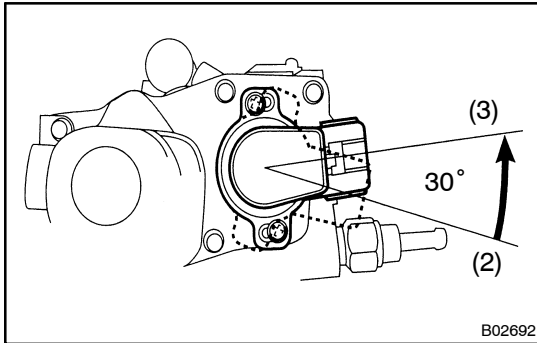
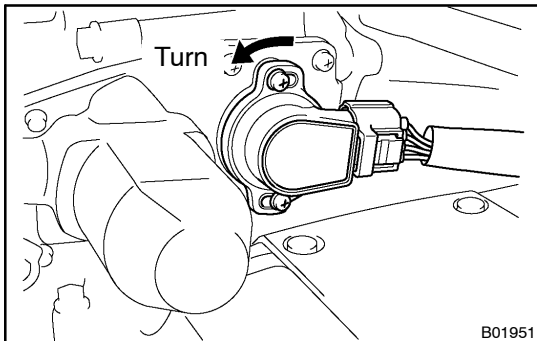


B02816



B02692



B01951

REPLACEMENT

NOTICE:

- To prevent deterioration, do not shock the throttle position sensor and accelerator pedal position sensor.
- Mixing of the foreign objects may cause the gear locking, so thoroughly check that there is no stuck of any foreign objects and clean up if any.

1. REPLACE THROTTLE POSITION SENSOR

- (a) Remove the 2 set screws and throttle position sensor.
- (b) Reinstall the throttle position sensor.
 - (1) Check that the throttle valve is under the condition of the opener opening angle (about 3.5°).
 - (2) Install the sensor to the place where is at 30° rotated to the right from the specified installation position.
 - (3) Gradually turn sensor counterclockwise until it touches the throttle valve shaft and temporarily torque the 2 set screws.
- (c) Adjust the throttle position sensor.
 - (1) Connect the throttle position sensor connector.

NOTICE:

At this time, do not connect the throttle control motor connector.

- (2) Connect the LEXUS hand-held tester or OBDII scan tool to the DLC3.
- (3) Turn the ignition switch ON.

NOTICE:

After turning the ignition switch ON, do not depress the accelerator pedal.

- (4) While reading the value of the throttle valve opening percentage (THROTTLE POS) of the CURRENT DATA, turn the throttle position sensor slowly to left and set the sensor at the center value of the standard value, and then torque the screws.

Torque: 1.7 N·m (17.5 kgf·cm, 15 in.·lbf)

Standard throttle valve opening percentage:

14.8 ± 0.8 %

NOTICE:

At the time of tightening the screw, as the sensor itself tends to turn causing to slanting, check that it is within the standard value after having finished the torque.

- (5) Fully close the throttle valve with a screwdriver and check that the value of the throttle valve opening percentage (THROTTLE POS) of the CURRENT DATA stays with the standard value.

Standard throttle valve opening percentage:

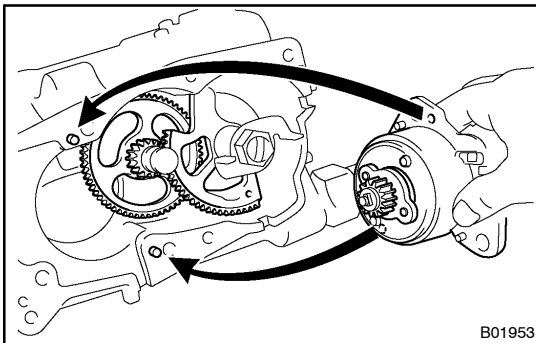
10 - 14 %

If the throttle valve opening percentage is not as specified, repeat steps (4) through (5).

- (6) Paint the sensor set screws.
- (7) Turn the ignition switch OFF.
- (8) Disconnect the LEXUS hand-held tester or OBDII scan tool from the DLC3.
- (9) Disconnect the throttle position sensor connector.

2. REPLACE THROTTLE CONTROL MOTOR

- (a) Remove the throttle position sensor.
- (b) Remove the throttle control motor.
 - (1) Disconnect the connector from the bracket.
 - (2) Remove the 5 screws, bracket and cover.
 - (3) Remove the 3 screws and throttle control motor.



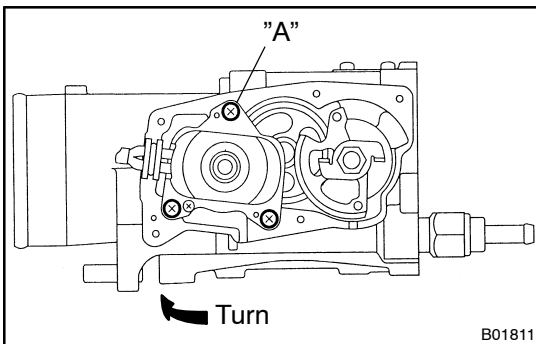
- (c) Reinstall the throttle control motor.
 - (1) Apply the grease thinly on the whole surface of the gear teeth.

NOTICE:

Do not apply the grease other than specified because grease has been already applied to the component to be replaced.

- (2) Align the protrusions of the motor with the positioning pin holes of the throttle body.
- (3) Rotate the motor to the direction marked with an arrow and temporarily install the set screw "A" under the condition that there is no wobbles in the motor and the positioning pin.
- (4) Tighten the 3 set screws.

Torque: 3.7 N·m (37.5 kgf·cm, 33 in·lbf)



- (5) Temporarily install the cover with the 2 screws "B" and "C".

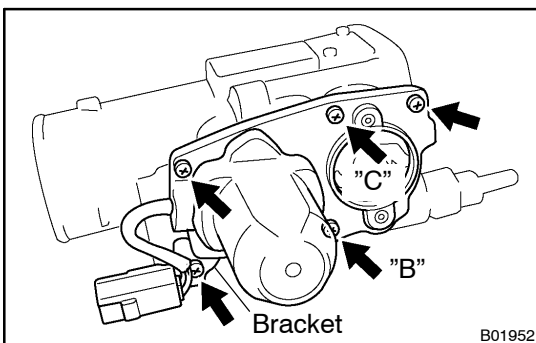
NOTICE:

The grommet of motor not be caught.

- (6) Tighten the 5 screws.

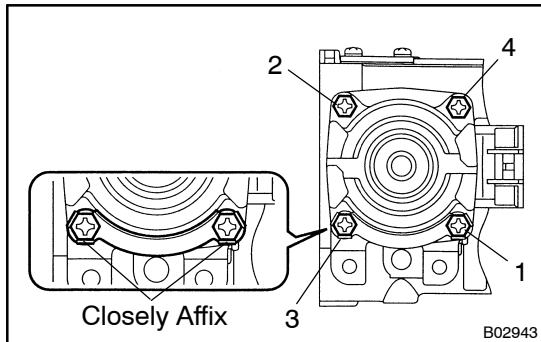
Torque: 1.7 N·m (17.5 kgf·cm, 15 in·lbf)
- (7) Connect the connector to the bracket.

- (d) Reinstall and adjust the throttle position sensor. (See step 1)



3. REPLACE ACCELERATOR PEDAL POSITION SENSOR

- (a) Remove the accelerator pedal position sensor.
- (1) Using a small screwdriver, pry the 4 stoppers of the washer plate.
 - (2) Remove the 4 set bolts, washer plate and accelerator pedal position sensor.



- (b) Reinstall the accelerator pedal position sensor.
- (1) Install the accelerator pedal position sensor to the throttle body.
 - (2) Torque the 4 bolts in the order shown in the illustration through the washer plate.

Torque: 3.7 N·m (37.5 kgf·cm, 33 in·lbf)

- (3) Bend the stopper of the washer plate and closely affix to the bolts.
- (c) Inspect the accelerator pedal position sensor.
- (1) Connect the accelerator pedal position sensor connector.
 - (2) Connect the LEXUS hand-held tester or OBDII scan tool to the DLC3.
 - (3) Turn the ignition switch ON.

NOTICE:

After turning the ignition switch ON, do not depress the accelerator pedal.

- (4) Check that the ACCEL POS #1 (VPA) voltage of the CURRENT DATA shows the standard value.

Standard accelerator pedal position voltage:

0.3 – 0.9 V

4. AFTER INSTALL THROTTLE BODY, INSPECT SYSTEM OPERATION (See page SF-32)