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Preliminary Information

PIP5311D Information On Track Ready Corvette Related To Track Engine or automatic transmission fluid Temperature

Models

Brand:	Model:	Model Years:	VIN:		Engine:	Transmissions:
			from	to		
Chevrolet	Corvette	2015 - 2019	All	All	6.2L LT1 LT4 LT5	All

Supersession Statement

This PI was superseded to update Model Years. Please discard PIP5311C.

The following diagnosis might be helpful if the vehicle exhibits the symptom(s) described in this PI.

Condition / Concern

Concerns or Question on track ready Corvette's with the hot temp message, Related to track engine or trans temperature.

Recommendations / Instructions

Some good information on Corvette track ready vehicles, related to track engine temperature.

- **The Z06 Manual is designed to keep engine oil, coolant, transmission and differential fluids below the hot warning targets when driven by a professional on a 30C day (86F) on a "typical" racetrack for an indefinite period of time (effectively the time to burn through a full tank of fuel). Our team validates the durability of the Z06/ZR1 cooling systems with a 24hr accumulated track test to simulate the most aggressive track-day usage by our customers.**

- **We designate our track: the Milford Road Course, as the "typical" standard, but recognize that there are tracks around the world which are easier on a cooling system and some which are harder on a cooling system. Generally speaking, tighter tracks with lower average speed and higher sustained RPM, will drive higher engine and automatic transmission fluid temperatures.**

- **Higher temperature ambient conditions affects all car's abilities to run sustained laps at ten-tenths.**

- **The Z06/Z07/ZR1 with Z52 and Automatic transmission put in "Drive" selects the lowest possible gear ratio for best acceleration, and because it has 8 closely-spaced ratios typically runs higher average RPM than the manual. This optimizes lap time performance, but also taxes the engine oil and coolant more for any given track. So the automatic has the capability to run faster laps than the manual, but thermal limitations are reached more quickly. Customers who are planning to run extended track-day sessions at 'professional' speeds, are advised to go with the manual transmission, or to paddle shift the automatic and select higher gears when conditions warrant it.**

- **Any time the maximum recommended temperatures are reached in any condition, the DIC will give warnings at the appropriate time for coolant, oil, or transmission fluid. A cool-down lap or two will bring operating temperatures back to a reasonable level and aggressive track driving can be resumed**

New Track usage statement for 2017 MY:

- **Please Note: The Corvette Z06, Corvette Grand Sport, and Corvette Stingray with the Z51 Performance Package are the recommended models for track use. A manual transmission is recommended for extended track usage at higher ambient temperatures. Please be advised that Z06 with 8-speed automatic models have ambient temperature limitations and strong potential for engine and coolant overheating on an 86 degrees F (30 degrees C and above) day. Anytime the maximum recommended temperatures are reached in any condition, the Driver Information Center will provide warnings. Once these warnings are received, several cool down laps should be performed to bring operating temperatures back to normal so that aggressive track driving can be resumed.**

Some may wonder why don't we design to higher temperatures, say 110 degrees, to accommodate southern tracks in the Summer. We have used the "pro driver at 86 degrees" criteria for generations of Corvettes and for the vast majority of customers, it has resulted in excellent performance for their usage. If we designed to higher temperature criteria, we would have to add a lot of cooling hardware which drives mass up and perhaps more importantly, you have to feed the system with more air which has a huge impact on appearance and aerodynamic drag. Like most aspects of car design, the challenge is in finding the best balance of conflicting requirements.

GENERAL MOTORS