MER EQUIPMENT

Calibrating the Dipstick:

When engines (and transmissions) are installed at an angle, the oil pan's oil-level changes, front-to-back. If operated at extreme angles without re-marking the dipstick, the engine can fail, due to lubricating oil starvation.

This is because, without re-marking the oil level will appear way too high. If the excess oil is then drained down to the full mark, the engine will be running low on oil! High speed engines change all of the oil in the pan every 10-15 seconds. If you're running with less oil than needed, the oil gets a severe workout and will not last the full oil-change interval. What's more, running a low oil level may actually starve the engine for lube oil.

Each manufacturer knows how much an engine can be angled before the oil level gets too close to the rear oil seal.

If the oil level gets above the oil seal, the seal will fails. Engine makers publish their maximum installation angle guidelines, and these specifications vary widely between engine models. It is to your advantage to verify the installation angle of your engine, and proper marking of the dipstick.

However, after the engine is installed, the next step is to re-mark the dipstick. To do this, always review the engine-makers directions for re-marking the dipstick!

Then, based on the manufacturer's recommendations, continue by warming up the engine to be sure all internal passages and the filter, are full of oil. Next, drain the oil from the engine, leaving the oil filter un-disturbed.

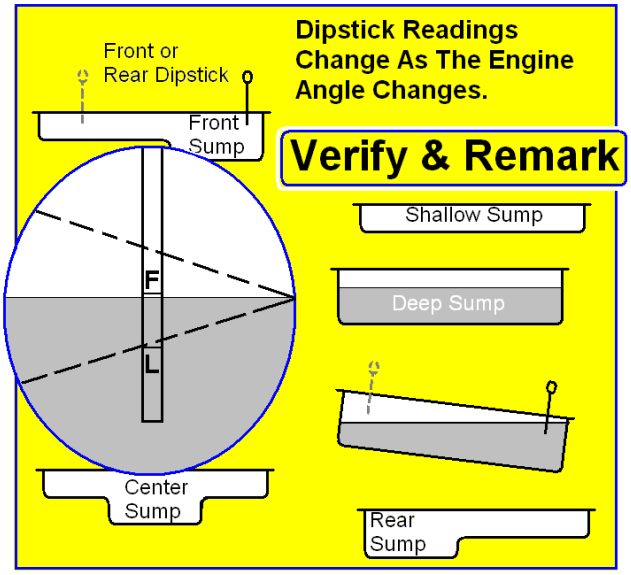

Figure 1 Engine installation angle alters the oil dipstick reading.

Now, refill with the factory specified amount of oil, minus the amount in the oil lines and filter. MER Service Manager, Herb Knight stresses the importance of taking into account the volume of oil the filter and oil lines hold, especially if using a remote oil filter. Subtract this amount

from the amount of oil poured back into the engine.

Figure 2 Newer engines have composite or high temperature plastic dipsticks.

Make note of exactly where the new "Full" mark must be, and for composite dipsticks like the one shown here, file a shallow ring all the way around the stick, to make the new mark. For steel dipsticks however, lightly file the new "Full" level mark across both sides of the stick, above the old mark.

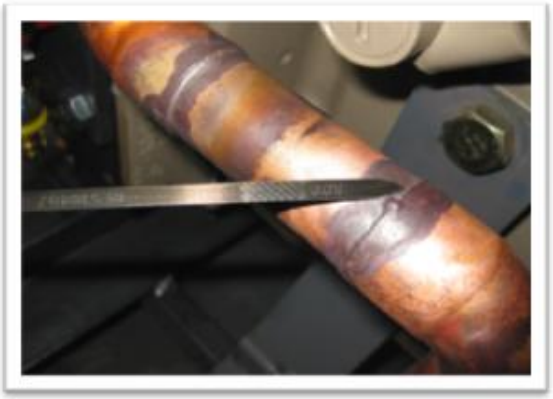

Figure 3 Many engines, including older models, have steel dipsticks.

For all dipsticks, finding the new "Add" mark is obtained by measuring the distance between the original "Full" and "Add" marks. Finally, make the new "Add" mark the same distance below the new "Full" mark.

MER sells John Deere Oil and Filters, as well as a complete line of filters for all engines.