

CONVERTER QUARTERLY

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Catalytic Converter Replacement 101

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A situation that plays out daily in shops all over the country is a customer complaining about a problem with a vehicle stalling or running with significantly decreased engine power. Upon ruling out major chassis component failure the shop installs a replacement catalytic converter which seems to have cured the problem. Or has it? You may have fixed the problem and made your customer happy for today but is this happiness only temporary? Will your customer be returning in the near future complaining of a similar problem but not willing to pay for replacement of the same part to cure the problem yet again? **Unless the proper diagnostics are performed** to not only fix the problem but also to find the root cause, **you are doomed** for future problems.

The Environmental Protection Agency (EPA) has evolved over the years from the signing of the Clean Air Act of the 1970's to amendments that push the boundaries of catalytic technology to give us all better air to breathe. Between 1970 and today the U.S. population has increased 35%, vehicle miles traveled increased 140%, and the gross domestic product increased 149%. At the same time, **total emissions of the six major pollutants** (CO, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide) **decreased 32%**. The reason for this astounding statistic is technological enhancements in engine development and emission control whose components you must now diagnose and repair or replace when there is a problem.

Although we are a long way off from 'your daddy's Chevrolet', repairing today's complex vehicles still comes
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- NEW Ford OEM Style Converter

OEM Style Converter!!!

Eastern Catalytic has a new OEM style Ford Truck Converters For Direct-Fit and Universal Applications

Eastern's new line of **OEM-style Ford truck converters** are made to meet manufacturer's specs for use large Ford trucks and vans. The converters are certified by the USEPA for use on **engines up to 8.0L**. The new line includes six direct-fit and two universal models, with a choice of OE style flange fittings or straight tube ends.

The new Ford truck converters are quality built and come with gaskets, O2 sensor ports, air tube fittings, and hangars for easy fit and trouble-free installation. Like all Eastern converters, they are **approved for use on OBDII equipped vehicles** in the United States (*except California).

Industry's longest EPA warranty

Eastern's OEM-style Ford truck converters are **designed for maximum reliability** and long life performance using Eastern's proprietary "**NANO Technology**" **catalyst washcoat** and full-body, 409 stainless steel construction. Eastern's warranty covers up to **5 years/50,000 miles**. (full details on warranty card). Nanotechnology is the manufacturing and manipulation of materials at the molecular or atomic level. At that scale, particles are measured in nanometers or billionths of a meter. A sheet of paper is 100,000 nanometers thick.

Direct - Fit Converters*

Part No.	Model Year	Cylinders	Engine Size	Applications
30800	1988 - 1997	8 Cyl.	5.8L / 7.5L	E250 / E350 / F250 / F350 / F450 with 4 bolt inlet & 2.50" outlet
	1988 - 1998	8 Cyl.	7.5L	
30801	1988 - 1997	8 Cyl.	5.8L / 7.5L	E250 / E350 / F250 / F350 / F450 with 4 bolt inlet & 3.0" outlet
	1988 - 1998	8 Cyl.	7.5L	
30802	1987 - 1997	8 Cyl.	5.8 L / 7.5L	F250 / F350 with 3" inlet / outlet E250 / E350 with 3" inlet / outlet
	1993 - 1996	8 Cyl.	7.5L	
30803	1997 - 2005	8 / 10 Cyl.	5.4L / 6.8L	E250 / E350
30804	2000 - 2001	8 / 10 Cyl.	5.4L / 6.8L	E150 / E250 / E350
30805	1999 - 2004	8 / 10 Cyl.	5.4L / 6.8L	F250 / F350

Universal - Fit Converters*

78300	1988 - 1997	Up to 8.0L 12,000 lbs. GVW - 3.0" ID inlet / 3.0" OD outlet
78400	1997 - 2002	Up to 8.0L 12,000 lbs. GVW - 3.0" ID inlet / 3.0" ID outlet / with 2 airtubes

* Not for use in California

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down to following the manufacturers' guidelines, the government's rules and regulations, and using quality replacement parts. Some of these rules and regulations put forth by the EPA state that a catalytic converter may only be replaced under the following circumstances:

- 1) A State or local inspection program has determined that the existing converter has been **lead-poisoned, damaged, or otherwise rendered ineffective** and needs replacement.
- 2) The vehicle is **no longer covered under** the Original Equipment Manufacturer (OEM) **warranty**, and a legitimate need for replacement has been established.
- 3) The converter is **missing** and the following guidelines and documentation procedures are met: installer must complete the Installer's Warranty Sheet, installer and the vehicle owner must sign the statement establishing and documenting catalytic converter replacement justification, a copy of the completed warranty sheet must be attached to the invoice and retained by the installer for six (6) months.

A new wrinkle in the replacement of catalytic converters and related components is the advancement of On Board Diagnostics (OBD). **All 1996 and newer cars and trucks** built and/or sold in the U.S. must be equipped with an advanced powertrain control computer that **uses second generation OBD technology (OBDII)**. This OBDII technology manages and monitors the operation of the engine, transmission, and emissions control components.

The OBDII system has a device to warn the driver of potential problems that could be either harming the car or the environment.

The OBDII system involves the use of oxygen (O₂) sensor(s) installed within the exhaust system that supply information to the control module to regulate various engine functions and monitor engine emissions. **The converters used as replacements on OBDII equipped vehicles must comply with EPA regulations** and identify themselves as OBDII compliant. While manufacturers like **Eastern Catalytic supply a complete line of OBDII compliant products** (CA excluded) not all converters in the industry will work.

The OBDII system has a device to warn the driver of potential problems that could be either harming the car or the environment. The warning system used is a

Malfunction Indicator Light (MIL) located on the instrument panel that will illuminate or blink to signal a need for service. If a vehicle is brought in with a MIL activated an approved computer scan tool must be used to determine the fault code. Simply repairing the equipment noted by the fault code may or may not solve the problem. Once the vehicle is repaired and all codes are cleared the vehicle must follow a manufacturer specific drive cycle to reset the OBDII monitor. Once reset the scan tool should be used again to ensure no other problems are revealed. If you were to simply replace the catalytic converter because the OBDII code said it was faulty you could be missing an engine problem that caused the converter failure to begin with. Theoretically, the catalyst inside the catalytic converter will never wear-out or deteriorate under perfect conditions. **If a catalyst has failed it was caused by some other outside entity.**

Pre-1996 vehicles not equipped with internal diagnostic equipment, like OBDII, to aid in determining problems can give other clues for converter failure. The mechanic can check the backpressure before and after the catalyst to determine if the converter is clogged, thump the converter to see if the catalyst has broken into pieces, check the difference in temperatures from the front to rear of the converter (an active catalyst will give at least a 90°F increase at the rear), or perform an exhaust gas analyzer test to measure the exhaust pollutants before and after the catalyst and compare the difference.

After all diagnosis and repairs are complete be sure to fill out the converter manufacturers warranty card. Normally this is a four-part card, one part for the customer, one for the shop, one for EPA, and one to stay with the old converter for a period of time. The warranty for aftermarket converters must be at least, 25,000 miles for Federal and State emission reduction requirements with proper maintenance and operation of the vehicle, and the first of 5 years or 50,000 miles for all of the converters external components. **The Eastern Catalytic warranty is 5 year, 50,000 miles for both performance and components!❖**

