



Mercedes-Benz

Campaign No. 2023040001, May 2023

TO: ALL MERCEDES-BENZ CENTERS

SUBJECT: **Model AMG G63 4x4 squared (463 platform)**
Model Year 2022

Replace Rear Axle

Mercedes-Benz AG (“MBAG”), the manufacturer of Mercedes-Benz vehicles, has determined that on certain Model Year (“MY”) 2022 AMG G63 4x4 squared (463 platform) vehicles, the rear axle differential housing might not meet the strength requirements. Cracks in the rear axle differential housing might occur during vehicle operation, which may lead to differential oil leaking onto the roadway. In this case, a risk of a crash for following vehicle traffic may be increased. Further, fracturing of the housing cannot be ruled out and could lead to an interruption of the power transmission on the rear axle, in which a loss of wheel guidance and a loss of propulsion without warning cannot be ruled out. In this case, the risk of a crash or injury could be increased. An authorized Mercedes-Benz dealer will replace the rear axle on the affected vehicles.

Prior to performing this Campaign:

- VMI must always be checked before performing campaigns to verify that the campaign is required on a specific vehicle. Always check for any other open campaigns, and perform accordingly.
- Please review the entire Campaign bulletin and follow the repair procedure exactly as described.

Approximately 278 vehicles are affected.

Order No. P-RC-2023040001

Replace Rear Axle

Work Procedure

i The **serial number** of the new **rear axle centerpiece (Figure 1)** must be changed in the **VeDoc** system. (XSF ticket has to be created for the VeDoc change)



Figure 1

1. Lift the vehicle and use the tension belts on all 4 jack points to secure it against falling down.

i For basic data, see AR00.60-P-1005-01D.

2. While the vehicle is lifted and the wheels are off the ground, actuate the rear axle differential lock actuator and then disconnect the electrical plug on the rear axle lock actuator while the lock is engaged.

i **The rear axle must be removed with the lock actuator set to lock position.**

i **To do this,** "Start the engine – Release the parking brake – engage neutral position (N) – Engage Low Range (**Figure 2**) – Engage drive position (D) – engage center differential lock (1) – while wheels are rotating slowly, engage rear axle differential lock (2) – Ensure red confirmation light is illuminated for center and rear differential lock (**Figure 3**) – switch off ignition – disconnect electrical plug on lock actuator of rear axle and leave disconnected (**Figure 4**)."



Figure 2

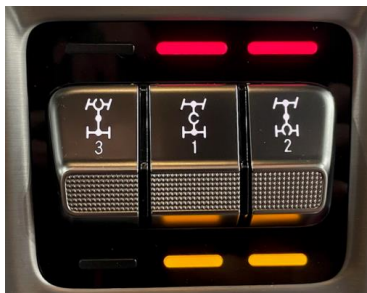


Figure 3

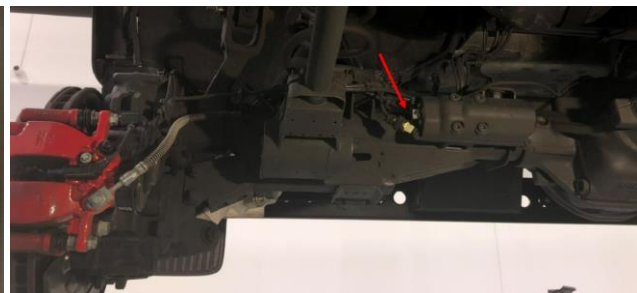


Figure 4

3. Bring the brake pads of the rear axle into assembly position and bring the transmission into permanent neutral position.
 - a) For basic data on brake pad assembly position, see AR42.10-P-1710-01LWE (key must remain in vehicle).
 - b) To bring the transmission into permanent neutral position; press the start button twice without actuating the brake pedal (**ignition on**) – depress the brake pedal and move selector lever to "N" position and hold for 1 second to engage permanent neutral position – switch off ignition. (key must remain in vehicle).

i Attention: The vehicle is now in permanent "N" position (Figure 5).



Figure 5

4. Disconnect ground line from battery.

i For basic data, see AR54.10-P-0003XG.
5. Remove cover caps of wheel nuts on all four wheels (**Figure 6**).

i To do this, clean cover caps then press Butyl Tape firmly against the cover cap and pull off the cap.

i Damaged cover caps must be replaced.



Figure 6

6. Remove all four wheel and tire assemblies using a wheel lift dolly.

i For basic data, see AR40.10-P-1100XG.

i The wheel nuts are reused.

7. Drain rear axle oil (**Figure 7**).

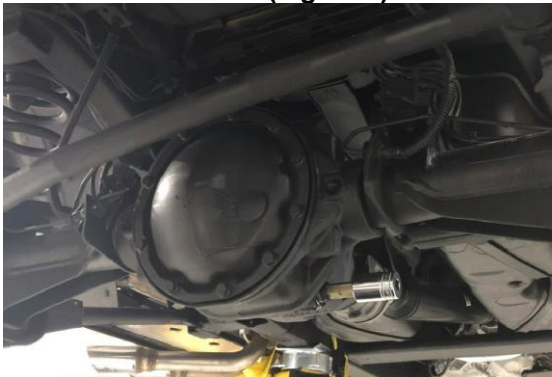


Figure 7

8. Disconnect electrical connectors of rear axle wiring harness on rear axle components (**Figure 8**).

Nm Brake sensor screw (**A, Figure 8**) 8 Nm

Unscrew the two holders for electrical wiring harness from the rear axle tube. (**Figure 9**).

Remove the complete rear axle wiring harness with holders and cable ties/clips from the rear axle and working area.

i Only replace defective cable ties/clips when installing the wiring harness onto the new axle bridge to ensure that the positioning of the wiring harness remains identical.

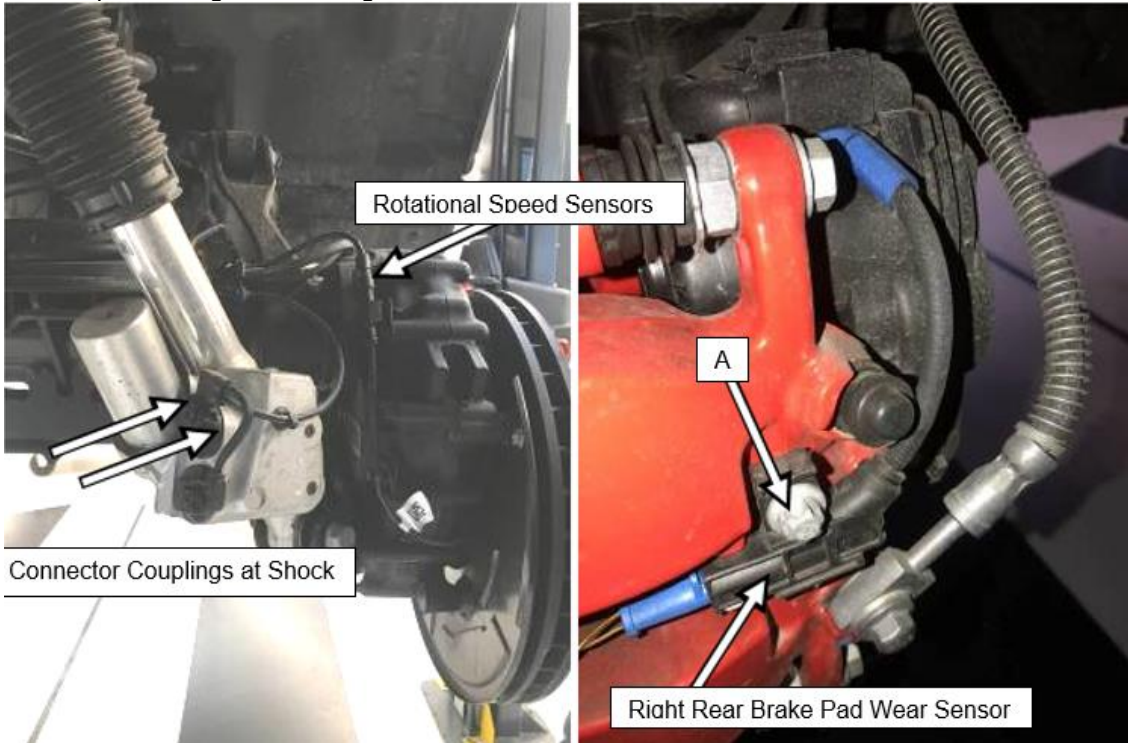


Figure 8



Figure 9

9. Unscrew banjo bolts for bleed lines at left and right rear axle hub reduction gears (**Figure 10**).

Nm M10 bleed line banjo bolt to rear axle hub reduction gear **15 Nm**.

i **Seal thread openings** on rear axle hub reduction gears with suitable stop plug/screw **immediately** to prevent oil from leaking out.

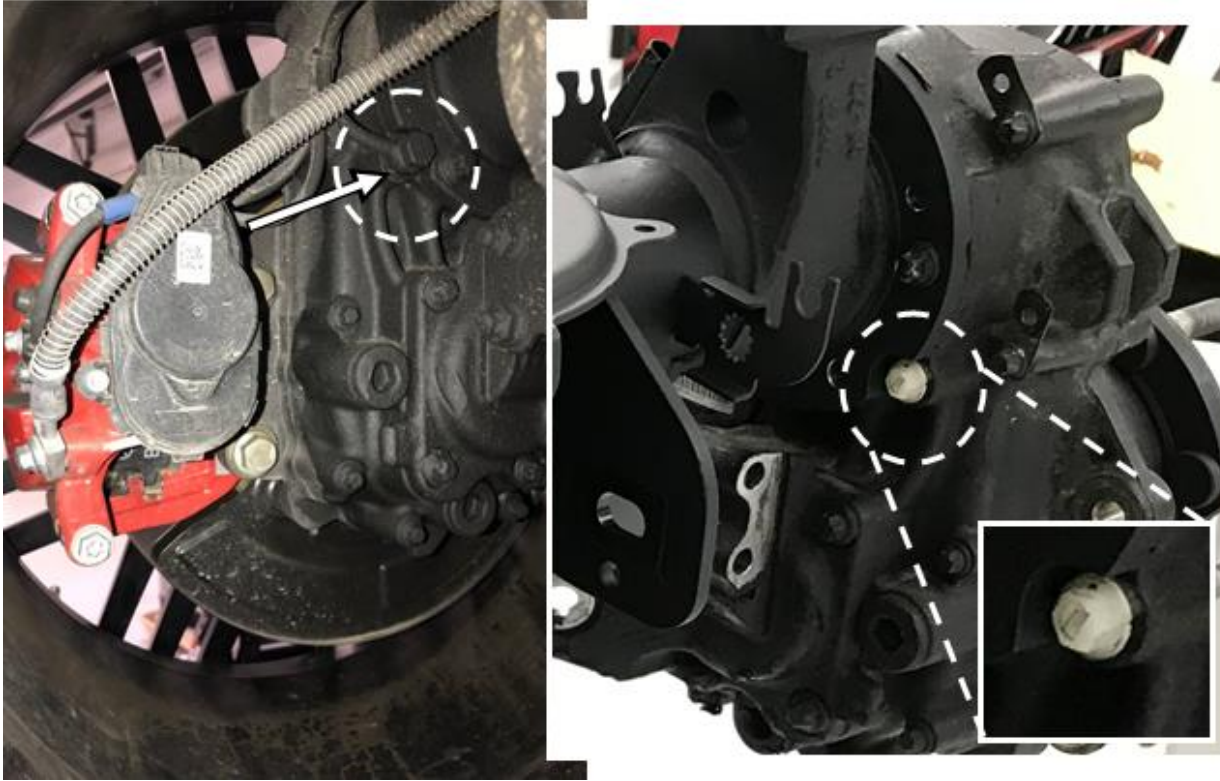


Figure 10

10. Unscrew banjo bolt for bleed lines at axle bridge above lock actuator (**Figure 11**).

Nm M8 bleed line banjo bolt to axle bridge **8 Nm**

i **Seal thread openings** on axle bridge with suitable stop plug/screw **immediately**.

i Important! A total of **3 copper sealing rings** are installed.

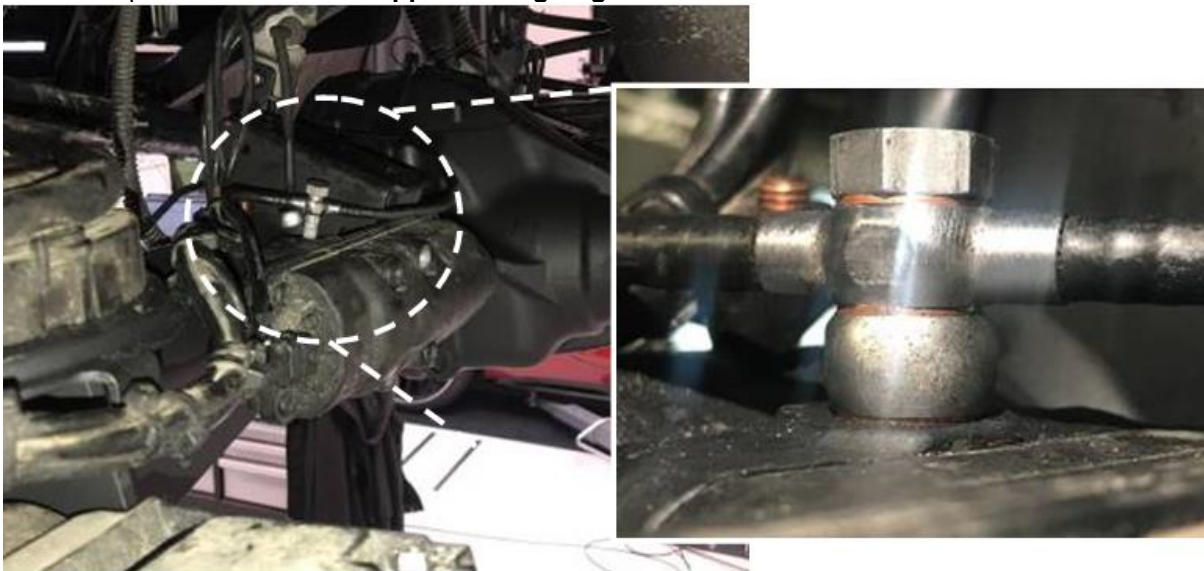


Figure 11

11. Unscrew brake hoses from brake lines on inside of axle (**Figure 12**) and seal open brake lines with suitable stop plugs e.g. W129 589 00 91 10.



Figure 12

12. Unscrew propeller shaft from rear axle differential, and secure against falling by tying to the top (**Figure 13**).

Nm Propeller shaft screw at rear axle differential **1st stage 40 Nm – 2nd stage 90°**



Figure 13

13. Position lift table under rear axle and use tension belt (**Figure 15**) to secure against falling.

i Lift table W 000 588 03 62 00.

i Place a support block with a width of approx. 5.5 cm (e.g. a hardwood block), under the axle at the left and right and under the center front section of the differential to ensure that the rear axle is evenly supported (**Figure 14**).



Figure 14



Figure 15

14. Lift table approx. 10 cm and bring rear axle to level of suspension.

i This way, the screw connections can be released and tightened again without tension.

15. Remove transverse control arm of rear axle (**Figure 16**).

i For basic data, see AR35.20-P-0140XG.

Nm Transverse control arm screw to rear axle **1st stage 150 Nm – 2nd stage 90°**

Nm Transverse control arm screw to frame **1st stage 150 Nm – 2nd stage 90°**

i During installation, the transverse control arm at the rear axle must be fit into the bearing using a shim.



Figure 16

16. Unscrew left and right shock absorbers at bottom of axle (**Figure 17**).

i The shock absorbers remain on the vehicle and do not need to be removed completely.

Nm Shock absorber screw to holder (axle tube) **1st stage 100 Nm – 2nd stage 90°**

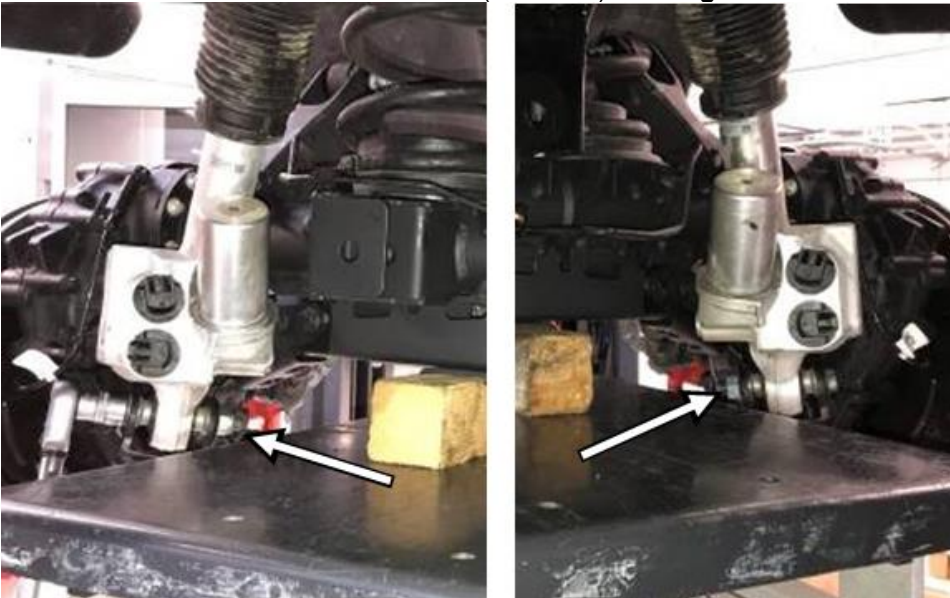


Figure 17

17. Release screw connection for top left and right trailing arms at rear axle (**Figure 18 and 19**).

i For basic data, see AR35.15-P-0320XG.

Nm Upper trailing arm screw to rear axle **1st stage 100 Nm – 2nd stage 90°**

i **Important!** The **new** screw on rear axle to the upper trailing arm is inserted inwards, from wheel side towards the rear axle spring (**Figure 19**).

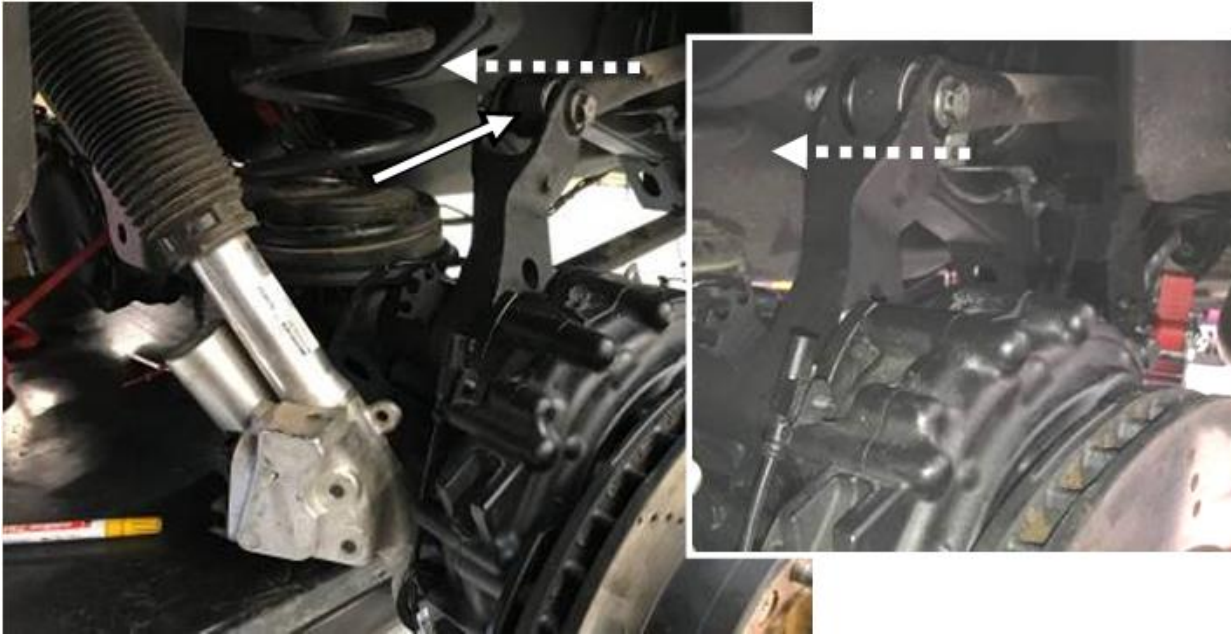


Figure 18

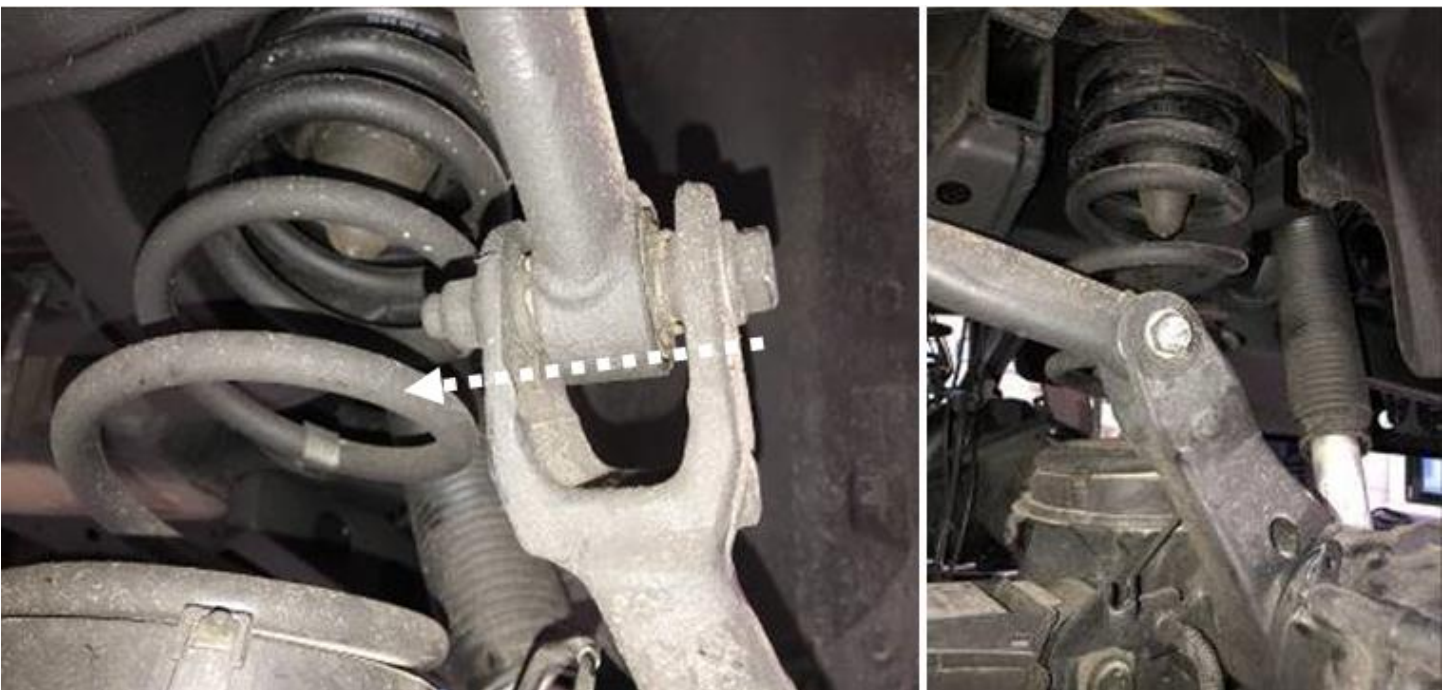


Figure 19: Assembly of upper trailing arm screw inwards, from wheel side towards the rear axle spring

18. Mark adjusting plates for adjusting the drive line angle, disconnect level sensors on trailing arms (**Figure 20**) and unscrew the connection of the rear axle at left and right lower trailing arms (**Figure 21**).

i For basic data, see AR35.15-P-0330XG.

Nm Lower trailing arm screw to rear axle **1st stage 100 Nm – 2nd stage 180°**

i **Important!** Mark adjusting plates and install in the same position on the new axle.

i **Installation:** Install adjusting plates with opening pointing downward.

i **Installation:** The notch on the adjusting plate should point in the direction of travel.

i The protective cover on the trailing arm is not removed.



Figure 20



Figure 21

19. Slowly lower the lift table with rear axle including the brake system and springs until tension is relieved from springs.

i Pay attention to surrounding component parts when lowering and lifting the rear axle.

20. Mark the spring and the upper and lower spring retainer then remove the springs completely (**A, Figure 22**).

i **Installation:** Align installation position (**A, Figure 22**).

i A tensioning device is not needed.



Figure 22

21. Fully lower rear axle and remove from underneath vehicle (**Figure 23**).

i For basic data, see AR35.10-P-0010XG

i Pay attention to surrounding component parts when lowering and lifting the rear axle.

i Unthread lower trailing arms while lowering.

i Helper required.



Figure 23

22. Remove brake disks with brake caliper including brake caliper supports, brake hoses, and brake cover plates from rear axle.

i For basic data, see AR42.10-P-0025XGS and AR42.10-P-0240XGS

i Brake hose should be separated from brake line and remain on brake caliper.

i Brake pads **do not** need to be removed and should remain in the brake caliper.

Nm Brake line to brake hose **14 Nm**

Nm Brake caliper support screw to steering knuckle **1st stage 50 Nm – 2nd stage 60°**

Nm Brake disk safety screw to wheel hub **10 Nm**

Nm Brake cover plate screw to steering knuckle **23 Nm**

23. Remove brake lines with retaining clips from axle tube.

24. Remove rear axle actuator (**Figure 24**).

i For basic data, see AR35.40-P-0001XGA.

i Rear axle actuator is in **lock engaged position**.

i **Installation:** The slide in the axle tube for actuating the lock must be slid in the direction of the axle centerpiece. One of the wheel flanges must be turned at the same time.

Nm Actuator screw to axle tube **1st stage 10 Nm – 2nd stage 20 Nm – 3rd stage 60°**



Figure 24

25. Unscrew and remove the mounting support between the hub reduction gear and rear axle tube **(Figure 25)**.

Hm Threaded connection for the mounting support between hub reduction gear and rear axle tube

1st stage 50 Nm – 2nd stage 135°

i **Installation:** All contact surfaces of threaded connections must be clean and free of grease and wax when being tightened.

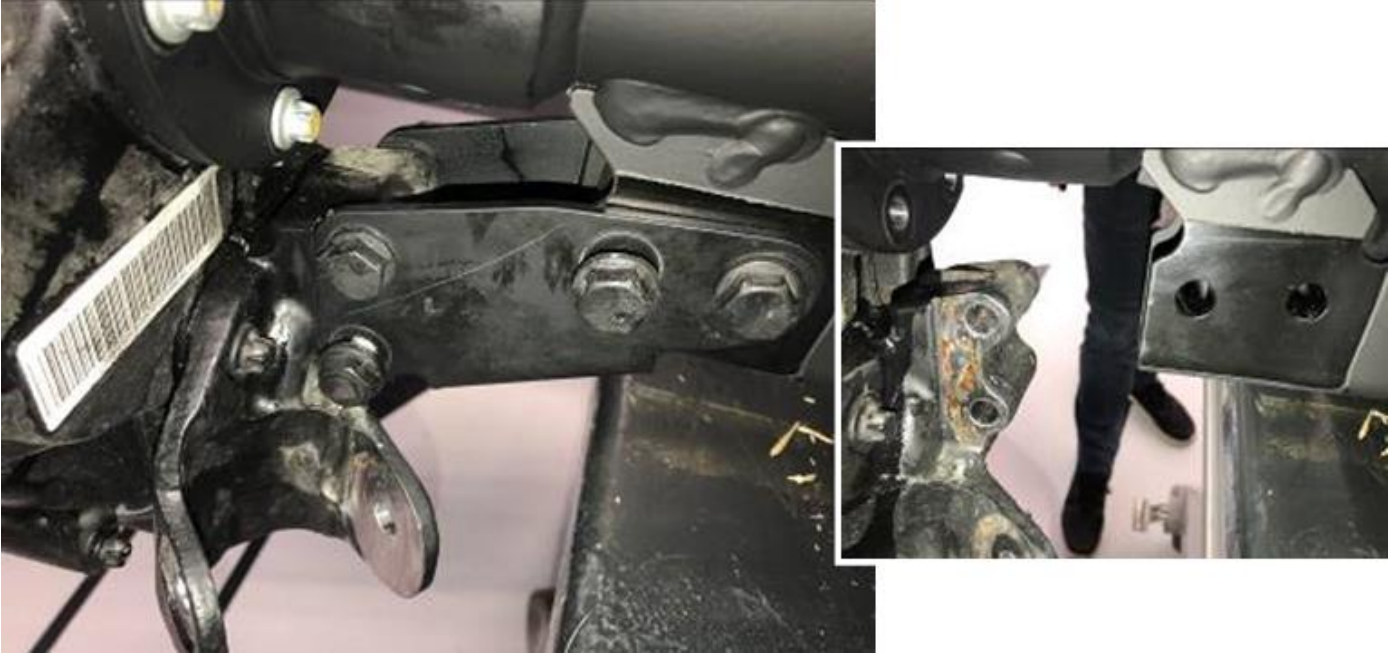


Figure 25

26. Remove left and right hub reduction gears (**Figure 26**).

i For basic data, see AR35.25-P-0645XGS.

Nm Hub reduction gear screw to axle tube **1st stage 40 Nm – 2nd stage 45°**

i **Installation:** Carefully slide hub reduction gear with axle shaft into rear axle differential while turning at the same time so that the gearing engages.

i **Installation:** Exercise particular caution when inserting the right portal to ensure that the slide for the lock actuation is not damaged.

i **Installation:** To install the right portal, **position the lock actuator temporarily** so that the lock tube has better guidance in the new axle centerpiece.

i **Installation:** All contact surfaces of threaded connections must be clean and free of grease and wax when being tightened.

Replace sealing rings on hub reduction gears and install axle hubs (**Figure 27**).

i New sealing rings are included in the delivery package of the new axle bridge.



Figure 26

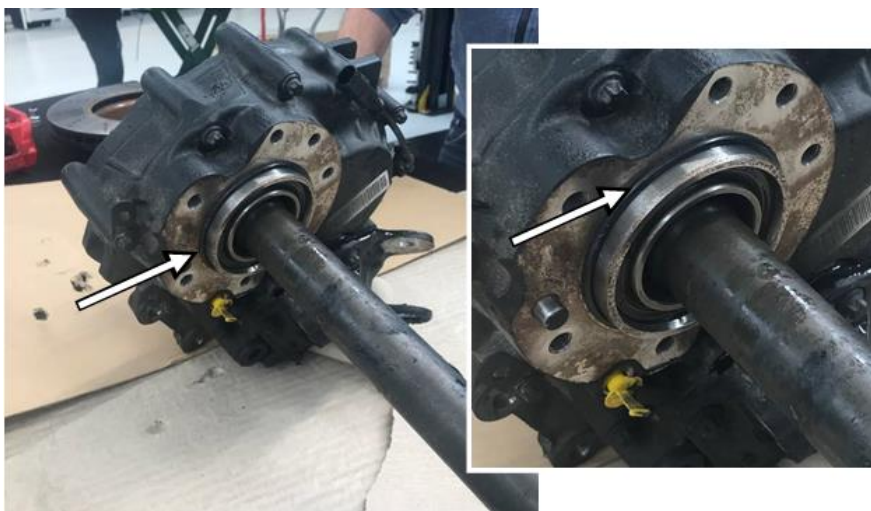


Figure 27

27. Position new axle centerpiece on lift table and secure with tension belts.

28. Check installed dimension of drive shafts in hub reduction gears.

i For basic data, see AR35.30-P-0100-01XGS.

i If the drive shaft has moved out of the hub reduction gear, it must be removed completely and reinstalled with a new snap ring.

i Installed dimension of left rear axle drive shaft $727.2\text{mm} \pm 1.5\text{mm}$ (Figure 28).

i Installed dimension of right rear axle drive shaft $743.3\text{mm} \pm 1.5\text{mm}$ (Figure 29).

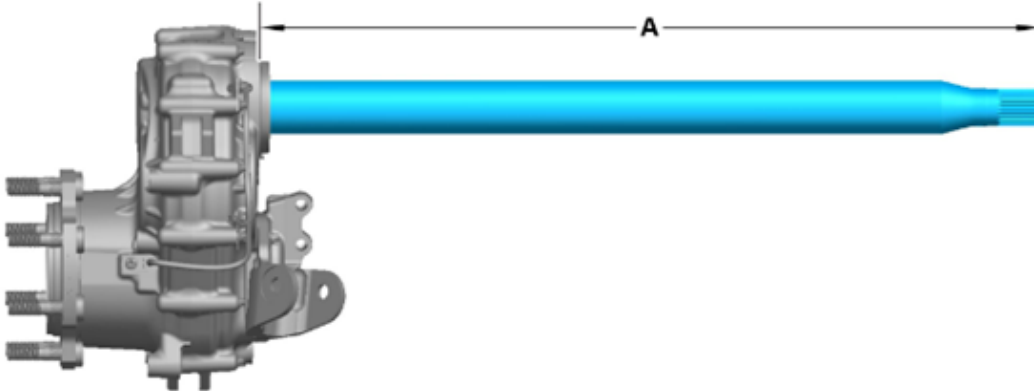


Figure 28: Left hub reduction gear, (A) installed dimension $727.2\text{mm} \pm 1.5\text{mm}$

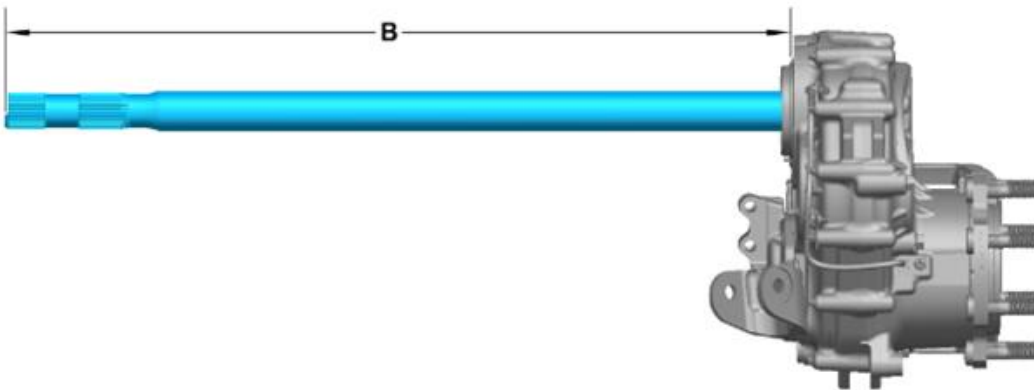


Figure 29: Right hub reduction gear, (B) installed dimension $743.3\text{mm} \pm 1.5\text{mm}$

29. Assemble all parts to the new rear axle centerpiece in reverse order (work instruction step 26-22)

i For the installation of the right hub reduction gear it is required to back out the bolt (A, Figure 30) on the new axle until there are no threads protruding into the axle shaft housing (B, Figure 31).

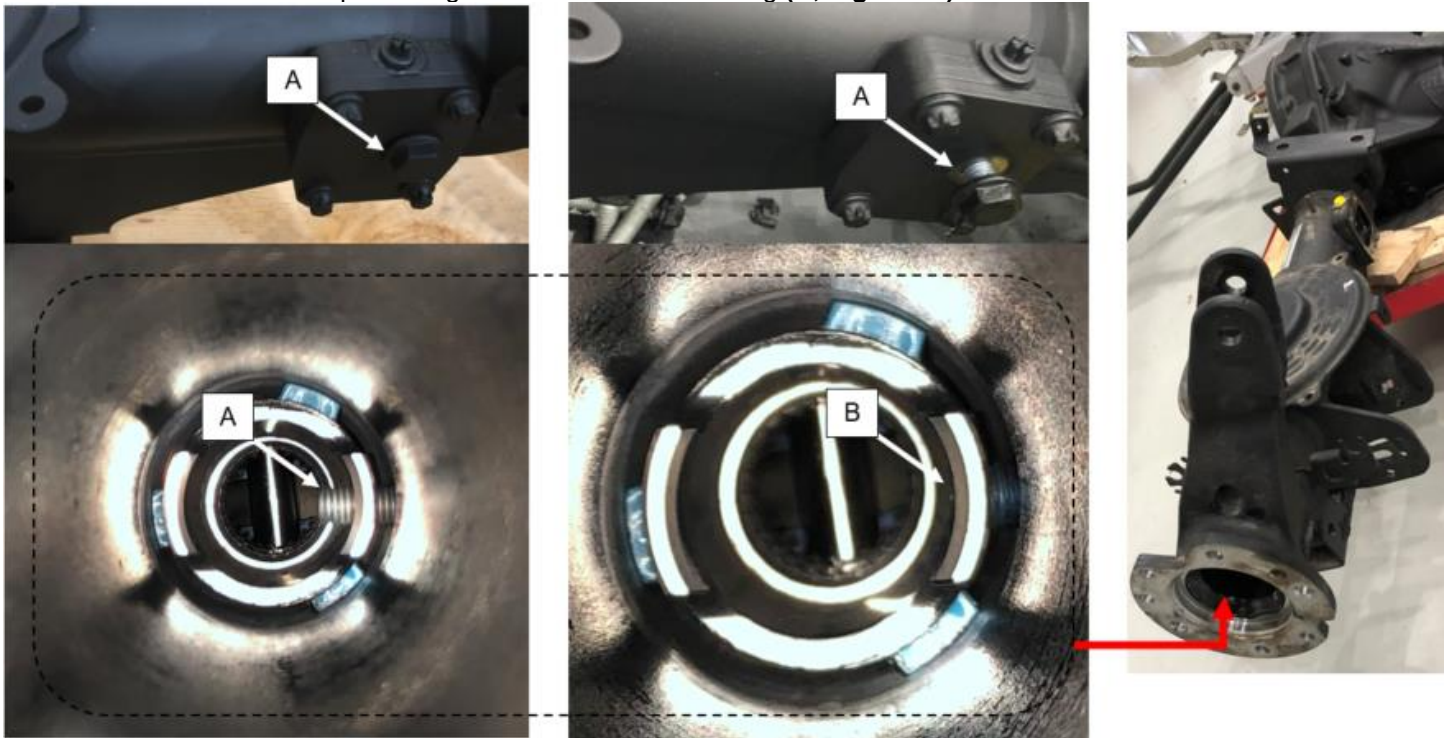


Figure 30 (delivery condition of bolt)

Figure 31 (backed out bolt for mounting position)

30. Fill rear axle centerpiece with 1.5 liters of oil and rotate the differential drive pinion multiple times for **at least 30 seconds** with the drive pinion tilted downward by **at least 5–10°** (Figure 32).

i **Attention, very important:** This ensures that the bearing of the drive pinion is sufficiently lubricated prior to initial use.

i After the rear axle has been installed, the oil level must be checked and in a ready-to-drive condition.



Figure 32

31. Install adjusting plate (If necessary) for transverse control arm on new axle bridge (**Figure 33, 34**).

i The left bearing of the transverse control arm must be installed with suction and with almost zero clearance, into the retaining tab of the axle bridge.

i The fit for the transverse control arm can be adjusted as required, either **without** an adjusting plate, or with a **0.5 mm** adjusting plate, or with a **0.8 mm** adjusting plate.

i **The previously installed original adjusting plate can be reused.**

i A **maximum of one** adjusting plate may be installed.



Figure 33



Figure 34

32. Assemble all remaining parts in reverse order.

i Ensure the suspension is at the proper ride height and supporting the vehicle weight before tightening/torquing.

33. Perform brake bleeding.

i The brake system must be bled before the wheels are mounted.

i For basic data, see AR42.10-P-0010XG.

34. Perform quick test and clear fault memory.

35. Perform wheel alignment check.

i Wheel alignment specifications may not be correct in the alignment machines and need to be overwritten manually, it is important to refer to WIS/WAO for the correct specifications.

i For basic data, see AR40.20-P-0200XG.

i The drive line angle AR40.20-P-0200-14XG is considered separately.

36. Perform a workshop test drive and leak check.

i Check the differential and differential locks for proper operation.

37. Apply wax **A 000 986 32 01 09** to rear axle in area between axle tube and differential (**Figure 35**).



Figure 35

38. Apply black wax **A 004 989 79 20** all over new rear axle carrier and all threaded connections in line with new vehicle delivery.

39. The old rear axle centerpiece has to be shipped back to the QEC via the regular parts return process.

Primary Parts Information

Qty.	Part Name	Part Number
1	Repair axle	A 463 350 96 01
2	Shock absorber screw	N 000000 002353
2	Shock absorber nut	N 000000 008268 64
4	Bleed line sealing ring (10 x 13.5 mm)	N 007603 010110
4	Lock actuator screw	N 000000 003967
1	Lock actuator seal	A 463 335 00 00
3	Bleed line sealing ring (8 x 1.5 mm)	A 000 997 87 20
As required	Cable tie clips	A 007 997 56 90
As required	Line clip	A 000 995 53 00
1	Transverse control arm Adjusting plate (0.5mm)	A 463 357 14 00
1	Transverse control arm Adjusting plate (0.8mm)	A 463 357 15 00
2	Panhard rod screw	N 000000 008623
1	Panhard rod nut	N 000000 008267
2	Lower control arm screw	N 910105 014014
2	Lower control arm nut	N 000000 008268
2	Upper control arm screw	N 910105 014016
2	Upper control arm nut	N 000000 008268
8	Nut between portal and mounting support	N 000000 003275
8	Screw between portal and mounting support	A 000 990 20 37
14	Screws between portal and axle	N 910142 010006
4	Brake caliper screw	N 000000 006443
2	Cable tie	A 006 997 28 90
5	Cable tie	A 007 997 56 90
1	Brake wear sensor screw	N 910143 006002
2	Brake disk centering screw	A 001 990 0914
8	Brake cover plate screw	N 000000 007857
3	Screw, propeller shaft	A 463 410 16 00
3	Hypoid gear oil SAE75W-140 (0.5-liter container)	A 001 989 52 03 10
1	Advance preservation – wax spray can	A 000 986 32 01 09
1	Final preservation – 1 liter black	A 004 989 79 20

i Small parts such as screws, lock nuts, sealing rings, cable ties, fluids, sealant, etc. are not listed in the parts list. The required small parts are taken into account in the budgeting.

i **Note:** The following allowable labor operation should be used when submitting a warranty claim for this repair:

Warranty Information

Damage Code	Operation Number	Description	Labor Time (hrs.)
35 910 03	12-1651	Replace centerpiece of rear axle Includes: Remove/install rear axle, modify hub reduction gear, ventilate brake system, wax rear axle, perform wheel alignment check	ZM

Warranty Information for towing

i **Note:** The towing/transport charge must be **claimed on the same RO** as the recall, separate line, invoice attached.

Damage Code	Description
35 600 01	Towing/transport reimbursement to authorized vendors