

# Texas Speedwerks Motor Mount Installation Instructions

(Replaces OEM oil filled upper motor mount on 04-06 MINI)

The steps below will guide you through the removal of the OEM upper motor mount, and the installation of your new urethane motor mount.

## **TSW Motor Mount Kit:**

- 1 – TSW urethane motor mount
- 1 – TSW aluminum stabilizer (dog bone with adjustable rod end)
- 1 – 1/2" conical spacer, US grade 8
- 1 – M12x1.5x40 hex cap screw, metric grade 10.9, head size = 19mm
- 1 – M12 washer, metric grade 10.9
- 1 – 1/2x20x2" hex cap screw, US grade 8, head size = 3/4"
- 1 – 1/2" washer, US grade 8

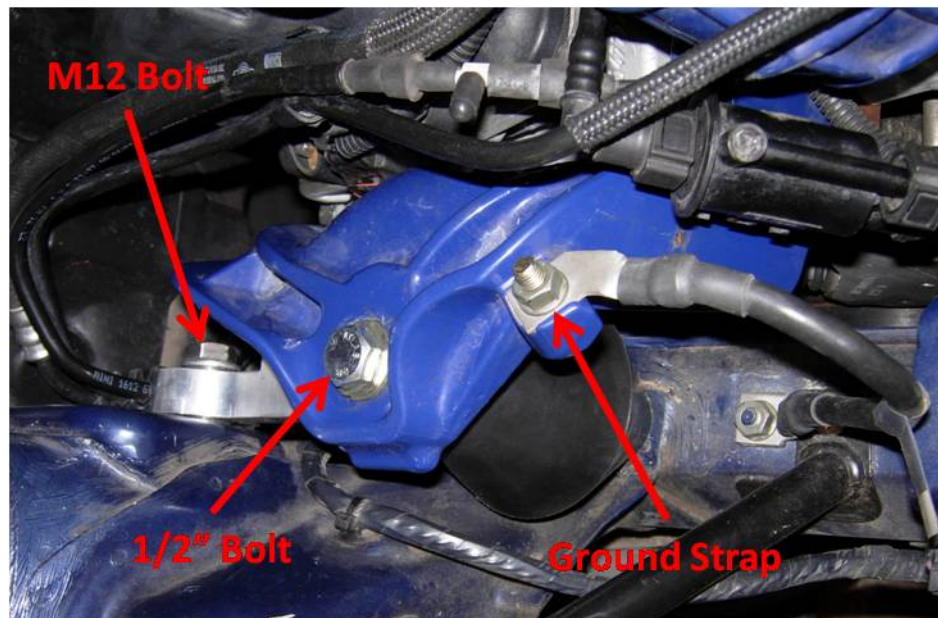
## **Tools and Items You Will Need:**

- Metric wrench assortment
- Metric socket assortment
- T-12 reverse torx socket (female torx socket, available at auto stores)
- 3/4" wrench and socket
- Torque wrench



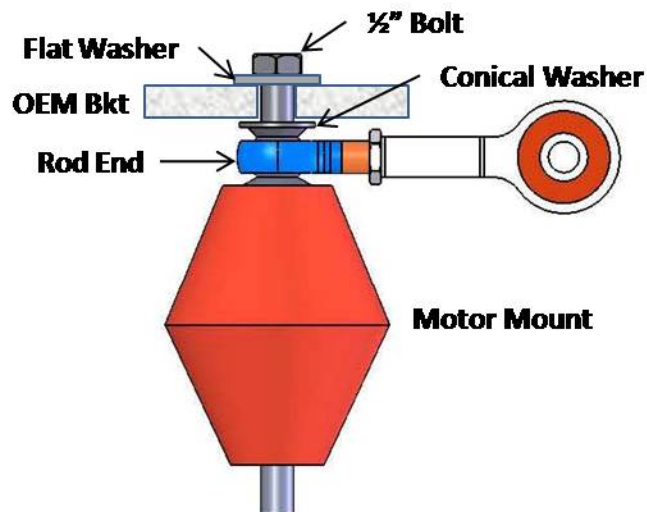
## Disassembly:

1. With the vehicle on the ground break loose the lug nuts or bolts on the passenger side tire.
2. Jack up the passenger side of the vehicle and put a jack stand under the passenger side front jack point.
3. Remove the passenger side tire and set aside.
4. Remove the inner fender liner and save all the mounting hardware.
5. Place a jack under the motor on the passenger side where the bottom of the motor has a large honey combed section. Move the jack up until it just makes contact with the bottom of the motor then put a small amount of pressure on the motor using the jack.
6. Remove the long bolt from the bottom of the motor mount using an M12 reverse (female) torx socket. Keep the bolt and washer – you will need it on the new motor mount.
7. If you are using a TSW engine damper kit, remove the entire kit.
8. Remove the upper nut on the OEM oil filled motor mount.
9. Remove the M12 bolt holding the engine mount stabilizer on the OEM oil filled motor mount to the shock tower, which has a captive nut.
10. Remove the engine ground strap from the large upper motor mount bracket.
11. Remove the four bolts holding the large upper motor mount bracket to the motor. These can be tough to remove if they are corroded. Remove the upper motor mount bracket, then the OEM oil filled motor mount.
12. Note the hole in the frame rail where the OEM motor mount was attached.



## Assembly:

1. Place the internally threaded cylinder protruding from the bottom of the TSW motor mount through the original mounting hole in the frame rail.
2. Put a small stripe of blue Loctite® on the end of the threaded portion of the long reverse torx mounting bolt. Push the bolt up through the frame rail and hand thread it into the bottom of the TSW motor mount. This is a torque-to-yield bolt: tighten to 41 ft-lb plus a torque angle of 90 degrees. MINI recommends replacing this bolt after one use!
3. Place the rod end of the dog bone on top of the TSW motor mount, then put the conical washer on top of the rod end with the smaller conical side facing down toward the rod end bearing. Temporarily thread in the 1/2" bolt and washer by hand to hold the rod end in place. The bolt will not thread in flush since the engine bracket is not yet installed, so just thread it in about 1/2 inch.
4. Adjust the threaded portion of the rod end until the round end of the dog bone lines up with the mounting hole in the shock tower. Note in the picture the flat side of the dog bone goes against the shock tower (notched side toward the engine). Thread in the M12 bolt and washer by hand (all the way in). Make sure the dog bone is not putting any stress on either the shock tower bolt or the rod end.
5. Back up the rod end locking nut away from the dog bone end enough to get a small stripe of blue Loctite® on the threads close to the dog bone. Tighten the locking nut by holding the flat part of the dog bone with one wrench and tightening the locking nut with another wrench. Torque this nut to no more than 30 ft-lb or just a bit past snug – do not over tighten it.
6. Remove the 1/2" bolt from the top of the TSW motor mount along with the washer and conical washer.
7. Place the large OEM upper motor mount bracket on the engine and replace the four engine mounting bolts by hand. Leave these bolt slightly loose.
8. Now comes the fun part. When you jack up the engine from the bottom it tends to move toward the back of the car. So you may have to pull the engine toward the front to get the upper motor mount bolt lined up. It is critical that you install the upper mounting hardware in this order:



9. In step 8 you may have to adjust the height of the motor as well as move the position of the upper motor mount bracket to line up the 1/2" bolt. Make sure the bolt starts threading by hand to avoid stripping the threads.
10. A few more steps and you are finished (check your manual for torque specs):
  - a. Tighten the 4 upper motor mount bolts to 60 ft-lb
  - b. Tighten the 1/2" upper motor mount bolt to 45 ft-lb
  - c. After the above two steps the motor may shift slightly forward or back. It is very important for you to re-check the M12 dog bone shock tower bolt. It should easily thread in and out. If it appears to be on a bind, you must remove the bolt and adjust the dog bone in or out to make sure the bolt threads in easily. If you do not make this check it could result in some vibration during idle. The dog bone should not have any pre-load on it forward or back.
  - d. Tighten the M12 dog bone shock tower bolt to 45 ft-lb
  - e. Replace the ground strap and tighten the bolt to 18 ft-lb.
  - f. Replace the inner fender liner
  - g. Install the tire and snug the lug nuts or bolts
  - h. Remove the jack from under the car
  - i. Jack up the passenger side front and remove the jack stand
  - j. Torque the tire lug nuts or bolts to 86 ft-lb
11. Optionally re-install the TSW engine damper kit if you removed it. You may want to drive the car without the damper kit at first to try out the new motor mount and stabilizer.