

Spherical Rack Bushing Upgrade Kit, 12mm Hole(MMST-7.1)



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

Thank you for purchasing the Maximum Motorsports Spherical Rack Bushing Upgrade Kit. The MMST-7.1 upgrade kit is specifically designed for use on vehicles that have center-drilled aluminum rack bushings already installed. This kit consists of the rear portion of our MMST-7 kit, and may require a slight modification to the previously installed aluminum rack bushings. The MMST-7.1 bushings are only for use on vehicles with stock k-members.

Solidly mounting the steering rack with aluminum bushings eliminates rack movement relative to the K-member, which improves steering response. Along with improved turn-in, the car will maintain a more precise line through a corner, and require fewer steering corrections.

Stock K-members are made from stamped steel, and always have some irregularities between the two rack mounting surfaces. The two rack mounting surfaces are never flat, nor even in the same plane. This is acceptable only when soft rack bushings are used. When rigid rack bushings are installed it can cause the aluminum rack housing to twist, resulting in steering chatter. Chatter can be caused if the steel steering rack binds up inside of the cast aluminum steering rack housing. This binding (binding means a resistance to moving freely) can happen if the rack housing is twisted when the rack is solidly attached to the K-member.

We designed a new steering rack bushing that retains the benefits of a solidly mounted steering rack, but also prevents the twisting of the rack housing that can cause chatter. Our new design incorporates a spherical washer into the bushing. This will accommodate the irregularities in the K-member surface, and prevent the rack housing from twisting. This kit allows adding the spherical washer portion of the new MMST-7 rack bushings to a previously installed center drilled rack bushing.

1. Raise and support the vehicle safely using jack stands.
2. Remove the one bolt retaining the lower flexible coupling (U-joint or rag joint) of the steering shaft to the input shaft on the steering rack.



3. Remove the two nuts and washers holding the steering rack to the k-member.
4. Remove the two steering rack mounting bolts.
5. Pull the rack forward from the k-member 1-2 inches so that the steel rack sleeves are clearly visible.
6. Using an awl or other sharp object, scribe a line around the circumference of the steel rack sleeves where they enter the k-member. Make sure to scribe the line as close to the face of the k-member as possible.

NOTE: Make sure that the back mounting face of the steel rack sleeves are resting firmly against the sheet metal of the k-member. If the sleeves have pulled forward during removal of the steering rack mounting bolts, use a hammer and drift to drive them back. If the sleeves are not touching the back mounting face, they will be cut too short in Step 8.



7. Remove the steering rack mounting sleeves from the k-member. Mark each sleeve as to which side of the vehicle they were removed from.

NOTE: To free the steering rack mounting sleeves from the k-member, it can be helpful to use a pair of Vice-Grip or Channellock pliers to rotate the sleeves back-and-forth, while pulling on them.

8. Using a hacksaw or other cutting device, cut off the forward portion of the rack mounting sleeves. The cut should be made $1/32$ " to $1/16$ " rearward of the lines scribed in Step 6. This will cause the

remaining rearward portion of the rack mounting sleeves to rest slightly below the front rack mounting surface of the k-member when they are reinstalled into the k-member. Discard the forward portion.

NOTE: Make sure that the cut faces are as close to perpendicular as possible.

WARNING: DO NOT cut the sleeves too short! The sleeves must NOT be too short to be retained by the forward surface of the k-member.



9. Reinstall the sleeves in the k-member, being sure to place them back into the same mounting holes that they were removed from.



10. Place the rear half of the MM aluminum rack bushings (with the machined concave mounting face) in the rearward side of the steering rack mounting holes.



NOTE: Older revisions of the aluminum rack bushings offered by MM (and some of our competitors' bushings) are too long to properly work with the MMST-7.1 upgrade kit without some minor trimming. Use the following procedure to check and modify your aluminum rack bushings.

11. Remove your aluminum rack bushings from the steering rack housing.
12. Measure the distance from the base of the mounting flange to the end of the bushing. This measurement must be less than 1.60". If the bushings are longer than 1.60", they must be cut shorter. The cut does not need to be made perfectly square. The goal is to cut the bushing short enough that it cannot contact the rear portion of the MM Spherical Rack Bushing when it is inserted into the steering rack housing.



13. After ensuring that they are short enough, reinstall both aluminum rack bushings into the front of the rack.



14. Slide the rack mounting bolts in from the rear of the k-member far enough so that they protrude about an inch past the front steering rack mounting face of the k-member. Make sure the sleeves are resting against the rear of the k-member. The front of the sleeve must be in the hole at the front of the k-member, and also should not protrude past the forward face of the k-member.
15. Slide one silver 12mm washer onto each rack mounting bolt, and place it against the front of the k-member.
16. Slide one spherical washer onto each rack mounting bolt. The flat face of the spherical washer should be placed against the 12mm washer.



17. Place the steering rack back into position, using the rack mounting bolts as your guide. Be sure to connect the steering rack input shaft to the steering shaft at this time.
18. Slide the steering rack mounting bolts completely forward and reinstall the washers that were previously removed in Step 3.



19. Reinstall the nuts on the steering rack mounting bolts, and torque to 45 ft-lbs.

NOTE: The rear aluminum portion of the rack bushing should NOT touch the k-member. If there is contact, use a small drift punch to drive the sheet metal of the k-member back away from the aluminum of the steering rack bushing, where it is making contact with the k-member. It may be necessary to temporarily unbolt the steering rack from the k-member to do so.



20. Install the one bolt retaining the steering shaft's lower flexible coupling to the input shaft on the steering rack. Torque it to 25 ft-lbs.
21. Safely lower the vehicle to the ground and test drive.

This kit includes:

- 2 Female Spherical Rack Bushing
- 2 Male Spherical Washer
- 2 12mm Washer (silver)