

**Vehicle:** BMW

**Model(s):** ALL

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One of the most common upgrades that new BMW owners acquire is a strut bar. A strut bar mounts between opposing strut towers. The purpose of this device is to reduce the flex that these towers experience during hard cornering. Reducing the flex will keep the wheels in position. Keeping the wheels in position helps keep the tires in the desired position on the road. This will help to improve traction on the turns. A front strut bar should help to reduce under steer and a bar in the rear should help to reduce over steer. However, unless you choose carefully you may end up with a bar that looks great but does not meet your performance objectives. The following is a picture of a front strut bar installed on an E36 M3.



There are many vendors providing a wide array of strut bars for just about every BMW on the market. The designs vary but all strut bars are made up of a strut cap and a cross bar.



The strut cap is attached to the strut tower via the three bolts from the strut camber plate that come up through the holes in the strut tower.



The bar is attached to the strut cap in a variety of ways. It can be bolted or pinned to the strut cap.

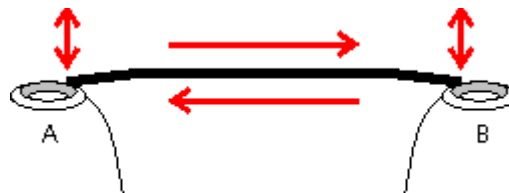
**BOLTED**



**PINNED**



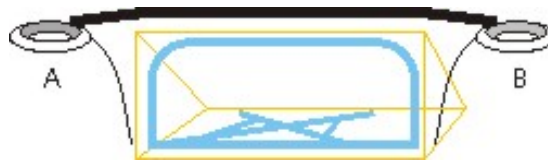
Many of these bars look sturdy, shiny, and just plain cool. However, looks have little to do with performance. To reduce the flex between struts the stress bar setup should be as rigid as possible. The bar should be designed to take horizontal pressure, during a turn, without flexing and losing rigidity. The bar should not bend, flex or pivot at the point it is attached to the strut cap otherwise the towers can move freely as they did before:



With a rigid stress bar you have created a structural upside down U.



To obtain the most rigid setup you will want to combine a stress bar with an xBrace. The xBrace will create a structural box. Since the xBrace also has a forward crisscross you are creating more than a box you are creating a structural pyramid that also reduces twist or flex of the axis of the box.



There are two types of strut caps, open and closed. Either setup is fine in reducing stress on the strut towers. However, if you plan to use adjustable camber plates you should look to acquire a stress bar that has an open cap. This will allow you to see the actual camber setting and some plates can only be adjusted through the opening. If you plan to use sport or coil over shocks you may want to select a stress bar with open strut caps since the length of the mounting bolt varies and may be too tall to fit under a closed strut cap.

**OPEN**



**CLOSED**

