

To correct the electrolyte level, remove the battery cell caps from the cells needing level correction. For ease of cell level correction a small syringe or plastic funnel should be used. Carefully add the proper amount of distilled water to bring the electrolyte level of the cells between the lower and upper marks. For maximum battery performance and life, only distilled water should be added, however, in an emergency situation where electrolyte level is found to be low and distilled water is not available, drinking water of a low mineral content can be used. Reinstall the cell caps. (Fig. 10-3)

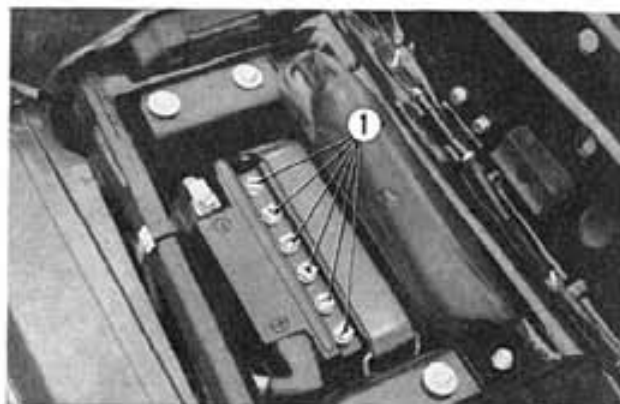


Fig. 10-3 ① Battery cell caps

2. Check the specific gravity of the battery electrolyte

The specific gravity is measured with a hydrometer, the type shown in Fig. 10-4. When making a reading of the measured value, the electrolyte level in the hydrometer should be held at the eye level and the scale read at the fluid level. Temperature of the electrolyte can be measured by a rod thermometer. (Fig. 10-4)

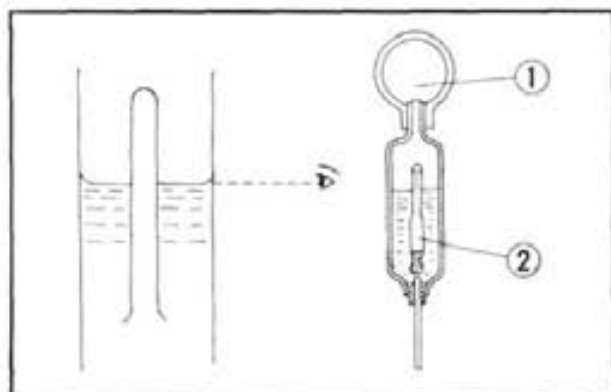


Fig. 10-4 ① Hydrometer
② Float

The relation between the battery capacity and the specific gravity (residual capacity) is shown in Fig. 10-5. When the specific gravity is 1.189 at 20°C (68°F) (less than 50%) the residual capacity is small and if continued to be used in such a condition, it will eventually lead to trouble as well as shortening the battery life, therefore, the battery should, under such a condition, be recharged as soon as possible. (Fig. 10-5)

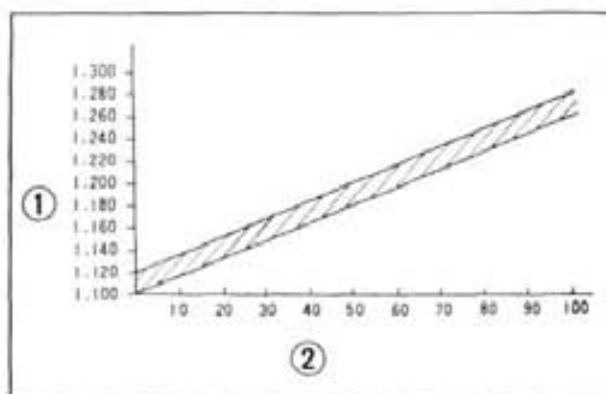


Fig. 10-5 ① Specific gravity (20°C)
② Residual capacity (%)

The electrolyte used in the battery must be comprised of pure sulfuric acid diluted to the designated specific gravity. The specific gravity will vary with the temperature, therefore, the specific gravity index is based on the electrolyte temperature of 20°C (68°F). The temperature correction formula should be used to derive at the proper specific gravity for the measure temperature of the electrolyte.

$$S_{20} = S_t + 0.0007 (t - 20)$$

Where:

S_{20} = Specific gravity of the electrolyte corrected to 68°F (20°C)

S_t = Specific gravity of the electrolyte measured temperature, t°C

t = Temperature of the measured electrolyte

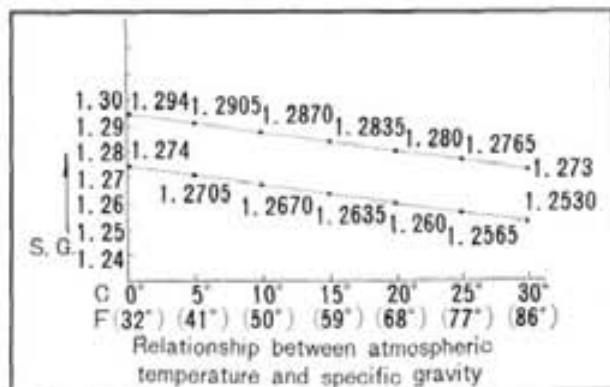


Fig. 10-5-1