

JOE GIBBS DRIVENTM RACING OIL



POWER.

PROTECTION.

PERFORMANCE.



2007 RACING OIL PRODUCT CATALOG

www.JoeGibbsRacingOil.com

**Hunt's
Machine**
"We Rebuild Engines"
www.HuntsMachine.com



Used by Joe Gibbs Racing since the 2000 season, Joe Gibbs Driven Racing Oil was introduced to the market in 2005. Since that time, hundreds of engine builders in the United States and on 4 different continents use Joe Gibbs Driven Racing Oil to make more power, lower operating temperatures, and provide protection to make it to the finish line. Here's the proof:

"We've tested more oil this year than any other time I can remember, and **Joe Gibbs oil performed the best every time.**" —Mark Smith @ Pro Motor Engineering

"We lost an oil pump belt while racing without breaking the engine. The team replaced the belt, and raced the engine 500 more laps. The oil **saved the engine.**" —Jack Cornett @ Cornett Racing Engines

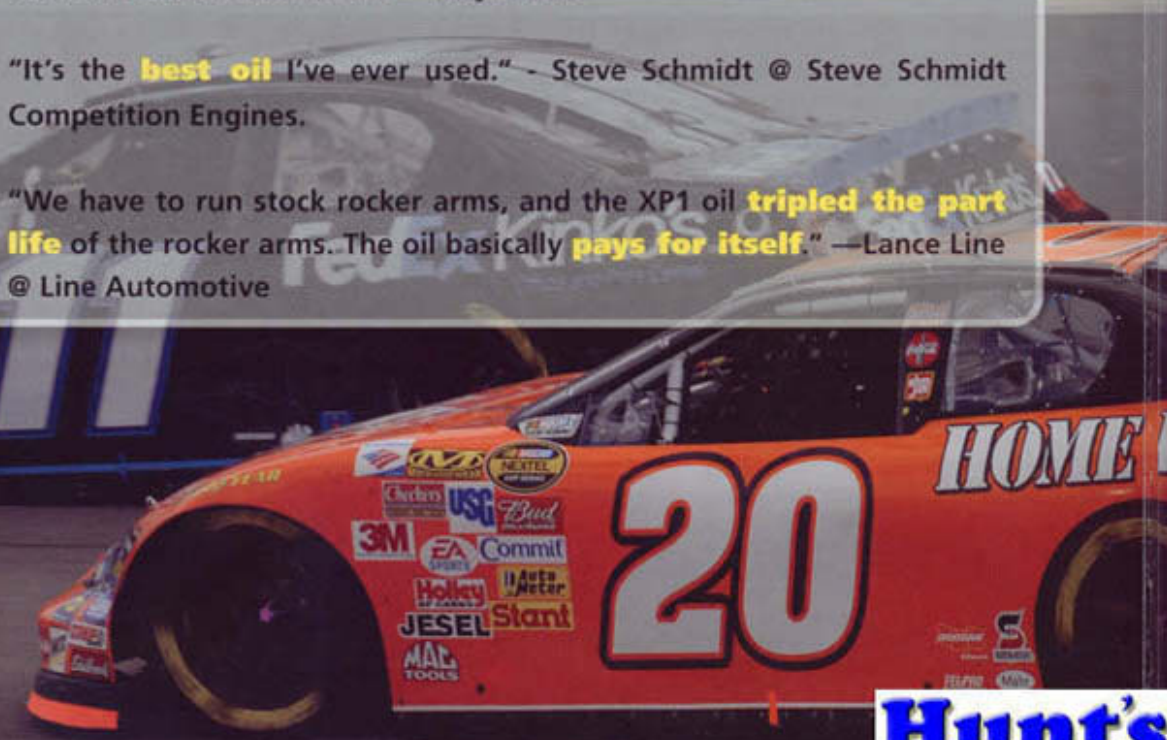
"We **won the WoO Late Model championship** using XP3." —Chuck CiCi @ C. C. Performance

"Even after 500 miles in a USAC Silver Crown engine, the bearings looked so good we decided to **use them again.**" —Chuck Snyder @ Snyder Enterprises

"We saw a **40 degree drop** in oil temperature in our GM Crate engine from the recommended oil." —Ray Theiss

"It's the **best oil** I've ever used." — Steve Schmidt @ Steve Schmidt Competition Engines.

"We have to run stock rocker arms, and the XP1 oil **tripled the part life** of the rocker arms. The oil basically **pays for itself.**" —Lance Line @ Line Automotive



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Racing Oil vs. Street Oil

Q: Why use racing oil instead of street car oil?

A: You wouldn't use stock pistons in a racing engine, and the same goes for oil. Racing oil contains high levels of anti-wear and friction reducing additives that the American Petroleum Institute's (API) licensing requirements will not allow in modern street car oils.

Q: Are all synthetic oils equal?

A: No, there are many blends of synthetic oil, and most are not specifically designed for racing. True racing oils do not conform to the API licensing requirements. The extra anti-wear additives and the extra friction reducing additives in racing oil provide superior valve train component protection and a horsepower increase compared to even the best synthetic API licensed oil.

Q: What is API?

A: The American Petroleum Institute (API) develops licensing requirements for passenger car oils. All current production cars feature catalytic converters for cleaner emissions. Unfortunately, the best anti-wear chemistry can be harmful to catalytic converters. As a result, for the last ten years API licensed oils have been using formulated anti-wear technology less and less.

Q: What are the results?

A: In addition to seeing an increase in horsepower, racers that use true racing oils see prolonged camshaft life, decreased bore wear, improved valve spring life, reduced operating oil temperatures and extended drain intervals. The bottom line is that racing oils provide affordable power gains and pay for themselves by extending the life of the most expensive valve-train components.

Q: Is there anything I need to be careful of?

A: Yes, our racing oils are designed for specific applications. Be sure to consult our product data sheets to determine which oil is right for your application, or contact our technical support line for more guidance.



PRODUCT LINE

Engine Oils



XP1

Used by Joe Gibbs Racing in all their **unrestricted engines**. Recommended applications: V8 engines with clearances under .0025, GM Crate Motors, Legends Car engines, and engines where a 30 weight oil is called for. Viscosity typical of **SAE 5W-20**. (Part No. 00006)



XP5

A semi-synthetic based on our original formula race oil, it offers improved **high temperature shear and oxidation stability** compared to mineral oils without the higher cost of a full synthetic. Viscosity typical of **SAE 20W-50**. (Part No. 00906)



XP2

Used by Joe Gibbs Racing in all their **restrictor plate engines**. Recommended applications: V8 Restrictor Plate engines, USAC Ford Focus Midget engines, and engines with clearances under .0020. Viscosity typical of **SAE 0W-20**. (Part No. 00206)



XP6

A full synthetic, 15W-50 version of our race proven XP1, it provides **excellent bearing oil film thickness** and **outstanding cold start protection** compared to similar viscosity oils. Designed for aluminum blocks and looser clearances. Viscosity typical of **SAE 15W-50**. (Part No. 01006)



XP3

A higher viscosity version of XP1, it offers outstanding **high-temperature, high-shear protection**. Recommended applications: Big Block V8 engines, Sprint and Midget engines, and engines with clearances under .0030. Viscosity typical of **SAE 10W-30**. (Part No. 00306)



XP0

Used by Joe Gibbs Racing for **qualifying**. It utilizes **ultra-low viscosity** synthetic base oils. Recommended applications: V8 Qualifying, NHRA Pro Stock and Motorcycle engines, and 4-Cycle Go-Kart engines. Viscosity typical of **SAE 0W**. (Part No. 00406)



XP4

A petroleum version of our original formula race oil, it offers **lower cost protection** for dirt racers that want to change their oil every race. Recommended applications: Big Block Late Model V8 engines, Sprint and Midget engines, and engines with clearances over .0025. Viscosity typical of **SAE 15W-50**. (Part No. 00506)

Joe Gibbs Driven XP1, XP2, XP3, XP6 and XP0 are based on the same lubricant technology and are completely compatible. As a result, these products can be blended. Consult Joe Gibbs Driven for blending specifications.

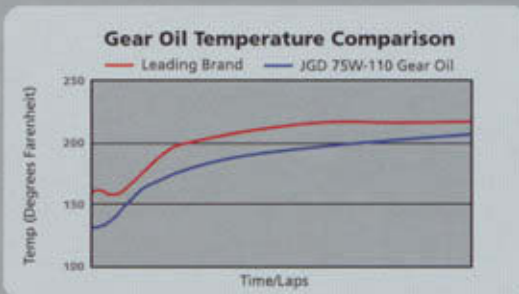
All part numbers listed are for single quarts. For additional container sizes, please refer to our price sheet or visit www.JoeGibbsRacingOil.com.

Gear Oils



Synthetic Gear Oil

Used by Joe Gibbs Racing in every rear end differential and transmission gear box, this unique synthetic gear oil **reduces operating temperatures** by up to 15 degrees compared to other brand gear oils. Viscosity typical of **SAE 75W-110**. (Part No. 00630)



Superspeedway Gear Oil

This **light weight**, 100% synthetic gear oil provides race **proven durability** and dyno proven power gains from reduced friction and parasitic drag. Can be used in Midget and Late Model Stock quick change rear ends. (Part No. 00830)



Qualifying Gear Oil

An ultra-lightweight gear oil developed specifically for **stock car qualifying**, it also provides race proven durability in open wheel competition. (Part No. 01130)

Engine Builder Products



BR

Used by Joe Gibbs Racing to break-in all their engines, this petroleum oil **provides the highest levels of Zinc and Phosphorus for flat-tappet engines**. The additive package promotes ring seal and provides maximum protection available for cams and lifters during initial break-in. (Part No. 00106)



Engine Assembly Grease

Used by Joe Gibbs Racing during the assembly of every engine, this unique formula **completely dissolves in oil**. Combined with BR, it provides proven protection during break-in. (Part No. 00728)

Additional Products



Manual Transmission Fluid

A fully synthetic fluid specially designed to meet the specific needs of an **oval track/drag racing manual transmission**. (Part No. 01206)



Power Steering Fluid

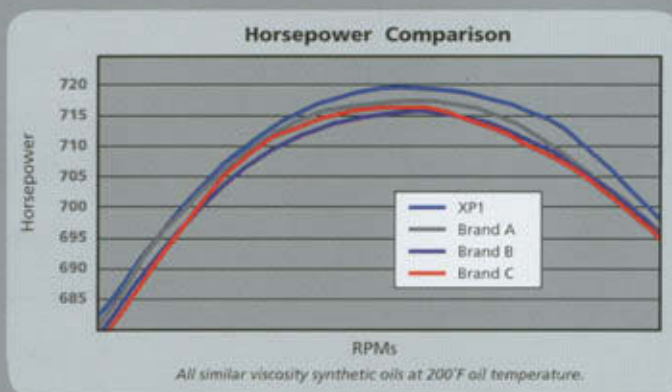
A fully synthetic formula power steering fluid. Offers **high temperature foam resistance**. (Part No. 01306)

The Story of Joe Gibbs Driven Racing Oil



Seven years ago, Mark Cronquist and the Joe Gibbs Racing engine department had a problem. The increased valve spring pressures required to turn a push-rod V-8 past 9,000 RPM caused increased cam lobe wear and lifter scuffing. Mark and his team looked for a way to eliminate the flat-tappet scuffing while maintaining the increased valve spring pressures. The JGR research and development team discovered that the majority of modern oils commonly used for racing did not have enough formulated anti-wear or extreme pressure additives to meet the needs of a Nextel Cup series flat-tappet engine competing for 500 plus miles.

Joe Gibbs Driven Racing Oil was created to meet the specific requirements of Joe Gibbs Racing's NASCAR Nextel Cup (flat-tappet) and Busch Series (roller-follower) engines. Countless hours of dyno testing and thousands of miles of competition have been spent perfecting Joe Gibbs Driven Racing Oil.



The first season Mark and his team used Joe Gibbs Driven Racing oil, Bobby Labonte won the championship. In 2004, not a single JGR engine failed over the course of both



NASCAR Nextel Cup and Busch series seasons, and Tony Stewart claimed JGR's third Nextel Cup series championship in 2005 - all using Joe Gibbs Driven Racing Oil.

The exact same oils and lubricant technology used by Joe Gibbs Racing are available for your engine and race car.

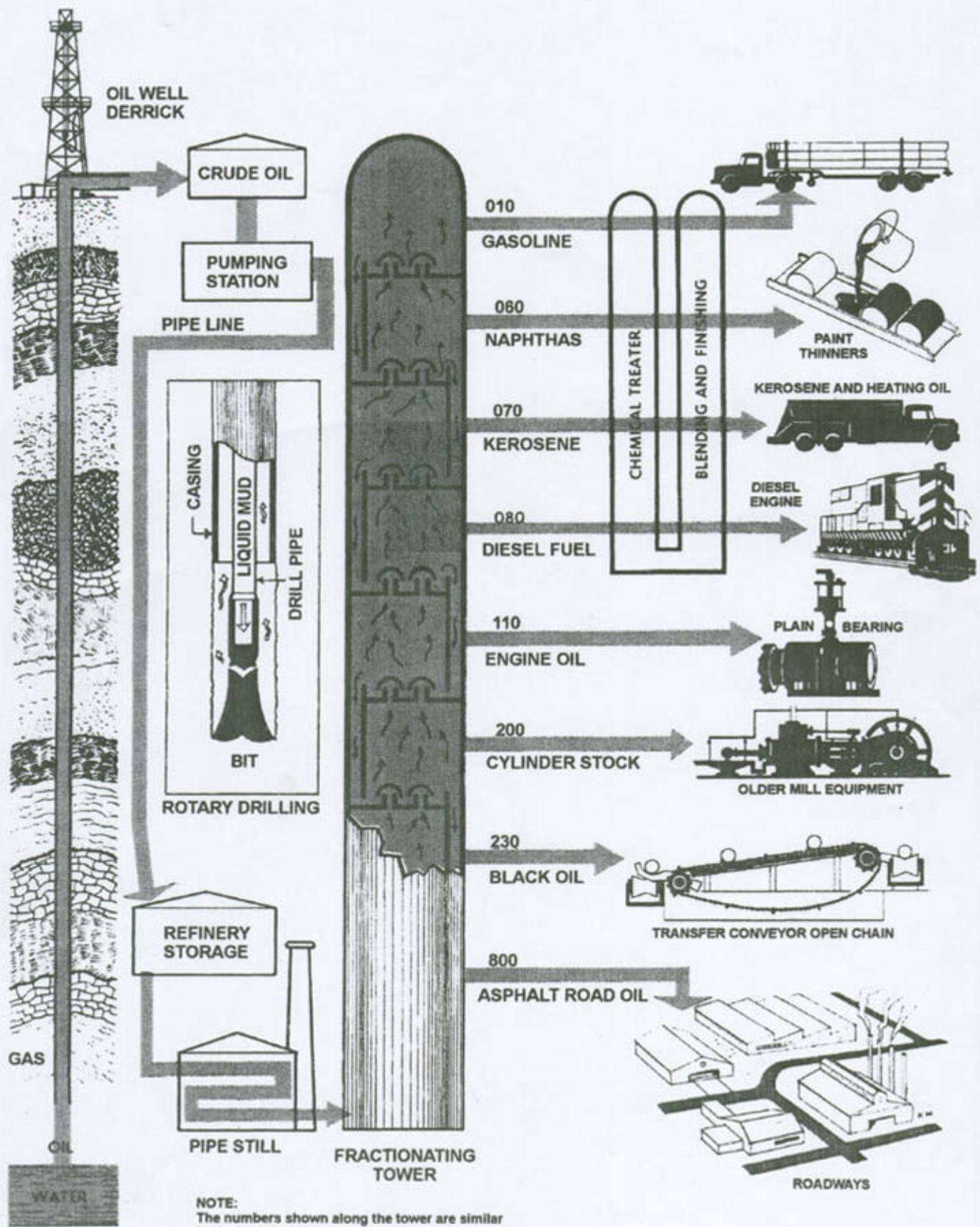
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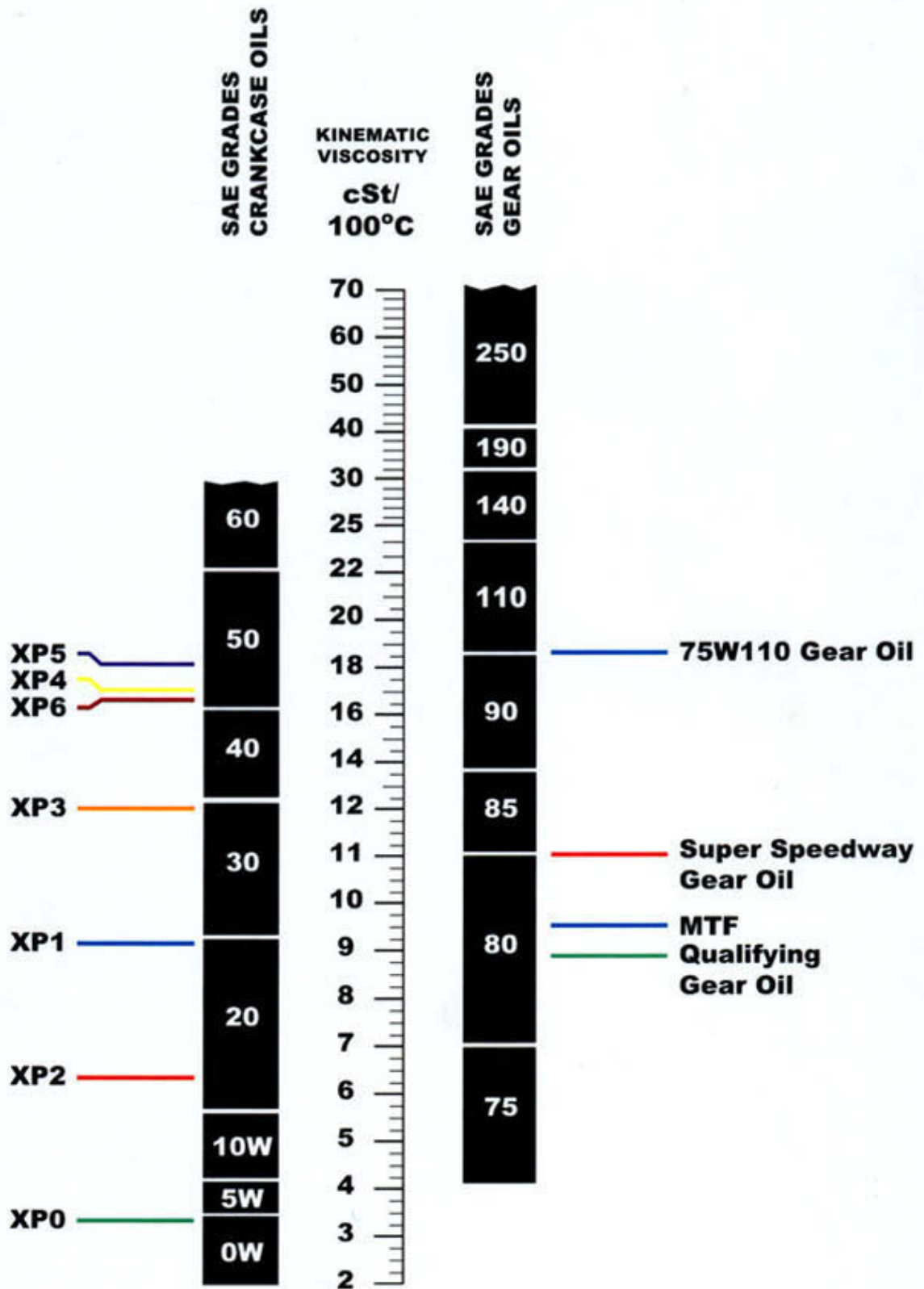
Part No.

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NOTE:
 The numbers shown along the tower are similar to the text classification numbers and increase with viscosity.

VISCOSITY EQUIVALENTS



Crankcase oils and gear oils are based on 100°C viscosity (212°F). The "W" grades are classified on low temperature properties but must have minimum viscosities as shown above.

API Licensed Motor Oils & Diesel Oils Are Not The Same Products As They Were A Few Years Ago

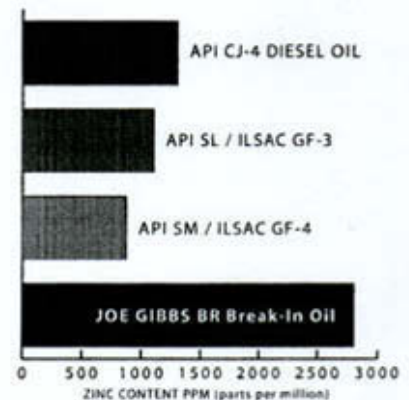
A recent Technical Bulletin said it best, "Today's engine oil is just not the same as it used to be, thanks to the ever tightening environmental regulations." The EPA, car manufacturers, and the American Petroleum Institute (API) have done a great job reducing emissions and extending the life of emissions control equipment. However, the reduction in emissions has coincided with a reduction in traditional, performance proven anti-wear additives (i.e. zinc dithiophosphates). In the past 12 months, the API has also begun to restrict the "Zinc" levels in diesel oils as well. In the years ahead, the levels of formulated anti-wear will be further reduced. While this is great for the environment, it is bad news for your racing engine and for flat-tappet cams.

As stated in the book Lubrication Fundamentals, "In heavily loaded applications (i.e. racing engines), flat tappet cam followers operate on partial oil films at least part of the time. Lubricants with anti-wear additives are necessary if rapid wear and surface distress are to be avoided. The oil additive Zinc Dithiophosphate is to provide anti-wear activity for the camshaft and lifters. With the increased use of roller follower cams (in production cars), the requirements for anti-wear have been changed to prolong the life of emission control devices."

The increased RPM and related increase in valve spring pressure in today's racing engines require higher levels of formulated anti-wear, especially in flat tappet engines. Again, the book Lubrication Fundamentals sums this up, "Loading on the rubbing surfaces in the valve train may be high, particularly in high speed engines, where stiff valve springs must be used to ensure that the valves close rapidly and positively. **This loading can result in lubrication failure unless special care is taken in the formulation of the lubricant.**" Simply put, the oil used in a racing engine needs to be formulated specifically for racing. You wouldn't use a stock piston in a race engine, and the same goes for oil.

Over the last seven racing seasons, Joe Gibbs Racing has developed a family of lubricants that provide the necessary levels of anti-wear chemistry to protect highly loaded racing engines from initial break-in to 24 hour endurance race conditions. The valve train loads in a flat tappet NASCAR Nextel Cup engine exceed 500 psi in order to turn over 9,000 rpm. These high loads and long duration races (up to 600 miles) require more formulated anti-wear chemistry than even the best API rated synthetic passenger car oils offer.

What Can You Do? - Check your oil bottles for the API donut. If the oil you currently use carries an API donut, it probably lacks the amount and type of formulated anti-wear chemistry found in a true racing oil. Choose an engineered fluid like Joe Gibbs Racing Oil that's designed to meet the higher anti-wear needs of your racing engine. Please refer to www.joegibbsracingoil.com for more technical information and detailed product descriptions. You can also call our tech line at 866-611-1820 between 9 am and 5 pm Eastern Time. To place an order, call Keystone at 1-800-233-8321.



CRANKCASE OIL: SAE VISCOSITY LIMITS

The viscosity of an oil is its resistance to flow. It can be determined by various methods. Most of them measure the time required for the oil to flow through a capillary or orifice. The SAE specifies its viscosity limits in centistokes or centipoises as shown in the table at right.

SAE viscosity grades specify ranges of viscosity at both high and low temperatures. The "W" grades have two tests at low temperature. The Cold Cranking Simulator test determines the lowest temperature at which the oil will allow good winter engine starting. The Mini Rotary Viscometer test measures the ability of the oil to be distributed by the oil pump to the different parts of the engine at very low temperature, so that critical parts of the engine will be lubricated immediately after startup.

Single grade oils, such as 30 or 40, are suitable for high temperature service. Multigrade oils such as 10W-40, 15W-40, are suitable for year-round use.

The table shows the SAE viscosity classification system. To be graded "W," an oil must pass both low temperature tests specified for that grade, the Cold Cranking Simulator, and the Mini

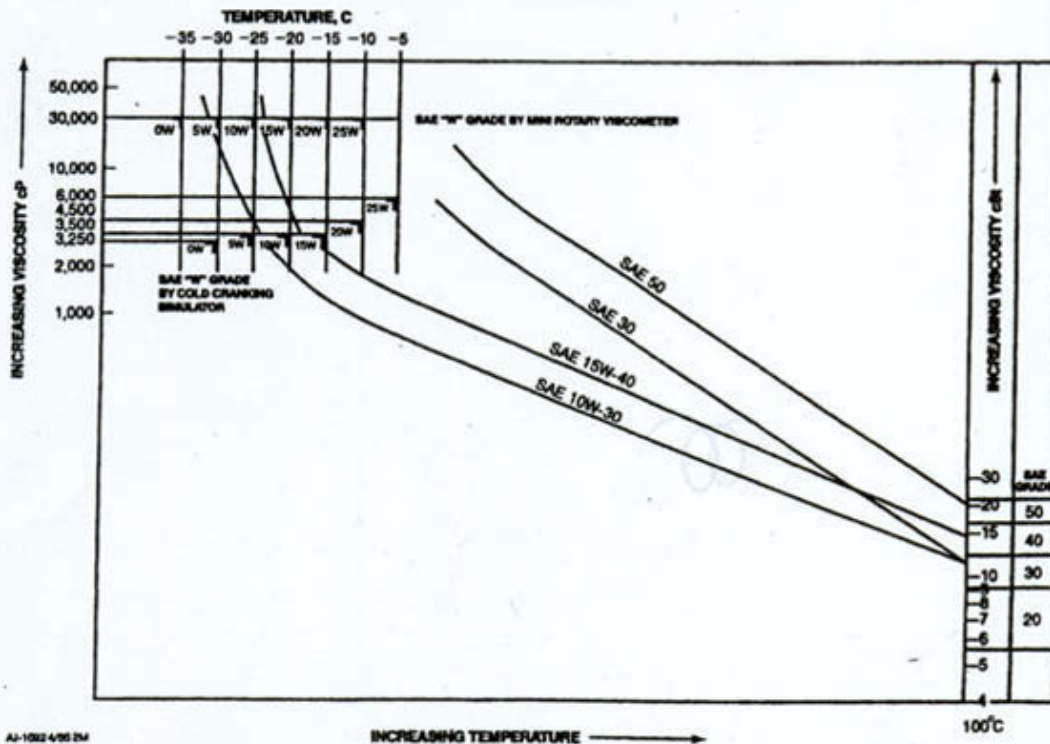
SAE Viscosity Grades for Engine Oils

SAE Viscosity Grade	VISCOSITY Maximum cP deg. C	Cold Cranking Simulator Mini-Rotary		VISCOSITY (cSt) at 100°C (212°F)	
		300 P @ deg. C	deg. C	min	max
0W	3250	-30	-35	3.8	
5W	3500	-25	-30	3.8	
10W	3500	-20	-25	4.1	
15W	3500	-15	-20	5.6	
20W	4500	-10	-15	5.6	
25W	6000	-5	-10	9.3	
20				5.6	Less than 9.3
30				9.3	Less than 12.5
40				12.5	Less than 16.3
50				16.3	Less than 21.9

Rotary test. The high temperature grading is determined by the viscosity at 100°C.

The graph below shows how multigraded oils are usable over a much wider temperature range than the straight grade oils. It also illustrates how an oil is graded at both high and low temperature.

VISCOSITY - TEMPERATURE CHART



AI-1002 4/95 2M

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Flat Tappet Camshafts

Recent changes in oil and engine technology are likely the cause of premature camshaft failure; here's what you can do to protect your engine!

Premature flat tappet camshaft failure has been an issue of late and not just with one brand or type of camshaft. In almost every case, the hardness or the taper of the cam lobe is suspected, yet most of the time that is not the problem. This growing trend is due to factors that are unrelated to camshaft manufacture or quality. Changes in today's oil products and "advanced" internal engine design have contributed to a harsher environment for the camshaft and a potential for failure during break-in. But there are several things you can do to turn the tide on this discouraging trend.

Proper Camshaft Set-Up & Break-In

Proper flat tappet camshaft set-up and break-in, as any engine builder knows, are keys to how long a camshaft will last, both short and long term. Making certain that the camshaft and lifters are properly lubricated will guarantee that the camshaft and lifters are protected during the critical initial start-up of your newly-built engine. COMP Cams® offers the right product for this job (Part #154), and it is available in several different size containers for engine builder convenience. To further enhance this "relationship," we strongly recommend the use of COMP Cams® Camshaft Break-In Oil Additive (Part #159) during the break-in. While this additive was originally developed specifically for break-in protection, subsequent testing has proven the durability benefits of its long term use. This special blend of additives promotes proper break-in and protects against premature cam and lifter failure by replacing some of the beneficial ingredients that the oil companies have been required to remove from off-the-shelf oil. These specialized COMP Cams® lubricants are the best "insurance policy" you can buy and the first step to avoiding durability problems with your new flat tappet camshaft.

Adequate Lubrication

Another major factor in the increase of flat tappet camshaft failure is your favorite brand of engine oil. Simply put, today's engine oil is just not the same as it used to be, thanks to ever tightening environmental regulations. The EPA has done a great job in reducing emissions and the effects of some of the ingredients found in traditional oils; however these changes to the oil have only made life tougher on your camshaft. The lubricity of the oil and specifically the reduction of important additives such as zinc and manganese, which help break-in and overall camshaft life, have been drastically reduced. In terms of oil selection, we recommend Shell Rotella T oil for the break-in procedure. Most often used in diesel engine applications, this higher lubricity oil works in gasoline engines as well.

Today's engines are great at providing oil to every engine component except one - your camshaft. Windage trays, limiting oil's ability to reach the top of the engine, modification of connecting rod side clearances for less splash oil and special oil pans further complicate both the break-in process and camshaft operation in general. But there are several things you can do to correct these problems.

COMP Cams® offers flat tappet lifters with oiling holes in the cam face surface, which will increase oil flow to the lifter-camshaft lobe contact point. Furthermore, using a lifter bore grooving tool (COMP Cams® #5003) will enhance oiling throughout the camshaft and valve train. As we all know by now, better oil flow means better initial break-in and increased camshaft durability.

Flat Tappet Lifter Selection – Choose Carefully!

In addition to these engine modifications, make certain you purchase high-quality lifters. Most lifters look alike, but you don't really know where they were produced. "Imported" flat tappets often times use inferior lifter castings and **DO NOT** deliver the durability of COMP Cams® high-quality, US-built lifters. COMP Cams® lifters are built to strict diameter and radius tolerances and designed to fit precisely within their lifter bores. This ensures the lifter rotates properly and decreases the potential for failure. Additionally, COMP Cams® Flat Tappet Lifters have the correct oil band depth and location to properly regulate the internal oiling of your engine.

Five steps to increased flat tappet camshaft durability:

- Double check your camshaft and lifter set-up prior to the break-in process, and use an ample amount of the supplied assembly lube on all lobes, distributor gear and the face of bottom of each lifter.
- Use high-lubricity engine oil such as Shell Rotella T oil to help during the break-in process, or use COMP Cams® Camshaft Break-In Oil Additive (Part #159).
- Use flat tappet lifters with cam face oiling provisions, such as COMP Cams® Part #800-16 (GM) or #817-16 (Ford).
- Use a COMP Cams® Lifter Bore Grooving Tool (#5003) to increase oiling.
- Use high-quality, U.S.-built COMP Cams® lifters to make certain you are receiving the best quality lifter you can buy. Avoid "brown bag" lifters.



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Part #255