SS 1034171 Airliner Rear Suspension Chassis Lean Troubleshooting.

Applicable Vehicles:
This document applies to 2010 thru 2020 model year Freightliner and Western Star chassis used in a "Truck" application and equipped with an Airliner rear suspension.

PROBLEM / SYMPTOMS: In a "Truck" application there are a number of problems that can result in a chassis lean at the Airliner rear suspension:

- Unequal tire pressure side to side.
- Rear suspension height set incorrectly.
- Rear suspension axle seats installed incorrectly.
- A lean at the steer axle suspension.
- A weight difference side to side at the front and/or rear suspension.

Troubleshooting:
On a flat level surface measure from the ground to the frame at both the left and right hand sides of the chassis at the front (steer axle) and rear (drive axle) suspensions. Record the measurements. (Take each measurement 3 times for accuracy.)

Note:
The tolerance for a frame height difference left to right is +/- 3/8".
Recommend using a plumb bob and marking the floor to insure a vertical measurement.

Steer Axle Suspension Measurement:
Measure from the ground to the bottom of the frame flange on the left and right hand side forward of the steer axle. See photo 1.

Drive Axle Suspension Measurement:
Measure from the ground to the top of the frame flange on the left and right hand side rear of the drive axle. See photo 2.

1) Check and if necessary adjust the tire pressure to within 2psi.
2) Check and if necessary adjust the rear suspension height.
[Reference section 32 of the workshop manual.]
3) Check for a lean caused by the front (steer axle) suspension.
If the truck is leaning at the front suspension use a frame jack to raise the low side of the front end until the front of the chassis is even.
Once the front is even measure the rear suspension again.

If the rear suspension is also even then the problem is with the front suspension.
Add the appropriate spacers between the axle and spring to level the front suspension.
- If the rear suspension continues to be low on one side, level the front suspension using the appropriate spacers and proceed to step 4.

4) Check the Airliner rear suspension axle seat cast angle and orientation.
The cast angle and orientation should be the same on both the left and right hand sides. Reference photo 3 to identify the axle seat angle and
photo 4 to identify the thick vs. thin side of the axle seat. If necessary correct the axle seat installation.

5) Dump the air from the air bags, the suspension should be sitting on the stops on both sides.
Loosen the clamp group on both sides, loosen the leaf spring bar pin connection at the frame bracket and loosen the transverse track rod at the axle housing.
Re-torque the hardware and re-inflate the air springs and recheck for a chassis lean.
[Reference section 32 of the workshop manual.]

6) Unequal loading side to side.
If 1 thru 5 are determined to be OK then the truck should be scaled to determine if there is a weight differential side to side.
- Weight on the front steer axle, left side vs right side.
- Weight on the drive axle - left side vs right side.

If there is a weight difference side to side the best solution is to install dual leveling valves which will compensate for the weight difference.
[Submit an FSPR technical request.]
Dual Height Control Valve Adjustment Procedure
[Reference the appropriate Workshop Manual Section 32.]

Photo 1 Steer Axle Suspension Measurement

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Photo 2 Drive Axle Suspension Measurement

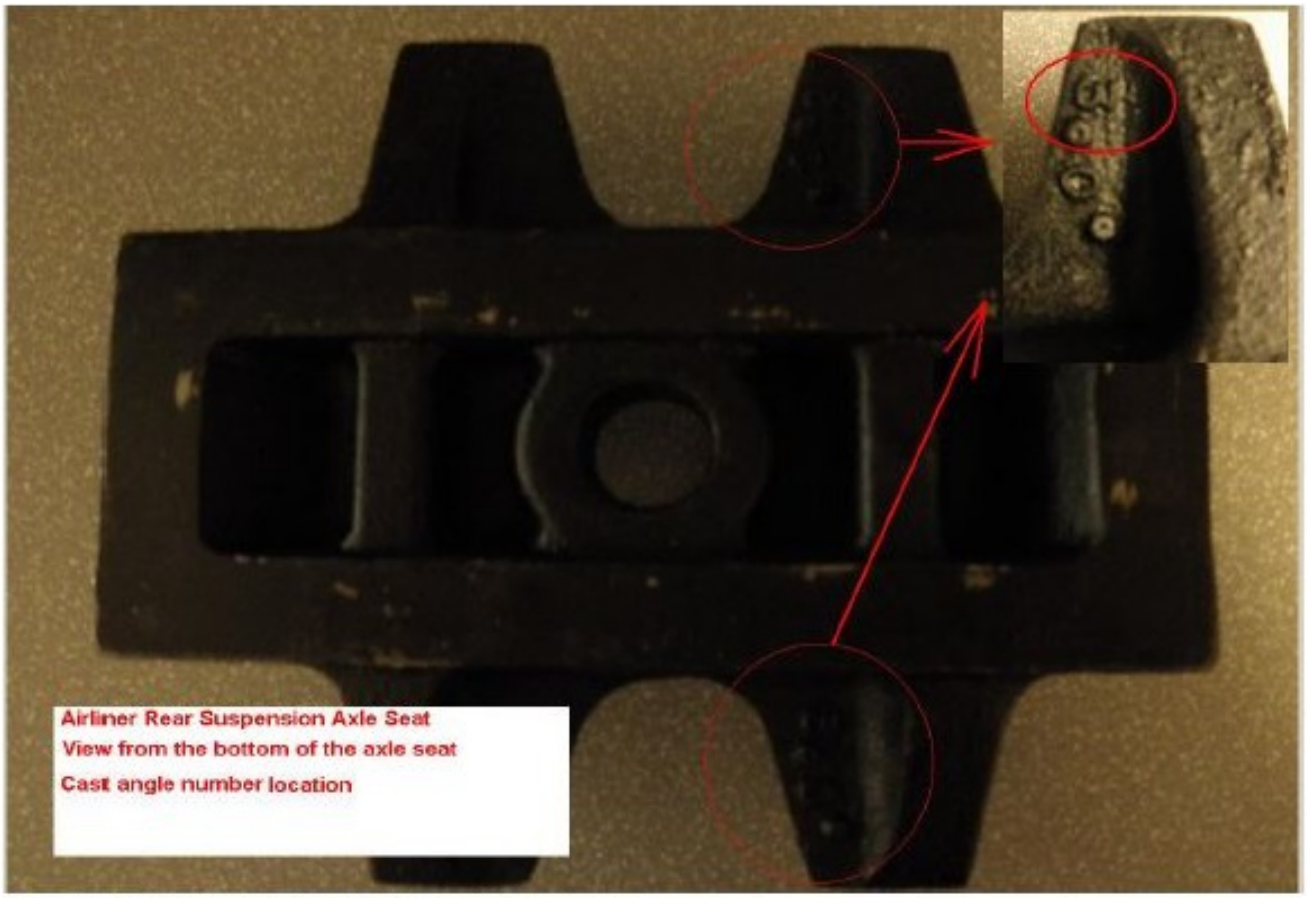

Photo 3 Airliner Axle Seat Cast Angle

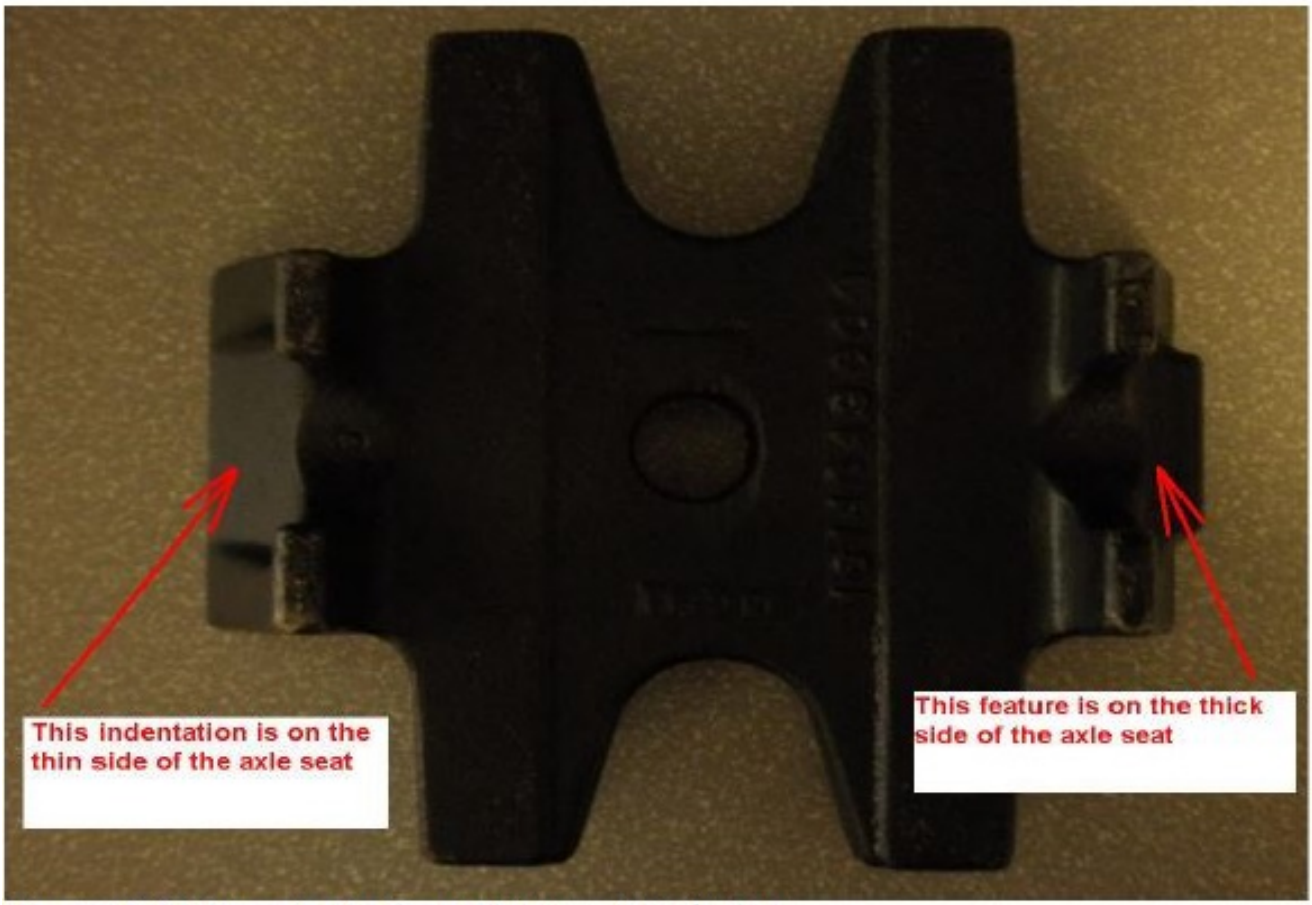

Photo 4 Airliner Axle Seat Thin vs. Thick Side

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