

OIL PUMPS & PANS

instantly. “Where the paddle wheel shines is not at idle, although it helps idle pressure out of idle volume when you take it to drag strip, and the third yellow light comes on, and your foot goes to the floor. You’re just worried about reaction time at that point. With a stock pump or stock valving style pump, it’s designed to do the following: As soon as the oil pressure comes roughly up enough to bypass the internals, where does oil go? As good engine builders know, you have cut off all the oil leaks, and you do not fill the valve covers up anymore. But the oil has to go someplace – the path of least resistance is back down the intake tube.

“So now you’re launching your car on a green light, and your oil pressure is going backward – doesn’t sound too good to me. Our 140 patented process eliminates the reversion of oil going back down the intake tube. It can’t do it, it’s impossible. The reaction time is fantastic with the paddle wheel. No more two, three, or four-second delay where the engine outruns the pump. It keeps up very well.”

Oil Pans

In high rpm engines, the force of the crankshaft spinning can pull the oil out of the sump of the pan and up into the crank. Adding a more stroke to an engine can significantly increase



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windage since the crankshaft throws and counterweights are down closer to the oil in the oil pan.

A well-designed windage tray will, essentially, separate the crankshaft from the oil in the oil pan, helping to eliminate windage. Some very well-built trays will have provisions that help keep the returned oil from the top of the engine away from the crankshaft. A well-designed crank scraper is also essential when trying to address windage issues in these engines.

Melling’s Risinger says that for most applications, a 5-6 quart pan is sufficient. However, more is almost always better when talking about pan capacity. “You also need to keep in mind anything external such as remote coolers or filters that may hold a significant amount of oil. If you are using a cooler that holds 3 quarts of oil you will need to take that into account when filling the system.”

The oil pan design plays an intricate role in the performance of the oiling system. Using a pan that is not designed for the application can cause engine damage or worse. The whole system must work together.

“The oil pan and pickup tube/screen assembly design can both have a huge effect on the oiling system,” Risinger explains. “A poorly designed pan and/or pickup can destroy an engine. An oil pump can only do its job if there is oil available at the pickup tube at all times. This can be a challenge in engines used in racing scenarios due to the forces that are present during hard acceleration, deceleration and high-speed cornering.”

A well-designed oil pan should have provisions such as trap doors, baffles, windage trays, and crank scrapers, says Risinger, to

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