



**NEW HOLLAND**



# **TD60D – TD70D – TD80D – TD90D – TD95D MODEL TRACTORS SERVICE MANUAL**

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**S E R V I C E**

## INTRODUCTION

- ◇ *This manual is divided into sections identified by two-figure numbers. Each section has independent page numbering.  
For ease of reference, these sections have the same numbers and names as the Repairs Rate Book sections.*
- ◇ *The different sections can easily be found by consulting the table of contents on the following pages.*
- ◇ *The document number of the manual and the edition/update dates are given at the bottom of each page.*
- ◇ *The information contained in this manual was current on the date printed on each section. As NEW HOLLAND constantly improves its product range, some information may be out of date subsequent to modifications implemented for technical or commercial reasons or to meet legal requirements in different countries.  
In the event of conflicting information, consult the NEW HOLLAND Sales and Service Departments.*

## IMPORTANT WARNINGS

- ◇ *All maintenance and repair work described in this manual must be performed exclusively by NEW HOLLAND service technicians in strict accordance with the instructions given and using any specific tools necessary.*
- ◇ *Anyone who performs the operations described herein without strictly following the instructions is personally responsible for resulting injury or damage to property.*
- ◇ *The Manufacturer and all organisations belonging to the Manufacturer's distribution network, including but not restricted to national, regional or local distributors, will accept no responsibility for personal injury or damage to property caused by abnormal function of parts and/or components not approved by the Manufacturer, including those used for maintenance and/or repair of the product manufactured or marketed by the Manufacturer.  
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# NEW HOLLAND

## Repair Manual - TD Series Tractors

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## GENERAL INSTRUCTIONS

### IMPORTANT NOTICE

All maintenance and repair operations described in this manual should be carried out exclusively by the NEW HOLLAND authorised workshops. All instructions detailed should be carefully observed and special equipment indicated should be used if necessary.

Everyone who carries out service operations described without carefully observing these prescriptions will be directly responsible of deriving damages.

### SHIMMING

At each adjustment, select adjusting shims, measure them individually using a micrometer and then sum up recorded values. Do not rely on measuring the whole shimming set, which may be incorrect, or on rated value indicated for each shim.

### ROTATING SHAFT SEALS

To correctly install rotating shaft seals, observe the following instructions:

- Let the seal soak into the same oil as it will seal for at least half an hour before mounting;
- Thoroughly clean the shaft and ensure that the shaft working surface is not damaged;
- Place the sealing lip towards the fluid. In case of a hydrodynamic lip, consider the shaft rotation direction and orient grooves in order that they deviate the fluid towards the inner side of the seal;
- Coat the sealing lip with a thin layer of lubricant (oil rather than grease) and fill with grease the gap between the sealing lip and the dust lip of double lip seals;
- Insert the seal into its seat and press it down using a flat punch. Do not tap the seal with a hammer or a drift;
- Take care to insert the seal perpendicularly to its seat while you are pressing it. Once the seal is settled, ensure that it contacts the thrust element if required.;
- To prevent damaging the sealing lip against the shaft, place a suitable protection during installation.

### O RINGS

Lubricate the O rings before inserting them into their seats. This will prevent the O rings from rolling over and twine during mounting which will jeopardise sealing.

### SEALERS

Apply one of the following sealers: RTV SILMATE, RHODORSIL CAF 1, or LOCTITE PLASTIC GASKET over the mating surfaces marked with an X.

Before applying the sealer, prepare the surface as follows:

- remove possible scales using a metal brush;
- thoroughly degrease the surfaces using one of the following cleaning agent: trichlorethylene, petrol or a water and soda solution.

### BEARINGS

It is advisable to heat the bearings to 80 to 90°C before mounting them on their shafts and cool them down before inserting them into their seats with external tapping.

### ROLL PINS

When fitting straight roll pins, ensure that the pin notch is oriented in the direction of the effort to stress the pin. Coil roll pins can be installed in any position.

### NOTES FOR SPARE PARTS

Use exclusively **genuine NEW HOLLAND spare parts**, the only ones that guarantee same quality, life, safety as original components as they are the same as mounted in production.

Only **genuine spare parts** can offer this guarantee.

All spare parts orders should be complete with the following data:

- tractor model (commercial name) and frame number;
- engine type and number;
- part number of the ordered part, which can be found on the "Microfiches" or the "Spare Parts Catalogue", which is the base for order processing.

### NOTES FOR EQUIPMENT

Equipment which NEW HOLLAND proposes and shows in this manual are as follows:

- studied and designed expressly for use on NEW HOLLAND tractors;
- necessary to make a reliable repair;
- accurately built and strictly tested to offer efficient and long-lasting working means.

We also remind the Repair Personnel that having these equipment means:

- work in optimal technical conditions;
- obtain best results;
- save time and effort;
- work more safely.

### NOTICES

Wear limits indicated for some details should be intended as advised, but not binding values. The words "front", "rear", "right hand", and "left hand" referred to the different parts should be intended as seen from the operator's seat oriented to the normal sense of movement of the tractor.

### HOW TO MOVE THE TRACTOR WITH THE BATTERY REMOVED

Cables from the external power supply should be connected exclusively to the respective terminals of the tractor positive and negative cables using pliers in good condition which allow proper and steady contact.

Disconnect all services (lights, wind-shield wipers, etc.) before starting the tractor.

If it is necessary to check the tractor electrical system, check it only with the power supply connected. At check end, disconnect all services and switch the power supply off before disconnecting the cables.

## SAFETY RULES

### PAY ATTENTION TO THIS SYMBOL



*This warning symbol points out important messages involving personal safety. Carefully read the safety rules contained herein and follow advised precautions to avoid potential hazards and safeguard your safety and personal integrity. In this manual you will find this symbol together with the following key-words:*



**WARNING** - it gives warning about improper repair operations and deriving potential consequences affecting the service technician's personal safety.

**DANGER** - it gives specific warning about potential dangers for personal safety of the operator or other persons directly or indirectly involved.

## TO PREVENT ACCIDENTS

Most accidents and personal injuries taking place in workshops are due from non-observance of some simple and essential prudential rule and safety precautions. For this reason, IN MOST CASES THEY CAN BE AVOIDED. It suffices to foresee possible causes and act consequently with necessary caution and care.

The possibility that an accident might occur with any type of machines should not be disregarded, no matter how well the machine in question was designed and built.

A wise and careful service technician is the best precautions against accidents.

Careful observance of this only basic precaution would be enough to avoid many severe accidents.

**DANGER:** Never carry out any cleaning, lubrication or maintenance operations when the engine is running.

if they are certified operators to assist in the operation to be carried out.

- ◇ Never operate the machine or use attachments from a place other than sitting at the operator's seat.
- ◇ Never carry out any operation on the machine when the engine is running, except when specifically indicated.
- ◇ Stop the engine and ensure that all pressure is relieved from hydraulic circuits before removing caps, covers, valves, etc.
- ◇ All repair and maintenance operations should be carried out with the greatest care and attention.
- ◇ Service stairs and platforms used in a workshop or in the field should be built in compliance with the safety rules in force.
- ◇ Disconnect the batteries and label all controls to warn that the tractor is being serviced. Block the machine and all equipment which should be raised.
- ◇ Never check or fill fuel tanks and accumulator batteries, nor use starting liquid if you are smoking or near open flames as such fluids are flammable.
- ◇ Brakes are inoperative when they are manually released for maintenance purposes. In such cases, the machine should be kept constantly under control using blocks or similar devices.
- ◇ The fuel filling gun should remain always in contact with the filler neck. Maintain this contact until the fuel stops flowing into the tank to avoid possible sparks due to static electricity buildup.

## SAFETY RULES

### GENERALITIES

- ◇ Carefully follow specified repair and maintenance procedures.
- ◇ Do not wear rings, wristwatches, jewels, unbuttoned or flapping clothing such as ties, torn clothes, scarves, open jackets or shirts with open zips which could get hold into moving parts. We advise to use approved safety clothing such as anti-slipping footwear, gloves, safety goggles, helmets, etc.
- ◇ Never carry out any repair on the machine if someone is sitting on the operator's seat, except

## SECTION 10 - ENGINE

## Chapter 1 - Engine

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| GENERAL SPECIFICATIONS                                                 | 3 cylinders                                          | 4 cylinders                                          |
|------------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|
| <b>Engine type:</b>                                                    |                                                      |                                                      |
| - mod. TD60D normally aspirated – type 8035.05D.939 (BOSCH pump) ..... | see data pages 6-7                                   | -                                                    |
| - mod. TD70D turbocharged – type 8035.25C.939 (BOSCH pump) .....       | see data pages 8-9                                   | -                                                    |
| - mod. TD80D normally aspirated – type 8045.05R.939 (BOSCH pump) ..... | -                                                    | see data pages 10-11                                 |
| - mod. TD90D turbocharged – type 8045.25.939 (BOSCH pump) .....        | -                                                    | see data pages 12-13                                 |
| - mod. TD95D turbocharged – type 8045.25L.939 (BOSCH pump) .....       | -                                                    | see data pages 14-15                                 |
| Cycle .....                                                            | Diesel, 4-stroke                                     |                                                      |
| Fuel injection .....                                                   | Direct                                               |                                                      |
| Number of cylinders in line .....                                      | 3                                                    | 4                                                    |
| Cylinder liners .....                                                  |                                                      | dry force-fitted in cylinder block                   |
| Piston diameter                                                        |                                                      |                                                      |
| - mod. TD60D .....                                                     | 104 mm (4.0945 in.)                                  | -                                                    |
| - mod. TD70D .....                                                     | 104 mm (4.0945 in.)                                  | -                                                    |
| - mod. TD80D .....                                                     | -                                                    | 104 mm (4.0945 in.)                                  |
| - mod. TD90D .....                                                     | -                                                    | 104 mm (4.0945 in.)                                  |
| - mod. TD95D .....                                                     | -                                                    | 104 mm (4.0945 in.)                                  |
| Piston stroke .....                                                    | 115 mm (4.5276 in.)                                  |                                                      |
| Total displacement:                                                    |                                                      |                                                      |
| - mod. TD60D-TD70D .....                                               | 2931 cm <sup>3</sup><br>(178.8496 in. <sup>3</sup> ) | -                                                    |
| - mod. TD80D-TD90D-TD95D .....                                         | -                                                    | 3908 cm <sup>3</sup><br>(238.4662 in. <sup>3</sup> ) |
| Compression ratio .....                                                | 17 to 1 normally aspirated<br>16.5 to 1 turbocharged |                                                      |
| Maximum power 2000/25 EC at 2500 rpm:                                  |                                                      |                                                      |
| - mod. TD60D .....                                                     | 43.4 kW (59 hp)                                      | -                                                    |
| - mod. TD70D .....                                                     | 50.7 kW (69 hp)                                      | -                                                    |
| - mod. TD80D .....                                                     | -                                                    | 58.8 kW (80 hp)                                      |
| - mod. TD90D .....                                                     | -                                                    | 65.5 kW (89 hp)                                      |
| - mod. TD95D .....                                                     | -                                                    | 69.1 kW (94 hp)                                      |
| Maximum power ECE R 24 at 2500 rpm:                                    |                                                      |                                                      |
| - mod. TD60D .....                                                     | 41.2 kW (56 hp)                                      | -                                                    |
| - mod. TD70D .....                                                     | 47.8 kW (65 hp)                                      | -                                                    |
| - mod. TD80D .....                                                     | -                                                    | 55.9 kW (76 hp)                                      |
| - mod. TD90D .....                                                     | -                                                    | 63.3 kW (86 hp)                                      |
| - mod. TD95D .....                                                     | -                                                    | 66.9 kW (91 hp)                                      |
| Fast idling speed .....                                                | 2500 rpm.                                            |                                                      |
| Maximum torque (daNm) at 1500 rpm: TD60D model .....                   | 20.7 (152.6753 ft lb)                                | -                                                    |
| Maximum torque (daNm) at 1500 rpm: TD70D model .....                   | 25.0 (184.3905 ft lb)                                | -                                                    |
| Maximum torque (daNm) at 1500 rpm: TD80D model .....                   | -                                                    | 27.9 (205.9778 ft lb)                                |
| Maximum torque (daNm) at 1500 rpm: TD90D model .....                   | -                                                    | 32.0 (236.0194 ft lb)                                |
| Maximum torque (daNm) at 1500 rpm: TD95D model .....                   | -                                                    | 33.7 (248.5584 ft lb)                                |
| Number of main bearings .....                                          | 4                                                    | 5                                                    |
| Sump .....                                                             | Structural, cast iron                                |                                                      |

**ENGINE****Removal - Installation (Operation 10 001 10)****DANGER**

Lift and handle all heavy parts using suitable lifting equipment.

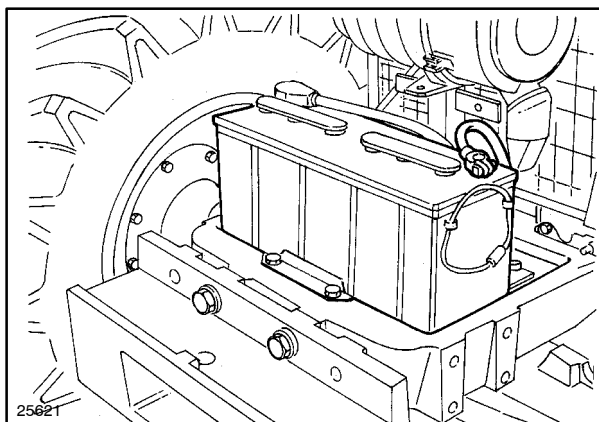
Make sure that assemblies or parts are supported by means of suitable slings and hooks.

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

**WARNING**

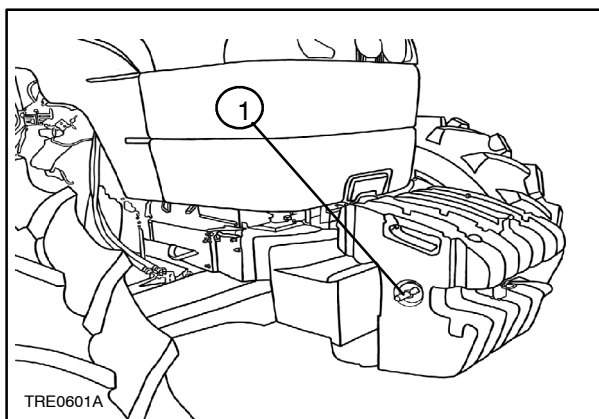
Always use suitable tools to align holes in parts.  
**NEVER USE FINGERS OR HANDS.**

1. Disconnect the battery negative cable.
2. Drain oil from the transmission/gearbox.
3. Drain the cooling system.



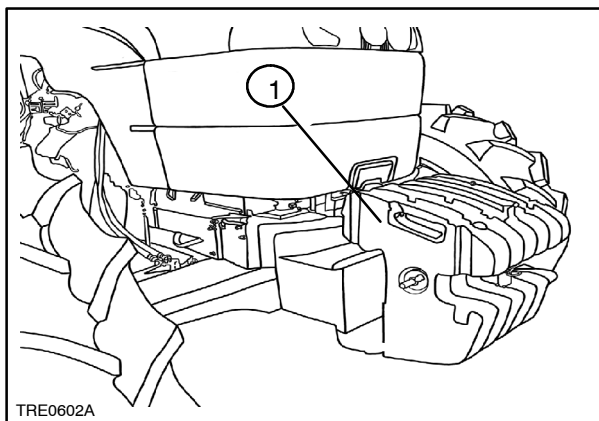
10

4. Unscrew the nut (1) from the weight retaining pin.



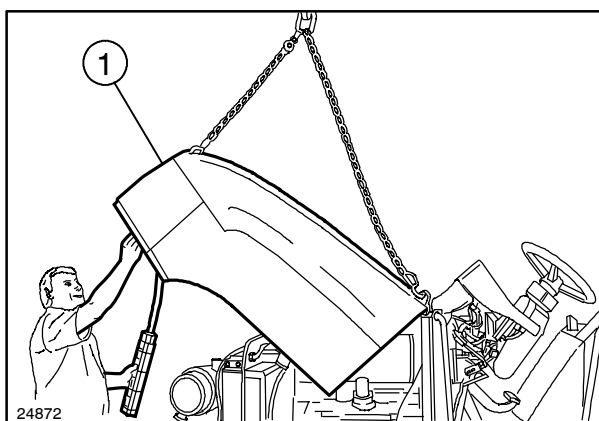
11

5. Remove the weights (1) from the front support.



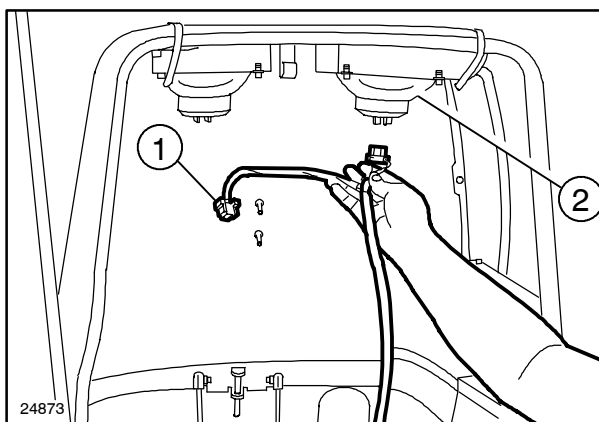
12

6. Remove the exhaust pipe, attach lifting chains to the bonnet (1) and attach the chain to the hoist.



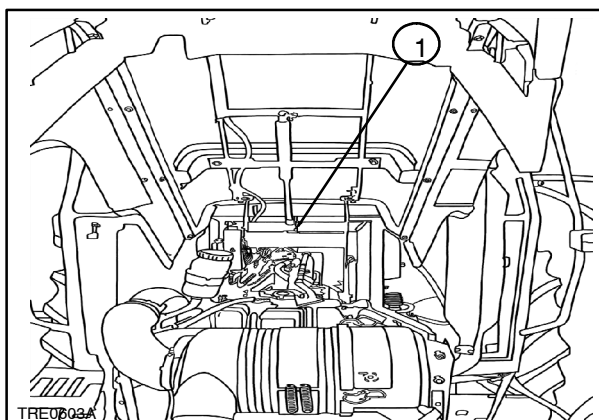
13

7. Disconnect the electrical leads (1) from headlamps (2).



14

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



15



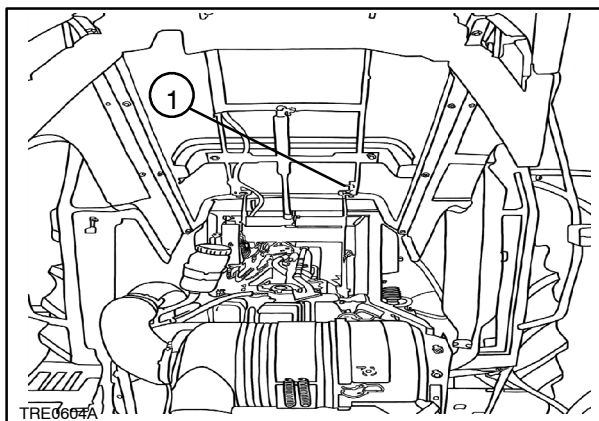
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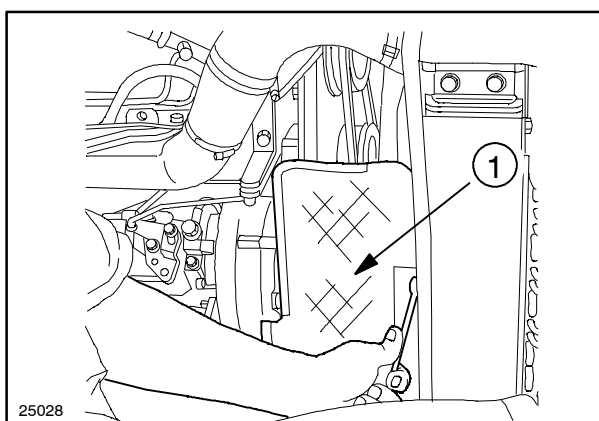
**Thank you so much for reading**

9. Remove the four bonnet hinge bolts (1) and lift the bonnet clear.



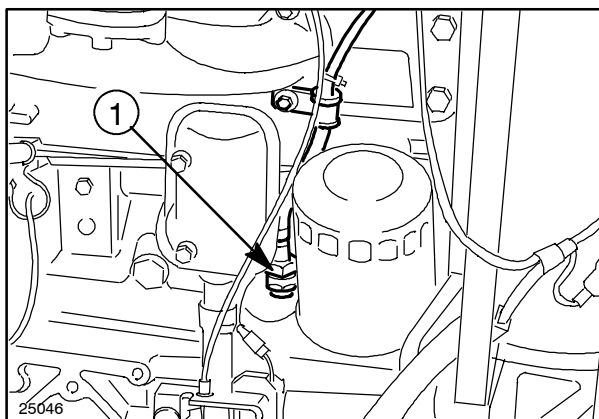
16

10. Remove the wire mesh guard (1) from right-hand side of the fan.



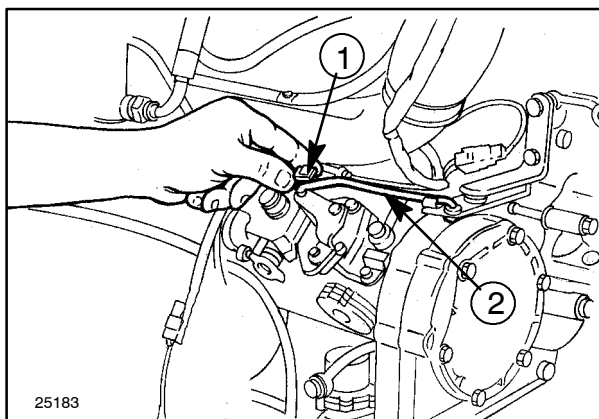
17

11. Disconnect the tachometer cable (1) and remove the retaining ring and sleeve.



18

12. Detach the throttle control spring (1) and remove the throttle lever (2).



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