

**CITGO PACEMAKER® GAS ENGINE OIL
1900 XL SERIES**

Date 09/16

DESCRIPTION: CITGO Pacemaker Gas Engine Oil (GEO) 1900 XL series are next-generation, premium-performance low ash and low phosphorus lubricants for stoichiometric and lean-burn stationary natural gas engines. CITGO Pacemaker GEO 1900 XL series are designed for highly loaded 4-cycle natural gas engines operating under severe conditions and provides premium performance over older technology lubricants in high nitration conditions typically found in stoichiometric engine operation.

- QUALITIES:**
- Exceptional resistance to oxidation and nitration
 - Extended oil drain intervals capability (up to two times vs. other premium oils operating in severe conditions) helps maximize production and lowers operating cost through less down time, and reduced lubrication cost
 - Exceptional deposit control and protection against piston scuffing and ring and liner wear
 - TBN retention to neutralize combustion acids from sour gas
 - Minimized valve recession for longer head life
 - Improved TAN control
 - Catalyst compatible

APPLICATIONS: CITGO Pacemaker GEO 1900 XL series low ash lubricants meet rigorous demands of modern natural gas engines operating in a variety of natural gas fuel qualities.

Recommended for high and medium speed 4-cycle engines manufactured by:

- Caterpillar
- Waukesha
- Superior
- Jenbacher
- Wärtsilä
- Worthington (low-speed engines)
- Cooper-Bessemer (low-speed engines)
- Cummins
- Dresser-Rand (Categories I, II, III)

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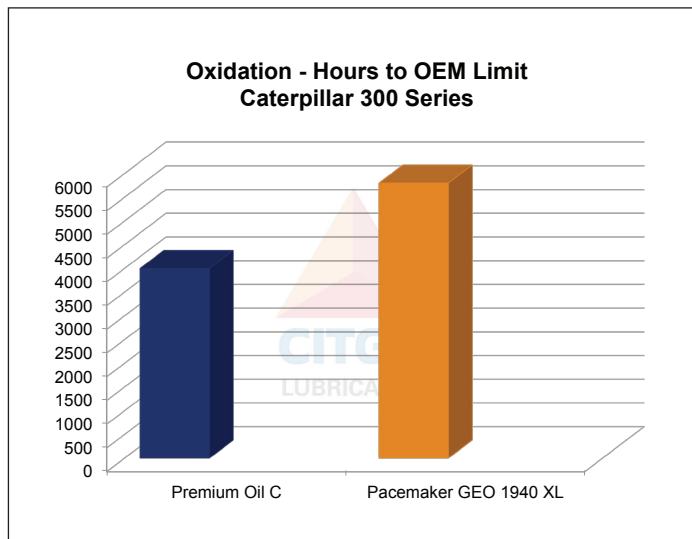
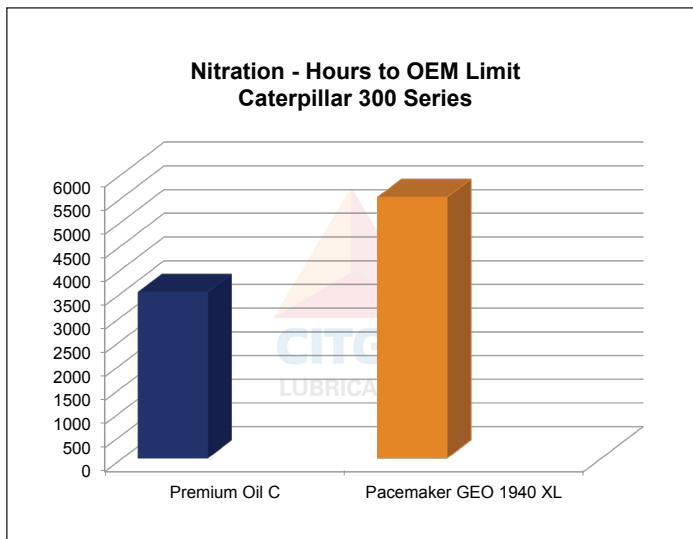
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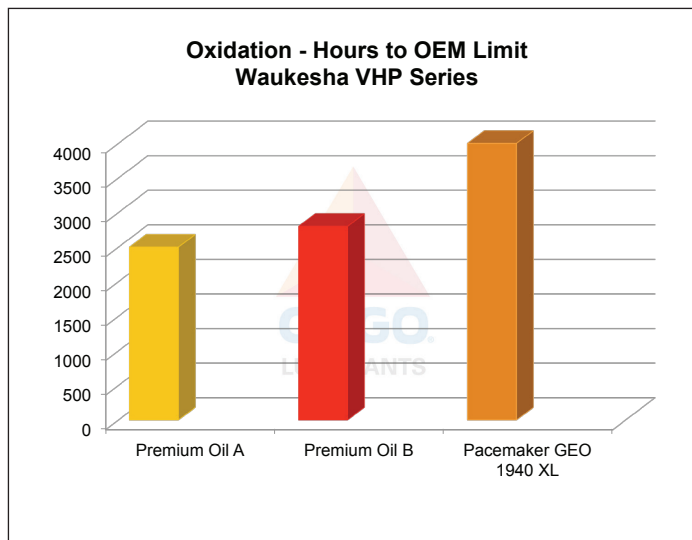
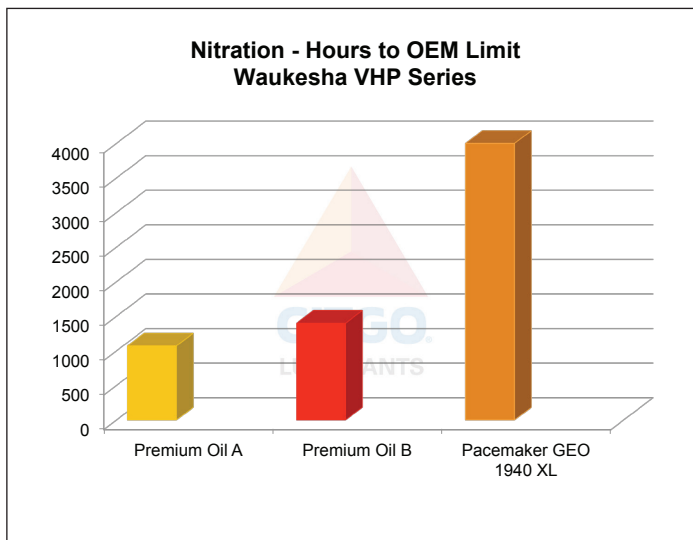
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Proven in Severe Service

Caterpillar 300 Series and Waukesha VHP Series stoichiometric engines are historically severe in nitration. In field operation, results show CITGO Pacemaker GEO 1940 XL delivered up to 200% longer engine oil life compared to other premium oils.



Caterpillar 300 Series Stoichiometric Engines



Waukesha VHP Series Stoichiometric Engines

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TYPICAL PROPERTIES:

CITGO PACEMAKER® GAS ENGINE OIL 1900 XL SERIES

Product Name	1930 XL	1940 XL
SAE Grade	30	40
Material Code	632090001	632085001
Gravity, ASTM D 4052, °API	29.0	28.5
Pounds Per Gallon	7.34	7.37
Viscosity, ASTM D 445, cSt at 40°C	98	126.7
cSt at 100°C	11.5	13.6
Viscosity Index, ASTM D 2270	105	103
Pour Point, ASTM D 97, °F (°C)	-33 (-36)	-33 (-36)
Color, ASTM D 1500	L5.0	L5.0
Sulfated Ash, ASTM D 874, m%	0.5	0.5
Total Base No., ASTM D 2896, mg KOH/g	5.09	5.09
Total Acid No., ASTM D 664, mg KOH/g	0.82	0.82
Phosphorus, ppm	280	280

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Values shown are typical values only and do not constitute a specification. The information contained herein is subject to change without notice.