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26
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The Story With Additives

Many people like to add additives to already blended oils. So, in light of this, I decided to take a well known additive in the trucking industry that is used in gear oils and motor oils. The following is what I did.

Gear oils used, Schaeffers 267 80w90 blend, on the left, and Pennzoil full synth 80w140 on the right.



This device is a small variable motor, attached by O rings to the little small gear in each box. Both boxes are separated in the middle from each other. There is a speed control on the top which allows you to vary the speed of the gears turning, like in a rear-end. I had just drained out all the previous oil and replaced with brand new fresh oil in both tanks.

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185 captures
8 Apr 03 - 28 Aug 13

Go

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26
2009 2010 2011

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We now turn on the unit. As you can see, the one on the right is making a wave but is not climbing the gears. Schaeffers on the left is climbing. Both are turning by the same motor, same speed and at the same temp.

Now, understandably many do not like the way the full synth oil is failing to climb the gears like when a truck or farm tractor is moving slowly at the beginning of take off in the morning. This is what can cause wear during slow starts because the rear end uses a splash method instead of an oil pump to lubricate, and since you're not moving very fast, it would stand to reason you'd want to have a climbing additive to help offset this during start up. So, this is where this Lucas additive shows to help improve the climbing and help this new oil.. Right?, well, lets go on and see how this does. BTW, take note on the color of the full synth on the right side during this process.

Ok, now we crank up the speed a little and notice how the gear oil is foaming as you can see the color changing due to air entrenching in with the 140 gear oil. It also is not climbing any further than before, one on left is. This does NOT have Lucas additives at this time. As many know, where air is present, oil isn't so due to lack of lubrication where the air is, heat will rise



Neat stuff!!! I got to admit though, at this time I wasn't surprised at this outcome. Let's look at a comparison of a before and after.

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185 captures
8 Apr 03 - 28 Aug 13

Go

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26
2009 2010 2011

Close
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I over layed on top of the before picture the end results after running the gear oil. Notice the color change due to the entrapped air bubbles.

NOW FOR THE LUCAS ADDITIVE!

We start it up again and now add in the Lucas Additive, designed for both engines and gears. This also states "Use Lucas Oil Stabilizer in gear oil to stop leaks, reduce operating temperatures and increase the life of the gear oil. Since it is pure petroleum, it can safely blend with all other automotive lubricants, even synthetics." OK, I can see this working.



Here it starts to climb...Very impressive and is working as it should be according to their ad's. Only difference between this picture and the above is the additive.

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WayBackMachine

185 captures
8 Apr 03 - 28 Aug 13

Go

AUG SEP NOV
26
2009 2010 2011

Close
Help



So now let's add some speed to it and see how it will hold up under this conditions.



WOW! This I didn't expect! Notice how it has frothed up! I will say this, Lucas works. It is causing the oil to climb as advertised

Ok, What happened here? Well, I think I can give you an answer.

Notice how the color of the right side has turned extremely light? That's because of the higher amount of air trapped in the gear oil. Again, this is the full synth. Why'd this happen?, Ladies and gent's, oil has antifoamant additives to reduce air bubbles. In this case, there was not enough Antifoamants to keep the oil from trapping air with Lucas added to it.



Also notice how the oil on the right has settled down to the bottom leaving very little on the gears. This is the **PRIME REASON** for not adding in additives into a already good designed oil/ lubricant. Myself, didn't see this coming. It makes perfect sense what happened and would have thought it would help this oil to lubricate at startups but instead, it created more problems than it solved.

Now let's try motor oils with Lucas...



Here I used Schaeffers Supreme 7000 15w40 and Delo 400 15w40.

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WayBackMachine

185 captures
8 Apr 03 - 28 Aug 13

Go

AUG SEP NOV
26
2009 2010 2011

Close Help

Now, to see how it reacts to just plain agitation we turn on the machine and let the oils run through the gears, like the Lucas demo displays on the counter tops. Notice, the color, dead give a way for air in the lubricant, which appears both at this time is doing quite well and no problem with air. Either one would be good in a Ford power stroke engine IMO.



Now we add Lucas to the Delo 400.

WOW!, It even makes a good motor oil foam up! I know, there's no gears in a motor... Really? what about the oil pump? It's gear driven, also pumps with gears. Ok, Toyota's have gears, boy wouldn't that be a mess?, Alright, here's the biggy.. What about the Ford PSD's? The high pressure pump on a PSD (95-97) is 500psi @idle 1200psi@3300 RPM 3600psi @full load acceleration. The HP oil pump is only used to control the HEUI injectors. It does not lube the engine, But at these pressures, it foams like a devil. It is then returned to the sump. So, think the oil is being whipped up any in that? On a PSD, This runs the injectors and add a little air to that system, Now you really have problems.



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WayBackMachine

185 captures
8 Apr 03 - 28 Aug 13

Go

AUG SEP NOV
26
2009 2010 2011

Close
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Well, there you go folks, again, the color shows where air has been entrapped into the oil, therefore, creating a problem.

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