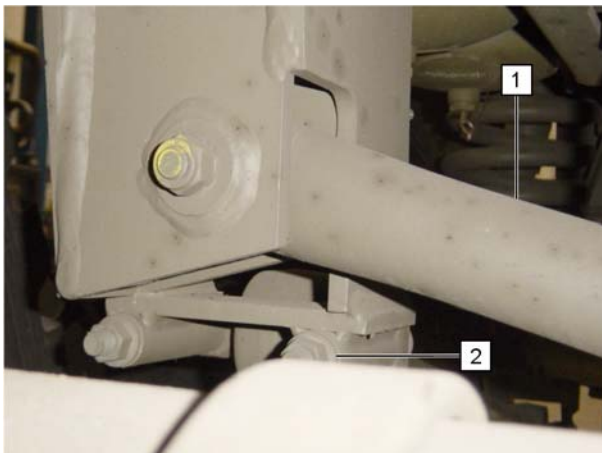


- l. Install the rear propeller shaft (refer to EMEI Veh D 393 Group 6 - Main Transmission).



THE PANHARD ROD BUSHES AND SWAY BAR BUSHES WILL BE SUBJECT TO EXTREME TORSIONAL STRESS CAUSING ACCELERATED WEAR AND PREMATURE FAILURE IF THE CONNECTING BOLTS ARE TORQUED WHILST THE VEHICLE IS ON CHASSIS STANDS. DO NOT TORQUE THE CONNECTING BOLTS UNTIL THE WEIGHT OF THE VEHICLE IS ON THE SUSPENSION.

- m. Remove the chassis stands supporting the vehicle.
- n. Connect the intermediate axle panhard rod (Fig 294(1)) to the right hand chassis rail mounting bracket with the M16 bolt and conical spring washer. Torque the bolt to 315 Nm.



- 1. Panhard rod
- 2. Inner mounting bolt

Figure 294 - Panhard Rod Mount Connection

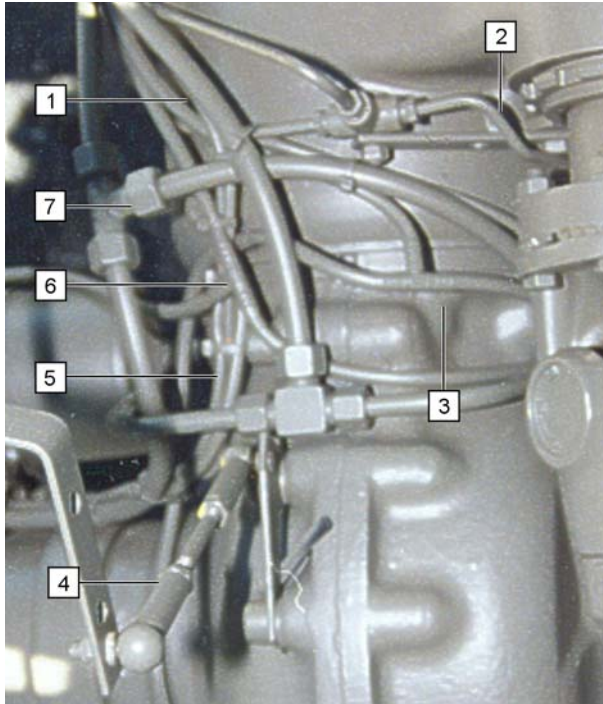
- o. Slide the right hand inner mounting bolt (Fig 294(2)) securing the right hand longitudinal link into position and fit the lock nut. Torque the bolt to 150 Nm.

- p. Install the lower mounting bolts, angle brackets, serrated washers and self locking nuts securing the left hand and right hand shock absorbers to the intermediate axle. Torque the mounting bolts to 250 Nm.
- q. Install the rear sway bar on the intermediate axle (refer to Group 19 Frame/Chassis Group, para 344).
- r. Connect the ALB linkage (Fig 295(4)) ball joint to the socket on the mounting bracket on the intermediate axle housing and secure with the locking clip. Lubricate the inside of the socket with grease prior to assembly.

NOTE

Ensure that all cable ties (noted on removal) are replaced. As a rule of thumb cable ties must fasten wiring looms and air lines at intervals of 500 mm, but may be fitted at shorter intervals if required.

- s. Position the air lines, pipes and electrical looms in their original mounted positions (as noted on removal) on the intermediate axle housing, torque tube and chassis rail so they are not under tension or subject to chafing and secure them with nylon ties.
- t. Install the intermediate axle park brake actuator breather lines with the assistance of the clamping pliers (Table 2, Item 46) and a soft hammer.
- u. Connect the intermediate axle differential lock shift cylinder air supply line (tagged on removal) to the axle housing. Fit new sealing washers to the banjo bolt.
- v. Connect the left and right intermediate axle wheel hub breather lines (Fig 295(6)) (tagged on removal) to the axle housing. Fit new sealing washers to the banjo bolts.

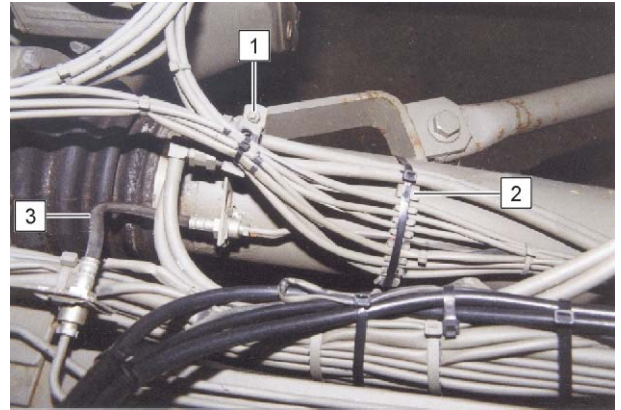


1. Park brake actuator air supply line
2. Hydraulic brake line
3. Differential breather line
4. ALB linkage
5. Brake wear indicator electrical lead
6. Wheel hub breather line
7. CTIS air supply line

Figure 295 - Lines and Cables - Intermediate Axle

- w. Connect the intermediate axle differential breather line (Fig 295(3)) (tagged on removal) to the intermediate axle housing. Fit new sealing washers to the banjo bolts.
- x. Connect the power divider shift cylinder breather line (tagged on removal) to the intermediate axle housing. Fit new sealing washers to the banjo bolts.
- y. Connect the power divider shift cylinder electrical lead (tagged on removal) to the intermediate axle housing.
- z. Connect the CTIS air supply line (Fig 295(7)) (tagged on removal) to the connector at the intermediate axle torque tube.
- aa. Connect the air supply lines to the left and right park brake actuator cylinders and to the connector for the air line (Fig 295(1)) at the intermediate axle torque tube.
- ab. Connect the intermediate axle brake wear indicator loom connector to the main wiring loom on the left hand chassis rail. Secure the intermediate brake wear indicator loom to the main wiring loom with cable ties.

- ac. Connect the flexible brake hose (Fig 296(3)) to the steel brake pipe on the top of the intermediate axle torque tube. Secure the hose to the mounting bracket on the torque tube with the locking clip.



1. M6 bolt
2. Insulator piece
3. Flexible brake hose

Figure 296 - Intermediate Axle Torque Tube Connections

- ad. Secure the CTIS hose with bracket and the park brake actuator cylinder air supply line to the mounting bracket at the front of the intermediate axle torque tube with the M6 bolt (Fig 296(1)) and self locking nut.
- ae. Bleed and adjust the service brakes (refer to EMEI Veh D 393 Group 8 - Brake System).
- af. Check the park brake adjustment (refer to EMEI Veh D 393 Group 8 - Brake System).
- ag. Check the intermediate axle differential, power divider and axle hub oil levels.
- ah. Check the ALB valve adjustment, rectify if required (refer to Group 8 - Brake System, para 140).
- ai. Road test the vehicle and check the operation of the intermediate axle including the differential lock and the power divider lock. Check for air and oil leaks, rectify as required.

NOTE

Tighten the wheel nuts again after 50 km of operation.

- aj. Torque the wheel nuts to 400 Nm.

Intermediate Axle Half-Shaft

NOTE

The removal/replacement procedure for the intermediate axle and rear axle half-shafts is identical.

113. Removal

- a. Apply the hand brake and chock the wheels at the front and rear axles.

WARNING

DO NOT WORK ON THE VEHICLE WITHOUT SAFETY STANDS BENEATH THE CHASSIS OR BENEATH THE AXLE. PLACE THE AXLE STAND AS CLOSE TO THE RAISED WHEEL AS POSSIBLE. FAILURE TO USE SAFETY STANDS MAY RESULT IN SEVERE INJURY OR DEATH IF THE JACK SLIPS OR COLLAPSES.

- b. Jack up the intermediate axle until the wheels are clear of the ground and support both wheel hubs on safety stands.
- c. Remove the road wheel at the faulty hub (refer to the Operator Handbook).

WARNING

THE CTIS QUICK DISCONNECT COUPLING ON THE OPPOSING WHEEL MUST BE DISCONNECTED IF THE OPPOSING WHEEL IS NOT SUPPORTED BY A SAFETY STAND. IF THIS ACTION IS NOT DONE WHEN THE CTIS LINE OR WHEEL HUB ON THE FAULTY HUB IS DISCONNECTED THE OPPOSING TYRE WILL DEFLATE AND ALLOW THE VEHICLE TO SLIP OFF THE AXLE STAND AND INJURE PERSONNEL AND DAMAGE EQUIPMENT.

- d. Remove the wheel hub cover off the opposing wheel hub and disconnect the CTIS quick disconnect (Fig 297).

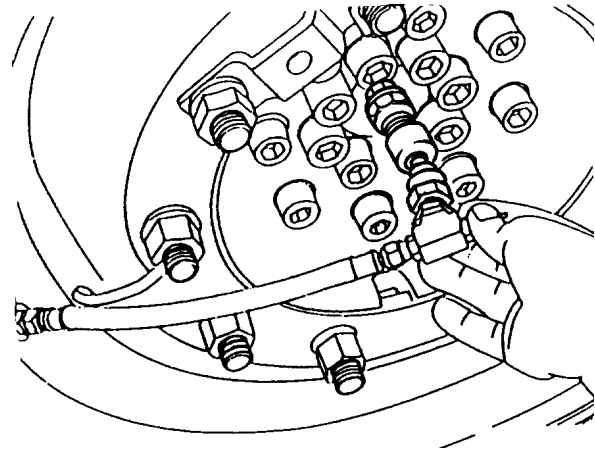
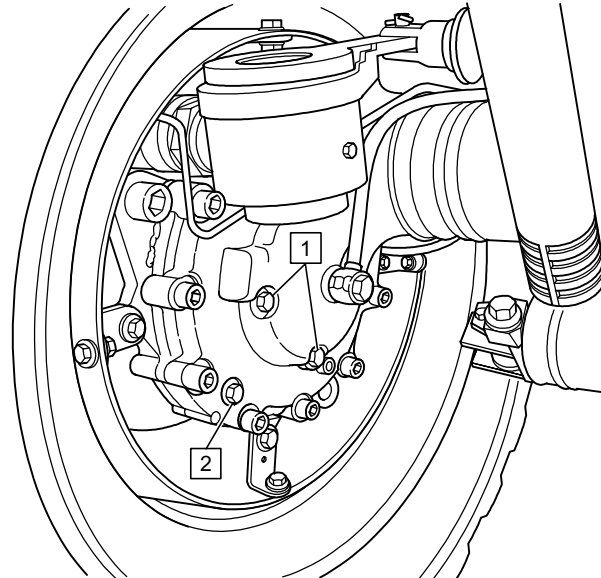


Figure 297 - CTIS Quick Disconnect Coupling - Removal

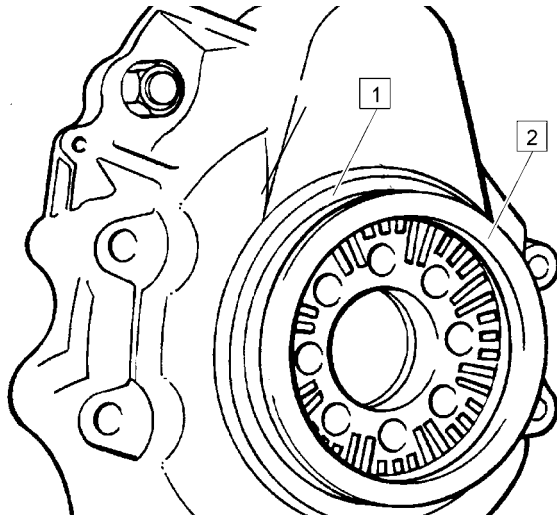
- e. Clean the area around the axle hub drain plug (Fig 298(2)) and drain the oil from the wheel hub drive. Refit the drain plug with a new sealing washer and tighten securely.



1. Hub gear bearing ring mounting bolt
2. Drain plug

Figure 298 - Wheel Hub Drain Plug

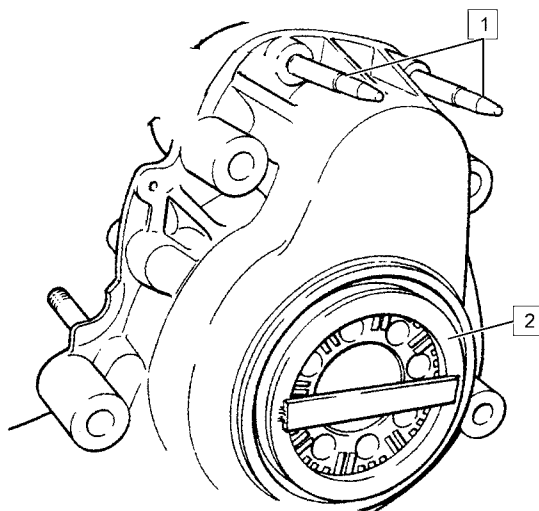
- f. Remove the brake caliper (refer to EMEI Veh D 393 Group 8 - Brake System).
- g. Remove the wheel hub with brake disc and CTIS sleeve (refer to EMEI Veh D 393 Group 8 - Brake System).
- h. Remove the wheel hub seal and wear ring (Fig 299(1) and (2)).



1. Wheel hub seal
2. Wear ring

Figure 299 - Wear Ring - Removal

- i. Install the retainer (Table 2, Item 23) (Fig 300(2)) in the hub.
- j. Remove the ten M14 (Grade 12.9) hub drive housing retaining bolts and screw in the three guide pins (Table 2, Item 24) into the mounting holes (two upper and one lower) (Fig 300).



1. Guide pin
2. Retainer

Figure 300 - Wheel Hub Housing - Removal

- k. Remove the hub drive housing, at the same time push the retainer completely into the roller bearing to prevent the bearing rollers from dropping out.
- l. Remove the four bolts (Fig 298(1)) securing the hub gear bearing ring to the hub casing.



SUPPORT THE PULLER BRIDGE WITH A CRANE TO PREVENT THE HUB GEAR FROM FALLING DURING REMOVAL.

- m. Remove the hub gear with the puller and plate (Table 2, Items 25 and 26) (Fig 301).

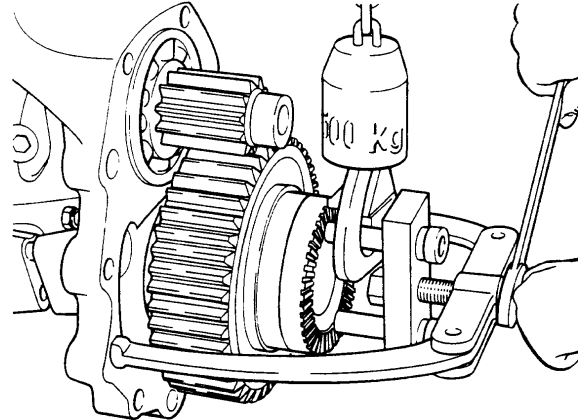


Figure 301 - Hub Gear - Removal

- n. Remove the circlip, shim, spacer ring and bearing from the hub gear.
- o. Remove the half-shaft gear with bearing from the axle housing with two levers (tyre levers).
- p. Remove the circlip, thrust ring and bearing from the half-shaft gear (Fig 303).
- q. Remove the hub gear outer bearing and seal from the hub drive housing with a hammer and soft drift.
- r. Remove the half-shaft gear outer bearing from the hub drive housing with the puller and extractor (Table 2, Items 25 and 43).

114. Cleaning and Inspection

- a. Clean and inspect all components. Replace any worn or damaged components.
- b. If the integrity of components is in doubt, crack test all components using an appropriate method. De-magnetise components that are induction tested before assembly and/or installation.

115. Installation

NOTE

Install the long tooth profile of the right hand intermediate axle half-shaft to the differential lock. Install the long tooth profile of the left hand rear axle half-shaft to the differential lock.

- a. Install the axle half-shaft into the axle housing (Fig 302).

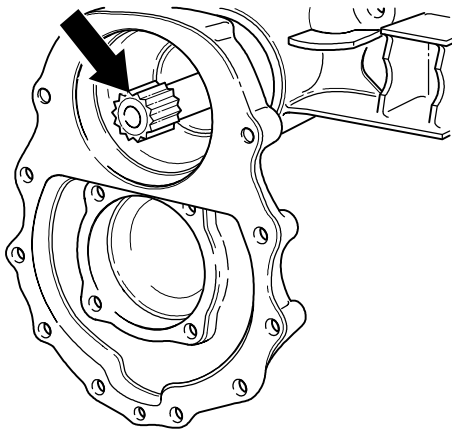


Figure 302 - Axle Half-Shaft - Installation

NOTE

Install the seal side of the bearing towards the half-shaft gear.

- b. Assemble the bearing, thrust ring and circlip on the half-shaft gear (Fig 303).

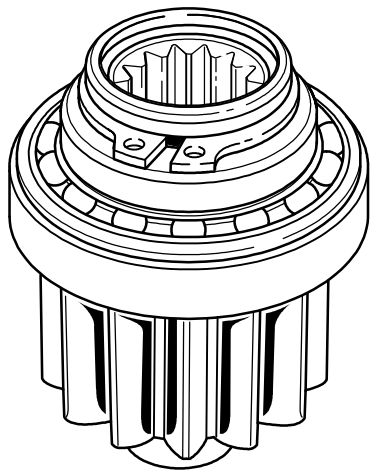


Figure 303 - Half-Shaft Gear - Assembly

- c. Install the half-shaft gear (Fig 304).

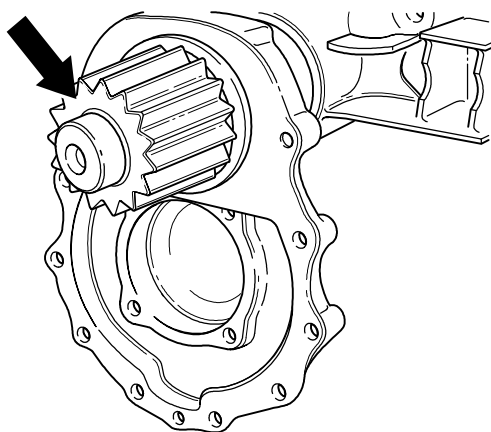


Figure 304 - Half-Shaft Gear - Installation

- d. Install the bearing retaining ring on the hub gear. The machined face of the bearing retaining ring must face the bearing. Fit the bearing, spacer ring and circlip to the shaft of the hub gear.

NOTE

There must be zero end float of the bearing on the shaft of the hub gear. Eliminate end float by inserting a shim of appropriate thickness between the bearing and the spacer ring (Fig 305).

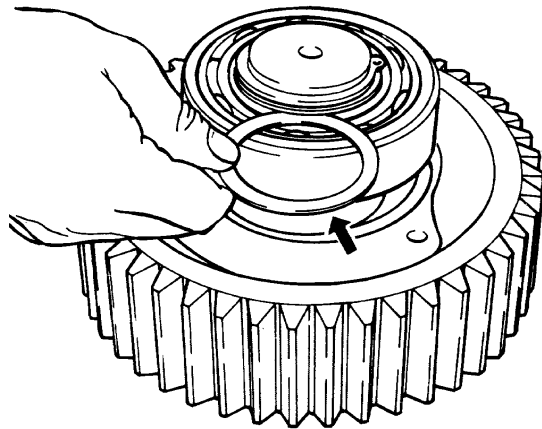
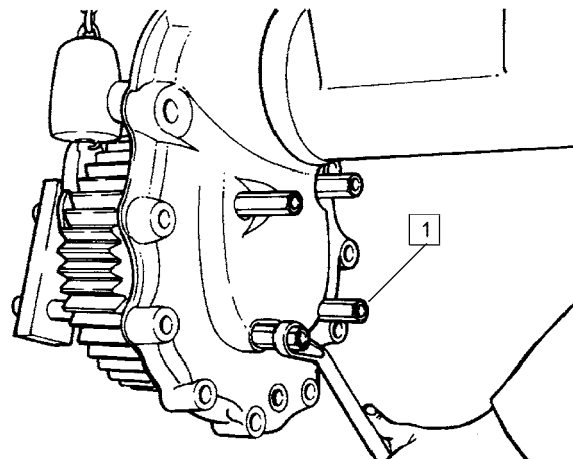


Figure 305 - Bearing End Float Adjustment

- e. Screw the puller studs (Table 2, Item 31) into the bearing retaining ring in the hub gear and fit the hub gear with puller studs to the inner axle housing.
- f. Pull the hub gear uniformly into the axle housing bearing seat with the puller nuts (Table 2, Item 31) (Fig 306(1)).



- 1. Puller nuts

Figure 306 - Hub Gear - Installation

- g. Remove the puller nuts and studs. Coat the threads of the four hub gear retaining bolts with a sealing compound (Terostat 56, Part No. 001 989 58 20 or equivalent) and install the bolts. Torque the bolts to 40 Nm.

- h. Coat the half-shaft gear shaft roller bearing with a lubricant (Molycote or equivalent) and install in the outer casing with the drift and replacer (Table 2, Items 6 and 32) (Fig 307).

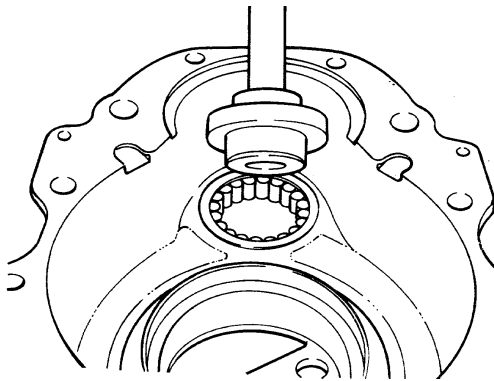


Figure 307 - Half-Shaft Gear Shaft Bearing - Installation

- i. Install the hub gear outer bearing race in the outer casing with the handle and replacer (Table 2, Items 6 and 33) (Fig 308). Do not fit the rollers in the bearing race at this stage.

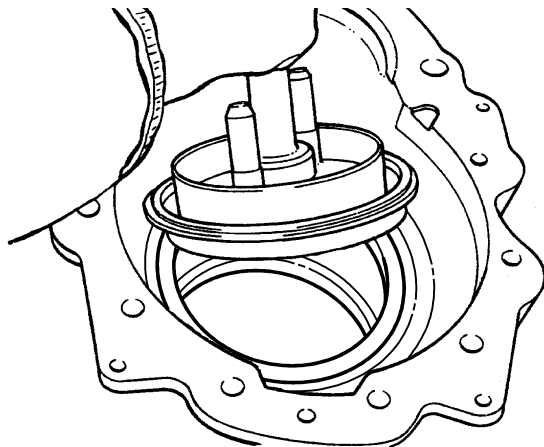


Figure 308 - Large Roller Bearing Race - Installation

- j. Insert the rollers in the bearing race and lubricate the rollers with a lubricant (Molycote or equivalent).
- k. Install the retainer (Table 2, Item 23) in the bearing to retain the rollers in position.
- l. Screw the three guide pins (Table 2, Item 24) into the mounting holes (two upper and one lower).

NOTE

Maintain the position of the retainer (Table 2, Item 23) during installation of the hub drive housing to prevent movement of the bearing rollers.

- m. Coat the contact surfaces of the hub drive housing with a sealing compound (Terostat 56, Part No. 001 989 58 20 or equivalent).

- n. Install the hub drive housing and progressively remove the retainer from the hub gear bearing as the housing is installed. Ensure that the bearing rollers remain in position.
- o. Progressively remove the guide pins and install the ten M14 (Grade 12.9) hub housing retaining bolts (Fig 309). Torque the bolts to 200 Nm.

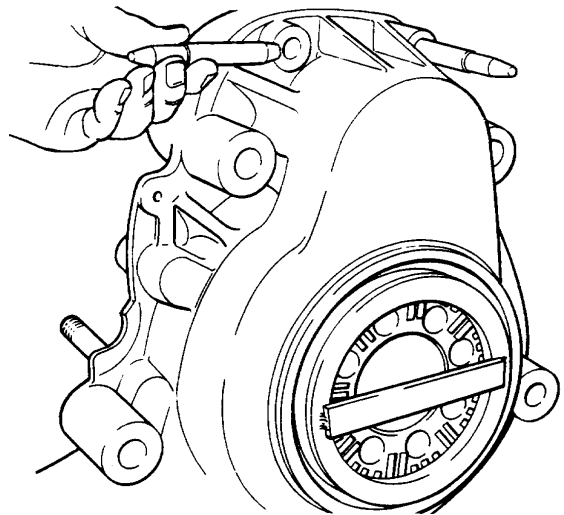


Figure 309 - Wheel Hub Housing - Installation

- p. Coat the shaft seal ring and seal spring with a lubricant (Molycote or equivalent) and install with the handle and replacer (Table 2, Items 6 and 33) (Fig 310).

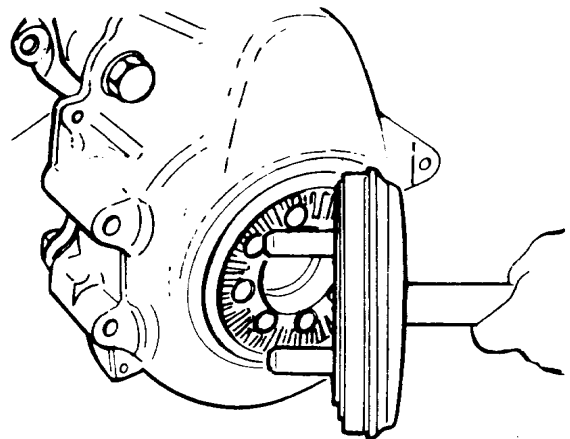
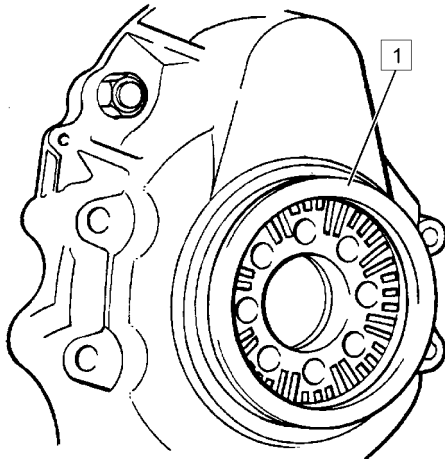


Figure 310 - Sealing Ring - Installation

- q. Inspect the seal to ensure that the seal spring has not moved during installation.
- r. Carefully install the wear ring (Fig 311(1)) with a soft hammer. When installed check that the wear ring contacts the wheel hub housing all the way around its circumference.



1. Wear ring

Figure 311 - Wear Ring - Installation

- s. Screw the guide pins (Table 2, Item 34) into the output gear (Fig 312).

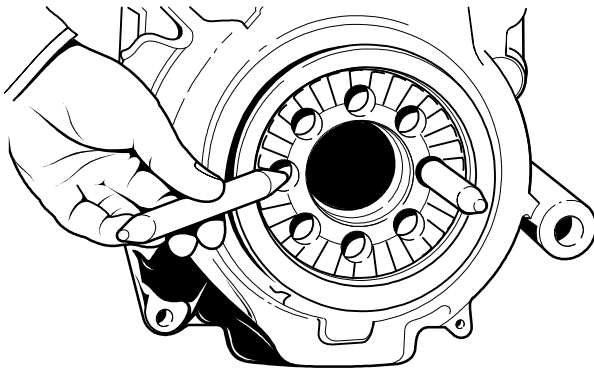


Figure 312 - Guide Pins - Installation

- t. Install the wheel hub with brake disc and CTIS sleeve.
- u. Install the brake caliper (refer to EMEI Veh D 393 Group 8 - Brake System).

- v. Check the adjustment of the park brake (refer to EMEI Veh D 393 Group 8 - Brake System).
- w. Fill the wheel hub drive with 0.25 litres of oil (OEP 220) (refer to the Operator Handbook).
- x. Check the intermediate axle differential oil level, top up if required.

NOTE

Tighten the wheel nuts again after 50 km of operation.

- y. Install the road wheel. Torque the wheel nuts to 400 Nm (refer to the Operator Handbook).
- z. Connect the CTIS quick disconnect coupling on the opposing wheel and fit the wheel hub cover.
- aa. Remove the axle stands supporting the vehicle.

NOTE

When checking the axle for serviceability, check that air is not leaking from the venting block behind the cab. Air leaking from the venting block may indicate a CTIS inner hub seal on a road wheel is leaking.

NOTE

A leaking differential lock cylinder will over-pressure the axle and blow oil seals. To test a differential lock cylinder suspected of being faulty, isolate the axle by disconnecting and plugging the vent line connection at the axle and connecting a pressure gauge to the vent line fitting at the axle. If pressure is evident in the axle when the differential lock is engaged then the differential lock cylinder is leaking.

- ab. Road test the vehicle, inspect for leaks and check the performance of the intermediate axle including the CTIS. Recheck the oil levels, top up if required.

Intermediate Axle Coil Spring

NOTE

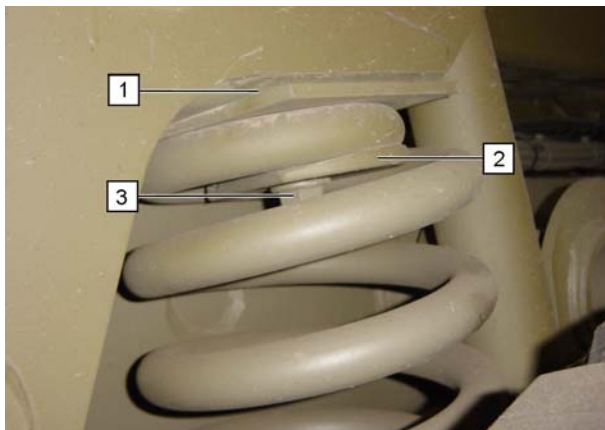
The removal/installation procedure for the intermediate and rear axle coil springs is identical.

116. Removal

WARNING

DO NOT WORK ON THE VEHICLE WITHOUT SAFETY STANDS BENEATH THE CHASSIS OR BENEATH THE AXLE. PLACE THE AXLE STAND AS CLOSE TO THE RAISED WHEEL AS POSSIBLE. FAILURE TO USE SAFETY STANDS MAY RESULT IN SEVERE INJURY OR DEATH IF THE JACK SLIPS OR COLLAPSES.

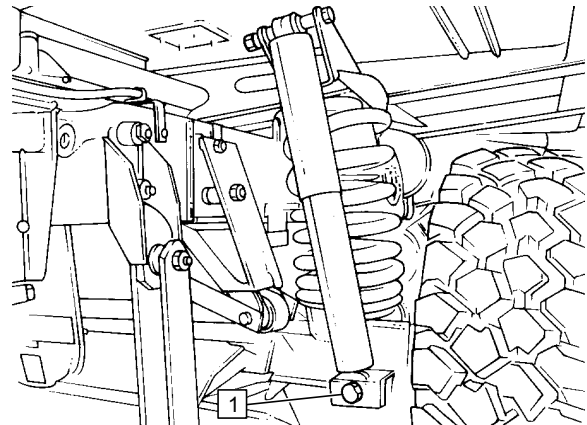
- a. Chock the road wheels at the front axle and apply the park brake.
- b. Disconnect the ALB linkage from the intermediate axle (refer to Group 8 - Brake System, para 137).
- c. Place the vehicle on chassis stands so that the wheels are just touching the ground.
- d. Remove the self locking nut (Fig 313(3)), the coil spring retaining plate (Fig 313(2)) and the coil spring centre bolt.



1. Upper wear plate
2. Coil spring retaining plate
3. Self locking nut

Figure 313 - Rear Coil Spring Mounting Bolt - Removal

- e. Remove the wheel on the wheel station that is to have the coil spring replaced (refer to the Operator Handbook).
- f. Remove the lower shock absorber bolt (Fig 314(1)), angle bracket (intermediate axle only), serrated washer and self locking nut. Detach the shock absorber from the axle housing.



1. Shock absorber mounting bolt

Figure 314 - Lower Shock Absorber Mount - Disconnecting

- g. Lower the axle, and remove the coil spring and the upper wear plate (Fig 315(1)).

117. Cleaning and Inspection

WARNING

ENSURE THE SAFETY REQUIREMENTS FOR USE OF COMPRESSED AIR ARE STRICTLY ADHERED TO. INADVERTANT USE OF COMPRESSED AIR EQUIPMENT MAY RESULT IN INJURY TO PERSONNEL.

- a. Wash the parts in an appropriate cleaning agent and blow dry with compressed air. Inspect all parts and the coil spring brackets for wear or damage, replace as required.

118. Installation

- a. Position the coil spring on the coil spring retaining plate so that a clearance of 15 mm to 35 mm exists between the end of the coil spring and the lip of the coil spring retaining plate (Fig 315).

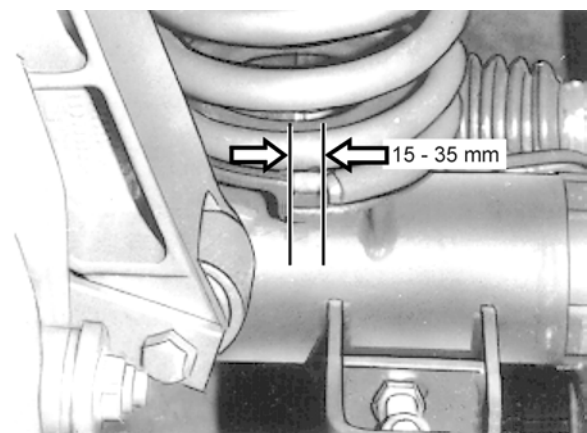


Figure 315 - Rear Coil Spring Lower Coil - Alignment

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- b. Position the upper wear plate on top of the coil spring.
- c. Jack up the axle and install the coil spring retaining plate to the top of the coil spring. Position the flat of the retaining plate flush with the end of the coil spring (Fig 316).

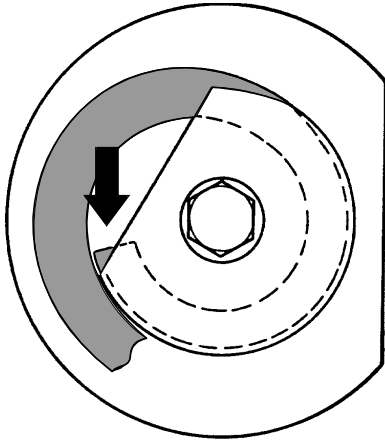


Figure 316 - Rear Coil Spring Top Coil - Alignment

- d. Fit the coil spring retaining plate (Fig 313(2)), the coil spring centre bolt and self locking nut (Fig 313(3)). Do not torque the bolt at this stage.
- e. Lower the jack and align the shock absorber lower eye and the mounting bracket on the axle housing, then install the bolt, angle brackets (intermediate axle only), serrated washer and self locking nut. Torque the bolt to 240 Nm.
- f. Install the road wheel (refer to the Operator Handbook).
- g. Torque the coil spring centre bolt to 150 Nm.
- h. Remove the chassis stands from beneath the vehicle.
- i. Connect the ALB linkage to the axle (intermediate axle only) (refer to Group 8 - Brake System, para 139).
- j. Road test the vehicle and check the performance of the rear coil springs under all operating conditions.

Rear Axle Assembly

119. Removal

- a. Apply the hand brake and chock the wheels at the front and intermediate axles.

WARNING

DO NOT WORK ON THE VEHICLE WITHOUT SAFETY STANDS BENEATH THE CHASSIS OR BENEATH THE AXLE. PLACE THE AXLE STAND AS CLOSE TO THE RAISED WHEEL AS POSSIBLE. FAILURE TO USE SAFETY STANDS MAY RESULT IN SEVERE INJURY OR DEATH IF THE JACK SLIPS OR COLLAPSES.

- b. Remove the wheel hub covers on the rear axle and disconnect the CTIS quick disconnect couplings at both wheel hubs (Fig 317).

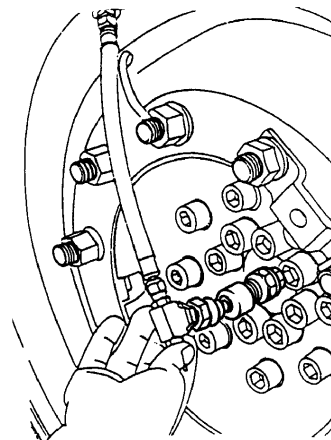
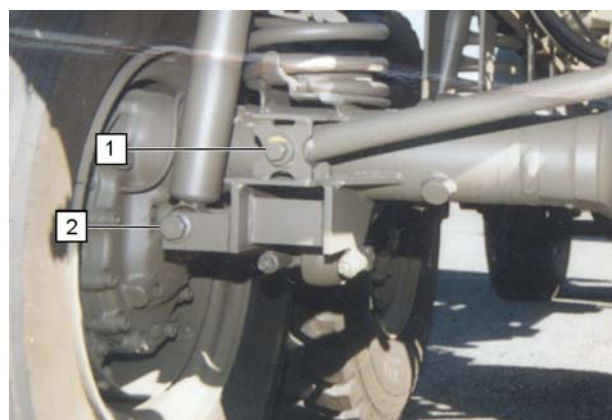


Figure 317 - CTIS Quick Disconnect Coupling

- c. Remove the lower shock absorber mounting bolts (Fig 318(2)), serrated washers and self locking nuts on both sides of the rear axle and swing the shock absorbers free of the axle.



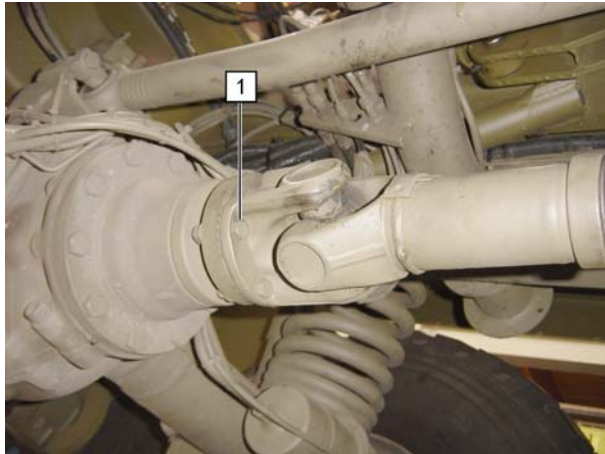
- 1 Panhard rod mounting bolt
- 2 Shock absorber mounting bolt

Figure 318 - Panhard Rod and Shock Absorber Connections

- d. Remove the rear panhard rod (refer to Group 19 - Frame/Chassis Group, para 345).

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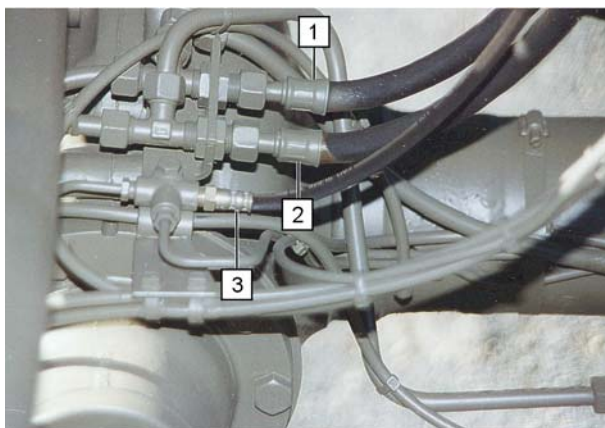
- e. Remove the four M10 (Grade 10.9) bolts (Fig 319(1)) and self locking nuts securing the rear propeller shaft to the rear differential input shaft flange. Tie the propeller shaft up clear of the rear axle.



- 1. M10 (grade 10.9) bolt

Figure 319 - Rear Propeller Shaft - Connections

- f. Disconnect the steel brake line from the flexible hydraulic brake hose (Fig 320(3)) at the mounting bracket on the chassis crossmember above the rear axle.
- g. Remove the locking clip securing the flexible hydraulic brake hose (Fig 320(3)) to the mounting bracket on the chassis crossmember above the rear axle and disconnect the hose. Seal all openings.
- h. Tag and disconnect the CTIS air supply line (Fig 320(1)) from the rear axle.
- i. Tag and disconnect the park brake actuator air supply line (Fig 320(2)) from the rear axle.



- 1. CTIS air supply line
- 2. Park brake actuating cylinder supply line
- 3. Hydraulic brake hose

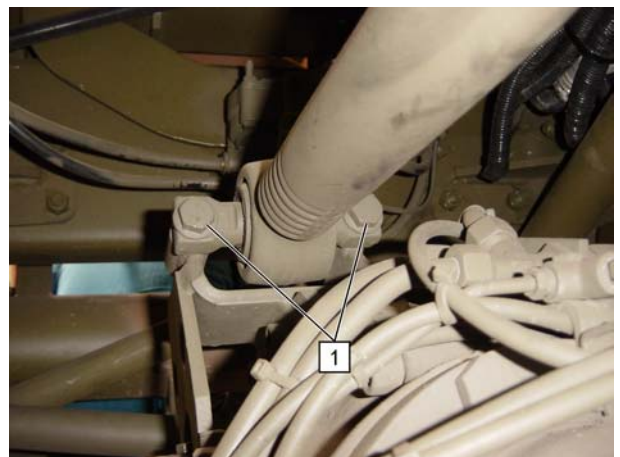
Figure 320 - Lines and Cables - Rear Axle

- j. Tag and disconnect the brake wear indicator electrical lead at the connector on the left hand chassis rail. Note the position of and cut cable ties as necessary to release the brake wear indicator electrical lead from the loom on the chassis rail.
- k. Tag and disconnect the rear axle park brake actuator cylinder breather line from the connection at the mounting bracket on the chassis crossmember above the rear axle.
- l. Tag and disconnect the differential lock air supply line from the connection at the mounting bracket on the chassis crossmember above the rear axle.
- m. Tag and disconnect the rear axle breather line from the mounting bracket on the chassis crossmember above the rear axle.
- n. Support the chassis on chassis stands forward of the rear axle.

WARNING

DO NOT WORK ON THE VEHICLE WITHOUT SAFETY STANDS BENEATH THE CHASSIS OR BENEATH THE AXLE. PLACE THE AXLE STAND AS CLOSE TO THE RAISED WHEEL AS POSSIBLE. FAILURE TO USE SAFETY STANDS MAY RESULT IN SEVERE INJURY OR DEATH IF THE JACK SLIPS OR COLLAPSES.

- o. Support the rear axle on axle stands and remove the rear wheels (refer to the Operator Handbook).
- p. Remove the bolts (Fig 321(1)) and nuts securing the longitudinal links to the mounting bracket at the centre of the rear axle differential housing.



- 1. Bolt

Figure 321 - Centre Longitudinal Link - Axle Housing Bracket Connections

- q. Remove the bolts (Fig 322(1)) and nuts securing the longitudinal links to the mounting brackets on the left and right hand side of the differential housing.



1. Bolt

Figure 322 - Side Longitudinal Links - Rear Axle Housing Bracket Connections

NOTE

Note the number and position of the rear axle alignment shims when removing the side longitudinal link mounting bolts.

- r. Tag and remove the two left and right hand side longitudinal links from the vehicle. Identify the left and right link and mark the front and rear of each link. Each link must be re-installed in the exact same position on the vehicle during installation.
- s. Lower the rear axle clear of the rear coil springs. Manoeuvre the axle clear of the vehicle using a trolley jack ensuring all lines, pipes and hoses do not foul.

120. *Cleaning and Inspection*

WARNING

ENSURE THE SAFETY REQUIREMENTS FOR USE OF COMPRESSED AIR ARE STRICTLY ADHERED TO. INADVERTANT USE OF COMPRESSED AIR EQUIPMENT MAY RESULT IN INJURY TO PERSONNEL.

- a. Wash all parts in an appropriate cleaning agent and blow dry with compressed air.
- b. Inspect all parts for wear or damage, replace as required.
- c. Transfer mounts, brackets and fittings to the replacement rear axle, as required.

121. *Installation*

WARNING

DO NOT WORK ON THE VEHICLE WITHOUT SAFETY STANDS BENEATH THE CHASSIS OR BENEATH THE AXLE. PLACE THE AXLE STAND AS CLOSE TO THE RAISED WHEEL AS POSSIBLE. FAILURE TO USE SAFETY STANDS MAY RESULT IN SEVERE INJURY OR DEATH IF THE JACK SLIPS OR COLLAPSES.

- a. Manoeuvre the rear axle into position under the vehicle, and align the coil springs and the centre longitudinal link mount at the rear axle housing.
- b. Support the rear axle on axle stands.

CAUTION

THE PANHARD ROD BUSHES WILL BE SUBJECT TO EXTREME TORSIONAL STRESS CAUSING ACCELERATED WEAR AND PREMATURE FAILURE IF THEIR CONNECTING BOLTS ARE TORQUED WHILST THE VEHICLE IS ON CHASSIS STANDS. DO NOT TORQUE THE CONNECTING BOLTS UNTIL THE WEIGHT OF THE VEHICLE IS ON THE SUSPENSION.

- c. Connect the centre longitudinal link to the rear axle housing mount. Do not tighten the mounting bolts at this stage.

NOTE

Ensure the axle alignment shims are installed in their original positions (as noted on removal) when installing the left hand and right hand longitudinal links.

- d. Install the left hand and right hand longitudinal links and rear axle alignment shims in the exact same orientation recorded on removal. Do not tighten the mounting bolts at this stage.

NOTE

Check the torque (400 Nm) of the wheel nuts after 50 km of vehicle operation.

- e. Install the road wheels and torque the road wheel nuts to 400 Nm (refer to the Operator Handbook). Do not connect the CTIS quick disconnect couplings at this stage.

- f. Install the panhard rod (refer to Group 19 - Frame/Chassis Group, para 346). Do not torque the mounting bolts at this stage.
- g. Install the shock absorbers on the lower mounting bracket. Fit the mounting bolts (Fig 314(1)), serrated washers and self locking nuts. Torque the lower shock absorber mounting bolts to 240 Nm.
- h. Remove the vehicle from the chassis stands.
- i. Connect the propeller shaft to the rear axle input flange with the M10 (Grade 10.9) bolts and self locking nuts. Coat the threads of the bolts with a thread locking agent (Loctite 243) and torque the bolts to 75 Nm.
- j. Torque the panhard mounting bolts to 315 Nm.
- k. Torque the longitudinal link mounting bolts to 150 Nm.
- l. Connect the rear axle breather line (previously tagged on removal) to the mounting bracket on the chassis crossmember above the rear axle.
- m. Connect the differential lock air supply line (previously tagged on removal) to the mounting bracket on the chassis crossmember above the rear axle.
- n. Connect the rear axle park brake actuator cylinder air supply line (Fig 323(2)) (previously tagged on removal) to the mounting bracket on the chassis crossmember above the rear axle.
- o. Connect the brake wear indicator electrical lead (previously tagged on removal) at the connector on the left hand chassis rail. Cable tie the electrical lead to the loom on the chassis rail in the positions noted on removal.
- p. Connect the park brake actuating cylinder air supply line (Fig 323(2)) (previously tagged on removal) to the connection on the rear axle.
- q. Connect the CTIS air supply line (Fig 323(1)) (previously tagged on removal) to the connection on the rear axle.
- r. Secure the flexible hydraulic brake hose (Fig 323(3)) to the mounting bracket on the chassis crossmember above the rear axle with the locking clip and connect the steel brake line to the hose.
- s. Connect the CTIS quick disconnect couplings at the rear axle wheel hubs, and fit the wheel hub covers.
- t. Bleed the brake system (refer to EMEI Vehicle D393 Group 8 - Brake System) and check for leaks.
- u. Check the operation of the park brake, adjust if required.
- v. Fill the rear axle assembly with 2.5 litres of oil (OEP-220) (refer to the Operator Handbook).
- w. Fill the rear axle wheel hubs with 0.25 litres of oil (OEP-220) (refer to the Operator Handbook).

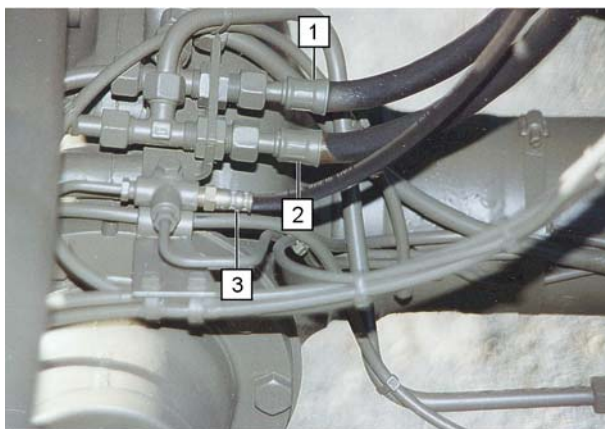
NOTE

When checking the axle for serviceability check that air is not leaking from the venting block behind the cab. Air escaping from the venting block may indicate a CTIS inner hub seal on a road wheel is leaking.

NOTE

A leaking differential lock cylinder will over-pressure the axle and blow oil seals. To test a differential lock cylinder suspected of being faulty, isolate the axle by disconnecting and plugging the vent line and connect a pressure gauge to the vent line connection at the axle. If pressure is evident in the axle when the differential lock is engaged, the differential lock cylinder is leaking.

- x. Road test the vehicle, inspect for leaks and check the performance of the rear axle including the differential lock and the CTIS. Recheck the rear differential and axle hub oil levels.



- 1. CTIS air supply line
- 2. Park brake actuating cylinder air supply line
- 3. Hydraulic brake hose

Figure 323 - Rear Axle Connections

Rear Axle Half-Shaft

122. Removal

- a. The procedure for removing the rear axle half-shaft is identical to that of the procedure for removing the intermediate axle half-shaft, see para 113.

123. Installation

- a. The procedure for installing the rear axle half-shaft is identical to that of the procedure for installing the intermediate axle half-shaft, see para 115.

Rear Axle Coil Spring

124. Removal

- a. The procedure for removing the rear axle coil springs is identical to that of the procedure for removing the intermediate axle coil springs, see para 116.

125. Installation

- a. The procedure for installing the rear axle coil springs is identical to that of the procedure for installing the intermediate axle coil springs, see para 118.

CTIS Axle Assembly

126. Removal

WARNING

THE CTIS QUICK DISCONNECT COUPLING ON THE OPPOSING WHEEL **MUST** BE DISCONNECTED IF THE OPPOSING WHEEL IS NOT SUPPORTED BY A SAFETY STAND. IF THIS ACTION IS NOT DONE WHEN THE CTIS LINE OR WHEEL HUB ON THE FAULTY HUB IS DISCONNECTED THE OPPOSING TYRE WILL DEFLATE AND ALLOW THE VEHICLE TO SLIP OFF THE AXLE STAND AND INJURE PERSONNEL AND DAMAGE EQUIPMENT.

NOTE

The procedure for removing and installing the CTIS shafts is identical for all axles.

- a. Remove the wheel hub cover off the opposing wheel on the axle and disconnect the CTIS quick disconnect coupling at the wheel hub (Fig 324).

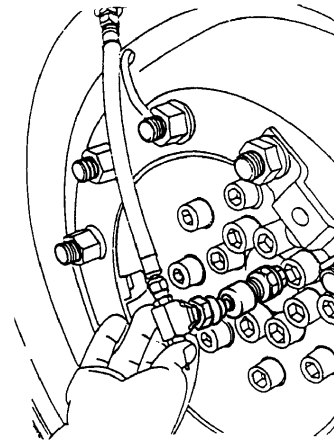
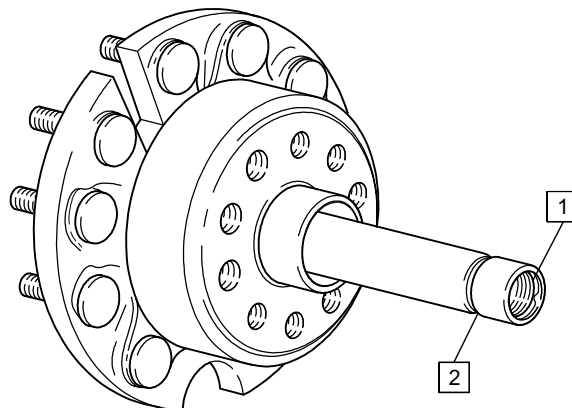


Figure 324 - CTIS Quick Disconnect Coupling - Disconnecting

- b. Remove the wheel hub cover on the wheel that is having the CTIS axle assembly replaced.
- c. Disconnect the CTIS quick disconnect coupling at the wheel hub (Fig 324) that is having the CTIS axle assembly replaced.
- d. Remove the quick disconnect male adaptor (Fig 326(10)), connector (Fig 326(9)) and O-rings (Fig 326(8)) from the CTIS shaft (Fig 326(7)). Discard the O-rings.
- e. Unscrew the CTIS shaft (Fig 326(7)) from the wheel hub.

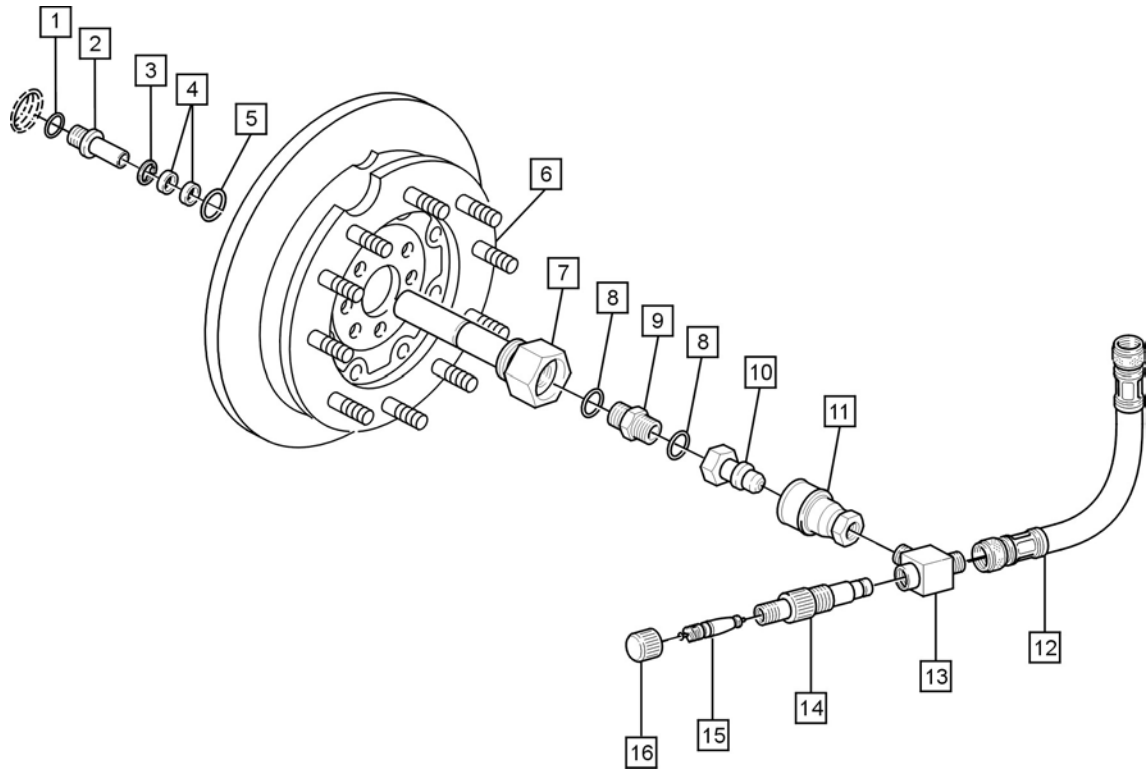
127. Inspection

- a. Inspect the shaft seals (Fig 325(1)) and O-ring (Fig 325(2)). If the CTIS is suspected of leaking at the hub, remove the retaining circlip and replace the two shaft seals. Note the direction the shaft seal lips are facing prior to removal.



1. CTIS shaft seals
2. O-ring

Figure 325 - CTIS Shaft - Inspection



- | | | | |
|---------------------|---------------|-------------------------------|---------------------|
| 1. O-ring | 5. O-ring | 9. Connector | 13. T-fitting |
| 2. Axle hub fitting | 6. Wheel hub | 10. Male adaptor | 14. Valve body |
| 3. Circlip | 7. CTIS shaft | 11. Quick disconnect coupling | 15. Schroeder valve |
| 4. Sealing ring | 8. O-ring | 12. Hose | 16. Valve cap |

Figure 326 - CTIS Shaft - Exploded View

128. Installation

- a. Coat the shaft seals (Fig 325(1)) and O-ring (Fig 325(2)) with a lubricant (Molycote).
- b. Coat the threads of the CTIS shaft (Fig 326(7)) with a sealing compound (Terostat 56), install the shaft and tighten securely.
- c. Fit new O-rings (Fig 326(8)) to the connector (Fig 326(9)) and coat the threads of the connector with a sealing compound (Terostat 56).
- d. Fit the connector (Fig 326(9)) to the CTIS shaft (Fig 326(7)) and tighten.
- e. Fit the quick disconnect male adaptor (Fig 326(10)) to the connector (Fig 326(9)) and tighten.
- f. Connect the CTIS quick disconnect coupling to the wheel hub (Fig 324).

- g. Connect the CTIS quick disconnect coupling on the opposing wheel hub and fit the wheel hub cover.

NOTE

When checking the axle for serviceability check that air is not leaking from the venting block behind the cab. Air leaking from the venting block may indicate the CTIS inner hub seals on a road wheel are leaking.

- h. Test the operation of the CTIS and check for leaks.
- i. Install the wheel hub cover.
- j. Check the wheel hub oil level, top up if required.