



Volvo Trucks. Driving Progress

# STAY IN POWER

Battery consumption awareness





This brochure helps you get the most out of your truck batteries. It includes easy-to-follow tips that maximise battery life and minimise the risk of unplanned stops.

# Five ways to prolong battery lifetime

A switched-off engine is the real challenge for a battery. Consumers and systems need power, and if too much battery capacity is used, the truck might not start. Minimise that risk by doing the five things below.



## RECHARGE YOUR BATTERY OFTEN.

You must top charge your battery at least every three weeks. But do it whenever there's an opportunity, such as on overnight stops or weekend breaks. A top charged battery cuts fuel consumption and makes the vehicle more reliable.



## TURN OFF CONSUMERS WHEN NOT

**REQUIRED.** Everything from the fridge to charging your phone drains the battery when the engine is switched off. Use consumers wisely, especially during long stops.



## KEEP AN EYE ON THE BATTERY STATUS

**INDICATIONS.** The driver display shows status and current usage, and sends out alerts if for instance there's a low state of charge. Follow this advice – it prolongs battery lifetime.



## CHOOSE THE RIGHT VEHICLE MODE DURING STOPS:

- Parking Mode is always the preferred choice when no active use of cab features is needed
- If you need access to cab features, choose Living Mode, but make sure to activate Parking Mode as soon as you're finished
- Accessory Mode adds more possibilities to use cab features. Use this restrictively though in order not to drain the batteries
- Remember to be economical and turn off consumers that aren't needed!



## BE EXTRA CAREFUL IN THE WINTER.

A temperature drop from +20°C to -18°C cuts battery capacity by 50%. Pay extra attention to the battery's condition and the preventive handling of electrical consumers when the vehicle isn't in operation.

For a closer look at these, please turn the page ►►

# Get to know your consumers

Consumers require power. Below you can see how some of the most popular ones affect battery performance. If you use the fridge, cooler/heater, lights and entertainment for ten hours, they might require 170 Ah. As a 225Ah battery can only use 50% of its energy before lifetime is reduced this might drain the battery so you can't start the truck.



**THE FRIDGE.** It consumes 1-3Ah per hour (more if it's hot outside). If left on over the weekend, it drains more than 50% of a fully charged battery. If the battery was only partially charged, your truck will be deeply discharged due to the consumption of the fridge.



**I-PARK COOLER.** It consumes 10-30Ah per hour and shuts off when the state of charge is 45%. If it's 30°C outside, you can use it for 8-10 hours if you put the cabin temperature to 26°C. But if you want 20°C, Always set the cab temperature to a moderate level compared to the outside temperature.



**PARKING HEATER.** This one uses 4-10Ah per hour. Together with the I-Park Cooler, this is the major consumer during longer stops. As it's normally used in cold temperatures, you must keep in mind that the battery's energy level is already substantially lower. For instance, you only have 50% capacity at an outside temperature of -18°C.



**LIGHTS AND ENTERTAINMENT.** These are heavy consumers. Interior lights require approximately 5Ah per hour. And if you plug your TV and audio system into the AUX input to watch movies or use your laptop, you use another 4-5Ah per hour.

## Some practical consumer advice

### WHEN THE ENGINE IS ON

- Charge external consumers (phones, laptops etc.) in a safe way
- Plan the cab temperature, set it at a moderate level compared to the outside temperature (i.e. 26°C if 30°C outside). Pre-cool your cab by idling the engine and using the normal climate system before you park the vehicle and turn on I-Park Cooler

### WHEN THE ENGINE IS OFF

- Shut down unnecessary consumers, as you're only using up battery energy
- If you use I-Park Cooler, adjust to a moderate level as the battery drains quicker with a bigger difference between cab and outside temperatures

- Turn off interior lights when they're not needed, they use the same amount of energy as a parking heater
- Avoid, for example, spot lamps, trailer lamps, extra side lamps and parking lights (especially non-LED)

### AVOID EXTERNAL POWER CONVERTERS

These have a consumption of 1-2 A/h, even when nothing is connected. If you must use them, disconnect them immediately when not used.

# Choose the right Vehicle Mode

There are three non-driving modes. Living and Accessory should only be used when access to cab features is needed. When no active use of cab features is needed, choose Parking Mode.

Vehicle Mode	Consumption/h	Time before alerts when it's +20°C (capacity 100%)	Time before alerts when it's -18°C (capacity 50%)	Functions
Accessory	10.9-28.5A	3-9 h	1-4 h	Living + Climate, Window lift, Wipe & Wash, Mirror defrost, Mirror adjustment, Transport mgmt, Coffee maker.
Living	4.5-16.5A	6-22 h	3-11 h	Parking + Lock, Interior light, Audio, Fridge, Security, Comfort and Recreation.
Parking	0.03-0.5A	168-1000 h (1-6 weeks)	96-500 h (4 days-3 weeks)	Un-lock, Remote Key Entry, Alarm, Parking heater, Parking cooler, Park light.

For a full explanation of the functions of each mode, please consult your local Volvo dealer.

## Save the most power – go to Parking Mode

Putting your vehicle into Parking Mode shuts off functions like the fridge, comfort and recreation, interior light and audio. This saves a lot of battery capacity. If you're away from your truck, this is highly recommended.

### HOW TO ENTER PARKING MODE.

There are three ways to enter Parking Mode, depending on variant specification:

- Automatically by a **timer** (see **Delay time between Living and Parking Mode**)
- Manually\* by turning the **main switch** (red main switch on the battery box or fender stay)
- Manually\* by pressing the lock button on your **key fob** twice (the direction indicators will give a long flash followed by four short flashes to indicate Parking Mode)

\* Consult your local dealer or workshop if you're not sure what kind of setup your specific vehicle is equipped with.

### DELAY TIME BETWEEN LIVING AND PARKING MODE.

The Living to Parking timer function is active on all trucks and it will automatically put your vehicle into Parking Mode after a preset timer value. The default value is set to 12h, but the timer value can be reduced to optimize battery lifetime.

The timer starts counting when you either:

- Unlock the doors
- Put the ignition key in the "0" position

\* Consult your local dealer or workshop to find the most suitable timer value for your operating profile.

### DO YOU NEED THE FRIDGE?

A fridge consumes up to 15Ah on a five-hour stop. This takes away approximately 15% of the battery's energy.

If you don't need the fridge it's recommended to go to Parking Mode whenever possible. If you choose to run the fridge during longer breaks, just let the vehicle go to Parking Mode automatically via the Living to Parking timer function.

The fridge timer function is active on all trucks and it will automatically shut down the fridge after a preset timer value.

The default value is set to 45h, but the timer value can be reduced to optimize battery lifetime.

\* Consult your local dealer or workshop to find the most suitable timer value for your operating profile

# Keep an eye on Battery Status Indications

The state of the battery is shown in the Driver Display. Learn to understand this information and act on it. It minimises the risk of battery problems.



**THE BATTERY STATUS WINDOW** shows the status. On the bottom right you see the current usage (-8 A). This indicates what your consumers use.



**A TIP:** Set this window as default in your favourite menu.



**THE STATUS BAR** shows how much energy you have left. When the battery temperature decreases, so does the maximum battery energy capacity.

The energy reserve needed to crank

The state of charge (each box = 10-15%)

How much your batteries can still be charged

Loss of capacity due to cold weather

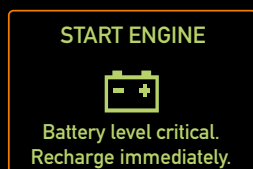


## HOW TO ACT ON A PRE-ALERT WARNING

When the battery capacity falls to 50%, its lifetime is reduced. At 45%, there's a Pre-Alert. If this happens, please:

- Charge the battery to prolong lifetime and ensure that the vehicle starts
- If that's not possible, shut down as many consumers as possible

- If you're staying in the vehicle, shut off interior/ exterior lights, parking cooler, entertainment, chargers, the fridge and then charge the batteries
- If you're not staying in the vehicle, force the truck into Parking Mode and charge the batteries



## HOW TO ACT ON AN ALERT WARNING

This indicates that the battery energy level is critical, i.e. below 35% of its capacity. If this happens you must **immediately charge** the batteries.

If not, you might face a breakdown due to insufficient battery power for cranking the engine.

# Charging and maintenance tips

The key to a long and reliable battery life is frequent charging and proper maintenance. Here are a few things to remember.

**TOP CHARGE AT LEAST EVERY THIRD WEEK.** A battery should be recharged whenever possible, and you should use an external charger (min 20A). If you use an alternator, you can only top charge (up to 90%) if it's at least +25°C outside, due to regulations concerning charging voltage (max 28.8V). The battery chargers we recommend have intelligent charge controls and temperature compensation. This ensures higher voltage charges and helps maximise battery lifetime.

## DURING LONGER STOPS – PLUG IN A BATTERY CHARGER.

Examples of stop scenarios:

- The driver spends the night/weekend in the cab: If possible, plug in a battery charger (min 20A).
- The driver leaves the truck for the night/weekend: Always plug in a battery charger (min 20A).

This gives you fully charged batteries and saves fuel since you won't use the alternator to charge the batteries while driving.

**N.B.** Charging by alternator uses approximately 1.5 litres of diesel (€2) as fuel consumption increases by 1.5% during charging.

## BEWARE OF COLD WEATHER.

This harms battery capacity and chargeability. A 225Ah battery only has 110Ah left at -18°C. Please note that you get an Alert warning at 35% of 225 Ah, i.e. at 80Ah. This means that you only have 30Ah for on-board living in this situation as 80Ah is required to start the engine. Therefore, only use a minimal number of consumers and charge even more often in cold temperatures.



Some things to note:

- At 0°C, you get warning messages, even with a fully working battery
- Below 0°C, chargeability is reduced by up to 94%
- At -15°C, the battery indication is shut off to save battery energy
- Full capacity and chargeability are restored at +25°C

**KEEP EVERYTHING CLEAN.** To guarantee a good connection between battery and the B+ cable, make sure to keep them clean.

## Three smart accessories

**SOME TYPES OF TRANSPORTS** are extra demanding. And due to unforeseen events, you might need to use more battery power than planned. It's wise to have these three installed in your vehicle.

### Volvo Battery Charger

This helps you charge the batteries and guarantees that a top charge can be provided even in cold weather (unlike when you use alternators). We offer the following types of chargers (like the one shown on the right):

- Chargers for vehicle fitting
- External chargers for use without fitting

All chargers have min. 20A and intelligence to avoid overcharging.

### Extension cord kit

This 5-metre 220V cord connects your truck to external charge stations. Especially useful when such stations are awkwardly placed or too far away for the regular connection cord.



### Volvo Battery Reconditioner

Removes and prevents sulphation. This helps you avoid discharges that could ruin the battery.



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