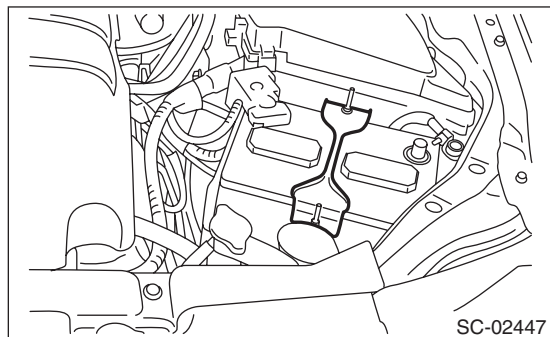


4. Battery

A: REMOVAL

- 1) After disconnecting the battery ground terminal, remove the terminal cover, then disconnect the positive terminal.
- 2) Remove the flange nut from battery rod and remove battery holder.



- 3) Remove the battery.

B: INSTALLATION

Install in the reverse order of removal.

Tightening torque:

3.5 N·m (0.4 kgf-m, 2.6 ft-lb)

NOTE:

- Clean the battery cable terminals and apply grease to retard the formation of corrosion.
- Connect the positive (+) terminal, and then connect the negative (–) terminal of the battery.
- After the battery is installed, initial diagnosis of the electronic throttle control is performed. Therefore, start the engine after 10 seconds or more have passed since turning the ignition switch to ON.

C: INSPECTION

WARNING:

- **Electrolyte is corrosive acid and has toxicity; be careful of handling the fluid.**
- **Do not let electrolyte contact with skin, eyes or clothing. Especially at contact with eyes, flush with water for 15 minutes and get prompt medical attention.**
- **Do not let electrolyte contact with painted surfaces.**
- **Batteries produce explosive gases; be careful of handling.**
- **Keep open flames away from batteries.**
- **In case an explosion does occur, wear safety glasses when working near any battery. Never lean over a battery.**
- **Ventilate when using or charging batteries in enclosed space.**

- **Before starting work, remove rings, watches and other metallic belongings.**
- **When in contact with a metallic portion of the vehicle, never allow metallic tools held in the other hand to come into contact with the battery positive terminal or any hardware attached to the terminal.**

1. EXTERNAL PARTS

Check the battery case, top cover, vent plugs, and terminal posts for dirt or cracks. If necessary, clean with water and wipe with a dry cloth. Apply a thin coat of grease on the terminal posts to prevent corrosion.

2. ELECTROLYTE LEVEL

Check the electrolyte level in each cell. If the level is below MIN level, bring the level to MAX level by pouring distilled water into the battery cell. Do not fill beyond MAX level.

3. SPECIFIC GRAVITY OF ELECTROLYTE

1) Measure specific gravity of electrolyte using a hydrometer and a thermometer. Specific gravity varies with temperature of electrolyte, so it must be corrected for 20°C (68°F) using the following calculation:

$$S_{20} = St + 0.0007 \times (t - 20)$$

S₂₀: Specific gravity corrected at electrolyte temperature of 20°C (68°F)

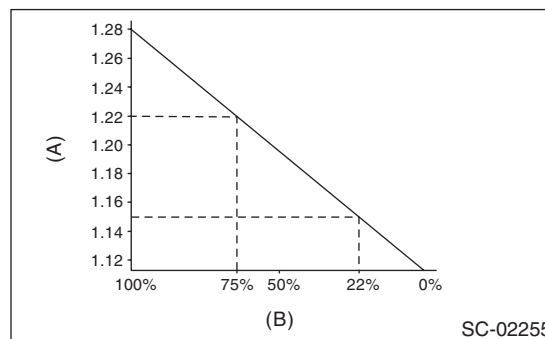
St: Measured specific gravity

t: Measured temperature (°C)

Determine whether or not battery must be charged, according to the corrected specific gravity.

Standard specific gravity: 1.220 — 1.290 [at 20°C (68°F)]

2) Measuring the specific gravity of the electrolyte in the battery will disclose the state of charge of the battery. The relation between specific gravity and state of charge is as shown in the figure.



(A) Specific gravity [20°C (68°F)]

(B) State of charge

D: MEASUREMENT

WARNING:

Do not bring an open flame close to the battery while working.

CAUTION:

- Prior to charging, corroded terminals should be cleaned with a brush and common caustic soda solution.
- Be careful since battery electrolyte overflows while charging the battery.
- Observe instructions when handling the battery charger.
- Before charging the battery on the vehicle, disconnect the battery ground terminal to prevent damage of generator diodes or other electrical units.

1. JUDGMENT OF BATTERY IN CHARGED CONDITION

1) Specific gravity of electrolyte should be held within the specific range from 1.250 to 1.290 for more than one hour.

2) Voltage per battery cell should be held at a specific value in a range from 2.5 to 2.8 V for more than one hour.

2. CHECK CONDITION OF CHARGE WITH HYDROMETER

Hydrometer indicator	State of charge	Corrective action
Green	65% or more	Load test
Dark	65% or less	Charge battery
Clear	Low electrolyte	Replace the battery.* (If cranking is difficult)
* Check electrical system before replacement.		

3. NORMAL CHARGING

Charge the battery at the current value specified by manufacturer or at approximately 1/10 of battery's ampere-hour rating.

4. QUICK CHARGING

CAUTION:

- Observe the items in "3. NORMAL CHARGING".

- Never use 10 A or more when charging the battery because it will shorten the battery life.

Quick charging is a method that the battery is charged in a short period of time with a relatively large current by using a quick charger. Since a large current flow raises electrolyte temperature, the battery is subject to damage if the large current is used for prolonged time. For this reason, quick charging must be carried out within a current range that will not raise the electrolyte temperature to 40°C (104°F) or more. Also the quick charging is a temporary mean to bring battery voltage up to some level, and battery should be charged slowly with low current as a rule.

ENGINE (DIAGNOSTICS)

EN(H6DO)(diag)

	Page
1. Basic Diagnostic Procedure	2
2. Check List for Interview	4
3. General Description	6
4. Electrical Component Location	9
5. Engine Control Module (ECM) I/O Signal	18
6. Engine Condition Data	28
7. Data Link Connector	29
8. General Scan Tool	30
9. Subaru Select Monitor	37
10. Read Diagnostic Trouble Code (DTC)	46
11. Inspection Mode	47
12. Drive Cycle	53
13. Clear Memory Mode	62
14. Compulsory Valve Operation Check Mode	63
15. System Operation Check Mode	64
16. Malfunction Indicator Light	67
17. Diagnostics for Engine Starting Failure	74
18. Diagnostic Procedure for Subaru Select Monitor Communication	86
19. List of Diagnostic Trouble Code (DTC)	88
20. Diagnostic Procedure with Diagnostic Trouble Code (DTC)	98
21. General Diagnostic Table	393