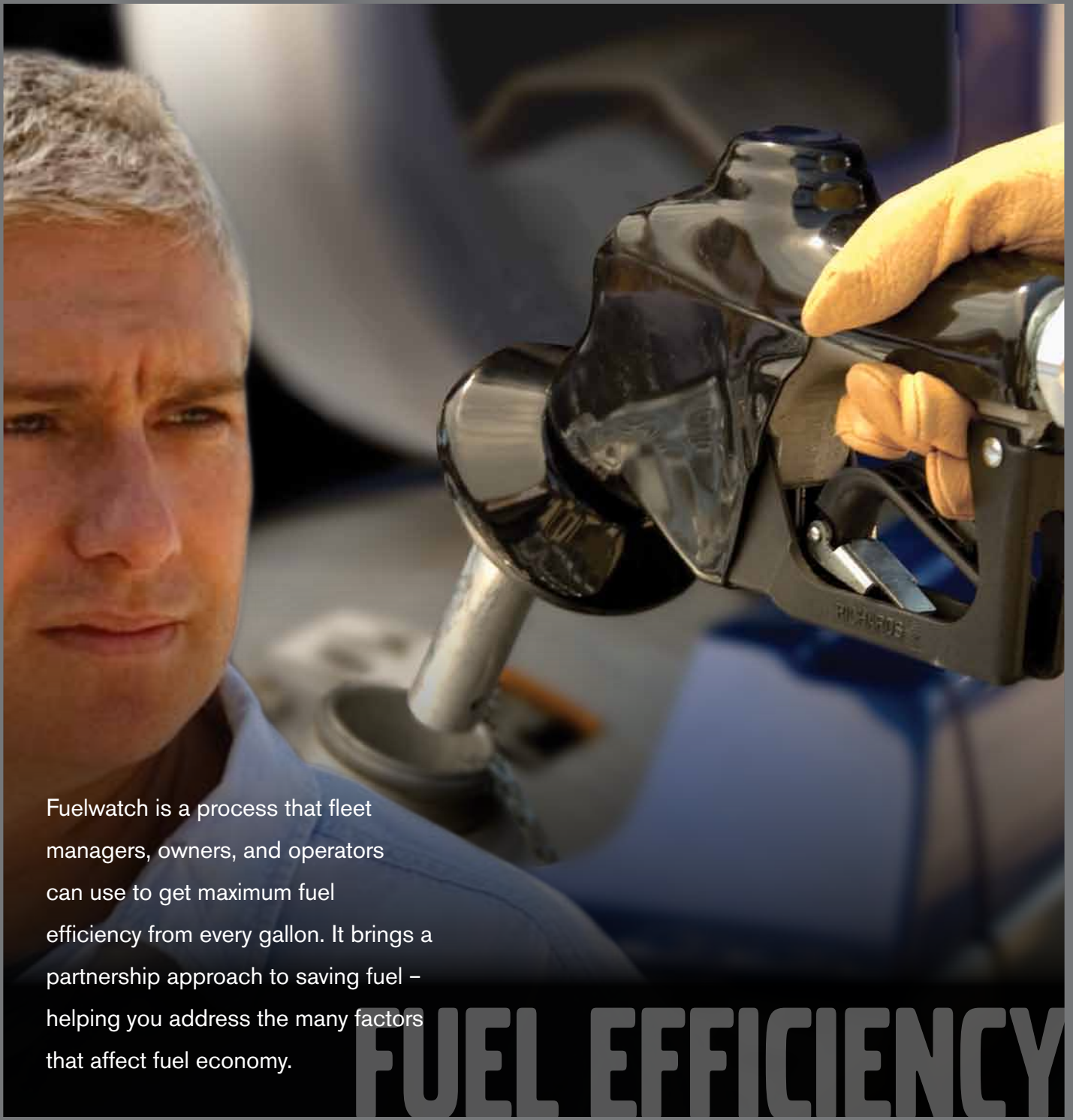


FUELWATCH

Volvo Trucks. Driving Success.®



Fuelwatch is a process that fleet managers, owners, and operators can use to get maximum fuel efficiency from every gallon. It brings a partnership approach to saving fuel – helping you address the many factors that affect fuel economy.

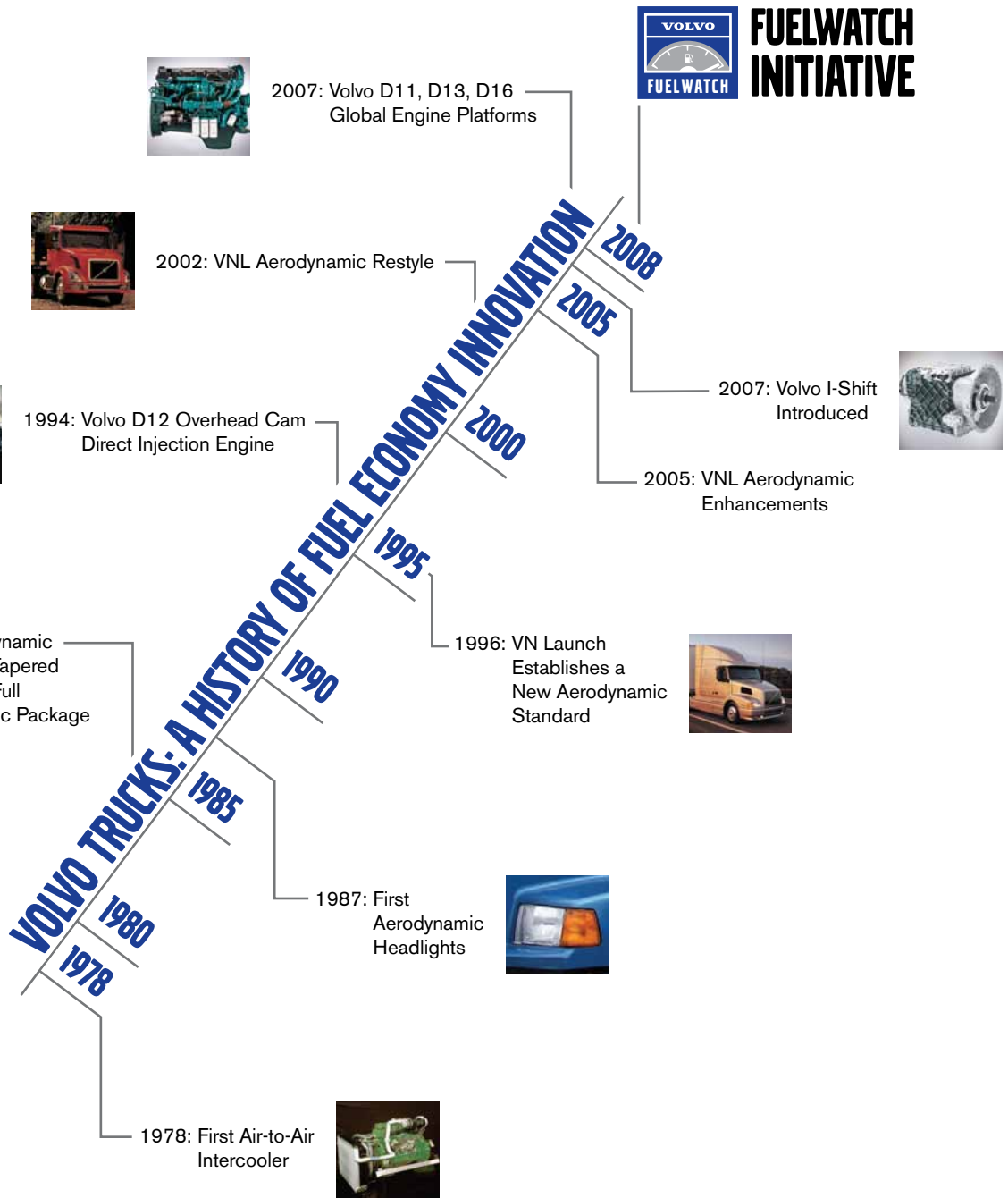
FUEL EFFICIENCY

COST-SAVING SOLUTIONS FOR VOLVO TRUCK OWNERS





FUELWATCH: SAVINGS STRATEGIES TO DRIVE YOUR SUCCESS



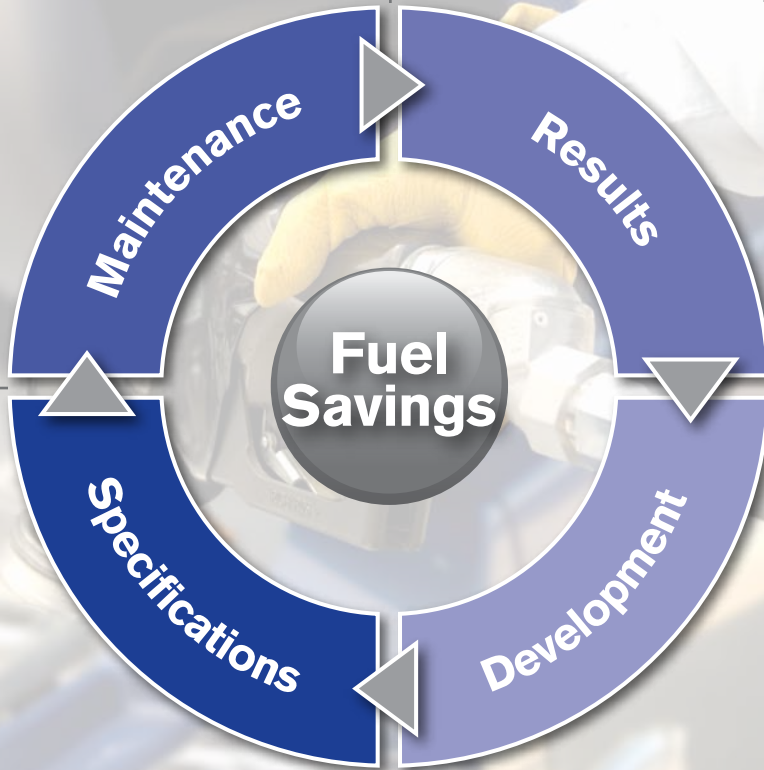
At Volvo Trucks, we've been focused on fuel efficiency—and protecting the environment—for decades. Today, we've condensed what we've learned into Fuelwatch: a comprehensive approach you can use to fuel your success.

OPTIMIZING FOR FUEL EFFICIENCY

Fuel Savings Maintenance:
Maintain Your Fuel Economy

OPERATING FOR FUEL EFFICIENCY

Monitor & Measure Results:
Track and Plan
Your Fuel Efficiency



Correct Specifications:
Getting It Right From the Start

Driver Development:
The Driver Delivers Your Final Results

Control your fuel costs.

The benefits of fuel economy are simple: you save money and reduce CO₂ emissions. But that doesn't mean it's easy. Lowering your fuel consumption depends on many factors—from the truck to the route to the driver.

Fuelwatch is a comprehensive approach you can use to achieve considerably lower fuel costs by addressing those critical areas

that affect fuel economy. Using Volvo as your partner, you see where the savings are, and how to capture them. It starts when your vehicle is ordered and you match the right specifications for your application. Next, fuel-saving maintenance tips help you keep your vehicle operating at peak performance. And finally, **Fuelwatch** gives operators tools and techniques to keep driving for maximum fuel economy and performance.



FUELWATCH: OPTIMIZING FOR FUEL EFFICIENCY

Want to cut your fuel costs? Start smart. Fuelwatch helps you match your application with the best specs for your new Volvo truck. Plus you'll have a complete maintenance solution to keep your Volvo truck operating at peak fuel efficiency.

CORRECT SPECIFICATIONS | Getting It Right From The Start

Fuelwatch helps you look at key specifications, including:

Aerodynamics

- Volvo's smooth lines and minimal obstructions maintain air attachment to the chassis—most effective above 50 mph.
- Chassis fairings contribute to improving airflow and fuel efficiency.

Optimized Trailer Gap and Height

- Volvo optimizes trailer gap for the application: every 10" over 32-36" equals 1.5% loss.
- A tractor-to-trailer height mismatch can rob fuel economy 7-10%, even for short runs at highway speed.
- Volvo's patented adjustable trim tab further improves fuel economy up to 2%.

Anti-Idle Measures

- Additional idle savings devices can also reduce fuel consumed at idle, such as idle shut down, cab heaters, shore power, battery-powered HVACs and APUs.
- When required to idle, idle at 650 RPMs vs 1000 RPMs to save 0.5 gals/hr.

Volvo Family of Engines

- Optimize fuel performance by matching the engine to the application.

Volvo I-Shift Transmission

- The Volvo I-Shift transmission with Eco-Roll turns vehicle momentum into fuel savings.

Fuel-Efficient Tires

- Specify EPA Smartway tires for lower rolling resistance, or wide-base single drive tires for weight savings and less sidewall flexing losses.

CAB AND CHASSIS

Cab & Chassis Specifications

To select the right tool for the job, you first have to understand how you'll be using that tool.

It's the same for trucks. With skyrocketing fuel prices, we no longer have the luxury of "one spec fits all." Today, it is more important than ever to choose the right truck for your needs. **Fuelwatch** gives you a simple way to look at your application and the results you need. Then, it helps you select the truck specifications that best match the requirements of your application to deliver the best mix of performance and fuel economy.

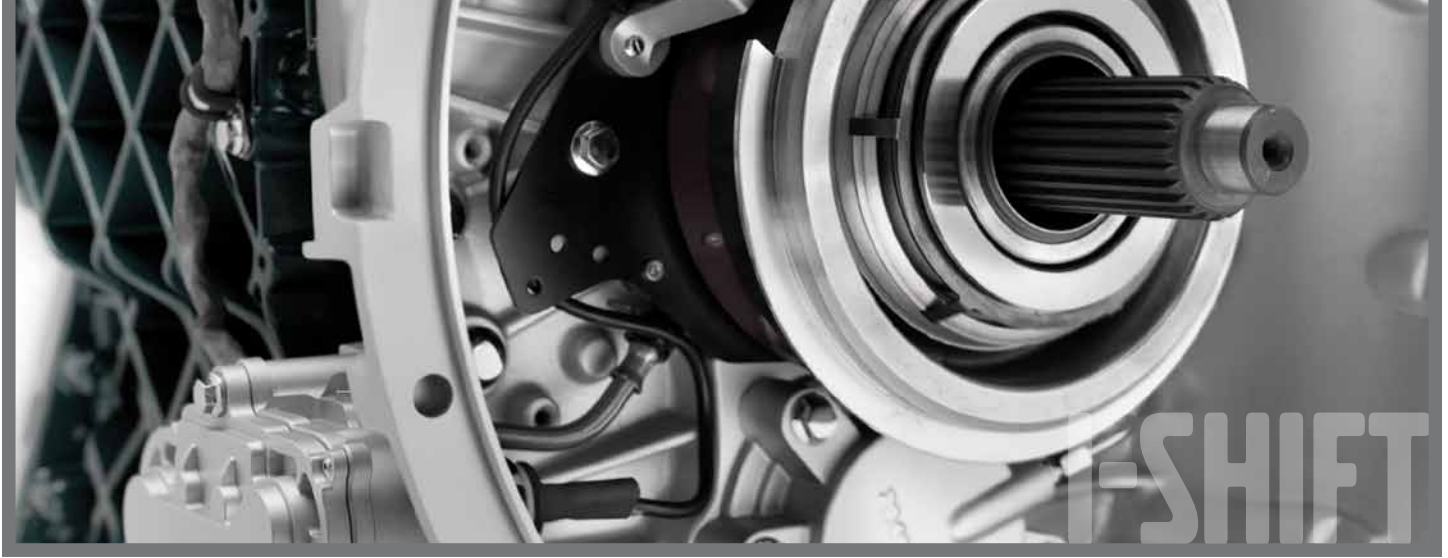


Spec Smarter with SmartWay

VNL sleepers are designed to meet the EPA SmartWay® Transport Partnership requirements. So when you start with a Volvo SmartWay spec, you take important steps toward cleaner, more efficient transportation—using fuel-saving strategies that can help increase your profits while reducing greenhouse gases and air pollution.

When compared to a non-EPA SmartWay Tractor:

- An EPA SmartWay Tractor reduces operating cost by using less fuel.
- An EPA SmartWay Tractor helps provide higher resale value.



DRIVETRAIN

Drivetrain Specifications

Everyone loves to talk about horsepower, but that's not the real secret to performance. Today, to achieve optimal performance and fuel efficiency, you have to think about engine torque, transmission, rear axle ratio, and more.

How much torque should you specify? Enough so that on a highway cruise, you can remain in the highest gear 90% or more of the distance driven. While terrain and axle ratio are factors, this roughly translates into 1450 lb-ft for up to 65,000 pounds; 1650 lb-ft for 80,000 pounds; and 1850 lb-ft for 110,000 lbs.

Fuelwatch can help you calculate the power and performance you need for your application. **Fuelwatch** then matches the right drivetrain components to deliver the results and fuel efficiency you need.

Since the 1970s, engine rpm at cruise has been progressively lowered. With Volvo's EPA 2007 engines, suggested operating ranges have been lowered even further—to 1300-1500 rpm at cruise. When you spec your Volvo truck, consider rear axle ratio, transmission ratio, and tire size—with your gross weight and average cruise speed—to achieve this cruising rpm for best fuel economy.

Some tips for fuel economy:

- Specify the Volvo I-Shift transmission—it makes every driver capable of shifting as well as the best, most experienced driver. The unique ability to skip shift allows the engine to operate most effectively and eliminates wasted fuel in unnecessary gears.
- Volvo I-Shift features Eco-Roll, which allows the engine to idle on some downhill grades, increasing fuel efficiency.
- Direct drive transmissions have straight-through power flow from the input shaft through to the output shaft, and will save 1.5% compared to overdrive. However, you will need a low axle ratio (such as 2.64:1); but depending on your cruise speed, even that may not be low enough. As more and more companies reduce their cruise speeds to 62 mph, there are more advantages to direct drive.



Buying the right truck is an important step toward maximizing fuel efficiency. But you also have to keep it operating at its best.

Fuelwatch helps you keep up with scheduled preventive maintenance on your Volvo truck. In return, you can realize significant fuel savings and improved uptime. Even small items can rob you of fuel economy, so carefully follow OEM recommendations and use genuine Volvo parts. You'll see longer life of the drivetrain components and better, more fuel-efficient performance.

Lubricants

From engine oil to differential lubricants, exciting new products are being developed to improve the efficiency of the truck drivetrain. Changing your lubricants as recommended can protect your fuel mileage. Lubricants that are carrying dirt and soot cause increased friction and reduce engine efficiency. Your Volvo dealer is also your source for synthetic differential lubricants that can reduce friction and raise the operating efficiency of the drivetrain.

Tire Pressure Monitoring

If you've ever pushed a wheelbarrow with a tire that wasn't fully inflated, you have experienced "rolling resistance." Imagine trying to move 80,000 lbs with tires that are under inflated, and you can see how this hurts your fuel economy. Your Volvo dealer can make it easy to keep your tires properly inflated with a tire pressure monitoring system you can check at a glance.

Software

Software governs the operation of your engine to make sure you have the power you need for your application. Volvo has many engine software options. So if your needs change along the way, your engine can be reprogrammed to make sure your truck reflects that change—many times without any parts changes. Make sure your operating software provides the efficiency by talking to your local Volvo service department.

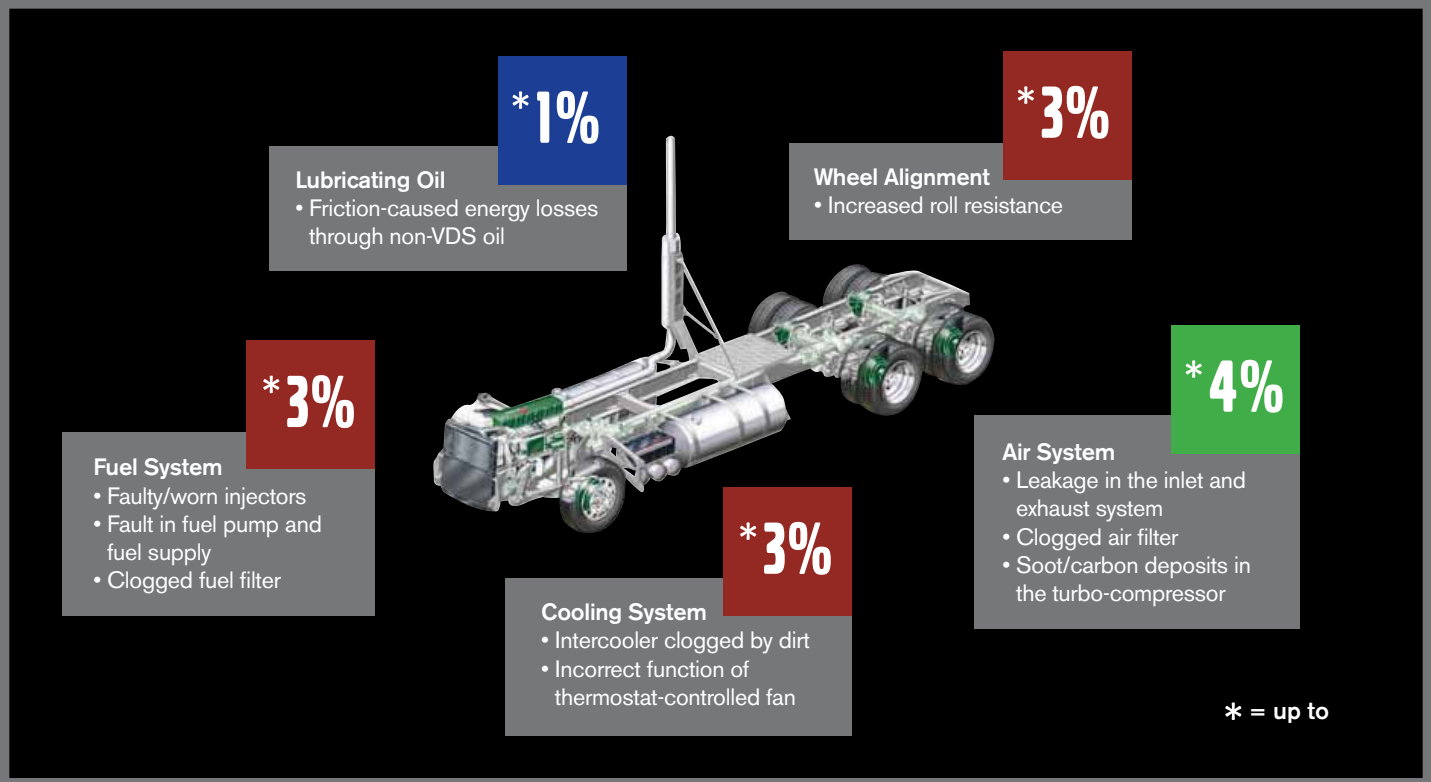
Tips for fuel economy:

- Check and clean the radiator and AC system (condensor) each season to reduce unwanted air restrictions that can rob fuel economy.
- A dirty air filter robs fuel, so pay attention—especially when operating in a dusty environment. Also check for DPF Filter restriction.
- Check Charge Air Cooler for leaks.
- Check fuel system. During winter, adopt a shorter fuel filter interval (1/2) to avoid the risk of fuel filter clogging—which can cause a huge pressure drop that affects engine performance and fuel economy.
- Adjust the oil filter change time and adapt the oil viscosity to the season (Fall & Winter vs. Spring & Summer).
- Proper wheel alignment and tire pressure for truck and trailer will reduce rolling resistance and improve fuel economy.





Without proper maintenance, wear and tear may slowly affect some systems negatively with regard to fuel efficiency:



Keeping your truck or fleet on a good preventive service program will save fuel and will help you keep each vehicle in the best possible condition for every demanding load.



FUELWATCH: OPERATING FOR FUEL EFFICIENCY

Once you've determined the best specifications for your new Volvo truck, Fuelwatch will help you operate it most efficiently. With Volvo Link you can monitor all critical functions that affect fuel consumption. Training your drivers can help them learn how to get the most mileage out of every drop of fuel.

MONITOR & MEASURE RESULTS | Track and Plan Your Fuel Efficiency



Vehicle Data

VOLVO LINK

With today's high fuel prices, you can't afford to guess. When it comes to fuel economy, knowledge really is power—and profits—when you can measure and monitor your operating efficiency. Only then can you track and plan for bottom line improvements within your fleet.

With Volvo Link and Sentry standard on every Volvo truck, you can always stay connected to verify your vehicle's performance results. This will allow fleet managers to identify and make adjustments for even better fuel efficiencies.

Sentry—a service of Volvo Link—gives you weekly vehicle data updates and the ability to optimize your fuel economy. With Sentry vehicle data, you can save fuel and boost mpg. It's also a valuable tool for additional uptime support through Volvo's roadside assistance group, Volvo Action Service. New Volvo trucks with Volvo Link include 2 years of Sentry service at no charge.

Fleet Dashboard: Identify Trends to Maintain Overall Performance

	Last Report	Last Month	3 Months Prior	Trend
Distance (miles)	15,689.70	72,571.63	202,432.26	
Fuel Used (gal)	2,185.38	10,164.48	32,469.43	
Fuel Economy	7.18	7.14	6.23	●
Mpg - Best	7.46 +	7.53 +	6.57 +	●
Mpg - Worst	6.96 +	6.66 +	5.87 +	●
Idle Time (%)	0.42	4.23	7.24	●
Idle Time - Best	3.51 +	2.20 +	1.89 +	●
Idle Time - worst	19.55 +	5.84 +	27.70 +	●
Sweet Spot (%)	67.29	76.37	69.30	●

Performance Ranking: Identify Exceptions to Pinpoint Areas for Improvement

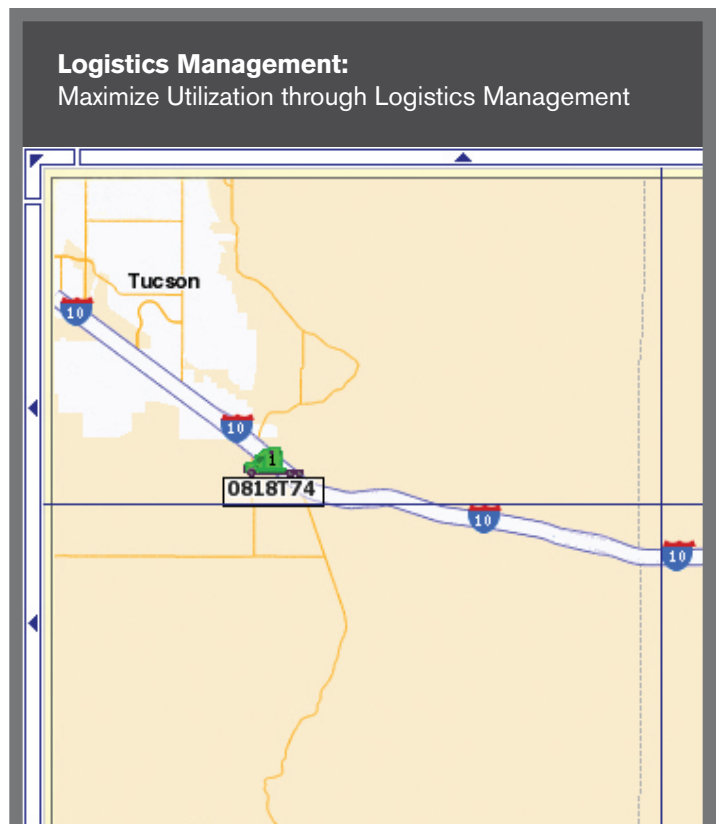
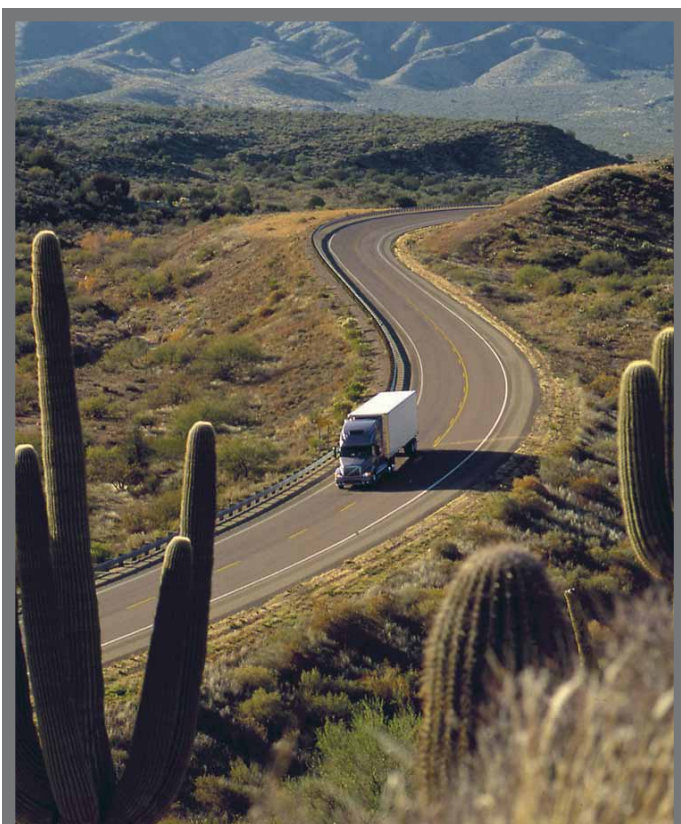
Fuel Economy (Best) - Last Report

Alias	Distance	Fuel used	Economy
2282	3,421.10	422.50	8.10
2281	3,043.50	389.75	7.81
2285	149.40	19.50	7.66
2278	2,962.10	389.00	7.61
2279	2,547.20	342.75	7.43



Extended Services

Volvo Link gives you additional tools to improve how vehicles are used and to reduce overall fuel operating costs. With extended services, you can track the activities of your vehicles by location to improve usage, perform fuel tax reporting, or plan your route based on fuel usage. When you stay connected to your vehicles and track their performance results, you can plan for even more savings by ensuring that they are properly maintained.



Perhaps the greatest key to success for any operator is understanding their vehicle. And understanding how to get the most from your Volvo truck can help you drive greater fuel efficiency.

Electronic settings available with every Volvo engine can be set to help the driver in specific—and often less obvious—activities. Maximum road speed has a dramatic effect on fuel economy, and the Volvo Road Speed Limit—set for reasonable road speeds—helps many operators reduce fuel consumption.

Another effective option is the “Elastic” Road Speed Limit Control, which allows the truck to slow 2 mph on upgrades before responding to the throttle for maximum power to maintain road speed. And Volvo’s Differential Road Speed Governor encourages the driver to operate in top gear for maximum fuel economy.

Operation:

- Allow engine to lug down (shift between 1 150 and 1500 rpm).
- Make as few shifts as possible (skip shift).
- Try to stay in top gear at least 85-90% of the distance in a normal highway application.
- When approaching the crown of a hill or red light, release the accelerator and use the truck’s own momentum to save fuel.

Idle Time:

- With an idle time of 10% of total engine hours, you’ll see a 1% fuel economy loss.

Speed:

- Slow down; a 1 mph increase equals a loss of 0.1 mpg.

Terrain and Routes:

- Steady (average) speed is better than many small up and down speed changes; each acceleration between 0-65 mph uses about 1/2 gallon of fuel or the equivalent of 4-5 minutes of typical highway driving.
- Stop/Go/Traffic Accelerations have a HUGE impact.
- On a smooth, flat stretch of road, utilize cruise control to supply a more even amount of fuel.





Guiding Drivers to Better Performance.

Performance Guide is a unique ride-along “coach” in the Volvo Driver Instrumentation Display that tells the driver how to operate the engine for best fuel economy. It may be combined with Volvo Trucks’ **Performance Bonus** to create an incentive when the driver operates the vehicle to maintain the maximum amount of time in the engine’s sweet spot. This incentive can be added road speed, certain I-Shift functions, or part of the employee’s compensation package. Either way, it can help save fuel.

Cut Your Costs With Driver Training

The driver is the key to vehicle performance. That’s why effective driver training can pay off almost immediately. In fact, tests show drivers who adopt more fuel-efficient driving techniques can reduce fuel costs 5% or greater. Economical driving is all about awareness and planning. By adopting a number of simple techniques, drivers can contribute to cutting both fuel costs and CO₂ emissions. Courses in economical driving can bring operators up to speed on modern engine technologies and how to get the most out of their engine and vehicle for safer, more efficient driving.

Performance Guide, active over 25 mph, includes the following aids for the driver:



If the driver uses too many revs, the RPM DOWN reminder tells him to upshift to bring it back to the sweet spot.



There are times when the rpm is in the sweet spot but the driver is using too much throttle. Easing up slightly will bring him into the sweet spot. This function also illuminates in cruise control.



As the parameters approach the sweet spot, a single dollar sign illuminates. Half of the fuel burned goes toward meeting the target percentage of fuel burned in the sweet spot.



When all the parameters meet the requirements, the double dollar sign illuminates and all fuel burned goes toward meeting the target. This symbol will even illuminate at full throttle if the rpm is below 1350 rpm, showing that mode is a very efficient way to run the engine.



When the target is achieved, the trophy illuminates. If Performance Bonus is achieved, the driver can receive certain incentives, which might include an increase to the road speed, enabling of special I-Shift functions, or other recognition or rewards.



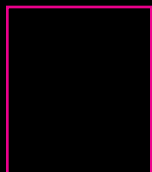
WE'RE LOOKING OUT FOR YOUR BOTTOM LINE

Volvo Trucks has a 50-year history of fuel economy innovation. Today, Fuelwatch takes the next step, putting you on the road to better fuel efficiency.

Fuelwatch is your best solution for new Volvo trucks, as it helps you optimize the components of each truck to match your specific routes and applications. It's also your best approach for fleet vehicles you already operate, as you can achieve significant savings by properly maintaining your vehicles and training and rewarding drivers.

It's no secret that fuel prices account for a larger portion of your company's total operating costs. Count on Fuelwatch to help you reduce fuel consumption and fuel costs. Contact your Volvo dealer today for complete information.

* Information in this brochure was current at the time of publication. For the latest and complete listing of fuel advantages, contact your local Volvo Truck dealer. Savings shown are estimates only, subject to operating conditions and not to be applied in aggregate.



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