

 Preview Solution CBR-2599-1

Aggressive Trailer Braking Troubleshooting Guide - AN (4) - PR - VN (4)

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Valid For

Mack Chassis - AN (4), PR

Volvo Chassis - VN (4)

Model Year - 2024 to current.

The purpose of this CBR is to provide support for complaints of trailer braking aggressively.

NOTE: All diagnostic steps must be completed on each affected chassis before submitting an eService case.

Step 1. Driver/Customer Questions

- a.) Are any malfunction lamps or telltale indicators illuminated in instrument cluster?
- b.) Does the trailer have ABS? If so, does ABS light and message appear in instrument cluster?
- c.) Does it only occur at certain road speeds; low, high, or both?
- d.) Is the trailer empty, partially loaded, or heavy loaded?
- e.) Has this been observed with more than one trailer, if applicable?
- f.) Does this occur during normal, light, or heavy brake application?
- g.) Is it consistent, intermittent, or only under specific operating conditions?

Step 2. Visual Inspection

- a.) Inspect both the red (emergency/supply) and blue (service/control) gladhands for debris, contamination, damage, or other conditions that could restrict or affect air flow.

- b.) Verify that both the pneumatic and electrical connections at the FBM (Foot Brake

Module) and eTPCM (Electronic Trailer Pressure Control Module) are properly connected, secure, and free of damage.

c.) Verify that the brake pedal returns fully and smoothly after release, without binding, resistance, or delay.

d.) Verify that the air tanks are free of excessive water accumulation.

Step 3. DTC Readout

a.) Perform a DTC readout and check for any active or inactive fault history.

b.) Saved a PDF DTC Snapshot of initial readout for documentation and reference.

Step 4. Pressure Monitoring

NOTE: Before testing, ensure there are no active DTCs.

Option 1: Workshop Toolbox

a.) Block off both red gladhand (emergency/supply) and blue gladhand (service/control).

b.) Insert wheel chocks.

c.) Start engine.

d.) Run Operation 17037-3 – Sensor and Parameter Values, Monitoring

e.) Enable extended parameter filter.

f.) Select parameters: P1DFB – Foot Pedal Position & P120J – TCM Brake Pressure Control (Trailer Control Pressure), under EBS. (Only in WTB will pressure need to be converted from BAR to PSI.)

g.) Release both tractor and trailer park brakes.

h.) Ensure both front and rear circuit tanks have reached maximum system pressure before each test.

i.) Start recording.

j.) Apply brake pedal to 25%, hold for 5 seconds, then release.

k.) Apply brake pedal to 50%, hold for 5 seconds, then release.

l.) Apply brake pedal to 80%, hold for 5 seconds, then release.

m.) Apply brake pedal gradually to 100%, hold for 5 seconds, then release.

n.) Stop recording, then exit operation so data will be saved in Product History Viewer.

o.) Playback recording can be reviewed in Diagnostics widget under Operations, then select Open Replay.

p.) If Trailer Control Pressure is 20 PSI or higher at 25% brake pedal application, document the results and proceed to Step 7.

q.) If Trailer Control Pressure is below 20 psi at 25% brake pedal application, a road test should be performed with a trailer to verify. If a trailer is not available for testing, release back to customer. There could be an issue with braking system on trailer.

Option 2: Tech Tool

a.) Block off both red gladhand (emergency/supply) and blue gladhand (service/control).

b.) Insert wheel chocks.

c.) Start engine.

d.) Run Operation 1700-08-03-06 – Sensor and Parameter Values, Monitoring.

e.) Select parameters: P1DFB – Foot Pedal Position & P120J – TCM Brake Pressure Control (Trailer Control Pressure), under EBS, or upload the provided template (Aggressive Trailer Braking.xml). Reference CBR-270 for importing template (Tech Tool Only), if needed.

f.) Release both tractor and trailer park brakes.

g.) Ensure both front and rear circuit tanks have reached maximum system pressure before each test.

h.) Start recording.

i.) Apply brake pedal to 25%, hold for 5 seconds, then release.

j.) Apply brake pedal to 50%, hold for 5 seconds, then release.

k.) Apply brake pedal to 80%, hold for 5 seconds, then release.

l.) Apply brake pedal gradually to 100%, hold for 5 seconds, then release.

m.) Stop recording, then exit operation so data will be saved in Product History Viewer.

n.) Playback recording can be viewed under Product History tab, then selecting Sensor and Parameter Values, Monitoring operation.

o.) If Trailer Control Pressure is 20 PSI or higher at 25% brake pedal application, document results and proceed to Step 7.

p.) If Trailer Control Pressure is below 20 psi at 25% brake pedal application, a road test should be performed with a trailer to verify complaint. If a trailer is not available

for testing, release back to customer. There could be an issue with braking system on trailer

Step 7. Tractor Component & System Check

a.) Verify correct pneumatic routing and plumbing of the control circuit from FBM (Foot Brake Module – ports 21 & 22), to eTPCM (Electronic Trailer Pressure Control Module – ports 41 & 42).

- FBM port 21 – eTPCM port 42
- FBM port 22 – eTPCM port 41
- APM port 29.3 – eTPCM port 11

b.) Verify correct pneumatic routing and plumbing of the trailer supply circuit from APM (Air Production Modulator – port 29.3) to eTPCM (Electronic Trailer Pressure Control Module – port 11).

c.) With each control and supply line disconnected, apply shop air through each line to clear any potential debris or contamination.

d.) Remove silencer from both FBM (Foot Brake Module) and eTPCM (Electronic Trailer Pressure Control Module). Inspect for any signs of debris or contamination.

e.) If no faults or concerns are identified after completion, proceed to submitting an eService Case.

Step 8. Submitting eService Case

When submitting a case to Technical Support, enter “Aggressive Trailer Braking” in the Summary field.

Provide all of the following information with the case:

- Answers to all questions in Step 1.
- Results of all inspections and tests performed in Steps 2, 4, and 7.
- Initial DTC readout from Step 3.
- Any additional abnormal findings identified during the troubleshooting process.

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