

REAR AXLE**Remove and Refit****Removing**

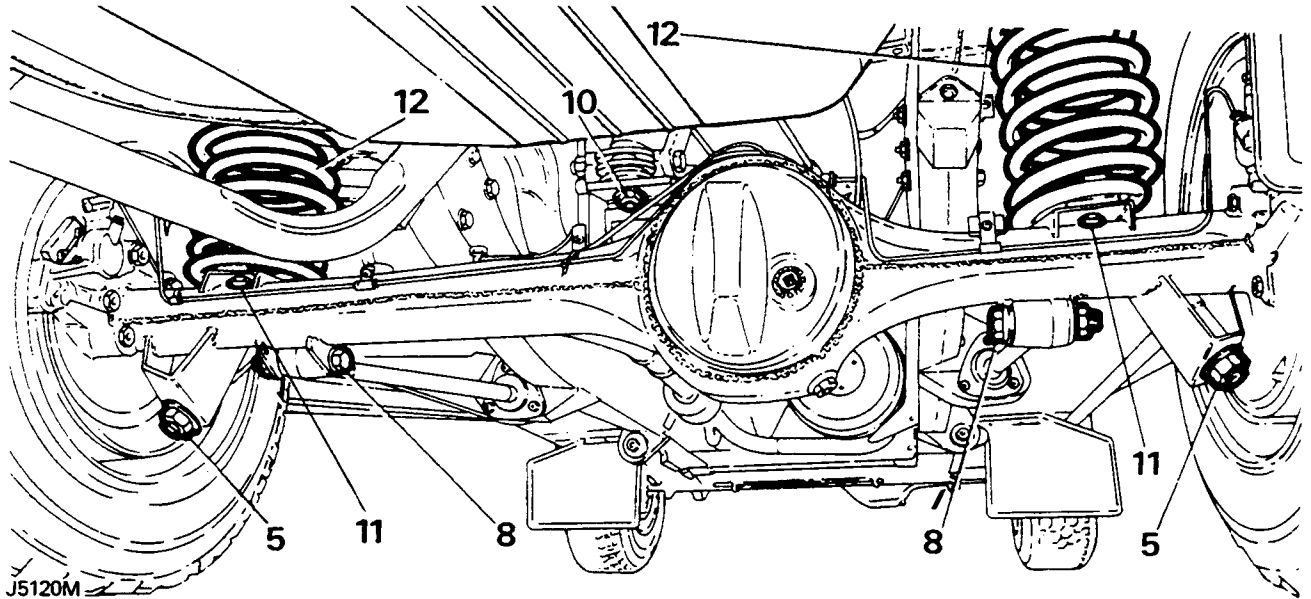
WARNING: The removal and refitting of the axle from the vehicle requires the assistance of a further two personnel to steady the axle, when lowering or repositioning the axle.

1. Drain the brake system.
2. Jack-up the rear of the vehicle and support the chassis.
3. Remove the road wheels.
4. Support the axle weight with a suitable hydraulic jack.
5. Disconnect the shock absorbers.
6. Disconnect the flexible brake hose at the connection under the floor, ensuring any excess of fluid is stemmed.
7. Disconnect the pad wear multi-plug at the bracket mounted on the underside of the floor. Pry the rubber grommet out of the bracket and feed the plug through the hole.
8. Disconnect the lower links at the axle.

9. Mark the differential and drive shaft drive flanges with identification marks to aid re-assembly. Remove the four nuts and bolts, lower the drive shaft and tie it to one side.
10. Disconnect the pivot bracket ball joint at the axle bracket.
11. Release the bolts and remove the coil spring retaining plates.
12. Lower the axle and remove the road springs.
13. Withdraw the axle assembly.

Refitting

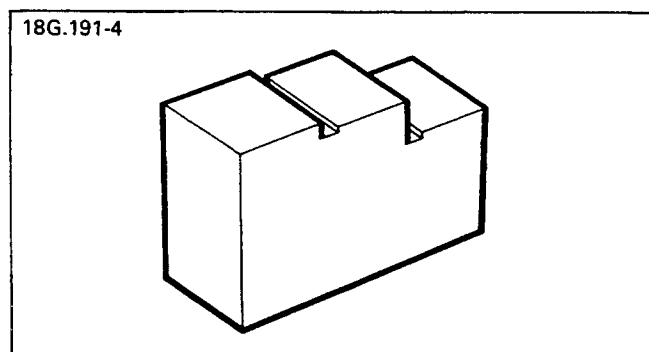
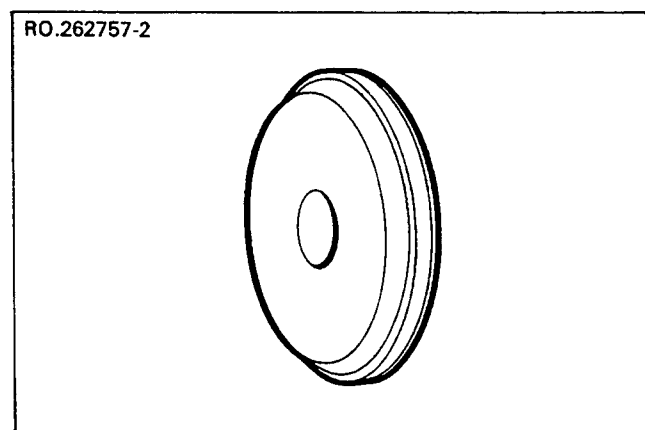
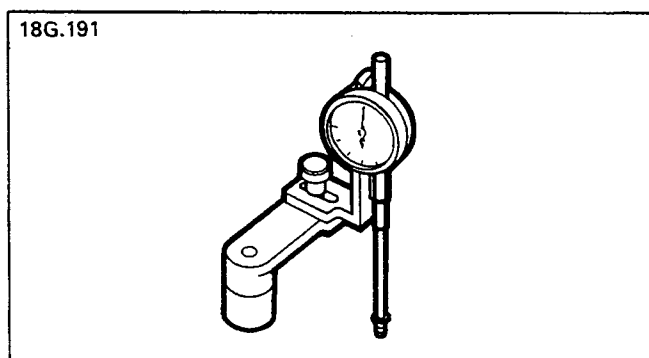
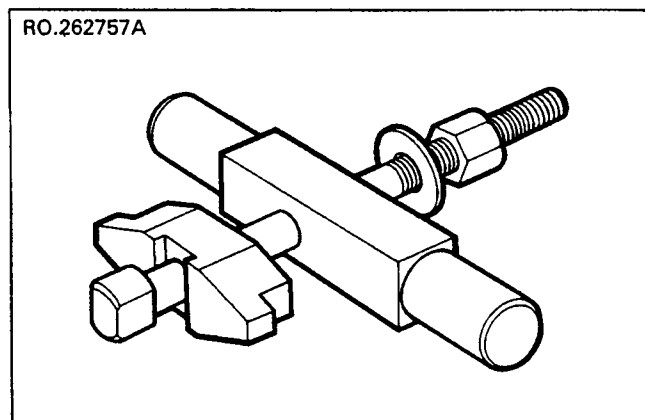
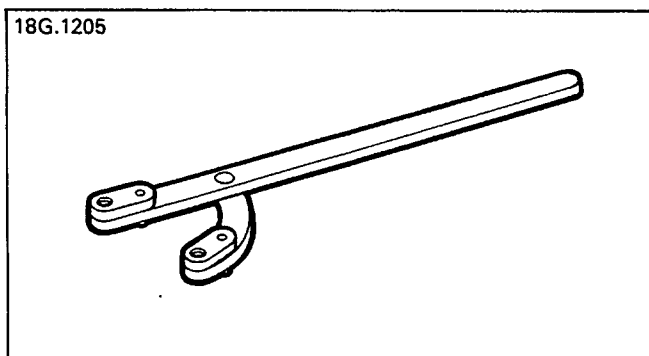
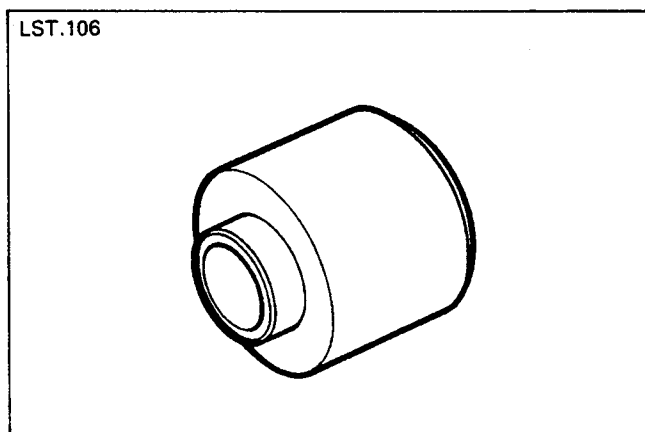
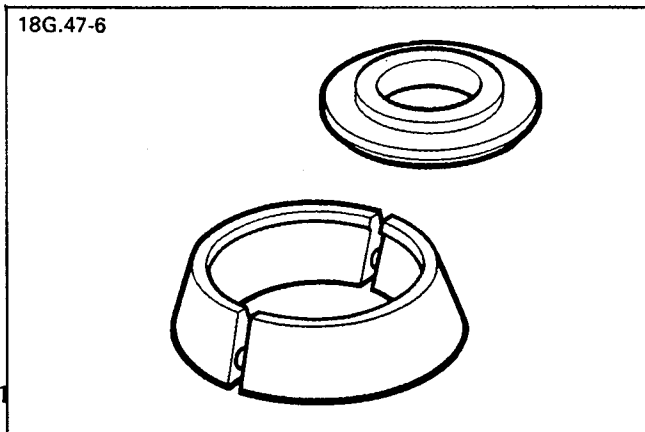
14. Position the axle and fit the lower links, and tighten the bolts to the specified torque (see section 06-Torque values).
15. Reverse the removal instructions.
16. Tighten the pivot bracket ball joint to axle to the specified torque (see section 06-Torque values).
17. Tighten the drive shaft to differential drive flange to the specified torque (see section 06-Torque values).
18. Refill the brake system and bleed as described in Section 70.



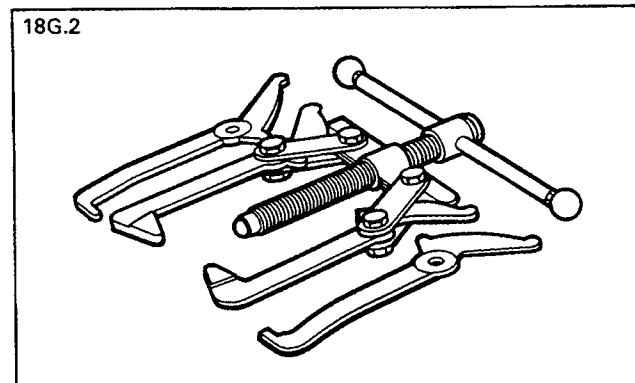
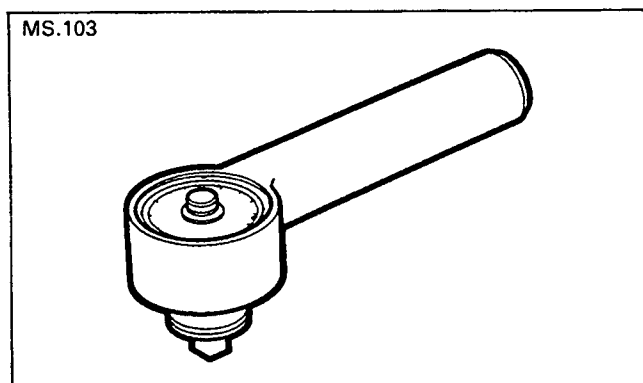
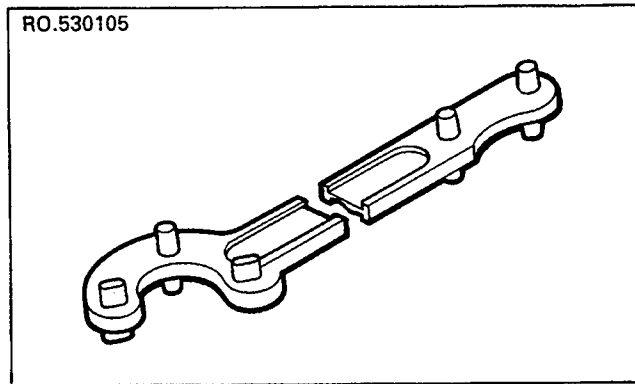
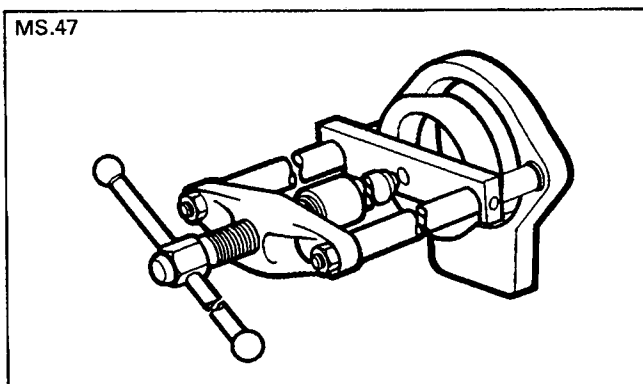
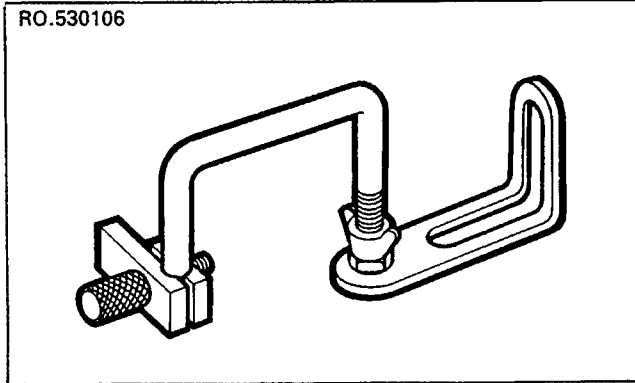
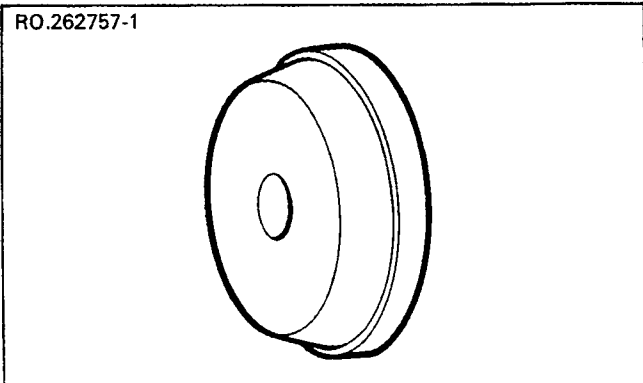
OVERHAUL FRONT AND REAR AXLE DIFFERENTIAL

Special service tools

- Flange restrainer tool. 18G 1205.
- Pinion height setting gauge. 18G 191.
- Universal setting block. 18G 191-4
- Pinion head bearing remover/
replacer. 18G 47-6.
- Oil seal replacer,
Extractor, pinion bearing
races. 18G 47-6.
LST 106.
- Replacer, use with
Adaptor, tail bearing cap
replacer, for use with RO 262757A
RO262757A RO262757-1
- Wrench, flange and carrier
bearing nuts. RO 262757A.
RO262757-2
- Wrench, flange and carrier
bearing nuts. RO 530105
- Bracket for dial gauge RO 530106
- Press. MS 47.
- General purpose puller 18G 2.
- Torque meter MS 103.



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DATA

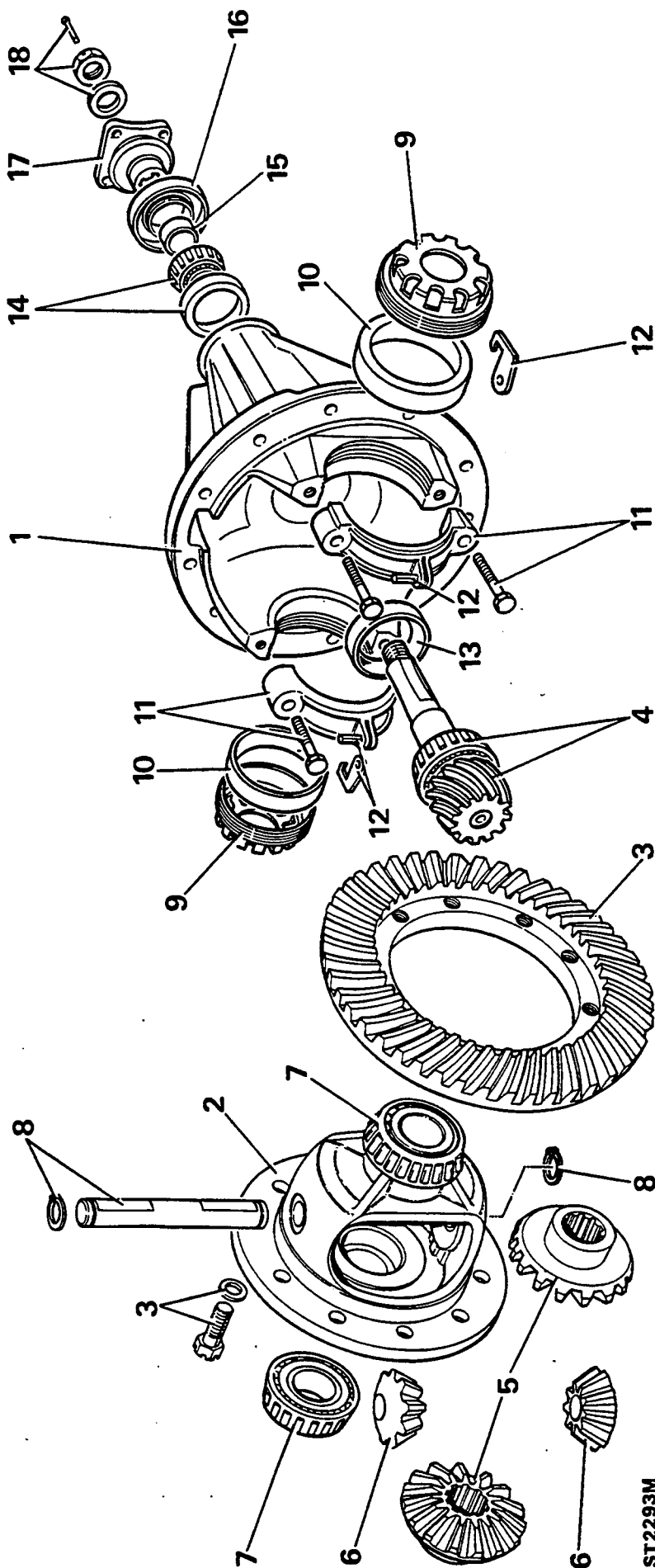
Pinion bearing pre load:

| | |
|---------------------------------------|----------------------------------|
| new bearings | 2.0 - 4.0 Nm (20 - 35 in lb.) |
| Bedded-in bearings | 1.2 - 1.7 Nm (10 - 15 in lb.) |
| Crown wheel run-out | 0.10mm (0.004ins.) |
| Crown wheel and pinion backlash | 0.10 - 0.17mm (0.004 - 0.007in.) |

TORQUE FIGURES

| | Nm | ft.lbs. |
|--|----------|----------|
| Pinion housing to axle case | 36 - 46 | 26 - 34 |
| Crown wheel to differential case | 55 - 61 | 40 - 45 |
| Bearing cap to pinion housing | 80 - 100 | 59 - 74 |
| Drive flange to propeller shaft | 41 - 52 | 30 - 38 |
| Bevel pinion nut | 95 - 163 | 70 - 120 |

FRONT AND REAR AXLE DIFFERENTIAL



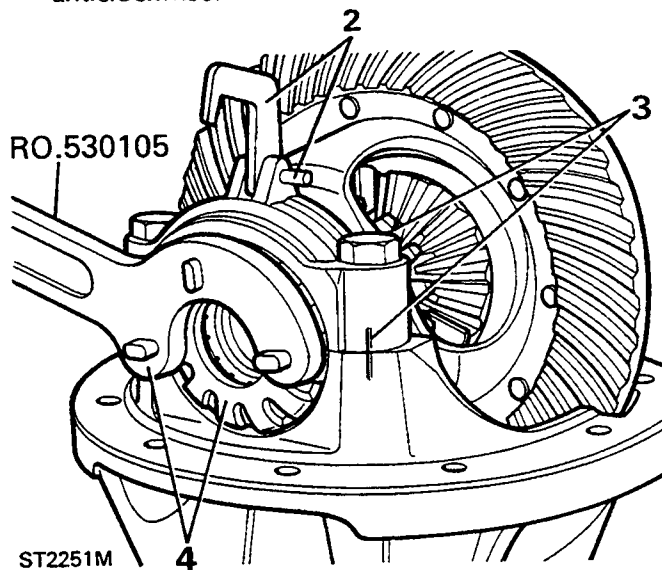
- | | | | |
|----|---------------------------------|-----|---|
| 1. | Pinion housing | 10. | Carrier bearing tracks |
| 2. | Differential carrier | 11. | Carrier bearing caps and bolts |
| 3. | Crown wheel and retaining bolts | 12. | Locking fingers and roll pins |
| 4. | Pinion and head bearing | 13. | Pinion head bearing track |
| 5. | Sun gears | 14. | Pinion tail bearing track |
| 6. | Planet gears | 15. | Spacer |
| 7. | Carrier bearings | 16. | Oil seal |
| 8. | Cross shaft and circlips | 17. | Drive flange |
| 9. | Carrier bearing adjusting nuts | 18. | Drive flange washer, nut and split pin. |

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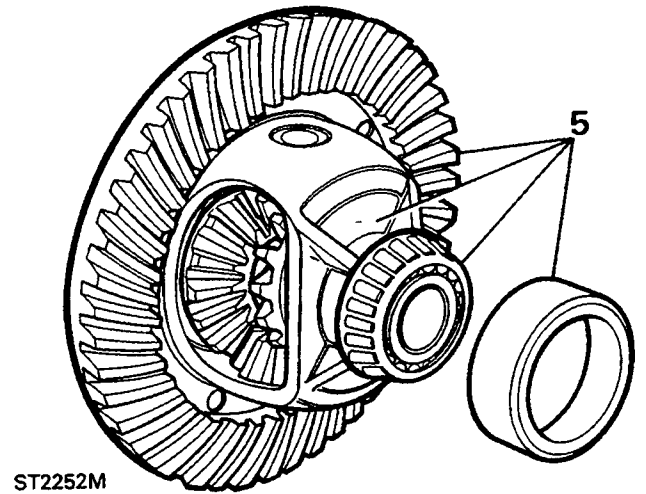
DISMANTLE

It is important that when dismantling the differential the relationship of the components are marked relative to each other and to their position in the Pinion housing and differential carrier so that if refitted, the original settings are maintained to avoid the possibility of noise and premature wear of the overhauled axle. In particular, the bearing caps and gears must not be interchanged and new gears should never be matched with worn ones.

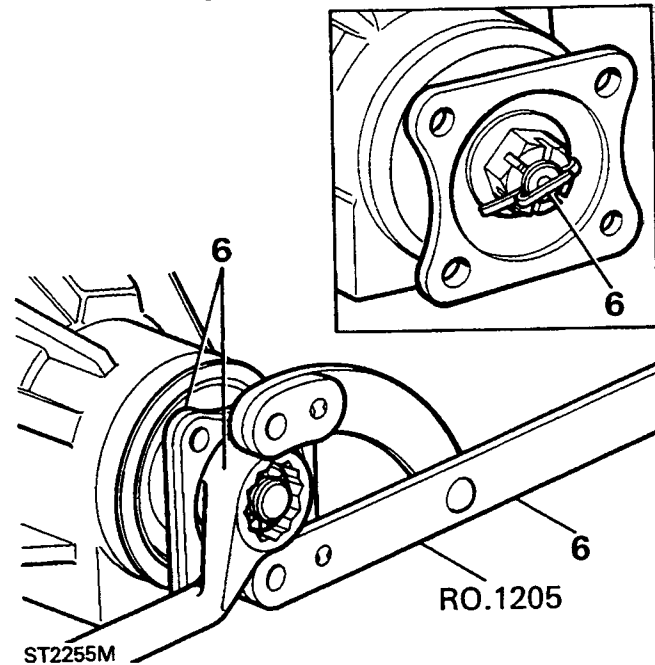
1. Drain the oil from the axle and refit and tighten the drain plug. Withdraw the axle shafts and remove the differential assembly from the vehicle. Clean and degrease the exterior of the pinion housing and secure the assembly in a vice in a vertical position.
2. Remove the two bearing nut locking fingers, by driving out the retaining roll pins from the bearing caps using a suitable punch.
3. Mark the caps in relation to the housing and slacken the four bolts securing the two bearing caps.
4. Using special service tool RO 530105 or a suitable alternative, unscrew the bearing nuts anticlockwise.



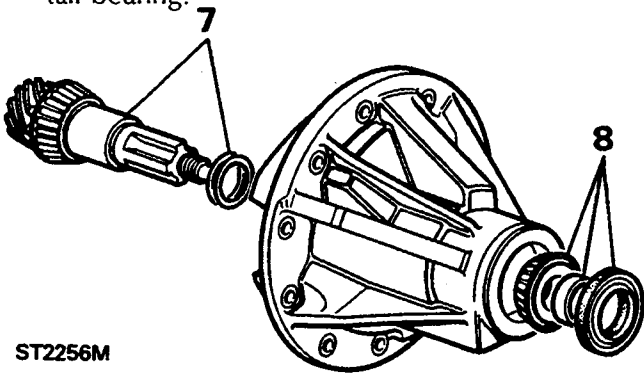
5. Lift-out the crown wheel and differential carrier assembly together with the taper bearings and tracks.



6. Reposition the pinion housing in the vice so that the pinion flange nut is accessible. Remove the split pin from the pinion nut and using special service tool RO 1205 or the reverse end of RO 530105, to restrain the flange, remove the nut anticlockwise using a socket or ring spanner.

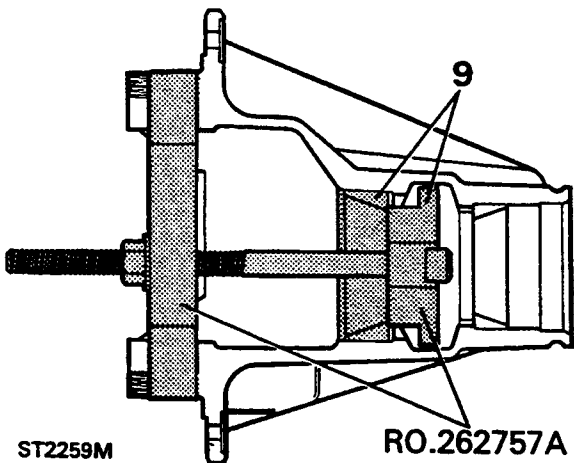
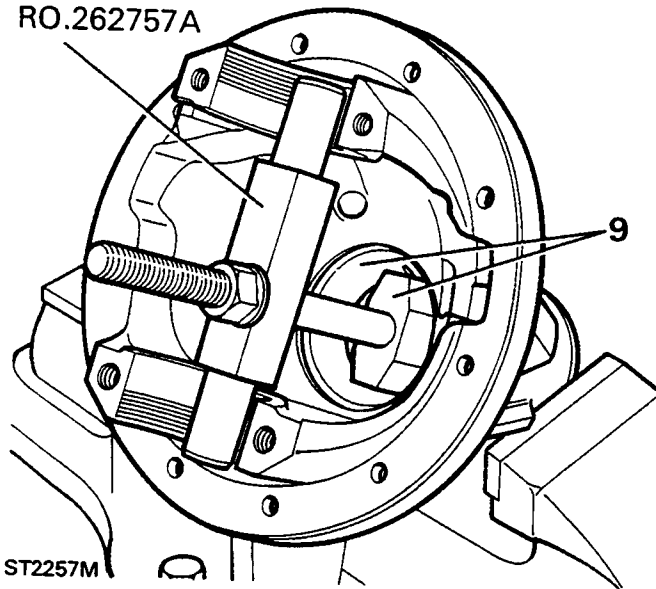


- 7. Withdraw the pinion complete with the pinion head bearing and shims.
- 8. Also, remove the oil seal, spacer and pinion tail bearing.

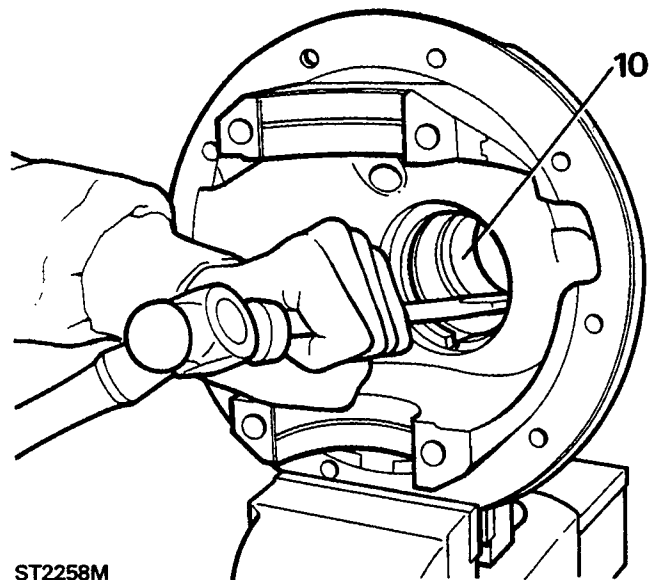


- 9. To remove the pinion head bearing track use special service tool RO 262757A ensuring that the lower end of the tool locates in the two cut outs in the housing. Using a ring spanner turn the nut clockwise and draw out the track and shim.

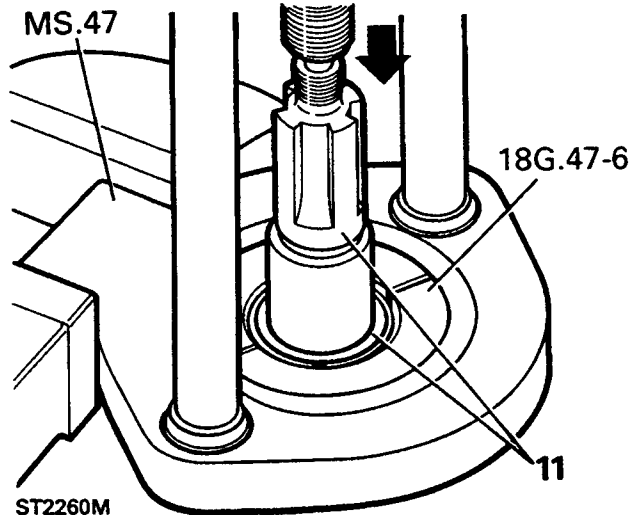
RO.262757A



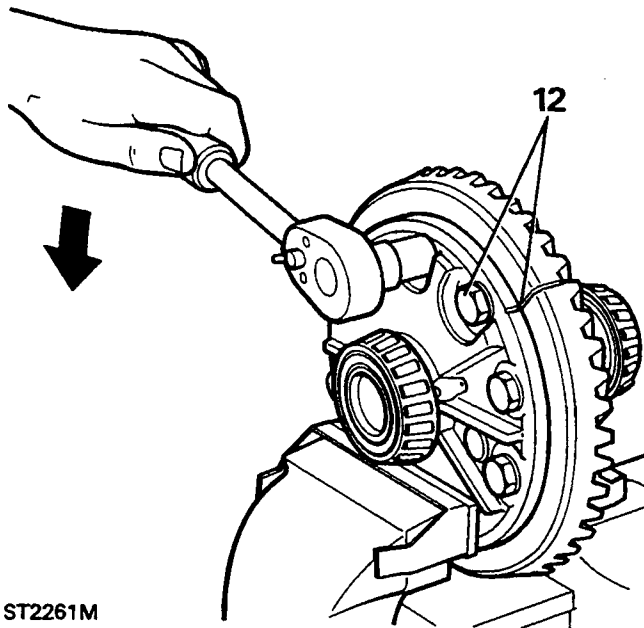
- 10. Using a suitable drift, drive out the tail bearing track locating the drift in the housing cut outs.



- 11. Now that all the components have been removed from the pinion housing, the main assemblies can now be dismantled. To remove the pinion head bearing, secure the press tool MS 47 in the vice. Encircle the bearing with the adaptor collets 18G 47-6 ensuring that the ends of the bearing rollers locate against the internal shoulder of the tool. Insert the assembly into the press tool and press the pinion from the bearing. Remember to hold the pinion to prevent it falling when released from the bearing.

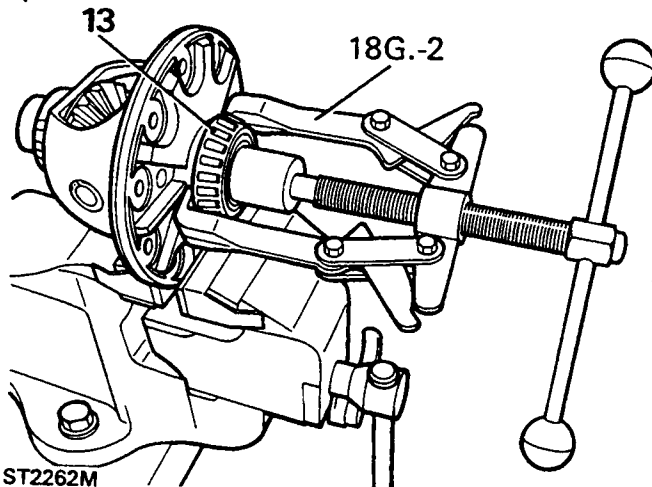


12. Mark the relationship of the crown wheel to the differential carrier and firmly secure the assembly in a soft jawed vice. Remove the ten bolts and washers and withdraw the crown wheel from the carrier. Since the bolt threads are secured with Loctite, it is possible that they will be tight for the entire length.



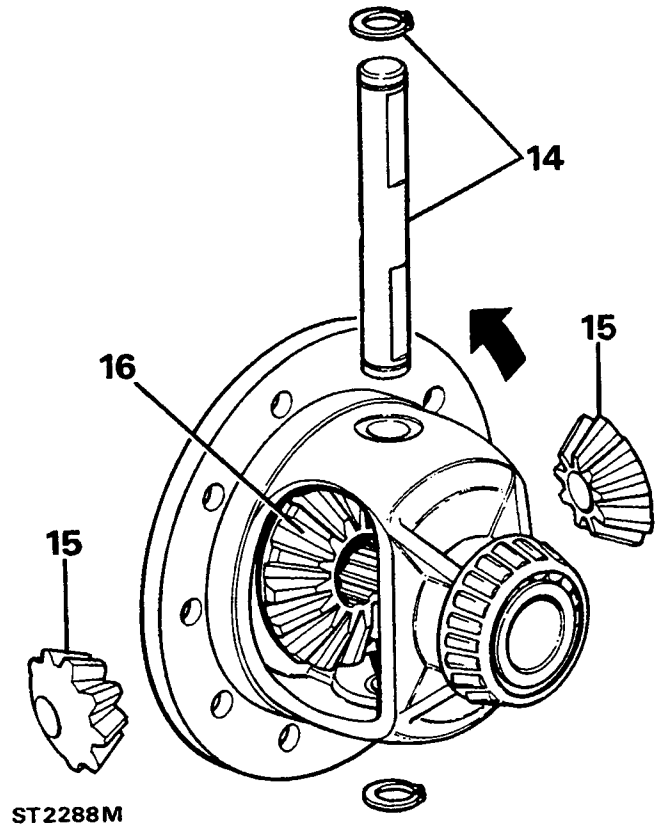
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13. Remove the carrier bearings with the general purpose tool 18G 2 or a suitable alternative. It is possible, however, to drift-off the bearing from the gear housing side of the carrier by positioning a drift in the two cast indentations behind the bearing. The bearing on the crown wheel side can only be withdrawn with a puller.



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14. To remove the differential gears, release one of the two circlips securing the cross shaft and push out the shaft.
15. Turn the gear assembly 90 degrees to enable the two planet gears to be withdrawn through the carrier aperture.
16. Finally, remove the two sun gears.

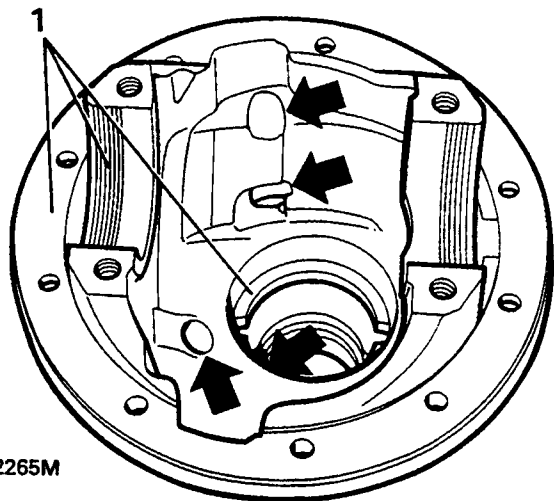


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17. Clean and degrease all components ready for inspection. Clean the threads of the crown wheel bolts with a wire brush to remove the old locking compound.

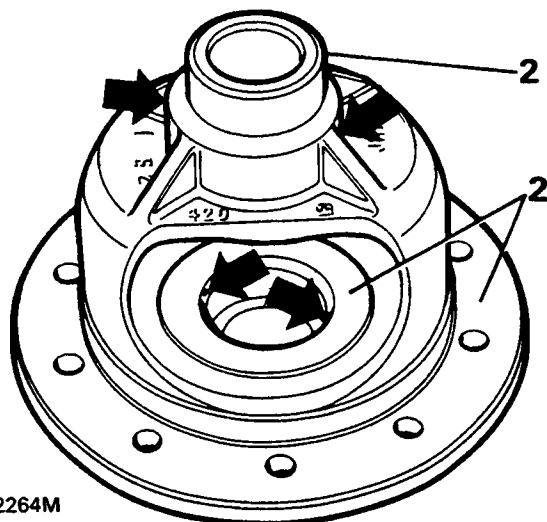
INSPECTION

1. Examine the pinion housing for damage. Check the machined surfaces and remove any burrs. Check the carrier bearing nut threads in the housing and caps and adjusting nuts for damage and repair as necessary. Make sure that the cast-in lubrication passages (arrowed) including the passage to the tail bearing, are completely clear of any obstruction.



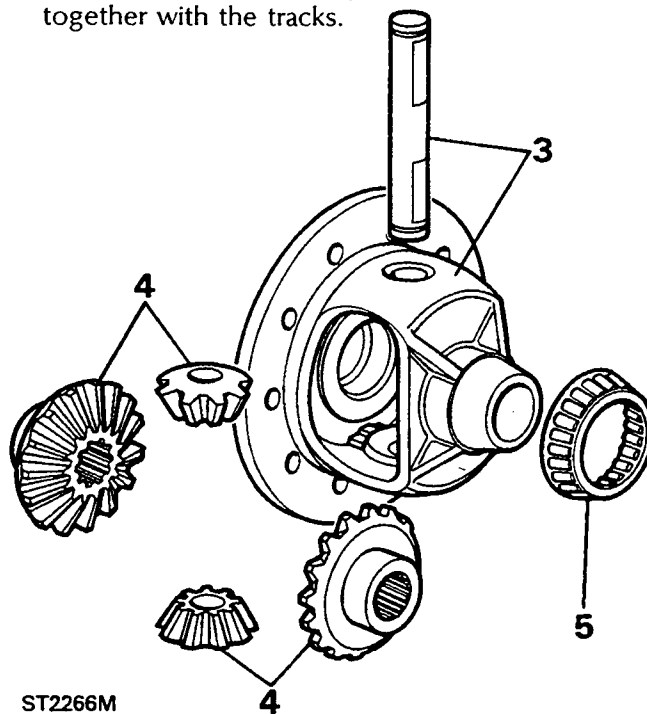
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2. Examine the machined surfaces of the differential carrier for damage, pitting, scores and wear and in particular the surfaces on which the sun and planet gears run. Also, ensure that the four lubrication holes (arrowed) are clear. Any obstruction here could cause future bearing failure.



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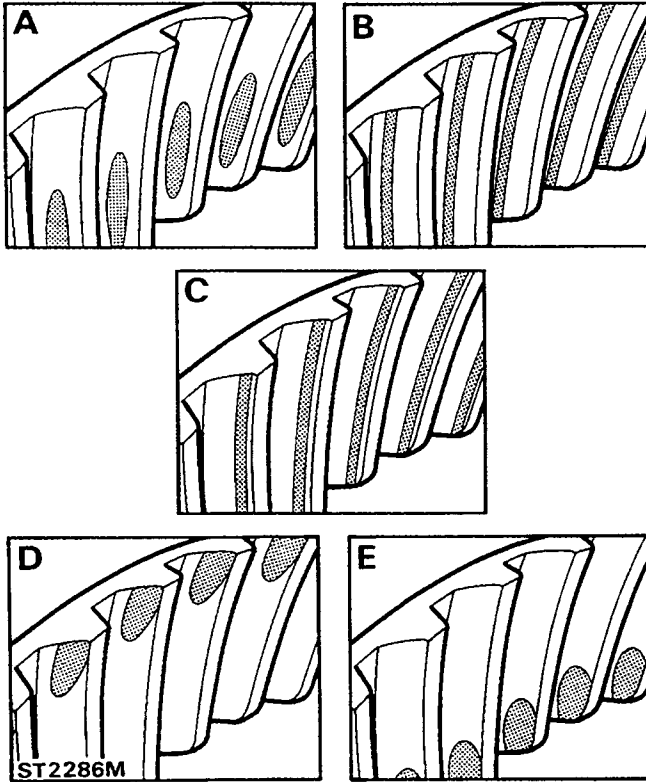
3. Check the cross shaft for scores and pitting. Insert the shaft in the carrier to check for excessive wear.
4. Carefully examine the sun and planet gears for wear on the teeth and the running surfaces in contact with the carrier. Check also for signs of over heating.
5. Inspect all the bearings for wear, pitting, flats on the rollers and overheating. If the bearings are serviceable they can be refitted but if new ones are available they must be renewed together with the tracks.



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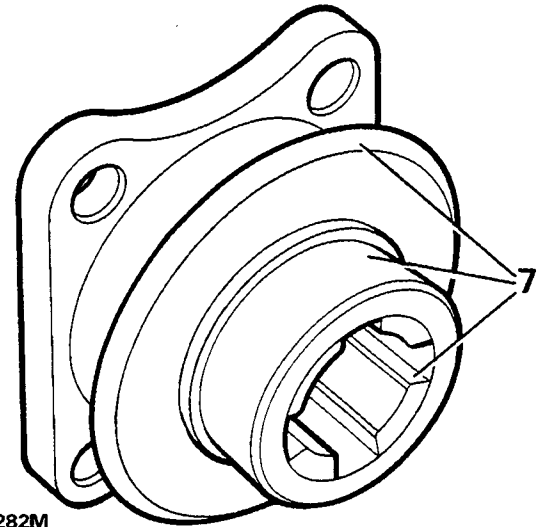
6. Examine the crown wheel and pinion for excessive and abnormal wear and signs of over-heating. Compare the tooth contact on the crown wheel driving side with the examples illustrated below. These examples, however, are for the rear axle crown wheel where the pinion is driven clockwise. Tooth contact for the front axle crown wheel, where the pinion is driven anticlockwise, is the same but on the opposite side of the tooth. The first example "A" shows the marks that should be made by a correctly meshed crown wheel and pinion. The remaining examples show incorrect tooth contact.

- B. Root contact - Pinion too far in mesh.
- C. Peak contact - Pinion too far out of mesh.
- D. Toe contact - Excessive backlash.
- E. Heel contact - Insufficient backlash.



Note: The crown wheel and pinion are only supplied as a matched set likewise the sun and planet differential gears.

7. Finally, check the condition of the pinion and driving flange splines and ensure that the machined outer diameter of the flange is free from any damage that could destroy a new oil seal. Check that the mud deflector is not damaged or buckled to the extent that it cannot deflect mud and water away from the oil seal.

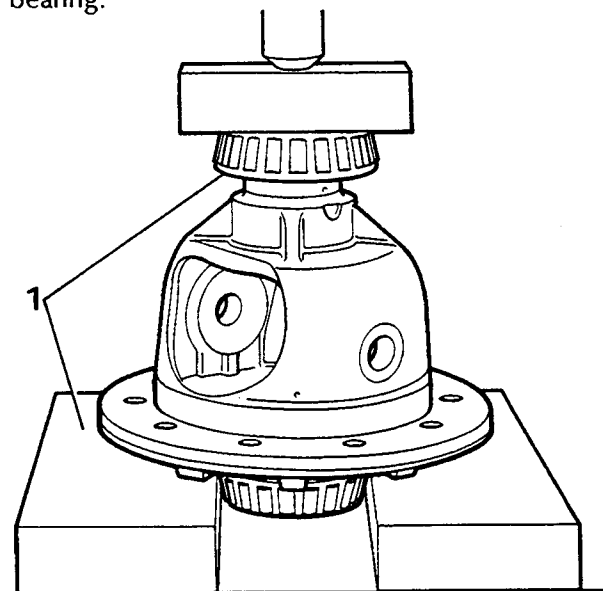


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ASSEMBLE

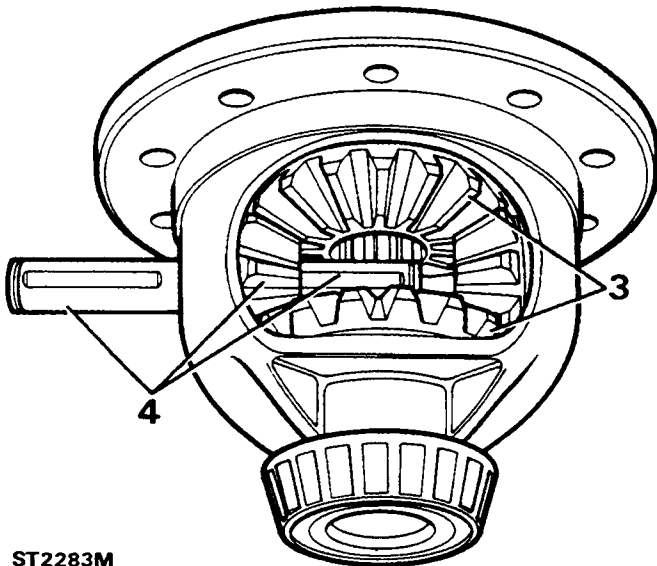
Differential carrier and crown wheel

1. Lubricate the carrier bearing journals with clean oil and start the bearing squarely on to one side of the carrier, largest diameter towards the carrier. It does not matter which bearing is fitted first. Mount the carrier squarely under, a suitable press, supporting it under the flange, as close as possible to the journals. Slowly press the bearing fully home against the carrier shoulder.
2. Repeat the above procedure to fit the second bearing.



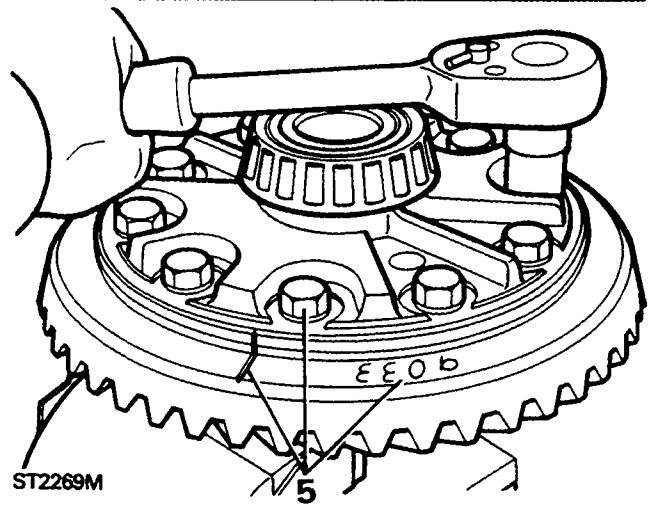
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3. Lubricate and fit the two sun gears followed by the planet gears.
4. Align the planet gears with the carrier holes and fit the cross shaft. Secure the shaft with new circlips. Check the gears for freedom of rotation and that there are no tight spots. Only nominal backlash should be present but if excessive, the gears or the carrier or both should be changed since there is no provision for adjustment.



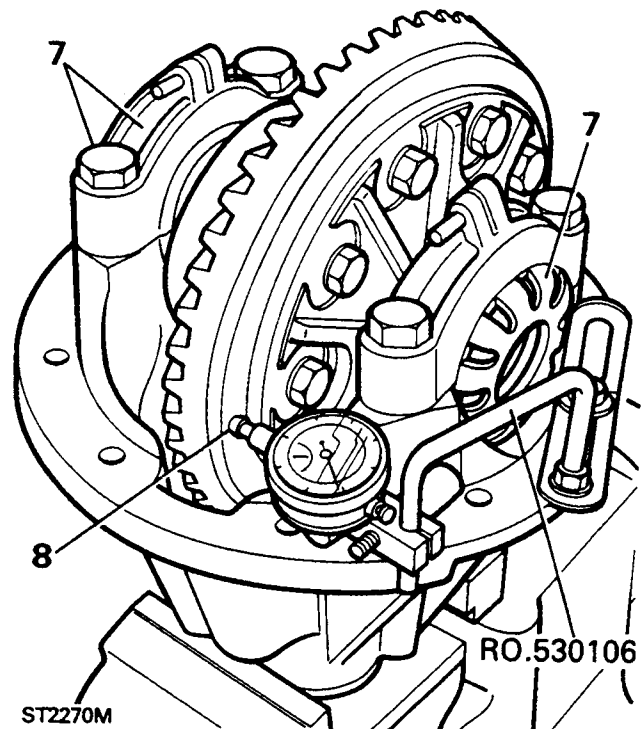
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5. Check that the serial number etched on the pinion end face is the same as that marked on the crown wheel. Clean the crown wheel and carrier mating faces and check that there are no burrs or any other damage that could cause excessive run-out of the crown wheel. If the original crown wheel and pinion is being refitted ensure that the marks made when dismantling line up. Since the crown wheel is a fairly tight fit on the carrier, the bolt holes should be lined up first while locating the crown wheel squarely on the carrier. Fit and tighten the bolts evenly, a little at a time, until the crown wheel has pulled down on to the carrier flange. Tighten the bolts temporarily to the correct torque.



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6. To check the crown wheel for run out, secure the pinion housing in the vice in a vertical position. Fit the tracks to the carrier bearings and lower the assembly into the pinion housing.
7. Fit the bearing caps, lining up the marks and just nip the bolts. Do not fully tighten. Fit the bearing adjuster nuts and tighten using service tool RO 530105 until there is no end float between the bearings. Now, tighten the bearing cap bolts evenly to the correct torque.



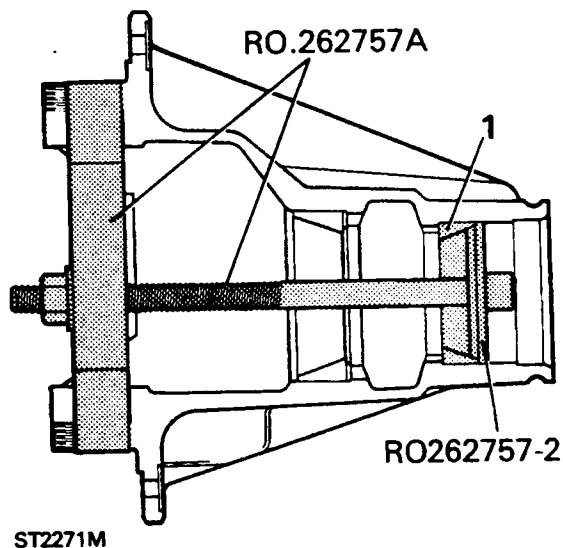
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RO.530106

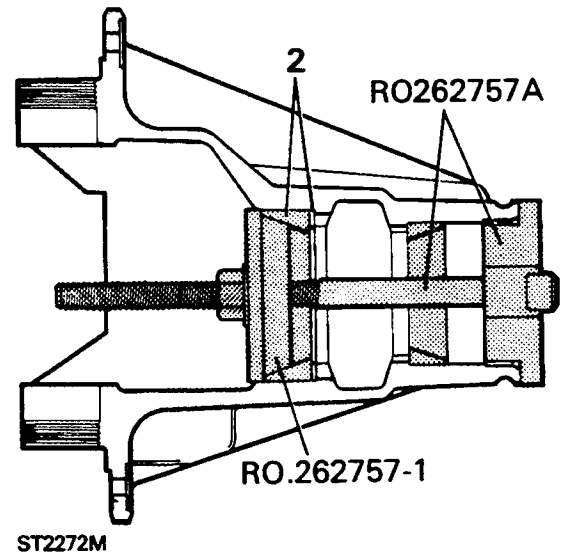
8. Mount a dial test indicator on the flange of the pinion housing using bracket RO 530106 so that the stylus rests on the back of the crown wheel. Turn the crown wheel and if the run out exceeds 0,10mm (0.004ins.) remove the crown wheel from the carrier and check again that there are no burrs, dirt or damage of any kind that could account for excessive run out. Fit the crown wheel again to the carrier and should the run out still persist, the crown wheel and carrier should be individually checked for run out on a lathe or similar equipment where the parts can be accurately turned and measured.
9. When satisfied that the run out is within the specified limit, remove the crown wheel bolts, one at a time, coat the threads with Loctite Studlock and refit the bolts tightening evenly to the correct torque.

Fitting pinion bearing Tracks

1. To fit the pinion tail bearing track, lubricate and start the track squarely in the pinion housing. Assemble the special tool RO 262757A and adaptor RO 262757-2 as illustrated below. Slowly turn the nut clockwise until the track is fully home against the housing shoulder.

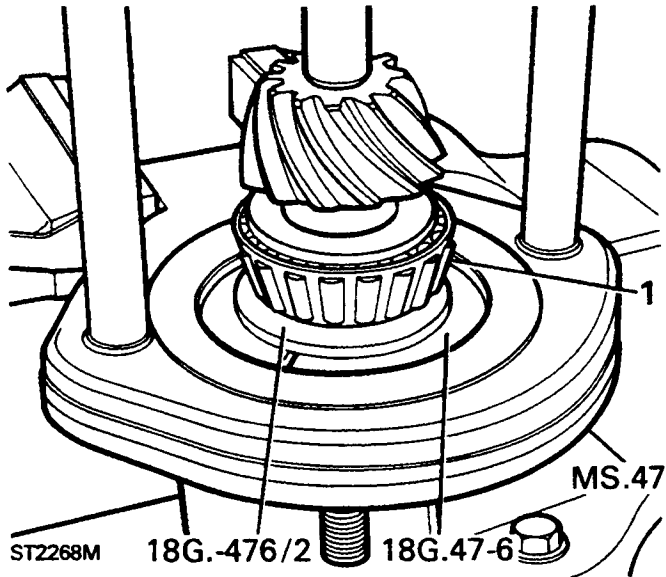


2. Fit the bearing head track and the original shim using main tool RO 262757A and adaptor RO 262757-1. Lubricate and start the track squarely in the housing and assemble the tool as shown below. If the shim was damaged during removal fit a new one of the same thickness. If the shim was lost before the size was measured, fit a replacement shim at least 1,27mm (0.050 ins.) thick. Turn the nut slowly, using a box spanner, until the track is fully home against the housing shoulder. It is vital to the successful assembly of the differential and in particular the following pinion height setting, that the track and shim is indeed pressed fully home.



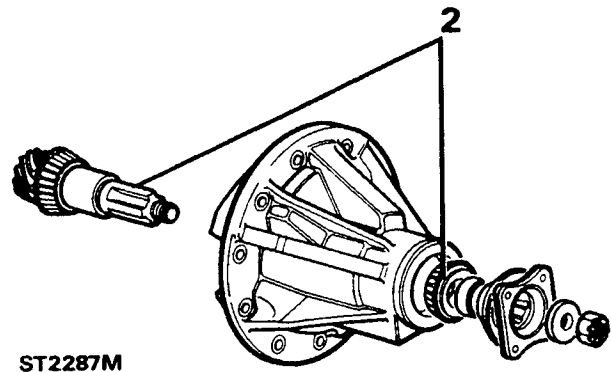
Pinion height setting

1. Fit the pinion head bearing to the pinion with press MS 47 and collets 18G 47-6 and 18C 47-6/2. Note that the smaller register on 18C 47-6/2 must be uppermost against the bearing. Ensure that the larger diameter of the bearing is towards the gear. Lubricate the pinion and press it slowly on to the bearing.

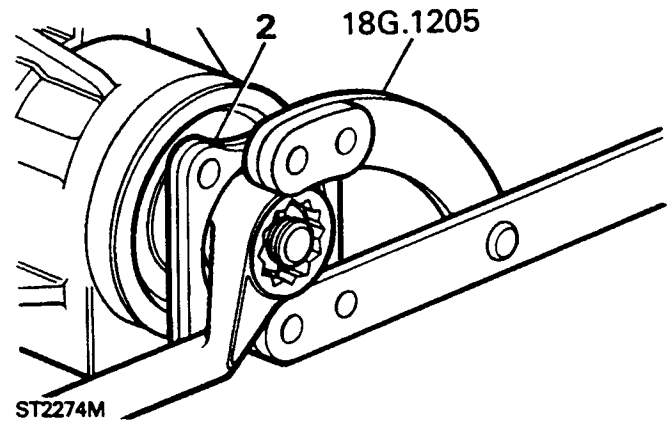


The object of the following instructions is to establish the correct height of the pinion, in the pinion housing, so that it will mesh correctly with the crown wheel. This may entail raising or lowering the pinion by adjusting the value of the shims behind the pinion head bearing track. In order to achieve this, the pinion bearings must be temporarily pre loaded to the same figure as they will be when the differential is finally assembled.

2. Insert the pinion into the housing and fit the tail bearing without any pre load shims. Fit the spacer and drive flange, omit the oil seal, and secure the assembly with the washer and nut. Restrain the flange with service tool 18G 1205 or the reverse end of RO 530105, and slowly tighten the nut a little at a time and remove the flange restrainer.

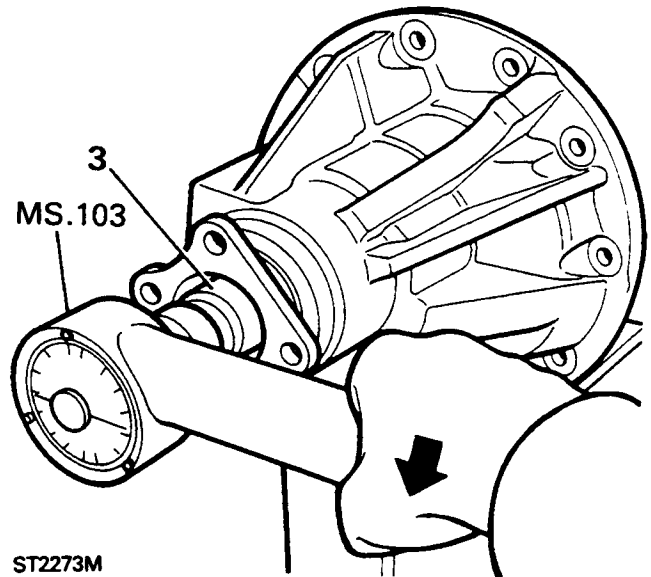


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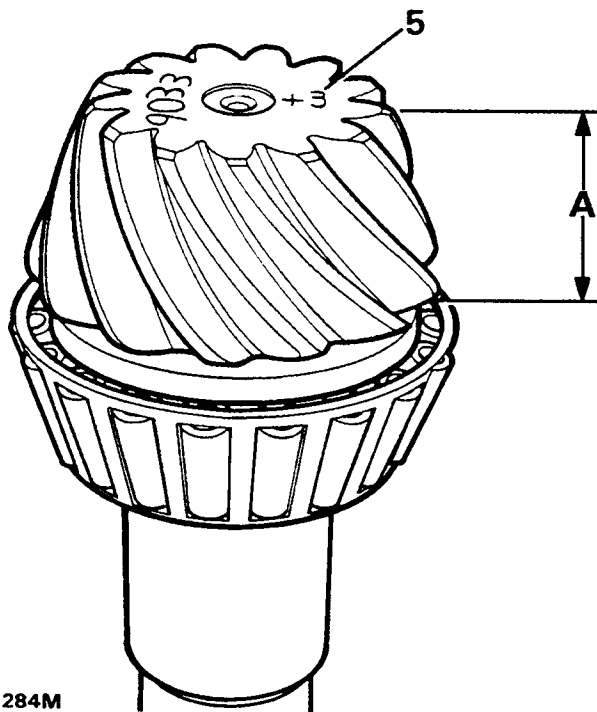
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3. Fit a suitable socket to the torque pre load meter MS 103 or a suitable alternative, and check the pre load figure by turning the pinion, with the meter, in a clockwise direction. Continue to tighten the nut until the gauge reads 20 to 35 in lb (2 to 4 Nm).
4. Note that if the original, bedded-in, bearings are being refitted the pre-load figure should be 10 to 15 in lb (1.2 to 1.7 Nm).



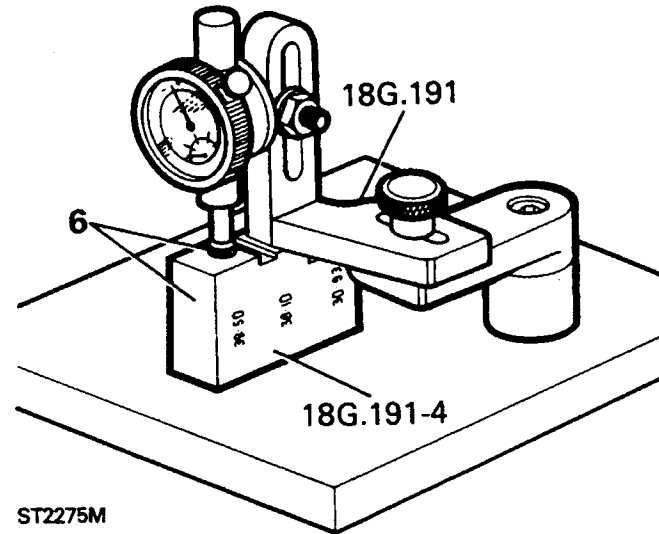
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5. Secure the pinion housing vertically in the vice so that the pinion is uppermost. It will be noted that in addition to the serial number etched on the pinion end face there may be a figure with a minus (-) or a plus (+) sign before it. This figure indicates, in thousandths of an inch, whether the depth of the pinion head, (dimension A), is under or oversize from the designed dimension. A pinion without these figures must be set in the pinion housing at the nominal height dimension. The nominal height dimension, 39,50mm, is represented by the pinion height setting block 18G 191-4. The dimension is taken from the pinion end face to the lowest point in the differential carrier bearing saddle in the pinion housing.



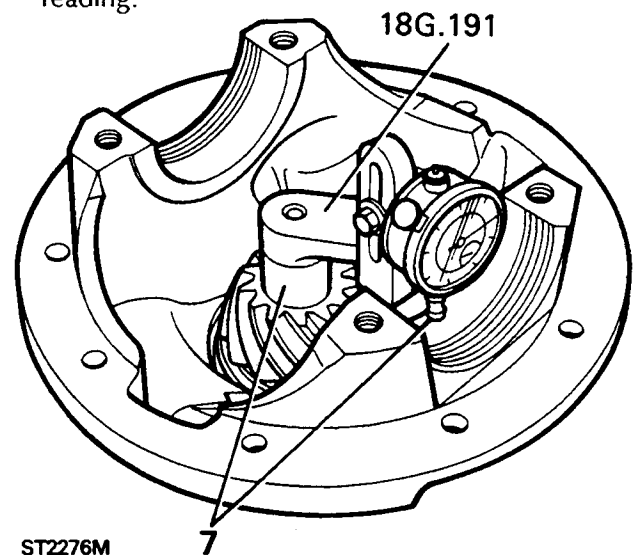
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6. Remove the keep disc from the magnetic base of the pinion height setting dial gauge 18G 191 and position the setting block 18G 191-4 and gauge on a surface plate as illustrated. It will be noted that the setting block has three setting heights. It is essential that only the 39.50mm setting is used for this differential. Rest the stylus on this setting and load the gauge to read approximately 0.015ins. (0,40mm) and zero the gauge.



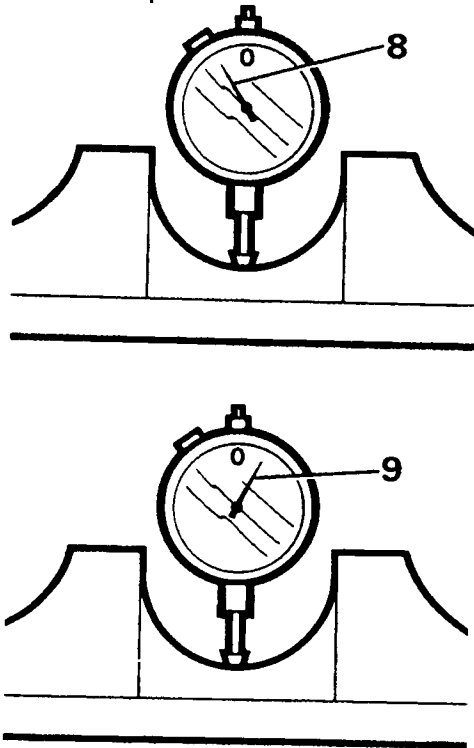
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7. Ensure that the pinion head is clean and smooth. Transfer the gauge to the pinion housing so that the magnetic base sits centrally on the pinion end face and the stylus rests on the lowest point in one of the carrier bearing saddles. Make a note of the dial gauge reading from the zeroed setting and whether the gauge needle moved up or down. Now move the dial gauge across to the other saddle and again note the reading from the zeroed setting. Now add the two readings together and divide by two to obtain a mean reading.



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8. If the dial indicator needle did not reach the zeroed setting, the difference between this setting and the position of the needle is the thickness of shims that must be removed from behind the pinion head bearing track to lower the pinion to the nominal dimension.
9. If the indicator needle moved beyond the zeroed setting, the difference between this setting and the position of the needle is the thickness of shims that must be added to those behind the pinion head bearing track to raise the pinion to the nominal dimension.



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10. Before actually adjusting the shim thickness, the plus or minus figure, if any, on the pinion face must be taken into consideration when calculating the final thickness of shims that must be removed or added.

If the pinion has a plus (+) figure etched on the pinion face, subtract this figure, in thousandths of an inch, from the figure obtained in instruction 8 or 9.

If the pinion has a minus (-) figure on the pinion face add this to that obtained in instruction 8 or 9.

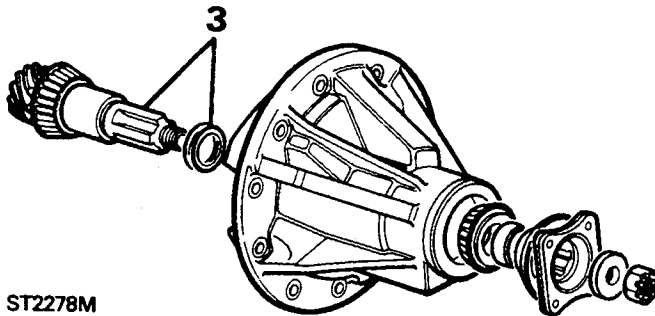
A pinion without a plus or minus figure must be adjusted to the nominal dimension and shims to the value indicated by the dial test indicator in instruction 8 or 9 should be added or removed.

11. Remove the pinion from the housing and withdraw the pinion head bearing track as previously described. Adjust the shim thickness as required by the above calculations. Refit the bearing track and shims and ensure that once again the track is pressed fully home.
12. Having made the necessary adjustments the pinion height setting must be checked again to ensure that the calculations and adjustments are correct. Refit the pinion to the housing and pre load the bearings, as before, repeating instructions 2 and 3 above. Now set up the dial gauge and carry out the pinion height check again exactly as described in instructions 6 and 7. If the pinion height setting is correct, the mean reading obtained will agree with the figure etched on the pinion end face. For example, a pinion with an end face figure of +3 the dial gauge reading should indicate that the pinion head depth is indeed 0.003in oversize.

Pinion bearing pre load adjustment

1. Position the pinion housing horizontally in the vice. From the pinion housing remove the drive flange, spacer, tail bearing and pinion.
2. Fit a new shim or shims of the same thickness as the originals to the pinion. If these are lost and the thickness is unknown fit shims to the value of at least 4,06mm (0.160 ins).

- Fit the pinion, with the shims, to the housing, then the tail bearing followed by the spacer and driving flange. Omit the oil seal at this stage and secure the assembly with the washer and castle nut.



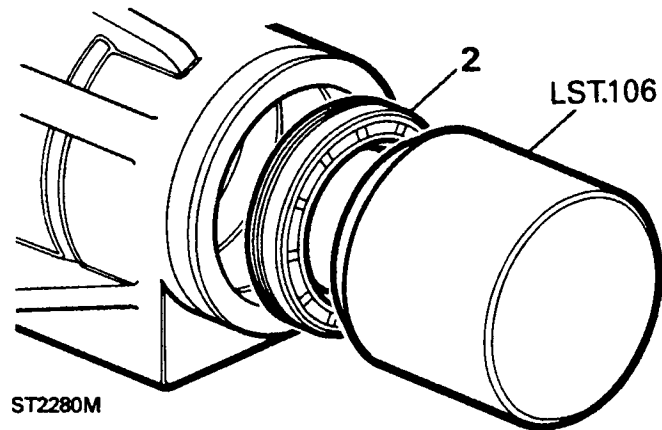
ST2278M

- Tighten the flange nut to the specified torque. Whilst holding the flange with service tool 18G 1205, as before. The torque now required to turn the pinion, if new bearings have been fitted, should be between 20 and 35 in lb. (2 to 4.0 Nm) once the initial inertia has been overcome. If the original, bedded in, bearings have been refitted, the figure should be between 10 and 15 in lb (1.2 to 1.7 Nm). To check the torque or pre load, use the Torque Meter MS 103 and a socket and turn the pinion whilst noting the meter reading. If necessary, dismantle the pinion assembly and change the bearing pre load shims in order to achieve the correct torque figure. As a guide, thicker shims will reduce the torque or pre load and thinner shims will increase the torque. Reassemble the pinion again and recheck the torque.

Fitting pinion oil seal

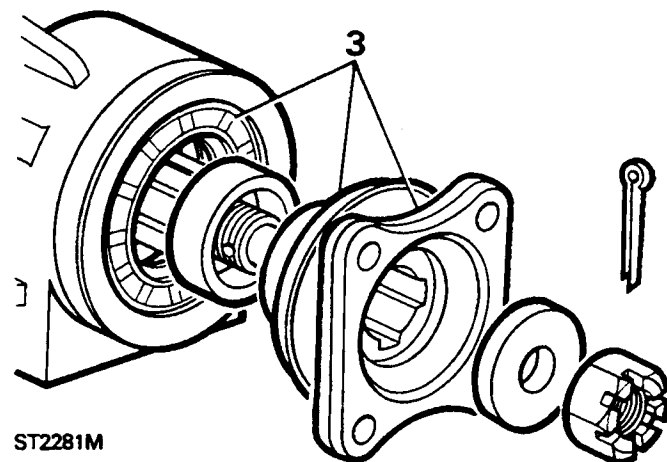
- Having established the correct thickness of shims the pinion drive flange must be removed to fit the oil seal. Examine the seal before fitting to ensure that it is clean and undamaged, since even a small scratch on the seal lips could impair its ability to prevent oil leaking. Also check that the garter spring is properly located. Whilst the distance piece can be inserted after the seal has been fitted, the tail bearing will not pass through the seal, so it is important to check that the bearing is in position.

- Smear the outer diameter of the new seal with a recommended all purpose grease and with the lip side leading, start it squarely into the pinion nose housing. Using special service tool LST 106, drive the seal home to the depth determined by the tool.



ST2280M

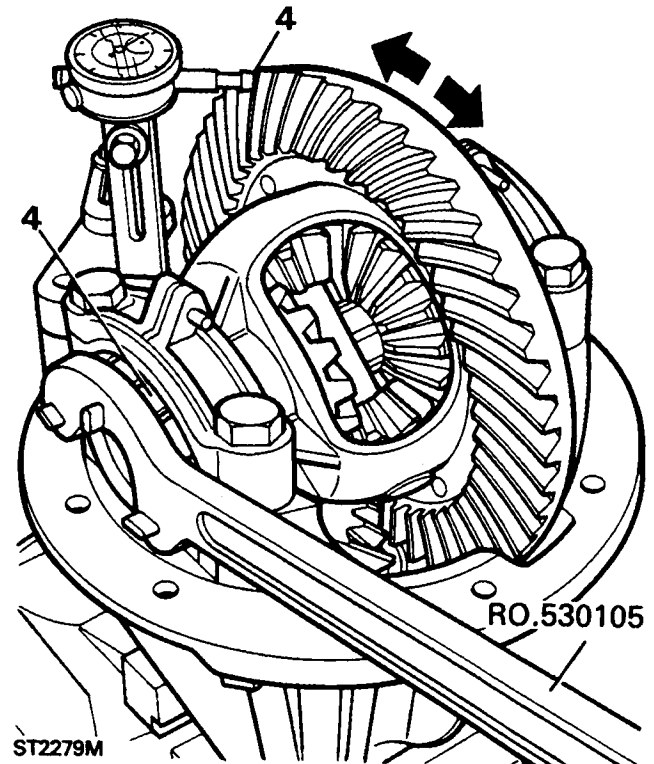
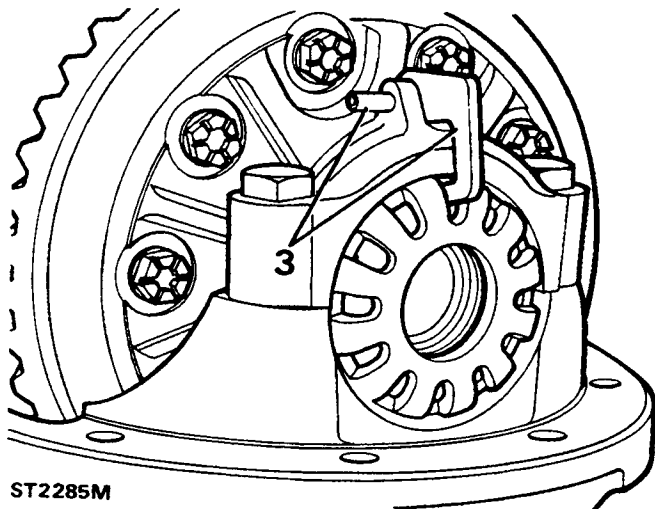
- Lubricate the seal lips with a recommended axle oil. Check that the flange seal running surface is clean, smooth and free from imperfections that could damage the seal. Carefully fit the drive flange and secure with the washer and nut. Tighten the nut to the correct torque whilst holding the flange with restraining tool 18G 1205. If necessary continue to tighten the nut to line up the split pin hole and fit a new split pin.



ST2281M

Adjust crown wheel and pinion backlash

1. Return the pinion housing to the vertical position and lower the Crown wheel and differential assembly into the pinion housing. Lubricate the carrier bearings and fit the tracks. Fit the bearing caps so that the assembly marks line up and fit the bolts, finger tight only.
2. Move the crown wheel into mesh with the pinion and fit the bearing adjusting nut on the crown wheel side. Using wrench RO 530105 tighten the nut with just sufficient nip to remove any backlash between the crown wheel and pinion.
3. Line up the centre of the locking finger lug with a slot in the adjusting nut. Fit the locking finger and secure with the roll pin. Fit the opposite nut and tighten, with the above wrench, until resistance is felt.



5. After evenly tightening the bearing cap bolts to the correct torque, check the backlash again to ensure that it has not altered the setting. Fit the locking finger and secure with the roll pin.
6. Locate a new joint washer over the axle casing studs, liberally lubricate the bearings and gears and refit the differential assembly to the axle. Fit and tighten the retaining nuts evenly to the correct torque.
7. Check that the drain plug is tight and remove the axle oil filler level plug. Inject approximately 1,70 litres (3 Imperial pints) of a recommended axle oil until it begins to run from the level hole. fit and tighten the plug and wipe away any surplus oil.

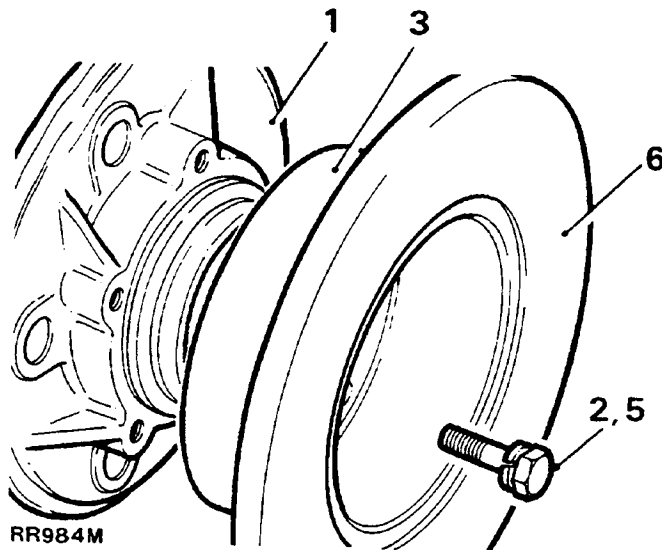
4. Mount the pinion height setting gauge, with the magnetic base on the pinion housing flange and the stylus resting against a crown wheel tooth. Continue to tighten the nut, on the carrier side, until a backlash of 0,10 to 0,17mm (0.004 to 0.007in.) is achieved. Do not slacken the crown wheel side nut otherwise the backlash and bearing preload will be lost. Line up the locking finger lug with a slot in the nut.

REAR DISCS**Remove and refit****Removing**

1. Remove the rear hub assembly.
2. Remove the rear disc fixing bolts.
3. Tap off the disc from the rear hub.

Refitting

4. Locate the disc onto the rear hub.
5. Fit the disc fixing bolts. See Section 06 for tightening torques.
6. Using a dial indicator, check the total disc run out, this must not exceed 0.15 mm (0.006 in). If necessary reposition the disc.



7. Fit the rear hub assembly.

Disc Reclamation

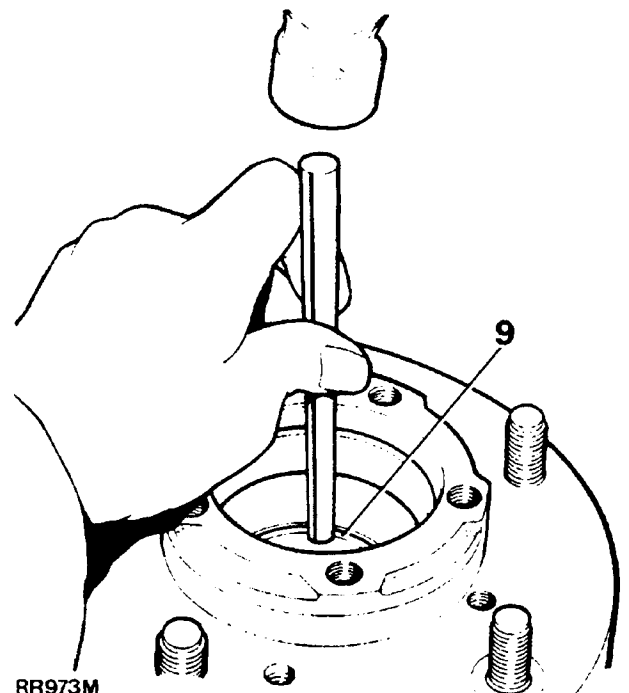
Check the disc thickness marked on the disc boss-this dimension may be reduced to a minimum thickness of 13 mm (0.510 in) front and 12 mm (0.460 in) rear, by machining an equal amount off both sides.

REMOVE AND OVERHAUL REAR HUBS**Service tools:**

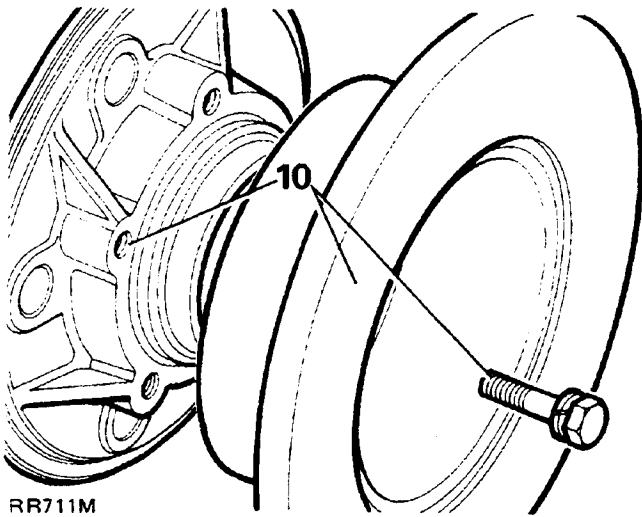
Oil seal replacer -LST550-5
Drift for above tool -MS550 or 18G134
Hub nut wrench -606435

Remove

1. Jack-up the vehicle, lower on to axle stands and remove the road wheels.
2. Release the brake hose from the axle, casing clips and remove the brake caliper retaining bolts and secure the assembly to one side. Take care not to kink the brake hose.
3. Remove the five bolts securing the axle shaft to the hub and withdraw the shaft.
4. Bend back the lock tab and remove the outer nut using box wrench 606435 and remove - remove the lock washer. Likewise remove the inner nut.
5. Remove the seal track spacer.
6. Withdraw the hub complete with bearing oil seals and brake disc.
7. Remove the inner and outer oil seals.
8. Remove the inner and outer bearing cones (races).
9. Drive-out the inner and outer bearing cups.



10. Degrease and examine the hub and brake disc and if necessary replace both or whichever part is unserviceable. The disc is attached to the hub with five bolts. Mark the relationship of the hub to the disc if the original parts are to be re-assembled.

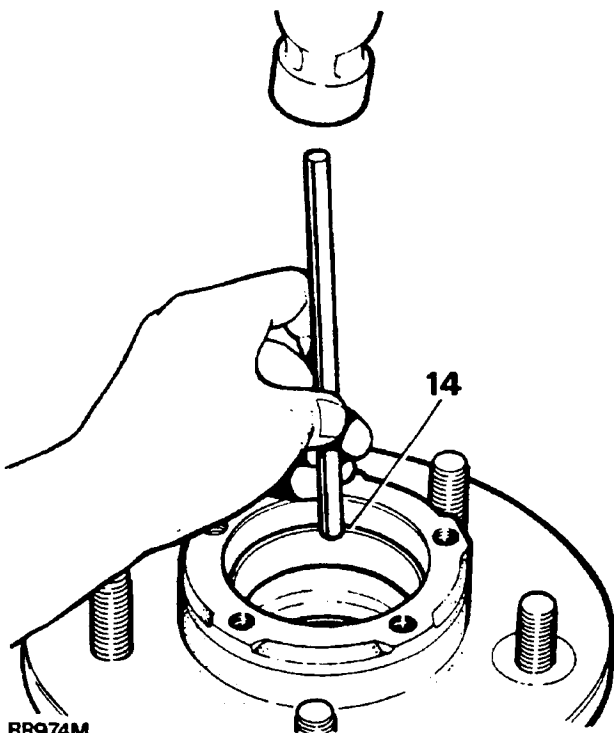


RR711M

11. Examine the stub axle and in particular check that the inner seal track is smooth and free from blemishes.
12. If necessary remove the six retaining bolts and remove the stub axle complete with the mudshield and joint washer.

Assemble

13. Using a new joint washer fit the stub axle and mud shield. Coat the threads of the retaining bolts with Loctite 270 and tighten evenly to the correct torque (see section 06-Torque values).
14. Fit the new inner and outer bearing cups to the hub, using a suitable drift or commercial bearing race driving tool.

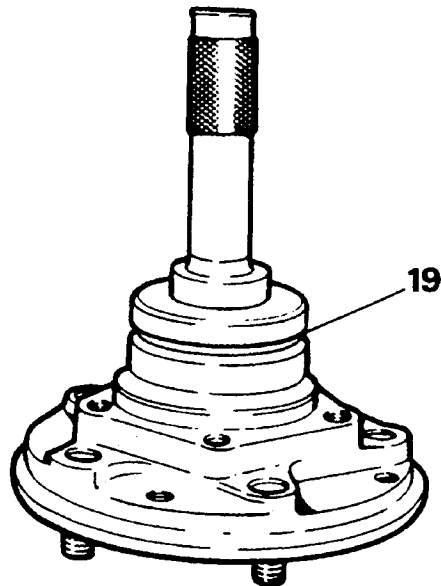


RR974M

15. Fit the new inner bearing cone and pack with one of the recommended hub greases.

Fitting new oil seal-inner

16. Clean the hub oil seal housing and ensure that the seal locating surface is smooth and the chamfer on the leading edge is also smooth and free from burrs.
17. Examine the new seal and ensure that it is clean and undamaged and that the garter spring is properly located. Even a small scratch on the seal lip could impair its efficiency.
18. Although the new seal is already pre-greased by the manufacturer, apply one of the recommended hub bearing greases to the outside diameter of the seal before fitting, taking care not to damage the lip.
19. Place the seal, lip side leading, squarely on the hub and using the 76 mm end of seal replacer tool LST550-5 and drift 550 or 18G134, drive the seal into position, flush with the end face of the hub.



RR975M

Fitting outer oil seal

20. Fit the new outer bearing cone and pack with one of the recommended hub greases. Carry out instructions 16 to 18.
21. Place the seal, lip side leading, squarely on the hub and using the 72 mm end of seal replacer tool LST550-5 and drift 550 or 18G134, drive the seal into position to the depth determined by the tool.
22. Coat the lips of both seals with one of the recommended greases. This is important since a dry seal can be destroyed during the first few revolutions of the hub.

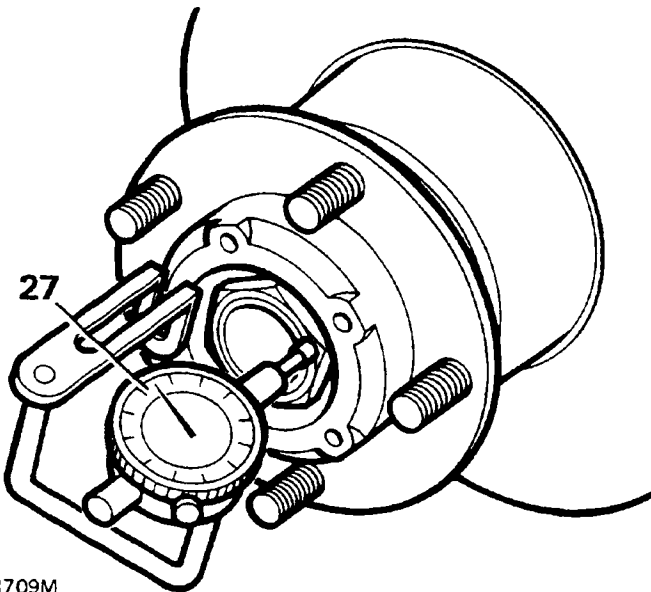
Fitting hub to stub axle

23. Select a new seal track spacer and check that the outer diameter is smooth and free from blemishes and that there are no burrs on the chamfered leading edge.
24. Taking care not to damage the seal lips fit the hub assembly to the stub axle. Do not allow the weight of the hub to rest even temporarily on the outer seal otherwise damage and distortion could occur. Therefore hold the hub clear of the stub axle until the seal track spacer is fitted.
25. Carefully fit the seal track spacer, seal lip leading.

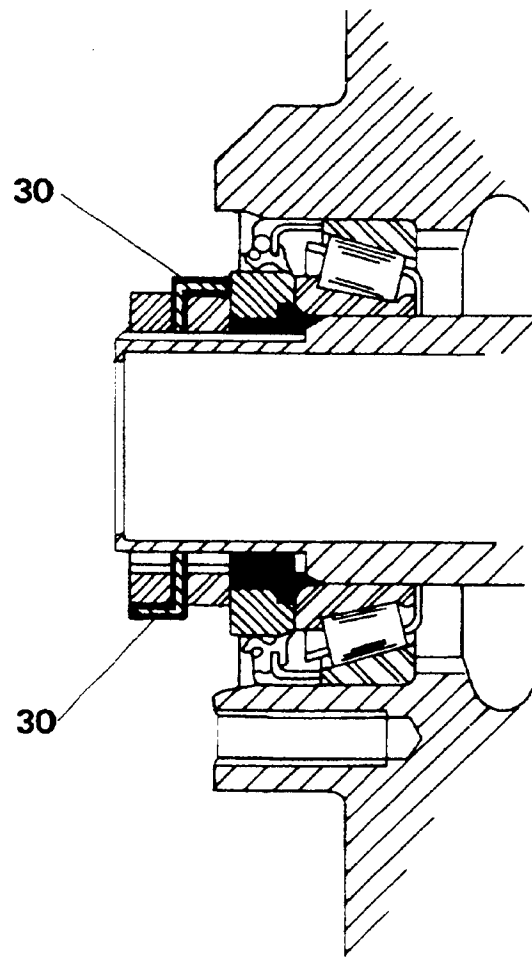
NOTE: Instruction 26 is applicable to hubs that have been fitted with new components throughout. If original components are being refitted instruction 27 must be followed using the adjustment nut to achieve the required end-float.

26. Fit the hub inner nut and using wrench 606435 tighten the adjusting nut while slowly revolving the hub until all end-float is removed, then back-off the nut approximately half a turn and retighten the nut to 13-15 in lb which will automatically allow for compression of the rubber on the new seal track spacer giving the required hub end-float of 0.013 to 0.10 mm (0.0005 to 0.004 in).

27. If the rubber on the seal track spacer has previously been compressed the hub end-float can be checked by mounting a dial indicator and bracket on the hub so that the trace pin rests in a preloaded condition on the nut. Rotate the hub to settle the bearings and check the end-float by pushing and pulling the hub. End-float must fall within the limits given in the previous instruction.
28. Fit a new lock washer and locknut. Restraining the inner adjustment nut, tighten the outer lock nut to 70 to 80 ft lb (95 to 108 Nm).
29. If original components have been refitted rotate the hub several times to settle the bearings then recheck the end-float, refer to previous note and instruction 27.



RR709M



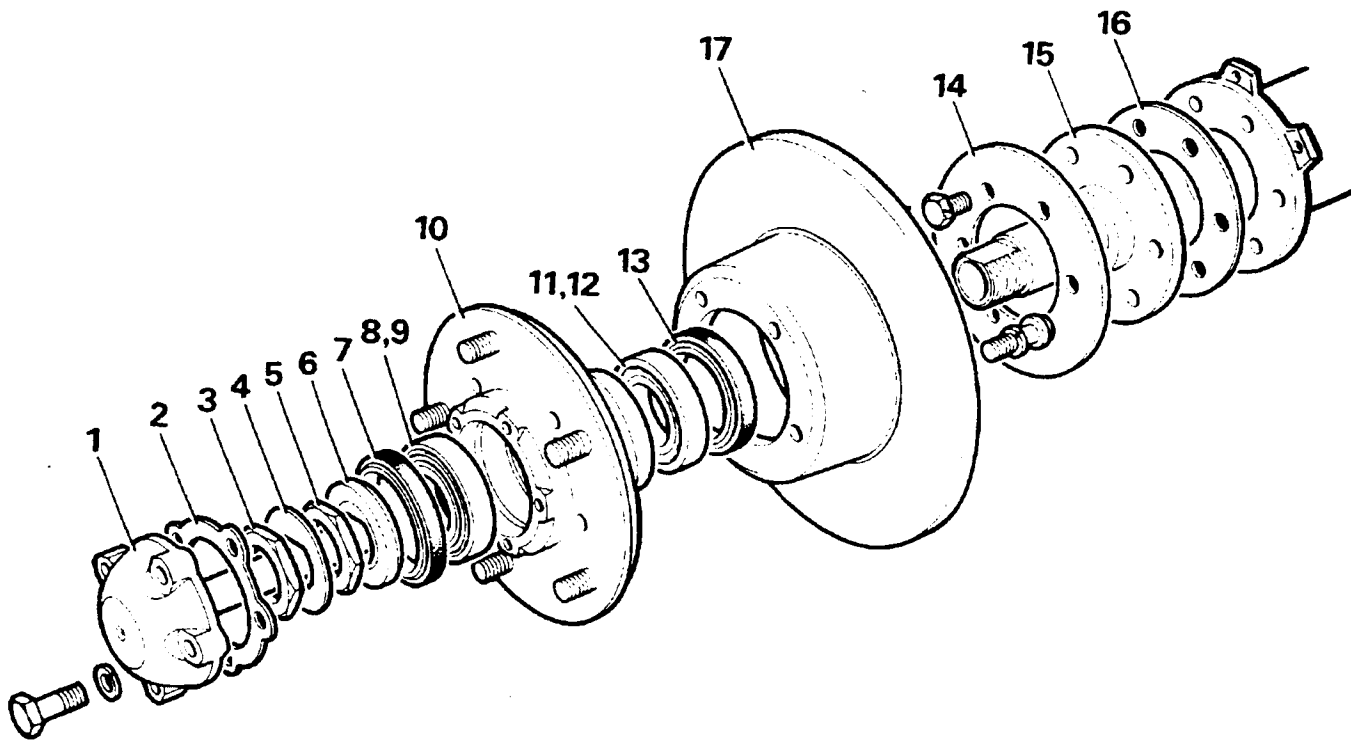
RR708M

30. Bend one segment of the lock washer over the adjusting nut and another, diametrically opposite, over the locknut taking care not to damage the outer seal.
31. Using a new joint washer, fit the hub driving shaft and evenly tighten the retaining bolts to the correct torque (see section 06-Torque values).
32. Fit the brake caliper and secure with the retaining bolts and tighten to the correct torque (see section 06-Torque values). Secure the brake pipes to the axle casing.

33. Fit the road wheels, jack-up the vehicle, remove the axle stands, lower the vehicle to the ground and tighten the road wheel nuts evenly to the correct torque.

KEY TO REAR HUB COMPONENTS

1. Rear axle shaft
2. Joint washer
3. Locknut
4. Lock washer
5. Adjusting nut
6. Seal track spacer
7. Outer oil seal
8. Outer bearing cone
9. Outer bearing cup
10. Hub
11. Inner bearing cup
12. Inner bearing cone
13. Inner oil seal
14. Mudshield
15. Stub axle
16. Stub axle joint washer
17. Brake disc



RR706M