Bulletin No.: 16-NA-383

Date: May-2017

Service Bulletin

INFORMATION

Subject: **Information on Rough Idle, Crank No Start, Extended Crank or Misfire Due to Excessive Carbon on Top of the Valves or Sticking Valves, Malfunction Indicator Light (MIL) Illuminated - DTC P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308 Set**

This Bulletin replaces PIP5029H. Please discard PIP5029H.

Brand:	Model:	Model Year:		VIN:		Engine:	Transmission:
		from	to	from	to		
Buick Cadillac Chevrolet GMC	GM Passenger Cars and Trucks (including LCF MD)	2000	2018			Gasoline Engines Only	

Involved Region or Country	North America and N.A. Export Regions

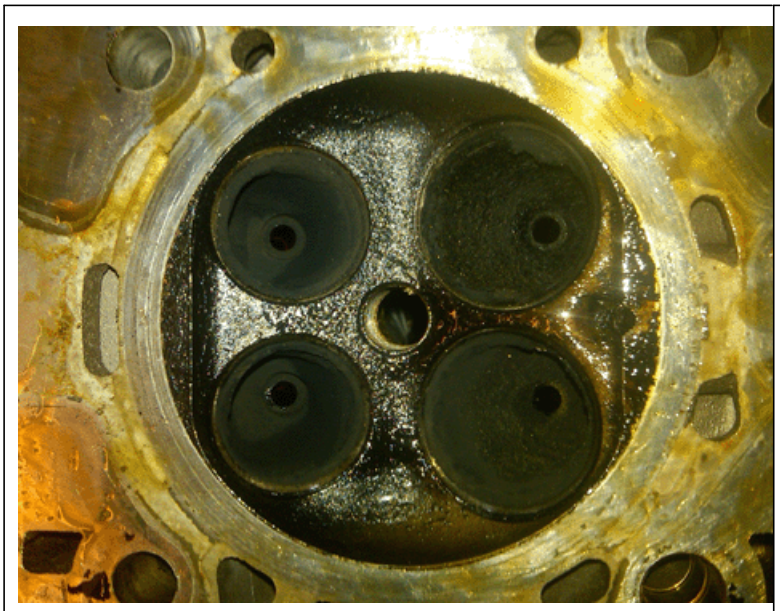
Condition	Some customers may comment on the following conditions: • Rough idle. • Crank no start. • Extended crank. • Engine misfire. The technician may find one or more of the following DTCs set: • P0300 • P0301 • P0302 • P0303 • P0304 • P0305 • P0306 • P0307 • P0308 SI diagnosis may or may not isolate the cause of the misfire depending on whether the intake/exhau valves are sticking at the time of the diagnosis.
Cause	This condition may be caused by major carbon build up on the intake and/or exhaust valves due to fuel contamination or incomplete burning of the fuel as shown below so the misfires should not have appeared until accumulating at least 5,000 miles (8,000 kilometers) or more.

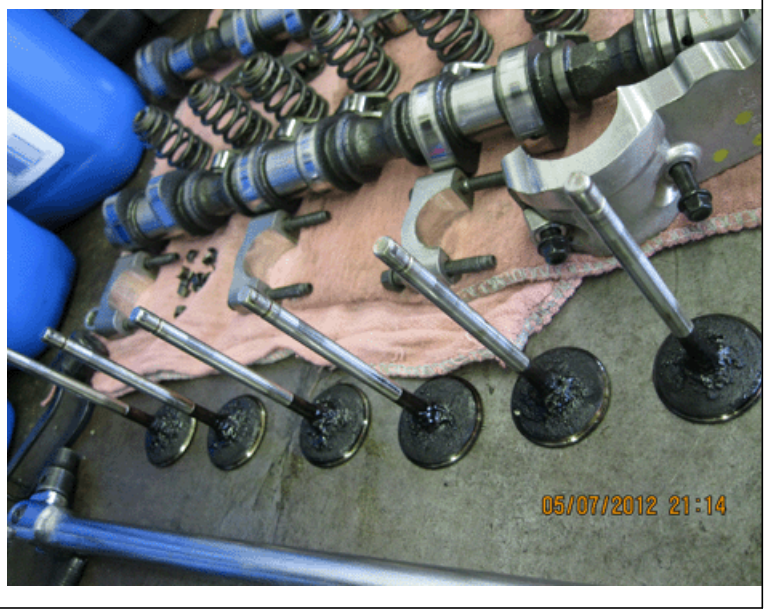
Note: Fuel oxidation and volatility concerns can often cause these issues as well, however they cannot generally be checked in service. Trying a different, high quality Top Tier fuel and regular oil changes is sometimes the best diagnostic. Additional gasoline retailers are added to the TOP TI list when their gasoline meet the TOP TIER Detergent Gasoline Standards. For the most up to date list of fuel marketers that offer TOP TIER Detergent Gasoline, refer to this website: www.toptiergas.com.

Information

Important: A new reformulated Top Engine Cleaner has been released by GM Service Parts and is recommended and approved to use in the GM vehicle line.

The graphics below may show typical carbon build-up during engine dissemble and inspection of the cylinder heads:





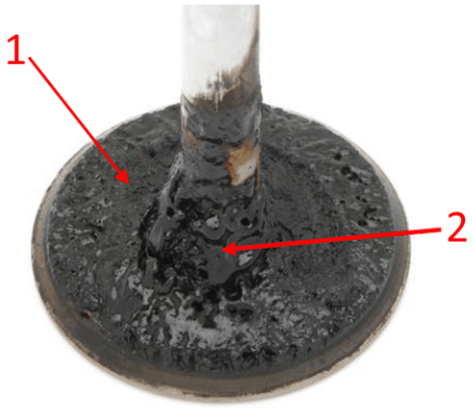
When the engine is cold, the compression on multiple cylinders may be at 0 PSI (0 kpa).

The engine also may pop through the intake or exhaust while cranking and the spark plugs may be fuel fouled when inspected.

Some engines may also experience valve damage or cam followers that are out of position as a result of this.

If this concern is encountered, perform SI diagnosis. If the SI Diagnosis leads to a compression loss due to a valve sealing concern and/or eliminates everything else external to the engine, the following information may help:

- If there is no sign of valve damage or cam followers that are out of place, perform the following procedure to free up sticking valves and to remove carbon from the valves and pistons.
- If valve damage is present or if there are cam followers that are out of place, perform engine mechanical repairs as necessary to correct the concern and then perform the procedure below to prevent the concern from returning.
- Perform an upper engine and valve cleaning procedure.
- Below are examples of valves that have gone through a top engine cleaning procedure.

Before Cleanup	After Cleanup
	
	

Video Training

There is also a related training video on this subject that is included in the January 2013 Emerging Issues Video that technicians should consider viewing. Because the training video does not mention this, please note that it is acceptable to use equivalent tools and the engine oil and filter sho also be replaced to complete the repairs. The training video is available at the GM Center of Learning Website and can be viewed by following this path:

- ⇒ Go to www.centerlearning.com
- ⇒ Enter Training ID
- ⇒ Click Resources
- ⇒ Click Service Know How / Tech Assist
- ⇒ Click Emerging Issues
- ⇒ Click 10213.01D - January 2013 Emerging Issues (VOD)
- ⇒ Click the Topics Tab on Upper Right
- ⇒ Click Link for PIP5029: Decarbonizing Valves in SIDI Engines

The related training video on this topic for Canadian dealers is included in the March 2013 TAC TALK presentation. The training video is available within GM Center of Learning and can be viewed by selecting Center of Learning from the Global Connect Home Page.

- ⇒ Center of Learning
- ⇒ Resources
- ⇒ Video on Demand
- ⇒ Click (arrow beside) GM Pro - Center of Learning
- ⇒ Click (arrow beside) TAC Talk

⇒ Click 2013
⇒ Click March 2013 TAC Talk - 523013.03D-0D
⇒ Scroll to time stamp 17:30

Service Procedure

Warning: Please follow all safety instruction noted on bottle and service tool. Ensure safety glasses and gloves are being worn during the procedure.

Fuel Injector Cleaner Kit J-35800-A	Cleaner Nozzle EN-35800-20
	

Important: Extreme care must be taken not to hydro-lock the engine when inducing the cleaner, especially if it is induced without Fuel Injector Cleaner Kit J-35800-A or equivalent. If too much cleaner is induced at too low of a RPM, or if you force the engine to stall by inducing too much cleaner at once, the engine may hydro-lock and bend a connecting rod(s).

1. Fill Cleaner Kit J-35800-A with Top Engine Cleaner approx. 16 oz. (473 ml) and close cap of tool tightly. Set the air pressure to 40 psi (260 kPa) at the service tool.
2. Using GDS 2 command engine idle to 2000 rpm to prevent the engine from stalling. Typically 2,000 RPM will be sufficient.

   Note: Two applications of the Top Engine Cleaner may be necessary to perform a total cleanup depending on the condition of the combustion chamber.
3. In a well-ventilated area with the engine at operating temperature, slowly/carefully induce the Top Engine Cleaner into the engine which should take approximately 3 minutes.

   - For best results, it is suggested to induce the cleaner through the throttle body with Fuel Injector Cleaner Kit J-35800-A or equivalent and NEW Cleaner Nozzle EN-35800-20 has been developed to help atomize the cleaner as shown below.
4. After the entire contents of top engine cleaner has been induced, continue to run the engine for 2 minutes at idle.
5. Change the engine oil and filter, and advise the customer to only use one of the Top Tier Gasoline listed at http://www.toptiergas.com and/ in the latest version of bulletin 05-06-04-022 to minimize future deposits. It can also be recommended to add a bottle of GM Fuel System Treatment Plus at every oil change as mentioned in the latest version of bulletin 04-06-04-051.
6. Test drive the vehicle and clear any DTCs if necessary.

Important: GM does not recommend the use of any aftermarket top engine cleaning product. Some products may cause harmful effects to components or seals and may void the terms of the vehicle warranty. Use only the GM products listed below which have been tested and approved.

Parts Information

Description	Part Number	Qty

ACDelco Top Engine Cleaner	19355198 (In Canada, use P/N 19355199)	1
Fuel System Treatment Plus - Gasoline	88865595 (In Canada, use P/N 88865598)	1
Fuel System Treatment Plus – Flex Fuel	88865596 (In Canada, use P/N 88865599)	1
Oil Filter, Engine	Refer to Parts Catalog	1
Oil, Engine	Refer to Parts Catalog	5 qt

Warranty Information

For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
4080148*	Decarbon Engine Using Upper Engine Cleaner	0.5 hr
Add	Change Engine Oil and Filter	0.3 hr
*This is a unique Labor Operation for Bulletin use only.		

Version	1
Modified	