

# USING EXTRA FILTERS AND CONDITION-BASED MAINTENANCE TO EXTEND DIESEL ENGINE LIFE

## WHILE ALSO BEING CLEANER, GREENER AND REDUCING COSTS

BY ROCKA ROMCKE



**DON'T THINK ANY ENGINEER WOULD DISAGREE THAT TO** maximize engine performance, we need to give it clean fuel, clean air and clean oil. Years ago, we relied on the Engine manufacturer's standard supplied filters to do these three types of filtering. Then, over the years there have been developments and improvements, some of which we now take for granted.

Fuel filtering has come a long way, and we have welcomed these new methods to improve cleanliness and reduce restriction. Every Superyacht has extra fuel filters on their engines, such as Racors or similar other brands. Most large yachts also have fuel spinners like Alfa-Lavals, and some also add fuel polishers. We have been going to extreme lengths to clean fuel, and we benefit from added reliability and less wear and maintenance on fuel related parts. Like fuel filtration, we used to only rely on standard air filters. Now, after-market filters are standard procedure.

But when it comes to oil, most yachts are only supplementing their engine's standard full-flow filters with centrifugal filters (or 'Spinners'), but Spinners only address the issue of particle removal.

As a yacht captain, I do all I can to protect my engines since my job is to protect the Owner's investment. So, when I bought a pair of C18 CATS, I put both Spinners and a Puradyn system on them. So, what does the Puradyn filter system do above and beyond a Spinner? It addresses all three issues facing used oil. First, it can remove solid contaminants down to the size of less than 1 micron, which greatly reduces wear on the engine. Second, it removes liquid contaminants, including water, by using a patented polymer technology. Third, it replenishes the oil with 'slow release' base additive pellets to maintain the oil's chemical balance, viscosity and keeps the TBN levels up to well within engine manufacturers' specifications. This triple action process keeps engines running on continuously clean oil, as opposed to adding new oil that just keeps getting dirtier.





While there are many benefits of using Puradyn on your engines or generators, your reason will depend on which is most important to you: less wear on the engine, a cleaner greener footprint, more reliability, reduction in major maintenance/overhauls or to just save money by reducing the need for oil changes. In the commercial world, it is usually to save money, but all the points above will ultimately save you money. Puradyn systems are running on the diesel engines found in roughly 35% of all land-based oil rigs in the U.S and growing fast. Their customers have publicly reported savings from reduced maintenance and up to 89% less oil purchased. One of the largest oil drilling companies, Nabors Industries, recently reported that they are now able to skip mid cycle, top-end engine overhauls, and they attribute it to using Puradyn for over a decade to keep their engines cleaner.

Part of the cleaner, greener angle is using less oil overall. Depending on engine type and use case, Puradyn users report reducing oil change frequency between 66-89%. Especially for those of us in marine environments, this also means a similar reduction in the potential environmental hazard of waste oil storage and disposal.

Condition-Based Maintenance has taught us to perform maintenance as it is needed, not by way of blatantly following a book. That was the standard practice for over 100 years and designed to take care of those worst-case scenarios. Engine manufacturers have little to lose by proposing super safe oil change hours. If you ask them for longer oil change interval, they give you a bigger sump! That just lets you change oil less often, but the same amount of oil is changed in the long run. I consider this false advertising.

So why not use the practice of CBM on engine oil? Let the engine tell the engineers when new oil is needed rather than just conducting an

oil change unnecessarily. The antiquated belief that oil must be changed according to a set schedule is much like thinking that your tires must be changed after so many miles instead of using simple tests and measurements to show how much they are worn. Most large yachts already send an oil sample away to be tested. These tests not only tell us if the oil is still good, they also tell us what metal types are in the oil, which suggests which parts of the engine are beginning to wear out. But by the time the report comes back, you may have already changed the oil even though the report shows the oil is still good to use.

There is real value in knowing that you are giving your engines the cleanest, best oil you can, just as you do with fuel and air. I ran Puradyn systems on the 78 m S.Y. *Mirabella V* with MTU's (later CATS) and Northern Lights Gens, 43 m M.Y. *Daydream* with two stroke Detroit's and Northern Lights Gens, and recently installed them on the 78 m Lurssen, M.Y. *Rocinante*, (formerly M.Y. *TV*) with CATS. Puradyn filter systems are like an insurance policy for your engine. If you feel you have to, or just want to change the engine oil at whatever interval the book or you say, fine, change it. It is up to the engineer/Captain/Owner when you do that, not me, not Puradyn. Even if you change your oil more frequently than is necessary, your engines will still benefit hugely from running on continuously cleaner oil versus only when the oil is brand new.

Puradyn filter systems can be installed on virtually any engine, and they do not void any OEM warranties. They also work on hydraulics, where the elimination of water is critical. They saved my hydraulic oil on M5. I had a lot of water slowly get into the oil, and to change it, flush it and change the flushing oil was going to be a messy and expensive job. We did it in less than two days with special Puradyn filters and a flushing pump. Awesome, no mess and little cost. We then installed a Puradyn permanently in the hydraulic system to protect it for the future.

Puradyn offer multiple models and sizes based on engine type and oil capacity. They are available in a few ways: National Marine Supplies in USA, Global Services in UK, the main Factory in Florida or I can help you myself. I welcome any comments and questions.



Rocka Romcke  
Captain and Engineer  
rocka@akcor.net

Puradyn Filter Technologies  
Florida, USA  
<http://www.puradyn.com>