TECH TIPS

ATRO PARTS
ENGINEERED | DURABLE | RELIABLE
MANUFACTURED IN ST. CLAIR, MISSOURI | U.S.A.

SUSPENSION INSPECTION MAINTENANCE

Today's heavy duty suspensions are called on to carry loads for more miles and under harsher conditions than ever before. Keeping an eye on these suspensions help keep trucks on the road and stress free. Air Spring and Leaf Spring suspensions each have critical weare points that need to be reviewed regularly.

Common Air Suspensions: Freightliner FASII, Kenworth AirGlide 400, Peterbilt Air Leaf, Peterbilt Air Trac

KEY FAILURE POINTS: AIR SPRING

1

Leaking air or restricted air flow

- If both sides are flat, there may be a leak between the air brake system and the suspension air system
- If flat on one side, there may be a leak between the height control valve and the air spring

2

Automatic height control valve

- Test it: disconnect linkage and move actuating arm up and down to see if air bag inflates/deflate.

3

Bushings

- Place pry bar between trailing arm and hanger and check for movement - abnormal tire wear is a good indicator of bushing wear

4

Shocks - should be warm to the touch after vehicle operation

- If cold, the shock is not functioning properly and should be replaced
- If shock can be easily compressed after removal, shock should be replaced
- Check for shock bushing wear

5

Under-inflation - slight positive pressure maintains shape of air bag and prevents folding/pinching

6

Causes of Air Spring failure:

- Overextension
- Abrasion
- Contamination
- Suspension Misalignment
- Road Hazards
- Fatigue/Old Age

MEASURING A TORQUE ROD

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Common Leaf Spring Suspensions: Hendrickson RT, Mack Camelback

KEY FAILURE POINTS: LEAF SPRING

1 **Spring leaves**
- Look for cracked or broken leaves

2 **Center bolt & U-bolt nuts**
- Check for proper torque routinely

3 **Spring eyes**
- Look for cracks, signs of rotation or looseness, lack of lubrication

4 **Spring clips**
- Replace if missing or damaged

5 **Front suspension spring shackle bolts**
- Periodically check for tightness

6 **Shock absorbers & bushings**
- Examine bushings & replace worn or damaged bushings

7 **Review torque rods and all other related parts of spring suspensions: Hangers, equalizers, beam bushings**

U-BOLTS

- Never re-use U-bolts!
- Check they are the proper grade
- Ensure proper alignment (check condition of top plate and saddle alignment holes)
- Allow suspension to settle, re-torque while under load
- Torque U-bolts per specifications - re-torque at 500 miles and check periodically

SPRINGS

- Cracks are the primary sign of fatigue
- Proper U-bolt maintenance will increase spring life but spring will fatigue and wear overtime
- One commonly overlooked factor in spring longevity is brake balance; a poorly adjusted brake makes the other brakes overcompensate and the spring at those axle ends will get "wound up" more than if all brakes are pulling equally

TORQUE RODS

- Check for failure periodically - especially transverse rods
- Affects spring life, bushings, brackets, bolsters, shocks, air bags and other suspension hardware

LUBRICATION FAILURES

- Inhibits normal free movement, resulting in part breakage
- Wear is accelerated; wear patterns are exaggerated

BUSHING FAILURES

- Don't wait to replace worn bushings until after they've created a secondary, more expensive replace

SHOCK ABSORBER

- Affect spring life, bushings and other suspension hardware causes additional strain and vibration on radiators, electrical systems, cabs and tires, defective shocks can also contribute to air bag failure