Camshaft Gear - Remove and Install

SMCS - 1210-010-GE

Removal 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>9U-6896</td>
<td>Guide Bolt</td>
<td>1</td>
</tr>
</tbody>
</table>

Start By:

A. Remove the front cover. Refer to Disassembly and Assembly, "Front Cover - Remove".
1. Position the No. 1 piston at the top center of the compression stroke. Refer to Testing and Adjusting, "Finding Top Center Position for No. 1 Piston".

2. Verify that the timing mark on camshaft gear (1) is aligned with Timing Mark (X) on front housing (3).

3. Remove top bolt (2) from camshaft gear (1). Install Tooling (A) in place of the bolt.

4. Remove remaining bolts (2) and remove camshaft gear (1).

**NOTICE**

*Do not turn the crankshaft or the camshaft while the camshaft gear is removed. If the front gear group is not correctly timed during installation, interference can occur between the pistons and the valves, resulting in damage to the engine.*

5. Remove Tooling (A).

**Installation Procedure**

**Table 2**

<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>9U-6896</td>
<td>Guide Bolt</td>
<td>1</td>
</tr>
</tbody>
</table>
NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

Illustration 3 g00579966

NOTICE

Do not turn the crankshaft or the camshaft while the camshaft gear is removed. If the front gear group is not correctly timed during installation, interference can occur between the pistons and the valves, resulting in damage to the engine.

1. Install Tooling (A) in the top hole in the camshaft.

2. Align the hole in the back of camshaft gear (1) with the dowel in the adapter. Install camshaft gear (1) over Tooling (A).
Note: Camshaft timing is critical. The timing mark on the camshaft gear must be aligned with the timing mark on the front cover when the No. 1 piston is at the top center of the compression stroke. Refer to Testing and Adjusting, "Gear Group (Front) - Time".

3. Verify that the timing mark on camshaft gear (1) is aligned with Timing Mark (X) on front housing (3).

Note: If the timing marks are not aligned, remove camshaft gear (1) and rotate the camshaft until the timing marks are aligned.

4. Install bolts (2). Remove Tooling (A) and install remaining bolt (2).
5. Tighten the bolts in a numeric sequence 1, 4, 2, 5, 3, 6, 1, 4 to a torque of 240 ± 40 N·m (175 ± 30 lb ft).

6. Check the backlash between the camshaft gear and the adjustable idler gear. The backlash should be 0.216 ± 0.114 mm (0.0085 ± 0.0045 inch). Refer to Testing and Adjusting, "Gear Group (Front) - Time" for the backlash adjustment procedure.

**End By:** Install the front cover. Refer to Disassembly and Assembly, "Front Cover - Install".