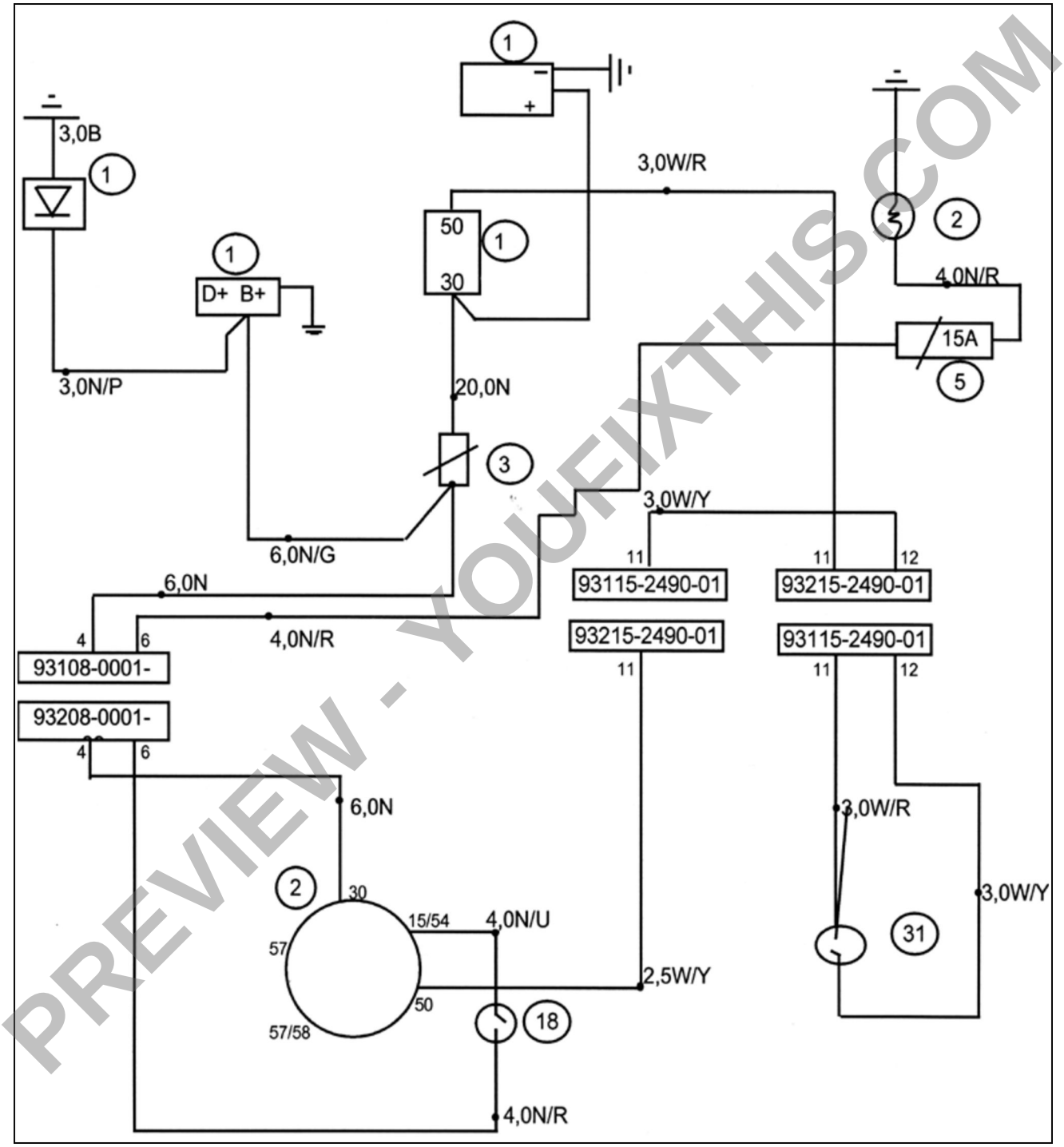
Wiring harnesses - Electrical schematic sheet 01

TD65F	LA
TD75F	LA
TD85F	LA

Side lights, main and dipped beam headlights and parking lights circuit



BRAG12TRALL0344 1

2. Starter signal switch
3. Turn signal switch
5. Fusebox
6. Dipped beam relay
7. Main beam relay
32. Headlamps

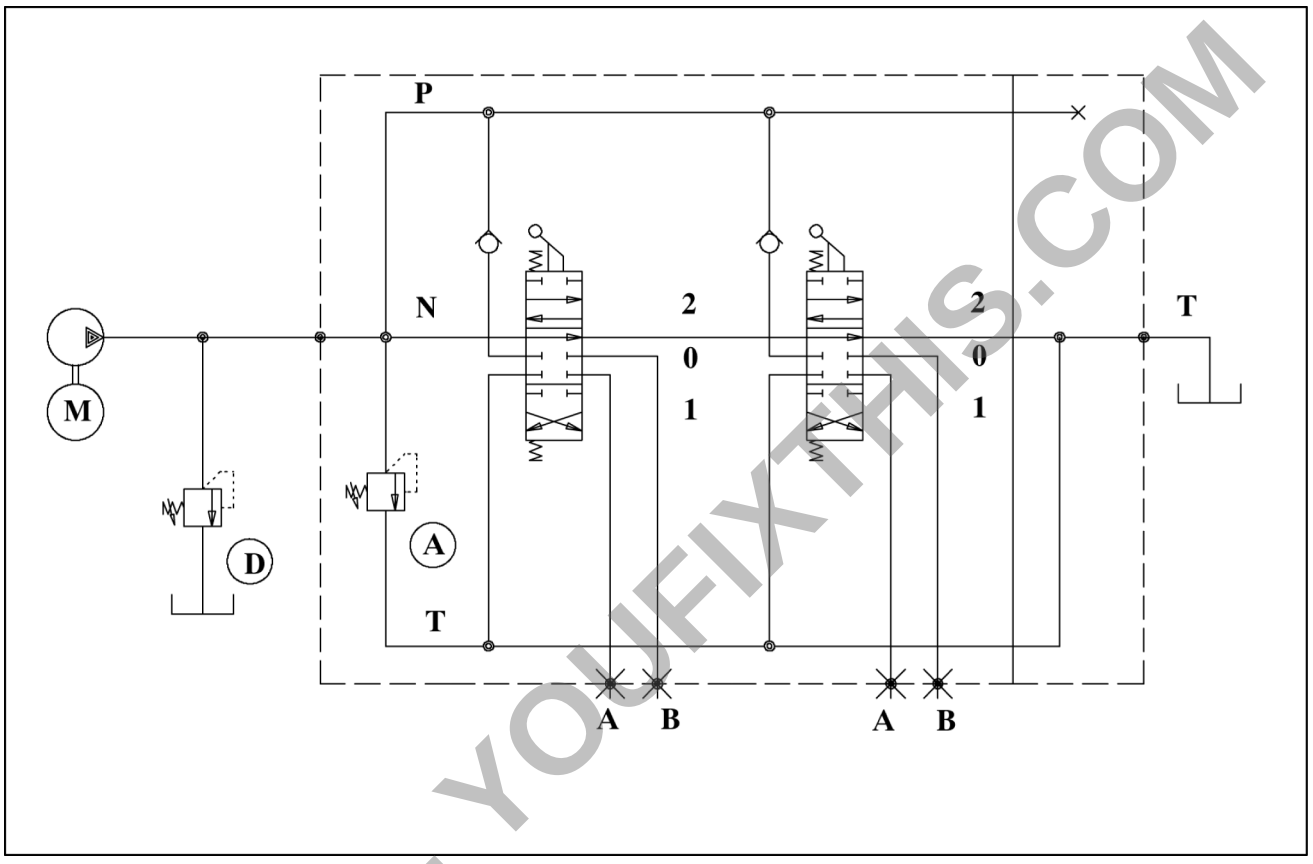
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Remote control valve - Hydraulic schema

TD65F	LA
TD75F	LA
TD85F	LA

Schematic Drawing

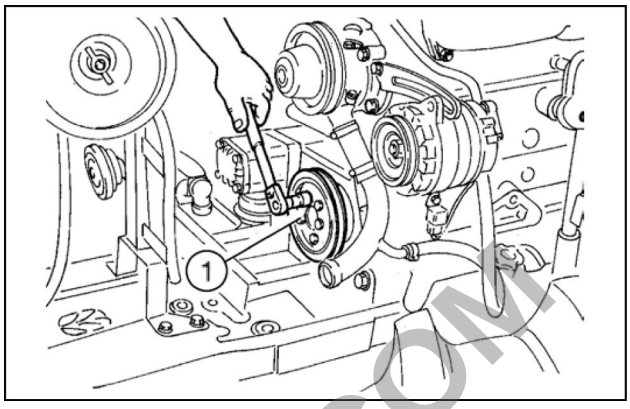


LAIL11FT0856F0A 1

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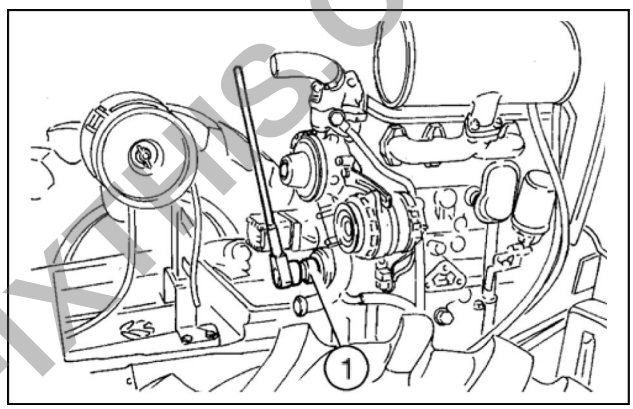
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18. Loosen the retention bolts **(1)** and remove the pulley from the crankshaft.



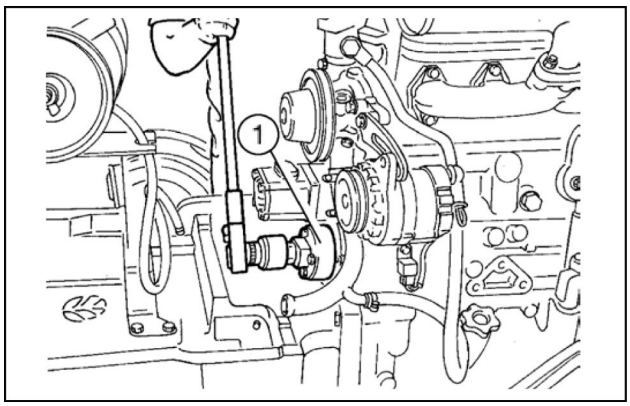
LAIL11TL1237A0A 15

19. Straighten the projection on the back-up washer, securing the crankshaft against rotation and loosen the nut **(1)**.



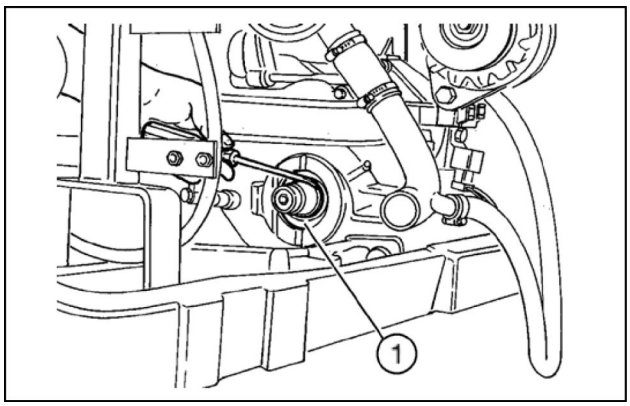
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20. Remove the pulley hub from the crankshaft with tool **380000226 (1)** and extract the woodruff key.



LAIL11TL1239A0A 17

21. Remove the oil seal from its seat.

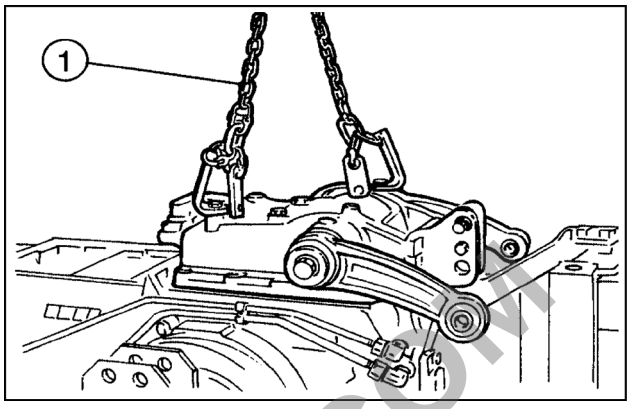


LAIL11TL1240A0A 18

Next operation:
Installation of the front crankshaft retainer: see the procedures in **Crankshaft oil seal Front seal - Install (10.103)**.

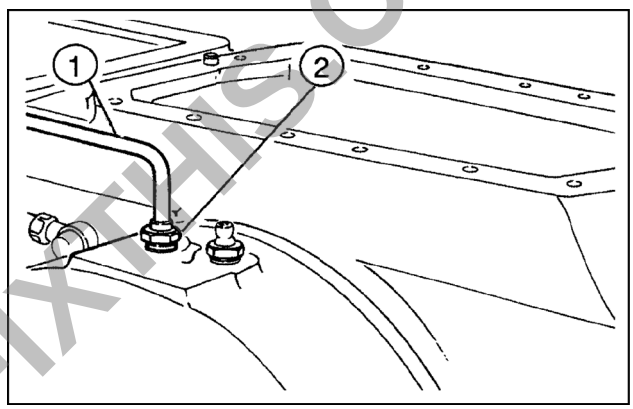
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51. Loosen the fixing bolts and use hook 291517 **(1)** to remove the hydraulic lift.



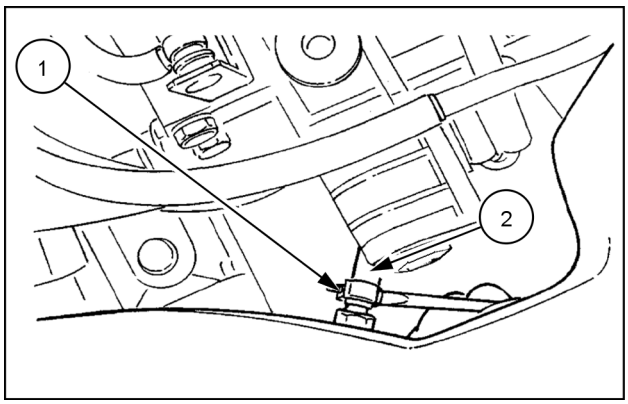
LAIL11TL0596A0A 44

52. Loosen the nut **(2)** and remove the brake tube **(1)**; do this on the right/left-hand sides.



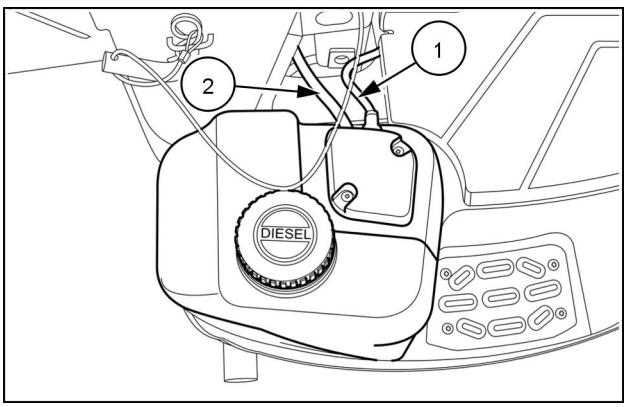
LAIL11TL0597A0A 45

53. Loosen the clamp **(1)** and remove the injection pump feed pipe **(2)**.



LAIL11TL0598A0A 46

54. Disconnect the electrical connections **(1)** and fuel return pipe **(2)** located on the fuel level sensor and remove the vent pipe.



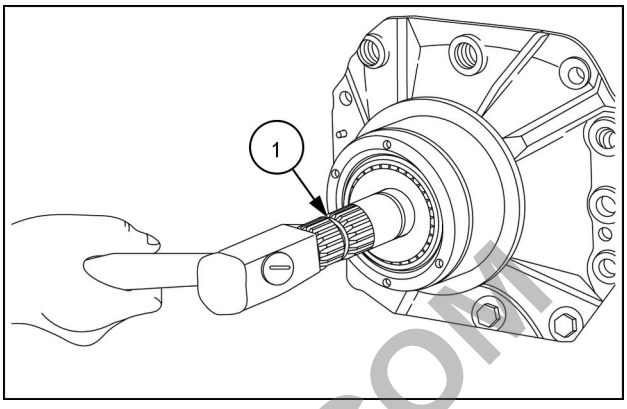
BRAG12TRALL0359 47

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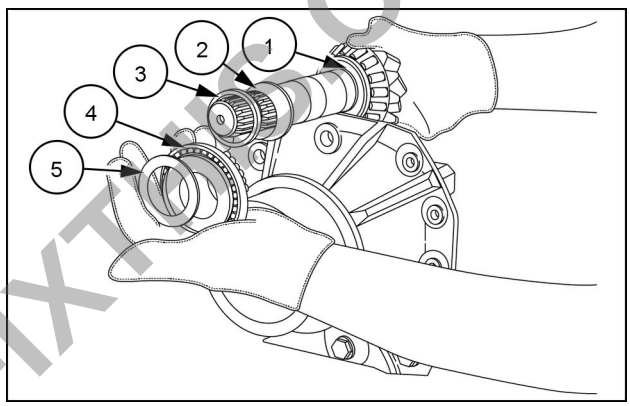
10. Tap the shaft with a soft hammer to remove the pinion **(1)**.

NOTE: *Take care not to drop the pinion.*



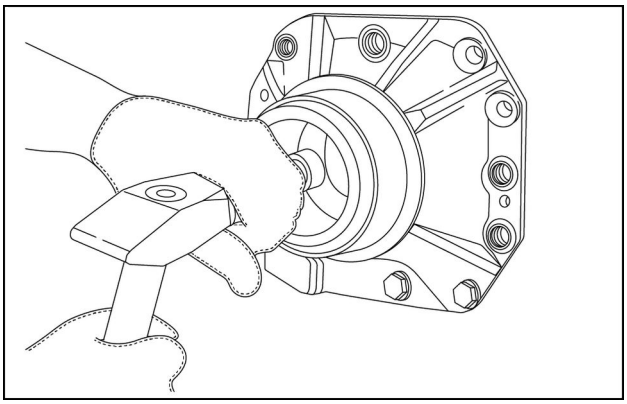
CUIL16TR00519AA 8

11. Collect the pinion preload adjustment shim **(1)** and **(3)**, the bevel pinion bearing spacer **(2)**, the cone bearing **(4)** and the washer **(5)**.



CUIL16TR00520AA 9

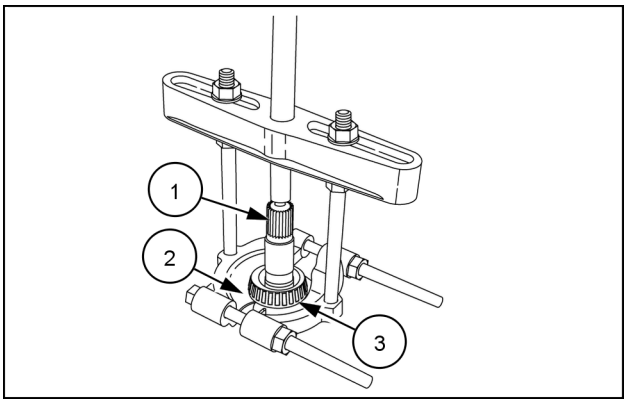
12. Remove the bearing cups using a driver and a hammer.



CUIL16TR00521AA 10

13. To remove the bearing cone **(3)** of the pinion **(1)**, use a standard extractor.
14. Collect the cone bearing **(3)** and the underlying bevel pinion bearing spacer **(2)**.

NOTE: *Check all pinion components for wear and the ring nut and the bevel pinion bearing spacer must be replaced when reassembling the unit.*



CUIL16TR00522AA 11

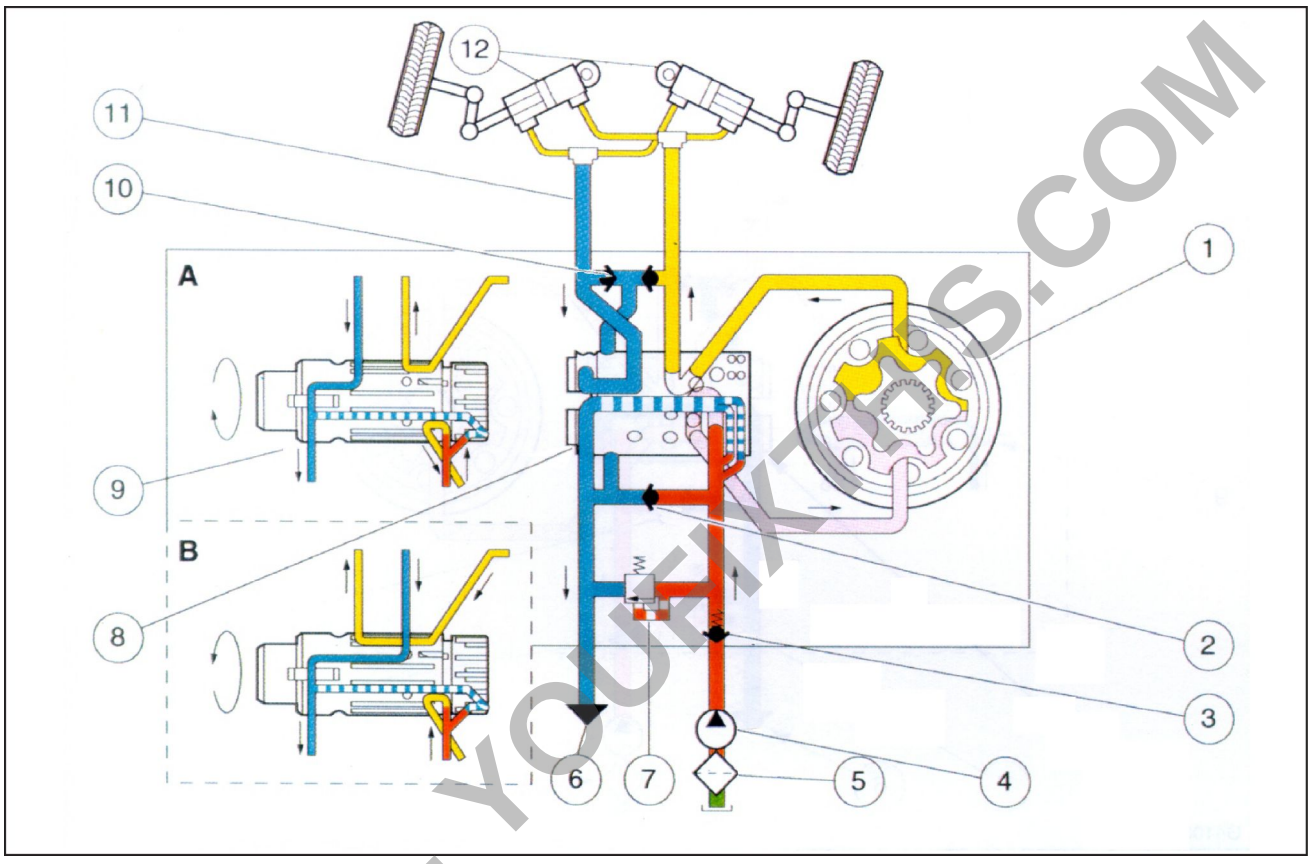
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Hydraulic control components - Functional diagram

TD65F	LA
TD75F	LA
TD85F	LA

Schematic diagram of the steering operation - Steering activated:



LAIL11TL1012F0A 1

Suction oil
Supplying the steering motor
Return oil
Pressurised oil (up to **170 bar**)
Measured oil to the steering piston

Turning to the right

By turning the wheel to the right, the movement of the control valve spool aligns a series of grooves in the sleeve. When turning to the right, the oil flows through the sleeve along a groove in the valve spool into a passage in the steering motor housing and is taken to the measuring unit, Fig. **1**.

The measuring unit is activated by the rotor drive shaft and sends the oil along another series of passages in the spool and the sleeve, then into the steering cylinder. The return oil from the other end of the cylinder is sent through the spool and the valve sleeve to a return passage in the housing.

When turning the steering wheel to the left, the oil flows along the sleeve in a manner similar to that described when turning to the right.

Manual Operation

In the event of a failure in the steering pump, or loss of oil pressure, the steering system can be put to work manually. Turning the tractor steering wheel activates the measuring unit which forces the oil into the steering cylinder.

On the suction end of the measuring unit, the return oil flows from the cylinder and is aspirated through the safety valve to feed the measuring unit.

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7. Keep switch **(19)** in position 2, with the refrigerant heater in cylinder **(31)** on, and heat the refrigerant for approx. **10 - 15 min** to facilitate transfer from the cylinder to the air conditioning system on the tractor.
8. According to the refrigerant type, rotate the outer casing **(30)** so that the graduated scale and the pressure values correspond with the pressure reading on gauge **(2)** .
9. Move the external ring **(26)** along the cylinder glass to mark the quantity of refrigerant to be charged.
10. Open cock **(22)** and charge from the high pressure side.
11. Open cock **(3)** , charge approx. **300 g** of refrigerant, close cock **(3)** and check for leaks.
12. If there are no leaks, continue charging up to the prescribed quantity.
13. On completion of charging, turn switch **(19)** back to position ”0”, close cocks **(3)** and **(22)** , disconnect pipes **(17)** and **(15)** , and replace the caps on the service valves.

Carry out functional tests with the system set to maximum performance levels.

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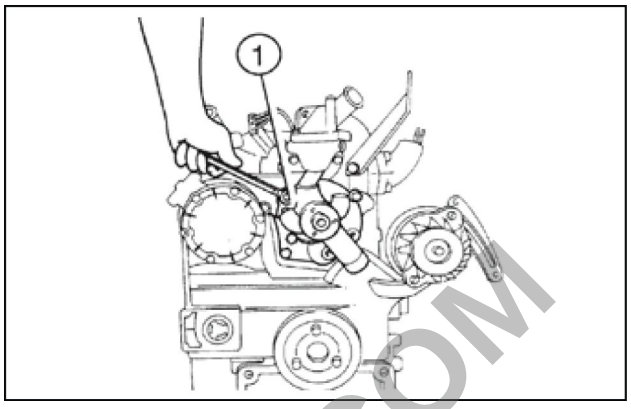
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[25.100] Powered front axle 25.1
[25.102] Front bevel gear set and differential 25.2
[25.108] Final drive hub, steering knuckles, and shafts 25.3
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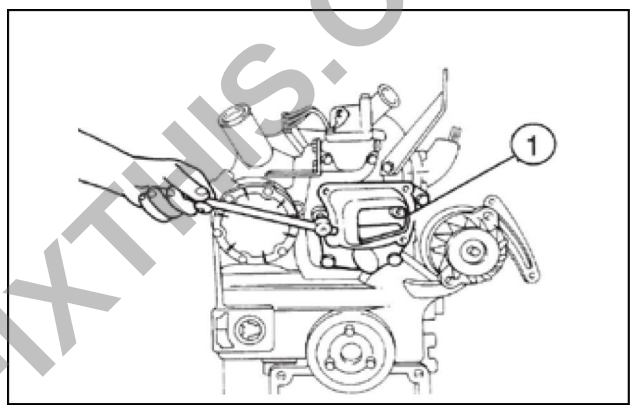
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11. Unscrew the coolant pump retaining bolts **(1)** and remove the pump.



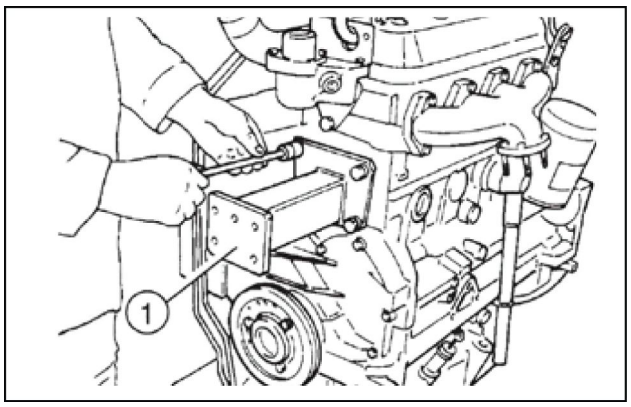
LAIL11TL1160A0A 8

12. Unscrew the pump support bolts **(1)** and the silencer support bolt. Remove the two supports.



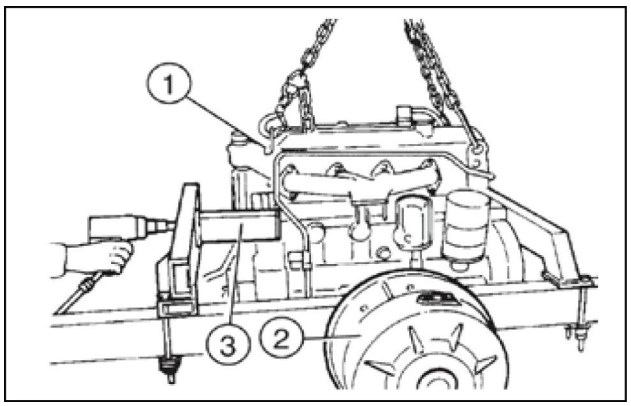
LAIL11TL1161A0A 9

13. Fit mounting bracket **(1)** of the set **380000804** permit attachment of the engine to the rotary stand **380000301**.



LAIL11TL1162A0A 10

14. Fit an eyebolt (**1)** on the front of the engine in place of the silencer support.
15. Raise the engine from the wooden platform and move it to the rotary stand **380000301 (2)** . Secure it to the stand by means of the bracket **(3)** of the set **380000804**.



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Engine cooling system - Dynamic description

TD65F	LA
TD75F	LA
TD85F	LA

The function of the water pump mounted at the front of the engine, is to maintain a continuous flow of water around the cooling system. This is essential to ensure the correct engine temperature and performance during vehicle operation.

The pump is driven by a “V” belt from the crankshaft pulley when the engine is running.

The cooling system for the new generation of engines, is of recirculating by-pass type with full length water-jackets for the bottom tank of the radiator by the water pump, which passes the coolant to the cylinder block. This coolant then flows through cored passages to cool the cylinder walls. Passages in the cylinder head gasket allow coolant to flow from the cylinder block, into the cylinder head cored passages also conduct the coolant to the fuel injector nozzle locations before re-entering the water pump below the thermostat.

The thermostat is located at the top of the water pump body, and controls the water flow as required by changes in temperature.

NOTE: *A faulty thermostat may cause the engine to operate at too high (hot) or low (cold) a temperature. If not replaced this could result in a damaged engine or impaired engine performance.*

When the thermostat is closed a recirculating by-pass is provided to allow the coolant to recirculate from the head to the block to effort a faster warm-up.

Once the engine has reached its normal operating temperature, the thermostat will open and allow water to be drawn through the radiator by the pump action. Cooled water then returns to the engine system. Cooling occurs as the coolant passes down through the radiator cores, which are exposed to the air as it is drawn through the radiator by the fan.

NOTE: *Do not operate the engine without a thermostat. The cooling system incorporates a drain plug, on the left hand side of the cylinder block. The cap on the radiator is a system pressure cap and should not be removed unless refilling the system from empty.*

The engine cooling fan is mounted on a pump pulley which is belt driven from the crankshaft.

Coolant

Clean all of the parts thoroughly before proceeding with repair operations.

The cooling system is filled with a permanent coolant mixture consisting of water and anti-freeze **NEW HOLLAND AMBRA AGRIFLU**(ideally **40 %**, may also be **50 %** in volume). This mixture prevents freezing below the temperatures indicated in the table:

This mixture also has anti-oxidizing, anti-corrosion, anti-foam, and anti-sediment properties to ensure long-term protection of the cooling system.

The same mixture can be used in the system for up to 2 years or **1600 h** of use, whichever comes first, after which the mixture must be changed.

Temperature	% by volume of NEW HOLLAND AMBRA AGRIFLU
-8 °C (**17.60 °F**)	**20 %**
-15 °C (**5.00 °F**)	**30 %**
-25 °C (**-13.00 °F**)	**40 %**
-35 °C (**-31.00 °F**)	**50 %**

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Clutch mechanical release control - 100

Clutch mechanical release control - Height adjust (*) 3

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10. Conical pinion shaft

NOTE: *When installing, apply anaerobic sealant (* ***LOCTITE® 515™****) to seal the surfaces* ***(X)*** *as indicated on page. 24, chapter 4*

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Creeper - Disassemble

TD65F	LA
TD75F	LA
TD85F	LA

Clutch box - supplementary inverter and reducer

DISASSEMBLY

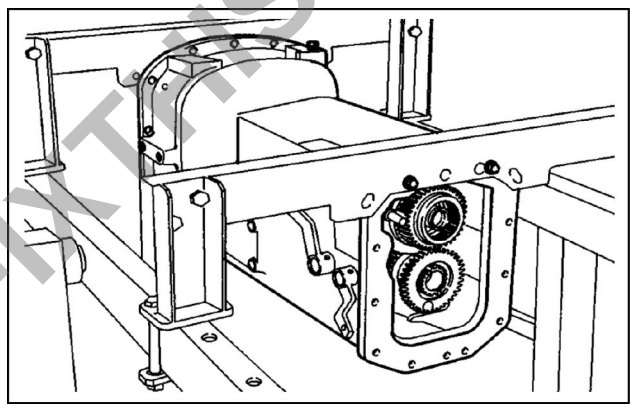
⚠ WARNING

Avoid injury!
Handle all parts carefully. Do not place your hands or fingers between parts. Use Personal Protective Equipment (PPE) as indicated in this manual, including protective goggles, gloves, and safety footwear.
Failure to comply could result in death or serious injury.

W0208A

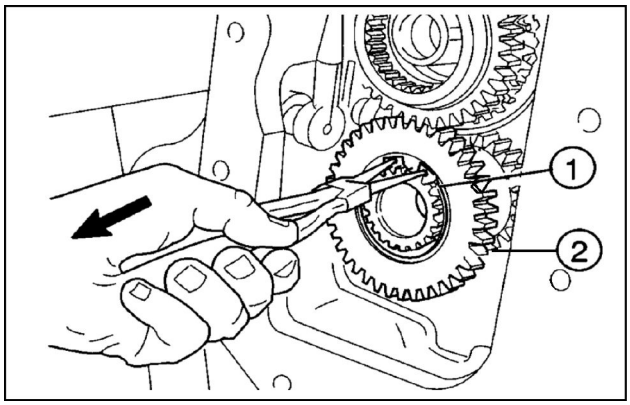
In order to be able to work on the supplementary inverter-reducer group, you will have to remove the platform following the instructions described in section **Mechanical transmission - Remove (21.114)** and remove the clutch box, then proceed as follows.

1. Place the box on the rotating trestle 290090 using supports 293971 and 293972.



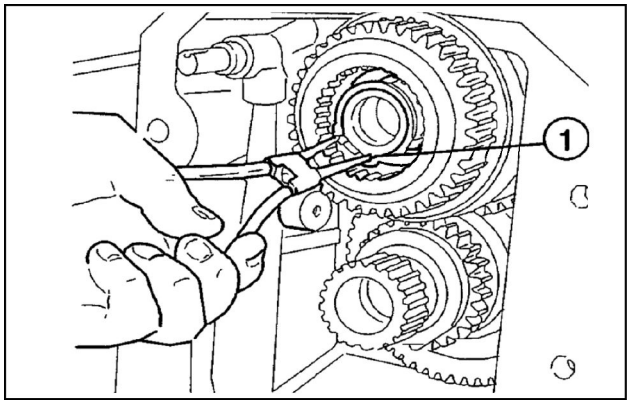
LAIL11TL0446A0A 1

2. Remove the lock ring **(1)** and the gear **(2)**.



LAIL11TL0447A0A 2

3. Remove the lock ring **(1)**.



LAIL11TL0448A0A 3

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Drive shaft - General specification

TD65F	LA
TD75F	LA
TD85F	LA

Front wheel drive shaft

Front drive liner adjustment	
Thickness of front drive liner skirt	**2.2 - 2.5 - 2.8 - 3 - 3.3 - 3.7 - 4 - 4.3 mm (0.0866 - 0.0984 - 0.1102 - 0.1181 - 0.1299 - 0.1457 - 0.1575 - 0.1693 in)**

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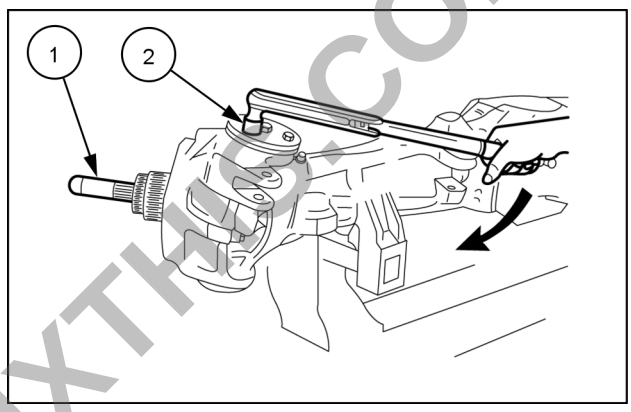
Steering knuckle and king pin - Adjust

TD65F Without cab, 12x12	LA
TD65F Without cab, 20x12	LA
TD75F Without cab, 12x12	LA
TD75F Without cab, 20x12	LA
TD85F Without cab, 12x12	LA
TD85F Without cab, 20x12	LA

Adjusting the steering casing

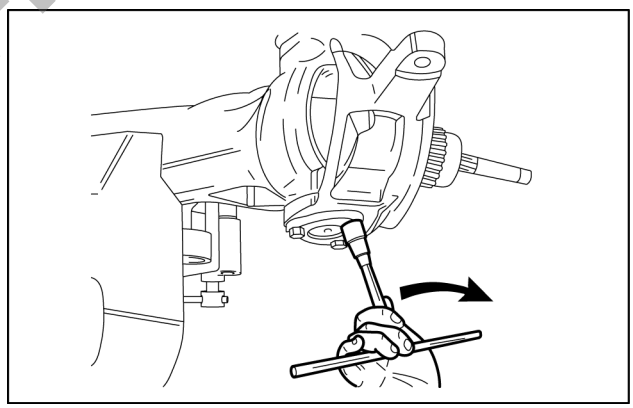
ATTENTION: *Handle all parts very carefully. Do not put hands or fingers between two parts. Always use the recommended safety clothing, including protective goggles, gloves, and shoes.*

Put the front drive on a stand for service 293460 and proceed as follows.



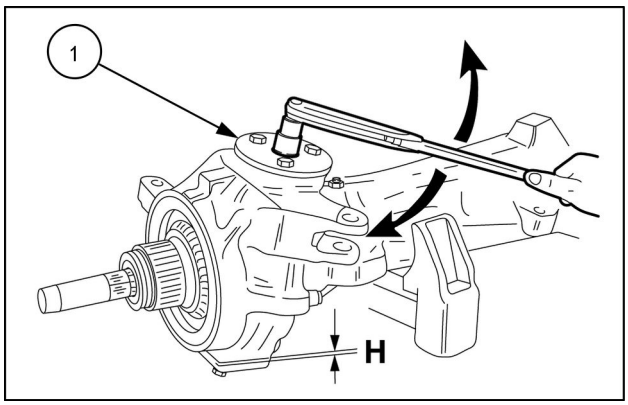
LAIL11TL0078A0A 1

1. Apply grease **NEW HOLLAND AMBRA GR 75 MD** on the outer track of the bushing and fit the upper pin without the adjustment shims using the **380000235 (2)** tool. Tighten the mounting screws to a torque of **113 N·m** (**83.3 lb ft**).
2. Fit the lower pin without adjustment shims and lubricate the three mounting bolts with engine oil.



LAIL11TL0079A0A 2

3. Gradually tighten the lower screws in sequence, turning the casing to allow excess grease to drain out.
4. Using a torque wrench and the **380000235 (1)** tool, check that the torque needed to rotate the casing is **15 - 25 N·m** (**11.1 - 18.4 lb ft**), not taking the initial peak torque into consideration. If the value is different, make an adjustment using the screws on the pin's lower flange.
5. Measure the distance (H) between the bottom flange of the pin and the casing, in relation to the three bolts.



LAIL11TL0080A0A 3

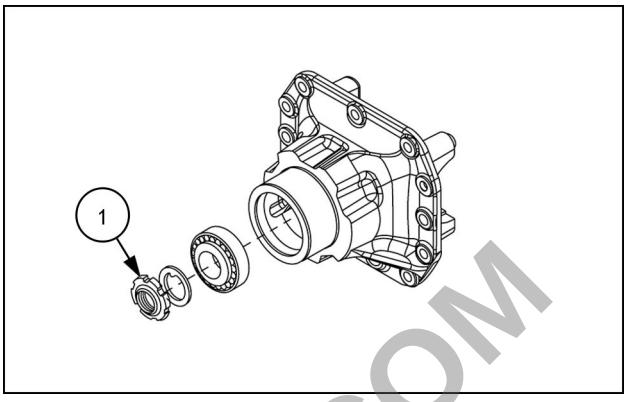
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16. The adjustment is carried out by increasing the castle nut **(1)** torque gradually, being careful not to exceed.

NOTE: *All preloadings must be measured without the seal rings.*

17. Once the requested preloading value is achieved, Lock the ring **(1)**, using a hammer and a chisel.



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Powered rear axle - Torque

TD65F	LA
TD75F	LA
TD85F	LA

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Rear mechanical control - Torque (*) 4

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Remote control valve - Dynamic description

TD65F	LA
TD75F	LA
TD85F	LA

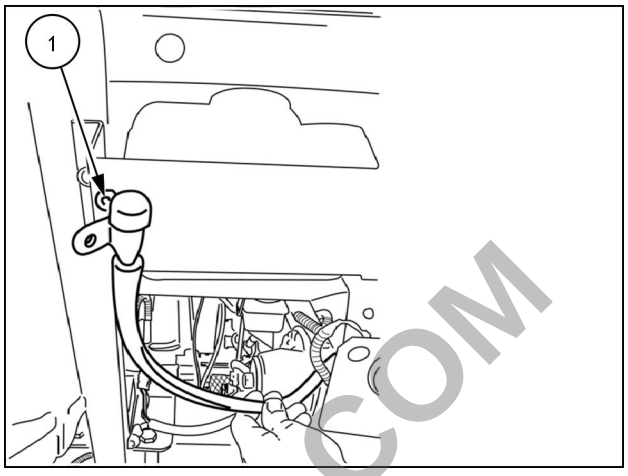
Operation of undulation control

To select this mode, push the lever (located in the cab) fully forwards. The control valve spool **(2)** in **Remote control valve - Functional diagram (35.204)** will move and the detent balls **(26)** in **Remote control valve - Functional diagram (35.204)** will insert into the groove **(32)** in **Remote control valve - Functional diagram (35.204)** where they will be kept in position by the support and the spring **(24)** in **Remote control valve - Functional diagram (35.204)**. In this position, the spool directs the oil to orifices A and B and exhaust gallery T. Do not apply pressure to the orifices. Thus, the only force acting on the coupled implement is that created by its own weight and the hydraulic lift may be activated. Automatic release of the detent does not occur during undulation control since there is no pressure inside the auxiliary control valve.

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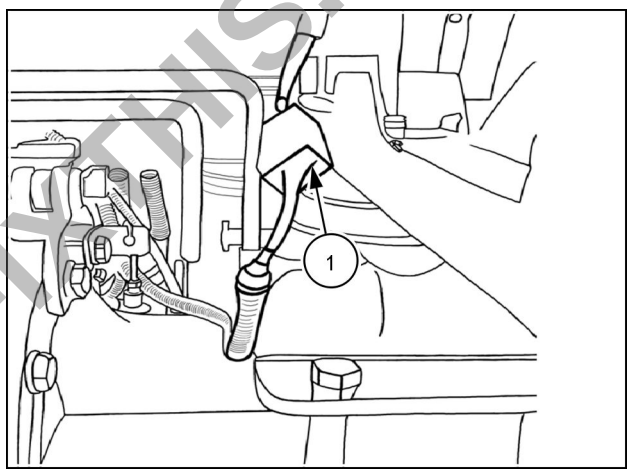
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10. Undo the bolt **(1)** and disconnect the breather pipe connection.



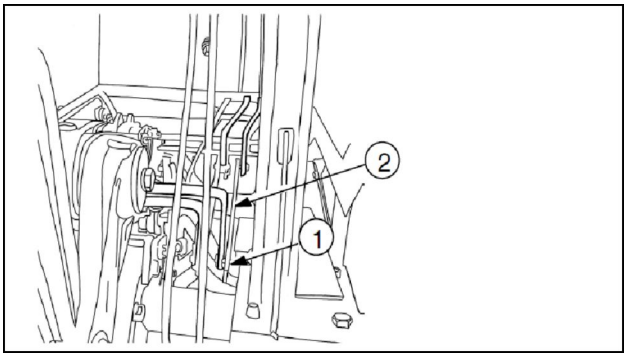
BRAG12TRALL0198 10

11. Remove the electric socket **(1)** .



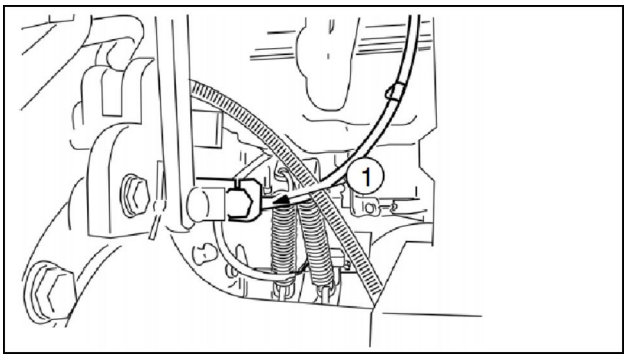
BRAG12TRALL0199 11

12. Extract the spring clips **(1)** and detach the two lift levers tie-rods **(2)**.



BRAG12TRALL0200 12

13. Detach the tie--rod **(1)** on the LIFT-O-MATIC.



BRAG12TRALL0201 13

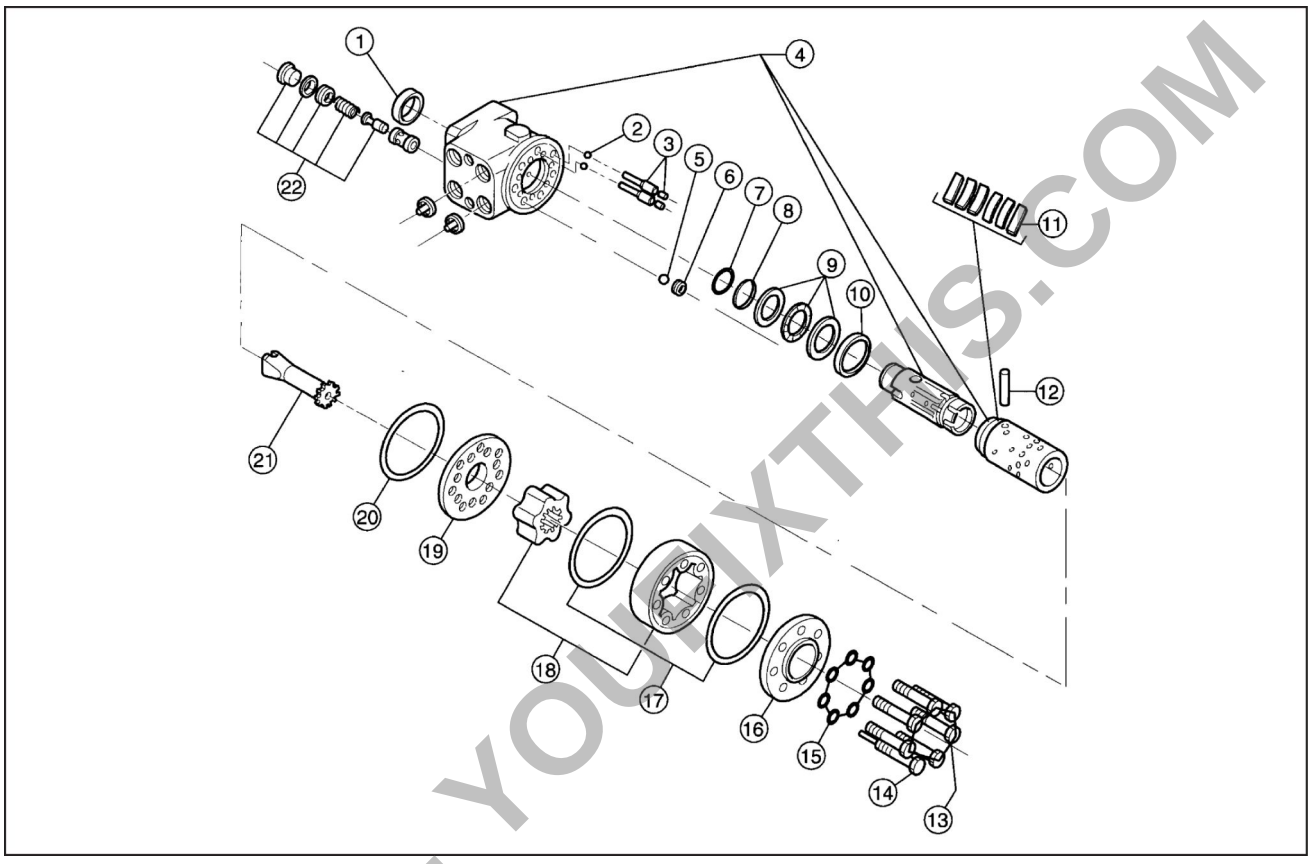
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Power steering control valve - Exploded view

TD65F	LA
TD75F	LA
TD85F	LA

Hydrostatic steering control valve components



LAIL11TL1005F0A 1

1. Dust cover ring.
2. Reflow valve balls.
3. Reflow valve pins.
4. Body, rotary valve and valve sleeve.
5. Retention valve ball.
6. Retention valve threaded plug.
7. O-ring seal.
8. O-ring support ring (7). **(7)**
9. Thrust bearing components.
10. Retention ring for springs. **(11)**
11. Springs to return the sleeve to the neutral position.
12. Rotor control shaft – sleeve lock pin.
13. Cover fixing bolts.
14. Retention valve bushing bolt.
15. Washers.
16. Cover.
17. O-ring.
18. Rotor and rotor fixed ring.
19. Thrust plate.
20. O-ring.
21. Rotor drive shaft.
22. Pressure relief valve complete with spring.

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6. Continue the operation until the circular sector of the humidity indicator **(15)** turns green. If after **15 min** the circular sector of indicator **(15)** still has not turned green, replace the filter **(3)** as described on group **Air conditioning - Adjust (50.200)**.

NOTE: *The circular sector of the humidity indicator **(15)** must remain green throughout the recycling operation.*
If the colour of the sector tends to vary between yellow and green, or turns completely yellow, , this means that the filter is saturated with moisture and therefore must be replaced.

7. On completion of the decontamination operation, close the yellow cock (**(18)** –REF) and continue to recover the refrigerant.The compressor will stop automatically when .the pressure gauge **(2)** shows a reading of – **0.3 bar** (**4.35 psi**).

8. Close the cock (**(6)** –LOW), the two cocks on the ends of the yellow **(16)** and blue **(11)** service pipes, disconnect pipes **(16)** and **(11)** and switch off the station, turning switch **(5)** to position ”0”.

Discharge of recovered oil

The presence of contaminated recovered oil can be seen in the distillation cylinder (4). The recovered oil must always bee discharged and disposed of according to local regulations.

Proceed as follows:

9. Slowly open the yellow cock **(7)** and discharge the recovered oil in the graduated container.

10. If no refrigerant leaks, whether major or minor, have ever been detected in the system, on recharging, replace the contaminated oil with same quantity of new oil (see page 26).

Transfer of decontaminated refrigerant from cylinder (10) to an external cylinder

If for any reason the decontaminated refrigerant is not to be put back into the air conditioning system immediately, for reasons of safety it must be transferred from cylinder **(19)** to a homologated refillable gas container.

Proceed as follows:

11. Check that all the cocks are closed with the exception of cock **(9)** and that the station is switched off. Check that the container (cylinder) is large enough to contain all the refrigerant to be transferred without exceeding the permitted safety level.

12. Connect the end of the yellow service pipe **(16)** without the cock to the free connector on the left– hand side of the pressure gauge manifold, and connect the other end (with the cock) to the red connector of the external cylinder.

13. Set switch **(5)** to position ”2” HEATING CYLINDER to switch on the refrigerant heater fitted to the cylinder **(19)** so as to facilitate the transfer of the refrigerant from the cylinder to the external cylinder.

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Alternator - Preliminary test

TD65F	LA
TD75F	LA
TD85F	LA

Preliminary tests

These tests can be carried out without removing any part of the charge circuit from the tractor. The test checks:

1. Connections for the alternator wiring harness.
2. Alternator charging current and controlled voltage.
3. Low voltage in the charging circuit.
4. Maximum alternator output.

The following equipment is needed to perform these tests:

Moving coil voltmeter of **0 - 30 V**.

Moving coil voltmeter of **0 - 30 V**.

Millivoltmeter of **0 - 1 V**.

Moving coil amp meter of **0 - 110 V**.

Variable load resistance of **1.5 Ω**, **110 A**.

NOTE: *The majority of current test devices combine various test functions (multimeters). If using these items, following the manufacturer's instructions.*

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Battery - 302

TD65F Without cab, 12x12, TD65F Without cab, 20x12, TD65F Without cab, 12x12, Semi Knock-Down Argentina, TD65F Without cab, 20x12, Semi Knock-Down Argentina, TD75F Without cab, 12x12 , TD75F Without cab, 20x12, TD75F Without cab, 12x12, Semi Knock-Down Argentina, TD75F Without cab, 20x12, Semi Knock-Down Argentina, TD85F Without cab, 12x12, TD85F Without cab, 20x12, TD85F Without cab, 12x12, Semi Knock-Down Argentina, TD85F Without cab, 20x12, Semi Knock-Down Argentina

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