

BUMPER TO BUMPER

PREP YOUR RIG FOR SUMMER

A guide created by
TBS Factoring Service

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CREATED BY TBS FACTORING SERVICE

With over 50 years of experience serving motor carriers, TBS makes trucking easier with cutting-edge technology and various services to help drivers get established, stay compliant, find loads, and get paid faster. TBS serves thousands of clients nationwide with simple and quick cash flow solutions.

Headquartered in Oklahoma City and voted one of the best places to work in Oklahoma, the TBS family of companies drives change for small businesses with our commitment to digital transformation.



LET'S BE FRIENDS





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BUMPER TO BUMPER

PREP YOUR RIG FOR SUMMER

The benefits of regular vehicle maintenance are thoroughly understood. Not as well known, however, is the importance of preparing trucks for summertime operation.

Every summer, truckers face inconvenient and costly—in both money and time—problems that might have been avoided if they had invested in a bit of summer preventive maintenance.

Many things can be done at the end of the cold season to prepare vehicles to make sure summer's high temperatures don't lead to problems down the road.

HOT, HOT, HOT

Whatever the cause, the world is getting warmer. The streak of consecutive record hot years is unprecedented since measurements began in 1880.

Higher temperatures can cause pavement to soften and expand, creating rutting and potholes that can cause tire damage, vehicle alignment problems, and more.

Also, as temperatures increase, vehicles can overheat, batteries can wear out faster, belts and hoses can crack, and tires can deteriorate more quickly.

All the more reason to prepare vehicles against the broiling heat of summer to prevent unplanned vehicle repairs, breakdowns, and unscheduled disruptions to operations.

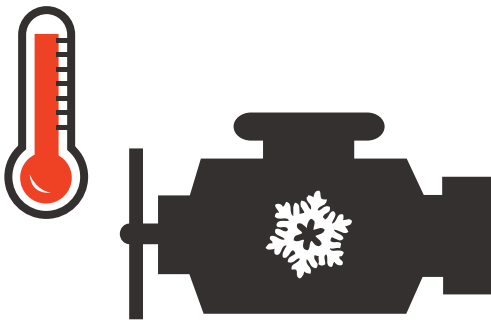


CHAPTER #1

ENGINE COOLING SYSTEM

An engine can potentially be the biggest expense if its cooling system fails; thus, it is critical to inspect this system. Inspecting it serves several purposes, including keeping the engine running at its most efficient temperature no matter the operating conditions.

During the summer, the cooling system works to prevent the engine from overheating. If not properly maintained, the engine will not operate as efficiently and internal components could be damaged. Just one cooling system overheat can severely damage a truck engine.



Research has shown that an estimated 40 percent of preventive engine problems are associated with the cooling system. Once initiated, these problems can spread through the lubrication, hydraulic, and transmission systems which damages components, causes scaling, clogs passages, and forms deposits.

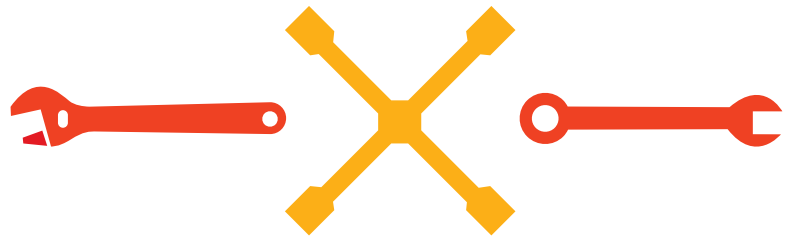
Yet most cooling system problems are preventable.

COLOR CONFUSION

Cooling system maintenance has become more complicated over the past few years because many engines require different types of antifreeze/coolant. Complicating matters are the lack of standards for the color of the antifreeze/coolant. What's more, the dyes—added to differentiate one brand from another and one formulation from another—no longer mean what they once did.

Caution: mixing antifreeze/coolant technologies can cause contamination.

CHAPTER #2



ENGINE COOLING SYSTEM PM TIPS

These preventive maintenance (PM) tips can help ensure optimal engine cooling system performance and reduced vehicle downtime.

Radiator

- Inspect the radiator inside and out for signs of damage.
- Inspect the exterior of the radiator and cooler for excessive debris and dust buildup and clean regularly.
- Inspect the airflow through the radiator and whether fans are turning on and off correctly.
- Check the inside of the radiator for corrosion.
- Examine the radiator cap for cracks and/or swelling and replace if necessary.
- Replace the thermostat every two years.

Cooling Fan

- Check for loose or damaged fan blades.
- Check for cracks or nicks in the blades that can cause the fan to become out of balance and vibrate.

Radiator and Heater Core Hoses, Lines, and Clamps

- Examine hoses and lines for excessive mushiness, hardness, bulges, cracks, leaks, or other signs of deterioration.
- Replace hoses every two years, whether they exhibit obvious wear or not.
- Confirm that all connections are tight to avoid leakage.

ENGINE COOLING SYSTEM PM TIPS (CONTINUED...)

Belts

- Check for wear, cracks, and proper tension.
- Look for belt misalignment.
- Test the function of the tensioner arm.
- A best practice is to replace belts every one to two years.



Heater

- Run the truck heater to verify that the system is functioning properly.
- Verify that the engine maintains a temperature within the manufacturer's specification.

OUTSIDE DEFENSE

Hot weather also affects a vehicle's finish and can cause the paint to fade and crack. Therefore, it's important to take precautionary measures to safeguard the vehicle exterior from the sun's damaging rays and humidity; rocks, sand, gravel and other road debris; as well as insects, bird droppings, sap, etc.

Over time, these contaminants can chemically etch a vehicle's surface, leaving permanent damage which could ultimately lead to rust and corrosion. Hot temperature accelerates the problem.

One way to keep the exterior of any vehicle protected from the elements of summer is to apply paint protection film. These are durable, high-grade, colorless urethane films applied to the high-impact areas of the vehicle—front and rear faces, bumpers, mirrors, and door edges.

ENGINE COOLING SYSTEM PM TIPS (CONTINUED...)



Water Pumps

- Inspect for leaks.

Cooling System

- Confirm that the cooling system is full. Operating with low coolant can lead to numerous problems because the coolant cannot protect surfaces that it does not contact.
- Look to see if the antifreeze/coolant is clean and pure with no rust or other impurities. These can contaminate the cooling system and cause costly issues.
- Drain, flush, and refill with the appropriate antifreeze/coolant if any contamination is noted.

A "SACRIFICIAL LAYER"

A best practice is to use vehicle care products to:

- Take abuse that might otherwise damage the clear coat
- Cover small scratches or light blemishes
- Maintain durable protection and shine

Even the highest quality vehicle finishes will deteriorate and dull over time.

Vehicle care products provide an easily renewable, transparent barrier between the finish and a "hostile" hot weather environment.

Another defense is frequent washing and drying to remove dirt and dust particles that can cause micro scratches and dull the vehicle's finish.

Summer brings bugs, so make sure to use a windshield washer fluid that can handle the mess.

CHAPTER #3



ENGINE ANTIFREEZE/COOLANT

The antifreeze/coolant is an integral part of good cooling system preventive maintenance. Its primary function is to safeguard an engine from overheating at high temperatures and from freezing during cold temperatures.

Antifreeze/coolant also keeps metal surfaces in the radiator clean and protects against scaling, cavitation, and corrosion on engine components.

Always use only the recommended type of antifreeze/coolant specified for the engine and continually maintain the engine antifreeze/coolant to meet engine manufacturer's specifications.

Because antifreeze/coolant comes in a range of colors and chemistries, it is important to know which specific antifreeze/coolant to use. Mixing of technologies can cause coolant contamination.

How often should antifreeze/coolant be changed? Regardless of the type, the best practice is to follow the vehicle or engine manufacturer's recommended intervals.

KEEP THEM SEPARATE

Few things are more damaging to an engine than antifreeze/coolant mixing with the oil because this can potentially cause a massive failure.

Industry experts estimate that more than 50 percent of all catastrophic engine failures are due to coolant leaks.

ENGINE ANTIFREEZE/COOLANT (CONTINUED...)



Regardless of the color, all antifreeze/coolants should have one thing in common: all should be clear. Coolant that appears cloudy or has floating particulates could be an indication of bigger problems.

A best practice is to perform an engine antifreeze/coolant analysis to determine its condition and additive concentrations. The analysis also identifies other vehicle problems that can show up in the cooling system.

Antifreeze/coolant analysis programs typically are available in various levels and costs, depending on the number of parameters to be checked. At a minimum, it is wise to perform an annual cooling system pressure test.

Antifreeze/coolants are both conventional and extended-life (ELCs). Conventional coolants use inorganic additives such as silicates and phosphates to plate cooling system surfaces and provide a protective layer.

Over time, due to flow and erosion, this protective layer is chemically consumed. This necessitates adding a charge of supplemental coolant additive (SCA) to replenish the additives and reinforce the protective layer.

ELCs use an organic acid technology (OAT) additive that chemically reacts with metal surfaces when needed for protection. The OAT formulas protect metals from corrosion by forming a thin, molecular coating on them. While ELCs are not as fast acting, they provide protection over a longer period of time.

TO LEARN MORE...

The cooling system is probably the least-maintained system of an engine. Industry experts estimate that about 40 percent of all engine problems can be traced to abnormal coolant conditions.

For more detailed information about antifreeze/coolant types and analysis, check out our *Engine Life* e-book.

CHAPTER #4

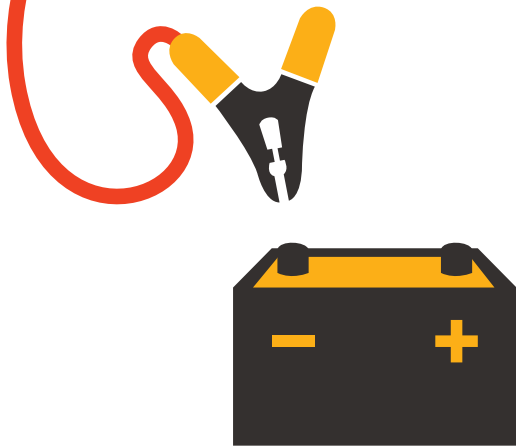
BATTERIES

Extreme heat can be hard on batteries, no matter if a vehicle utilizes a flooded or AGM (absorbent glass mat) battery. Battery degradation, which results in a loss of capacity, occurs much more rapidly in hot weather.

When a battery doesn't function correctly, it cannot start and crank the engine. This leads to a no-start which will contribute to vehicle downtime.

Here are some summertime battery prep tips:

- Inspect the batteries for bulges, cracks, or leaks.
- Be sure batteries are firmly mounted in place.
- Check the integrity of the battery cables where they connect to the battery and make certain the fasteners are secure.
- Check battery cables to ensure they aren't in contact with items that will wear through their insulation.
- Look for corrosion at the battery's terminal posts. If corrosion is present, clean it off and spray the connections with a protectant.
- Test the batteries at least once a year.



GOT ELECTRICAL ISSUES?

The vehicle's electrical system can also face many hot-weather related issues. To help avoid problems:

- Check to be sure electrical wiring is not loose
- Inspect for frayed or cracked insulation and for chafing and abrasion damage
- Look for signs of corrosion
- Check starter and alternator connections and ground wires to confirm that all connections are both clean and tight
- Make certain all lights and turn signals are operating properly

CHAPTER #5

TIRE INFLATION PRESSURE

Because of summertime's higher temperatures, the air pressure in a warm tire rises. Air is a gas, so it expands when it heats up and contracts when cooled.

Tire professionals advise against bleeding air from a hot tire to relieve normal pressure buildup. Bleeding air pressure will result in under-inflation because as a tire cools at the end of the shift or day, inflation pressure drops. The normal increase in pressure due to service conditions is 10 to 15 psi, which is allowable in a radial truck tire.

Checking and adjusting tire inflation pressure should always be done when tires are "cold," according to the professionals. This means after a vehicle has been parked about three hours, before it's been driven more than a mile, or before rising ambient temperatures or the sun's radiant heat affects the pressure.

Tire professionals also recommend:

- Inspecting tires every two hours or every 100 miles when driving in very hot weather.
- Checking tire inflation pressures on a regular basis—at least once a week—using a calibrated tire gauge to obtain an accurate reading.

Checking inflation is also a good time to:

- Look over tires for damage to the tread and sidewall area.
- Examine for uneven wear, which indicates the need for an alignment.
- Inspect wheels, looking for cracks and elongated bolt holes due to loose lug nuts.
- Be sure valve caps are installed on all valve stems and are tight.
- Be alert for anything out of the ordinary.



IT'S IN THE BOOK

When temperatures soar during the summer, the chances of tire problems increase.

Maintaining correct inflation pressure is by far what protects a tire's structural integrity and performance as it relates to temperature. Plus, it helps extend the life cycle of the casing through retreading.

To learn more about how to get the most out of your tires, check out our *Tires* e-book.

CHAPTER #6



WAYS FOR DRIVERS TO BEAT THE HEAT

It is important that drivers keep themselves cool and focused on the road during the hot summer months. Working in excessive heat and humidity can result in a variety of adverse health effects—from discomfort to serious illness, and even death.

Here are some things drivers can do to stay safe:

- Wear lightweight clothing that allows the skin to breathe. Light-colored clothing is best as it will reflect away some of the sun's heat.
- Wear a wide-brimmed hat and sunglasses and put on sunscreen. Sunburn affects the body's ability to cool down and can dehydrate a person.
- Stay hydrated. Whether or not you feel thirsty, drink plenty of water on a regular basis, especially when working outside. The body needs water to keep cool and protect against dehydration.

WAYS FOR DRIVERS TO BEAT THE HEAT (CONTINUED...)

- Slow down and avoid overexertion. If a driver must do strenuous activity, try to do it during the coolest part of the day, usually in the morning between 4 AM and 7 AM. Take frequent breaks in the shade or in air conditioning.
- Avoid drinks that contain alcohol or caffeine. They can make a person feel good briefly, but they will worsen the effects of heat on the body. Stay away from beer. It dehydrates.
- Eat small meals and eat them more often. Avoid hot and heavy meals as they add heat to the body.



HEATING UP?

Exposure to abnormal or prolonged amounts of heat and humidity without relief or adequate fluid intake can cause heat-related illnesses.

Heat-related illness—like heat exhaustion, heat stroke, and heat cramps—can happen when the body can't properly cool itself. While the body normally cools itself by sweating, this might not be enough during extreme heat.

In these instances, a person's body temperature rises faster than it can cool itself down. This can cause damage to the brain and other vital organs.

Heat-related illnesses are stressful to drivers who are fit. It is dangerous to drivers who have weight issues and underlying medical issues like high blood pressure.

Heat-related illnesses are preventable. Know the symptoms and what to do when you think there is a problem, with you or others.

Among the warning signs: high body temperature; rapid pulse; very heavy sweating; hot, red skin; headache; dizziness; confusion; nausea; vomiting; changes in consciousness; rapid, shallow breathing; and muscle cramps or spasms.

Additional information on heat-related illness can found on the Centers for Disease Control and Prevention's website at: <https://www.cdc.gov/disasters/extremeheat/warning.html>

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