

Howell, Rosa (NHTSA)

From: Seymour, Nate (NHTSA)
Sent: Thursday, October 12, 2017 5:00 PM
To: Pamela Tonglao <Pamela.Tonglao@PACCAR.com> (Pamela.Tonglao@PACCAR.com); Rod Curbo <Rod.Curbo@PACCAR.com> (Rod.Curbo@PACCAR.com); 'paul.giampapa@paccar.com'; dave.vanduker@paccar.com
Subject: RQ17-001: Peer data

Good afternoon,

Hope all's well. We really enjoyed our visit in Aug.

I wanted to follow up on the PACCAR axle we looked at while visiting the Tech Center. As you know we're looking into an issue with DTNA for capscrew failures on a similar design. I'd like to understand PACCAR design and what design parameters and assumptions they used. I can send this in the form of an IR if you like, but was hoping an email would be easier and faster. Of course, if PACCAR would like confidential treatment of any data, you may submit through the normal process for such.

1. What is the expected torque loss / clamp load loss over time & cycles for the steer and tie rod arm bolts? Does PACCAR have any validation data that shows the amount of loss if any?
2. Is there an expected clamp load loss due to heat cycling from the front brakes? Does PACCAR have any validation data that shows the amount of loss if any?
3. Please describe the capscrew to include size and material specifications.
4. Are the bolts threaded the entire length, or do they have a shoulder? Please explain why PACCAR choose the type of bolt it uses.
5. The axle at the Tech Center appeared to have bolts with washer integrated into the head. Please explain the reasoning behind this.
6. Is Loctite used on the bolts during assembly or service?
7. Are the bolts considered one time use or may they be reused?
8. What is the target torque range of the capscrews?
9. Did product validation testing include end stop to end stop conditions to determine the forces at the steering arm and tie rod arms when they hit the steering stops? If so, please describe the test parameters and results.
10. What axle ratings does PACCAR offer this design?
11. Has PACCAR experienced any capscrew failures? What is the failure rate?

http://www.peterbilt.com/resources/Brochures/Steer_Axle_Brochure.pdf

Please give me a call with any questions,

Respectfully,
Nate Seymour
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