

# INSTRUCTIONS FOR INSTALLING STRONG-STRUT BODY-BRACE

For your convenience if you have installation issues: email [azz3man@cox.net](mailto:azz3man@cox.net) PH 480 513 3222 FX 480 513 3238

Please read instructions completely prior to installing this accessory. If you are installing the rear Strong-Strut now, please refer to the instructions packed with the rear Strong-Strut and install it first. However, the ½ inch thick square spacer will probably be required between the rear Strong-Strut and mounting bracket in order to fit the Body-Brace properly. (the rear Strong-Strut instructions give you a few options here that may not be compatible with Body-Brace installation) Those of you who already have a rear Strong-Strut installed from previous purchase, may find it necessary to reposition the rear Strong-Strut spacers. The ½ inch thick square spacer should be installed on top of the rear Strong-Strut for the first "trial" fitting of the Body-Brace. The ¼ inch thick round spacer can go above the rear Strong-Strut or below it under the head of the fastener as required to achieve desired positioning of the Body-Brace to the underbody. If you decide to use both the round and square spacer above the rear Strong-Strut, you should use one of the thin washers under the head of the custom fastener. If you already had the rear Strong-Strut installed contrary to these updated instructions, you can attempt a "trial fit" of the Body-Brace but it may not fit on top of the rear Strong-Strut as required. Save yourself extra work and don't torque the rear Strong-Strut until you have the Body-Brace installed, because you might have to rearrange the spacers or washers. It is important to use both the round ¼ inch thick spacer and the square ½ inch thick spacer when installing the rear Strong-Strut. (regardless of where you position them) Use of both, prevents the shank of the custom fastener from bottoming out on the mounting bracket which would result in a tight fastener but the rear Strong-Strut would not be tightened down. Please note the torque spec for the rear Strong-Strut fasteners has been changed to 75 to 80 foot pounds. If you already have the rear Strong-Strut installed at 90 ft pounds and you do not have to reposition the spacers for Body-Brace installation, leave it at 90 ft. pounds. If you do have to reposition it, torque to 75 to 80 ft. pounds.

Prior to installation, be sure your tires are inflated to the pressures you normally carry. This will insure an accurate evaluation of the benefits of the Body-Brace. Select a bumpy road in your area and drive it prior to installation and form some impression of how much "wiggling" and looseness is perceived. Most of the Z3 owners describe the flexing as though the car is in three sections, front middle and rear, and when driving over bumpy surfaces, the car seems "disjointed" with the three sections wiggling independently of one another. After installation, drive the same route at the same speeds and notice the difference in chassis rigidity. Once installed, the runners provide a convenient place to jack up your car using a 2x4 between the runner and jacking head. Under some circumstances, they serve as "skid plates" and may prevent damage to your rocker panels.

## Parts list:

1. two runners
2. two bolts with 5/8 inch hex head , replacements for original on OEM "X" brace
3. two rear fasteners 5/8 inch hex and 11/16 inch nut with washers
4. two large washers with ¾ inch hole for shimming (lowering) rear Strong-Strut position if necessary for fuel tank clearance.
5. four washers, 7/16 X 1.25 X 1/8<sup>th</sup> inch thick for shimming rear of runner tabs to rear Strong-Strut if necessary (see instructions)

## Suggested tools and equipment:

1. 5/8 inch (16mm) open end, box or socket wrench
2. 11/16 (17mm) open end or box
3. ½ inch (13mm) socket , box or open end wrench
4. 4 jack stands, ramps or hoist for elevating vehicle

5. egg or milk crate ( or substitute) for temporarily "propping" the "runners" while installing and adjusting them.
6. torque wrench for fasteners.....40 ft pounds on front and rear bolts of runners. 20 ft pounds on 13mm bolts on OEM "X" brace (75 to 80 ft lbs on rear Strong-Strut fastener)

#### Nomenclature

- 1) OEM "X" brace is the factory supplied brace below and to the rear of the engine.
2. "Runners" are the two long bars that make up the Body-Brace. They are installed parallel to the vehicle body (not an "X" configuration) with the open part of the "V" toward the underbody and the knife edge toward the ground. They are identical and can be installed on either side of the car.
3. "Box member" is the structure on each side of the vehicle to which the OEM X brace is bolted to the chassis. It begins in the front where the X brace bolts on and runs the entire length of the passenger compartment to a point just forward of the rear wheels
4. "Pad" the 3/4 inch square pad at the end of the "X" brace mounting points.

#### INSTALLATION STEPS

Special note for 2001 and 2002 ///M Roadsters Your car is fitted with plastic sheets of under cladding that cover most of the underside of the vehicle. You will have to cut two "windows" in the front cladding that will give you access to the bolts securing the OEM "X" brace.

Assuming the vehicle is SAFELY elevated (your responsibility) and the rear Strong-Strut properly installed: If the rear Strong-Strut is already installed and in the optimum position to accept the Body-Brace, it is not necessary to raise the rear of the car to attach the fastener that holds the rear of the runners.

Start by removing the two 17 mm (11/16ths inch) bolts holding the rear of the "X" brace to the car. Then loosen the 4, ½ inch (13mm) nuts holding the front of the "X" brace but do not remove them. Be sure you have about ½ inch of slack between the little square foot pad of the "X" brace and the box section, this will allow room for you to slip the front tab of the runner into it's final position. Start on the driver's side of the vehicle and position the rear of the runner above the rear Strong-Strut so it rests there and supports itself. Then slide the slotted tab at the front of the runner UNDER the "X" brace pad and insert the longer bolt provided. (we recommend placing a little lube of your choice on the threads of the bolt) Tighten it down a few turns to prevent it from falling out and then insert the rear 7/16 diameter bolt and lock washer, from the bottom (upside down) and screw the nut on finger loose to hold it in position. You will note the Body-Brace runner aligns itself with the box member when bolted in the correct position. Optimal installation will have the runners in contact with the box member for most of their length. This can be adjusted by placing one of the provided washers between the rear Strong-Strut and runner tab in the rear or by using a provided washer to raise or lower the height of the rear Strong-Strut. You probably won't have to fiddle with this at all. Please see supplemental instruction sheet with drawing.

Now go to the passenger side and repeat the same process, however, please note this important information and be careful.

**CAUTION:** do NOT position and bolt the runner to the rear Strong-Strut while allowing the forward end of the runner to drop toward the floor. This will elevate the rear of the runner and possibly damage the fuel tank which is directly above it. Always provide some means of support under the forward end of the runner to prevent this from happening.

As noted, the fuel tank is directly above the passenger side runner at the rear Strong-Strut attachment point. As long as there is 1/8 inch gap between the tank and runner, there is no conflict. Since the fuel tank is bolted in place, it doesn't "jiggle" or move. The rear Strong-Strut is also "fixed" and does not move around at any time. If a conflict does exist on any vehicle, adding a 1/8 inch washer between the rear Strong-Strut and mounting bracket will restore clearance.

With everything bolted into place, go back and torque down all fasteners to the specified settings, including the rear Strong-Strut fasteners in the event you had to loosen them. (75 to 80 ft. lbs) Now go back and drive the same "test route" you drove prior to the installation. The Body-Brace is not a "cure all" and won't make your Z3 feel like a Mercedes 300SL Gullwing, but the improvement is quite obvious and will give the feeling that the car is a solid one piece unit. There are additional benefits in steering response since body flex = delayed steering feel and response. Remove the delay and steering becomes "sharp."

## ADDENDUM

OK, here's where we cover the "what ifs." The only one we encountered was the possibility of the holes in the "X" brace not lining up properly with their threaded holes. This was caused by introducing the extra 3/8 inch thickness of the front mounting tab resulting in a slight displacement of the "X" brace. This will not happen on all cars. If it does, here's the cure. Remove the "X" brace from the car and using either a course round file, Dremel tool or similar, enlarge the 4 holes at the front of the "X" brace about 1/16 inch in all directions. The metal is very soft, so this job takes only about 30 seconds per hole. This provides needed "slack" so you can position all the "X" brace mounting holes to match with their threaded counterparts. We also suggest you enlarge the two main holes in the "X" brace. This provides more flexibility when inserting the bolt and is added insurance against cross threading. On the test mule, we drilled those two holes out to 1/2 inch diameter and if you have the tools, we recommend it but it's not necessary. None of hole enlarging operations may be necessary on your car, you'll find out when you get into the installation process.

**One more word of caution, be very careful inserting the two front replacement bolts to avoid cross threading and possible stripping. The previously suggested "lube" is a good idea here.....in general, give those threads plenty of TLC ☺**

**That's it.....you're finished.**

ENJOY !!!! We love manufacturing products for you wonderful guys and gals and we know you will get many thousands of miles and many hours of enjoyment from your Body-Braced Z3. We always appreciate a post by our customers on the message board to let others know what you think of the product. Thank you.

Best wishes, Paul & the Strong-Strut Team

A few words about safely elevating your vehicle. Use good quality jack stands or ramps. Apply fail safe and backup measures. We usually place one of those strong supermarket milk cases under the engine and one somewhere at the rear of the car. This of course is in addition to the 4 jackstands. We also leave the jack itself locked and in place under the differential so it will "catch" the vehicle if any of the other supports fail. You can also use a stack of 2x4 lumber, building blocks or any other material that will hold the weight of the car as a backup measure. If you live in earthquake country you have even more to consider !!!!