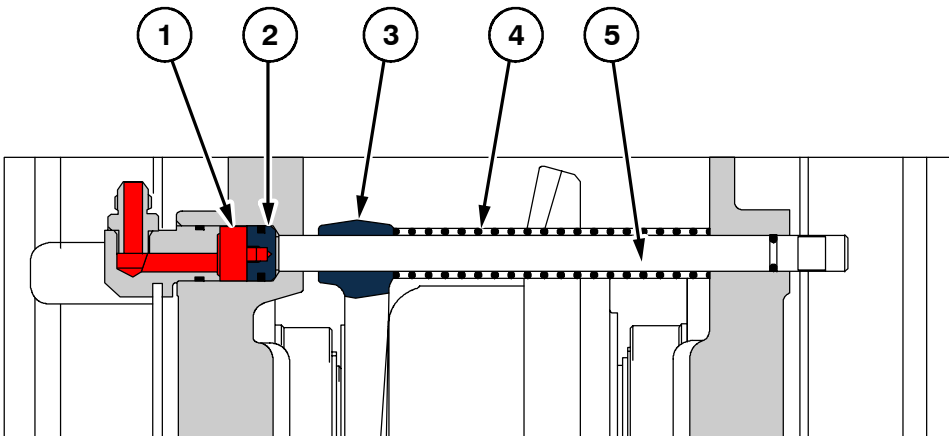


26269

Rear differential lock disengaged



26270

Rear differential lock engaged

- Pressurised oil
- Discharge oil

DESCRIPTION AND OPERATION

The rear transmission transmits drive from the gearbox to the final drives by means of the bevel drive, the teeth on the bevel drive are helical supported on tapered roller bearings. The differential has two planet gears and is fitted with a mechanically or hydraulically operated differential

lock. Operation of this device is described below. The final drives are of the epicyclical type and are operated by the bevel drive output half shafts, the same shafts that control the service brakes.

HYDRAULICALLY CONTROLLED REAR DIFFERENTIAL LOCK

When the differential lock is not being used, it is held in the disengaged position by the pressure of the spring (4) on the fork (3). By operating the relative switch on the control panel, the solenoid valve opens to allow the oil sent from the pump to enter the chamber (1). After acting on the piston (2)

and spring (4), it moves rod (5), fork (3) and the sleeve, thereby engaging the differential lock. When the switch is pressed to disengage the differential lock, spring (4) exerts a force on fork (3), rod (5) and piston (2), which discharges the oil through the corresponding solenoid valve.

BEVEL DRIVE AND DIFFERENTIAL TROUBLESHOOTING

Problems	Possible causes	Solutions
Transmission is noisy while the tractor is moving, even when the gears are in neutral (not due to Final drives).	<ol style="list-style-type: none"> 1. Incorrect adjustment of bevel pinion and / or bevel crown wheel bearings. 2. Incorrect adjustment or wear of sun and side pinions. 3. Excessive clearance between half-shaft keyed groove and sun gears. 	<p>Remove the rear transmission gearbox and correctly adjust the pinion support bearings (page 47) and bevel crown wheel (page 48 and 51).</p> <p>Remove the rear transmission casing, replace the worn parts and correctly adjust the differential gears (page 53).</p> <p>Remove the rear transmission casing and replace the damaged parts.</p>
Transmission is noisy when tractor is under or released from load.	<ol style="list-style-type: none"> 1. Excessive coupling clearance between the teeth of the pinion and of the bevel crown wheel. 2. Internal part faulty. 	<p>Remove the rear transmission casing and correctly adjust the bevel crown wheel and pinion support bearings (page 48 and 51).</p> <p>Remove the rear transmission casing, replace the worn parts and correctly adjust the differential gear clearance (page 53).</p>
Transmission noisy and assembly overheats.	<ol style="list-style-type: none"> 1. Pinion and / or bevel crown wheel support bearing clearance insufficient. 2. Insufficient coupling clearance between the teeth of the pinion and of the bevel crown wheel. 	<p>Remove the rear transmission casing and correctly adjust the bevel crown wheel and pinion support bearings (page 47, 48 and 51).</p> <p>Remove the rear transmission casing and correctly adjust the bevel crown wheel support bearings (page 48 and 51).</p>

FINAL DRIVE FAULT DIAGNOSIS

Problems	Possible causes	Solutions
Final drives are noisy while the tractor is moving, even when the gears are in neutral.	<ol style="list-style-type: none"> 1. Incorrect adjustment of wheel axle shaft support bearings. 2. Internal part faulty. 3. Excessive clearance between wheel axle shaft spline and epicyclic final drives. 	<p>Remove the final drive casing and adjust the bearings (page 61).</p> <p>Remove the final drive housing and replace the damaged parts.</p> <p>Remove the final drive housing and replace the damaged parts.</p>

HYDRAULICALLY CONTROLLED DIFFERENTIAL LOCK TROUBLESHOOTING

Problems	Possible causes	Solutions
The differential lock fails to engage.	<ol style="list-style-type: none"> 1. Transmission oil level low. 2. Clogged oil filter. 3. Hydraulic pump faulty. 4. Faulty differential lock-unlock switch. 5. Lack of power supply to the solenoid valve: connections loose or damaged, contactor faulty. 6. Differential lock control solenoid valve jammed in discharge position. 7. Oil leakage through the seals with consequent pressure drop: cylinder piston or feed pipe seals. 	<p>Top up oil.</p> <p>Replace filter.</p> <p>Overhaul or replace the pump.</p> <p>Replace switch.</p> <p>Check electrical connections and replace defective parts.</p> <p>Overhaul or replace solenoid valve.</p> <p>Replace damaged seals.</p>
Differential lock fails to disengage.	<ol style="list-style-type: none"> 1. Faulty differential lock-unlock switch. 2. Differential lock solenoid valve jammed in delivery position. 3. Disengage spring faulty. 	<p>Replace switch.</p> <p>Overhaul or replace solenoid valve.</p> <p>Remove the hydraulic lift and replace the spring.</p>
With the differential lock engaged, it cannot be disengaged by operating the brake pedals.	<ol style="list-style-type: none"> 1. Differential lock control switch (connected to brake pump) defective. 	<p>Replace switch.</p>

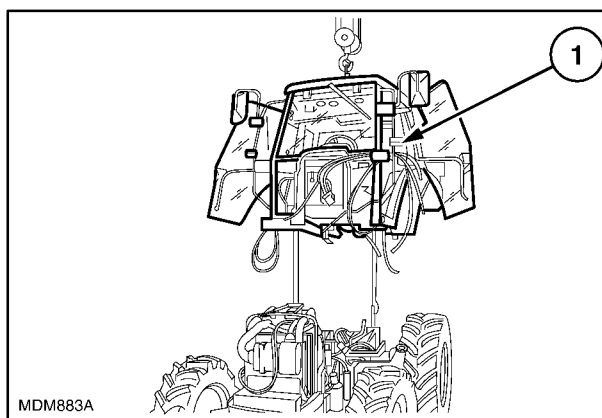
**REAR GEARBOX-TRANSMISSION CASING
R.I.****ATTENTION**

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. Ensure that no-one is in the vicinity of the load to be lifted.

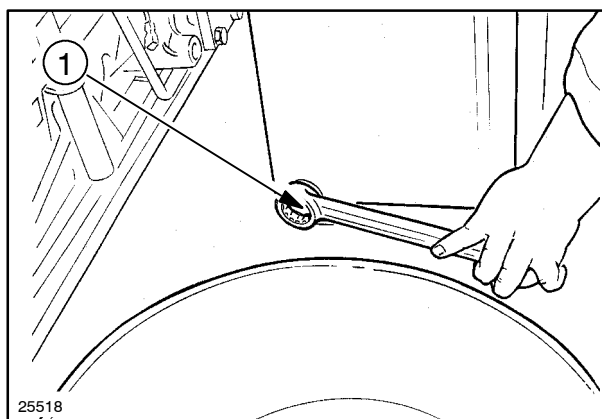
To remove the rear transmission-gearbox casing proceed as follows:

1. Detach the cab (1) as directed in operation **9015010** and put it down on a wooden base.



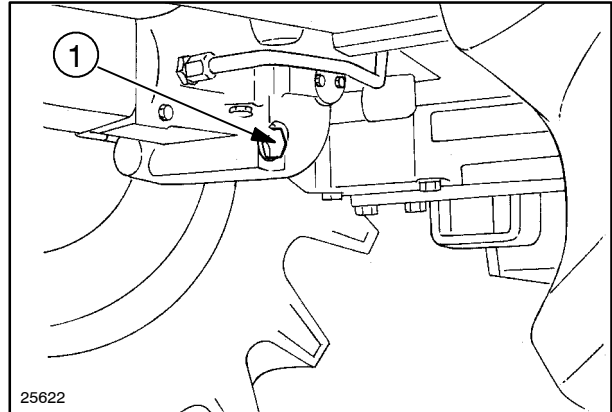
16

2. Remove the plug (1) and drain off the fuel tank into a suitable container (tank capacity is 127 litres).



17

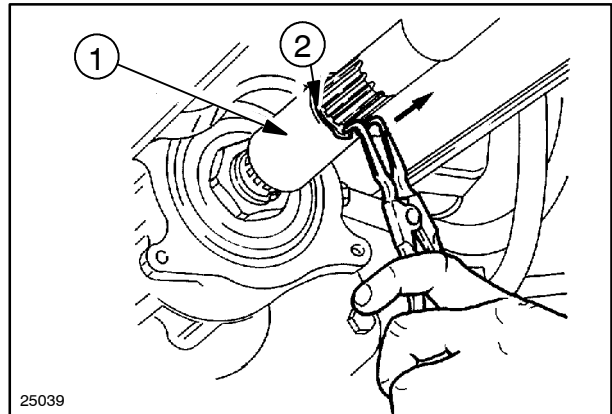
3. Take out the plug (1) and drain oil from the gearbox-transmission casing.



18

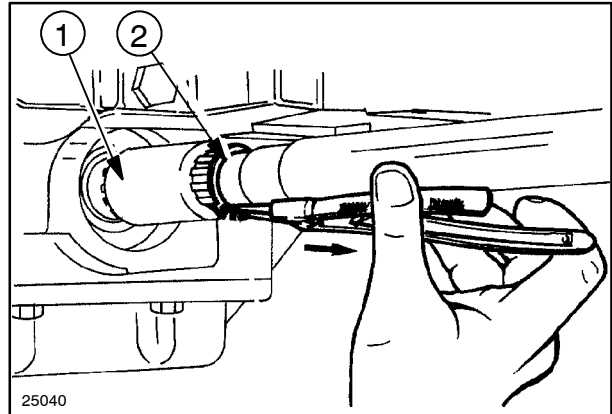
4. Remove the 4WD transmission shaft guard by unscrewing the front, central and rear retaining bolts.

Take off the circlip (2) and extract the sleeve (1) from the front axle pinion.



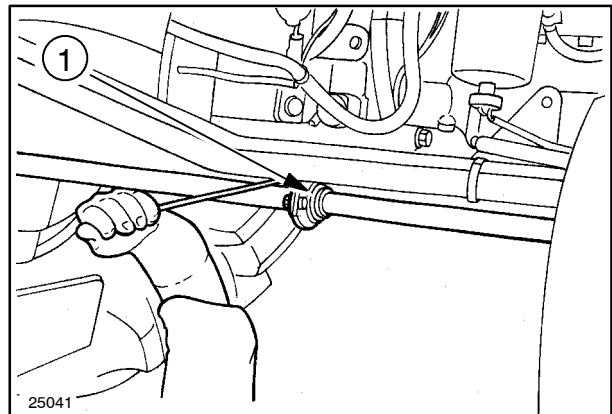
19

5. Take off the circlip (2) and extract the sleeve (1) from the drive.



20

6. Remove the propeller shaft central support (1) retaining bolts and extract the shaft together with the support.



21