

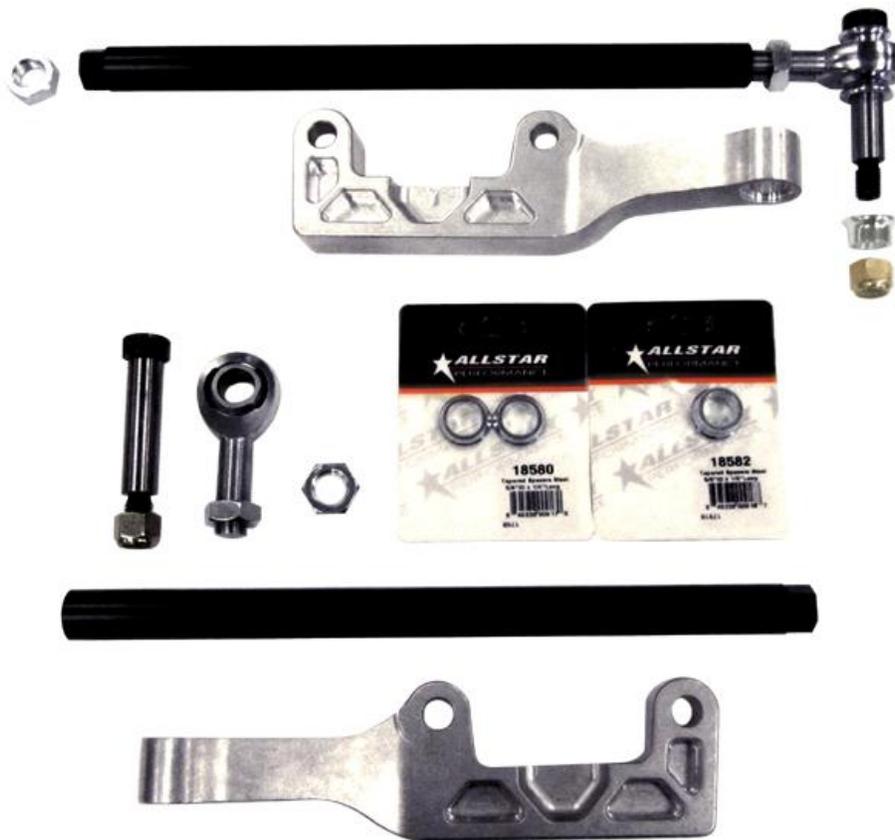


PERFORMANCE USA LLC

Feb 16, 2018

Enhanced Ackermann and Bumpsteer Adjustment Kit

220512

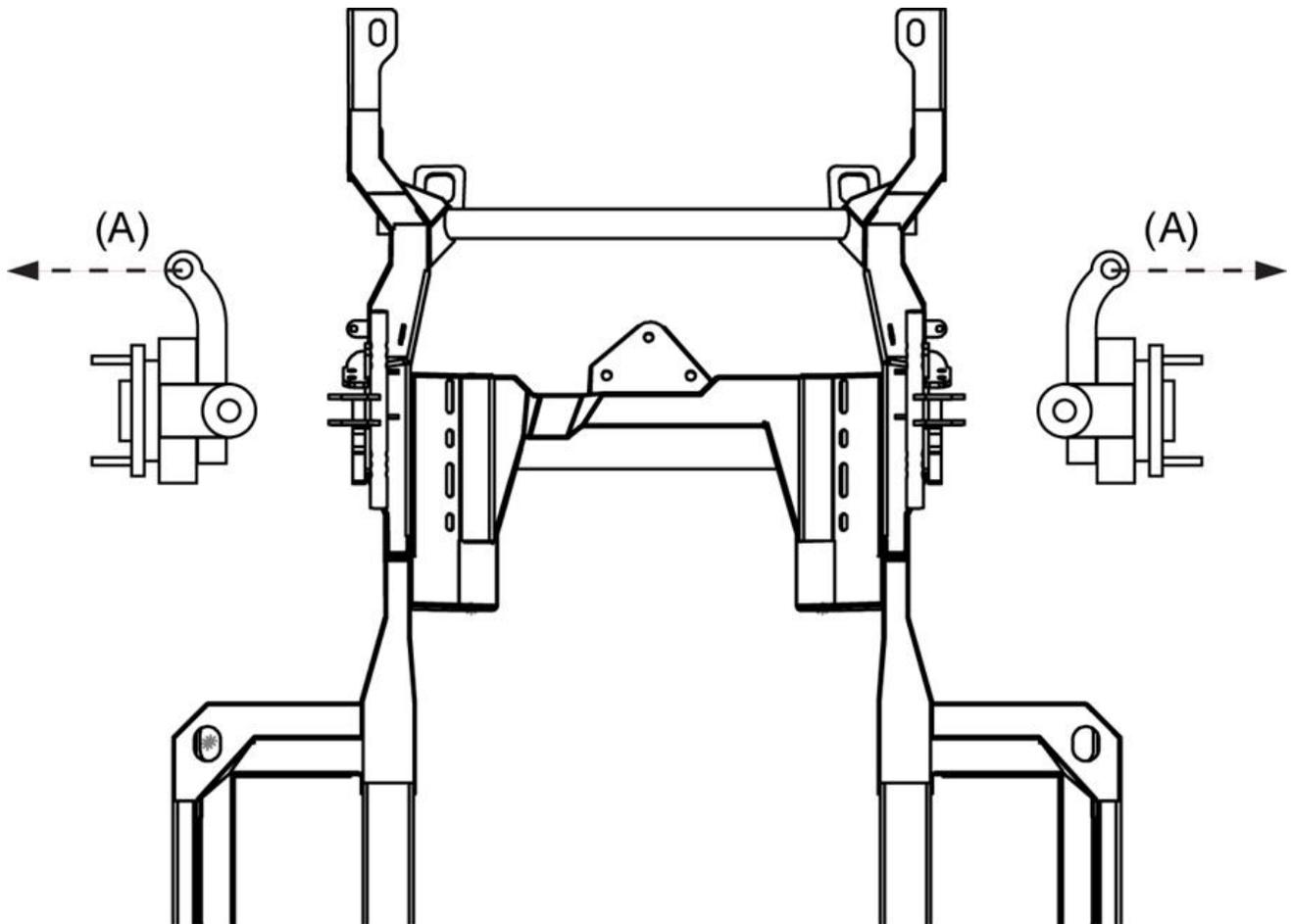


The following instructions are intended for professional installers. Speedtech Performance assumes NO responsibility for the installation of any of its products. All products are intended for off road use only and must be installed by qualified professionals only. Setting the alignment for this kit should only be performed by a technician familiar with setting race car type alignments. Alignment specs are not included in the kit and should be catered to your specific driving style and needs.

Part Checklist (Compare to photo on previous page)

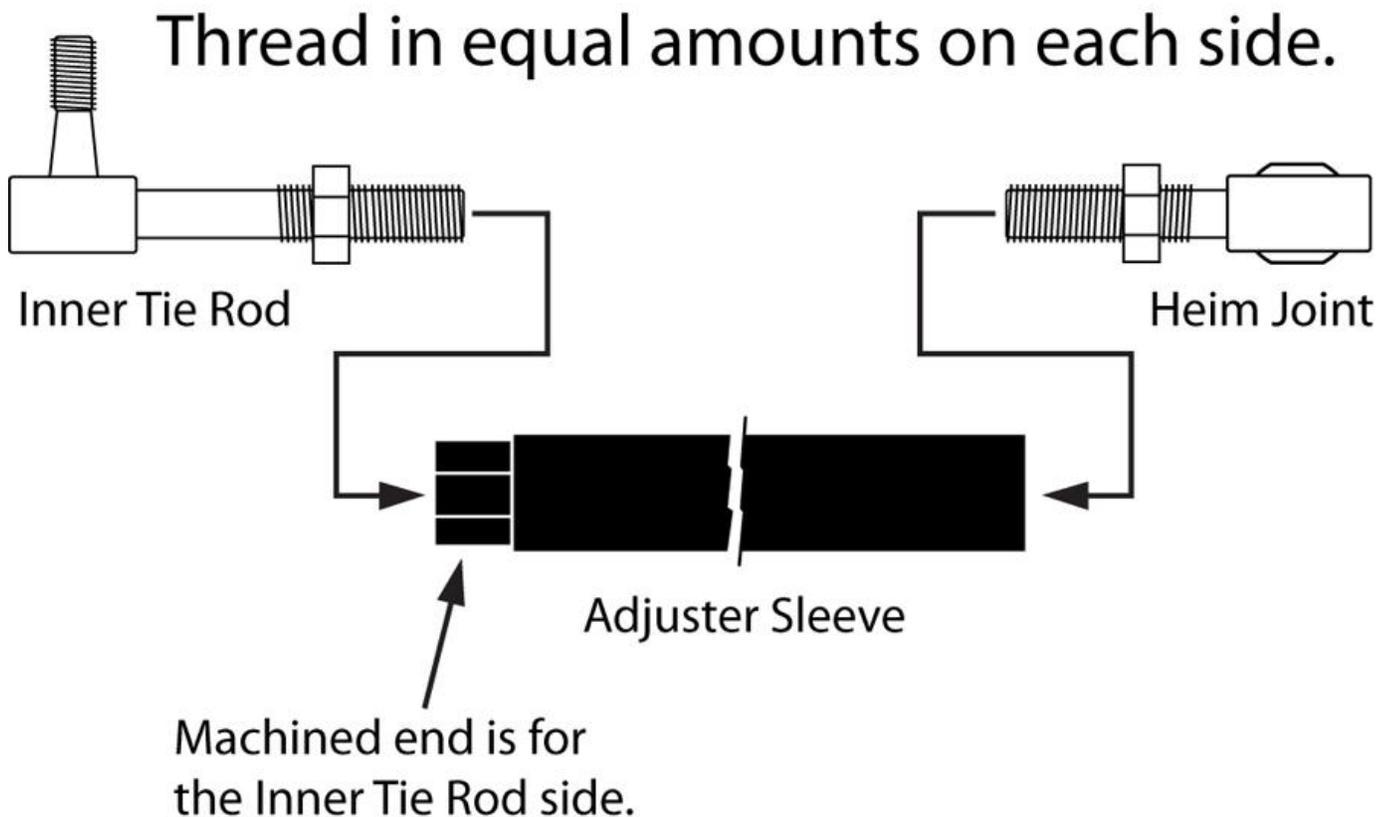
- (2) Billet Long Tie Rod Sleeves
- (2) Heim Joints
- (2) 5/8 Shoulder Bolts
- (2) Nylock Nuts
- (2) Right Hand Thread Jam Nuts
- (2) Left Hand Thread Jam Nuts
- (1) Pack Tall 5/8 Shims
- (2) Packs Short 5/8 Shims

1. With the car on sturdy jack stands install your AFX tall spindles (see spindle instructions) and steering arms with the tie rod ends pointing towards the outside of the car **(A)** . Remove the old outer tie rods and adjusting sleeves from the steering linkage. Do not remove the inner tie rods from the center link unless they need to be replaced.

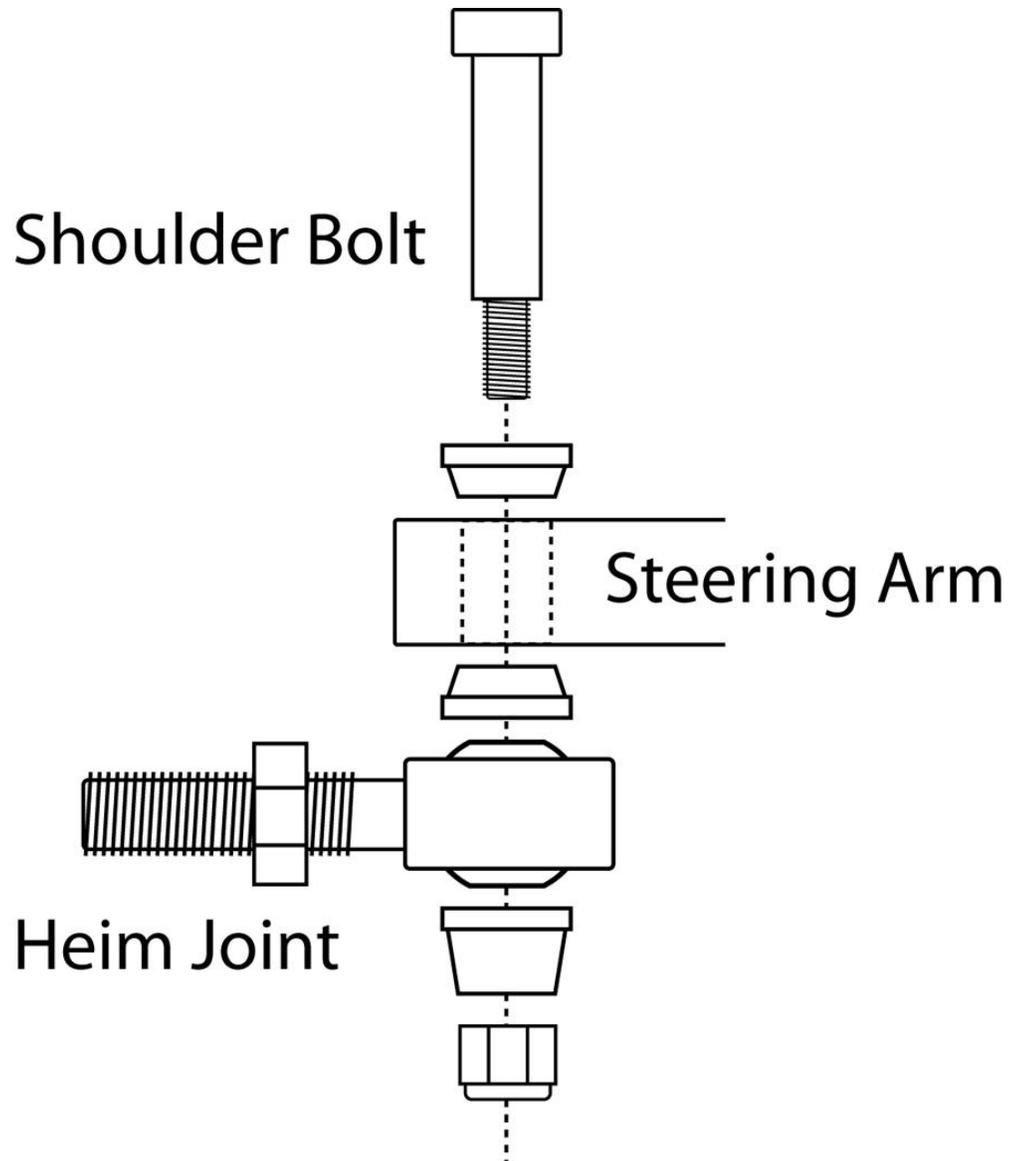


2. Thread a jam nut several threads onto both the heim joint and the inner tie rod, paying close attention to using the correct nut thread direction in the appropriate corresponding locations.

3. Apply anti-seize to the threads on both ends of the adjuster sleeves. Thread the machined end of one adjuster sleeve (see diagram below) a couple of threads onto one *inner* tie rod. Thread one heim joint *the same amount of threads* into the other end of the adjuster. Holding the heim joint steady use the other hand to rotate the adjuster sleeve so that it simultaneously tightens down both sides an equal amount until it lines up with the spindle steering arm with the wheel pointed straight forward.

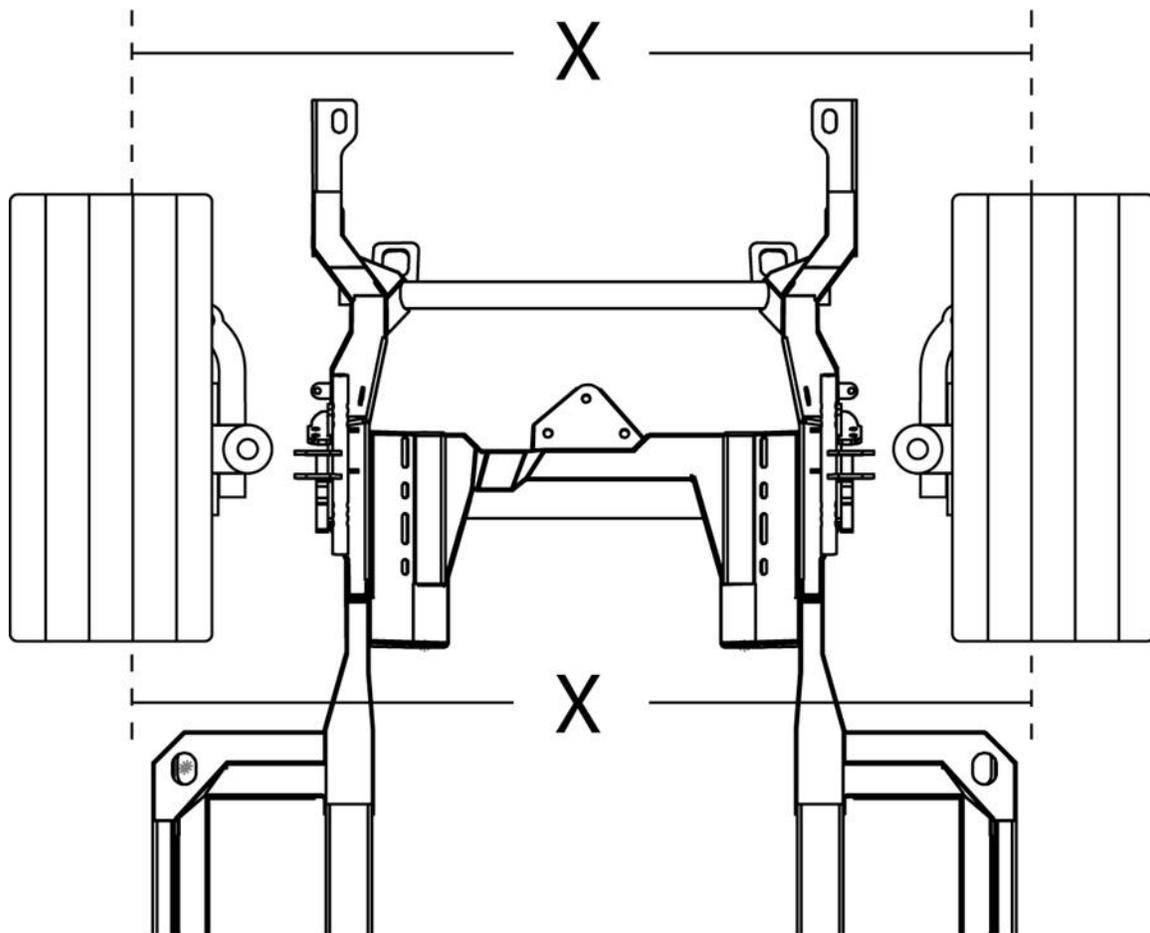


4. Install the shims, shoulder bolt and nylock nut as seen in the diagram below. With the suspension mocked up *at ride height*, if necessary change the positioning of the shims to have the tie rod assembly close to parallel with the ground. This will give you a good base bump steer setting to start with. Finger tighten the nylock nut, do not fully tighten it at this point.



5. Repeat steps 1-4 on the other side of the car.

6. Using a center point on the frame as a reference align the middle of the centerlink to the center of the vehicle. Now with the suspension *at ride height* and the wheels and tires bolted in place adjust each side's toe setting by turning the adjuster sleeves equally either forward or backward until the tires are facing forward. You can get the toe setting fairly close by adjusting the suspension until measuring the distance between the same points on the front side of each tire is equal to the distance between the same points on the rear side of each tire, see (X) in the diagram below. Adjust as needed until both front and rear measurements are near the same. When finished snug all four jam nuts finger tight. This will be close enough to drive the car onto a trailer to take to a competent alignment shop. *Do not street drive the car in this condition* other than to load it on a trailer.



7. Bring the car to a reputable alignment shop that is familiar with performance alignment settings and how they all correlate with each other, including but not limited to caster, camber gain, toe settings for specific types of driving/ racing, bump steer adjustment, etc.

When the alignment is finalized the alignment technician will then tighten the tie rod adjuster jam nuts.

8. With all other alignment specs set you can check and adjust your bump steer. First measure and record the distance from the center of the hub vertically to the fender, this will give you your ride height wheel position. Raise the car off the ground, support on jack stands and remove one wheel. Using a floor jack raise the suspension to ride height, matching the measurement from the hub center to the fender. Using a bump steer gauge find measurements at 2-3" of compression and 2-3" of rebound. If bump steer is more than about .015 (15 thousandths), return the suspension to ride height. Disconnect and remove the shoulder bolt at the tie rod heim joint and rearrange the spacers as necessary, moving the heim joint either closer to or further from the steering arm. Reassemble and re-measure. Additional shims not included in the kit may be required to find the least amount of bump steer. Torque the nylock nut to 40 ft./lbs when finished. Be sure there are enough shims so that the nut makes contact with and tightens the rest of the assembly, and not too many shims so that at least 1-2 threads are showing beyond the nut when finally torqued down.

Note: You'll want to avoid static toe in and bump out. If your toe is set to toe in, than any amount of bump must be bump in. The same rule applies to toe out (autocross setting), any bump must be bump out.

9. After bump steer is in range recheck the other alignment specs.

10. Recheck the torque on all fasteners after 100 miles.

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Warranty Claim:

1. Speed tech Performance Ltd. Warrants its products against materials and workmanship failure for the term of 12 months (1 year) from the date of purchase and only up to the amount paid with proof of purchase.
2. Seller's liability shall as limited to repairing or replacing, at its option, any defective product which is returned, freight prepaid to Seller, according to the Merchandise Return Procedure set forth in Section 3 below. Buyer shall bear all responsibility for shipping charges and risk of loss or damage during transit to Seller. Products which have been subjected to abuse, misuse, alteration, neglect or unauthorized repair or installation, as determined solely by Seller, are not covered by this warranty. Any alterations, addition, improvements or attachments to the product(s) not authorized in writing by the Seller shall be deemed to be a waiver of this warranty by Buyer and shall render this warranty null and void. Seller shall return repaired or replaced product(s) to Buyer, at its expense via regular ground service in Canada. Shipping charges by all other methods and to all other destinations shall be borne by Buyer.
3. Merchandise return procedure
 - A. If you purchased your Speed tech performance ltd product from us or from an authorized dealer, you are covered by the terms of this policy. All claims however, must be submitted directly to Speed tech performance Ltd.
 - B. Call the customer service representative at 1-888-467-1625.
 - C. Provide the invoice number, date of purchase and reason for return
 - D. You will be assigned a Returned Goods Authorization Number (RGA). The package you return must show the RGA on the outside of the package, include the original invoice and be shipped prepaid to our facility. The part has to be in its original packaging materials and be in a sellable condition. For parts presenting signs of use, only warranty claims will be accepted.
 - E. Ship to seller, freight pre-paid and insured for replacement cost in original packaging.
 - F. Replacement or repair decision will be made when merchandise is received by seller. No advance replacement is available.

How to File a Warranty Claim:

The answer to ALL the following questions should be YES before contacting our Customer Service Department.

Is the part appropriate to your application?

Did you carefully and thoroughly read the instructions provided along with the part?

Do you have the proof of purchase?

Are you the original purchaser?

Is the part unmodified and clean?

Is the return date within 3 months from the purchase date?

Is the reason for return a legitimate product defect?

If the answer to all these questions is YES, please contact our Customer Service Department at 1-888-467-1625. You will be given a Returned Goods Authorization Number (RGA) valid for 30 days. You will also be asked to ship the part prepaid to our facility. All shipments MUST be prepaid, include the original invoice and show the RGA on the outside of the package, otherwise it will be refused. Please include a brief explanation letter in order to expedite the warranty analysis process.

What doesn't this Warranty Cover?

The costs not covered by this warranty include but are not limited to:

- Removal, installation, shipment and insurance costs.
- Improper installation or maintenance
- Misuse or abuse, negligence
- Damage to related components
- Normal wear and tear.
- Costs incurred due to down time of vehicle
- Alterations on the original design or unauthorized repairs.

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