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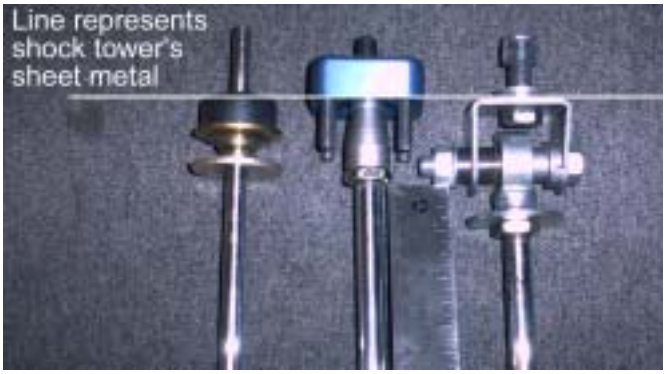
MM Racing Rear Upper Shock Mount - Koni 30 Series (MMSM-3)

Read all instructions before beginning work. Following instructions in the proper sequence will ensure the best and easiest installation.

Thank you for purchasing Maximum Motorsports' Racing Upper Shock Mount. This kit is manufactured specifically for Koni 30 Series shocks. There are many features that make this product unique.

- A solid aluminum block and steel doubler plate reinforce the shock tower for coil-over applications. May also be used without coil-overs.
- Relocates the shock shaft 1" upward relative to the body of the car. This reduces the amount of un-necessary droop in the shock when using stiff rear springs.
- Performs a similar function as a rod end on the top of the shock, but provides 1" more bump travel than a rod end mount under the shock tower; thus restoring the bump travel to what was originally available stock. This means the car will perform better with a longer progressive bumpstop for the same ride height, or may be run very low for racing with a short bump stop. A stock shock is shown on the left for reference.



NOTE: The installation of the upper shock mount is not easily reversible. Due to the drilled holes, the shock tower will be too weak if the shock is run in stock configuration without welding the holes closed.

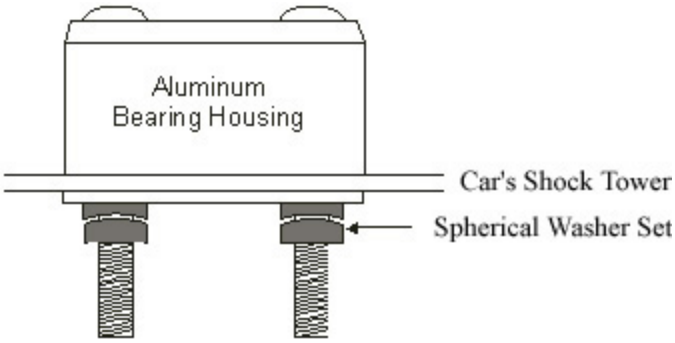
1. Loosen, but do not remove, the lug nuts of the rear wheels.
2. Block the front wheels and jack up the rear of the car. Once raised, support the rear of the car with jack stands under the subframes or torque boxes. With the shocks just short of full extension, support the axle on jack stands.
3. Remove the rear wheels.
4. From inside the car, remove the nut, thrust washer, and shock rubber isolator (if removing a stock shock) from the top of the shock shaft. None of this hardware will be re-used.
5. Remove the bottom shock bolt from the lower shock mount. Save the lower shock bolt and nut. Remove the shock from the car.
6. Check that the hole in the rear shock tower is at least 1" diameter. The size of this hole varies greatly, and may need to be enlarged. Use a round file or a die grinder for this operation.
7. Set the steel Doubler Plate on top of the rear shock tower. Center the large center hole of the plate over the hole in the chassis where the shock came through. Align the Doubler Plate so it is parallel to the rear inner wheel well housing. You may need to remove seam sealer from the mounting area. The angled corners are positioned towards the center of the car.

8. Mark the position of the four mounting holes onto the shock tower. Remove the Doubler Plate. Center punch the location of the hole centers. Drill four 1/8" pilot holes. Drill to the final size of 11/32". Debur the holes.

9. Set the Aluminum Shock Mount into place, with the four mounting bolts protruding down through the four new holes in the shock tower.

10. From underneath the shock tower, place a Doubler Plate over the four mounting bolts, and push it up against the shock tower. The angled corners are positioned towards the center of the car.

11. Place a spherical washer set on each bolt--concave sides first (see below), followed by a nylock nut.



12. Torque each nylock nut to 19 ft-lb.

13. Repeat steps 4-12 to install the bearing housing on the other side of the car.

14. Remove the circlip securing the Koni upper upper spring perch to the rod end flange.

15. Make sure the lower spring perch is positioned so there is a 2" gap between the top of the spring and the upper spring perch. Push the upper spring perch and bumpstop downward to disengage the upper spring perch from the rod end flange. Remove the upper spring perch from the shock shaft.

16. Loosen the jam nut securing the flanged-rod end. Grip the head of the rod end with a Crescent wrench or with a vice.

17. Unscrew the flanged-rod end and jam nut from the end of the shock shaft. Save the jam nut - you will need it later. Discard the flanged-rod end - it will not be re-used.

NOTE: The installation of this upper shock works best with a 2 -1/4" MM Rear Coil-Over kit (P/N MMCO-6) for Koni 30-series shocks. The MM 2-1/4" springs provide better clearance around the tires, inner fender well and axle tube than 2-1/2" springs. The MM kit also provides hardened steel inserts that properly fit into the shock's lower rod end, plus a lower shock mount that uses two bolts to eliminate the bending that is common with the Ford lower shock mount. If using a MM Rear Coil-Over kit, install it now, then skip to step 19. If you want to re-use the Koni style coil-over kit proceed as indicated.

18. Position the provided Spring Perch Disc into the Koni upper spring perch and secure it with the circlip.

19. If your car is lowered 1" - 2", we reccomend using Koni's LONG 55mm soft, progressive bumpstop (MM P/N SERVICE-5). The long bumpstop will provide a soft and progressive contact for better performance. Replace the SHORT 25mm bumpstop (standard equipment on the Koni 30 Series) with the LONG 55mm bumpstop, tapered end facing down and skip to step 24.

    If your car is lowered 2" or more for racing, leave the SHORT 25mm long bumpstop on the shock shaft.

WARNING!!!! Special care must be taken if you use a shorter bumpstop than stock, such as the SHORT 25mm bump stop that is standard with the Koni 30 Series shock. Because such short bumpstops will allow more bump travel than stock, brake line damage will occur without special care. The photo below shows the danger of increasing bump travel without paying attention to brake line clearance.

When using a shorter bumpstop than stock you must re-route the brake lines to avoid potential interference. If you are unsure of your abilities to re-route brake lines, take your car to a professional race preparation shop. Typical brake repair shops will not be able to help you.

20. Use a floor jack to slowly compress the rear suspension. As the axle nears full bump, with each pump of the jack, carefully inspect brake lines for adequate clearance.

21. '79-'93 cars need special attention to the single brake hose and the hard metal lines between the differential and the trunk floor. On '94+ cars, pay attention to the brake lines between the axle and the frame rail.

22. As you approach full bump travel, you will most likely have to re-bend and re-route the hard metal brake lines. You may have to re-mount some of the frame tabs that support the brake lines. Details of how and where to re-route the lines are impossible for us to describe here because of extreme variations in race car layout. Fuel cells, fuel lines, exhaust routing, placement of lead ballast and different types of brake calipers are only some of the factors to consider.

23. To check your revised brake line routing, cycle the suspension until the axle hits the trunk floor or frame rails. Cycle the suspension in roll as well. As the axle rolls, the path that the axle travels can be quite different than straight bump and droop.

IMPORTANT! Do not continue until the brake lines have been re-routed for adequate clearance.

24. Position either the MM or Koni upper spring perch over the end of the shock shaft with the top of the perch slid down past the threaded portion of the shock shaft.

25. Thread the 14mm jam nut onto each shock until it bottoms against the smooth portion of the shaft. Do not force the nut once it has bottomed, as this will damage the threads.

26. Thread the Adapter Cone onto the Koni shock shaft as far as it will go. Use a 7/8" wrench on the flats of the Adapter Cone and tighten the jam nut against the Adapter cone to lock it in place.

27. Thread the 12mm stud into the top of the Adapter Cone. The 12mm stud will bottom against the top of the 14mm shock shaft. Hold the Adapter Cone with a 7/8" wrench and tighten the 12mm stud to 35 ft-lb.

28. Place a Shock Shaft Reducer onto the shock shaft. The end with the flange is positioned towards the bottom of the shock.

29. Repeat Steps 14-28 for the other shock.

30. On the passenger side of the car, position the shock shaft through the spherical bearing hole in the Aluminum Shock Mount.

31. Insert the OEM 12mm lower shock bolt through the lower shock mount and the shocks' rod end. Torque to 70 ft-lb.

32. Using a jack, raise the axle to seat the Shock Shaft Reducer in the bottom of the spherical bearing.

33. From inside the car, on top of the spherical bearing, place a Shock Top Spacer over the shock shaft followed by a provided 12mm Nylock nut. Hold the shock shaft with an Allen wrench and torque the shock top nut to 35 ft-lb.

34. Repeat steps 30-33 to install the completed shock assembly into the other side of the car.

35. Reinstall the wheels and torque the lug nuts to factory specs.

36. Remove the jack stands and lower the car.

37. Test drive and enjoy.

<u>This kit includes the following:</u>

2 Aluminum Bearing Housings
2 Doubler Plates
8 Spherical washer sets
8 5/16" Nylock nuts
2 Adapter Cones
2 Shock Shaft Reducers
2 Shock Top Spacers
2 12 mm X 60mm long, studs
2 12 mm Nylock nuts
2 Spring Perch Discs