



Quaife BMW

Tuning BMW

Service BMW

Quaife ATB Differential Conversions

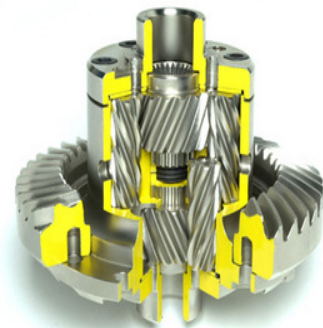
Additional Instructions for mounting the Quaife ATB Limited Slip Differential with internally secured output shafts.

Many of the Mercedes Benz final drives have output shafts that are not retained using conventional methods. The vast majority of manufacturers exclusively install output shafts by means of a snap ring. This method means that the shaft can be installed or extracted for the purpose of replacing output shaft seals without disassembly of the final drive. But in many cases, MB secure the shafts by means of an internal circlip (item 150 below). Unfortunately, the Quaife device cannot use such a method, because the whole differential is fully enclosed.

Alternative fixing method.

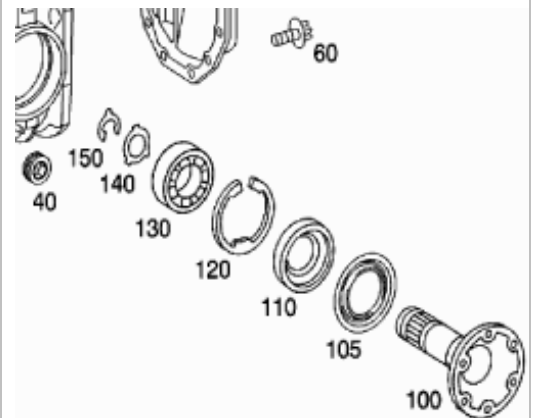
A means of securing these types of shafts has been developed, which requires the services of a machining facility. The operations are quite simple, and do not require high levels of accuracy. Ideally, the machining operations would be carried out using a lathe, but it is certainly possible with a pillar drill.

Birds provide, at additional cost, a full kit of tools and parts to convert the shafts. The tools are re-useable, and the small number of parts required are commonly available from local fastening companies. Therefore, once you have the tools, this operation can be carried out simply and cheaply. We also provide dimensioned drawings which are easily understood.



Quaife Automatic Torque Biasing Differential

Tools		
Drill	Through hole for bolt	Ø 8mm x 165mm
Drill	For bearing bush	Ø 10mm
End Mill	For bolt head seat	Ø 15mm
Drill	For tapped hole	Ø 6.8mm
Tap	Thread	M8x1.25
Parts		
Loctite	For Through Bolt	271 3ml
Through Bolt	For 33-202-430	M8 x 1.25 x 120mm
Through Bolt	For 33-210-320	M8 x 1.25 x 140mm
Bush	Bearing	Ø 10mm
Plug	Sealing the bolt hole	Ø 15mm



Mercedes internal circlip

How to determine the fixing type for the standard car.

It will always be necessary to either inspect the car beforehand, or use Mercedes Electronic Parts Catalogue to determine which Quaife differential is required. At the same time, the fixing type should be determined. Our technical sales people can determine for you. All we need is the complete chassis number of the car.

Kevin Bird Garages Limited

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How accurately can the versions be determined?

In the case of the differential type, and due to the vast array of MB models across the global market, it is not always possible to identify which Quaife unit is viable for each and every car. We will always advise if there is a risk that what we offer may not be suitable. We may ask for more information. We pride ourselves on offering a "right first time" service, and we will always let you know if there is any risk.

In the case of the shaft fixing type, most of the time we can be 100% accurate. However, EPC sometimes shows the comment "Mixed Installation Possible". In this case, MB cannot be certain that they have accurately predicted which system was built on the car. In this case, we would always recommend buying the additional installation kit. We will always accept it for credit if it does not need to be used. Most of our distributors would be expected to keep at least one kit in stock.

Instructions.

1. Mount the right hand shaft in the lathe 3 jaw chuck, flange outermost.
2. Coolant should be used throughout.
3. Using the Ø 8mm x 165mm drill, bore through the entire shaft.
4. Using the Ø 10mm drill, bore to a depth of 27mm approx.
5. Using the Ø 15mm end mill, bore to a depth of 17.6mm approx. Note. If the end mill and shaft are not held rigidly, this will cause the hole to be bored oversize.
6. Mount the left hand shaft in the chuck, flange face to chuck.
7. Bore down 30mm approx from the end of the shaft using the Ø 6.8mm drill.
8. Tap the hole using the M8x1.25 tap. Use cutting compound.
9. Clean out all swarf and cutting fluids thoroughly.
10. Install the Ø 10mm bearing bush.
11. Checking that the threaded hole depth will be sufficient not to cause binding of the bolt at the bottom of the hole.
12. Install both flanges and install the bolt using Loctite until it nips up both shafts.
13. Back off the bolt by ¾ turn. This will allow end float of 1mm maximum.
14. Tap in the Ø 15mm plug to prevent any oil leakage.

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