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# The Garage - PML Diff Cover

## Installing the Front Differential Cover from PML!

Last Updated: 1/13/2014

### Resources

#### PML Differential Cover

##### PML, Inc.

Address: 201 W. Beach Avenue  
 Inglewood, CA 90302  
 Phone: (310) 671-4345  
 www.YourCovers.com  
 Hours: Mo thru Fri  
 Mo - Fri - 8:00am - 4:00pm (PT)  
 Click [here](#) to visit their website.

##### Summit Racing Equipment

Address: P.O. Box 909  
 Akron, OH 44398-6177  
 Phone: 800-230-3030  
 Fax: 330-630-5333  
 The Order Line is open 24 hours  
 a day, 7 days a week.  
 Click [here](#) to visit their website.

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### Visit the [Photo Gallery](#)



The "Photo Gallery" has some of my favorite pictures of my Durango, our

I have sent out over fifty emails and have spent countless hours of research on the web with the hope to find a front differential cover for the Durango 8"/205mm IFS front differential. It's quite sad that most of the contacted companies made no effort to reply! I almost gave up but then received an email reply from Randy at [Performance Pros](#) which told me to contact [PML](#) and that's what I did. Although the differential cover for the Durango (Part#11046) is still in development the friendly people at PML gave me the opportunity to receive and test one of their prototypes.

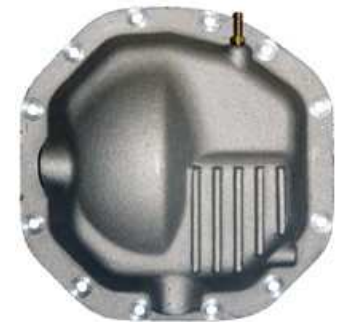


I do not know the final pricing of the part but PML states that it will be likely similar to the rear cover (\$195 for natural cast finish, \$245 for black powder coat with shaved fins). Vent will be additional. I suggest that you contact PML directly if you are interested in installing a prototype cover and/or to check if they have a final version ready.

#### Specifications:

Manufacturer	<a href="#">PML</a>
Manufacturer Part #	11046
Model	Dodge Front Differential Cover 8"/205mm Ring Gear, 12 Bolt w/vent for Ram 1500, Dakota, Durango
Product Name	Differential Cover
Color	natural cast finish
Application / Usage	Drivetrain
Vent	Yes
Dimensions	<a href="#">Click here</a> for dimensions
Low Pressure	Yes
Volume	0.25qt over stock

The Durango requires 3.5 pts.(pints) = 1.75 quarts = 1.66 Liter for the OEM cover



PML Differential Cover Part#11046

### Shopping List


Part	Description
	<b>Dodge Front Differential Cover P/N 11046 (8"/205mm Ring Gear, 12 Bolt)</b> For Ram 1500, Dakota, Durango  PRODUCT IN DEVELOPMENT. PROTOTYPE PART No pricing
	<b>Royal Purple Max-Gear OIL R75W90</b> Royal Purple 01300 - Royal Purple Max-Gear Synthetic Gear Oil  Royal Purple's Max-Gear is an ultra-tough, high-performance, GL-4 and GL-5 automotive gear oil designed to provide maximum protection to heavily loaded gears, while maximizing power throughout the drivetrain. It outperforms many other oils because it combines the highest quality synthetic oils with Royal Purple's proprietary Synslide additive technology. Max-Gear makes your gears run smoother, quieter, cooler, and longer without overhauls. (3) \$14.94 each +s/h @ <a href="#">Summit Racing Equipment</a>
	<b>Permatex High-Temp Red RTV Silicone Gasket (3 oz)</b>  OEM specified. Formulated for hi-temp applications or heavy-duty use (such as towing, etc.). Replaces almost any cut gasket by making reliable formed-in-place gaskets that resist cracking, shrinking and migrating caused by thermal cycling. Coats precut gaskets to increase reliability. Handles temperatures ranging from -65°F to 650°F intermittent and resists auto and shop fluids. First generation 1970 - 1980 gasket maker. (1) \$6.99 each + tax @ <a href="#">Auto Value</a>

family trips, and others of interest.

### NEW Project Alert!

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Fitment & Custom Install



 A Fire Extinguisher to control small fires, especially in emergency situations is a must have in a truck!

This project is available NOW. [Check it out!](#)



PML designs and manufactures since 1986 specialty automotive products using state-of-the-art computer assisted design and manufacturing technology.



**Cost:** The total amount came to approx.\$50.00 without the differential cover

### Let's get started!

The basic procedure of this project is to remove the old differential cover and replace it with this new awesome looking cast PML cover. Although I got a bunch of helpful instructions, I kinda have an idea how it works :-)

#### Disassembly:

1. I begin by jacking the Durango up and secure the lift with jack stands on both frame rails at the side. I then remove the plastic push pins which secure the radiator splash guard and take the guard off. Now I have all the access to the differential. Next is cleaning the old cover and surrounding area of dirt and debris. At the same time I make a quick inspection of parts near by.

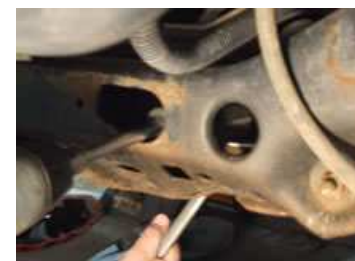


I set up a clean oil catch below the differential for the waste oil and proceed with removing all bolts around the differential. There is a small indent on the right side (passenger side) of the differential to allow a standard size screw driver to aid in the removal of the old differential case. Using a screw driver I carefully pry the cover away from the case making sure not marring the aluminum casing.

2. I now clean the mating surface of the differential housing. I used to do this with a gasket scraper what has been mostly tedious work. However, now-a-days I am using red Scotch-Brite pads from the local car parts store. These pads work unbelievable well on getting RTV gaskets off surfaces and don't leave marrings either. Just awesome stuff!



3. While trying to dry fit the new PML differential case I realize that there is no way on getting it on without removing the driver side steering rack bolt. The bolt I am taking about is the bolt which holds the steering rack in place (Mopar Part#06506558AA). In the drawing below marked with a red arrow. This bolt needs to be removed to install the cover, there is no way to get the cover in place without removing or loosening the bolt first.

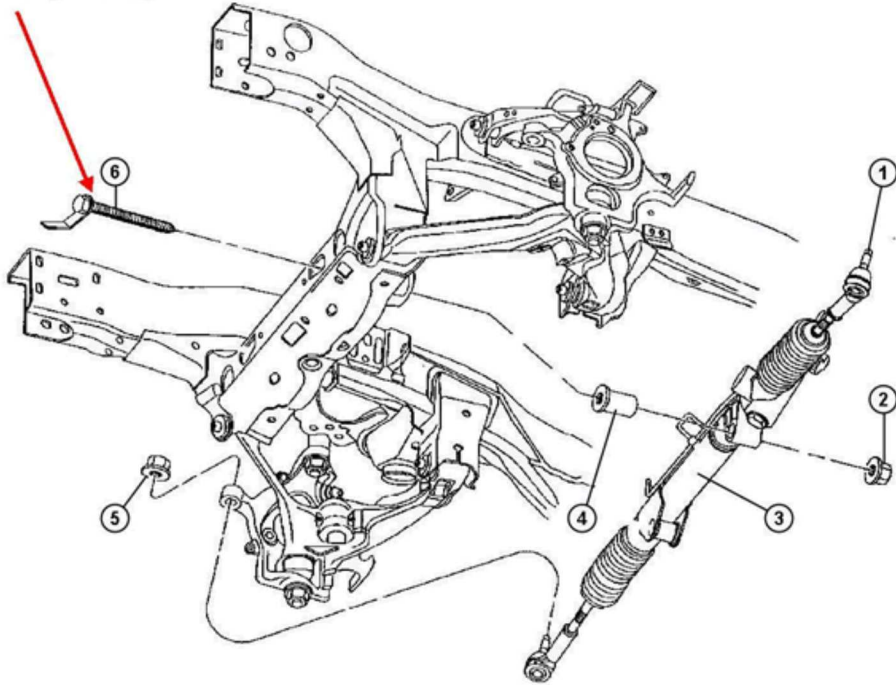


There just will be not enough room between the steering rack bolt end and the fins of the cover. Even if I could get somehow by it, all the RTV from the cover would end up on the ring gear or other places and I likely will be having to deal with sealing issues afterwards due to the loss of gasket material.



Removing the bolt which decided that this is it's final resting place was done with a high powered 1/2"-drive air impact gun. After the bolt was removed and inspected, I did another dry fit. I mounted the cover with three bolts to the differential case and checked for clearance between the OEM bolt (see schematic below: item 6) and the cover

Steering Rack Mounting Bolt



Even before tightening, the bolt already touched the fins of the PML case. It was clear that I had either to machine a washer or use multiple washers to underlay the bolt.

I machined a washer from 6061 aluminum.

In my case the bolt was protruding 22mm beyond the nut (see schematic to the left: item 2). That's a little less than an 1 inch. See below how it looks after the length has been corrected. If left, the bolt would penetrate into the differential cover



4. It was time to prep the new cover. It had some rough casting edges around the drain hole on the inside. I used a rotary power tool to deburr it. I installed the fitting for the case ventilation and applied a few drops of Permatex thread sealant before tightening it into place. Now is the time to attach a new vent hose as it is hard to get to later on. I am using fuel hose as I was out of vacuum hosing, but the fuel hose will work just fine.



5. Another quick cleanup of both mating surfaces with acetone. Then high temp RTV was put onto the PML cover and after lining the cover up it was bolted to the differential case using 15 ft./lbs of torque as stated in the dodge service manual. I do not use Loctite on the bolts.



I installed the drain plug using a small amount of anti-seize and then letting it sit for a few hours so that the RTV sealant has time to cure through.



### Finishing up!

Later on in the afternoon I began to fill the case through the fill hole for which I am using 1" Tygon tubing with a fill spout I made for this type of job.

Avoid to fill the differential through the vent tubing! If you use the vent most likely you will introduce a mess as soon there is the first equalization in the case. Also make sure you didn't create any loops in the vent tubing as this will also create oil blows into your fender well. I am using my favorite Royal Purple Max-Gear OIL R75W90 as my lubricant of choice. Dodge specifies non-synthetic for the front and synthetic for the rear. However, I am using synthetic in both for years without issue and it is my believe that this is just a cost saving

measure and not based on an engineering point of view. I use Royal Purple just about for anything, and no I am not sponsored :-)

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## Verdict:

Well, I received a few questions from my readers since the install such as what's the purpose if there is no noticeable or no difference in performance etc. Frankly, I didn't want it because I was hoping for a performance increase, I wanted it because it doesn't rust (which is a huge issue here in the UP), it will make my future gear oil changes a lot easier with the drain plug which also offers a magnet which will give me an early warning of any issues if they should come up, and it's of awesome quality. I also like it because the cover looks great and if you are now telling me that you don't see it under there then you just don't spend enough time under your truck. It's as simple as that!

### Before:



### After:



I am extremely happy with the cover. After testing it for about 200 miles I did not encounter any issues.

I would like to thank PML for giving me the opportunity to test and acquire this cool looking and quality manufactured differential cover for my Durango. A special thanks goes out to Valerie from PML for outstanding customer service and certainly the best communication I have encountered in the car parts business. Where do you think I'll look first when I need my next cover or pan? And how many people do you think I've told this fact to?

**This project was completed on 01-03-2014**



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