

Driver's Handbook

Replacement of Wheel and Air Springs

B13R

VOLVO

Foreword

This manual contains information concerning the replacement of the wheels and bellows. The information in this manual applies to vehicles built January 2009 and later. Please keep this manual in the vehicle at all times.

Note: Illustrations in this manual are used for reference only and may differ slightly from the actual vehicle. However, key components addressed in this document are represented as accurately as possible.

The National Highway Traffic Safety Administration (NHTSA) and Volvo Trucks North America 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 (888) 327-4236, by writing to NHTSA, U.S. Department of Transportation, Washington, DC 20590, by TTY at 1 (800) 424-9153, or visit their website at www.nhtsa.dot.gov.

Volvo Bus Corporation

Göteborg, Sweden

Order number: 88993880

©2010 Volvo Bus Corporation, Göteborg, Sweden

All rights reserved. No part of this publication may be reproduced, stored in retrieval system, or transmitted in any forms by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of Volvo Bus Corporation

Contents

Replacement of Wheels.....	1
Introduction.....	1
Wheel Replacement.....	1
Before Lifting the Vehicle.....	1
Lifting Point s.....	1
Lifting Point for Wheel Change.....	2
Lowering the Spare Wheel.....	4
Lifting with the Jack.....	8
Install the Spare Wheel.....	9
Install the Spare Wheel in the Mount Position.....	11
Replacement of Air Springs.....	14
Air Springs Replacement.....	14
Before Lifting the Vehicle.....	14
Lifting Point Decal.....	14
Lifting Point, Air Springs Replacement.....	15
Air Spring Replacement.....	16
Recovery and Towing.....	17
Towing.....	17
Release the Parking Brake with Air from the Bus Tires.....	19
Tire Chains.....	20
Tire chains.....	20

Safety 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 manual. Be certain that you fully understand and follow all safety warnings.

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

The following types of advisories are used throughout this manual:

DANGER

Danger indicates an unsafe practice that could result in serious personal injury or death. A danger advisory banner is in **white** type on a **black** background with a **black** border.

WARNING

Warning indicates an unsafe practice that could result in personal injury. A warning advisory banner is in **black** type on a **gray** background with a **black** border.

CAUTION

Caution indicates an unsafe practice that could result in damage to the product. A caution advisory is in **black** type on a **white** background with a **black** border.

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

Introduction

This booklet is intended to help the driver about how to replace wheels and air springs properly

Wheel Replacement

Before Lifting the Vehicle

Make sure the bus is parked on a flat even surface that is not too soft. Turn on the hazard warning flashers. Place the warning triangle out.

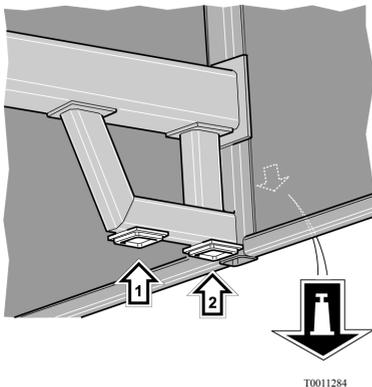
Ask the passengers to leave the bus.

Verify that the parking brake is applied.

Lifting Point s

The bus has special jack lifting points.

These jack lifting points are marked with decals.



Example of lifting points.



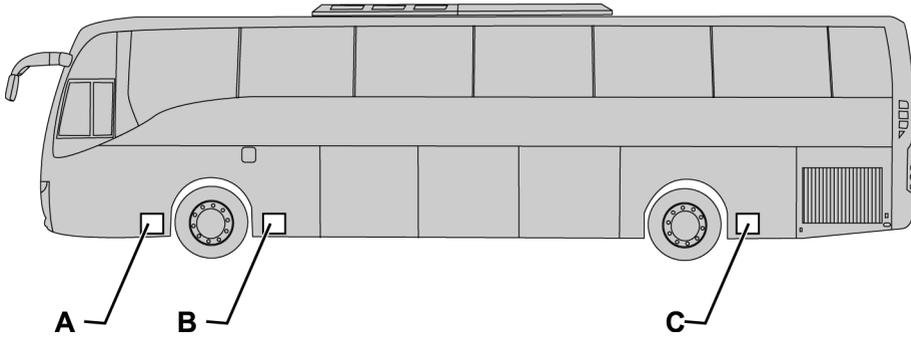
T0008922

Jack lifting point decal

2 Replacement of Wheels

Lifting Point for Wheel Change

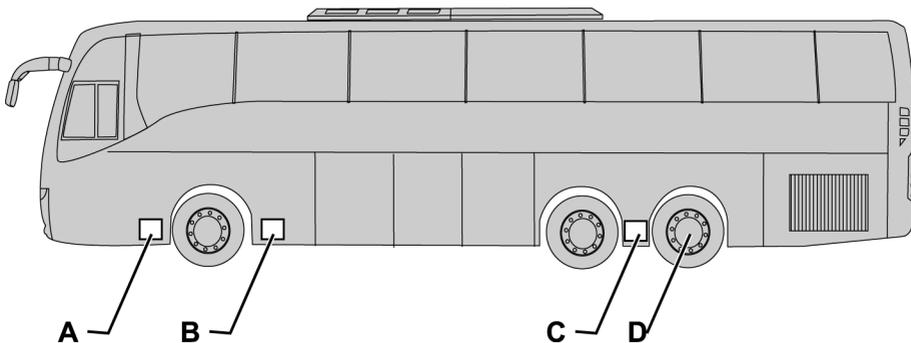
Two Axle Bus



T0015373

Bus model	Chassis	Lifting point for front axle	Lifting point for rear axle
9700	B12B,B13	B	C

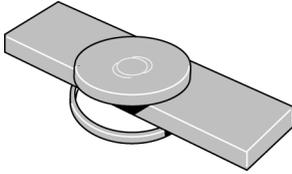
Three Axle Bus



T0015374

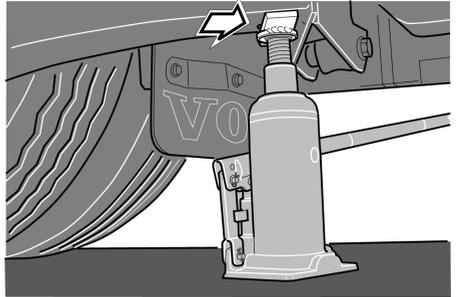
Bus model	Chassis	Lifting point for front axle	Lifting point for driving axle	Lifting point for trailing axle
9700	B12B,B13	B	C	D Lift under the axle

Lifting Point C



T0011285

Adapter for lifting air suspension beam



T0011286

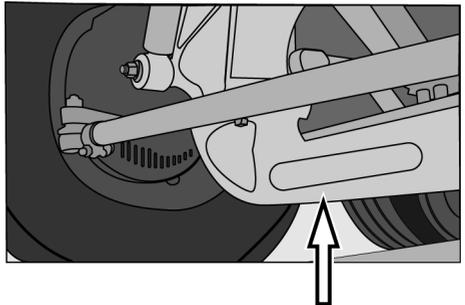
Jack with adapter at lifting point C

Lifting Point D



DANGER

Exercise the greatest care when the trailing axle is raised. Be sure to position the jack properly so that the bus does not slide off the jack. Failure to do so may result in serious personal injury or death.



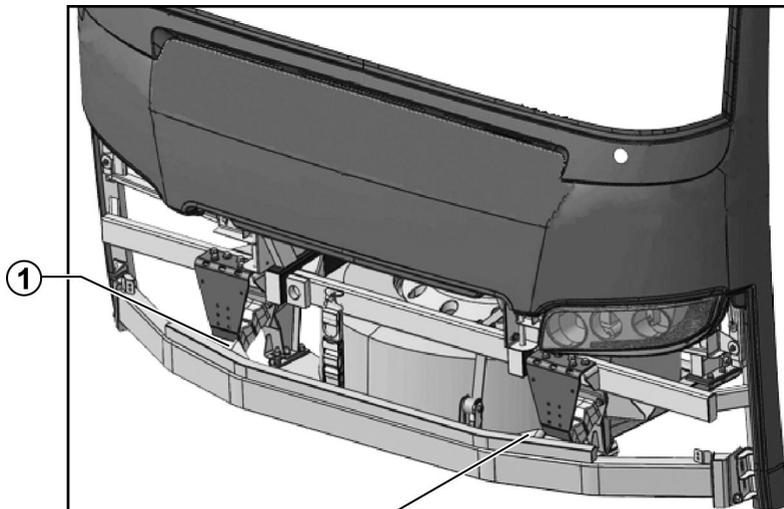
T0015389

4 Replacement of Wheels

Lowering the Spare Wheel

The Volvo 9700 is equipped with a spare wheel located behind the front bumper. To remove the spare wheel, proceed as follows:

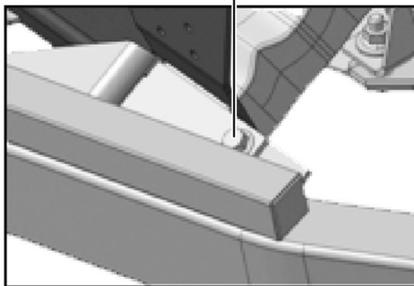
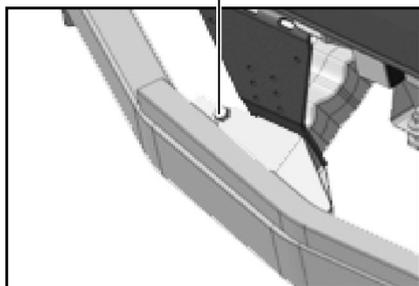
- Unscrew and remove the two support brackets (1,2) for the front under run protection brace.



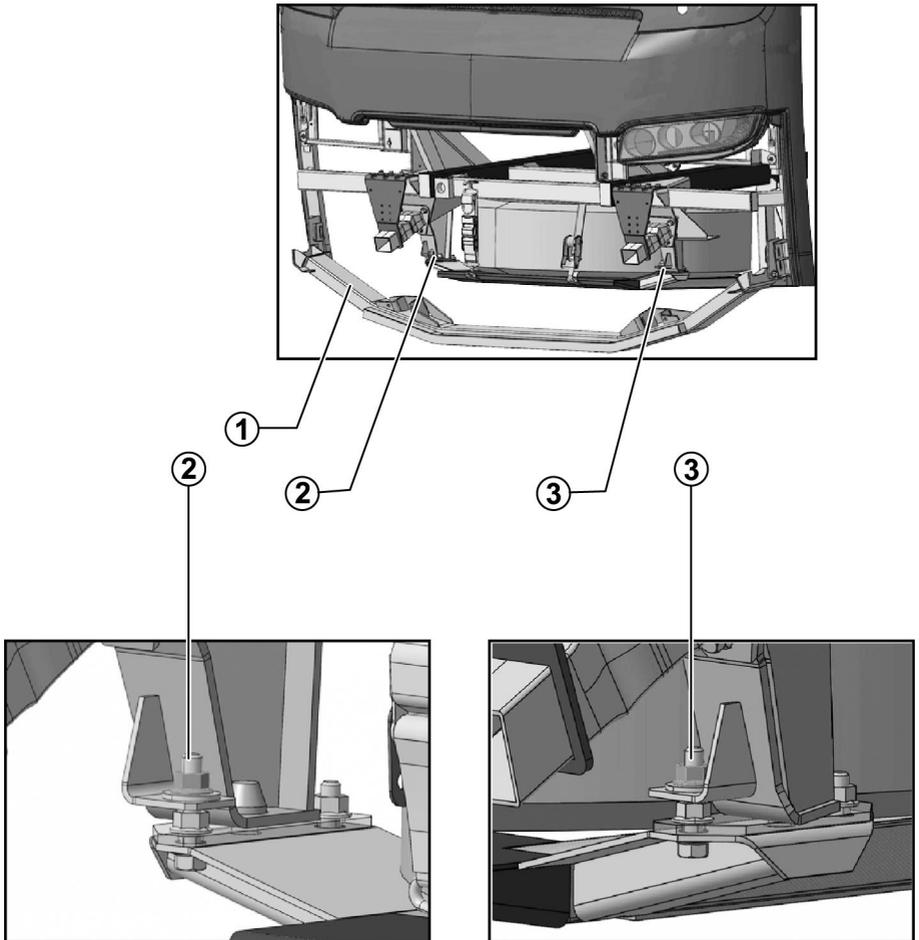
2

1

2

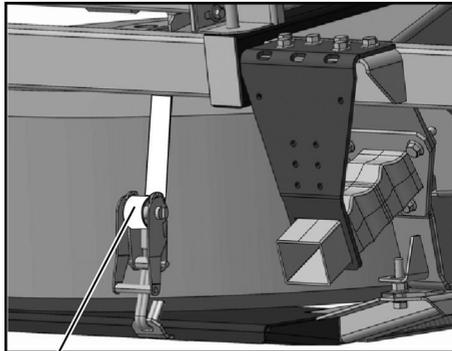


- Turn the front under run protection brace (1) downward.
- Check that the belts are tighten.
- Unscrew the security nuts (2,3)



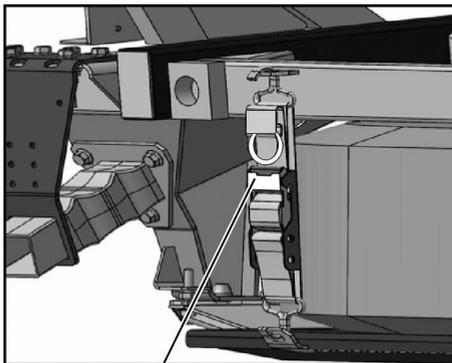
6 Replacement of Wheels

- Release and loosen the sling (1)



T0015377

- Loose sling slowly to down the spare wheel (2).



T0015378

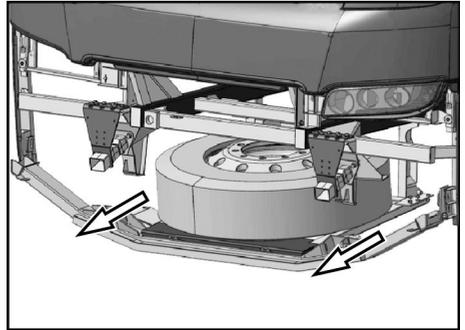


DANGER

Keep hands clear from the underside of the tire while removing it as they may get trapped between the tire and the front under run protection brace. Failure to do so may result in serious personal injury.

- Remove the spare wheel from the support frame.

Note: The sling may be used to pull out the spare wheel.



T0015379

8 Replacement of Wheels

Lifting with the Jack

DANGER

Always ensure that the bus **cannot** move. Always place stop chocks behind and in front of the wheels. Failure to do so may result in serious personal injury or death.

DANGER

Place the jack so that you do not have your arm or other body part beneath the bus when lifting is performed. Failure to do so may result in serious personal injury or death.

DANGER

Never get under a vehicle that is lifted with only a jack. Support the vehicle with jack stands or other suitable equipment if it is necessary to get under it. Failure to do so may result in serious personal injury or death.

- 1 Establish where the lifting points are. Refer to “Lifting Point for Wheel Change”, page 2 .
- 2 Place the jack directly beneath the jacking point. Assure that the jack is placed on a hard even surface.

Note: For the rear wheels, the jacking point can be a fixture on the chassis or sometimes an air suspension beam. Use the adapter if the bus is to be lifted on an air suspension beam.

- 3 Loosen the wheel nuts about two turns.
- 4 Make sure that the bus cannot slide off the jack during the lift.
- 5 Lift the bus sufficiently for the wheel to leave the ground.
- 6 Remove the wheel nuts completely and then the wheel.

Install the Spare Wheel

Before Installation

Clean the hub and spare wheel. Perform a check of the wheel contact surface with dual wheels. Check that the wheel nut threads and nut thrust washers are not damaged. Grease them lightly if possible.

Single Wheel

- 1 Lift the wheel up onto the hub so that it is centered. Install two diagonally opposite wheel nuts.
- 2 Install the remainder of the wheel nuts and tighten lightly.
- 3 Lower the bus and perform the final tightening of all nuts.

Dual Wheels

Use two guide sleeves, **9996833**.

- 1 Install the guide sleeves. Lift the inner wheel onto the hub so that it is centered.
- 2 Lift up and install the outer wheel. Make sure the valve is placed on the opposite side to the inner wheel.
- 3 Remove the guide sleeves. Install two diagonally opposite wheel nuts and tighten lightly. Install the remainder of the wheel nuts and tighten them.
- 4 Lower the bus and perform the final tightening of all nuts.

10 Replacement of Wheels

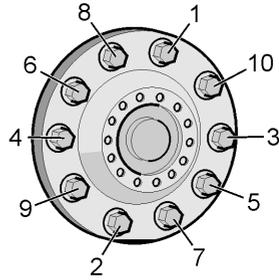
Tightening

Torque the nuts in the correct sequence, according to the tightening diagram.

Start by torquing them to **200 ± 8 Nm (148 ± 6 lb-ft)**. After that, angle torque in sequence to **90° ± 10°**.

Note: Re-torque the wheel nuts after about 200 km (124 mi).

Note: Check the tire pressure at the first service station along the road.



T0008985

Check Tightening at a Workshop

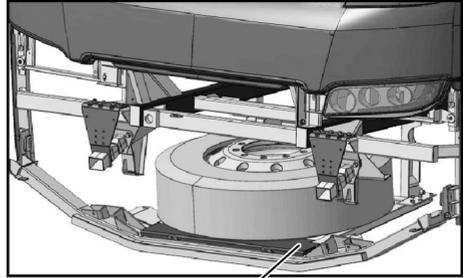
The torque check should not be less than **670 ± 30 Nm (494 ± 22 lb-ft)** for any wheel nut.

Note: Re-torque the wheel nuts every sixth month whether the wheel has been removed or not.

Install the Spare Wheel in the Mount Position

To install the spare wheel in the mount position proceed as follows:

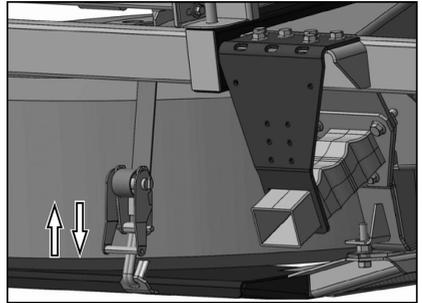
- Put the spare wheel on the support frame (1).



①

T0015380

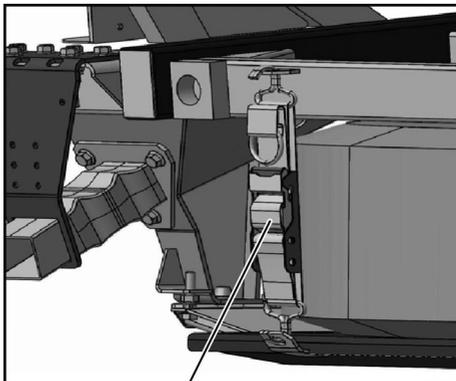
- Install the sling on the left side and use the sling mechanism to lift the spare wheel up to its raised position.



T0015381

12 Replacement of Wheels

- Install the belt on the right side and tighten the sling mechanism (1).

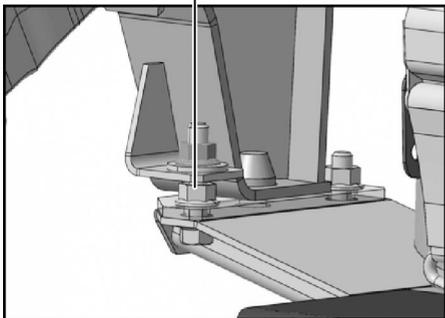


①

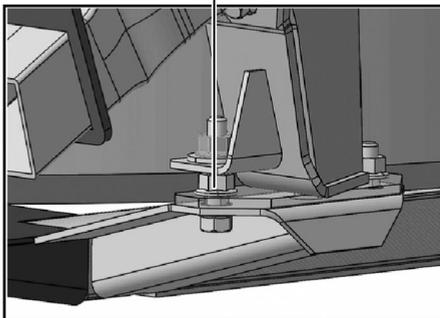
T0015382

- Install the two nuts and tighten them (2,3).

②

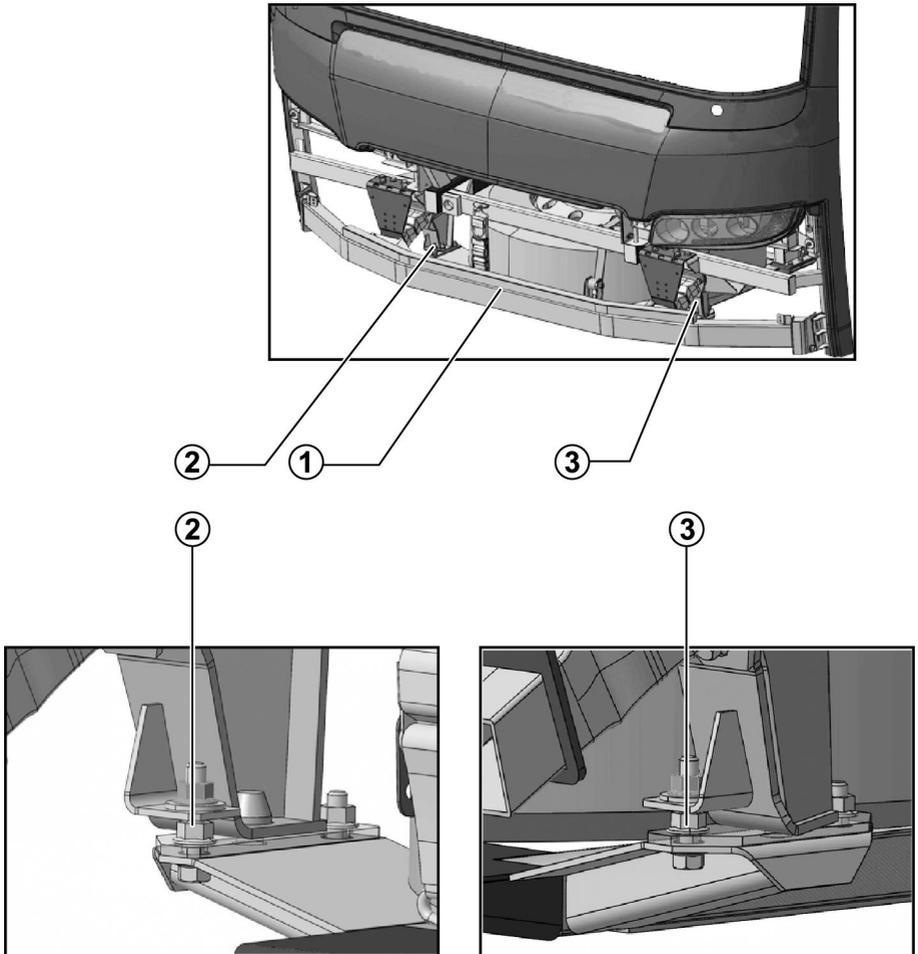


③



T0015383

- Rotate the front under run protection brace upward (1) and install the brackets with the screws (2,3).



14 Replacement of Air Springs

Air Springs Replacement

Before Lifting the Vehicle

Make sure the bus is parked on a flat even surface that is not too soft. Turn on the hazard warning flashers. Place the warning triangle out.

Ask the passengers to leave the bus.

Verify that the parking brake is applied.

Lifting Point Decal

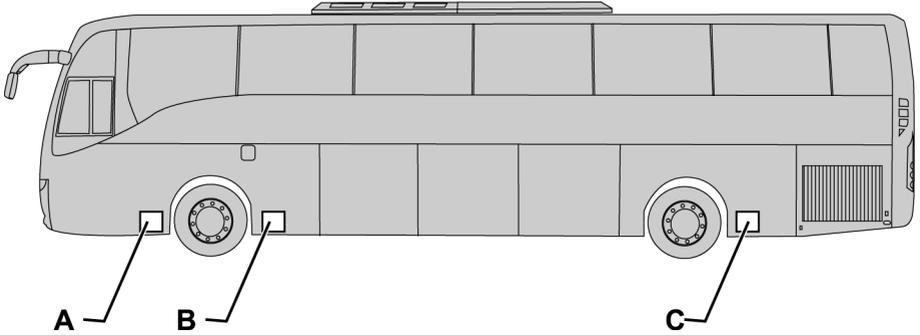
The bus has special jack lifting points. These jack lifting points are marked with decals.



T0008922

Lifting Point, Air Springs Replacement

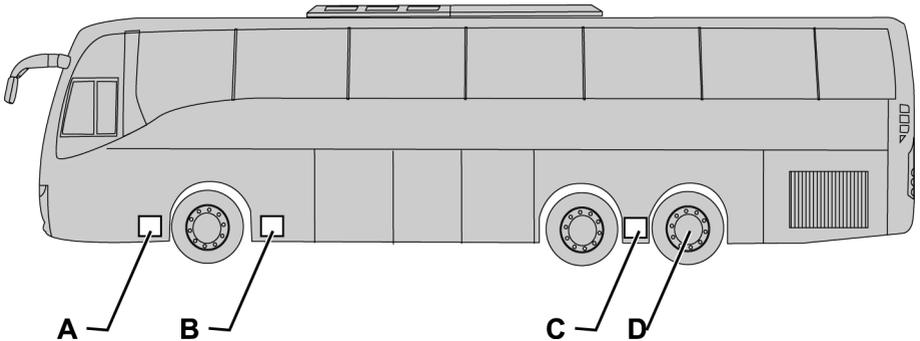
Two Axle Bus



T0015373

Bus model	Chassis	Front lifting point	Rear lifting point
9700	B12B,B13	B	C

Three-axle Bus



T0015374

Bus model	Chassis	Lifting point for front axle	Lifting point for driving axle	Lifting point for trailing axle
9700	B12B,B13	B	D	D

16 Replacement of Air Springs

Air Spring Replacement

DANGER

Always ensure that the bus **cannot** move. Always place stop chocks behind and in front of the wheels. Failure to do so may result in serious personal injury or death.

DANGER

Place the jack so that you do not have your arm or other body part beneath the bus when lifting is performed. Failure to do so may result in serious personal injury or death.

DANGER

Never get under a vehicle that is lifted with only a jack. Support the vehicle with jack stands or other suitable equipment if it is necessary to get under it. Failure to do so may result in serious personal injury or death.

- 1 Establish where the lifting points are. Refer to “Lifting Point, Air Springs Replacement”, page 15.
- 2 Place the jack directly beneath the jacking point. Assure that the jack is placed on a hard even surface.

Note: For the rear wheels: The jacking point can be a fixture on the chassis or sometimes an air suspension beam. Use the adapter if the bus is to be lifted on an air suspension beam.

- 3 Make sure that the bus cannot slide off the jack during the lift.
- 4 Lift the bus sufficiently to remove the air bellows.
- 5 Install a new air bellow and lower the bus.

Towing



CAUTION

Failure to disconnect the driveshaft, remove the drive axle shaft(s) or lift the drive wheels off the ground before towing or pushing the vehicle, can cause serious transmission damage and void the transmission warranty.

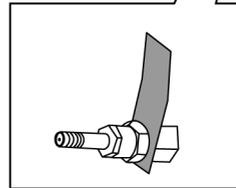
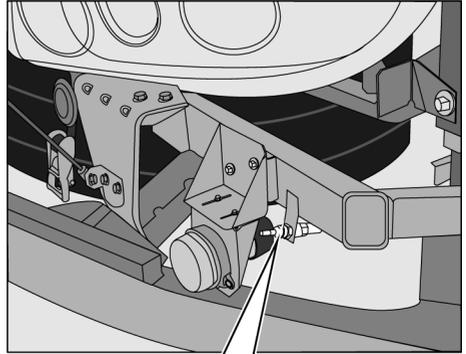


CAUTION

Do not run the engine while towing as this may result in transmission damaged.

The power steering will not function with the engine off. Keep in mind that this will make the bus steering very heavy.

If towing is over a longer distance, checks should be performed to verify the bus parking brake does not gradually become applied, due to the air pressure in the system dropping. If the bus's engine cannot be started to supply sufficient pressure to the braking circuit, pressurization from an external source can be used. Behind the front hatch there is a valve to which an external air supply can be connected. If it is not possible to arrange external air pressure, the parking brake can be disengaged mechanically. For more information refer to the vehicle "Operators Manual".



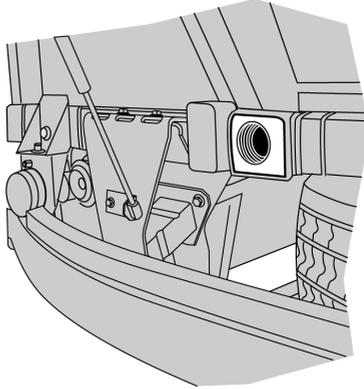
T0015390

18 Recovery and Towing

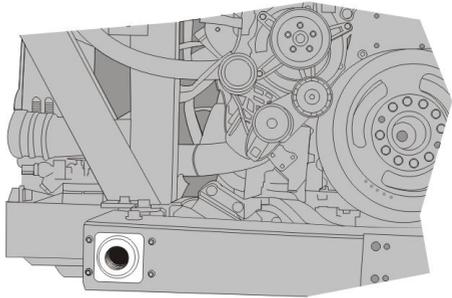
A tow bar connection should never be used for recovery (lifting), only when towing.

For more information about the connection points, refer to the vehicle “Operators Manual”.

- Use a tow bar, **NOT** a chain or rope. Install the tow bar to the correct attaching points on the vehicle.
- Ensure that the bus is attached to the towing vehicle before releasing the parking brake or removing the stop chocks from the wheels.



T8012390



T8059309

Release the Parking Brake with Air from the Bus Tires

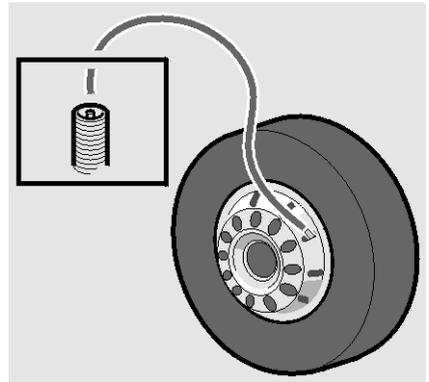


DANGER

Always ensure that the bus **cannot** move. Always place stop chocks behind and in front of the wheels. Failure to do so may result in serious personal injury or death.

Note: Instead of using the air pressure from tires, you can use an external supply of air compressed with at least 4 bars (58 psi).

- To prevent the bus from moving, chock the wheels.
- Connect the clamp end of the tire inflation hose to the valve of one of the tires.
- Move the parking brake control to the drive position.
- While pressing the other end of the tire inflation hose against the pump nipple, press in the blocking valve. Now the brake system is filled with the air from the tire. Filling can stop as soon as the air flow stops.



T0009182

20 Tire Chains

Tire chains

Some jurisdictions may require their use in certain weather conditions or during certain months of the year.

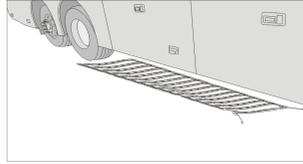
To install the tire chains please follow the instructions from the tire chains manufacturer.

Following a small procedure to install the tire chains on a bus tire, just as general explanation.

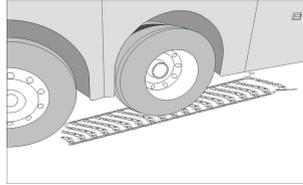
- Laid Chains in front of Drive Axle Tire
- Make sure that the chain links are spread out
- Drive forward onto 1/3 of the chain distance.
- Loop one side of the chains over the tires then loop the opposite side and link them together.

Note: Keep the chains as tight as possible in order to avoid damage to the coachwork

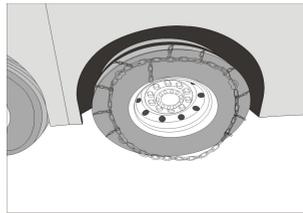
Note: Refer to laws of each State for more information related to dates an areas were the tire chains should be used, and on what axle(s) must be installed.



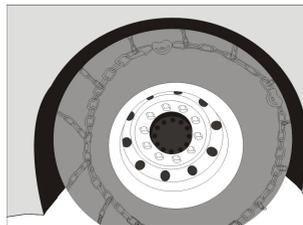
T8061480



T8061481



T8061482



T8061483

VOLVO

Volvo Bus Corporation

Göteborg, Sweden