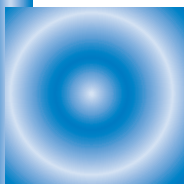


CONSUMER'S
GUIDE TO
ENGINE
REPLACEMENT



BUREAU OF REGULATORY SERVICES
MICHIGAN DEPARTMENT OF STATE

What's wrong with it? How long will it take? How much will it cost? Will they fix it right?

These are some of the questions you may ask when you take your vehicle to a repair shop for work. Your concern may be even greater if the problem involves something as complicated as the engine.

Michigan's Department of State wants you to know your rights when it comes to vehicle repairs. The department's Bureau of Regulatory Services licenses and regulates motor vehicle repair shops, informs consumers of their rights and investigates complaints.

This brochure gives you some guidelines on how to proceed with an engine replacement and how to get help if you have a complaint against a repair shop.

■ **How Do I Know If My Engine Needs To Be Replaced?**

Not all engine problems require replacing the engine. If you think your vehicle has engine problems, have it checked out by a reputable, certified mechanic. If possible, get a second opinion before making your decision.

Some typical symptoms of engine problems are:

- Excessive oil consumption
- Excessive smoke from the exhaust
- Coolant mixing with oil
- Low compression
- Overheating

■ If I Do Need To Replace My Vehicle's Engine, How Much Will It Cost?

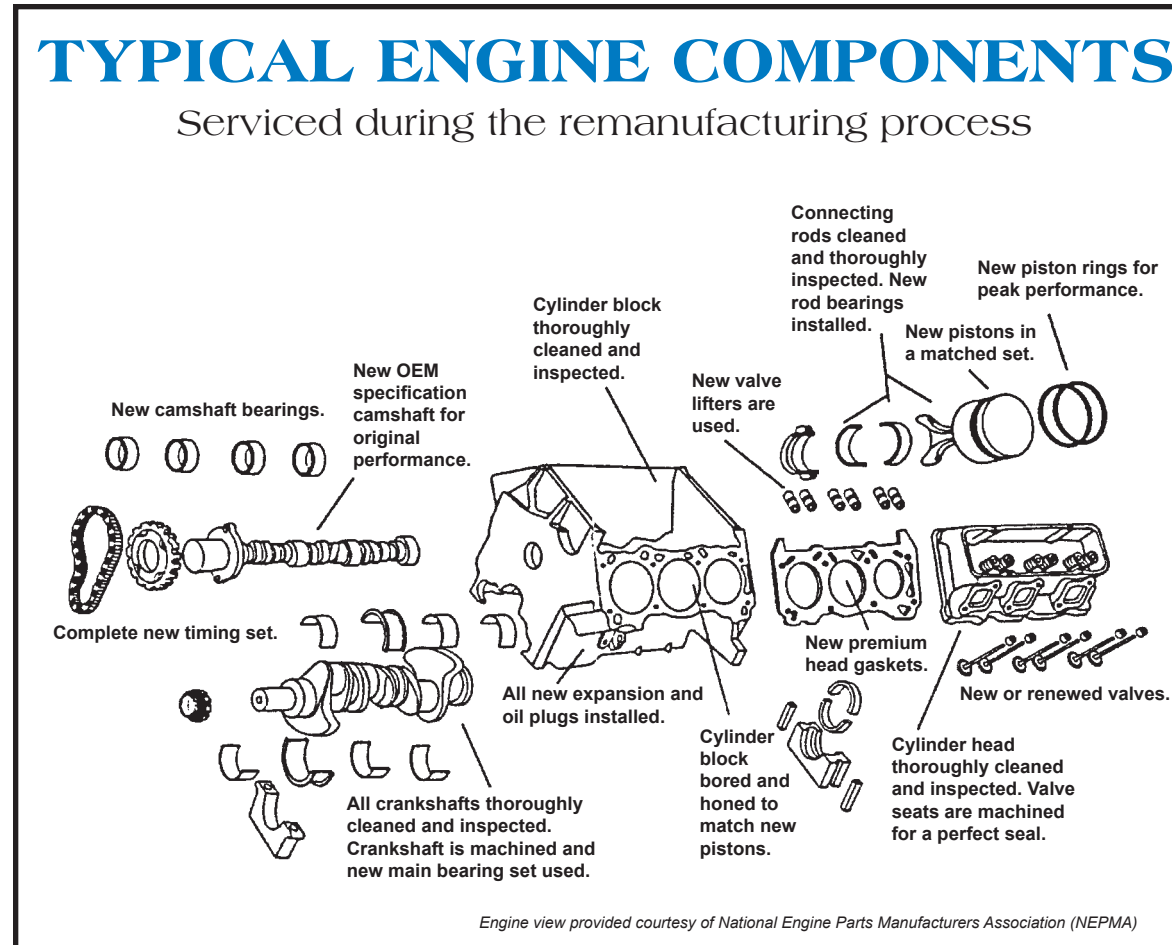
The cost depends on a number of factors, such as:

- Is the replacement engine new, rebuilt, remanufactured, or used?
- Size and type of engine to be installed.
- The type of warranty that comes with the engine.
- Do any external parts (such as the water pump, radiator, belts and hoses, etc.) need to be replaced? These parts are not normally included in the price of the replacement engine. Many engine remanufacturers recommend that these items be replaced at the time the replacement engine is installed.
- Electronic and computerized components are not usually included in the cost of an engine replacement.

■ What Is The Difference Between A Used Engine, A Rebuilt Engine, And A Remanufactured Engine?

Although the terms rebuilt and remanufactured are sometimes used interchangeably in the automotive repair industry, the following definitions normally apply:

A *rebuilt* engine is a used engine that has been reconditioned by cleaning, inspecting, and replacing severely worn or broken parts. Serviceable parts that are within the manufacturer's acceptable wear limits are



NOTE: In Michigan, automotive mechanics must be certified through the State in order to perform repairs for compensation. A facility is required by law to list on the invoice the names of all mechanics who performed repairs on your vehicle. Additionally, the mechanic is required to post his mechanic certificate at the place of business where the mechanic works, and it must be readily accessible to the customer.

reused. Rebuilt engines normally have fewer new components than a remanufactured engine.

A *remanufactured* engine is a used engine that has been made as close to new as possible. Wearable parts are automatically replaced. All core material is closely inspected and checked against original equipment specifications for tolerances. Replacement parts are new and made in the same production process as original equipment. Testing is performed

to manufacturer specifications and original production standards.

A *used* engine is one that is removed from one vehicle and placed in another vehicle with very little, if any, reconditioning being performed.

Talk with the facility representative and make sure you understand exactly what you are getting *before* you authorize repairs.

■ Typical New Components In A Remanufactured Engine:

Gaskets	Timing chain and gears
Piston rings	or belt
Lifters	Connecting rod bearings
Camshaft	Main bearings
Oil Pump	Valve train components
Pistons	

■ Typical Remachined Components:

Valves	Connecting rods
Valve seats	Crankshaft
Camshaft	

■ For An Added Cost, You Often Get:

New spark plugs	Oil change and filter
New air filter	filter
New water pump	New thermostat
New hoses and belts	New antifreeze
New motor mounts	New fuel filter

During the installation of a rebuilt or remanufactured engine, the fuel, ignition, and cooling systems should be checked to be sure that they are in top operating condition.

■ What If I Authorize Repairs?

Under Michigan law a repair shop is required to give you a written estimate before repairs are started if the cost of repairs will exceed \$19.99. Additionally, the facility must contact you and get authorization if the cost of repairs will exceed the last authorized amount by \$10 or 10% (whichever is less). If repairs are done, you are entitled by law to inspect and receive parts that were removed from your

vehicle and replaced. Always ask for and take these parts, if possible. For some parts the shop may require you to pay a fee known as a “core charge.” If the replaced parts are not needed to settle a complaint, returning them to the repair shop entitles you to a refund of the core charge.

Michigan law also entitles you to an itemized invoice showing all costs for parts and labor. Getting replaced parts and a final bill can be very helpful if you have a complaint against the repair shop.

Many warranties place obligations on the vehicle owner, such as oil changes at specific intervals. Make sure you understand these obligations and document your compliance so you have proof you have met the terms of the warranty. You are entitled by law to a written copy of any warranties that apply to the repairs. You should also make sure you understand whether the warranty is from the repair facility that performed the repairs, the company that remanufactured the engine, or both.

■ What If I Have A Complaint?

If you cannot settle your dispute directly with the repair shop, you may file a complaint with the Bureau of Regulatory Services. If you believe you were charged for repairs that were not done or you were told you needed repairs that you later found were not needed (even if you didn’t have the repairs done), contact the Bureau of Regulatory Services immediately.

Additional automotive brochures published by the Department of State:

Auto Repair Rights & Repair Tips

Consumer’s Automotive Information & Complaint Kit

Consumer’s Guide to Brake Repair Service

Consumer’s Guide to Buying a Vehicle from a Dealership

Consumer’s Guide to Collision Repairs

Consumer’s Guide to Private Vehicle Sales

Consumer’s Guide to Vehicle Leasing

Consumer’s Guide to Vehicle Restoration

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