

Steering Tube Assembly (p/n MCA-00035) Modification

Introduction

The Steering Tube Assembly, also referred to as a steering bias pole, is designed to provide an additional axis of support for the Steering Ring, thus increasing the Steering Ring's stability and reducing unwanted movement.

Kairos recommends mounting the MCA-00035 Steering Tube Assembly to the center floorboard. The following procedure assumes a center floorboard mount, *adjust as appropriate for the target vehicle*. For some vehicles the Steering Tube Assembly may need to be modified for proper fit.



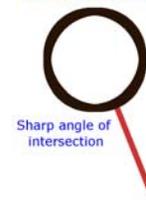
Modification Procedure

1. Determine the required length of the Steering Tube Assembly, *as follows*:
 - a. Determine the floorboard mounting location. This should be an area in the center of the vehicle's floorboard that is flat enough to secure the Ram Ball Mount.
 - b. Use the Ram Ball Mount self-tapping screws to secure the Ram Ball Mount to the floorboard.
 - c. Manually position the Steering Ring so that it is parallel to the steering wheel plane and it will have minimal interaction with the any part of the vehicle, in particular it should not impede any steering column controls (e.g., lever arms). The two most common orientations - as viewed by a driver - are to the lower-right of the steering wheel (e.g., the motor is oriented below the dash toward the center of the vehicle) or to the upper-left of the steering wheel (e.g., the motor sits inside the driver's console display area).
 - d. If the motor is NOT to the lower-right of the steering wheel, move the ball mount to the mount point closest to the lower-right or right of the Steering Ring, when it is positioned for installation.

CAUTION

The Steering Tube Assembly needs to be positioned so that the tube intersects the Steering Ring as tangentially as possible (i.e. inline with the edge of the ring and not at a right angle). The location of ball mount on the Steering Ring and the floorboard determine the angle of intersection. Failure to properly orient the Steering Tube Assembly may result in loss of steering control, which could lead to property damage.

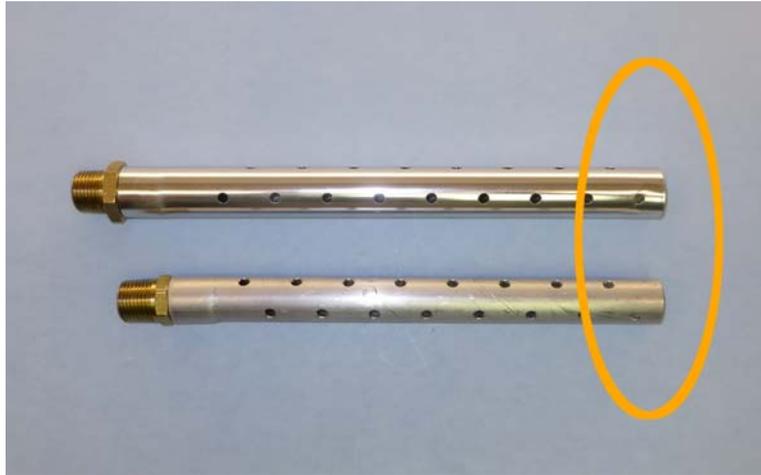
Incorrect



Correct



- e. Measure the distance from the Steering Ring's ball mount to the Ram Ball Mount on the floorboard. This is the length needed for the Steering Tube Assembly. If the needed length is less than 19.5" then each end of the Steering Tube Assembly will need to be cut down to an appropriate length. Use the following formula to determine the amount to remove:
 $19.5" - \text{needed length} = \text{length to be removed from each end}$
2. If the Steering Tube Assembly does need to be modified, do so *as follows*:
 - a. Use a hacksaw to cut each of the Steering Tubes the appropriate length.
 - b. Use a file, sandpaper, buffer or other comparable method to debur the Steering Tubes' cut edges.



3. Install the Steering Tube Assembly, *as follows*:
 - a. Manually screw a Ram Mount clamp to each Steering Tube until the clamp is secured.
 - b. Slide the inner Steering Tube into the outer Steering Tube.
 - c. Once the Steering Ring is mounted to the steering ring, clamp one end of the Steering Tube Assembly to the Steering Ring Ram Mount Ball and the other end to the Ram Ball Mount on the floorboard.
 - d. Use a pair of #10-32 x 1 1/4" stainless steel Philips head machine screws and #10-32 stainless steel nylock nuts to secure the Steering Tube Assembly at the correct length.

Contact Information

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