Service Training

Volkswagen

Self-Study Program 588

Jetta 2019

The New Jetta - A great family sedan that is fun to drive

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Going further on with the sales success achieved mainly in the North American market, the New Jetta is featured with three outstanding values:

Cool interior and exterior design: The front end highlights a wide chromium grille and LED headlights. Inside, the ambient light hue on the front doors and dash panel highlights the New Jetta personality. In addition to this, the New Jetta projects a robust and safe image.

Fun to drive: A range of engine powers from 81 kW to 170 kW is available to provide dynamic and safe driving to the New Jetta owner. Its exclusive equipment includes a 10.25-inch instrument cluster, a choice of new-generation radios with screens up to 8 inches plus connectivity with two USB ports. In addition, MODE-function allows users to customize data, enjoy their favorite music, and organize their day's agenda right there in the car.

A high level of safety and comfort: The latest-generation driver's assistance systems are available such as Adaptive Cruise Control (ACC) and Blind Spot Detector (BSD) as well as the Lane Assist Warning, Traffic Signal Recognition (TSR) and Dynamic Light Assist (DLA). Both driving safety and comfort have been improved in the New Jetta.

These values make the new Jetta a family car that combines traditional European driving with state-of-the-art technology.

S588_002

Both the multifunction indicator in the instrument cluster and the infotainment screen shown in this notebook display instructions in English. This is only for illustration purposes and do not apply for instructions displayed in other countries' languages. The exact contents on display must be checked in the applicable vehicle in each country.

The Self-Study Program reports on the design and operation of new developments.
The contents are not updated.

For the actual testing, adjustment and repair instructions, please refer to the After-Sales Service documentation prepared for these purposes.

Warning!

Quick Reference

Highlights

- 10.25” instrument cluster with map and route display
- Panoramic power-sliding sunroof
- Up to 8” data screen
- Selection of ambient light hue
- Central console with 1.5 gl. capacity
- LED Headlights
- Driving Mode Selection

S588_078

- Up to two USB ports
- Inductive mobile phone charger
- Start-Stop 2.0 system
- LED rear lights
- Keyless
- Heated and ventilated seats
- Latest generation driver assistants

S588_079

Equipment depends on each version and country.

Distinctive features

Wide chrome grille with LED headlights

Heated and ventilated seats

10.25" Instrument cluster

Driving Mode Selection

Selection of ambient light hue

Panoramic power-sliding sunroof

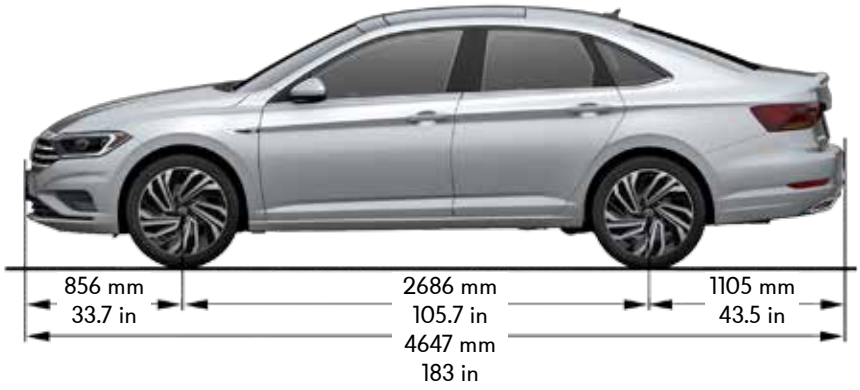
Rear LED optical groups and rear spoiler

S588_005

Technical data

Data on Jetta refers to the equipment for a 1.4 l TSI 110 kW engine and 6-speed manual gearbox MQ 250 and 225/55 R17 tires, without driver.

External dimensions and weights



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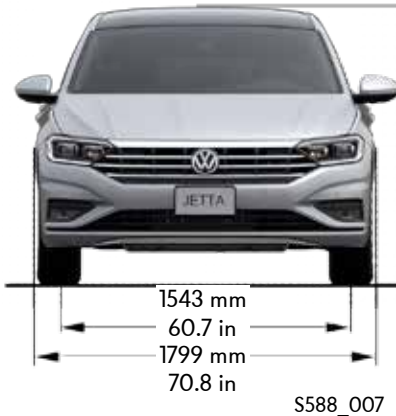

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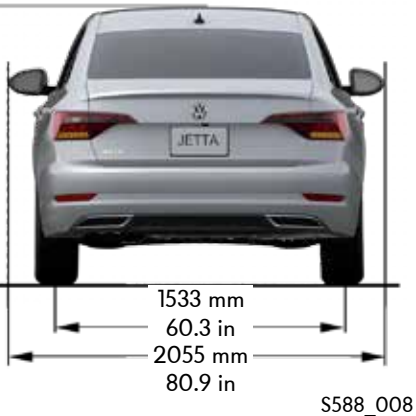
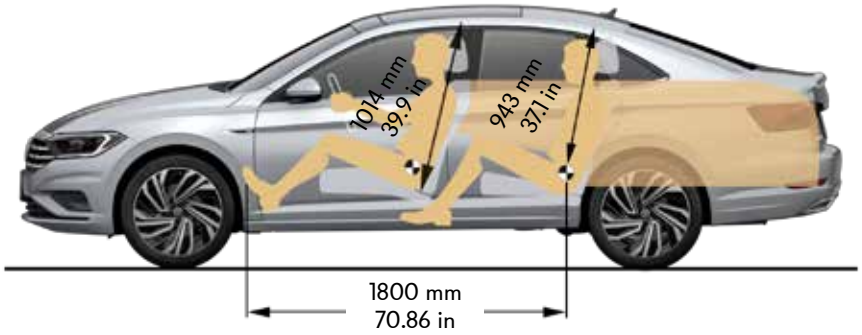


S588_008

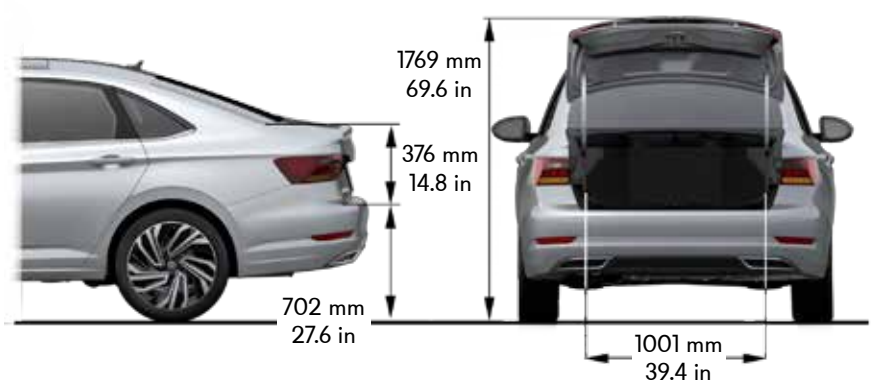
Data	DMS	IS
Turning circle	11.2 m	36.7 ft
Maximum authorized mass	1830 kg	4034 lb
Mass in running order according to DIN*	1309-1373 kg	2887-3027 lb
Maximum load on the roof	75 kg	165.3 lb
Drag coefficient	C_x 0.272	

DMS Decimal Metric System
IS Imperial System
*DIN = German Institute of Standards

Interior dimensions and volumes



S588_009



S588_010 S588_011

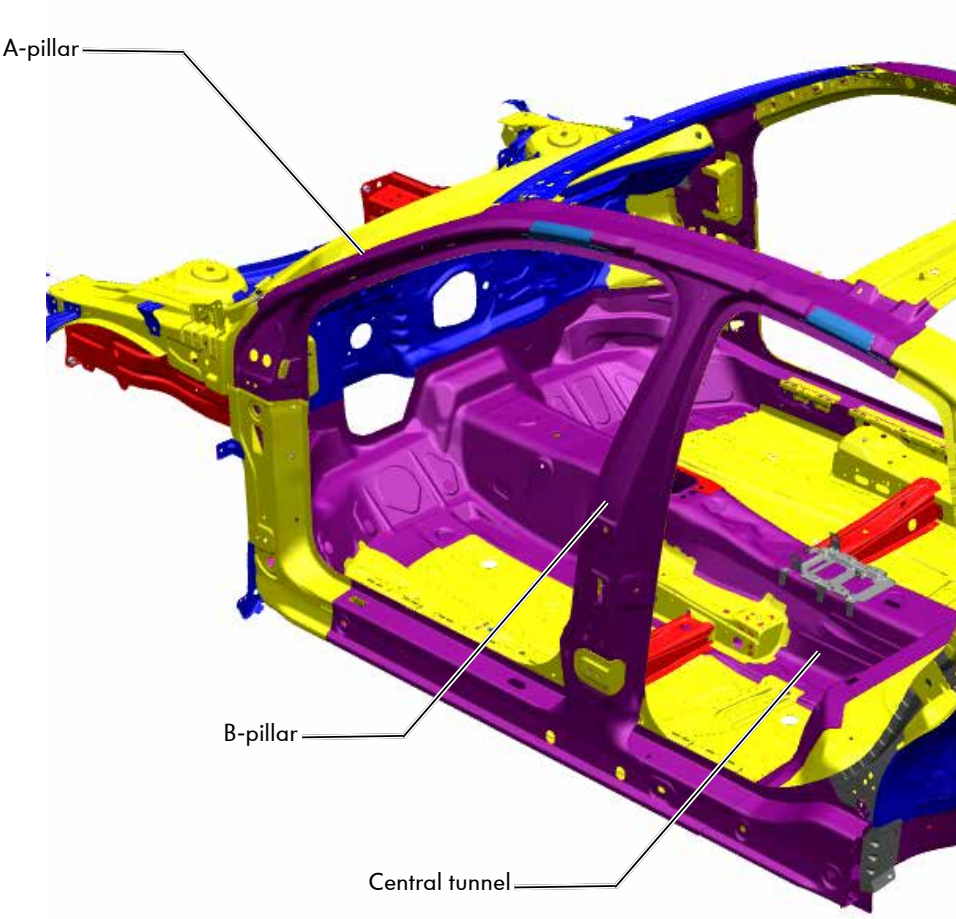
Interior dimensions and volumes

Data	DMS	IS
Useful width for long loads wheel arches	1004 mm	39.5 in
Luggage compartment volume	510 liters	135 gal
Luggage compartment volume with folded backrest	986 liters	34.8 ft^3
Tank capacity	50 liters	13.2 gal
Leg room, 2nd row	70 mm	2.75 in

DMS Decimal Metric System
IS Imperial System

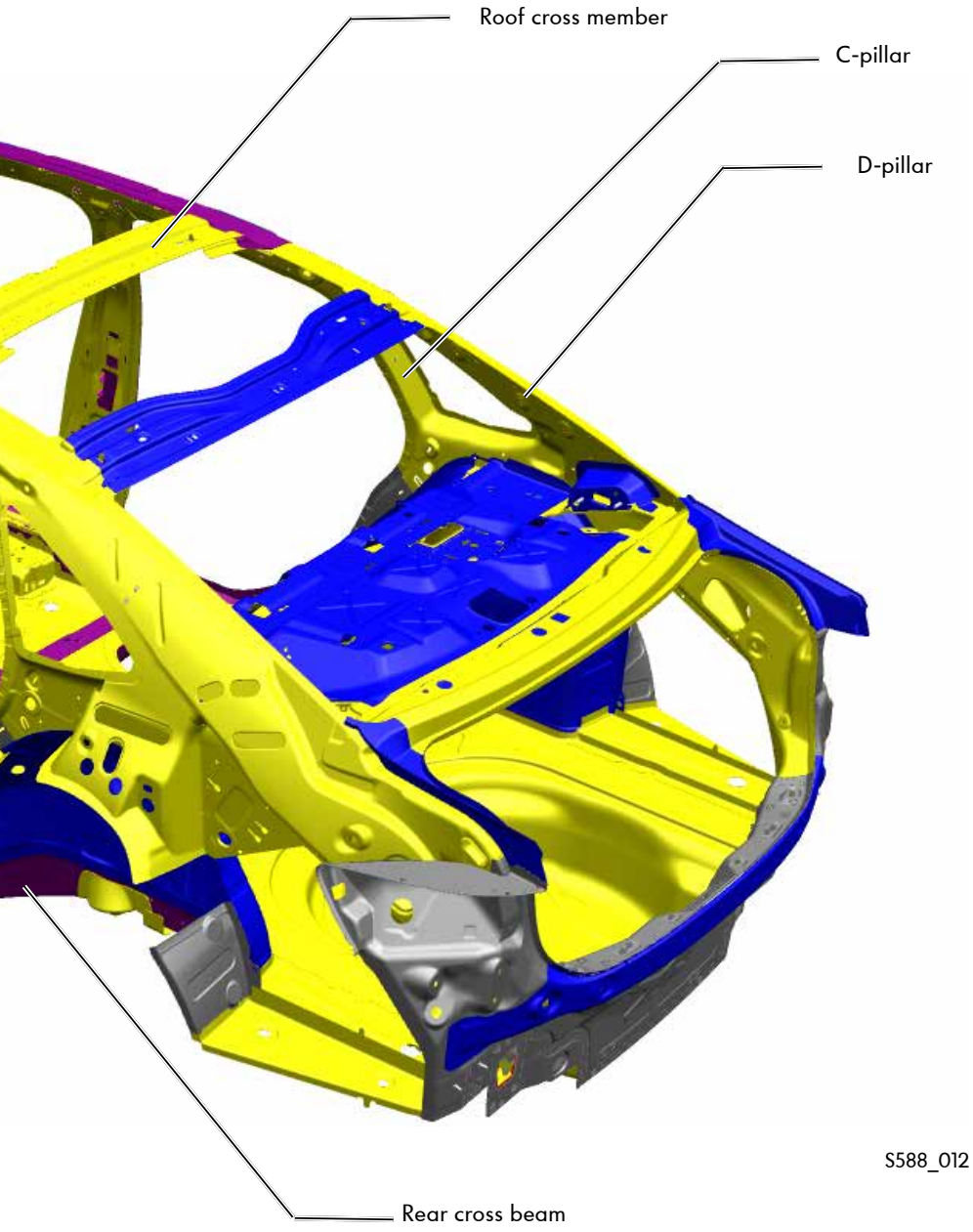
Bodywork Structure

The body is based on the Modular Transverse Matrix platform (MQB).
As in the other vehicles based on this platform, the New Jetta is built with extra high-yield strength steels. They are more resistant than conventional steels and comply with the highest safety standards in the market.



Steel plate strength

- <160 MPa mild steel
- <220 MPa high-yield strength steel
- <420 MPa upper-yield strength steel
- <1000 MPa extra high-yield strength steel
- >1000 MPa hot-formed extra high-yield strength



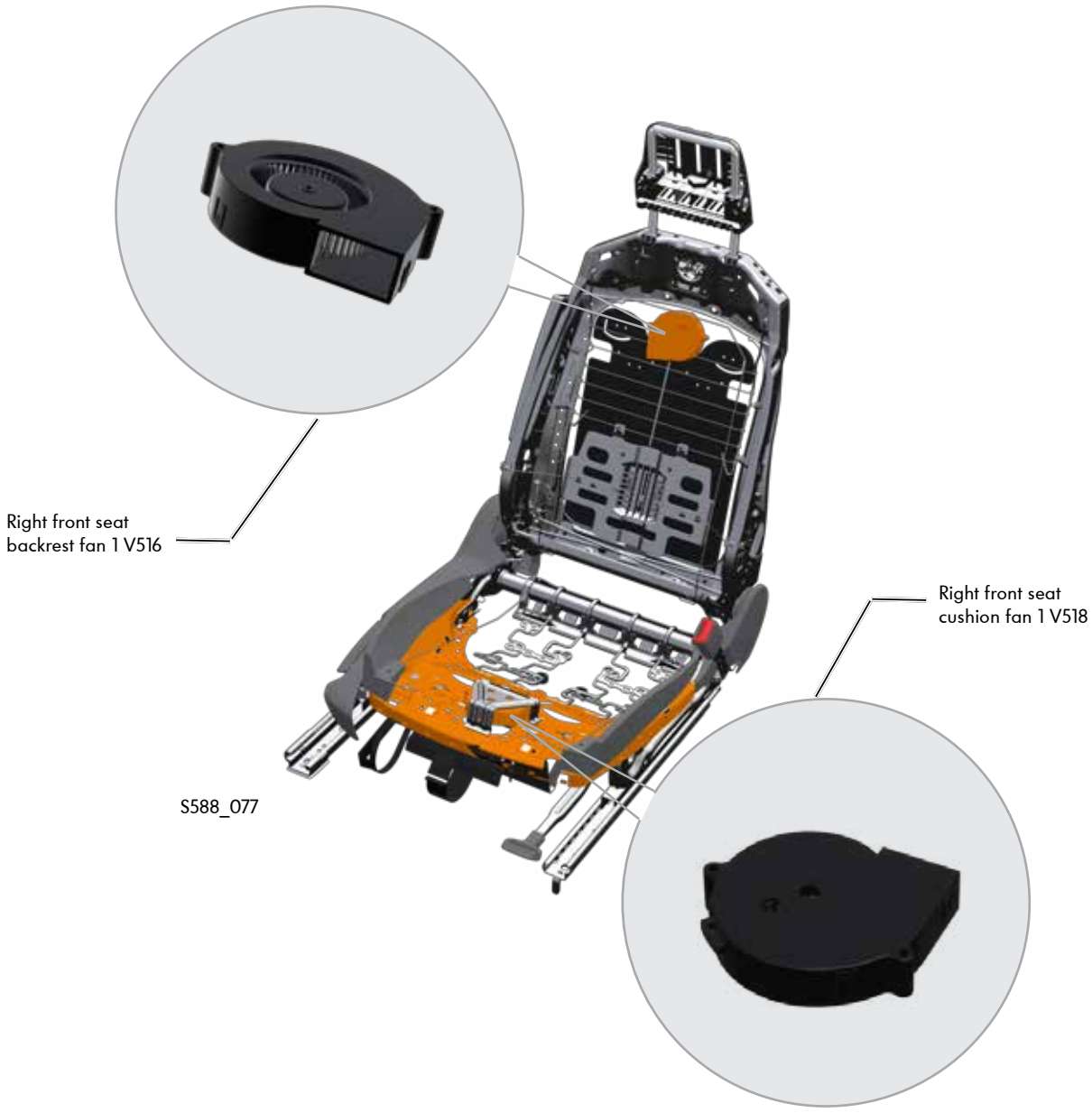
S588_012

Front seat, passenger side

There are 2 versions:

- With heating element
- With heating element and seat occupant detection

Front seat, passenger side with active climate control and with heating element and seat occupant detection



More information on front seats with active climate control can be found in the Self-Study Program Nr. 544 “The Passat 2015 Body and Occupant Protection”.

Front seat, driver side

The New Jetta features the following equipment as standard:

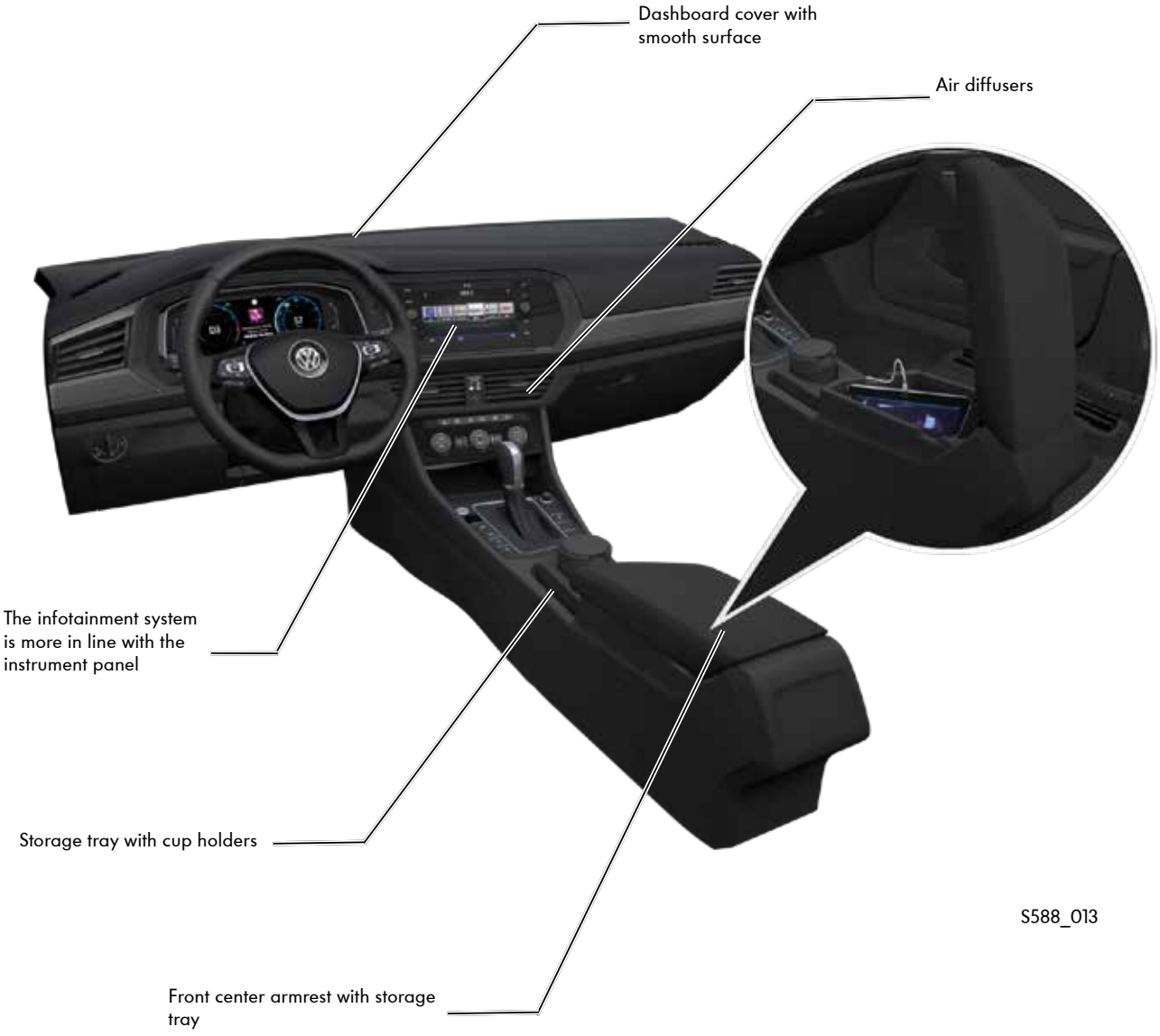
- Manual regulation
- Power regulation
- Power regulation with memory

Power regulation also features active air conditioning and heating.

Front seat, driver side with active climate control and seat memory

Dash panel and center console

The dash panel in the New Jetta is a fully innovative design. It features wide driving vision, elegance and high quality. The infotainment system is located in a much higher position. In addition, the mid-section of the dash panel is tilted slightly towards the driver as well as the center console. The new front center armrest with storage tray offers the driver greater comfort. Additionally, ambient lighting is included with dimmer and hue shifting.



Panoramic power-sliding sunroof

The sliding sunroof and tilting moonroof is attached and mounted as a Top-Load roof system. It is equipped with a manual sunshade.
Legal requirements for pinch protection are met.

S588_014

The glass top is mounted with the R2R system (Rail2Rail). Side moldings on the roof are eliminated with this design.

You will find more information about the panoramic power-sliding sunroof in the Self-Study Program Nr. 571 “Polo 2018”.

Safety Equipment

Occupant Protection

There are two market versions for occupant protection in the new Jetta: the North American NAR and the rest of the world RoW.

Characteristics of RoW version

- Single-stage driver airbag
- Single-phase passenger airbag
- Manual passenger airbag deactivation
- Front side airbags
- Head airbags for driver and front passenger
- Acoustic and optical warning for driver and passenger to use safety belt
- Three-point safety belts with pyrotechnic pretensioner in front seats
- Three-point safety belts in outer rear seats
- Belt force limiter in front and outer rear seats
- Top Tether System
- Latch System
- Multi-Collision Brake

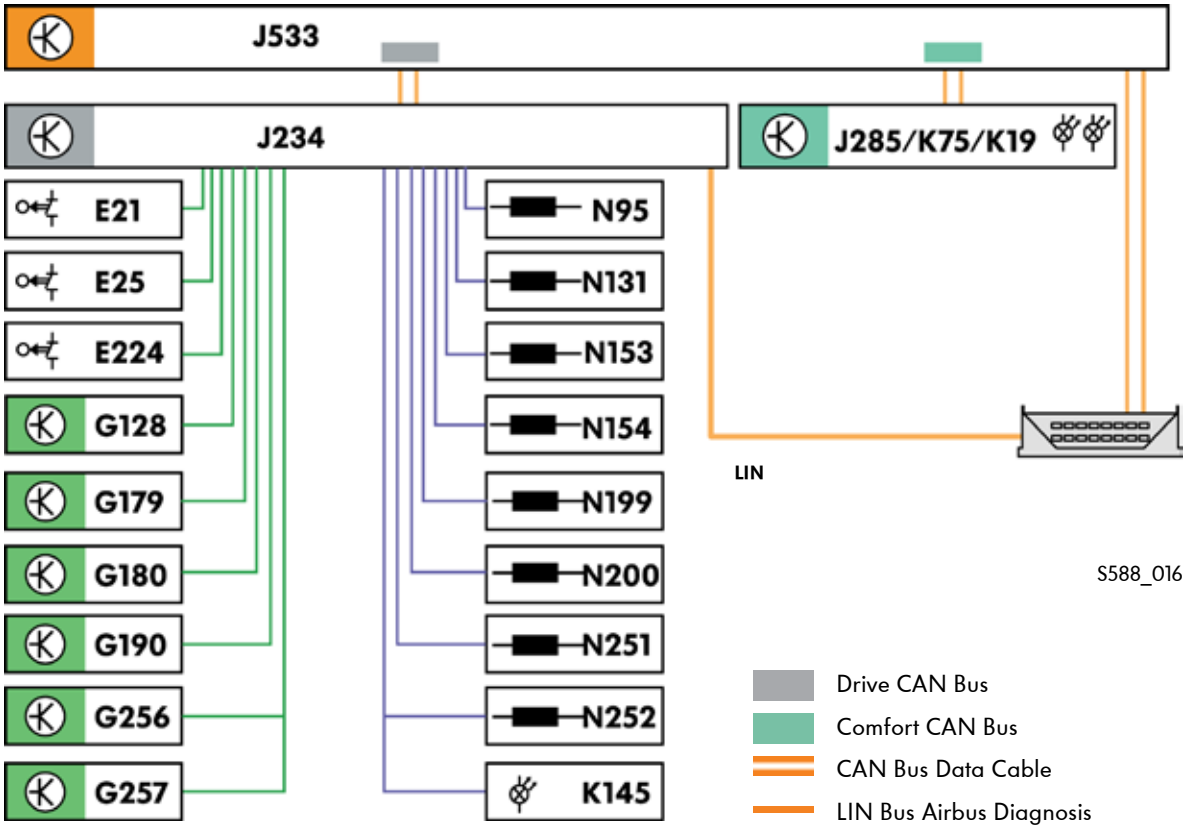
Characteristics of NAR version

- Single-stage driver airbag
- Dual-stage passenger airbag
- Front side airbags
- Optional rear side airbags
- Head airbags for driver and front passenger
- Acoustic and optical warning for driver to use safety belt
- Passenger seat occupant detection to turn passenger airbag onto active mode
- Chest and waist belt with force limiter and three pyrotechnic charges in front seats
- Three-point safety belts in outer rear seats
- Belt force limiter in front and outer rear seats
- Top Tether System
- Latch System
- Multi-Collision Brake

S588_015

For more information refer to Self-Study Program No. 559 “Tiguan 2018 LWB”.

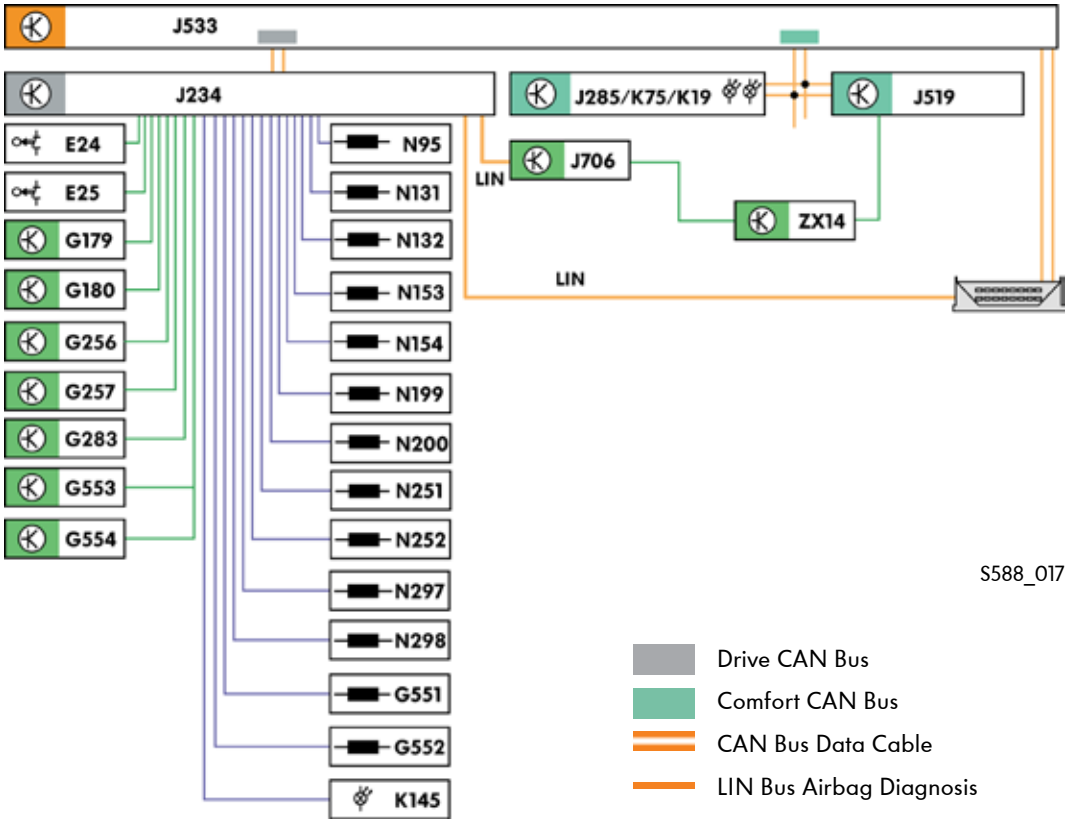
Electrical diagram ‘Rest of the world’ version



Key

E24	Driver seat belt switch
E25	Front passenger seat belt switch
E224	Front passenger airbag deactivation key switch
G128	Front passenger seat occupant detection sensor
G179	Driver thorax airbag crash sensor
G180	Front passenger thorax airbag crash sensor
G190	Front airbag crash sensor
G256	Driver side rear thorax airbag crash sensor
G257	Passenger side rear thorax airbag crash sensor
J234	Airbag control module
J285	Instrument cluster control module
J533	Data bus on-board diagnostic interface
K19	Seat belt indicator lamp
K75	Airbag indicator lamp
K145	Front passenger airbag -disabled- indicator lamp
N95	Driver airbag igniter
N131	Front passenger airbag igniter 1
N153	Driver seat belt tensioner igniter 1
N154	Front passenger seat belt tensioner igniter 1
N199	Driver thorax airbag igniter
N200	Front passenger thorax airbag igniter
N251	Driver head curtain airbag igniter
N252	Front passenger head curtain airbag igniter

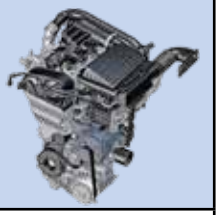
Electrical Diagram NAR Version



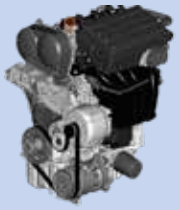
Key

E24	Driver seat belt switch
E25	Front passenger seat belt switch
G179	Driver thorax airbag crash sensor
G180	Front passenger thorax airbag crash sensor
G256	Driver side rear thorax airbag crash sensor
G257	Driver side rear thorax airbag crash sensor
G283	Driver front airbag crash sensor
G284	Passenger side front airbag crash sensor
G551	Driver belt force limiter (igniter)
G552	Front passenger belt force limiter (igniter)
G553	Driver seat position sensor
G554	Front passenger seat position sensor
J234	Airbag control module
J285	Instrument cluster control module
J519	Vehicle electrical system control module
J533	Data bus on board diagnostic interface
J706	Passenger occupant detection system control module
K19	Seat belt indicator lamp
K75	Airbag indicator lamp
K145	Front passenger airbag -disabled- indicator lamp
N95	Driver airbag igniter
N131	Front passenger airbag igniter 1
N132	Front passenger airbag igniter 2
N153	Driver seat belt tensioner igniter 1
N154	Front passenger seat belt tensioner igniter 1
N199	Driver thorax airbag igniter
N200	Front passenger thorax airbag igniter
N251	Driver head curtain airbag igniter
N252	Front passenger head curtain airbag igniter
N297	Driver seat belt tensioner igniter 2
N298	Front passenger seat belt tensioner igniter 2
ZX14	Front passenger seat heating element with seat occupant detection control module

Engine and gearbox combinations

Gasoline Engines / Gearbox	1.4 l 110 kW TSI Engine CZDA	1.4 l 110 kW TSI Engine DJXA	1.4 l 110 kW TSI Engine DGXA	1.4 l 110 kW TSI Engine CWLA
				
5-speed Manual Transmission MQ250 0A4				
6-speed Manual Transmission MQ250 02S				
6-speed Automatic Transmission AQ250 09G Gen 3				
8-speed Automatic Transmission AQ300 09S				

Volkswagen Technical Site: http://vwts.ru http://vwts.info

Gasoline Engines / Gearbox	1.6 l 81 kW MPI Engine CWVA	2.0 l 169 kW TSI Engine CXDB	2.0 l 170 kW TSI Engine DKFA
			
6-speed Manual Transmission MQ350 02Q			
6-speed Double Clutch Transmission DQ250 0D9			
7-speed Double Clutch Transmission DQ381 0GC			
6-speed Automatic Transmission AQ160 09G			

Engine and gearbox combinations

Diesel Engines / Gearbox	2.0l 110 kW TDI Engine CYKA
6-speed Manual Transmission MQ350 02Q	
6-speed Double Clutch Transmission DQ250 0D9	

1.4 l 110 kW TSI Engine

The basic engine was designed in the EA211 engine generation. In order to comply with environmental standard requirements, different versions have been implemented.

S588_018

Technical features

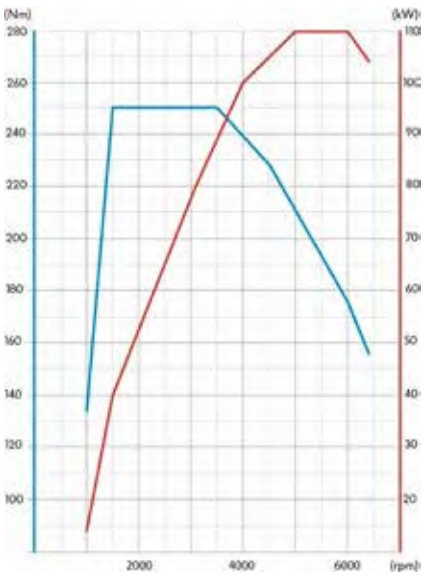
- Cylinder head with integrated exhaust manifold.
- Camshaft is driven by a toothed belt.
- The housing of the coolant thermostat and the coolant pump are a single unit.
- The coolant pump is driven by a toothed belt from the exhaust camshaft.
- Turbocharger module with electric boost pressure actuator.
- Timing of intake and exhaust camshafts.
- Oil pump with external gearing and two-stage regulation of oil pressure.
- Two-piece oil pan (upper aluminum cover, lower sheet metal sump)

More information on engine mechanics can be found in the Self-Study Program Nr. 511 “New Range of EA211 Gasoline Engines”.

Power Units

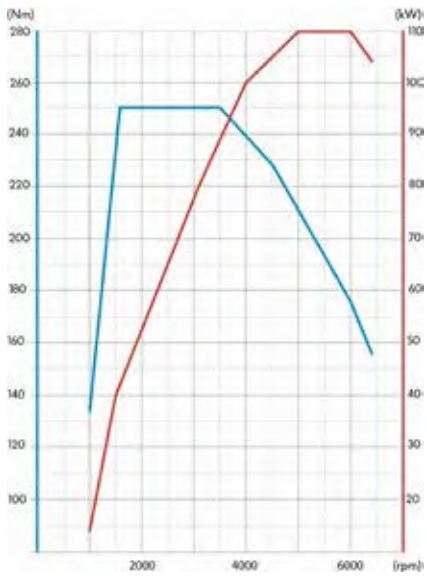
Engine code	CZDA	DJXA	DGXA	CWLA
Type	4-cylinder inline engine			
Displacement	1,395 cm^3			
Bore	74,5 mm			
Stroke	80 mm			
Valves per cylinder	4			
Compression ratio	10,0:1			
Maximum output	110 kW a 5000-6000 rpm			
Maximum torque	250 Nm at 1500-3500 rpm	250 Nm at 1600-3500 rpm		250 Nm at 1400-3500 rpm
Engine management	Bosch Motronic	Magneti Marelli		Hitachi
Fuel	95 RON unleaded			Bioethanol E100 or 95 RON unleaded
Exhaust gas treatment	Three-way catalyst, two binary lambda probes: one before and another after the catalyst			
Emission standard	EU4, EU5, EU6, PL6 BR	LEV3 / Tier3 70	LEV3 / Tier3 20	PL6 BR

Torque and power diagram



CZDA

S588_019



DJXA / DGXA

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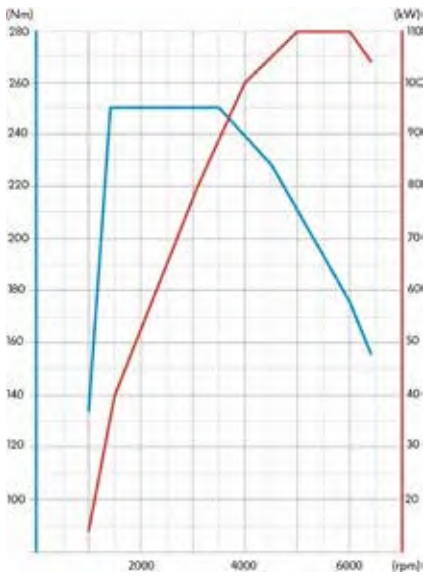


CWLA

S588_021

1.6 l 81 kW MPI Engine

The basic engine was designed in the EA211 engine generation with the characteristics of the Modular MOB Gasoline Engine System.

Technical features

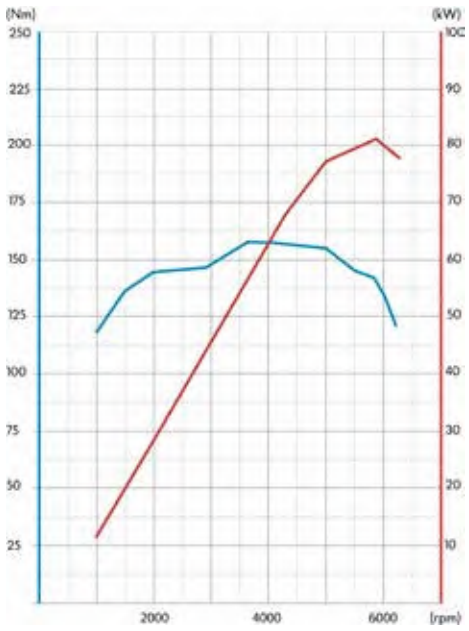
- Camshaft is driven by a toothed belt.
- Modular design of camshaft housing.
- Cylinder head with integrated exhaust manifold.
- Coolant pump is integrated in the thermostat housing.
- Coolant pump is driven by a toothed belt from the exhaust camshaft.
- Intake Camshaft Timing.

S588_022

Engine code	CWVA
Type	4-cylinder inline engine
Displacement	1,598 cm^3
Bore	76,5 mm
Stroke	86,9 mm
Valves per cylinder	4
Compression ratio	10,5:1
Maximum output	81 kW at 5800 rpm
Maximum torque	155 Nm at 3800-4000 rpm
Engine management	Bosch Motronic MPI
Fuel	95 RON unleaded
Exhaust gas treatment	Three-way catalyst, two binary lambda probes: one before and another after the catalyst
Emission standard	EU5

More information on engine mechanics can be found in the Self-Study Program Nr. 511 “New Range of EA211 Gasoline Engines”.

Torque and power diagram



CWVA

S588_023

2.0 l 169/170 kW TSI Engine

The basic engine was designed in the EA888 engine generation 3. In order to comply with environmental standard requirements, different versions have been implemented. Both engines will be implemented in the GLI version.

S588_024

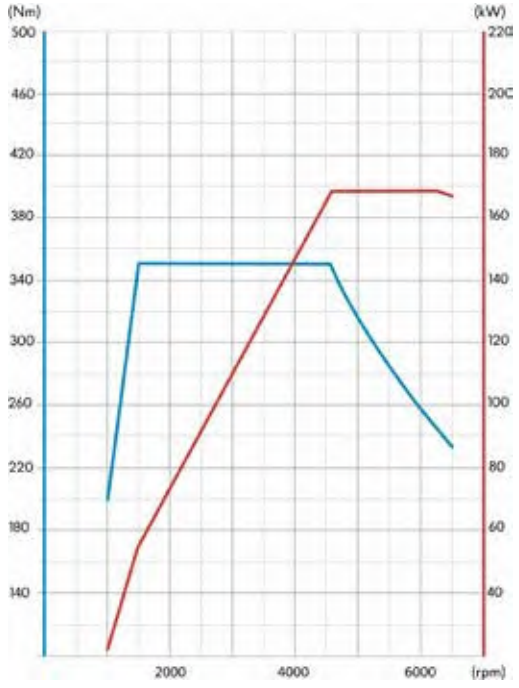
Technical features

- A total weight reduction of 17.2 lb.
- Cylinder head with integrated exhaust manifold.
- Balance shafts housed in bearings.
- A separate upper oil pan aluminum cover and a lower oil pan plastic sump.
- Oil filter and oil cooler integrated in the support of auxiliary assemblies.
- Timing of intake and exhaust camshafts.
- Electronic valve lift switching.
- The 169 kW engine has a dual Injection system with both TSI and SRE injectors (direct injection and injection into intake ducts)
- The 170 kW engine has a direct injection system with TSI injectors only.

More information on engine mechanics can be found in the Self-Study Program Nr. 522 “2.0 l 162/169 kW TSI Engine”.

Engine code	CXDB	DKFA
Type	4-cylinder inline engine	
Displacement	1,984 cm^3	
Bore	82,5 mm	
Stroke	92,8 mm	
Valves per cylinder	4	
Compression ratio	9,6:1	
Maximum output	169 kW at 4700-6200 rpm	170 kW at 5000-6200 rpm
Maximum torque	350 Nm at 1500-4600 rpm	350 Nm at 1500-4400 rpm
Engine management	SIMOS 18.1	SIMOS 18.1
Fuel	98 RON unleaded	
Exhaust gas treatment	Three-way catalyst, a broadband lambda probe before the turbocharger and a binary lambda probe after the catalytic converter	
Emission standard	EU4, EU6	LEV3 / Tier 3 30

Torque and power diagram



CXDB

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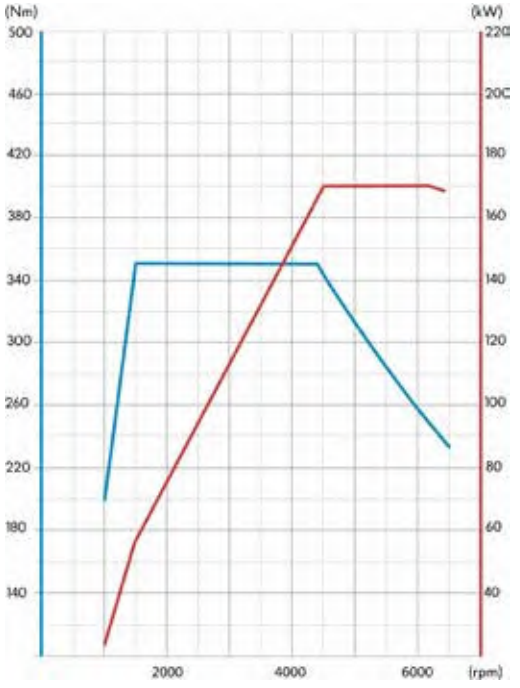


DKFA

S588_026

2.0 l 110 kW TDI Engine

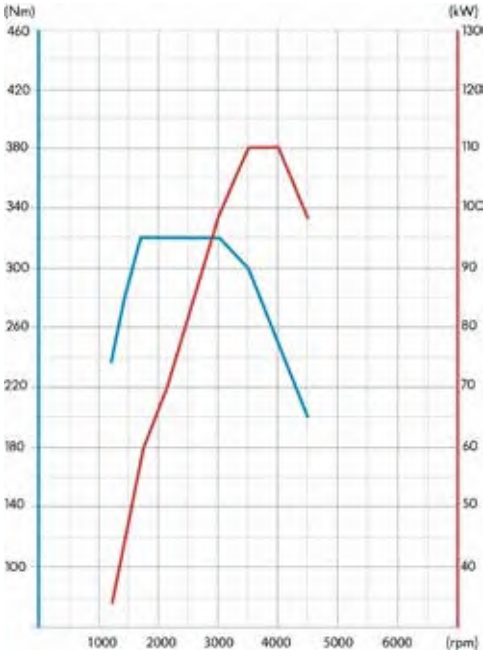
The 2.0 l TDI engine belongs to the EA288 diesel engine range. This engine is manufactured with or without balance shafts depending on the vehicle model. In this case, balance shafts are not included.

Engine code	CYKA
Type	4-cylinder inline engine
Displacement	1,968 cm^3
Bore	81,0 mm
Stroke	95,5 mm
Valves per cylinder	4
Compression ratio	16,2:1
Maximum output	110 kW at 3500-4000 rpm
Maximum torque	320 Nm at 1750-3000 rpm
Engine management	Common-Rail Bosch
Fuel	Diesel per EN 590
Exhaust gas treatment	Exhaust gas recirculation, oxidation catalyst, diesel particle filter
Emission standard	EU5

S588_027

More information on engine mechanics can be found in the Self-Study Program Nr. 514 “New Range of EA288 Diesel Engines”.

Torque and power diagram



CYKA

S588_064

Environmental Emission Standard in NAR

Technologies have been implemented in the New Jetta to comply with the demanding environmental emission standards in different markets.

One of the most environmentally-demanding markets is NAR (North America Region), which is ruled by two domestic agencies:

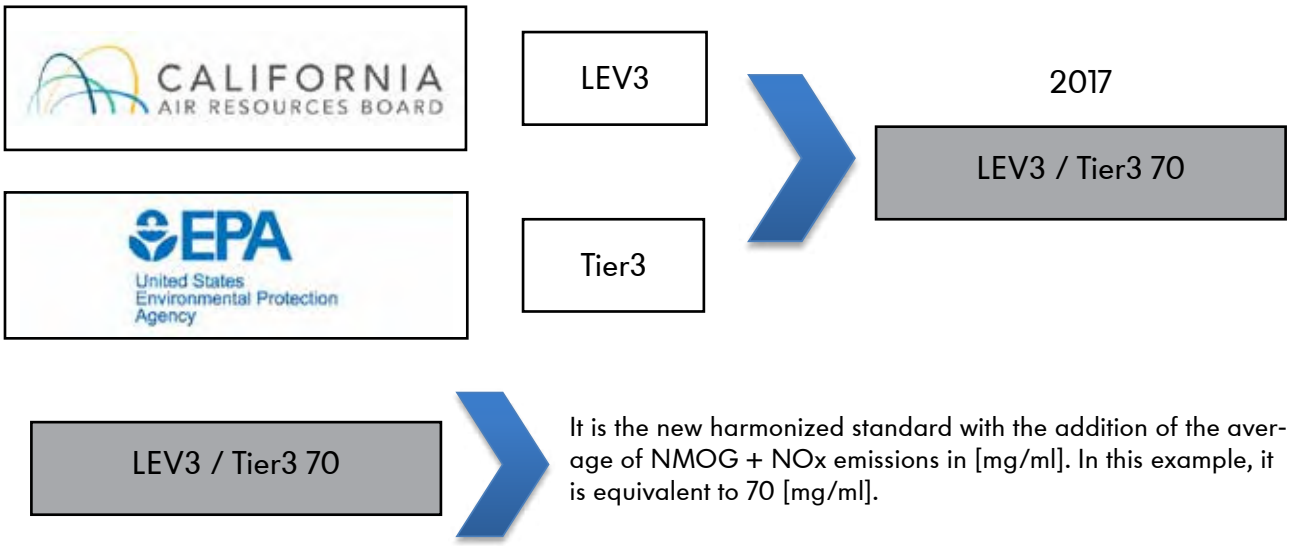
Unified States Environmental Protection Agency (EPA) California Air Resources Board (CARB)

These two agencies have their own standards and parameters, which our cars comply with absolutely.

Both regulations were harmonized and remained under the same measurement parameters, with the variation of adding the NMOG + NOx emission average,

where NMOG stands for Non-Methane Organic Gases and stands for Nitrogen Oxide NOx.

Evolution of the Environmental Emission Standard:



More information on US Emission Standards can be found in the Self-Study Program Nr. 573 “Laws on Vehicle Exhaust Emissions 2017”.

8-speed Automatic Gearbox 09S

A new automatic 8-speed gearbox 09S is implemented in the New Jetta.

Technical datasheet

Manufacturer	AISIN AW Co. LTD. Japan
Production designation	AQ300
Service designation	09S
ATF specification	Refer to ETKA catalog
Filling capacity	Refer to ELSA manual
Service period	Not yet planned

S588_028

The 8-speed automatic gearbox 09S from the Japanese Transmission Group AISIN AW CO LTD is a more developed version of 8-speed automatic gearbox 09P, which is currently mounted on Tiguan LWB.

The eight forward gears work by means of a system of modified planetary assemblies.
Automatic transmission 09S is designed for the Start-Stop function by means of a new electro-valve that keeps the first-gear clutch engaged while the function is on, ensuring a smooth connection when the idling motor starts up.

Highlights

- The brake by band B1 is replaced by a multi-disc brake.
- Multifunction transmission range switch F125 is replaced by the selector lever sensor system control module J587.
- The manual slide is eliminated.
- Chain-driven hydraulic pump.
- New ATF oil with high friction properties.
- Two pressure switches are incorporated to monitor the working pressure.

Clutch and brake application in 8-speed gearbox 09S

Application of clutches and brakes according to the gear engaged is shown below.

Drive	Components						
	K1	K2	K3	K4	B1	B2	F
I	●	–	–	–	–	●	●
II	●	–	–	–	●	–	–
III	●	–	●	–	–	–	–
IV	●	–	–	●	–	–	–
V	●	●	–	–	–	–	–
VI	–	●	–	●	–	–	–
VII	–	●	●	–	–	–	–
VIII	–	●	–	–	●	–	–
Reverse	–	–	●	–	–	●	–

● applied
– not applied

Where:

- Letter “K” designates the different multi-disk clutches (from 1 to 4)
- Term B1 designates the multi-disc brake 1.
- Term B2 designates the multi-disc brake 2.
- Letter F designates the freewheeling mechanism.

Engine brake: the engine braking effect is achieved by selecting first gear in Tiptronic mode in order to control specific driving situations such as driving downhill.

The multi-disc brake B2 only operates in first gear with Tiptronic mode on. This mode is also known as manual first gear.

Running Gear Overview

This overview shows important standard and optional equipment for the New Jetta running gear. It can be equipped with a standard running gear, a sports running gear or an adaptive running gear (DCC) in the GLI version.

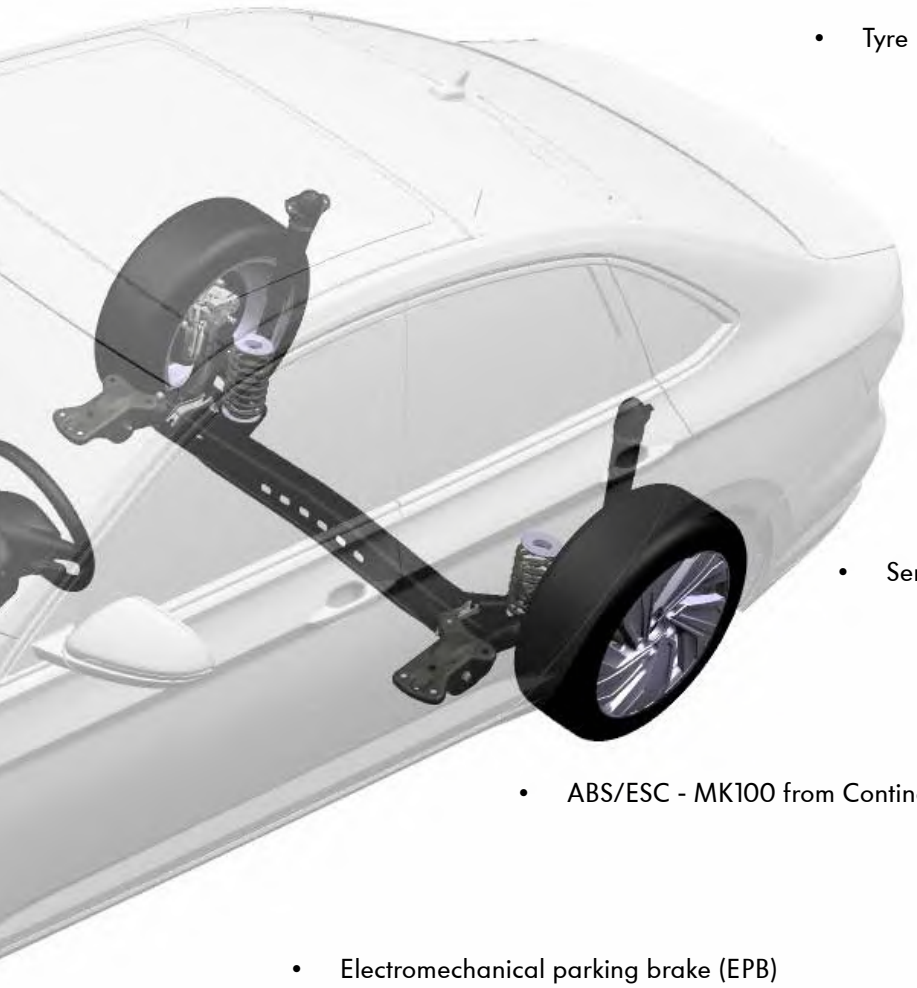
Running gear:

- Electromechanical power steering:
  - with parallel drive shaft (APA)
  - with ZF progressive steering

- Extension of the Electronic Differential Lock System (XDL)

- Front axle with McPherson telescopic arms.

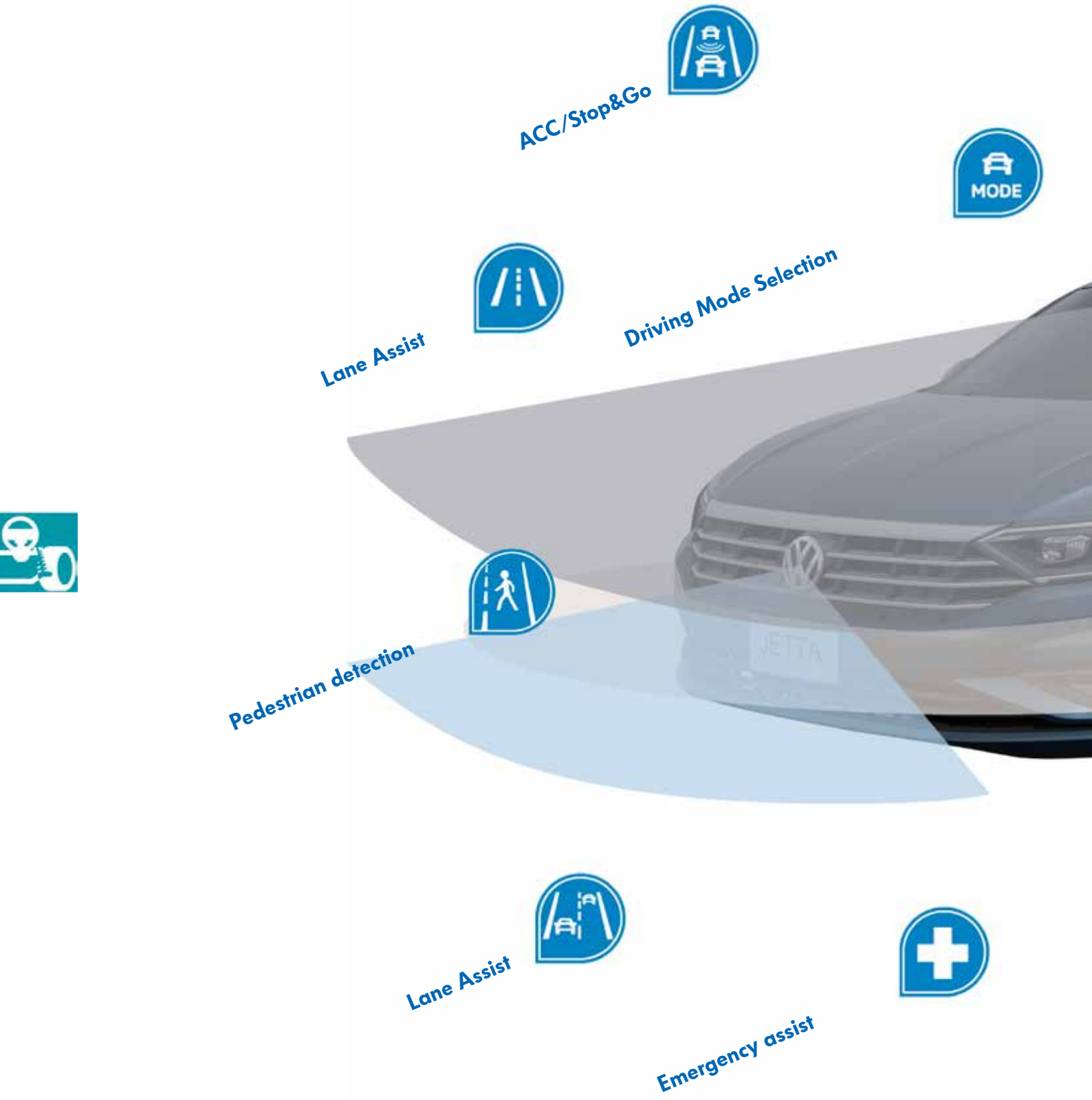
For more information on steering systems, refer to the following Self-Study Programs:
- Nr. 317 “Electromechanical power steering with double pinion”
- Nr. 399 “Electromechanical power steering with parallel drive to the main shaft. (APA)”
- Nr. 521 “Golf GTI/GTD 2013” (Progressive Steering)
- Nr. 543 “Passat 2015 - Driver Assist Systems”



- Tyre Pressure Monitoring System (TPMS)
- Semi-rigid rear axle with oscillating arms.
- ABS/ESC - MK100 from Continental
- Electromechanical parking brake (EPB)

S588_029

Driver Assist Systems Overview



Rear view camera system

Park Distance Control (PDC)

S588_030

Park Assistant

Front Assist

Tyre Pressure Monitoring System (TPMS)

Driver Assist Systems Overview

Multi-function camera (MFC) for the following systems:

Light Assist (FLA)

It recognizes both approaching traffic and vehicles standing in front of the camera. The system automatically switches between low beam and high beam (at speeds above 60 kph)

LaneAssist

Road markings are recognized by the camera. If the car steers out of a lane without turn signals having been activated, Lane Assist actively drives the car back into the corresponding lane.

Mid-Range Radar (MRR) for the following functions:

Forward Collision Warning

Specially developed for city driving, this system can help reduce or prevent a frontal collision when traveling at speeds up to 30 kph.

Adaptive Cruise Control (ACC)

ACC works like a conventional cruise control, but has an additional function through the radar: If the system recognizes a vehicle moving ahead, it automatically adjusts the speed, and if it stops recognizing said vehicle, it returns to the speed set by the driver (in combination with automatic transmission.) if necessary, it would even stop the car completely.

Pedestrian Detection

Pedestrian detection consists of a warning intervention and an automatic braking intervention when a possible collision with a human being is detected. Within the system limits, speed can be reduced and an accident can be prevented in the best case.

Rear Radars

Blind Spot Detection

Radar sensors mounted on the rear fascia can detect vehicles up to 25 meters in the blind spot zone and alert the driver through signals on the external rearview mirrors. This assist to prevent, especially while changing lanes.

Exit Assist

When leaving a parking space in reverse, the system can recognize a car coming up behind and warn the driver about the risk. If the driver does not react, the vehicle automatically performs an emergency braking.

ParkDistanceControl (PDC)

In total, 8 sensors on the front and rear bumpers detect obstacles that are close to the car, especially when parking. The system switches on automatically when the car approaches an obstacle at less than 10 kph or when the car is driven in reverse.

Driving Mode Selection

Option to change the automobile character by means of a button, according to the driver needs.
- Sport - Comfort - Eco - Individualized

S588_031

New ECO button (in some versions)

When activating the ECO function:

The vehicle electronically sets certain functions, such as the engine RPM range, engine torque, air conditioning, gear shifting, ambient lighting (in the Highline version) to achieve optimal fuel consumption.

S588_032

Other relevant safety systems:

ABS with ESP / Traction Control / Multi-Collision Brake

More information on Driver Assist Systems can be found in Self-Study Program Nr. 543 “Passat 2015 - Driver Assist Systems”.

Front Radar Sensor

In the New Jetta, the front radar sensor (Distance regulation control module J428) for Front Assist and ACC is mounted behind the radar-ready Volkswagen emblem.

A new generation of radar sensors was introduced with the New Jetta. Until now, pedestrian detection was carried out through the combination of radar sensor and front camera. Now, the new generation radar sensors can detect pedestrians on their own (radar only.) Calculation capacity of sensor is much higher. Thus a better detection, evaluation and differentiation of different objectives is obtained.

Technical data of sensor:

- Mid-range radar sensor, MRR 1.5 EVO
- Manufacturer: Bosch
- Frequency: 77 GHz
- Scope: 160 m

S588_033

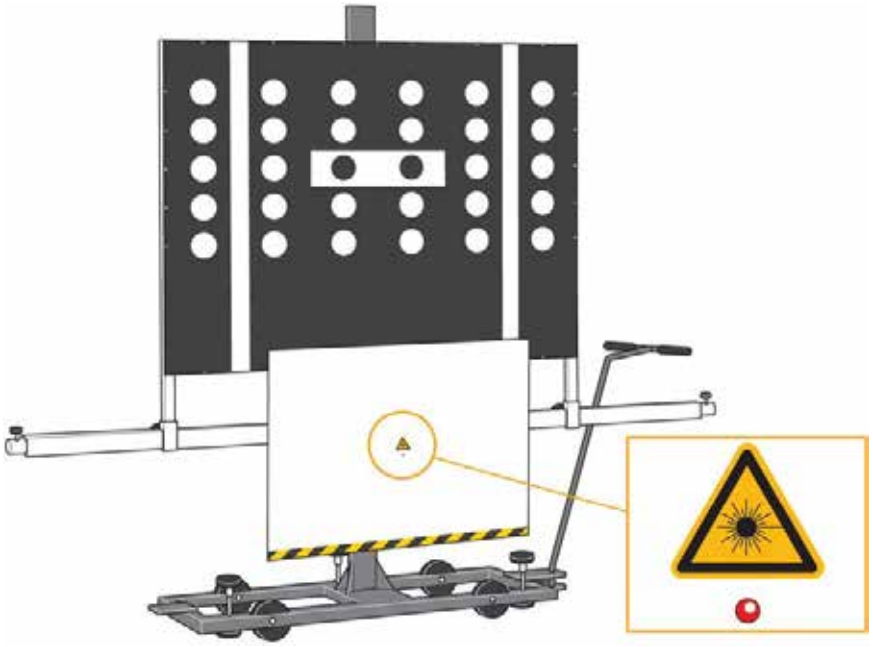
Static Calibration

There is a procedure for dynamic calibration of the sensors however, after some repairs it is necessary to perform the static calibration procedure.

The front radar sensor is calibrated statically on the alignment bench. The VAS 6430/10 ACC reflector mirror is oriented towards the vehicle according to the manufacturer's instructions.

In static calibration, the front radar sensor adapts its perception based on a reflector mirror oriented in relation to the vehicle's axis. The calibration is activated in the vehicle diagnostics testing program and is automatically developed. It is no longer possible or required to perform a mechanical adjustment with adjustment screws as was done on previous versions.

VAS 6430/10 Reflector Mirror



S588_034

It is necessary to calibrate sensor J428 when:

- The distance regulation control module J428 has been replaced.
- The locking plate has been replaced.
- The rear axle toe has been adjusted.
- The locking plate has been placed in the service position.
- There is a customer claim.
- There is a record in the event memory.

Follow the instructions in the Repair Manual and in the checking program.
For dynamic calibration it is necessary to follow the instructions in guided functions of the diagnostic equipment.

Heating and air-conditioning

Air-conditioning

The air-conditioning systems of the cross-modular platform MQB have been used in the New Jetta.

The standard equipment is an electric air-conditioner with manual control. Optionally, the 2-Zone Climatronic is available.

S588_035

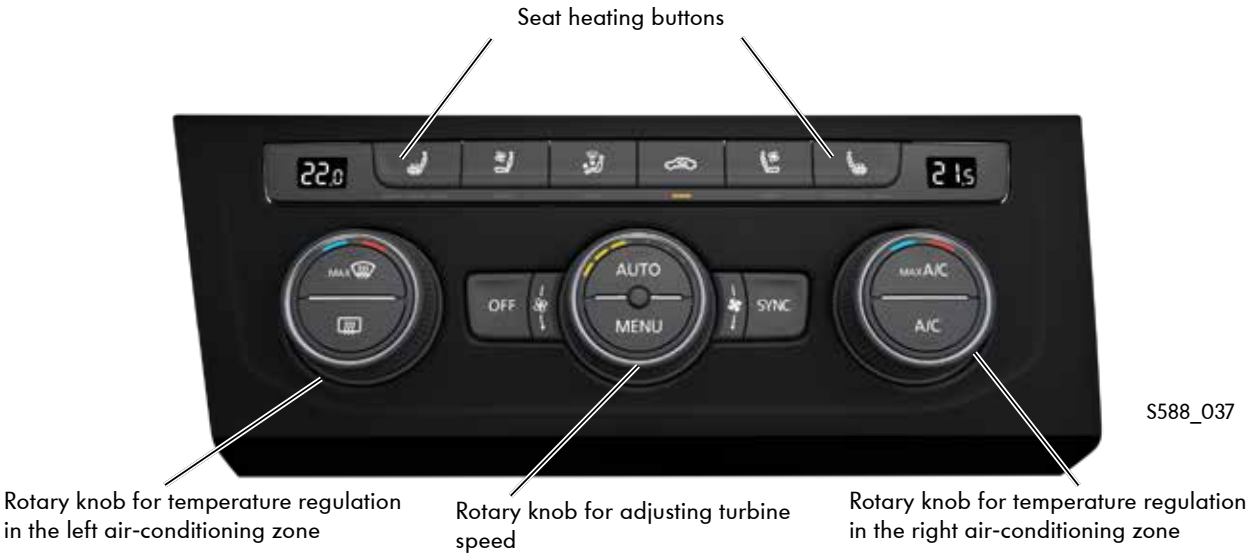
Electric air-conditioner with manual control

This version is the same one used in Tiguan 2017. To reduce impurities from the outside air entering the vehicle, a filter of dust and pollen is used.

S588_036

2-Zone Climatronic

In the 2-Zone Climatronic, different temperatures can be set for the driver side and the passenger side. The regulation is fully automatically.



Like Tiguan 2017, Climatronic has a MENU function. With this, the air-condition settings and activation of functions such as Air Care can be controlled from the Infotainment display..

S588_038

Air Care

An allergenic particulate filter is used for the “Air Care” function in order to reduce intake of polluting substances and allergenic particles

The air purification process in the passenger compartment is displayed with animation in the Infotainment screen. It reports the driver on the vehicle status (open windows, open panoramic roof, open doors, etc.)

In 10% steps, a blue “protection screen” is formed showing how much air is purified. The display is complete in about 20 seconds. The user feels the air recirculation mode through the slow increase of the fan speed.

S588_039

Signals from the following sensors are required for the Air Care function:

- Air quality sensor G238
- Outside air temperature sensor G17
- Sunlight photo sensor G107

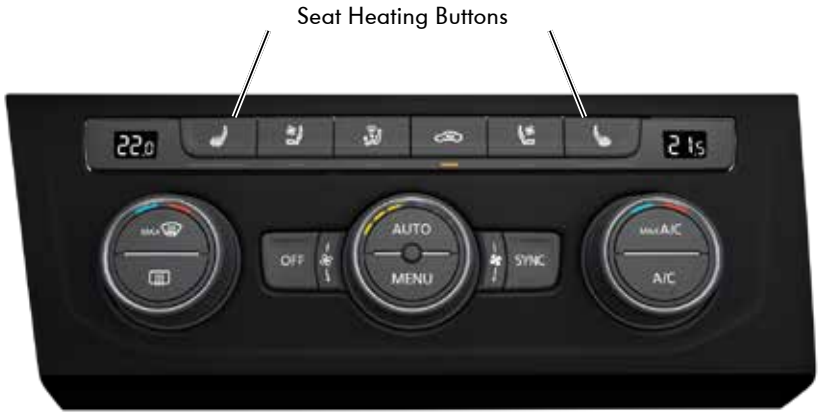
With the aid of sensors, the control unit calculates a pleasant climate in the passenger compartment and the dew point on the windshield. Climatronic’s Air Care always remains at about 5 degrees from dew point, so air recirculation flaps are never completely closed. Air recirculation is not possible below 54°F (12°C), as the window glass would fog too quickly.

Depending on the market, either R1234yf or R134a refrigerant is used.

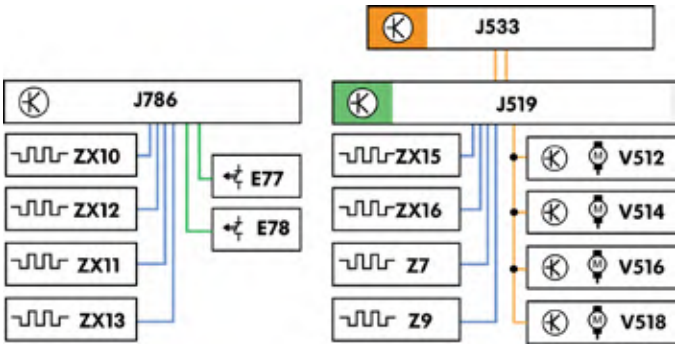
More information on coolant R1234yf can be found in Self-Study Program Nr. 552 “Tiguan 2017”.

Seat heating and ventilation

Seat heating and ventilation is operated through buttons located in the Climatronic control unit. Both heating and ventilation have three intensity levels and can be operated from the air-conditioning control or from the Infotainment display.



S588_040



S588_041

Key

E77	Left rear heated seat switch
E78	Right rear heated seat switch
J519	Vehicle electrical system control module
J533	Data bus on-board diagnostic interface
J786	Rear seat heating control module
V512	Left front seat backrest fan 1
V514	Left front seat cushion fan 1
V516	Right front seat backrest fan 1
V518	Right front seat cushion fan 1
Z7	Driver backrest heating element
Z9	Front passenger backrest heating element
Z11	Left rear backrest heating element
Z13	Right rear backrest heating element
ZX10	Left rear seat heater
ZX12	Right rear seat heater
ZX15	Driver side heated seat
ZX16	Front passenger side heated seat

If the passenger side has a heater with seat detection, the connection changes and ZX16 is replaced by ZX14 ‘Front passenger seat heating element with seat occupant detection control module.’
See Electrical Diagram NAR Version on page 17.

Electrical system and Infotainment systems overview

There may be some differences depending on country and equipment.

- Start-Stop 2.0 system

- 5th generation immobilizer with component protection

- New generation MIB with new command and indication units

- LED headlights with dynamic cornering light

- Keyless Entry and Keyless Access, optional

- Ambient light with dynamic light switching depending on the driver profile

- Tail light clusters with LED technology as standard equipment

- Instrument cluster Active Info Display

- “BeatsAudio” sound system

S588_042

- Car customization

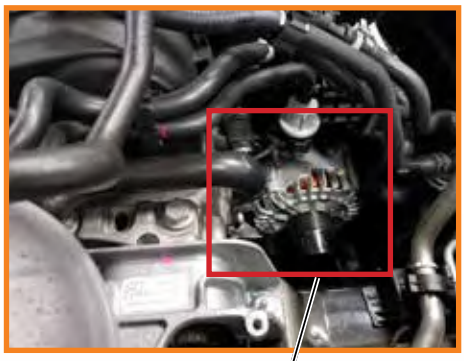
- Front seats with ventilation and heating

On-board network locations

Depending on the equipment, an alternator with a 140 A or 180 A current load is used. Also, the following battery types with a capacity between 59 Ah and 72 Ah are mounted depending on the equipment:

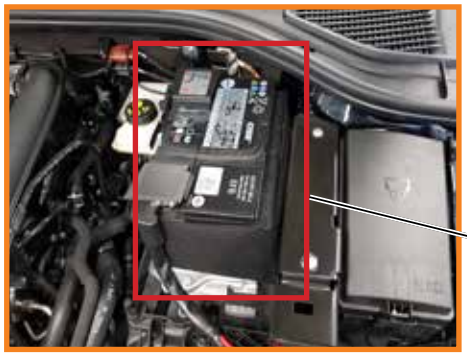
- Conventional wet battery.
- Enhanced Flooded Battery (EFB)

Alternator



S588_043

12V battery in the engine compartment



S588_044

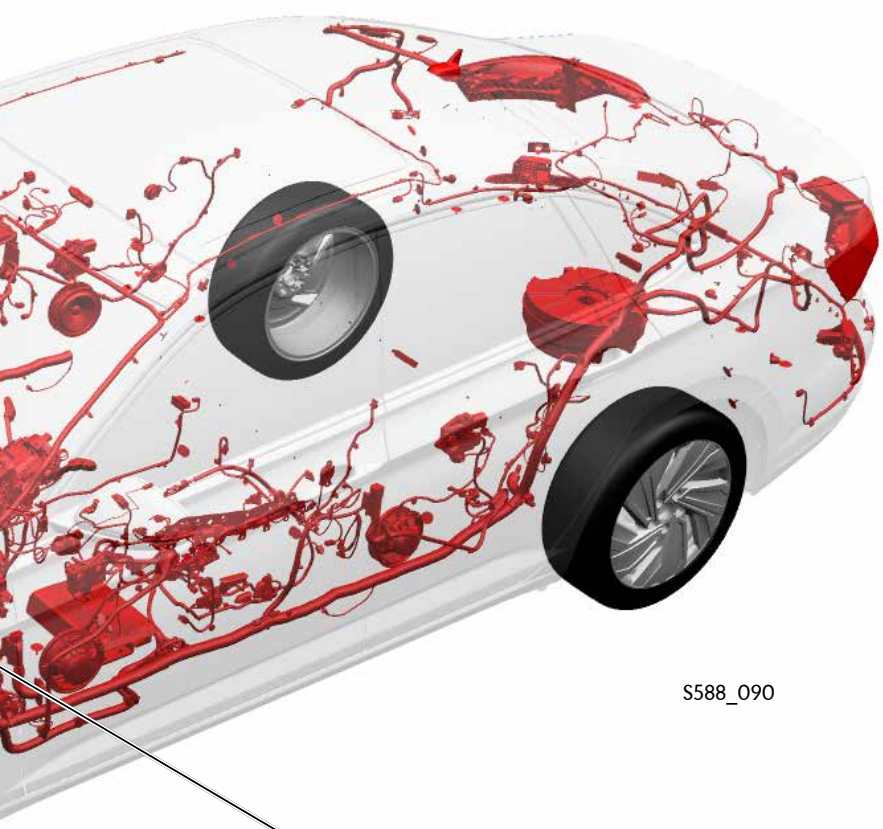
12V battery in the engine compartment

Three fuse holders distribute electric current in the vehicle:

- A Multifuse SA pre-fuse holder in the electronic box of the engine compartment.
- A relay holder and fuse holder SB in the electronic box.
- A relay holder and fuse holder SC under the left side of the instrument panel, behind the storage compartment.

Fuse box SA/SB

S588_045



S588_090

Relay holder and fuse holder SC

S588_046

Ambient light with dynamic light change

An emotional ambient is created when the car is switched on and the driver can feel and enjoy the sensations according to the selected driving profile. The driving profile selector button together with the ambient light hue change lets the Volkswagen experience “Fun2Drive”
(Sport Mode), “Innovative Comfort” (Comfort Mode) or “Environment Friendly” (Eco Mode) be perceived instantly.

S588_047

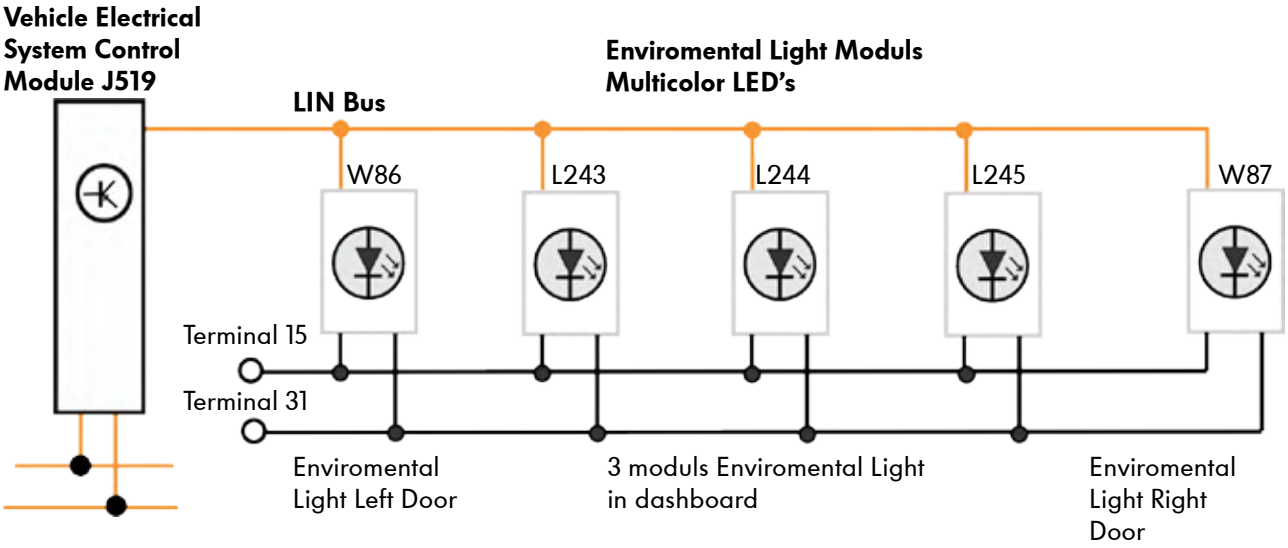
Operating Modes: “Sport” (Bright Red), “Comfort” (Candle light), “Eco” (Bright blue) and Customized.

In the Customized mode, up to 10 different hues may be selected (for example: Red, White, Amber, Blue, Orange, Green, Yellow and Pink) and set in the Infotainment display.

Hues also change instantly in combination with the driving mode selector button.

Electrical diagram of ambient light

Enviromental Light



S588_065

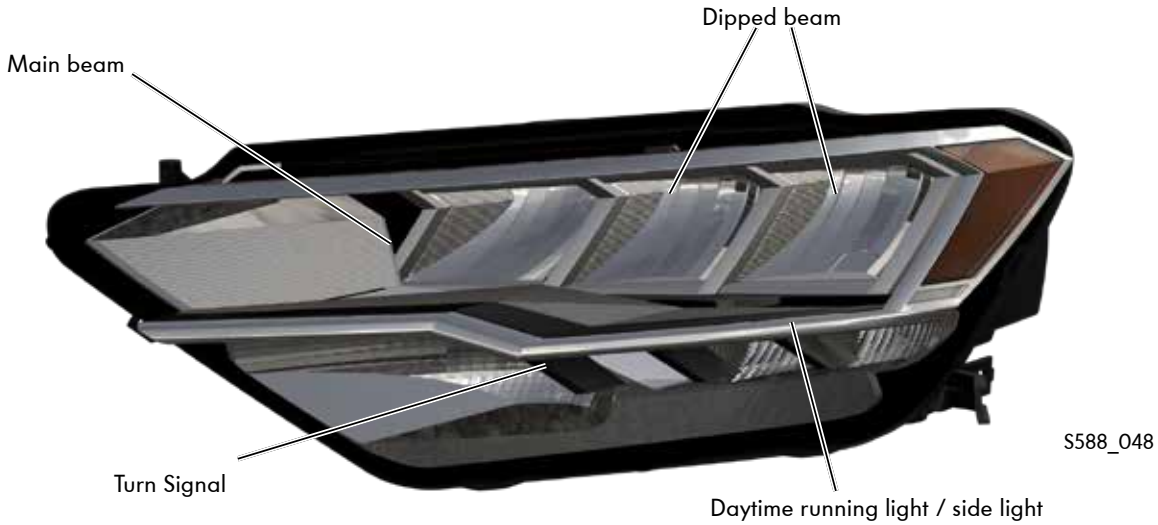
Headlights

There are two types of headlights available for the New Jetta:

- “Basis” LED headlights with LED daytime running lights
- Headlights LED “High”, according to the market, with dynamic light assist (DLA)

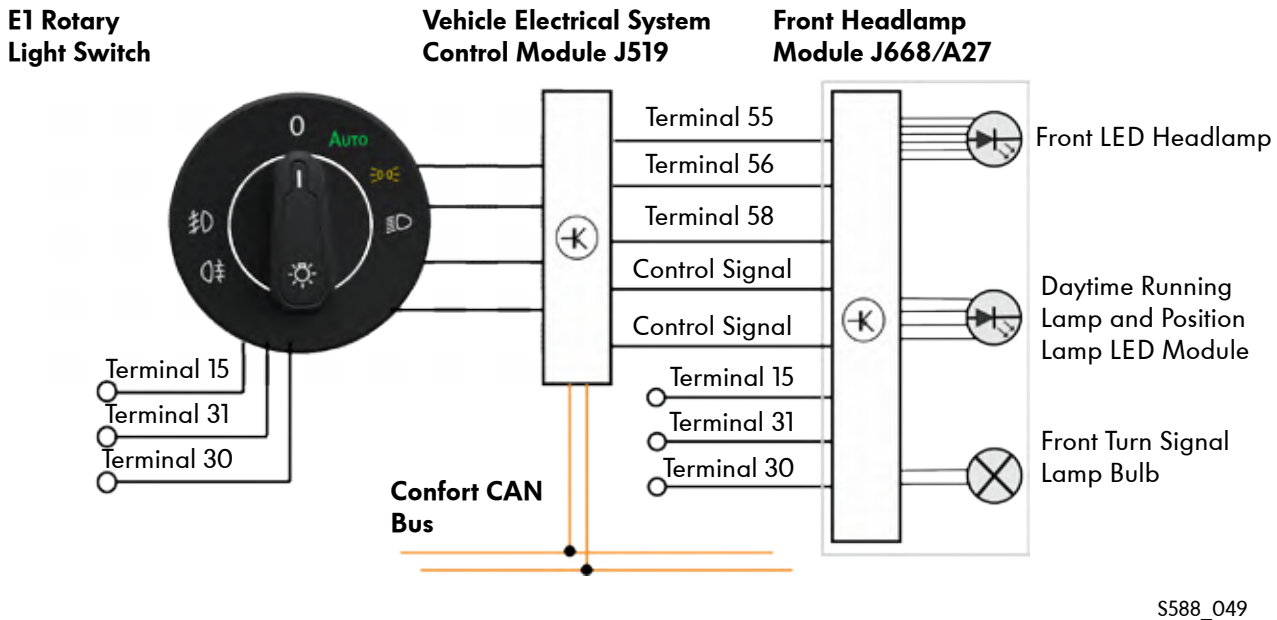
“Basis” LED headlights with LED daytime running lights

The “Basis” LED headlamp has the following light functions: low beam, high beam, position light, turn signal and daytime driving light. With the exception of the turn signals, all light functions are performed in LED technology. The daytime driving light and the position light are generated by an LED module and an optical conductor, where the light of the LEDs is attenuated to 10%.



Power connections

By means of discrete cables signals are sent from the light switch to the Control Unit of the Vehicle’s Electrical System and this unit sends the signals to the J668 headlight module without intermediate light unit.



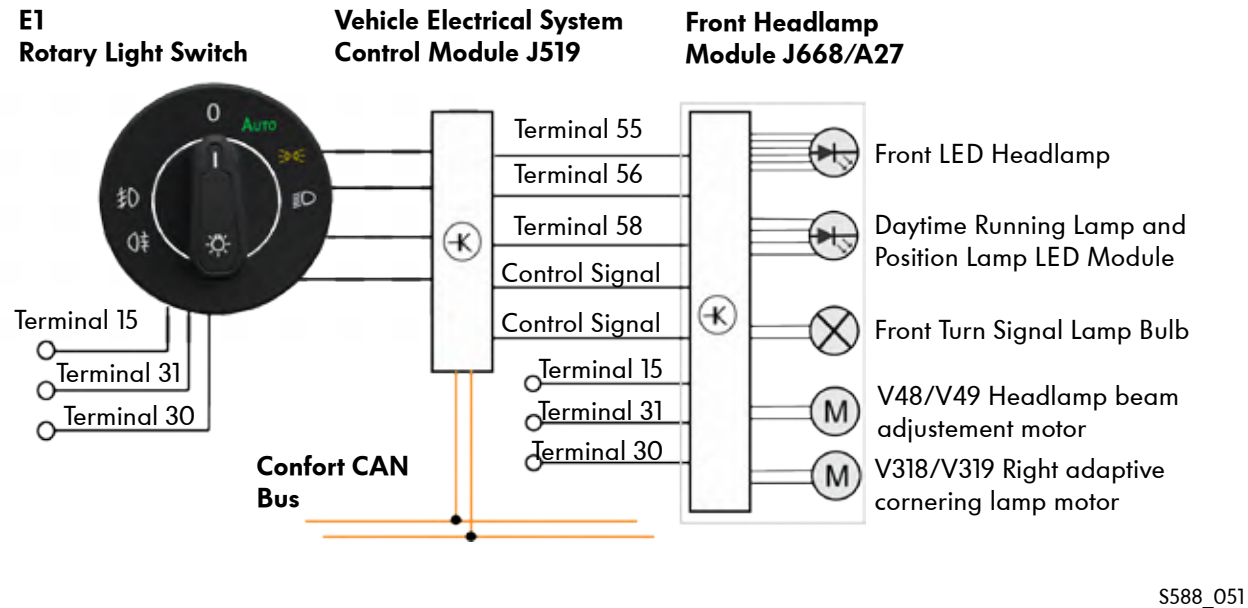
“High” LED headlight

The “High” LED headlight is also available in the new Jetta.

The “High” LED headlamp has the following light functions: low beam and high beam generated in the same module, position light, turn signals with incandescent lamp and LED daytime running light. The LED headlight “High” is equipped with a dynamic adjustment of the range of the lights and additionally a “Light Assist” system. In some markets the “High” LED headlamp with dynamic curve light will be offered.

Power connections

The on-board network control unit is responsible for the light range regulation and activates the servomotors for dynamic cornering lights.



Tail light clusters

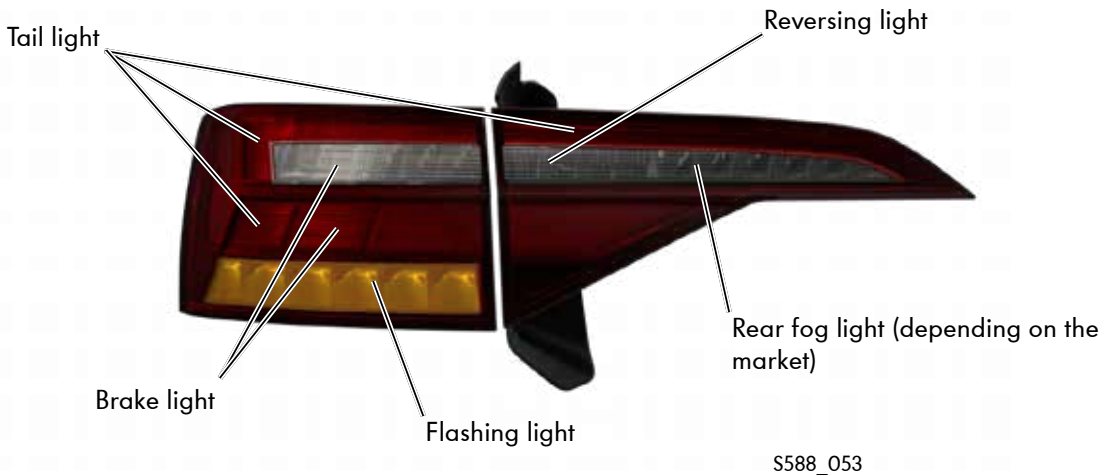
The tail light clusters are equipped exclusively with LED technology.

S588_052

Fixed section of tail light cluster

Rear lid section of tail light cluster

Tail light cluster



S588_053

Light functions

Projected image: tail light

S588_054

Projected image: tail light with brake light

S588_055

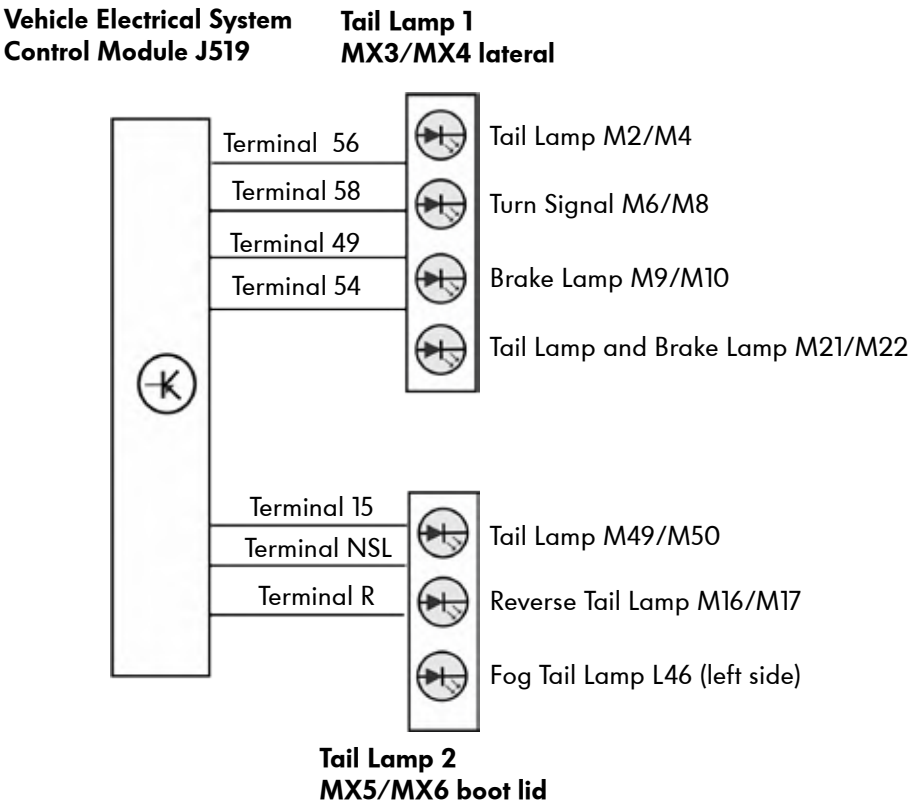
Projected image: tail light with rear fog light

S588_056

Projected image: tail light with reversing light

S588_057

Electrical diagram



S588_058

Instrument cluster

Medium instrument cluster

S588_059

- Black and white TFT center display with 240 × 320 pixel resolution.
- Rpm, speed, coolant temperature and fuel level analog indicators.
- Multifunction indicator with the following information:
  - Clock, odometer, trip odometer.
  - Vehicle warning messages shaped like symbols and text in 24 languages.
  - Gear range or gear shift indicator.
  - On-board computer with efficiency display.
  - Outside temperature, ice warning.
  - Speed controller.
  - Speed limiter.
  - Speed warning.
  - Date.
  - Service interval.
  - Engine identification letters.
  - Additional driver assist systems.
  - Navigation guidance.
  - Telephone lists.
  - Radio station list.
  - Oil temperature display.

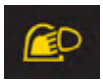
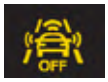
Color instrument cluster

S588_060

The same functions as the Medium model plus:

- Color TFT center display.
- Display transitions with animations.

New warning lights in the instrument cluster:

- Engine rpm is limited 
- Electromechanical power steering operation is limited 
- Fault in the rain and light sensor 
- Fault in the window cleaner 
- Adaptive cruise control (ACC) is not available 
- Fault or high temperature in DSG gearbox 
- Auto Hold function 
- The Front Assist surveillance system is off 
- Parking exit assist 
- Main beam assist 
- Low consumption ECO driving 

For more information on warning lights, refer to the Owner's Manual.

Instrument cluster Active Info Display (AID)

S588_061

In the Active Info Display (AID), the analog dial gauges are presented only virtually. The following safety-related warning lamps are still located at the side of the display as fixed indicators:

- Turn signals.
- Warning light for exhaust-related faults.
- Glow time warning light for diesel engine.
- Central warning lamp (observe displayed message)

The driver information display can be customized to show additional data for the driving, navigation and driver assist functions in the middle areas of the speedometer and the rpm counter.

Functions and characteristics

- 10.25" TFT screen with 133 dpi resolution.
- Features all basic functions.
- Engine temperature and fuel tank displays.
- Various display modes may be selected.
- Automatic display switching according to the active function.
- 2-D and 3-D graphics display.
- Navigation and media display.

Remote Start

Remote start is an option for the New Jetta.
To activate, press the following buttons within three seconds:

- Locking button once
- Remote Start button twice (×2) (×2)

S588_080

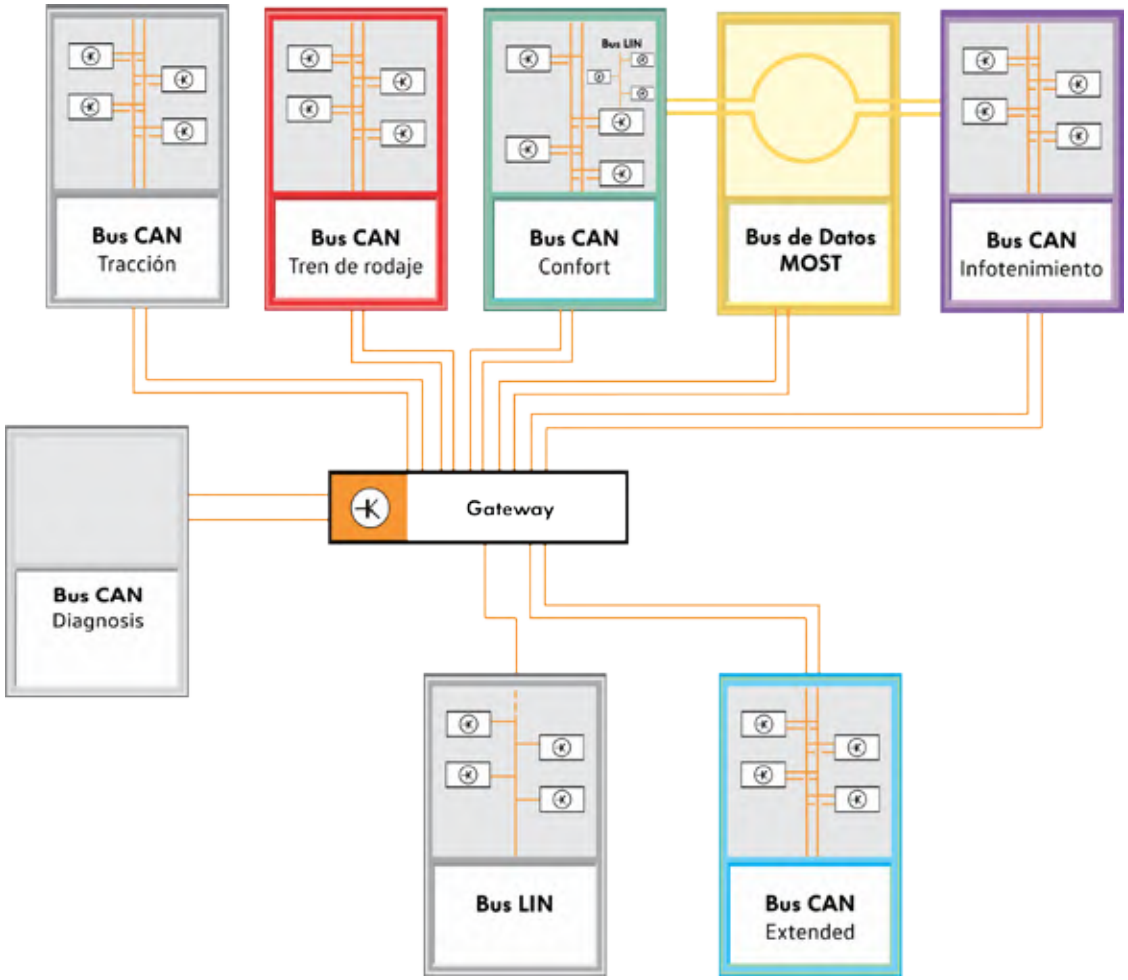
The indicator lights will give a confirmation flash and the parking lights will remain illuminated while the vehicle is running. If the remote start feature is not interrupted, the engine runs for about 10 minutes. Two remote starts in a row are possible before a start cycle from inside the vehicle is required.

You will find more information of the Active Info Display instrument panel in self-study program Nr. 571 "The Polo 2018".

Networking

Overview of the data bus systems used

All CAN bus systems in the New Jetta have a transfer speed of 500 kBit/s.
The LIN data buses have a transfer rate of 19.2kBit/s and the MOST150 data bus using fiber-optic technology has a transfer rate of 150 kbit/s.
The data bus diagnostic interface J533 contains the control system for several LIN buses and forms the link between the individual CAN bus systems as usual. Further LIN buses are connected to various control units.

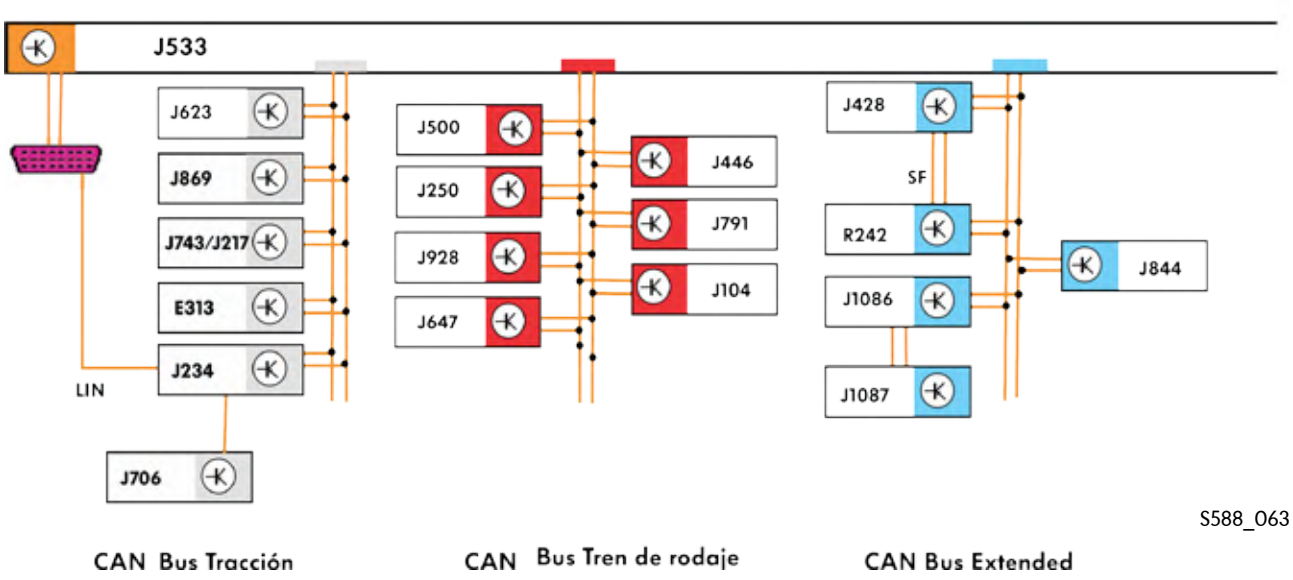


S588_062

Key

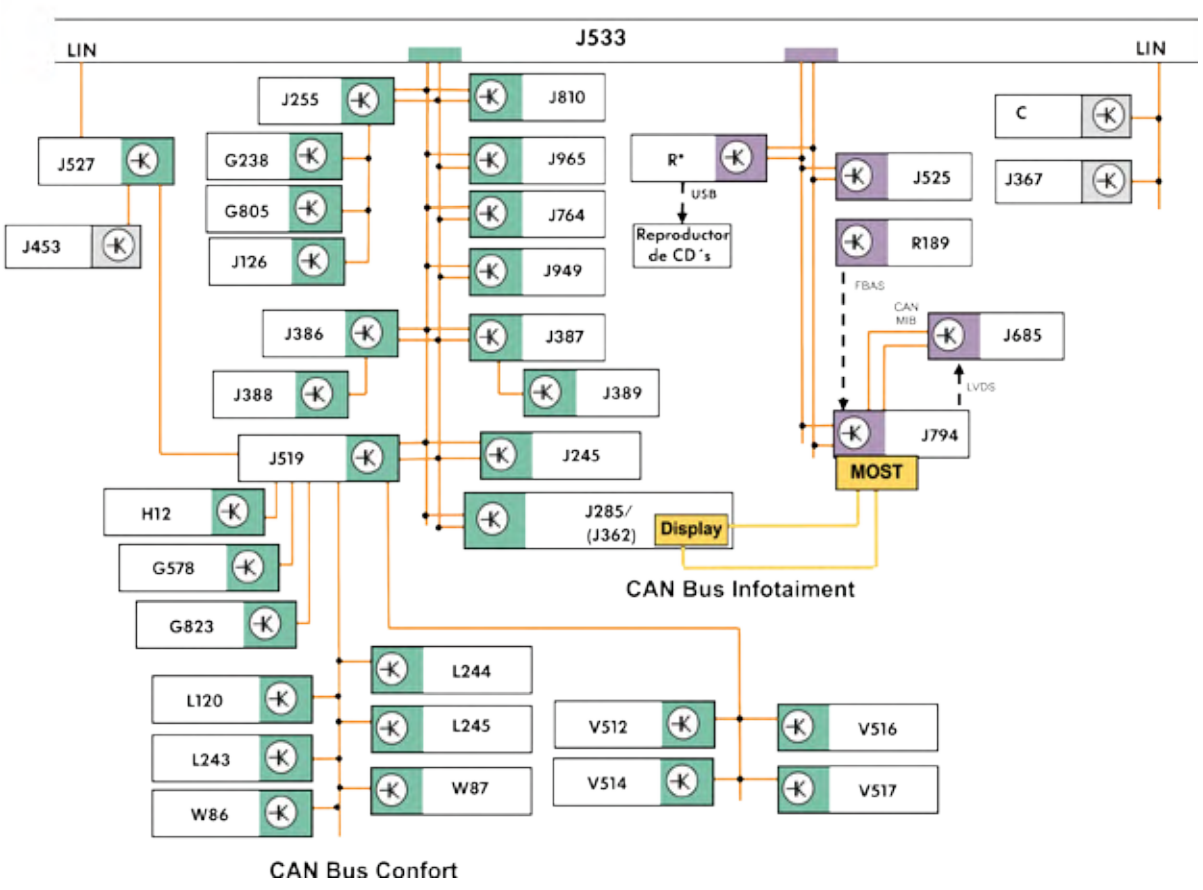
J533 Data bus on-board diagnostic interface
CAN data bus cable
LIN data bus cable

Networking



Key

E313	DSG selector lever or automatic transmission 09S
J104	ABS control unit
J217	Transmission control module
J234	Airbag control module
J250	Electronic damping control module
J428	Distance regulation control module
J446	Parking aid control module
J500	Power steering control module
J533	Data bus on board diagnostic interface
J623	Engine control module
J647	Differential locks control module
J706	Passenger occupant detection system control module
J743	Dual-clutch transmission Mechatronic
J791	Parallel parking assistance control module
J844	Automatic high beam assist control module (if camera R242 is not mounted)
J869	Structure borne sound control module
J928	Peripheral camera control module
J1086	Blind spot detection control module
J1070	Blind spot detection control module 2
R242	Driver assistance systems front camera
SF	Private Bus for ACC

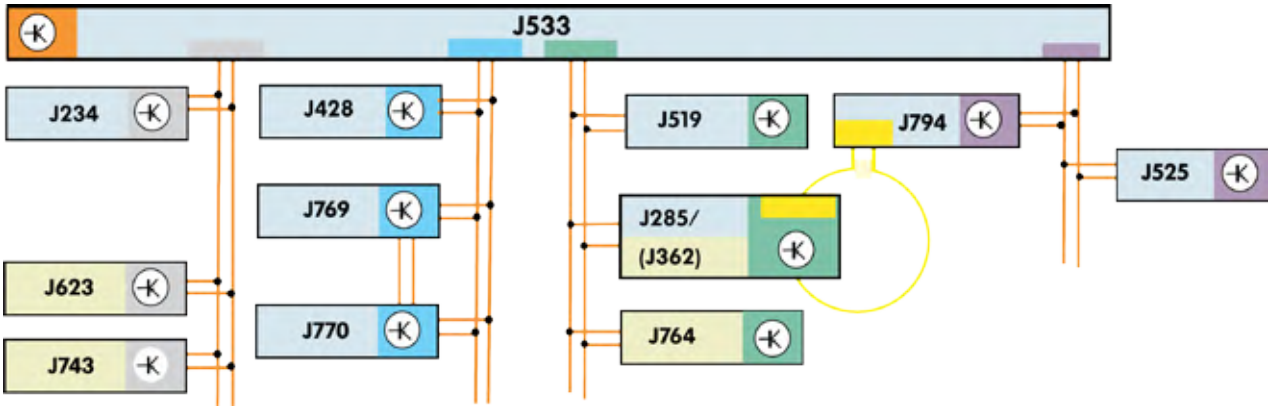


S588_066

Key

C	Generator
G238	Air quality sensor
G578	Anti-theft alarm system sensor
G805	Refrigerant circuit pressure sensor
G823	Humidity, rain and light recognition sensor
H12	Alarm horn
J126	Fresh air blower control module
J245	Power sunroof control module
J255	Climatronic control unit
J285	Instrument cluster control module
J362	Anti-theft immobilizer control module
J367	Battery monitoring 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
J453	Multifunction steering wheel control module
J519	Vehicle electrical system control module
J525	Digital sound system control module
J527	Steering column electronics control module
J533	Data bus on-board diagnostic interface
J685	Front information display control head
J764	Electronic steering column lock control module
J794	Information electronics control module 1
J810	Driver seat adjustment control module
J949	Control module for emergency call module and communication unit
J965	Access/start system interface
L120	Storage compartment illumination bulb
L243	Instrument panel contour illumination lamp 1
L244	Instrument panel contour illumination lamp 2
L245	Instrument panel contour illumination lamp 3
V512	Left front seat backrest fan 1
V514	Left front seat cushion fan 1
V516	Right front seat backrest fan 1
V518	Right front seat cushion fan 1
W86	Driver side door ambient lighting lamp
W87	Passenger side door ambient lighting lamp
R*	Radio (when neither J794 nor J685 is mounted)
R189	Rearview camera
LVDS	Low Voltage Differential Signaling
MIB	CAN data bus of Infotainment modular system
FBAS	Color image tracking and synchronization signal
USB	Universal Serial Bus

Immobilizer and component protection



S588_067

Key

J234	Airbag control module
J285	Instrument cluster control module
J362	Anti-theft immobilizer control module
J428	Distance regulation control module
J519	Vehicle electrical system control module
J525	Digital sound system control module
J533	Data bus on board diagnostic interface
J623	Engine control unit
J743	Dual-clutch transmission Mechatronic
J764	Electronic steering column lock control module
J769	Lane change assistance control module
J770	Lane change assistance control module 2
J794	Information electronics control module 1

- Immobilizer subscriber
- Component protection subscriber
- Powertrain CAN Bus
- CAN Bus Extended
- Comfort CAN Bus
- Infotainment CAN bus
- MOST data bus
- CAN data bus wire
- MOST fiber-optic cable

If an authorized key is recognized in the vehicle interior, all corresponding control units are checked for component protection. If the result of the check is negative, the respective control unit will block its function partly or completely (e.g. the radio can be switched on, but no sound comes out of the loudspeakers).
The component protection function must then be enabled online using the vehicle diagnostic tester.
This online connection is made to the FAZIT database. This is both responsible for enabling the component protection and also for all adaptations of the immobilizer components.

Modular Infotainment System (MIB)

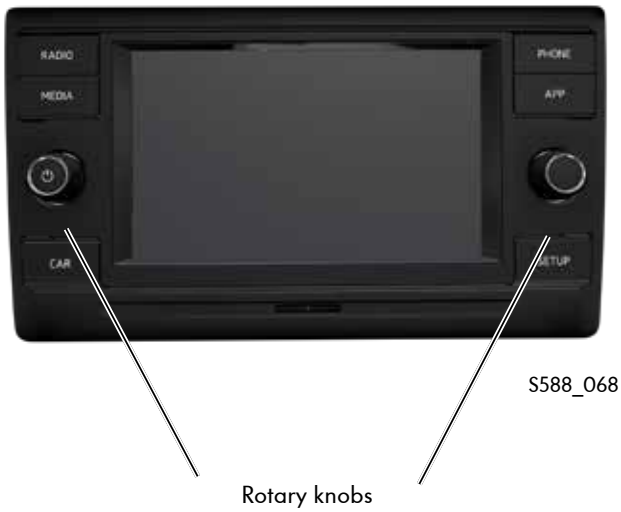
The New Jetta uses the modular Infotainment matrix (MIB) generation 2.
It can be equipped with the following radio and navigation systems: Composition Color, Composition Media, Discover Media and BeatsAudio.

Composition Color

Technical features

- 6.5” TFT color touch screen with
- 145 ppi resolution (800x480)
- 4x20 watt power
- Phase diversity
- SD card reader
- USB multimedia interface compatible with Apple
- Support of MP3, WMA, AAC and FLAC audio formats
- JPEG Viewer
- “Basic” mobile telephone interface with Bluetooth profiles: HFP, PBAP, A2DP, AVRCP, MAP
- App-Connect (depending on the market)

Front view of Composition Color



S588_068

Rotary knobs

Optional

- “Comfort” mobile telephone interface with additional Apple-compatible USB socket.
- DAB
- Voice control

The picture shows the standard version. Depending on what equipment is installed.
Button names or functions may vary.

Modular Infotainment System (MIB)

Composition Media

Technical features

Touch-sensitive 8” TFT color display with 800 × 480 ppi resolution

- 4x20 watt power
- 4 speakers (front)
- 2 speakers (rear)
- CD player
- Phase diversity
- Proximity sensors
- SD card reader and AUX-IN multimedia socket
- USB multimedia interface compatible with Apple
- Speed-dependent dynamic compression (GADK)
- Support of MP3, WMA, AAC and FLAC audio formats
- JPEG Viewer
- “Basic” mobile telephone interface with Bluetooth profiles: HFP, PBAP, A2DP, AVRCP, MAP. Two mobile telephones can be paired at the same time via HFP
- App-Connect

Front view of Composition Media

S588_069

Rotary knobs

Optional

- “Comfort” mobile telephone interface with additional Apple-compatible USB socket.
- Car-Net (depending on the market)
- DAB+
- Voice control
- Rear View Camera (available in Highline version)

The illustration displays the standard version. Depending on the equipment, either button names or functions may vary.

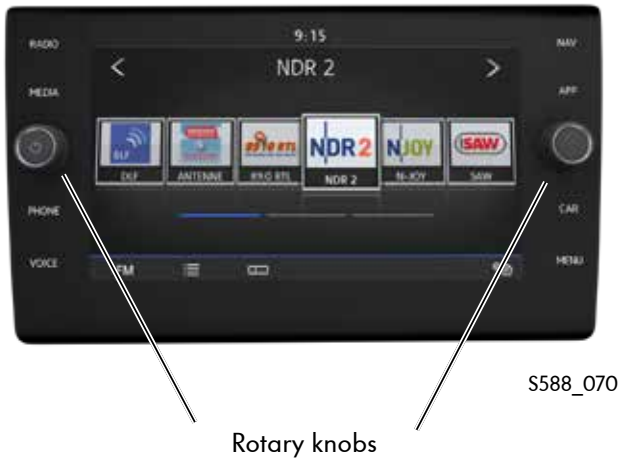
Discover Media

Technical features

Touch-sensitive 8” TFT color display with 800 × 480 ppi resolution

- 4x20 watt power
- 4 speakers (front)
- 2 speakers (rear)
- CD player
- Phase diversity
- Proximity sensors
- 2D/3D map display
- Personal points of interest (POI)
- SD card reader and AUX-IN multimedia socket
- USB multimedia interface compatible with Apple
- Speed-dependent dynamic compression (GADK)
- Support of MP3, WMA, AAC and FLAC audio formats
- JPEG Viewer
- “Basic” mobile telephone interface with Bluetooth profiles: HFP, PBAP, A2DP, AVRCP, MAP. Two mobile telephones can be paired at the same time via HFP
- App-Connect

Front view of Discover Media



S588_070

Rotary knobs

Optional

- “Comfort” mobile telephone interface with additional Apple-compatible USB socket.
- Car-Net (depending on the market)
- DAB+
- Voice control
- Rear View Camera (available in Highline version)

The picture shows the standard version. Depending on what equipment is installed. Button names or functions may vary.

Modular Infotainment System (MIB)

Composition Media and Discover Media with BeatsAudio

Technical features

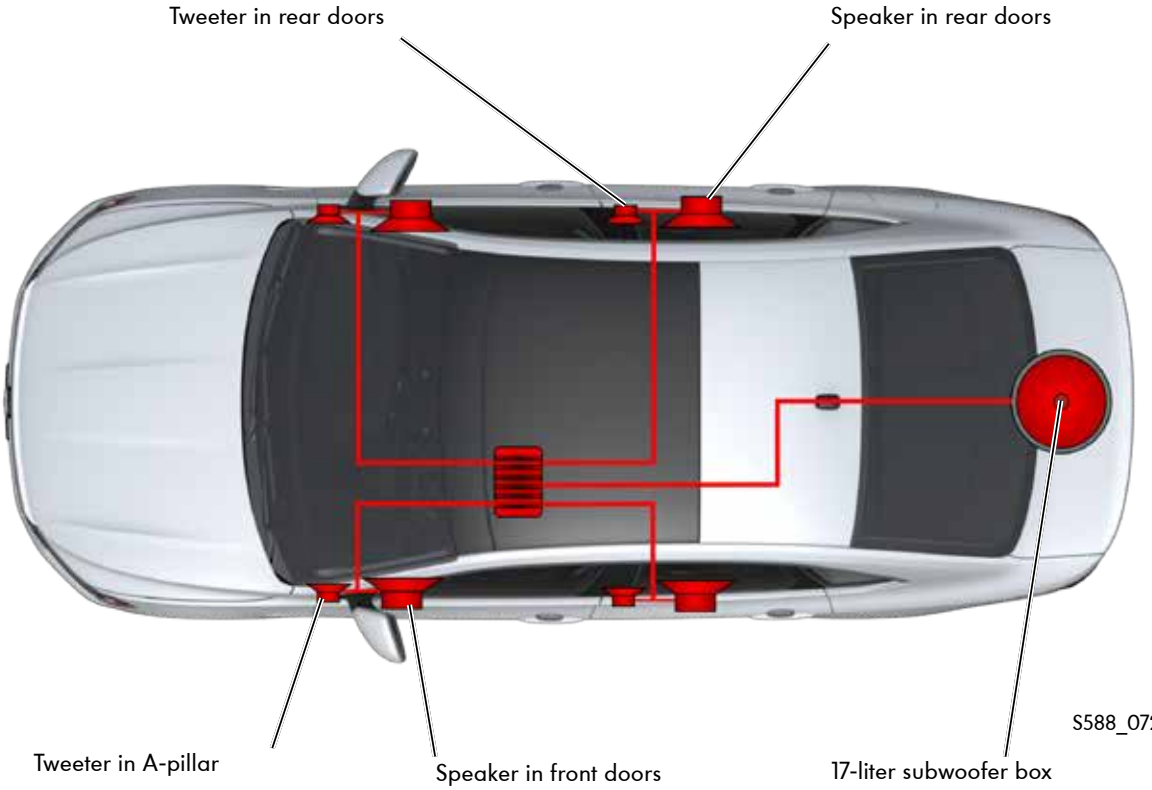
Touch-sensitive 8” TFT color display with 800 × 480 pixel resolution

- 300 watt power
- Amplifier
- 6 speakers
- 1 Subwoofer
- CD player

And all Composition Color functions

S588_071

BeatsAudio diagram



S588_072

Telephone interfaces

In some markets, the “Comfort” telephone interface option with an inductive charging function (Wireless-Charging WLC) will be available.

In this interface, the mobile phone is linked by induction with the R65 telephone antenna integrated in the ceiling. This ensures that there is always the best possible telephone reception in the vehicle. The new R65 phone antenna is compatible with the LTE mobile phone standard.

Inductive charging function

The mobile telephone can be charged wirelessly. To do this, the Qi-compatible mobile telephone must be set within the storage tray with R265 mobile telephone interface, located in front of the gear shift lever. The interconnection box is located in the storage tray. In addition to the coupling antenna for the external aerial connection, it contains several coils for inductive charging.

S588_073

Storage tray with R265 mobile telephone interface

More information on the charging system can be found in Self-Study Program Nr. 571 “Polo 2018”.

Modular Infotainment System (MIB)

The following Infotainment (MIB) Modules Generation 2 are installed in the New Jetta. Starting with the Composition Media model, the J794 external infotainment unit is mounted in the dash panel glove compartment.

The following table shows a functional comparison of the 3 available radio versions.

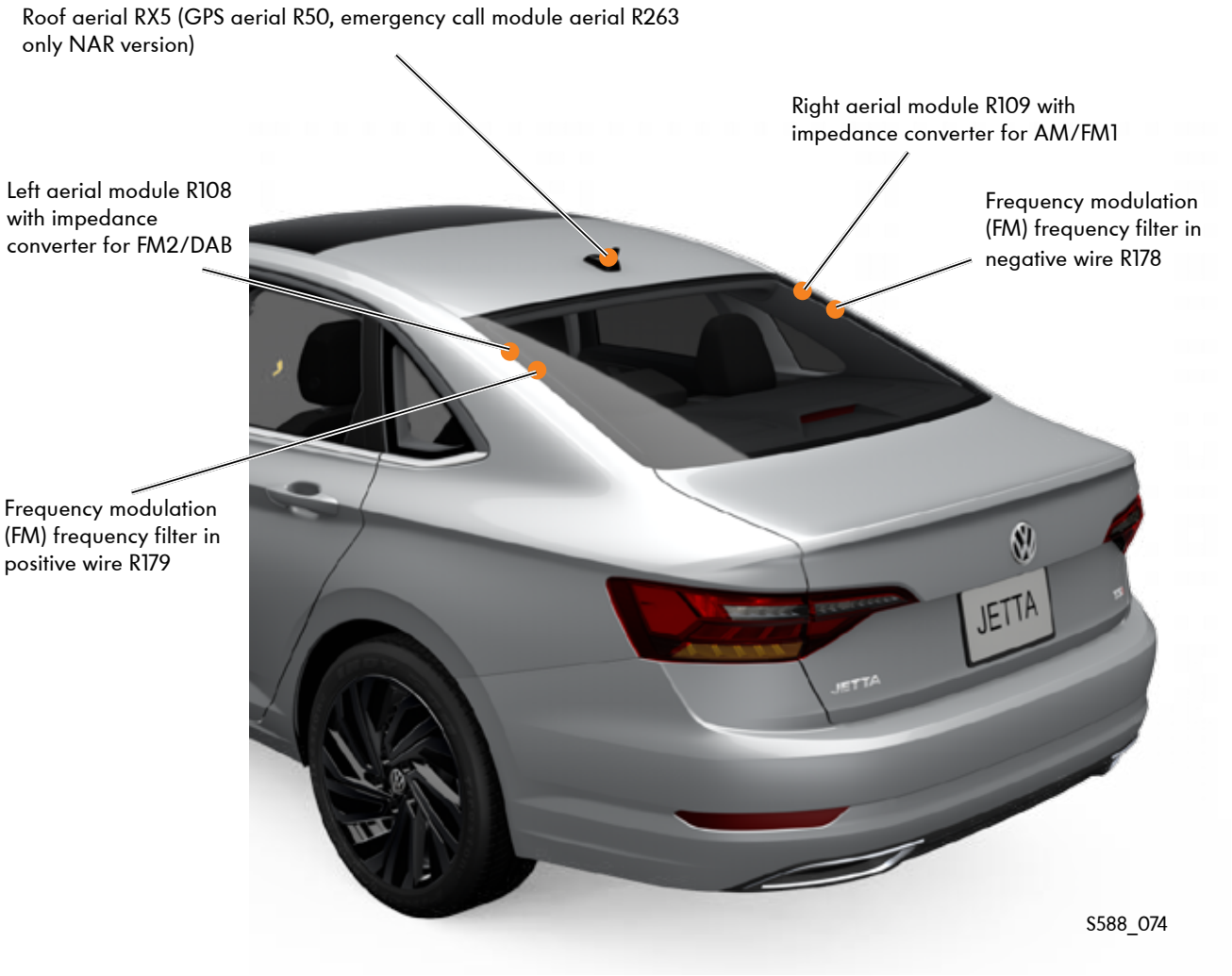
Function	Composition Color	Composition Media	Discover Media
	PR.Nr.: I8C	PR.Nr.: I8F	PR.Nr.: I8F+7UF
Screen 6.5" 8" 8"	6,5"	8"	8"
Touch screen	•	•	•
Radio frequencies	AM/FM	AM/FM	AM/FM
RDS	•	•	•
DAB	-	○	○
Station logos	-	•	•
Diversity system	•	•	•
CD player	○	•	•
USB type-A connector (compatible with Apple)	○	•	•
SD card reader	•	•	• (double)
AUX-IN interface	-	-	-
Volume output adjustment	3 areas	5 areas	5 areas
Output power	4x20 Watt	4x20 Watt	4x20 Watt
Voice control	-	○	○
Front speakers	•	•	•
Rear speakers	○	•	•
Compatibility with reversing camera	-	○	○
Basic Bluetooth interface	•	•	•
"Comfort" Mobile Interface	○	○	○
"BeatsAudio" Soundsystem	-	○	○
MP3, WMA	•	•	•
AAC, FLAC, OGG, WAV	-	•	•
Navigation	-	-	•
App-Connect	○	○	○

• Standard function ○ Optional equipment - Not available

Aerial Systems

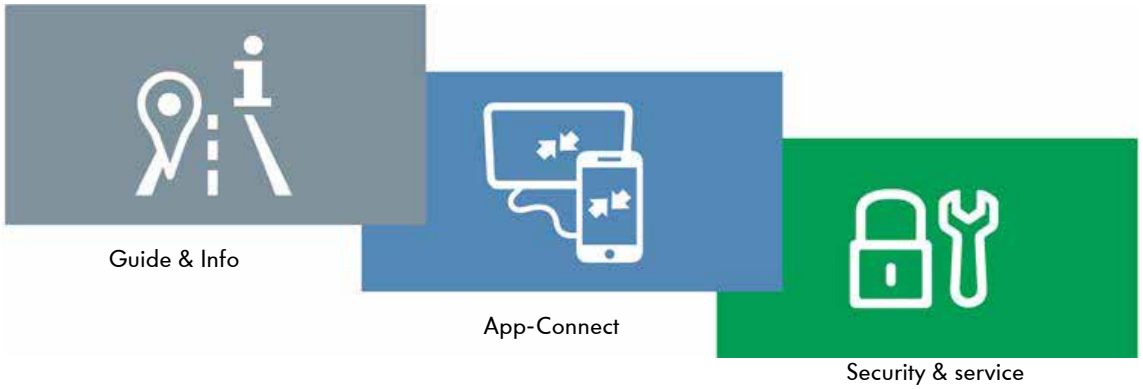
AM, FM, and DAB radio reception aerials are located in the rear window. The GPS aerial has been integrated into the roof antenna.

When the car does not have a GPS system, the element on the roof only fulfills an aesthetic function and the receiving antenna of the phone is the same internal antenna of the mobile device.



Car-Net

The following Car-Net services are available for the New Jetta:



The online applications and functions depend on country and equipment.
Not every service will be available when the New Jetta is launched.
Car-Net functions that will be available in your market can be referred to in the following page of information: **www.volkswagen-carnet.com**

Control module for emergency call module and communication unit J949

S588_075

The control module for emergency call module and communication unit J949 is a data interface with integrated UMTS module. It transmits and receives data and commands for the Car-Net Security & Service services.

J949 can connect to the Internet via the mobile telecommunications network. Therefore commands can be received, processed and executed when the ignition is switched off. Data is exchanged directly and encrypted with the Volkswagen backend server. Data is not transferred directly between the customer's device, computer (customer portal) or smartphone (app) and the vehicle.

The control unit is located behind the Infotainment system screen.

Glossary

ABS

(Antilock Braking System)
Traction control system that prevents the wheels from locking when braking.

ACC

(Adaptive Cruise Control)
Acronym for the automatic adaptive cruise control.

AFS

(Advanced Frontlighting System)
Abbreviation for the cornering light CAN bus. This function improves illumination of the road considerably when the vehicle is cornering as the headlight light beam pattern is directed according to the steering wheel position.

AM

Amplitude Modularion Electromagnetic wave used to transmit information.
In the amplitude modulation, the amplitude of the high frequency is modified.

AUX-IN

Signal input from external audio devices.

AVRCP

(Audio Video Remote Control Profile)
Bluetooth profile for remote control of audio or video devices.

A2DP

(Advanced Audio Distribution Profile)
A technology standard available to many manufacturers which allows wireless transmission of stereo audio signals to a corresponding receiver via Bluetooth.

Bluetooth

Bluetooth is an industry standard developed by the Bluetooth Special Interest Group (SIG) for wireless communications between devices over short distances.

CAN

(Controller Area Network)
Standardised digital twin-wire data network used in vehicle electronics.

CARB

(California Air Resources Board)
Public body of California government in charge of monitoring and maintaining air quality.

DAB

(Digital Audio Broadcasting)
Radio channel broadcast digitally by radio stations. DAB+ is a further development of digital radio, which was introduced in 2011 in Germany.

DLA

(Dynamic Light Assist)
Abbreviated name of an assistance system that intervenes the headlight beams, e.g. to prevent dazzling vehicles approaching in the opposite direction when driving with the main beam.

DVD

Digital Versatile/Video Disc
It is a further development of optical storage media with a memory capacity of 4.7 GB, on one-sided, single-layer DVDs (single-layer DVD, DVD±R, DVD±RW), and 8.5 GB, on double-layer DVDs (Dual Layer/Double Layer, DVD±R-DL, DVD-RW±DL).

E100

Fuel can have up to 100% bioethanol. Any mixing ratio below 100% is authorized.

EPA

(United States Environmental Protection Agency)
Is an agency of the federal government of the United States in charge of protecting human health and the environment.

Glossary

EPB

(Enhanced Flooded Battery)
Abbreviated name of an improved type of wet battery.

FLAC

(Free Lossless Audio Codec)
Audio codec for the compression of lossless audio data.

FM

Frequency Modulation Electromagnetic wave used to transmit information.
In the case of frequency modulation, the carrier oscillation is varied according to the tension of the information applied to it. Amplitude does not vary.

GADK

(Geschwindigkeits-Abhängige-Dynamik-Kompression: Speed-Dependent Dynamic Compression)
The different volumes of musical instruments in a song, for example, are harmonized according to the vehicle speed. The higher ones are lowered and the lower ones are increased correspondingly.

GSM

Global System for Mobile communications.

GPS

Global Positioning System.

JPEG

(Joint Photographic Experts Group)
Name that describes different methods to compress images.
Developed by the Joint Photographic Experts Group. The name also applies to an image format file.

LED

(Light Emitting Diode)
System of low-energy-consumption lighting elements where one or more light diodes are activated jointly to form a light source.

LEV

(Low Emission Vehicle)
Standard of CARB, a United States public agency.

LIN

(Local Interconnect Network)
Single-wire serial data network by which electronic components are connected to a higher control unit.

LTE

(Long Term Evolution)
Fourth-generation (4G) mobile telephony standard. The speed rate is much higher than the standards used so far (e.g. GSM, UMTS.)

MAP

(Message Access Profile)
It allows SMS to be read and written.

MIB

(Modular Infotainment System)
Modular system used in all makes and models for the infotainment system components of a vehicle.

MIRROR LINK

A mirror function that allows the smartphone display to be seen in the Infotainment display.

MOST150

(Media-Oriented System Transport)
Protocol for data transmission through optical fiber at a rate of 150 Mbits/s.

NMOG

(Non-Methane Organic Gases)
Organic gases other than Methane.

NOx

Nitrogen Oxide.

OGG

Open container audio format.

PBAP

(Phonebook Access Profile)
Bluetooth profile for transfer of address and telephone number data to the Infotainment system.

PL6 BR

Brazil's Vehicle Emissions Control Program, Level 6.

Qi

(Induction Electricity Standard)
It is an interface standard developed by the Wireless Power Consortium for the transfer of electrical energy by induction.

RDS

(Radio Data System)
Data broadcasting radio system.

rSAP

(remote SIM Access Profile)
Profile that enables the reading of a SIM card as well as the copying of its access data through a universal pre-installation for mobile telephones (UHV.)

SD

(Secure Digital Card)
Small and robust cards used e.g. in digital photo cameras.

SMD

(Surface-mount Device)
Slim electronic component mounted on the surface of a printed circuit board taking up very little space.

TFT

(Thin Film Transistor)
Abbreviated name for a flat screen with transistor matrix.

UMTS

(Universal Mobile Telecommunications Systems)
Third generation (3G) mobile telephony standard with which data transfer rates of up to 42 Mbit/s are possible.

USB

(Universal Serial Bus)
It is a standardized interface between different electronic devices, such as computers, printers, scanners, and televisions.

WAV

(Short form for WAVE form audio file format)
It is a digital audio format typically uncompressed.

WMA

(Windows Media Audio)
It is a special audio format used by Microsoft Windows.

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