



Technical Service Bulletin

Technical Service Bulletin: TSB160055	Released Date: 17-Apr-2020
SmartAccel™ Feature Release and Initial Tuning Guide	

SmartAccel™ Feature Release and Initial Tuning Guide

Warranty Statement

The information in this document has no effect on present warranty coverage or repair practices, nor does it authorize TRP or Campaign actions.

Contents

Product Affected

- ISX12 CM2350 X102
- ISX15 CM2350 X101
- X15 CM2350 X114B
- X15 CM2450 X124B
- X12 CM2350 X119B

Manual transmissions **only**.

Issue

Customer has concerns with vehicle powertrain robustness or has experienced powertrain component malfunctions when launching the vehicle from a stop.

Resolution

The SmartAccel™ feature has been released to increase powertrain robustness during a vehicle launch. This is a user-selectable feature in INSITE™ electronic service tool. When enabled, the SmartAccel™ feature will limit the rate at which torque is applied to the flywheel. This feature is designed to protect powertrain components from impact torque from harsh events such as a clutch dump when the Accelerator Pedal Position is 100%. The SmartAccel™ feature is designed to protect powertrain components on all transmissions.

Enabling SmartAccel™ Feature

1. Determine Gear Ratio Threshold

- Connect INSITE™ electronic service tool version 8.1.2 or newer.

- Verify/Install engine control module (ECM) calibration code with SmartAccel™ feature. ECM calibration codes after 30 Mar 2016 have the SmartAccel™ feature.
- Enable SmartAccel™ in Features and Parameters.
- Determine highest gear used by customer at vehicle launch.
- Determine transmission gear ratios of the vehicle. See equipment manufacturer service information. See Table 1 below for example gear ratios.

Gear Number	1	2	3	4	5	6	7	8	9	10
Gear Ratio	14.8	10.95	8.09	5.97	4.46	3.32	2.45	1.81	1.34	1.00

- Determine average gear ratio between highest launch gear and next highest sequential gear.
For Example:
 - If third gear is the highest launch gear; the average ratio of third gear and the next higher gear (fourth gear), is as follows.
 - $(8.09 + 5.97) / 2 = 7.03$
 - Set 7.03 as the gear ratio threshold for SmartAccel™.

2. Determine Torque Ramp Rate Value

- Connect INSITE™ electronic service tool version 8.1.2 or newer.
- Select Features and Parameters and select Vehicle Speed Source to see Rear Axle Ratio.
- If rear axle ratio < 2.47, then input 370 lb*ft/s [500 N*m/s] for Torque Ramp Rate.
- If $2.47 \leq$ rear axle ratio < 3.91, then input 553 lb*ft/s [750 N*m/s] for Torque Ramp Rate.
- If $3.91 \leq$ rear axle ratio, then input 737 lb*ft/s [1000 N*m/s] for Torque Ramp Rate.

Customer Communication

Decrease in acceleration in the first few gears from launch may be observed.

Production Status

SmartAccel™ feature has been implemented for production. See Table 2.

Product	Engine Serial Number (ESN) First	Build Date*	Engine Plant
ISX12 CM2350 X102	75050864	6 Apr 16	Jamestown Engine Plant
ISX15 CM2350 X101	79912573	5 Apr 16	Jamestown Engine Plant

*Engine build date can be found on the engine dataplate.

Document History

Date	Details
2016-5-31	Module Created
2020-4-16	Non-Product Problem Solving (PPS)

Last Modified: 17-Apr-2020
