# SERVICE MANUAL

## RG140.B / RG170.B / RG200.B
## RG140.B VHP / RG170.B VHP / RG200.B VHP
## RG170.B AWD / RG200.B AWD
GRADERS

Part Number 71114389
03/2012
1st Edition

NEW HOLLAND CONSTRUCTION

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# GRADERS
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## Service Manual

**71114389**

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# SPECIFICATIONS

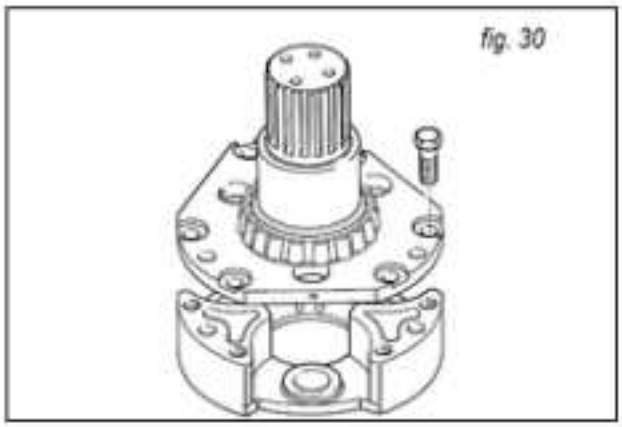
| Item | Measurement | Specification |
|---|---|---|
| DF-150 (Transmission model) | Weight (Application Dependent) | 567 Kg (1250 lbs) |
| DF-150 | Input-to-Output | 500 mm (19.69 in) |
| DF-150 | Rating (Depending on application) | Input power (maximum) - 142 kW (190 SAE hp) |
| | | Input no load speed (maximum) - 3000 rpm |
| | | Turbine torque (maximum) - 1288 N·m (950 lb-ft) |
| DF-150 | Mountings Available | Engine |
| | | Midship |
| | | Remote |
| DF-150 | Clutches | Fully modulated, oil cooled, multidisc, hydraulic actuated and self-adjusting. |
| DF-150 | Gearing | Constant mesh, in line, high contact ratio ground gears. Up to eight speeds forward and four speeds reverse. |
| DF-150 | Oil | Hydraulic Transmission Fluid |
| DF-150 | Filter | Remote mounted spin-on type filter. |
| Transmission Operating Conditions | Maximum Input Speed | 3000 rpm |
| | Test Input Speed | 2000 rpm |
| | Maximum Continuous Operating Temperature | 93°C (200°F) |
| | Maximum Intermittent Operating Temperature | 115°C (230°F) |
| | Maximum Temperature | 121°C (250°F) |
| | Normal Operating Temperature | 65-93°C (150-200°F) |
| | Check Oil Level Temperature | 37°C (100°F) |
| Pressures and Flows at Control Valve | Pump Pressure (test input speed) | 17.58 - 19.65 Bar (255 - 285 psi) |
| | Pump Flow (test input speed) | 87 - 102 L/min (23 - 27 gpm) |
| | Clutch Pressure (test input speed) | 16.55 - 19.31 Bar (240 - 280 psi) |
| | Lube, In Pressure (test input speed) | 1.38 - 4.14 Bar (20 - 60 psi) |



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If the removal of the hub from the support is necessary, remove the six screws.

At reassembly tighten screws with a torque of 470 Nm.


fig. 30

## Re-Assembly Axle Support with Planetary Spider

Apply grease to needle bearings (10) total 62.

**IMPORTANT:** In case of replacement , use the same class of bearing.

Place the pin (8) on a flat surface:

- insert a thrust washer (13) and apply grease to the pin (8);
- mount the first needle rollers (10);
- mount the spacer (12);
- mount needle bearing rollers (10).
- position the planetary gear (9) and the second thrust washer (10), hold the two thrust washers and install the pin.

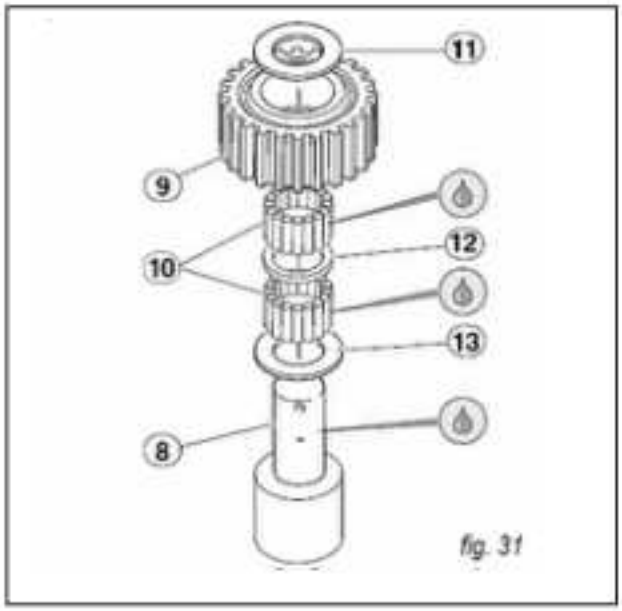


fig. 31

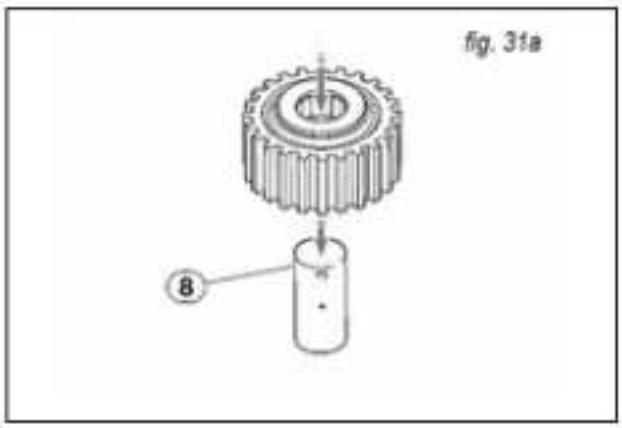


fig. 31a



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# SERVICE POSITION

Before making any service, maintenance or inspection procedure, the grader must be placed in the **Service Position**.

1. Park the grader on a level surface.
2. Place the transmission in neutral and apply the handbrake. Ensure the handbrake is correctly adjusted and in good working order.
3. Lower the moldboard and all attachments to the ground. Do not apply down-pressure.
4. Shut down the engine.
5. Install the service pin in the LOCKED position (see the Operators Manual).
6. Install chocks at the front and rear tandem wheels. Wedge the chocks in place.
7. Relieve residual hydraulic pressure by operating all control levers.
8. Some hydraulic circuits may contain lock valves. Operating the control levers in these circuits will not relieve residual hydraulic pressure. Such pressure must be relieved by loosening a fitting or electrically activating the solenoid valve. Wear face and eye protection. **Danger of spraying oil**.
9. Fasten a "**DO NOT OPERATE**" or similar warning tag on the steering wheel.
10. Remove and retain the ignition key.
11. Turn the battery isolation switch to the 0FF position.
12. Allow the engine and hydraulic system to cool before working in these areas.
13. Be aware of other service personnel in your work area.
14. If the service procedure includes welding, you must disconnect the following items:

    a. Negative battery cable.
    b. Positive battery cable.
    c. Power supply harness at the transmission controller.
    d. Transmission wiring harness at the controller (see the operators Manual).
    e. Alternator to battery wiring harness
    f. 24V-12V converter wiring harness at the fuse.
    g. Float valve module (if installed) wiring harness at the module.

Connect the arc-welder ground cable as close as possible to the work area.



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| Error No. and Color | Error Description | Condition for cancel |
|---|---|---|
| 5413 | **Revolutions on right front wheel speed sensor above maximum.**<br>Measured frequency of front right wheel speed sensor exceeds the maximum measurable speed. | • Check power supply of front right wheel speed sensor at sensor connector pin 1 for being constant.<br>• Replace front right wheel speed sensor. |
| 5421 | **Open circuit at forward pressure sensor.**<br>An open circuit at forward pressure sensor was detected while engine is running. | • Check connector of forward pressure sensor.<br>• Check harness from EHC pin 6 to connector of forward pressure sensor pin 1.<br>• Check fuse F25. |
| 5422 | **Short circuit to power at forward pressure sensor.**<br>A short circuit to power at forward pressure sensor was detected. | • Check connector of forward pressure sensor.<br>• Check harness from EHC pin 6 to connector of forward pressure sensor pin 1. |
| 5426 | **Return line pressure at pump port A above allowed value.**<br>Return line pressure exceeds maximum when driving machine reverse. | • Check current of forward pressure sensor pin 1) for having reasonable current values (4..20mA = 1..450bar) when ignition is on or engine is running.<br>• Check forward pressure sensor being connected to EHC pin 6 and reverse pressure sensor being connected to EHC pin 7. |
| 5431 | **Open circuit at reverse pressure sensor.**<br>An open circuit at reverse pressure sensor was detected while engine is running. | • Check connector of reverse pressure sensor.<br>• Check harness from EHC pin 7 to connector of reverse pressure sensor pin 1.<br>• Check fuse F25. |
| 5432 | **Short circuit to power at reverse pressure sensor.**<br>A short circuit to power at reverse pressure sensor was detected. | • Check connector of reverse pressure sensor.<br>• Check harness from EHC pin 7 to connector of reverse pressure sensor pin 1. |
| 5436 | **Return line pressure at pump port B above allowed value.**<br>Return line pressure exceeds maximum when driving machine forward. | • Check current of reverse pressure sensor pin 1 for having reasonable current values (4..20mA = 1..450bar) when ignition is on and/or engine is running.<br>• Check forward pressure sensor being connected to EHC pin 6 and reverse pressure sensor being connected to EHC pin 7. |
| 5440 | **No CAN connection of drive behavior module.**<br>Drive behavior module is not connected to CAN Bus #1. | • Check fuse F21.<br>• Check power supply of drive behavior module pin 6.<br>• Check module pin 7 being connected to CAN high and module pin 8 being connected to CAN low of CAN Bus #1. |
| 5442 | **AWD mode key not available on drive behavior module C6.**<br>Right key of drive behavior module can not be found. | • Check if correct drive behavior module is installed. |
| 5443 | **Incorrect status of AWD mode key on drive behavior module C6.**<br>Internal key state error occurred when reading right key of drive behavior module. | • Error might not be caused by hardware problems. Please contact Service. |
| 5445 | **Creep mode key not available on drive behavior module C6.**<br>Left key of drive behavior module can not be found. | • Check if correct drive behavior module is installed. |
| 5446 | **Incorrect status of creep mode key on drive behavior module C6.**<br>Internal key state error occurred when reading left key of drive behavior module. | • Error might not be caused by hardware problems. Please contact Service. |



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