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Preliminary Information

PIC6464 Variable Red Line Tachometer

Models

Brand:	Model:	Model Years:	VIN:		Engine:	Transmissions:
			from	to		
Chevrolet	Corvette	2014 - 2019	All	All	All	All

Involved Region or Country	North America
Condition	Some customers may comment that the redline indicator on the IPC of the vehicle will change, depending on when they are looking at it. Some customers may also comment that it increases and/or decreases while the vehicle is being driven.
Concern	This concern can be attributed to a feature on the Corvette C7 generation called Variable Redline, or Dynamic Engine Redline. This is a feature that utilizes a variable redline, depending on the temperature of the engine. As the engine warms up, the redline becomes higher. This is a normal feature that helps to protect the powertrain of these vehicles from unnecessary abuse before the system has had a chance to properly warm up. If the vehicle is idling in neutral or park, and the accelerator pedal is depressed, the ECM will not allow the engine RPM's to go higher than the current redline that is indicated by the red segments that surround the tachometer. If the vehicle is in gear, however, and the accelerator is depressed, the ECM will allow the engine RPM to exceed the suggested redline that is indicated by the cluster. The variable redline feature is strictly related to the colored segments on the outside perimeter of the tachometer. Actual tachometer functionality is not affected by this. The three pictures seen below show the different stages that this feature may display as the engine cooling system is warming up. The first picture can be seen with a "cold" engine coolant temperature (ECT) reading taken just as the vehicle's engine was first started for the day. The redline reading can be seen at the 4,500 RPM mark.  The second picture was taken as the vehicle has been started and allowed to warm up for a few minutes. Notice how the redline has increased to the 5,500 RPM mark.

The last picture below was taken after the vehicle reached operating temperature. The redline in this photograph is at the 6,500 RPM mark.

Correction: If a customer has a concern with an intermittent or toggling redline, as indicated by the red LED segments on the outer edge of the tachometer, the dealership technician should check the ECT reading in the scan tool.
When the concern is acting up, the reading will also be erratic in nature.
The wiring to and from the sensor, as well as the sensor operation itself, should be inspected for any loose connections, terminal issues, etc. and repaired as needed.

Version History

Version	1
Modified	7/15/2022 - Created

GENERAL MOTORS