TOYOTA SERVICE BULLETIN

Group: 04 No.: 06 Date: May, 17

## Yaris (NCP90/91/93)

# Corrections to Repair Manual RM00S5E

Please ensure these pages are distributed to all relevant staff for their information; and a copy made available for future reference, with the above repair manual.

| Section | Title | Paragraph |
|---|---|---|
| SERVICE SPECIFICATIONS | 1NZ-FE CHARGING | SERVICE DATA |
| | 2NZ-FE CHARGING | SERVICE DATA |
| 1NZ-FE CHARGING | GENERATOR | INSPECTION |
| 2NZ-FE CHARGING | GENERATOR | INSPECTION |

The revised pages listed above are attached.

(The corrected parts are indicated by arrows.)

This bulletin does not cause the Flat Rate Manual to be changed

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# 1NZ-FE CHARGING

## SERVICE DATA

| | | |
|---|---|---|
| Battery | Standard specific gravity: | 1.25 to 1.29 at 20°C (68°F) |
| Charging circuit without load | Standard amperage | 10 A or less |
| | Standard voltage | 13.2 to 14.8 V |
| Charging circuit with load | Standard amperage | 30 A or more |
| Generator brush holder assembly brush exposed length | Standard exposed length | 9.5 to 11.5mm (0.374 to 0.453 in.) |
| | Minimum exposed length | 1.5mm (0.059 in.) |
| Generator regulator assembly conductance | F (Positive (+) pole) - B (Negative (-) pole)<br>(Conductance) | 0.4 to 0.8 V |
| | F (Negative (-) pole) - B (Positive (+) pole)<br>(No conductance) | Approximately 3.0 V *1 |
| | F (Positive (+) pole) - E (Negative (-) pole)<br>(No conductance) | Approximately 3.0 V *1 |
| | F (Negative (-) pole) - E (Positive (+) pole)<br>(Conductance) | 0.4 to 0.8 V |
| Generator drive end frame resistance | Coil wires | Below 1Ω |
| | Coil wire and body | 10kΩ or higher |
| Generator holder with rectifier resistance | P1, P2, P3 -B | When the positive and negative poles among terminals P1, P2, P3 and B are exchanged, there is continuity in one direction but on continuity in the other direction. |
| | P1, P2, P3 -E | When the positive and negative poles among terminals P1, P2, P3 and E are exchanged, there is continuity in one direction but on continuity in the other direction. |
| Generator rotor assembly resistance | Slip rings | 1.7 to 2.1Ω at 20°C (68°F) |
| | Slip ring and rotor | 10kΩ or higher |
| Generator rotor assembly slip ring diameter | Standard diameter | 14.2 to 14.4mm (0.559 to 0.564 in.) |
| | Minimum diameter | 12.8 mm (0.5.4 in.) |

[Corrected]

[Added]

HINT:
The specified conditions*1 displayed above are the conditions when using the Toyota electrical tester. When using a different type of digital tester, the condition displayed for the direction without conductance may differ depending on the specifications of the tester.

## TORQUE SPECIFICATIONS

| Part Tightened | N*m | kgf*cm | ft.*lbf |
|---|---|---|---|
| Fan belt adjusting slider x Cylinder head assembly | 11 | 112 | 8.1 |
| Generator assembly x Wire harness clamp | 9.8 | 100 | 7.2 |
| Generator assembly x Cylinder block sub-assembly | 54 | 551 | 40 |
| Generator assembly x Fan belt adjusting slide | 19 | 189 | 14 |
| Negative battery terminal x Negative battery cable | 5.4 | 55 | 48 |
| Generator pulley x Generator rotor assembly | 133 | 1356 | 98 |
| Generator brush holder assembly x Generator holder with rectifier | 2 | 20 | 17 in.*lbf |
| Rear end cover x Generator rectifier end frame | 4.4 | 45 | 39 in.*lbf |

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# 2NZ-FE CHARGING

## SERVICE DATA

| | | |
|---|---|---|
| Battery | Standard specific gravity: | 1.25 to 1.29 at 20°C(68°F) |
| Charging circuit without load | Standard amperage | 10 A or less |
| | Standard voltage | 13.2 to 14.8 V |
| Charging circuit with load | Standard amperage | 30 A or more |
| Generator brush holder assembly brush exposed length | Standard exposed length | 9.5 to 11.5mm (0.374 to 0.453 in.) |
| | Minimum exposed length | 1.5mm (0.059 in.) |
| Generator regulator assembly conductance | F (Positive (+) pole) - B (Negative (-) pole)<br>(Conductance) | 0.4 to 0.8 V |
| | F (Negative (-) pole) - B (Positive (+) pole)<br>(No conductance) | Approximately 3.0 V *1 |
| | F (Positive (+) pole) - E (Negative (-) pole)<br>(No conductance) | Approximately 3.0 V *1 |
| | F (Negative (-) pole) - E (Positive (+) pole)<br>(Conductance) | 0.4 to 0.8 V |
| Generator drive end frame resistance | Coil wires | Below 1Ω |
| | Coil wire and body | 10kΩ or higher |
| Generator holder with rectifier resistance | P1, P2, P3 -B | When the positive and negative poles among terminals P1, P2, P3 and B are exchanged, there is continuity in one direction but on continuity in the other direction. |
| | P1, P2, P3 -E | When the positive and negative poles among terminals P1, P2, P3 and E are exchanged, there is continuity in one direction but on continuity in the other direction. |
| Generator rotor assembly resistance | Slip rings | 1.7 to 2.1Ω at 20°C (68°F) |
| | Slip ring and rotor | 10kΩ or higher |
| Generator rotor assembly slip ring diameter | Standard diameter | 14.2 to 14.4mm (0.559 to 0.564 in.) |
| | Minimum diameter | 12.8 mm (0.5.4 in.) |

[Corrected]

[Added]

HINT:
The specified conditions*1 displayed above are the conditions when using the Toyota electrical tester. When using a different type of digital tester, the condition displayed for the direction without conductance may differ depending on the specifications of the tester.

## TORQUE SPECIFICATIONS

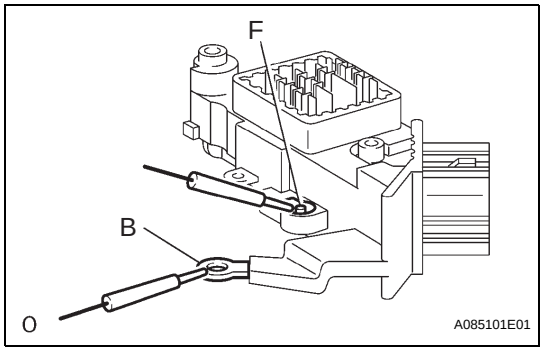
| Part Tightened | N*m | kgf*cm | ft.*lbf |
|---|---|---|---|
| Fan belt adjusting slider x Cylinder head assembly | 11 | 112 | 8.1 |
| Generator assembly x Wire harness clamp | 9.8 | 100 | 7.2 |
| Generator assembly x Cylinder block sub-assembly | 54 | 551 | 40 |
| Generator assembly x Fan belt adjusting slide | 19 | 189 | 14 |
| Negative battery terminal x Negative battery cable | 5.4 | 55 | 48 |
| Generator pulley x Generator rotor assembly | 133 | 1356 | 98 |
| Generator brush holder assembly x Generator holder with rectifier | 2 | 20 | 17 in.*lbf |
| Rear end cover x Generator rectifier end frame | 4.4 | 45 | 39 in.*lbf |

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## 2. INSPECT GENERATOR REGULATOR ASSEMBLY

(a) Check Conductance.

(1) Set the digital tester to the diode test range.




(2) Using the digital tester, check the conductance between F and B of the generator regulator assembly.

**OK**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| F (Positive (+) pole) - B (Negative (-) pole) | Conductance | 0.4 to 0.8 V |
| F (Negative (-) pole) - B (Positive (+) pole) | No conductance | Approximately 3.0 V *1 |

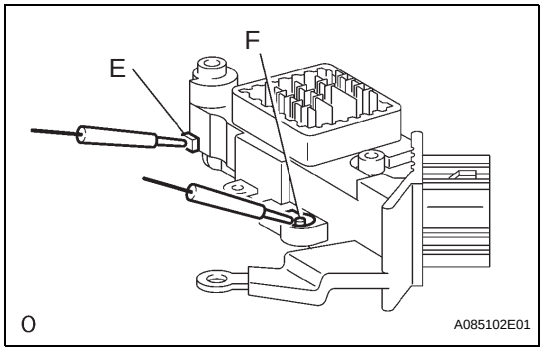
**NOTICE:**

- **If the value shown on the digital tester display differs from the expected 3.0 V by a large amount, replace the digital tester internal battery with a new one.**
- **As the diode test range uses the voltage from the internal battery of the digital tester to check the conductance of the diode, if the internal battery is depleted it may not be possible to determine whether the diode is good or bad.**

HINT:

The specified conditions*1 displayed above are the conditions when using the Toyota electrical tester. When using a different type of digital tester, the condition displayed for the direction without conductance may differ depending on the specifications of the tester.

If the result is not as specified, replace the generator regulator assembly.




(3) Using the digital tester, check the conductance between F and E of the generator regulator assembly.

**OK**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| F (Positive (+) pole) - E (Negative (-) pole) | No conductance | Approximately 3.0 V *1 |
| F (Negative (-) pole) - E (Positive (+) pole) | Conductance | 0.4 to 0.8 V |

**NOTICE:**

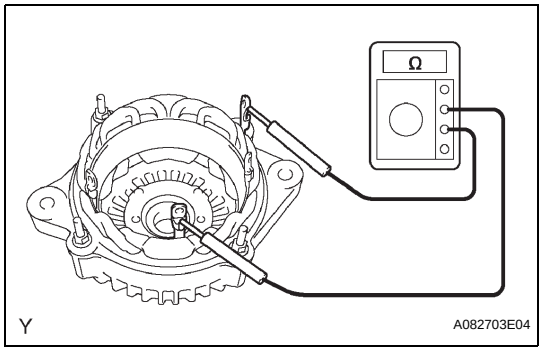
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- **As the diode test range uses the voltage from the internal battery of the digital tester to check the conductance of the diode, if the internal battery is depleted it may not be possible to determine whether the diode is good or bad.**

[Corrected]

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The specified conditions*1 displayed above are the conditions when using the Toyota electrical tester. When using a different type of digital tester, the condition displayed for the direction without conductance may differ depending on the specifications of the tester.
If the result is not as specified, replace the generator regulator assembly.

[Corrected]




**3. INSPECT GENERATOR DRIVE END FRAME**

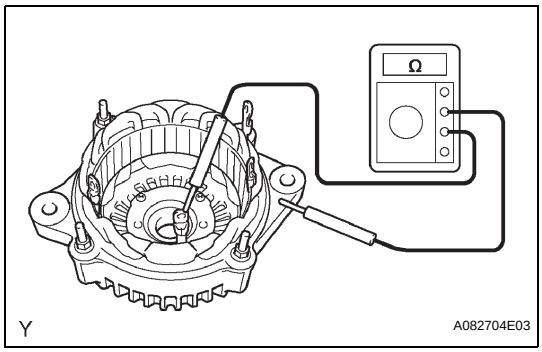
(a) Check the stator coil for open circuits.

(1) Using an ohmmeter, check the resistance between the coil leads.

**Standard resistance:**

**Below 1 Ω**

If the result is not as specified, replace the generator assembly.




(b) Inspect the stator for ground.

(1) Using an ohmmeter, check the resistance between the coil lead and drive end frame.

**Standard resistance:**

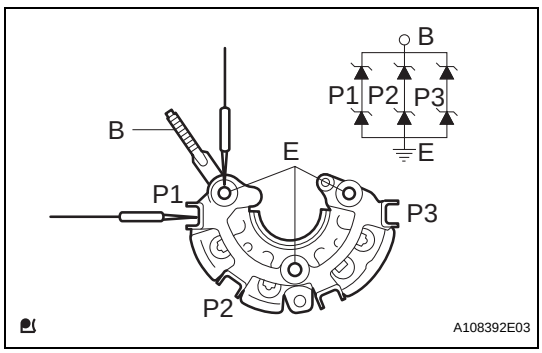
**10 kΩ or higher**

If the result is not as specified, replace the generator assembly.

(c) Check the bearing.

(1) Inspect the bearing is not rough or worn.

If necessary, replace the generator assembly.




**4. INSPECT GENERATOR HOLDER WITH RECTIFIER**

(a) Using an ohmmeter, check the continuity among terminals P1, P2, P3 and B, and among P1, P2, P3 and E.

**Standard:**

**When the positive and negative poles among terminals P1, P2, P3 and B are exchanged, there is continuity in one direction but no continuity in the other direction.**

**When the positive and negative poles among terminals P1, P2, P3 and E are exchanged, there is continuity in one direction but no continuity in the other direction.**

If the continuity is not as specified, replace the generator holder with rectifier.

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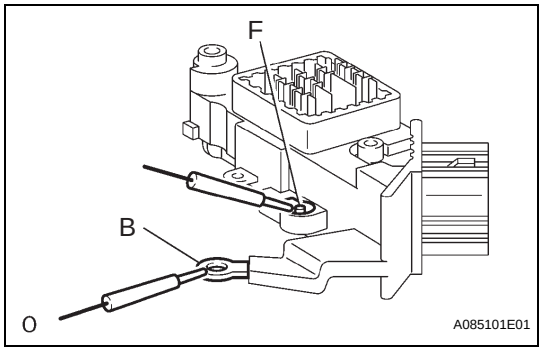
## 2. INSPECT GENERATOR REGULATOR ASSEMBLY

(a) Check Conductance.

(1) Set the digital tester to the diode test range.

(2) Using the digital tester, check the conductance between F and B of the generator regulator assembly.

**OK**




| Tester Connection | Condition | Specified Condition |
|---|---|---|
| F (Positive (+) pole) - B (Negative (-) pole) | Conductance | 0.4 to 0.8 V |
| F (Negative (-) pole) - B (Positive (+) pole) | No conductance | Approximately 3.0 V *1 |

**NOTICE:**

- **If the value shown on the digital tester display differs from the expected 3.0 V by a large amount, replace the digital tester internal battery with a new one.**
- **As the diode test range uses the voltage from the internal battery of the digital tester to check the conductance of the diode, if the internal battery is depleted it may not be possible to determine whether the diode is good or bad.**

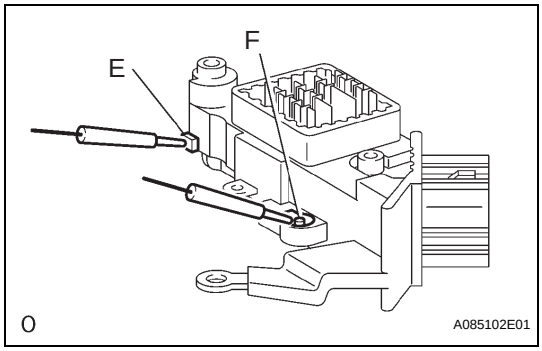
HINT:

The specified conditions*1 displayed above are the conditions when using the Toyota electrical tester. When using a different type of digital tester, the condition displayed for the direction without conductance may differ depending on the specifications of the tester.

If the result is not as specified, replace the generator regulator assembly.

(3) Using the digital tester, check the conductance between F and E of the generator regulator assembly.

**OK**




| Tester Connection | Condition | Specified Condition |
|---|---|---|
| F (Positive (+) pole) - E (Negative (-) pole) | No conductance | Approximately 3.0 V *1 |
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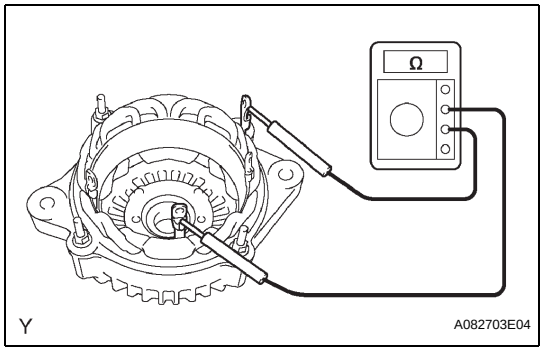
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[Corrected]

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If the result is not as specified, replace the generator regulator assembly.

[Corrected]




**3. INSPECT GENERATOR DRIVE END FRAME**

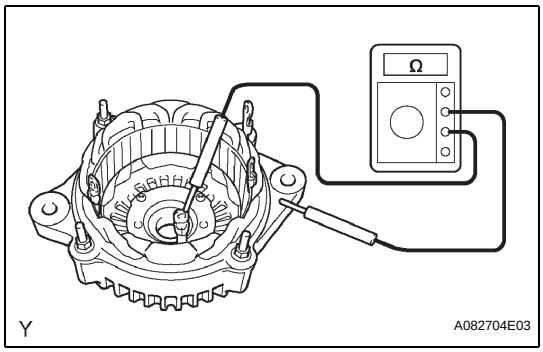
(a) Check the stator coil for open circuits.

(1) Using an ohmmeter, check the resistance between the coil leads.

**Standard resistance:**

**Below 1 Ω**

If the result is not as specified, replace the generator assembly.




(b) Inspect the stator for ground.

(1) Using an ohmmeter, check the resistance between the coil lead and drive end frame.

**Standard resistance:**

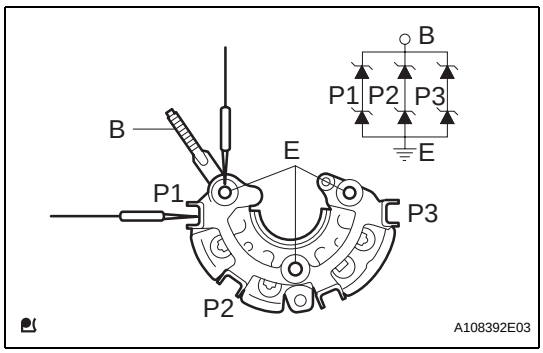
**10 kΩ or higher**

If the result is not as specified, replace the generator assembly.

(c) Inspect the bearing.

(1) Make sure that the bearing is not rough or worn.

If necessary, replace the generator assembly.




**4. INSPECT GENERATOR HOLDER WITH RECTIFIER**

(a) Using an ohmmeter, check the continuity among terminals P1, P2, P3 and B, and among P1, P2, P3 and E.

**Standard:**

**When the positive and negative poles among terminals P1, P2, P3 and B are exchanged, there is continuity in one direction but no continuity in the other direction.**

**When the positive and negative poles among terminals P1, P2, P3 and E are exchanged, there is continuity in one direction but no continuity in the other direction.**

If the continuity is not as specified, replace the generator holder with rectifier.

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