

## Mercedes QUAIFE ATB Limited-Slip Differential installation guide

**\*\*These instructions are specific to official Mercedes QUAIFE ATB Differentials only. This does not include the QDF9V, QDF7V, or their variations. Procedures for some applications may vary. Contact Birds for further information.\*\***



Final drive unit from a 216 CL 65 AMG. The final drive is already removed from the vehicle paying attention to the manufacturers instructions. Damage may occur if you do not work in accordance with manufacturer recommendations.



The cast in number is useful for identification of which Quaife ATB Limited Slip Differential is required.



1. Drain oil and remove rear cover.



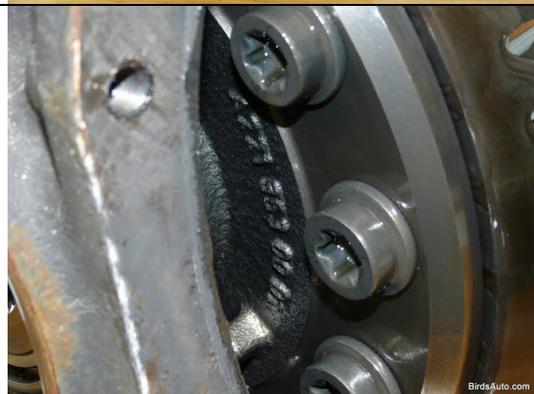
2. Clean out any residual oil from inside the housing.



3. Remove output shaft seals.



4. Check and record the crownwheel to pinion backlash. Typical backlash figures are between 0.06 and 0.14mm, and largely depend on the size of the crownwheel.



Location of the OE Mercedes differential case part number.



5. Remove bearing outer race retainers.
6. Extract the bearing outer races. Always keep the bearing races and bearing retainers together, and ensure they are installed on the same side of the final drive from which they were removed. Failure to achieve this will result in incorrect crownwheel to pinion backlash.
7. Remove the original differential, bearing and crownwheel assembly from the final drive, taking care not to damage the bearings upon removal.



8. Extract the inner races from the original differential. Place them with their respective outer races and bearing retainers.



9. Remove the standard bolts from the crownwheel, and remove the crownwheel by tapping with a drift.



10. Clean all parts removed.



11. Place the crownwheel in boiling water to aid installation.

12. Clean the protective lubricant from the Quaife differential.

13. Drop the crownwheel onto the Quaife, taking care to align the boltholes



14. Add Loctite or Wurth ThreadLock Medium strength to the original bolts and torque to the factory settings.

Bolt spec	Torque	+Torque angle
M12x1.5	100 Nm	30 degrees
M		
M		



15. Press on the bearing inner races on the correct sides, taking care to ensure the races are fully bottomed out on the Quaife bearing journal.

16. Gently insert the assembly into the final drive housing. DO NOT damage the bearings.



17. Insert the bearing outer races and bearing retainers. Note that the bearing retainers control the output bearing preload, so it may be necessary to apply a little pressure to the last bearing retainer installed. Ensure the retainer is fully engaged in the groove by tapping the end of the retainer in a circumferential direction. It will become almost solid once it is fully engaged. Some drives have a lubrication hole in the retainer groove. Be sure not to block it with the retainer. Position the open end either side of the oil hole.



18. Install new output shaft seals.



19. Check the crownwheel to pinion backlash. It is common to note that the backlash has decreased slightly from original. This is due to the fact that the final drive has not yet been run.



In this case, the standard differential cooler has to be removed. Clean off aluminium oxide, and apply heat sink compound, which improves the effect of the cooler.



21. Seal and install the rear cover, paying attention to the factory bolt torque settings. Reinstall the final drive in accordance with manufacturers instructions.