



SLINGSHOT

Release Date: 01/21/2015

Expiration Date:

TECHNICAL SERVICE BULLETIN

Slingshot

Bulletin Number: **SLI-15-02**

Model Year(s): **2015**

Safety Bulletin Service Bulletin Service Alert Fax Production Update Kit

Distribution: Owner / Principal Service Manager Sales Manager Parts Manager Technicians

This Service Bulletin is located at www.polarisdealers.com

-Confidential and Proprietary-

IMPORTANT SAFETY NOTICE! STOP RIDE – STOP SALE

SUBJECT: 2015 Slingshot / Slingshot SL – Steering Rack Replacement

PURPOSE:

Polaris has determined that some Slingshot vehicles were manufactured with a steering rack that does not meet Polaris quality standards. In some vehicles, the upper pinion bearing for the steering rack assembly could fail unexpectedly, allowing the pinion to move so that it no longer is engaged with the steering rack. The result of such a failure could be a loss of steering. This could cause the vehicle operator to lose control, increasing the risk of a vehicle crash.

AFFECTED MODELS:

Model Year	Model Numbers	Models	Vehicle Identification Number Range
2015	ALL MODEL NUMBERS	ALL MODELS	Enter the Vehicle Identification Number (VIN) into 'Unit Inquiry' to verify whether a vehicle is affected by this Safety Bulletin.

WHAT YOUR DEALERSHIP SHOULD DO:

- STOP ALL SALES / TEST RIDES / DEMO RIDES** until this Safety Bulletin has been completed on affected units. After the bulletin is completed and a warranty claim has been filed, it is acceptable to resume sales / test rides / demo rides.
- Review your dealership's inventory to locate potentially affected models.
 - Use 'Unit Inquiry'.
 - OR**
 - Login to the dealer website.
 - Locate the 'Service and Warranty' dropdown, click on STOP Site.
 - On the left hand side of the page, under 'STOP Site Links', click on 'Service Bulletins'.
 - Locate the SLI-15-02 link and click on the 'All VINs' link located on the right.
 - The 'All VINs' page will display all affected VINs within your dealership's inventory.
- Perform the steering rack replacement procedure outlined in this Safety Bulletin on all affected units.
- File a warranty claim following completion and attach a bulletin completion decal as shown on page 3 of this bulletin.

CUSTOMER NOTIFICATION:

A customer notification letter will be sent to all registered owners of potentially affected vehicles. In addition to the notification letter sent by Polaris, dealers are required to review sales records and contact consumers who have purchased a potentially affected vehicle. Make arrangements to perform the steps outlined in this Safety Bulletin immediately.

WARRANTY CLAIM INFORMATION:

A single group claim may be submitted listing the complete (17 digit) Vehicle Identification Number for machines with the same model number. File claim type: **SB (Service Bulletin)**. DO NOT PUT MORE THAN ONE MODEL NUMBER ON A CLAIM.

SERVICE BULLETIN #	SLI-15-02
CLAIM TYPE	SB (Service Bulletin)
LABOR ALLOWANCE	1 Hour 18 Minutes (1.3 Hours)
CLAIM PART NUMBERS	N/A – Auto Process Bulletin

PARTS INFORMATION:

PART NUMBER / DESCRIPTION	7170107 (QTY.1) – Service Bulletin Completion Decal 1824432 (QTY.1) – Rack, Steering 7547746 (QTY.2) – Nut, M10 x 1.5 7518097 (QTY.2) – Screw, M8 x 1.25 x 20 7518291 (QTY.2) – Bolt, Tie Rod to Knuckle 7517770 (QTY.2) – Bolt, Wheel Speed Sensor 7518558 (QTY.2) – Bolt, EPAS 7517792 (QTY.4) – Bolt, Steering Rack to Frame
PARTS AVAILABILITY	Available to order
DIRECT-SHIP FROM POLARIS?	No
TO BE ORDERED BY DEALER?	Yes

TOWING REIMBURSEMENT:

Polaris will cover up to \$250 for the cost of towing; we recommend customers work with dealerships on the best method of transport, either dealership or 3rd party. Follow the steps below to obtain transport reimbursement.

1. Submit a Service & Warranty, Non Cosmetic Authorization Request
2. For Concern, Cause, Correction add: SLI-15-02 Transport Reimbursement
3. For fail codes 1, 2, 3 add: Service Bulletin, Service Bulletin, Service Bulletin
4. Add part 0000499, quantity 1
5. Enter transport costs in the “Misc. Charges” field
6. Attach documentation (RO, invoice, etc.) supporting the transport reimbursement request and submit the case

PARTS RETURN OR DISPOSAL INFORMATION:

International Dealers & Distributors: Under no circumstances shall the part(s) removed in this repair be re-used, sold, or re-purposed for another application. It is your dealership / distributorship’s responsibility to make sure every part replaced is taken out of circulation and disposed of properly.

For North American Dealers: Once the warranty claim for each unit has processed, please review the “Check Returned Parts List” on your dealer website. The steering rack is an item you will be required to return to Polaris. If you fail to return the steering rack, your dealership will be charged.

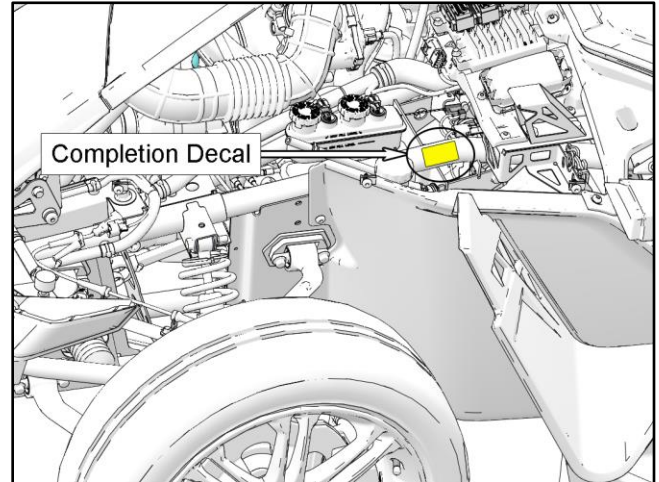
SERVICE BULLETIN COMPLETION DECAL:

A Service Bulletin Completion Decal (PN 7170107) must be completed for this bulletin repair. Place the decal on the left side frame tube, near the brake master cylinder (as shown). If you require more decals, order them through normal Polaris parts ordering channels.

Sincerely,



Doug Koch
Technical Service and Warranty Manager



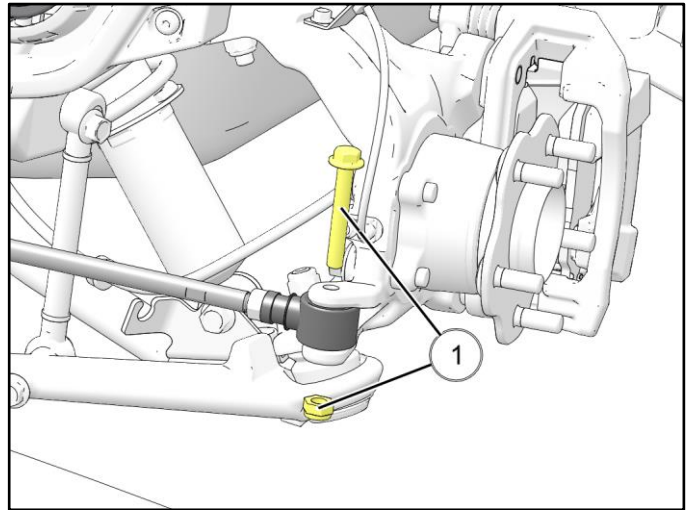
STEERING RACK REPLACEMENT

IMPORTANT

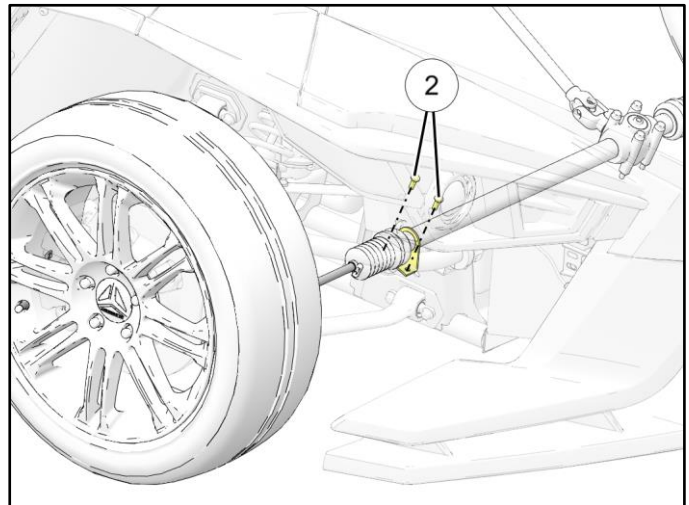
- With the steering wheel in a centered position and the front wheels pointing straight ahead, secure the steering wheel with ratchet straps (or similar) to ensure it does not rotate throughout this procedure.

Steering Rack Removal:

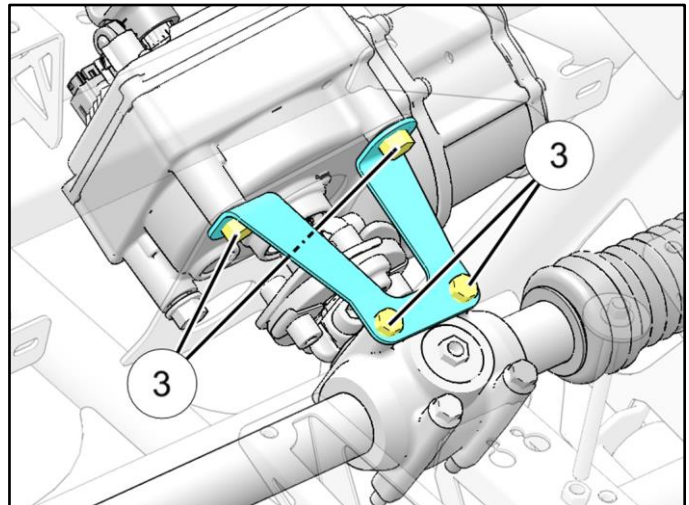
1. Disconnect the negative battery cable.
2. Open the vehicle hood.
3. Raise the vehicle using a suitable lift or jack and remove the front wheels. Refer to the 2015 Slingshot Service Manual for lift-point locations.
4. Remove both of the wheel speed sensors from the steering knuckles prior to removing outer tie rod bolts to gain clearance.
5. Remove the bolt and nut ① securing the outer tie rod end to the steering knuckle for each side of the vehicle and discard.



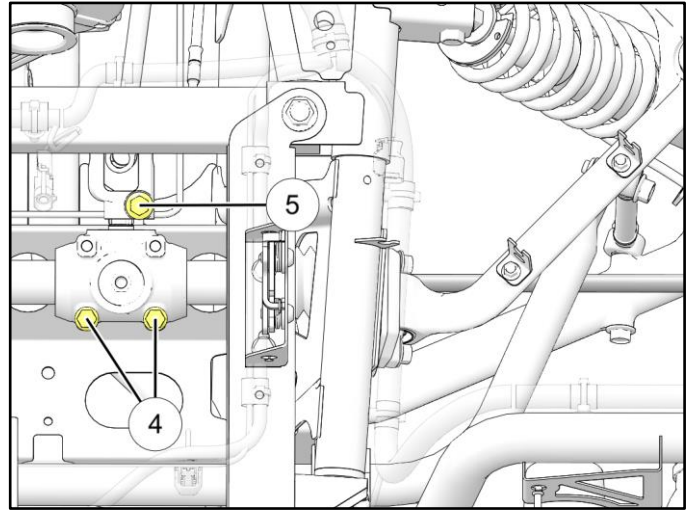
6. Remove the bolts ② from the passenger (right) side of the steering rack.



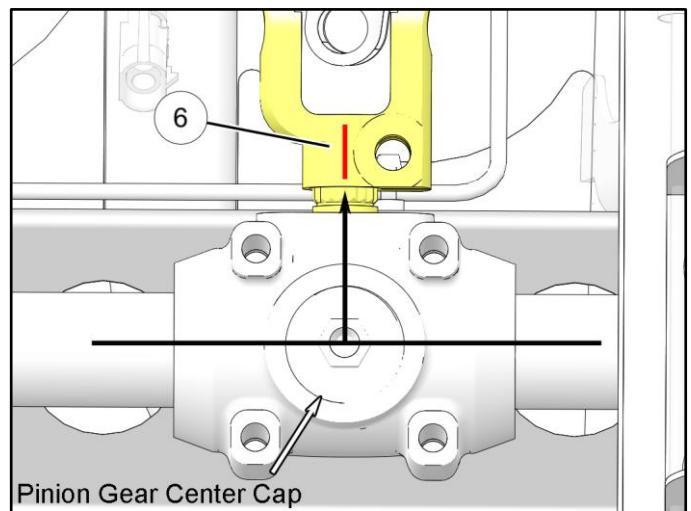
7. Remove the four steering rack bracket bolts ③ and remove bracket.



8. Remove the remaining two bolts ④ from the steering rack.
9. Remove the steering shaft coupler bolt ⑤.

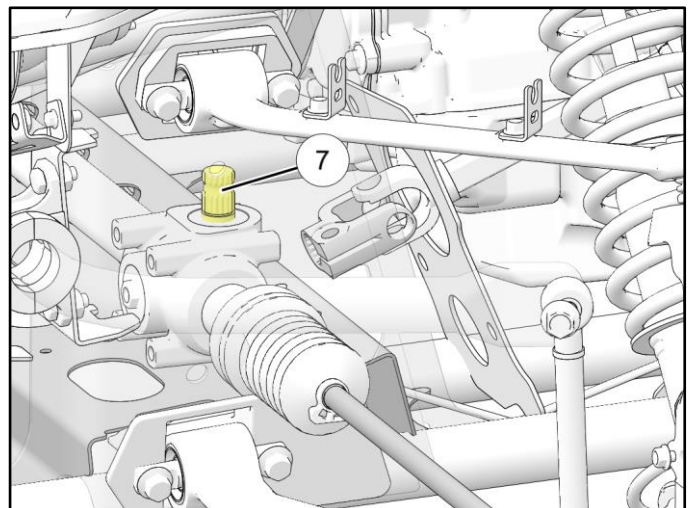


10. Using a grease / paint pen, place a mark on the steering shaft coupler ⑥ that is aligned with the pinion gear center cap and perpendicular to the steering rack. (To be used for reference later)

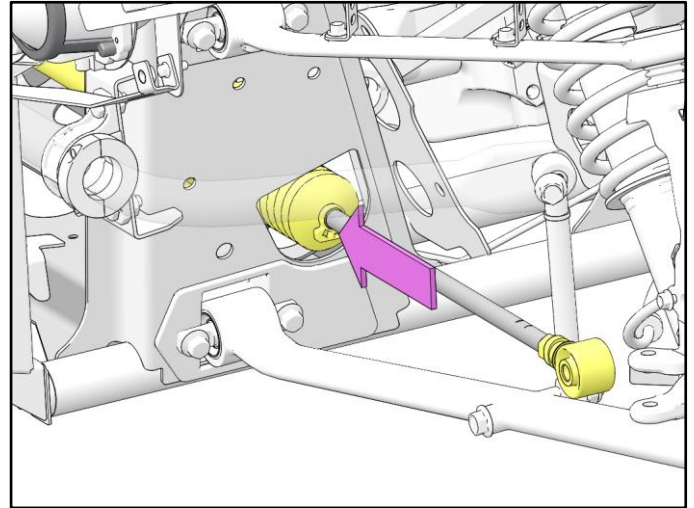


NOTE: Be careful not to damage the radiator, fan shroud or radiator hoses while moving the rack into position for removal.

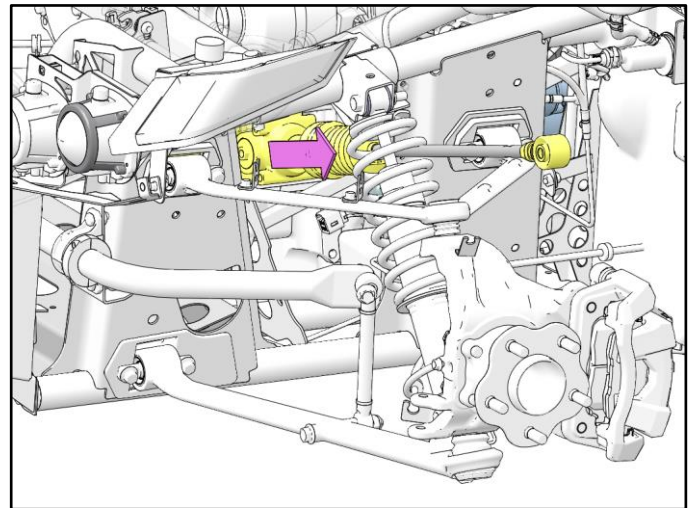
11. Slide the rack assembly forward off of the steering shaft coupler and rotate so the input shaft ⑦ is pointing up as shown.



12. Slide the rack towards the passenger (right) side of the vehicle until the driver (left) side tie rod end clears the inside of the frame opening.



13. Move the rack to the rear of the shock assembly at the frame opening and remove the rack out of the driver (left) side of the vehicle as shown.



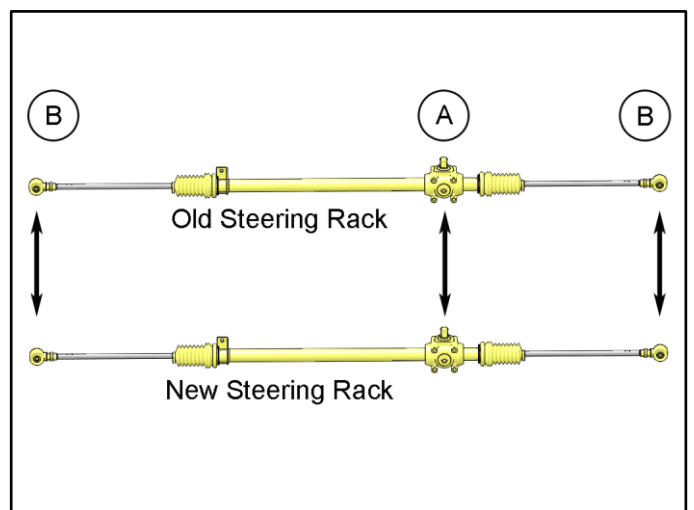
Steering Rack Installation:

14. **NOTE:** The new rack should arrive at your dealership pre-centered and marked for installation. The following check will verify that the centered position has not been affected during transit.

IMPORTANT: This is a baseline inspection only. Tie rod ends should not be adjusted at this time.

Lay the steering rack you removed on the ground in front of the new steering rack to verify that the new rack is centered:

- Align the pinion gear center caps from each rack (A)
- Verify that the outer tie rod ends (B) are in the same position.



15. Install the new steering rack assembly by sliding it into position in the same order by which it was removed. See Figure 1 & Figure 2.
16. Apply a thin coat of grease to the input shaft splines and align the centering mark on the input shaft with the mark made in step 10, and slide the input shaft into the coupler joint.
17. Insert the coupler bolt and torque to specification.
18. Install the remaining bolts and torque to specification. Verify that steering rack boots were not torn / damaged during installation.

TORQUE:

Steering Rack to Frame: **22 ft-lbs (29.8 Nm)**

EPAS Bracket Bolts: **40 ft-lbs (54.2 Nm)**

Steering Shaft Coupler Bolt: **35 ft-lbs (47.5 Nm)**

Outer Tie Rod Bolts: **55 ft-lbs (74.5 Nm)**

Wheel Speed Sensor Bolts: **8 ft-lbs (10.8 Nm)**

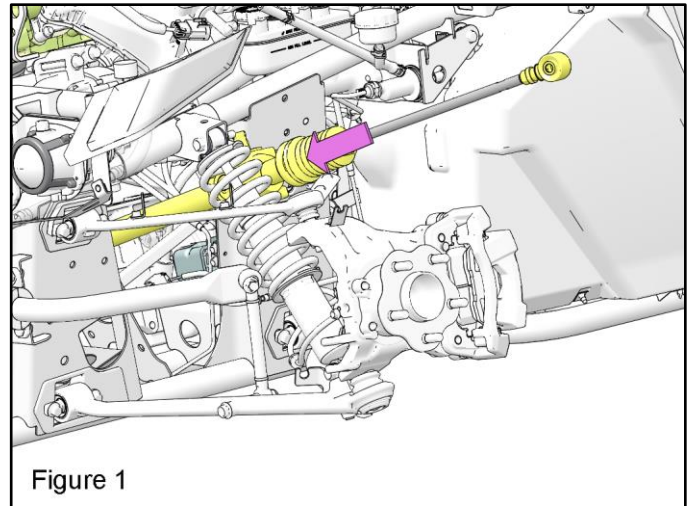


Figure 1

19. Install the front wheels and torque to specification in a star pattern.

TORQUE:

Wheel Lug Nuts: **75 ft-lbs (101.7 Nm)**

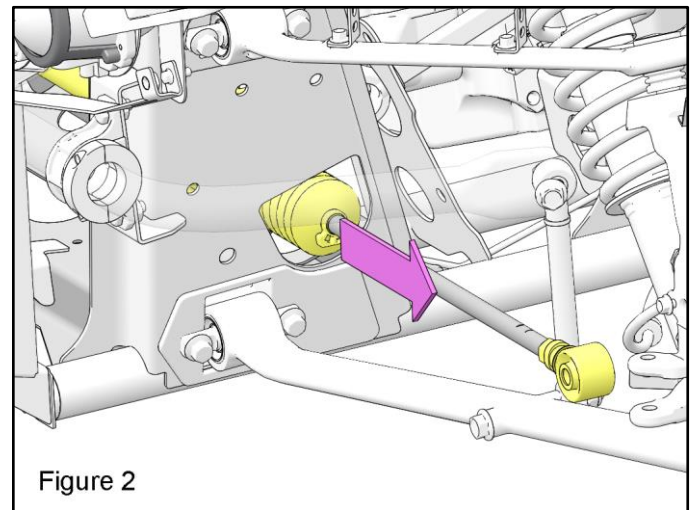


Figure 2

20. Set toe using the method outlined below.

Setting Toe:

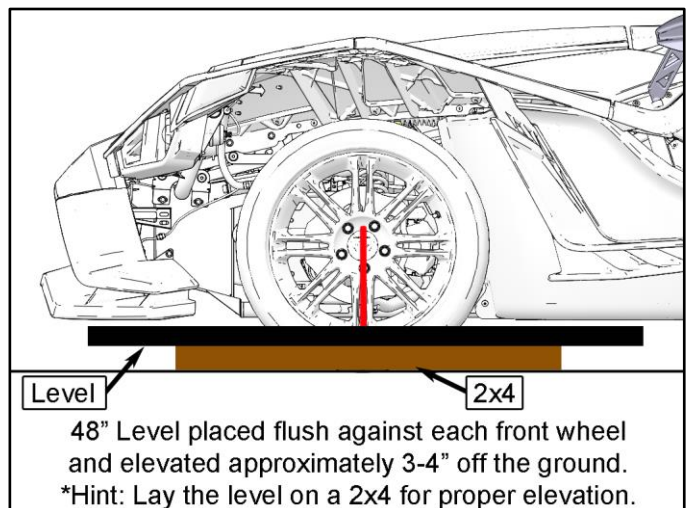
Tools Required for Alignment:

- 48" Level (QTY.2)
- 24" - 36" - 2x4 Boards (QTY.2)
- Tape Measure
- Assorted Ratchet Straps

21. Lower the vehicle so it is resting on the ground.
22. Place a **48"** level along the outer edge of each front wheel. The level must be elevated off the ground approximately 3-4" and flush against the tire sidewall. (A standard 2x4 will work)

IMPORTANT: Using a 48" level is critical to obtaining an accurate TOE measurement.

NOTE: The center of the level must be aligned with the wheel center cap as shown.



48" Level placed flush against each front wheel and elevated approximately 3-4" off the ground.
*Hint: Lay the level on a 2x4 for proper elevation.

23. Measure the distance (A) between the forward, inside edges of both levels and record.

Measurement A: _____

24. Measure the distance (B) between the rear, inside edges of both levels and record.

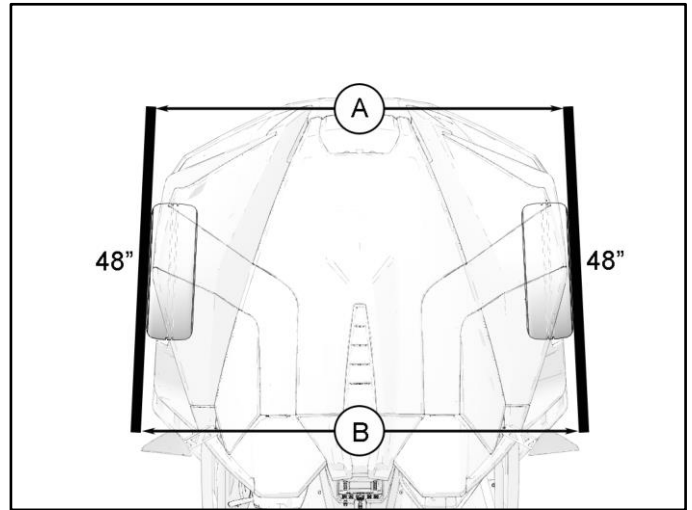
Measurement B: _____

25. Subtract measurement A from measurement B and record:

B - A = _____

This measurement is your TOE.

Example 37" - 36" = 1" Toe-In



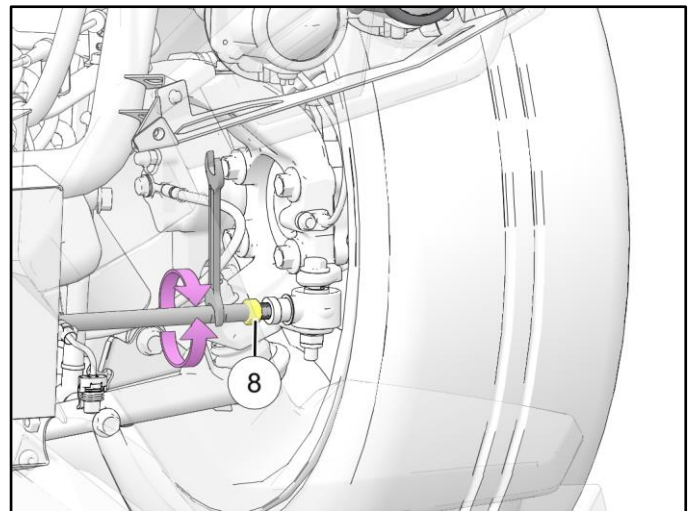
26. If the TOE measurement is not within specification, it will be necessary to loosen the tie rod jam nuts (8) and adjust tie rods **equally in small increments** until the correct TOE-IN specification is achieved.

Example: If wheels are toed-out 1", each wheel should be brought in 5/8" to achieve the specified 1/4" toe-in.

SPECIFICATION:

Toe-In: 0.21 inch (5.3 mm) ± .04 inch (1.0 mm)

27. Once the correct TOE specification has been achieved, torque the tie rod end jam nuts to specification.



TORQUE:

Tie Rod End Jam Nut: **55 ft-lbs (74.5 Nm)**

28. Roll the vehicle back and forth 10 feet and repeat steps 22-25 to verify the toe is still correctly adjusted.

29. If further adjustment is required, repeat steps 26-27. **If the toe measurement is correct, proceed to step 30.**

30. Remove straps and turn the key to the ON position. Turn the steering wheel (counting the rotations) to full left lock. Return the wheel to center and count rotations to full right lock. The number of rotations should be approximately equal and steering should operate smoothly.

If the steering wheel is not perfectly centered while driving in a straight line after setting the toe, proceed to step 31. If the steering wheel is perfectly centered, proceed to step 37.

Centering the Steering Wheel:

CAUTION: This procedure is for small corrections (10° or less). Large corrections (greater than 10°) will require the steering wheel to be repositioned on the steering shaft. Refer to the 2015 Slingshot Service Manual for Steering Wheel Removal and Installation.

31. On a flat surface, drive a short distance in a straight line and park the vehicle without manipulating the steering wheel.
32. Apply the parking brake.
33. Loosen the tie rod end jam nuts so both tie rods can be turned.
34. With an assistant sitting in the driver seat, turn the tie rods in **EQUAL, 1/4 TURN INCREMENTS** until the steering wheel appears straight. The tie rods must be turned in the same direction to change steering wheel angle.
NOTE: If the tie rods are not turned equally and in the same direction, the toe adjustment will be lost.
35. Torque tie rod end jam nuts to specification and verify that TOE has not changed by repeating steps 22-25.

TORQUE:

Tie Rod End Jam Nut: **55 ft-lbs (74.5 Nm)**

IMPORTANT: There should be a maximum of **5 threads exposed past both jam nuts when the alignment is complete.**

36. Test drive vehicle to verify proper handling and steering wheel position.

Resetting the Steering Angle Sensor (SAS) Using Digital Wrench:

37. On a flat surface, drive a short distance in a straight line and park the vehicle without manipulating the steering wheel.
38. Connect the vehicle to Digital Wrench and "Zero" the steering angle sensor.
39. Test drive the vehicle to verify that no codes are present and that the vehicle handles properly and that the steering wheel is centered.

