



# M.D. Alignment

As-Driven Solutions™



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## CONTACT ME

If you have comments or suggestions with regard to this or any of our bulletins, contact me at:  
[mike\\_beckett@mdalign.com](mailto:mike_beckett@mdalign.com)

## **Tech Bulletin #2 May 2 2007**

### **Pete “Flex Air” and KW “380” Air Ride Rear Suspensions**



These two names identify the same corporate suspension in the PACCAR family. It is easily identified by the curved main spring that connects the frame hanger with the axle bracket.

It is easy to adjust for thrust angles, axle off center and pinion angle. Characteristics that need to be monitored are vibrations caused by axle twist under torque and load that effect drive line angles and thrust angle changes under torque. It has also been noted that in applications where you are heavy loaded the majority of the time, the u-bolts have a tendency to stretch and loosen.

Vibrations can occur because the curved springs have the potential to compress under load from engine torque or weight at the same time the air bag maintains the same height or

stretches and gets taller. This compression of the suspension at the front of the axle combined with the air bag getting taller changes the pinion angles and induces vibrations that are detected in the driver's seat and the floor. Common complaints refer to vibrations during acceleration or vibrations that exist when loaded but not empty. Since drive line angles are set unloaded, it makes sense that the change when loaded could compress the spring and induce a vibration.

The compliance in this suspension (its ability to absorb road shock) lends itself to a lot of mobility both vertically and laterally. Alignment settings, particularly thrust, change when the axle is under acceleration. We find that our normal thrust settings of slightly left and right need to be increased up to  $\frac{3}{4}$ " left and right in order to get acceptable handling and tire wear.

U-bolt tension is a result of the axle bracket being placed under the axle. This places all the weight in the u-bolts bolts causing them to stretch and loosen. It is the same basic problem that the Freightliner and International air ride suspensions have.