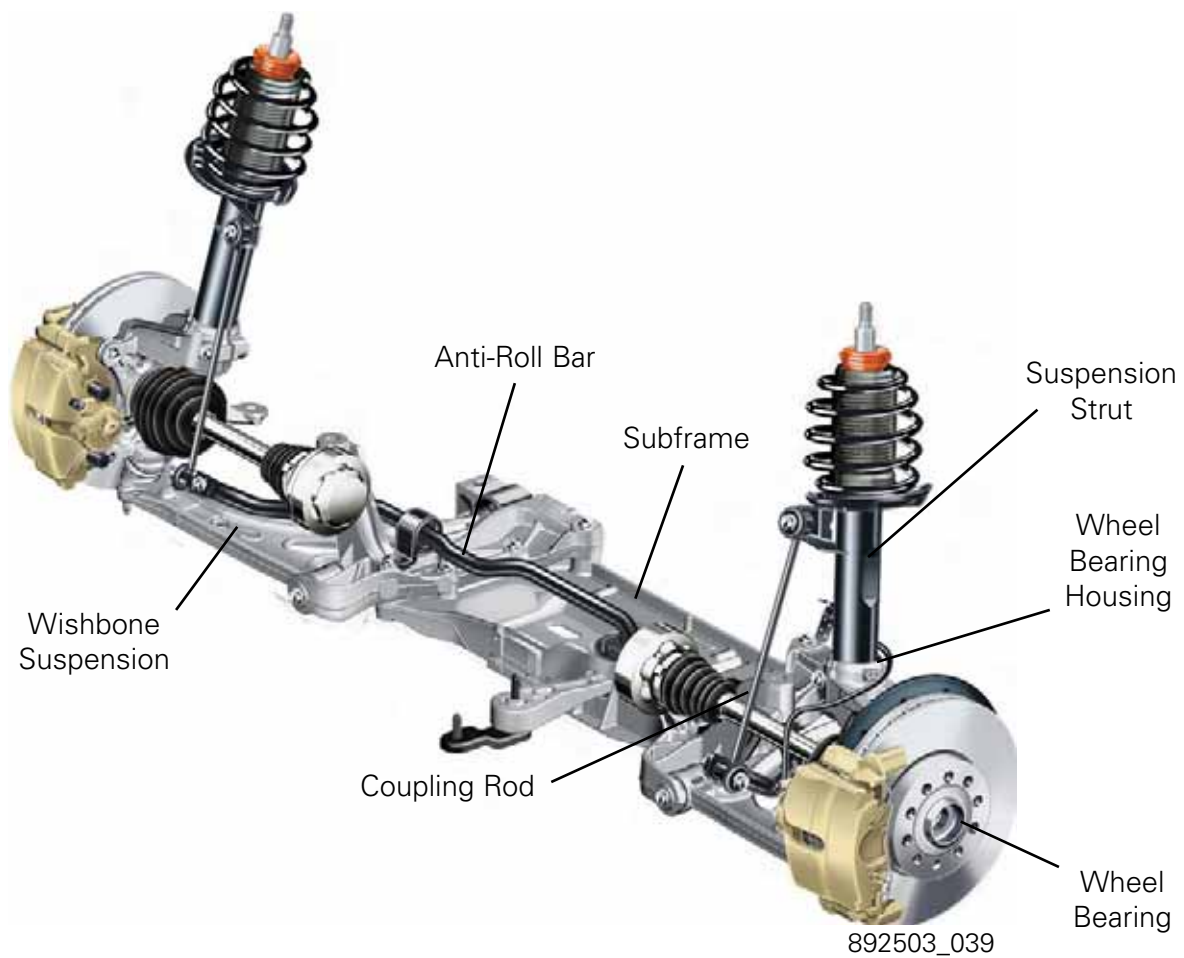
- Four link rear suspension
- Brake assist system
- Toe and camber adjustments on rear suspension
- 17" wheels

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Running Gear

Front Axle

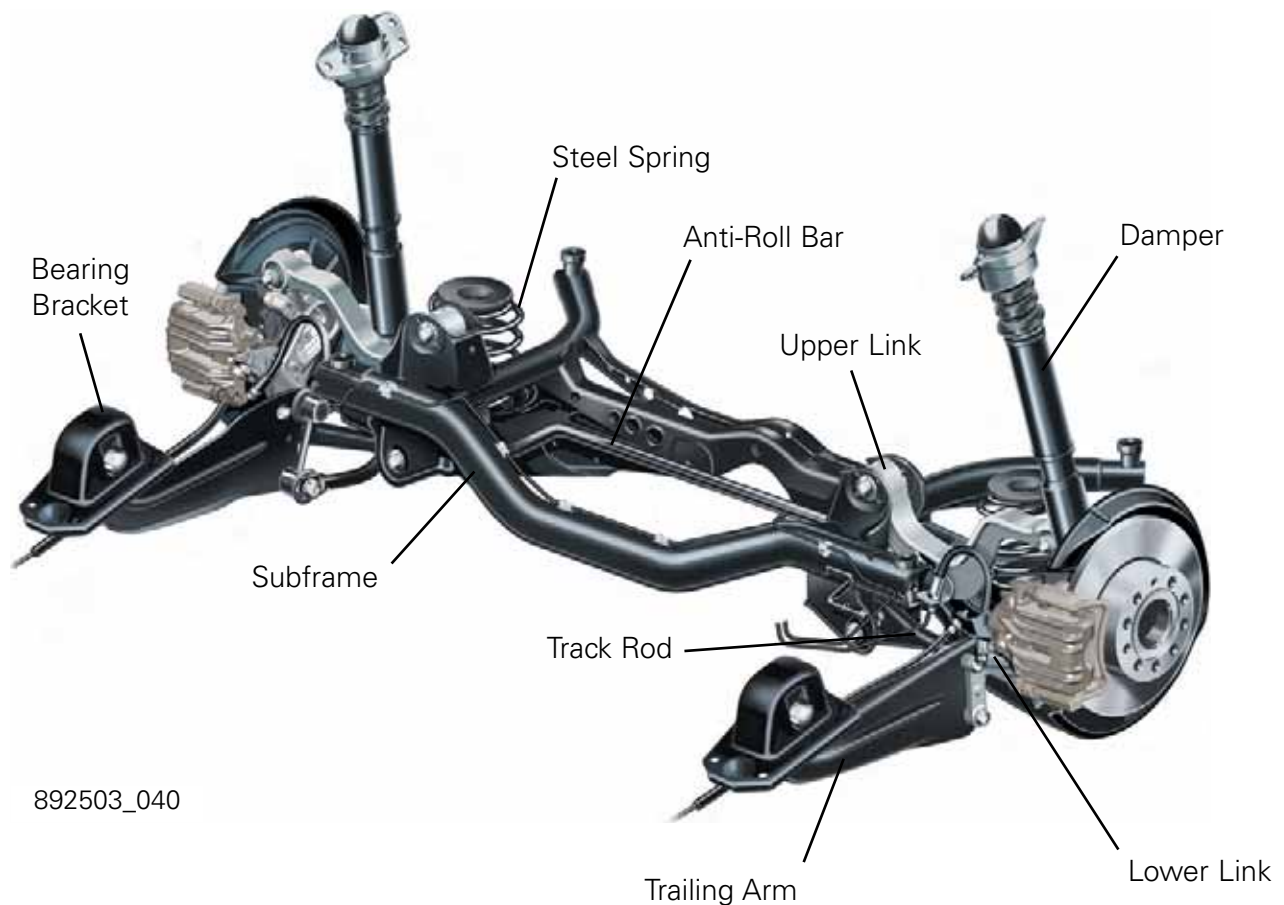
The new GTI is equipped with a MacPherson strut front suspension with a double wishbone design. This design optimizes comfort while maintaining stability.



Rear Axle

The rear axle suspension of the new GTI is a compact four-link design. Each side consists of four suspension links: lower link, track rod and upper link, and a trailing arm. This design greatly enhances stability and ride.

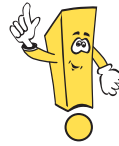
This suspension develops a slight understeer during cornering.



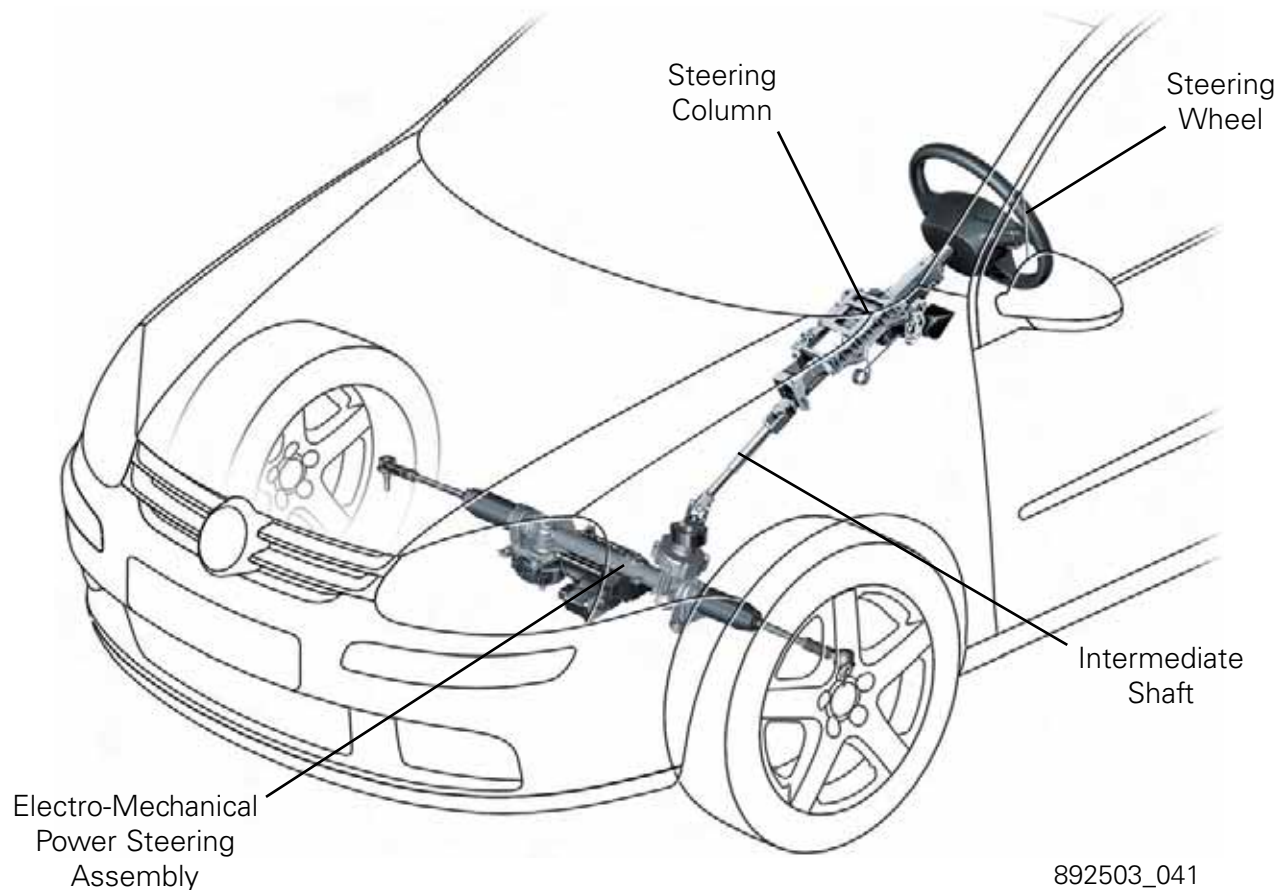
Running Gear

Steering System

The electro-mechanical power steering system enhances the vehicle's driving response by maintaining the driver's precise feel of the road. As speed changes, steering assist adapts. Road surface factors such as bumps and grooves in the road are minimized as much as possible.



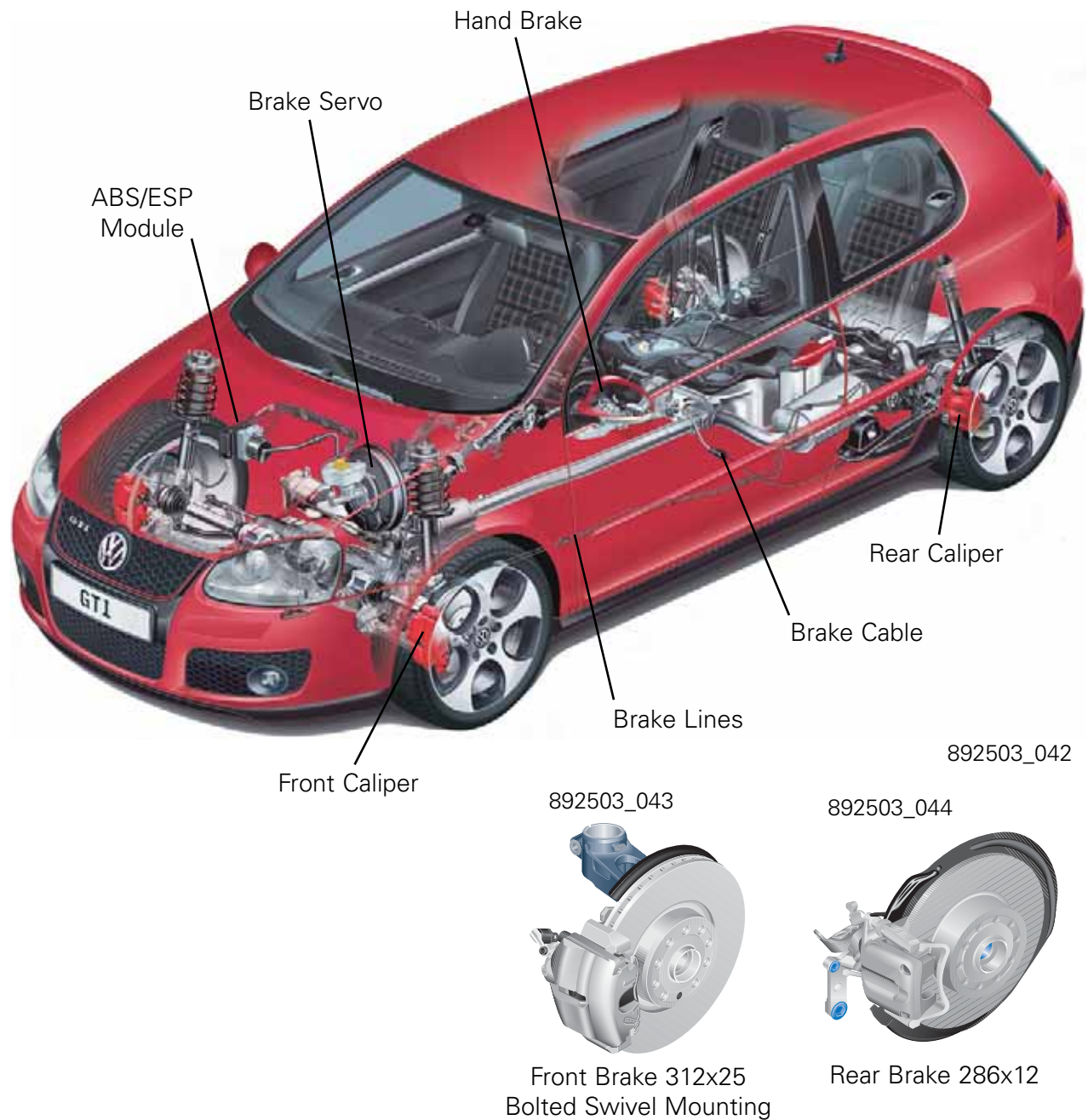
For additional information on electro-mechanical power steering, please refer to SSP 892403 "Electro-mechanical Power Steering Design and Function."



Brake System

Brake System

The newly designed braking system on the new GTI presents the driver with the latest generation ABS/ESP combined with its state-of-the-art power brake assist system.



Brake System

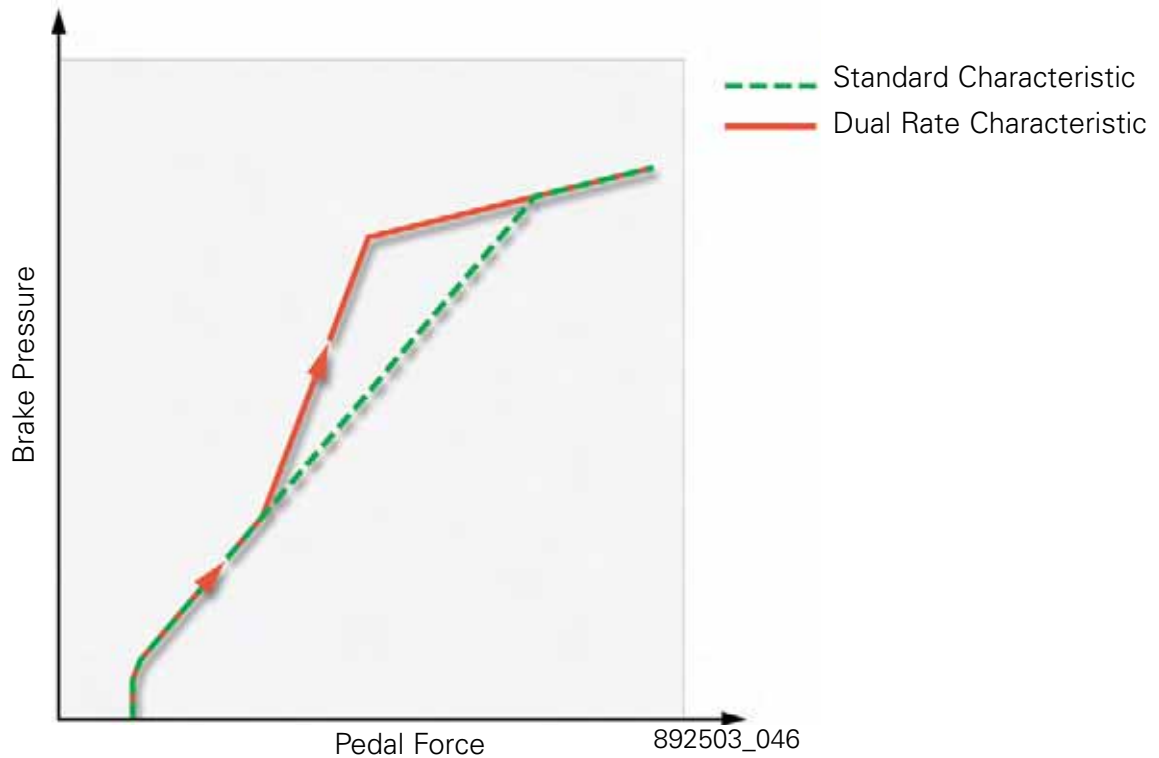
Dual Rate Booster Brake Servo

The new GTI has a 10" brake servo featuring a new "dual rate characteristic."

The inside of the brake servo is modified, resulting in a progressive characteristic that allows higher brake pressures than conventional brake servos, even at low pedal forces. Braking forces are still applied softly during normal operation.



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Brake System

Anti-Lock Braking System ABS/ESP

The Continental/Teves MK 60 ABS/ESP features:

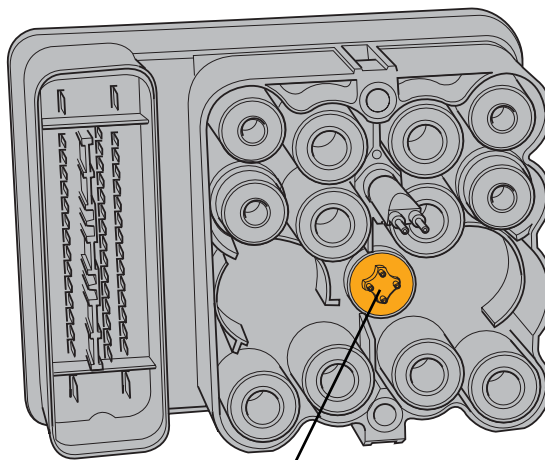
- Active wheel speed sensor
- Combined ESP Sensor Unit G419 (yaw rate/lateral acceleration sensor)
- Brake Pressure Sensor 1 G201 is part of the ESP module — in the past, the brake pressure sensor was mounted on the master cylinder
- New ESP warning lamp



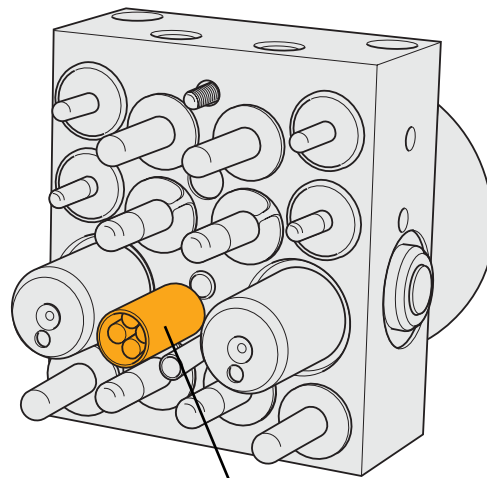
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ABS Control Module J104 with
Brake Pressure Sensor 1 G201

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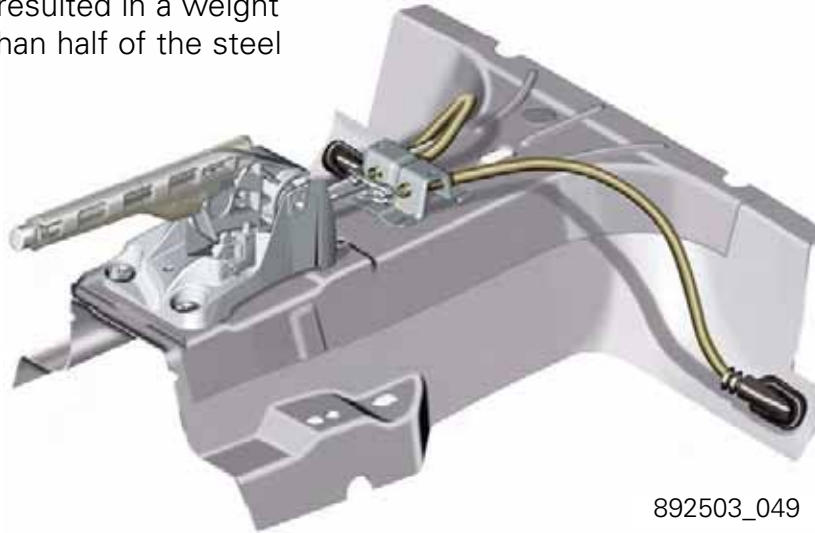
Brake Pressure Sensor
Spring Contacts



Brake Pressure Sensor

Hand Brake

The new design means that the amount of space required in the center console has been minimized. In this way, additional storage facilities have been created behind the handle. The lever is pressure cast from magnesium. This resulted in a weight savings of more than half of the steel version.



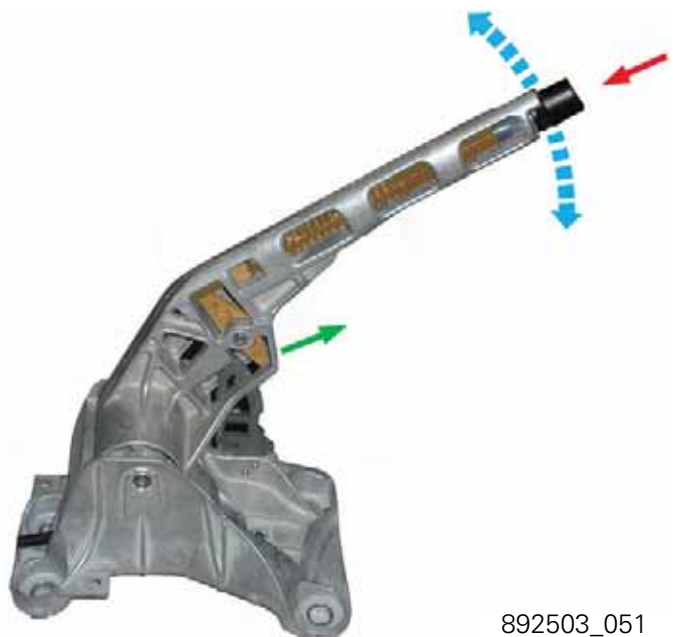
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In the neutral position, the pawl is engaged with the toothed segment and the brake lever is locked.

When the release button is pressed, the pawl is pulled away from the toothed segment and the brake lever is free to move.



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Pedal Assembly

Pedal Assembly

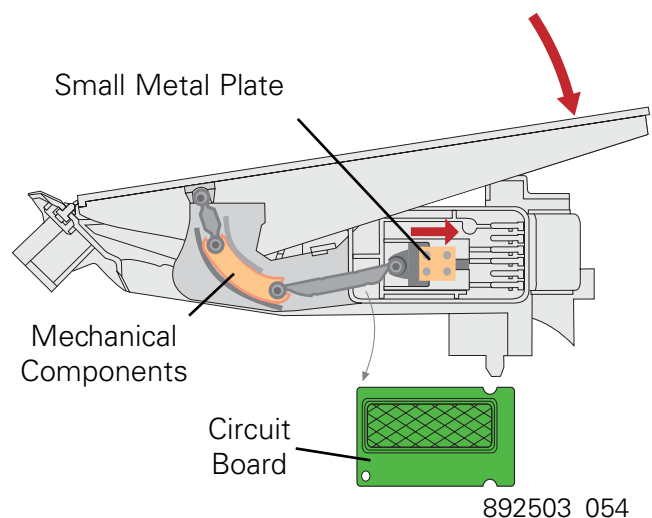
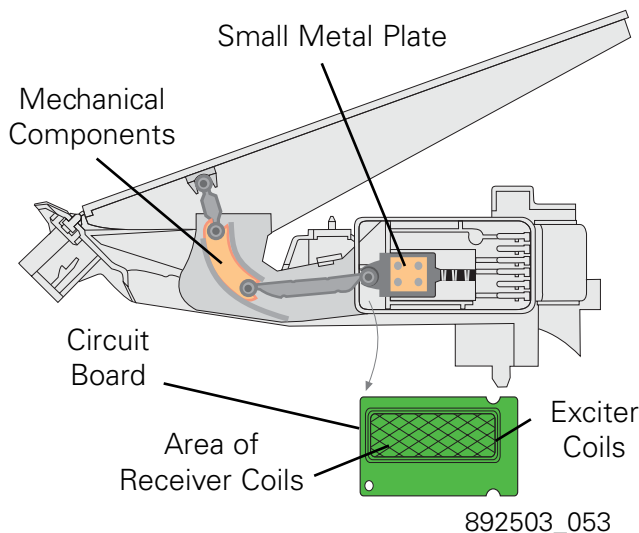
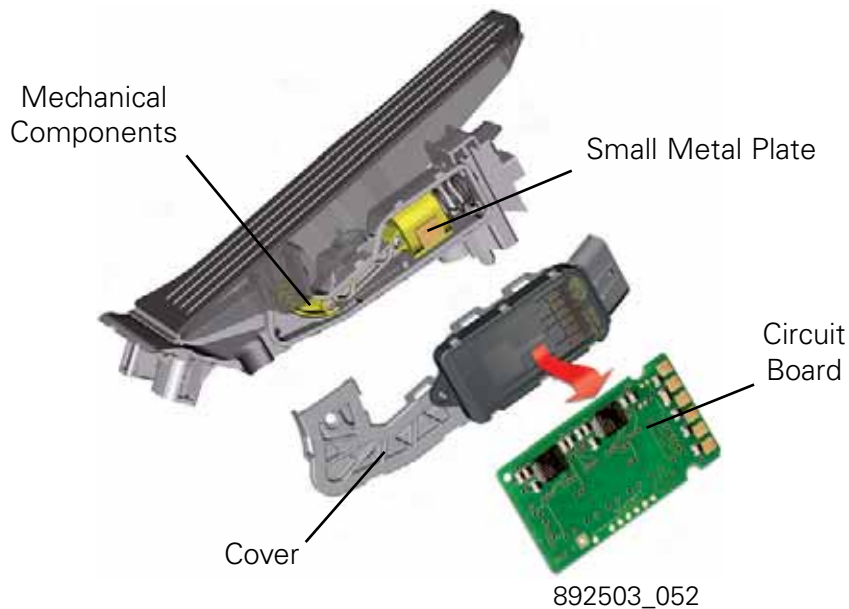
The pedal assembly includes accelerator, brake and clutch control modules.

The brake pedal module housing is made of aluminum and sheet steel.

The accelerator pedal and the clutch pedal module housing are made of plastic. Pedal position sensors recognize the pedal position without making direct contact with pedal sensing components.

Throttle Position (TP) Sensor G79 and Accelerator Pedal Position Sensor 2 G185

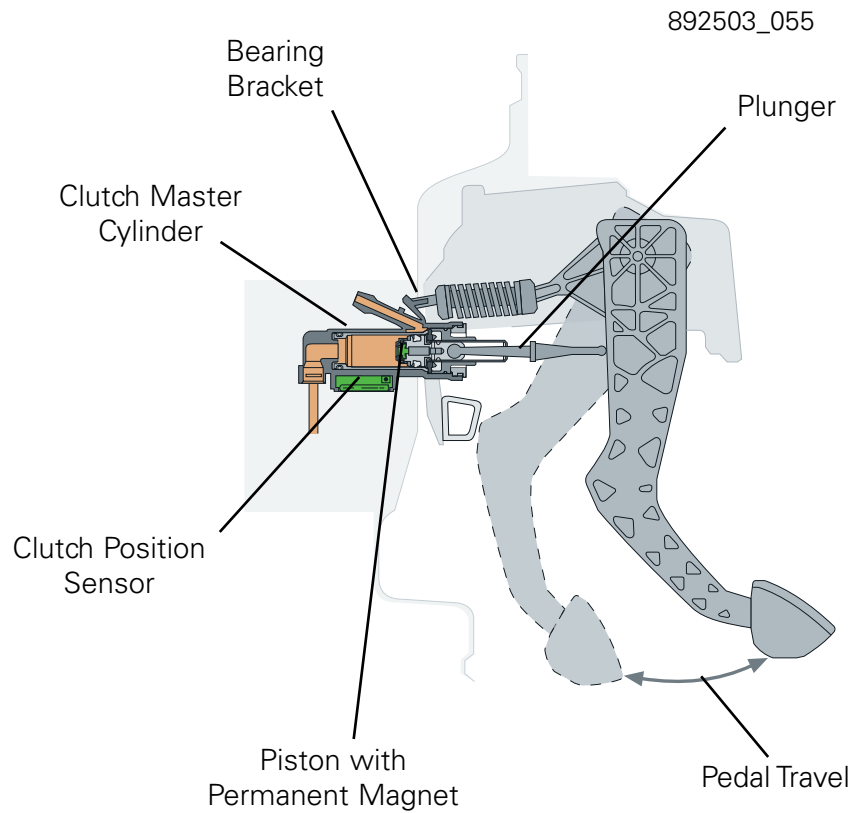
G79 and G185 are located in the accelerator pedal module. Both are inductive sensors that provide the exact position of the accelerator pedal to the engine control module. The engine control module uses this information to control the amount of fuel available to the fuel injectors.



Pedal Assembly

Clutch Position Sensor G476

G476 is a Hall effect device that signals the engine control module that the clutch pedal has moved. This deactivates the cruise control system and briefly reduces fuel to the fuel injectors to prevent engine shudder during the resulting gear change.



Electrical System

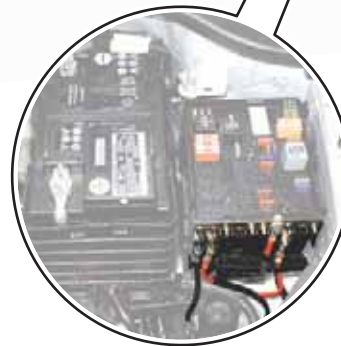
Electrical System Fuses and Relays

Locations

The electrical system on the new GTI is entirely redesigned. Because of this, the mounting location of fuse and relay centers has changed.



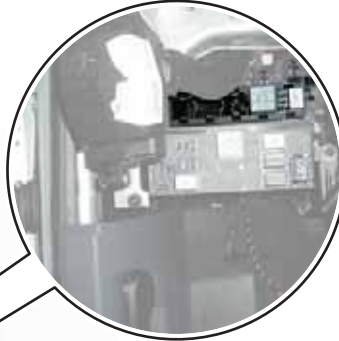
Fuse and relay center under hood on driver side SB



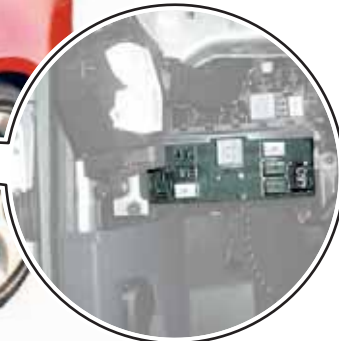
Back-up fuse box under hood on driver side SA

Electrical System

Relay carrier below instrument cluster on driver side, above on board power supply control module



Relay carrier of on board power supply control module, on left under instrument cluster



Fuse box driver side instrument panel SC



892503_056

Electrical System

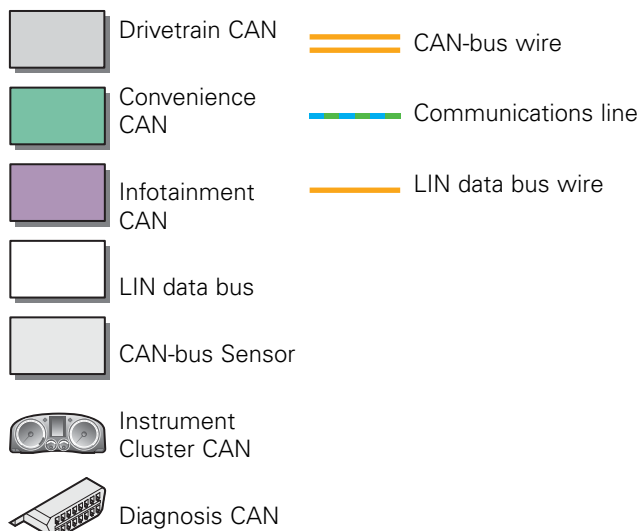
Communication Network

Overview of Networked Control Modules

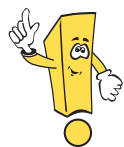
To allow communication between the control modules without interference, they are connected through several data bus systems.

The Data Bus On Board Diagnostic Interface J533 (Gateway) allows communication between the following data buses:

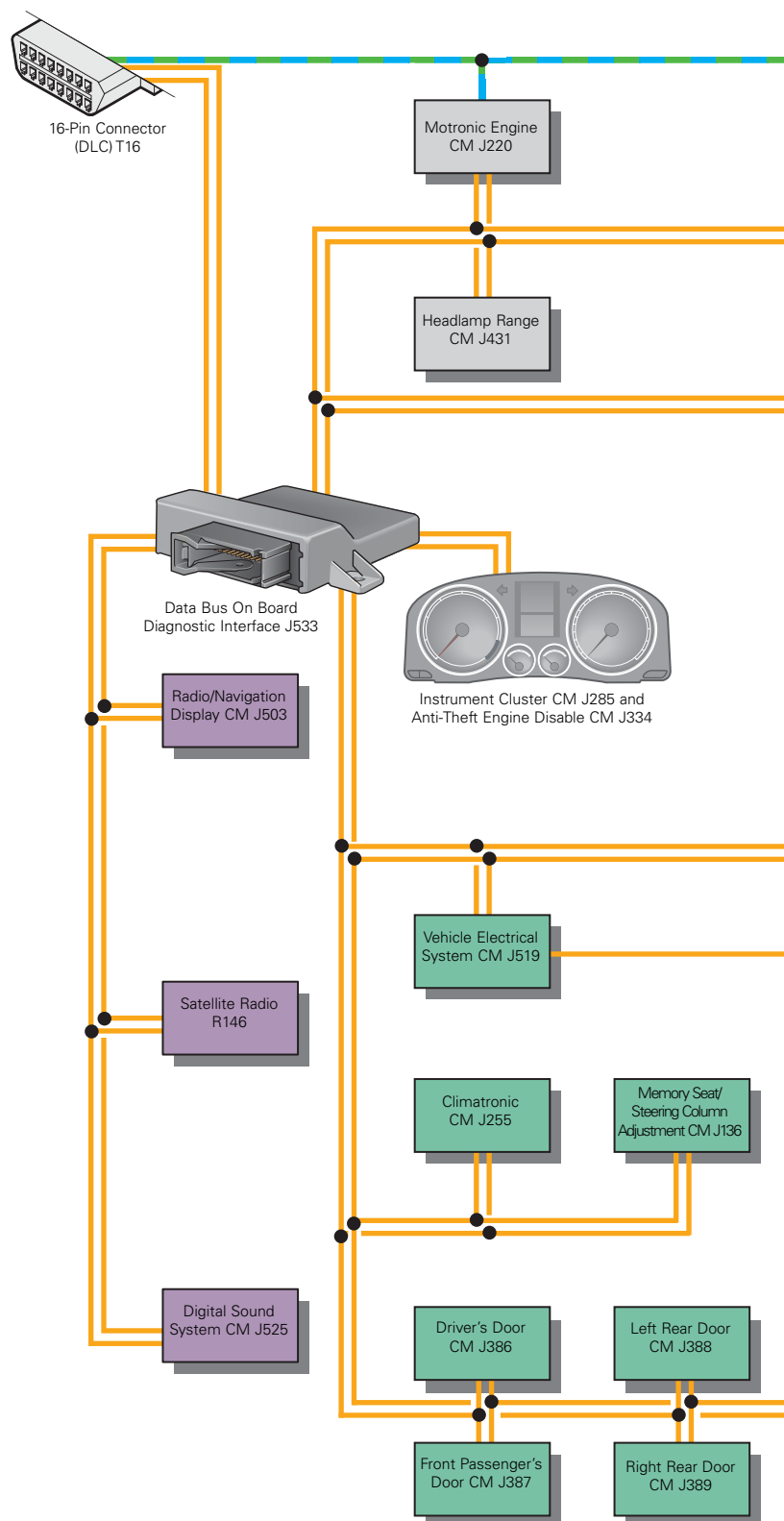
- Drivetrain CAN-bus
- Convenience CAN-bus
- Infotainment CAN-bus
- Instrument Cluster CAN-bus
- Diagnosis CAN-bus

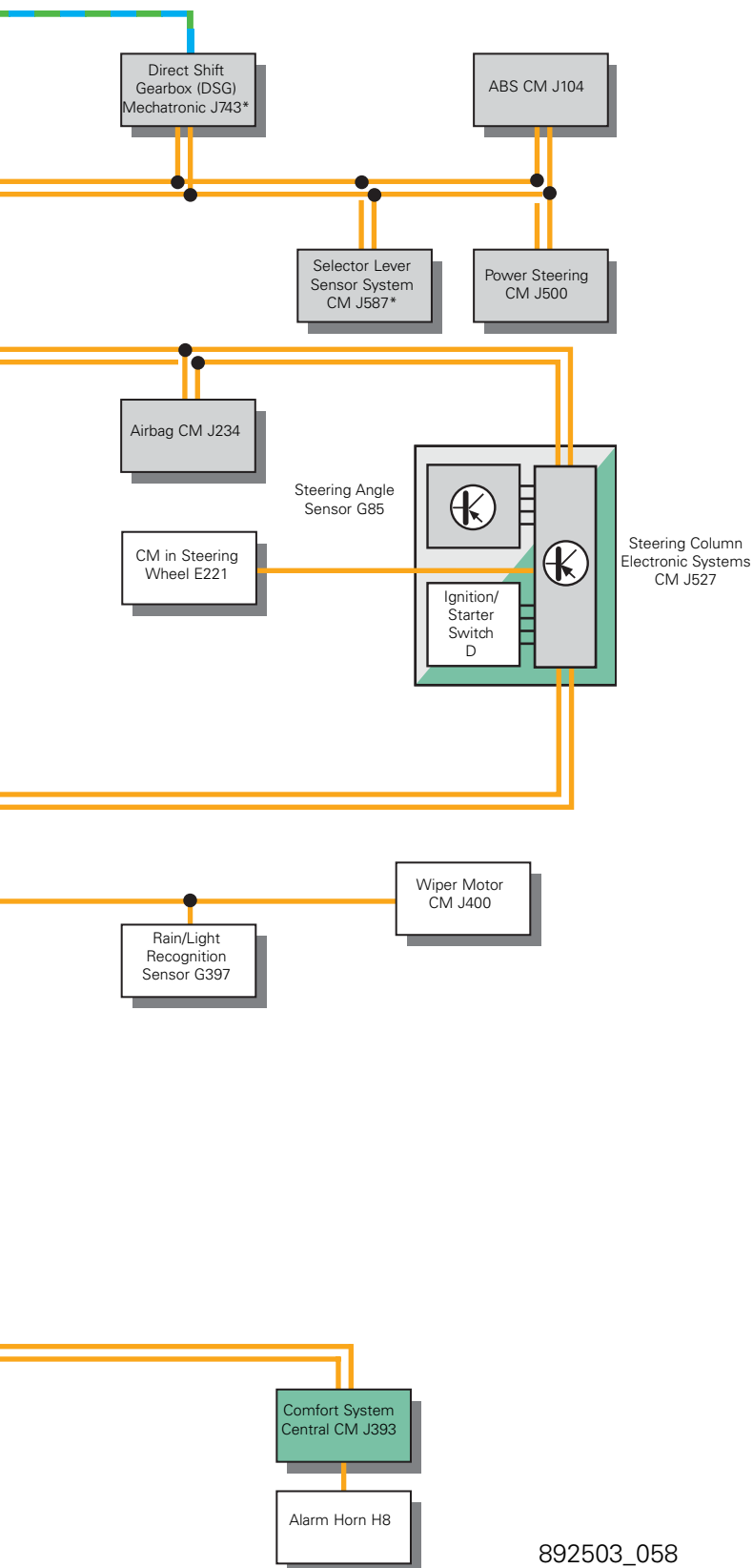


892503_057



In addition to the CAN-bus, a number of electronic components are networked through the LIN-bus.





Key

D	Ignition/Starter Switch
E221	Control Module in Steering Wheel
G85	Steering Angle Sensor
G397	Rain/Light Recognition Sensor
H8	Alarm Horn
J104	ABS Control Module
J136	Memory Seat/Steering Column Adjustment Control Module
J220	Motronic Engine Control Module
J234	Airbag Control Module
J255	Climatronic Control Module
J285	Instrument Cluster Control Module
J334	Anti-Theft Engine Disable Control Module
J386	Driver's Door Control Module
J387	Front Passenger's Door Control Module
J388	Left Rear Door Control Module
J389	Right Rear Door Control Module
J393	Comfort System Central Control Module
J400	Wiper Motor Control Module
J431	Headlamp Range Control Module
J500	Power Steering Control Module
J503	Radio/Navigation Display Control Module
J519	Vehicle Electrical System Control Module
J525	Digital Sound System Control Module
J527	Steering Column Electronic Systems Control Module
J533	Data Bus On Board Diagnostic Interface
J587*	Selector Lever Sensor System Control Module
J743*	Direct Shift Gearbox (DSG) Mechatronic
R	Radio
R146	Satellite Radio
T16	16-Pin Connector (DLC)

*On direct shift transmissions only

892503_058

Electrical System

Drivetrain CAN Control Modules

Control Module Locations

The data transfer rate is 500 kbit/s. The data is transferred through the CAN high wire (orange/black) and CAN low wire (orange/brown). To ensure reliable communication without conflict or interference, the CAN wires are twisted together.



Airbag Control Module J234,
beneath center console, in
front of tunnel



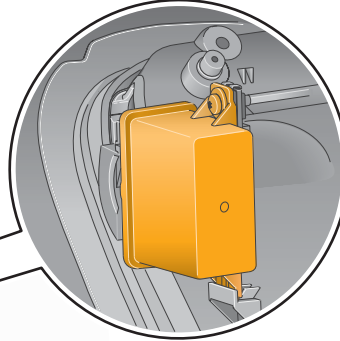
ABS Control Module J104,
on right side of bulkhead,
in engine compartment



Motronic Engine Control Module
(ECM) J220, under plenum
chamber cover

Electrical System

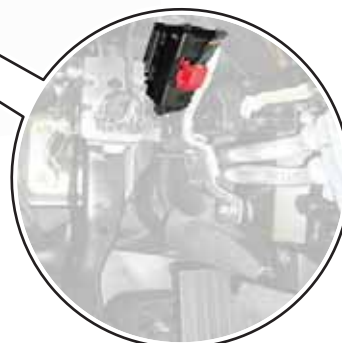
Headlamp Range Control Module J431,
on right side of glove compartment



Steering Column Electronic
Systems Control Module J527,
beneath steering column switch



Data Bus On Board Diagnostic
Interface J533, beneath instrument
cluster, above accelerator pedal



892503_059

Electrical System

Convenience CAN Control Modules

Control Module Locations

The data transfer rate is 100 kbit/s. The data is transferred through the CAN high wire (orange/green) and the CAN low wire (orange/brown). To ensure reliable communication without conflict or interference, the CAN wires are twisted together.

Steering Column Electronic Systems Control Module J527, beneath steering column switch

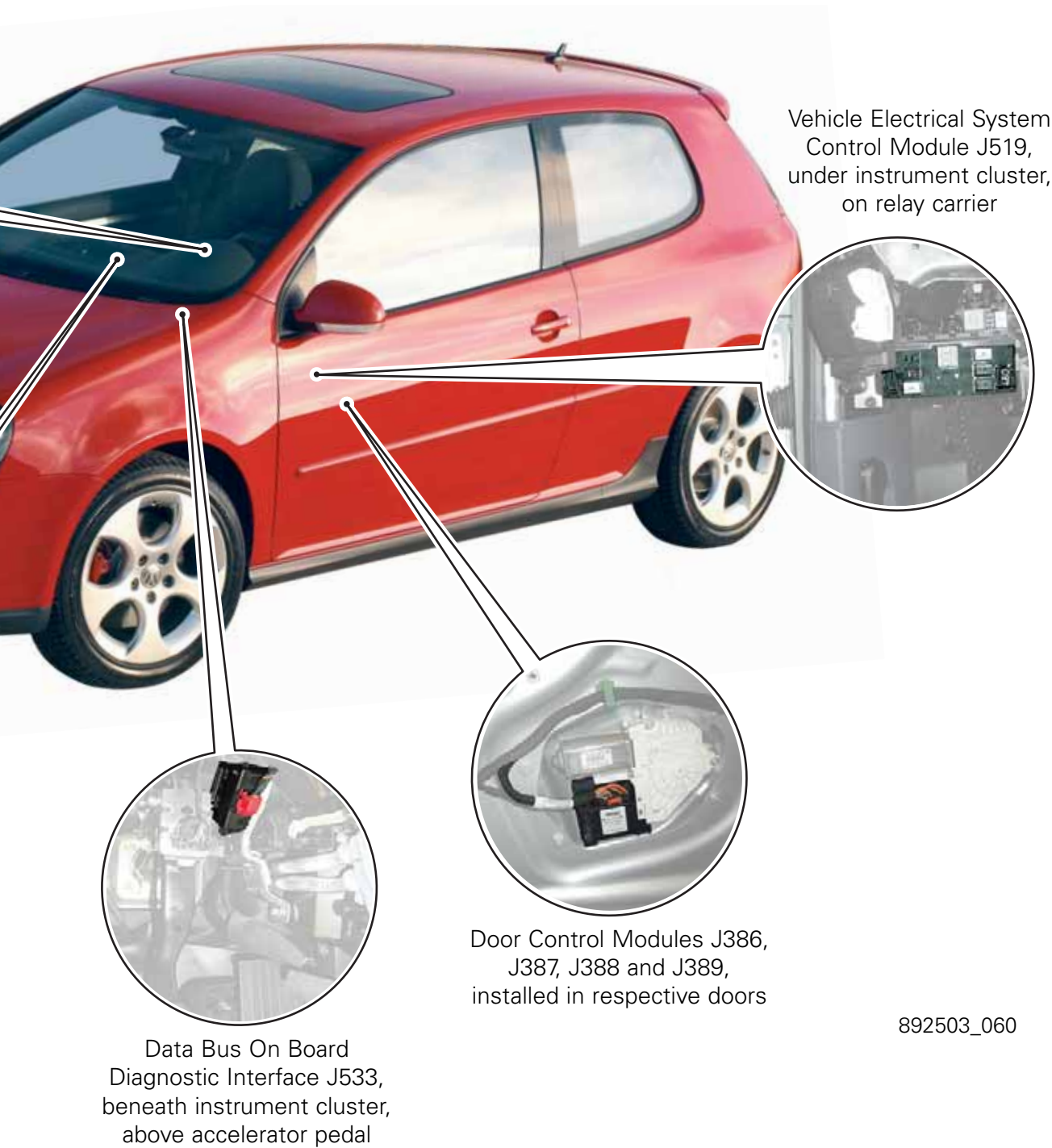


Comfort System Central Control Module J393, on right side, beneath instrument cluster, behind glove compartment



Climatronic Control Module J255, in center console

Electrical System



Electrical System

Infotainment CAN Control Modules

Control Module Locations

The Infotainment CAN-bus transfer rate is 100 kbit/s. The data is transferred through the CAN-bus high wire (orange/purple) and the CAN-bus low wire (orange/brown). To ensure reliable communication without conflict or interference, the CAN-bus wires are twisted together.



Electrical System



Radio/Navigation Display Control
Module J503 or Radio R, in
center console



CD Changer R41, in
center console,
beneath front armrest



892503_061

Electrical System

Instrument Cluster and Diagnosis CAN Control Modules

Instrument Cluster CAN-bus

Information is exchanged between the Instrument Cluster Control Module J285 and the Data Bus On Board Diagnostic Interface J533 through the instrument cluster CAN-bus. These are the only control modules in this data bus system.

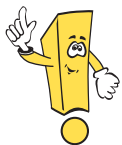
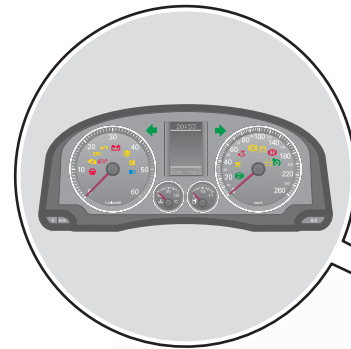
Diagnosis CAN-bus

The transfer of data between the VAS 5051/5052 scan tool and Data Bus On Board Diagnostic Interface J533 is through the diagnosis CAN-bus.

Data Transfer Rate

The transfer rate for both CAN-buses is 500 kbit/s.

Instrument Cluster
Control Module J285



For additional information on the electrical system of the new GTI, please refer to SSP 873403, "The new Jetta Electrical System Design and Function."

Electrical System

Data Bus On Board Diagnostic
Interface J533, beneath instrument
cluster, above accelerator pedal

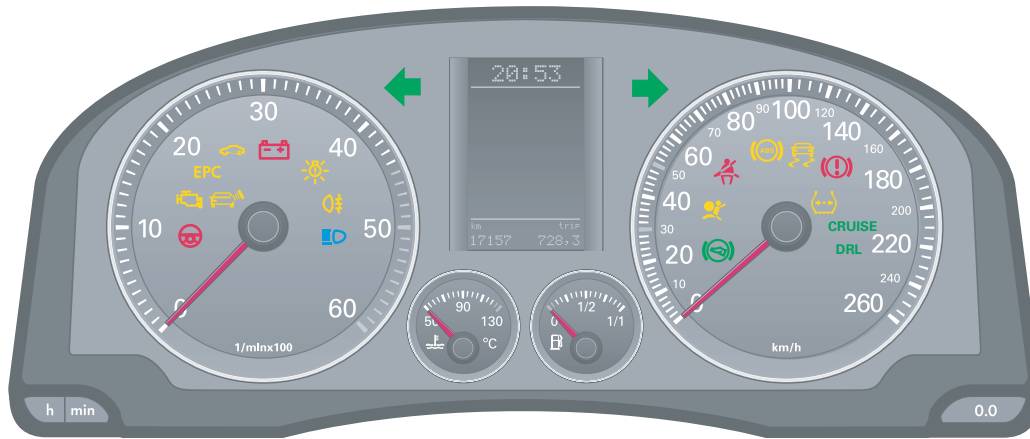


16-Pin Connector T16, on
left side, beneath
instrument cluster (DLC)

892503_062

On Board Power Supply


















Warning Lamps in Instrument Cluster



892503_063

Symbol	Warning Light	Midline	Highline	Warning Message Description
	Airbag	X	X	Airbag fault! Airbag seatbelt pretensioner deactivated
	Antilock Braking System (ABS)	X	X	ABS
	Brake pad wear indicator	X	Pictogram	Check brake pad
	Low brake fluid level	X	X	Stop! brake fluid Operator's manual
	Preheating (diesel engines)	X	X	Engine malfunction — bring in for service Exhaust gas — bring in for service
	Electronic Power Control (exhaust gas)	X	X	Engine malfunction — bring in for service Exhaust gas — bring in for service
	Oil pressure warning	Flashing	Flashing Pictogram	Stop — no oil pressure, turn engine OFF See operator's manual 3x audible warning
	Electric steering Electronic steering lock	X	X	Illuminates in yellow and red Lock steering Move steering Steering lock! Bring in for service
	Electronic brake power distribution	X	X	3x audible warning
	Parking brake system/electric parking brake	X	X	Press brake pedal!
	Electric parking brake Warning light	X	X	Parking brake error! See operator's manual
	ESP TCS	X	X	ESP/TCS inactive — solid ESP/TCS event — flashing

On Board Power Supply

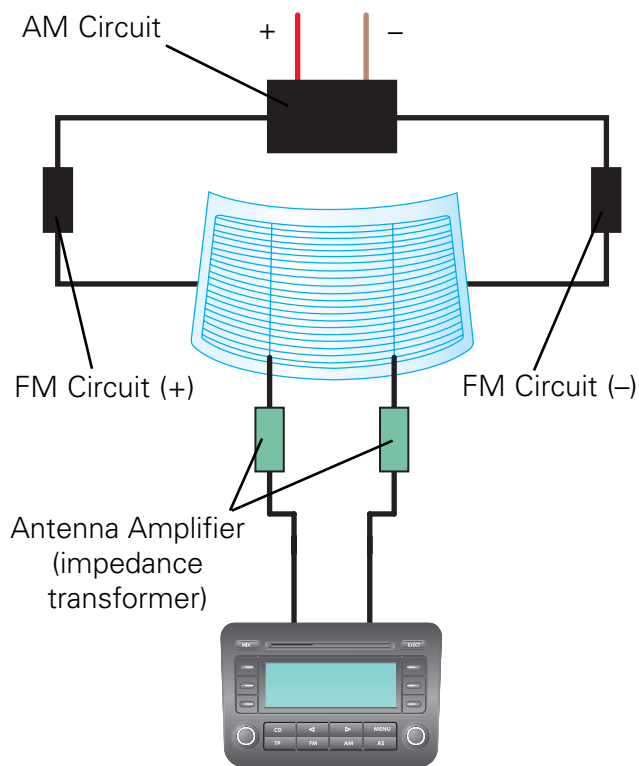
Symbol	Warning Light	Midline	Highline	Warning Message Description
	Left turn signal	X	X	Audible warning
	Right turn signal	X	X	Audible warning
	High beam headlights	X	X	
CRUISE	Cruise control system CCS	X	X	
	Bulb failure	X	X	Constantly ON: Bulb failure Flashing: Headlamp leveling or AFS defective
	Trunk lid open	X	X	Trunk lid open 1x audible warning at speed greater than 3.7 mph (6 km/hr)
	Door open	X	Pictogram	Door open! Warning buzzer 1 time at speed greater than 3.7 mph (6 km/hr)
	Low fuel level	X	Pictogram	Please refuel — 1x audible warning
	Coolant level low/coolant temperature high	X	Pictogram	Stop! Check coolant level See operator's manual 3x audible warning
	Alternator low voltage output	X	X	
	Engine check MIL On Board Diagnostics (OBD)	X	X	Engine malfunction — bring in for service Exhaust gas — bring in for service Emissions
	Hood open	X	Pictogram	Door warning! Hood! Warning buzzer 1 time if speed greater than 3.7 mph (6 km/hr)
	Oil level low	X	X	Check oil level Oil sensor — bring in for service
	Tire pressure monitoring	X	Pictogram	1x audible warning
	Shift lock	X	X	
	Seatbelt	X	X	Please fasten seatbelt Chime
DRL	Daytime Running Lights	X	X	
	Fuel cap OFF or missing	X	X	
	Washer fluid low	X	Pictogram	Fill with washer fluid 1x audible warning

Infotainment

Radios

Three radios are available. The single-disc AM/FM radio and the in-dash 6-disc AM/FM radio feature an internal diversity tuner for automatic selection between antennas. An external diversity tuner is not required.

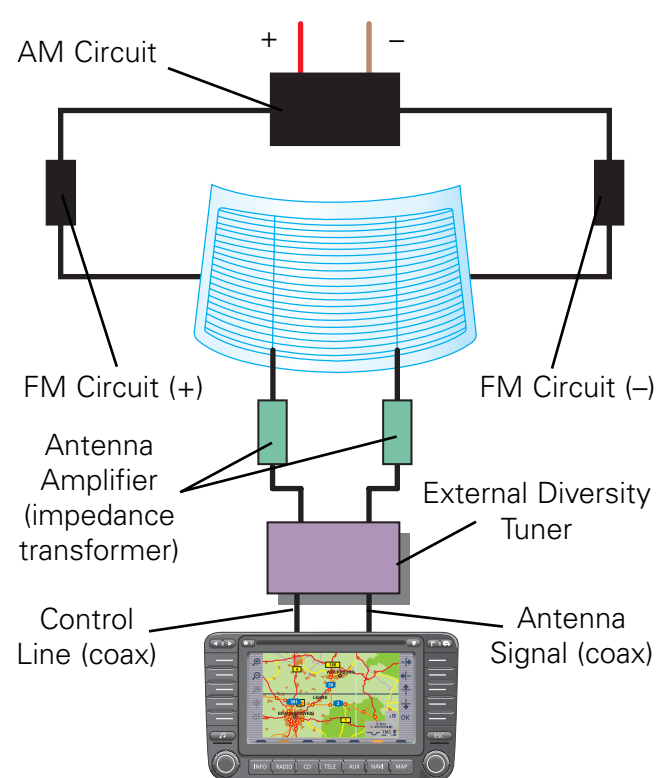
Two rear window antennas are connected simultaneously to the radio. The radio automatically selects the antenna with the strongest signal.



892503_064

Radio With Navigation System

The radio with navigation system does not feature an internal diversity tuner. It has an external tuner, to which two rear window antennas are connected.

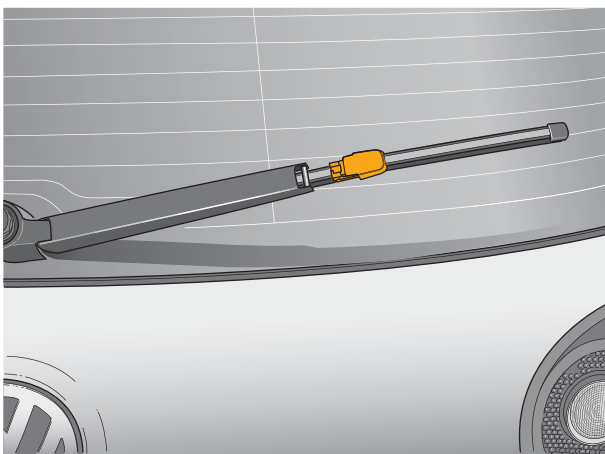
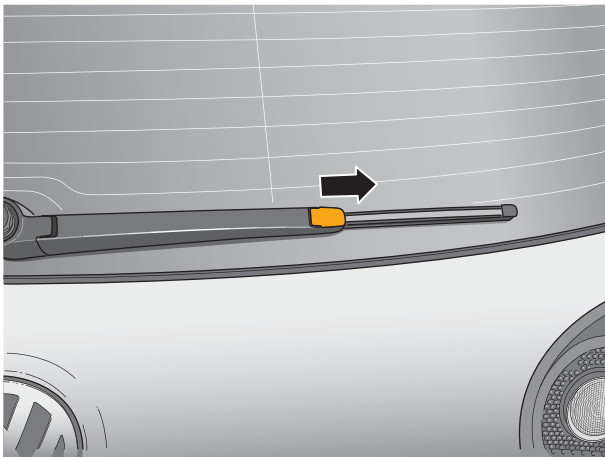


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Rear Wiper Replacement

To remove the rear wiper blade from the wiper arm, the mounting must be moved to the right in the direction of the arrow.

After the wiper blade has been released, the wiper arm must be lifted away from the rear window to allow the wiper blade to be removed from the mounting.



892503_066

Heating and Air Conditioning

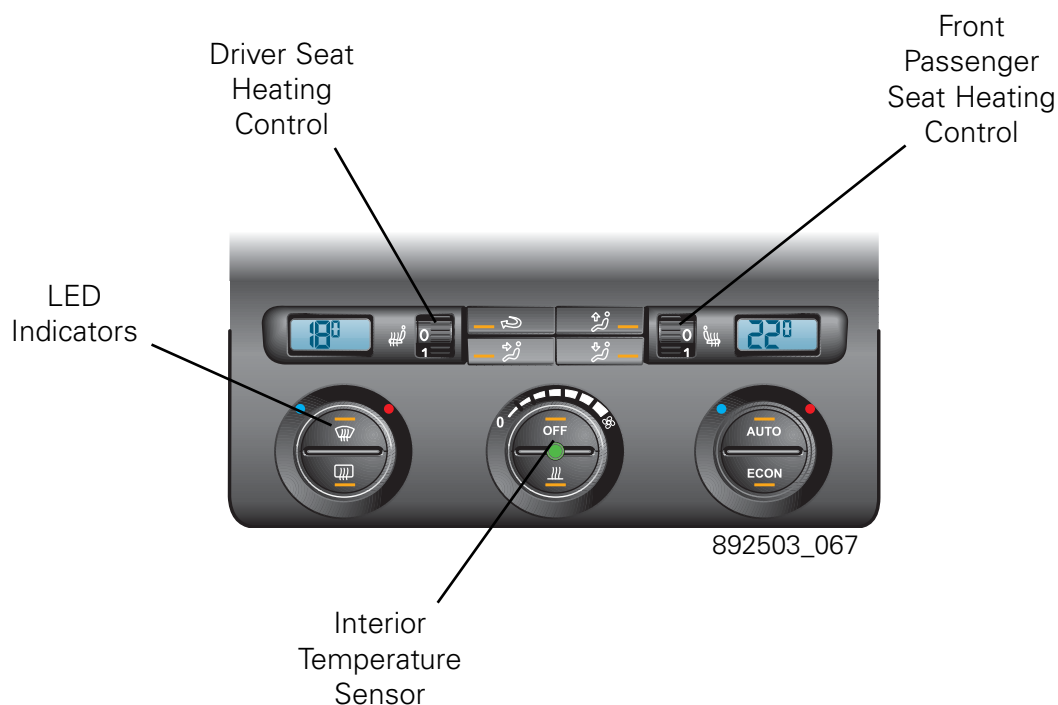
Introduction

The new GTI's heating, ventilation and air conditioning system (HVAC) is available in two versions, depending on the option selected:

- Dual Zone Climatronic heating and air conditioning system
- Climatic heating and air conditioning system

All operating controls for each system are located on the control panel. Feedback LEDs on all buttons provide an indication of active functions. The Dual Zone Climatronic and Climatic systems include an interior temperature sensor.

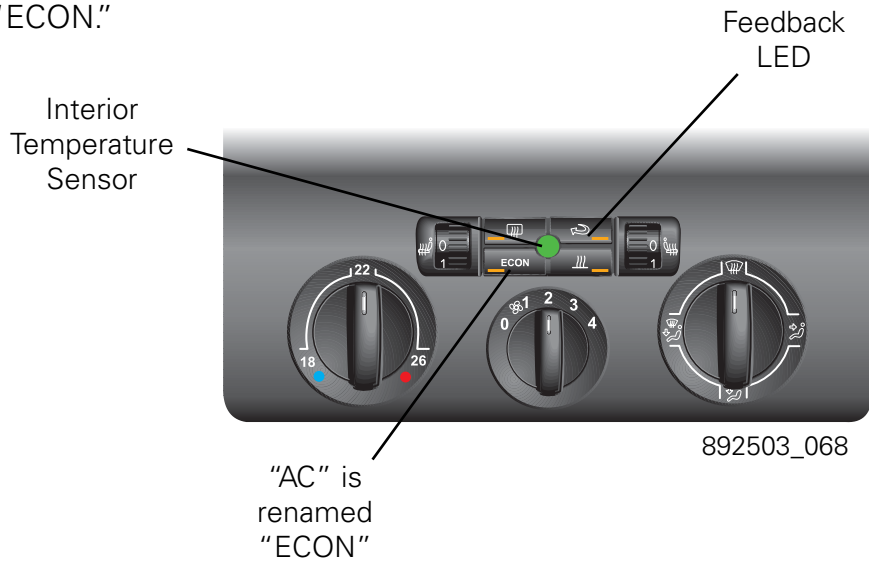
Dual Zone Climatronic System



Heating and Air Conditioning

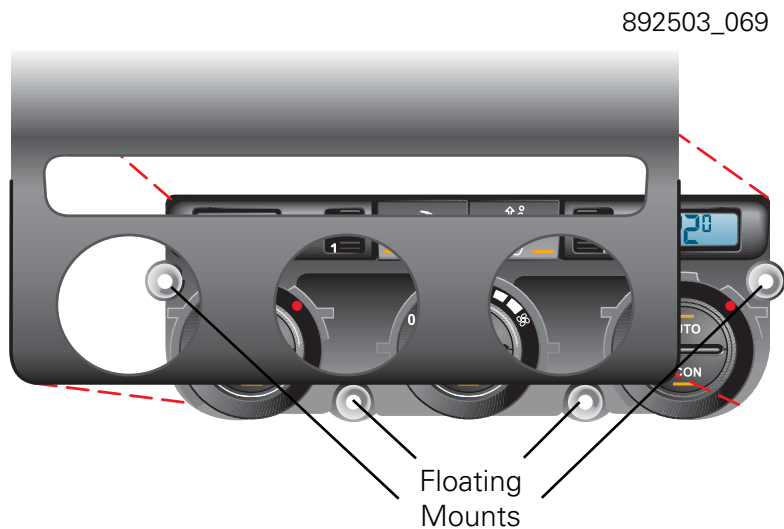
Climatic System

The "AC" button on the Climatic system is labeled "ECON."



Floating Mount Installation

To ensure a uniform fit, the system control modules are installed using floating mounts. This installation method allows perfect alignment with the trim panel when the panel is installed.



Heating and Air Conditioning

Air Conditioning Systems

Dual Zone Climatronic

Climatronic is an option for the GTI, offering dual-zone capabilities. The temperature on the driver's and front passenger's sides can be controlled separately to between 60°F (16°C) and 85°F (29.5°C). Pressing the "Auto" button for longer than two seconds allows the temperatures on both sides to be synchronized to the driver's side.

Two air-conditioning zones are achieved by using two temperature doors within the air conditioner. All air conditioner doors on the Dual Zone Climatronic are activated by six control motors with integrated potentiometers. The Dual Zone Climatronic can be operated either automatically or manually.

To prevent fogging of the windshield, the Dual Zone Climatronic automatically increases air flow to the windshield if the compressor is OFF and the windshield wipers are ON. The defrost door is also opened wider.

The Dual Zone Climatronic also reduces the fresh air blower speed depending on vehicle speed. This minimizes the airflow noise of the air conditioner. The fresh air blower is automatically adjusted as a function of road speed.



892503_070

Heating and Air Conditioning

Climatic System

The Climatic system manages the interior of the vehicle as one climate zone. The Climatic air conditioner has a combined fresh air/recirculating door that, like the temperature control door, is driven by a control motor.

The Climatic system uses a flexible shaft to control the position of the air distribution doors. Temperature requests are relayed to the control module by a potentiometer in the rotary switch. The requested temperature setting is achieved by adjusting the position of the temperature door.

The various components of the Climatic system are divided into two units: an electronic front unit and a mechanical rear unit that is controlled by a flexible shaft. The heater is controlled by a bowden cable.

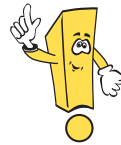


892503_071

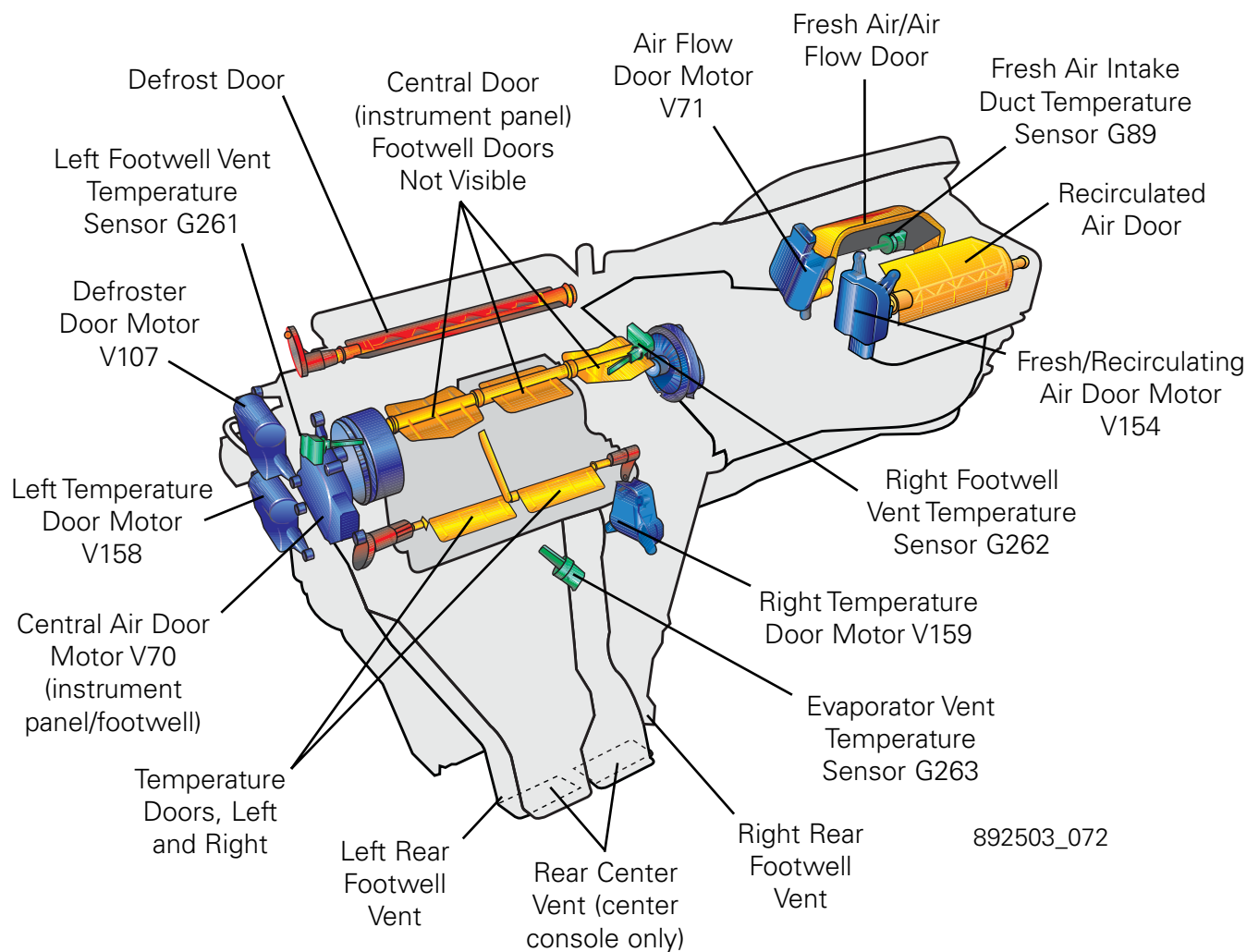
Heating and Air Conditioning

The main difference between the Climatronic and Climatic systems is the method used to control air distribution. The Dual Zone Climatronic system has an additional fresh air door, which closes at speeds above 60 mph (97 kph). This provides constant fresh air flow at different vehicle speeds.

The figure below shows the air conditioner of the Dual Zone Climatronic system.



The Climatic system uses a fresh recirculation door. The Dual Zone Climatronic uses a fresh flow door and a separate air recirculation door.



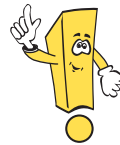
Heating and Air Conditioning

Air Distribution

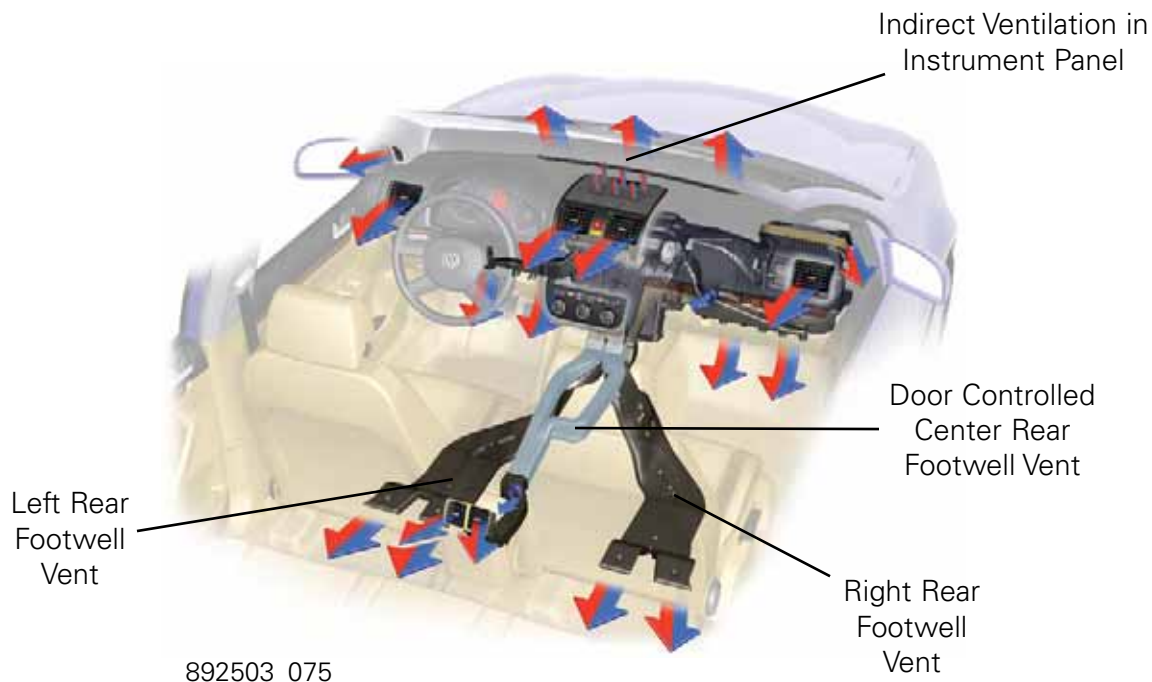
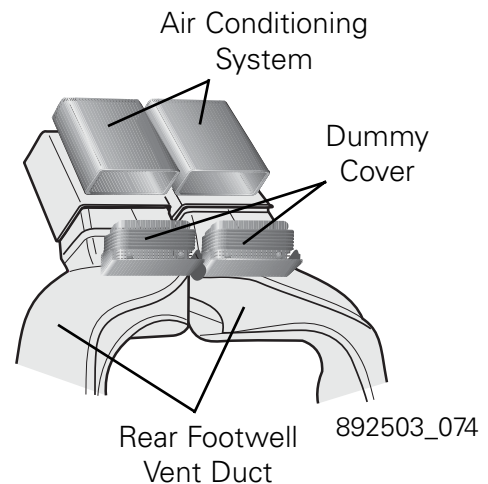
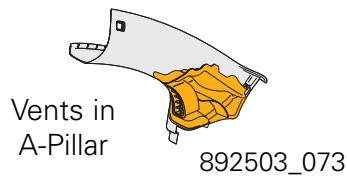
The air distribution system on the new GTI is similar to the systems on previous Golfs. However, significant improvements to the system have been made, including:

- Cross sectional area of all air ducts has been increased
- Air duct to the defrost and instrument panel vents runs through the instrument panel
- Front side windows are now ventilated through new vents in the A-pillar
- Rear passenger area is vented by a single air duct leading to the left and right footwells

A center console vent is available that directs airflow to the center rear vents through a common air duct.



The Dual Zone Climatronic air ducts in the instrument panel provide indirect ventilation through vents in the top of the instrument panel.



Heating and Air Conditioning

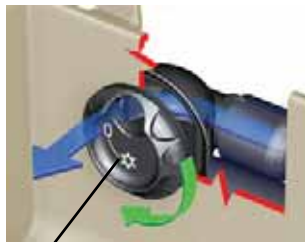
Storage Box Cooling

All vehicles are equipped with a cooled glovebox storage compartment located in the front passenger side area. The storage compartment is cooled directly by air from the evaporator. The cooling level is adjusted manually by turning an adjustable nozzle.

The center console also has an adjustable vent for temperature control. Cooled air is directed from the center console air duct to the storage compartment. This cooled air supply can also be adjusted manually by turning an adjustable nozzle.

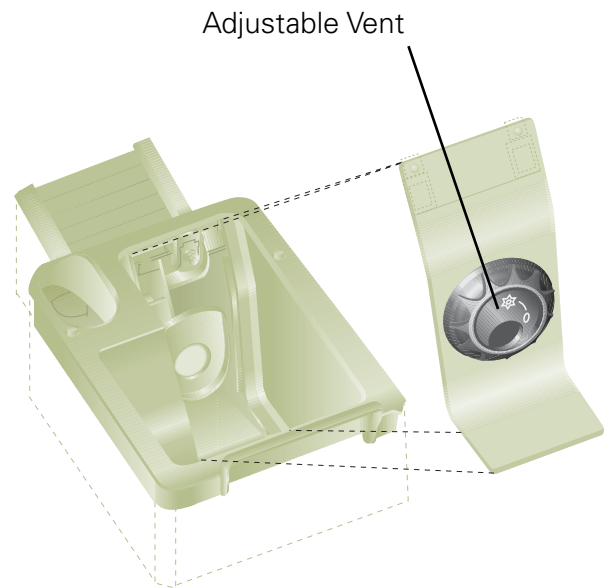


892503_076



Adjustable Vent

892503_077



892503_078

Notes

Knowledge Assessment

An online 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.vwwebservice.com

From the vwwebservice.com Homepage, do the following:

- Click on the Certification tab
- Type the course number in the Search box
- Click “Go!” and wait until the screen refreshes
- Click “Start” to begin the Assessment

For assistance, please call:

Certification Program Headquarters

1-877-CU4-CERT

(1-877-284-2378)

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

Or, Email:

Comments@VWCertification.com

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