



# Workshop service manual

## n° 3378647M3

# 8400

### CONTENTS

01 - Introduction - Specifications

03 - Engine

05 - Gearbox

06 - Rear axle

07 - Power take off

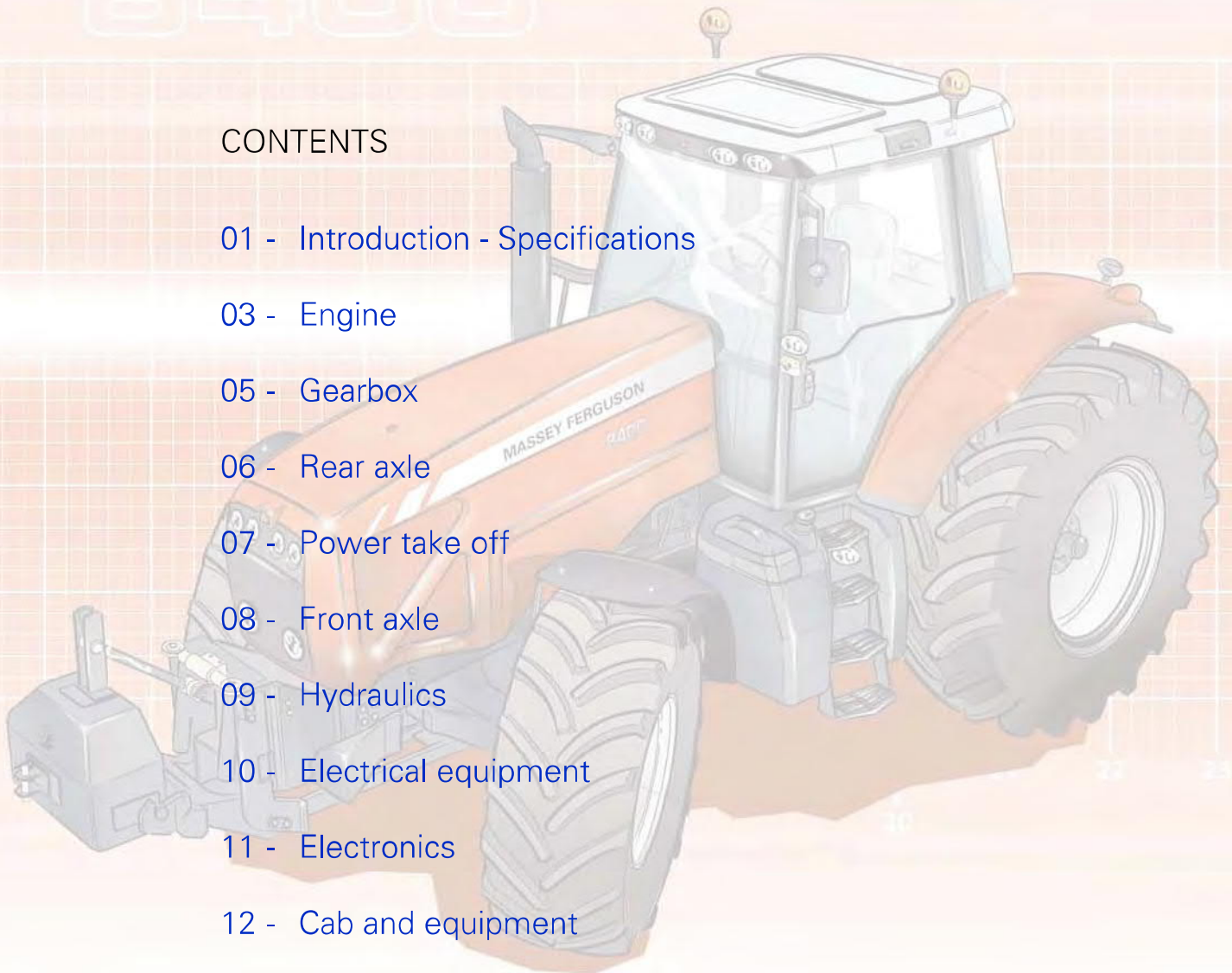
08 - Front axle

09 - Hydraulics

10 - Electrical equipment

11 - Electronics

12 - Cab and equipment



## A . General

---

Some of the following pictures may not show your exact axle, but the procedure is the same.

The final drive unit comprises a swivel housing (10) linked to the front axle housing via two pivot pins (30) (35). The wheel hub (3) turns on two tapered roller bearing races (9)(18) where the races are force fitted. The cones are also force fitted.

The tapered roller bearings (9) (18) are not adjustable. The parts are manufactured with machining tolerances requiring no further adjustment or shimming.

Drive from the front differential is transmitted to the wheel hub via the universal joint shaft assembly (25), sun gear (6), planetary gears (14) and ring gear (16). This is held in position by the snap ring (15) on the ring gear carrier (8). The sun gear (6) is fitted on the universal joint (25). The ring gear carrier (8) is kept in place by a series of bolts (7) on the swivel housing (10).

The hub/case sealing is secured by the casing joint (12) and the sealing of the universal joint shaft/axle housing by the seal (40). The sealing of the drive unit and swivel housing is ensured by the seal (20) and the sealing of the swivel bearings in the swivel housing by the seals (31) (36).

# DANA final drive units

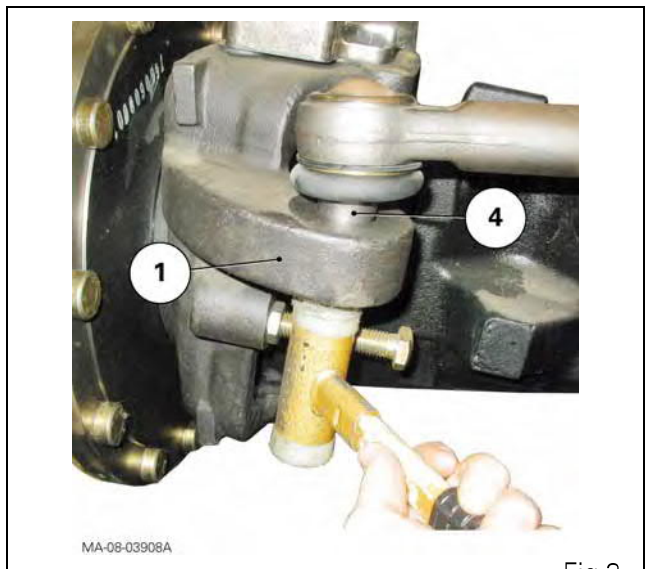
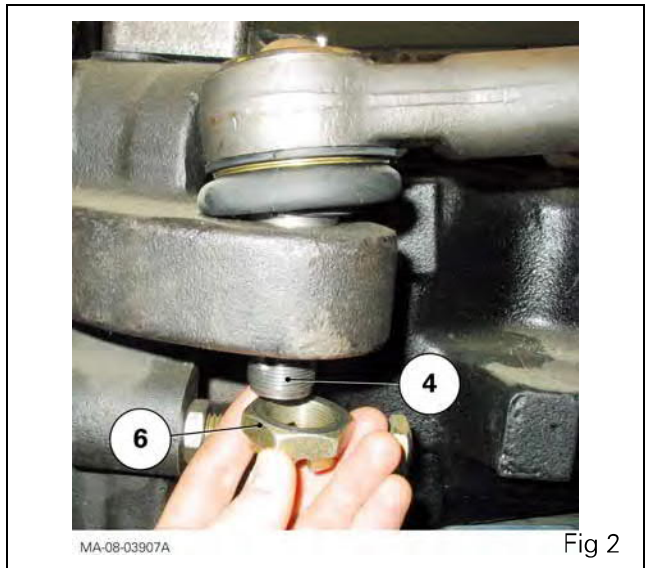
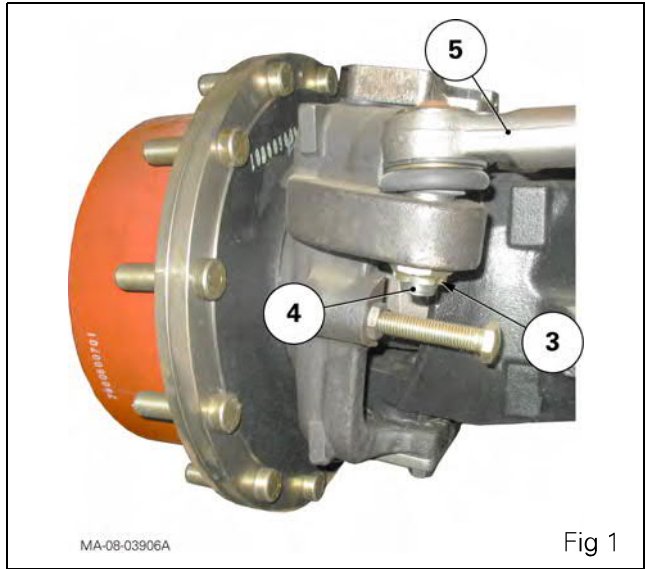
## B . Removing and refitting the steering ram

### Removal

1. Remove the split pin (3) from the ball joint (4) of the steering arms (5) (Fig 1).

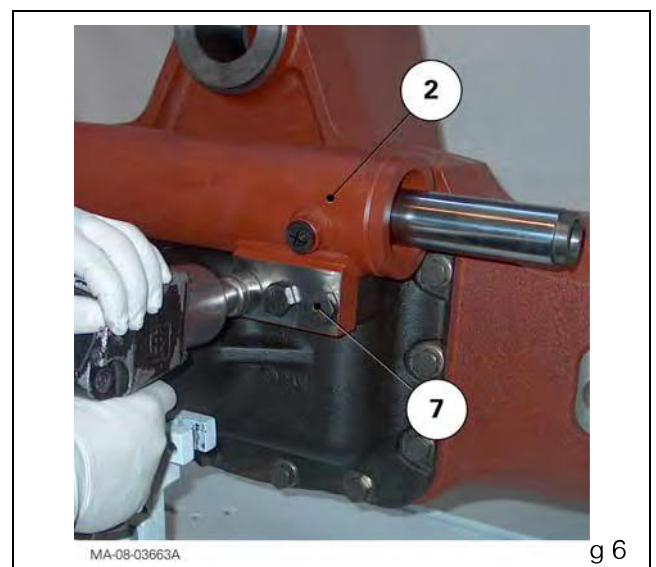
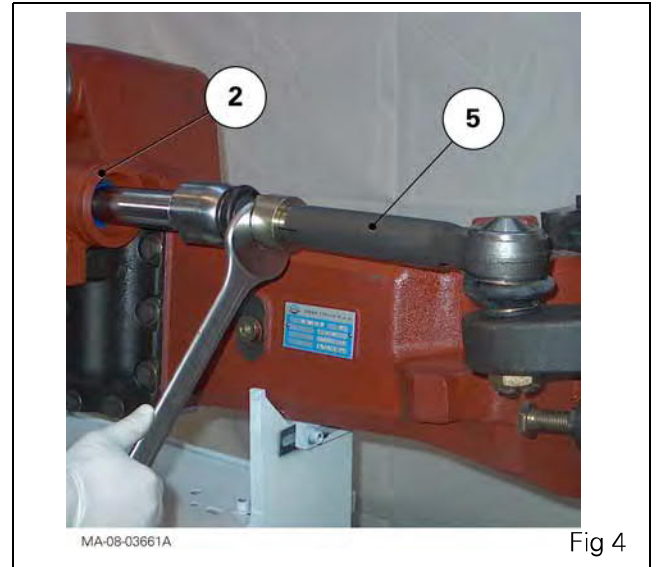
**NOTE:** Throw away the used pins.

2. Remove the milled attachment nuts (6) from the ball joint (4) (Fig 2).
3. Using a plastic mallet, drive out the ball joint (4) from the swivel housing (1) (Fig 3).



## DANA final drive units

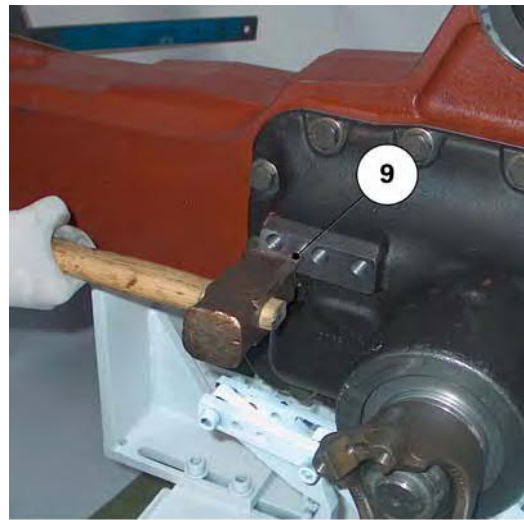
4. Separate the right and left steering arms (5) from the ram (2) (Fig 4).
5. Remove the rotary joints (8) (Fig 5).
6. Remove the screws (7) from the ram (2) (Fig 6).
7. Extract the ram (2) using a plastic mallet.



## DANA final drive units

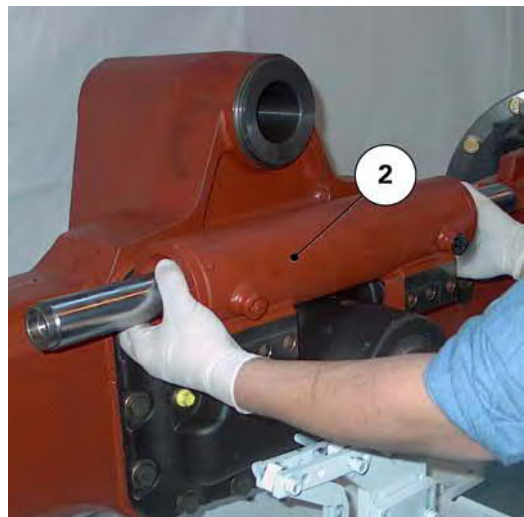
### Refitting

8. Mount the centring pin (9) (Fig 7).
9. Position the ram (2) (Fig 8).
10. Apply Loctite 270 to the screws (7) (Fig 9).



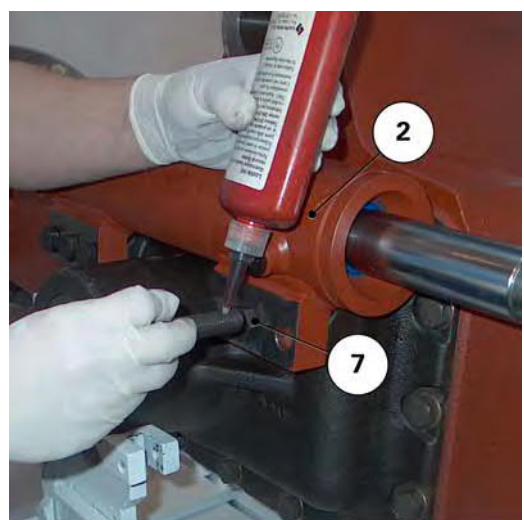
MA-08-03664A

Fig 7



MA-08-03665A

Fig 8

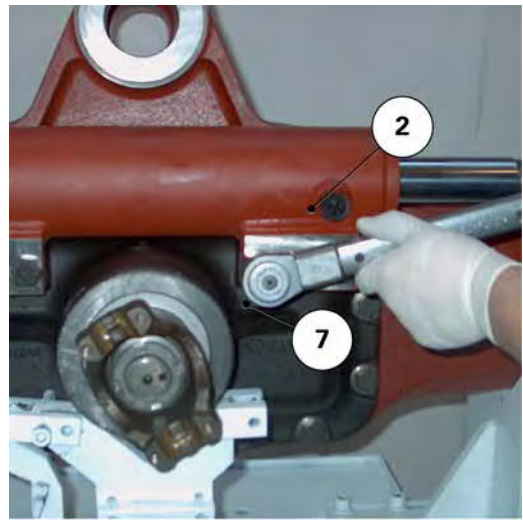


MA-08-03666A

Fig 9

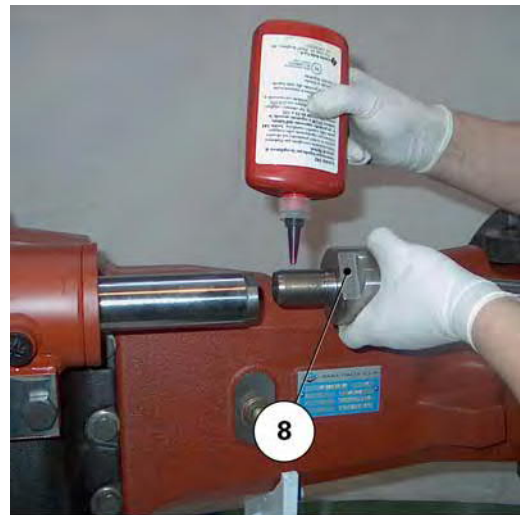
## DANA final drive units

11. Attach the ram with the screws (7) cross tightened. Torque: 200–220 Nm (Fig 10).
12. Apply Loctite 270 to the rotary joints (8) (Fig 11).
13. Mount the joints (8) by tightening onto the ram's rod. Torque: 170–190 Nm (Fig 12).



MA-08-03667A

Fig 10



MA-08-03668A

Fig 11

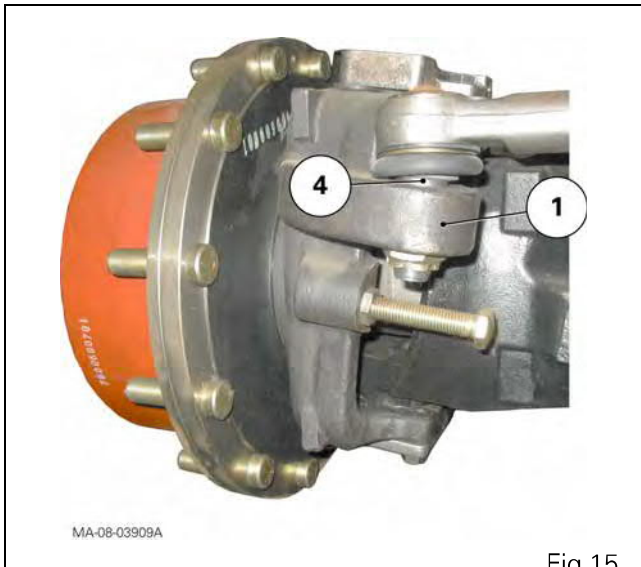
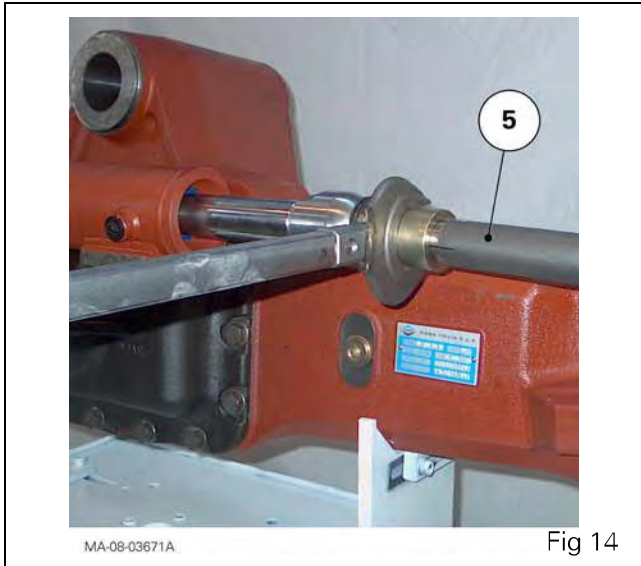


MA-08-03669A

Fig 12

# DANA final drive units

- 14. Coat the threads of the joints with Loctite 270 (Fig 13).
- 15. Mount the steering arms (5) by tightening the ends to the piston rotary joints.  
Torque: 350–390 Nm (Fig 14).
- 16. Insert the ball joint (4) into the swivel housings (1), then lock it in position by tightening the milled nuts to a torque of 170 to 190 Nm.  
**NOTE:** Check that the rubber protections are in good condition.  
Look for the notch position in relation to the pin hole while continuing to tighten the nut (Fig 15).
- 17. Insert new split pins (3) and bend the legs to secure the pins.



## C . Wheel alignment

18. Mount two equal straight bars, each a metre long, on the sides of the wheel hub. Lock them with two nuts on the hub studs (Fig 16).

**NOTE:** The two bars should be attached at their median line so they are perfectly perpendicular to the rolling surface and parallel to the pinion shaft. Align the two bars properly.

19. Measure the distance M in mm between the ends of the bars (Fig 17).

**NOTE:** Keep the minimum value by oscillating the measurement point.

20. Ensure that the difference between the measurements at the ends of the wheel hub diameters is within the admissible limits.

The nominal alignment value A refers to the external diameter of the wheel hub flange, thus the alignment value M measured at the ends of the bars should depend on the ratio between the bar's length and the flange's diameter:

- nominal alignment =  $A_{-2}^0$
- measured alignment =  $M_{-5}^0$

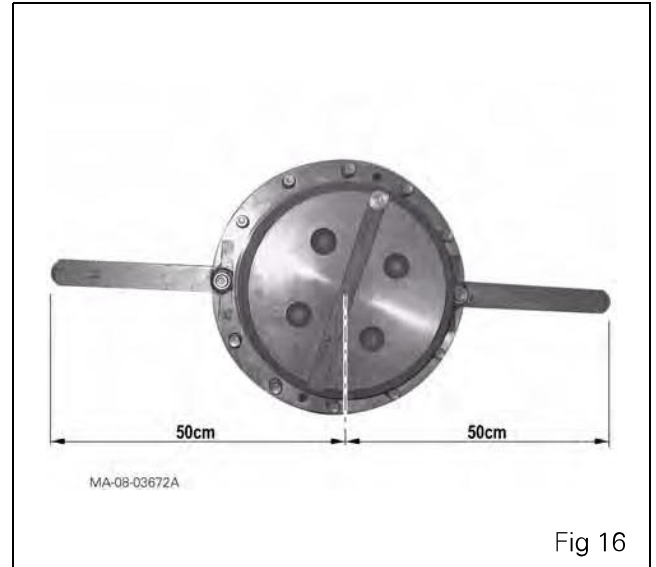


Fig 16



Fig 17

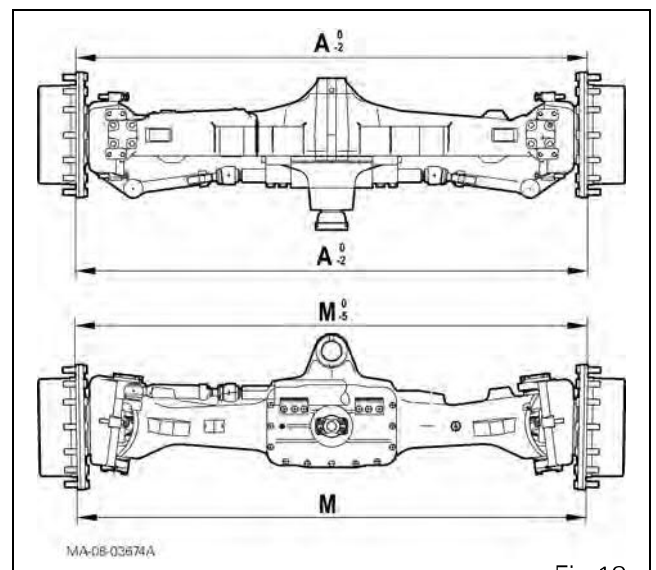


Fig 18



# DANA final drive units

---

## Parts list (Fig 1, Fig 2 and Fig 3)

- (1) Screw
- (2) Cover
- (3) Hub
- (4) Circlip
- (5) Spacer
- (6) Sun gear
- (7) Screw
- (8) Ring gear carrier
- (9) Tapered roller bearing
- (10) Housing
- (11) Circlip
- (12) Casing joint
- (13) Circlip
- (14) Planetary gears
- (15) Stop ring
- (16) Ring gear
- (17) Tube
- (18) Tapered roller bearing
- (19) "O" ring
- (20) Lip seal
- (21) Circlip
- (22) Bearing
- (23) Circlip
- (24) Washer
- (25) Universal joint shaft
- (26) Plate
- (27) Screw
- (28) Plate
- (29) Screw
- (30) Lower pivot pin
- (31) Seal
- (32) Spacer
- (33) Bearing
- (34) Shims
- (35) Upper pivot pin
- (36) Seal
- (37) Spacer
- (38) Bearing
- (40) Lip seal
- (41) Sleeve
- (42) Axle
- (43) Screw
- (44) Housing
- (45) Nut
- (46) Screw
- (47) Nut
- (48) Screw
- (49) Plug

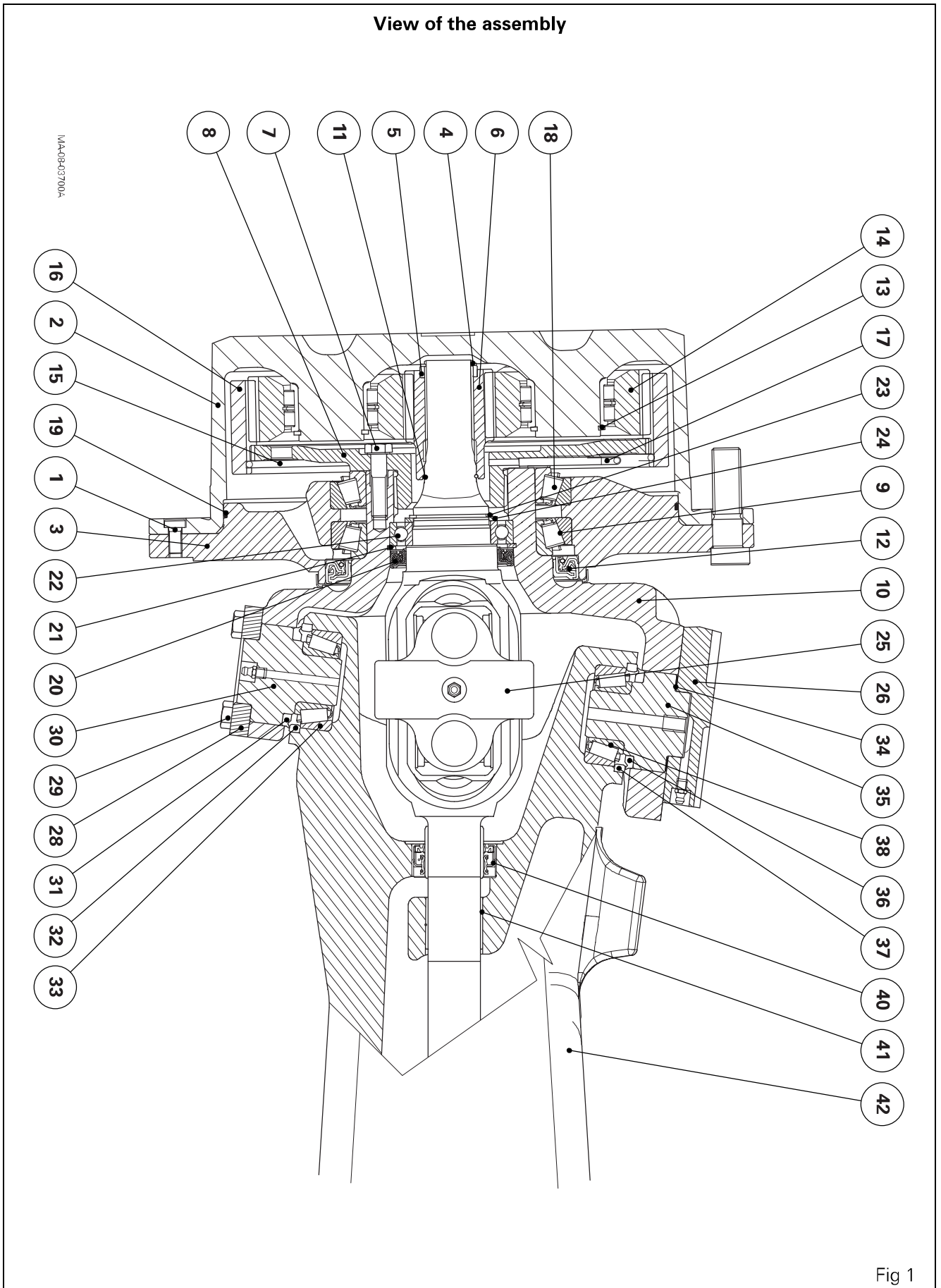
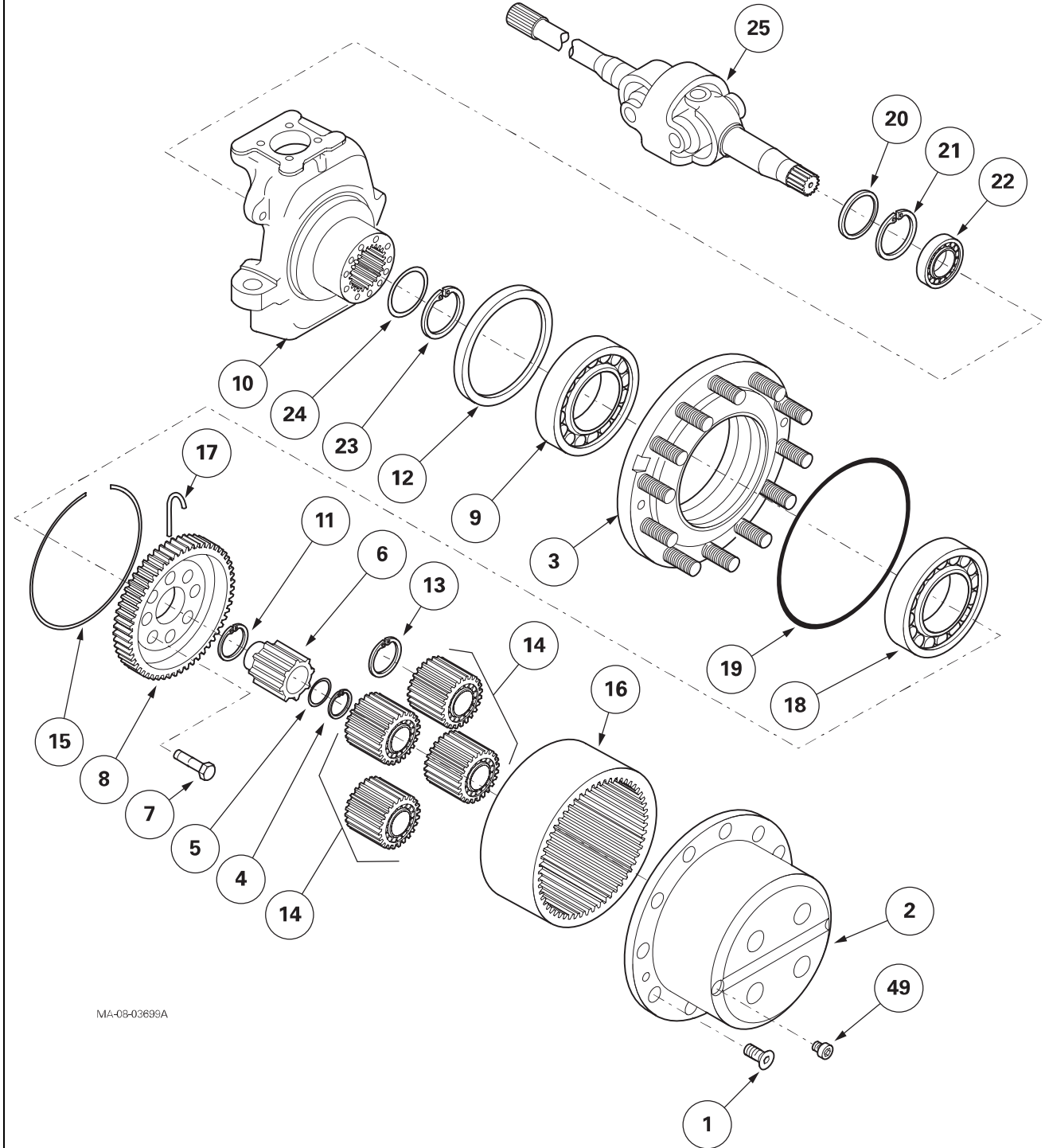


Fig 1

# DANA final drive units

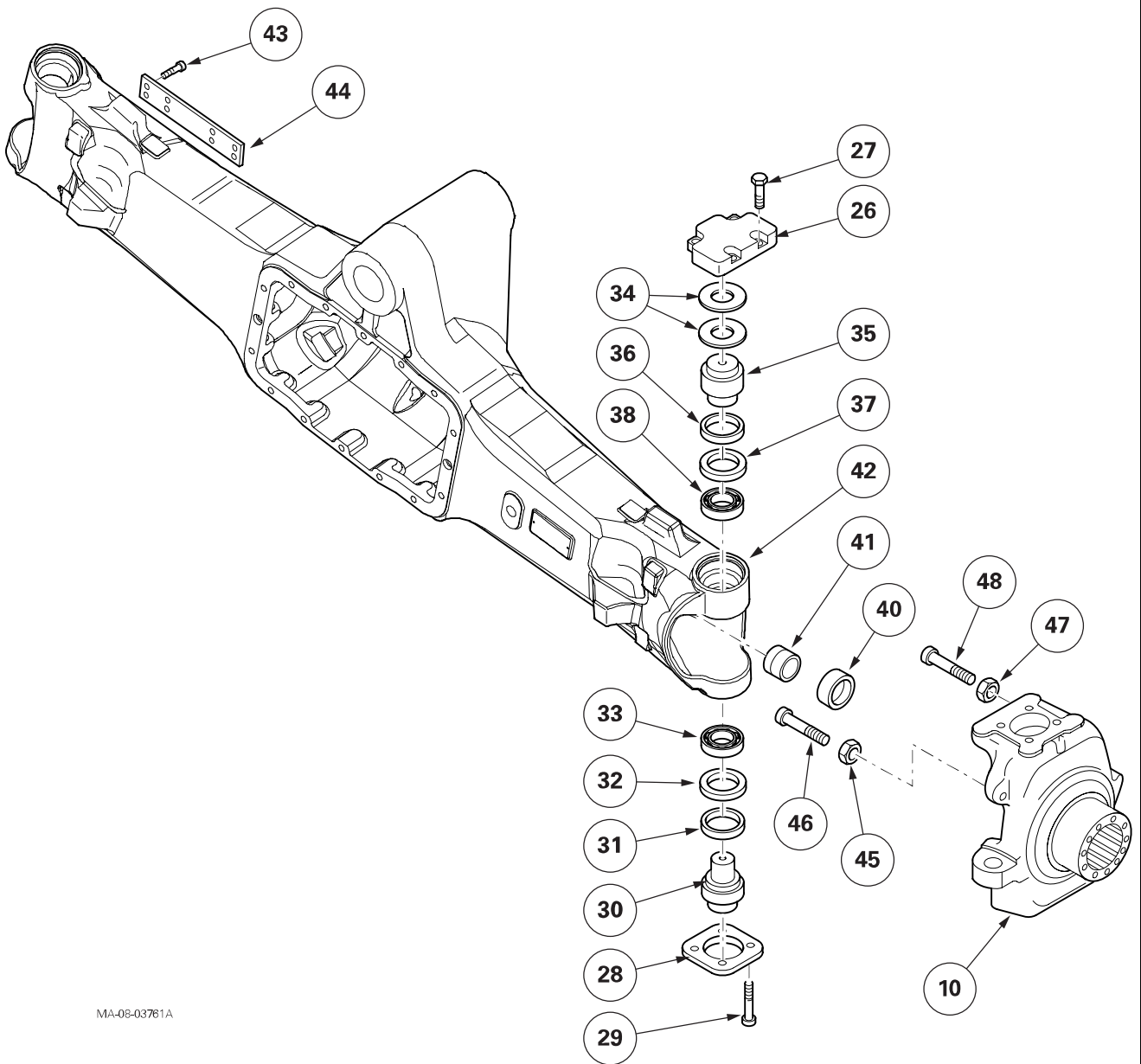
Blown-up view of final drive unit



MA-08-03699A

Fig 2

Blown-up view of steering housing



MA-08-03761A

Fig 3

# DANA final drive units

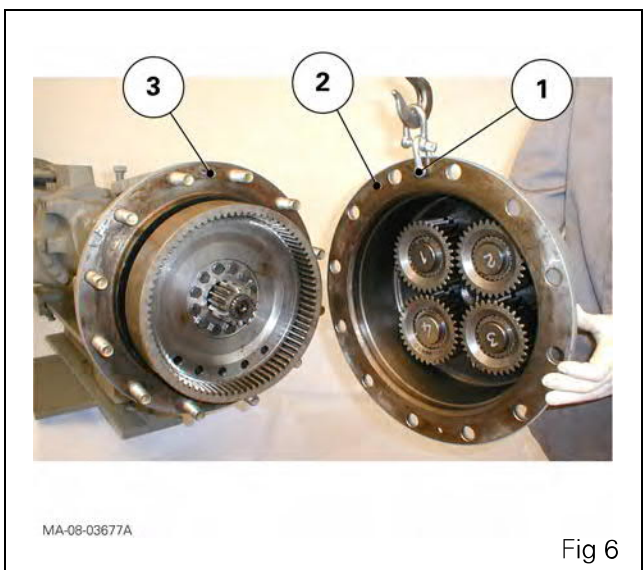
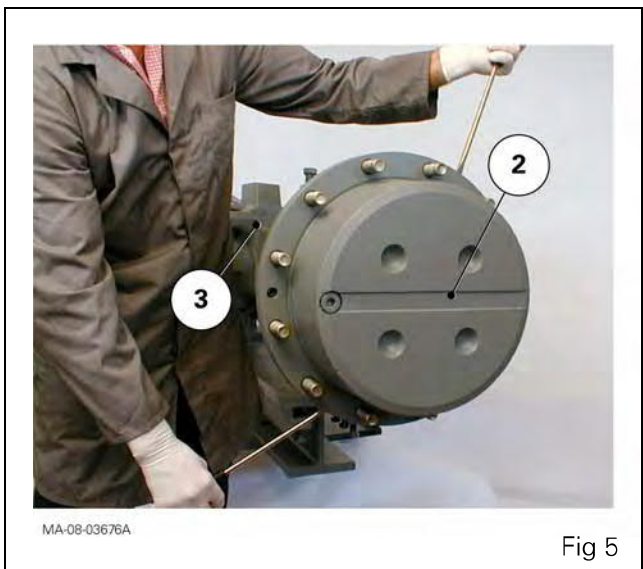
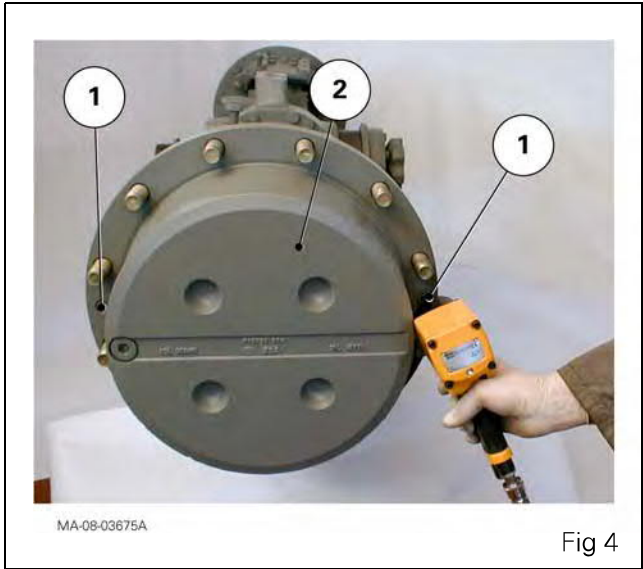
## D . Removing the final drive unit

### Preliminary steps

- 21. Drain the final drive units.
- 22. Remove the steering ram (see § B).

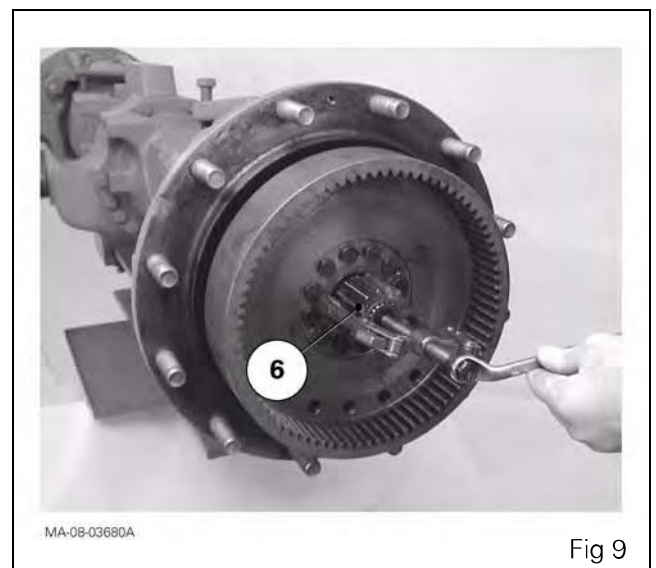
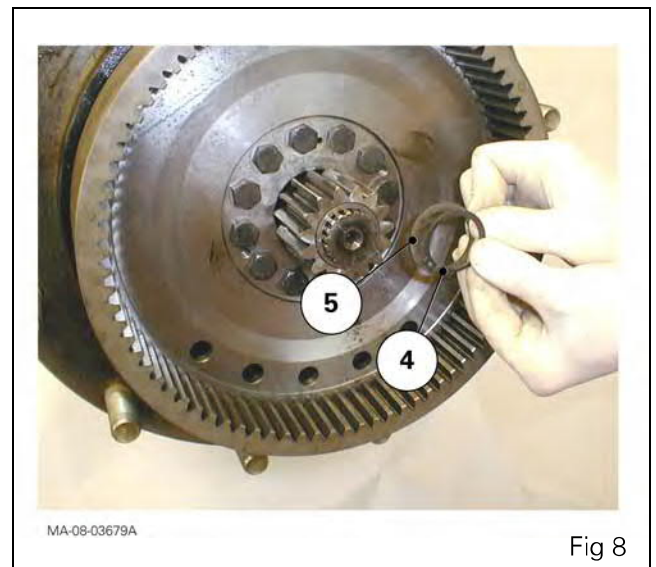
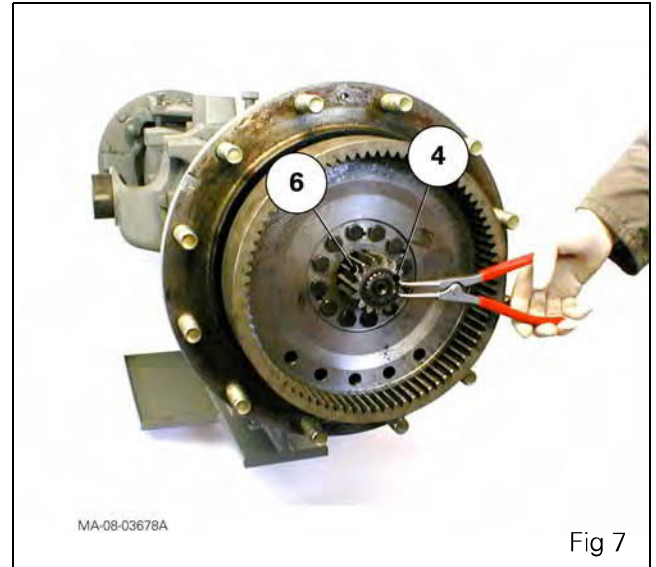
### Disassembly

- 23. Remove the screws (1) from the planetary gear cover (2) (Fig 4).
- 24. By gradually inserting a screwdriver into the appropriate slots, prise off the planetary gear cover (2) from the wheel hub (3) (Fig 5).
- 25. Turn the wheel hub (3) to position one of the screw holes (1) at the top.  
Attach a shackle in the screw hole, attach a pulley block and remove the cover (2) (Fig 6).



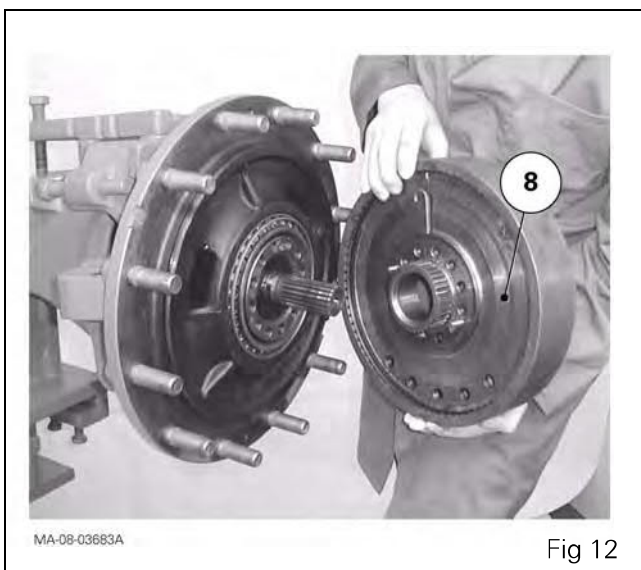
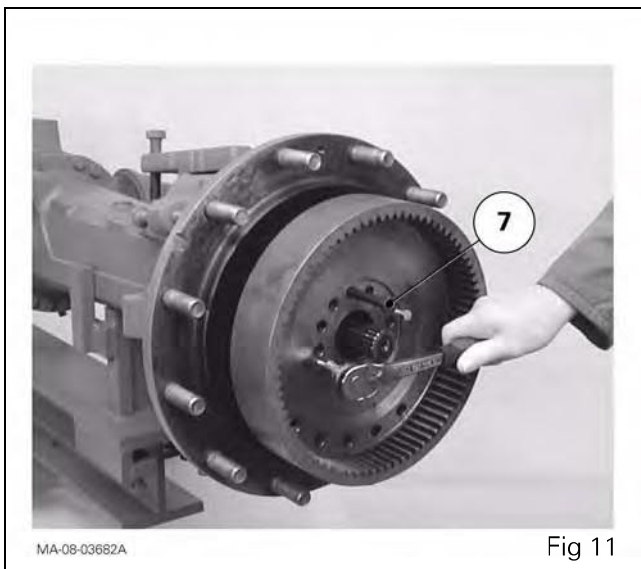
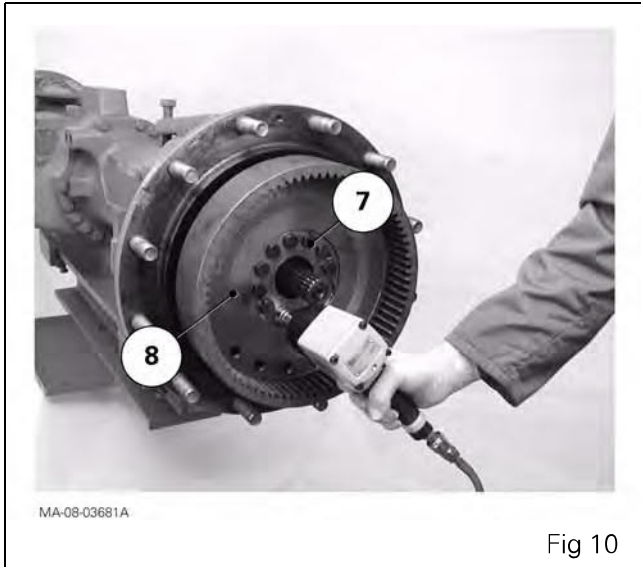
## DANA final drive units

26. Remove the circlip (4) used to attach the sun gear (6) (Fig 7).
27. Remove the spacer (5) (Fig 8).
28. Take out the sun gear (6) using an extractor (Fig 9).



## DANA final drive units

29. Loosen and remove the screws (7) of the ring gear carrier flange (8) (Fig 10).
  30. Screw two TEM8x50 screws into the extraction threads. Tighten alternately leaving one screw (7) for safety (Fig 11).
  31. Remove the ring gear carrier flange (8) assembly (Fig 12).
- NOTE:** Mark the disassembly position.



32. Partially extract the wheel hub (3) using a plastic mallet (Fig 13).

**NOTE:** Strike the wheel hub (3) at several points the same distance apart and raise it with a lifting block using a double chain to place it under slight tension.

33. Extract the wheel bearing hub (3) (Fig 14).
34. Remove the external bearing (9) using an extractor (Fig 15).

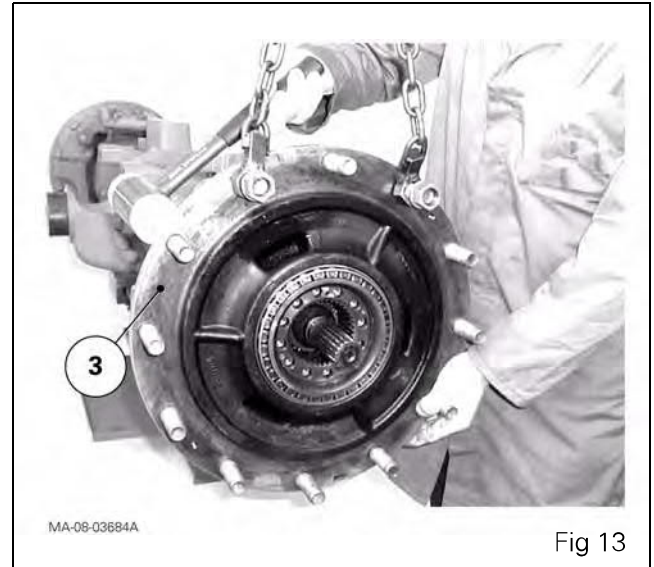


Fig 13

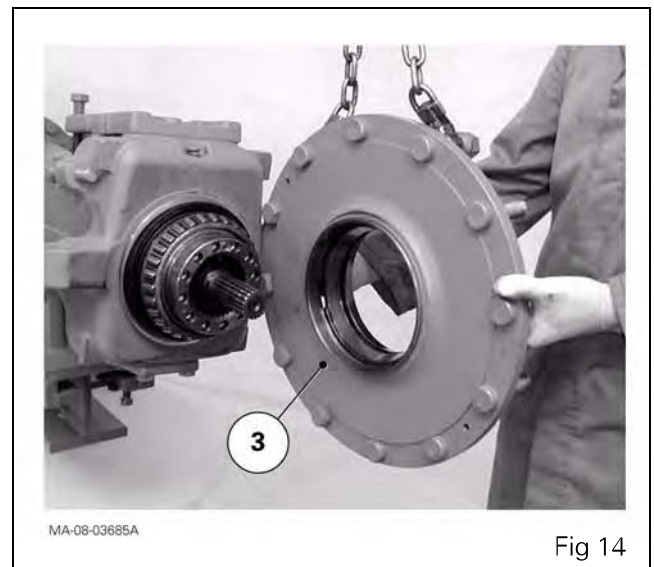


Fig 14

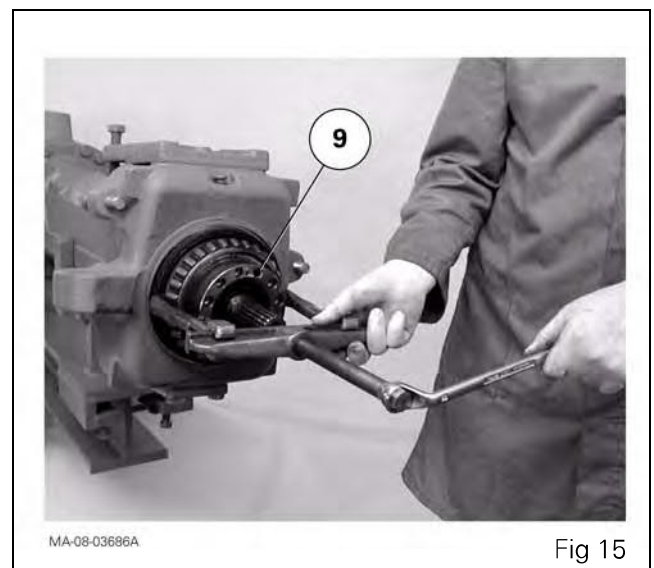


Fig 15



Thank you so much for reading.  
Please click the “Buy Now!”  
button below to download the  
complete manual.



After you pay.

You can download the most  
perfect and complete manual in  
the world immediately.

Our support email:

[ebooklibonline@outlook.com](mailto:ebooklibonline@outlook.com)