

Mercedes E320 4Matic Sedan 2004 Model-Year W211.082

Some notes on a rear brake job....the job is easier than all these words may make it seem. These are not step – by –step instructions, but are my observations. You do need a set of instructions, too.

Tools Used:



18 mm wrench (it's nice to have a plain wrench, flatter the better, because of the poor access to some bolts makes it hard to fit a socket and socket wrench in, because of their total depth. Most plain wrench sets skip 18mm)

18mm socket (for removing the brake anchor, which is the stationary bracket to which the calliper attaches, 2 bolts per side. As stated, it is a bit hard to get it on the upper bolt)

Breaker-bar, 1/2" x 24 (not really needed, but good for the wheel nuts and 18mm bolts if you can)

Socket wrench (or two). I have one plain 1/2" and one hollow-socket one that is lower profile and was faster and easier to position once the 18mm ones were loosened a bit

T40 Torx (1/2" drive) (for removing the calliper pins, 2 per side)

T30 Torx (1/2" drive) (for the screw on the brake disk, 1 screw per disk)

11mm wrench for bleed screw (not shown)

19mm socket for wheel bolts

12" long, ratcheting T-handle (black handled tool in the picture) for use on the T40 Torx bolts once they were loose and for replacing them. I threaded it through gaps in the suspension, to access the T40's

Calliper piston retractor tool, (or use a C clamp)

A couple of flat-blade screwdrivers to gently lever out the calliper retaining bolt/pins once they were loosened

Brake bleed bottle and plastic hose. Nothing special.

Rubber mallet and hammer

Materials

Brake anti-squeal spray from CRC. It's easy. (I used this instead of paste on the back of the pads)

Brake cleaner spray

Rags and paper towel to remove the protective gray paint from the new disks. Spray them with the brake cleaner. It is like paint remover.

A couple of zip ties, to hold the callipers to a nearby suspension arm while you are working

Locktight – small bottle

I used no brake fluid at all doing this job

Parts

I went genuine Mercedes for all parts this time. Total cost about US\$280

2x disks (mine are ventilated.)

4x pads

2x replacement disk screws

1x sensor

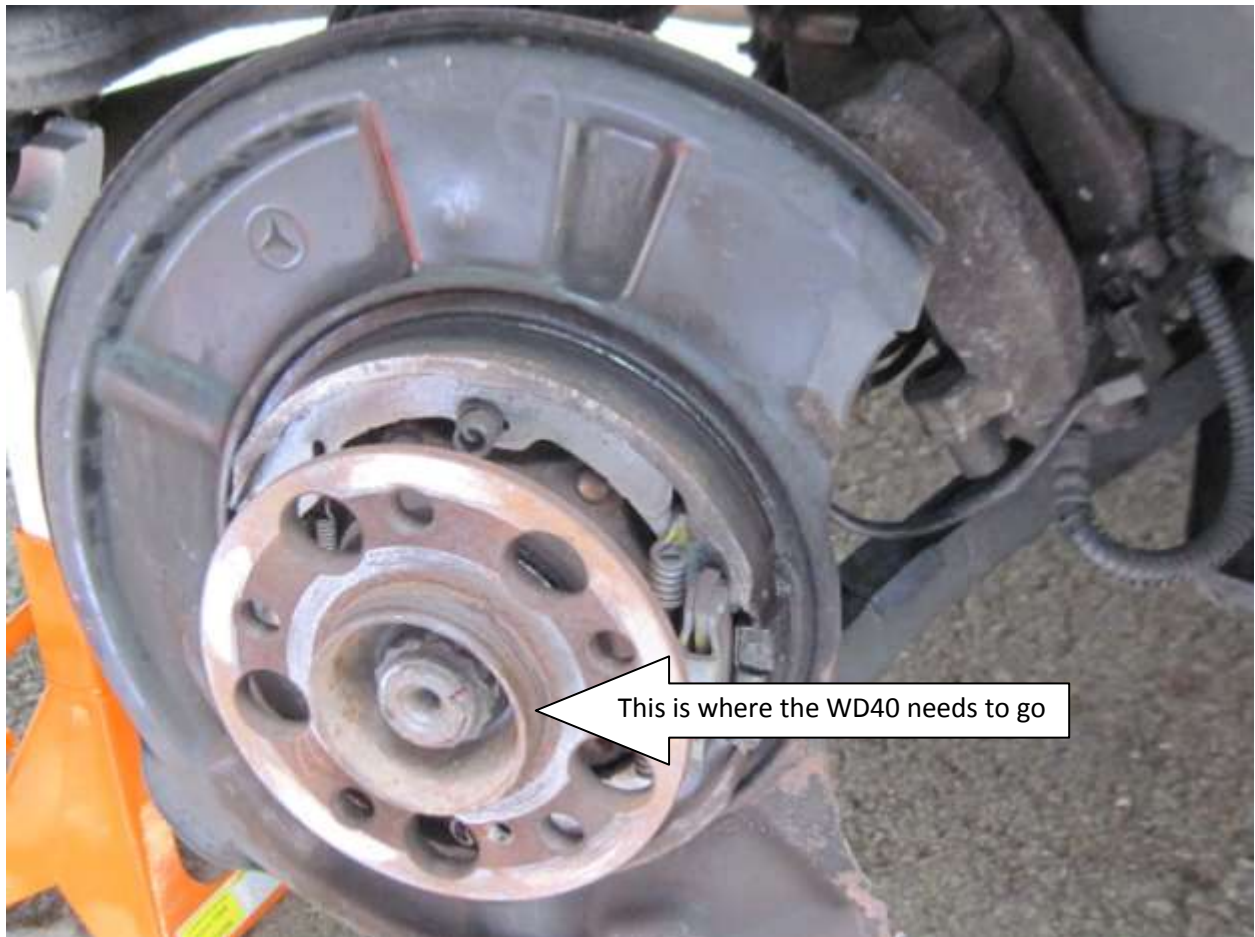
1x replacement retaining spring in case I broke one (I never needed it)

Some Notes:

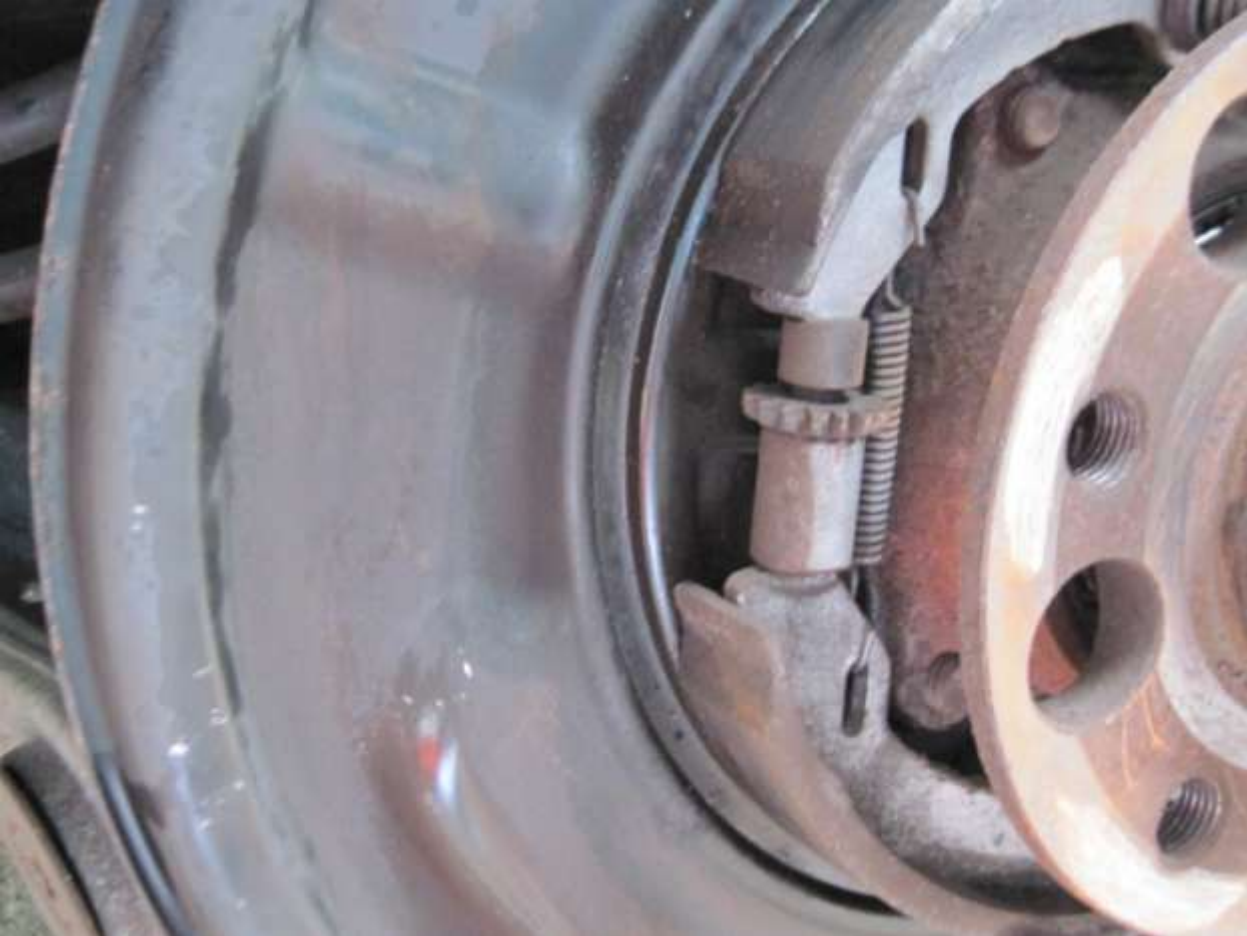
- 1) I left the car unlocked, hood raised, doors closed, keys on my work bench. I am not recommending, just saying
- 2) Chock the wheels and RELEASE the PARKING BRAKE, or you'll never get the disks off
- 3) I unplugged the SBC. To do that, carefully snip the zip tie that may be holding the electric cable to a bracket on the SBC and then pull vertically on the black handle on the cable. This handle is part of the cable. This may take several movements like this: Pull up half an inch or so on the handle. Then pull the cable plug backwards a half an inch. You may need to gently use a screwdriver to lever it backwards. Pull up on the handle again. Repeat until the cable plug comes right out of the socket. The way it is designed to not fall out easily means you may need to do this stepwise as described. It is easy, but if you don't know, you don't know, and you'll wonder why it's not coming out. Then place the plug so it can't re-seat itself in the socket.
- 4) As soon as you get the wheel off, start spraying your WD/40 around the hub where the disk mates with the hub. See picture below. That will give it time to penetrate while you get the callipers off. It's boring watching it soak in, so don't leave it until you actual want to get the disk off.
- 5) The inside pad has a large steel "clip" on its backing plate. This goes into a big hole in the calliper piston
- 6) The pad sensor is on the passenger side (LHD) and is easy to remove at the calliper end
- 7) But do not remover the old sensor from the old pad. You may want to look at it when putting the new sensor in the new pad if you're not sure how they go.
- 8) So, buy a new sensor. They don't cost much
- 9) The 18mm and T40 bolts have their heads toward the inside of the car, so remember to turn in the correct direction as you will be working a little back-to-front, unless you have a hoist
- 10) I used the breaker-bar for helping to get one of the 18mm bolts moving, but access was poor and I only could use it on one bolt. All 18mm bolts were in tight, but I only really needed a breaker bar on one of them and I couldn't get it to fit into the space for the others anyway
- 11) I had ½ inch sockets, but 3/8 would be preferable for some of this job. Access is tight, with the suspension too close to the callipers to get a big socket wrench in there. If you have a low-profile, but longish, 18mm tool of some kind, you'll be glad of it
- 12) The instructions say to remove the plastic protector caps over each of the T40 calliper pins. Mine were missing. Do not try to remove the rubber sleeves. You'll just wreck the sleeves and you don't need to remove them anyway
- 13) The calliper pins, once undone, need to be pushed into the calliper just a little to get them clear of the brake anchor (that's the name of the thing the callipers are bolted to, that you'll remove next. See picture below). Use a screw driver to gently lever on the threads on the pins, in the gap you've made between the anchor and the calliper, to get them further out. Otherwise you will have a calliper that's *almost* free but won't seem to want to fall off. If you've turned the pins 400 times in the correct direction, and the caliper hasn't come off, this is your problem
- 14) The brake anchor is next (again, see picture below). It is the lump of iron that actually holds the caliper and pads and is held in with the 18mm bolts. It should take some force to get the bolts moving

- 15) Remember to remove the screw that holds the disk to the hub. Push inward hard as you turn this counter-clockwise, so your T30 does not round the screw head. It may be seized and if this screw head is damaged, you'll need to drill it out or something to get the disk off. And then you'll need to do without one.
- 16) The disks will probably not fall off by themselves!
- You need to *really* give them a serious headache with a large rubber mallet or heavy hammer. You have bought new disks, right? So who cares what you do to the old ones!
 - Do not try to lever them off by using a screwdriver against the dust shield behind the disk. You'll wreck the dust shield, bend the screwdrivers and the disks won't have moved at all anyway
 - Hitting from behind the disk, toward the outside, sounds sensible, but there is only a small quadrant of disk accessible, you can't get a good swing, and that's not enough. It probably won't work
 - Here's what to do: Hit hard, on the outside face of the disk, at several places toward the perimeter . Yes, you read that right. It is impossible to seat the disks any further in, so you will *not* be making it worse. You WILL be able to get heavy blows landed, all around the disk, and it will shock the disk loose from the hub that it is already seated against and seized to. Again, it works, and the disk can't go any further in from you doing it this way. It can only stay still or bounce out in the direction you want it to.
 - On one side, after I had shocked the disk loose and it had moved out half an inch, my parking brake was released, but adjusted badly and still wanted to grip the disk (see pictures of mechanism below). I just had to pull and inch the disk off. After it was off, I backed off the adjustment screw a little. I have no idea how to adjust the parking brake when the disks are still on
- 17) When pushing the calliper piston back in, I used an 11mm wrench and plastic tube and bled off a little fluid at the calliper rather than overflowing the reservoir. The piston went in very easily for me
- 18) Put brake anti-squeal on the back of the pads per the instructions that come with it.
- 19) Use locktight on the 18mm bolts and on the T30 screw that holds the disk to the hub
- 20) If you can't get the sensor to plug back in to the calliper, maybe you have it 90 degrees wrong. Look in the calliper socket. The sensor pins are aligned horizontally in the calliper, not vertically.
- 21) After reconnecting the SBC, I pumped the pedal a bit, fairly slowly. I then placed the key in the ignition, turned to the 2nd position but did not attempt to start the car. I let the SBC pump for 20 seconds or so until it seemed finished. I then pumped the brakes a few more times, and then started the car.
- 22) At no time did I get any brake warnings of any color on the dash

Passenger side rear hub (LHD), calliper is zip tied to the suspension in the background. Disk removed. Earlier, when the disk was still on, you would have put WD40 around the circle of the hub the arrow in the picture points to



Parking Brake Adjuster Pinion Wheel:



Brake Anchor, with 18mm bolts



Calliper held out of the way with a twist tie:



Detail of the Parking Brake actuating mechanism.(No need to touch it):



A Calliper Pin, with the T40 Torx bit used to loosen it. (2 per side):



end of file