



Workshop Manual

Arteon 2018 ➤, Beetle 2012 ➤,
CC 2010 ➤, CC 2012 ➤, Eos 2006 ➤,
Golf 2009 ➤, Golf 2013 ➤,
Golf 2015 ➤, Golf 2017 ➤,
Golf Cabriolet 2012 ➤,
Golf Plus 2009 ➤,
Golf Sportsvan 2015 ➤,
Golf Sportsvan 2018 ➤,
Golf Variant 2010 ➤,
Golf Variant 2014 ➤,
Golf Variant 2015 ➤,
Golf Variant 2017 ➤, Jetta 2011 ➤,
Jetta 2013 ➤, Jetta 2015 ➤,
Passat 2006 ➤, Passat 2011 ➤,
Passat 2015 ➤,
Passat (NMS - US) 2012 ➤,
Passat (NMS - US) 2016 ➤,
Passat CC 2009 ➤,
Passat Variant 2006 ➤,
Passat Variant 2011 ➤,
Passat Variant 2015 ➤, Polo 2010 ➤,
Polo 2014 ➤, Polo 2018 ➤,
Polo KH IN 2015 ➤,
Polo KH MY 2014 ➤,
Polo KH MY 2015 ➤,
Polo Lim IN 2016 ➤,
Polo Lim MY 2014 ➤,
Polo Lim MY 2016 ➤,
Polo Lim RUS 2011 ➤,
Polo Lim RUS 2016 ➤, Scirocco 2009 ➤,



Scirocco 2015 ➤ , Sharan 2011 ➤ ,
Sharan 2016 ➤ , T-Roc 2018 ➤ ,
The Beetle Cabriolet 2012 ➤ ,
The Beetle Cabriolet 2017 ➤ ,
Tiguan 2008 ➤ , Tiguan 2016 ➤ ,
Touareg 2010 ➤ , Touareg 2015 ➤ ,
Touran 2003 ➤ , Touran 2016 ➤ ,
e-Golf 2014 ➤ , e-Golf 2017 ➤ ,
e-up! 2014 ➤ , e-up! 2017 ➤ ,
up! 2012 ➤ , up! 2017 ➤

Manual for Troubleshooting and Diagnosing Noises

Edition 12.2017



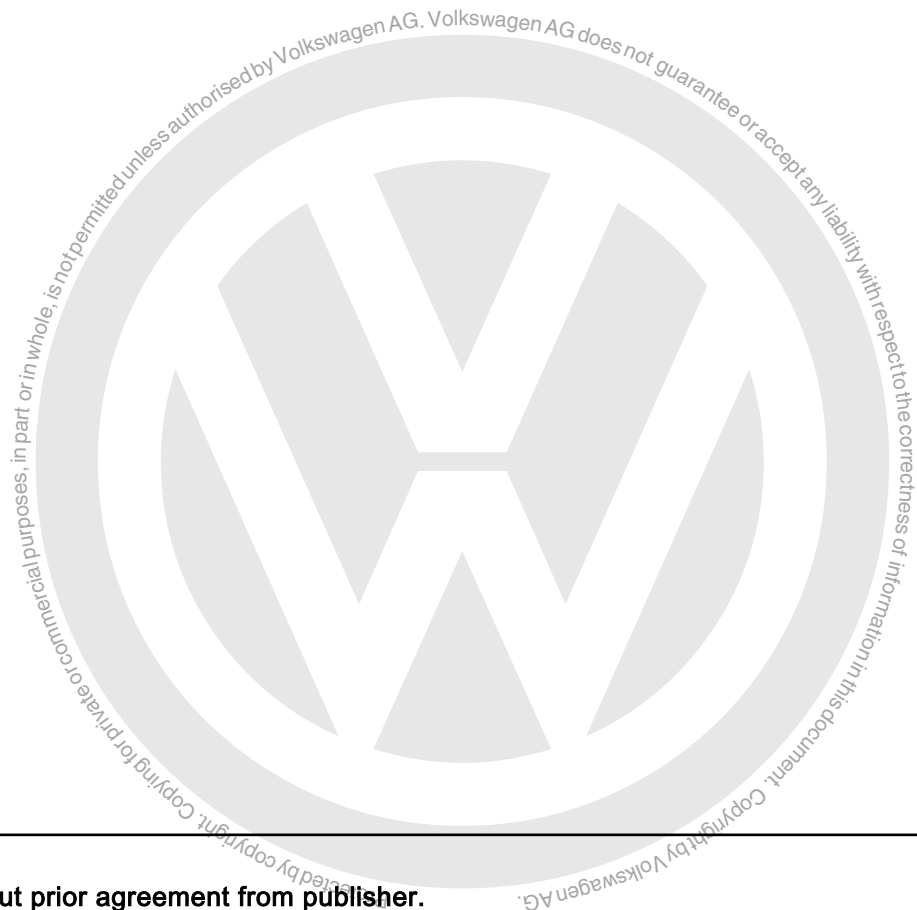
List of Workshop Manual Repair Groups

Repair Group

00 - Technical data



Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.





Contents

00 - Technical data	1
1 Introduction	1
2 Acoustic considerations during vehicle development	2
2.1 Vibration insulation film	2
2.2 Insulation	4
3 General procedure for identifying noises	5
3.1 General procedure	5
3.2 Identifying a noise	5
3.3 Aid for localising noise by means of audio recordings (frequencies)	6
3.4 Checklist	8
4 Volkswagen equipment for localising noises	12
4.1 Ultrasonic tester VAG 1842	12
4.2 Endoscope VAS 6748A	15
5 Attachments	17
5.1 Checklist	17
5.2 Designations for noises	19







00 – Technical data

1 Introduction

(VRL011149; Edition 12.2017)

During normal vehicle operation there are normal operating noises and vibration. However, there may be disturbing sounds or noises which indicate a special condition such as malfunctions, wear or ageing and which sometimes indicate a potential failure in the near future.

If noises or vibrations are perceived as unpleasant, they are to be treated as an issue for the customer.

The customer may be worried by such noises even if they are not very loud. It may be a new noise which was not heard before or an unpleasant noise for the customer. Therefore, it is essential to verify the customer complaint accordingly.

To allow for better classification and identification of these noises it may be helpful to know the characteristics and theory of sound.





2 Acoustic considerations during vehicle development

Throughout the history of motor vehicles, noises have been continuously reduced to achieve greater comfort. In addition, other characteristics have been improved as well (stability, air conditioning, ergonomics, leak tightness, safety, corrosion protection, engine output, etc.).

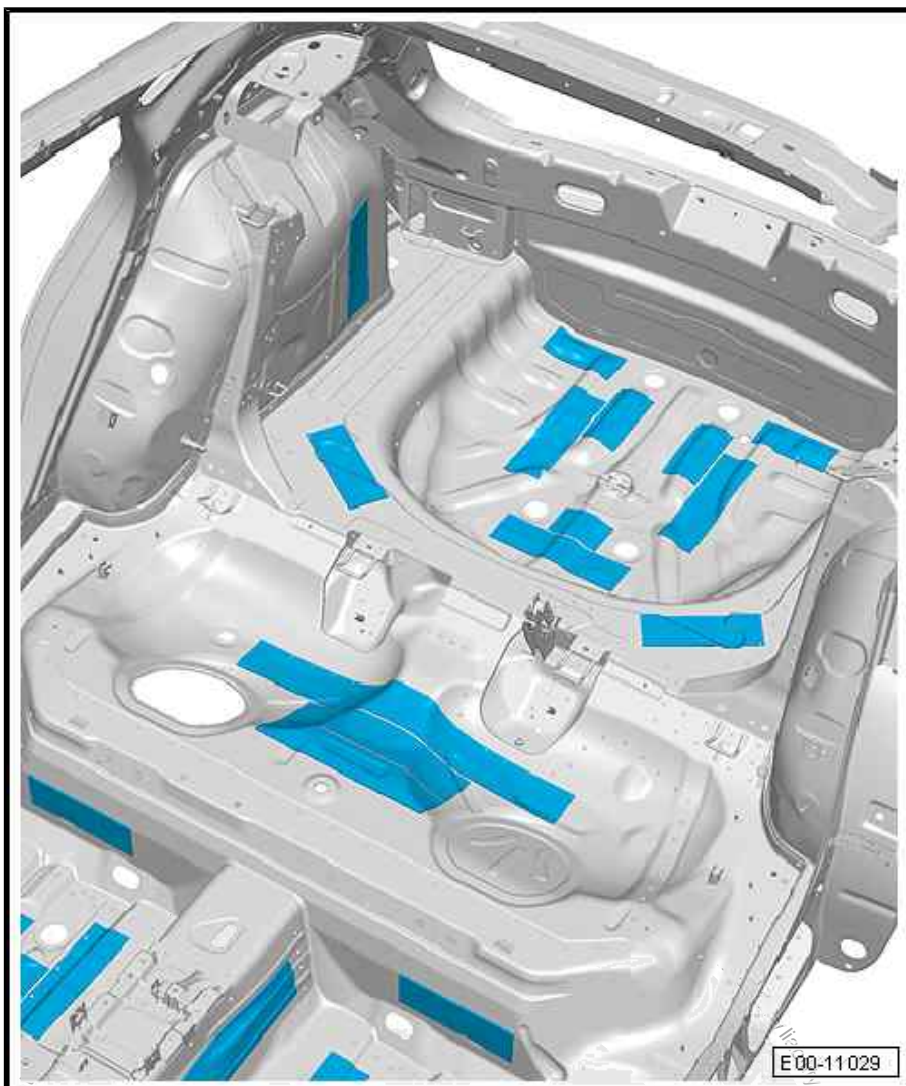
In addition to reducing the number and the level of noises, including dynamic noises, mechanical noises and noises from the wheel suspension, the noises have been insulated to prevent them from propagating into the vehicle interior.

In this way the noises have been insulated to an extent which was unimaginable a few decades ago.

All this has been achieved not only by preventing noise from being generated, but also by insulating noise and vibrations. For this purpose, noise insulation elements are fitted in specific areas which have been determined beforehand to suppress the noise propagation.

2.1 Vibration insulation film

The vibration insulation film is mainly used for insulating the vehicle interior. It prevents the propagation of driving noise into the vehicle interior as well as the generation of noise by large vibrating body panels.



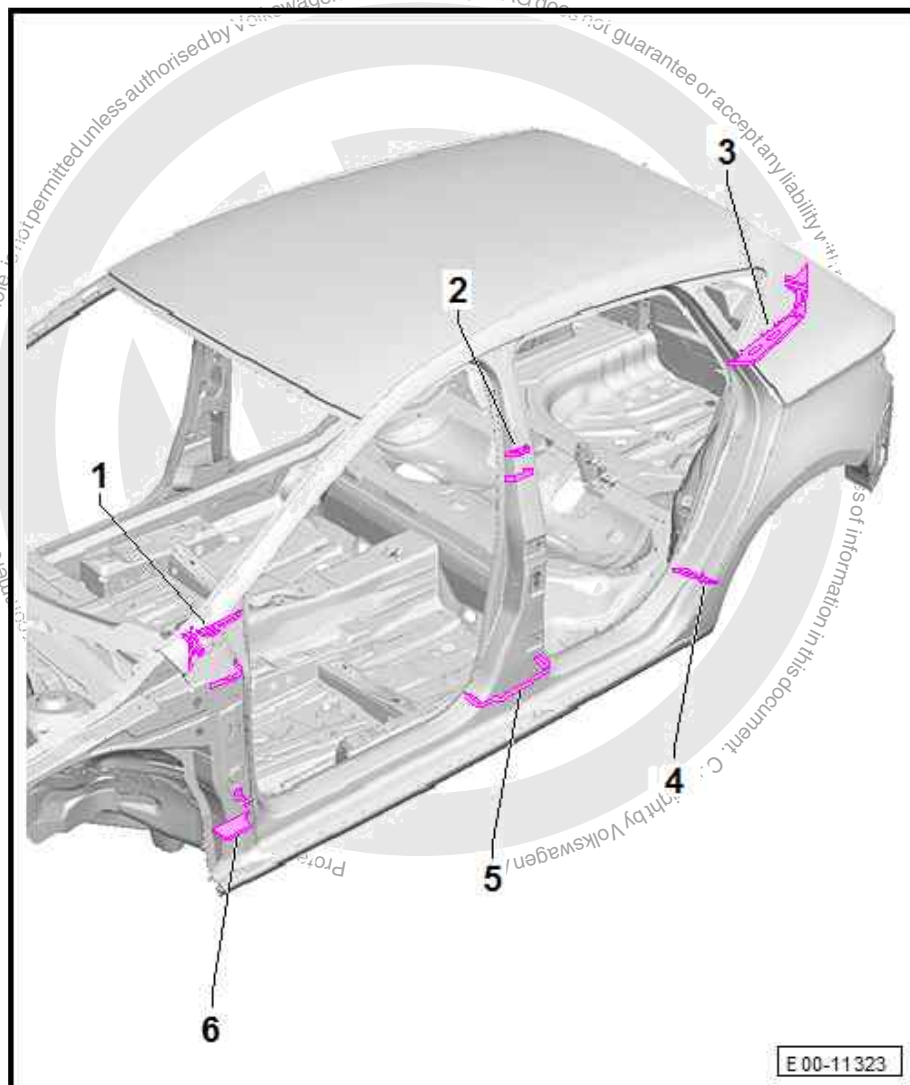
Protected by copyright. Copying for private or commercial purposes, in part or in whole, is prohibited without the written permission of Volkswagen AG. Copyright by Volkswagen AG. With respect to the correctness of information in this document.



2.2 Insulation

The noise insulation prevents the propagation of driving noise via cavities into the vehicle interior and thus insulates the vehicle interior from excessive noise.

- 1 - Noise insulation in upper section of A-pillar
- 2 - Noise insulation in upper section of B-pillar
- 3 - Noise insulation in upper section of C-pillar
- 4 - Noise insulation in lower section of C-pillar
- 5 - Noise insulation in lower section of B-pillar
- 6 - Noise insulation in lower section of A-pillar





3 General procedure for identifying noises

3.1 General procedure

The steps below must be followed in the specified order when identifying a noise:

- ◆ To allow for proper identification of a noise and the reason for a complaint, the checklist must always be completed in the presence of the regular vehicle user. Start with asking for the origin, the type, the point in time when the noise occurs and the designation of the noise.
- ◆ Refer to technical product information documents (TPIs).
- ◆ Note the examples.
- ◆ Localise the noise using the specified tools.
- ◆ After diagnosing the noise, complete the checklist.



Note

It is essential to note the environmental conditions at the point in time when the noise occurred.

3.2 Identifying a noise

The general procedure must be adhered to when localising and identifying a noise. The following factors are critical for identifying a noise:

- ◆ Other sources of noise
- ◆ Hearing acuity of mechanic
- ◆ Reproducibility of the circumstances under which a noise is generated
- ◆ New vehicle model which mechanic does not know well

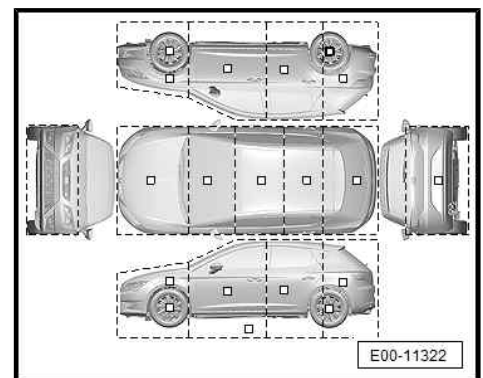
The particular steps are described below. The order may be adapted in accordance with the experiences the mechanic made during previous noise-related work.

It is recommended to adhere to the order below as a reference.

3.2.1 Localising origin of noise

To simplify the procedure, it is recommended to start by dividing the vehicle into quadrants, e.g. front, rear, left and right. In this way, it is easier to isolate the potential cause.

The diagram from the ➔ **“3.4 Checklist”, page 8** may also be used to mark the area or areas in which the noise could be localised.



3.2.2 Identifying the type of noise

In this step the noises are differentiated according to their characteristics to allow for identifying the potential cause more precisely. For this, the hearing must be trained accordingly to be



capable of differentiating the various sounds from each other for a correct identification.

As explained above, low-pitch and high-pitch sounds must be differentiated. Low-pitch sounds have a low frequency such as the male voice, whereas high-pitch sounds have a high frequency such as the female voice.

In addition, it must be determined whether the noise occurs periodically or continuously.

The duration must be differentiated as well, i.e. whether it is a short or long noise.

Another important aspect is the composition of a noise, i.e. whether it consists of several sounds with one primary sound accompanied by an additional less relevant sound caused by the oscillations of another object. This additional sound must then be identified as a resonance or as a sound which is produced by a metallic or plastic component.

3.2.3 Identifying the point in time when the noise occurs

In many cases the point in time when the noise occurs is the crucial information for identifying the cause or origin of a noise because it is the moment when the affected component is activated. In this way, it is easier to identify a malfunction, wear or any other issue in the component.

Such point in time could be the activation of the air conditioner compressor, to driving through a pothole, etc.

3.2.4 Identifying the noise by definition or designation

To identify noises by means of similarities with other noises from outside the motor vehicle industry the noises must be assigned to names of objects, animals or instruments and thus to well-known noises.

For more information on designations for noises refer to section ⇒ ["5.2 Designations for noises", page 19](#)

3.3 Aid for localising noise by means of audio recordings (frequencies)

The aim of this chapter is to provide an aid for the identification and localisation of noises by playing various audio frequencies via the sound system of the vehicle.

In this way, vibrations can be generated in order to localise components that cause noise.

This method is used for noises in doors, trims and around loudspeakers which are generated by the output of the audio system.

This method can be used for noise caused when the vehicle is stationary.

3.3.1 Preparing an audio CD with downloaded files

- Download the WAV files and CD cover from the website of your importer or contact your importer.
- Copy the various audio files in this order onto a CD.
 - ◆ 01. Music [1:38]
 - ◆ 02. 50 Hz sine curve [0:42]



- ◆ 03. 60 Hz sine curve [0:42]
- ◆ 04. 70 Hz sine curve [0:42]
- ◆ 05. 80 Hz sine curve [0:42]
- ◆ 06. 90 Hz sine curve [0:42]
- ◆ 07. 100 Hz sine curve [0:42]
- ◆ 08. 110 Hz sine curve [0:42]
- ◆ 09. 120 Hz sine curve [0:42]
- ◆ 10. 130 Hz sine curve [0:42]

3.3.2 List of audio tracks

Track 1 ► Music



Note

When this track is played at the volume specified for the vehicle, there may be no noises in the area of the loudspeakers and the door trims.

Tracks 2 - 10



Note

- ◆ *These tracks are sounds in different frequencies.*
- ◆ *The individual tracks are to be played in succession until a potential noise source can be identified.*

3.3.3 Conditions for testing

The following conditions must be observed during execution:

- ◆ Start fault finding with activation volume level 2 on the radio
- ◆ Bass and treble of the radio must be set to neutral
- ◆ The fader control must be set to neutral
- ◆ Slowly increase the volume of the radio until the components causing the noise begin to vibrate
- ◆ The maximum volume of 50% should not be exceeded

3.3.4 Conditions for performing the audio test

It is recommended to perform noise localisation by two mechanics.

One mechanic controls the radio system to determine the track which is most suitable.

At the same time, the second mechanic focusses on the area in which the noise occurs to identify the source of the noise and potential remedies.

The workshop area in which the test is carried out must be as quiet as possible.



Note

After the source of the noise has been eliminated, perform the audio test again.

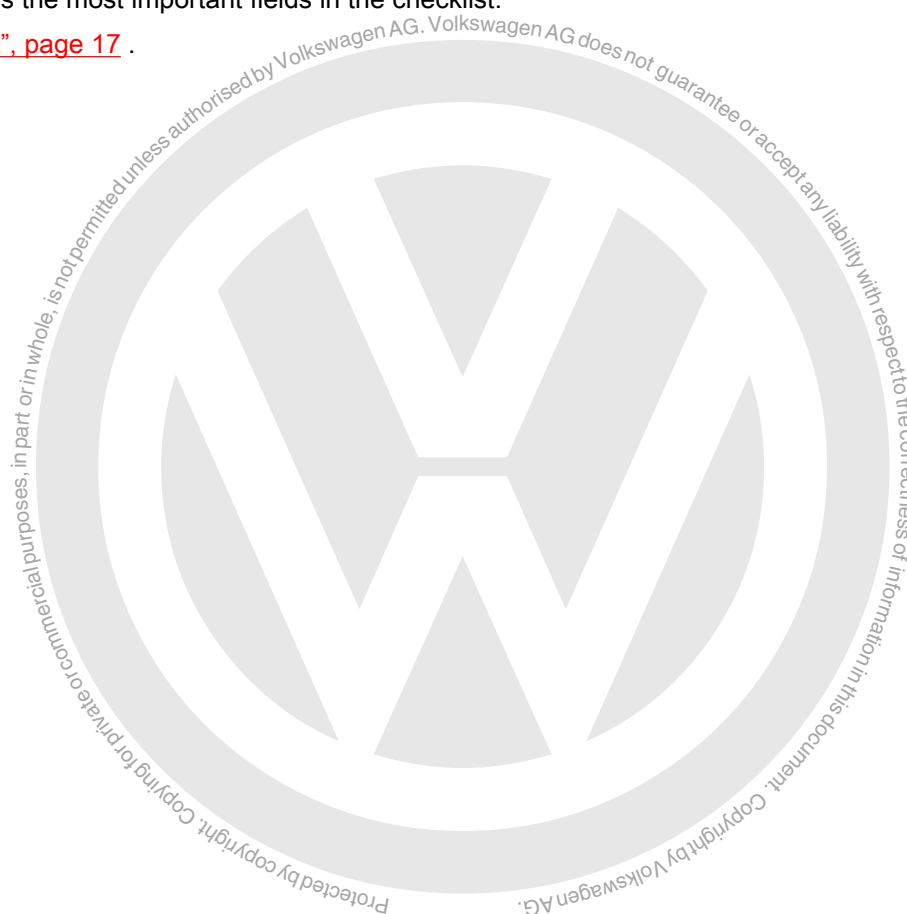
3.4 Checklist

The checklist provides assistance when identifying and localising a noise in the workshop and is used as a protocol. It is very useful for the data acquisition. The first part is to be completed in advance together with the regular user of the vehicle to obtain more information on the respective noise.

Description of the checklist (guideline)

This section describes the most important fields in the checklist.

Print ⇒ ["5.1 Checklist", page 17](#) .





Description of the checklist (guideline), part I

- A - Vehicle data ¹⁾ 1) ²⁾ 2)
- B - Vehicle inspection ³⁾ 3) ⁴⁾ 4) ⁵⁾ 5)
- C - When did the noise begin to occur ⁶⁾ 6) ⁷⁾ 7) ⁸⁾ 8)
- D - Potential damage ⁹⁾ 9)
- E - Diagram for localisation ¹⁰⁾ 10)
- F - Noise level ¹¹⁾ 11) ¹²⁾ 12)
- G - Pitch ¹³⁾ 13) ¹⁴⁾ 14)
- H - Duration ¹⁵⁾ 15) ¹⁶⁾ 16)
- I - How often does the noise occur ¹⁷⁾ 17)
- J - Types of noises according to designations ¹⁸⁾ 18) ¹⁹⁾ 19)
- K - Nuance of the noise ²⁰⁾ 20)

- 1) Item no.: chronological list of cases which were processed in the workshop.
- 2) Retrofitted components: if components were retrofitted after production.
- 3) Dynamic or static test during which the noise could be perceived.
- 4) Can the customer complaint be confirmed?
- 5) The mechanic confirms that the noise reported by the customer could be perceived and clearly identified and that it is currently regarded as suspicious.
- 6) At which mileage did the noise occur, if this information is available.
- 7) Did the noise become gradually more intense, develop recently, or has it always been there?
- 8) Did the noise occur after an accident or a certain event such as mechanical repair work, body repairs, installation of devices, modifications (tuning) etc.?
- 9) Potential noise-related damage or impairment, even though the customer is not aware of them. Inspection of vehicle for identifying such damage or impairment since this might be a helpful lead during diagnosis.
- 10) This diagram is used for marking the area or areas in which the noise is perceived. It is permissible to mark several areas.
- 11) Decibel value, if a sound level meter is available.
- 12) Check the options for high, medium or low sound level which is to be assessed in the vehicle interior with doors and windows closed.
- 13) Depending on the respective pitch, check the options "High", "Medium" or "Low".
- 14) If the sound is between two options, it is permissible to check several fields.
- 15) Check the respective field in accordance with the duration.
- 16) If the sound is between two options, it is permissible to check several fields.
- 17) Intermittent, if there are several noises, or isolated if there is only one noise.
- 18) Check the designation which resembles the respective noise the most.
- 19) If the noise resembles several sounds, it is permissible to check several fields.
- 20) Check at least one nuance, which is characteristic for the primary noise or only the secondary noise.



Description of the checklist (guideline), part II

L - Under which circumstances does the noise occur (scenario)?

21) 21) 22) 22)

M - Vehicle speed when the noise occurs and gearbox type²³⁾

23) 24) 24)

N - Vehicle speed ²⁵⁾ 25)

O - Engine speed ²⁶⁾ 26)

P - Operating conditions of engine ²⁷⁾ 27)

Q - Environmental conditions ²⁸⁾ 28)

R - Ambient temperature ²⁹⁾ 29)

S - Nature of the road surface ³⁰⁾ 30)

T - On which seat can the noise be perceived most intensely?

31) 31)

U - Can the cause of the noise be localised? ³²⁾ 32) ³³⁾ 33)

V - Remarks ³⁴⁾ 34) ³⁵⁾ 35) ³⁶⁾ 36) ³⁷⁾ 37) ³⁸⁾ 38)

21) First, specify whether the noise can be heard continuously, often, rarely or very rarely.

22) Then, specify the respective circumstances under which the noise occurs. If the relevant circumstance is not listed, describe it in the "Other Circumstances" field.

23) Specify whether an automatic gearbox or a manual gearbox is installed.

24) Check the gear or gears in which the noise occurs.

25) The vehicle speed range within which the noise occurs. Check the respective fields for the lower and upper limits of the vehicle speed range.

26) The engine speed range within which the noise occurs. Check the respective fields for the lower and upper limits of the engine speed range.

27) Check the operating condition or operating conditions of the engine in which the noise occurs.

28) Check the climatic condition or conditions in which the noise occurs.

29) Check the ambient temperature or temperatures in which the noise occurs.

30) Check the condition or conditions of the road surface under which the noise occurs.

31) Check the seat on which the noise is the most intense.

32) After the list has been completed, the mechanic is to specify a preliminary diagnosis.

33) If none of the fields is applicable, check "Other" and describe it under "Which?".

34) To ensure efficient data acquisition it is essential that the regular driver of the vehicle is present when the first part of the checklist is completed.

35) The data acquisition together with the driver can be performed by the mechanic or by a service advisor. The mechanic who is in charge of the work on the vehicle must complete the remaining sections of the checklist.

36) To acquire as much specific information as possible, the mechanic must ask suitable open-ended questions to allow for a flawless diagnosis of the noise.

37) In addition, the mechanic must explain the reasons for asking the questions and must inform the customer about the required measures so that the customer can approve the measures accordingly.

38) If the checklist is used correctly, it facilitates the identification of the operating conditions of the vehicle under which the noise in question occurs. When identifying the area or component which generates the noise, consider the history of the vehicle, analyse the acoustic characteristics of the noise and adhere to the specified order.





4 Volkswagen equipment for localising noises

In some cases noises can be very complex and their origin is difficult to localise, because the noise is transmitted via several components.

The sections below describe the available Volkswagen equipment to be used and the respective procedure for localising noises. In some cases, the equipment is used in combination for identifying noises.

4.1 Ultrasonic tester - VAG 1842-

The ultrasonic tester - VAG 1842 detects ultrasonic signals, which cannot be perceived by the human ear. The unit converts the signals both into light signals as well as into acoustic signals so that the origin of the noise can be determined more precisely. This unit is used to enhance the hearing of the mechanic.

4.1.1 Design of the ultrasonic tester - VAG 1842-

- ◆ Plastic case



4.1.2 Example of procedure for identifying noises using ultrasound

Clattering, knocking and humming sounds

The low-frequency noises such as dull knocking (e.g. when the headliner strikes against the roof) or low-frequency humming noises do not generate any ultrasound signals or only weak ultrasound signals. Therefore, the combined probe should be used to detect and amplify the audible noise and ultrasound simultaneously. This probe is connected to the receiver via two connectors. Due to the high directivity and the possibility to amplify the sound, the noises can be localised very precisely although they are not very intense or located behind trims.

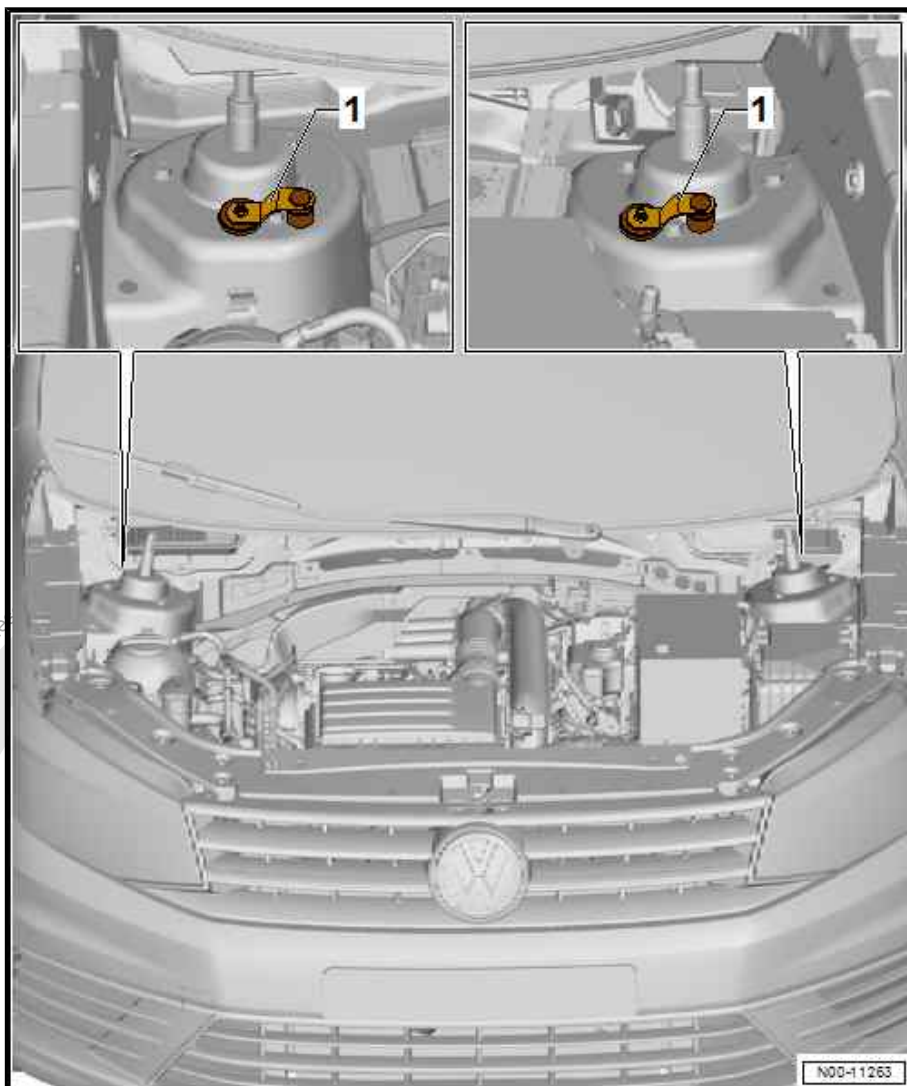


Note

Headphones are mandatory to avoid being confused by the whistling noises emitted by the unit itself.



Noises from the engine compartment or body



Are localised using an ultrasonic receiver or a microphone and magnetic mountings. They are attached in pairs near the suspected origin of the noise. The supplied extension cables are used to connect them to a changeover switch on the receiver in the vehicle interior. The noise is analysed during the road test and the origin is determined by switching between the sensors and by changing their position.



Caution

It is recommended to secure the sensors and cables using adhesive tape to avoid any damage to them or to other components when the position of the sensors is changed. Do not attach the sensors and cables near any heat sources.



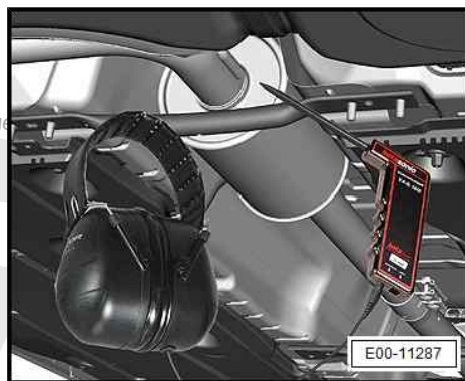
Localising small leaks in the intake connecting pipe and exhaust system

The receiver allows for clearly localising leaking joints, loose clamps, porous or defective vacuum lines and damaged seals when the engine is running. If there is a leak, a whistling/intake sound can be heard through the headphones.

These small leaks may cause noises at increased engine speed.

First, inspect the entire engine compartment using the receiver set to maximum sensitivity and with headphones connected.

A strong air flow generates higher ultrasound levels. In this case, reduce the sensitivity of the unit accordingly. After the origin of the sound has been identified roughly, the exact location is determined using the unidirectional probe or the pointed attachment to ensure a higher accuracy.



Noises from mechanical components or bearings

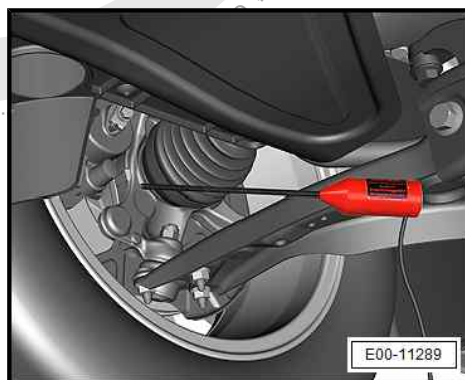
Nearly any friction between metal components generates ultrasound which becomes audible and visible using the ultrasonic tester.

First, identify the potential origin of the noise using the receiver with headphones connected. Set the sensitivity on the receiver to a level at which the noise can be heard well but is not too loud.



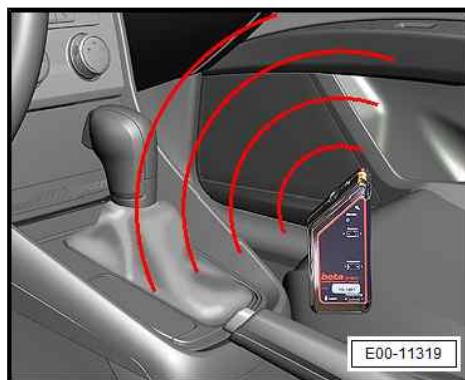
The status LED must be in the medium range (yellow LED) at most. However, the intensity of the noise itself is the deciding factor. Weak signals may be audible even if they are not displayed. The closer the receiver is moved towards the source of the noise, the stronger is the received signal. Fit the unidirectional attachment (with pointed attachment as necessary) to localise the source of the noise more precisely.

After the source of the noise has been determined, it is to be verified by holding the tip of the ultrasonic tester for structure-borne noise against the component.



Ingress of air into vehicle interior

This type of leaks can be identified during a road test using the receiver and the unidirectional attachment. This test always requires two mechanics. Any search for leaks on the driver side during a road test bears a certain risk. In this case it is safer to perform a static test using the sender in the vehicle interior and the receiver outside the vehicle. In this way, air leaks can be localised by sensing the seals of doors, windows and panoramic tilting sunroof.





Air leaks may cause whistling noises and dynamic noises in the vehicle interior.



WARNING

- ◆ *Always adhere to the safety precautions when performing road tests which include 2 mechanics. One mechanic drives the vehicle while the other performs the test.*
- ◆ *Always adhere to the traffic rules when performing road tests on public roads. The vehicle safety as well as the safety of any other road users must never be impaired by the test.*



E00-11290

4.2 Endoscope - VAS 6748A-

The endoscope - VAS 6748A- is an electronic display device for detecting noises and allows for localising noises in the vehicle using the images which are provided by a micro-camera on the probe with its own light and a high zoom.

4.2.1 Design of the endoscope - VAS 6748A-

- ◆ Transport case



E00-11302

- ◆ Control panel

Allows for capturing colour images and videos.

2 GB SD card



E00-11303



4.2.2 Procedure for identifying noises using the endoscope

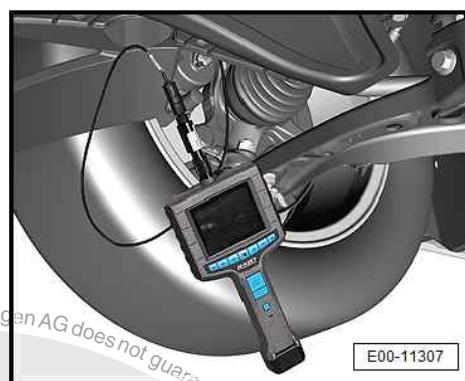
The endoscope shows the interior of various components and can be used to search for additional indications leading to the cause of a noise at hidden locations and without the need to remove components.

Examples:

Check vent flaps, fans and push rods on bulkheads.



Check bearings for metal particles and proper condition.



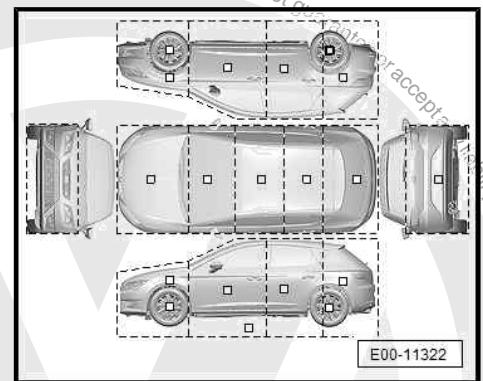


5 Attachments

5.1 Checklist

Protocol for localising noises					
Vehicle data: (fill in together with vehicle user)					
Item no.:		Brand:		Production date:	
Date:		Status:		Partner:	
Engine type:		Mileage:		Retrofitted components:	
Gearbox type:		Service technician:			
Has the vehicle been checked?				YES <input type="checkbox"/>	NO <input type="checkbox"/>
Can the customer complaint be confirmed?				YES <input type="checkbox"/>	NO <input type="checkbox"/>
When did the noise begin to occur?		_____ k m		It has always existed <input type="checkbox"/>	Shortly <input type="checkbox"/>
Increased gradually <input type="checkbox"/>		Since an accident <input type="checkbox"/>		Since a modification <input type="checkbox"/>	
Area affected by the modification or accident:					
Potential damage: (related observations)					
Black smoke <input type="checkbox"/>	Power loss <input type="checkbox"/>	Gearbox fault <input type="checkbox"/>			
Battery charge <input type="checkbox"/>	Play in steering <input type="checkbox"/>	Coolant leakage <input type="checkbox"/>			
Vibrations <input type="checkbox"/>	Jerking <input type="checkbox"/>	Bad starting behaviour <input type="checkbox"/>			
Warning lamp on <input type="checkbox"/>	Excessive force for steering <input type="checkbox"/>	Fuel leakage <input type="checkbox"/>			
Oil leakage <input type="checkbox"/>	Suspension bouncing <input type="checkbox"/>				

Noise localisation in vehicle:



Noise level:	dB _____	High <input type="checkbox"/>	Medium <input type="checkbox"/>	Low <input type="checkbox"/>
Pitch of noise		High <input type="checkbox"/>	Medium <input type="checkbox"/>	Low <input type="checkbox"/>
Duration of noise:		Long <input type="checkbox"/>	Short <input type="checkbox"/>	Continuous <input type="checkbox"/>
How often does noise occur:		Intermittent or periodic <input type="checkbox"/>		Occasionally <input type="checkbox"/>
Types of noises according to designations:				
Flapping <input type="checkbox"/>	Explosion <input type="checkbox"/>	Crunching <input type="checkbox"/>	Uncommon <input type="checkbox"/>	Puffing <input type="checkbox"/>
Whining <input type="checkbox"/>	Howling <input type="checkbox"/>	Droning <input type="checkbox"/>	Boom Boom <input type="checkbox"/>	Groaning <input type="checkbox"/>
Oscillating <input type="checkbox"/>	Knocking <input type="checkbox"/>	Grinding <input type="checkbox"/>	Bubbling <input type="checkbox"/>	Squeaking <input type="checkbox"/>
Rattling <input type="checkbox"/>	Chirping <input type="checkbox"/>	Grunting <input type="checkbox"/>	Buzzing <input type="checkbox"/>	Whipping <input type="checkbox"/>
Clattering <input type="checkbox"/>	Humming <input type="checkbox"/>	Whistling <input type="checkbox"/>	Jingling <input type="checkbox"/>	Knock Knock <input type="checkbox"/>



Screeching <input type="checkbox"/>	Mooring <input type="checkbox"/>	Siren <input type="checkbox"/>	Murmuring <input type="checkbox"/>	Pop Pop <input type="checkbox"/>
Cracking <input type="checkbox"/>	Whooshing <input type="checkbox"/>	Rattle <input type="checkbox"/>	Click Click <input type="checkbox"/>	Whistle <input type="checkbox"/>
Clacking <input type="checkbox"/>	Crackling <input type="checkbox"/>	Bells <input type="checkbox"/>	Clip Clip <input type="checkbox"/>	Lisping <input type="checkbox"/>
Sizzling <input type="checkbox"/>	Scratching <input type="checkbox"/>	Chattering <input type="checkbox"/>	Clucking <input type="checkbox"/>	Tap Tap <input type="checkbox"/>
Creaking <input type="checkbox"/>	Scraping <input type="checkbox"/>	Whirring <input type="checkbox"/>	Tuning fork <input type="checkbox"/>	Ticking <input type="checkbox"/>
Nuance of the noise	Resonance (echo) <input type="checkbox"/>	Metallic sound <input type="checkbox"/>	Plastic sound <input type="checkbox"/>	
Under which circumstances does the noise occur?				
Always <input type="checkbox"/>	Often <input type="checkbox"/>	Rarely <input type="checkbox"/>	Very rarely <input type="checkbox"/>	
Engine off <input type="checkbox"/>	With ignition <input type="checkbox"/>	With ignition <input type="checkbox"/>	At engine start-up <input type="checkbox"/>	
Idling <input type="checkbox"/>	switched off <input type="checkbox"/>	switched off <input type="checkbox"/>	When accelerating <input type="checkbox"/>	
At full acceleration <input type="checkbox"/>	Engine on <input type="checkbox"/>	When accelerating slowly <input type="checkbox"/>	moderately <input type="checkbox"/>	
	When decelerating <input type="checkbox"/>	With vehicle stationary <input type="checkbox"/>	When driving <input type="checkbox"/>	
When braking <input type="checkbox"/>	When disengaging clutch <input type="checkbox"/>	When engaging the clutch <input type="checkbox"/>	When changing gears <input type="checkbox"/>	
When steering <input type="checkbox"/>	Under load <input type="checkbox"/>	Without load <input type="checkbox"/>	When driving through potholes <input type="checkbox"/>	
When going down-hill <input type="checkbox"/>	When going uphill <input type="checkbox"/>	In right-hand bends <input type="checkbox"/>	In left-hand bends <input type="checkbox"/>	
With air conditioning system switched on <input type="checkbox"/>	At air recirculation mode in vehicle interior <input type="checkbox"/>	With heater switched on <input type="checkbox"/>	With auxiliary heater switched on <input type="checkbox"/>	
With interior blower set to low stage <input type="checkbox"/>	With interior blower set to medium stage <input type="checkbox"/>	With interior blower set to highest stage <input type="checkbox"/>	Other circumstances <input type="checkbox"/>	
Which? _____				
In which gear:				
Manual gearbox <input type="checkbox"/>	1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>
Automatic gearbox <input type="checkbox"/>	P <input type="checkbox"/>	N <input type="checkbox"/>	D <input type="checkbox"/>	R <input type="checkbox"/>
Vehicle speed range: <input type="checkbox"/> 0 <input type="checkbox"/> 25 <input type="checkbox"/> 50 <input type="checkbox"/> 75 <input type="checkbox"/> 100 <input type="checkbox"/> 125 <input type="checkbox"/> 150 <input type="checkbox"/> 175 <input type="checkbox"/> 200 <input type="checkbox"/> 225 <input type="checkbox"/> 250 km/h				
Engine speed range: <input type="checkbox"/> 0 <input type="checkbox"/> 1000 <input type="checkbox"/> 2000 <input type="checkbox"/> 3000 <input type="checkbox"/> 4000 <input type="checkbox"/> 5000 <input type="checkbox"/> 6000 <input type="checkbox"/> 7000				
Engine condition: Cold <input type="checkbox"/> Medium warm <input type="checkbox"/> Warm <input type="checkbox"/>				
Weather: Rainy <input type="checkbox"/> Dry <input type="checkbox"/> Windy <input type="checkbox"/> Hot <input type="checkbox"/> Ice or snow <input type="checkbox"/>				
Ambient temperature: <input type="checkbox"/> -20 <input type="checkbox"/> -15 <input type="checkbox"/> -10 <input type="checkbox"/> -5 <input type="checkbox"/> 0 <input type="checkbox"/> 5 <input type="checkbox"/> 10 <input type="checkbox"/> 15 <input type="checkbox"/> 20 <input type="checkbox"/> 25 <input type="checkbox"/> 30 <input type="checkbox"/> 35 <input type="checkbox"/> 40 <input type="checkbox"/> 45 <input type="checkbox"/> 50				
Condition of road surface:				
Smooth <input type="checkbox"/>	Rough <input type="checkbox"/>	With pot-holes <input type="checkbox"/>	No tarmac <input type="checkbox"/>	Bumpy <input type="checkbox"/>
On which seat the noise can be perceived as the most intense?				
Front right <input type="checkbox"/>	Front left <input type="checkbox"/>	Rear right <input type="checkbox"/>		
Rear left <input type="checkbox"/>	Same on all seats <input type="checkbox"/>			
Can the source of the noise be localised?				
Right front area <input type="checkbox"/>	Left front area <input type="checkbox"/>	Front centre area <input type="checkbox"/>	Left front door <input type="checkbox"/>	
Right front door <input type="checkbox"/>	Right rear area <input type="checkbox"/>	Left rear area <input type="checkbox"/>	Rear centre area <input type="checkbox"/>	
Left rear door <input type="checkbox"/>	Right rear door <input type="checkbox"/>	Rear lid <input type="checkbox"/>	Mirror <input type="checkbox"/>	
Bumper <input type="checkbox"/>	Roof <input type="checkbox"/>	Solar roof <input type="checkbox"/>	Body <input type="checkbox"/>	
Vehicle interior <input type="checkbox"/>	Seats <input type="checkbox"/>	Interior trims <input type="checkbox"/>	Dash panel <input type="checkbox"/>	
Engine <input type="checkbox"/>	Power train <input type="checkbox"/>	Gearbox <input type="checkbox"/>	Clutch <input type="checkbox"/>	
Differential <input type="checkbox"/>	Intake connecting pipe <input type="checkbox"/>	Turbocharger <input type="checkbox"/>	Coolant pump <input type="checkbox"/>	
Air conditioner compressor <input type="checkbox"/>	Exhaust system <input type="checkbox"/>	Wheel <input type="checkbox"/>	Alternator <input type="checkbox"/>	



Fuel pump Pulley	<input type="checkbox"/>	Fuel filter Bearing	<input type="checkbox"/>	Underbody Belt	<input type="checkbox"/>	Suspension Other...	<input type="checkbox"/>
Which? _____							
Remarks: ³⁹⁾ _____							

39) Always consider loose objects in the glove compartment, the storage compartments in the doors and the luggage compartment including jack, vehicle tool kit and spare wheel.

5.2 Designations for noises

Refer to the noise database.

