

Ford Mustang S550 Steering Rack Conversion Kit To BMW E90 Steering Rack

This manual describes the modification process of the Mustang S550 front subframe to allow the use of the BMW E90 steering rack.

We recommend reading this manual all the way through before making any modifications.

With this modification the new steering rack will be fitted in place of the OEM electric steering rack.

This setup is meant to be used with **Wisefab Ford Mustang S550 Front Drift Angle Lock Kit**.

Long-tube headers or other non factory items could need modification or replacement to suit this kit.

The pictures in this manual are of the Mustang S197 LHD rack. All drawings are up to date.

The modification process is mostly same as the E90 rack.

Components needed:

Steering Rack: BMW E90 **Hydraulic** Steering Rack

Overview of the kit

RHD assembly shown here

LHD is mirrored

Column
weld shims
for RHD

Column
weld shims
for LHD

On RHD cars use the
longer rack spacer on
the right.

On LHD cars use the
longer rack spacer on
the left.

Tools needed:

Make sure that You have all the required tools on hand. You will need:

- Safety equipment (welding mask, goggles, gloves)
- Fine tip permanent marker
- Wrenches
- Angle grinder with cutting and sanding discs
- 8mm drill
- Welding equipment



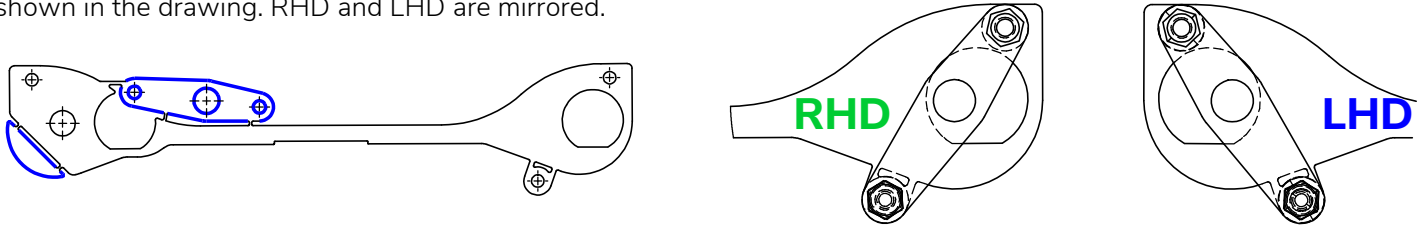
If you still have some trouble installing the kit, contact us at

sales@wisefab.com, or call us **+372 5562 5669**

1. Remove tie rods and rubber boots from the E90 steering rack and clean the rack.
2. Clean the subframe from dirt/oil. This is vital to ensure a good quality weld and proper penetration.
3. From the top, grind flat the section of the bushing that sticks out.



4. Cut off the two parts marked in blue, these will be required later. Use the plate with 3 holes as a positioning tool like shown in the drawing. RHD and LHD are mirrored.



5. Use the S550 rack bolts or other generic M16x2 bolts to position the upper rack conversion plate. Drill through the smaller holes with an 8mm drill.



6. Cut out the stock mounting bushings. For example this can be done with a 43mm / 1,75" hole saw. Make sure to leave the 8mm holes intact.



7. For LHD mark the left edge of the conversion plate and cut a 45degree section out of the subframe. Use the supplied plate to fill this hole. Check clearance with rack before final welding. For RHD do this for the right edge.



8. Grind flat the bottom part of the subframe. Use the S550 subframe brace bolts to position the lower rack conversion plate and drill through the smaller holes with an 8mm drill. Use holes marked LHD or RHD according to your car.

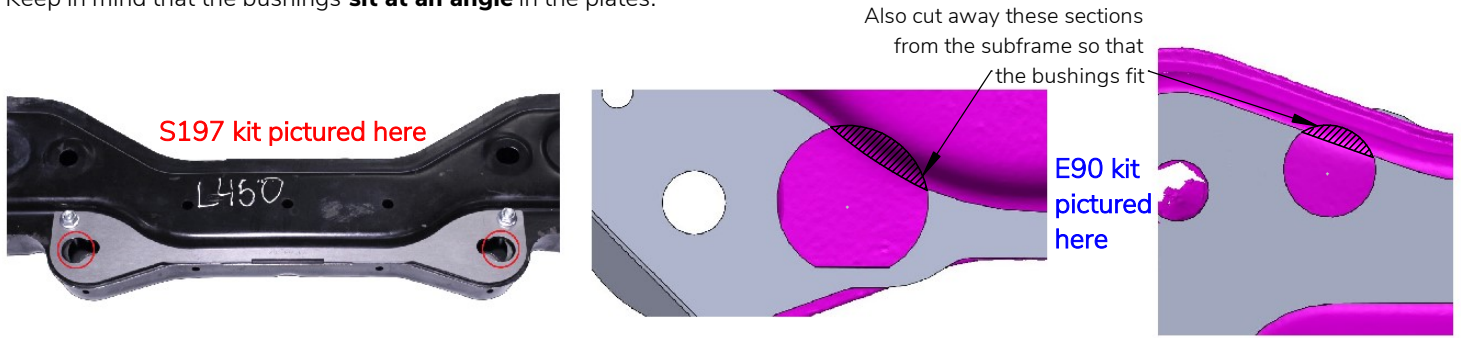


9. Cut off the single locating tab.
-



If you still have some trouble installing the kit, contact us at sales@wisefab.com, or call us +372 5562 5669

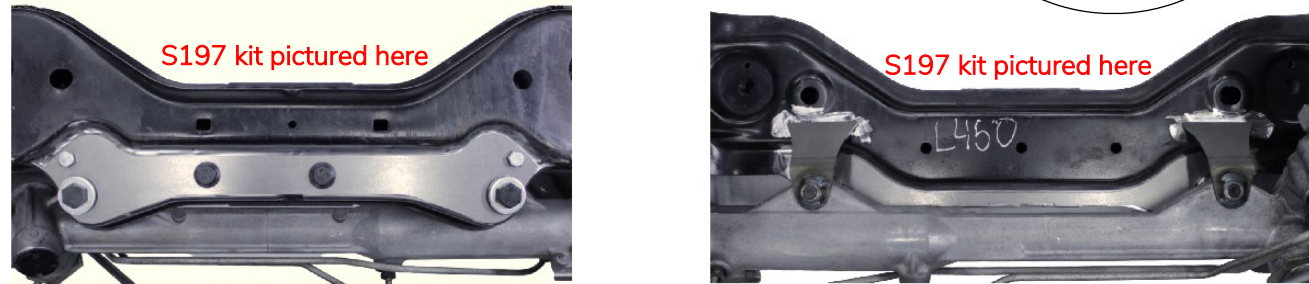
10. Make sure the supplied M8 bolts fit through the conversion plates and subframe. Use the conversion plates as templates for cutting out holes for the new bushings. On one side, the subframe has to be cut further than the template. See drawing below. Keep in mind that the bushings **sit at an angle** in the plates.



11. Clean all surfaces under the conversion plates from paint/rust. Fit the new mounting bushings from the top. Make sure the bushings sit on the flat edge of the conversion plate hole. **The bushing sits at an angle of 81.6degrees in relation to the conversion plates.**



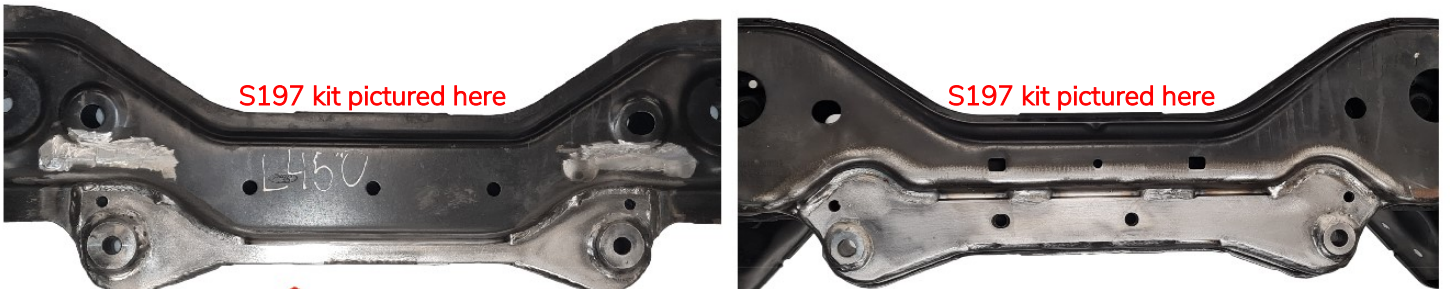
12. Fit the E90 steering rack as shown in the pictures. Tighten the bolts hand tight. No more than 30Nm/22lb-ft.



13. Tack weld the upper & lower conversion plates and mounting bushings. Don't weld the threaded mounting tabs yet.



14. Fully weld the mounting bushings to the upper and lower conversion plates and the plates to the subframe.



If you still have some trouble installing the kit, contact us at sales@wisefab.com, or call us +372 5562 5669

15. Refit the steering rack and weld the upper mounting tabs. Paint the subframe to avoid rusting.



16. **For LHD cars.** Cut the LHD S550 steering shaft 240mm (9½") from the column end. Make sure the cut is straight.

LHD



17. **Continued for LHD cars.** Cut the LHD E90 steering shaft 180mm (7") from the rack end.

LHD



18. **Continued for LHD cars.** Press the two adapter shims on the E90 steering shaft. One shim is flush with the shaft end. Leave a 25mm(1") gap between the shims.

LHD



19. **Continued for LHD cars.** Install the E90 shaft end into the S550 column. Assembled shaft should be 380mm (15").

LHD



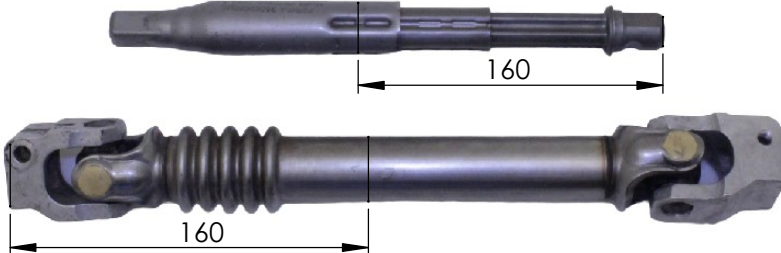
20. **Continued for LHD cars.** Tack weld and test fit the shaft. If the length is suitable, final weld with at least 2 passes.

LHD



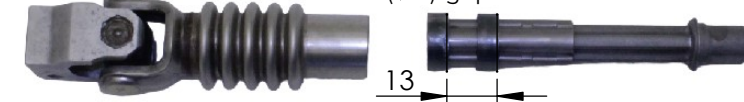
21. **For RHD cars.** Cut the RHD S550 steering shaft 160mm (6¼") from the column end. Remove the remaining section of the outer tube. Cut the RHD E90 steering shaft 160mm (6¼") from the rack end. Make sure the cuts are straight.

RHD



22. **Continued for RHD cars.** Remove the zinc coating and press the two adapter shims on the Mustang steering shaft. One shim is flush with the shaft end. Leave a 13mm(½") gap between the shims.

RHD



23. **Continued for RHD cars.** Install the S550 column end into the E90 shaft. Assembled shaft should be 287mm (11¼")

RHD



24. **Continued for RHD cars.** Tack weld and test fit the shaft. If the length is suitable, final weld with at least 2 passes.

RHD



If you still have some trouble installing the kit, contact us at

sales@wisefab.com, or call us **+372 5562 5669**