



Installation Instructions for 93054

Ingalls Engineering Stiffy™ Engine Torque Damper for 2004-2009 Mazda 3 & Mazdaspeed3

The **Stiffy™ Adjustable Engine Torque Damper** is engineered to reduce deflection under hard acceleration and cornering for improved performance and power to weight transfer. Deflection in the motor mounts, as with the chassis and suspension, is a formidable enemy in power and weight transfer, robbing valuable horsepower and control. The innovative, built-in damper eliminates the huge amounts of “torque shock” that result from wheel-hop and once installed; transfers more power to the road and improves acceleration, shifting, and overall control and balance. The adjustable feature allows the assembly to be tuned and pre-loaded for racing and street applications.

CAUTION: Observe proper safety and repair procedures for installation of all chassis parts. Some chassis parts require specialized tools and experience and therefore **MUST** be installed by a qualified technician; otherwise and unsafe vehicle and/or personal injury could result. Wear safety glasses and other protection.

WARNING: Before beginning, check for any damaged or loose suspension connections. Loose connections here indicate worn or broken parts which **MUST BE REPLACED**. Failure to replace a damaged or worn spindle and/or link may cause the wheel to separate from the vehicle, possibly resulting in serious personal injury. Installer **MUST** check for proper clearance. Modification(s) may be required. Please proceed **ONLY** if the vehicle owner is completely aware of these potential suspension modifications.

Estimated Installation Time: One Hour

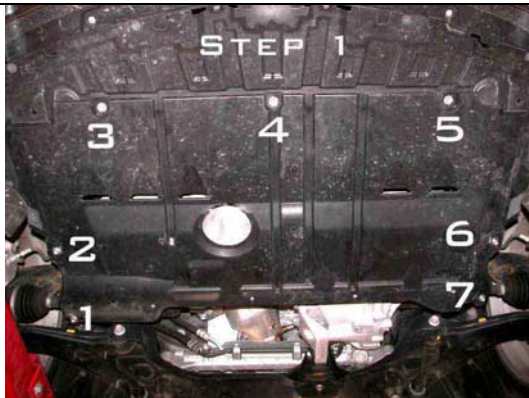
Technical Rating: Easy

Included Parts List:

- 1 - Stiffy™ Engine Torque Damper
- 1 - Engine Bracket
- 1 - Chassis Bracket
- 1 - Cable Tie
- 1 - Hardware Kit

Required Tools for Installation:

- Metric Sockets & Hex keys
- Metric Box Wrenches
- Crescent Wrench (up to 27mm)
- 3/8" Torque Wrench
- 3/8" Socket Driver (Wrench)



Step 1: Remove the 7 bolts that retain the large plastic splashguard from under the engine and remove splashguard.

Step 2: Safely support passenger side of engine. This **MUST** be done to avoid the engine from dropping after removing the engine mount studs.



Step 3: Mazdaspeed3 **ONLY**: remove the nut from the rear of the engine that is holding the lower A/C hose. This will allow you more room to work for Step 4.

Step 4: Remove both nuts from the passenger side engine mount studs.



Step 5: ONE AT A TIME, remove and replace the engine mount studs with the longer studs provided. Replacing the studs one at a time will allow the other stud to maintain alignment of the engine mount. The OEM studs can be removed with the proper external torx socket or by carefully using a 6-point 8mm socket. When installing the new studs DO NOT OVERTIGHTEN. They should only be finger tight until they stop threading in easily with approximately 7/8" of stud exposed above the engine mount. **WARNING:** Over tightening the studs could damage the threads of the engine mount.

Step 6: Install the provided spacers over the studs.

Step 7: Install the ETD engine-mounting bracket over the studs. Use the original nuts install on new studs and tighten to 110lb-ft.

Step 8: Remove the temporary engine support from under the vehicle and replace the splashguard.

Step 9: Mazdaspeed3 ONLY: Reinstall nut from rear of engine that was holding the A/C line and tighten.

Step 10: Remove the 3 bolts from the top of the passenger side strut tower.

Step 11: Install the strut tower ETD bracket using the original bolts and tighten.

Step 12: Install Stiffy™ onto the Chassis Mount Bracket and Engine Mount Bracket using the supplied hardware. Begin on the Chassis bracket. Use one of the M10 bolts to fasten the Stiffy™ to the chassis bracket. You may need to loosen the jam nut with an open-end wrench (17mm) and adjustable wrench to increase the assembly length depending upon vehicle. The supplied M10 (17mm HEX) bolt should go through the engine side of the bracket, and the Stiffy™ should mount on the outside of the bracket. The supplied rubber o-ring is placed between the Stiffy™ rod end and the supplied washer (smaller washers), which mounts against the bracket. The Stiffy™ nuts (15mm HEX) are black in color. The Stiffy™ adjustment dials should be facing toward the Chassis Mounting Bracket. **Note:** Install bolts with bolt head on the rod end side of the assembly and the locking nut (black in color) on the bracket side of the assembly. Refer to illustration 3 for proper assembly of the mounting hardware.



Step 13: Mazdaspeed3 ONLY: Using the supplied nylon zip-tie, tie the two A/C lines together to pull the larger, upper line down away from the Stiffy mounting bolt. The tie may not need to be tight to gain sufficient clearance for the bolt.

Notes:

Proper use and fitment of the rubber O-ring helps dampen additional road noise or "feel" that can be transferred through the damper assembly. The O-ring should be used between the Stiffy™ heim joint and bracket for optimal noise suppression. Dynamat or other damping materials, as used in aftermarket audio and in-car electronics industries, can also be used to provide further noise and vibration damping when used between the brackets and the surface they mount on.

DO NOT attempt to adjust Stiffy™ from its pre-set stiffness without consulting the Ingalls website. Large open-end wrenches are required to adjust stiffness (27mm). Most standard and mechanics tool kits do not include these types of wrenches.

Limited Warranty

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