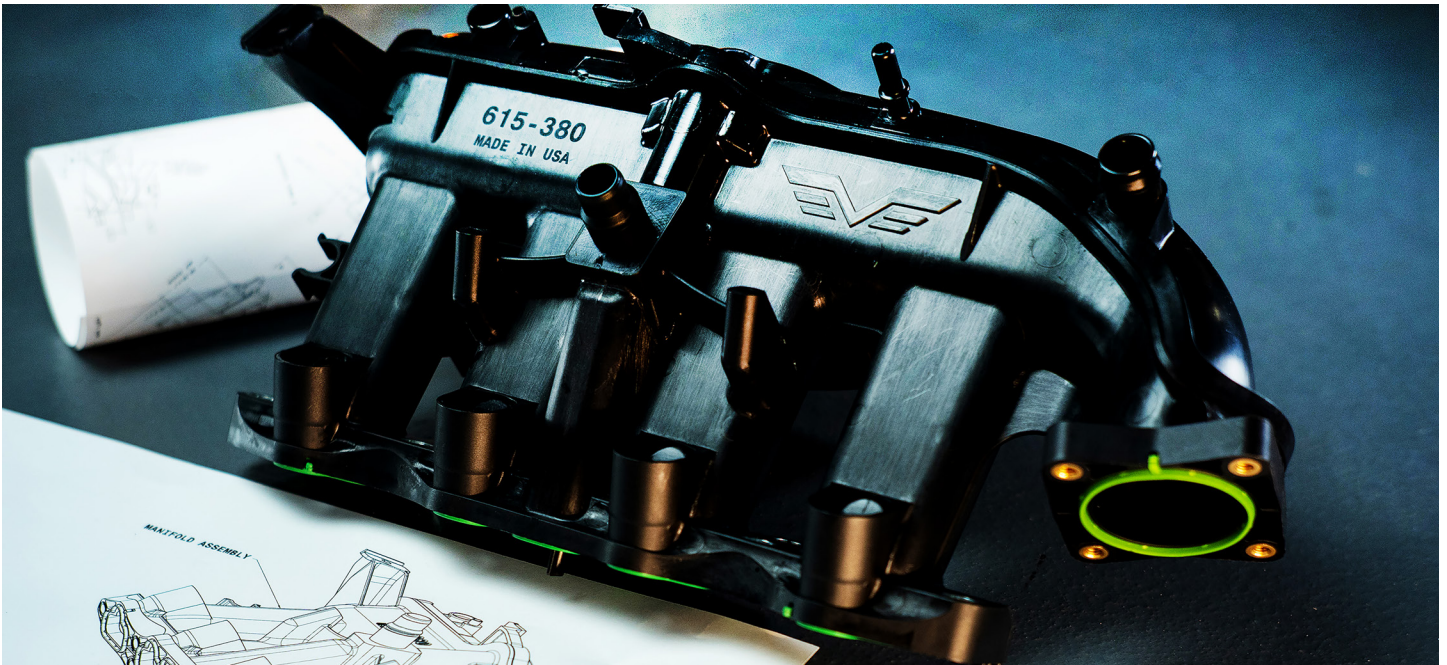


# ECOTEC 1.4L INTAKE MANIFOLD

## IMPROVED DESIGN ELIMINATES EXCESSIVE OIL CONSUMPTION



**615-380**

Chevrolet Cruze 2016-11, Chevrolet Sonic 2019-12, Chevrolet Trax 2019-13, Buick Encore 2019-13



- > Redesigned to address a common failure
- > Incorporates retainer to keep PCV valve from becoming dislodged
- > Eliminates excessive oil consumption caused by missing PCV valve
- > Exclusive solution - U.S. patent pending
- > Made in the U.S.A.

General Motors' 1.4L Ecotec engine has an inherent issue that can lead to excessive oil consumption. The umbrella-style PCV valve built into its intake manifold routinely becomes dislodged with age, and when it does, oil vapor flows freely.

Dorman redesigned the intake manifold to include an internal retaining piece that holds the valve in place without affecting its functionality, solving the original issue permanently.

Think It's Dealer Only? **Check Dorman First!**

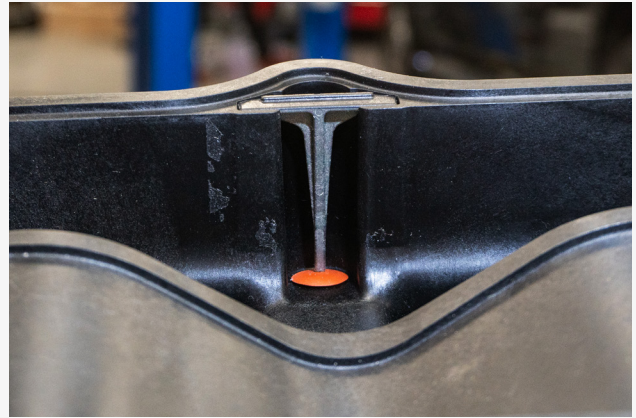


# GM ECOTEC 1.4L INTAKE MANIFOLD

## IMPROVED DESIGN ELIMINATES EXCESSIVE OIL CONSUMPTION



*Adding the T-shaped retainer (center) changed everything.*

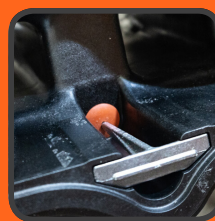


*The retainer holds the umbrella valve (orange) in place without affecting its function.*



### PROBLEM:

The original intake manifold on this GM Ecotec engine uses excessive oil when the internal PCV valve becomes dislodged



Our replacement has been improved by adding a retaining pin to keep the valve in place and prevent future failure.

## RELATED PART

Excess vacuum created by a missing intake manifold PVC valve can damage the fragile diaphragm integrated into the valve cover's PCV cap. The proper fix is to replace both the intake manifold and the valve cover at the same time.



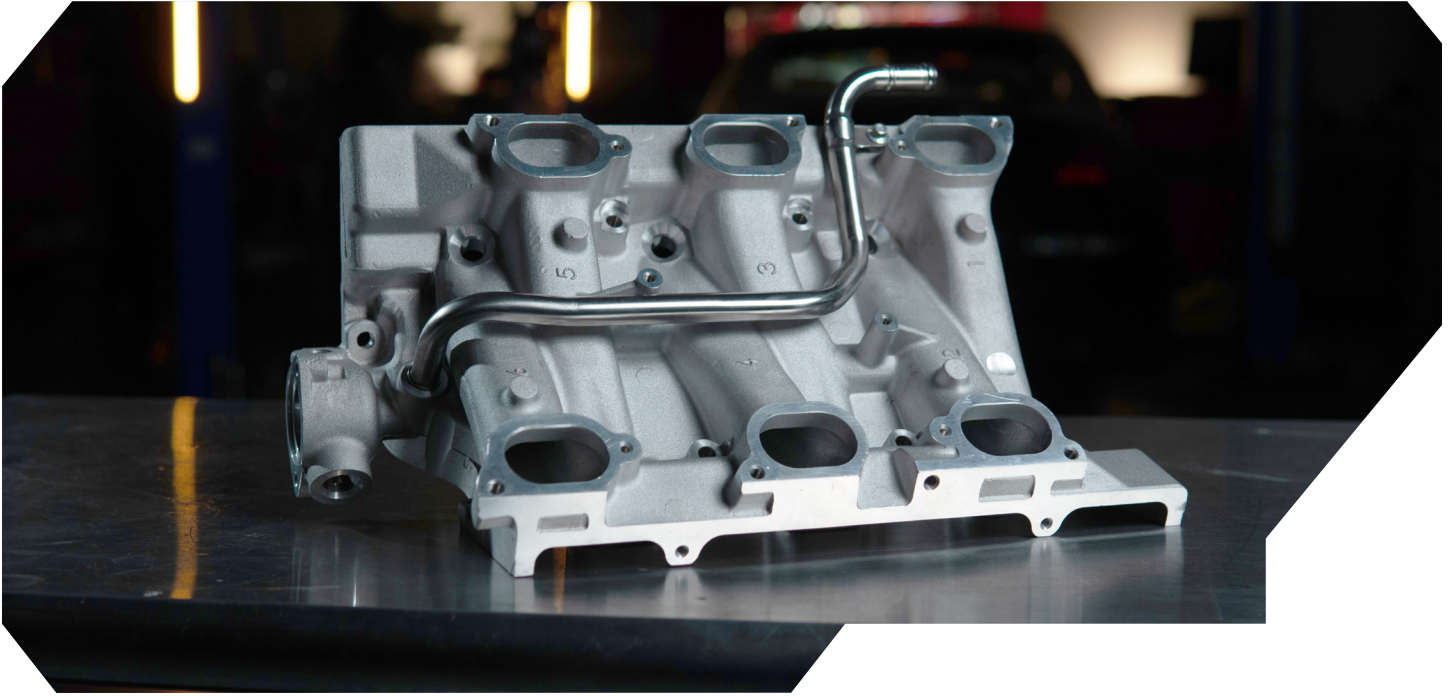
**264-968**

Buick 2019-13, Cadillac 2016-14, Chevrolet 2019-11

Think It's Dealer Only? **Check Dorman First!**

**DORMAN**<sup>®</sup>

# DORMAN INTAKE MANIFOLDS



**Dorman's highly-detailed, installer-focused development process** leads to intake manifolds with better, more reliable designs.

Before they designed the aftermarket's most popular line of replacement intake manifolds, Dorman engineers spent hundreds of hours visiting repair shops, talking to vehicle owners who perform their own repairs, and analyzing original equipment failure data. The result? Replacement intake manifolds that are second to none, featuring more durable materials, ultra-precise manufacturing tolerances and superior designs. Replacing an intake manifold is a gritty, time-consuming repair. Dorman quality and innovation ensures you can do it right the first time.

## BETTER INPUTS MEAN BETTER INTAKES

**Saves time** – a relentless focus on quality throughout the manufacturing process means a no-hassle, reliable repair the first time, without visiting the dealer

**Improved designs** – including patented OE FIX intake manifolds and manifold/valve cover kits that eliminate a failure-prone original equipment design

**Reliable construction** – precision-engineered and tested to match the fit and performance of the original equipment

**Broadest coverage** – Dorman leads the aftermarket with intake manifolds for vehicles in North American operation, with more SKUs on the way



# DORMAN INTAKE MANIFOLDS

## HIGHLIGHTED OE FIX INTAKE MANIFOLDS



**615-380**

Buick 2020-13, Chevrolet 2020-12



### PROBLEM:

The original intake manifold often fails when the internal PCV valve becomes dislodged, leading to excessive oil consumption.

### FIX:

This Dorman OE FIX intake manifold has been redesigned with a retaining pin for the valve to prevent future failure and includes a new throttle body gasket, port gaskets, fuel injector O-rings, MAP sensor O-ring and screws for a complete installation.

This intake manifold is also available as a Dorman OE FIX kit (**615-380KIT**) for a complete repair of all damaged components, including the intake manifold, valve cover and PCV tube assembly.



**615-472**

Hyundai Santa Fe 2012-10, Kia Sedona 2014,  
Kia Sedona 2012-11, Kia Sorento 2013-11

### PROBLEM:

The original equipment intake manifold on certain Hyundai and Kia vehicles fails when the pivot linkage connecting the two variable-intake flapper valve shafts shears from fatigue.

### FIX:

This Dorman OE FIX intake manifold has been completely reengineered for greater durability. The flapper valve shafts are made from thicker material for improved strength and the shafts are supported by additional bearings to reduce stress points that lead to failure in the factory design.

## ADDITIONAL FEATURED INTAKE MANIFOLDS

These direct replacement intake manifolds are precisely engineered and manufactured to match the fit, function and durability of the stock manifold on specified vehicles. Gaskets are included for a complete repair.



**615-175**

Ford 2011-99,  
Lincoln 2011-01,  
Mercury 2011-01



**615-188**

Ford 2016-00



**615-523**

Chrysler 2008-07,  
Dodge 2008-04



**615-524**

Chrysler 2006-05,  
Dodge 2006-05,  
Jeep 2008-06



# Intake Exhaustion

A clever intake manifold solution ends the cycle of excessive oil consumption

When General Motors' Ecotec engines started to exhibit higher than normal oil consumption, owners and technicians alike had reason to panic. Assuming the worst – that the engines' internals were wearing prematurely, almost certainly indicating catastrophic damage – techs were relieved to discover the root of the problem was far simpler.

It turns out the small non-return valve built into the intake manifold as part of the PCV system routinely becomes dislodged once the engine had some age and



**615-380**

Buick 2019-13, Chevrolet 2019-12

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***Dorman's OE FIX intake manifold takes care of the inherent problem in the OEM design, but the team's engineers discovered the troubles didn't end by just replacing the manifold.***

miles on it. This valve, little more than a simple rubber flap with a retainer tab on one side, drops out of its mount with nothing to secure it in place. Once this valve is gone (it's typically sucked through the intake system and combusted), vaporized oil is free to pass through the engine, resulting in the higher oil consumption.

Replacing the original intake manifold with a new factory part may take care of the immediate problem, but it virtually ensures the owner will be making the same repair again in the future. Once Dorman's




## AFTERMARKET CASE STUDY

ideation team looked at the source of the problem, they developed a smart solution to keep the valve located, even if its retainer should wear out. By incorporating a restraining pin into the intake manifold, the valve in this improved design is now captive, eliminating the chance it will ever become dislodged.



**Dorman's OE FIX** intake manifold takes care of the inherent problem in the OEM design, but the team's engineers discovered the troubles didn't end by just replacing the manifold. The original failure has a side effect, causing damage to other critical components.

When the valve in the factory intake manifold disappears it creates excessive vacuum, and that damages the fragile diaphragm integrated into the valve cover's PCV cap. The result is a rough running condition from air being drawn into the engine through this opening.

The proper fix is to replace both the intake manifold and the valve cover at the same time. With Dorman's OE FIX intake manifold (615-380) and direct replacement valve cover (264-968), owners can end the cycle. 

## PLASTIC INTAKE MANIFOLD



### OE Problem:

The original integrated umbrella PCV diaphragm becomes dislodged over time, resulting in multiple engine trouble codes and damage to PCV diaphragm in the valve cover.



Inserted tooling to hold the PCV umbrella valve in place to prevent failures in the future.

***Dorman's OE FIX intake manifold takes care of the inherent problem in the OEM design.***



# INSTALL/REMOVAL INSTRUCTIONS: INTAKE MANIFOLD

**ATTENTION:** Refer to the appropriate shop manual for your vehicle to obtain specific service procedures for this part. If you do not have a service manual or lack the skill to install this part, it is recommended that you seek the services of a qualified technician. Pay special attention to all cautions and warnings included in the shop manual. Read and follow all instructions carefully.

## REMOVAL/INSTALL OF 1.4L TURBO AIR INTAKE MANIFOLD (615-380) Buick 2019–13, Chevrolet 2019–12

### General Tech Tips:

- **Spare O-rings:** New O-rings have been provided for your OEM fuel injectors (brown) and OEM MAP sensor (blue). Replace O-rings carefully after parts are removed from the engine and prior to assembly of the new manifold – take care not to cut sealing surfaces of the MAP sensor and fuel injectors when removing old O-rings.
- **Fuel Rail Installation:** Make sure injectors are fully seated into the injector pockets by pushing down, directly above each injector before securing the fuel rail. Utilize a tightening torque of approximately 5-7 Nm or until the fuel rail is securely fastened to the intake manifold. **DO NOT OVER TIGHTEN!**

**PLEASE WEAR  
SAFETY GLASSES!**

**STEP 1:** Carefully remove the OEM intake manifold, fuel rail, EVAP purge solenoid, throttle body, air induction system and MAP sensor per the service procedure outlined in the shop manual. See notes above on spare o-rings provided in kit and proper fuel rail installation.

**STEP 2:** Remove the six (6) mounting bolts from the OEM manifold, and install in new manifold.

**STEP 3:** Clean cylinder head mounting surface to help ensure proper sealing when installing your new manifold.

**STEP 4:** Slip the solenoid over the mounting feature on the underside of the manifold. Once in place, use one of the M6 self-tapping screws to secure the solenoid to the manifold (tighten to 5-7 Nm). **DO NOT OVER TIGHTEN.** Next, attach the two vacuum lines to the vacuum nipples.

**STEP 5:** Attach the purge solenoid to the center clip on manifold and then attach purge inlet hose to purge inlet nipple on the manifold.

**STEP 6:** Reinstall MAP sensor with the replacement o-ring. Using the original self-tapping screw to secure the MAP sensor and tighten to 3-5 Nm. **DO NOT OVER TIGHTEN.**

#### Disclaimer:

Even though every attempt is made to ensure this information is complete and accurate, it is impossible to account for all possible circumstances or situations. Please consult with a qualified auto technician before attempting to perform any work you are not qualified to do. Automobiles can be hazardous to work on; be sure to take all necessary safety precautions. Failure to do so may result in property damage or personal injury. Certain motor vehicle standards and performance requirements may apply to your motor vehicle (such as Federal Motor Vehicle Safety Standards by the National Highway Traffic Safety Administration). Be sure that your work is performed in accordance with such standards and that you do not disable any motor vehicle safety feature.

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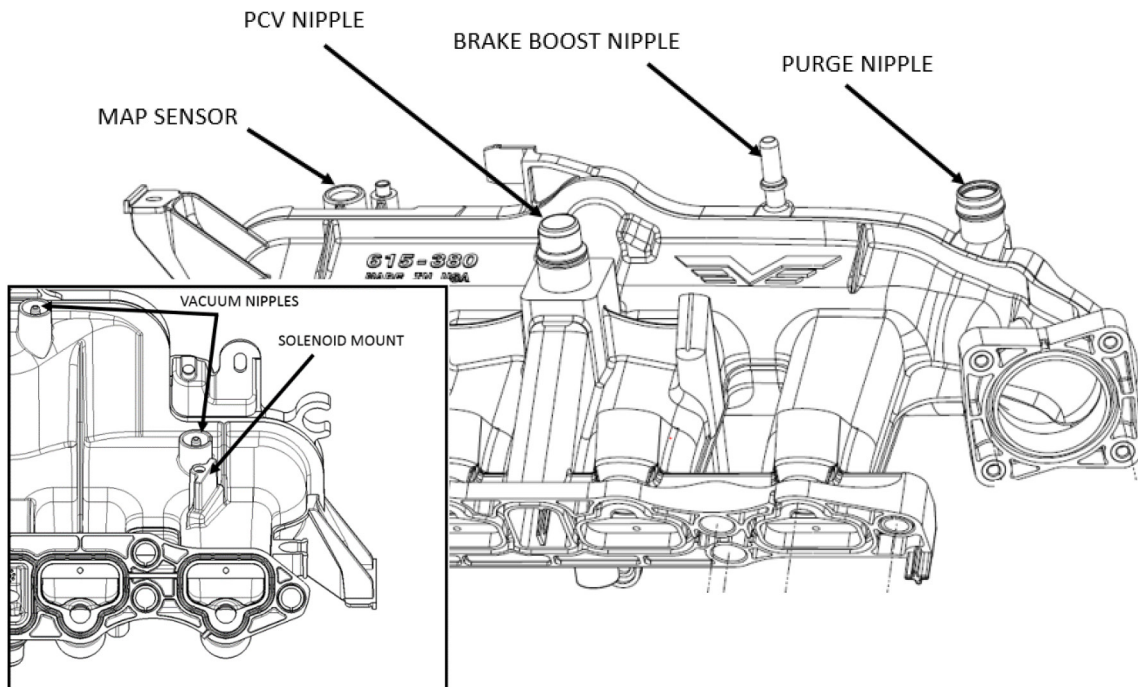
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**STEP 7:** Install the fuel rail and fuel hose bracket to the manifold. Fasten the fuel rail with two M6 self-tapping fasteners per above instructions/torque specification.

**STEP 8:** Reinstall the throttle body using the four stock throttle body bolts and washers, and tighten to 9-11 Nm.

**STEP 9:** Bolt the manifold to the cylinder head (6 places) in two passes, using a 2 Nm initial and 20 Nm final tightening torque.

**STEP 10:** Attach the remaining engine components as per service procedure outlined in the shop manual.



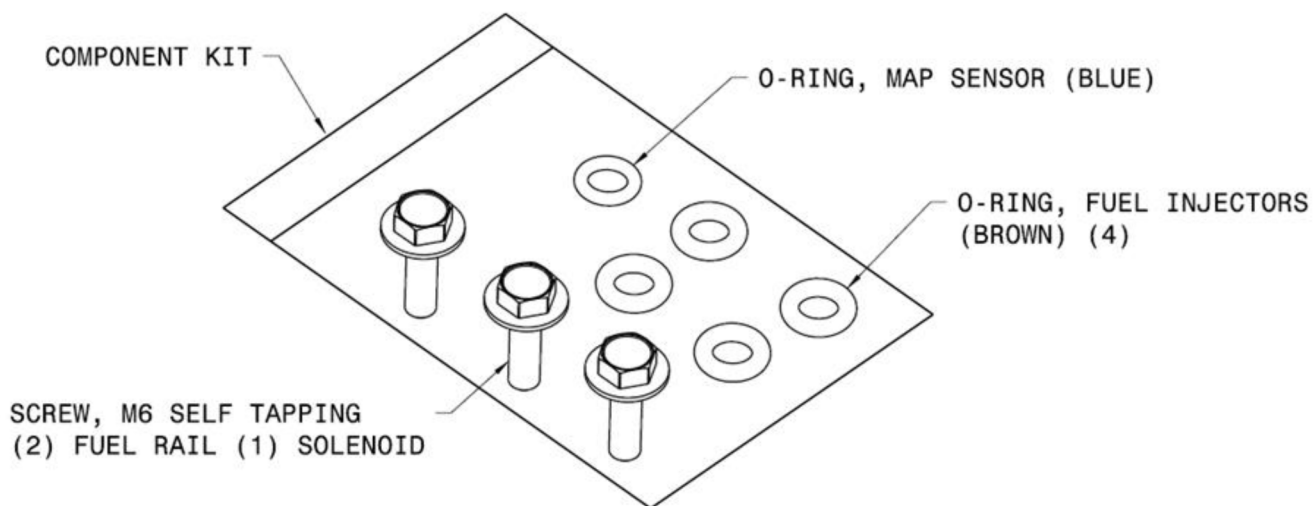
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