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Advantages of dry sump over wet sump

The advantages of dry sump over a wet sump engine are as follows:

1. Wet sump requires a well of oil, which needs to remain in contact with its pick-up pipe, which supplies its feed to the oil pump, itself. Unfortunately, the needs of motorsport usually require that the engine is mounted as low as possible in the car and therefore, the sump pans are usually restricted in height. If you take this to its extreme, in some of the pick-up racing formulas therefore, you effectively end up with a sump pan that resembles a frying pan. So, as you can imagine when the car is cornering at high speed, the thin layer of oil e.g. 1" to 3" of oil is sloshing around continually. In order to make the sump pan work, it needs to be quite complicated with gates, to keep the oil supply continuous to the pump, without any pockets of air being supplied instead of oil.

2. The nature of a dry sump system is that the pump, which is usually in three stages, is designed to do two things:

a. Supply a continual flow of oil from a very tall thin tank (which is the reverse of a wet sump) and since the tank is tall and thin, when the car is cornering at high speeds there will never be a gap in the supply of oil to the pump.

b. The other two pumps are designed to extract the oil from the sump pan and transport it to its oil tank. This does two things, firstly by removing the oil from the sump (the better the sump design, the better the oil is removed) and transferring it to the oil tank. Secondly, because the oil has been removed from the sump, this means during cornering the oil that would have been sloshing around in a wet sump and slowing your crank down, losing you horsepower, is no longer there.

Some of the other benefits that can be gained from using our dry sump systems, is that on the high specs of pumps, the scavenge stages are large enough to generate a vacuum. This allows you to do two things, first of all remove all the breathers from the engine, which means less plumbing and a neater engine installation. In some cases, we have even seen BHP gains due to the fact the engine is running in a vacuum.



The dry sump systems we supply will suit almost every type of car you can imagine, front wheel drive, rear wheel drive mid-engine cars e.g. Westfield's, Caterhams, Mallocks, Vauxhall Lotus, single seater, Astras & cars with cross members in the way. Some systems have lugs at the front to mount the engine directly to the chassis of the car, some have rear legs to allow attachment to a bellhousing or adapter plate, fins are also fitted on some versions to protect the flywheels. There is also a mount fitted to the front all our dry sump pans, where you can fit an external crank sensor, this allows you to use one of our small trigger wheels and pulley, which get rid of the need for the internal pressed steel trigger wheel which can be fragile after extended use or on high revving engines.

Please look at the dry sump systems on our website checking to see which one is most suitable for your needs, then contact us directly and we will advise you further. The more information you provide us with, the better our help with your choice will be and we can advise you on what alterations or modifications may be required, when installing a dry sump system especially as most installations are different.



Please be aware that Technical Support involving our Technicians is chargeable

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