

# CAMBER PLATE INSTALLATION GUIDE

**STOP!**

**PLEASE READ AND BECOME FAMILIAR WITH THE ENTIRE INSTALLATION GUIDE BEFORE YOU CONTINUE!**

**ALSO BE AWARE THAT BY ALTERING THE SHOCK/SPRING MOUNTS (guide supports), YOU WILL BE UNABLE TO RETURN THEM TO ORIGINAL CONDITION OR USE.**

**PLEASE HAVE THE FRONT PROFESSIONALLY ALIGNED, THE TOE WILL CHANGE AFTER THE CAMBER PLATES ARE INSTALLED!**

Please inspect all supplied mounting hardware and clean off all oil and dirt, as it will affect the integrity of “Loctite” used in step #10. Oil was applied to the nuts and bolts by the manufacturer to prevent corrosion during storage and shipment and MUST be removed. Use brake cleaner or other solvent.

1. Elevate the front of the vehicle using a suitable jack and place jack stands or approved Safety supports in place to secure the vehicle during this procedure.

**Make sure that the vehicle is supported properly and safely for this or any other procedure! Body injury or death can result if vehicle falls or becomes unstable or jacking devices fail. The person(s) responsible for performing this procedure is (are) solely responsible for and accept full liability for any and all claims as a direct result of performing this procedure.**

2. Remove the front wheel/tire assemblies (both sides).

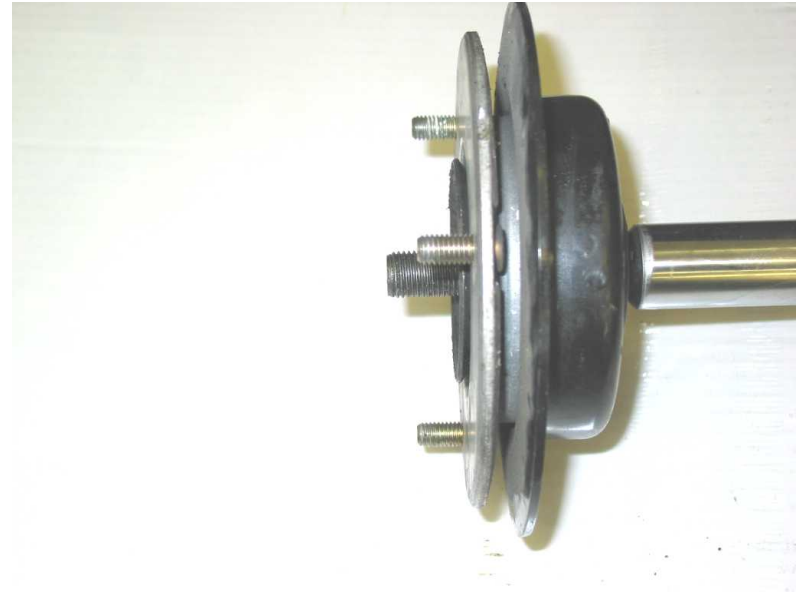
3. Remove the entire front strut/spring assembly from the vehicle,

- a. Disconnect one side of the anti-sway bar link from the strut. (From the anti-sway bar is easiest)
- b. Remove the brake caliper by removing 2 bolts that hold the caliper to the strut assembly.
- c. Hang the caliper by a wire or “bungee cord”; do not let the caliper dangle by the brake line!
- d. Disconnect the ABS sensor at the connector and also (on the appropriate side) the brake pad sensor.
- e. Remove 3 bolts (12mm) from the tie rod arm at the bottom of the strut. These are very easy to damage as they are installed with “Loctite”. Make sure the socket is fully seated, as it will take a lot of force to break them free.
- f. Remove 3 nuts (8mm) from the studs coming thru top of the strut tower.

4. Push down on the lower wishbone assembly and remove the strut/spring assembly.

**Do not remove the guide support from the shock or disassemble the spring assembly for this procedure. The following pictures show only the guide support for clarity.**

**Picture #1, #2, #3, #4**



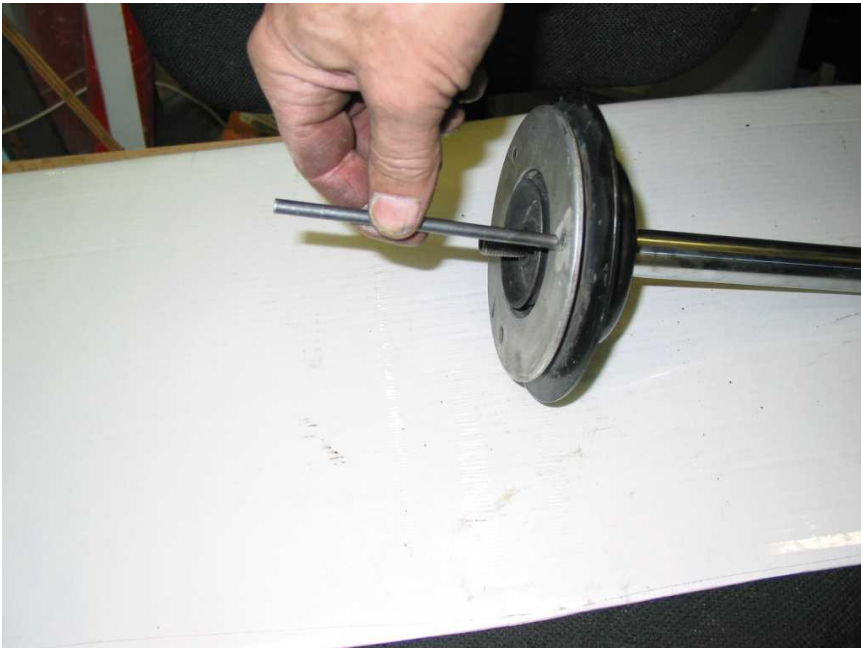
**5. With a hacksaw or other cutting device, carefully cut the three 8mm bolts sticking up from the guide support. Make Sure that these bolts are cut as close as possible to surface of the hat plate.**

**Picture #5**



**6. With a file or other sanding/grinding device, file down the remainder of the bolts so they are flush with the top surface of the guide support. Notice the filed bolt at the top and the fresh cut bolt at the bottom? The bolt at the top will easily come out, the bolt at the bottom will not until it is filed or sanded down.**

**Picture #6, #7, #8**



**7. With a small diameter punch, drive out the remainder of the bolts and remove from the assembly.**

**8. Clamp, block, or have someone hold the strut assembly in a vertical position.**

**Picture #9, #10, #11**



**9. Place three nuts around the ring using the spring perch as a shelf, carefully position the three nuts to line up with the holes where the bolts were driven out.**



**10. Apply red Loctite on a new (supplied) flat head bolt, using an allen wrench work thru the hole and catch the nut below, lightly tighten, repeat this for the remaining two bolts.**

**11. After all three bolts are installed, immediately tighten all to 36 Nm (27 lb/ft). It is important to tighten the nut rather than apply torque thru the allen wrench. The flat head bolt has too much head friction to reliably tighten correctly.**

**Picture #12, #13**



**Finished assembly**



**Before and after comparison**

**12. Re-install strut assembly reversing the procedure from steps 4-3.**

**13. Install wavy washers on three bolts after the strut has been fitted into the tower and replace the nuts removed in step 3f.**

**14. Tighten these 8 mm nuts to 30 Nm (22 lb/ft).**

**15. Locate the position for the tie rod arm on the bottom of the strut, using blue Loctite, replace three bolts (12mm) taken out in step 3e.**

**16. Torque these bolts to 123 Nm (90 lb/ft).**

**17. Replace caliper, and reconnect ABS and brake sensor, torque caliper bolt to 115Nm (85lb/ft).**

**18. Reconnect the link to the anti-sway bar, torque nut to 66Nm (45lb/ft).**

**19. Repeat this procedure for the opposite side.**

**20. Final installation should look similar to this.**

**Picture #14, #15, #16, #17**



**Before**

**After**





Stopper washer gets close to the edge of the hole on the top of the strut tower, the lower portion of the washer is rubber and will not cause any damage or noise. **DO NOT DELETE THIS WASHER**, it is necessary to keep the shock rod from pulling thru the elastomer bushing.



For a nice finished touch a cover may be purchased from BMW Part #31 31 2 227 387, \$12.60 ea retail. The original cover may not fit without modification because of the clearance issue between the stopper washer and strut tower as previously illustrated.

**Recommended tools:**



**Notice the 13 mm wrench in the caliper jaws is thinner, any thicker will not grip the nut well. Space between the top plate and spring perch is limited.**

