GENERAL SPECIFICATIONS	3 cylinders
Engine type:	
– mod. TD65F turbocharged – type TTF 8035.25F.939T (BOSCH pump)	see data pages 6
– mod. TD75F turbocharged – type TTF 8035.25G.939T (BOSCH pump)	see data pages 7
– mod. TD85F turbocharged – type TTF8035.25E.939T (BOSCH pump)	see data pages 8
Cycle	Diesel, 4–stroke
Fuel injection	Direct
Number of cylinders in line	3

PREVIEW - YOUFIXTHIS.COM

Blurred on purpose. The manual you buy has this page in full quality.

Download full manual at youfixthis.com

ENGINE
Removal – Installation (Operation 10 001 10)

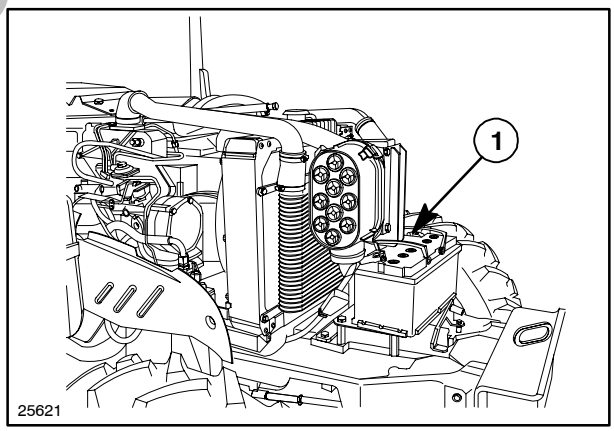
DANGER

Lift and handle all heavy parts using suitable lifting equipment.
Make sure that assemblies or parts are supported by means of suitable slings and hooks.
Check that no one is in the vicinity of the load to be lifted.

WARNING

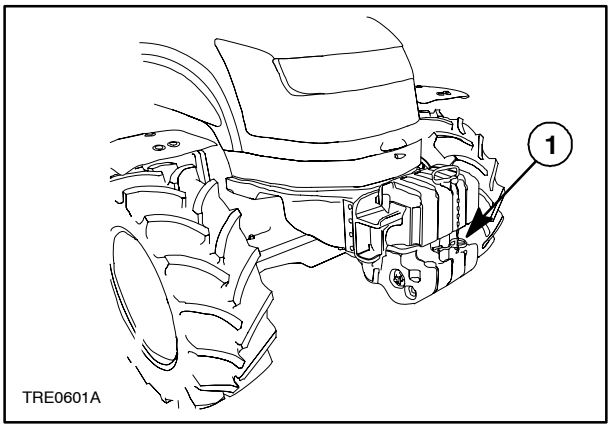
Always use suitable tools to align holes in parts.
NEVER USE FINGERS OR HANDS.

1.
2. Drain oil from the transmission/gearbox.
3. Drain the cooling system.



7

4. Unscrew the nut (1) from the weight retaining pin.
5. Remove the weights from the front support.



8

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

ANGLE TIGHTENING TORQUE DATA

PART	Thread	Preliminary torque		Angle
		Nm	ft lb	
Cylinder head bolts (2) fig. 3	M 12 x 1.25	70	51.6293	90° + 90°
Main bearing cap bolts (4) fig. 3	M 14 x 1.5	80	59.0050	90°
Big–end cap bolts (5) fig. 3	M 11 x 1.5	40	29.5025	60°

PREVIEW - YOUFIXTHIS.COM

Blurred on purpose. The manual you buy has this page in full quality.

Download full manual at youfixthis.com

ENGINE TROUBLESHOOTING

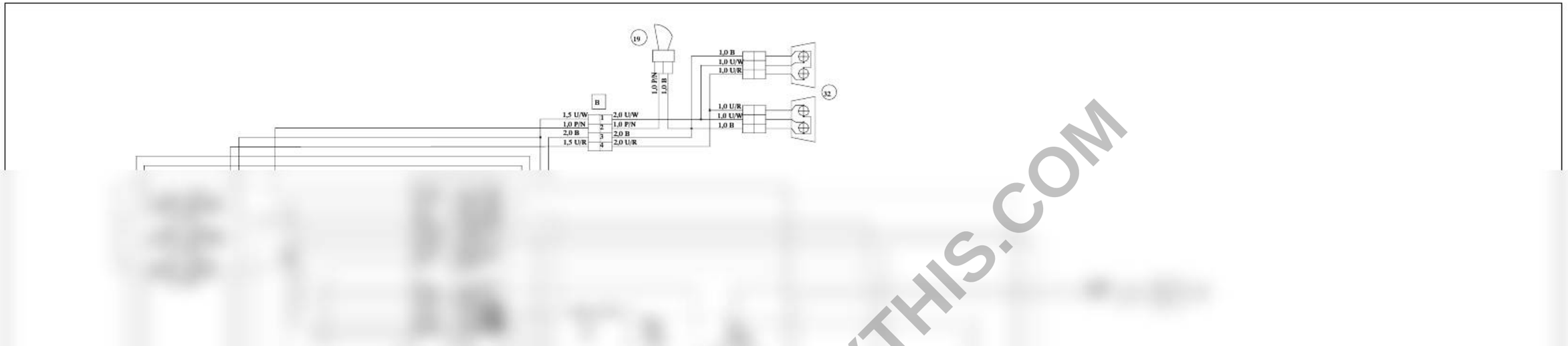
Faults	Possible Cause	Correction
Engine does not start.	**1.** Batteries partially discharged.	Check and recharge battery. Replace if necessary.
	2. Battery terminal connections corroded or loose.	Clean, inspect and tighten terminal nuts. Replace terminals and nuts if excessively corroded.
	3. Incorrect injection pump timing.	Adjust injection pump timing.
	4. Impurities or water in fuel lines.	Disconnect fuel lines from injection pump and clean thoroughly. If necessary clean and dry the fuel tank.
	5. No fuel in tank.	Fill tank.
	6. Fuel supply pump malfunction.	Check and replace pump if necessary.
	7. Air in fuel system.	Check fuel lines, unions, supply pump, filters and injection pump for air, then bleed system.
	8. Starter motor faulty.	Repair or replace starter motor.
	9. Faulty thermostart.	Check and replace thermostart, if necessary.
Engine stalls.	**1.** Idle speed too low.	Adjust idle speed.
	2. Irregular delivery from injection pump.	Check injection pump delivery on test bench.
	3. Impurities or water in fuel lines.	Disconnect fuel lines from injection pump and clean thoroughly. If necessary clean and dry the fuel tank.
	4. Fuel filters clogged.	Renew filter cartridges.
	5. Incorrect valve clearances.	Adjust valve clearance.
	6. Burnt or cracked valves	Replace the valves.
	7. Air in fuel system.	Check fuel lines, unions, supply pump, filters and injection pump for air, then bleed system.
	8. Injection pump drive mechanism damaged.	Replace damaged parts.

(continued)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

GENERAL DIAGRAM –CENTRE(WITHOUT CAB)



PREVIEW - YOUFIXTHIS.COM
Blurred on purpose. The manual you buy has this page in full quality.

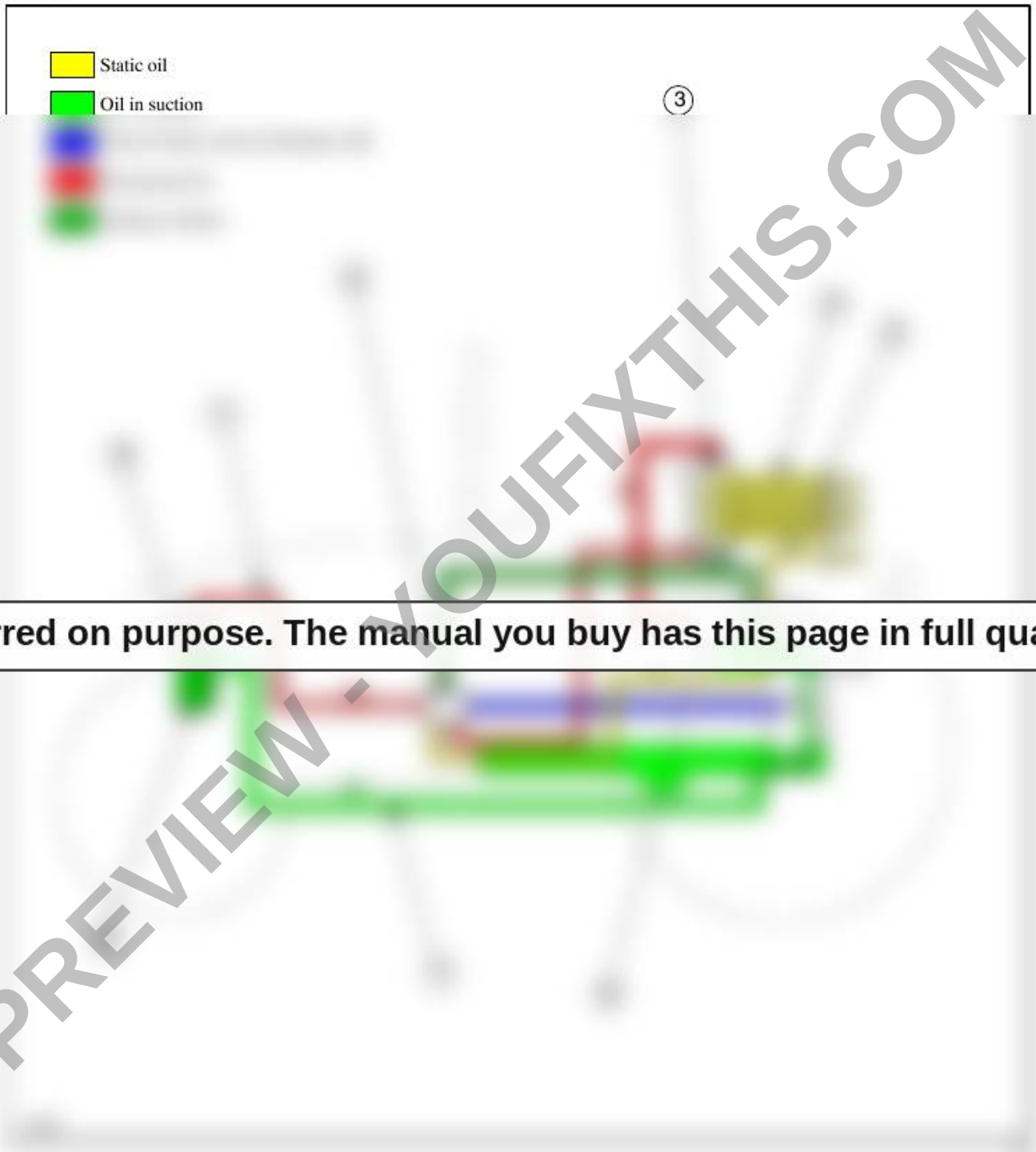
Download full manual at youfixthis.com

DESCRIPTION AND OPERATION

The mechanical lift can operate with controlled position or draft control and with a combination of the two. The lift is controlled by two levers located on the operator's right. It also features the Lift–O–Matic device which raises and lowers the implement without the need to use the position and draft control levers.

Draft control is actuated by the flex bar positioned in the special box mounted under the rear transmission.

The lower lift arms and corresponding control rods are connected to the flex bar.



Blurred on purpose. The manual you buy has this page in full quality.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

NEW HOLLAND

Repair Manual – TD F Series Tractors

CONTENTS

GENERAL **SECTION 00**

General Instructions and Health and Safety **Chapter 1**

Section	Description	Page
00 000	General instructions	1
	Notes for spare parts	2
	Notes for equipment	2
	Safety rules	3
	Consumables	6

ENGINE **SECTION 10**

Engine System **Chapter 1**

Section	Description	Page
10 000	General specification	2
	Injection pump calibration data	5
	General specifications	9
	Tightening torques	17
	Tools	18
	Cross–sectional views	21
	Lubrication and cooling system diagrams	23
	Fault diagnosis	25
10 001 10	Engine *Removal–Installation*	29
10 001 54	Engine *Bench overhaul*	40
	Checks, measurements and repairs	61
10 406 10	Radiator *Removal–Installation*	81
10 102 70	Crankshaft front oil seal *removal installation*	83
10 402 10	Coolant pump *removal installation*	89
10 402 30	Cooling system thermostat	92
10 206 14	Bosch injection pump *removal installation*	95
	Bosch injection pump *timing*	98
	Bosch injection pump *air bleeding*	100
10 218 30	Injectors *removal installation*	101

84285941 – 02 –2010

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

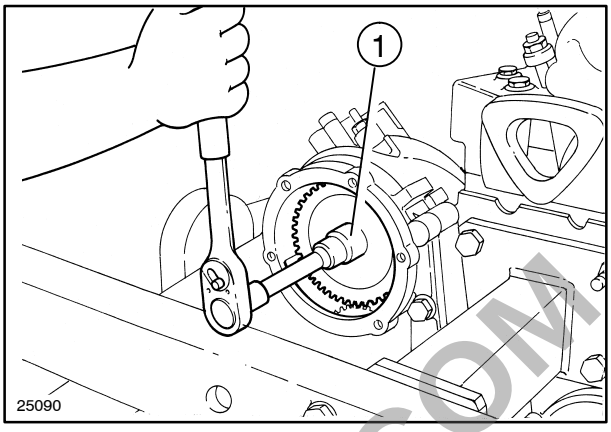
LUBRICATION SYSTEM DATA	mm (in.)
	All Models
Assembly clearance between oil pump drive shaft and bushing .	0.016 to 0.055 (0.0006 to 0.0022)
Clearance between shaft and driven gear	0.033 to 0.066 (0.0013 to 0.0026)
Tooth backlash between drive and driven gears	0.100 (0.004)
Radial clearance between drive and driven gears and housing .	0.060 to 0.170 (0.0024 to 0.0067)
Thickness of drive and driven gears	40.961 to 41.000 (1.6126 to 1.6142)
Height of gear seat in pump	41.025 to 41.087 (1.6152 to 1.6176)
Endfloat between gears and gear housing in pump	0.025 to 0.126 (0.0010 to 0.0050)

COOLING SYSTEM DATA	mm (in.)
Interference fit between pump impeller and shaft	0.017 to 0.059 (0.0007 to 0.00231)
Interference fit between fan hub and shaft	0.024 to 0.058 (0.0009 to 0.0023)
Interference fit between front seal bushing and impeller	0.012 to 0.058 (0.0005 to 0.0023
For further cooling system data	See page 3

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

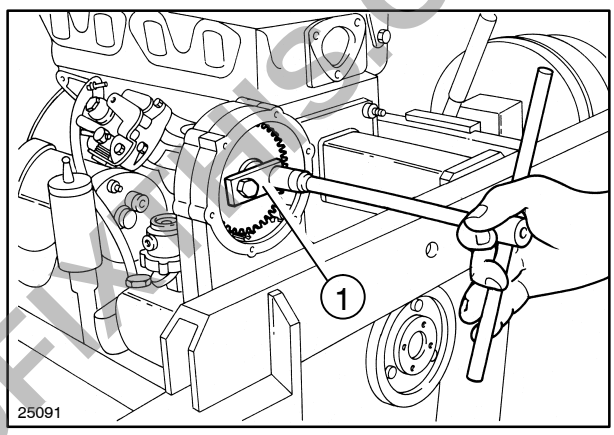
20. Unscrew the nut (1) securing the injection pump drive gear to the pump shaft.



54

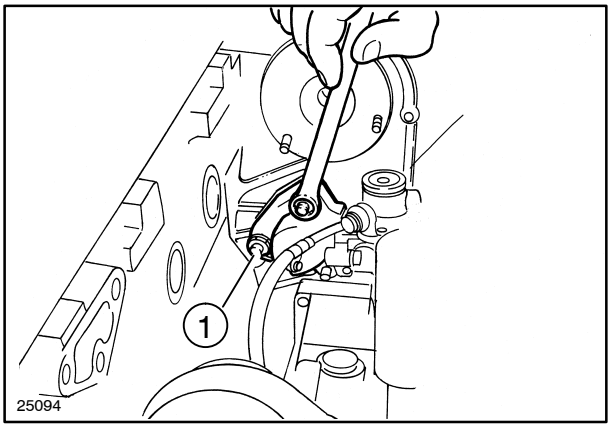
21. Extract the injection pump gearing using tool **380000835** (1) and remove the injection pump.

NOTE: *If the injection pump does not require any specialist work it must be removed following the instructions given on page 118.*



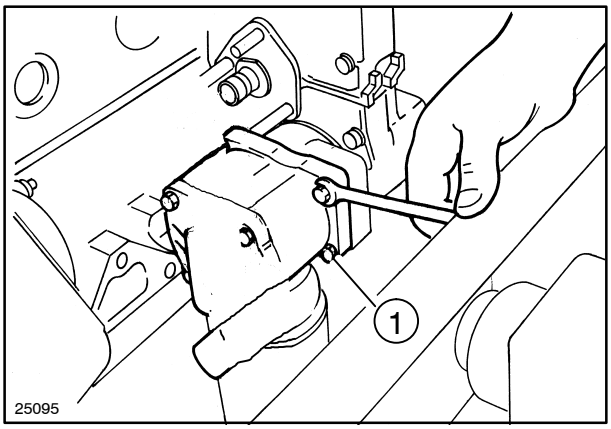
55

22. Unscrew the retaining nut (1) and remove the fuel pump support complete with the pump. Retain the gasket for re–use, if undamaged.



56

23. Unscrew the power steering pump retaining bolts (1) and remove the pump complete with filter and accumulator on the delivery line.



57

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

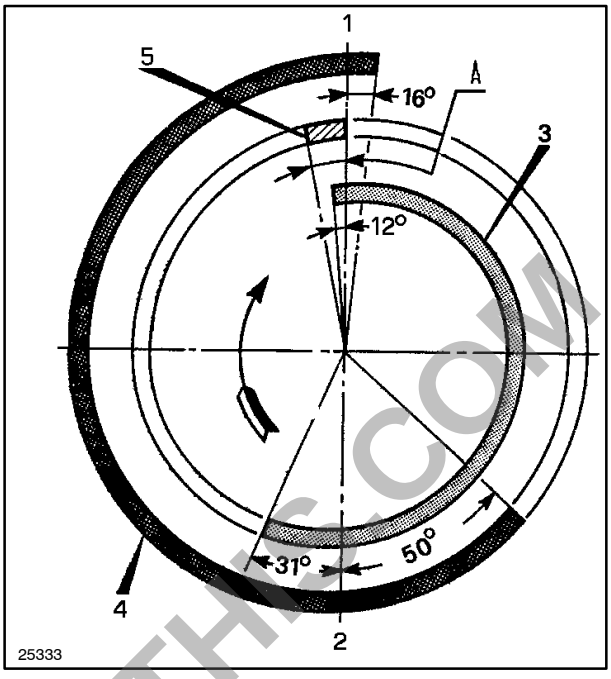
Valve timing check

To check the valve timing after dismantling/assembly or overhaul of the valve timing gear, proceed as follows:

Check that the timing reference marks on the timing gears are aligned as indicated on page 57.

Provisionally set valve clearances to 0.45 mm (0.0177 in.).

Turn the crankshaft and, using a graduated timing disc, check that valves open and close at the angles indicated in the timing diagram.



127

On completion of timing check, set the valve clearances for normal running as detailed on pages 127 to 129.

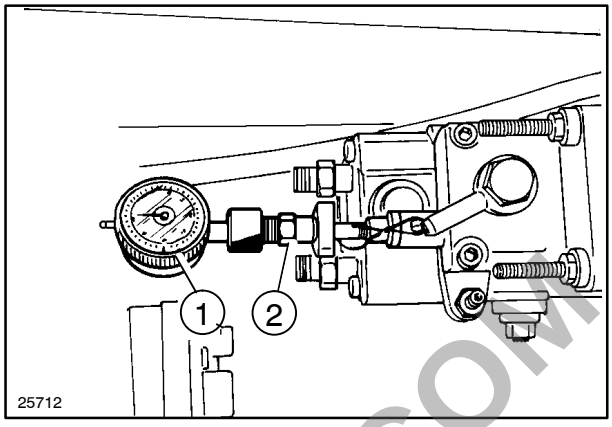
Valve timing diagram.

A. Fixed advance.
1. TDC.
2. BDC.
3. Inlet.
4. Exhaust.
5. Injection.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

8. Zero–set the dial gauge and slowly turn the flywheel clockwise (as viewed from the fan end of the engine) until the pointer lines up with reference marks **0**° for all models.
9. Check on the dial gauge that the plunger has completed a stroke of 1 mm (0.0394 in.) up to this point, if not, slacken off the pump mounting bolts. If the plunger stroke is checked with the pointer at the T.D.C. there must be a stroke of: **1.0 mm** (**0.0394 in.**) for all models.
10. Turn the pump anti–clockwise if the plunger has completed a shorter stroke and clockwise if the stroke is longer, repeating the test until the correct stroke is obtained.
11. Having obtained the correct plunger stroke, fix the pump in position by tightening the mounting nuts to the torque specified on page 24.
12. Remove the dial gauge **380000228** (1) and relative tool **380000229** (2) and replace the plug and tighten to a torque of 8 – 10 Nm (5.9005 – 7.3756 ft lb).
13. Refit other parts in the reverse of the dismantling order.



201

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

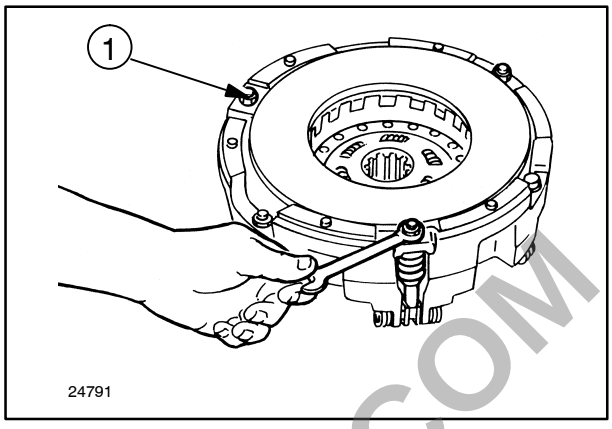
Op. 18 110 30
11”/11” DUAL DISK CLUTCH – Test bench overhaul

ATTENTION

Use suitable tools to align the holes. NEVER USE FINGERS OR HANDS.

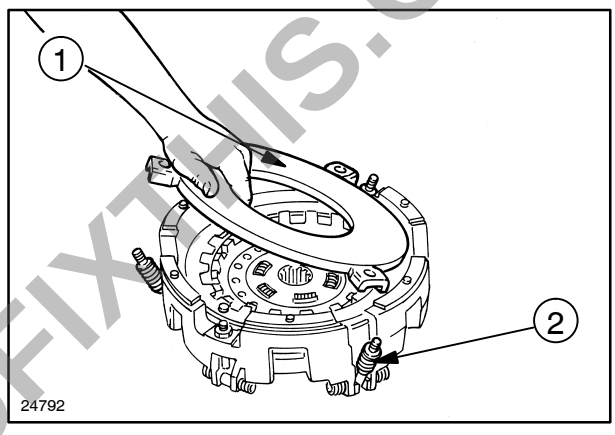
Proceed as follows.

1. Unscrew the three PTO clutch lever adjustment nuts (1).



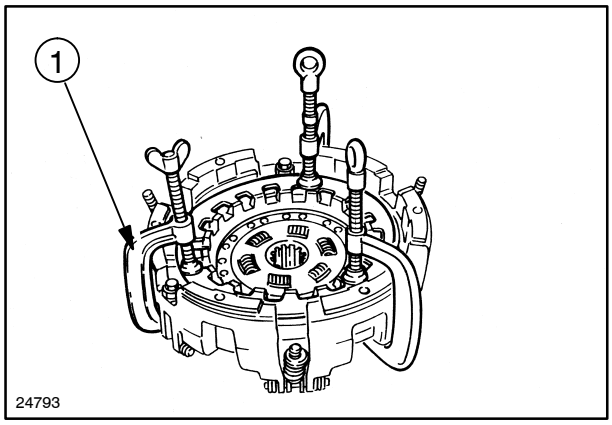
43

2. Recover the pressure plate (1) with the three coil springs (2) and the three washers.



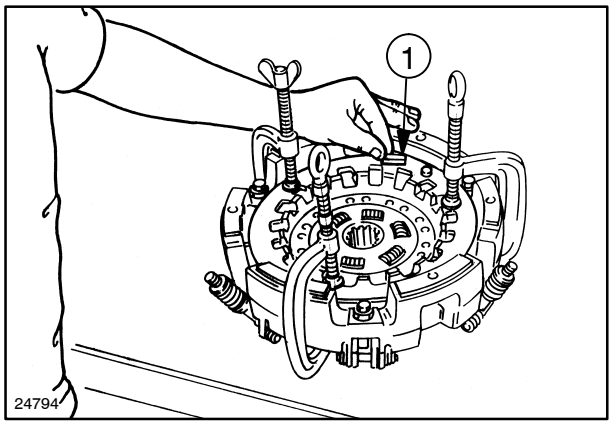
44

3. Position three clamps (1) at intervals of 120° on the clutch body and gradually and carefully squeeze the Belleville spring disk.



45

4. Extract the six spring retaining pins (1) from their seats.



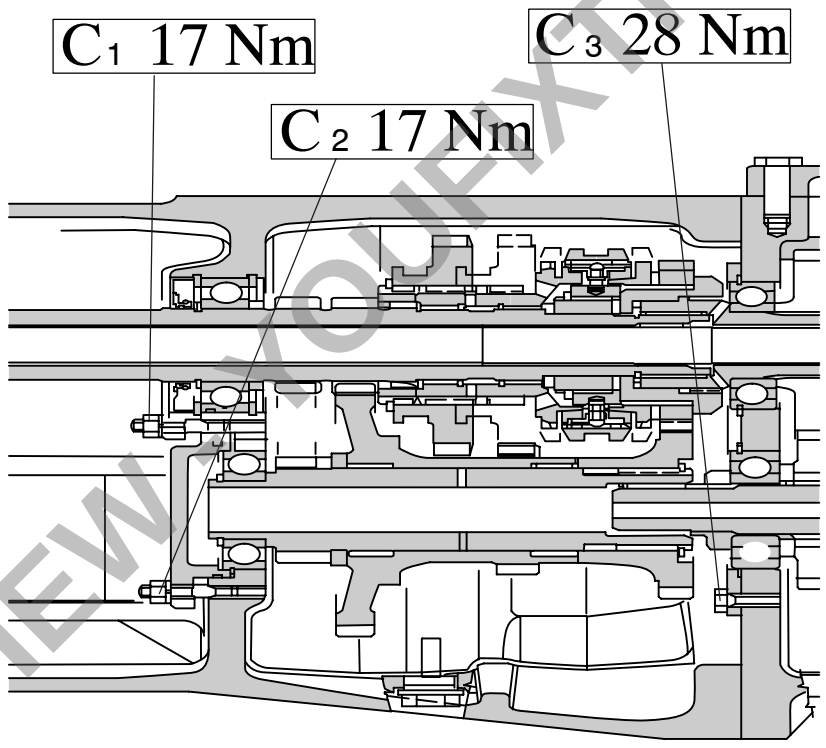
46

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

TORQUE VALUES

PARTS	Thread	Torque Settings	
		Nm	ft lb
Sleeve cover nuts (C1)	M 8 x 1.25	17	12.5385
Synchroniser reverser – creeper unit driven shaft cover nuts (C2)	M 8 x 1.25	17	12.5385
Gearbox driving and driven shaft bearings cover screws (C3) . .	M 8 x 1.25	28	20.6517
Bolt securing clutch casing – reverse and creeper unit to the rear transmission–gearbox	M 12 x 1.25	98	72.281117

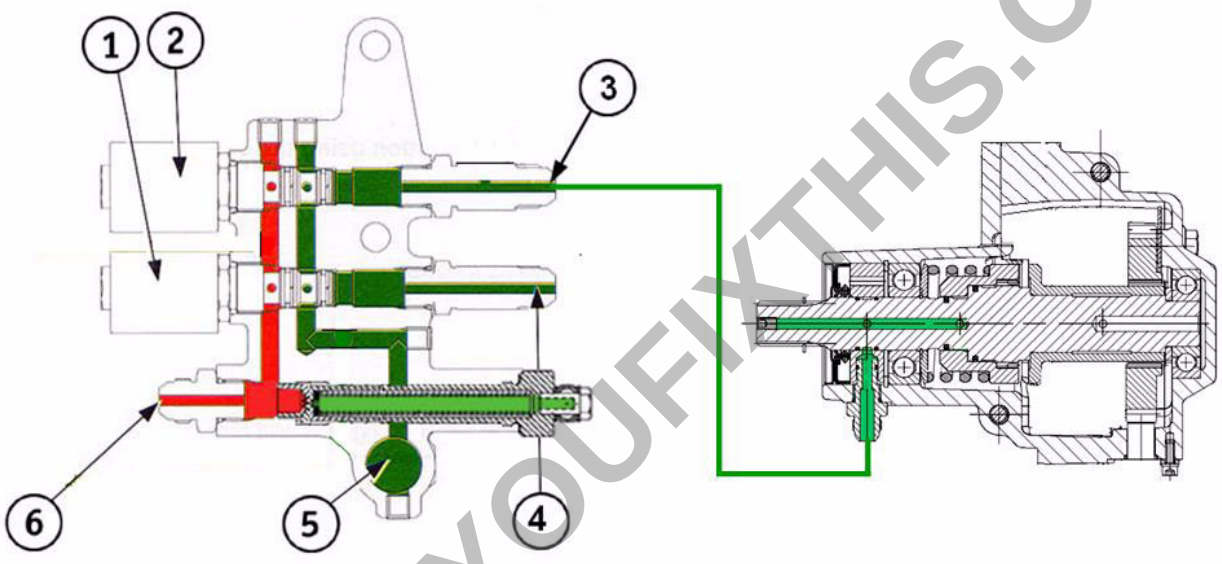


TRE0561A

1

PREVIEW YOUFIXTHIS.COM

Download full manual at youfixthis.com



6

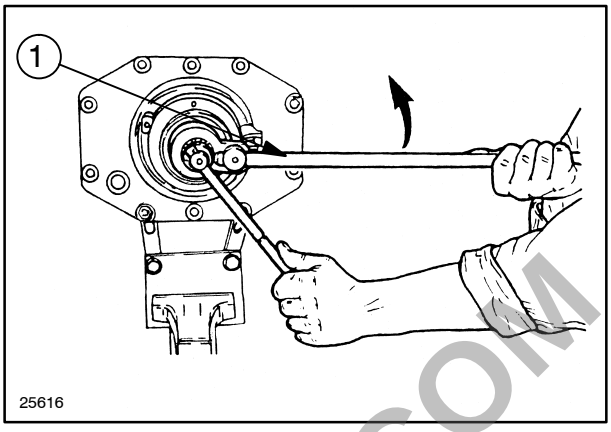
4WD engaged operation

1. Differential Lock solenoid
2. 4WD solenoid
3. Oil outlet to 4WD.
4. Oil outlet to Differential Lock
5. Discharge line to tank
6. Oil inlet from steering pump

PREVIEW - YOUFIXTHIS.COM

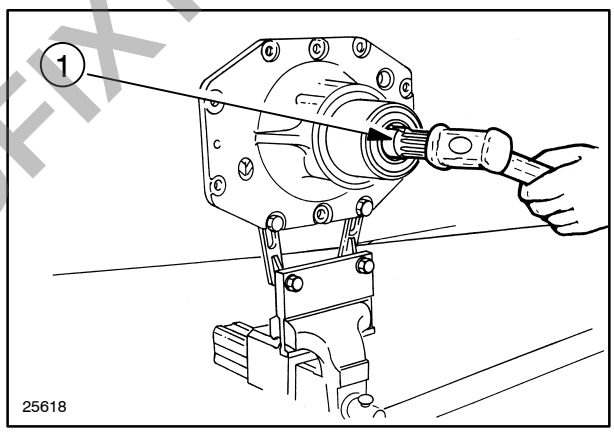
Download full manual at youfixthis.com

24. Unscrew the nut using wren8ch **380000268** (1) while preventing rotation of the bevel drive pinion shaft using wrench **380000257**.



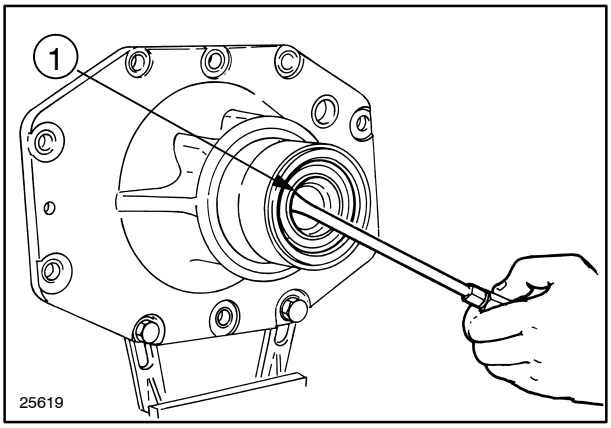
50

25. Withdraw the bevel drive pinion shaft (1) from the rear of the casing and recover the spacer, the adjustment shims and the bearing.



52

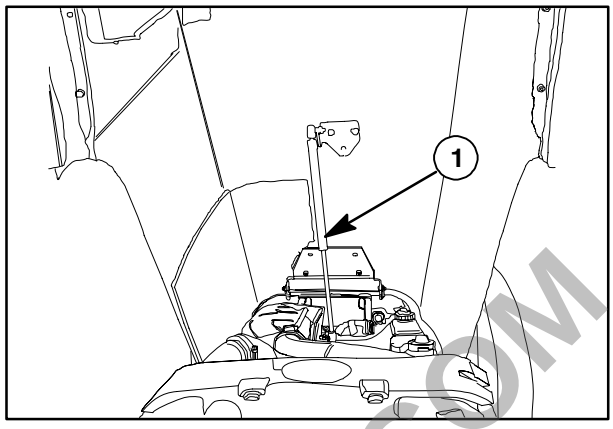
26. Using a screwdriver, detach and recover the dust seal, the oil seal (1) and the rear bearing.



53

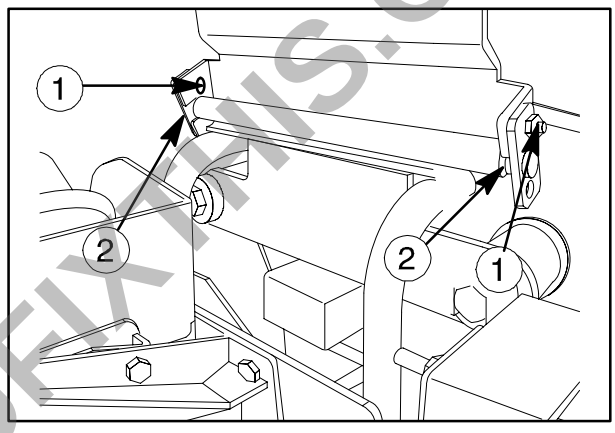
PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

6. Detach the gas struts (1) from the bonnet.



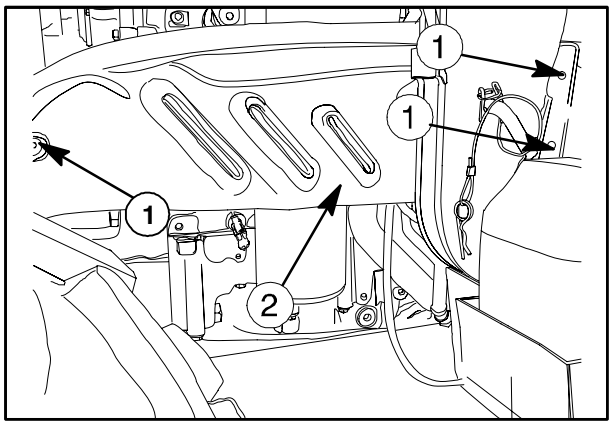
10

7. Remove the two bonnet hinge bolts (1) and take out the spacers (2) lift the bonnet clear.



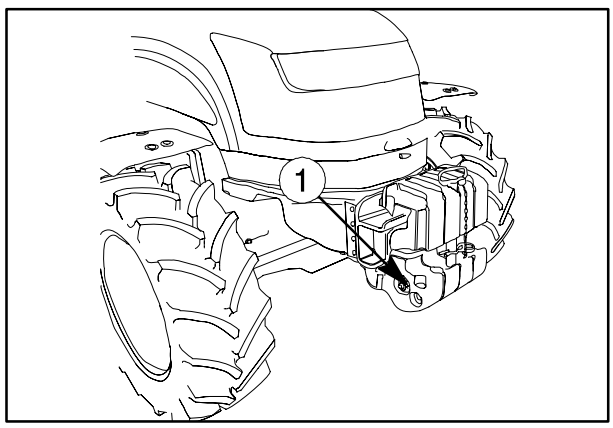
11

8. Remove the three retaining bolts (1) and the guard (2) both on the right and left hand side of the engine.



12

9. Unscrew the nut (1) from the weight retaining pin. Remove the weights from the front support.



13

PREVIEW - YOUFIXTHIS.COM

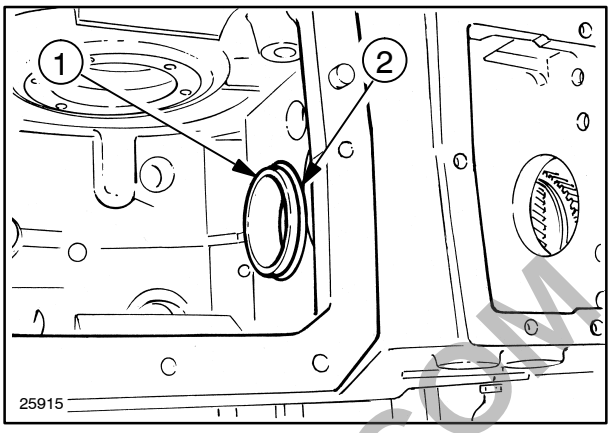
Download full manual at youfixthis.com

ADJUSTING THE BEVEL GEAR PAIR

Determining the bevel pinion positioning adjustment ring

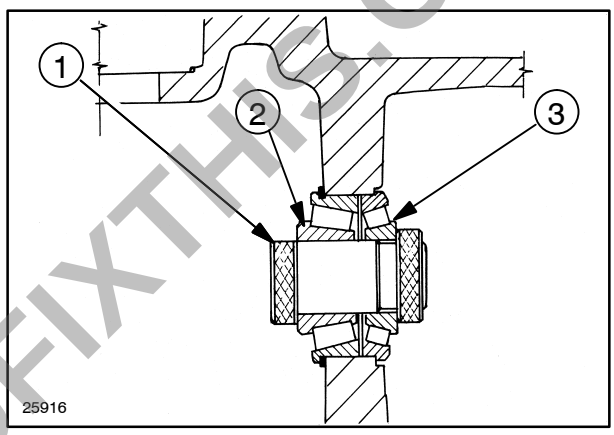
Proceed as follows:

1. On the transmission–gearbox case mount the outer ring of the bearing (1) fig. 33 with the test shim (2) and the outer bearing ring (3) fig. 34.



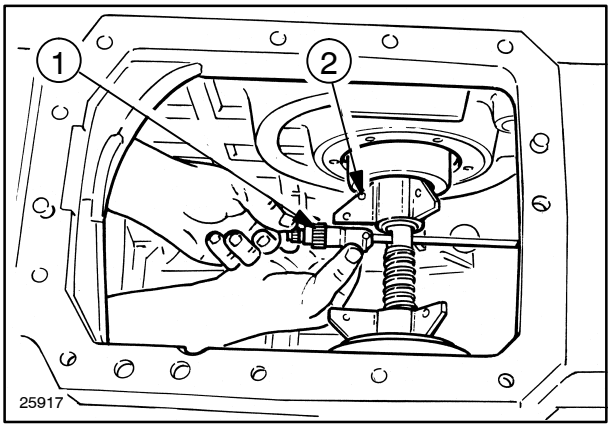
33

2. Position the bearing (2) on tool **50004** (1), insert the bearing (3) and lock the tool (1).



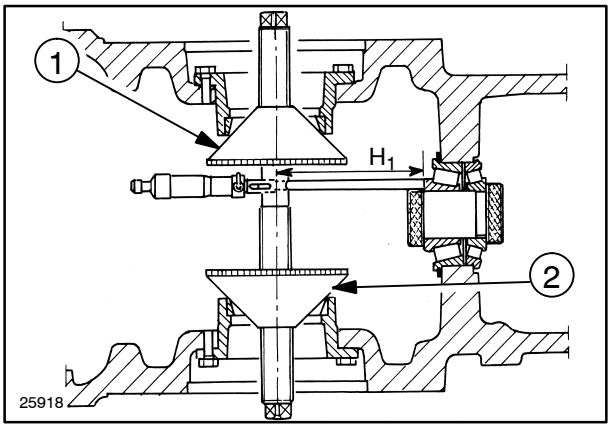
34

3. Position the tool **380000249** (2) with two conical parts in the ring gear supports and insert the micrometer (1) with depth rod into its seat and lock using the bolt.



35

4. Screw down or unscrew the cones (1) and (2) so as to align the micrometer rod with the bearing. Adjust the cones (1) and (2) to lock the tool on the supports and eliminate any axial clearance.
5. Move the depth rod of the micrometer into contact with the bearing and measure the value (H_1).

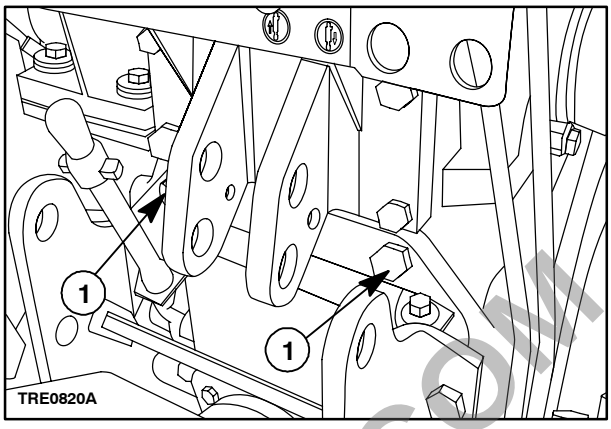


36

PREVIEW - YOUFIXTHIS.COM

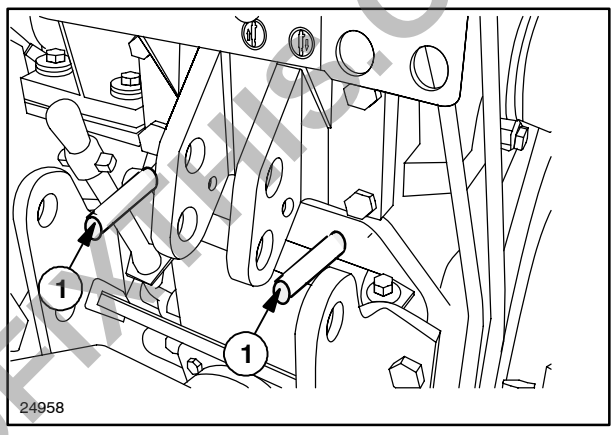
Download full manual at youfixthis.com

9. Remove the two upper screws (1) which fasten the PTO unit to the transmission.



19

10. Insert the two guide pins **380001597** (1) and remove the two lower screws (29) (Fig. 2 Page.5) which fasten the PTO unit to the transmission.

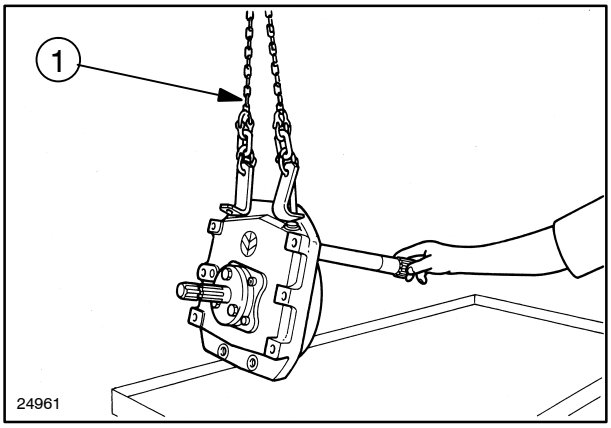


20

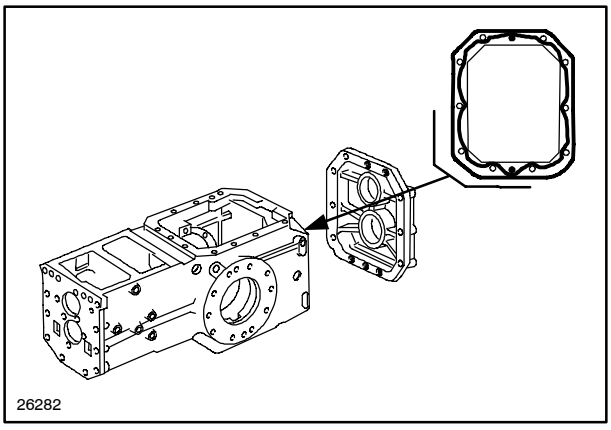
11. Engage the lever (1) fig. 8, in position (A), ground speed PTO, so that the sleeve (3) fig. 9, rests on the shaft (2) during the removal operation. Withdraw the PTO unit by a few centimetres and detach using the hook with lifting chain **380000227** (1).

To reinstall proceed as follows:

— Clean the mating surfaces between the transmission and PTO cover and apply sealing compound as shown in figure 22.
— Raise the PTO unit and position it directly behind the transmission casing. Slide the PTO cover onto the guide pins **380001597**, for ease of assembly.
— Remove the hook with chain (1) fig. 21, and fasten the PTO unit using the two lower screws.
— Remove the two guide pins **380001597** and install the two upper screws.
— Reinstall the bracket (1) fig. 18, that retains the PTO speed selector control lever.
— Refit the tow bar support.
— Refit the tow bar, the tow hook and the three–point linkage top link.
— Screw in and tighten the oil drain plug and fill the transmission/gearbox with oil.
— Reconnect the negative battery cable.



21



22

PREVIEW - OUFIXTHIS.COM

Download full manual at youfixthis.com

MAIN SPECIFICATION OF IMPLEMENT HITCHING DEVICE

Type		three–point linkage
Category: – All Models Draft control		 2 by means of lower arms with flex bar
Maximum liftable load with centre of gravity 610 mm from the lower arm link ends: with arms horizontal (with top link connected to hole on upper support): – TD65F, TD75F, TD85F Models	kg (lb)	 1780 (3926)
Maximum liftable load: with arms horizontal (with top link connected to upper support pin): – TD65F, TD75F, TD85F Models	kg (lb)	 3000 (6613.87)
Flex bar diameter: – TD65F, TD75F, TD85F Models Axial clearance of flex bar	 mm (in.) mm (in.)	 24.867 – 24.900 (0.9790 – 0.9803) 1.2 – 4.1 (0.0472 – 0.1614)

MAIN SPECIFICATION OF HYDRAULIC PUMP (All models)

Filter		
Type		paper cartridge
Location		fixed to the pump housing on suction side
Pump		
Type		gear type with oil suction from transmission casing
Location		Flanged on the front right–hand side of the engine
Construction		BOSCH
Model		A31
Operation		by means of the engine gears
Direction of rotation (as seen from drive side)		left (counter clockwise)
Engine speed to pump speed ratio		1 : 0.931
Maximum speed of pump rotation (with engine at maximum power equivalent to 2300 rpm)	rpm	2328
Bench output at 1450 rpm and pressure of 172 bar (175 kg/cm^2):		
– for new or reconditioned pump	dm^3/min (in.^{3}/min)	19 (1159.5)
– for worn pump	dm^3/min (in.^{3}/min)	13.3 (811.6)
– test oil temperature	C°(F°)	55 – 65 (131 – 149)
– test oil viscosity		SAE 20

(continued overleaf)

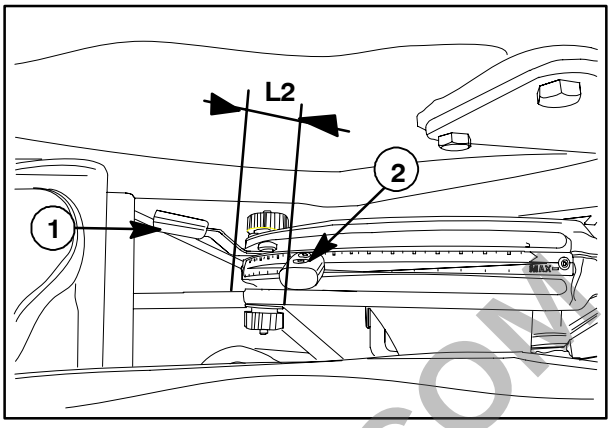
PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

8. Move the draft control lever (2) to a distance (L_2) of 95 – 105 mm (3.7402 – 4.1338 in.) from the beginning of the slot and check that at this position the arms start to rise.

9. If they do not, adjust the eccentric pin (1) fig. 49, to restore this distance.

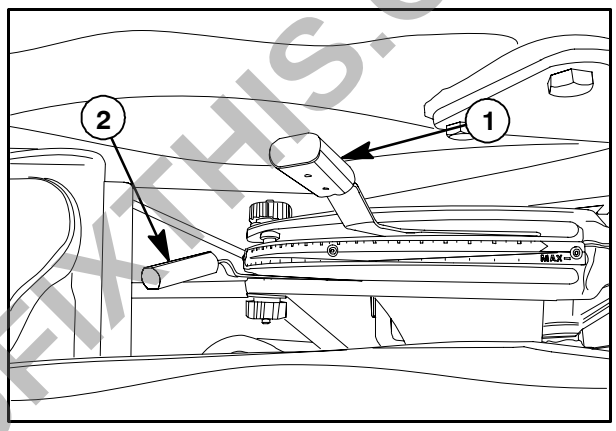
10. Fasten the eccentric pin using the securing bolt (1) fig. 50.



58

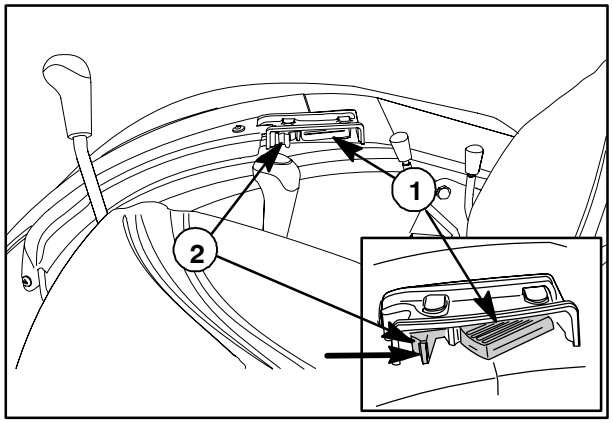
Adjusting LIFT–O–MATIC device
Proceed as follows:

11. Move the position control lever (1) and the draft control lever (2) fully forward in the sector.



59

12. Press latch (2) in the direction of the arrow to raise the lift arms at the headland.



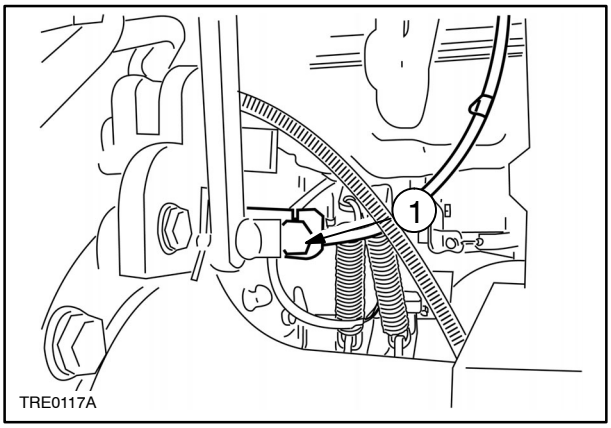
60

13. Tighten the nut (1) fig. 61, until the arms lower.

14. With the lever (1) fig. 60, still in the same position, unscrew the nut (1) fig. 61, until the arms begin to rise.

15. Unscrew the nut (1) by another 1.5 turns.

16. Using the levers (1) and (2) fig. 60, lower and raise the arms a few times to ensure that the system is operating correctly.



61

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

SECTION 35 – HYDRAULIC SYSTEM

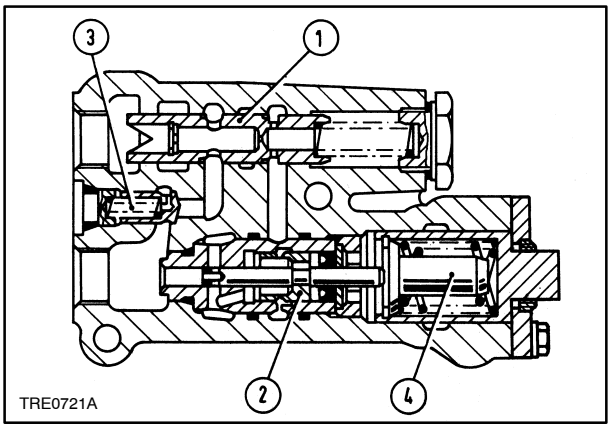
Chapter 3– Trailer brake auxiliary control valve

CONTENTS

Section	Description	Page
35 000	Section views	1
	Description and operation	1
	Hydraulic diagram	2
	Description and operation of valve phases	3
	Trailer brake auxiliary control valve linkage adjustment	6

Section view of auxiliary control valve for trailer braking

1. Flow control valve.
2. Piston.
3. Check valve.
4. Relief valve.



1

DESCRIPTION AND OPERATION

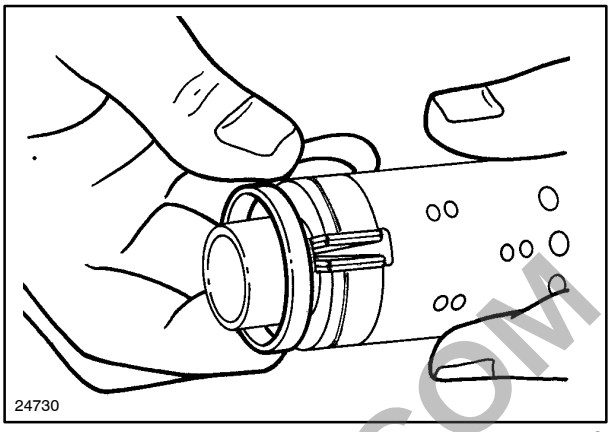
The trailer brake valve is mounted on the rear transmission casing forward of the hydraulic lift. It is supplied by the same pump as the lift circuit.

The trailer brake valve has priority over the auxiliary control valves and the hydraulic lift.

The hydraulic operation of these valves is described on pages 3 and 4.

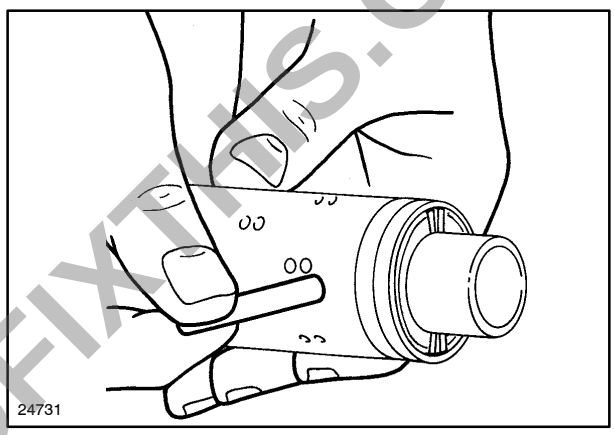
PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

29. Fit the **neutral** position spring retaining ring on the valve seat sleeve, remembering that the ring must rotate freely without being impeded by the springs.



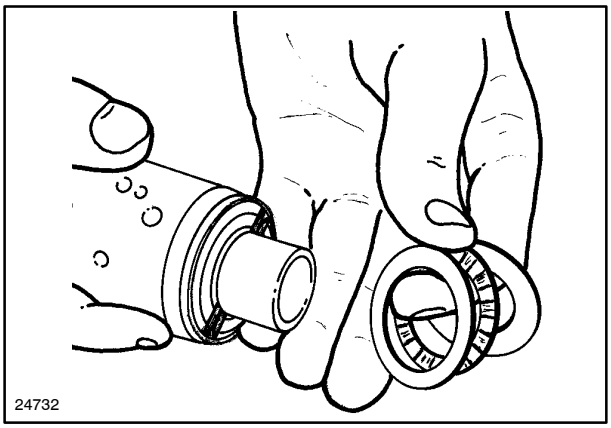
46

30. Insert the sleeve–rotor drive shaft trim pin.



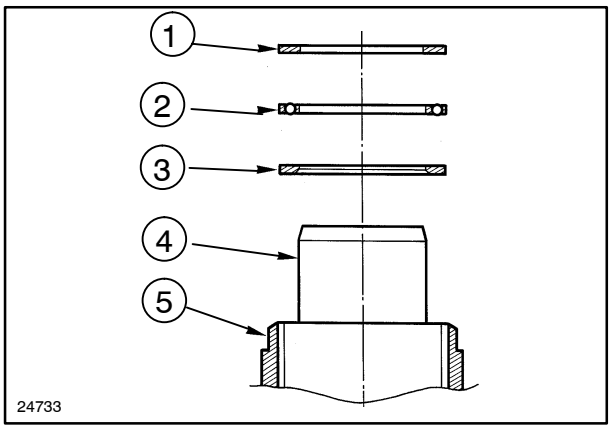
47

31. Fit the thrust bearing, following the order indicated in fig. 49.



48

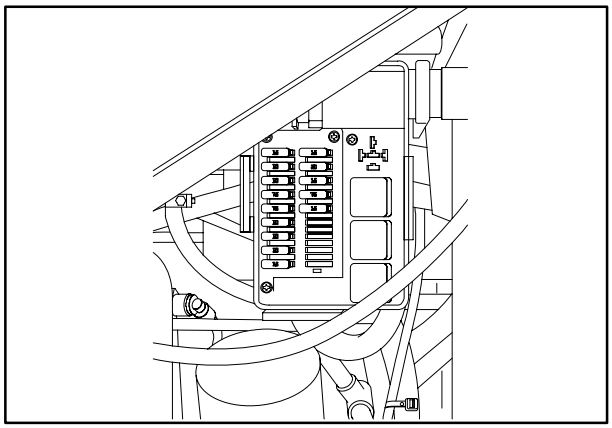
1. Bearing external ring.
2. Thrust bearing.
3. Bearing internal ring with bevel facing contact surface of part (5).
4. Rotary valve.
5. Rotary valve seat sleeve.



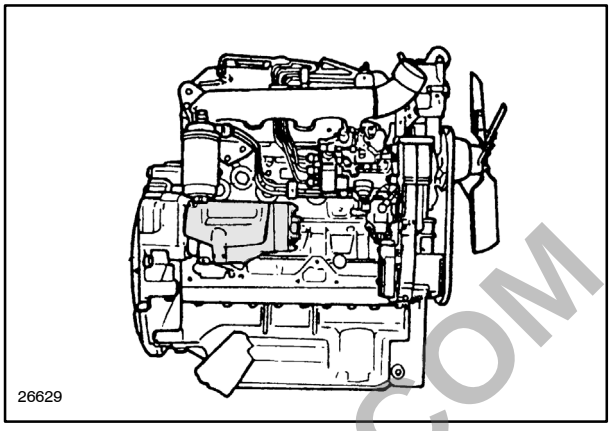
49

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com



Fuse panel 4



Starter motor 5

SYSTEM TESTS

STARTING SYSTEM ON TRACTOR TEST

To easily and quickly trouble–shoot the starting system problems and reach conclusive results, it is recommended that you use a battery/starting tester (high discharge multimeter) with incorporated 0–20V voltmeter and 0–500 A ammeter.

When using testing devices, follow test procedures recommended by the manufacturer. If you do not have access to testing devices, carry out the following test using a normal 0–20V voltmeter and a 0–500 Amp ammeter in order to check correct starter motor functioning without removing it from the engine.

Before carrying out the test:

- check the battery is fully charged;
- check that no wires in the starting system are broken or frayed and that there are no loose connections;
- check the engine is not seized.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

BATTERY CHECKING AND MAINTENANCE

RELATIVE DENSITY

The relative density of the battery electrolyte shows the charge level of the battery. When the battery is fully charged, the relative density of the electrolyte, at 25°C (77°F), is at least 1.280.

Alternatively, approximate charge can be measured using a digital voltmeter (± 0.01 V) as follows:

less than	10.5 V unusable battery*
less than	11.8 V flat battery
less than	12.3 V half–charged battery
more than	12.6 V fully–charged battery

* See notes to paragraph “TESTS” for instructions on how to recuperate a slightly sulphurized battery.

Battery voltage must be registered on a flat battery considering the following:
A) the battery must be flat for at least 4 hours
B) if the vehicle has been used recently, or if the battery has been charged recently, switch the headlights on for 2 minutes.

When a battery is flat, the sulphuric acid in the electrolyte combines chemically with the plates and this decreases the relative density of the solution.

A battery densimeter will determine the relative density of the electrolyte in an element. A reduction in the amount of sulphuric acid in the solution will show the degree of charge of that element.

The lower the temperature at which the battery operates, the more necessary it is to keep the battery fully charged. For example, a battery with a relative density of 1.225 at 27°C (80°F) can start the engine at mild outside temperatures but might not do so at lower temperatures because of lower battery performance.

Table 1 shows the effect of temperature on battery performance.

Table 1

Temperature	Fully charged battery performance
25.0 °C (77.0 °F)	100%
–4.5 °C (23.9 °F)	82%
–24.0 °C (–11.2 °F)	64%
–27.5 °C (–17.5 °F)	58%
–31.0 °C (–23.8 °F)	50%
–34.5 °C (–30.1 °F)	40%
–37.5 °C (–35.5 °F)	33%

Maximum battery life can be obtained by paying the right attention and by carrying out regular checks. The energy capacity output must not be exceeded by constant overload and charging requirements must be respected.

BATTERY MAINTENANCE

WARNING: *Batteries contain sulphuric acid and generate a highly explosive hydrogen and oxygen mix during charging.*

- *Do not use devices producing flames or sparks to inspect the electrolyte level.*
- *Do not remove battery caps without protecting your hands and your eyes.*

During battery maintenance, follow the steps below:

1. Keep the electrolyte level 17 mm (0.6993 in.) (over the plates. If this is not respected, the acid concentration will vary, which could damage spacers and cause a deterioration in plate performance.
2. Use distilled or de–mineralized water only. Never use tap water or rain water or water from any other source.
3. Keep the battery charged at least 75% to avoid plate sulphurization, performance loss and possible freezing at low temperatures.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 24 of 503 pages

The full manual includes:

- All 503 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

New Holland TD65F, TD75F, TD85F Service Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual