

Australia's Number 1

Shock Absorber, Steering and Suspension Specialists

PEDDERS TRACK DAY NEW JERSEY 2009 Pt 2 – Pedderised 300C/LX Test Results

Every chassis ever designed has strengths and weaknesses. The LX architecture is quite capable as it is derived from a proven Mercedes Benz architecture. We have found that bump-steer, excessive bush compliance, tall ride height combined with modest rate coils and dampers for enthusiastic driving limit the performance of this chassis from the factory. The averaged skid pad performance in enthusiast publications is just under .87 Gs and that was validated on our New Jersey Motorsports Skid Pad testing where we achieved a .87 in the OE Charger R/T.

The LX uses a Virtual-Pivot front suspension in the lower front control arms with a wishbone style upper front control arm. The sophisticated geometry is designed to maintain dynamic alignment geometry. The lower double pivot or Virtual Pivot design is similar to BMW's larger models (5,6 and 7 Series as well as the X3 and X5 Sports Activity Vehicles) and is new to the BMW 3 Series. The system provides improved steering feel and control under most road conditions. The two arms don't actually intersect; if you visually extend their axes to a point where they do intersect, you will find a "virtual pivot point" that is ideal under a wide range of operating parameters.

The LX rear suspension was developed using Mercedes-Benz W210 E-Class the 5-link rear suspension, the W5A580 5-speed automatic, the rear differential, and the ESP system. The elegant design of the LX suspension is limited by highly compliant rubber bushes, with modest coil and damping rates. This is evident on the skid pad where you can see the enormous amount of lean and roll as the centrifugal force increases on the 200' pad.

Engine placement in the LX series is tall and far forward. This design feature creates a very large cabin at the expense of balance. With a curb weight in excess of two tons achieving a .87 on the skid pad is testimony to superior suspension geometry. The OE LX compares favorably to much smaller sports cars.

.86 Infiniti G37
.87 Ford Shelby GT500
.93 Ford GT500 Super Snake

People often ask why Pedders places so much emphasis on bushes before coils, dampers (struts and shocks) or sway bars. The answer is you can't set a fence post in Jell-O and expect a good result. As engineers strive to isolate vehicle occupants from Noise, Vibration and Harshness (NVH) suspension stability is reduced. In this video demonstration you can see how little effort is required to generate large amounts of motion in the LX Upper Front Wishbone Style Control Arm. You will find similar range of motion in the lower front control arm and radius arms. This is evident in the LX on the skid pad.

The Pedderised LX chassis starts with the foundation at the rear sub-frame bushes. They are not replaced with rock hard race style urethane. They are replaced with voided and shaped urethane of density suitable

to the available tire contact surface. This delivers optimum performance with a surprising amount of OE ride comfort. The same is true with every rubber bush in the LX chassis replaced with Pedders street friendly urethane.

The LX chassis does not need to be slammed to achieve excellent balance. A combination of bushes, coils, dampers and bars bring these HEMI powered monsters under control. Using 2940 coils front and 7026R coils in the rear the Pedderised LX vehicle arrived at the skid pad with the following ride heights measured from the lower edge of the wheel rim to the edge of the painted fender.

300C with 20" Wheels
Front 667mm
Rear 660mm

Charger SRT 8 with 20" Wheels
Front 667mm
Rear 663mm

OE Charger with 20" Wheels
Front 680mm
Rear 680mm

With the sway bars set to full hard front and rear and the tires inflated to 35 PSI using the same gauge for all the vehicles the Pedderised LX vehicles came within a hair of hitting the 1G mark as a constant. They peaked as high as 1.03, but peaks are impressive but not sustainable so they test out as .99 vehicles.

The limiting factor in this test is the tire and wheel combination. Were either of the Pedderised vehicles equipped with Bridgestone Pole Position tires as was the 1.03 G G8 we feel both would have exceeded the 1 G mark How impressive is a .99 G vehicle on OE wheels and tires?

.86 Infiniti G37
.87 Ford Shelby GT500
.87 Dodge Charger R/T
.88 Dodge Charger SRT 8
.88 Pontiac G8 GT
.93 Ford GT500 Super Snake
.94 Audi RS 4
.95 BMW M3
.98 Audi RS R8
.99 Corvette Z06
.99 Porsche 911 Turbo
.99 Porsche Carrera GT

.99 Arrington Pedderised 300C Powered by a 426 Arrington HEMI on OE Wheels and Tires

.99 Wretched Motorsports Pedderised SRT 8 on OE Wheels and Tires

1.00 Porsche 911S
1.0006 Pedderised Composite Pontiac G8
1.01 Ferrari Enzo

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1.01 Dodge Viper SRT 10

1.01 Pedders USA, LLC Pontiac G8 on Bridgestone Pole Position 275/35/XL/19

1.03 Porsche 911 GTZ

1.03 Porsche GT3 RS

A two ton Chrysler LX slots in between a group of two seat Porches and a Corvette Z06! Suspension tuning is part science and part art. It is part physics and part black magic. What we learned on the skid pad is that a Chrysler LX chassis i.e. exceptionally capable when properly fine tuned. Comfort does not have to be thrown to the side. Each of these vehicles was driven to the track. There were no exotic alignment specifications required. These are daily driver vehicles that tested out in the same range as some of the world's finest two seat performance cars.

How close are they to these same performance cars on the track – stay tuned for the next installment complete with video from the Arrington / Pedders New Jersey Motorsports Benchmark Testing and Track Day.

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Pedderised 300C/LX

