Disassembly and Assembly
416D, 420D, 424D, 428D, 430D, 432D, 438D and 442D Backhoe Loaders Power Train

Rear Axle Housing - Assemble

Assembly Procedure

Table 1

<table>
<thead>
<tr>
<th>Tool</th>
<th>Part Number</th>
<th>Part Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>8T-3111</td>
<td>Plate</td>
<td>1</td>
</tr>
<tr>
<td>B</td>
<td>8T-5096</td>
<td>Dial Indicator Gp</td>
<td>1</td>
</tr>
<tr>
<td>C</td>
<td>1U-8814</td>
<td>Gauge</td>
<td>1</td>
</tr>
</tbody>
</table>
1. Use a press and Tooling (A) in order to install ring gear (34). Use a feeler gauge in order to check the gap between the ring gear and the housing. Ensure that the ring gear is seated.

2. Place bearing cup (33) into a deep freeze in order to lower the temperature of the race. Install race (33) into the axle housing.

3. Place bearing cup (32) into a deep freeze in order to lower the temperature of the cup. Install cup (32) into the axle housing.
4. Install a new seal onto the axle shaft. Heat bearing (31) to a temperature of 135 °C (275 °F). Install bearing (31) onto the axle shaft.

5. Install axle shaft assembly (30) into the axle housing.
6. Install gear shaft (25) and spacer (29) into gear (27). Install roller bearings (28) around shaft (25). Install washers (26) on each end of the gear. Remove shaft (25) and install the gear assembly into the planetary gear assembly.

7. Rotate retaining ring (24) into position. Bend the ends of the ring downward.
8. Install bearing (23) onto the planetary gear assembly.

9. Install planetary gear group (22). Install shim (21), washer (21), and axle retainer bolt (19). Tighten bolt (19) to a torque of 540 ± 60 N·m (398 ± 44 lb ft).

**Note:** Measure the thickness of shim (21) prior to installation.

10. Install Tooling (B) onto the axle retaining bolt. Move the axle laterally in order to measure the end play. Subtract the original shim thickness from the end play. Use the necessary shims in order to obtain the correct end play. Refer to Specification, RENR3576, "Axle - Rear".
11. Install (17) lock on axle bolt (18).

12. Install the seals in piston (14). Put clean oil on the seal and install the piston into the outer brake housing (13). Install brake torque pin (15).
13. Install outer brake housing (13) into the axle housing.

14. Install manifold (12) and screws (11).

**Note:** Obtain the differential preload for any of the following new parts: Left hand side axle housing, left hand side planetary ring gear, left hand side outer brake housing and left hand side inner brake housing. The differential preload will be made on the left side axle housing only.

15. Install the inner brake housing. Do not install the bearing race or the shim at this time. Tighten the nuts until the housing is completely seated.
16. Install Tooling (C) onto the inner brake housing. Use a feeler gauge in order to measure the gap. The gap will determine the required shim thickness for the differential preload.

17. Remove the inner brake housing from the axle housing.

18. Install correct shims (35) into the bore of the inner brake housing. Lower the temperature of bearing race (36) and install race (36) into the brake housing. Seat the bearing race completely into the bore of the brake housing.
19. Install sun gear (16) into the axle housing.

20. Install four discs (10) and the four plates.
21. Install inner brake housing (9). Install bolts (8). Tighten bolts (8) to a torque of 160 ± 30 N·m (118 ± 22 lb ft).

22. Install differential lock fork (5) and shaft (4). Install bolt (2) into the alignment hole in the shaft. Tighten the nut. Install O-ring (1).

Note: This step is for the right side of the axle housing.


Note: This step is for the left side of the axle housing.