

Update on Repair Procedure for Mono-Wiper Assembly

Mercedes-Benz W124 chassis pre-1994 by Anthony Tugwell

Introduction

In the hope that it could benefit others, (those without professional skill and training principally), who might want to carry out a repair or maintenance procedure on their own mono-wiper unit, I've taken the liberty of compiling information from other sources and adding my own information gathered from when I did this job myself in August 2005.

I should straight away thank Hazen Arnold, Robert Goodwin and Fred May who offered quick and valuable input to me on this. Thanks also to Ian Read for previously posting the following procedure, which is relevant up to the stage of accessing and removing the wiper assembly.

For me, and despite a significant amount of information being available, there were some critical comments or explanations missing. This might be just my own reading of the information but I've added them here, (in blue), and I think they clarify the matter somewhat. Pictures are referred to as *Fig 1*, *Fig 2*, etc. This symbol , shows an item mentioned in a numbered step.

I then, from item 18 onwards, offer my own suggestions.

As has been pointed out by many, there seem to be at least three different wiper assemblies for this chassis type. I haven't searched any part numbers or part number differences but the details of my particular car are:-

- chassis: 124 030
- engine: 103 983
- type: 300E
- year: first registered 1989 (Australia - RHD)

If your car is not similar to the above you could find some variations from what is shown here.

Blower Motor Removal and Installation (by Ian Read - Date: Mon, 26 Nov 2001)

(AT - This procedure is followed to the point where the wiper assembly can be removed. Clearly you can also get to your blower motor at the same time if you wish).

Here is the process that I followed since I could not find the instructions on the MB maintenance CD. Note all fastener lengths and locations, they are all different.

1. Remove the arm cover and hex screw from the wiper arm.
2. Remove the two rubber strips (AT - mouldings along the bottom edge of windscreen) from each side of the lower windshield by pulling them straight out. (*Fig 1*, *Fig 2*).



3. Pull off the rubber weather-stripping that runs right across the inner firewall area. (Fig 1 - 3).
4. Remove the top outer left and right plastic covers (AT – the ‘gutter’ units at each outer side of car below windscreen). Each are held in place in with two Philips head screws and are also joined to the top inner two covers with white plastic clips. (Fig 5 - centre left) Pull slowly to remove these fragile clips, ask me how I know. Remove the inner four Philips screws holding the inner top two covers down. (Fig 3, Fig 5 LHS gutter).
5. Remove the 4 screws holding the C shaped rubber grommet (AT – and its black plastic retaining strip over), which is below the wiper arm mechanism. (Fig 4).
6. Pull off the engine side firewall weather-stripping. (AT – don’t lose the spring clips under and inside the rubber stripping). (Fig 1 - Fig 4).
7. Just below the weather-stripping there are 4 plastic fasteners which hold the sound insulation to the firewall, the inner two have a flower shape while the outer two are flat with two little holes. All four need to be loosened, the outer two will come right off. (AT – I only found 3, 2 flower types centrally left and right and 1 flat one at right, ie, wiper motor side). (Fig 8 lwr rt).
8. After step 7 you can pull the insulation forward slightly and find two Phillips screws which hold the center plastic housing down. Remove these two screws.
9. Remove the upper left and right inner plastic covers. (AT – I think this is the single little plastic grating over the pair of drainage ducts in the centre of car). (Fig 4 lower centre).
10. The center grate cover should now come straight out. (AT – This bit puzzled me at first. The central 2 vents are a SINGLE unit held by the above screws as well as by the C-shaped plastic piece on the grommet in 5 above). (Fig 3 in place; Fig 6 removed).





11. The wiper assembly has four 10mm nuts holding it in place, two are on the far right, and one each under the rotating center piece. Remove these nuts carefully and make sure you don't drop them like I did as they can fall into the center black hole which is not accessible. (MIA one hex screw.) I found a similar one holding the A/C pipe on the left side of the inner firewall near the fuse-box which I used to replace the lost nut. (AT – Before doing this, stuff some rags into the black holes. Note also the central brace fixing at lower centre. Also you will need to wriggle the assembly a fair bit to get it out. Take your time and it will shed the several years of grime. One warning! It's possible to dislodge the brass-coloured fixings off the ledge under the windscreen. As they say ... ask me how I know). (Fig 7 nuts on; Fig 8 nuts off).
12. Move the wiper assembly to the right. It is not necessary to disconnect the power cable. (AT – for preventative maintenance on the wiper unplug the cable from the motor and remove the whole assembly. Go to item 18).
13. Remove the outside temp sensor from the blower motor cover. (Fig 8, in fingers).
14. Pry loose with fingers the blower motor harness on the left of the housing.
15. Unclip the 6-8 metal fasteners holding the blower motor cover down, a couple may require a small screwdriver, but be careful again. Remove the cover.
16. Unplug the motor, and release the hold down strap using a pointed tool.
17. Oil bearings with ATF. Check brushes.

As in Haynes (reassemble in reverse of above.)



Wiper Head Disassembly and Assembly (by AT) (Fig 9 assembly front; Fig 10 assembly rear).

18. Refer to MB procedure 82-0760 for removal and replacement of wiper-to-motor linkage mechanism. This MUST come off to allow removal of the wiper gear head cover. Hazen Arnold thinks you should scribe the crank location on the knurled axle. I agree as there is no squared end or similar device to ensure correct orientation on replacement. (Fig 11).
 19. Refer to MB procedure 82-0765 for removal and replacement of the gear head. Note it must be in the 12 o'clock position before it can be removed. Take care of washers, C-clip and nut. (Fig 12 gear head base; Fig 13 wiper head underside).
 20. The above procedure is actually for removal of the large rubber flashings (in 2 parts) from around the head assembly, but you don't HAVE to either (1) remove them to get into the gear head, or (2) replace them unless weathered or damaged. (Fig 12).
 21. With gear head off, undo the FIVE small Philips head screws on the underside and carefully separate the cover from the base and slide mechanism. Take care with rubber gasket around edge. (Fig 14 - 16).
- James L Crofts has a useful photo story of this disassembly but implies there are only 3 screws holding the gear head cover. But 2 are hidden, hence item 18 above.
22. I cleaned all parts without further disassembly. Slides can be re-greased with lithium or other long-lasting type. Connections between oscillating arms, also bush for sliding wiper arm, (?felt) can receive small amount of ATF or similar.





Wiper Motor Disassembly and Assembly

24. Scribe the location of the crank on the motor drive axle before undoing its nut. Axle is knurled and you could be 1 or more knurls off on re-assembly. (Fig 7 - 9, Fig 20).
25. Remove the motor complete, undoing the 3 bolts on the alloy frame. Remove plastic cover, which just clips over the unit using the flexibility of the plastic shell. (Fig 20, cover not shown).
26. I took the motor to an auto electrician for checking of brushes, bushes etc. You might have the knowledge to do this yourself. Either way it should be done.
27. Re-assemble in reverse order. A bit of ATF, sparingly, on the pivots of the motor-to-head mechanism is a good idea. Note the difference in ease of movement of the whole assembly. (Fig 21, Fig 22).
28. Note: BEFORE re-attaching crank to motor drive shaft, take motor to car and plug it in. Engage wiper switch once to ensure motor now stops at "Park" location. This is controlled within motor NOT the mechanism or the gear head or linkage.





21.



22.

Assembly in Car

29. Before re-assembly into the car, I cleaned up all round the base of windscreen; areas hidden by the rubber stripping; inside air plenum, around battery etc.; drains at corners of windscreen; gutters up sides of windscreen. Lots of debris can accumulate all-round and this is a good opportunity to remove it.
30. When you have the wiper assembly mounted in the car operate it, (best with blade raised) to check if the coverage is correct. If not, (refer item 18) at least it's easier to take it out again at this stage if a correction to the orientation of linkage on the gear head or on the motor is required.
31. Good dose of plastic treatment, (Meguir's makes one), to all rubber and plastic parts is also called for before they go back in.

(Refer Fig 23 - Fig 30, showing clean up and re-assembly).



23.



24.



25.



26.



Conclusion

Refer to the digital pictures right through the above work. At the time, I took these for my own benefit so that I didn't have too many parts left over! I've selected the better ones for reference here.

As noted above, there are several different wiper assemblies out there. It will be very interesting to know what changes occurred and when they happened. For example was it by model year, chassis type (eg. coupe vs sedan), engine type (M103 vs M104 etc). Maybe it was by country of export. Any further input is welcomed by me and, I'm sure, by the Ritter/Easley Mercedes listers.

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