

Technical Service Bulletin



34, 37 Grinding or wheel bearing type noises from front when accelerating or at constant speed

34 13 13 2028650/2 January 15, 2013. Supersedes Technical Service Bulletin Group 34 number 12-08 dated February 21, 2012 for reasons listed below.

Model(s)	Year	VIN Range	Vehicle-Specific Equipment
S4 and S5	2010-2011	All	All with DSG Transmission
A4, A4 Cabriolet, A5, A5 Cabriolet	2009-2011	All	All with CVT Transmission
A5, S5	2008-2011	All	All with Manual Transmission
A4, S4 cabriolet	2009-2011	All	All with Manual Transmission

Condition

REVISION HISTORY		
Revision	Date	Purpose
2	-	Revised <i>Required Parts and Tools</i> (Shim quantity) Revised <i>Service</i> (Formatted for clarity)
1	2/21/12	Original publication

Customer states constant howling, droning, or scraping noises heard from the front of the vehicle when accelerating lightly.

Technical Background

The ball bearing for the left flange shaft spins in the gearbox housing because of a gap between the outer bearing ring and the support bracket. This can result in grinding marks and swarf (Figure 1, Figure 2).

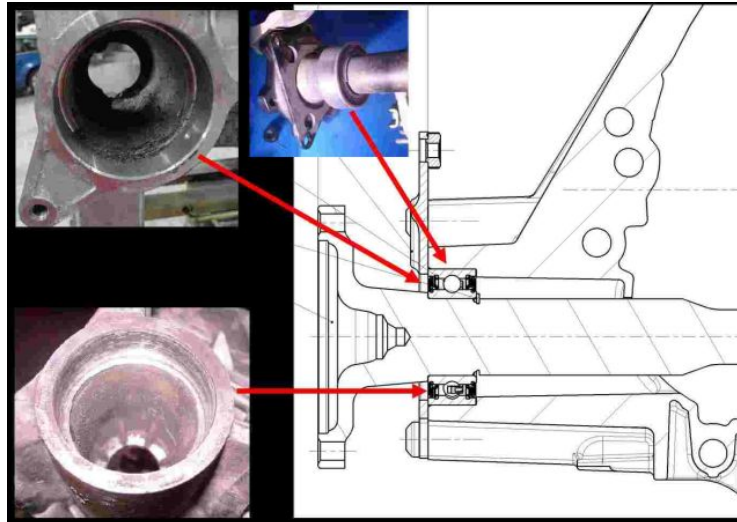


Figure 1. Grinding marks and swarf in gearbox housing.



Figure 2. Grinding marks and swarf on flange housing and bearing.



Tip: The affected ball bearings are only fitted on the left side; therefore, the complaints do not occur on the right side.



Note:

After a removal of the bolts to check for this condition, the bolts must always be replaced by new parts (new part number: **N 91208801**).

Production Solution

Not applicable.

Service

Try to reproduce the customer complaint so that it can be clearly assigned to this TSB by removing the support bracket and checking for wear marks. If wear marks are present as shown in Figure 1 or Figure 2 above, follow checks and repair instructions below:

On V6 and V8 engines:

1. Remove the gearbox according to the repair manual.
2. Loosen the support bracket of the left final drive (if necessary) and pull the left flange shaft out of the gearbox according to the repair manual, taking care not to damage the shaft seal.
3. Proceed to **Checks Section** below.

On all models with 4 cylinder engines:

1. Remove the left drive shaft according to the repair manual.
2. Remove the brake caliper and hang caliper off to the side without stressing the brake hose.
3. Detach the suspension strut from the lower control arm, and the suspension strut from the sway arm link. (Loosen upper bolts for the strut if needed to allow for more clearance).
4. If necessary for bearing housing clearance, remove the upper control arm bolt and allow bearing housing to swing out of the way.
5. Remove any shielding from the axle opening.

6. Pull the left flange shaft out of the gearbox (according to the repair manual) (Figure 3). Support the flange shaft through the lower opening on the gearbox (service flap) to avoid damaging the oil seal between differential and gearbox housing (Figure 4).



Figure 3. Pulling out the flange shaft.



Note:

After a removal, the bolts must always be replaced by new parts (new part number: **N 91208801**).



Figure 4. Supporting the flange shaft.

7. After removing the flange shaft visually check the oil seal between differential and gearbox housing with a lamp through the lower gearbox opening (service flap) for damage.



Note:

Remove bearing and bearing bracket from axle and discard. Use new bearing for measurements.

8. Proceed to **Checks Section** below.

Checks Section:

The following steps assist in determining how many shims must be fitted between bearing and gearbox housing to make the bearing extend out from the case a minimum of 0.5mm to 0.8 mm (Figure 5).



Figure 5. Bearing example.



Tip: Bearing in Figure 5 is only for demonstration purposes. Always measure using a new bearing.

Determine the number of shims to be fitted:

1. Use size 600 grit sandpaper to remove any corrosion or dirt on the gearbox flange surface. Do not clean the bearing carrier.
2. Measure whether the gap between bearing and gearbox housing is flush or extended from case.
3. Use a straightedge on two different positions on the bearing and on the gearbox housing (this leads to four measuring positions) (Figure 6).

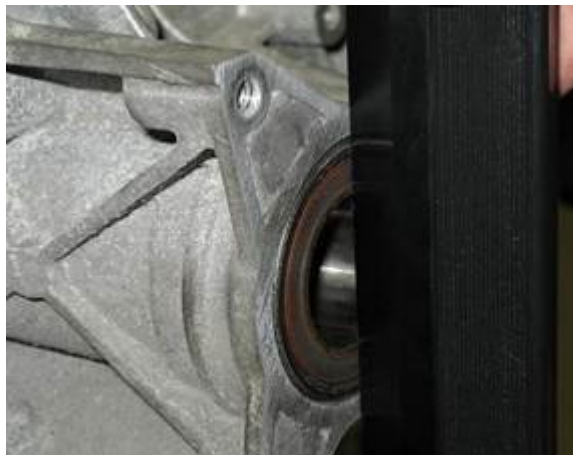


Figure 6. Apply straightedge on gearbox housing/bearing.

4. Determine the value with a feeler gauge on four different points (Figure 7).



Tip: Bearing in Figure 7 is only for demonstration purposes. Always measure using new bearing.



Figure 7. Measuring gap

5. After the measuring, calculate how many shims must be fitted between bearing housing and bearing. Each shim is 0.30 mm. Examples:

Below flush gap (Figure 8):

Measured values: Top 0.10 mm, bottom 0.15 mm, left 0.15 mm, right 0.10 mm

Biggest measured value: 0.15 mm

For the calculation the value must be given a negative algebraic sign.

$$\begin{aligned} & - 0.15 \text{ mm} \\ + & 0.30 \text{ mm} \quad \text{thickness of 1st shim} \\ = & 0.15 \text{ mm} \\ + & 0.30 \text{ mm} \quad \text{thickness of 2nd shim} \\ = & 0.45 \text{ mm} \\ + & 0.30 \text{ mm} \quad \text{thickness of 3rd shim} \\ = & 0.75 \text{ mm} \quad \text{minimum is reached} \\ & (0.5- 0.8 \text{ mm}) \end{aligned}$$



Figure 8. Determine the below flush value.

Three shims are needed.



Note:

Although the bearing may extend from the case as shown, the distance may not be enough to hold the bearing tight. Measure as follows to determine and correct.

Extended from case gap (Figure 9):

Measured values: Top 0.10 mm, bottom 0.15 mm, left 0.10 mm, right 0.10 mm

Smallest measured value:

0.10 mm

+ 0.30 mm 1st shim

= 0.40 mm

+ 0.30 mm 2nd shim

= 0.70 mm minimum is reached
(0.5- 0.8 mm)

Two shims are needed.



Figure 9. Determine the extended value.

Reassembly:

1. Install new support bracket and bearing onto the shaft per repair manual, being sure the part number of the support bracket is pointing outward.



Tip: When fitting the support bracket the part number must point to the outside.

2. Clean the flange shaft with a fluff-free cloth and slightly lube the shaft at the seal contact area using **G 052128A1**.
3. Install the shims and feed the shaft back through the opening of the lower gearbox side with appropriate support, taking care not to damage the seal (Figure 10).
4. Be sure to replace the support bracket bolts.



Figure 10. Position of shims.



Note:

Because the bearing turns, it may have taken material off of the bearing carrier in axial and radial directions. The resulting free play can be ignored, as a turning of the outer bearing ring is prevented by the axial clamping force of the support bracket.



Warning:

Any bolts or fasteners that were removed, loosened, or that are for one-time use must be replaced per ELSA instructions.

Technical Service Bulletin



Warranty

Claim Type:	Use applicable claim type. If vehicle is outside any warranty, this Technical Service Bulletin is informational only.		
Service Number:	3437 Manual 3737 Automatic		
Damage Code:	0010		
Labor Operations: 4 Cylinder Manual transmission	Remove and install drive shaft	4041 1900	90 TU
	Check gearbox	3435 0199	20 TU
	Repair gearbox housing	3437 4199	90 TU
4 Cylinder Automatic Transmission	Remove and install drive shaft	4041 1900	90 TU
	Check automatic gearbox	3735 0199	20 TU
	Repair gearbox housing	3737 4199	90 TU
6 and 8 Cylinder Manual /DSG Transmission	Remove and install gearbox	3435 19XX	Use labor operation for appropriate model/transmission.
	Check gearbox	3435 0199	20 TU
	Repair gearbox housing	3437 4199	50 TU
Diagnostic Time:	GFF	No allowance	0 TU
	Road test prior to service procedure	0121 0002	10 TU
	Road test after service procedure	0121 0004	10 TU
	Technical diagnosis at dealer's discretion (Refer to Section 2.2.1.2 and Audi Warranty Online for DADP allowance details)		
Claim Comment:	As per TSB #2028650/2		

All warranty claims submitted for payment must be in accordance with the *Audi Warranty Policies and Procedures Manual*. Claims are subject to review or audit by Audi Warranty.

Required Parts and Tools



Tip: For customer satisfaction to reduce time down, it is recommended to pre-order 4 shims (**0B4409227**) as most vehicles will require 1 to 4 shims. Return all unused portions.

Part Number	Part Description	Quantity
0B4409294D	Deep-groove ball bearing	1
0B4409175C	Support bracket (flange for final drive) 0AW and 0B2	1
0B4409175D	Support bracket (flange for final drive) 0B5 and 0B4	1
0B4409227	Shims	As needed (4 maximum).
0B4409297	CIRCLIP	1
N 91208801	M8 bolts	3
G 052128A1	Grease for radial oil seal	.25

Additional Information

All parts and service references provided in this TSB are subject to change and/or removal. Always check with your Parts Department and service manuals for the latest information.