

Before installing a new converter:

Most catalytic converters fail due to engine related problems. Replacing the catalytic converter without diagnosing and repairing the cause of the failure may lead to another ruined converter.

A catalytic converter is designed to last the life of the vehicle. When malfunction in the catalytic converter is indicated, it is almost always the result of some other problem.



Signs indicating need for a catalytic converter replacement

Most often, catalytic converter problems turn up when reading codes or performing emissions testing. However, there are physical symptoms that may indicate need for converter replacement:

- Broken or rusted-out converter body or end tubes.
- Physical damage to the converter body.
- Presence of a rattle in the converter. A thump on a monolithic converter should make a solid sound to indicate that the substrate is present and is still in one piece.
- Fragments of substrate in other sections of the exhaust system.
- Indications of overheating on converter body.

Converter Basics

A catalytic converter has three main components:

- The converter body, which includes the “can,” pipes, and matting used to hold the brick in place.
- The converter substrate – usually a high performance ceramic “brick,” engineered with thousand of tiny channels through which the exhaust gases pass. The substrate can also be constructed of a metal mesh.
- The washcoat, which coats the substrate with a combination of precious metals; platinum, palladium, and / or rhodium.

In addition to these components, many converters will have O2 sensor ports and air tubes.

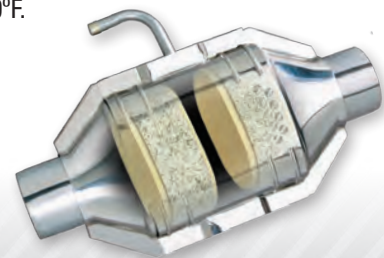
How a catalytic converter works

As exhaust gases pass into the converter and through the

substrate, the washcoat creates chemical reactions that lower the level of emissions emitted from the tailpipe.

A catalytic converter needs two factors to operate properly: sufficient operating temperature (the “light off” temperature) and a steady stream of feed gas. Once the “light off” temperature is reached the catalytic conversions occur: 1) oxides of nitrogen (NO_x) are reduced into nitrogen and carbon dioxide, and 2) hydrocarbons (HC) and carbon monoxide (CO) are oxidized to create water vapor.

Converters typically start to work at around 550°F. The majority of the purification takes place once the converter reaches at least 750°F.



Diagnosing catalytic converter failures

When a converter malfunctions, it can be due to an engine performance issue or an issue with any of the components in the fuel, engine, and exhaust systems. Typical issues include faulty O2 sensors, incorrect air/fuel ratio, unburned fuel entering the unit, chemical additives in the fuel, malfunctioning sensors, ECM failure, and road damage. One or more of these conditions can trigger a change in emissions at the converter, causing the ECM to record a code that indicates “Catalyst Efficiency Below Threshold”.

If a catalytic converter has failed, it is up to the technician to thoroughly diagnose the problem to find out what caused the failure. If this is not done, it will eventually lead to failure of the new converter.

Codes P0420 and P0430 indicate that the “catalyst system efficiency is below threshold bank 1 or 2.” In other words, the vehicle’s oxygen sensors downstream noticed that the converter is not working as efficiently as it should be. However, code P0420 and P0430 can occur for a variety of reasons other than converter failure or malfunction. It is important to properly diagnose and identify any problem or problems before installing a new catalytic converter.

Converter replacement requires ECM reset

When a converter is replaced, the technician will need to perform a drive cycle in order to correctly reset the ECM. Follow the manufacturer guidelines for the correct drive cycle.

Conditions that can lead to a Code P0420 and P0430:

Fuel trim too high

- Vacuum leaks
- Intake leaks
- Bad mass-air flow sensor

Fuel trim too low

- Stuck fuel injectors
- Bad fuel pressure regulator

O2 sensor problems

- Failed or “lazy” sensor
- Sensor contamination by antifreeze, additives, oil, unburned fuel, or service chemicals/sealants

Maintenance / operation problems

- Overloaded vehicle
- Incorrect engine timing
- Carbon deposits

Mechanical / electrical issues

- ECM failure
- Defective electrical parts: plugs, wires, coils
- Improper compression
- Leaking valves
- EGR failure
- Exhaust leaks
- Worn camshaft
- Transmission problems
- Improper fuel system performance
- Blown head, intake, or exhaust gaskets
- Bad valve timing
- Cooling system issues



Remember: Fix the problem that caused the original converter to fail.

Causes of converter failure and the Eastern Catalytic warranty.

There are three basic types of converter failure; physical, thermal, and chemical. The issues shown here VOID the EMI warranty and are NOT eligible for credit. Check your converter before you return it:

Is the part missing a stamp code that verifies it is an Eastern Catalytic product?

- Check stamp code for EM or TD

Shake the part – is there rattling from inside?

- Rattling is typically heard when the substrate inside is loose or broken
- Was the part physically damaged due to impact that may have caused the substrate to break?
- Does the part show visible signs of extreme temperature that would cause loss of efficiency, matting failure / loose substrate?

Look at the tubing and the shell of the converter – Does it show signs of extreme heat?

- Deep gray, black, and dark purple are signs of extreme temperature caused by an improper running or misfiring engine.

Look inside the converter, is the substrate missing, plugged up, melted?

- These are all signs of an improper running engine or contaminants in the exhaust that have plugged the face of the catalyst or melted the catalyst due to extreme heat.

Check the picture of the part in the Eastern catalog, is it missing any pieces of the converter tubing or converters?

- There are some 2 or 3 piece units that must be returned complete with all pieces.



NOTE:

Failures caused by these problems are not covered by the warranty.

Environmental Protection Agency (EPA) Requirements

The EPA has established four basic situations when you can install an aftermarket converter:

- If the converter is missing from the vehicle when brought in for exhaust system repair.
- If a state or local inspection program has determined that the existing converter has been poisoned, damaged, or otherwise needs replacement.
- If the vehicle exceeds the factory emissions warranty and a legitimate need for replacement has been established and appropriately documented (e.g., a plugged converter or unrepeatably exhaust leaks).
- If an OBD II vehicle's mileage exceeds OEM warranty and the fault code identifies that the converter needs replacement.

The last two points are very important.

The original converter on a vehicle is designed to last the lifetime of the vehicle if the vehicle is properly maintained and no engine malfunctions occur. The EPA requires the vehicle manufacturer to warrant the original converter for at least five years or 50,000 miles (8 years or 80,000 miles for OBD II), whichever comes first. Any converter within this warranty period must be replaced with an original equipment converter.

Aftermarket converters cannot be used for replacement:

- If the existing converter is present and functioning properly.
- If the replacement is under recall or warranty.
- If the vehicle is returning from overseas use, unless accompanied by EPA forms permitting the installation.

When replacing a converter:

Once you have determined that you may replace the converter, look up your application in this catalog to determine the appropriate replacement converter.

The converters in this catalog are not legal for sale or use in California.

Eastern Catalytic produces a separate catalog for California-approved converters.

- Converters may only be used within the limits of their compliance. Vehicle weight and engine size must not exceed those listed for each converter in this catalog.
- A two-way converter may not be used to replace an original equipment, three-way converter.
- A three-way converter may be used to replace an original equipment two-way, only if it has been approved for that purpose.
- An OBD II compatible converter is required for all OBD II applications.

The EPA requires that the catalytic converter installer:

1. Fill out the warranty card supplied by the manufacturer.
2. Send the top portion to the manufacturer.
3. Give the middle portion to the consumer, and keep the bottom portion.



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Eastern Catalytic Limited Warranty

The manufacturer warrants that the catalysts in our converters are free from defects in material and workmanship which cause such catalysts to fail to conform with emission reduction requirements specified by the U.S. Environmental Protection Agency for a period of 50,000 miles from the date of installation of said catalytic converters. The manufacturer warrants that the external shell, including end pipes, shall be free from defects to materials and workmanship for a period of five years or 50,000 miles from the date of installation, whichever comes first. The required warranty for non-OBD II catalyst performance is 25,000 miles, but **due to the high level of confidence in our products, we have increased the warranty to 50,000 miles.**

This warranty is conditioned upon the converters being properly installed on the vehicle(s) for which they are designated and cataloged and the said vehicle(s) maintained in proper operating condition according to original specifications. The manufacturer will replace any such defective converter provided that it is returned to an authorized dealer along with the proof of purchase and

properly completed warranty certificate. If the warranty claim relates to emission performance, proof of failure of an emission test should be provided.

Manufacturer may request proof that the engine was tuned to original specifications and maintained in proper operating condition. This warranty does not cover converters that have been damaged from accidents, road debris, or the use of leaded fuels. This warranty shall give you specific legal rights. The only obligation of the manufacturer under this warranty is to supply the purchaser with a new catalytic converter assuming all warranty conditions are met. You may also have other rights which vary from state to state.

Our catalytic converters will not in their operation, function, or malfunction result in any unsafe condition endangering the motor vehicle(s), its occupants, or other persons or property in close proximity to the vehicle(s) when properly installed on the vehicle(s) for which they were intended.

Eastern Manufacturing Inc. 2010 Catalytic Converter

Eastern warranties all converters for 5 years or 50,000 miles with proper paperwork completed and Return Goods Authorization # (RGA#).

Converters that can be classified as DEFECTIVE are relatively rare; we would like to again provide guidelines to help you determine when a defective converter actually exists.

Manufacturing defects

These are defects which occur during the manufacturing process and escape our quality control process. They include:

1. Welds that may have spaces around the inlet and outlet pipes or between the seams of the two shells that escape detection and cause a leak that is sometimes detected by a high pitched whistle.
2. A spot weld that holds the heat shield to the converter body, which may not have adhered correctly resulting in a loose heat shield at the weld point.
3. A part that does not fit the vehicle it is specified for due to possibly incorrect pipe bending, inlet/outlet flaring, incorrect flange or flange rotation, damage in shipping, etc.

These defects rarely occur, but converters diagnosed with these problems that are in the original condition with all included gaskets and components, may be returned for credit with prior Return Goods Authorization (RGA).

Structural defects

All catalytic converters have a five (5) year warranty against structural failure. Structural failures include:

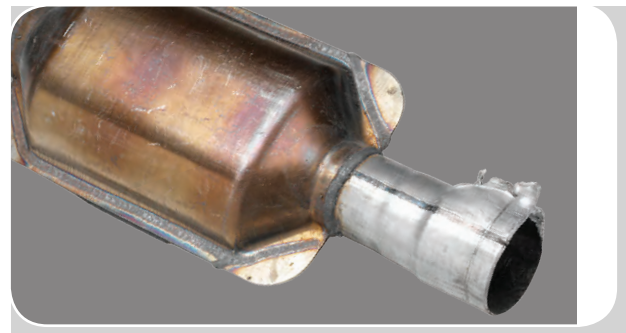
1. A failure during the established (an invoice with a proof of purchased date) warranty period caused by perforation rust (a hole rusted completely through the converter body or pipes).
2. Any other failure to the structure of the unit that was not caused by impact or abuse. If a converter had a dent, from impact, that either causes the substrate to crack or break or the structure to sustain physical damage, it is not the responsibility of the installer or manufacturer and may NOT be returned for credit.

Performance defects

All converters have a 50,000 mile performance warranty (Federal Law is 25,000 miles). Performance failures are difficult to determine.

1. Converters that show signs of excessive heat, usually by being discolored, and fail any performance criteria, are not defective, but instead have been abused by an improperly functioning engine, usually the result of an excessive rich condition that expels high amounts of unburned fuel into the converter causing temperature spikes. These converters are NOT defective and may NOT be returned for credit.
2. When a converter is installed due to a MIL or "check engine light" illumination, and the new converter fails to remedy to the problem, it may be that the converter was not the cause of the problem originally. There are over 1,200 diagnostic codes which can trigger the MIL or the "check engine light." Only eight (8) of those codes deal with the right and left converters operating below efficiency. Documentation from a trained mechanic indicating the code number designation, diagnostic details, and repair must be included with returned converter to obtain credit.

Examples of Converters NOT covered under warranty:



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