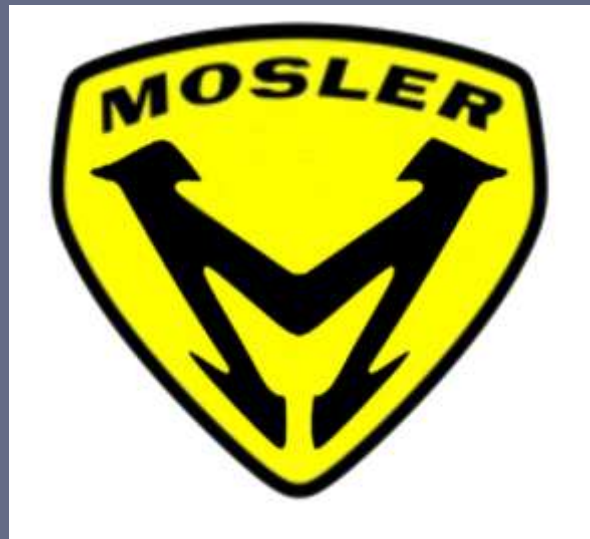


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# OIL SURGE PROBLEMS ON THE CHEVROLET LS7

- It has been apparent that there can be oil surge problems with the LS7. Our customers in Australia and France have experienced oil surge, yet topping up the tank makes little change, as the tank is usually full, and only a litre or so of oil can be squeezed in.
- Attached you will find infos on Aviaid Dry Sump bolt on aids.
- Step 1, missing from the document is for the standard Corvette dry sump tank so should be ignored.
- Step 2 is an oil pan insert and windage tray (Mosler Part Number MTRGT3-EN-0174) which will trap doors that keeps the oil near the pick up.
- Step 3 is an external dry sump pump which will increase flow rate. We are going to look at this to do a kit for the Mosler that will allow a simple bolt on with the current belt and pulley set up (Mosler Part Number MTRGT3-EN-0175)
- We should be able to buy in bulk and get advantageous prices.
- Please advise if you are interested?
- Web link [http://aviaid.com/pdfs/153-boltin\\_dry\\_sump\\_lubrication\\_systems\\_for\\_ls7\\_engine\\_and\\_zo6\\_corvette.pdf](http://aviaid.com/pdfs/153-boltin_dry_sump_lubrication_systems_for_ls7_engine_and_zo6_corvette.pdf)

# **BOLT-IN DRY SUMP OIL SYSTEM ENHANCEMENTS FOR THE LS7**

***Retrofit Kits for 2006-present Corvette Z06 and other applications using LS7 engines!***

- ***100% compatible with OEM components***
- ***Provides oil control the factory left unfinished***
- ***Retain use of factory air conditioning, power steering, alternator, oil filter, oil cooler, oil tank and all plumbing***
- ***Helps prevent oil from being vented into intake***
- ***Easily installed —welding required only in Step 3***
- ***Improves engine reliability and performance***

The Z06 Corvette is an awesome machine. However, it does have shortcomings in the lubrication system. Given the lack of oil control in the pan and sump tank, starvation can easily occur as a result of aggressive cornering, rapid acceleration, and hard braking. This can result in damage to the bearings, crankshaft and connecting rods — leading to engine failure.

Aviaid, the company that introduced dry sump technology to motorsports over 40 years ago, and most recently supplied the oil systems employed on the GT-III Manufacturers Championship-winning Callaway Corvettes, has developed an elegant 3-step solution for Z06 owners.

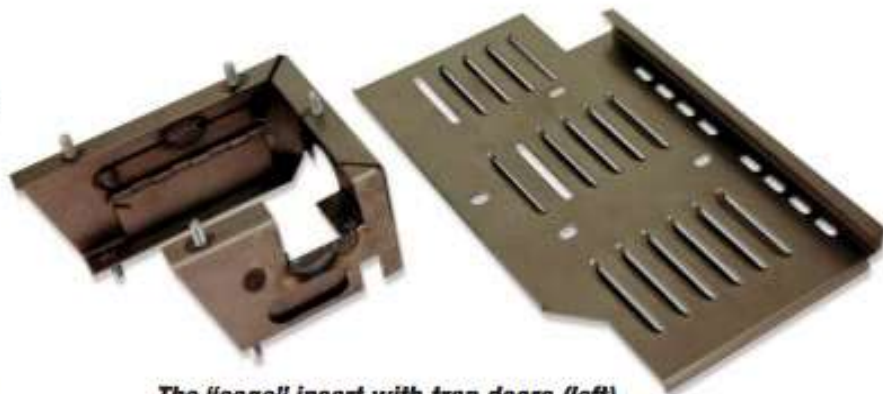


## **STEP 2 - OIL PAN INSERT & WINDAGE TRAY**

The stock LS7 oil pan also suffers from a severe shortcoming. There's no internal baffling to keep lubricant around the pickup during sustained hard driving, hampering evacuation, while the uncontrolled oil also makes its way into the rotating crank assembly, creating power-robbing windage.

To combat this, Aviaid has developed a special cage-like pan insert with one-way trap doors that traps the oil around the pickup. A louvered windage tray allows the crank assembly to rotate freely, allowing the oil to escape the "tornado" surrounding the reciprocating assembly, while keeping the oil down in the sump.

Again, this is a quick and simple installation. Three holes are drilled in the floor of the pan (stamped steel template furnished with kit), the insert is affixed to the pan and the windage tray bolted to the insert.



*The "cage" insert with trap doors (left) and windage tray provide much-needed oil control for stock LS7 oil pans*



*From an overhead perspective you can see how the insert "cage" traps the oil around the factory pickup.*

## STEP 3 – EXTERNAL DRY SUMP PUMP

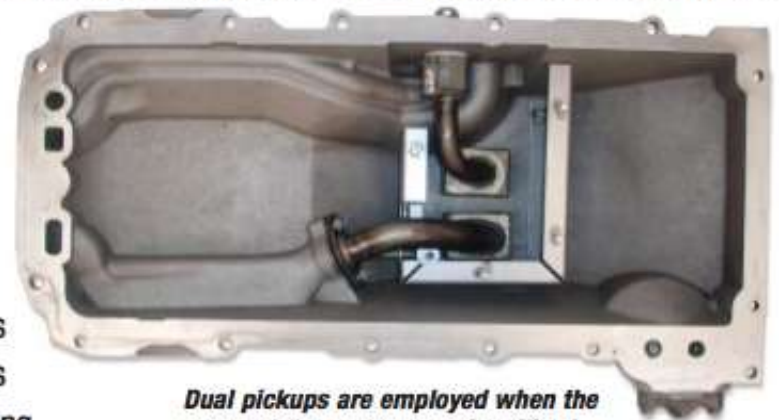
To bring the Z06's lubrication system to competition caliber, Aviaid has designed a compact single-stage pump that, in combination with the OEM scavenge pump, more than doubles the stock scavenge capacity, as well as enhances the evacuation of crankcase pressure and ensures that once oil accumulates on the floor of the pan it is removed efficiently.

The pump attaches to the passenger side cylinder head and is driven by a timing belt. An adjustable Katech idler assembly featuring a custom combination drive pulley replaces the stock spring-loaded idler and pulley assembly. It is driven by the factory serpentine belt and subsequently drives the pump. The kit includes an auxiliary pickup for scavenging, while a companion pickup replaces the OEM unit. To feed the pump an AN -10 line is routed from the oil pan to the pump. An included weld-in tank bung provides the connection point for the auxiliary scavenge pump return.

Other than drilling a hole into the pan for the pickup bung, drilling a hole and welding a fitting in the tank, and running two lines from the pan to the pump and sump tank, no additional fabrication is required. And the most important thing to remember is that everything has been designed to work in concert with the OEM air conditioner, power steering, alternator, etc. What's more, it does not require relocating the oil filter, or replacing/modifying any oil tank or oil cooler lines. It's as straightforward and clean an installation as you'll find anywhere.



*Kit includes pump, idler/drive, belt, 2 pickups and 3 bungs (not shown).*



*Dual pickups are employed when the external dry sump pump is utilized*

# Z06/LS7 KIT INFORMATION AND PRICES

Part No	Description	Price	Step
110-51007	LS7 OEM Tank Insert	249.00	1
159-59502-03	LS7 OEM Pan Pickup Trap Assembly w/ doors and Trap Windage Tray	249.00	2
003-31201-01	1 Section Scavenge pump w/ 45D outlet port -10x-10	427.36	3
104-40047	LS-A Oil Pump Adapter Plate	48.90	3
104-40018-02	Bolt Kit LS-A Pump Installation	7.60	3
109-TP100	3.5" Tensioner Serpentine Pulley w/ 14T Gilmer Pulley	99.00	3
109-KAT-A	Katech LS Fixed Adjustable Belt Tensioner	162.00	3
105-OPLC-625	Locking Collar 5/8 x 1"	57.65	3
159-59502-01	LS7 Pickup OEM Replacement	60.12	3
159-59502-02	LS7 Pickup Auxiliary Pump	60.12	3
104-40805-225	Belt 225L050 (Gilmer)	12.32	1
109-VPPG402	Pulley 5X04 46 G	102.00	1
	Step 1 component subtotal.....	\$249.00	
	Step 2 component subtotal.....	\$220.44	
	Step 3 component subtotal.....	\$1,078.92	
	Total for Steps 1, 2 and 3.....	<b>\$1,548.36</b>	



We call this "Step 2-B." To gain approximately 30% greater scavenging over the OEM LS7 pump we offer the Katech High Capacity LS7 Oil Pump. It's ported, blueprinted, and comes with a blue anodized finish. The pump costs \$449.99, and there is a \$269 refundable core deposit. This is an excellent "between" step for the Z06 owner who wants extra scavenging, but is not ready to step up to the Aviaid external pump.