

## Work Instructions

### Subject: Western Star 4900 Steering Idler Arm Spacers

Models Affected: Specific Western Star 4900SA Twinsteer vehicles manufactured December 21, 2001, through June 4, 2010, with certain idler arm spacers.

#### Steering Idler Arm Spacer Replacement

NOTE: Advance arrangements are required. Please order and have the Recall kit at the dealership before scheduling a vehicle to arrive. Freight will not be covered.

1. Check the base label (Form WAR259) for a completion sticker for FL581 (Form WAR260) indicating this work has been done. The base label is usually located on the passenger-side door about 12 inches (30 cm) below the door latch. If a completion sticker is present, no work is needed. If a completion sticker is not present, go to the next step.
2. Turn the steering wheel as far to the right as possible. Turning the steer tires full-right will provide the necessary access to the steering idler arm.
3. Apply the parking brakes, shut down the engine, and chock the tires.
4. Partially remove the driver-side fender over the rearmost steer axle.

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#### NOTICE

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Do not use air tools on stainless steel fender mounting fasteners. Use of air tools could cause galling of the threads.

- 4.1 Remove the four mounting bolts that secure the fender to the fender mounting brackets.
  - 4.2 Swing the rear end of the fender outward, so that the front of the fender rests against the steps. Place a cloth or pad between the fender and the steps to prevent damage. See Fig. 1.
  - 4.3 Discard the fender mounting fasteners.
5. Disconnect the upper rear timing link from the steering idler arm.

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#### NOTICE

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Failure to secure the rear timing link could result in damage to the timing link or other steering system components.

6. Secure the upper rear timing link to the frame rail using a strap or tie. See Fig. 2.
7. Disconnect the lower drag link from the steering idler arm and axle steering arm.
8. Remove the hub cap and gasket from the steering idler arm assembly. See Fig. 3. Discard the gasket.
9. Remove the cotter pin that secures the steering idler arm to the spindle, then remove the steering idler arm. Discard the cotter pin.
10. Remove and discard the rubber seal between the steering idler arm and the spindle.
11. Remove the mounting fasteners that secure the spacer and spindle bracket to the frame rail, then remove and discard the spacer and spindle bracket.

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FL581AB  
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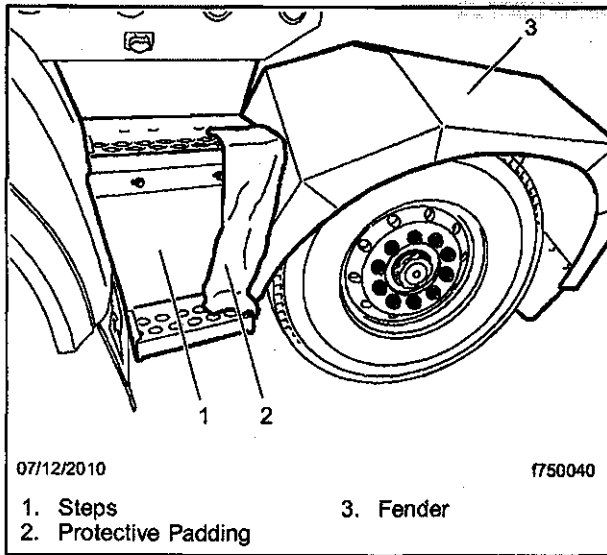


Fig. 1, Partial Removal of the Fender

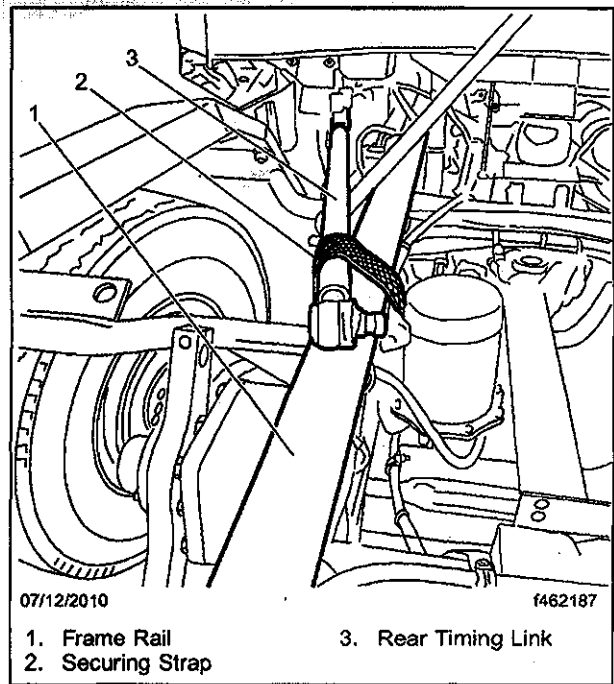


Fig. 2, Rear Timing Link Secure

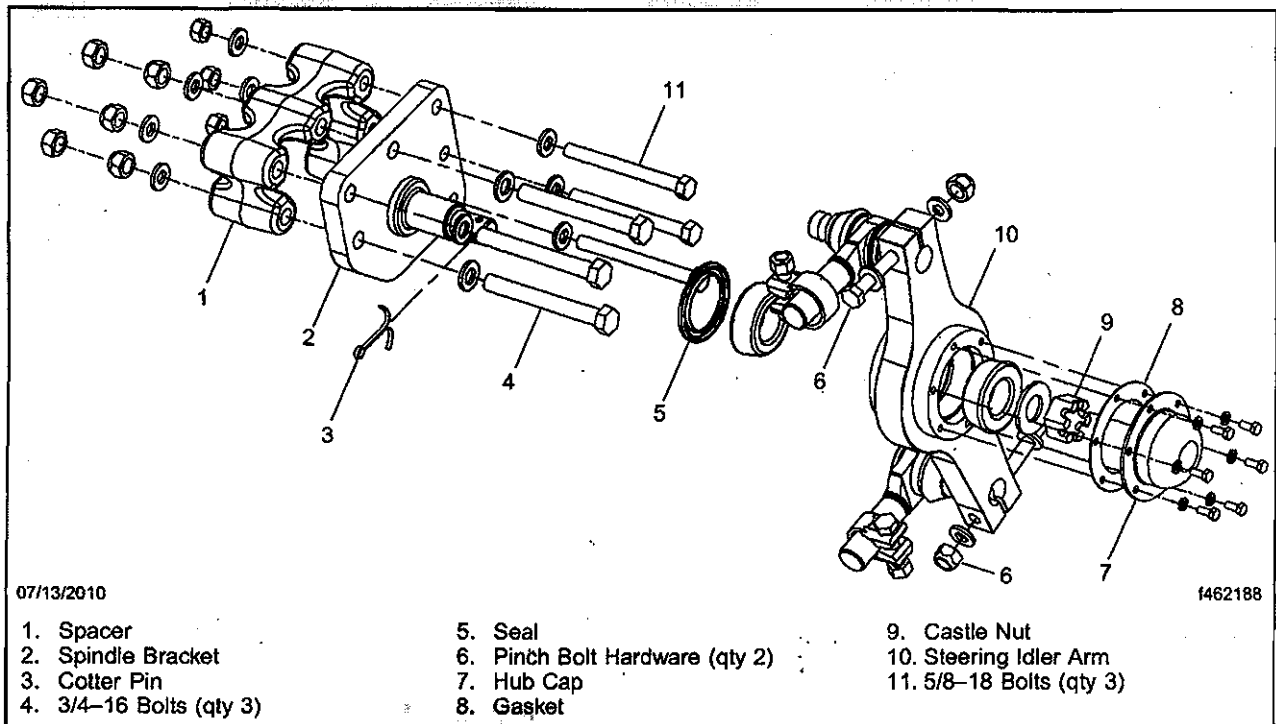


Fig. 3, Steering Idler Arm Assembly and Installation

## NOTICE

Failure to protect or move wiring or hoses along the frame rail could result in damage to components attached to the frame rail.

12. Clear all air hoses and wiring from the frame rail where the original spacer was located.
13. Expand the top rearmost spacer mounting hole from 17/32-inch to 21/32-inch diameter. See Fig. 4.
14. Using three 5/8-inch mounting bolts and the three vertical holes used by the old spacer, temporarily mount the new spacer on the frame rail.
15. Using the new spacer as a guide, mark the frame rail for drilling three additional 13/16-inch diameter holes. See Fig. 4.
16. Remove the spacer from the frame rail.
17. Inspect the inboard side of the frame rail for weld studs near the drilling area. If any weld studs could interfere with the spacer mounting holes, remove them.
18. Using a magnetic drill, drill 13/16-inch holes in the frame rail at each of the three marked locations.

**IMPORTANT:** Due to the proximity of the two forwardmost upper holes in the frame rail on certain single-channel frame rail vehicles, it may be necessary to trim two washers to fit the forwardmost 21/32-inch hole before bolting it up.

19. Bolt up the existing 21/32-inch holes that will not be used by the new spacer with the 5/8-18 bolts, nuts, and washers that were removed from those holes. Depending on the configuration of the vehicle, three or four holes will require bolting up.
20. Using three 5/8-18 bolts and three 3/4-16 bolts, install the new spacer and spindle bracket assembly on the frame rail. See Fig. 3 for bolt locations.

Tighten the spacer mounting bolts from the inboard side of the frame rail per the following specifications:

- Tighten 5/8-18 bolts 154 lbf-ft (209 N-m).
- Tighten 3/4-16 bolts 269 lbf-ft (365 N-m).

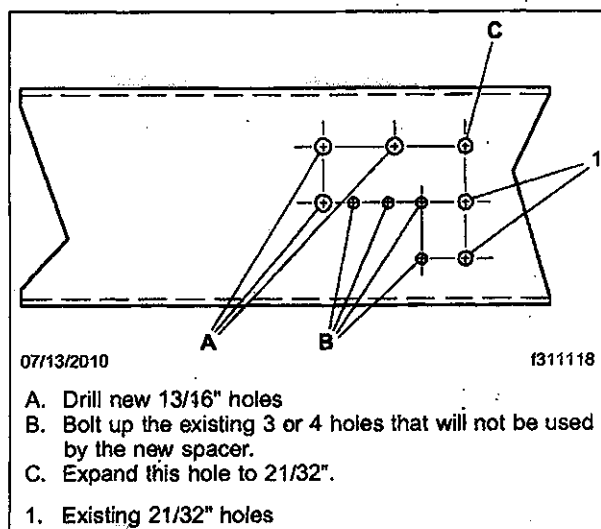


Fig. 4, Drilling Diagram

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21. Coat the spindle with grease. Using a new rubber seal, loosely install the idler arm on the spindle bracket. See Fig. 3.
22. Secure the steering idler arm on the spindle.
  - 22.1 While pivoting the idler arm, tighten the castle nut 100 lbf-ft (136 N-m).
  - 22.2 Back off the castle nut entirely, then, while pivoting the idler arm again, tighten the castle nut 50 lbf-ft (68 N-m).
  - 22.3 Back off the castle nut 1/6 to 1/4-turn until the next castle nut slot aligns with the hole in the spindle, then insert a new cotter pin and bend the tabs.
23. Connect the lower drag link to the steering idler arm. Tighten the pinch bolt 154 lbf-ft (209 N-m).
24. Connect the lower drag link to the axle steering arm. Tighten the nut 120 to 170 lbf-ft (163 to 230 N-m). Continue tightening until the next castle nut slot aligns with the hole in the ball stud, then insert the cotter pin and bend the tabs.
25. Install a new gasket and the hub cap on the idler arm assembly. See Fig. 3. Tighten the hexhead capscrews 15 lbf-ft (20 N-m).
26. Connect the upper rear timing link to the steering idler arm. Tighten the pinch bolt 154 lbf-ft (209 N-m).
27. Tighten or replace any air hoses or wiring that were moved before drilling the frame rail.
28. Install the driver-side fender over the rearmost steer axle.
  - 28.1 Swing the rear end of the fender inward, so that the fender rests squarely on the mounting brackets.

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## NOTICE

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**Do not use air tools on stainless steel fender mounting fasteners. Use of air tools could cause galling of the threads.**

- 28.2 Using new fender mounting fasteners, secure the fender on the mounting brackets. Use hand tools to tighten the stainless steel mounting bolts.
29. Adjust the steering axle stops to ensure that, during full turns, the forward steer axle stops contact the stop bolts before the rearmost steer axle stops.
  - 29.1 With the brakes fully applied, turn the steering wheel in one direction to the end of travel. Have someone verify that the forward axle stop contacts the stop bolt before the rearmost axle stop.
  - 29.2 If necessary, loosen the rearmost steer axle stopscrew locknut and adjust the gap to between 1/16-inch and 1/8-inch. Tighten the locknut 50 to 60 lbf-ft (68 to 88 N-m).
  - 29.3 Repeat the previous two substeps with the steering wheel turned in the opposite direction. Adjust the axle stop as needed to between 1/16-inch and 1/8-inch.
30. Clean a spot on the base label (Form WAR259). The base label is usually located on the passenger-side door about 12 inches (30 cm) below the door latch. Attach a completion sticker for FL581 (Form WAR260) to the base label.