

Document Title: Safety concerns everybody!	Function Group: 191	Information Type: Service Information	Date: 2014/7/8 0
Profile: ART, A40F FS (37534) [GB]			

Safety concerns everybody!

Always follow the instructions in the machine's operator's manual, which is a supplement to this Service Manual.

The Operator's Manual **must always** be kept in the cab for easy reference.

Volvo designs and manufactures machines with a high level of safety as well as effectiveness. All this work may be wasted if anyone who is about to perform service on any of our machines does not read the safety instructions, or does not follow them, e.g., does not replace guards, climbs on slippery machine parts instead of using a ladder, grabs a hold of hoses instead of handles or uses the wrong tools for the job.

In order to maintain safe and effective function, always use the intended and adapted spare parts for the machine. Using genuine Volvo spare parts is recommended since they are adapted to the machine for highest safety and quality.

Machines seldom cause accidents, instead people often do.

A safety-conscious person and a well-maintained machine make for a safe, effective and profitable combination.

Those who do not follow the safety instructions and observe the warnings in this manual must make sure that their work method is safe. Otherwise, there is a great risk of accidents, perhaps even accidents that result in fatalities.



WARNING SYMBOL

This symbol is shown at various points throughout the manual. The appearance of it means "Warning, stay alert! Your safety may be involved!"

Get to know the capacity and limits of your machine!

Document Title: Safety when handling the machine	Function Group: 191	Information Type: Service Information	Date: 2014/7/8 0
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Safety when handling the machine

Volvo Construction Equipment Group is only responsible if:

- the machine has been used correctly and has been maintained according to recommendations in the service manuals and the machine's Operator's manual.
- prescribed service and inspections have been performed at the specified intervals.
- lubricant recommendations in the manual have been followed.
- no safety seals have been opened by an unauthorized person.
- all modifications and repairs have been performed in the manner prescribed by Volvo.
- only genuine Volvo parts/accessories, or attachments that fulfil Volvo's requirements have been used.

WARNING

Machine operators must have sufficient skills and knowledge of the content in the Operator's Manual before operating the machine.

It is important that the operator reads and follows the instructions in the machine's Operator's Manual.

An untrained operator may cause serious injuries and fatalities.

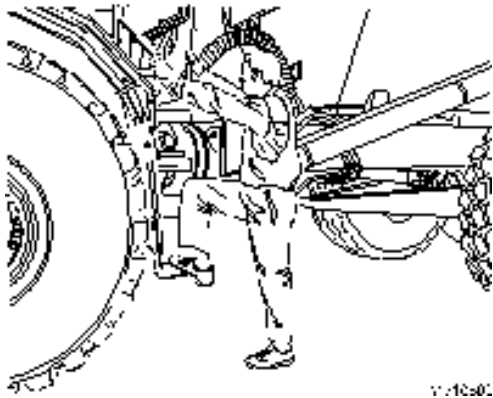
Never operate a machine for which there is no Operator's Manual available.

Learn to understand the warning plates, symbols and operating instructions for the machine before you start operating.

A few safety rules

General

- Repair malfunctions or defects that affect safety as soon as possible.
- Always wear a hard hat, protective goggles, gloves, work shoes and other safety items that your work requires.
- Avoid standing in front of or behind the machine, and on or under the machine when the engine is running.
- To avoid unnecessary climbing on the machine, use a window scraper or brush with long handle when cleaning external window glass or rear-view mirrors.
- When servicing the machine, i.e. changing light bulbs, a ladder may be needed.
- Make sure that stepping surfaces, service areas, handles and slip-protection are clean and free from oil, diesel fuel, dirt and ice and that they're replaced if they are defective or missing.
- Check at regular intervals that all slip-protection is firmly attached. If not, these shall be attached or replaced.
- Always face the machine and use the steps and handrails when entering or leaving the machine. Use two hands and one foot, or two feet and one hand. Do not jump!



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Figure 1
Entering/leaving the machine



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Figure 2
Read the Operator's manual, plates and instructions before you operate the machine.

Before operating

- Read the Operator's manual before you operate the machine! Follow the instructions for operating and perform the indicated recommended actions before operating.
 Some important rules below:
- Perform a control light test before starting the engine by turning the ignition key to position 1 (see Operator's manual).
- Perform all safety checks prescribed in the Operator's manual.

⚠ WARNING

Never operate the machine if you are tired or under the influence of alcohol, medicine or other drugs.

- Before starting the engine indoors, make sure that ventilation is adequate for this. The machine is equipped with a diesel engine and the exhausts may be hazardous to your health. Therefore, ensure adequate ventilation and avoid running the engine more than necessary where ventilation is inadequate.
- Read all plates and instructions on the machine and in the Operator's manual before you operate or perform service on the machine. Each one of these contains important information regarding safety, handling and service.
- Always sit in the operator's seat when you start the engine.
- Use the lap type seat belt during all operation.
- The machine must be fully functional before it's put into operation, that is, all defects that may cause eventual accidents must have been repaired.

- Never operate the machine for long periods without ventilation, or with a completely closed cab without the fan on (to avoid lack of oxygen).
- Step only on the prepared non-slip surfaces and use the provided handles and rails.

Hip-type seatbelt

- Use the seat belt during all operation.



Figure 3

Use the seat belt during all operation

- If the seatbelt needs washing: Use a mild soap solution when washing and let the belt dry while it's fully pulled out before it's rolled up. Make sure that the belt is installed correctly.
- Replace the seatbelt immediately if it's worn, damaged or the machine has been involved in an accident where the belt had to take some strain.
- Modifications of the belt or its mountings is never permitted.
- The hip-type seatbelt is intended for one adult, not more.
- Always keep the belt rolled up when not in use.

When the engine is running

- Respector symbols and alarm displays. The red alarm displays require immediate action or consideration, see instructions in the Operator's Manual under information display unit.
- Move the gear selector to neutral position and apply the parking brake before leaving the machine.



Risk of crushing injuries

- Do not stand near the frame joint unless it has been locked with the frame joint lock.
- Stop the engine before you leave the machine unattended.

The cab is the operator's protection and meets the standards for roll-over protection according to test standards, (ROPS), see further [191 CE-marking, EMC-directive](#). Prerequisite for protection is that the operator uses the lap-type seat belt and remains in the cab in case of a roll-over. Therefore, hold on to the steering wheel if the machine rolls over. **Do not jump!**

The cab is dimensioned to fulfill the requirements for objects falling on to the cab roof according to given test methods (that is, FOPS, see further [191 CE-marking, EMC-directive](#)).

Alternative exit

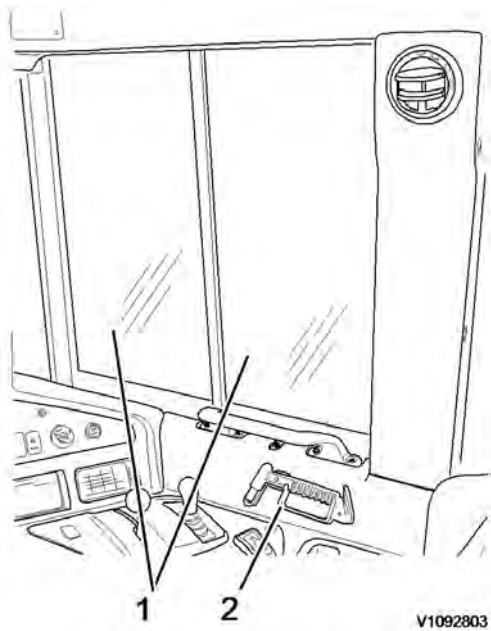


Figure 4

1. Alternative exit (right side of cab)
2. Hammer

Alternative exit is possible through the split side window in front of the B-pillar on both the right and left sides of the cab. Alternative exits are marked with a decal. In an emergency situation the window glass can be broken using the hammer. When the window glass has been broken, the moulding between the window's two parts falls away.

NOTE!

It is only possible to break windows marked with decal for alternative exit.



Figure 5

The hammer is used in emergencies to:

- break the window glass for alternative exits,
- cut the seatbelt with the knife located in the rear edge of the hammer.

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Service position 3

With axle stands

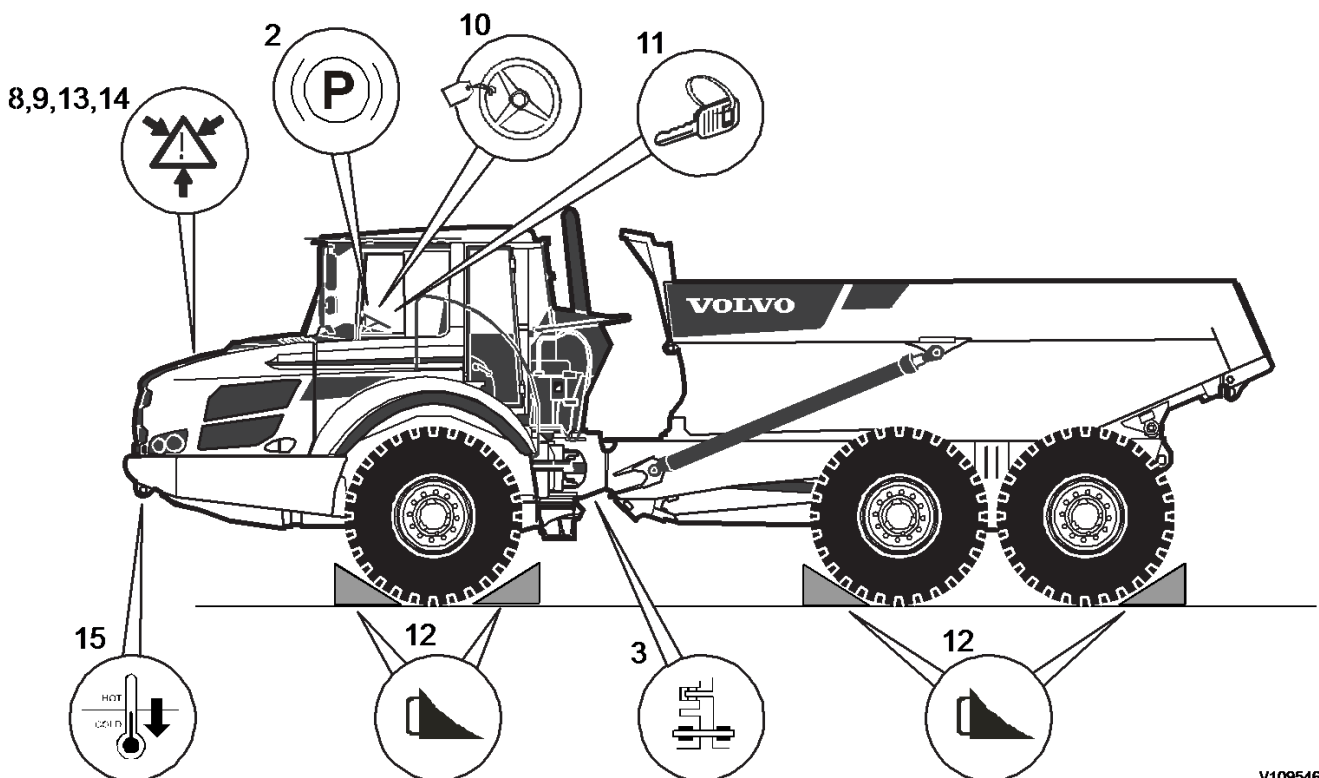
Op nbr 191-025

[88830046 Dump body support](#)

[14290266 Hose](#)

E-2500 Axle stand, tractor drawing, see [080 E-2500](#)

E-2501 Axle stand, trailer drawing, see [080 E-2501](#)



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Figure 1

1. Place the machine on solid and level ground.
2. Apply the parking brake.



Risk for personal injury caused by crushing. The machine could turn. Lock the steering lock.

WARNING

Risk of crushing.

An unlocked raised dump body can fall down. Personnel standing under a falling dump body could be seriously injured, including death.

Always lock the dump body before entering under it.

3. Lock the steering joint with the steering joint lock. Lower the load body against the frame or elevate the load body and secure with the load body lock or 88830046 Dump body support.
4. Raise the machine to top position, see [720 Forced Raising/lowering, Full suspension](#).
5. Turn off the engine.
6. Place the two axle stands with E-tool no. 2500 at the front on the axle, see [080 E-2500](#).

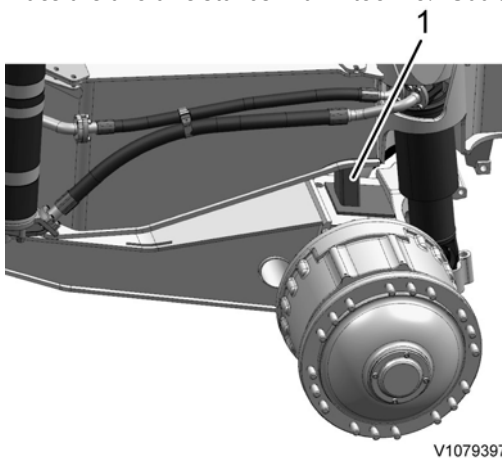


Figure 2
Right side, tractor

1. Axle stand, E-tool no. 2500
7. Place the 4 axle supports with E-tool no. 2501 on the front and rear bogie axle, see [080 E-2501](#).
 - A. Front bogie axle, height of support: 192 mm (7.56 in)
 - B. Rear bogie axle, height of support: 218 mm (8.58 in)

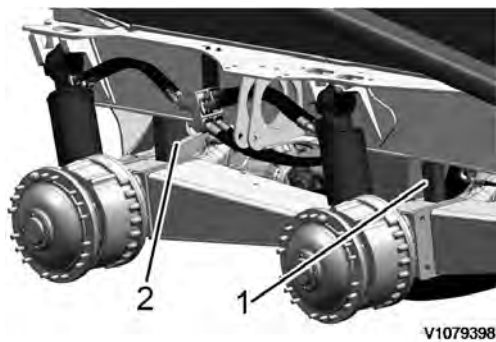
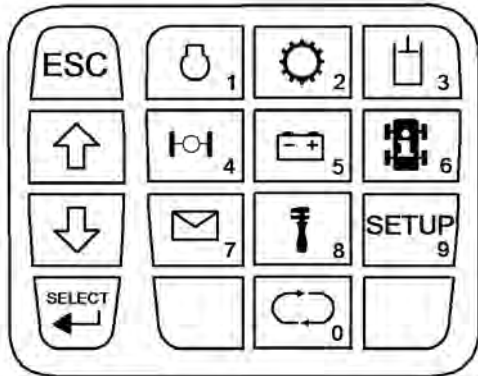


Figure 3
Right side, trailer

1. Axle stand, E-tool no. 2501, A. Front
2. Axle stand, E-tool no. 2501, B. Rear

8. Lower the machine onto the axle stands with the keypad, see [720 Forced Raising/lowering, Full suspension](#).
9. Depressurize pressurized lines and pressure tanks. See [520 Brake system, relieve pressure](#) and [900 Hydraulic system, relieve pressure](#).



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**Figure 4
Keypad**

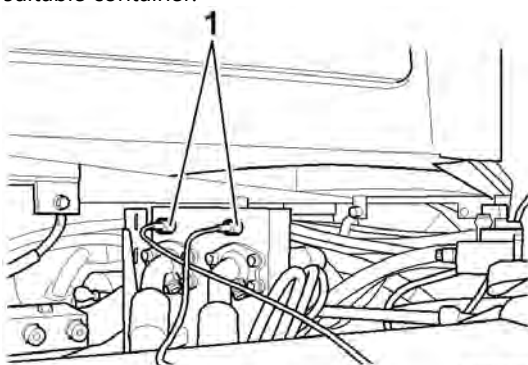
Depressurize the system by forced lowering using the keypad for 3 minutes, see [720 Forced Raising/lowering, Full suspension](#).

11. Turn off the engine and remove the start key.
12. During on-going service work, fasten a warning sign on the steering wheel with information that service is in progress.
13. Block the wheels in a suitable manner (e.g., with wedges).

NOTE!

Even if the machine has stopped lowering, it is not certain that the system is pressureless. Pressure may still be maintained by the accumulators.

14. For work in the tractor's FS hydraulic circuit, make sure that depressurizing has been performed by connecting two 14290266 Hose to the pressure check connections on the distribution block under the cab. Drain the oil into a suitable container.



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**Figure 5
Pressure check connections on tractor under cab (can be reached under cab door)**

1. Pressure check connection
15. For work in the trailer's FS hydraulic circuit, make sure that depressurizing has been performed by connecting two 14290266 Hose to the pressure check connections on the accumulator bank's distribution block in the trailer frame. Drain the oil into a suitable container.

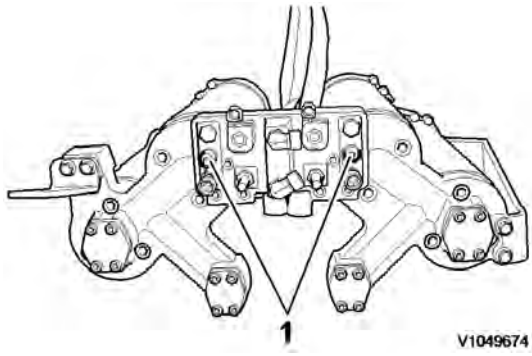


Figure 6
Accumulator bank on rear part of trailer

1. Pressure check connection
16. Let the machine cool down.

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Checking function

After work in a safety-related electrical system, a function check shall be performed to meet the requirements in ISO 15998.

Safety-related electrical system

Systems covered by function check for safety-related electrical system are:

- Parking brake. For check, see [550 Parking brake, function check](#).
- Load and dump brake. For checking, see [553 Load and Dump brake, function check](#).

Document Title: Safety when working with air conditioning refrigerant	Function Group: 191	Information Type: Service Information	Date: 2014/7/8 0
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Safety when working with air conditioning refrigerant

WARNING

There are a number of safety aspects that should be kept in mind when working with repairs and maintenance of the air conditioning. Therefore, read and consider the safety section in the Service Manual Air Conditioning R134a before starting any work.

For repairs of the air conditioning, refer to the **Service Manual Air Conditioning R134a**.

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Safety when lifting and supporting the machine

- When lifting or supporting machine parts, use equipment with a lifting capacity that equals at least the weight of the part in question.
- All lifting devices, such as straps, slings, ratchet blocks, must comply with governing national regulations for lifting devices. We will not accept any responsibility if any lifting devices, tools or work methods are used other than those described in this publication.
- If a jack is to be used, make sure that the ground or floor is even and is sufficiently firm or strong to support the expected load.
- Prevent the machine from rolling by applying the parking brake and placing suitable wedges on both sides of the wheels which are not to be raised off the ground.
- Always use a jack with sufficient lifting capacity and position it under the axle or on the inside of the wheel that is to be removed.
Make sure that the jack is correctly positioned and is at the correct angle to the lifting point on the machine.
- Take care to position supports under the machine in a safe way.

Document Title: Safety when using lifting equipment	Function Group: 191	Information Type: Service Information	Date: 2014/7/8 0
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Safety when using lifting equipment

WARNING

Do not work under a hanging or suspended load!

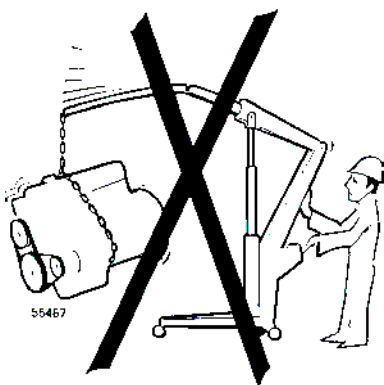


Figure 1

Do not overload lifting or support equipment.

- All lifting devices, e.g., slings, straps, ratchet blocks, etc., must meet governing national regulations for lifting devices.
We will not accept any responsibility if other lifting devices, tools or work methods are used, other than those described in this publication.
- Make sure that the ground surface is flat and has sufficient strength to support the expected load for lifting device with load.
- When lifting or supporting machine parts, use equipment with a lifting capacity that at least equals the weight of the part in question.
- Use the lifting eyes or lifting points that are located on certain machine components.

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