

NEW HOLLAND

REPAIR MANUAL

TD80D
TD95D
Tractors

NEW HOLLAND AGRICULTURE

SERVICE

87658938

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REPAIR MANUAL
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The following pages are the collation of the contents pages from each section and chapter of the TD80D, TD95D Tractor Repair manual. Complete Repair part # 87658938.

The sections used through out all New Holland product Repair manuals may not be used for each product. Each Repair manual will be made up of one or several books. Each book will be labeled as to which sections are in the overall Repair manual and which sections are in each book.

The sections listed above are the sections utilized for the TD80D, TD95D Tractors.

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BOOK 1 - 87658939

Chapter 1 - General

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SECTION 10 - ENGINE

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Chapter 1 - Engine

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TROUBLESHOOTING

Refer to Figure 2 for component identification.

Problem	Possible Cause	Corrective Action
Oil leaking from hydrostatic steering unit:	O-ring seal defective (7).	Renew the seal and the stop ring using special tool **380000836**.
a. Control side.	Screws (13) not sufficiently tight.	Tighten the screws to the prescribed torque (24 - 36 Nm, 17.70 - 26.55 ft.-lbs.).
b. Cover side	Sealing washers (15) or O-rings (17) defective.	Renew the washers and seals.
Steering wheel excessively stiff	Hydraulic pump inefficient.	Repair the pump.
	Check valve (5) held open by foreigh bodies or open due to absence of ball.	Eliminate foreign bodies and clean the filter; put a new ball into the seat (if missing)..
	Pressure relief valve (22) incorrectly set.	Reset the valve.
	Pressure relief valve (22) jammed or held open by foreign bodies.	Eliminate foreign and clean the filter.
	Steering column has become stiff on its bushing due to rusting, seizing, etc.	Eliminate the cause.
Excessive play of steering wheel.	Excessive play between the steering column and the coupling with the rotary valve (4).	Renew the worn parts.
	Excessive play in the coupling between shaft (21) and trim pin (12).	Renew the worn parts.
	Excessive play in the splined coupling between the shaft (21) and the rotor (18).	Renew the worn parts.
	Combination of excessive play as described above.	Renew the most worn parts.
	Leaf springs (11) broken or fatigued.	Renew the springs.
The steering wheel turns normally, but steering is:	Inadequate seal of control cylinder.	Renew the seal.
a. Slow.	Cylinder rod broken.	Replace the damaged part.
b. No steering	Rotor control shaft (21) or pin (12) broken.	Replace the damaged part.
With the engine stopped, the steering wheel can be turned without turning the wheels.	Excessive wear between rotor and fixed ring (18).	Renew the worn parts.
	Check valve damaged.	Renew the control valve.

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SPECIFICATIONS

CHARACTERISTICS	TYPE OF BATTERY
Voltage (V)	12
Cold start amperage (C.C.A)	800
Capacity (Ah)	120
Number of elements	6
Number of plates per element	21
Energy reserve (SAE) (min.)	210
Weight kg (lb)	35 (77)
Earth (ground) terminal	Negative

TROUBLESHOOTING

Discrepancy

1. Internal open circuit.
2. Internal short-circuit.
3. Battery electrolyte leakage.
4. Grid active material separation.
5. Accumulation of sulfate crystals too big to be dispersed.

Probable Causes

1. Component failure inside the elements.
2. Excessive crystal growth which can pierce the spacers and cause short circuits.
3. Excessive overload (bad charging system, high voltage fast charging, high operating temperatures).
4. Battery electrolyte freezing.
   A fully charged battery freezes at -65°C (-85°F). A 50% charged battery freezes between -17°C and -27°C (1.5°F and -16.5°F). A completely flat battery freezes between - 3°C and -11°C (26.5°F and 12°F). Excessively fast charging and boiling caused by gas formation cause the separation of active material from the grids. Separation destroys the battery chemical function.
5. Crystals are formed when batteries are left flat. High temperature and long periods with the battery flat increase this condition. If a battery is left at room temperature for a week it can rarely be charged in the vehicle. Battery recharge requires higher constant voltage. After three weeks the battery will be permanently jeopardized and it will be necessary to follow the procedure described for "very flat batteries".

Fully charged batteries have longer a life. A lead-calcium battery discharges 3% a month. This means that in 16 months it will reach 50% charge. In the tractor, inactive load is approximately 50 mA. To forecast discharge on a vehicle not in use add approximately 8 Ah a week to this value.

It is worth noting that if a battery is weak during engine start-up, it is best to let the battery rest for two minutes. This rest time increases as the temperature decreases.

When two batteries are installed, do not use an old battery with a new one. One battery will always stop before the other one. If the battery has lasted as forecasted, charge both batteries. If one has stopped before the forecasted time due to a defect, then change only the defective battery.

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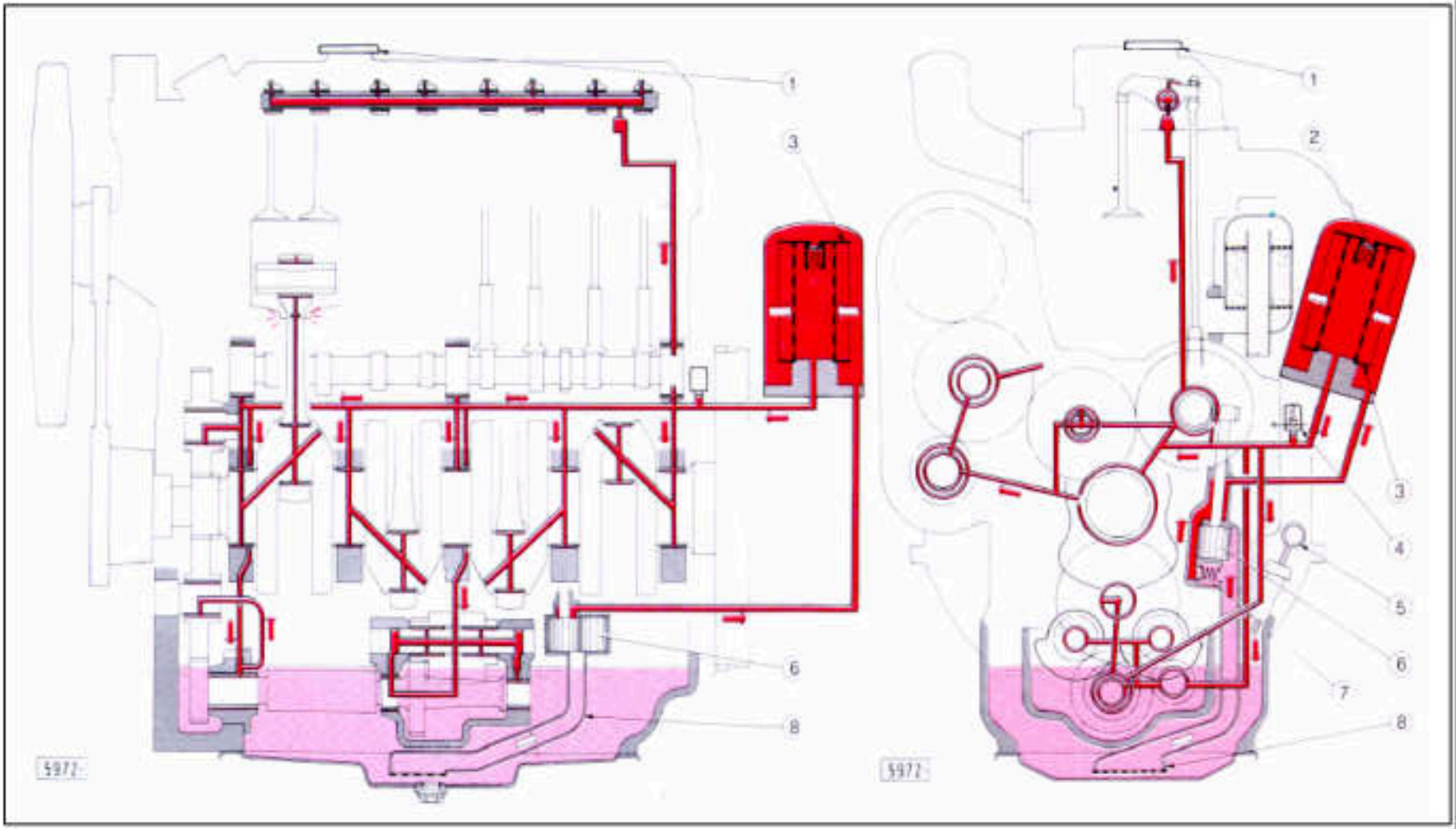
HEATING AND AIR CONDITIONING CIRCUIT

2- Starter switch
5- Fuse box
9- Compressor
11- Battery
12- Starter
13- Alternator
35- Main fuse
38- Cab fuse box
47- Heater
55- Power relay
B- Main and cab harness connector

I- Electrical fans
II- Air conditioning - thermostat
III- Air conditioning pressure switch
IV- Electric fan control switch
V- Air conditioning control switch
VI- Heating control
VII- Air conditioning control switch connection

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SECTIONAL VIEWS



Engine lubrication system (nonturbo engine shown)

1. Filler Cap
2. Safety Valve
3. Filter
4. Low Oil Pressure Warning Light
5. Dipstick
6. Oil Pump
7. Oil Pressure Relief Valve
8. Screen Filter on Supply Line

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OPERATION

Steering Right

When the steering wheel is turned in a clockwise direction, the springs deform, allowing the valve to rotate in relation to the sleeve.

Under these conditions the following occurs:

- The internal passages on parts, which were previously communicating in the neutral phase, become misaligned and the oil outflow is interrupted.
- The alignment with the same number of ducts, that are connected with the compartments on the rotor in the pump suction phase and in the delivery phase of the steering cylinders, allow turning to the right.

Steering Left

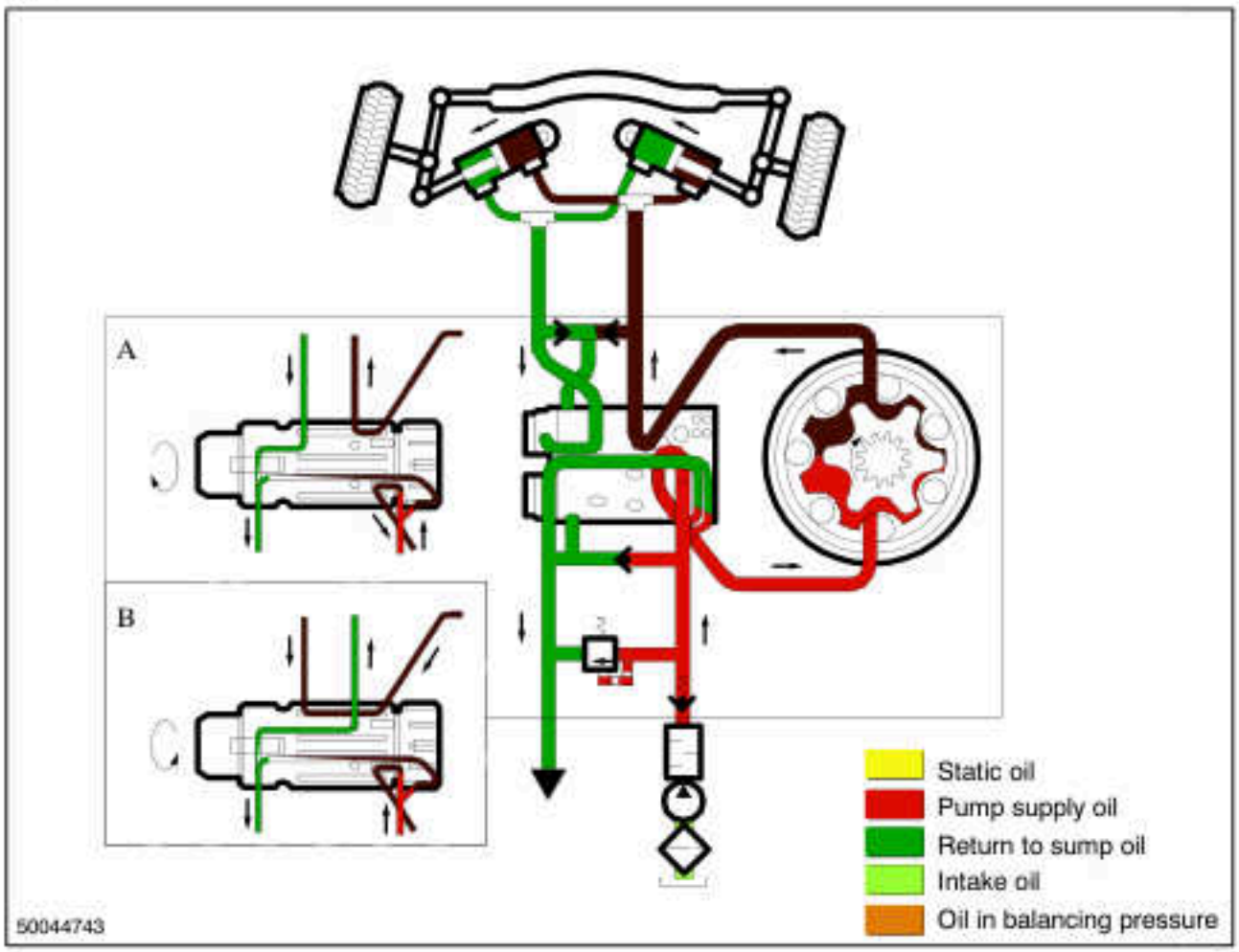
When the steering wheel is turned counterclockwise, the internal grooves on parts and the delivery to the steering cylinder are inverted, allowing turning to the left.

Manual Steering to Right

In the event of power steering pump failure or insufficient oil pressure, turning is possible manually.
When the steering wheel is turned in a clockwise direction, the power steering control valve internal rotor operates as a hand pump, directing the oil to the rod side of the cylinders, allowing manual turning to the right.

Manual Steering to Left

When the steering wheel is turned counterclockwise, the internal power steering control valve rotor operates as a hand pump (as previously described), directing the oil to the cylinder piston side, allowing manual turning to the left.



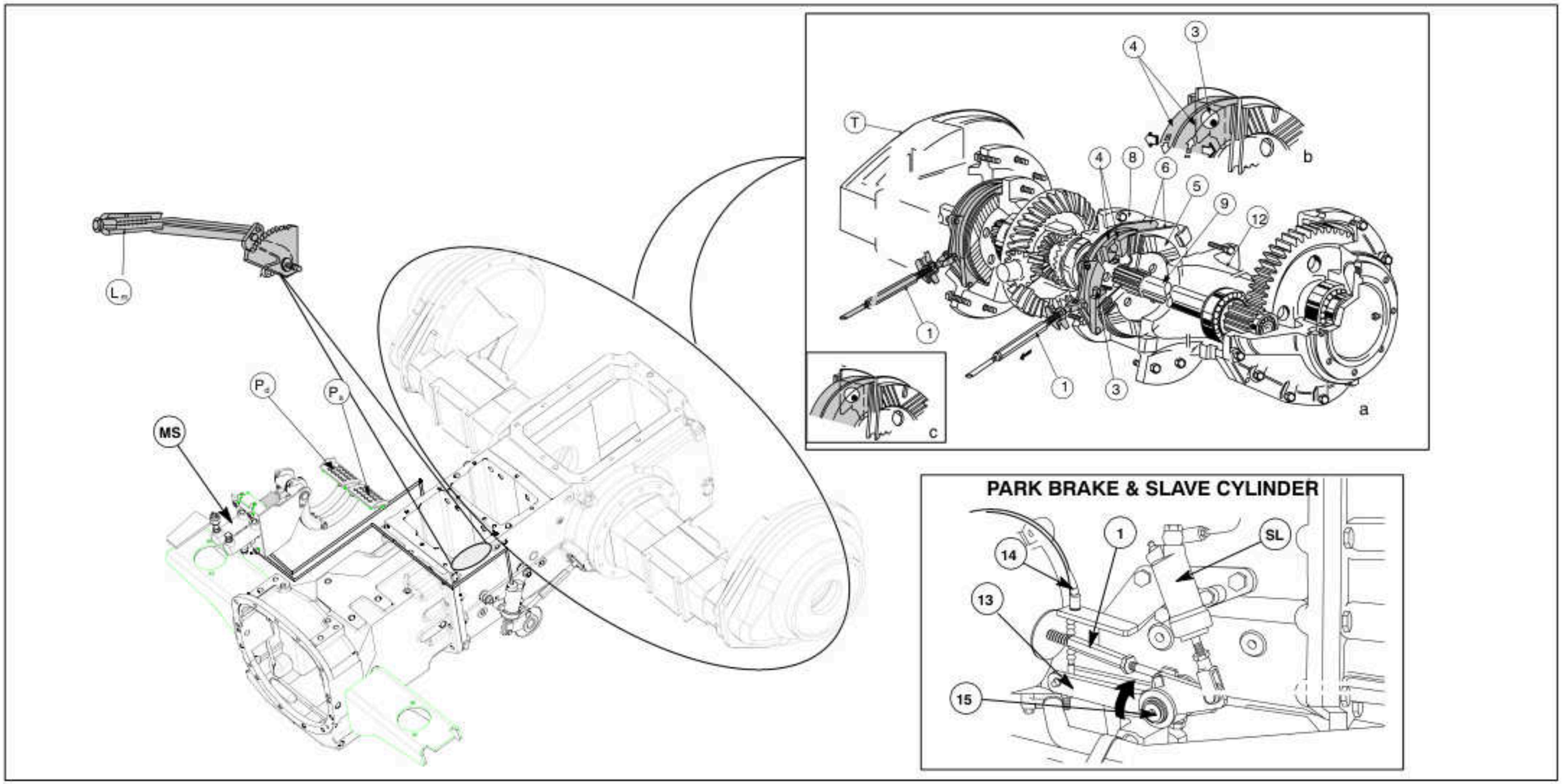
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Hydrostatic Power Steering Oil Flow (Turning) (Models with FWD Shown - Similar on 2WD)

A. Right-hand turn

B. Left-hand turn

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View of service and park brake controls

a. R.H. brake pedal in rest position and L.H. brake applied.
b. Brakes applied.
c. Brakes in rest position.
Lm. Parking brake hand lever.
M. Brake pedal return springs.
Pd. R.H. brake pedal.
SL. Slave cylinder
MS. Master cylinder
T. Parking brake link.
1. Brake links.
3. Actuator ball.
4. Brake actuator.
5. Brakes discs.
6. Back-up discs.
7. Actuator return spring.
8. Differential support.
9. Axle shaft.
12. Final drive housing.
13. Park brake control lever.
14. Park brake control cable.
15. Brake pivoting shaft.

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