

Does Your Exhaust Manifold Leak?

Some Model A owners find it difficult to prevent exhaust leaks between the exhaust manifold and the side of the engine. When our Model A's were new, the manifolds did not leak where they attached to the engine and with good parts and proper procedures, a good long lasting seal for both the exhaust and intake manifolds can be accomplished today.

First, you have to have a good used exhaust manifold that is not warped, distorted or badly rusted. Also check the tapered surface where the exhaust system head pipe attaches to the exhaust manifold. If this surface is badly pitted, you will find it is difficult to achieve a leak free joint at this connection. Equally important is to use a good intake manifold that is free of cracks and is in good condition. Good used manifolds are getting very hard to obtain and you may find that buying quality reproduction manifolds from a reputable parts supplier will go a long way to solve a lot of problems.

The mounting surfaces of both the intake and exhaust manifolds, when they are bolted together, must be flat. If these surfaces are not flat, there will be gaps where the manifolds fit up to the side of the block and the gaskets may not provide an adequate seal. An automotive machine shop can help you with machining these surfaces. This process is almost always necessary when replacing the exhaust manifold. If you are replacing both the intake and exhaust manifolds with new reproduction parts, some parts suppliers are offering new intake and exhaust manifolds that, when bolted together, do not require machining to make them flat. Make some inquiries if you are purchasing both manifolds.

The exhaust ports of most of the Model A engines were machined with a step or relief for a gland ring. The exhaust manifold also has a similar relief. The gland rings help support the exhaust manifold and also help to keep exhaust gases from leaking past the gaskets. Be sure these reliefs are clean so the gland rings fit properly in both the exhaust port and the manifold. Insert the gland rings in the block and without the gaskets in place. Do a trial fit to be sure the rings enter the exhaust manifold properly and the manifolds will seat up tight against the block. If the rings are too wide, when installed, the manifolds will not seat up tight and leaks can occur. Carefully, grind or file down the rings a little if they are too wide.

Be sure you are using the correct hardware to assemble the manifold to the block. Use the original design large thick slightly cupped washers and the extra thick nuts. The cup side of the washers go against the manifolds. It is not necessary to use brass nuts, steel will work just fine but be sure to use a little Anti-Seize on the threads. Correct hardware is available from most parts suppliers

I like to use the original style copper gaskets, either the early or late design. DO NOT use the solid hard white gaskets with no metal cladding that come in some gasket sets. These will become brittle with age and crack and fall apart. Apply a small bead of High Temp Silicone Sealer around all the port openings on both sides of the gasket. This is a very important step in the process. The high temp sealer will cure with heat and will provide a good seal for both the exhaust and intake manifolds. Torque the nuts to 35 ft Lbs. After a few miles and when the engine is cold after sitting overnight, re-torque the nuts.

Following this procedure will result in a long lasting leak free seal between the manifolds and the engine.



Tech Tip

Periodically, when the engine is cold after sitting overnight, check the intake and exhaust manifolds attaching nuts to be sure they are tight. Torque to 35 ft Lbs. Also at the same time, check the muffler head pipe clamp bolts to be sure they are both tight. Because of the heat-cool cycles and vibration of the engine, these bolts tend to loosen over time.