INTAKE MANIFOLD REPLACEMENT AFTER AN INTERNAL ENGINE FAILURE

Many engines built by the major automotive manufacturers in the past 20 years have a variable intake manifold. Simplified, this type of intake has the ability to vary the intake runner length to allow for more airflow and added performance at higher RPM. By design, the variable intake has more internal passages. Those passages can and will hold material from a failed engine.

Variable intakes and conventional intakes will transfer any remaining foreign material to the replacement engine after a catastrophic failure. If the intake cannot be properly cleaned to assure that there is no foreign material, the intake must be replaced. DAMAGE TO YOUR ENGINE RESULTING FROM FOREIGN MATERIAL IS NOT COVERED UNDER THE WARRANTY.

From the text book - Automotive Engines: Diagnosis, Repair, Rebuilding – Tim Gilles

“Some manufacturers recommend replacement of the intake manifold after a catastrophic engine failure. When an engine has blown up, exploded parts are sometimes coughed up into the runner of the intake manifold where metal parts can remain even after cleaning.”

From Installation Tips for your Engine

“The intake manifold must be throughly cleaned and free of all debris before being installed on the engine. Debris such as old piston, piston ring or valve material can be trapped in the intake plenum and EGR system. The debris can and will be pulled into the replacement engine causing it to fail.” IF THE INTAKE CANNOT BE THROUGHLY CLEANED, IT MUST BE REPLACED.

Engine Suppliers place special warning tags with their engines.
Sample variable intake manifold

FOREIGN MATERIAL FROM A FAILED ENGINE CAN BECOME TRAPPED IN ANY OF THESE AREAS OF THE INTAKE.

THAT SAME FOREIGN MATERIAL WILL BE SUCKED BACK INTO THE REPLACEMENT ENGINE AT HIGHER RPM.
INTAKE MANIFOLD REPLACEMENT AFTER AN INTERNAL ENGINE FAILURE

The OE manufacturers and several Automotive Trade Associations have published TSB’s and bulletins directing that the intake be replaced in the case of Severe Internal Engine Damage.

Sample GM TSB

ENGINE - INSPECTION AFTER SEVERE INTERNAL ENGINE DAMAGE
# 00-06-01-026E: INTAKE MANIFOLD Inspection/Replacement After Severe Internal Engine Damage - (Nov 11, 2013)

SUBJECT: INTAKE MANIFOLD Inspection/Replacement After Severe Internal Engine Damage
MODELS: 2014 AND PRIOR GM CARS AND TRUCKS
This bulletin has been revised to add the 2014 model year. Please discard Corporate Bulletin Number 00-06-01-026D.

When replacing an engine due to internal damage, extreme care should be taken when transferring the INTAKE MANIFOLD to the new Genuine GM Part service engine long block. The internal engine damage may have resulted in the potential discharge of internal engine component debris into the intake manifold via broken pistons and/or bent, broken, or missing intake valves.

After removing the INTAKE MANIFOLD from the engine, the technician MUST carefully inspect all of the CYLINDER HEAD intake ports to see if the valve heads are still present and not bent. Usually when the valve heads are missing or sufficiently bent, internal engine component debris will be present to varying degrees in the intake port of the cylinder head. If this debris is present in any of the cylinder head intake ports, the intake manifold should be replaced.

This replacement is required due to the complex inlet runner and plenum configuration of most of the INTAKE MANIFOLDS, making thorough and complete component cleaning difficult and nearly impossible to verify the complete removal of debris. Reinstallation of an intake manifold removed from an engine with deposits of internal engine component debris may result in the ingestion of any remaining debris into the new Genuine GM Part service engine. This will cause damage or potential failure of the new Genuine GM Part service engine long block.