



TMS E46M3 Race Camber Plate (monoball)

PART # T-SU-46-80-651

The TMS monoball caster-camber plate is designed to be used for racing coilover suspensions. Specifically, the plates are designed for use with Moton Club Sport shocks and the Bilstein PSS9 kits, but will work on other systems designed to work with the E46M3 suspension as well. Camber is adjusted by simply unbolting the top three bolts and sliding the plate. Caster is adjusted by unbolting the camber bolts and sliding the plate back and forth. Camber has a wide range of adjustment, from stock to a full race setting. These plates are the result of several months of design and testing. Detailed settings and combinations will depend on each car's suspension geometry. When ordering specify what diameter springs you will be using. These plates are also easily interchangeable with our "stock style" urethane bushing camber plates. This is a great option if you ever desire to go back to a more stock style suspension, as they utilize some of the same parts.

Technical Specifications

- *No strut tower cutting needed*, therefore the strength of the strut tower is not compromised
- **Average Camber Range** $\approx -1.23^\circ \pm .33^\circ$ to $-3.23^\circ \pm .33^\circ$
 - Caster and Camber Ranges are dependent on setup and the suspension combination used
- Wide Race $\frac{3}{4}$ " Aurora High Performance Bearing to handle high axial loads better (Replaceable), where most manufactures use $\frac{5}{8}$ " bearings.
- Complete stress analysis
- Compatible with most strut braces including the BMW Motorsport brace.
- The mounting height is based on optimum shock travel for our shock kits, but can be customized to fit any system's specifications.
- Uses high strength spiral rings to constrain bearings.
- CNC machined from high grade aluminum billet and Mil-A-8625F Type III anodized (hardcoat) for protection
- Shock nut is always accessible through shock tower for quick spring changes without affecting static caster or camber.
- Utilizes a full round upper plate to spread more force throughout the strut tower to PREVENT deformation.

Parts list for kit:

- 2 – Upper plates
- 2 – Lower bearing carriers (with bearing assembled)
- 2 – Lower slides (with bolts welded in)
- 6 – M8 nylocks and washers
- 8 – M6 bolts
- 16 – Slide washers (for M6 bolts)
- 2 – Bearing sleeves

Install time: 3 hours (no alignment)

Directions:

1. Properly lift and support the front end of the car, and remove the wheels
2. Undo the swaybar links from the swaybar.
 - Requires a wrench (16mm) to be inserted behind to remove
3. Remove shocks (easiest to assemble everything). May also want to remove brake calipers to prevent damage to brake lines.
 - Support the control arm assembly with a jack
 - Remove headlight adjusting link (if equipped)
 - Loosen the lower shock bolt enough to let the shock body twist (note orientation)
 - Remove the top strut mount nuts (there are three).
 - Lower the control arm assembly. Be careful not to damage the brake lines or any other connecting wires/parts, and pull out the entire strut assembly.
 - Remove top strut plate by using a spring compressor and removing the top shock nut.
4. Assemble camber plates
 - Slide springs over shock shaft
 - Slide spring perch over shock shaft and fit onto spring.
 - Put on entire camber plate assembly. Make sure the bearing sleeve is seated on the spring perch and in the actual bearing.
 - Put on shock washer and shock nut.
 - Caster can be set at this time. Most people will want the caster placed fully to the back of the car.
5. Install Camber plates and shocks
 - Place the shock shaft into the spindle properly oriented and torque bolt to:
81 N*m (61 ft*lb)
 - You can also first loosely place the strut assembly in the strut tower and use the jack to line up the spindle and shock.
 - Raise the control arm assembly up until it's close to the shock tower.
 - Make sure the camber plate is properly oriented and raise the control arm assembly up making sure the bolts go all the way through the shock tower.
 - Tighten the M8 nylocks.
 - Hook up the swaybar links

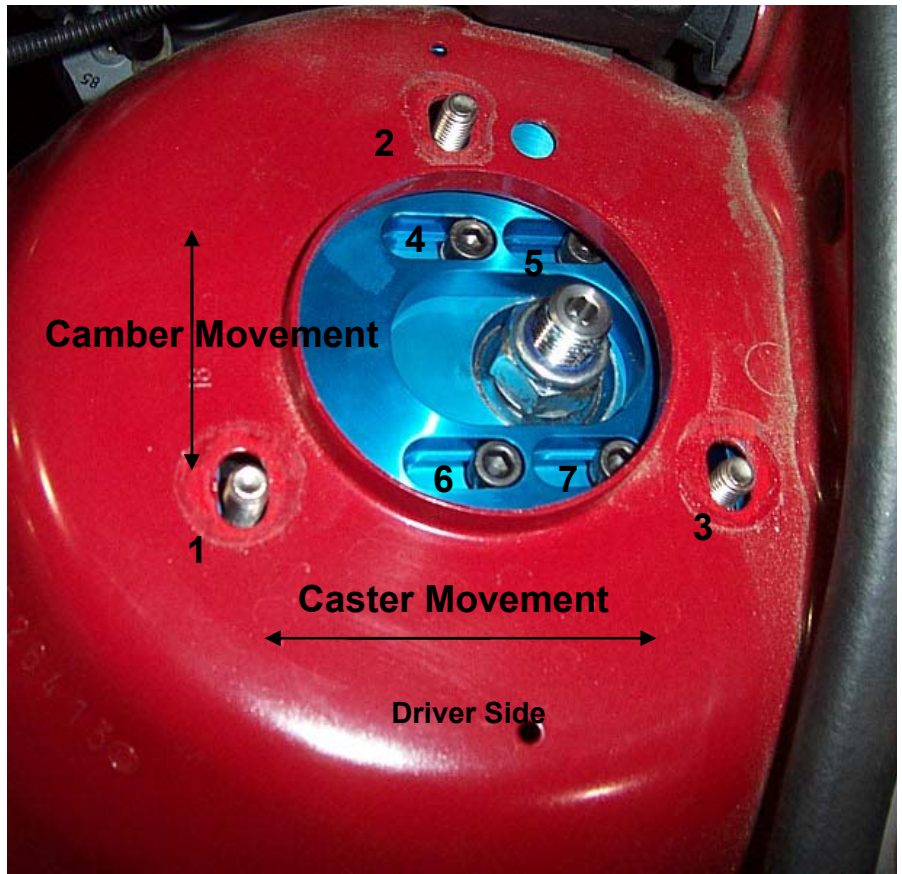
*******Do not hook up swaybar links if doing one side at a time. Both sides need to be undone*******
6. Alignment: To adjust the caster, the camber bolts must be loose and the plates able to slide back and forth. After caster is set, Camber can be set.
 - Adjust the caster so the shock is the farthest back towards the rear of the car possible.
 - Tighten down the 4 M6 bolts and torque to: 6 ft*lbs (Do not over torque!!!)
 - Adjust the camber so the shock is leaned the farthest to the outside of the car possible.
 - Take to alignment shop with your required settings or they will set everything close to stock.
 - To adjust, the car should have the weight taken off of it to reduce wear and tear and prevent damage to the plates.

Adjusting Caster

- Loosen the camber nuts (1,2,3). This allows the Plate to move so each caster bolt can be accessed.
- Loosen the caster bolts (4,5,6,7) by moving plate back and forth, and adjust to desired position based on tick marks. Tighten Caster bolts (do not over tighten!!).
- Reset camber settings.
- Adjust camber using tick marks and tighten camber nuts.

Adjusting Camber

- Loosen the camber nuts (1,2,3) and slide plates into desired position. Tighten Camber bolts.



← Front of car

Note - To adjust the caster while keeping the camber set for fine tuning:

- Loosen all the camber nuts (1, 2, 3)
- Loosen the caster bolts (4, 5, 6, 7)
- Reset the camber for the desired position and tighten camber nuts
- Move caster to desired position.
 - Tighten down caster bolts that are within the strut tower opening.
- Loosen camber nuts, move plate back and forth to tighten the remaining caster bolts
- Set the camber to desired position and tighten camber nuts.

Tip – An approximation of 11.5mm of movement along the strut tower can be assumed to be 1 degree of camber change.