

Uncontrolled Copy

ID # CBR-206

Version 6

Title

Vehicle Speed Factor (K-Factor) Programming - Speed Factor Value Incorrect When Calculated In Premium Tech Tool (PTT); Speedometer Reading Incorrectly Following A Change To Vehicle Speed Factor - US17+OBD16 And Newer Emissions, Common Model Year 2018

Abstract

Newer vehicles may display an incorrect speedometer reading in the Instrument Cluster following Vehicle Speed Sensor (VSS) Calibration. following a drive axle ratio or tire size/model change.

This issue is caused by a conversion error in PTT. It has been determined that the calculated value is correctly displayed, but the value that is programmed is incorrect.

Content

Published: 10/12/2023

Valid for:

Mack - CHU, GU, GR,AN, CXU

Volvo - VNR,VNL, VNM, VAH, VHD

Model Years - 2016 TO CURRENT

Prior to performing any steps below, ensure that PTT is the current version. At the time of this solution's composition, PTT version 2.6.70 is the current release. The conversion error will be fixed in a future release. If a newer version is available, PTT should be updated and the issue confirmed to still exist prior to proceeding.

A. Calculate the Vehicle Speed Factor

1. Run PTT Operation [3829-08-03-06 Vehicle Speed Factor](#), located under the Calibrate tab.
2. Enter the Drive axle ratio and Tire Revolutions per Mile (Revolutions per Kilometer) as required
3. Press the Play button in the Step 1 box on the left-hand side of the screen. The Calculated Value box will display the Speed Factor. **This value is correctly calculated.**
4. **DO NOT PRESS PLAY IN THE STEP 2 BOX.** Copy or record the value displayed in the Step 1 box, then exit the Operation.

Product
Product History
Diagnose
Test
Calibrate
Prog

Programmed speed factor incorrect after step 2 completes

12300

Vehicle speed factor

6

Speed sensor gear teeth

Vehicle speed factor calculation

1

8031

Calculated value

Calculated value appears correct after step one completes

Program vehicle speed factor

2

B. Program the Calculated Value

1. Run PTT Operation [1700-22-03-03 Parameter Programming](#), located under the Program tab.
2. Once parameters have loaded, search for or locate parameter [MH, Vehicle Speed Factor US](#).
3. Enter the value that was copied or recorded in Part A as the new value for parameter [MH](#).
4. Complete the parameter programming operation to save the new Vehicle Speed Factor value.

Tags

k49053322

p215a-64

p215a64

volvo

mack

Categories ★

Make and Model > Mack > CXU/CHU/PI - Pinnacle



Live UI Make and Model > Volvo > VNL

Make and Model > Volvo > VNR

Make and Model > Volvo > VAH

Make and Model > Volvo > VHD

Emission Standard > US17 > US17+OBD16

Emission Standard > US17 > US17+OBD18

Powerplant > Volvo > D11

Powerplant > Volvo > D13

Make and Model > Mack > MRU/TE - TerraPro

Powerplant > Mack > MP7

Powerplant > Mack > MP8

Make and Model > Mack > AN - Anthem

Make and Model > Mack > GU/GR - Granite

Select an operation and click Start



Sort by function



- + 1 - Service and maintenance
- + 2 - Engine, Engine mounting and equipment
- 3 - Electrical system and instruments
 - 3829-08-03-06 Vehicle Speed Factor
 - 3979-07-03-02 Telematics System SIM ID
- 4 - Transmission
 - 4000-07-04-01 Transmission (Transmission removed)
 - 4320-07-03-01 Transmission, clutch, engagement point
- + 5 - Brakes
- 6 - Axles, suspension and steering
- 7 - Frame, springs, shocks and wheels
- 8 - Body, cab and interior
- 9 - Miscellaneous

3829-08-03-06 Vehicle Speed Factor



Run the operation in simulation mode

Purpose

Calculate and calibrate the vehicle speed factor

Description

Calibrate the vehicle speed factor by entering the requested values and then program the calculated value into the Vehicle ECU (VECU)

The vehicle speed factor is calculated from

- Drive axle ratio
- Tire revolutions per km/mile
- Number of cogs on the transmission output shaft gear (automatic parameter readout)

Start >

Cancel

Product Online

Tech Tool

Tech ToolLinksHelp

BRADLEY PICKENS

ProductProduct HistoryDiagnoseTestCalibrateProgramImpact

3829-08-03-06 Vehicle Speed Factor

Simulation

Information >> Conditions >> Execution

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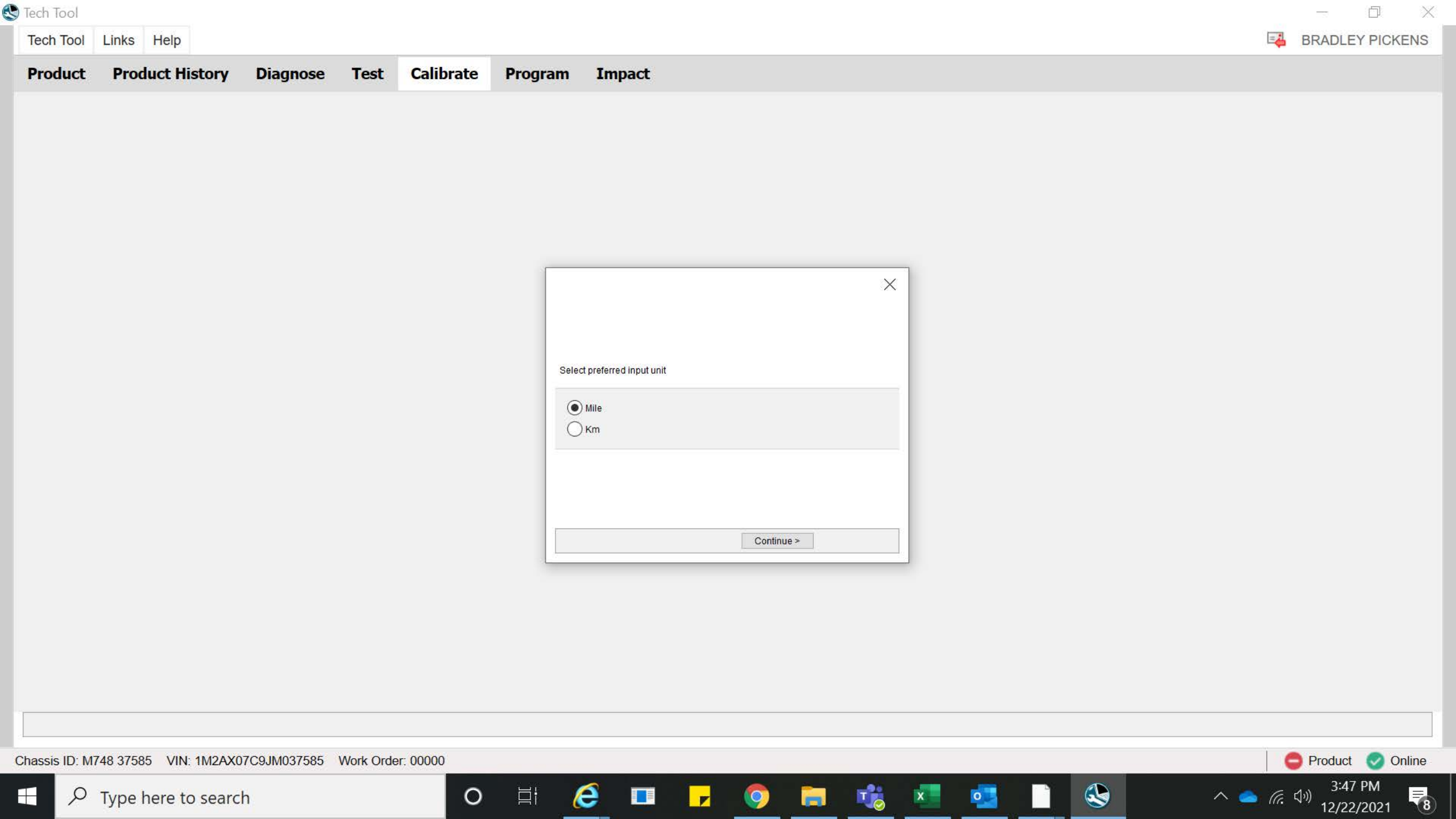
Continue >

Cancel

Chassis ID: M748 37585VIN: 1M2AX07C9JM037585Work Order: 00000

ProductOnline

3:46 PM12/22/20218



Select preferred input unit

☒ Mile

☐ Km

Continue >



4675 imp/km

Vehicle speed factor

6

Speed sensor gear teeth

1



Vehicle speed factor calculation

0

Calculated value

2



Program vehicle speed factor

3829-08-03-06 Vehicle Speed Factor

Simulation

Information >> Conditions >> Execution

Action

1

Select preferred input unit

☒ Mile

☐ Km

Enter the values for the requested variables below

Drive axle ratio

0

Tire revs / mile

0

Click Start to calculate the vehicle speed factor

2

Press Start to program the vehicle speed factor using the calculated value

Results

Select one of the following alternatives

☐ OK

☐ Not OK