



Power Tips:

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Troubleshooting Truck & Trailer Alignment & Suspension

When a complaint arises concerning unusual tire wear or handling characteristics the obvious culprit is misalignment of the suspension. Many factors can cause misalignment running the gamut from broken and missing parts to bent beams. As usual safety is the most important item to remember whenever you are working on and around a vehicle, especially when it relates to the suspension. All components of the suspension on a heavy truck and trailer are cumbersome and by definition they are 'suspending' the vehicle.

The easiest and first step is to examine all components of the suspension whether it is the power unit or the trailer. It is very important to make sure that the vehicle is clean. Road grime can cover and mask broken cast components and fill cracks. After cleaning the undercarriage examine the following:

MECHANICAL SUSPENSIONS:

1. Broken bolts including torque arm bolts, u-bolts, hanger bolts, rebound bolts.
2. Look for cracked cast components including spring seats, hangers and equalizers.
3. Examine bushings for extrusion (squeezing out), dry rotting, and pieces missing.
4. Look for rust streaks on hanger bolts which would indicate loose bolts.
5. Look for cracked springs, broken center bolts, worn ends, and missing rebound clips.

AIR SUSPENSION:

1. As with the mechanical suspension all bolts and bushings.
2. examine the air springs for abrasion damage and evidence of overextension
3. Examine the shocks for over extension and damage.
4. Check shocks by measuring the temperature when the vehicle has just come off the road. By comparison a cold shock is a failed shock. (remember shocks 'mist' by design this isn't always an indication of failure)
5. Check the air system and the adjustment of the leveling valve(s). A tractor with the ride height out of adjustment can damage the driveline.



Once the suspension has been repaired and the broken and worn parts replaced it's time to check the alignment and realign as necessary. The alignment on the tractor can be very involved as the rear axles are aligned off of the steer axle and is usually best left to an alignment shop. The trailer is aligned off of the kingpin using an alignment pogo stick (a "bazooka"). Aligning the trailer suspension is simply a matter of measuring from the kingpin to the center of the first trailer axle and confirming the measurement is within 1/16" +/- of each side. Then the rear suspension is aligned to the front (also 1/16" +/-). The torque arms are adjusted to achieve the correct measurement on a mechanical suspension. An air suspension usually uses an eccentric washer to align the suspension. Please contact your account representative for any suspension components you may need.

