

Two-wheel Drive Front Axle - 1

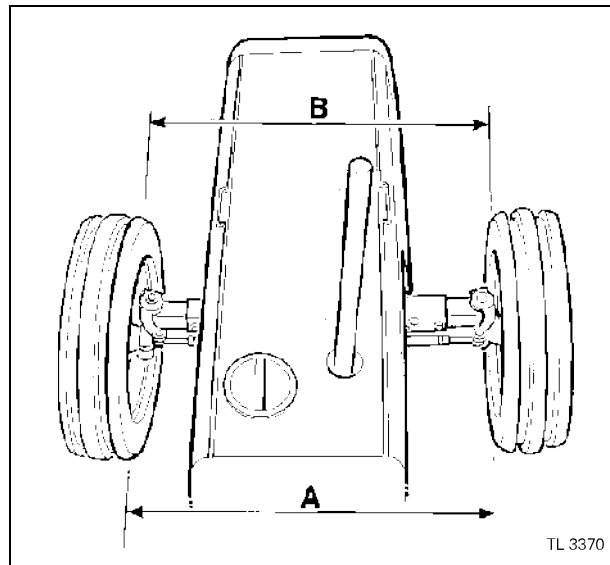
FRONT WHEEL ALIGNMENT

Adjust

1-8A

Procedure

1. Place the tractor on firm level ground and put the front wheels in the straight ahead position.
2. To check the toe-in, see illustration. Distance 'A' must be 0-5 mm (0-3/16 in) greater than distance 'B' measured on the centre line of the axle at the wheel rim.
3. If adjustment is necessary proceed as follows:
4. Loosen the track rod clamp bolt.
5. Slacken the track rod setting bolt.
6. Screw out the track rod tube to increase toe-in, screw in to decrease the toe-in.
7. Locate the track rod setting bolt in its correct hole in the rod and tighten to a torque of 50 Nm (40 lbf ft).
8. Retighten the clamp nut and bolt to a torque of 50 Nm (40 lbf ft).



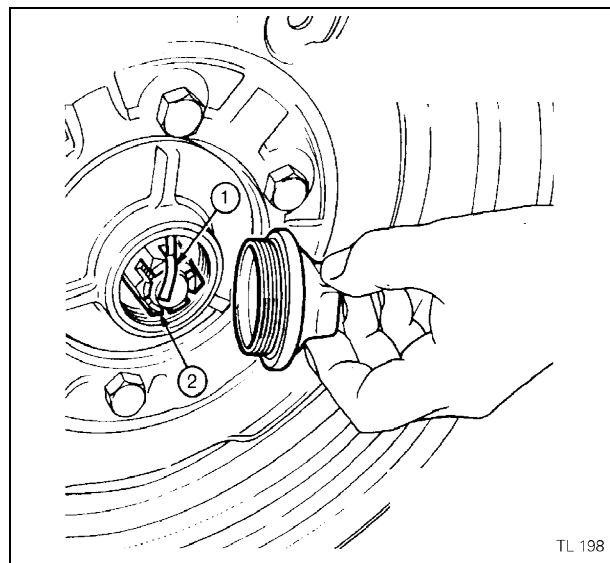
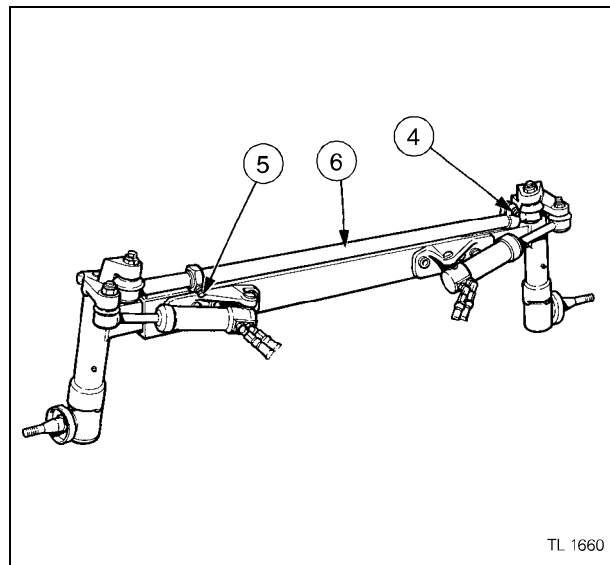
FRONT WHEEL HUB

Adjust

2-8A

Procedure

9. Place the tractor on hard level ground.
10. Raise the front wheels off the ground and check the wheel bearing for wear. If movement is found, adjust the bearing pre-load as follows:
11. Unscrew the hub cap.
12. Remove and discard the split pin.
13. Tighten the slotted nut to a torque of 80 Nm (60 lbf ft) then slacken off the nut to the nearest split pin hole to give the correct end float.
14. Fit a new split pin.
15. Refit the hub cap.
16. Grease the hub until clean grease appears from the seal at the back of the hub.



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FRONT HUB

Overhaul

3-8A

Dis-assembly

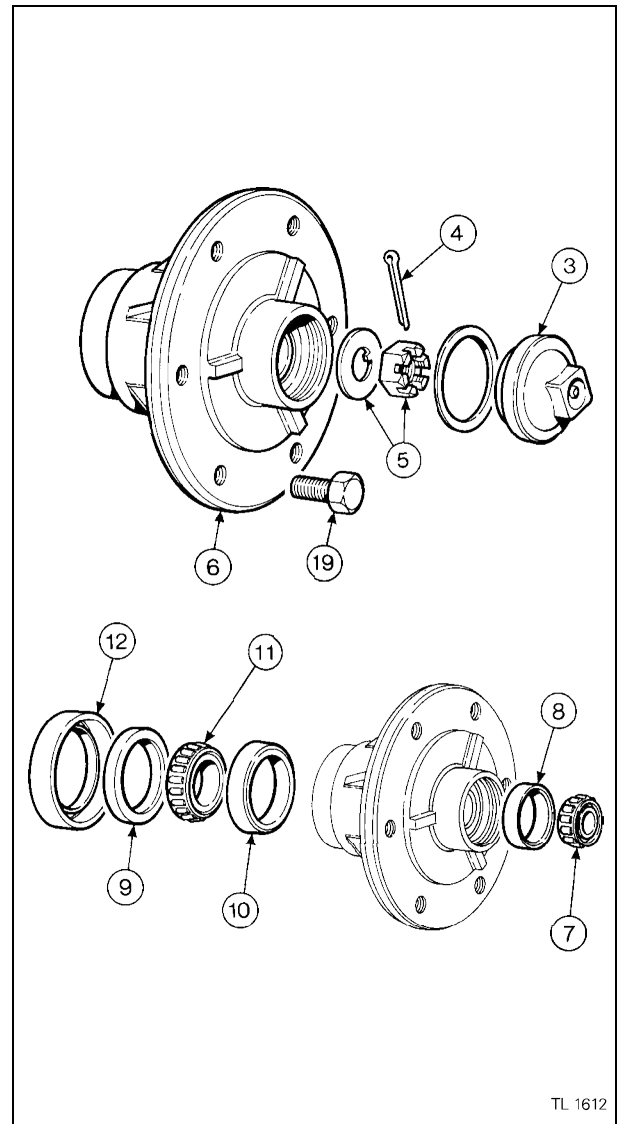
1. Raise the front of the tractor.
2. Remove the wheel.
3. Remove the hub cap.
4. Remove and discard the split pin.
5. Remove the slotted nut and washer.
6. Remove the hub assembly complete with bearing and seal from the spindle housing assembly.
7. Remove the outer bearing cone.
8. Tap out the outer bearing cup.
9. Remove the seal.
10. Drive out the inner bearing cup.
11. Remove the bearing cone.
12. Remove the dust shield.

Examination

13. Completely clean the hub components using paraffin and check the condition of the hub, spindle and bearings. Any worn or damaged components should be replaced. Always fit a new seal with the lip facing outward and fit the seal right into the recess of the hub.

Re-assembly

14. Reverse procedures 1 to 12.
15. Pack the bearings with an approved grease during assembly.
16. Tighten the slotted nut to 80 Nm (60 lbf ft) then slacken off the nut to the nearest split pin hole to give the correct end float.
17. Refit the hub cap.
18. Grease the hub until grease appears from the seal at the back of the hub.
19. Tighten the wheel bolts to a torque of 110 Nm (80 lbf ft).



SPINDLE SHAFT AND HOUSING

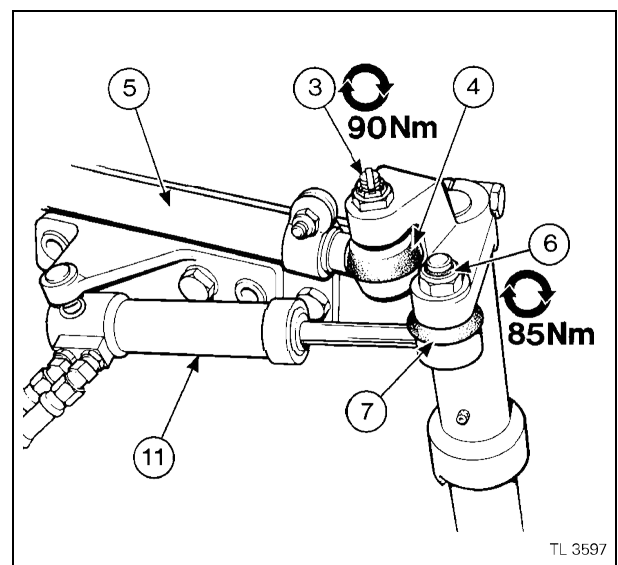
Removal and Refitment

4-8A

Removal

Removal of Housing Assembly

1. Jack-up the axle on the side to be worked and remove the wheel.
2. Remove the front hub, ([see operation 3-8A](#)).
3. Remove the nut and split pin.



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4. Disconnect the ball joint.
5. Move the track rod to one side.
6. Remove the steering cylinder nut.
7. Disconnect the steering cylinder.
8. Remove the steering arm nut and bolt.
9. Lift the steering arm off the spindle.
10. Remove the bolts securing the spindle housing to the axle beam.
11. Move the steering cylinder and bracket to one side and support.

or:

Disconnect the steering hoses and remove the cylinder assembly.

12. Withdraw the spindle housing assembly.

Dismantling Housing Assembly

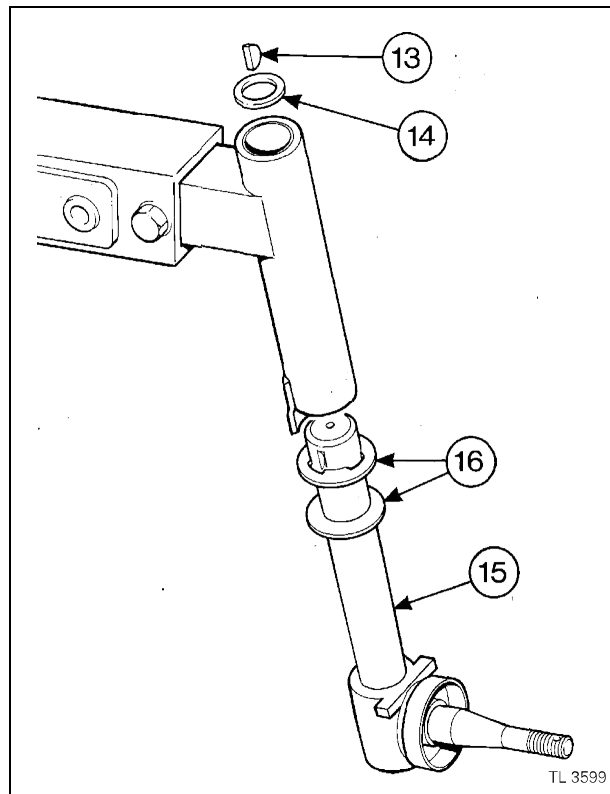
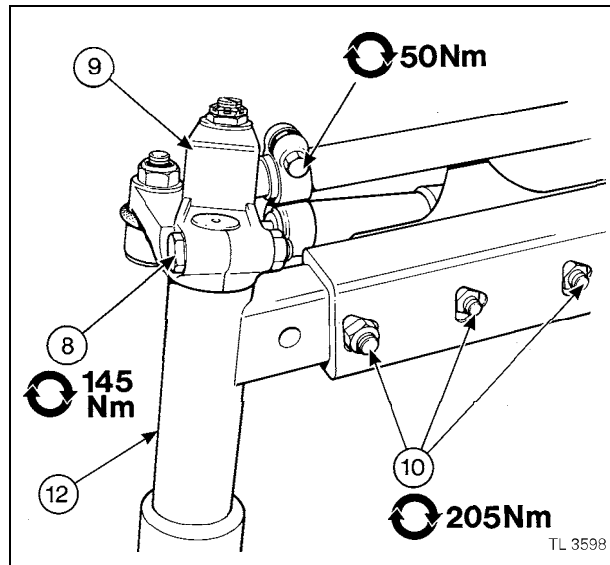
13. Remove the woodruff key.
14. Remove the dust seal.
15. Remove the spindle shaft from the housing.
16. Remove the spacer and thrust washer from the spindle.

Examination

Examine the spindle, thrust bearings for damage or wear and replace if necessary. Thoroughly clean all components and remove all traces of old grease.

Refitment

17. Liberally lubricate the thrust washer and spacer with an approved grease before assembly.
18. Fit the spacer.
19. Fit the thrust washer to the spindle with the indentations in the bronze face facing downwards.
20. Refit the spindle to the housing.
21. Renew the felt seal.
22. Refit the steering arm.
23. With the hub and spindle assembly held firmly in place against the thrust bearing, measure the gap between the steering arm and the spindle housing using feeler gauges. The gap must not exceed 0,05 mm (0.002 in).
24. When the correct setting has been obtained tighten the steering arm nut to a torque of 145 Nm (105 lbf ft).
25. Thoroughly grease the spindle before the wheel is fitted and lowered to the ground. Ensure that the grease comes out of the lower bearing.
26. Refit the spindle housing to the axle beam selecting the required track setting and locate the steering cylinder.



27. Tighten the spindle housing to axle beam bolts to a torque of 205 Nm (150 lbf ft).
28. Refit and tighten the track rod ball joint to a torque of 90 Nm (65 lbf ft) do not exceed 100 Nm (75 lbf ft) to align the split pin.
29. Refit the steering cylinder and tighten the nut to a torque of 85 Nm (125 lbf ft).
30. Tighten the track rod setscrews to a torque of 50 Nm (40 lbf ft).

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SPINDLE HOUSING

Overhaul

5-8A

Special Tools:

MF.263A Bush Remover - Main Tool

MF.263-2 Bush Remover and Replacer

MF.264 Bush Reamer and Pilot - Main Tool

MF.264-1 Bush Reamer and Pilot

MS.550 Universal Handle

Dis-assembly

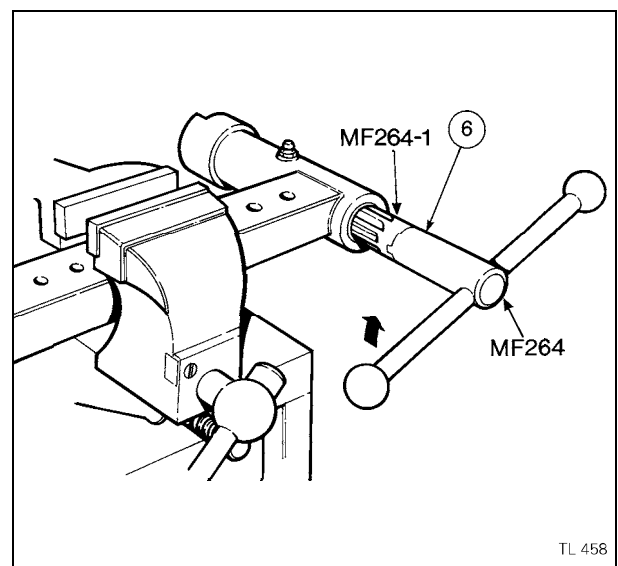
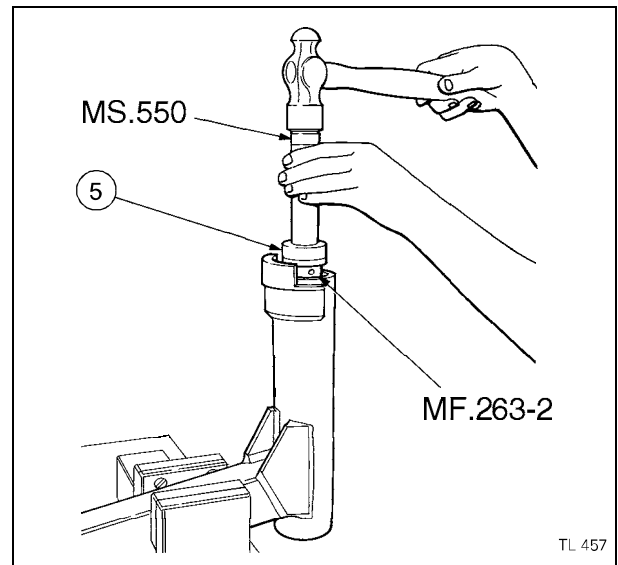
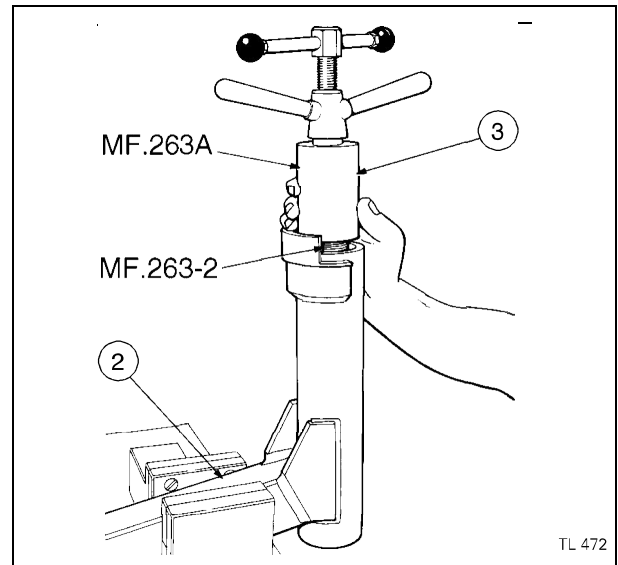
1. Remove the spindle housing and spindle, ([see operation 4-8A](#)).
2. Secure the housing in a vice.
3. Using special tool MF.263A Bush Remover - Main Tool and MF.263-2 Bush Remover. Remove the bush by screwing the threaded extractor into the bush with the upper handle. Withdraw the bush by turning the lower handle.
4. Invert the housing and remove the lower bush.

Examination

Clean all components and replace the spindle and bushes if there are signs of wear.

Re-assembly

5. Using special tools MS.550 Universal Handle and MF.263-2 Bush Replacer, drive a new bush into each side of the housing.
6. Using special tools MF.264 Reamer Handle - Main Tool and MF.264-1 Reamer and Pilot. With the reamer and handle assembled, pass the guide bar through the housing. Fit the reamer pilot onto the guide bar and into the housing. This will ensure that the bush is reamed parallel.
7. Ream the upper bush to size.
8. Turn the equipment over and ream the lower bush to size.
9. Remove all swarf from the housing and ensure the grease nipple hole is clear of dirt.
10. Thoroughly grease parts before and after assembly.
11. Refit the spindle shaft, ([see operation 4-8A](#)).



Two-wheel Drive Front Axle - 1

AXLE BEAM ASSEMBLY

Removal and Refitment

6-8A

Special Tools:

MF.264 Bush Reamer and Pilot - Main Tool

MF.264-2 Bush Reamer and Pilot

MF.444 Pivot Pin Remover

Removal

1. Block both rear wheels of the tractor and apply the parking brake.
2. Place a trolley jack under the engine sump and take the weight off the front of the tractor. DO NOT lift the front wheels off the ground.
3. Remove the front tractor weights, if fitted, and remove the front weight frame.
4. Disconnect the steering cylinder hoses at the cylinder end. Cap the ends of the pipes to prevent the ingress of dirt.
5. Remove the front wheels.

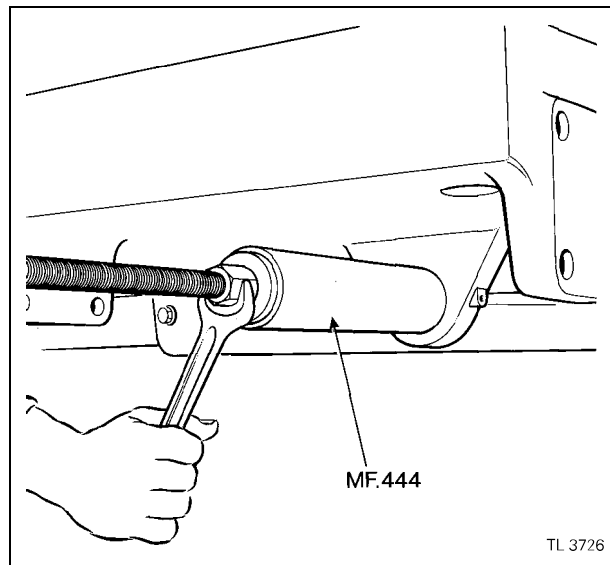
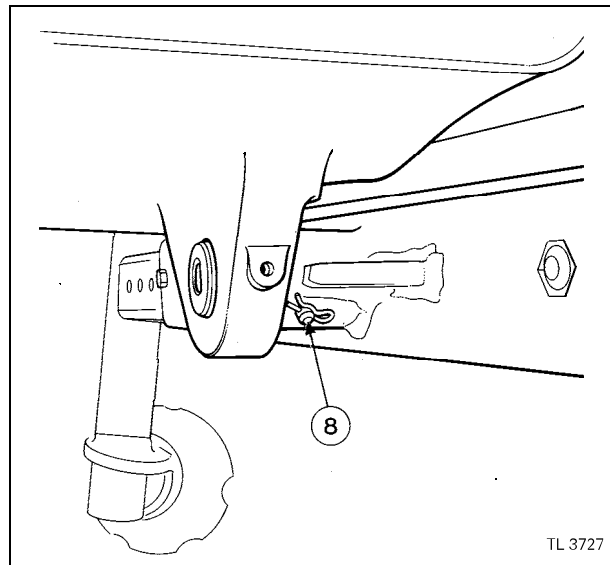


WARNING: Prevent the axle from tilting forwards or backwards, or rotating about the wheels if the axle is wheeled from under the tractor on its wheels. It could fall over and cause injury if precautions are not taken.

6. Place the axle in slings from an overhead crane.
7. Remove the plug from the end of the pivot shaft.
8. Remove one of the 'R' clips from the locking pin on the axle beam and pull it out of the axle.
9. Install special tool MF.444 Pivot Pin Remover, using the 7/16 inch UNC adaptor to extract the pivot pin from the axle and housing.
10. Lower the axle, remove it from the tractor and place it on two axle stands.
11. Remove shim washers and thrust washer between the axle and support casting.
12. Using a suitable drift remove the two bushes in the support casting.

Examination

Check the end face of the axle beam boss, the pivot pin and thrust washer for wear. Examine all surfaces for wear or damage. In the event of accident damage, check the beam for bending or twisting. If the beam has been deformed, it must be replaced, as steering characteristics and tyre wear can be severely affected. Also the beam may have been dangerously weakened due to straining of the welded seams.



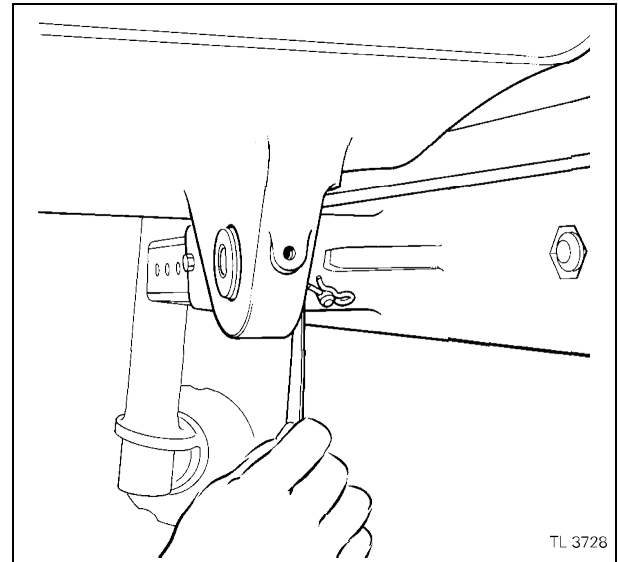
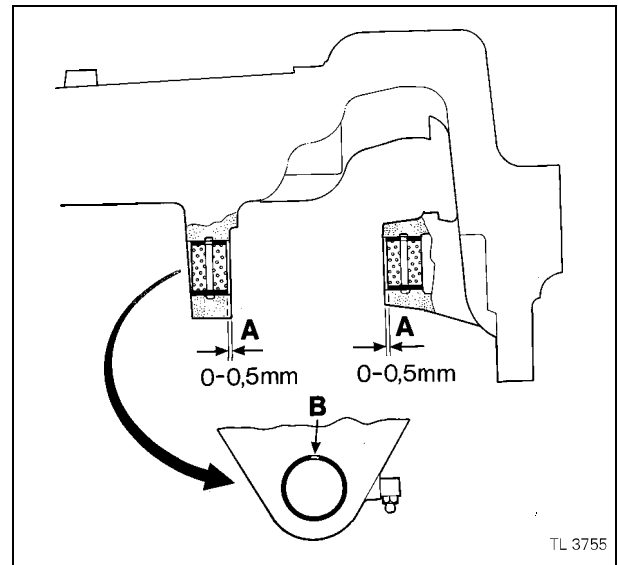
Two-wheel Drive Front Axle – 1

Refitment

13. Install two new bushes in the support casting.
14. The bushes must be 0-0,5 mm (0-0.020 in) below the faces in the support casting adjacent to the axle beam 'A'.
15. When fitting the bush, the grease hole in the bush must be positioned at 12 o'clock 'B'.
16. The pivot pin should be free to rotate in the bushes; if tight, use special tool MF.264 Bush Reamer and Pilot - Main Tool, and MF. 264-2 Bush Reamer, and pass through the two bushes to clean out to size.
17. With the aid of an overhead crane sling the axle so that it is horizontal in both directions.
18. Lift the axle up into place, DO NOT use your fingers to locate the axle.
19. Reinstall the shim washer(s) to the front of the axle; Install the shims removed, the thrust washer to the rear of the axle.
20. Refit the pivot pin.
21. Check the clearance between the axle beam and the support casting, it should not exceed 0,05-0,25 mm (0.002-0.010 in). If adjustment is required, select suitable shims from the following chart:

Part number	Shim thickness	
	mm	Inch
898 018 M1	0,74	0.029
898 019 M1	0,89	0.035
3759 455 M1	0,53	0.021

22. Refit the pivot pin aligning the locking pin holes.
23. Refit the locking pin and 'R' clip.
24. Reinstall the plug in the end of the pivot shaft.
25. Grease the axle pivot until clean grease appears at both the front and back of the axle beam.



Two-wheel Drive Front Axle – 1

STEERING CYLINDER

Removal and Refitment

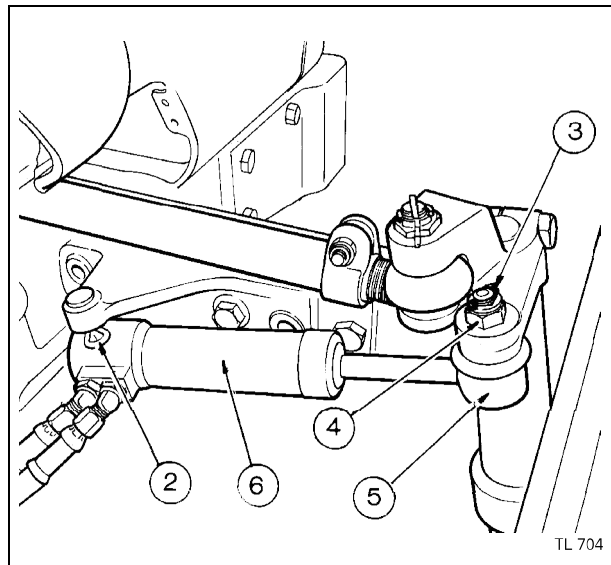
7-8A

Removal

1. Disconnect both hydraulic pipes to the steering cylinder. Cap the ends of the pipes to prevent the ingress of dirt.
2. Remove the 'R' clip from the inner pivot pin.
3. Remove the split pin.
4. Remove the slotted nut.
5. Drive the ball joint taper out of the steering arm.
6. Remove the steering cylinder.

Refitment

7. Reverse procedures 1 to 6 except:
 - a. Tighten the ball joint nut to a torque of 85 Nm (125 lbf ft).



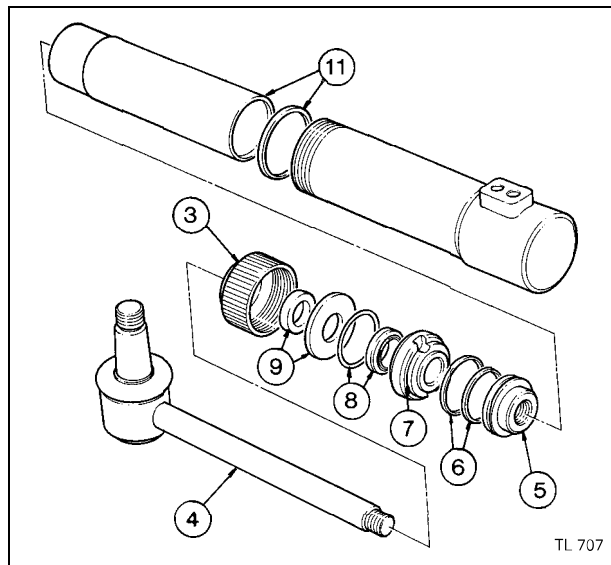
STEERING CYLINDER

Overhaul

8-8A

Dis-assembly

1. Remove the steering cylinder, ([see operation 7-8A](#)).
2. Place the steering cylinder in a vice.
3. Unscrew the end cap.
4. Withdraw the piston assembly from the cylinder.
5. Unscrew the piston from the rod.
6. Remove the sealing ring and 'O' ring from the piston.
7. Remove the end housing from the rod.
8. Remove the pressure seal and 'O' ring.
9. Remove the washer and dust seal.
10. Remove the end cap (3).
11. Remove the cylinder and sealing ring from the ram tube.



Examination

Clean and inspect all parts. Replace all seals and 'O' rings. Lubricate all parts with transmission oil.

Re-assembly

12. Reverse procedure 1 to 11 except:
 - a. Apply Massey Ferguson Studlock (Loctite 270) to the thread on the end of the piston rod.
 - b. Tighten the piston on the end of the piston rod and centre punch the thread to prevent it unscrewing.

Two-wheel Drive Front Axle – 2

Two-wheel Drive Front Axle – 2 (Heavy-/Extra Heavy-duty) Section 8 - Part B

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Two-wheel Drive Front Axle – 2

SPECIFICATION

Model application:

Heavy-duty	4225 to 4270.
Extra heavy-duty	4243 to 4270.

Maximum static load:

Heavy-duty	3460 kgf (7628 lbf).
Extra heavy-duty	4360 kgf (9612 lbf).

Track settings 1315 mm (52 in) to 1820 mm (72 in).

Wheel camber angle..... 2.1/2°.

Wheel caster angle..... 0°.

Spindle angle 12°.

Front wheel toe-in 0-5 mm (0-3/16 in) at wheel rim.

Axle beam to support casting clearance..... 0,10-0,25 mm (0.004-0.010 in).

Steering arm to spindle housing clearance..... 0-0,05 mm (0-002 in).

Steering cylinder pivot to axle beam clearance..... 0,05-0,25 mm (0.002-0.010 in).

Special Tools:

MF.195C.....	Bearing puller - main tool.
MF.263A.....	Bush remover - main tool.
MF.263-5.....	Bush remover and replacer (1.3/4 in diameter).
MF.264.....	Bush reamer and pilot - main tool.
MF.264-8.....	Bush reamer and pilot (1.3/4 in diameter).
MF.500.....	Front axle bearing replacer.
MF.504.....	Steering pivot nut wrench.
MF.505.....	Steering cylinder wrench.
MF.509.....	Steering ball joint wrench.
MS.550.....	Universal handle.

Bolt Torques:

Track rod ball joint.....	100 Nm (75 lbf ft) maximum torque to split pin 120 Nm.
Track rod to ball joint clamp.....	45 Nm (35 lbf ft).
Track rod to steering cylinder clamp.....	140 Nm (105 lbf ft).
Steering arm clamp.....	408 Nm (300 lbf ft).
Steering cylinder ball joint nut.....	110 Nm (80 lbf ft) maximum torque to split pin 120 Nm.
Steering cylinder ball joint to cylinder.....	210 Nm (155 lbf ft).
Spindle housing to axle beam.....	395 Nm (290 lbf ft).
Wheel hub nut.....	80 Nm (60 lbf ft).
Wheel nuts.....	95 Nm (140 lbf ft).
Front axle trunnion bearing bolts.....	560 Nm (415 lbf ft).
Pivot lock nut to stop nut.....	200 Nm (148 lbf ft).

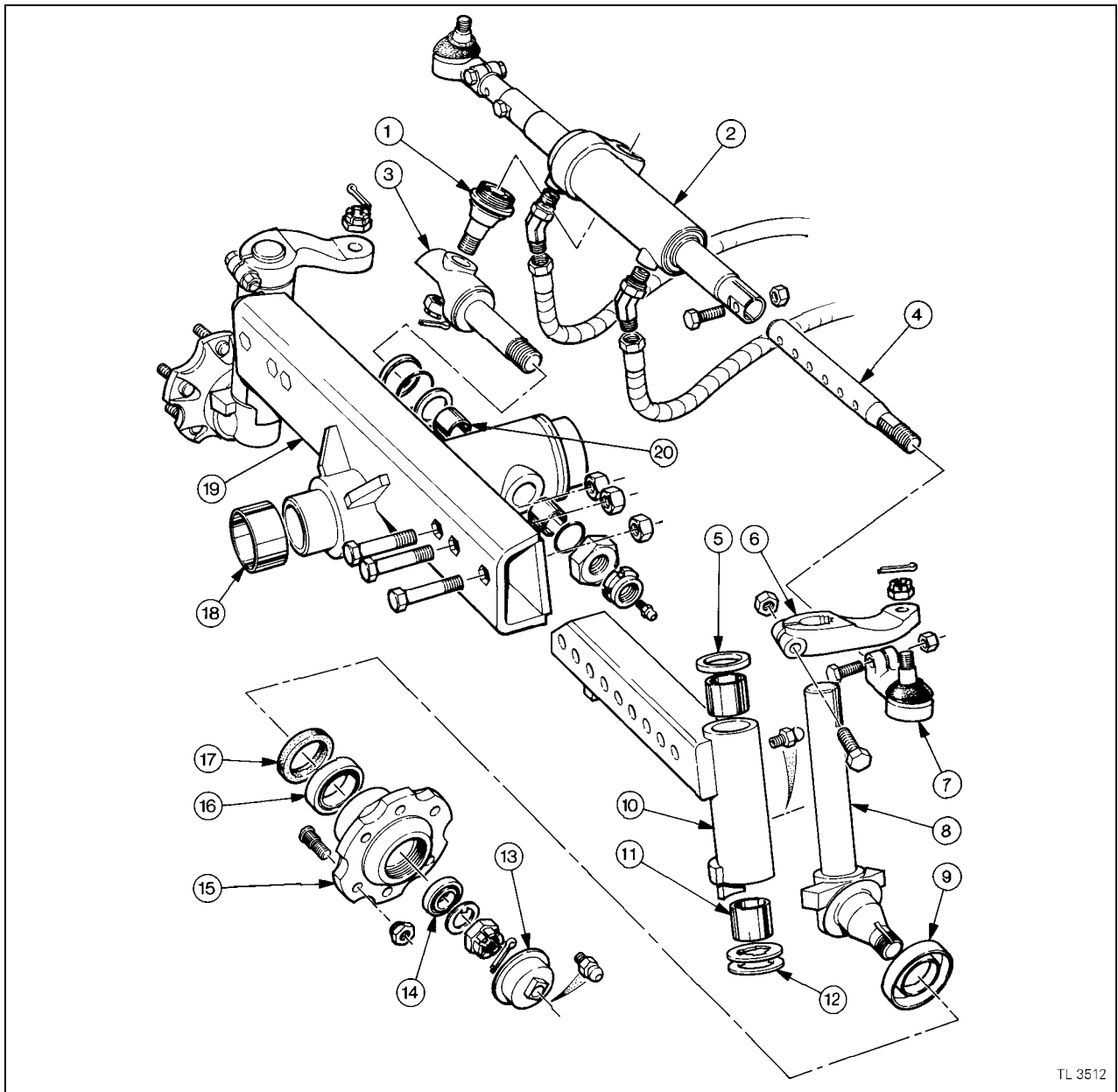
GENERAL DESCRIPTION

The front axle assembly consists of an axle beam and two spindle housing assemblies. The axle beam pivots on two bushes in the support casting and a front trunnion bearing block. The spindle housing assemblies can be bolted in alternative positions to provide front track adjustment.

The steering system is operated by an orbitrol hydrostatic steering unit controlling a double ended steering cylinder. The steering cylinder is centrally mounted behind the axle

beam and is directly connected to each steering arm by a short adjustable track rod. The cylinder is mounted on a pivot pin and ball joint to allow alignment during turning. The short adjustable track rod is to allow adjustment of the front track

Two-wheel Drive Front Axle – 2



Heavy-/Extra heavy duty Front Axle Assembly

- | | | |
|----------------------------------|---------------------------------|-------------------------------------|
| 1. Steering cylinder ball joint. | 8. Spindle. | 15. Wheel hub. |
| 2. Steering cylinder. | 9. Oil seal shield. | 16. Inner taper roller bearing. |
| 3. Steering cylinder pivot. | 10. Spindle housing. | 17. Oil seal. |
| 4. Adjustable track rod. | 11. Spindle bush. | 18. Axle beam pivot bush. |
| 5. Dirt seal. | 12. Thrust washers. | 19. Axle beam. |
| 6. Steering arm. | 13. Hub cap. | 20. Steering cylinder pivot bushes. |
| 7. Track rod ball joint. | 14. Outer taper roller bearing. | |

Two-wheel Drive Front Axle - 2

FRONT WHEEL ALIGNMENT

Adjust

1-8B

Procedure

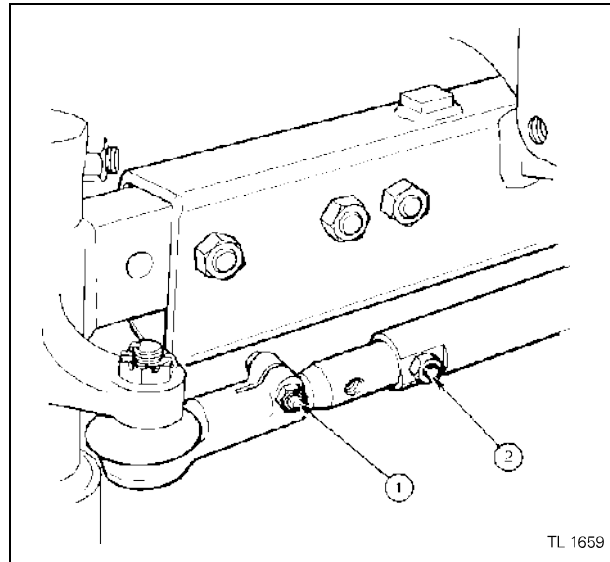
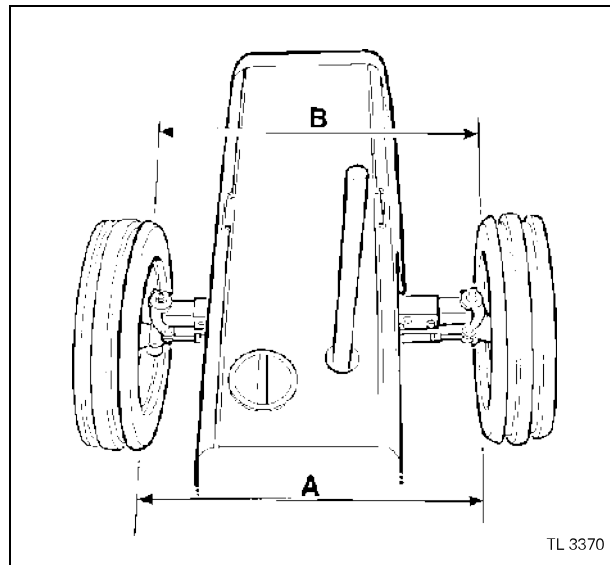
1. Place the tractor on firm level ground and put the front wheels in the straight ahead position.
2. To check the toe-in, see illustration. Distance 'A' must be 0-5 mm (0-3/16 in) greater than distance 'B' measured on the centre line of the axle at the wheel rim.
3. If adjustment is necessary proceed as follows:

NOTE: Small adjustments can be carried out on one side only. Major adjustment after an extensive repair must be made on both sides to ensure that there is an equal amount of thread in each ball joint.

4. Slacken the ball joint clamp bolt (1) on each end of the track rods.
5. Remove the pinch bolt (2) from each end of the steering cylinder.
6. Rotate the track rod (3) by only half a turn at a time. It is important to keep the amount of thread in both ball joints equal. Screwing out the track rod will increase the tow-in, screwing in will decrease the toe-in.
7. Refit the pinch bolts and nuts (2) and tighten to a torque of 140 Nm (105 lbf ft).

IMPORTANT: Pinch bolt (2) must be set in the horizontal position as shown in the illustration.

8. Set pinch bolt (2) in the horizontal position and check the toe-in; if acceptable, tighten the two ball joint clamp bolts (1) to a torque of 45 Nm (35 lbf ft).



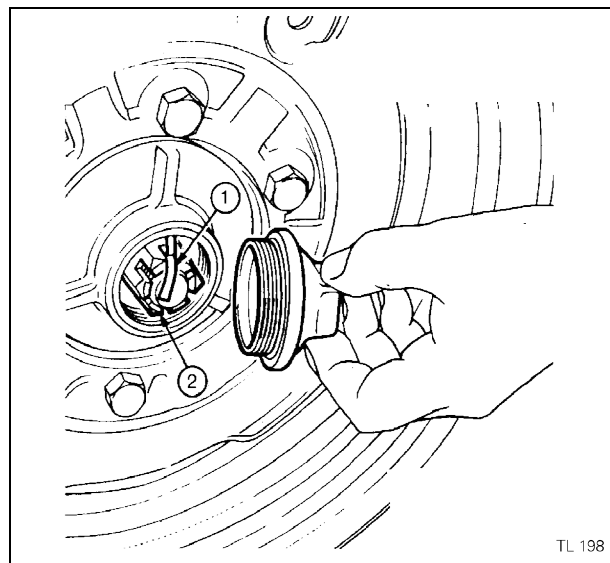
FRONT WHEEL HUB

Adjust

2-8B

Procedure

1. Place the tractor on hard level ground.
2. Raise the front wheels off the ground and check the wheel bearing for wear. If movement is found, adjust the bearing pre-load as follows:
3. Unscrew the hub cap.
4. Remove and discard the split pin.
5. Tighten the slotted nut to a torque of 80 Nm (60 lbf ft) then slacken off the nut to the nearest split pin hole to give the correct end float.
6. Fit a new split pin.
7. Refit the hub cap.
8. Grease the hub until clean grease appears from the seal at the back of the hub.



Two-wheel Drive Front Axle – 2

FRONT HUB

Overhaul

3-8B

Dis-assembly

1. Raise the front of the tractor and remove the wheel.
2. Unscrew the hub cap.
3. Remove and discard the split pin.
4. Remove the slotted nut and washer.
5. Remove the hub complete with bearings and seal from the axle spindle.
6. Remove the outer bearing cup.
7. Remove the seal.
8. Remove the inner bearing cup and cone.
9. If necessary, remove the dust shield.

Examination

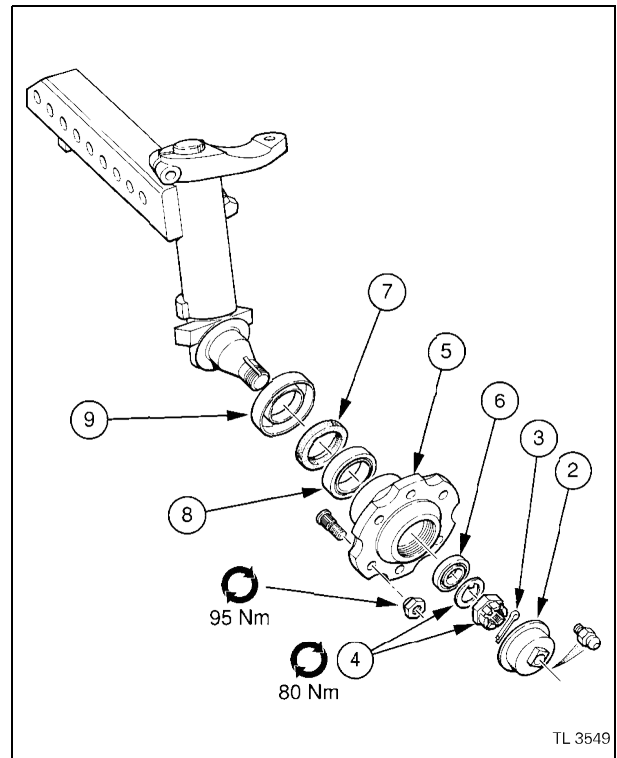
Thoroughly wash out the old grease and dirt from the hub and components using clean paraffin, and check the condition of the hub spindle and bearings. Any worn or damaged components must be replaced.

Re-assembly

10. Reverse procedures 1 to 9 except:

IMPORTANT: The oil seal is fitted with the lip facing outwards to prevent the dirt getting in, and to allow the grease to get out.

- a. Pack the bearings with an approved grease during assembly.
- b. Adjust and grease the bearings, ([see operation 2-8B](#)).



Two-wheel Drive Front Axle – 2

SPINDLE and HOUSING

Removal and Refitment

4-8B

Removal

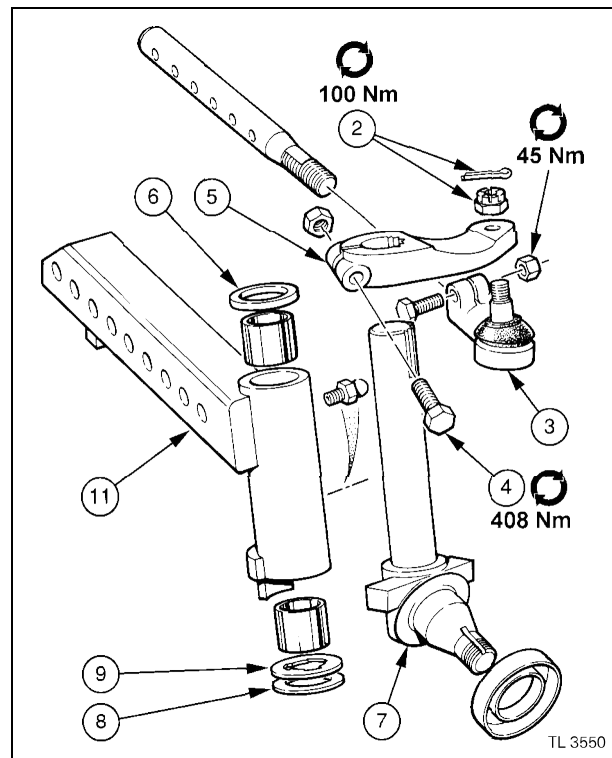
1. Remove the front hub, (*see operation 3-8B*).
2. Remove the nut and split pin.
3. Disconnect the ball joint.
4. Slacken the steering arm nut and bolt.
5. Remove the steering arm.
6. Remove the dust seal.
7. Lower the spindle from the housing.
8. Remove the spacer from the spindle.
9. Remove the thrust washer from the spindle.
10. Remove the bolts securing the spindle housing to the axle beam.
11. Remove the axle housing.

Examination

Examine the spindle thrust bearings for damage or wear and replace if necessary. Thoroughly clean all components and remove all traces of old grease.

Refitment

12. Liberally lubricate the thrust washer and spacer with an approved grease before assembly.
13. Fit the thrust washer to the spindle with the indentations in the bronze face facing downwards.
14. Fit the spacer.
15. Refit the spindle to the housing.
16. Renew the felt seal.
17. Refit the steering arm.
18. With the hub and spindle assembly held firmly in place against the thrust bearing, measure the gap between the steering arm and the spindle housing using feeler gauges. The gap must not exceed 0,05 mm (0.002 in).
19. When the correct setting has been obtained tighten the steering arm nut to a torque of 408 Nm (300 lbf ft).
20. Thoroughly grease the spindle before the wheel is fitted and lowered to the ground. Ensure that the grease comes out of the lower bearing.
21. Refit and tighten the ball joint to a torque of 100 Nm (75 lbf ft) do not exceed 120 Nm (90 lbf ft) to align the split pin.
22. Tighten the spindle housing to axle beam bolts to a torque of 395 Nm (290 lbf ft).



Two-wheel Drive Front Axle – 2

SPINDLE HOUSING

Overhaul

5-8B

Special Tools:

MF.263A Bush Remover - Main Tool
MF.263-5 Bush Remover and Replacer
MF.264 Reamer Handle - Main Tool
MF.264-8 Reamer and Pilot
MS.550 Universal Handle

Dis-assembly

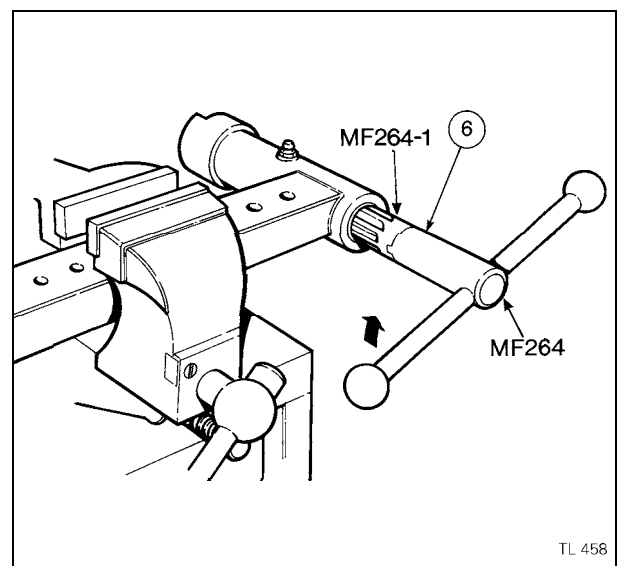
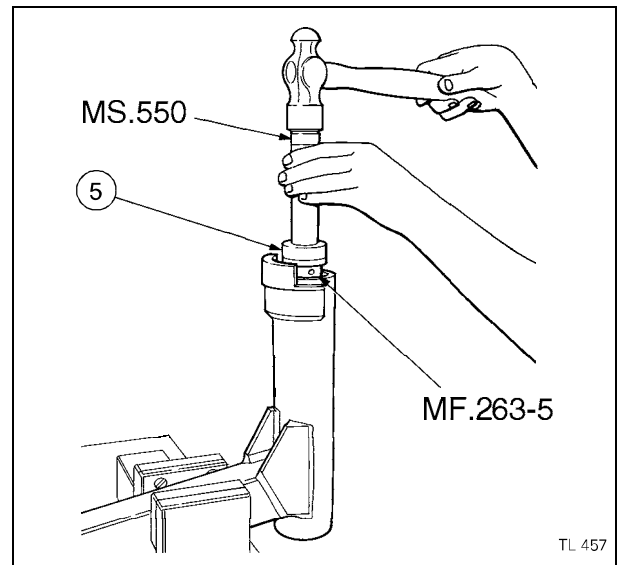
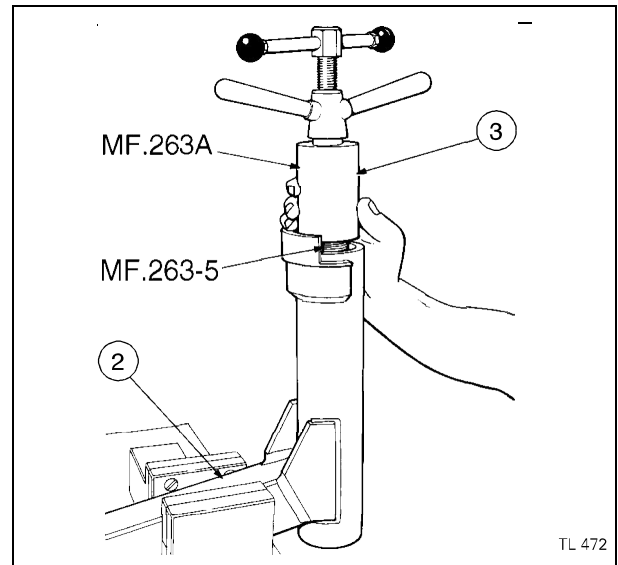
1. Remove the spindle housing and spindle, (*see operation 4-8B*).
2. Secure the housing in a vice.
3. Using special tool MF.263A Bush Remover, Main Tool and MF.263-5 Bush Remover. Remove the bush by screwing the threaded extractor into the bush with the upper handle. Withdraw the bush by turning the lower handle.
4. Invert the housing and remove the lower bush.

Examination

Clean all components and replace the spindle if there are signs of wear.

Re-assembly

5. Using special tools MS.550 Universal Handle and MF.263-5 Bush Replacer, drive a new bush into each side of the housing.
6. Using special tools MF.264 Reamer Handle - Main Tool and MF.264-8 Reamer and Pilot. With the reamer and handle assembled, pass the guide bar through the housing. Fit the reamer pilot onto the guide bar and into the housing. This will ensure that the bush is reamed parallel.
7. Ream the upper bush to size.
8. Turn the equipment over and ream the lower bush to size.
9. Remove all swarf from the housing and ensure the grease nipple hole is clear of dirt.
10. Thoroughly grease parts before and after assembly.
11. Refit the spindle shaft, (*see operation 4-8B*).



Two-wheel Drive Front Axle – 2

AXLE BEAM ASSEMBLY

Removal and Refitment

6-8B

Removal

1. Block both rear wheels of the tractor and apply the parking brake.
2. Place a trolley jack under the engine sump and take the weight off the front of the tractor. DO NOT lift the front wheels off the ground.
3. Remove the front tractor weights, if fitted, and remove the front weight frame.
4. Disconnect the steering cylinder hoses at the cylinder end. Cap the ends of the pipes to prevent the ingress of dirt.
5. Remove the front wheels.

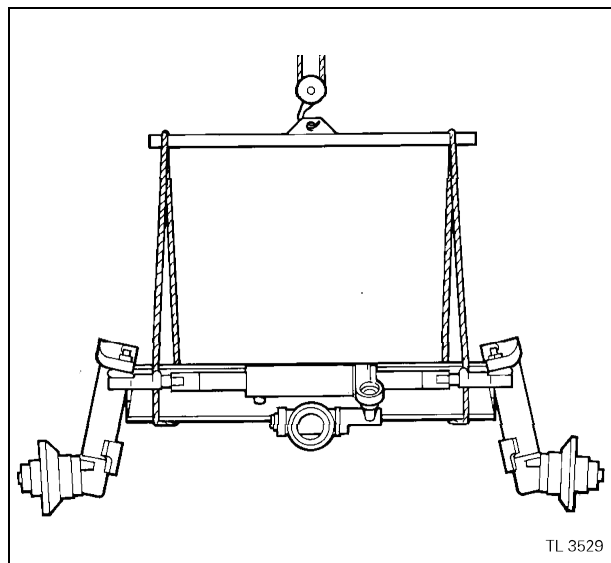
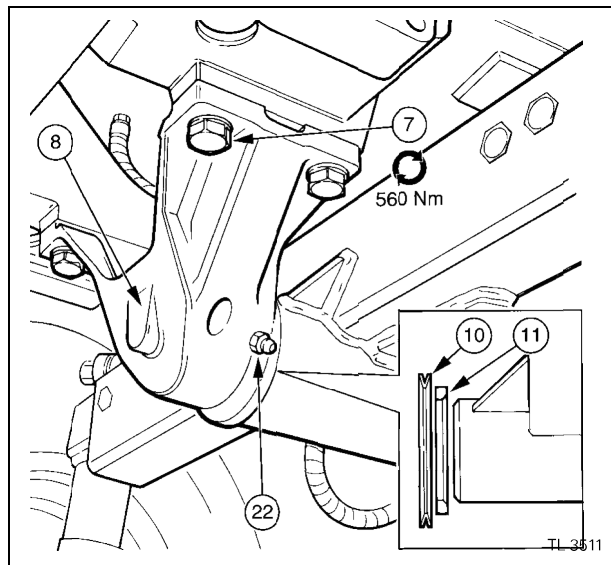
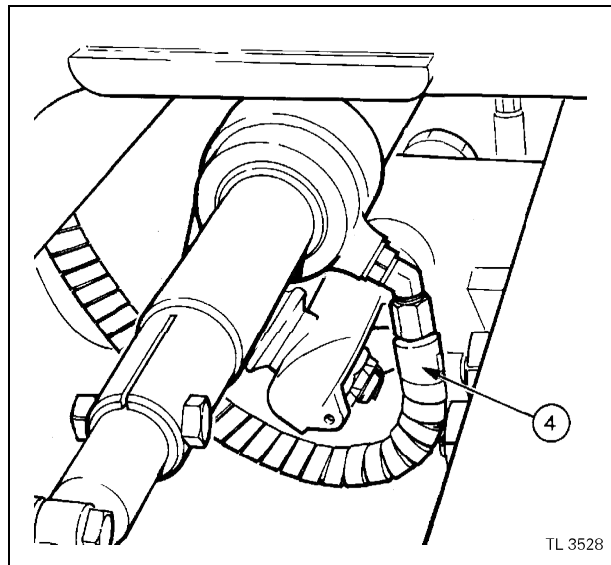


WARNING: Prevent the axle from tilting forwards or backwards, or rotating about the wheels if the axle is wheeled from under the tractor with its wheels still attached. It could cause injury if precautions are not taken.

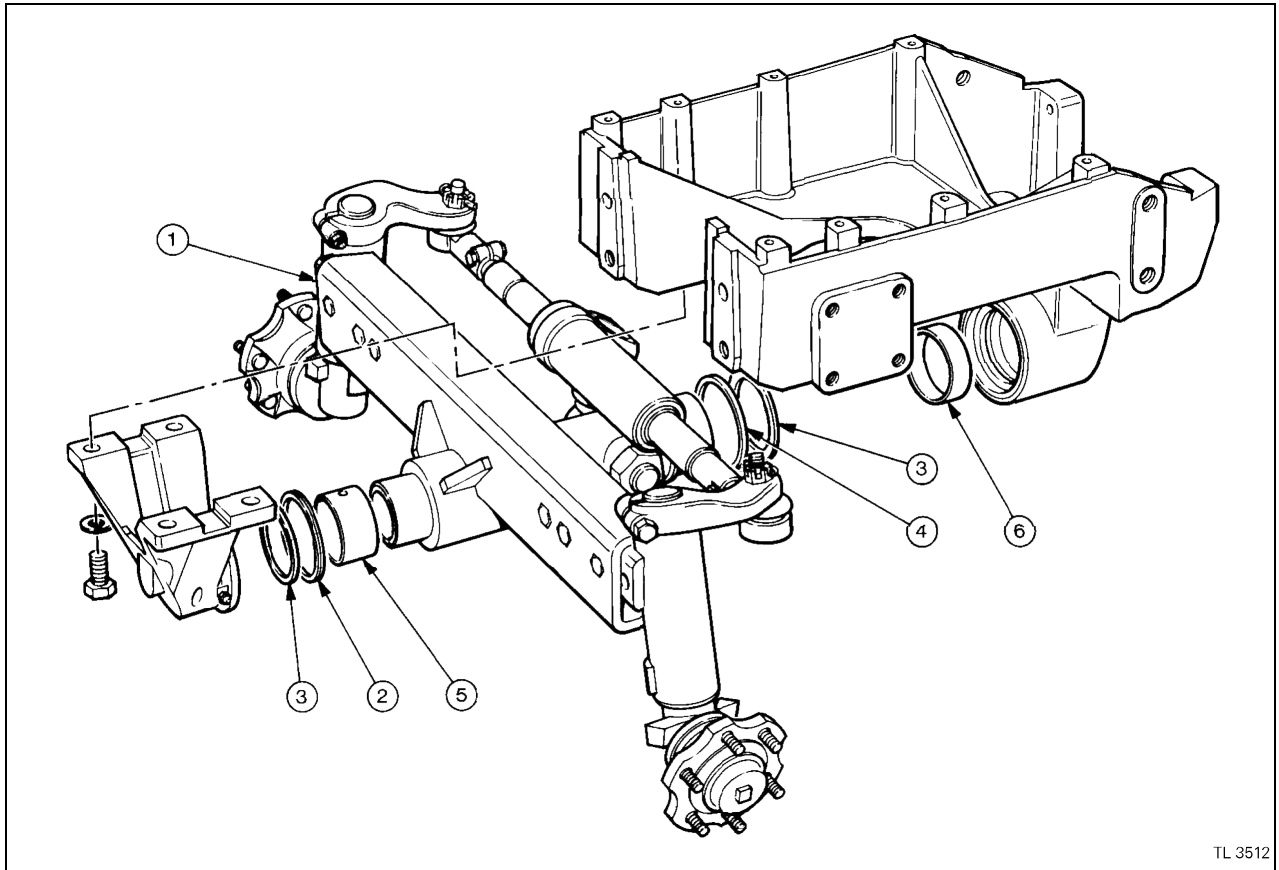
6. Place the axle in slings from an overhead crane.
7. Remove the bolts from the front trunnion.
8. Remove the trunnion.
9. Slide the axle forwards, disengaging it from its rear bearing housing and place it on two axle stands.
10. Remove the 'V' seals.
11. If necessary, remove the two chamfered washers.
12. Remove the quad seal.

Refitment

13. With the aid of an overhead crane sling the axle so that it is horizontal in both directions.
14. Fit a new quad sealing ring.
15. Reinstall the two thrust washers with the internal chamfered face facing the axle.
16. Fit new 'V' rings.
17. Place the axle under the front support casting and engage the rear support bearing, move the axle rearwards so that it is fully engaged.
18. Refit the front trunnion bearing and adjust its position until there is a clearance of 0,1-0,25 mm (0.004-0.010 in) between the axle and the housing.
19. Tighten the trunnion bearing bolts to a torque of 560 Nm (415 lbf ft).
20. Re-check the axle clearance, re-adjust if necessary.
21. Reverse procedures 1 to 5.
22. Grease both the front and rear bearings until grease shows between the bearing and axle.



Two-wheel Drive Front Axle – 2



AXLE BEAM ASSEMBLY

Overhaul

7-8B

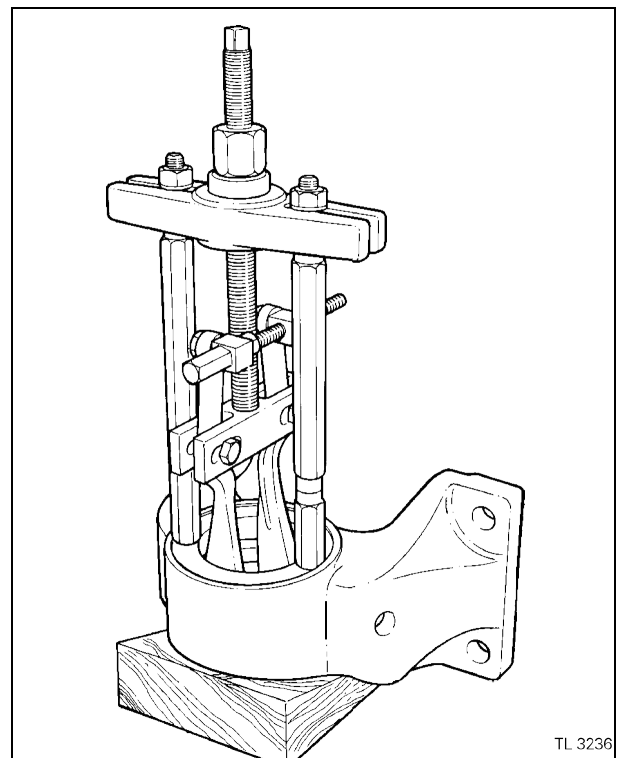
Special Tools:

MF.500 Front Axle Bearing Installer

MS.550 Universal Handle

Dis-assembly

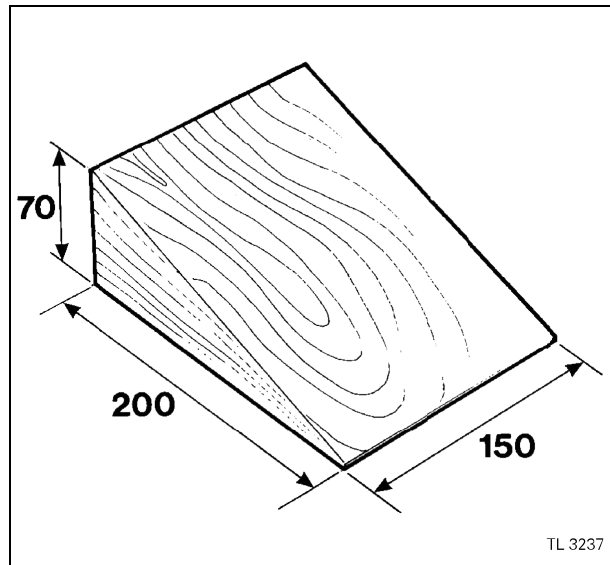
1. Remove the front axle, ([see operation 6-8B](#)).
2. Remove the two 'V' ring seals.
3. Remove the two thrust washers.
4. Remove the quad seal from the axle pivot.
5. With the aid of an internal bearing extractor (see illustration) remove the bush from the front bearing housing.
6. Repeat the same operation and extract the bearing from the rear bearing housing.



Two-wheel Drive Front Axle – 2

Re-assembly

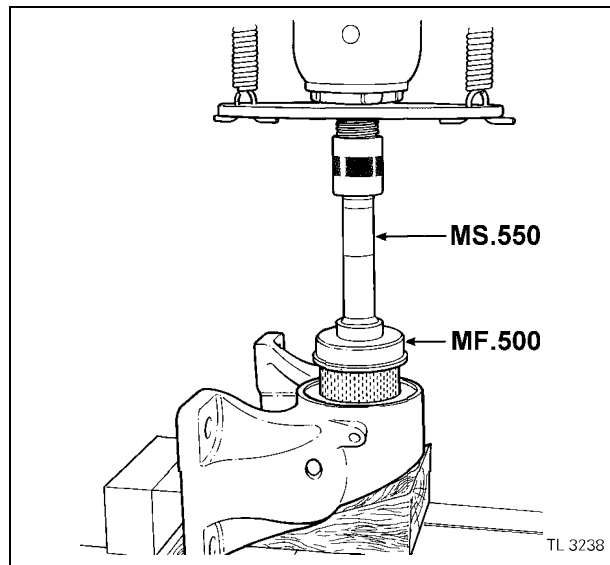
7. To replace the front bearing, make a wooden wedge to the dimensions shown in the illustration.



8. Place the bearing housing under a press on the wooden wedge.

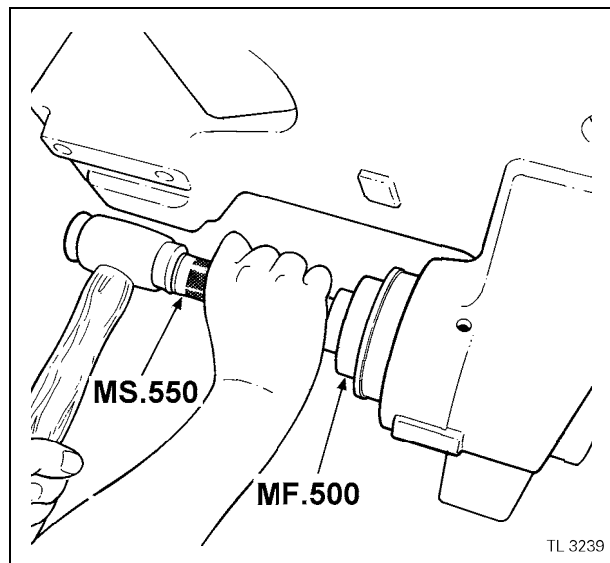
IMPORTANT: Both bushes, front and rear, must be assembled with the grease hole to the top.

9. Using special tool MF.500 Front Axle Bearing Installer and MS.550 Universal Handle, press the bush into the housing until it is 0,5-1,5 mm (0.020-0.060 in) below the rear face, the tool will position the bush correctly.

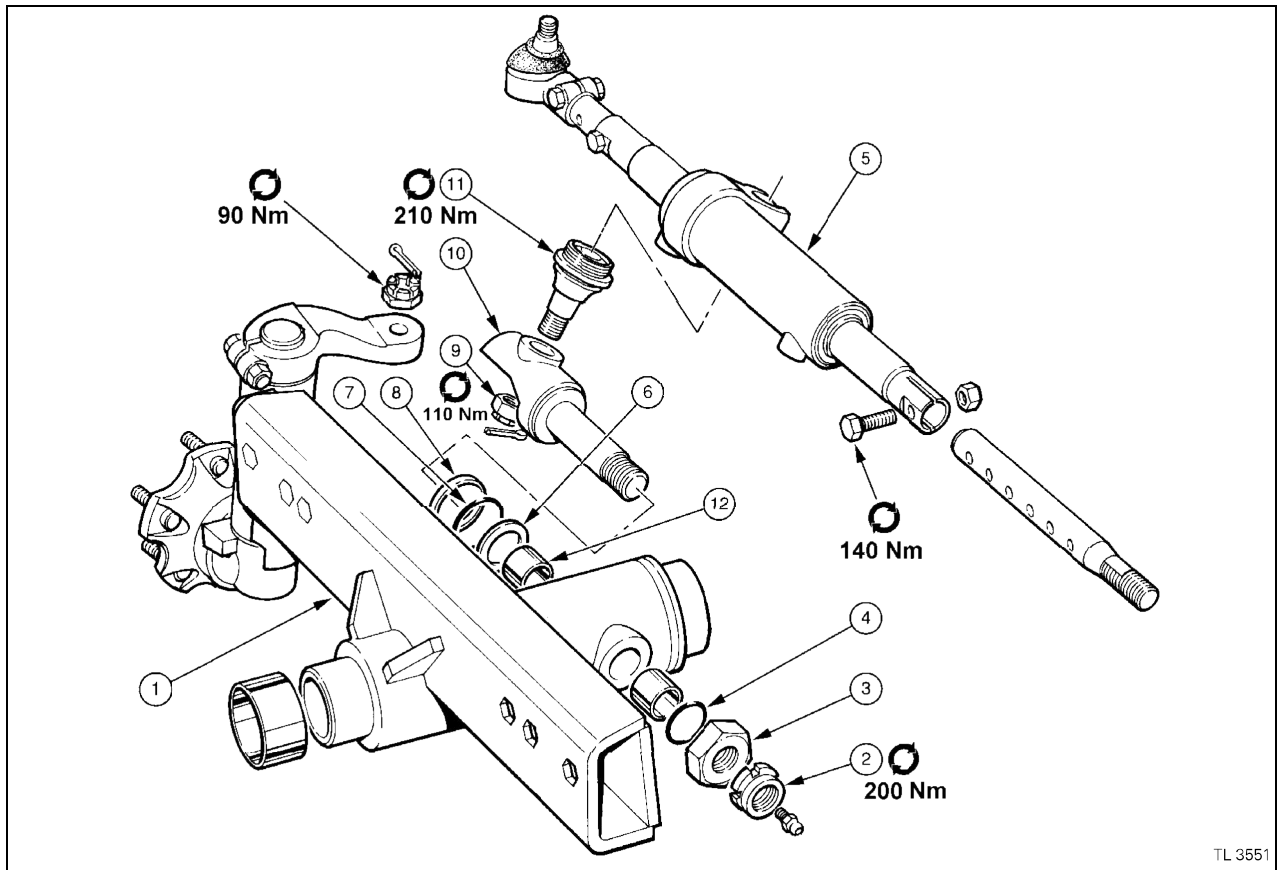


10. Using special tool MF.500 Front Axle Bearing Installer and MS.550 Universal handle, drive the rear bush in until it is 0,1-0,5 mm (0.004-0.020 in) below the front face, the tool will position the bush correctly.

11. Reverse procedures 1 to 4 except:
 - a. Renew the two 'V' ring seals.
 - b. Renew the quad seal ring.
 - c. Lubricate the seals and bushes prior to assembly with a general purpose grease.



Two-wheel Drive Front Axle – 2



STEERING CYLINDER and PIVOT

Removal and Refitment

8-8B

Special Tools:

MF.504 Steering Pivot Nut Wrench

MF.509 Steering Ball Joint Wrench

Removal

1. Remove the axle beam, ([see operation 6-8B](#)).
2. Using special tool MF.504 Steering Pivot Nut Wrench, remove the locknut.
3. Unscrew the stop nut.
4. Remove the 'O' ring.
5. Withdraw the steering cylinder from the axle beam.
6. Remove the thrust washer.
7. Remove the 'O' ring.
8. Remove the seal protector ring.

Pivot Pin and Ball Joint

9. Remove the split pin and nut.
10. Remove the pivot pin from the cylinder ball joint.

11. With special tool MF.509 Steering Ball Joint Wrench, remove the large ball joint from the cylinder.

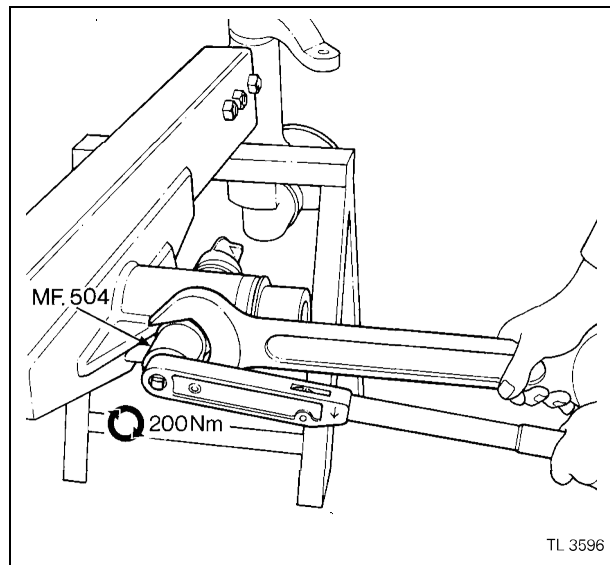
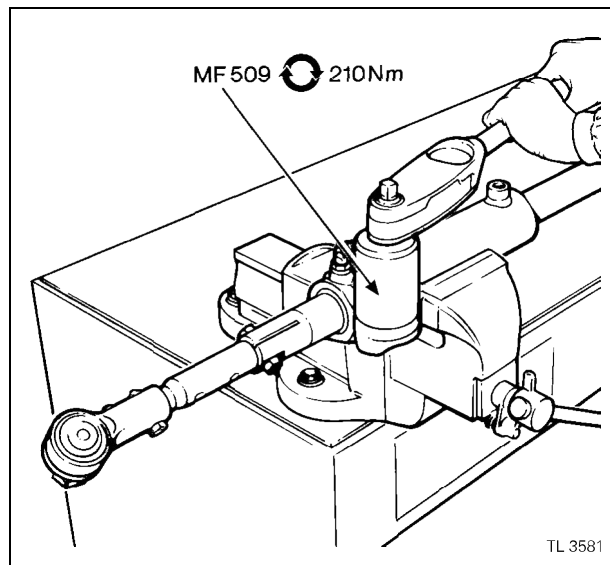
Examination

Thoroughly clean all components. Examine for wear or damage and replace any faulty components. Discard and replace all 'O' rings, seals and tab washer.

Two-wheel Drive Front Axle - 2

Refitment

12. Reverse procedures 1 to 11 except:
- Apply Massey Ferguson Studlock (Loctite 270) and using MF.509 tighten the ball joint into the cylinder to a torque of 210 Nm (155 lbf ft).
 - Set the running clearance of the cylinder pivot pin to 0,05-0,25 mm (0.002-0.010 in); to achieve this, tighten the stop nut and turn back by one flat.
 - Tighten the lock nut against the stop nut using MF.504 to a torque of 200 Nm (148 lbf ft).
 - Tighten the steering cylinder ball joint nut to a torque of 110 Nm (80 lbf ft), tighten further to align the split pin hole, DO NOT exceed a torque of 120 Nm (88 lbf ft) to align the split pin.
 - Tighten the piston rod clamp bolt to a torque of 140 Nm (105 lbf ft).
 - Tighten the track rod ball joint to a torque of 100 Nm (75 lbf ft). DO NOT exceed 120 Nm (90 lbf ft) to align the split pin.



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