TRW Drag Link

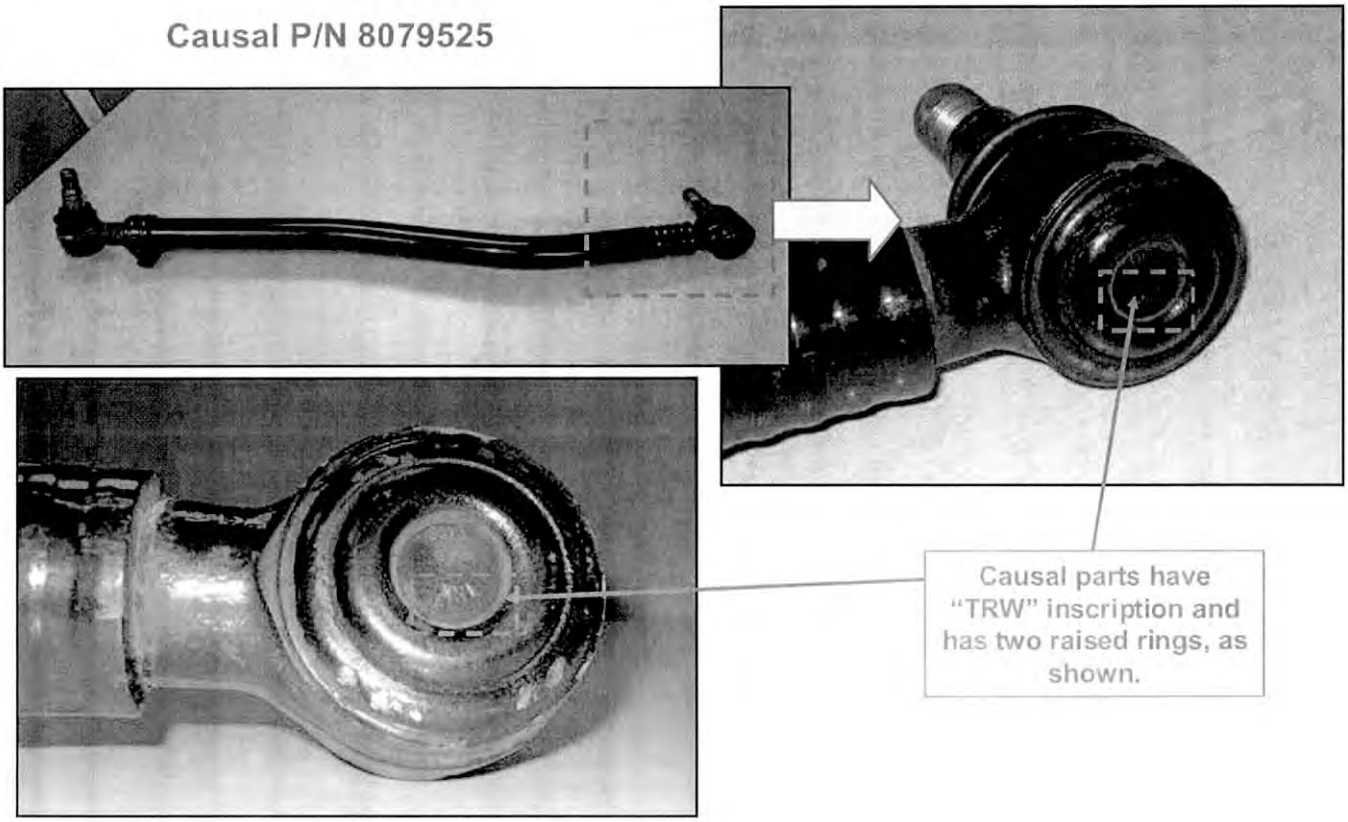
VNL, VNM

RVXX1003, TRW Drag Link

On certain model year 2001 through 2006 trucks equipped with a TRW sealed (i.e. non-greasable) drag link, certain factors can exist, which if left untreated may result in a ball socket separation. Ball socket separation at the drag link results in complete loss of steering and therefore can result in a vehicle crash.

Repair will involve replacement of the drag link if a TRW sealed drag link is found (see pictures below); please proceed directly to page 3 to the replacement procedure if a TRW sealed drag link is found.

If the drag link is not a sealed TRW type, a free inspection will be provided, however owner would be responsible for any replacement expenses. **Proceed to page 2 for inspection procedure.**



Inspection Procedure for non-TRW sealed Drag Link:

1. Park the vehicle on a level surface with the transmission in neutral and wheels chocked.
2. Turn the steering wheel to a full right or left position.

NOTE

Turning the steering wheel to a full right or left position allows the technician to visually see the inscription on the ball joint and check for damage to the ball joint sealing boot.

3. Check for looseness at the ball socket by pushing and pulling on the drag link in the axial direction.
4. Check the drag link ball joint sealing boot for damage and check for the TRW inscription on the ball joint.

NOTE

If a torn boot or looseness is found in the ball socket of a non-TRW drag link, inform the owner that replacement is required and that they are responsible for the replacement. If the customer/owner refuses to have it replaced, make a note in the comments section of the claim for the inspection.

Replacement Procedure for Vehicles with TRW Sealed Drag Link:

You must read and understand the precautions and guidelines in Service Information, Group 60, "General Safety Practices Wheel Suspension and Steering" before performing this procedure. If you are not properly trained and certified in this procedure, ask your supervisor for training before you perform it.

5. Park the vehicle on a level surface with the transmission in neutral and wheels chocked.
6. Remove the cotter pins from the castle nuts at the steering knuckle and pitman arm.
7. Remove the castle nuts at the steering knuckle and pitman arm.
8. Remove the drag link.
9. Connect the new drag link PN85128559 at the steering knuckle. Tighten the caste nut to specification, which is 200 Nm (148 ft-lb) and then turn to next slot to align the cotter pin. Install the cotter pin.
10. Connect the new drag link at the pitman arm. Tighten the castle nut to specification, which is 200 Nm (148 ft-lb) and then turn to next slot to align the cotter pin. Install cotter pin.
11. **Grease the drag link.**

NOTE

Properly adjust the length of the drag link before tightening the castle nuts to specification. The approximate length is 801 mm (31.5 in.) for vehicles with mechanical front suspension and 810 mm (32 in.) for vehicles with front air suspension. When mounting, the ball stud must be perpendicular to the pitman arm at the steer gear and steer arm at the axle end.

NOTE

It is recommended to use a new castle nut and cotter pin when replacing the drag link. New castle nuts and cotter pins are provided in Kit 85129151.

NOTE

The pinch bolt on the adjustable ball socket should be torqued to 85 Nm (63 ft-lb).

Reimbursement

This repair is covered by an authorized Safety Recall campaign. Reimbursement is obtained through the normal claim handling process.	
Claim Type (used only when uploading from the Dealer Bus. Sys.)	**R**
Recall Status	
Vehicle inspected, repair not needed	1-Inspected, Ok
Vehicle repaired per instructions	2-Modified per instructions
Labor Code	
Primary Labor Code	64302-0-01 - 0.3 hr., Time allowed to inspect t[illegible] trucks drag link (VNL-2, VNM-2) per recall RVXX1003 **for non-TRW drag link.**
Primary Labor Code	64302-0-02 - 0.4 hr., Time allowed to **inspect and** replace per recall RVXX1003 (VNL-2, VNM-2) **for TRW sealed drag link.**
Time to take charge of vehicle and determine campaign status	17003-0-01 - 0.3 hr.
Causal Part	8079525
Authorization No.	RVXX1003

The Primary Labor Codes shown above are stand alone (i.e. only one of the two can be applied to a warranty claim along with take charge if applicable).

Take-charge time is not included in the labor code for this operation. Take charge ma[illegible] be eligible, but can only be used once per vehicle repair visit. If the vehicle is having other warranty [illegible] performed, take-charge should be charged to the warranty repair, otherwise take-charge can [illegible]rged to this Safety Recall campaign

NOTE

Dealers are to perform Safety Recall Campaigns on all s[illegible]ect vehicles at no charge to the vehicle owner regardless of mileage, a[illegible] of vehicle or ownership (original purchaser or subsequent purchasers). Whenever vehicles are subject to a safety recall are brought to your dealership for service, or taken into your dealership vehicle inventory, it is strongly recommended that every effort be made to perform the recall correction before the vehicle is sold or released to the owner.

Inspection and Replacement Criteria for Drag Links

Introduction:
The Federal Motor Carrier Safety Administration requires pre and post trip inspections of Commercial Motor Vehicles as well as periodic comprehensive whole-vehicle inspections. One of the areas for daily inspection is the steering wheel system. The regulation for steering wheel systems, among other things, requires inspection of the drag link ball-and-socket joints for wear, loose and missing hardware, and damage. The complete requirements can be found at http://www.fmcsa.dot.gov/ .

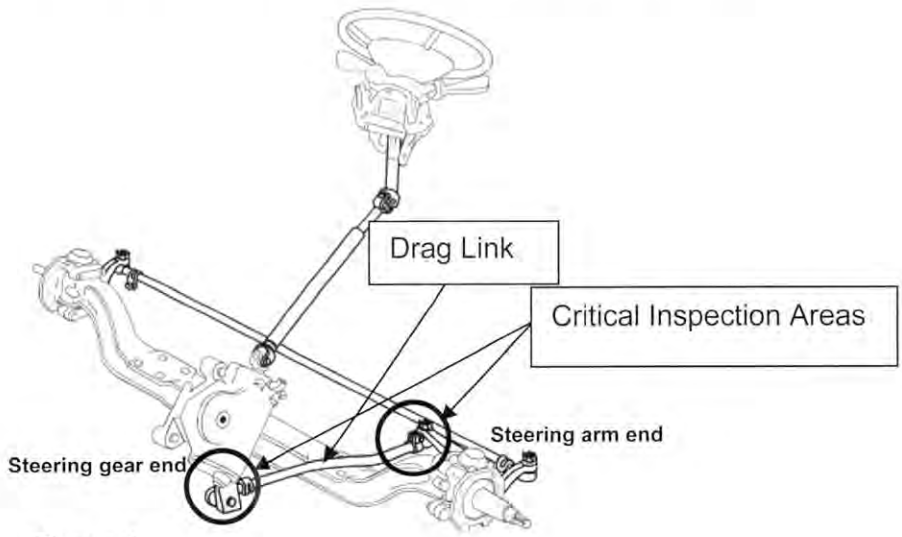


Figure 1

The image above shows the draglink and critical inspection areas. These areas **must be visually inspected daily** for damaged components; missing bolts, nuts, cotter pins; and for damaged sealing boots. Any problems found should be recorded on the daily inspection report.

The drag link ball sockets also require inspection for wear on a quarterly basis or at 25,000 miles (40,234 kilometers), whichever comes first. This is done by pushing and pulling on the drag link by hand to see if there is any movement in the ball socket.

DANGER! Missing or damaged components must be repaired or replaced before placing the vehicle into service. Complete loss of steering may occur!

DANGER! Any movement, other than rotational, measured with hand pressure (i.e., 50 lbs of pressure), requires placing the vehicle out of service for immediate drag link or socket replacement. Complete loss of steering may occur!

Rotational movement is normal and is explained on page 5 of this document.

The information that follows provides the correct inspection and replacement criteria for drag links and ball sockets.

Daily Inspection:

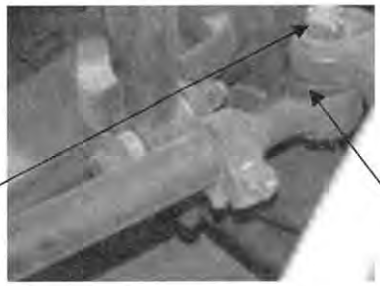
The drag link is located just inside of the driver's side front tire.

DANGER! The engine must be off, the park brake applied, and wheels properly chocked when conducting this inspection.

Step 1: Inspect for damaged or torn sealing boots and loose or missing attachment nuts and cotter pins.

Any form of tear in the rubber sealing boot requires drag link or ball socket replacement.

Missing cotter pins and loose or missing castellated nuts are to be repaired before driving the vehicle.

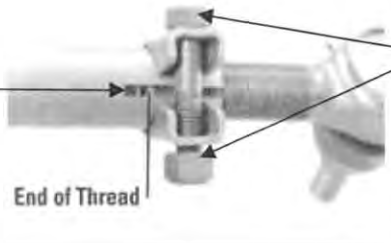


Socket connections are to be inspected daily for missing cotter pins and loose or missing castellated nuts.

Rubber sealing boots are to be inspected daily for damage.

Step 2: Inspect the adjustable end of drag link for loose or missing pinch bolt and for socket thread engagement.

The threaded, adjustable, end is to be inspected daily. If you can see the end of the socket threads through the slot in the tube, the drag link or tie rod must be adjusted or replaced before driving the vehicle.



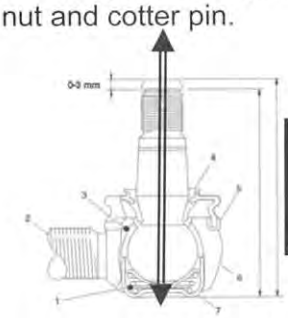
Pinch bolt is to be inspected daily for loose or missing pinch bolt and nut. Missing or loose bolts/nuts are to be repaired before driving the vehicle.

Quarterly Ball Socket Inspection:

DANGER! The engine must be off, the park brake applied, and wheels properly chocked when conducting this inspection.

Frequency: Inspect for lash in sockets every three months or 25,000 miles (40,234 kilometers), whichever comes first.

The drag link has spring loaded ball sockets at each end and is attached with a castellated nut and cotter pin.



Any movement along the axis indicated by the line with arrows requires placing the vehicle out of service for immediate drag link or socket replacement.

1. Pressure Spring
2. Joint Shaft
3. Ball Race
4. Boot Opening
5. Sealing Boot with Retaining Ring
6. Housing
7. End Cap

This inspection is done by pushing and pulling on the drag link to see if there is any movement in an axial direction. **Any movement, other than rotational, measured with hand pressure of 50 lbs, requires placing the vehicle out of service for immediate drag link or socket replacement.** Rotational movement is normal and is explained on page 5 of this document. If no movement is detected by hand, the socket is operable.

IMPORTANT NOTE! The front wheels must be pointed straight ahead when performing this inspection.

Step 1: Inspection at the adjustable end:

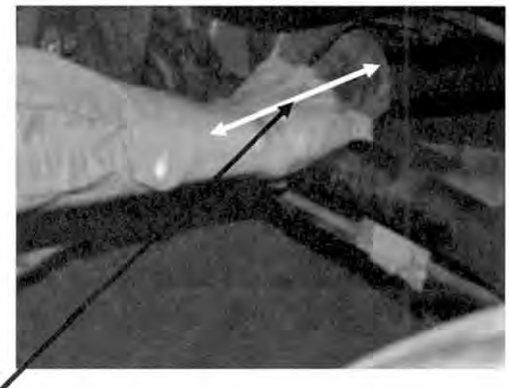
At the steering arm end (i.e., the adjustable end), **push down and pull up** on the drag link in a direction toward the ground by reaching over the driver's side front tire. **Any movement requires placing the vehicle out of service for immediate replacement of the ball socket.**

The adjustable end is the rearmost end and is to be checked by pushing down and pulling up on the drag link.

Step 2: Inspection at the fixed end:

At steering gear end (i.e., the fixed end), **push in and pull out** on the drag link in a direction toward the engine. **Any movement, other than rotational, requires placing the vehicle out of service for immediate replacement of the drag link.** Rotational movement is normal and is explained on the bottom of this page.

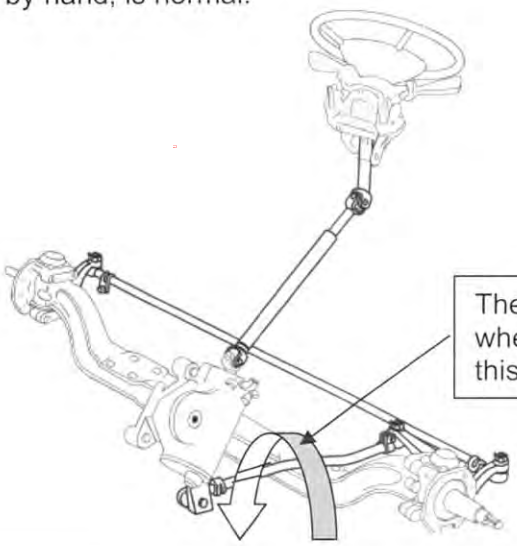
If no movement is detected by hand, the socket is operable.



At steering gear end (i.e., the fixed end), push in toward the engine and then pull back out.

Important Note: Do not use a wrench or other objects to apply leverage when inspecting ball sockets. Applying leverage can damage components, which may ultimately result in loss of steering control.

Important Note: Rotational Movement, movement when twisting or rotating the drag link by hand, is normal.



The drag link can move when twisting by hand; this is normal.