

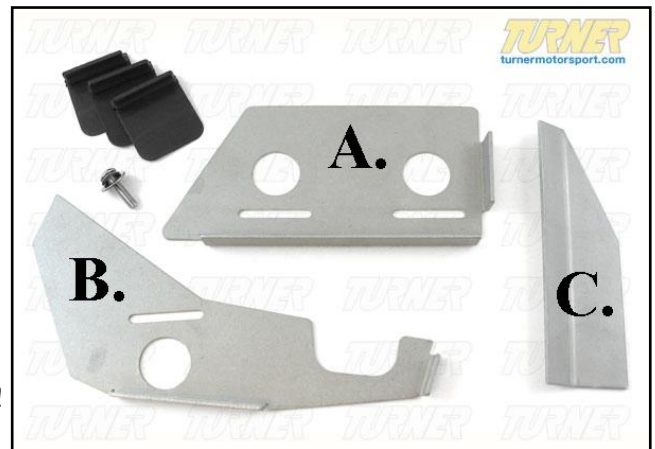
Oil Pan Baffle Kit for M50 and M52 Engines for E36 and Z3* **TEN-36-31-B36**

*Requires professional welding

Through experimentation and data acquired from our E36 World Challenge Touring Cars, it was discovered that in long corners and under heavy braking that there is an oil starvation problem in the M50 and M52 engines. This system was developed to keep oil in the sump and eliminate the starvation problem. After several iterations, further testing and data acquisition in the Touring Cars showed that this system eliminates the problem of oil starvation. This is a less expensive alternative to replacing the stock oil pan with the factory BMW M3 Lightweight oil pan, while still achieving similar results.

Kit Consists of:

1. Baffles
 - A. Has two spots for Non Return Flap
 - B. Has one spot for Non Return Flap
 - C. Has one bend in it
2. 3 Non Return Flaps
3. 1 M5 Bolt/Washer Assembly



When would it be a good time to perform this work on my car?

- Before track driving
- When changing the oil pan gasket.
- If you are going to secure oil pump nut (They do fall off)!!!
- Reinforce front subframe. TMS part # RE1809/10

Directions:

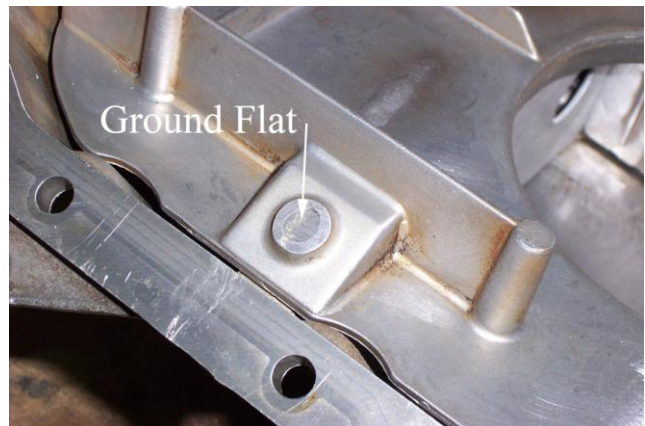
- 1) Keep in mind that Turner Motorsport recommends a professional welder perform work
- 2) Remove oil pan from car.
- 3) Grind off aluminum mushroom that holds the factory baffle in place. (See pic #1 and #2 on page 2)
- 4) Remove small rubber grommets and save for reuse. NOTE: These grommets cannot be purchased separately, so make sure to keep them in a safe place. (See pic #3 on page 3)
- 5) Thoroughly clean oil pan and factory baffle. **Tip:** Sand any spots that are going to be welded.

- 6) The kit includes three weld-in aluminum oil pan baffles. Part A and C of these attach to the factory oil pan baffle inside of the oil pan. Part B attaches directly to the oil pan itself. The placement of this baffle is critical.
 - i. **Part A:** Place part A. on bottom side of factory baffle so that part A. rests up against the lip of the big hole in the factory baffle. Then line Part A. with the corner of the notch in the factory baffle. Weld in place (See pics #4 and #5 on page 3).
 - ii. **Part C:** Place part C. on factory baffle so that it follows the same contour about 5mm in. weld in place (See pics #6 and #7 on page 3).
 - iii. **Part B:** Find the two bolt holes just in front of the oil sump. Then make a mark 37.5mm from the oil sump side of the bolt hole on the gasket surface. **Warning:** Do **not** scribe a line, this is a gasket surface, use a marker or a pencil. Line part B. up with the lines you just made. Part B. should follow the contour of the oil pan on the driver side. A space can be seen between the baffle and the pan on the passenger side. This space is critical so make sure you have the space before you weld. Weld in place (see pictures #8 - #10 on page 4).
- 7) Make sure you test fit oil pan after this baffle has been installed to check clearance between baffle and oil pump tube, and make necessary adjustments if needed.
- 8) After all plates are welded, install flappers as shown. Make sure flappers are installed so oil will flow into oil sump. (see pics #12 and #13, page 4) * **NOTE: Severe damage will result if flappers are installed incorrectly**
- 9) Reinstall small grommets and factory baffle.
- 10) Drill and tap a 5 mm hole in the location where the aluminum mushroom was. The hole should go through the oil pan. (See pic #14, page 4)
- 11) Remove factory baffle, then clean oil pan. Make sure oil pan is free of all welding debris and metal shavings from drilling and tapping.
- 12) Reinstall factory baffle.
- 13) Use red Loctite and secure baffle with the bolt and washer provided.
- 14) It is recommended that the cavity in the oil pan where the bolt goes through be partially filled with silicone or epoxy to prevent oil leakage through the bolt hole. Do this on the outside of the oil pan. (See pic #15, page 4)
- 15) Reinstall oil pan on engine. **Tip:** remove any rust on the engine block at the oil pan gasket surface. The rust can lift the gasket away from the block and can cause an oil leak. We also recommend using a new gasket.

Pic # 1



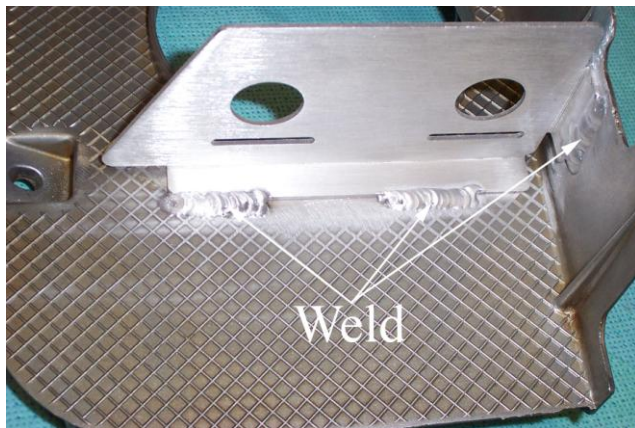
Pic # 2



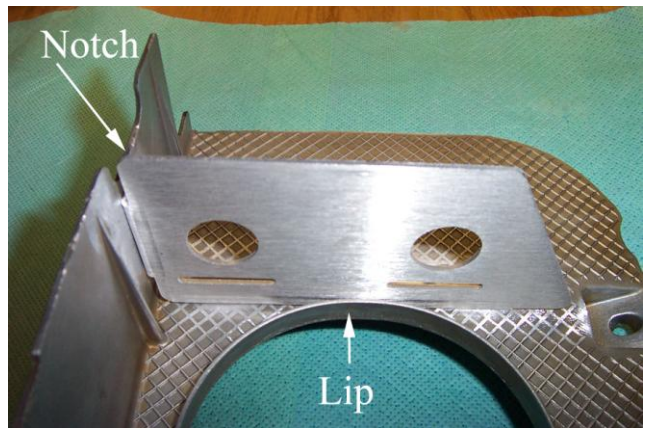
Pic # 3



Pic # 4



Pic # 5



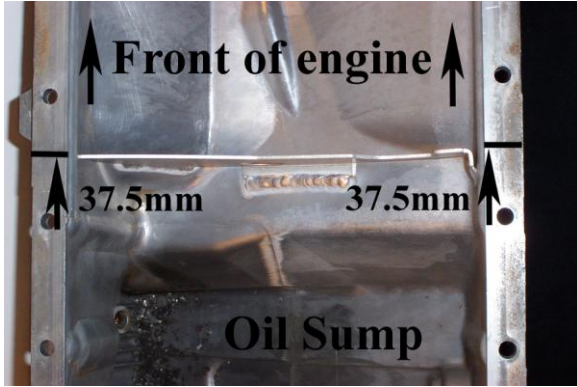
Pic # 6



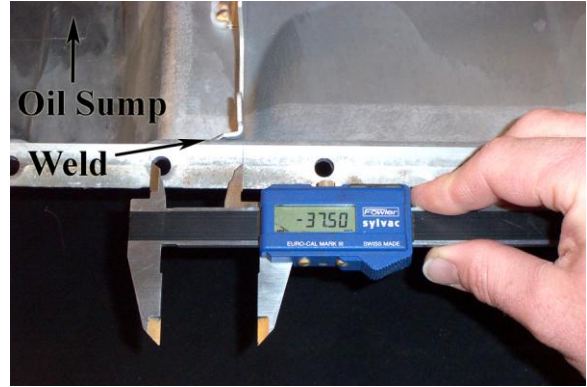
Pic # 7



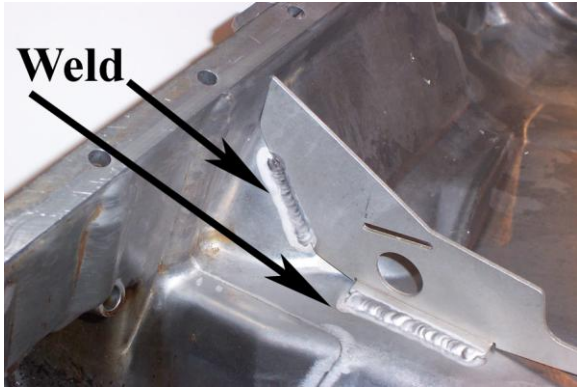
Pic # 8



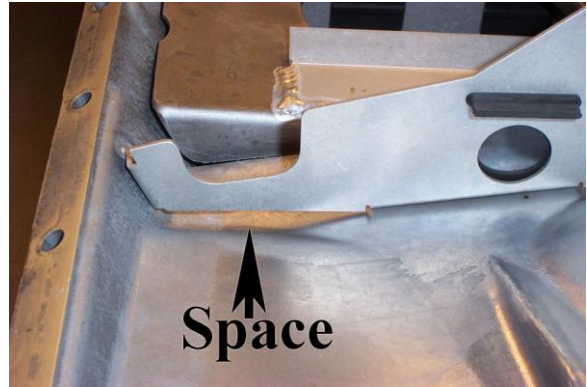
Pic # 9



Pic # 10



Pic # 11



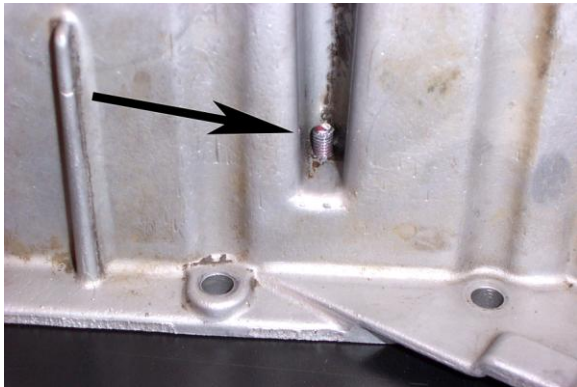
Pic # 12



Pic # 13



Pic # 14



Pic # 15

