



ANCHOR INDUSTRIES

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Mounting Trouble Signs

Don't wait until it's too late!

Practical tips for driveline mount failure signs and diagnosis



ANCHOR INDUSTRIES QUALITY COMMITMENT

- Only natural and Styrene Butadiene rubber is used to provide premium abrasion resistance and aging stability to ensure maximum life and performance -
- All rubber material is manufactured to specific Durometer (hardness) measurements based on vehicle application requirements -
- All fasteners are made of hardened steel with heat treated Grade #5 bolts -
- Chemlok® bonding agent is used to ensure a superior rubber-to-metal bond -
- Hydraulic Mounts are specifically engineered for high vibration and torque applications and are filled with special hydraulic fluid to dampen excess noise and vibration -
- All engine mounts are specifically engineered and designed to OEM standards using the latest CAD/CAM engineering process to ensure the highest consistency and quality -

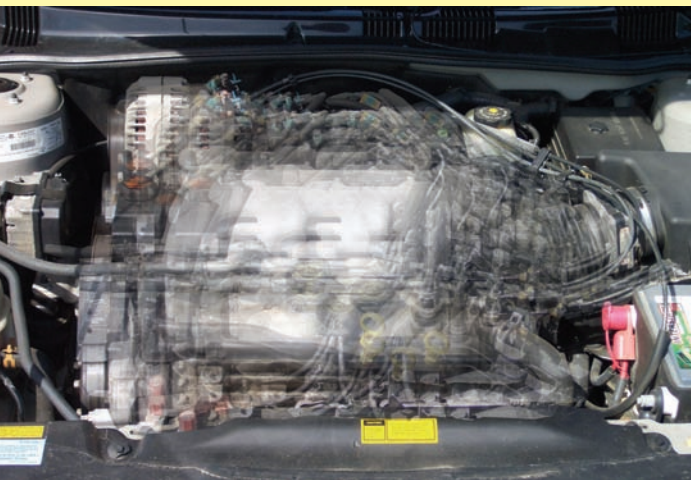
Key Causes

Why mounts lose their resiliency and function efficiency - ultimately leading to failure

- ✓ Acceleration
- ✓ Hot and Cold Temperatures
- ✓ Age and Ozone
- ✓ Engine Torque
- ✓ Braking
- ✓ Collision Damage



Symptoms, Causes and F



Engine Vibration

One of the most common symptoms of worn engine and transmission motor mounts is excessive engine vibration, especially under heavy acceleration and/or engine revving, when engine movements are most pronounced. Worn motor mounts can't absorb vibration or the loads. As a result the vibration is transmitted to the body of the vehicle and can be felt in the passenger compartment.

Probable Cause:

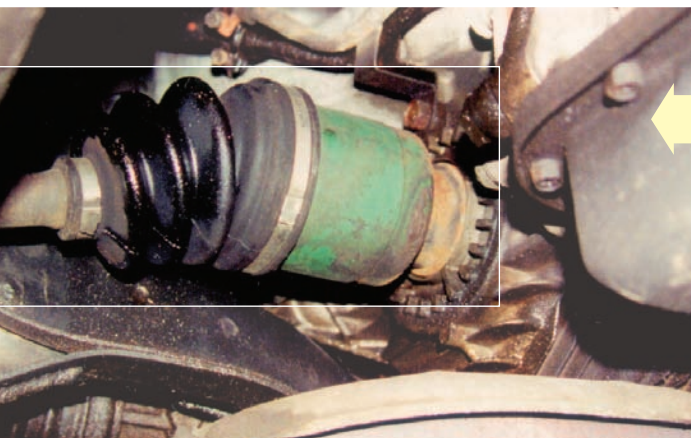
- Worn conventional engine and transmission mount rubber will harden as a result of age. Extreme changes in temperatures and abuse cause a hardened mount to crack or separate from the steel it is bonded to.
- Newer Hydraulic mounts can have punctures or tears in the mount allowing the hydraulic fluid to leak and cause the engine to sag. The result is more vibration will be transmitted directly to the chassis.



Related Vehicle Problems (Check or replace mounts when doing these repairs):

- **Repairing sticky accelerator linkage:** Binding accelerator linkage due to misalignment. When a mount is worn or damaged, it can no longer keep engine in its proper position, so during acceleration it can lift up and cause the linkage to bind or even stick wide open in extreme cases.

- **Repairing sticky transmission linkage:** A sagging or bent mount can cause transmission linkage to be misaligned, creating harsh shifts as well as shifting at improper speeds and even cause the transmission to slip.



- **Replacing a CV joint or Shaft:** Another common symptom is a misalignment of the CV shaft or drive shaft. As little as a 1/4" misalignment of a sagging or twisted mount can cause the CV Joint to be off line by 1" or more adding stress to the drive train.



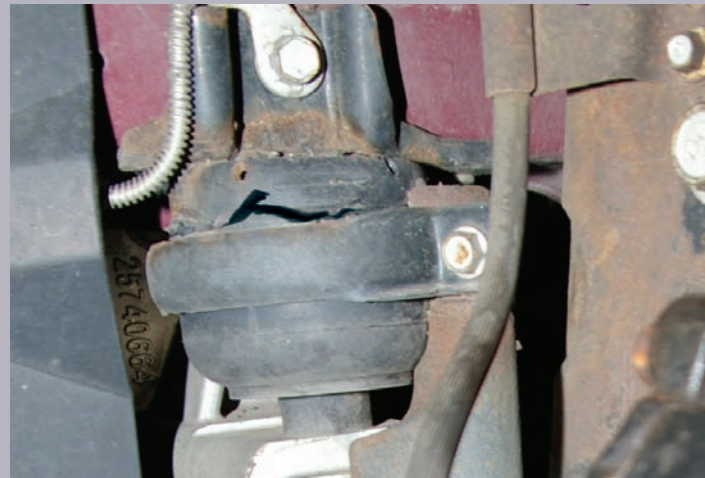
Related Vehicle Problems

Knocking Noise and/or Excessive Engine Rocking

Engine knocking/rattling is another common symptom of worn engine and transmission mount that will cause the engine to excessively shake and shimmy in an odd manner. If not repaired quickly, these symptoms will result in additional damage to other vehicle components including exhaust, transmission, radiator and engine driveline accessories.

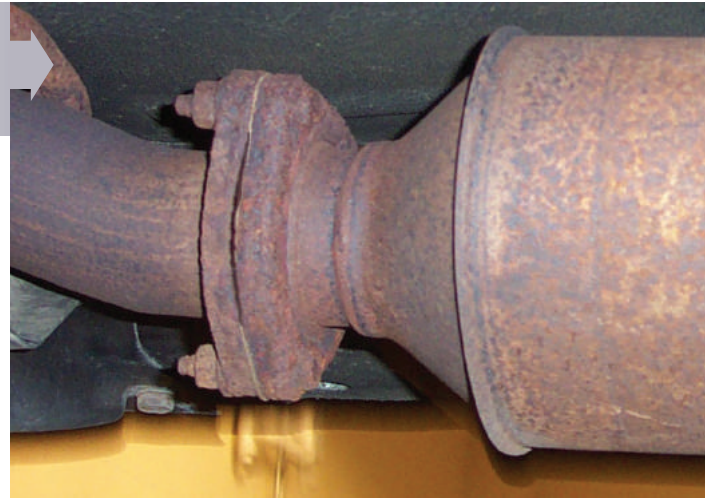
Probable Cause:

- A severely loose or broken mount will cause the engine to rock back and forth especially under acceleration.



Related Vehicle Problems *(Check or replace mounts when doing these repairs):*

- **Repairing exhaust leaks:** Excessive engine movement will put added stress on exhaust manifolds and exhaust head pipes, damaging the exhaust doughnut and pipes.



- **Replacing an engine fan or water pump to eliminate fan shroud noise:** Excessive engine movement can cause the engine fan to scrape against the fan shroud damaging the fan and water pump shaft.

- **Manual transmission repair:** Severely deteriorated or broken mounts can also cause clutch chatter resulting in further clutch damage if left unaddressed.





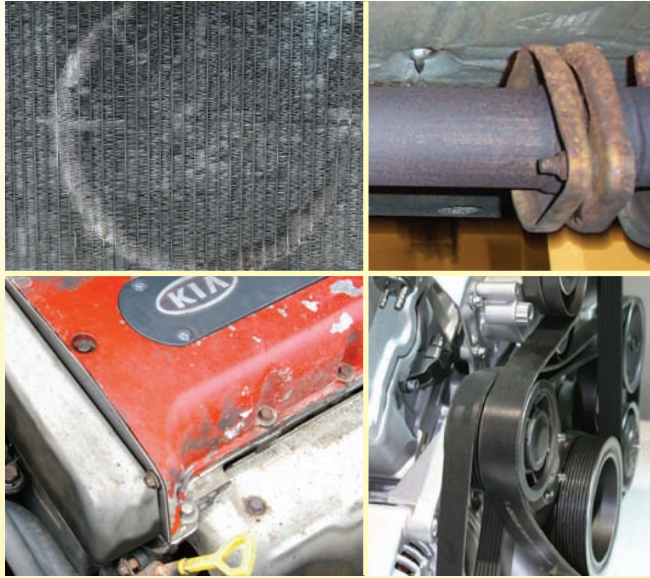
Excessive Shifting or Misaligned Engine

An engine that appears out of alignment, relative to its normal position. This is caused by severely damaged mounts that will not keep an engine properly aligned and positioned to allow for adequate engine operation, and adequate operation of all of the supporting drive accessories.

Probable Cause: Broken or severely damaged mounts

Related Vehicle Problems (*Check or replace mounts when doing these repairs:*)

- **Radiator repair:** A punctured radiator from the fan blade could be caused by dramatic engine shift due to a broken mount.
- **Repairing exhaust leaks:** Cracks or broken exhaust head pipe where it connects to the exhaust manifold.
- **Repairing damaged valve covers or other engine drive accessories like power steering pumps, water pumps or A/C compressors:** In extreme cases broken motor mounts can allow a vehicle's engine to shift and turn violently, especially during rapid engine acceleration, and/or high speed driving. This can cause physical damage if the engine turns far enough to one side to allow contact between the engine and the sides of the vehicle engine compartment. Engine parts can become cracked, broken or dented as the result of broken motor mounts.
- **Replacing Belts and Hoses:** Severely damaged or broken mounts can cause engine belts and hoses to break and/or snap if the engine is allowed to shift back and forth excessively. Belts and hoses, especially water pump, power steering belts and radiator hoses, can be stretched abnormally and severely damaged or broken.



Quick Check Diagnosis:

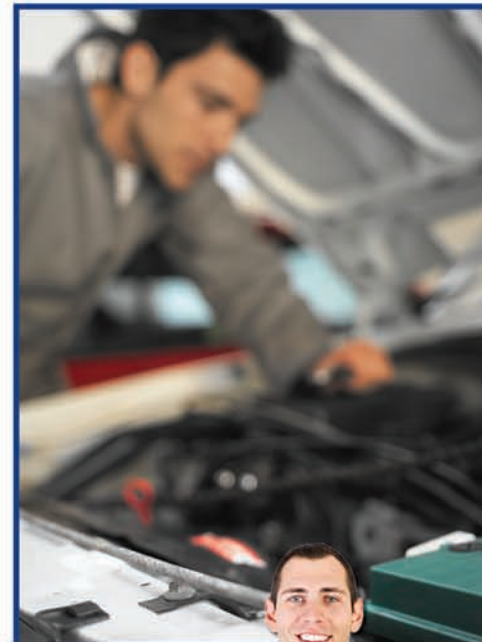
1. Two Person Test:

Note: all engines rotate slightly opposite to the direction of the crankshaft rotation. Two people are usually required for this test: one to operate the vehicle and the other to observe the engine and mount. Have an assistant start the engine and apply the parking brake. While still applying the brakes, put the transmission in gear (drive) and slightly increase the engine throttle. A severely worn or broken mount will cause excessive engine movement, sometimes as much as several inches if the engine lifts off the mount. Next, check the mounts on the other side of the engine. Once again, have an assistant start the engine and apply the parking brake. While still applying the brakes, put the transmission in reverse, and slightly increase the engine throttle. Look for excessive engine movement on the other side.

2. Visual Mount Inspection: Visually inspect mounts for cracking, loose or broken brackets, bolts or collapsed rubber cushions and fluid leaks. A pry bar can be used to easily check for separated or broken mounts. Apply one end of the pry bar to the base of the engine by the motor mount and gradually lift the engine. If you see any cracking or separation in the rubber or broken brackets, the mount needs to be replaced.

Solution: Proper Preventative Maintenance:

1. Whenever the engine and/or transmission are removed for service, the mounts should always be replaced.
2. Inspect the condition of the mounts every time a vehicle is on a lift. It can solve potential serious problems and repairs down the road.
3. Leaking hydraulic fluid from a mount indicates a hydraulic mount has failed and must be replaced.



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