

F . Removing the ring gear - Disassembling the planet gears and sun gears

16. Place the differential unit in a vice fitted with soft jaws.

NOTE: Before disassembling, mark the position of the half-units (25) (26) and the fixed dog clutch (24) with paint for reassembly in their initial positions.

Removing the ring gear

17. Take off the screws (23) and nuts (28).

18. Remove the ring gear.

Disassembling the planet gears and sun gears

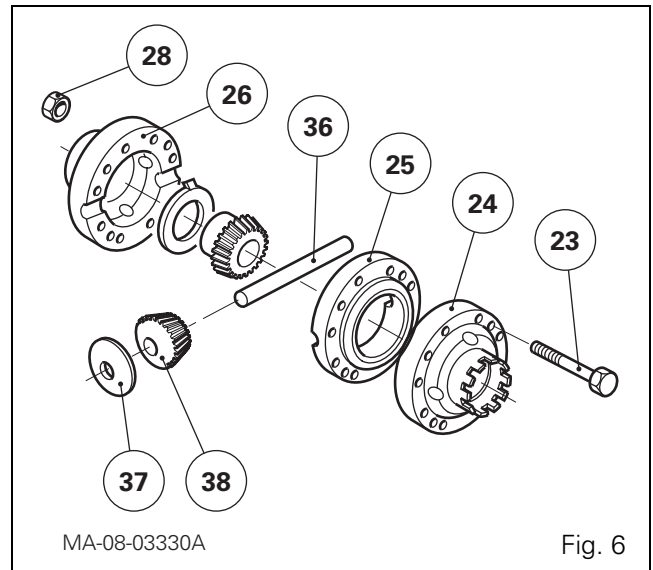
19. Take off the screws (23) and nuts (28).

Separate the half-units (25) (26) and the fixed dog clutch (24) (Fig. 6).

20. Remove the sun gear (11) and the washer (35).

21. Take out the pin (36), planet gears (38) and spherical washers (37) (Fig. 6).

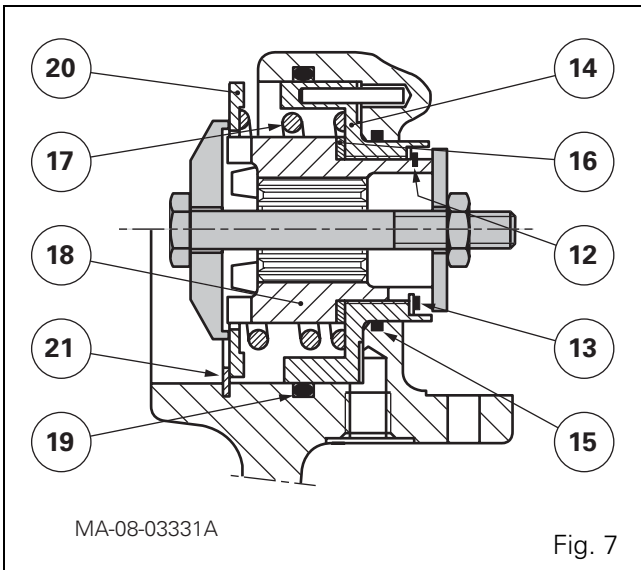
22. If required, extract the bearing cones (33) on the half-unit (26) and on the fixed dog clutch (24).



DANA - Differential

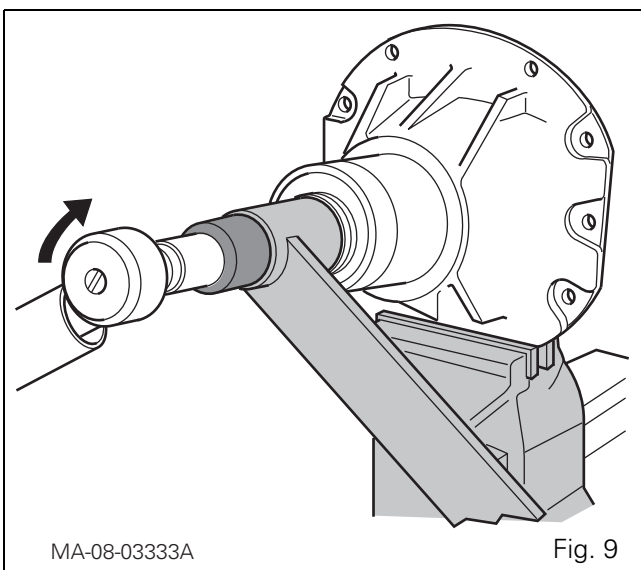
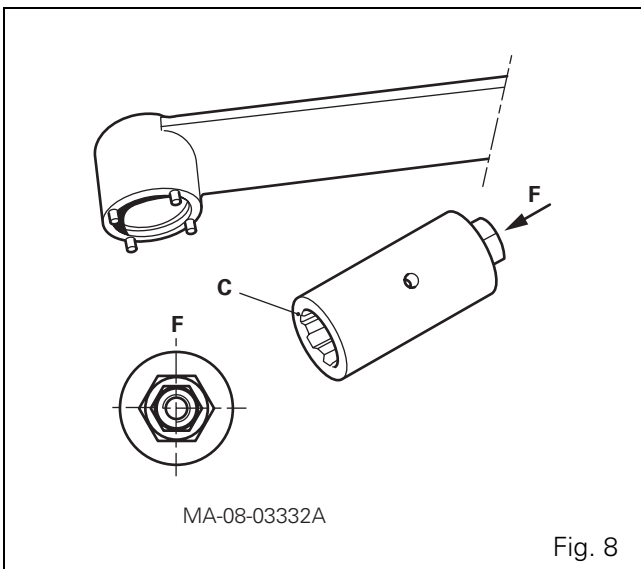
G . Removing the differential lock

23. Using tool MF 471 centred correctly (see § Q), compress the spring (17) until the thrust washer (21) is free.
24. Take off the washer and gradually release the spring.
25. Take off the tool along with the guide washer (20) and spring.
26. Take off the snap ring (13). Remove the mobile dog clutch (18), the friction washer (16) and the tab washer (12).
27. Drive out the piston (14).
28. Discard the "O" rings (15) (19).



H . Removing the pinion

29. Unlock the nut (1) (depending on assembly) and immobilise it using the wrench (Fig. 8 and Fig. 9):
 - 3376927M1 (AG 85 axle)
 - 3376881M1 (AG 105 axle)Loosen the pinion by turning clockwise (Fig. 9), using special makeshift sleeve "C" (Fig. 8) (see § Q).
30. From the front of the housing, extract the pinion, cone (10), spacer (45), shims (2) and "O" ring (40).
31. Separate the pinion and seal (40), and remove the shims (2) and the spacer (45).
32. Extract the cone (10) from the pinion.
33. Drive out the cup (9) and remove the shims (8).
34. Remove the spacer (3), and extract the seal (4). Remove the cone (5). Drive out the cup (6).



I. Adjusting the position - Shimming and refitting the pinion

35. Clean the components and replace those that are defective. Check that the differential lock hydraulic channel is not blocked in the housing.

Adjusting the position

36. Adjust the position of the pinion (Fig. 10).

The thickness of shims required to position the pinion correctly is calculated as follows:

$$SP = C - E (d \pm r)$$

SP: Thickness of shims required (8).

C: Value measured between the mating face of the cup and machined face "F".

d: Pinion nominal positioning dimension: 118 mm \pm 0.10

NOTE: Do not confuse the nominal positioning dimension with the pairing number.

E: Thickness of the bearings (9) (10).

r: Actual value marked on the pinion (Fig. 11). This value may be positive or negative (to be added or subtracted from the nominal value **d**).

Procedure

37. Using a depth gauge, measure values **C** and **E**.

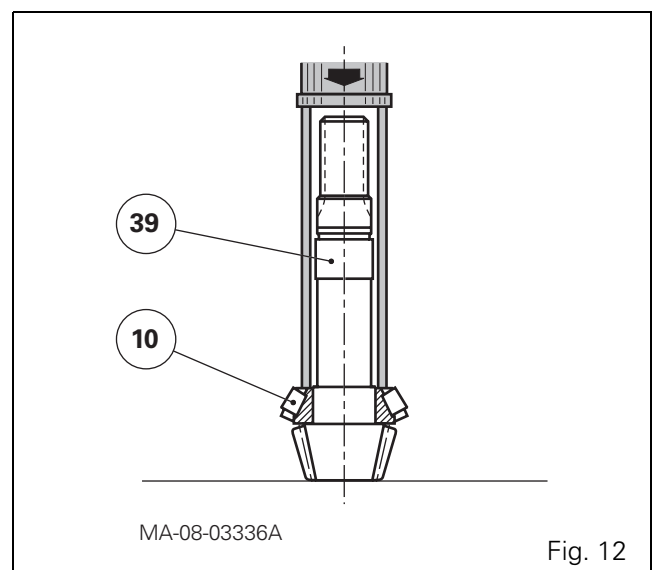
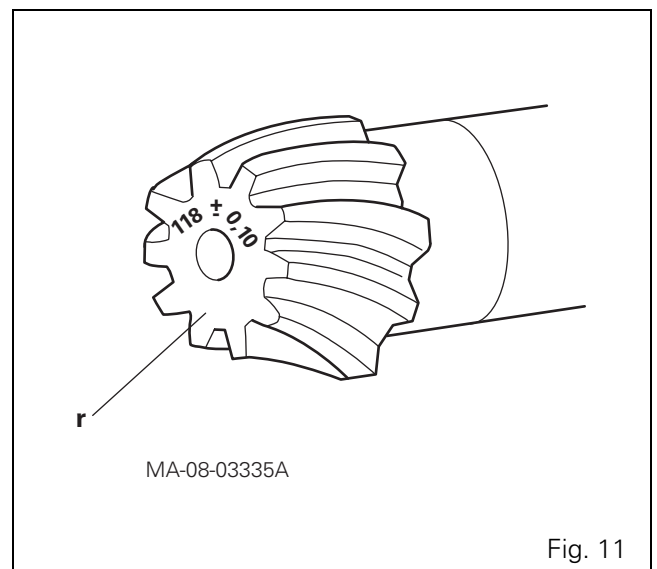
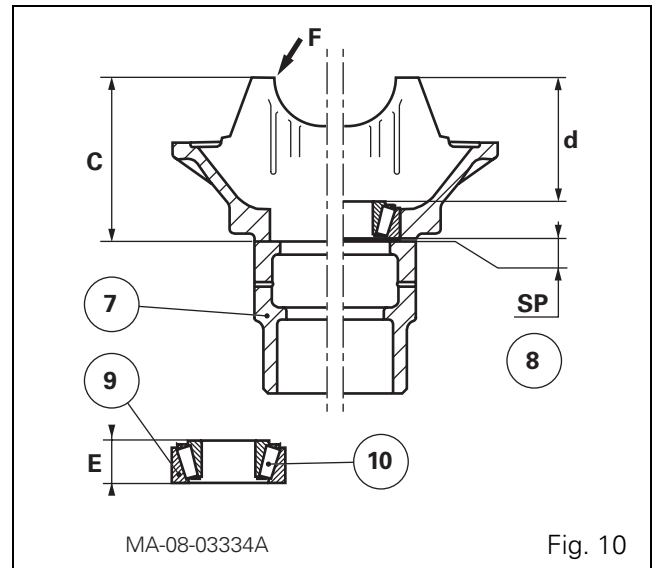
NOTE: Ensure the cone (10) is correctly seated in the cup (9).

38. After measuring the values, apply the formula to determine the thickness of shims required.

39. Fit the cone (10) up against the shoulder on the pinion (39) using a press and a suitable fitting (Fig. 12).

40. Position the thickness of shims (8) calculated previously into the housing.

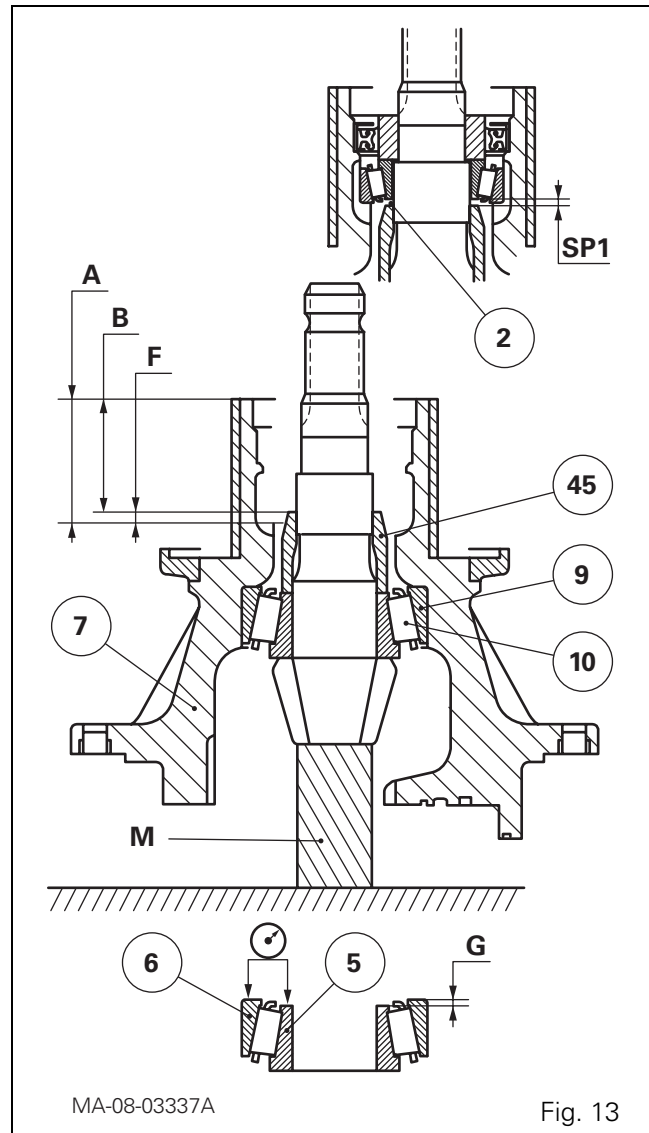
41. Fit the cup (9) using a suitable fitting and shim the bearings (5) (6) and (9) (10).



DANA - Differential

Shimming

42. In the housing (7), position the prepared pinion prepared up against the cylindrical sleeve "M" as shown in Fig. 13. Press hard on the housing while turning it several times in order to seat the bearing cone (10) correctly in the bearing cup (9). Slide on the spacer (45), with its chamfer facing towards the splines of the pinion.
43. Using a depth gauge, measure value **F** according to the formula **A - B** (Fig. 13).
44. Press hard on the cup (6), turning it alternately to the right and left to correctly seat the cone (5).
45. Calculate the thickness of shims **SP1** according to the formula: **G - F**.



46. Position the cup (6) up against the housing.
47. Slide the shims (2) calculated during step 45 onto the pinion.

Refitting

48. Fit the cone (5) and the lubricated seal (40) (Fig. 14).
49. Grease the lips of the seal (4) and fit it home in the shoulder using a makeshift drift (see § Q).
50. Fit the spacer (3) (Fig. 14).
51. Fit the nut (1) and immobilise it using the wrench ref. 3376881M1 (AG 105) or ref. 3376927M1 (AG 85).

Using the special sleeve and a torque wrench, turn the pinion until the following tightening torque is obtained: 360 - 400 Nm.

52. Check the pinion rotational torque.

Checking the pinion rotational torque

- Turn the pinion several turns using a dial-type torque wrench and the special sleeve (Fig. 16). Check that the rotational torque is 2 to 4 Nm.
- After checking the torque, take off and degrease the nut (1) and lightly smear it with Loctite 270 or equivalent. Tighten as described in step 51.

