



CHARGING SYSTEM

The charging system is responsible for recharging the battery and providing power to the vehicle's electrical components. It consists of the battery, the alternator, and the voltage regulator. The battery stores energy, while the alternator generates electricity to charge the battery and power the vehicle's systems. The voltage regulator controls the output of the alternator to prevent overcharging.

CHARGING SYSTEM



The battery is the source of electrical energy for the vehicle. It is composed of several cells, each containing a positive plate and a negative plate. The plates are immersed in an electrolyte solution. During discharge, the positive plate releases electrons, which flow through the external circuit to the negative plate. Simultaneously, ions move through the electrolyte from the positive plate to the negative plate.



The alternator is a generator that converts mechanical energy into electrical energy. It consists of a rotor and a stator. The rotor is connected to the battery and is driven by the engine. The stator is a stationary coil of wire. As the rotor spins, it induces an alternating current in the stator. This current is then converted to a direct current by a diode rectifier.

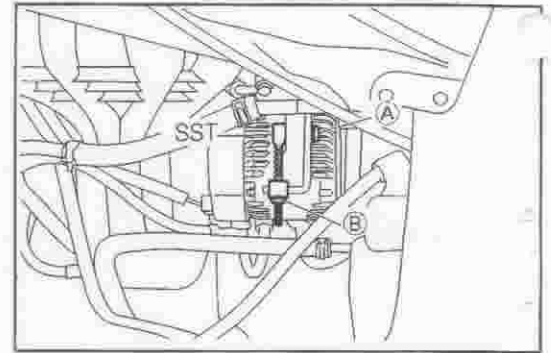


The voltage regulator controls the output of the alternator. It is connected to the alternator and the battery. It monitors the battery voltage and adjusts the alternator's output to maintain a constant voltage. If the battery voltage is low, the regulator increases the alternator's output. If the battery voltage is high, the regulator decreases the alternator's output.

IN-VEHICLE INSPECTION

BATTERY

1. If the battery case exhibits cracks, replace the battery with a satisfactory one.
2. If contamination, foreign matters or corrosion is found at the battery terminals, clean the battery.
3. Check that the battery terminals are connected with the cable securely without any looseness.
4. Ensure that the standard cover is mounted at the positive pole of the battery.
5. Ensure that a thin film of lithium grease has been applied to the negative pole of the battery.
6. Check to see if the electrolyte level of each cell of the battery has reached the specified level indicated on the battery case. If the level is below the specified level, replenish distilled water to the specified level.

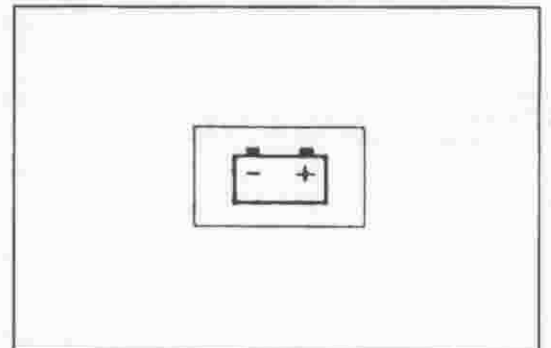


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7. To check the charging condition of the battery, measure the specific gravity of each cell of the battery with a hydrometer. In the case of a maintenance-free battery, take a reading of the indicator provided at the battery. If the battery is inadequately charged, charge the battery in accordance with the instructions of the charger manufacturer.

Specified Value:

When fully-charged: 1.25 - 1.28 (at 20°C)

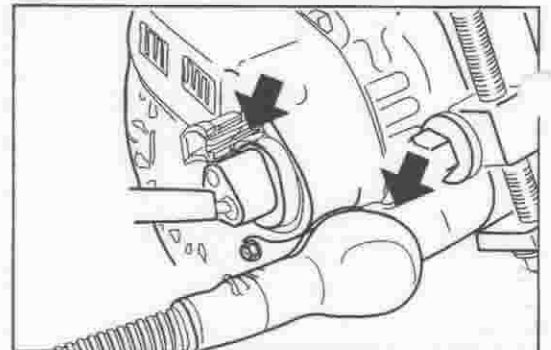


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ALTERNATOR

Check of drive belt

1. Visually check the drive belt for wear or cracks.
2. If there is any evidence which shows that the contact surface with the pulley has lost elasticity or slipping occurred in the surface, replace the drive belt or check the drive belt for tension.

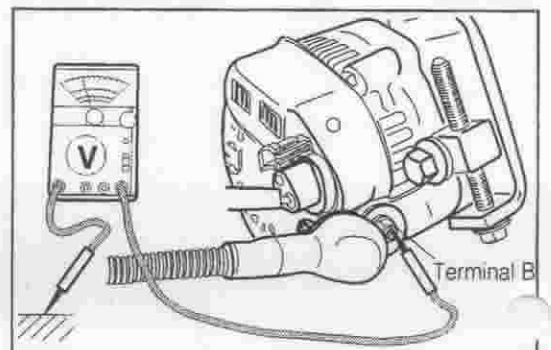


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3. Check and adjustment of tension of drive belt (In the case of M101, M201 series)

(1) Check of tension of drive belt

Apply a force of 98 N to the position between the water pump pulley and the power steering pulley, as shown in the right figure. Measure the deflection amount.



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Specified Values

	New belt	Used belt
Belt deflection amount	10.5 - 12.5 mm	14.5 - 16.5 mm
Belt tension	490 - 690 N	340 - 440 N

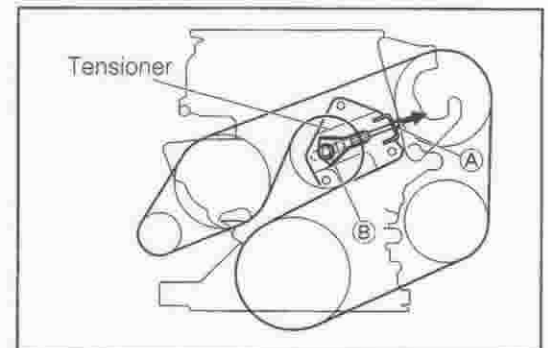
NOTE:

- The tension can be measured by using a belt tension gauge.
- When installing a new belt, set the values to the median values of the specified values for new belts.
- When installing the belt that has been used on a running engine for more than five minutes, it should be adjusted to the median values of the specified values for used belts.

(2) Adjustment of tension of drive belt

- ① Loosen the nut (B). Then, loosen the bolt (A). Under this condition, no belt tension is applied to the tensioner.
 - ② Tighten the nut (B) by hand to such an extent that the tensioner may be retained without any excessive looseness.
 - ③ Tighten the bolt (A) so that the belt tension may reach the specified value. Proceed to tighten the nut (B) fully to tighten the tensioner securely.
- Tightening Torque: 35.2 - 52.8 N·m**

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NOTE:

- As for the bolt (A), be very careful not to over-tighten it beyond of a tension of 8 N·m.
- ④ Loosen the bolt (A) to a tightening torque of 3.9 to 4.1 N·m. (For this operation, loosen the bolt (A) about 1/2 turn.)
- ⑤ Check the tension of the drive belt.

(In the case of J102 series)

(1) Check of tension of drive belt

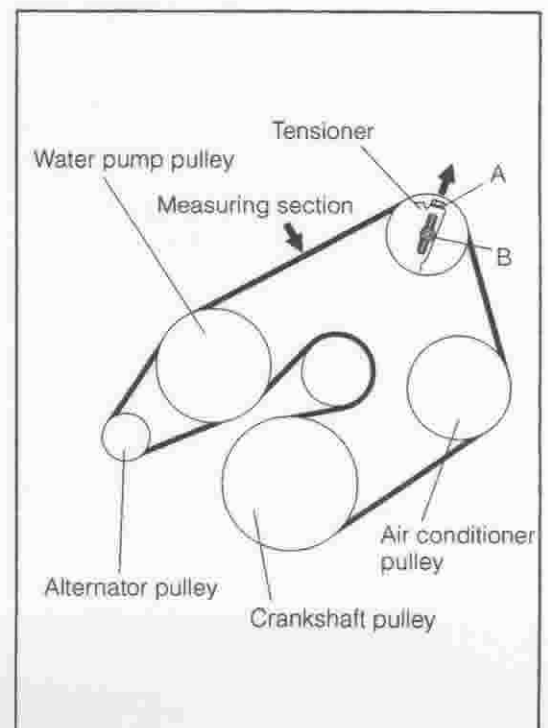
Apply a force of 98 N to the position between the water pump pulley and the tensioner, as shown in the right figure. Measure the deflection amount.

Specified Values

	New belt	Used belt
Belt deflection amount	9.0 - 11.0 mm	13.0 - 15.0 mm
Belt tension	490 - 690 N	340 - 440 N

NOTE:

- The tension can be measured by using a belt tension gauge.
- When installing a new belt, set the values to the median values of the specified values for new belts.
- When installing the belt that has been used on a running engine for more than five minutes, it should be adjusted to the median values of the specified values for used belts.



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