RACE-DEVELOPED COMPONENT
Turner Motorsport Inc, 16 Hunt Road South, Amesbury, MA 01913
978-388-7769 / www.turnermotorsport.com

DBM 1/10/05

E46 FRONT SUBFRAME REINFORCEMENT KIT
PART # TDR-46-75-F99

As E46's get older and see more use, they start to develop cracks and bends in high stress areas. One of the most stressed areas is the front subframe. The engine torque on acceleration applies force on the subframe engine mounting ears, which after time will crack the sheet metal around the motor mount nut. A sure sign that your subframe is not holding up is the paint will chip and peel from the stressed area. The result of this is that the engine is not securely mounted and can move in the engine bay, which can result in both mechanical and body damage. Also, when the engine is not securely mounted, it affects the shifting mechanism, potentially resulting in shifting into the wrong gear and causing a catastrophic mechanical over-rev. If caught early, it will not get to this point, but in our many years of development of these cars, Turner Motorsport has seen these extreme examples. We have used this kit in a multitude of street and racecars, and have many miles of street and track testing to demonstrate their reliability and performance. This is a good bit of preventative maintenance for the next time you're doing front suspension work to save time and money in the long run. Requires welding.

This product increases the surface area of the metal at the mounting point and redistributes the forces to the strongest points of the ear. The outer reinforcement triangulates in the ear of the subframe and keeps the ear from bending.

Applications: **1999-2005 318/323/325/328/330/M3 (E46 All) 2002-2005 (Z4 All)**

Parts list for kit: 2 steel plates to reinforce motor mount nut area
2 steel plates to reinforce the subframe ear from bending

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

- You can save time if you need to change your control arms, tie rods, oil pan gasket, or engine mounts.

Install time: 4 hours

Directions:

Properly lift and support the car to access the front subframe

Removing the subframe from the vehicle:

1. Remove all under trays and braces to access front subframe.

2. Remove the nuts that secure the motor mount stud to the subframe and loosen one of the top nuts on the motor mount so the mount can move freely.

3. Disconnect the outer control arm ball joint from the spindle by removing the nut on the outer ball-joint. Remove the two bolts holding the control arm bushing bracket to the vehicle's frame. The strut assembly with the brake rotor should swing freely.

4. Remove the two nuts and bolts securing the steering rack to the subframe.

5. Support the front of the engine with an engine support.

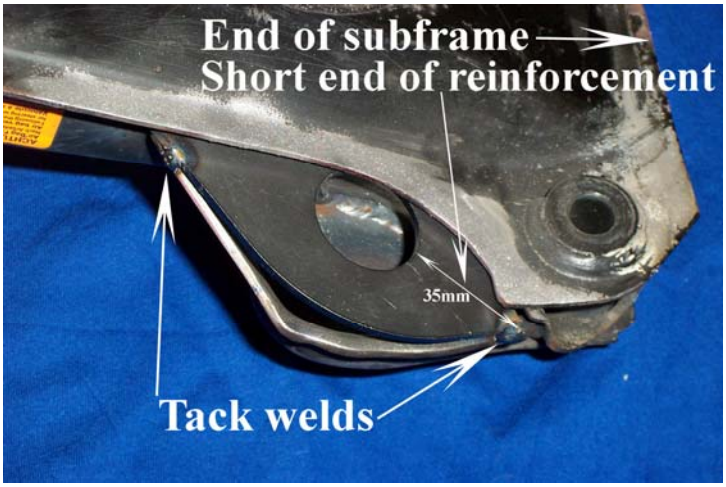
6. Remove the four bolts securing the subframe to the vehicle's frame. Lower and remove the subframe from the car. At this point the only thing on the subframe is the control arms.

At your workbench:

6. Thoroughly remove paint and rust in areas to be welded. Do this on both ends of the subframe.

7. Place the subframe reinforcement that has one small holes inside of the subframe ear. Make sure the hole on the plate lined up with the corresponding hole on the subframe. Secure with a C-clamp or a M10 nut and bolt and weld into place.

8. Place the other reinforcement gusset onto the ear and under the seam of the subframe. Hold in place with a long screwdriver or pry bar. Make sure the big hole in the reinforcement is centered over the bolthole for the engine mount stud. Tack weld into place on each end of the reinforcement.
Tip: The side of the reinforcement that is shorter faces toward the end of the subframe.



9. Use a pry bar or hammer to bend the reinforcement down to the subframe ear. Complete the weld around the perimeter of the gusset.

10. Primer and paint the bare metal areas to prevent corrosion and reinstall the subframe into the car. Make sure the alignment tab on the motor mount lines up with the alignment hole on the subframe.