

V O L V O



# VNR SAFETY SYSTEMS

Volvo Trucks. Driving Progress





## Safety drives everything

From the roads we've conquered to the road ahead, safety has been and will continue to be our top priority.

We are constantly striving to reduce injury and make it easier for drivers to avoid issues before they occur.

At Volvo Trucks, developing safety innovations drivers can use to protect themselves and everyone else on the road is a process that never ends. We have a vision of Zero Accidents and continue to work toward that vision every day.

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**VOLVO**



## New safety innovations on the all-new Volvo VNR

The all-new Volvo VNR offers lots of new safety features. It's almost impossible to choose the most important innovations that have been added, but we've done our best. Here's our list of the top new safety options available in this incredible truck.



### Emergency calling system

In the event of a rollover or airbag deployment, the truck will automatically call 911 to summon help to the scene.



### Pedestrian detection

The VNR comes standard with our long-range forward collision mitigation system which detects other road users, including pedestrians and cyclists.



### Camera Monitor System (CMS)

An optional, integrated CMS provides superior rear views during backing and lane changes. The CMS is equipped with infrared technology for improved visibility in low light.



### Next-generation Volvo Dynamic Steering (VDS)

The latest improvements to VDS include Oversteer Guidance, which can prevent driver overcorrections, as well as optional personal settings to customize steering feel.



### Road Sign Recognition

A forward-looking camera automatically identifies common road signs and displays up to three of them in the instrument panel, giving the driver a quick reference of last signs passed.



### Automated high beams and cornering lamps

Intelligent headlights can switch high beams on and off automatically while cornering lights provide improved visibility in turns at low speeds or while in reverse.



### Active Driver Assist

Our next-generation Active Driver Assist package comes standard on the new VNR. It is designed to help drivers mitigate forward collisions.



### Active Driver Assist Plus

The optional new Active Driver Assist Plus package provides support for lane changes and lane keeping, as well as passenger blind spot detection.

Read on to learn about these and more.



# For the good of all

Volvo Trucks is committed to a vision of Zero Accidents, because it’s the only number that’s acceptable. It’s a never-ending process, but it drives continuous development of new safety features. That Zero Accident vision led to the all-new VNR being one of the safest trucks we’ve ever built in North America.

When you build a truck from scratch, you can integrate safety systems from the start. The new VNR features the Volvo Active Safety Platform. This allows our proprietary technologies to work together seamlessly. We were able to fully envision all systems working together, giving drivers more tools than ever to help mitigate accidents before they occur.

You can choose a VNR equipped with either our standard or advanced safety package for accident mitigation:

Volvo Active Driver Assist (VADA) Standard Package
Long-range forward pedestrian detection and mitigation
Forward collision warning and mitigation
Lane departure warning
Adaptive cruise control with stop-and-go
Automatic emergency braking

*Volvo Dynamic Steering may be added as an option on the standard VADA package*

VADA Plus Optional Advanced Package
All standard VADA package elements <b>plus:</b>
Volvo Dynamic Steering with oversteer guidance
Lane keep support
Lane change support alert (blind spots)
Short-range, passenger-side pedestrian detection system (alert only)





## Pedestrian detection

Drivers can now benefit from an extra set of “eyes” in congested urban areas. The radar/camera fusion system can provide long-range detection of pedestrians ahead, while short-range detection senses pedestrians and bicyclists that may appear in lateral blind spots on either side of the truck and trailer. Door Opening Warning radar sensors scan

both sides of the truck to alert the driver and the passenger of other road users before opening any of the cab doors. If a door is already open and a road user is approaching, a warning light appears in the DID. The system can provide warnings up to two minutes after the ignition is switched off.



# More visibility. Less risk.

## Innovative camera system options debut in the VNR

The VNR features a host of new camera solutions. On the cutting edge is our optional, fully-integrated Camera Monitor System (CMS). It replaces traditional side mirrors for better aerodynamics because the displays are situated inside the cab on the A-pillar. They provide superior visibility, which can lead to safer lane changes and backing. The system features infrared technology offering sharper views in low light. Cameras track the rear corner and reference lines are shown to indicate the rear of the trailer while driving. The CMS works even in double trailer applications. The cameras sit encased high above each door, offering an overall wider viewing angle and reduced road spray effects.

### Back-up camera

A camera positioned on the back of the cab provides an excellent view of the back of chassis and fifth wheel, making trailer connect much easier. The camera activates as soon as reverse is engaged. This camera will be viewed either through the Instrument Cluster or on the Infotainment System screen.

### Multi-camera system connections

With the Volvo multi-camera system installed on your VNR via the optional Infotainment Center you can connect up to six additional cameras. Camera units can be placed where you need them most on the truck, based on your application.

### Lens covers

Each Volvo proprietary back-up camera and multi-camera system unit (digital and analog) features a camera lens cover. The covers open only when that view is on screen, protecting the lens from dirt and damage when the unit is not in use. The lenses themselves are heated to prevent ice buildup.

### Infrared technology

All Volvo proprietary cameras feature infrared technology. This improves visibility in low-light conditions. It can also create sharper views in dark warehouses or alleys where ambient light is insufficient. Infrared technology is available when you choose Volvo cameras for the Camera Monitoring System, back-up camera, or the multi-camera system.





#### Road sign recognition

A forward-looking camera can recognize many road signs ahead of time and display them right in the instrument panel. Overspeed warnings, based on the last posted speed limit sign, can be enabled.



#### Intelligent lighting

Automatic high beams automatically turn on and off based on surrounding light environment to deliver optimal driver visibility. Cornering lamps anticipate needed sightlines, providing additional lighting for entering turns at low speeds and also when reversing.



#### High-visibility grab handles

Grab handles come standard for safer cab entry and exit. They are standard for back of cab (BOC) access as well. A high-visibility color option is available for interior and BOC handles.



#### CO and smoke detector

An alarm alerts drivers when increased levels of smoke or carbon monoxide are detected and helps reduce the risk of smoke inhalation. This is especially helpful when drivers are asleep in the cab.



#### Electronic braking

An improved electronic braking system provides better balance between truck and trailer brakes. When faster braking is required, the system seamlessly blends the engine brake with foundation brakes.



#### Parking brake

The next-generation parking brake engages automatically if the truck is put in neutral and the driver door is opened. Auto-release occurs if the truck is placed in gear and the accelerator is pressed.

## Safety you can see and feel

Drivers know that two of the most important aspects of safety are visibility and maneuverability. The Volvo VNR excels at both.

Designed with a unique slope and curvature, our panoramic windshield provides drivers with a clear, unobstructed view of the road. Greater visibility gives drivers more time to react, further reducing risk of collision. The driver's seat position can adjust as needed to take full advantage of the already exceptional sight lines.

Drivers will also find the VNR much easier to operate in tight spaces and congested areas, helping them protect people and property. Our 50 degree wheel cut and superior wall-to-wall turning radius make the VNR the envy of the industry. All of this is complimented by Volvo Dynamic Steering and the I-Shift transmission, making steering at low-speeds easier than ever.



## Ready for every “what if”

At Volvo Trucks, we know that regardless of how sophisticated the technology and how careful the driver, there may be situations where an accident is unavoidable. Our newest VNRs are outfitted with intelligent driver protection features designed to reduce risk of serious injury and potentially save lives during an accident.

### High-Strength Steel construction

Our High-Strength Steel (HSS) cab is designed to absorb and deflect the energy of a crash, reducing the chance of injury. HSS delivers a strength-to-weight ratio that's three times stronger than standard aluminum. Greater rigidity and strength in the cab and increased structural integrity improve our vehicles' ability to withstand severe external impacts.

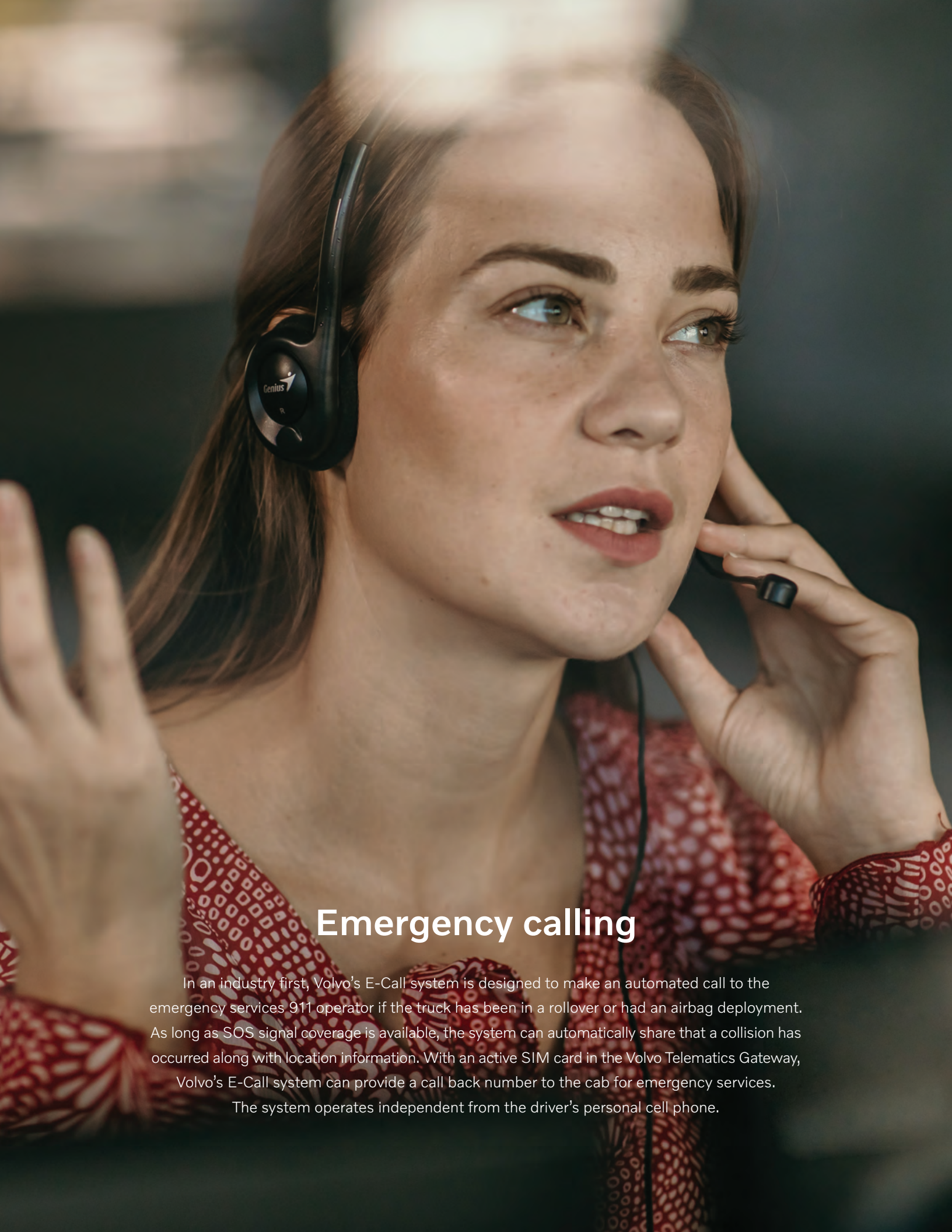
The new VNR features improved Ultra HSS as well, created with hot stamping technology. This VNR features 33% more UHSS than was found in the legacy model, reinforcing crucial points in the roofline. Each new VNR is designed to exceed the rigorous standards of the Swedish Impact Test.

### Three-point safety belts

In 1959, we invented the revolutionary three-point safety belt and gave that technology to the world. Since that introduction, this technology is credited with saving more than one million lives. Today, it is available in multiple colors to encourage usage and driver compliance.







## Emergency calling

In an industry first, Volvo’s E-Call system is designed to make an automated call to the emergency services 911 operator if the truck has been in a rollover or had an airbag deployment. As long as SOS signal coverage is available, the system can automatically share that a collision has occurred along with location information. With an active SIM card in the Volvo Telematics Gateway, Volvo’s E-Call system can provide a call back number to the cab for emergency services.

The system operates independent from the driver’s personal cell phone.

## In an instant

At the moment of an accident, the vehicle’s protection measures simultaneously work to reduce risk or the severity of injuries inside the cab. Inside the protective High-Strength Steel structure, the driver is surrounded by an impact absorbing dash and steering column that are designed to protect arms, legs, knees and ankles. The windshield comes standard with laminated safety glass, to minimize flying debris during a collision. Laminated safety glass is also optional for doors and rear windows.

<b>Powertrain drop</b>	<b>Front airbag</b>	<b>Side airbag</b>
The flared frame rail is designed to release the powertrain below the cab in a collision, reducing the risk of the engine and transmission being forced directly back toward the driver.	Volvo Trucks was the first Class 8 manufacturer to provide front airbags standard in every vehicle. The airbag can help reduce the risk of severe injury to a driver’s face and upper body.	Optional integrated side airbags are available in the new VNR. These curtain style airbags cover the door and window for additional protection to driver and passenger during a rollover.
<b>Engine shutdown</b>	<b>Reinforced hinges</b>	<b>Hazard lights</b>
If airbags deploy, the fuel supply is designed to immediately cut off, shutting down the engine and reducing the risk of fire. The emergency parking brake will engage when the front airbag deploys.	Our industry-leading hinges are designed to keep doors securely shut during a crash. Afterward, the hinges and auto unlock feature make it easier to open the door.	If an airbag deploys or a rollover is detected, your VNR is designed to automatically trigger hazard lights on the truck and trailer after the vehicle comes to rest.



# Volvo Dynamic Steering

Volvo Dynamic Steering (VDS) takes stress out of local and regional driving by making it easier to turn every corner and back down every alley.

The system features a powerful electric motor mounted above the hydraulic steering gear to provide additional torque when necessary. It receives input 2,000 times per second from sensors throughout the truck monitoring yaw rate, steering angle, wheel speed and the driver's own actions. Optimal steering input is constantly calculated based on the conditions.

## Ease of backing

Dynamic Steering provides advantages when turning at low speeds and reversing in tight spaces. Additional steering torque automatically feeds into the system to allow the driver to maneuver with a light touch. And with improved course stability you can reverse without drifting off course.

## Personal settings

VDS can give each driver the possibility to customize the steering feel with the optional personal settings feature. Settings are accessed via a presets menu and can be selected at the touch of a button. Drivers can choose from a range of preset options for greater or less assistance.

## Vibration dampening

The VDS system dampens vibrations from rough roads and minimizes the steering corrections needed in

crosswinds. Minute directional adjustments keep the driver on a straight course. Over a full day, this means significantly less mental and physical strain on the driver.

## Return to center

Volvo Dynamic Steering gives you perfect precision, near effortless steering and returns the wheel to neutral automatically. The steering wheel will return to center when released, saving driving effort and bringing the vehicle into a straight line quickly and easily.

## Smooth sailing

Volvo Dynamic Steering even balances the effect of strong side winds. VDS with Oversteer Guidance can also assist the driver with small, rapid adjustments to help reduce the risk of rollovers or jackknives. So, relax your grip on the steering wheel—the truck will only change direction when you want it to.





**V O L V O**

Some vehicle options and services may not be available at time of introduction.  
Some vehicles shown with optional equipment. All specs current at time of publication release.  
Performance data based on engineering calculations and real-world data.

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