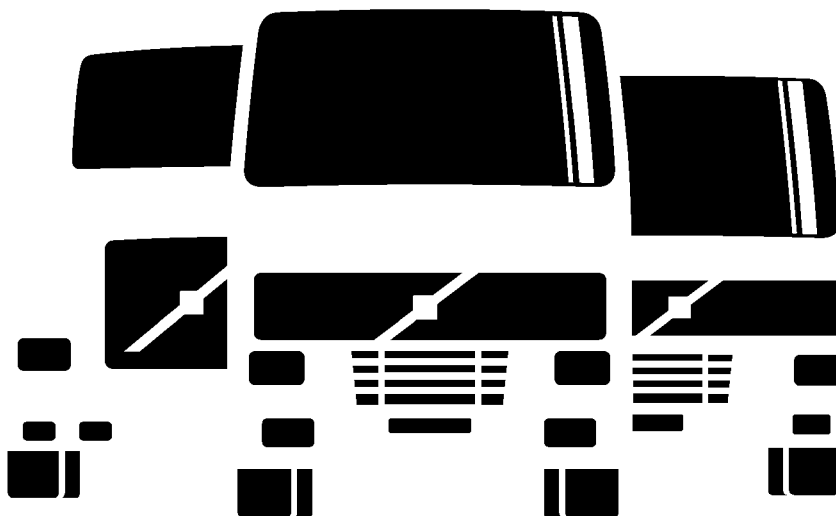


Service Manual Trucks

Group 177-500

Preventive Maintenance
Basic Service
VN, VHD



Foreword

The descriptions and service procedures contained in this manual are based on designs and methods studies carried out up to December 2001.

The products are under continuous development. Vehicles and components produced after the above date may therefore have different specifications and repair methods. When this is believed to have a significant bearing on this manual, supplementary service bulletins will be issued to cover the changes.

The new edition of this manual will update the changes.

In service procedures where the title incorporates an operation number, this is a reference to an S.R.T. (Standard Repair Time).

Service procedures which do not include an operation number in the title are for general information and no reference is made to an S.R.T.

The following levels of observations, cautions and warnings are used in this Service Documentation:

Note: Indicates a procedure, practice, or condition that must be followed in order to have the vehicle or component function in the manner intended.

Caution: Indicates an unsafe practice where damage to the product could occur.

Warning: Indicates an unsafe practice where personal injury or severe damage to the product could occur.

Danger: Indicates an unsafe practice where serious personal injury or death could occur.

Volvo Trucks North America, Inc.
Greensboro, NC USA

Order number: PV776-TSP151476

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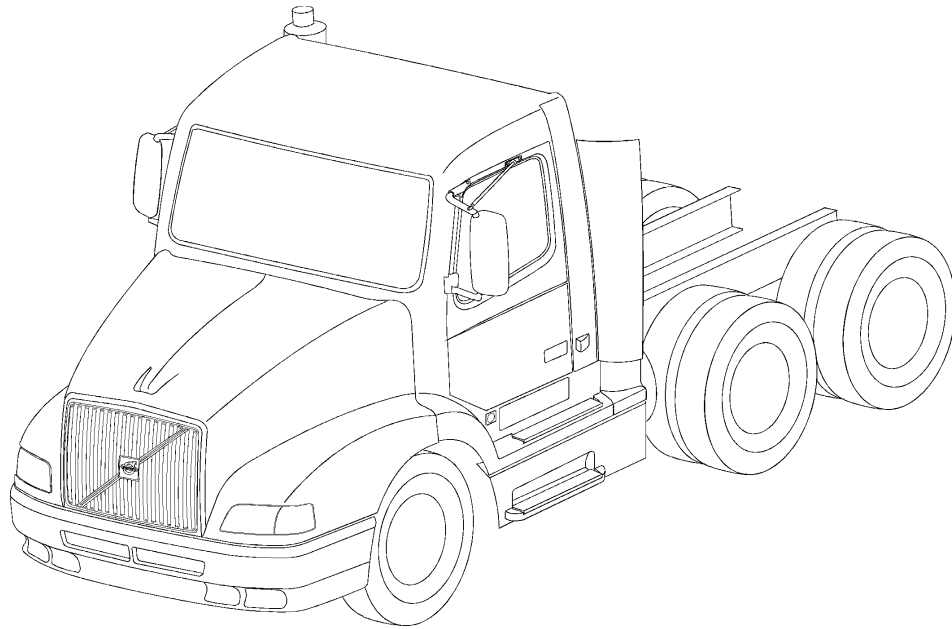
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General

Preventive Maintenance, General



Introduction

This manual describes inspection and lubrication requirements during the Basic Service of Volvo VN/VHD vehicles. The purpose for doing the preventive maintenance is to ensure that the vehicle is safe and roadworthy over its full lifetime.

The driver is taking part in the continuous preventive maintenance program by completing the required Daily Pre-trip Inspection. This is a purely visual inspection that is designed to detect any obvious problems that would make the vehicle unsafe to take on the road. Added to the Pre-trip Inspection is the Preventive Maintenance Program that is typically carried out by trained personnel using a systematic approach to cover all important components of the new vehicle.

Preventive Maintenance is a planned vehicle maintenance program that provides an orderly series of servicing and inspecting procedures. A well applied maintenance program realizes the investment made in the vehicle. The difference between a poorly maintained vehicle and a well maintained vehicle will not show up until later mileage. Good maintenance is necessary to assure the designed life expectancy of the vehicle and its individual components.

Maintenance Coverage

There is no firm maintenance program that will apply to all operations. A basic maintenance program is not difficult to set up; to make the program the most effective takes time and effort, and is based around the needs and experiences of each individual operation. The program in this service manual covers all types of Volvo VN/VHD vehicles with medium to high mileage and sometimes high loads.

Use this established maintenance program as a base to tailor an individual maintenance program for customers that have requirements that are outside of the scope of this program.

To establish an individual program, look at information sources that are usually available, such as:

- Driver's repair or complaint reports.
- Unusual parts usage.
- Repetitive failures or problems found in inspection.
- Unscheduled maintenance or repairs.
- Road failures.

Program Structure

This maintenance program has been based on the progress in vehicle technology and increases in oil quality to simplify the maintenance.

For simplified scheduling, the program has tied maintenance to logical time or mileage limits that make it easy to anticipate needed servicing. For the majority of on-highway operators, the 24,000 km (15,000 miles) or 4 months schedule can be used with little change.

It is important that the scheduled intervals are followed as limits. Maintenance can be done before either 24,000 km (15,000 miles) have been reached or before 4 months are up but must be made at or before either the mileage or the time limit has been reached.

For further information concerning component specifications see service information in Group 1, "Oil and Filter Change Intervals for Volvo Components, All Models", Publication Number 175-001, and any appropriate vendor literature.

Advantages

A well-planned preventive maintenance program offers the following advantages:

- The lowest attainable maintenance cost.
- Maximum vehicle uptime.
- Better fuel economy.
- Reduced road failures; greater dependability.
- Increased customer confidence, better public relations.
- Less possibility of accidents due to defective equipment.
- Fewer driver complaints.

Regardless of the planning and the details of the maintenance program, the success of the program hinges on the caliber of workmanship in performing the actual inspection. A major cause of failure is a "pencil inspection," that is, the mechanic checks off each operation as being OK without making the actual inspection. A "pencil inspection" defeats the purpose of the inspection, which is to detect an impending failure.

Maintenance Form

A Service Manual is issued detailing the current inspection forms. Forms are created for different users but all with the same references to this document. When the inspection point is carried out, check the box if the item is OK. If further work, such as adjustment, repair, etc., needs to be performed, record this information and go on with the next inspection point. Items noted as being faulty or in need of adjustment need to be shown to the customer and scheduled for repair.

There are many time — and/or mileage-based — service items that are not listed on the form. Look at the end of this document for a listing of additional components that may need to be serviced, depending on the mileage or time since last service.

Maintenance Records

It is important to use the inspection form together with other reports to come up with the best maintenance program for a specific application. Use driver's reports, complaints, parts usage, repetitive failures, previous repair orders, road failures, etc. to build a maintenance history.

Records should be collected over the lifetime of the vehicle to form a permanent vehicle record file. The vehicle file should be used to customize the operational maintenance needs.

The "Driver Inspection Form" is also required by Federal law. The use of this inspection report makes the driver a part of the maintenance program and places direct responsibility on the driver to report problems that may come up during operation. When properly used, there should be no excuse for a defective vehicle being in service.

Basic Inspection

Note: The included Basic Service checklist is an original copy. The document can be updated without notice.

The Basic inspection is carried out at a maximum of 24,000 km (15,000 miles) or 4 months, whichever comes first.

All inspection points are to be carried out as verification of function or condition. Any defects are noted on the inspection form for later correction, if so ordered by the vehicle owner.

Note: The standard repair time for performing the Basic Service Preventive Maintenance is based on inspection and Oil and Filter Change, without repair or adjustment.

Annual Inspection

The Annual inspection is carried out yearly in addition to a Basic inspection. This inspection is designed to open up components for inspection or using test equipment to record performance.

The ideal time to carry out the Annual inspection is right before the hardest season, which means just before winter in the cold weather climates and just before summer in the hot weather climates.

For further information refer to "Annual Preventive Service Manual", Publication Number 177-501.

Other Inspection

There are additional service points that are carried out at specific mileage or time intervals. These are not part of the Preventive Maintenance Basic time. They should be scheduled as an adjustment or repair job carried out at the same time as the Preventive Maintenance, and are listed in this document as reminders only.

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, to all applicable U.S. EPA Noise Control Regulations, at the time it left the control of Volvo Trucks North America, Inc.

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.

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:

Noise Shields and Insulation

Removing or rendering inoperative the engine and/or transmission noise deadening panels, shields or insulating materials.

Removing or rendering inoperative the cab tunnel or hood noise insulating materials.

Removing or rendering inoperative any truck body mounted sound insulation components and/or shields (e.g., cab or fender shields, skirts, wheel housing splash shields, etc.).

Engine Control and Fuel Systems

Removing or rendering inoperative, or modifying the engine control system (such as the ECU or the fuel system components) in order to allow the engine to operate outside of the manufacturer's specifications (e.g., exceeding the manufacturer's engine speed limits).

Cooling System

Removing or rendering inoperative cooling system components (e.g., temperature-controlled fan clutch, fan shroud, fan ring, recirculation shields, etc.).

Exhaust System

Removing or rendering inoperative exhaust system components (e.g., muffler, pipes, clamps, etc.).

Air Intake System

Removing or rendering inoperative air intake/induction system components (e.g., filter, filter housing, ducts, etc.).

Safety Advice



DANGER

Never operate a diesel engine in an area where hydrocarbon vapors (gasoline for example) are present or are suspected to be present. Hydrocarbon vapors can enter the air intake and make the engine over-speed, causing severe damage and/or explosion or fire. Serious personal injury or death can occur.



DANGER

Always chock the wheels before working under the vehicle to prevent it from rolling. Failure to do so can result in unexpected vehicle movement and serious personal injury or death could occur.



DANGER

When entering and exiting the cab, use caution. Always have a firm hand hold and/or stable foot position before transferring weight to that position. Do not carry anything when entering or exiting. Make sure the soles of your shoes and the cab steps are free from dirt, grease, oil or moisture before using the steps. Failure to do so can result in a fall, and serious personal injury or death may occur.



DANGER

If using a jack and/or jack stands, choose proper fault-free equipment. Failure to do so can result in equipment failures and personal injury or death may occur.

Note: During the Preventive Maintenance inspection, check the condition of warning labels on the vehicle. If a label is damaged or defaced to the point where the message cannot be read, note on the inspection form to have it replaced.

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