

# DELO®: A HISTORY OF FIRSTS

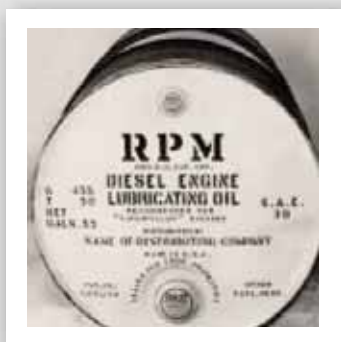
## GOING FURTHER SINCE 1935



### ANSWERING THE CALL

The early 1930s are remembered as a period of significant struggle for America. However, this time of depression marked significant achievements for two companies – Chevron (then Standard Oil of California) and Caterpillar Tractor. Caterpillar needed an oil to lubricate the high-speed diesel engines it was planning to build. The joint venture between the two companies in 1935 resulted in a multipurpose motor oil known as DELO, an acronym for Diesel Engine Lubricating Oil.

As engine technology improved and different engines required specific lubrication needs, the family of Delo motor oils expanded. Just prior to World War II, U.S. submarines were operating on straight mineral oil, meaning their engines occasionally had to be overhauled at sea, even on short trips. In 1941, the company developed compounded diesel engine oil, RPM Delo Special Motor Oil, with extended drain capabilities, enabling U.S. submarines to extend overhauls and triple cruising range. Also in 1941, Diesel Engine Lubricating Oil (DELO) became a registered trademark.



In the 1950s, the Delo brand pioneered the first successful multi-grade engine oil and delivered one of the first two oils approved for Caterpillar Series 3 – RPM Delo Supercharged-3 Oil. In 1957, Delo introduced the first ashless detergent engine oil. In 1967, the Delo brand introduced the first high dispersant, low ash content Caterpillar Series 3 Oil.

Through 1970, the industry's greatest challenge was to develop a "universal" oil that would meet all diesel and four-cycle gasoline engine manufacturers' specifications and performance requirements.

In 1971, Chevron Delo 400 was introduced and became the first product in the industry to meet the dual need. In the early 1980s, Delo 400 experienced a significant improvement with the introduction of additives to provide better soot dispersion. This advancement, coupled with the use of improved detergents, decreased engine wear and kept engines cleaner. In 1984, Chevron introduced the first all-hydroprocessed base oils, which set the standard for performance in the base oil industry. Later in the decade, Chevron introduced its Low Oil Consumption Delo Multigrade SAE 15W-40 and was the first to extend a big diesel engine (CAT 3406B) to 1.6 million km (1,000,000 miles) without overhaul.



Chevron developed a non-synthetic axle lubricant approved by Rockwell for extended service in 1990 and introduced Delo with ISOSYN™ Technology based on our ISODEWAXING process, resulting in mineral base oils with synthetic-like capabilities in 1993. The Delo brand also introduced diesel oil specifically formulated for both low and normal sulfur fuel in 1993. In 1996, Delo became the first brand to demonstrate

1.6 million km (1,000,000 miles) to overhaul in DDC Series 60, Cummins NTC400/N-14 and Caterpillar 3406B engines and the first to meet the oil performance requirements of PC-7 (which later became API CH-4) without having to reformulate. Delo 400 Multigrade SAE 15W-40 became the first heavy duty engine oil to meet the API CH-4, Cummins CES 20076 and Mack EO-M Plus extended drain specifications in 1998.

Today, Chevron's Delo product family includes lubricants, coolants and greases. Delo products are found in all major industries including commercial transportation, construction, mining, agriculture and power generation. These performance benefits can be seen through the experiences of our customers in a variety of markets.

### PROOF OF PERFORMANCE

R.E. West Transportation is a nationally recognized contract and dedicated carrier with a fleet of 120 trucks and 300 trailers. For years, R.E. West has depended on Chevron's Delo lubricants and Chevron Delo Extended Life Coolant for its fleet. Recently, the team tore down a 2.4 million km (1.5 million-mile) Series 60 engine for an extensive, three-day inspection. The engine appeared to be a fraction of its true age. The components had minimal wear and clear of harmful deposits. ASARCO Ray Copper Mine operates a fleet of 39 haul trucks, 21 of which are Liebherr T 282s. One of the facility's 20V MTU 4000 engines that had delivered 21,900 hours of service with 500 hour drain intervals was torn down and inspected. ASARCO determined it was saving approximately \$160,000 per engine per year – roughly \$3,000,000 in savings per year – based on the extended service protection and engine durability.

Tahoe Truckee Sierra Disposal operates in extreme conditions, including high altitudes and severe temperatures ranging from -34 °C (-30 °F) in the winter to over 38 degrees (100 °F) in the summer. The fleet includes a garbage disposal truck with a Cummins M11 engine, which the company tore down after 16,000 hours of service using Delo 400 LE SAE 15W-40 and Delo Extended Life Coolant. The company noticed significant savings to its bottom line as the trucks lasted longer and engine components experienced minimal wear despite the hours of service.



The success of Delo is based on its unique formation, superior quality, extended service protection and unsurpassed performance record. The Delo story is an evolving process that has produced a family of engine oils to keep pace with the ever-changing needs of the industry. And it is a story that will continue to develop as the industry moves forward with the next diesel engine oil category, Proposed Category-11 (PC-11). Chevron is working closely with the group in charge of creating this new engine oil classification and is prepared to introduce new Delo products focused on fuel economy to meet the demands of PC-11. Delo is a global brand, distributed by Chevron and Caltex.



**1935**  
Marketed first compounded diesel engine oil (RPM Diesel Engine Lubricating Oil) making high-speed diesel engines feasible.



**1941**  
First in the world to develop compound diesel engine oil that could be used in any diesel engine – adopted by the US Navy. Delo becomes registered trademark.



**1936**  
Caltex founded as a joint venture of Standard Oil of California.

**1958**

First in the world to develop an ashless detergent 2-cycle engine oil.

**1953**

First in the world to develop a successful multi-grade engine oil.

**1973**

First borate base "ultra" extreme pressure gear lubricant for industrial and automotive applications.



**1971**

First grease capable of extending lubrication intervals of heavy-duty equipment to 32,000 km (20,000 miles).



**1989**

First to document 1.6 million km (million-mile), no overhaul engine life in Caterpillar 3406B.



**1980**

First low-wear tractor hydraulic fluid with satisfactory wet brake performance in Ford/Massey/Ferguson bronze brakes and John Deere paper composite brakes.

**1993**

First to introduce ISODEWAXING technology, resulting in mineral base oils with synthetic-like capabilities.

**1999**

Delo 400 Multigrade SAE 15W-40 is the first heavy duty engine oil to meet the API CH-4, Cummins CES 20076 and Mack EO-M Plus extended drain specifications.

**1996**

Documents the first 1.6 million km (million-mile), no overhaul engine life for the three major U.S. engine manufacturers and is first to meet the performance levels of PC-7 (CH-4)

**1.6 million km**



**2001**

Recognized for outstanding performance, Chevron Delo products have been honored by Lubricants World magazine in 1999, 2000 and 2001 because these products "are poised to contribute greatly to the achievement and enrichment of the lubricants industry."

**2006**

Delo's Extended Life Coolant formulation is the first to deliver 1.2 million km (750,000 miles) of service life with no Extender required, and also reached first 1.6 million km (1,000,000 mile) life in heavy duty trucks with the addition of an Extender.

**1.2 million km without Extender      1.6 million km with Extender**

**2003**

Delo products meet the API CI-4 Plus standard before official licensing.

**API CI-4 Plus**

**2011**

Chevron launches Delo Grease ESI which provides extended service protection to 48,000 km (30,000 miles).



**2012**

Delo 400 LE reaches 2.4 million km (1.5 million miles) in a Detroit Diesel Series 60 Engine.

**2.4 million km**



**Delo**  
Let's go further.™

# DELO®: A HISTORY OF FIRSTS

## GOING FURTHER SINCE 1935



"To the men and women of Standard of California:  
We the soldiers of the fighting line, give thanks to  
you soldiers of the production line for the sinews of  
war that made our victory possible."

- General Douglas MacArthur, United States Army

**Delo®**  
**Let's go further.™**

Visit [ChevronDelo.com](http://ChevronDelo.com)