Rear Strong-Strut

Installation Instructions

Please read instructions completely before installing the rear Strong-Strut

Forward

Installation of the rear Strong-Strut is quite simple and involves the removal of two large nuts that fasten the rear axle carrier to the car, positioning the rear Strong-Strut in place and attaching the spacing hardware and custom fasteners (nuts)

Once your car is **SAFELY** on a hoist or jackstands, it should be no more than a 30 minute process. Most of our customers are installing it without raising the car at all. It works, but there is a bit less room to work.

We have included an enhanced parts diagram from BMW and a hand drawn illustration to assist you in the installation. Please familiarize yourself with these documents before starting the installation

There are colored pictures of the installed prototype rear Strong-Strut on the web page at http://www.strong-strut.com

Viewing the pictures will be an installation aid.

Clearance concerns

The variation in available engines in the Z3 result in several different exhaust system configurations, component size, and component location. The rear Strong-Strut is a universal fit for all models. The only clearance issues are for either the exhaust system or for the quilted aluminum heat shielding nearby. In addition to the 2 inch square spacer, we provide a round,¼ inch thick and two thinner washers. These can be used singly or in combination at the owners discretion to provide more or less clearance where necessary. If the rear Strong-Strut touches any of the aluminum heat shielding, it's best to modify the shield by tapping or bending it slightly out of harms way. **It is important that you use the ½ inch thick round spacer and the ¼ inch thick round spacer in every installation.** Use of both will insure that the shank of the custom fastener will not bottom out on the mounting bracket but leave the rear Strong-Strut itself, lose. You have the option of inserting both the spacers wherever they result in the best installation for your car…….but both MUST BE USED. Providing there are no clearance issues with the exhaust routing, we suggest mounting the round ¼ inch spacer above the rear Strong-Strut and then place the ½ inch thick square spacer below the rear Strong-Strut under the head of the fastener. This provides the most ground clearance for the rear Strong-Strut. This arrangement may not be possible on all cars but try this method first. The two thin washers can be used at the owners discretion to gain additional exhaust pipe clearance if needed.

Tools needed

22 mm deep socket (7/8 inch) or open end/ box wrench to remove OEM nuts on axle carrier.

1 and 1/8 inch socket and torque wrench to attach custom fasteners.

Safety concerns

NEVER get under a vehicle that is supported only by a jack. If the jack were to fail for any reason, you could be crushed to death. Do not utilize any of the movable rear suspension components for jacking up the car or for jackstand placement. Use the provided jacking pads in the rocker panel and place your jackstands or other supports in a safe and appropriate location.

Installation steps

1. Elevate the rear of your car to enable you to access the rear axle carrier and nuts. (optional--- can be completed without raising vehicle) (see safety concerns for jack and stand placement) Secure the vehicle on a hoist or other means you deem to be safe. Once you are certain the vehicle is safely elevated and will not fall, proceed to step #2.
2. Locate the two OEM 22 mm nuts that secure the rear axle carrier to their mounts. Refer to the attached parts diagram and nut indicated by #6 "collar nut." You can safely remove the nuts and the rear axle carrier and other parts will remain in place. These nuts are factory torqued to a fairly high setting so it will require a proper fitting wrench or socket and some muscle or leverage to loosen them. Before removing the nuts, clean the threads on the stud protruding through the nut with a solvent on a rag or brush. Remove the nuts and be very careful with the threads, taking care not to damage them. The OEM nuts are the slightly oval, self locking type and will offer some resistance to removal even after you have them loose. When both the collar nuts are removed, go to step #3.
3. Position the rear Strong-Strut below the two mounting brackets and OEM threaded studs. Insert the appropriate spacer for your car, either the square or round one and position it between the top of the rear Strong-Strut and the mounting bracket. While holding it in place, position the remaining spacer under the head of the fastener, line up all the parts and screw on the fastener with your fingers. Repeat on the other side of the car. In order to install the first side, the rear Strong-Strut must be close to level and raised near its final position. You can use a box or prop of some kind to hold the second side up near its stud while you work on the first side. If you have an extra person, it's easier and no need to prop up. The holes in the strut, spacer and washers (if used) are large enough to allow the shank of the fastener to pass through them. Tighten the fasteners so there is only a small amount of slack remaining and then lower the car to the ground allowing the suspension to settle. Then torque the fasteners to 75 to 80 ft. pounds. Please remember that both the 2 inch square spacer and the round spacer MUST be used on every installation to prevent the shank of the fastener from bottoming out and leaving the strut lose in the mounts.

   The rear Strong-Strut was made to fit all models of the Z3 in stock configuration. If you have a custom exhaust or other modifications in the vicinity of the rear Strong-Strut, there may be conflicts in clearances. Often in these situations, the application of a little imagination, common sense, and addition of some extra washers, is all that is needed to correct the issue.

   Be especially kind to the threaded studs (on diagram, #2 thread bolt) If they get damaged to the point of replacement, it will require removal of the inner fender liner for access.

   IMPORTANT After 300 miles of operation, re-torque the custom fasteners to 75 – 80 ft pounds. Thereafter, we suggest you check them at each oil change.

A WORD ABOUT THE DESIGN AND LOCATION

The rear Strong-Strut is bolted below the sub frame rear axle carrier. Everything above the OEM mounting brackets of the sub frame is mounted in rubber anti-vibration mounts and is designed to move around. Therefore, the rear axle carrier, although massive in appearance, provides no stiffing element to the body/chassis. Because the rear Strong-Strut is bolted below, and directly to the mounting brackets, which are in turn solidly bolted to the body, the rear Strong-Strut serves as a rigid transverse reinforcing member. This ties both sides of the body/chassis together just forward of the rear wheels and resists the torquing/twisting forces of the rear body structure when subjected to aggressive cornering or uneven

roadway. By eliminating or reducing body flex, the rear of the car follows the front more crisply when turning into corners. One experienced driver remarked that it feels like rear wheel steering has been added to the car. The obvious benefit is the disappearance of the "lose" feeling in the rear that all Z3 Roadsters seem to have, and a more unified feel to the structure when subjected to bumpy or uneven road surfaces. The Strong-Strut rear Strong-Strut functions much the same way as the front Strong-Strut, in that it prevents sheet metal structures from reacting to twisting and torquing forces.

If you encounter difficulties with the installation, please do not hesitate to contact us. azz3man@cox.net

480 513 3222

Thank you for your purchase of the Strong-Strut rear Strong-Strut, we know you will get many years of enjoyment from its benefits.

Please visit our web site and review our other products. http://www.Strong-Strut.com. Many find that out factory matching spray paint kit is quite handy.

Best wishes,

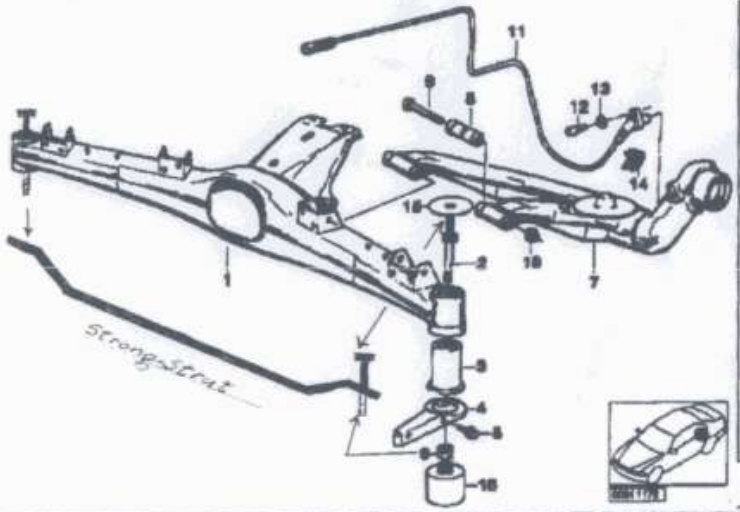
Paul and the Strong-Strut Team

Installed in ///M Roadster from behind

Fender liner removed

Print | Change | Quit | Services | Vehicle ID | > BMW <

Group EPC - Diagrams 33_0998 REAR AXLE SUPPORT/WHEEL SUSPENSION



PNo	Qty	N
31 33 1 096 046	1.00	
11 42 1 730 389	1.00	

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DMS direct

No.	Description	Supplement	Qty	From	Up To	Cat	Tr	St	Part Number	AT	R	TI
1	REAR AXLE CARRIER		1						33 31 2 228 200		1	
2	THREAD BOLT		2						33 32 1 090 951			
3	RUBBER MOUNTING		2						33 31 1 090 946			
4	PUSH ROD LEFT											
5	INNER HEX BOLT	M9X22	4						33 31 1 129 676			
6	COLLAR NUT	M14X1,5	2						33 33 1 126 136			
7	TRAILING ARM LEFT											
8	SET RUBBER MOUNTING ECCENTRIC											
9	HEX BOLT	M12X1,5X90	4						33 32 1 136 406			
10	SELF-LOCKING HEX NUT	M12x1,5	4						07 12 9 900 047			
11	PULSE GENERATOR, ABS		2	06/96					34 52 1 164 643		1	
12	SCREW FILLISTER HEAD	M6X16	2						07 11 9 901 436			
13	WAVE WASHER	06	2						07 11 9 932 072			
14	CABLE CLAMP		2						33 18 1 182 534			
15	STOPPER		2						33 31 1 092 183			

VIN: | Series: Z3 | Model : Z3 M3.2S52 ROADSTER USA | Year/Month: - | Transmiss.: - | Steering: L

STRONG-STRUT, BUTT-STRUT PARTS DIAGRAM

Not to scale

1) OEM bolt
2) Mounting bracket
3) 2x2x1/2 inch spacer
4) Butt-Strut
5) 1/4 x 2 inch washer
6) customer fastener
7) two extra washers, not shown