

Steering Gear Noisy Questionnaire

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Please complete this questionnaire when a customer reports noises during steering operations, which leads to a steering gear replacement.

In addition to completing this questionnaire, please provide supporting evidence (image(s), sound file(s) and video(s)), as they would significantly enhance your response.

1) Have you (the technician) been able to identify or replicate the noise?

- Yes, audible without the need of any audible device
- Yes, audible with the need of any audible device (versatile electronic listening tool)
- No

If No, please explain why the steering gear was replaced.

2) Test Drive Observations

During which steering manoeuvres does the noise occur?

- when parking
- when cornering / turning
- when driving straight ahead
- other (please specify below)

Does the noise only occur at certain steering angles? Please specify below.

Is there any haptic responses / vibrations in the vehicle or steering wheel when the noise occurs?

- Yes
- No

During which steering manoeuvres does the noise occur?

- at a standstill
- < 5 kph or 3 mph (For example, while parking or turning)
- between 10 - 30 kph (6 - 18 mph)
- between 31 - 50 kph (19 - 31 mph)
- other (describe in the box below)

On which type of surface does the noise occur?

- on tarmac / asphalt
- on gravel roads (smooth gravel)
- off road (dirt or heavy gravel/ stones)
- winter / icy roads
- other (please specify below)

Is the road surface smooth, uneven, paved or otherwise? What type of road inputs are needed to generate the noise (for example, is the noise occurring on bumps, potholes)?

What were the weather conditions when the noise occurred? (For example, dry, wet, cold, warm) Please include the air temperature.

Does the noise change depending on the climatic conditions?

- yes, please specify below

- No

3) Noise Frequency and Duration

How often does the noise occur? (For example, every time you drive, occasionally, rarely)

How long does the noise last when it occurs? (For example, 1 second, 5 seconds)

Are there any other symptoms or abnormalities that occur together with the noise?

- Yes, please specify below

- No

Type of Noise

- BUZZING – high frequent continuous noise sounding like a wasp or bee.
- CLICKING – Light, high-frequency tapping.
- CLUNKING/KNOCKING – Heavy thump or bump sound without reverberation that can often sound a little muted.
- CRACKLING/CREAKING – Repeated, sharp, snapping sound.
- GRINDING/SCRATCHING – dry, rough sound, like rusty bearing, metal to metal scraping sound
- HOWLING – high frequent noise, reproducible during steering operation
- SQUEAKING – high frequent disturbing noise with short random appearance

- POPPING – Sharp, explosive sounds can be described as popping and usually aren't as loud as banging.
- RATTLING – The same sound as marbles rolling around in an empty can be described as rattling.
- RUMBLING – Almost a roar but sounds like it's far away.
- ZIPPER NOISE – low frequent humming noise at steering operation
- OTHER (please specify below)

How loud is the noise on a scale from 1 (very quiet) to 10 (very loud)?

4) Workshop and Diagnosis Observations

Please provide the tire information for the front axle:

	LH	RH
Tire Model:		
Tire Size:		
Tire Pressures:		

Is the noise reproducible on the lift?

- Yes, with wheels off the ground
- Yes, with wheels on the ground
- No

Are there visible signs of wear or damage to the steering?

Please check for signs of water ingress via bellows, harness, connector pins etc. Check for damage (cuts, punctures and tears) on the steering gear, bellows, inner and outer ball joints. Check for missing bellow clips.

- Yes, please specify below

- No

Are there any visible signs of wear or damage to other components?

Please check for any signs of damages to the tires and rims. Check for any damage/play/abnormalities on the suspension components, heat shields, exhaust system, steering column, i-shaft and steering bulkhead seals. Please provide photos of the damages in the ePQR.

- Yes, please specify below

- No

Was the 'PSCM - Reset Steering Soft Lock End Stop Position' application ran before the replacement of the steering gear?

- Yes

No, please specify why the routine was not performed

Is the PSCM Software to the latest version before the replacement of the steering gear?

Yes

No, please specify the PSCM software version

Thank you for completing this questionnaire,
please can you scan and attach your document, plus supporting image(s), sound
file(s) and video(s) to an ePQR

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