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55 Degree Wheel Cut

Problem: Extreme outside right front shoulder wear on late model trucks.

In 1990 Mack introduced their CH model trucks with a 50 degree wheel cut. (The steering tires could turn 50 degrees from straight ahead instead of the normal 40 degree turn.) This extreme turn caused the tie rod and steering arm on the right side to come into close alignment with each other resulting in the end joint to flip in and out like a double jointed elbow. This movement caused excessive wear on the right front tire, king pin and end joint. Mack eventually identified the issue and modified the turning angle to under 40 degrees and resolved the problem.

In the first decade of this century Freightliner introduced the Rack and Pinion steering system for several purposes including an attempt to tighter turning radius. This system included a 55 degree turning angle. The result was the same problem with the tie rod ends and excessive right front tire wear and damage to the Rack system. Once it was pointed out that the extreme angles were the issue the Rack system was pulled from the market.

It has recently been pointed out to me that we are again seeing 55 degree wheel cuts on trucks and are experiencing excessive outside edge wear on right front tires. I am not sure when this change started



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but I have looked up the specs for available axles from Dana, Meritor and Detroit axles and all of the offer the 55 degrees option.

We are continuing to gather data on the makes and models of vehicles this condition exists on and we are preparing a video of the methods to diagnose the condition and suggestions for mitigating the damage.

As more information is forthcoming I will let you know.

Michael L Beckett
President.

