THE 10HP OIL CHANGE

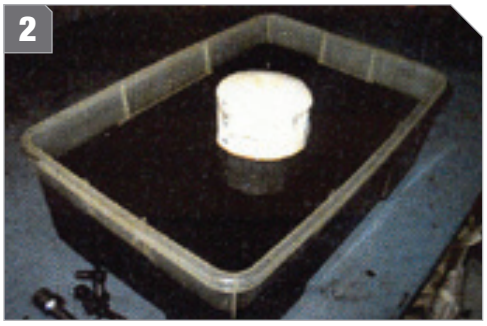
HOW ABOUT A MAINTENANCE SCHEDULE THAT ACTUALLY MAKES MORE POWER?

COURTESY OF SPORT TRUCK

Regularly scheduled maintenance is a term you probably hear quite often. We read it incessantly in our trucks' owners manuals. It's even used in car commercials as a selling point these days with several automakers offering it for free when you buy a new vehicle. We tend to put a lot of miles on our test trucks here at Sport Truck, which means we are constantly performing routine maintenance such as changing the engine and transmission fluids, and we often keep track of our trucks' fuel economy before and after just to see what happens when we change brands or types of fluids. Most times, switching brands doesn't mean much in terms of vehicle performance, so we merely observe the trip odometer and how much gas our truck sucks up at each fill-up. This isn't one of those occasions. We tested a line of products specifically aimed at helping engines make more power, reduce emissions, and reduce fuel consumption, so we headed right to a dyno to find out the real deal.

Recently, we decided to switch one of our trucks over to synthetic fluids to see what all the hype was about. While we can't judge how well fluids like those offered by Royal Purple protect the bearing surfaces in our engine in a timely manner, we can find out if the stuff reduces friction in the drivetrain using a chassis dyno. We headed over to Westech Performance Group's new Superflow chassis dyno with engine, transmission, and axle lubricants in hand and ran the truck on the slick stuff and conventional oils. What we found was pretty interesting. Royal Purple's Max ATF, Max-Gear, and 10W30 synthetic motor oil indeed added 10 hp and 12 lb-ft of torque to our truck. We spent 30 minutes changing the fluid from the engine crankcase, transmission pan, and rear differential, and in back-to-back dyno runs found additional power made versus running conventional oils.

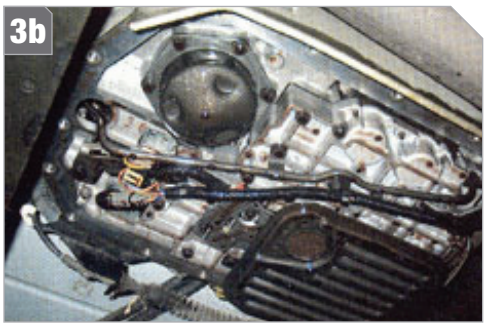
Ten horsepower measured at the wheels is substantial, especially when you factor in the cost of making the switch to fluids with extended service life. Sure the stuff costs more, but you can skip the standard 3,000-mile oil change and wait another 6,000 to 9,000 miles before you replace Royal Purple products, which means you are not only improving the performance of your sport truck but saving money as well. Here's a look at how easy it was to make the switch and at a couple of other cool products to make the most of your time spent beneath your truck.



1 Our guinea pig is the same '96 Chevy C3500 dually tow pig that you read about in past issues of Sport Truck. It's frequently ridden hard and put away wet and used daily for commuting purposes. We routinely run conventional 10W-30 gear oil in the 7.4L Vortec big-block Chevy, ATF in the 4L80-E transmission, and 75W-90 gear oil in the Corporate 14-bolt rearend. After three baseline pulls by 'Jersey' Steve on Westech's dyno to find a power average, we got crackin' and put the truck up on the lift.

2 Starting at the front of the truck, the oil was drained and the filter removed.

3 Next, the transmission pan was removed. The 4L80-E automatic tranny's gasket is reusable, so don't bother trying to buy a new one when you service your tranny. Most auto parts stores don't stock it and neither do most dealerships. We found this out the hard way, after running all over town trying to buy one because we assumed we needed it.



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4 We opted for a new K & N Performance Gold oil filter because frankly, they are easier to remove than most other brands and have a greater wall thickness and higher burst strength. Ever see a filter casing crack? You'd be surprised to see how far that oil can shoot. Besides, the impregnated cellulose filter medium offers maximum flow and excellent filtration.

5 Pay attention now because this next tip will save your engine in the event of a valve train failure. We run a Filtermag on all of our engines because they work. It's exactly what you think it is: a high powered magnet for your oil filter that will make ferrous metals stick to the walls of the filter instead of trying to pass through the filter media. Should a mechanical failure occur within the engine, like a broken lifter or flattened cam lobe, the Filtermag will keep those pesky metal particles from entering the oil system and ending up in the bearings. Check out the photos if you want proof. Look at all of that metal debris trapped up against the wall of the filter where the Filtermag is positioned — that debris came from a hydraulic roller lifter breaking.

6 Lastly, we drained the gear oil from the differential by unbolting the rear inspection cover. The cover was replaced using a new gasket after the old gasket material and sillicone were removed.


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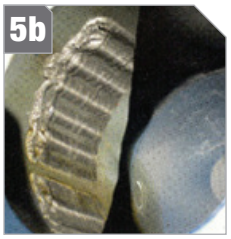
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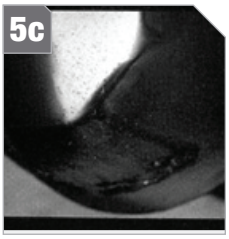
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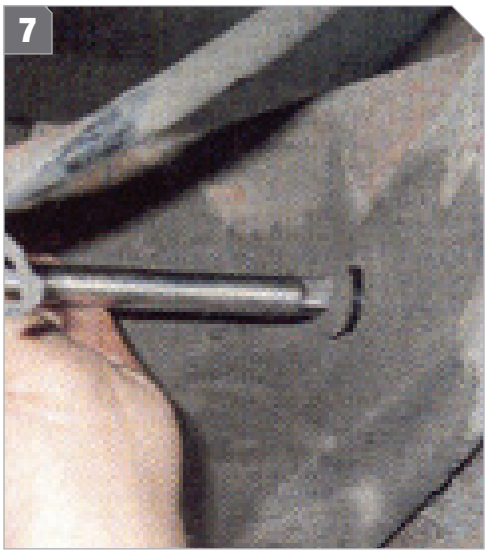
7 A 3/8-inch ratchet extension was used to remove the fill plug on the passenger side of the third member before it was filled with 4 pints of Royal Purple 75W-90 synthetic Max-Gear oil. Note that Max-Gear is formulated with hypoid friction modifiers for use in clutch- or cone-type rearends, so no additional additives are necessary.

8 Once the bottom end of the truck was buttoned up, we lowered the dually down on the ground and filled the engine crankcase with 7 quarts of Royal Purple 10W-30 synthetic oil and the transmission with 3.5 pints of Max ATF.



FAQS

Since we are talking so much about the power potential of synthetic lubricants, we decided to find out Royal Purple's stance on some longstanding questions about its products. We spoke with Patrick Burris, Royal Purple's motorsports marketing coordinator.

Sport Truck - Why do engine builders commonly tell us not to break in a new motor using synthetic motor oil?

Patrick Burris - To allow for proper break-in of the engine, Royal Purple recommends waiting until the manufacturer's first scheduled oil change or a minimum of 2,000 miles in new gasoline engines. Allow 8,000 to 10,0000 miles before using Royal Purple in diesel engines. Royal Purple's high film strength will not allow the piston rings to scuff the cylinder walls. Until the piston rings form a seal in the cylinder, the engine will consume oil and not perform as well as it should.

Sport Truck - How come many drivetrain shops recommend not putting synthetic fluid into the differential?

Patrick Burris - I don't know for sure, but it is most likely they had some differential failures when synthetic lubricants first came out. With today's test standards and additive technology, this should not happen as long as the correct viscosity and GL rating is used. Fact is, a properly formulated gear oil will protect the gearset whether the base oil is mineral or synthetic. Nowadays, GM and Ford trucks and performance rear-wheel-drive cars come factory-filled with synthetic gear oil.