SCANIA

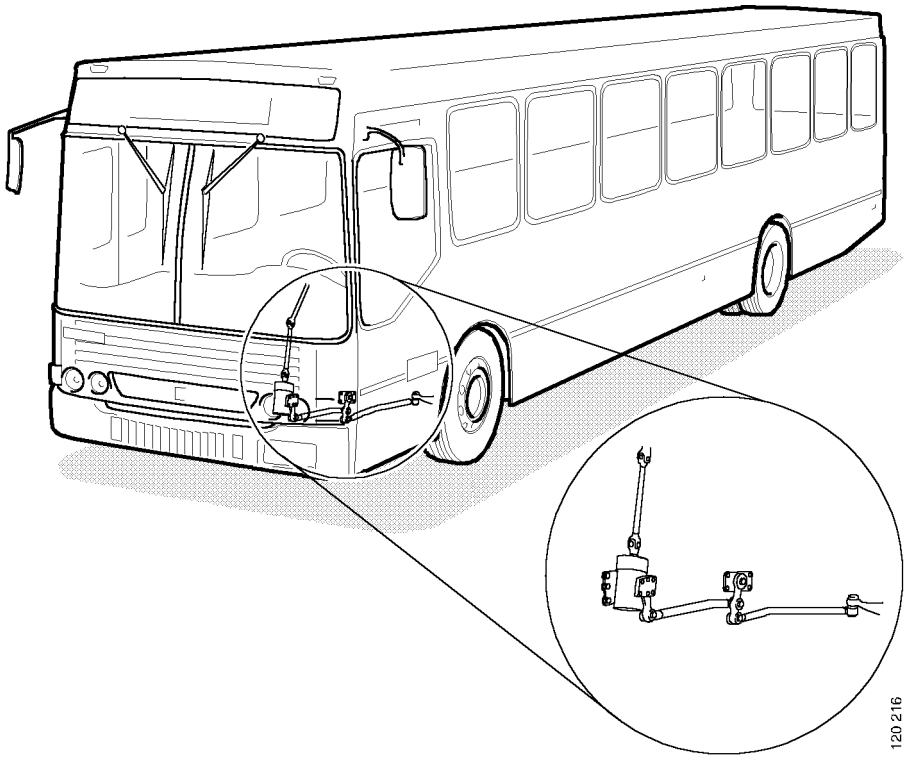
13:01-50

Issue 1 **en**

Intermediate steering arm

F bus

Function and Work description

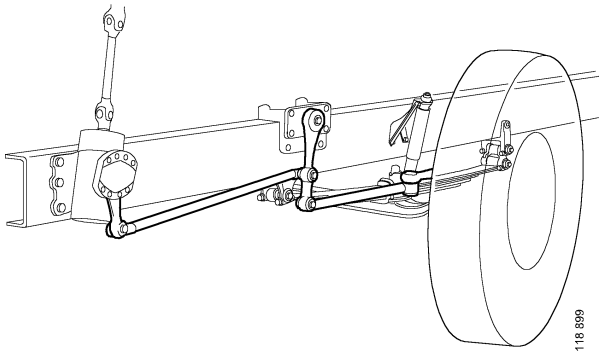


1 712 828

Contents

Function description

General



The steering system of the F bus is almost the same as the steering system of a truck. The differences are that the frame in front of the front axle is longer and the steering gear is further from the front axle. This means that the drag link would be very long. Therefore the F bus has an intermediate steering arm which divides the drag link between the drop arm and the drag link arm. In this way the front axle and the drag link arc movement is more uniform when the suspension moves up and down than with an undivided drag link.

This is also to avoid steering vibrations caused by an overlong drag link and so called bump steer (the wheel steers with suspension action). This would otherwise occur because the leaf spring and the drag link are different lengths which lead to different suspension action radius. The divided drag link also provides a better feel for the road.

The intermediate steering arm has a supporting journal which is at the same height as the upper edge of the frame just behind the front leaf spring mounting.

The drag links are mounted in a drop arm, intermediate steering arm and a drag link arm with ball joint tapers. The front drag link has a fixed length. The steering gear straight ahead position is adjusted on the rear adjustable drag link.

Great accuracy is needed when checking and adjusting front wheel angles. Therefore the laser method should be used. Refer to Group 13.

Work description

General

For repairs on front axles (king pin bearings, hubs and links), see work description in group 7.

For repairs on the suspension system, see work description in group 12.

For checking and adjusting wheel angles, straight ahead position etc, see group 13.

Checking intermediate steering arm play

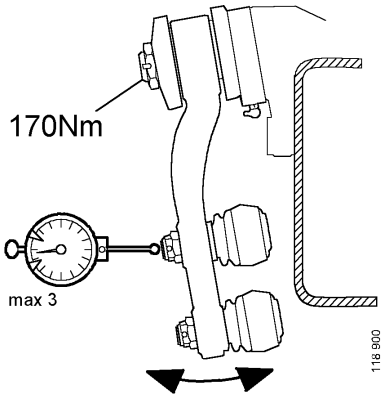
Tools

Number	Description	Illustration	Board
98 075	Dial gauge with magnetic stand		D2

Check that the lock nut is tightened to the correct torque, 170 Nm.

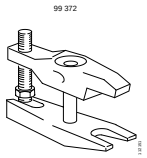
Measure the play on the upper ball joint bolt end with a dial gauge. Refer to the illustration.

If play is more than 3 mm the bearing should be renewed.



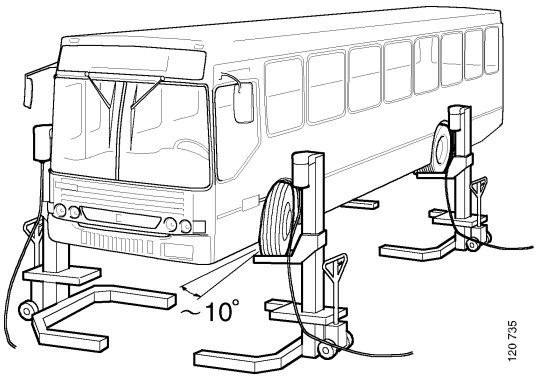
Removing intermediate steering arm

Tools

Number	Description	Illustration	Board
99 372	Ball joint remover		AM3

1 Turn the steering wheel one turn to the left on left-hand drive vehicles and one turn to the right on right-hand drive vehicles (in order to fit tool 99 372).

2 Jack up the bus.



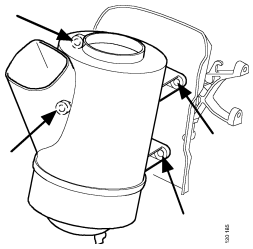
WARNING!

Never work under a vehicle supported by jacks only. Use axle stands.

3 Open the side cover under the drivers position.

4 Remove the filter from the air cleaner and remove the air cleaner.

5 Mark the position of the intermediate steering arm before removing it. The arm must be turned in the same direction when fitting.

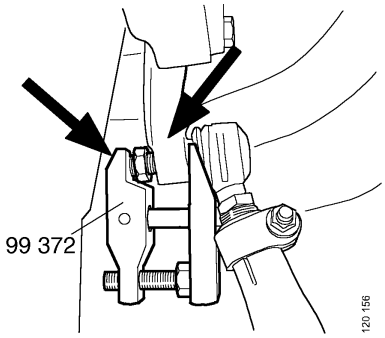


6 Remove the guide joint split pin and loosen the nut. Do not remove the nut so that the link does not fall down when the ball joint comes loose.

7 Fit ball joint separator 99 372.

8 Set the tool on the ball joint so that the upper and lower parts are parallel.

IMPORTANT! The tool must not push the ball joint apart, only place the ball joint under tension.

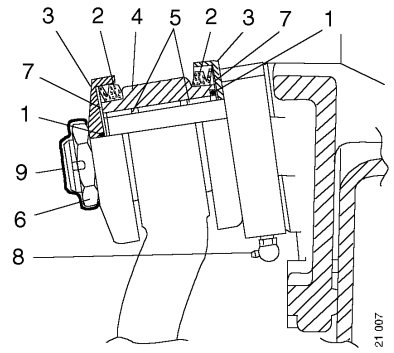


9 Tighten the tool by hand using an open spanner.

10 Tap the tool. You can also tap the outside of the intermediate steering arm (as illustrated with the arrows).

11 Repeat steps 9 and 10 until the ball joint comes loose.

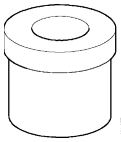
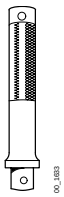
12 Remove the protective cap, lock nut, seal, O-ring, shim and the steering arm bearing V-ring seal. Remove the intermediate steering arm.



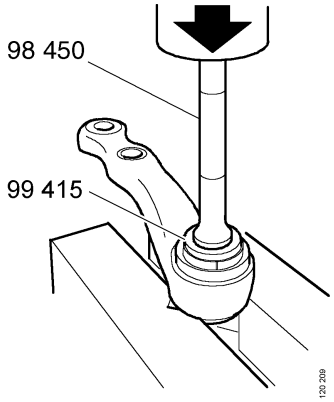
1 O-ring
2 V-ring seal
3 Seal
4 Intermediate steering arm
5 Bush
6 Lock nut
7 Shim
8 Grease nipple
9 Protective cap

Renewing intermediate steering arm bearing

Tools

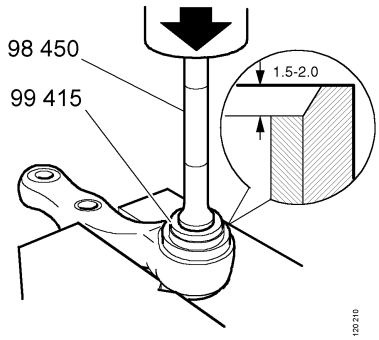
Number	Description	Illustration	Board
99 415	Drift		AM3
98 450	Handle	 98 450	R2 AD2 AM1

1 Press out the bushes with drift 99 415 and handle 98 450 in a press.



2 Clean the bearing surface inside the arm.

3 Press on a new bush from each direction. Press down the bearings with drift 99 415 and handle 98 450 until they are at a depth of 1.5-2.0 mm from the edge of the hole.



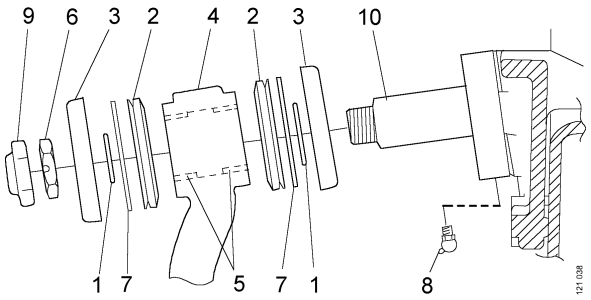
Fitting the intermediate steering arm

1 Clean the supporting journal.

2 Fit a new O-ring, seal and shim as far as possible inside the supporting journal.

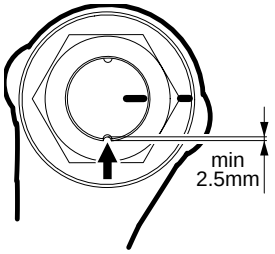
3 Fit new V-ring seals on the intermediate steering arm and fit the supporting journal at the same time as steering the ball joints.

4 Fit the shim, O-ring, seal and lock nut.



1 *O-ring*
2 *V-ring seal*
3 *Seal*
4 *Intermediate steering arm*
5 *Bush*
6 *Lock nut*
7 *Shim*
8 *Grease nipple*
9 *Protective cap*
10 *Supporting journal*

5 Tighten the lock nut to 170 Nm and lock the nut by closing up its lock flange at least 2.5 mm towards the groove in the supporting journal (see illustration). Fit the protective cap.



6 Lubricate the bearing through the grease union.

7 Screw on the ball joints in the intermediate steering arm. Tighten the nuts to 250 Nm and then to the closest slot. Secure with a new split pin.

8 In order to fit the air cleaner without a filter, insert the hand from underneath and feel when the air cleaner mates against the engine air pipe. First fit the air cleaner against the air intake and then against the engine air pipe.

9 Fit the air filter.

Specifications

Tightening torque

Guide joint castellated nut..... 250 Nm *

Lock nut on the intermediate steering arm supporting journal ..... 170 Nm

*) Pull to the nearest lock hole and lock with a new split pin.