

# Technical product information

<b>Topic</b>	Running gear - Noise identification
<b>Market area</b>	Bentley: worldwide (2WBE),Hongkong-Macau (5HK)
<b>Brand</b>	Bentley
<b>Transaction No.</b>	2056407/3
<b>Level</b>	EH
<b>Status</b>	Approval
<b>Release date</b>	

## New customer code

Object of complaint	Complaint type	Position
running gear -> adaptive suspension, pitch and roll compensation	noise, vibration	
running gear -> steering system	noise, vibration	
running gear -> steering, power-assisted steering	noise, vibration	
running gear -> shock absorber/suspension control	noise, vibration	

# Vehicle data

## All Models

### Sales types

Type	MY	Brand	Designation	Engine code	Gearbox code	Final drive code
****	2003	E		*	*	*
****	2004	E		*	*	*
****	2005	E		*	*	*
****	2006	E		*	*	*
****	2007	E		*	*	*
****	2008	E		*	*	*
****	2009	E		*	*	*
****	2010	E		*	*	*
****	2011	E		*	*	*
****	2012	E		*	*	*
****	2013	E		*	*	*
****	2014	E		*	*	*
****	2015	E		*	*	*
****	2016	E		*	*	*
****	2017	E		*	*	*
****	2018	E		*	*	*
****	2019	E		*	*	*
****	2020	E		*	*	*
****	2021	E		*	*	*
****	2022	E		*	*	*

# Documents

Document name
<a href="#">master.xml</a>
<a href="#">runninggear1.docx</a>
<a href="#">suspension.xlsx</a>

## Customer statement / workshop findings

Customer statement:

Noise complaint from the suspension and/or steering

Workshop findings:

The noise can be reproduced and clearly assigned to the suspension system from either of the axles

And/or

The noise can be reproduced and clearly assigned to the steering system

Prior to starting the instructions within this TPI, the Retailer must check and confirm the vehicle is in standard factory condition and has not had any non-approved aftermarket modifications conducted including the modification of the engine control modules (chip tuning) Check the history of the vehicle to confirm

Should any aftermarket modifications be found, the Retailer must make Product Support aware by raising a DISS query to report the details of the modification, you must then await feedback from Product Support before conducting any further work

## Technical background

It is the retailers responsibility to check and confirm if any TPI's are applicable to the customers complaint/issue, should an applicable TPI be available, apply it and complete a DISS complaint to include 'Workshop findings' only (No repair query required)

For correct diagnosis and repair, the attached Flowchart must be followed in conjunction with the Measure section of this TPI

## Production change

Not applicable

## Measure

1) Carry out a visual inspection of the suspension and/or steering components to confirm if the noise can be attributed to a faulty component for example:

- Damage to the underside of the vehicle
- Accident damage
- Damaged or incorrect specification road wheels
- Worn/leaking suspension components and/or steering components
- Loose and/or damaged components

If the noise is NOT a result of one of the afore mentioned issues, carry out the remaining instructions from Step 2

2) In the event an impact noise is present for example clonking, clicking, ticking, and the operative CAN NOT locate the issue by conducting a visual inspection you must capture/record the noise.

- Should the noise be frequency related for example a constant drone or humming noise a frequency recording will be required
- Refer to the onward instructions depending on which type of noise is evident (Impact or frequency related)

IMPORTANT: For frequency analysis and noise recording we recommend using the Chassis Ear Tool WT 10437

Record the noise and measure the frequency using WT 10437 Chassis Ear Tool - Follow the instructions within this TPI in conjunction with the WT 10437 user instructions

3) Referring to Figure 1 - Using the sensor clamp/s (Point A) and Bluetooth module/s (Point B) provided in the kit - Record the noise



Figure 1

TIP: In order to locate the noise it could be necessary to use multiple clamp and module assemblies, the operative must refer to the appropriate user instructions

NOTE: If the noise is only evident during a road test, the clamp and module assembly must be positioned outside of the cabin for the best results, please be aware that recordings from outside of the vehicle may not help identify the issue at higher speeds or noisy geographical locations, therefore a recording from inside the cabin will also be required



WARNING

IMPORTANT: The driver's concentration MUST be focused on the road at ALL times the assistance of a second technician is required



WARNING

Observe all road safety procedures and speed limits.

TIP: To capture the frequency - Select 'FFT Graph' as Wave Form Type (Figure 2) and read the peak achieved during the recording as highlighted in Figure 2 (in this EXAMPLE the frequency is 2000Hz)

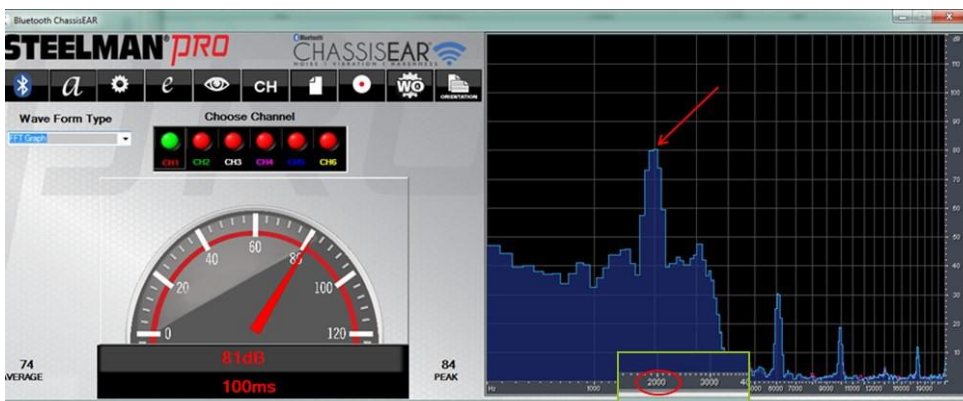


Figure 2

4) Once recorded - Save the file to your device

NOTE: The sound recording/video can also be taken from a mobile telephone as long as the noise is clearly identifiable

Additional 'contextual' video/audio recordings from a customer perspective should also be used

Should there be no applicable TPI's, and you are not able to identify the source of the noise by using WT 10437, proceed to Step 5

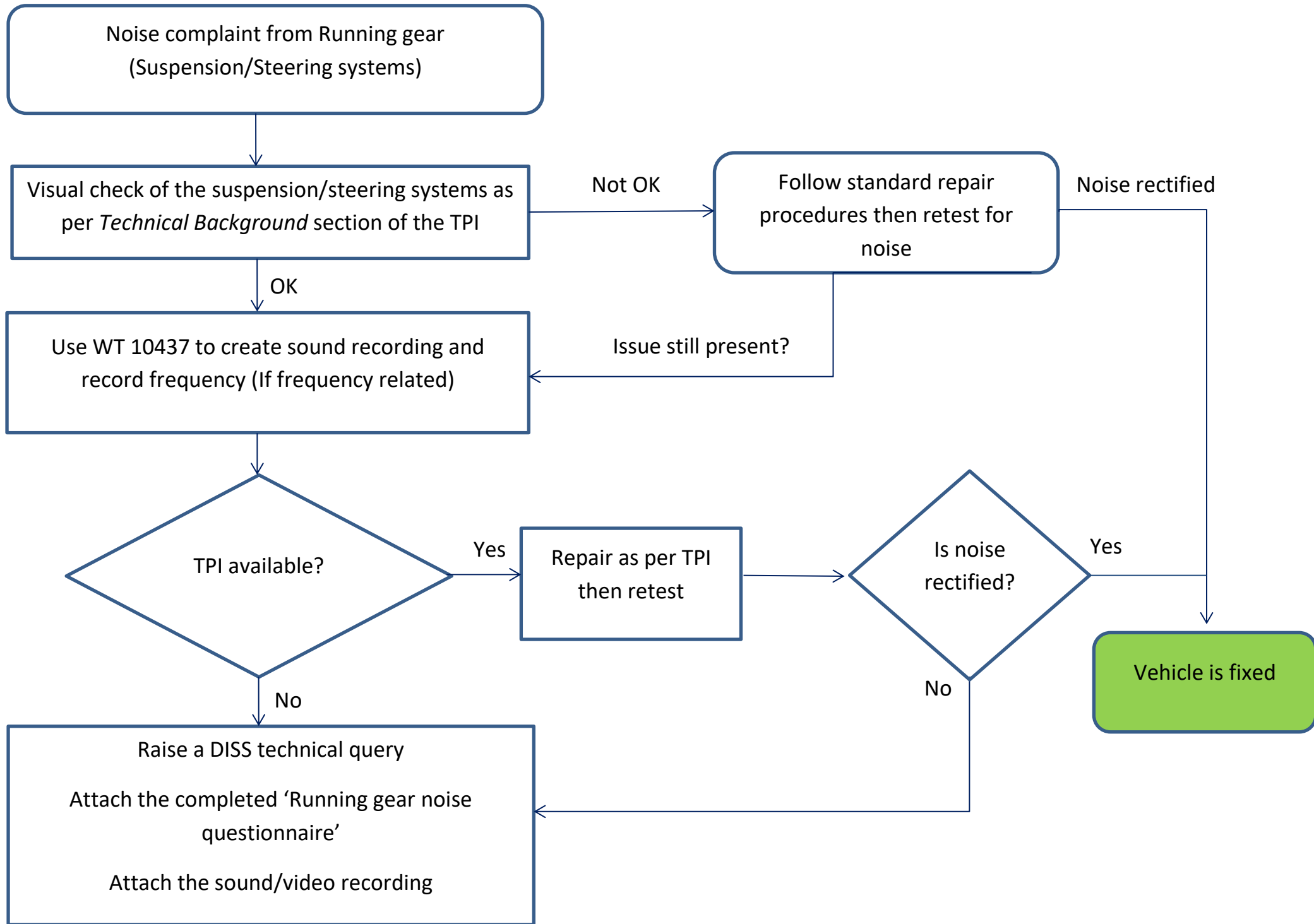
5) Raise a DISS technical query - The running gear questionnaire (attached Excel spreadsheet) and the sound/video recording must be attached to the open DISS query IMPORTANT: The following detail MUST also be included:

- Vehicle speed
- With or without steering lock applied (please confirm)
- Ambient conditions
- Engine coolant temperature when issue is evident
- What does the driver/customer do to induce the problem?
- Any reported disassembly and/or issues of the rear axle area

VERY IMPORTANT: NOISE RELATED DISS QUERIES SHOULD NOT BE SUBMITTED WITHOUT AT LEAST TWO ATTACHMENTS (QUESTIONNAIRE AND SOUND RECORDING). SHOULD THE REQUIRED INFORMATION NOT BE INCLUDED, THE QUERY WILL BE RETURNED TO THE RETAILER

### Warranty accounting instructions

Warranty claims about noise complaints suspension and/or steering system are only possible with a completed running gear questionnaire, an audio/video recording and an eligible DISS query



# Questionnaire Suspension system - NVH complaint

## Vehicle information:

VIN:

## Road test:

carried out:  yes

Complaint understandable:  yes  no

## Noise type:

- grinding  judder  chattering  hissing  
 squealing  moaning  chirping  knocking  
 creaking  clonk  clicking  popping  
 rattle  humming  crunching  roaring  
 banging  dronning  groaning  ticking  
 buzzing  whirring  gurgling  whistling

## When does the noise occur:

- forward  
 with steering input  without steering input  brake applied  
 backwards  
 with steering input  without steering input  brake applied  
 static with steering input  straight line  curve  
 always  often  rare  Right  
 uneven road  pot holes  speed bump  Highway  Left  
 0-30 mph  30-60 mph  over 60 mph  speed not dependent

## Where does the noise occur:

Front axle  Rear axle  RH  LH

Description:

## Frequency:

kHz

## Noise occurs only once on the same direction (repeatable moving back and forth):

yes  no

## State of suspension components: bush/ball joints/mounts:

Okay  damaged  leaking  wear  free play  Cracks

## Vehicle Temperature

cold  warm

## Outside temperature:

15 c°

to

20 c°

Weather: wet  dry  snow

Humidity  High  Low

## Customer Driving profile:

Long haul  short haul  sporty  normal

Further information:  
(if necessary)

## Previous Attempted Repairs (DISS if available):

## Comparable Vehicle tested on same conditions:

VIN:

Comments

yes  no