

# Operator's Manual VNL and VNM



**VOLVO**

# Foreword

This manual contains information concerning the safe operation of your vehicle. It is extremely important that this information is read and understood before the vehicle is operated. This manual also contains a considerable amount of information concerning the vehicle, such as vehicle identification, Preventive Maintenance recommendations and a log for your service records. Please keep this in the vehicle at all times. Information from other component manufacturers is supplied in separate manuals in the Owner's Package.

**NOTE!** It is important that this manual stay with the vehicle when it is sold. Important safety information must be passed on to the new customer. The service information contained in this manual gives the owner important information about maintaining the vehicle but is not intended as a substitute for the Preventive Maintenance Service Manual and must not be regarded as such.

The National Highway Traffic Safety Administration (NHTSA) and Volvo Trucks North America, Inc. (VTNA) should be informed immediately if you believe that the vehicle has a defect that could cause a crash, injury or death.

Contact NHTSA by calling the Auto Safety Hotline at 1 (800) 424-9393 (or 366-0123 in the Washington, DC area) or by writing to: NHTSA, U.S. Department of Transportation, Washington, DC 20590.

**Volvo Trucks North America, Inc.**  
Greensboro, NC USA

**Order number: PV776-TSP20 154796**

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# Warning Label Information

## IMPORTANT

**Before driving this vehicle, be certain that you have read and that you fully understand each and every step of the driving and handling information in this Operator's Manual. Be certain that you fully understand and follow all safety warnings. It is extremely important that this information is read and understood before the vehicle is operated.**

IT IS IMPORTANT THAT THE FOLLOWING INFORMATION CONCERNING LABELS BE READ, UNDERSTOOD AND ALWAYS FOLLOWED.

The following types of labels are used throughout this manual:

**NOTE!** A note defines an operating procedure, practice, condition, etc., which is essential to proper operation of the vehicle.



### CAUTION

A caution label directs the operator's attention to unsafe practices where personal injury is not likely but property damage could occur. The caution label is in **black** type on a **white** background with a **black** border.



### WARNING

A warning label directs the operator's attention to unsafe practices which could result in personal injury or severe damage to the vehicle. The warning label is in **black** type on a **gray** background with a **black** border.



### DANGER

A danger label directs the operator's attention to unsafe practices which could result in serious personal injury or death. The caution label is in **white** type on a **black** background with a **black** border.

## Information For the Owner

If there are questions on the maintenance and performance of your vehicle, please discuss them with your Volvo Truck dealer. Your authorized dealer is required to have trained mechanics, special tools and spare parts to fully service your vehicle. If necessary, your dealer will contact the manufacturer for any assistance.

In addition to this Operator's Manual, there may be additional instruction/operator's manuals supplied by component manufacturers. These manuals are placed in the Owner's Package and placed in the cab. Be sure to read all the manuals thoroughly before operating the vehicle.

Also, various safety labels may be placed on components by the component manufacturer. Be sure to read and follow these labels to prevent damage to the vehicle, personal injury or even death.

Information in this manual refers to Volvo components and Volvo drivetrain. Information concerning non-Volvo engines and/or drivetrains can be obtained by contacting the respective manufacturer.

Establish a Preventive Maintenance Program with the help of your local Volvo Truck dealer. A Preventive Maintenance Program makes it possible to maximize the amount of time your vehicle is up and running, resulting in longer component life. This makes for a safer vehicle by reducing any mechanical failures due to poor maintenance practices.

Various truck warranty coverage plans, contingent on application and weight class, are available. Please contact an authorized Volvo Truck Dealer for complete details. Replacement warranty certificates for Volvo Trucks are available from Volvo dealers.

For trucks placed in service after August 1, 2000 and operating in the USA and Canada, Volvo dealers can print copies of the Standard Truck Warranty Certificate and the Premium (Purchased) Truck Coverage Certificate. Copies are available in either English or Canadian French at the dealer communication system (DCS) website. Look in the Service/Warranty folder.

**NOTE!** Federal law requires manufacturers to notify owners of its products in the event of a non-compliance to a Federal Motor Vehicle Safety Standard or if a safety related defect is discovered. If you are not the original owner of this vehicle, please notify us about the change in ownership at the address below or through an authorized Volvo Truck dealer. This is the only way we will be able to contact you if necessary.

Volvo Trucks North America, Inc.

Att: Vehicle Registration Dept.

P. O. Box 26115

Greensboro, NC 27402-6115

United States of America

## 2 General Information

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**Do Not Remove** this manual from the vehicle. It contains important operational and safety information that is needed by all drivers and owners of this vehicle.

This Operator's Manual covers Volvo VN-series vehicles manufactured by Volvo Trucks North America, Inc. with any of the following designations:

**VNL42T VNM42T VNL42 VNM42**  
**VNL64T VNM64T VNL64 VNM64**

*L=long hood, M=medium hood*  
*T=tractor*

Explanation: The first number after the model designation represents the total number of wheels (hubs) per vehicle. The second number represents the number of wheels (hubs) that drive the vehicle. Each model designation also carries a suffix, which identifies the cab type.

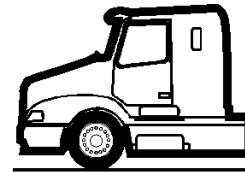
This manual, together with manuals for specific components, for example, Volvo engine, Cummins engine, Eaton transmission, etc., contain important information to be able to operate this vehicle safely. They contain advice and instructions which will enable you to get the operating economy and performance that you expect from this quality vehicle.

All information, illustrations and specifications contained in this manual are based upon the latest product information available at the time of publication. If any questions arise concerning the current status of Federal or state laws, the appropriate Federal or state agency should be contacted.

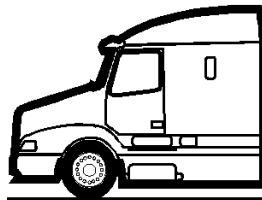
Volvo Trucks North America, Inc. reserves the right to make changes at any time or to change specifications or design without notice and without incurring obligation.



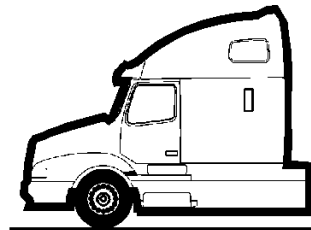
DAYCAB



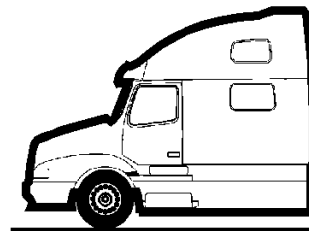
SLEEPER - 420



SLEEPER - 610



SLEEPER - 660



SLEEPER - 770

VN cab types

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## General Safety Information

### Operating the Vehicle

Every vehicle, including heavy duty vehicles, has blind spots. The size of blind spots varies from driver to driver and from situation to situation. As a skilled, professional driver, **you** are in the best position to avoid accidents in turns, lane changes or other maneuvers. Volvo Trucks North America, Inc. provides standard equipment (such as cabs, windshields, window sizes and mirrors), preferred by most owners and drivers under most conditions and in most applications.

However, due to differences in the size of drivers, their seating positions, the way that they use and operate their vehicles, personal preferences and other factors, no combination of mirrors and other visibility enhancement devices will eliminate all blind spots in every situation.

The safe operation of this vehicle is up to **you**. Because of your special preferences, needs and circumstances, you may want to add extra mirrors and/or other visibility enhancement devices. If so, you should contact an authorized Volvo Truck dealer to obtain those parts which best fit your own personal needs and preferences.



### DANGER

Never try to operate or work on this vehicle while under the influence of alcohol. Your reflexes can be affected by even a small amount of alcohol. Drinking and operating this vehicle can lead to an accident, causing serious personal injury or death.



### WARNING

All items within the cab must be secured before the vehicle is set in motion. This includes, but is not limited to, drinks, clothes, books, televisions, etc. In the event of a collision, loose items could fly around inside the cab. This could cause personal injury.



## 4 General Information

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### Operating In Bobtail Mode

Tractors are equipped with a bobtail air brake proportioning valve which automatically redistributes the braking force between front and rear axles when not hooked up to a semitrailer (bobtail operation).

When operating in bobtail mode, the rear brake chambers receive reduced or proportional brake air pressure. When the tractor is towing a trailer, the rear brake chambers will receive full (normal) brake pressure.

**NOTE!** When operating bobtail, be certain that glad hands, trailer air hoses, electrical cable and connectors are properly stowed and secure. Do not allow them to rub or chafe on other components.



#### **WARNING**

When operating bobtail, the brake system on the vehicle reduces the possibility of rear wheel brake lockup, except on full pedal application. When bobtailing, be certain that adequate pedal pressure is applied. There is no need to reduce pedal effort. Failure to do so may result in increased stopping distances.

## Do Not Overload

This vehicle has been designed and assembled for a maximum gross vehicle weight rating (GVWR) and a maximum front and rear axle weights rating (FAWR and RAWR). The actual rating for this vehicle can be found on the label attached to the door frame on the driver's side. If any of these three ratings is exceeded and overloading occurs, instability, poor handling, failure of parts and accelerated wear can occur.



### DANGER

Under no circumstances should the published GVWR, FAWR, and/or RAWR be exceeded. Failure to observe these precautions can lead to the loss of vehicle control, resulting in a crash causing serious personal injury or death.



### DANGER

Do not exceed the load rating of the tires or the vehicle weight ratings. Overloading may result in tire failure causing loss of vehicle control, leading to an accident resulting in severe personal injury or death.



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## Operating

**Before driving this vehicle, locate the instruments and controls, and become thoroughly familiar with their operation. After starting and when driving, always check to make sure that the instrument readings are normal.**

## 6 General Information

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### Reporting Safety Defects

#### USA

The National Highway Traffic Safety Administration (NHTSA) and Volvo Trucks North America, Inc. should be informed immediately if you believe that the vehicle has a defect that could cause a crash, injury or death.

Contact NHTSA by calling the Auto Safety Hotline at 1 (800) 424-9393 (or 366-0123 in the Washington, DC area) or by writing to: NHTSA, U. S. Department of Transportation, Washington, DC 20590.

**1 (800) 424-9393**

#### Canada

Refer consumer complaints to Volvo Trucks Canada, Inc. or to the Transport Canada - Department of Public Complaints, Recalls and Investigations.

**1 (905) 795-1555**

#### Mexico

Volvo Trucks of Mexico, S.A. de C.V. should be informed immediately if you believe the vehicle has a defect that could cause a crash, injury or death. Contact Volvo Trucks de Mexico by calling or by writing to: Volvo Trucks de Mexico, S.A. de C.V., Prol. Paseo de la Reforma 600, 1er. Piso — 121, Col. Santa Fe Peña Blanca, C.P. 01210, México, D.F.

**01 (800) 90 94 900**

**NOTE!** For a listing of other contacts for information or help, see page 341.

## Modifications to Vehicle

### Chassis Frame

Frame side rails are heat treated. *No welding* is permitted because structural failure may result. Do not drill through either top or bottom flanges. A warning label is also attached to the frame for information.

Drilling is permitted in the frame web in accordance with a specified hole spacing pattern. Consult a Volvo Truck dealer to obtain approved hole spacing dimensions or refer to the Frame Rail and Cross Member Service Manual.

Frame rail and cross member nuts and bolts should be checked periodically and tightened to the specified torque if necessary.



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### WARNING

Do not weld on any part of the frame or drill holes in the top or bottom flanges. Serious structural damage could occur.

### Frame Alterations

Under no circumstances can the frame be cut and an extension piece added to increase the wheelbase. The only alteration allowed is wheel base shortening, where the only change in the frame rail is a new hole pattern drilled for the new location of the rear suspension.

### Welding In Vehicle

Do not weld anywhere in or on the vehicle before disconnecting batteries, all electronic control units (ECU) and instrument cluster. See page 298 for more information. Do not use oxy/acetylene welding to repair cab panels. Refer to the service manuals for specific information.

## 8 General Information

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### Exhaust and Noise Emissions

#### General

##### USA

The Federal Clean Air Act, Section 203 (a) (3), states the following concerning the removal of air pollution control devices or modification of a certified engine to a non-certified configuration:

“The following acts and the causing thereof are prohibited:

(3) For any person to remove or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine in compliance with regulations under this part prior to its sale and delivery to the ultimate purchaser, or for any manufacturer or dealer knowingly to remove or render inoperative any such design after sale and delivery to the ultimate purchaser.”

Specifically, please note that no person may make such changes prior to the sale and

delivery of the vehicle to the ultimate purchaser, and, in addition, no manufacturer or dealer may make take such action after sale and delivery of the vehicle to the ultimate purchaser. The law provides a penalty of up to \$10,000 for each violation.

Modifications, such as reprogramming of the fuel system so the engine will exceed the certified horsepower or torque, or removing the mufflers are examples of illegal changes.

Changes should not be made to a certified engine that would result in an engine that does not match the configuration of an engine model that is currently certified to meet Federal Standards.

##### Canada

The same conditions that apply in the USA apply to Canada, with one exception. After the vehicle is sold to a retail customer, that is, the end user, the jurisdiction controlling the emission control devices becomes the province in which the vehicle is licensed. No changes should be made that render any or all of the devices inoperative.

Should the owner/operator wish to make any changes to the emission control devices, check with the provincial authority before making any such changes.

##### Mexico

The same conditions that apply in the USA apply to Mexico. Refer to the Mexican Federal Law for Emission Control which adheres to EPA regulations. No changes should be made that render any or all of the emissions control devices inoperative.

Should the owner/operator wish to make any changes to the emission control devices, check with the state authority before making any such changes.

## **California Emission Control Warranty Statement**

### **YOUR WARRANTY RIGHTS AND OBLIGATIONS**

The California Air Resources Board and Volvo Trucks North America, Inc. (VTNA) are pleased to explain the emission control system warranty on your vehicle. In California, new motor vehicles must be designed, built and equipped to meet the State's stringent anti-smog standards. Volvo Trucks North America, Inc. must warrant the emission control system on your vehicle for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your vehicle.

Your emission control system may include parts such as carburetor or fuel injection system and engine computer. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, Volvo Trucks North America, Inc. will repair your vehicle at no cost to you including diagnosis, parts and labor.

### **MANUFACTURER'S WARRANTY COVERAGE**

This warranty is applicable for a period of five years, 100,000 miles or 3,000 hours of operation, whichever first occurs. If an emission-related part of your vehicle is defective, the part will be repaired or replaced by Volvo Trucks North America, Inc.

This is your emission control system DEFECTS WARRANTY.

### **OWNER'S WARRANTY RESPONSIBILITIES**

As the vehicle owner, you are responsible for the performance of the required maintenance listed in your owner's manual. Volvo Trucks North America, Inc. recommends that you retain all receipts covering maintenance on your truck but Volvo Trucks North America, Inc. cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

You are responsible for presenting your vehicle to a Volvo Trucks North America, Inc. dealer as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

As the vehicle owner, you should also be aware that Volvo Trucks North America, Inc. may deny you warranty coverage if your vehicle or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

If you have any questions regarding your warranty rights and responsibilities, you should contact Volvo Trucks North America, Inc., Warranty Administration, (336) 393-2000 or the California Air Resources Board at 9480 Telstar Avenue, El Monte, CA 91731.

# 10 General Information

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## EMISSION CONTROL SYSTEM WARRANTY

Volvo Trucks North America, Inc. WARRANTS TO THE ORIGINAL OWNER, AND EACH SUBSEQUENT OWNER, OF A NEW TRUCK POWERED BY A VOLVO DIESEL ENGINE THAT THE EMISSION CONTROL SYSTEM OF YOUR TRUCK:

- 1 Is designed, built and equipped so as to conform at the time of sale to all regulations of the U.S. Environmental Protection Agency and the California Air Resources Board applicable at the time of the manufacture; and
- 2 Is free from defects in material and workmanship which will cause the emission control components not to function as designed for a period of use of 5 years or 100,000 miles or 3,000 hours of engine operation, whichever comes first.

The 5 years/100,000 miles/3,000 hour warranty period shall begin on the date the vehicle is first delivered to the first retail purchaser or if the vehicle is placed in service as a demonstrator company vehicle prior to the sale at retail, on the date the vehicle is the first placed in service.

The emission control system of your new Volvo engine was designed, built and tested using genuine Volvo parts, and the engine is certified as being in conformity with Federal and California emission control regulations. Accordingly, it is recommended that any replacement parts used for maintenance, replacement or repair without invalidating this warranty; the cost of such services or or parts, however, will not be covered under the warranty except in an emergency situation. A part not being available or a repair not being completed within 30 days also constitutes an emergency.

Use of replacement parts which are not of equivalent quality may impair the effectiveness of emission control systems. If other than Volvo parts are used for maintenance, owner should obtain assurances that such parts are warranted by their manufacturer to be equivalent to genuine Volvo parts. However, the use of other than Volvo replacement parts does not invalidate the warranty on other components, unless such parts cause damage to warranted parts.

Repairs and service covered by the warranty will be performed by an authorized Volvo Trucks North America, Inc. dealer at his place of business with no charge for parts or labor (including diagnosis) using Volvo parts for the emission control system, that requires replacement and is covered by the warranty and found defective. In case of an emergency, where an authorized Volvo Trucks North America, Inc. dealer is not available, repairs may be performed at any available service establishment or by the owner, using any equivalent replacement parts and Volvo Trucks North America, Inc. will reimburse the owner for such repairs (including diagnosis) not to exceed Volvo Trucks North America, Inc.'s suggested retail price for the warranted parts and the labor rate appropriate for the geographical area and the tasks performed.

Replaced parts and paid invoices must be presented to a Volvo Trucks North America, Inc. dealer for reimbursement.

The emissions control parts covered by this Emission Control System Warranty are listed under "What Is Covered by the Emissions Warranty." You are responsible for the performance of all required maintenance on your new Volvo engine, including maintenance or repairs needed due to severe operating conditions. Volvo Trucks North America, Inc. will not deny a warranty claim solely because you have no record of maintenance. However, Volvo Trucks North America, Inc. may deny a warranty claim if your failure to perform required maintenance resulted in the failure of a warranted part. Receipts covering the performance of regular maintenance should be retained in the event questions arise concerning maintenance. The receipts should be transferred to each subsequent owner of the vehicle with the emission warranted engine.

## **CUSTOMER ASSISTANCE**

Volvo Trucks North America, Inc. wishes to help to assure that the Emission Control System Warranty is properly administered. In the event that you do not receive the warranty service to which you believe you are entitled under the Emission Control System Warranty, you should contact Volvo Trucks North America, Inc. Warranty Administration, (336) 393-2000. The address and telephone number of each Regional Office is in your vehicle owner's manual. If you need additional assistance or information concerning the Emission Control System Warranty, contact: Volvo Trucks North America, Inc., Warranty Administration, (336) 393-2000.

## **WHAT IS NOT COVERED BY THE EMISSION WARRANTY**

This warranty does not cover:

- 1 Malfunctions in any part caused by any of the following: misuse, abuse, improper adjustments unless performed by a Volvo Trucks North America, Inc. dealer, modifications, alterations, tampering, disconnection, improper or inadequate maintenance, or use of fuels not recommended for the engine as described in the owner's manual.
- 2 Damage resulting from accident, acts of nature or other events beyond the control of Volvo Trucks North America, Inc.
- 3 The replacement of expendable maintenance items such as filters, hoses, belts, oil, thermostat and coolant made in connection with scheduled maintenance services once these parts have been replaced. Any parts replaced under warranty before the first required replacement point are warranted for the remainder of the warranty period.
- 4 Replacement items which are not genuine Volvo parts or not authorized by Volvo Trucks North America, Inc.
- 5 Loss of time, inconvenience, loss of use of vehicle or engine, or commercial loss.
- 6 Any vehicle on which the odometer or hourmeter has been disconnected or the mileage (or hours) has been altered so the actual usage cannot be readily be determined.
- 7 Any vehicle registered and normally operated outside the United States.



## 12 General Information

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### WHAT IS COVERED BY THE EMISSION WARRANTY

The following is a list of the items that are considered a part of the Emission Control Systems and are covered by the Emission Warranty when installed as original equipment by Volvo Trucks North America, Inc. on vehicles which were built to conform to Environmental Protection Agency and California Air Resources Board regulations

**IMPORTANT** - This may not include expendable maintenance items. Emission related parts requiring scheduled maintenance are warranted until their first scheduled replacement point.

- I. Fuel Injection System
- II. Air Induction System
  - A. Intake Manifold
  - B. Turbocharge System
  - C. Charge Air Cooler (Intercooler)
- III. Exhaust Manifold
- IV. Miscellaneous Items Used in Above Systems
  - A. Hose, clamps, fittings and tubing
  - B. Pulleys, belts and idlers
  - C. Vacuum, temperature, and time sensitive valves and switches
  - D. Mounting hardware, sealing gaskets and PVC (if applicable)

<p>THIS CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT IN NO WAY REPLACES, MODIFIES, ALTERS OR SUPERSEDES THE TRUCK WARRANTY CERTIFICATE, ITS TERMS AND CONDITIONS, AND ITS LIMITATIONS AND EXCLUSIONS.</p>
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BE CERTAIN YOU READ AND UNDERSTAND ALL WARRANTIES WHICH ACCOMPANIED YOUR VEHICLE.

**NOTE!** Warranty coverage is subject to change without notice. Contact your Volvo Truck dealer for the current warranty statement.

## Noise Emissions

Volvo Trucks North America, Inc. warrants to the first person who purchases this vehicle for purposes other than resale and to each subsequent purchaser, that this vehicle as manufactured by Volvo Trucks North America, Inc. was designed, built and equipped to conform, at the time it left the control of Volvo Trucks North America, Inc., with all applicable U.S. EPA Noise Control Regulations.

This warranty covers this vehicle as designed, built and equipped by Volvo Trucks North America, Inc., and is not limited to any particular part, component or system of the vehicle manufactured by Volvo Trucks North America, Inc. Defects in design, assembly or in any part, component or system of the vehicle as manufactured by Volvo Trucks North America, Inc., which, at the time it left the control of Volvo Trucks North America, Inc. caused noise emissions to exceed Federal standards, are covered by this warranty for the life of the vehicle.

# 14 General Information

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## **Tampering with Noise Control System**

Federal law prohibits the following acts or the causing thereof:

(1) The removal or rendering inoperative by any person, other than for purposes of maintenance, repair, or replacement, of any device or element of design incorporated into any new vehicle for the purpose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use;

or

(2) the use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.

Among those acts presumed to constitute tampering are the acts listed below:

### **Air Intake System**

Removing or rendering inoperative the air cleaner or intake piping.

### **Engine Cooling Fan**

Removing or rendering inoperative the fan clutch.

Removing the fan shroud.

### **Engine**

Removing or altering engine speed programming so as to allow engine speed to exceed manufacturer's specifications.

Modifying the parameters of the Engine Electronic Control Unit.

### **Fuel System**

Removing or altering engine speed programming so as to allow engine speed to exceed manufacturer's specifications.

### **Inner Fender Shields and Cab Skirts**

Removing shields or skirts.

Cutting away parts of shields, skirts or damaged or loose portions of shields or skirts.