Dailey Engineering
DRY SUMP OIL SYSTEMS

LS Dry Sump Installation Guide

**This guide assumes the dry sump system will be installed on a crate engine. If installing on a built engine, ignore the disassembly portion.

**This is a generic set of guidelines. If this does not seem straightforward, please consult with a reputable engine builder with experience in motor preparation.

1- Remove the stock damper and discard it

2- Remove the stock oil pan and discard it

3- Reuse the stock oil pan gasket
(**The gasket must be trimmed to clear the oil feed fitting.**)

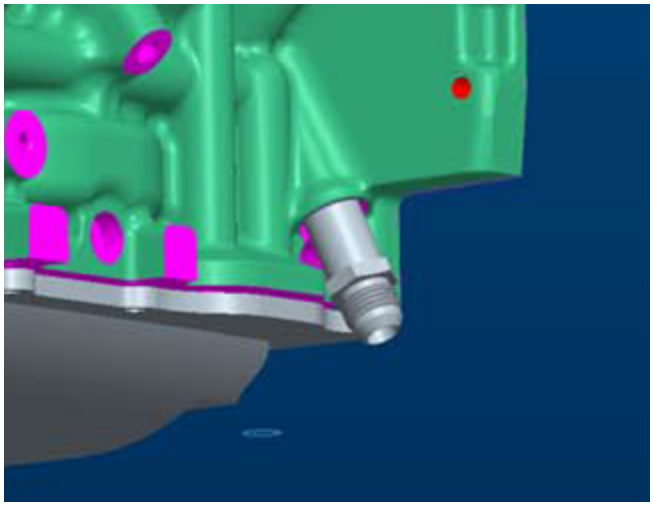
4- Remove the stock windage tray and discard it. The long studs for the windage tray will fit inside the oil pan and do not need to be removed

5- Remove the front cover

6- Remove the stock oil pump and discard it

NOTE: No oil holes in the block need to be plugged. The plastic oil galley plug in the rear of the main oil galley will seal the front holes in the block from oil fed to the motor with the fitting supplied. This applies only to production-based blocks. Some aftermarket blocks may do this differently.

7- Install the supplied fitting (26-02-0600) with the crush washer into the lower left rear port just above the #5 main cap side bolt (See the attached image). When the original plug is removed, you can look inside the port and see the plastic oil galley plug. If this is not in place, you must seal the ports at the front of the block.



8- Plug dipstick port
When the dipstick is removed, the hole in the block must be sealed. This is not supplied. It is only necessary for applications where the dipstick hole is in the block. In some applications, the dipstick hole is in the oil OEM pan.

NOTE: If you are installing this on a GM crate dry sumped engine, such as the LS7, this is the time to convert the timing set and front cover to the LS3 wet sump style.
Reference: (LS7 to LS2/LS3 Wet Sump Front Cover Conversion Parts Guide)

9- Install the front cover

10- Install the damper. Refer to the ATI damper instructions for installation.
http://www.atiracing.com/instructions/LS1-LS7-Damper.pdf

NOTE: ATI SPACER
***The LS7 crank snout is longer than the wet sump crank. This spacer should be installed after the damper is pressed on the crank and is needed so the crank bolt can clamp down on the ATI damper properly. Use the crank bolt for the LS7 crank.**
ATI 916322S

11- Install the oil pan with the stock gasket (be sure to trim the gasket to clear the oil feed fitting). Hardware to install the oil pan is left up to the engine builder and not supplied. The pan is designed around M8 Socket Head Cap Screws with A/N washers.

12- Install the oil pump with the supplied hardware. Use Loctite to secure these bolts and torque to 10 ft-lbs. Make sure the o-rings are new and replaced whenever the oil pump is removed. We recommend using an o-ring lubricant to hold the o-rings in place and lubricate them.
We use Dow Corning Molykote 55 O-Ring Grease.

13- Install the oil pump pulley following the instructions supplied with the pulley.
http://www.daileyengineering.com/faq

14- Install the belt. The belt runs in a loose condition so do not panic the first time you install our dry sump. You should be able to roll the belt off the pulley easily but not skip a tooth. You should be able to twist the belt 90 degrees. Never pinch the belt together as this can generate a tremendous amount of bending load on the shaft.

Vehicle installation is left up to the user to define. Oil tank, filter, and plumbing.

We recommend a -16 oil feed line from the oil tank outlet to the oil pump pressure inlet. No restrictions, like a filter, should be installed in this line.

We recommend that the -12 oil pressure outlet from the oil pump feeds an oil cooler (if used) with a -12 line size. The oil cooler should also be equivalent to a -12 line size.

We recommend the outlet of the oil cooler to feed a remote oil filter with a -12 line size.

We recommend the engine oil filter to be somewhere close to the oil inlet of the block. Connect the oil filter outlet to the engine oil inlet fitting with a -10 line. The line should be as short as possible.

We recommend the use of a 75 micron scavenge filter on the -16 scavenge return line back to the oil tank
XRP - 71 Series Filters
https://www.drysumpsolutions.com/product-page/xrp-71-series-filters

We recommend the vent line on the oil tank be at least a -16 line size.

We recommend a tall, slim tank for most applications, like the ARA1 2 or 2.5 gallon tanks. These are very good at keeping a tall column of oil over the pickup under high g-loads.

We recommend a tank with dual returns just in case you need somewhere to vent the engine or if you add an air/oil separator in the future. It's easier to cap the return if it's not needed than to add a return later.

We recommend the ARA1 3" or 4" breather for the oil tank.

If you are making a crankcase vacuum, we recommend the 08-0455 Peterson vacuum regulator. Set the vacuum to around 12-14 inHg, and monitor it with a data logger like you would oil pressure.

For plumbing, we recommend Brown and Miller
http://www.bmrs.net/