


EXHAUST LEAKS & PRESSURE TESTING

EXCEEDING EXPECTATIONS



INDEX



2	Overview
3	Symptoms of an exhaust leak
4	How to check/test for an exhaust leak
6	How not to test for an exhaust leak

PLEASE NOTE:

This information is provided for informative purposes only and should not be intended as a technical repairing guide. BM Catalysts cannot and will not be held responsible for any damages caused as a result of misusing this document.



OVERVIEW

Exhaust leaks are one of the most commonly occurring issues with vehicle exhaust systems and can be problematic for a number of reasons, including:

Environmental impact

Exhaust gases may be released into the atmosphere before they have had chance to pass through the vehicle's emissions control device(s).

MOT failure

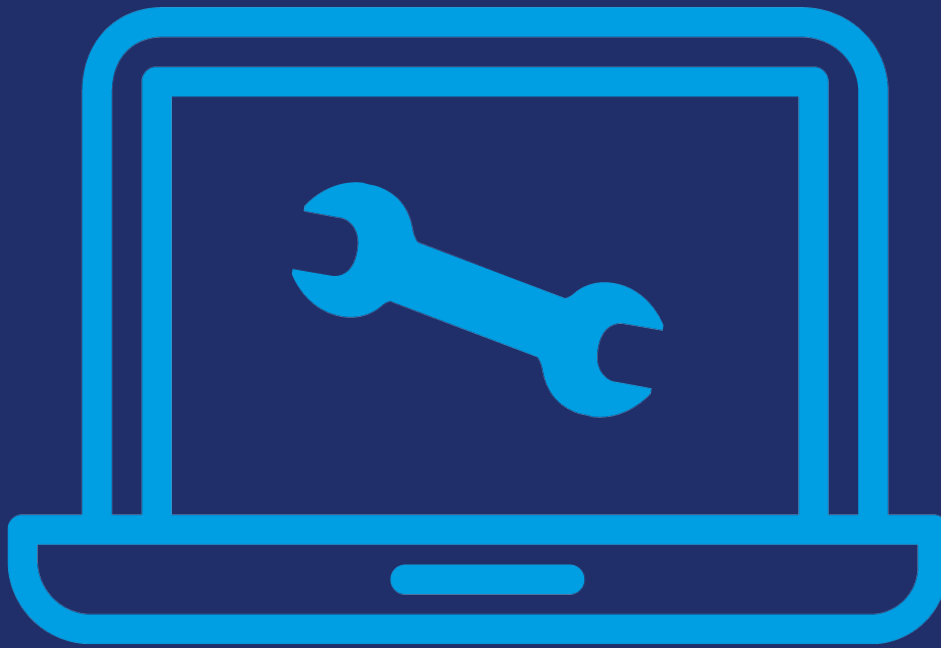
A vehicle with an exhaust leak will most likely not pass its MOT inspection.

Health threats to driver and passengers

Damaged exhaust pipes can leak gases/fumes into the vehicle's cabin which is dangerous.

May lead to other vehicle issues

Exhaust leaks can negatively impact vehicle performance and fuel economy and can go on to cause other problems.



SYMPTOMS OF AN EXHAUST LEAK

There are a number of things which are common indicators of an exhaust leak:

Engine noise

Listen for a loud rumble, especially when the vehicle is under acceleration. There may also be intermittent hissing or popping noises present while the engine is running.

Loss of acceleration/power

A noticeable loss of power while attempting to accelerate may indicate an exhaust leak. Exhaust leaks can effect engine performance and a vehicle will continue to lose power if the leak is not rectified.

Reduced/poor fuel economy

A vehicle's air:fuel ratio can be disrupted by an exhaust leak (depending on its position), causing the engine to run less efficiently, for example, by over-fuelling.

Smell of exhaust fumes

Damaged exhaust pipes can leak gases/fumes into the vehicle's cabin which should be considered a health threat to the driver and passengers.



HOW TO CHECK FOR AN EXHAUST LEAK (VISUAL)

Safety notice

Ensure that the engine is turned off and that the vehicle has been left to cool fully if it has been recently driven. Once the vehicle has been jacked up, ensure it is placed on the appropriate axel stands; never inspect the underneath of a vehicle if it is only on a jack.

Visual checks

- Starting at the manifold, look for any noticeable cracks, holes or soot build up anywhere along the exhaust system. If soot build up is noted, there is a good chance that there is a leak in that spot; soot only occurs where gases are exiting the exhaust
- Mark any spots where there are cracks, holes or soot build up so they can be easily identified later for repair
- If pipes appear rusty, gently squeeze the area with a pair or pliers (or similar) to see if they compress or flex; if there is movement, a replacement should be considered to avoid a potential future leak
- It is normal for mufflers to have a small weep hole on one end, allowing water to escape to aid rust prevention; this won't cause an exhaust leak and does not need to be fixed
- If the visual inspection does not reveal a leak, a vacuum test can be conducted



HOW TO TEST FOR AN EXHAUST LEAK (VACUUM)

Safety notice

Ensure that the engine is turned off and that the vehicle has been left to cool fully if it has been recently driven. Once the vehicle has been jacked up, ensure it is placed on the appropriate axel stands; never inspect the underneath of a vehicle if it is only on a jack.

Vacuum test

- Equip yourself with a vacuum cleaner with a hose and a spray bottle containing soapy water
- Connect the hose of the vacuum cleaner to the exhaust tailpipe and turn on the vacuum
- Starting at the manifold, move along the exhaust system and methodically spray the soapy water mixture onto the system, inspecting each area as you do so
- If the soapy water begins to bubble, this will highlight the source of the exhaust leak; this area should be marked so it can be easily identified later for repair
- It is possible to conduct a pressure test without water by feeling for suction or through auditory clues, however this process can take more time
- In any case, if an exhaust leak is identified, it is important that this is rectified as soon as possible



HOW NOT TO TEST FOR AN EXHAUST LEAK

It is important to note that exhausts are not pressure vessels. They are flow through devices designed to allow gases to pass through them, rather than capture or contain them.

Blowing air into an exhaust which is blocked on one end does not replicate the real-world scenario that an exhaust would operate under. If enough pressure is put into an exhaust, it will find a way to escape by any means available. For example, escaping around a welded joint. This may be incorrectly diagnosed as an exhaust leak or faulty unit. In other words, too much pressure may reveal 'leaks' that don't exist otherwise.

During an exhaust flow test, a measurement of < 1 litre per minute under pressure of 4-5psi is considered acceptable as this flow rate allows gases to pass through the exhaust, rather than forcing the gases to escape via another route.



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