

At Cenex®, it's our priority to study and understand fuel. This allows us to anticipate and address the changing needs in the industry – proactively and aggressively.

Based on our knowledge and experience, we've developed Cenex Premium Diesel Fuels to meet the demands of new and existing engine technology designed to operate with higher efficiency and less downtime.

Cenex Premium Diesel Fuel
Fueling innovation for enhanced performance.



ROADMASTER XL
PREMIUM HIGHWAY DIESEL FUEL

RUBYFIELDMASTER
SOY-ENHANCED PREMIUM DIESEL

ROADMASTER XL
PREMIUM HIGHWAY DIESEL FUEL

RUBYFIELDMASTER
SOY-ENHANCED PREMIUM DIESEL

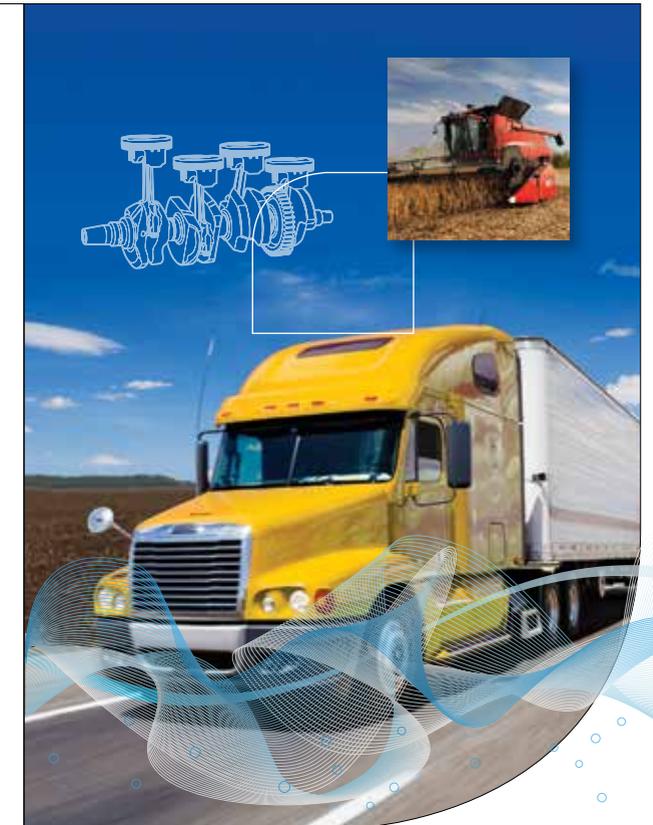
Powering the demands of high-tech engines with an *Enhanced Product Formulation*



**THE CENEX® VOYAGER® FLEET CARD:
MORE SAVINGS, MORE REWARDS,
MORE CONVENIENCE**

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For more information or to apply, visit cenex.com/voyager.



PREMIUM DIESEL FUEL



OUR ENERGY COMES THROUGH®

Meets 2014 Tier 4
Final EPA Emission Standards

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A BRAND OF **CHS**

Fueling innovation for enhanced performance.





Whether you're running Cenex Roadmaster XL® on the highway or Cenex® Ruby Fieldmaster® in the field, you're benefiting from more than 50 years of Cenex experience as an industry leader in premium diesel fuels.

Cenex leads the industry in premium diesel fuel, with a proprietary blend that maximizes performance and fuel efficiency, reduces downtime and maintenance costs, extends injector and injector pump life, and provides quicker, smoother starts.



THE CHALLENGES OF HIGH-PRESSURE INJECTION WITH TYPICAL #2 DIESEL FUEL

Today's diesel engines use high pressure common-rail (HPCR) direct injection technology to provide significantly greater efficiencies than conventional diesel engines. These engines operate under high temperatures and pressures that can literally "cook" typical #2 diesel. This results in fouled fuel that recirculates in the fuel system and can damage engine parts.

FUEL INJECTOR DEPOSITS

Internal diesel injector components within HPCR engines are much smaller, lighter and more intricate than direct inject diesel engines manufactured prior to 2007. With injection that occurs multiple times per combustion cycle at engine pressures up to 35,000 PSI, even the smallest deposit can cause issues within the tight tolerances of the injector (typically 1 to 3 microns). When using typical #2 diesel fuel, deposits occur in two places:

Deposit locales



Nozzle coking deposits occur in the injector nozzle tip. These orifices spray microscopic fuel droplets into the combustion chamber and, because they are so finite, they can become clogged by even the smallest amount of deposits. These deposits may only be a stain or varnish; however, they can lead to power deficiencies and decreased fuel efficiency.

Internal diesel injector deposits (IDID) are of critical concern with high-pressure injection engine technologies. Unlike conventional deposits, IDID form deep inside the high-precision injectors, causing havoc due to tight tolerances. These deposits can appear suddenly inside the injector and can significantly reduce power, fuel economy, and in some cases can result in injector failure.

FUEL-FILTER PLUGGING

In addition to forming deposits in the fuel injection system, another known issue that affects high-pressure injection (HPI) systems is premature fuel filter plugging. Fuel filters capture unwanted contaminants from the fuel, and left unchecked can cause serious damage. With the extreme high temperatures and pressures generated by HPI engine technology, typical #2 diesel is thermally decomposed in the injection system and results in fuel filter plugging. As the flow of the fuel through the fuel filter becomes restricted or plugged, a loss of power will result.



Fuel filter after 12,000 miles using typical #2 diesel.



Fuel filter after 30,000 miles using Cenex Premium Diesel Fuels.

Black sludge, a common problem, is a critical issue in HPCR engines operating at high temperatures, where contaminants from unburned fuel and combustion soot combine to further diminish performance.

ENHANCED CENEX® PREMIUM DIESEL FUELS MEET THE DEMANDS OF HIGH-TECH ENGINES

The fuel performance considerations that come with today's highly advanced engines make a clear case for Cenex® Premium Diesel Fuel, which meet or exceed the Premium criteria established by the NCWM/EMA/TCM.*

Laboratory and field tests confirm the upgraded injection stabilizer in Cenex premium diesel fuels successfully removes and prevents IDID, including carbonaceous, soap/metal carboxylates and lacquer type deposits, as well as a dramatic reduction in fuel filter plugging while maximizing power in today's high tech engines.

Cenex Premium Diesel Fuels optimize performance with a complete, high-quality, balanced additive package, that:

- Improves fuel economy by as much as 5%
- Increases fuel lubricity by 10-15%
- Improves power by up to 4.5%

Above claims are in comparison to a typical #2 diesel fuel.

*National Conference on Weights and Measures / Engines Manufacturers Association / The Maintenance Council

CENEX® PREMIUM DIESEL FUELS FEATURES AND BENEFITS CHART

FEATURE	WHAT IT DOES	HOW YOU BENEFIT
Injection Stabilizer	Address fuel oxidation problems in new engine technology fuel injectors and prevents internal diesel injector deposits (IDID) from forming deep inside high-precision injectors.	<ul style="list-style-type: none"> • Less filter and injector replacements in new engine technologies • Less downtime and maintenance costs
Detergents	Aggressive detergent components keep fuel systems clean and performing at their optimum level.	<ul style="list-style-type: none"> • Improved fuel efficiency • Greater horsepower • Extended life for fuel pumps and injectors
Cetane Improver	Cetane is a measure of diesel engine startability. The higher the cetane number, the quicker the fuel will ignite. Cenex Premium Diesel Fuel has a typical cetane number of 48.	<ul style="list-style-type: none"> • Reduced strain on engines and electrical systems • Quicker, more fuel-efficient starts • Smoother running engines
Lubricity Improver	Friction-reducing agents provide 10-15% better protection against friction and wear on the fuel pump than typical #2 diesel fuel.	<ul style="list-style-type: none"> • Protects moving parts from excessive wear • Extended life for the fuel pump
Demulsifiers	Demulsifiers force water to the bottom of the tank, allowing for easy drainage and removal. This prevents unwanted moisture from being carried through the fuel system and reduces the volume of water entering the combustion chamber.	<ul style="list-style-type: none"> • Easier removal of water from storage tank • Less wear on injectors and fewer filter replacements • Prevents algae formation in storage tanks
Corrosion Inhibitors	Provides superior corrosion protection, preventing the formation of rust on metal parts.	<ul style="list-style-type: none"> • Saves the cost of rebuilding injector pumps • Slows the natural degradation of diesel fuel caused by exposure to oxygen • Prevents corrosion-caused leaks, blockages and breaks in metal parts
Storage Stabilizers	Reduces gum and varnish buildup and contains components to extend the storage life of diesel fuel.	<ul style="list-style-type: none"> • Tolerates temperature extremes • Extends storage life of diesel fuel by 3-6 months.

More than a fuel, it's a guarantee.

Cenex Ruby Fieldmaster carries the best warranty program of its kind in agriculture. Our optional, no-hassle warranty program covers your farm equipment for up to 10 years or 10,000 hours, including fuel injectors in new or used equipment for 5 years or 5,000 hours. It's the extra step we take to make you even more secure in your investment.



Contact your authorized Cenex® Premium Diesel Fuel Distributor today, or visit cenex.com to learn more.