Fixing Suspension Clunks And Rattles

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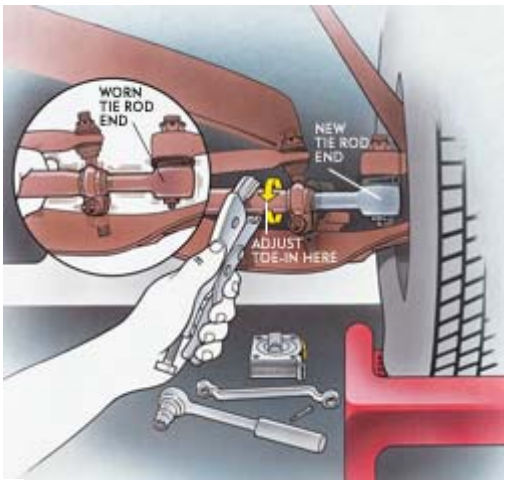
It's the proverbial 20 miles of bad road. Potholes compete with ruts for the privilege of knocking your Freedom Fries out of the bag and onto the floor. It's worth it, however, for the great weekend of backwoods hiking and knocking around. Heading back to civilization without the heavy load of refreshment and food seems easier on your car and your freshly relaxed psyche. At least until you hit the pavement and the rattling starts. Maybe you couldn't hear it on the unpaved road, but every expansion strip on the interstate makes your car sound like a tin can full of bolts. Something's loose in your suspension.

While there's little chance that your car is going to lose something essential while you're going down the road, chassis and suspension noises definitely have to be checked out for safety's sake. Plus, who wants to drive a vehicle that sounds like it's about to drop to the pavement?

If your car has lots of miles on it--or even if it doesn't, but is "chronologically gifted"--don't be surprised if some portion of the heavy metal that supports it over terra firma starts complaining. Unfortunately, finding the cause of the noise isn't so easy. The dynamics of a rolling vehicle, the complex nature of modern suspensions, and the way sounds can be telegraphed through the chassis and body make it hard to pinpoint the location of a problem.

If you hear a clunk when the suspension works over bumps, the probable cause is excessive clearance in a joint due to wear. It might be as simple as a loose strut gland nut, or something more subtle such as a shrunken, dried-out rubber bushing.



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A worn tie rod end will not only make the steering vague, but can set up a rattle if it's bad enough. Set the overall length of the tie rod with a tape measure to get the toe-in close enough to drive over to the alignment shop.

Research, Then Bounce

As a first step, consult whatever literature you have available to see if you can find a Technical Service Bulletin (TSB) that pertains to the noise. Apparently, suspension clatter is a popular problem industrywide because it generates quite a few TSBs. Some of these alert you to redesigned replacement parts, while others say the noise is simply a characteristic of the vehicle and should be accepted as normal.

If no clues are forthcoming, it's time to go hands-on. It'll be helpful if you can get a friend, preferably a hefty one, to assist. For front-end noises, pop the hood, and have your comrade press down on the bumper or fender, then release and lift repeatedly until the suspension is really working. While he does this, listen carefully and use a good light to examine the upper strut or shock mounts and the control arm joints. If you hear anything untoward, but can't pinpoint the source, place the end of a broomstick against your ear and touch the other end to suspected areas. This works almost as well as a mechanic's stethoscope. Nothing obvious? Then lie down and look underneath with your light, even though your friend's stamina may be taxed by this time.

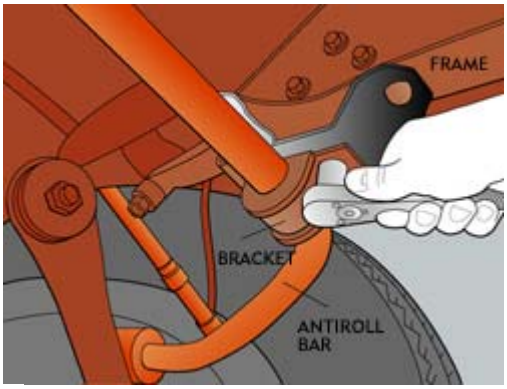
The "dry park check," which will uncover lash in the steering mechanism, is less physically challenging. Have your helper sit in the driver's seat, turn the key to unlock the column, then rock the steering wheel vigorously from side to side while you watch the steering components. There should be next to no visible lash.

By the way, if you raise the car by the frame, the suspension and steering parts will be hanging at an unnatural angle, which may mask the looseness you're looking for. So, place your jack and jackstands under the control arms or the rear axle to keep the weight on the suspension components.

You can uncover the shortcomings of upper A-frame or control arm bushings by having a helper hold the brakes firmly with the engine idling while shifting from Drive through Neutral to Reverse repeatedly. Look down over the fender as your helper does this.

Some vehicles have substantial horizontal struts that position the lower control arms fore and aft. These are mounted in large rubber bushings, and any clearance here will make itself heard. Also, their mounting points on the frame have been known to rust away, but this causes steering symptoms far more noticeable and worrisome than a mere noise.

Older rear-wheel-drive vehicles with a live rear axle and coil springs may have what's called a "panhard rod" that runs diagonally from the chassis to one side of the axle housing. The



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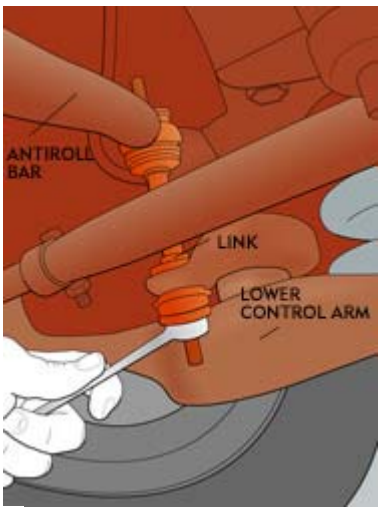
Antiroll bar bushings and brackets can loosen up as they wear. Replace the bushings or tighten the fastening hardware.



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The antiroll bar's attaching links can become loose. Check the bushings.

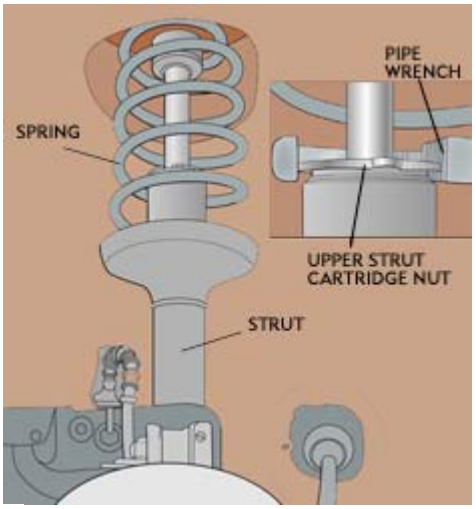
rod's bushings are a likely source of a clunking noise.

Worn-out shocks or struts are common culprits here. When the internal hydraulics wear out, the piston will move without the proper resistance, then stop short when you hit a bump. With shocks, another thing to check for is loose or dried-out mounting bushings.

A groaning noise when you turn the wheel typically means there's a dry joint, likely at the idler or pitman arm.

That husky stabilizer bar, the part that helps keep a car level in a curve, is often the source of noise. The links that attach it to the chassis have bushings at both ends, and there is more vulnerable rubber in its mounts.

A worst-case scenario we often see on unibody cars driven extensively in winter conditions: rusted-out suspension pickup points. The only fix for this is a trip to the frame shop where new metal can be welded on. If this is your vehicle's problem, you have real trouble--because if one point is rusted, its sister on the opposite side is probably rusted also. And probably a bunch of other places as well. Now you'll have to decide how much money you want to spend on a ship that's sinking slowly but surely. It may be time to retire this vehicle.



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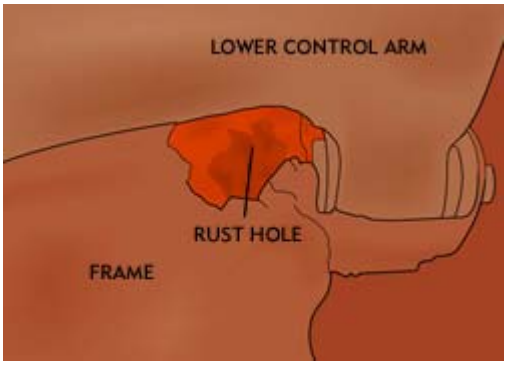
A loose upper strut cartridge nut can cause a hard-to-find rattle. You may be able to tighten it on the car.



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Rusted-out suspension pickup points are an accident waiting to happen. This calls for welding--or the scrapheap.

Alternate Sources

Of course, some noises that emanate from under a car do not have anything to do with the suspension or steering systems, but it can be difficult to make the distinction.

For instance, take the exhaust system--the muffler, headpipe and tailpipe, and the catalytic converter. If everything isn't positioned just right, or the hangers are loose or broken, it's likely that there'll be occasional contact, and the resultant clunk, between these components and the chassis or driveshaft. Try forcing the system from side to side (make sure it's cool to the touch) to see if you can duplicate the sound.

A broken motor mount can cause a solid thump. Oil soaking may have caused it to delaminate, or perhaps a couple of bolts are loose. This condition will be sensitive to getting on or off the throttle, but won't be detected over bumps.

Restoring The Peace

While we've seen people try to take up clearance in a deteriorated bushing with shims made of sheetmetal, screws, etc., the only real fix is replacement. This can be more involved and expensive than

you might expect, but it's the price of peace.

On the other hand, some repairs are free, or nearly so. It costs nothing to tighten a strut gland nut (put a drop of anaerobic thread locker on it to avoid a recurrence), and very little to replace shock mounting or stabilizer bar bushings.

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