



From The Dale Moseley's
Your Lubricant Technical Source
lubetech@pinkbird.com



July 2009

FLAMINGO OIL TECHNICAL BRIEF:

0W-20 IT'S Time Has Come

Environmental issues are driving the change to thinner engine oils. 0W-20 oils have been recommended for some Toyota and Honda models for several years. Starting with the 2010 model, the popular 2.5 L 4-cylinder Toyota Camry, Lexus RX 350, Honda Accord and Insight will recommend only 0W-20. They were certified with the government for fuel efficiency and lower emission requirements using high technology synthetic 0W-20. A thicker less advanced fluid would negatively affect the engine performance. Before being used in the certification process synthetic 0W-20 oils might have been preferred by the engine manufactures. Now that it is used in the certification process, 0W-20 is a requirement.

0W-20 BENEFITS:

Fuel efficiency -- Viscosity is defined as "resistance of a fluid to flow". The lower the viscosity, the lower the resistance, the less heat generated, the more power that gets to the wheels, the better the fuel economy of that vehicle. Toyota says that the use of 0W-20 will save between 0.4 and 0.6 MPG. Honda claims you will see a 1.5% fuel economy savings as compared to 5W-30.

Less wear -- Engine design, materials and manufacturing processes have changed.

- Engines are now designed with larger bearing surfaces, which spread the load and lowers PSI..
- The load bearing surfaces are smoother (mirror like) and less porous than in older engines. Therefore, thinner oils can keep moving surfaces apart without excessive wear.
- Clearances have been reduced to the point that thicker oils can not get where needed. The Honda Civic Hybrid and Insight have bearing clearances of just 0.0095 inches.
- At start up, thinner oils can get where needed faster thus reducing wear. A Ford study concluded that 75% of wear occurs at start up.
- Hybrid cars that cycle between battery and gasoline engine are constantly starting, stopping and jumping to high speed. 0W-20 is needed in this environment.

Cooler Engines -- Thin oil moving fast will remove more heat than thick oil moving slowly.

At a SAE meeting in April of 2009, Jeff Jetter of Honda R&D America gave a presentation call, "Lubricant Requirements for Honda and Acura Vehicles", that confirmed 0W-20 as their preferred engine oil viscosity and offered the following insights:

Insights from Honda:

- Most Honda and Acura engines have been designed for 0W-20 for several years.
- Factory fill for most Honda and Acura vehicles is and has been 0W-20. The exception is turbo charged vehicles that require Honda HTO-06 specification.
- 0W-20 has been recommended for most vehicles in Japan and Europe since 2001. The US gets the same vehicle models as Japan and Europe.
- 0W-20 was not recommended in the US because the 0W-20 grade was not generally available.
- 0W-20 will be **approved retroactive** for many Honda vehicles going as far back as 2001. Details will be announced later this year.
- By model year 2011 Honda estimates that there will be over 10,000,000 Honda and Acura vehicles on US roads that can use 0W-20. This number does not include Toyota or other OEM's

Both Toyota and Honda require ILSAC GF-4 as their service fill oil. They do not differentiate between conventional base oil versus synthetic. However, it is not possible to pass the GF-4 engine test for 0W-20 without using synthetic base oils. GF-4 for 5W-20 can be passed with conventional Group I or Group II base oils, thus, the big difference in price between the two SAE grades.

Flamingo Full Synthetic 0W-20 far exceeds GF-4 requirements but is made from synthetic Group III base oils. It meets Toyota's service fill requirements but does not meet Toyota's factory fill requirements. Flamingo also offers ENEOS 0W-20 made by Nippon Oil, the largest oil company in Japan and the sixth largest integrated oil company in the world. Nippon Oil works closely with Japanese and Korean car companies to develop OEM fluids. ENEOS 0W-20 is made from more costly Group IV base oils and meets Toyota's factory fill as well as service fill requirements. Flamingo has both products available in drums or bulk and Kendall 0W-20 in cases.



TO ADD YOURSELF OR OTHERS TO THIS TECH LETTER, PLEASE EMAIL TO LUBETECH@PINKBIRD WITH THE SUBJECT "ADD TECH LETTER". IN THE BODY OF THE EMAIL, LIST THE EMAIL ADDRESSES YOU WANT TO ADD.

IF YOU WANT TO REMOVE YOURSELF, PLEASE EMAIL A LETTER TO LUBEREMOVE@PINKBIRD.COM WITH THE SUBJECT "REMOVE TECH LETTER".