

CHRYSLER LX Chassis Tire Wear and Suspension Maintenance

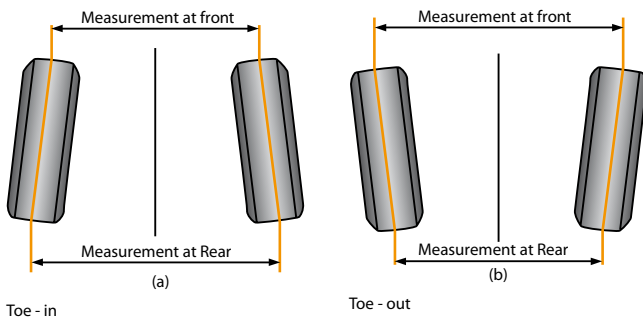


2005 ON CHRYSLER LX CHASSIS: CHRYSLER 300C, DODGE CHARGER, CHALLENGER AND MAGNUM

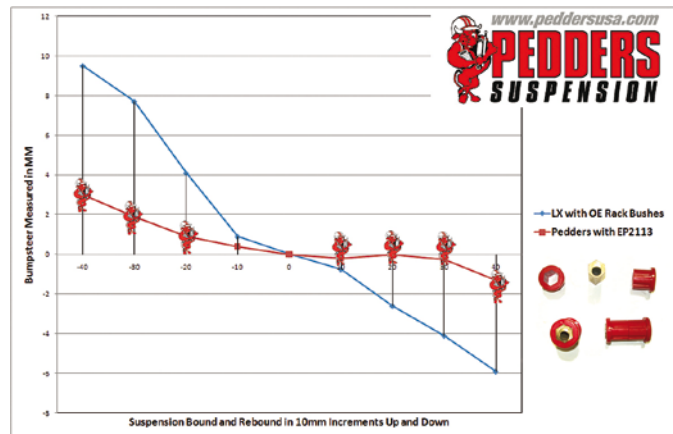
The LX series chassis is a product of Daimler Chrysler shared engineering. The chassis delivers excellent ride comfort and control and has been a tremendous success with approximately 1,300,000 units in the field. As good as these vehicles are owners and fleet managers report relatively short tire life in what they consider to be conservative use. Tire wear is directly related to two characteristics in the LX chassis. One is a high rate of bump steer. Contributing factors to premature tire wear from bump steer, are worn, torn or failed radius rod bushes. Two is high negative rear camber when the vehicle is carrying a load.

WHAT IS BUMP STEER?

Bump steer is the toe-in or toe-out of the front wheels as the suspension goes from normal ride height through full bump (suspension system moves up) to full droop (suspension system moves down). Measurement is usually limited to 3" up and 3" down from ride height. It is specified either by a graph or measurements.



Pedders EP2113
Bump Steer Correction Kit



performed with your next wheel alignment or when you purchase tires. The graph demonstrates the improvement.

WHY DOES BUMP STEER CAUSE TIRE WEAR?

The toe in and toe out motion created as the suspension articulates over the road surface literally scrubs the tread off your tires. You can create the same grinding motion with your feet. With your feet flat on the ground, grind them until your toes point out and point in. The resistance is what causes tire wear as bump steer occurs. In fleet, fuel consumption is the number one controllable expense followed by tires. Correcting bump steer will lower the operational expense of your LX vehicles in fleet service.

HOW BUMP STEER IS CORRECTED ON A CHRYSLER LX CHASSIS?

Bump steer is corrected by raising or lowering the steering rack in relation to the wheel knuckle at rest. Your Pedders dealer uses Pedders EP2113 Bumpsteer Correction Kit that raises the steering rack and reduces bumpsteer and tire scrub. Installation of the kit takes approximately one hour and should be

HOW DO I KNOW IF MY RADIUS ROD BUSHES ARE WORN, TORN OR FAILED?

A Radius rod bush can be inspected with the vehicle on a lift and a flash or shop light. As rubber ages, ozone causes the surface of the rubber to oxidize. A reddish brown ring where the radius rod bush moves is completely normal and requires no maintenance. A radius rod bush with cracks, tears or worse should be immediately replaced. Not only does the excess motion of the radius rod arm caused by a bad bush contribute to tire wear, it creates steering that is sloppy and contributes to wandering and pulling under way or when stopping. Chrysler offers replacement only of the entire arm and bush assembly. Pedders EP6567 is a severe duty cycle bit that replaces only the bush making it very cost effective. The manager or technician will walk you into the shop so you can see the condition of the bush.



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Well Worn LX Radius Rod Bush



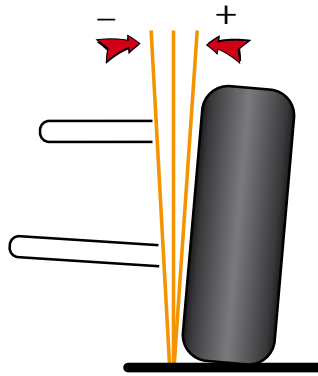
Severely Worn LX radius Rod Bush



Pedders EP6567

**WHAT IS CAMBER?**

Camber is measured in degrees, both positive and negative. Incorrect camber can be the result of a bad alignment, wearing parts and changing the ride height on your vehicle; raising or lowering it. Incorrect camber takes valuable rubber off the road by ridding on the edges of the tires instead of the traction patch. Positive camber points the top of the wheel away from the vehicle. Negative camber points the top of the wheel in towards the vehicle.

**WHAT IS THE WARRANTY FOR FIRST RESPONDERS USING PEDDERS PARTS IN OUR DEPARTMENT?**

The warranty is straight forward. It covers your First Responder vehicle for two years regardless of mileage. Any failed Pedders part will be replaced.

7841 Rear HD Coils
- 2 Per Vehicle



LX Front Shock
144304



LX Rear Shock
141206

**WHY DOES THE LX CHASSIS HAVE HIGH NEGATIVE CAMBER UNDER LOAD?**

If your LX is equipped with Nivomat load carrying rear shock absorbers from the factory, your LX will not have high negative camber when loaded with passengers or cargo. The Nivomat is a self-contained hydraulic load leveling system. As long as the Nivomats are working they will level the vehicle and keep the negative camber in check. The technician can determine if your LX has Nivomat rear dampers by measuring the OD of the lower shock tube. If it is over 59mm in diameter your LX is Nivomat equipped. Most of the LXs were delivered from the factory with standard style rear dampers. The coil rate, the ability to carry load is conservative. Typically the negative rear camber will increase 1.5 to 2.5 degrees with five passengers in the vehicle.

HOW DO I CORRECT THE NEGATIVE CAMBER WITH PASSENGERS OR CARGO ON MY LX?

Coils are like people, they age with time and use. You could replace your worn OE coils with new OE coils. They will be better, but still light in rate by FIRST RESPONDER and Pedders standards. Even brand new OE coils will measure 1 to 2 degrees of negative camber with the same load. Replacing the rear coils with Pedders 7841 HD coils. With Pedders 7841 coils installed the change in negative camber with identical load is .5 degrees. Your vehicle will ride a bit firmer, but most LX owners actually find the ride to be very close to factory.

2005 ON CHRYSLER LX CHASSIS: CHRYSLER 300C, DODGE CHARGER, CHALLENGER AND MAGNUM

The IRS in your Charger, Magnum, 300C and Challenger is attached to the vehicle using four bolts passing through large rubber bushes. To make the passenger cabin quiet, these rubber bushes have gaps or voids to reduce road and suspension noise from entering the cabin. Efforts to isolate these noises reduce the durability of the components. LX sub-frame bushes failures fall into two categories - corrosion or tearing.

Sub-frame bush failure exacerbates a known issue with virtually all vehicles that use rubber mounts to attach an IRS. The IRS assembly moves under load causing rear-end-step-out. In plain English, when the IRS moves it becomes a second set of wheels steering the car. This is a loose or unsettled feeling with good mounts and worse when the sub-frame bush or bushes have failed.

Solid mounts would eliminate the failure and improve the driving characteristics of the vehicle, but would also make them harsh and noisy. The increase in noise level with solid mounts is so great it is not a viable solution. The Pedders solution is to

use a superior urethane material with much larger control surfaces to better carry the load, while maintaining close to OE cabin noise levels through the use of void technology. The OE bush is dependent on an aluminium to rubber bond to hold the ferule in place. The pictures graphically illustrate how dramatically corrosion destroys this bond leading to failure. The Pedders LX sub-frame bush is trapped with a metal plate and does NOT use a bonded ferule, completely eliminating this from of failure.

The second cause of failure is tearing. The pencil size OE rubber ridges are replaced with Pedders large flat thick urethane discs. By design, Pedders LX sub-frame bushes completely eliminate tearing of control surfaces in the LX sub-frame bush.

The end result is a vehicle that is more controlled, more durable increasing the availability of the LX for patrol and pursuit use while reducing fleet maintenance expense.



This is caused by road salt corroding the aluminium ferule. This is a complete total falling out of the car failure



Same salt corrosion failure, different view.



The control surface of the bush is torn from normal wear.



If you see white oxidation on your LX sub-frame bush, it requires replacement.

The Chrysler LX chassis has four sub-frame bushes used to attach the Independent rear Suspension (IRS) to the vehicle. These four mounting points are very important to vehicle stability. When new they allow limited movement and isolate the passenger compartment from noise. When torn or delaminated due to corrosion they allow significant movement of the IRS and cause the vehicle to feel as though the rear of the car is steering the front of the car. This disconnected feeling is caused by the increase on movement. The rear wheels literally are shifting as though they were being turned by a steering wheel. In these pictures you can see how the sub-frame bushes fail. Your Pedders dealer will take you under your LX during the 28 Point Inspection. You will be able to see if your sub-frame bushes are solid, worn or failed. When you work with a Pedders Dealer there are no doubts about the need for a repair, because you, the owner of the vehicle, are an integral part of the inspection process.

CHRYSLER

LX LX Rear Sub-Frame Failures

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This is a salt caused failure on a Dodge Charger used by an Indiana Sherriff's Department.



Cass County Sheriff Second Failed Bush by Corrosion

The Cass County Sherriff's Department sought out Pedders when their Dodge Charger dropped out of an emergency call. The driver was going through a high speed corner when the vehicle shifted. He thought it was a blow out. The tires were fine. The condition persisted. No one seemed to be able to identify the problem. The dramatic shift that felt like a flat tire was being caused by two severely corroded sub-frame bushes allowing the IRS to shift so much under extreme driving conditions that the veteran member of the Sherriff's department felt the vehicle should be removed from service.



These are the failed OE sub-frame bush ferules removed from the Cass County Charger, the same ferules shown in the pictures on the vehicle on this same page. They don't look all that bad bolted in. Once the bush is removed from the vehicle we were able to pull the ferules out by hand. A new OE bush and ferule would require thousands of pounds of pressure in hydraulic press to be ripped out of the bush and the rubber bond would NOT have failed. The rubber near the bond would have ripped from the outer rubber of the bush. We took these out with our bare hands. The little bit of rubber that was still bonded to the ferule was hanging on by small shreds of rubber. The failed ferules allowed so much sub-frame movement that the car felt like it had a flat rear tire in turns and was not fit for service. Installing Pedders EP1172 complete eliminates the corrosion issue while dramatically increasing stability over a brand new OE set of rubber bushes.



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LX

LX Rear Sub-Frame Failures

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Pedders EP1172 Bushes Installed on the Cass County Car



Pete Basica, President of Pedders USA, LLC hands Deputy Gary Armstrong from Cass County Sheriffs Department, Cass County Indiana the keys to his fully Pedderised Police Pursuit Suspension equipped Dodge Charger.

Sheriff Gene Issacs and Deputy Gary Armstrong from Cass County Sheriffs Department, proud supporters of the Pedderised Police pursuit Suspension kit.



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LX LX Rear Sub-Frame Failures

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rear

EP3524/14.5 & 18 Sway Bar D Bush

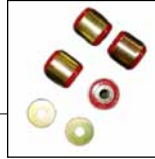


Sway Bars: 429001-18 & 18(A) Pedders Swaybar (Adjustable)

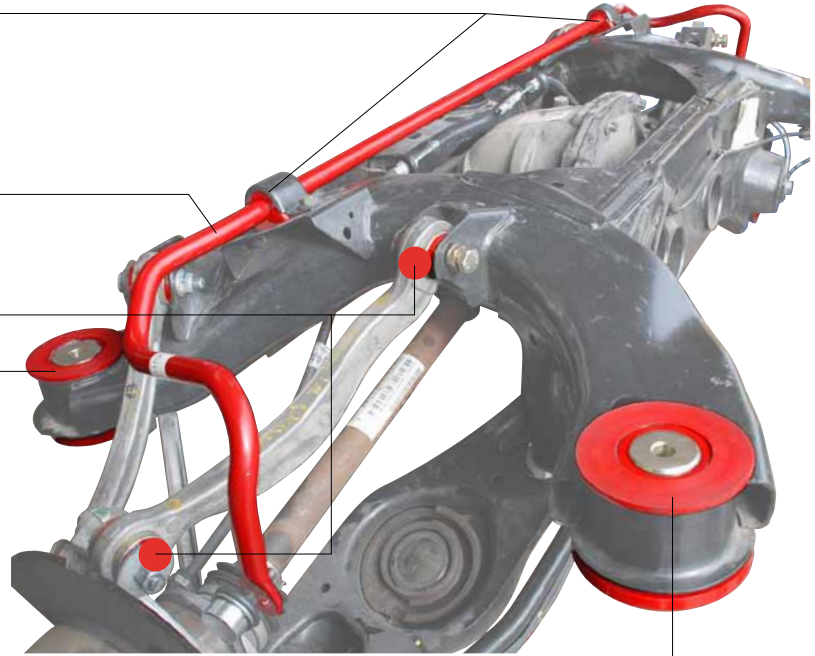
EP7277 LX Rear Camber Link Adj bsh kt



EP7276 LX Rear Camber Link/Radius



EP1172 LX Rear Sub-Frame Bush



EP1172 LX Rear Cradle Bushes — a great solution for the LX to ensure comfortable driving to replace the failure prone OE bushes that tear and corrode.