

# 10 WAYS TO CARE FOR YOUR CAT

There are several things you can do to ensure your "cat" has a long and healthy life.

1. Never use exhaust paste in front of a catalyst when fitting. When the exhaust paste hardens it can break off in chunks and damage the monolith. Paste dust can also block the monolith.
2. Always use the correct fuel and oil for your car.
3. Never use a fuel additive without first reading the instructions to find out if it is suitable for use with a catalytic converter. If in doubt, consult the manufacturer of the additive.
4. Never attempt to bump or tow start your car. This causes unburned fuel to be injected into the catalytic converter, which can make the monolith overheat and melt.
5. Never tow anything that is too heavy for your vehicle to cope with. For example, an overloaded caravan will actually push a car along when it travels downhill. This sends unburned fuel into the exhaust system and can cause the monolith to overheat and melt.
6. Have your car regularly serviced to the vehicle manufacturers' specifications. In particular make sure the engine is running correctly. A poorly tuned engine can cause the monolith to break down or become covered in soot, which stops it converting.
7. Take care when driving through deep puddles, fords, or parking when there has been heavy snow. The catalytic converter operates at an extremely high temperature, and when it comes into contact with water or snow it cools down rapidly. The steel shell cools more rapidly than the monolith, and in extreme circumstances the monolith can be crushed as the steel shell contracts.
8. Don't park your car over long grass or anything similar. As the catalytic converter operates at such a high temperature it can actually set the grass on fire!
9. Drive slowly over speed bumps or very bumpy roads to reduce the chance of the exhaust system being grounded. This could cause impact damage to the catalytic converter.
10. Always investigate any warnings lights on the dashboard as soon as they occur. Any delay could cause damage to the catalytic converter.

## CATALYST REPLACEMENT GUIDE

There is far more to replacing a cat than simply removing the old one and refitting a new one. The following guide will help ensure the replacement catalyst will not have any problems.

### • Identifying the Fault

#### • Structural failure?

This is the easiest sort of fault to identify, and can be simply caused by wear and tear. Examples of this are a broken flange, snapped pipe work, blowing flex etc. When the part has snapped check the engine mountings are not worn. This allows excessive movement through the engine into the exhaust which can contribute to this type of failure. If exhaust brackets are not replaced when they corrode extra pressure is put on the cat and can lead to it snapping at the weakest point.

#### • Rattling Cat?

The first thing you should do is check the cat is actually rattling! It may be a vibrating heat shield on the vehicle, or a loose baffle in the exhaust causing the problem and it is being wrongly identified as a rattling cat. Once it has been established the cat is rattling it should be checked for the following:

- **Impact damage** – check the cat for dents and road rash (scratches). If these are evident it is likely the cat has impacted against a speed bump, causing a fracture in the ceramic monolith and the cat to break down and rattle.
- **Exhaust Paste** – check the inlet side of the part for exhaust paste. If it is evident it is likely the exhaust paste has broken up and impacted against the monolith, causing it to fracture and break down.
- **Blue Can/Melted Monolith** – does the outside of the can have a blue/purple shade? Does the ceramic monolith show signs of melting and warping? If so this is a sign that the catalyst has superheated due to excessive levels of unburned fuel in the exhaust system. When this fuel enters the catalyst it ignites, superheating the monolith and causing it to breakdown. This is always a sign there is a fault with the running of the vehicle so a full diagnostic check and emissions check should be carried out to identify the fault before fitting a replacement cat.

#### • Operational Failure?

Operational failure is failure with the working of the cat such as an MOT emissions failure or Engine Management Light issues

➤ **Emissions Failure** – Emissions failures should always be investigated carefully as failures normally occur due to a vehicle fault. If the vehicle has failed on the Hydrocarbons (>200ppm) there is a definite fault with the vehicle over-fuelling which must be rectified before fitting a replacement cat. If the vehicle has failed on the  $\lambda$  (lambda) there is a problem with the air-fuel mixture on the vehicle. It does not always mean the lambda sensor needs replacing! A CO failure means the catalyst is not able to convert all the gasses that pass through it. However if it has hydrocarbon levels greater than 60ppm it is likely the cat has been contaminated with unburned fuel and is unable to convert to its full capacity.

➤ **Engine Management Light (EML)** – EML issues can be tricky to resolve. The most common fault code that occurs in relation to a cat failure is P0420 – "cat inefficient". There can be several reasons this code can be generated which are not a fault of the cat. For example it can relate to a lambda fault, an air leak in the exhaust system causing false readings or retarded spark timing. All possible faults should be thoroughly investigated before condemning the cat.

#### • Fitting the Cat

Once the fault has been identified and fixed the replacement cat can be fitted. The following information may be of use when trying to fit the cat:

1. Don't attempt to fit a cat unless you have experience in doing so.
2. Always fit the cat when the vehicle is on a ramp, never on axle stands.
3. Never use exhaust paste in front of the catalytic converter.
4. Don't hit the catalytic converter with a mallet or hammer etc to try and force it into place. Doing so may fracture the monolith and invalidate the warranty.
5. Use new fittings, such as gaskets or nuts and bolts wherever possible.

# Warranty

## TERMS AND CONDITIONS

Although every effort is made to ensure our catalytic converters will not fail, sometimes an external problem or a fault with the vehicle will cause them to break down. We regret the following problems are not covered by our guarantee:

### IMPACT DAMAGE

This is external damage caused to the catalytic converter by hitting a solid object such as a speed bump. The damage can be seen by dents or scratches on the catalyst. The cat will usually rattle and break up.

### USE OF EXHAUST PASTE

The use of exhaust paste in front of a catalytic converter is an automatic warranty failure. This is because as the paste dries it becomes very hard and brittle, and as it breaks up it can hit the monolith and cause it to break up and fracture. The use of silicon sealant is fine as this does not harden in the same way.

### PLUGGED OR CONTAMINATED

Plugged or contaminated catalytic converters can be caused by using the wrong fuel in your car, or if a vehicle has been running poorly for some time. A similar thing will happen if fuel additives are used that are not suitable for use with a catalytic converter. The cat will not be able to convert any gasses, and in the worst cases will block up completely.

### OIL FOULED

This is caused by oil getting into the exhaust system and contaminating the catalytic converter. The cat will be unable to convert any gasses passing through it and will eventually fail.

### MELTED/BROKEN MONOLITH

A monolith is usually broken

when it is impacted by an object or when it suffers a sudden change in temperature. More information on this can be found in the "Catalyst Replacement Guide" section.

### OVERHEATING

There are many problems that can cause a catalytic converter to overheat or fail. The most common cause is unburned fuel entering the catalytic converter. This can be caused by faulty spark plugs and leads which cause the engine to misfire and ruin the catalytic converter. It will also be damaged if the distributor timing is out. Other factors that may cause the cat to overheat and fail are a faulty lambda sensor, fuel injection system or a map sensor. More information can be found in the "Catalyst Replacement Guide" section.

### EMISSIONS FAILURES

We will not accept warranties for emissions failures with HC levels in excess of 60ppm, as above this level it is usually a vehicle fault that has caused the cat to fail. No returns for emissions failures will be accepted until the technician has seen a copy of the failed emissions report and approved the return.

### NOISY

A catalytic converter should not be considered to be a silencer although it does have some silencing qualities. Noise can be caused by excessive fuel getting into the catalytic converter.



Exhaust Catalic Convertor - EXH0002

Inline Catalic Convertor can be used in all types of vehicles and is ideal for kit cars for IVA purposes. Internal size: 52mm, Length 200mm, Width 100mm.

This is only a guide we reserve the right to change any contents and price at any time without notification.