

Installation Instructions for 300SEL 6.3 Oilpan Skidplate

VERSION 1.0 -- 23-Nov-03



Introduction

Congratulations on purchasing this kit! This is a very high-quality reproduction of the sump protection plate that was produced by Mercedes-Benz until the late 1980s. This plate provides additional protection to the low-hanging, cast-aluminum oilpan of the 1968-1972 300SEL 6.3.

This engine's size required a larger-than-normal oil supply, and its low-slung position in the chassis necessitated a lower-than-normal oilpan clearance. This presented a danger that more than one owner has experienced over the past 35 years -- smacking the cast oilpan on a parking curb or high-crown road often ruptures the pan. This more often than not, resulted in the immediate spillage of the engine's oil supply, or if not detected immediately the demise of the engine itself due to oil starvation and non-lubrication.

This kit exactly reproduces the factory parts that have been discontinued, and also includes a few pieces that are still available in extremely small quantities from the factory. Much care has been undertaken in this kit's design and production, and we are proud of its fit, finish and function.

Installation of this kit itself requires approximately four to six hours maximum, and requires common hand tools such as screwdrivers; open- and box-end metric wrenches; metric ratchets and socket sizes; commonly available welding equipment; and degreasing or brake-cleaner spray with clean rags.

Before Starting the Job

We highly recommend that the 6.3 front subframe mounts be replaced, as well as the left, right, and rear motor (transmission) mounts. This will provide optimal clearance for the skidplate and ensure proper alignment with the mounting points. Note that the front mounting points are pre-manufactured with the cars; the rear mounting points must be welded to the bottom of the front subframe. The process for replacing the front subframe and drivetrain mounts are outside of the scope of this document and can be found in the Mercedes-Benz service manual for the 108/109 chassis.

The mounts are available in repair “kits” and are easily available from MB dealers and aftermarket sources. The appropriate MB part numbers for these repair kits, and approximate cost, are:

- 6.3 subframe mount repair kit: # 108 330 02 75; approx.cost US \$150-175
- 6.3 left & right motor mount repair kit: # 109 586 00 22; cost \$300-325
- 6.3 rear (transmission) mount repair kit: # 108 240 04 18; cost \$60-70

It requires approximately 8 hours' labor (about one day) for a skilled mechanic to replace all of these mounts. Again, while this is not a requirement for mounting this kit, it will guarantee an optimal fit. More important though, it is also the single best thing one can do to restore the original driving "feel" and ride quality of the 6.3.

While replacing the chassis rubber, mechanics should be instructed to look out for other items that require attention, including transmission and engine oil leaks; coolant leaks or hose problems; air suspension problems; shock wear and tear; chassis and suspension lubrication issues; exhaust leaks or problems; kingpin wear and tear; chassis or component rust; brake problems, and so forth. This is a good time to be on the lookout for any issues, and note them for future repairs (or if critical, immediate repair).

Assuming that the appropriate front subframe and engine mounts have been replaced, we are now ready to proceed. The skidplate installation procedure is best performed on a hydraulic lift or “drive-on” ramp.

Verify Presence of All Parts

Each oilpan skidplate kit should include all parts required for installation. All hardware is high-quality and as good as or better than that originally used by the factory. Verify that each skidplate kit contains the following manufactured metal brackets on the attached, hand-drawn Appendix. With the exception of the skidplate itself, the kit should have two of every fabricated metal (black) part.

Next, ensure that each kit contains the appropriate hardware, which should be packaged and marked appropriately.



HARDWARE INCLUDED WITH KIT

Each kit should contain the following hardware:

- 2 - large gold metal threaded subframe pins (G)
- 8 - metal/rubber sandwich washers
- 4 - round plastic sleeves
- 6 - large flat washers
- 4 - medium lock washers
- 2 - medium 'nylock' nuts
- 4 - medium nuts
- 4 - long bolts with gold lock washers attached
- 2 - medium bolts with 'nylock' nuts and two gold washers attached
- 4 - short bolts with 'nylock' nuts and two gold washers attached
- 2 - short thick bolts with 'nylock' nuts, two gold and two large flat washers attached

Oilpan Skidplate Installation

Step 1

Locate the four holes (Photo 1) and four grooves (Photo 2) pre-drilled in the 6.3 front cross-member. The front cross-member is located directly in front of the radiator and directly behind the bumper. One will find two sets of two holes and grooves, immediately to the left and right of the car's center-line, roughly one foot apart. These are the front attachment points for the oilpan skidplate assembly.



PHOTO 1



PHOTO 2

Step 2

Attach the following parts to the front cross-member, using the Appendix as reference for the individual parts: simple front cross-member bracket (C); complex front cross-member bracket (A); extender support (B); and extenders (D) using Photos 3 and 4 as a guide. One group of brackets and extenders should be attached to each side of the car.

Use two rubber sandwich washers on either side of the extender (D) where the bolt runs through it. Thread one of the plastic sleeves on each bolt in between the sandwich washers, where it passes through the extenders. Attach extenders (D) using the round hole; the side of this part with the oval hole should be pointing toward the rear of the car as shown in Photo 4 (see next page).



PHOTO 3

Step 3

Assemble the skidplate (F) by attaching subframe brackets (E) to the threaded studs that are pre-mounted to the skidplate. Use Photo 5 (below) as a guide.

The straight sides of the subframe brackets (E) should be facing toward the inside of the skidplate; the angled sides should be facing outward toward the edge of the skidplate. Be sure to use washers between the subframe brackets and the nuts before tightening the subframe brackets down.



PHOTO 4

Step 4

LOOSELY attach the subframe pins (G) to the skidplate by inserting the ends of the pins downward into the round holes in the center of the subframe brackets (E). Assemble using the remaining sandwich washers and plastic sleeves, and then place a nut on the end of each subframe pin from below (the end of the subframe pin may poke through the hole, which allows accessibility to the subframe pin's tightening nut). Once the nut is threaded onto the pin, rotate the pin or nut so that it meets the point of resistance, but **DO NOT TIGHTEN**. See Photos 5 and 6 to show assembly.



Step 5

Mount both sides of the skidplate (F) loosely to the extenders (D) using the nuts, bolts and washers supplied. **DO NOT TIGHTEN DOWN** -- this play will be needed in the assembly for the next steps.

Note: Be sure to have a helper or a stand close at hand to support the rear of the skidplate after attaching the front of it. This is so it doesn't hang down and bend any of the metal pieces.

PHOTOS 5 & 6



Step 6

In this step, the position where the subframe pins will be welded to the bottom of the front subframe will be determined. With a powerful degreaser or solvent, such as Simple Green, WD-40 or brake cleaner spray, spray a liberal amount on the undersides of the front subframe to prepare it for welding. Let it

soak in for 60 seconds or so, then clean using a couple of shop rags. Be sure that the bottom of the subframe is very clean and free of road debris, grease, motor oil, and other contaminants. This is important because the skidplate's subframe pins will be welded to this area.

With the aid of a helper holding the rear end of the skidplate assembly (including the subframe pins (G) against the subframe, line the skidplate up so that it is straight and even. Because the front mounting points are loose, there should be adequate flexibility to adjust things as needed.

Take particular care when placing the subframe pins up against the bottom of the subframe. Make sure the pins are centered as well as possible (left and right of the centerpoint of the car, and centered on the width of the subframe itself). As an additional check, look to make sure that the oilpan drain plug is accessible through the cutout in the skidplate (see Photo 7).

If necessary, additional adjustment can be obtained by slightly loosening the four bolts holding the subframe brackets (E) attached to the skid plate, sliding them back and forth as needed in their oval adjustment slots.

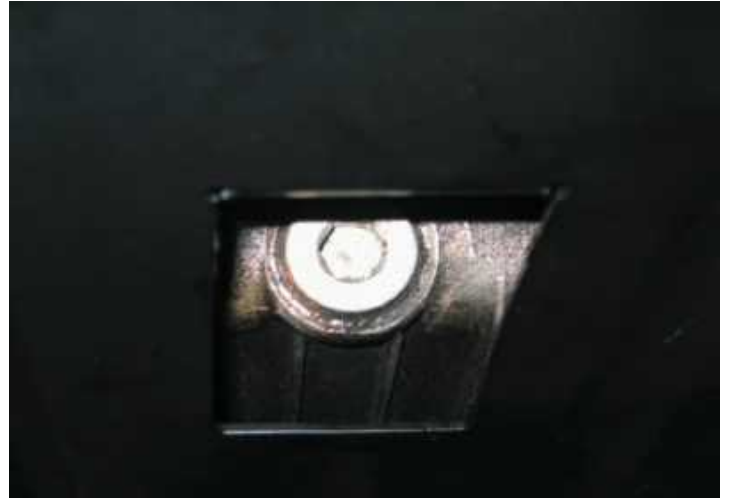


PHOTO 7

Having lined things up and double-checked everything, carefully mark the location of the center of the subframe pins when they are centered on the subframe. Use a permanent black marker or carpenter's pencil, or metal object to scratch the surface of the subframe. These marks are the locations where the subframe pins will be welded to the surface of the subframe. Remove the skidplate from the car by removing the front mount bolts.

Step 7

Unbolt the subframe pins from the subframe bracket/skidplate assembly. Put the nuts and washer aside in a safe place. Using a normal welding system, tack-weld the subframe pins to the bottom of the subframe, using a dab of weld at 90-degree intervals. There is no need to weld a solid bead around the entire circumference of the subframe pins; weld just enough so that the subframe pin is solidly anchored and securely mounted to the subframe. See Photos 8 and 9 for reference.



PHOTOS 8 & 9

After the weld cools, grab the subframe pins and work them back and forth to ensure they are solidly welded to the subframe. Then mount the subframe brackets to the subframe pins (see Photo 8), reassembling using the rubber sandwich washers and the remaining two plastic sleeves on the subframe pin between the two sandwich washers. Snug this assembly down but **DO NOT TIGHTEN**.



PHOTO 10

they were lined up with the studs. Tighten down the subframe bracket nut so that the rubber sandwich washers begin to “bow out” just a bit. This should be tight enough.

Step 8

With the assistance of a helper, bolt the skidplate back on the car starting at the front mounting points, using the same technique as before. Again, tighten these to the point of resistance, but **DO NOT** torque them down.

Line up the four studs on the skidplate with the four holes on the subframe brackets, having a helper hold the skidplate. Remove the skidplate slightly while holding the position of the subframe brackets when

Reinstall the skidplate by inserting the four pins in the four holes in the subframe brackets, and place the the nuts and washers onto the studs in the correct order (see Photo 9). The skidplate may have to be jiggered around a bit to get everything aligned correctly, but the play in the front and rear mounts should make this easily possible.

Step 9

When all hardware is in its correct slots, and all nuts, bolts and washers are mounted correctly, line the skidplate up one last time. Having a helper hold everything steady, tighten down all mounting nuts to an appropriately tight torque. Tighten to the point of strong resistance, then give each nut an extra half-to-one turn to secure it.

Step 10

Walk to the refrigerator, grab a beer. Enjoy knowing that there’s another 6.3 out there that is now better protected against the ravages that the real world can inflict upon it.

You’re done, mate !!

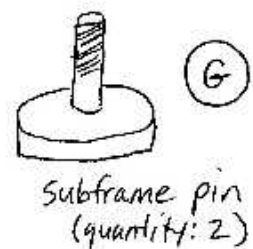
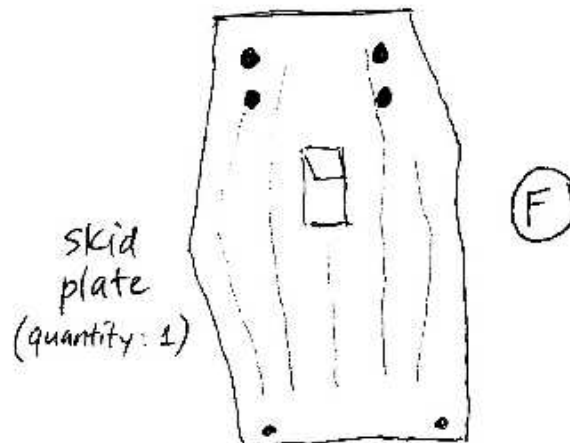
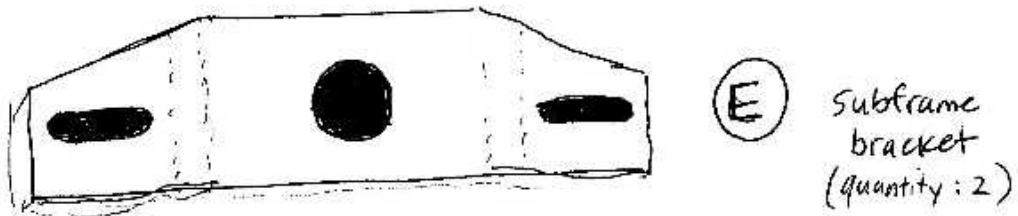
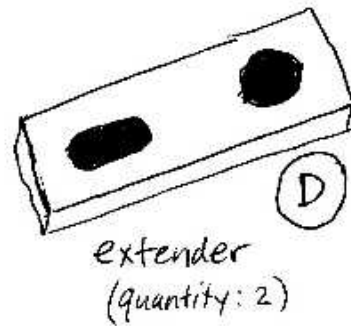
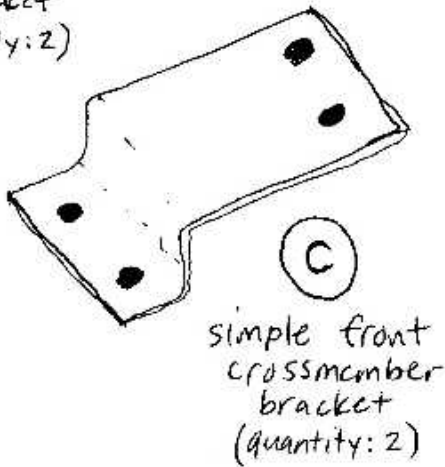
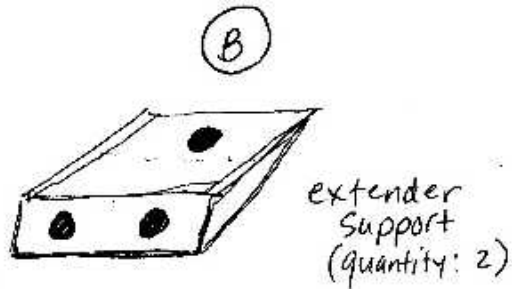
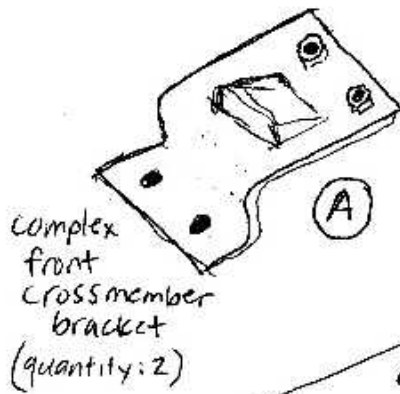
Cheers,
Gerry



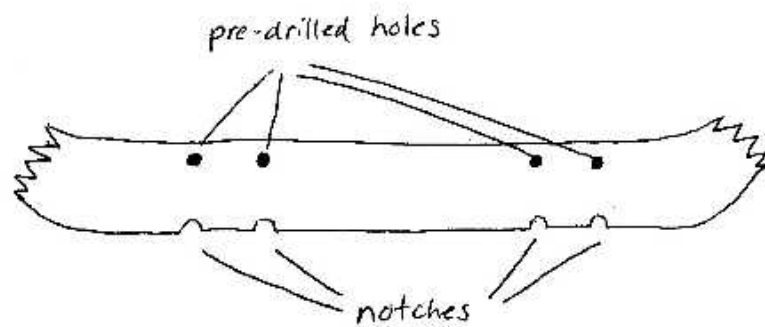
FINISHED PRODUCT !!

Appendix 1 — Fabricated Parts List

Kits contain the following parts, numbered:



Appendix 2 — Supplemental Assembly Diagrams



FRONT 6.3
CROSS-MEMBER
BETWEEN BUMPER
& RADIATOR
(VIEWED FROM
FRONT OF CAR)

