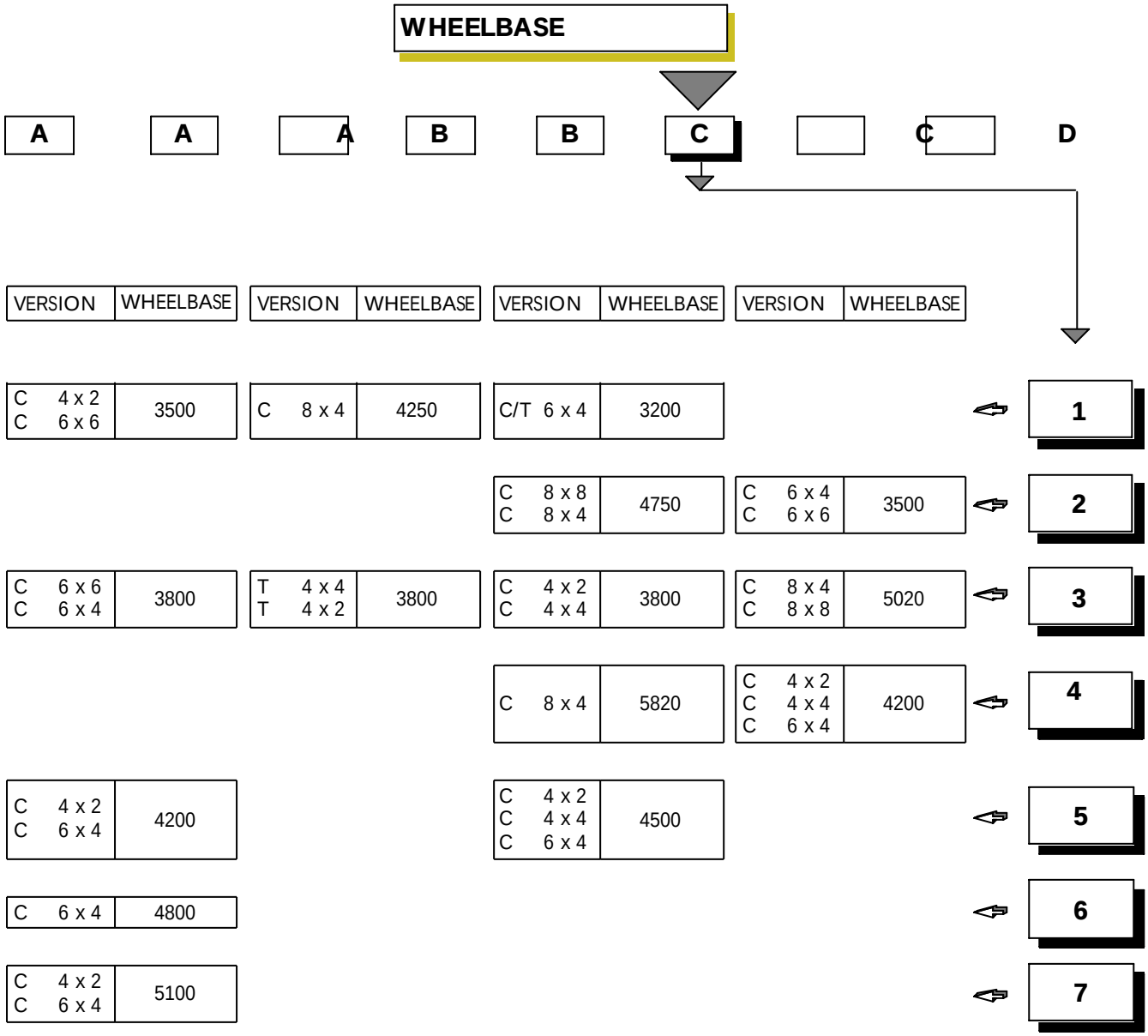
Aquila Trucks Centres

INDEX OF SECTIONS

Aquila Trucks Centres

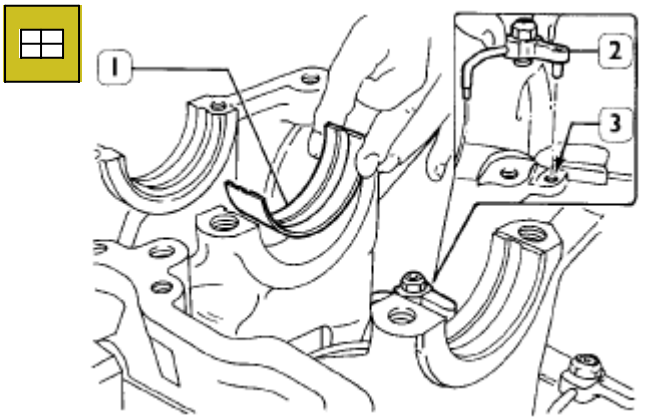


C = Chassis cabs
T = Tractors

ASSEMBLING THE ENGINE

Fix the engine block to the stand 99322230 by means of brackets 99361035.
Install the cylinder liners as described in page 56.

Figure 149

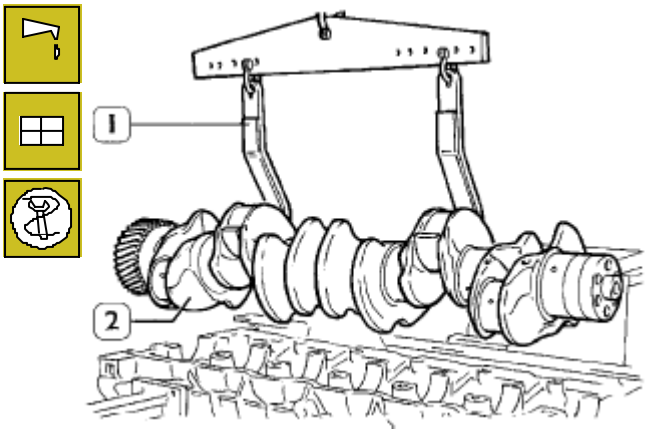


47586

Fit the oil spray nozzles (2), so that the dowel coincides with the block hole (3).

Place the half bearings (1) on the main bearings.

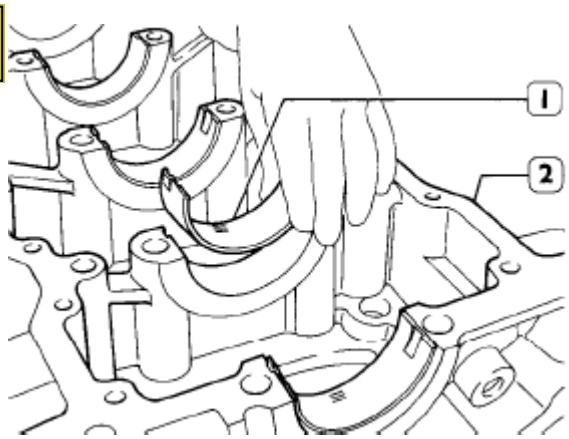
Figure 150



47570

Lubricate the half bearings, then install the crankshaft (2) by means of hoist and hook 99360500 (1).

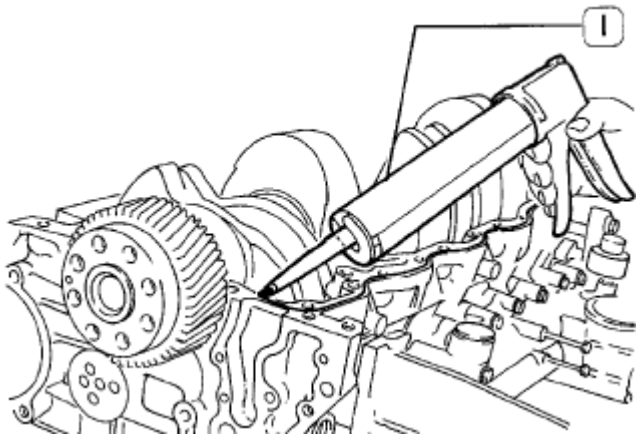
Figure 151



49021

Place the half-bearings (1) on the main bearings in the underblock (2).

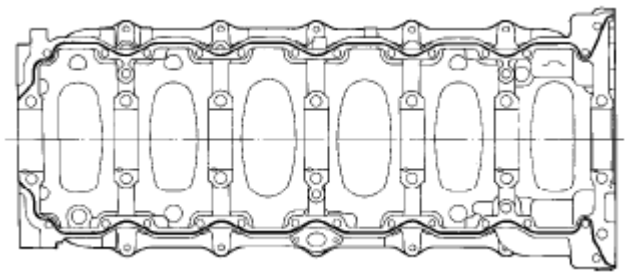
Figure 152



47595

By means of suitable equipment (1) apply silicone LOCTITE 5970 IVECO No. 2995644 to the block, as shown in the figure.

Figure 153



47596

Sealant application diagram

NOTE Fit the lower crankcase underblock within 10' of the application of the sealant.

Preliminary measurement of data to select main bearing and big end bearing shells

For each of the journals of the crankshaft, it is necessary to carry out the following operations:

MAIN JOURNALS:

- Determine the class of diameter of the seat in the crankcase.
- Determine the class of diameter of the main journal.
- Select the class of the bearing shells to mount.

CRANKPINS:

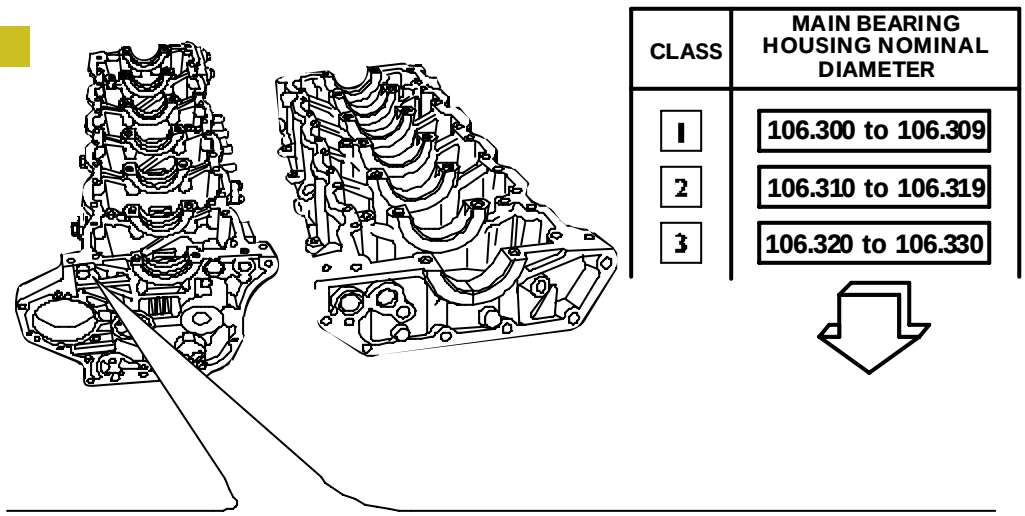
- Determine the class of diameter of the seat in the connecting rod.
- Determine the class of diameter of the crankpin.
- Select the class of the bearing shells to mount.

DEFINING THE CLASS OF DIAMETER OF THE SEATS FOR BEARING SHELLS ON THE CRANKCASE

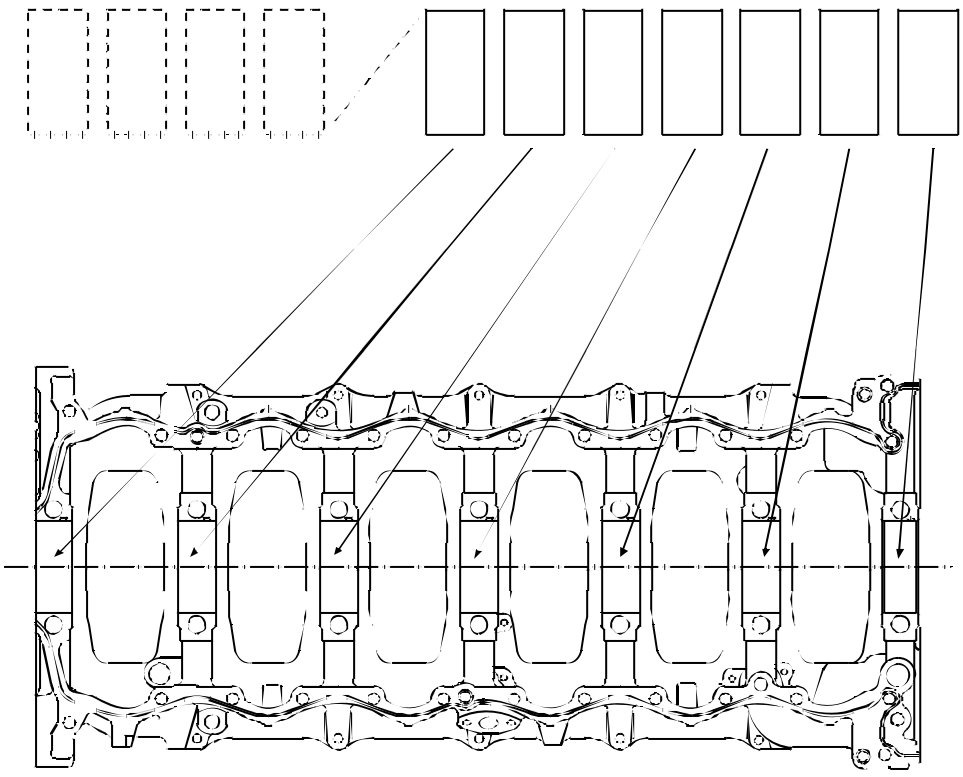
On the front of the crankcase two sets of numbers are marked in the position shown.

- The first set of digits (four) is the coupling number of the crankcase with its base.
- The second set of digits (seven) is the class of diameter of each of the seats referred to.
- Each of these digits may be **1**, **2** or **3**.

Figure 87



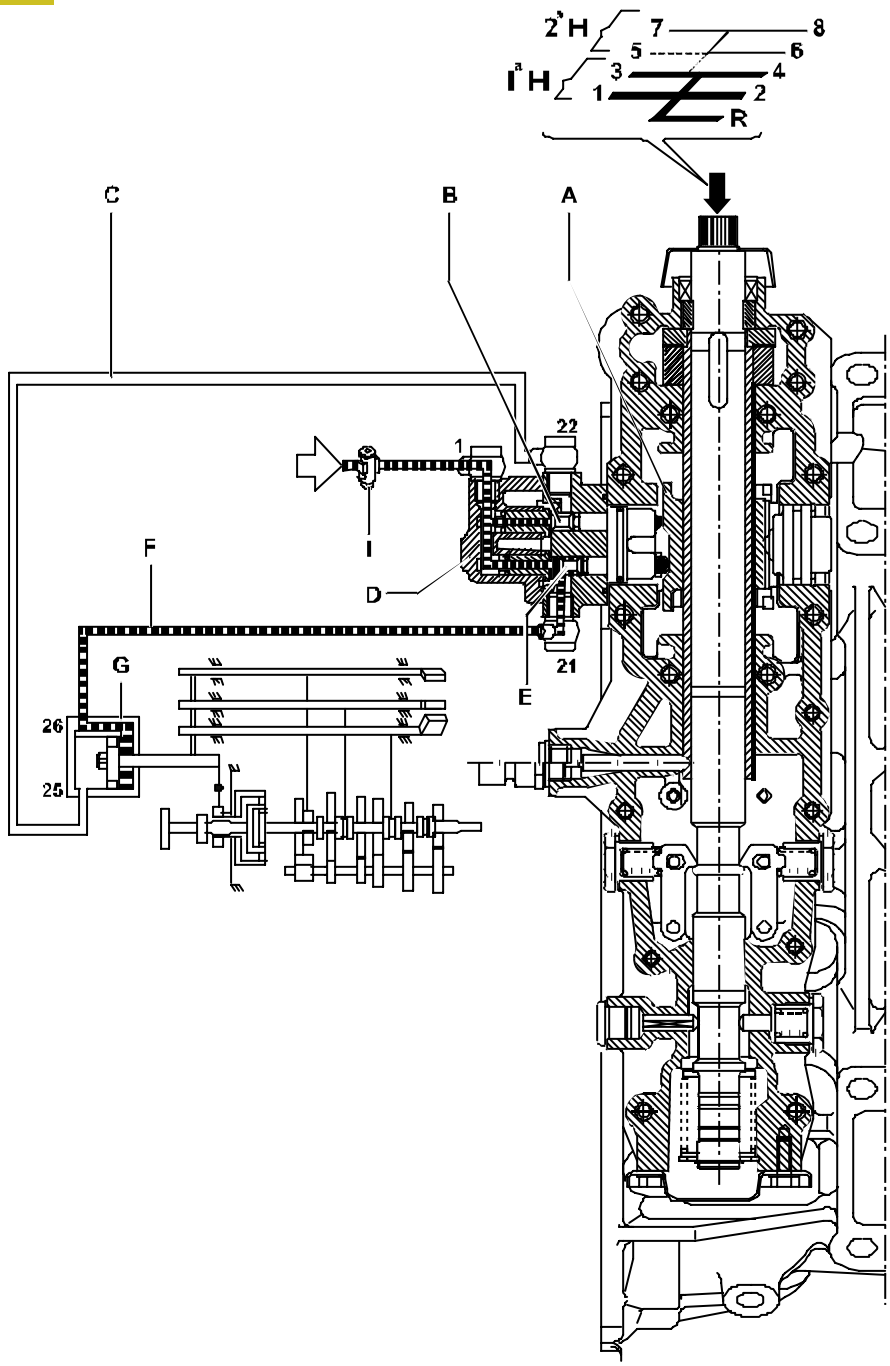
CLASS	MAIN BEARING HOUSING NOMINAL DIAMETER
1	106.300 to 106.309
2	106.310 to 106.319
3	106.320 to 106.330



47535

EPICYCLIC REDUCTION GEAR CONTROL
Reduced speeds

Figure 2/4



PNEUMATIC SYSTEM DIAGRAM OF REDUCED SPEED ENGAGEMENT

The air from the vehicle's pneumatic system is reduced to a pressure of 9.5 bars by the pressure reduction unit (1). It then supplies the inhibitor valve D.

Now, taking the control lever onto the reduced speed position (1st H), the body A, integral with the speed control rod, opens the valve E that, via the pipe F, supplies the cylinder G.

The piston of the cylinder G, moving to the right, activates the ERG.

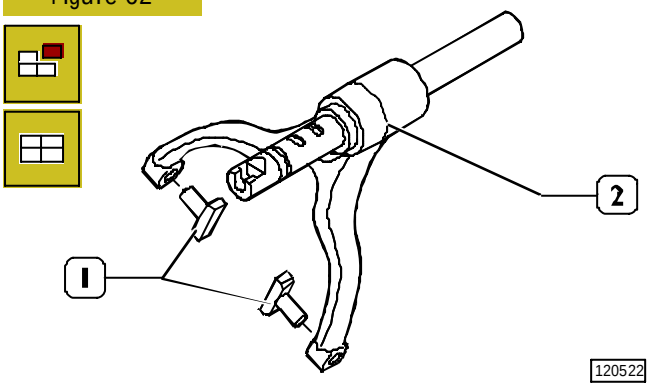
At the same time, the valve B closes, making it possible for the air from the pipe C to discharge into the atmosphere.

The movement of the piston causes the contact of the electric switch to close, which turns on the indicator light in the cab with the tortoise symbol.

NOTE The reduced speeds can be used in both slow range and fast range conditions, depending on the position of the pre-selector.

SPLITTER CONTROL FORK
Disassembly/Assembly

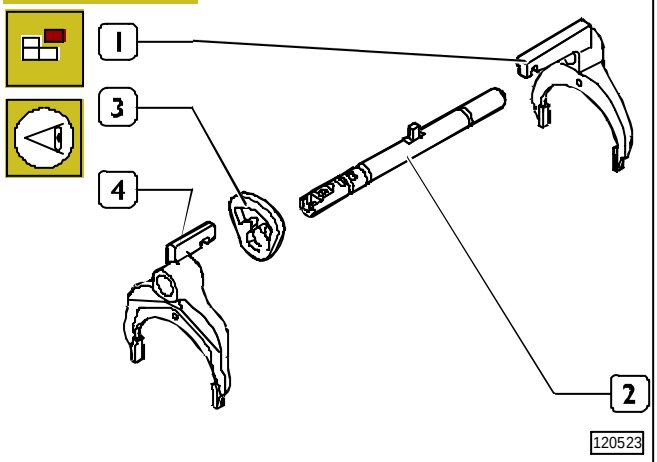
Figure 62



Remove the small block (2) from the splitter synchronizer connecting fork (1) and assemble the new small blocks.

GEAR CONTROL FORKS
Disassembly

Figure 63



Release and remove the control forks (1) and (4).

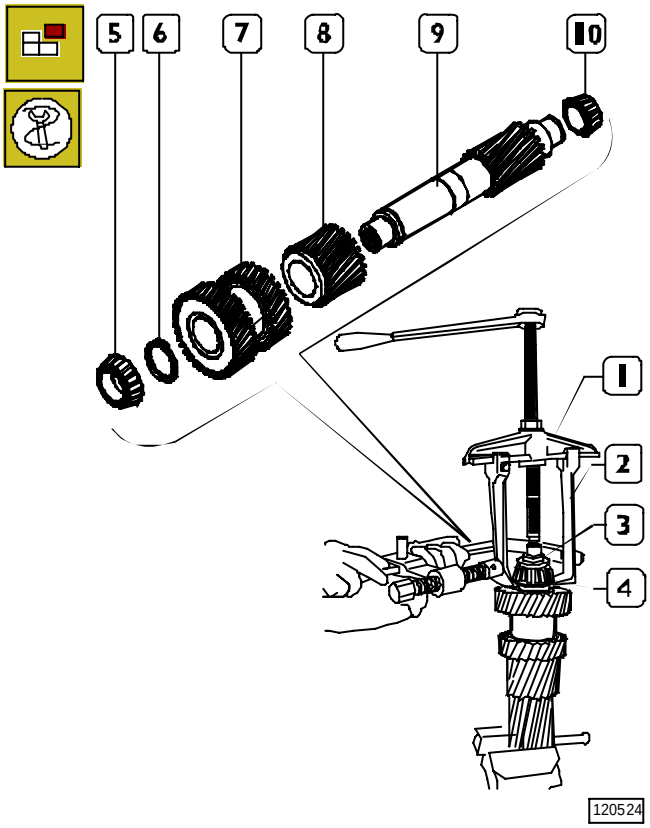
NOTE Do not change the control forks (1) and (4). If necessary, check the serial numbers of the packing list.

Remove the ring (3) hindering the simultaneous coupling of the control shaft (2).

Position the ring (3) onto the control shaft.
Insert the control forks (1 and 4) into the ring correct position.

SECONDARY SHAFT
Disassembly

Figure 64

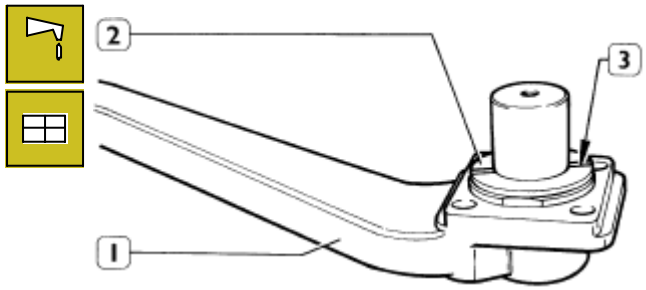


Remove the inner rings (5 and 10) of the roller bearings from the secondary shaft (9), using the extractor 99347100 (1), the holds 99347132 (4), the insert 99345057 (10) and suitable brackets (2).
Remove the safety ring (6).
Remove under press the double gear (7) and the gear (8).

NOTE The removal force of each gear can reach 500 kN.

DTC	FMI	Failing component	Type of Failure	Visible failure	Possible Cause	Repair action	Checks to be performed	Measuring conditions	Values to be detected	Remarks
33	0A	CLUTCH ACTUATOR - (Y15) SOLENOID VALVE CLUTCH ENGAGEMENT SLOW	INTERRUPTION	Comfort decreased when starting and manoeuvring; the clutch is controlled by the fast uncoupling valve.		Check the clutch actuator and the integrity of the connections with the gear actuator (electronic control unit)	Measure type: Resistance (Ohm) Measure point 1: Connector for clutch actuator - gearbox side Pin: 7 Measure point 2: Connector for clutch actuator - gearbox side Pin: 16	Connector Not connected; Key +15 OFF;	Min. value: 14 Ohm; Max. value: 20 Ohm;	
34	0A	CLUTCH ACTUATOR - (Y16) SOLENOID VALVE CLUTCH DISENGAGEMENT FAST	INTERRUPTION	Comfort decreased when starting and manoeuvring; the clutch is controlled by the fast uncoupling valve.		Check the clutch actuator and the integrity of the connections with the gear actuator (electronic control unit)	Measure type: Resistance (Ohm) Measure point 1: Connector for clutch actuator - gearbox side Pin: 12 Measure point 2: Connector for clutch actuator - gearbox side Pin: 17	Connector Not connected; Key +15 OFF;	Min. value: 14 Ohm; Max. value: 20 Ohm;	
35	0A	CLUTCH ACTUATOR - (Y14) SOLENOID VALVE CLUTCH ENGAGEMENT FAST	INTERRUPTION	Comfort decreased when starting and manoeuvring; the clutch is controlled by the fast uncoupling valve.		Check the clutch actuator and the integrity of the connections with the gear actuator (electronic control unit)	Measure type: Resistance (Ohm) Measure point 1: Connector for clutch actuator - gearbox side Pin: 8 Measure point 2: Connector for clutch actuator - gearbox side Pin: 17	Connector Not connected; Key +15 OFF;	Min. value: 14 Ohm; Max. value: 20 Ohm;	

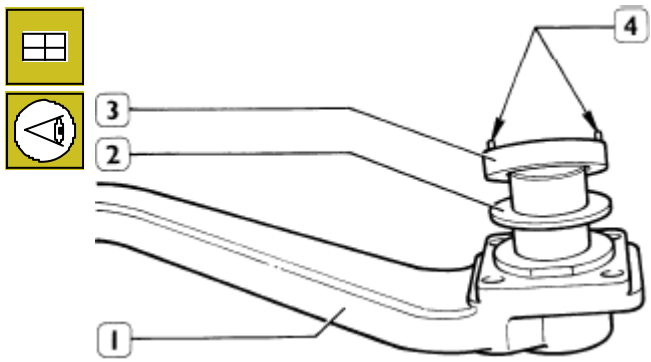
Figure 48



39521

Lubricate the shoulder ring (2) and fit on the steering return lever (1) in the position indicated by the arrow (3).

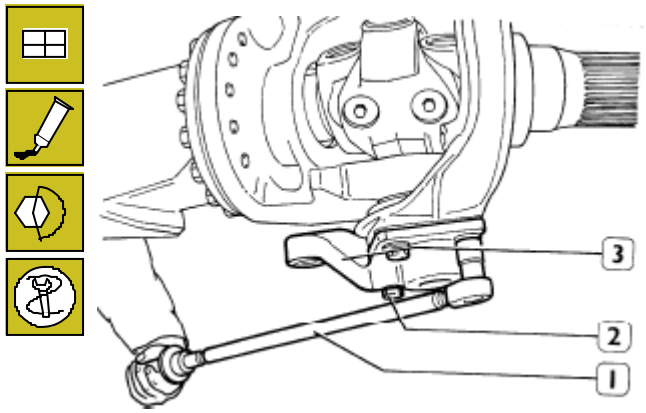
Figure 49



39522

Fit the spacer (3) with the pins (4) positioned as shown in the drawing; fit the seal ring in the safety ring and insert between the yoke support and the stub axle.

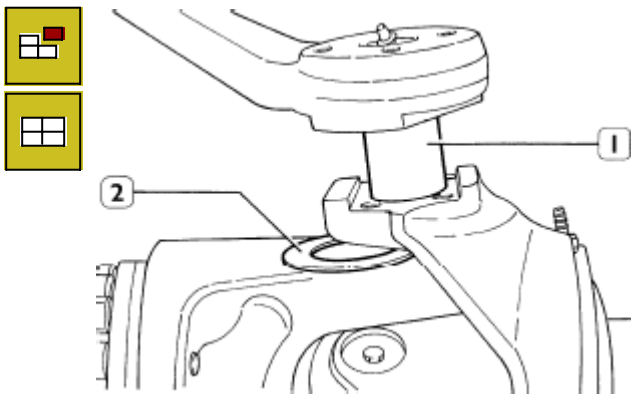
Figure 50



39523

Fit the lever (3) on the stub axle.
Tighten the screws (2) and use the torque wrench (1) to tighten to the correct value.

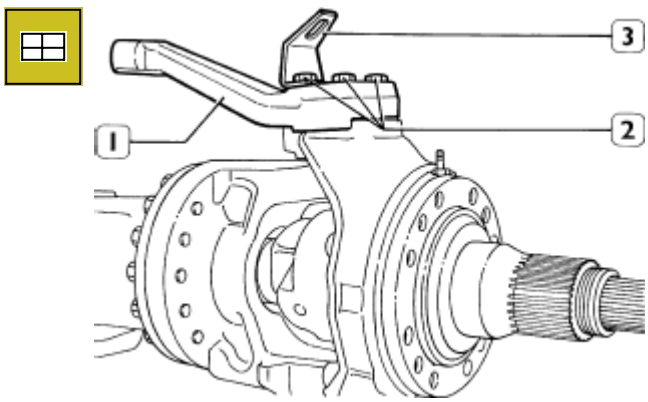
Figure 51



39524

Partially extract the upper pin (1) and insert the shim (2).

Figure 52



39525

Insert the upper pin (1).
Assemble the brake air piping union support bracket (3) and secure in position with the screws (2).

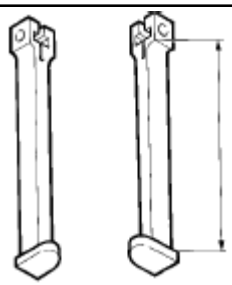
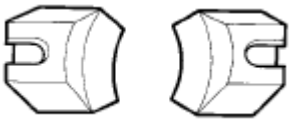
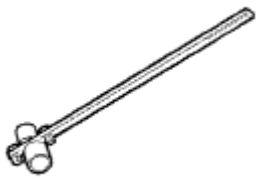
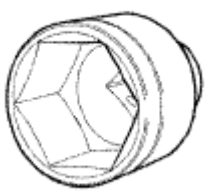
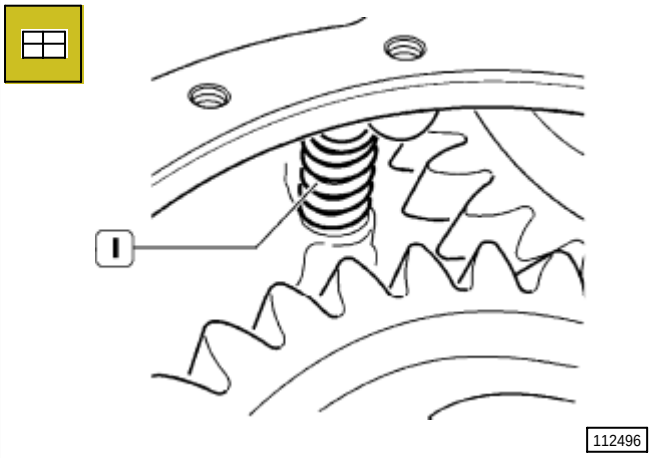
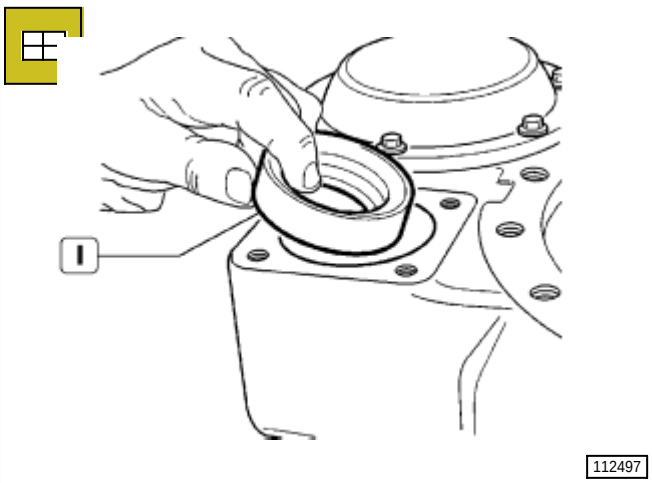
TOOL NO.		DESCRIPTION
99341020		Pair of tie rods for grips
99341023		Grips
99345055		Reaction block for extractors
99354001		Wrench for differential gear housing bearing adjustment ring nuts
99354207		Wrench (94.5 mm) for wheel hub bearings adjusting nut
99355081		Wrench (60 mm) for differential bevel pinion nut (use with 99370317)

Figure 69



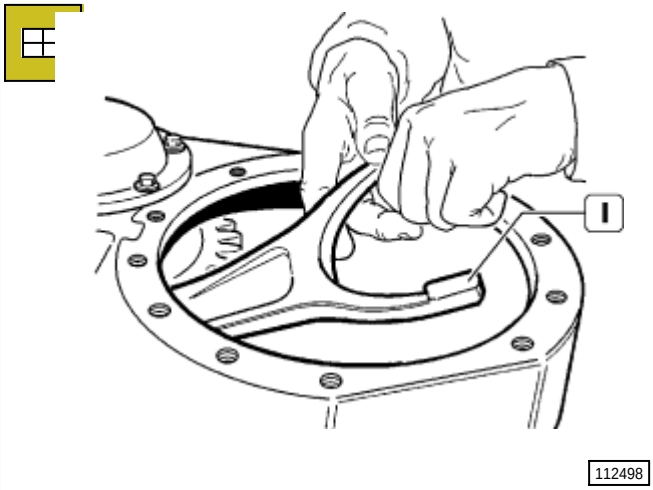
Fit the compression spring (1).

Figure 70



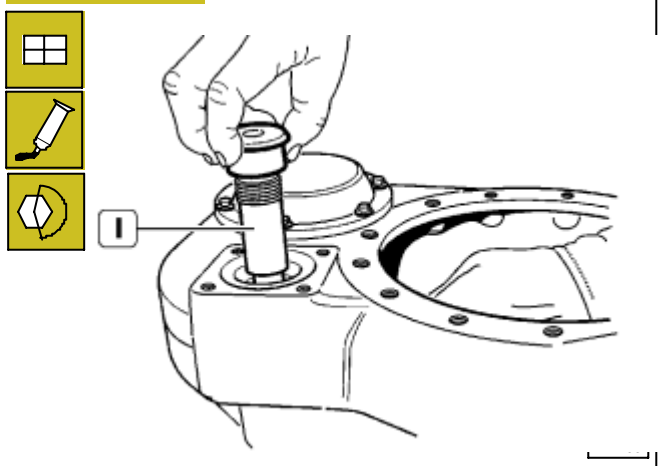
Fit the membrane seat (1).

Figure 71



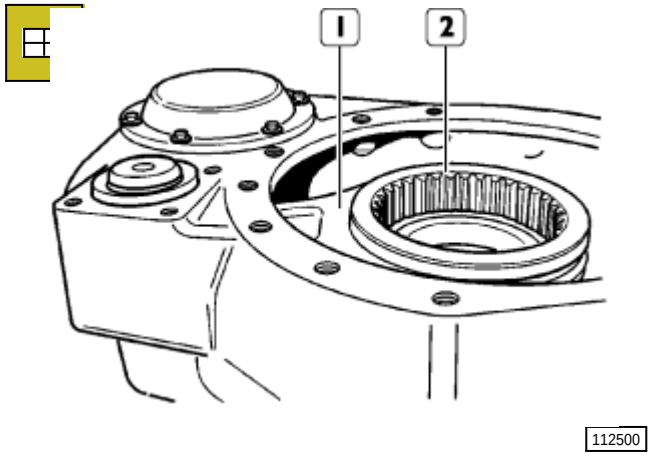
Fit the fork (1).

Figure 72



Apply some sealer on the piston threading (1). Insert the piston through the fork and the compression spring. Tighten to the prescribed torque.

Figure 73



Insert the sleeve (2) in the fork (1).

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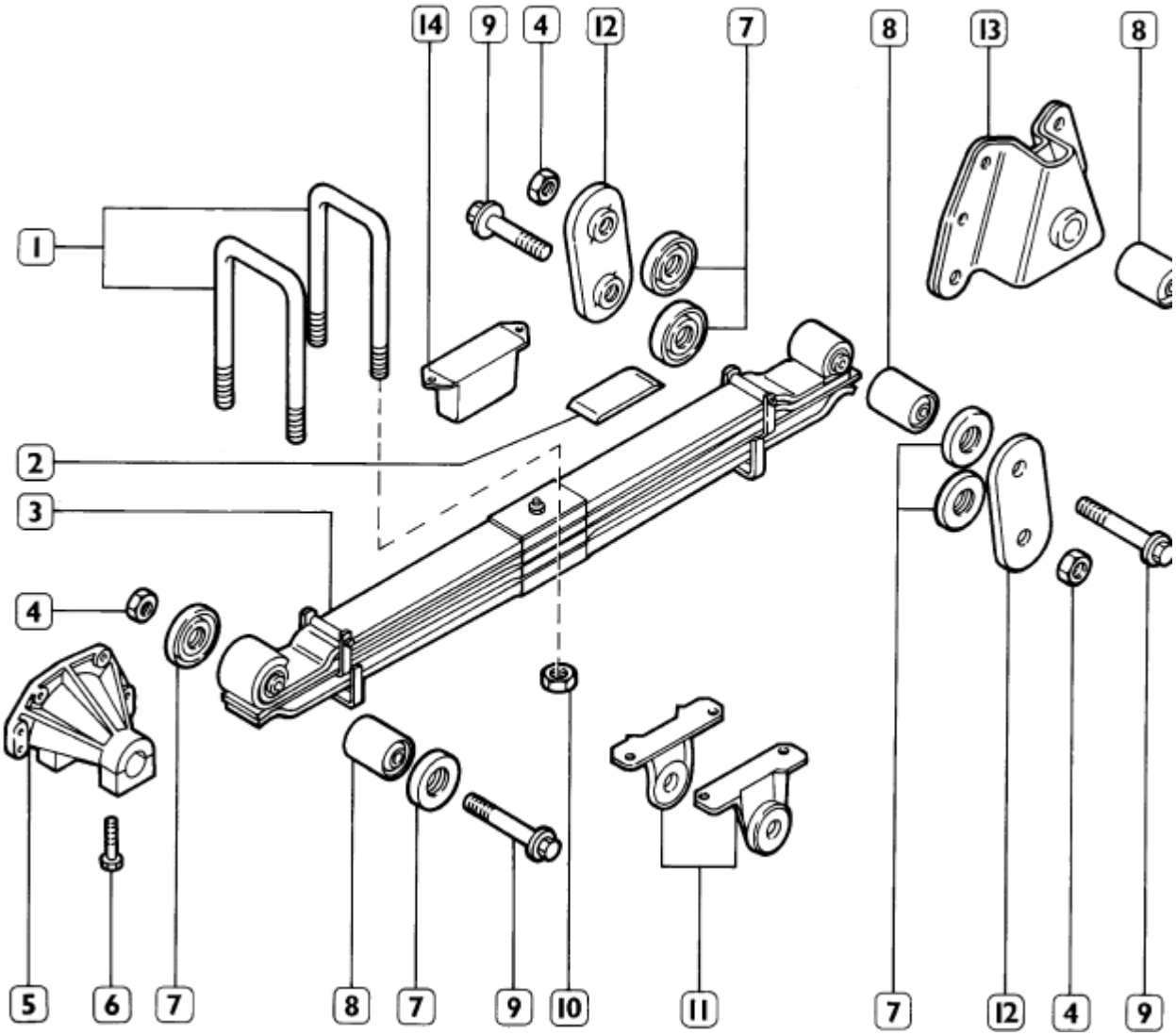
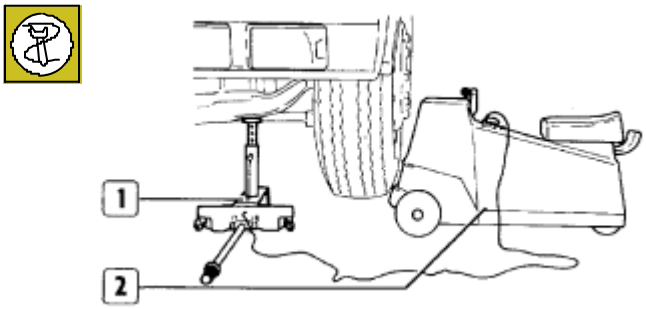
Figure 2



REAR SUSPENSION COMPONENTS
1. Clamping U-bolts - 2. Plate - 3. Leaf spring - 4. Nut - 5. Hanger - 6. Screw - 7. Washers - 8. Bushes - 9. Shackle pins - 10. Nut - 11. Clamping plates - 12. Shackle plates - 13. Hanger - 14. Bump stop

502511 STATIC WHEEL BALANCING

Figure 1

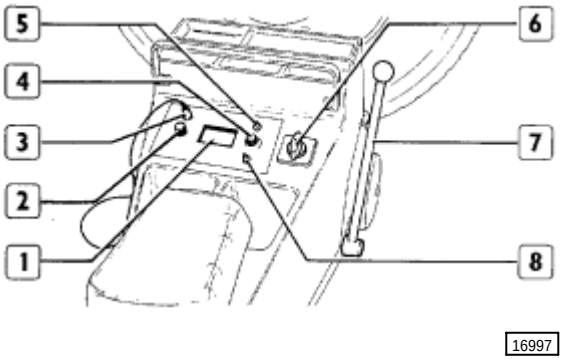


The front wheels can be balanced while on the vehicle using the electronic balancer 99305037; this method has the advantage of balancing the wheel along with the other rotating masses.

The operation must be carried out as follows:

- Jack up the front of the vehicle and check that the wheels can rotate freely.
- Position the pickup unit (1) under the axle near to the wheel, setting the height so that the wheel spinner of unit 99305037 (2) is in contact with the tyre; position an axle stand under the opposite end of the axle and lower the jack.

Figure 2



- Connect the lead (3) of the pickup unit to the balancer 99305037.
- Make a radial reference mark on tyre, using chalk or a strip of adhesive tape.
- Turn switch (2) to the static balancing position and sensitivity switch (4) to notch nº 5 on the graduated scale.
- Turn on switch (5) for the meter light (1) and turn on the strobe lamp (8).
- Turn the wheel spinner switch (6) to the first speed position in order to rotate the wheel.

Turn the wheel spinner switch (6) to the second speed position and push the balancer against the tyre.
As the wheel is spinning, the stroboscopic effect will make the reference mark appear static; the needle on the meter (1) will move from zero to a maximum value and then return to zero.
Once the needle has started to fall, withdraw the balancer, switch off the wheel spinner completely (6) and brake the spinner motor by means of the brake lever (7).
The wheel will continue to revolve due to inertia and the new position of the reference mark should be noted.
Read the value shown by the needle on the weight indication meter (1). Multiply this value by ten to obtain the correction weight to be fitted to the rim.

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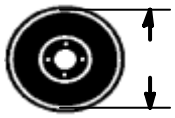
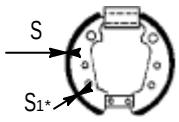
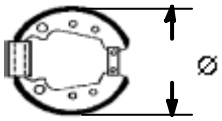
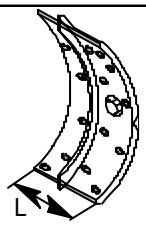
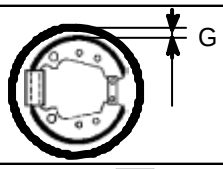
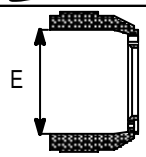
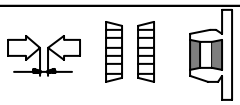
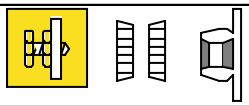
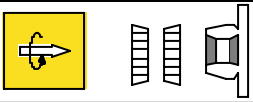
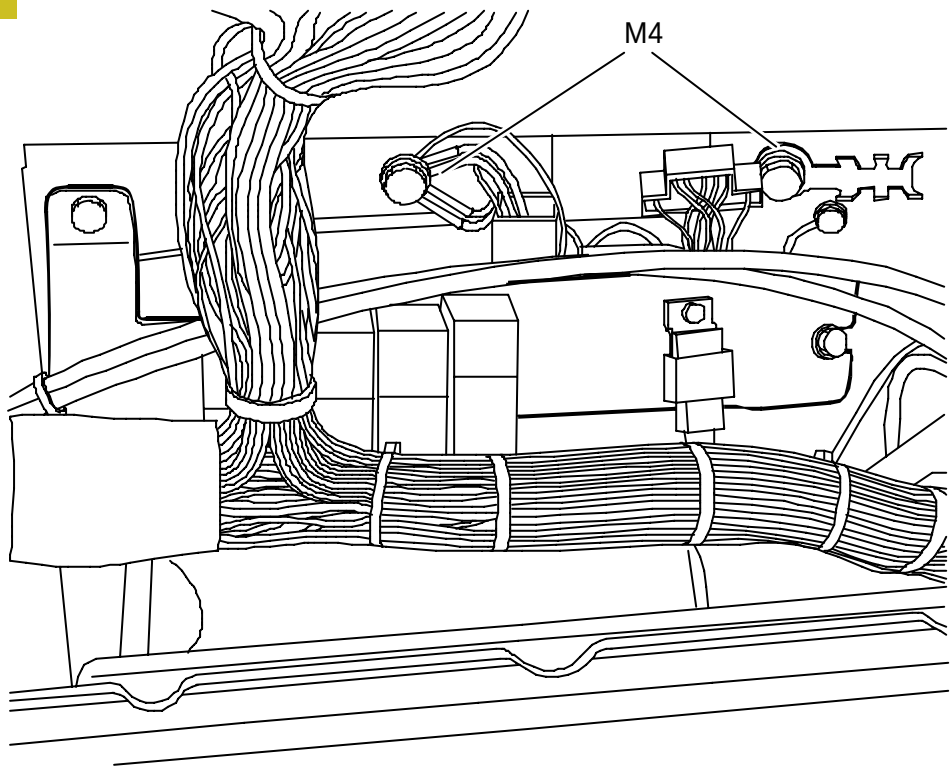
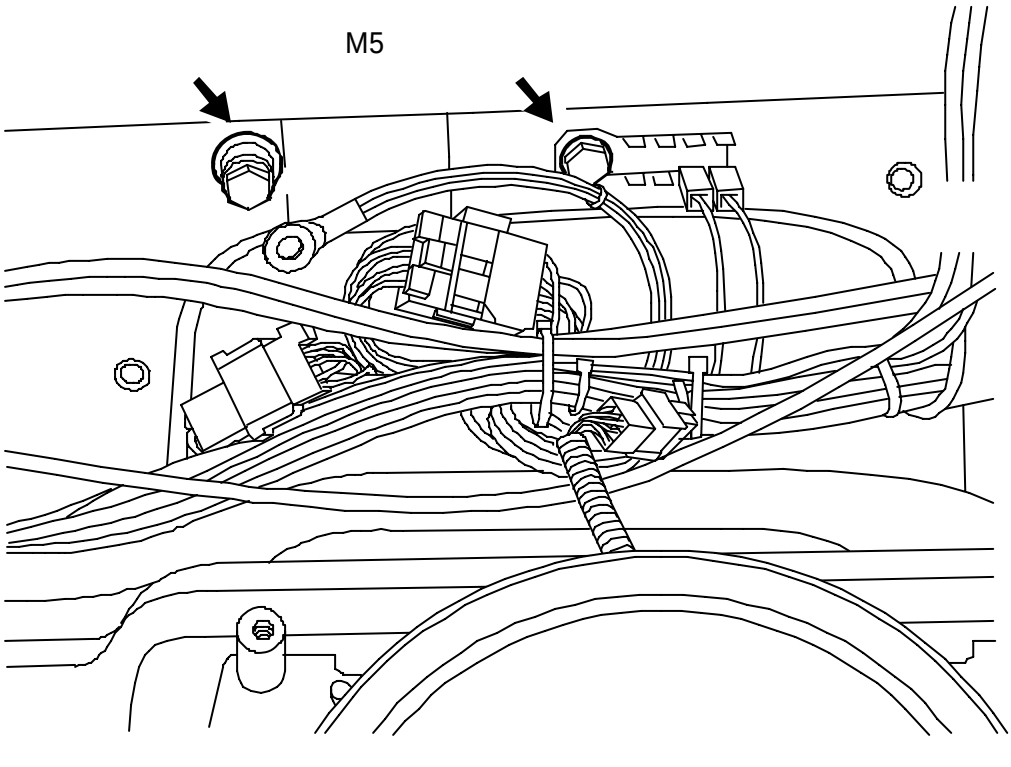
	MERITOR DUO-DUPLEX DRUM BRAKES	DRIVE AXLE 5985/2D
	Drum diameter: - Nominal Ø mm - 1st uprating Ø mm - 2nd uprating Ø mm	 410 ÷ 410.4 412 ÷ 412.4 414 ÷ 414.4
	Brake lining thickness: - Nominal S mm - 1st uprating S mm - 2nd uprating S mm - minimum permissible S_{1*} mm	 22.95 23.95 24.95 6.95
	Diameter of brake linings: - Nominal Ø mm - 1st uprating Ø mm - 2nd uprating Ø mm	 408 ÷ 409 410 ÷ 411 412 ÷ 413
	Width of brake linings: L mm	 179 ÷ 180
	Clearance between brake linings and drum: G mm	 0.5 ÷ 1.2
	Maximum error of concentricity in the drum diameter after turning E mm	 0.04
	**WHEEL HUBS**	
	Wheel hub bearings	Two with tapered rollers SET-RIGHT
	Hub bearing end float mm	 Not adjustable
	Hub bearing end float adjustment	Tightening to torque with ring nut
	Wheel hub bearing rolling torque	0.50 max -
	Oil for wheel hub bearings Tutela W 140/M DA Litres Quantity of oil for each hub Kg	 - -

Figure 15



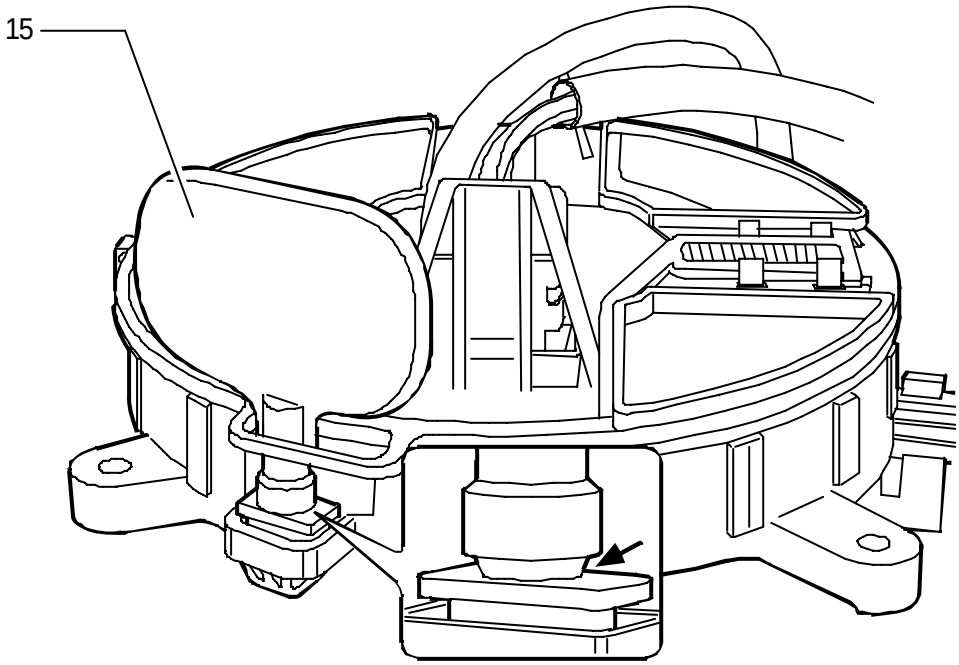
GROUND POINT BEHIND THE BODY COMPUTER

Figure 16



GROUND POINT BEHIND THE CLUSTER

Figure 151



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Invert the sequence of operations described above for reassembly.

The spiraled contact is supplied spare with its stop key (15) assembled as shown in the figure. After assembly on the steering wheel control support, rotate the key to cause breakage at the point indicated by the arrow and return it to steering wheel seat (5).