



FUEL QUALITY IMPACTS EVERY COMPACT MACHINE IN THE INDUSTRY.
ARE YOU PREPARED?

In the past, compact equipment was more forgiving of variances in fuel quality – so when fuel-related issues come up today, you might think there's something wrong with your machine. The truth is, your fuel could be to blame.

Every compact equipment manufacturer has introduced new engine emission technology that includes high pressure fuel systems and exhaust aftertreatment systems. These systems are necessary for meeting interim Tier 4 (iT4) and Tier 4 (T4) emissions standards, but they are highly susceptible to contaminants. Clean fuel is critical for today's engines.

A proactive fuel management strategy will ensure reliable performance and prevent unexpected issues caused by fuel contaminants.



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PROACTIVE
FUEL MANAGEMENT
PLANNING

HOW TO DEVELOP YOUR FUEL MANAGEMENT PLAN

Today's iT4 or T4 machines are sensitive to impurities. And that's the case no matter which brand you're running. A little planning sets the stage for reliable performance and long machine life.

STEP 1 UNDERSTAND TIER 4 ENGINE TECHNOLOGY.

- High-pressure common-rail (HPCR) technology uses extremely precise components that demand clean fuel.
- Fuel pressures have risen to as high as 30,000 psi. Contaminants combined with high fuel pressure create erosion that negatively impact performance, fuel economy and component longevity.

STEP 2 KNOW THE FUEL SUPPLY ISSUES.

- Chemistry changes to reduce emissions with ultra-low-sulfur diesel (ULSD) make it harder for fuel suppliers to consistently provide high-performing fuel.
- Refining techniques and additives vary from supplier to supplier.
- Current fuel standards do not address the cleanliness needed for HPCR engines.
- Biodiesel creates water-related challenges, such as microbial growth and winter freezing.

STEP 3 SELECT THE BEST SUPPLIER.

- Verify that your supplier uses water-removing filters rated to 10 microns or less on their fuel delivery lines.
- For cold weather, confirm your supplier uses a winter blend of #1 and #2 diesel with a low cloud-point temperature.

STEP 4 KEEP SPARE FILTERS AT ALL TIMES.

- Have a spare filter on hand for every HPCR engine in your fleet.
- Use only the correct Bobcat fuel filter to ensure component protection:
 - Removes water and contaminants down to about 1 micron (4 micron(c) current industry test scale).

STEP 5 FOLLOW BEST PRACTICES.

- Refill machine fuel tanks at the end of a work shift to reduce condensation.
- Drain water traps daily.
- Follow cold-weather starting procedures.
- Use only Bobcat-approved fuel additives.

STEP 6 STAY EDUCATED.

- Ask your dealer about Bobcat-sponsored fuel clinics.
 - Follow the Research Section on Bobcat.com:
 - Bobcat.com/learn/research/featured
 - Watch industry websites* for more information:
 - DieselNet.com
 - CumminsFiltration.com
 - MyCleanDiesel.com
 - Biodiesel.org
- * Bobcat Company does not necessarily endorse the views expressed or information provided on industry websites.

BULK FUEL CONSIDERATIONS

STEP 1 EVALUATE YOUR BULK FUEL STORAGE.

- Ensure your tank has a 1-micron desiccant style vent filter.
- Your dispensing filter should be the water removing design and rated to 10 microns or less.

STEP 2 TEST AND ANALYZE FUEL.

- Collect and test fuel to measure fuel cleanliness, water percentage and cloud point:
 - Basic Fuel Analysis Kit
 - Advanced Fuel Analysis Kit
- Use water-finding paste to detect water in storage tanks.

STEP 3 ESTABLISH A RECORDKEEPING SYSTEM.

- Keep a storage tank preventative maintenance log, and track the following:
 - Maintenance history
 - Refill/supplier history
 - Filter replacements
 - Particle counts

STEP 4 PREPARE YOUR FUEL SUPPLY FOR WINTER.

- Switch to a winter blend early to be ready for surprise temperature changes.
- Confirm your supplier uses a winter blend of #1 and #2 diesel with a low cloud-point temperature.
- If using biodiesel, completely purge your tank before winter.

USE BOBCAT FUEL ADDITIVES FOR BETTER PROTECTION AND PERFORMANCE.

ALL-TIER SUMMER DIESEL FUEL ADDITIVE



- Cleans and prevents injector deposits to maximize horsepower and fuel economy.
- Prevents fuel soot and sludge formation to extend filter, injector and fuel pump life.
- Increases cetane up to 5 numbers for faster, smoother, fuel-efficient starting that minimizes wear on the electrical system.
- Enhances thermal and oxidation stability to increase storage life of diesel fuel.
- Enhances corrosion protection for the fuel system and storage tank.
- Increases water dispersion to control water in equipment and storage tanks.
- Effective in all diesel fuels including ULSD and up to B20 blends.

ALL-TIER WINTER DIESEL FUEL ADDITIVE



- Provides superior cold-flow properties to help prevent gelling and filter plugging.
- Significantly reduces cold filter plugging point (CFPP) temperature.
- Prevents wax from settling during extended shutdowns in cold climates.
- Helps to safely and gradually remove water from fuel system.
- Aids against fuel filter icing.
- Using more additive than recommended will not help and can be counter productive. Do NOT exceed the label's treat rate recommendations.
- No additives improve fuel cloud point, so they are NOT a suitable replacement for properly blended #1 and #2 diesel for winter use.