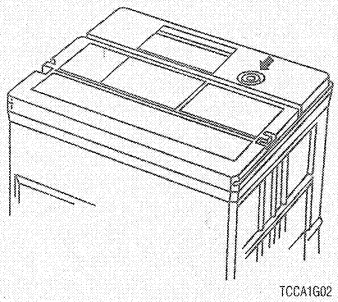


TCCA1G02

Fig. 54 Maintenance-free batteries usually contain a built-in hydrometer to check fluid level

tilled water should be used, because the chemicals and minerals found in most drinking water are harmful to the battery and could significantly shorten its life.

If water is added in freezing weather, the vehicle should be driven several miles to allow the water to mix with the electrolyte. Otherwise, the battery could freeze.

Although some maintenance-free batteries have removable cell caps, the electrolyte condition and level on all sealed maintenance-free batteries must be checked using the built-in hydrometer "eye." The exact type of eye will vary. But, most battery manufacturers, apply a sticker to the battery itself explaining the readings.

➡Although the readings from built-in hydrometers will vary, a green eye usually indicates a properly charged battery with sufficient fluid level. A dark eye is normally an indicator of a battery with sufficient fluid, but which is low in charge. A light or yellow eye usually indicates that electrolyte has dropped below the necessary level. In this last case, sealed batteries with an insufficient electrolyte must usually be discarded.

Checking the Specific Gravity

◗ See Figures 55, 56 and 57

A hydrometer is required to check the specific gravity on all batteries that are not maintenance-free. On batteries that are maintenance-free, the specific gravity is checked by observing the built-in hydrometer "eye" on the top of the battery case.

CAUTION

Battery electrolyte contains sulfuric acid. If you should splash any on your skin or in your eyes, flush the affected area with plenty of clear water. If it lands in your eyes, get medical help immediately.

The fluid (sulfuric acid solution) contained in the battery cells will tell you many things about the condition of the battery. Because the cell plates must be kept submerged below the fluid level in order to operate, the fluid level is extremely important. And, because the specific gravity of the acid is an indication of electrical charge, testing the fluid can be an aid in determining if the battery must be replaced. A battery in a vehicle with a properly operating charging system should require little maintenance, but careful, periodic inspection should reveal problems before they leave you stranded.

At least once a year, check the specific gravity of the battery. It should be between 1.20 and 1.26 on the gravity scale. Most auto stores carry a variety of inexpensive battery hydrometers. These can be used on any non-sealed battery to test the specific gravity in each cell.

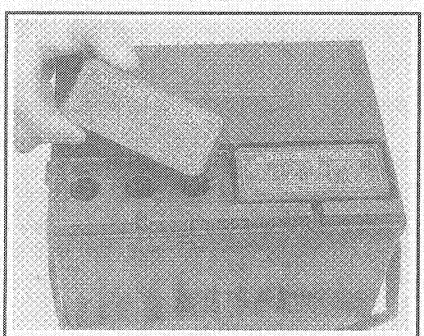
The battery testing hydrometer has a squeeze bulb at one end and a nozzle at the other. Battery electrolyte is sucked into the hydrometer until the float is lifted from its seat. The specific gravity is then read by noting the position of the float. If gravity is low in one or more cells, the battery should be slowly charged and checked again to see if the gravity has come up. Generally, if after charging, the specific gravity between any two cells varies more than 50 points (0.50), the battery should be replaced, as it can no longer produce sufficient voltage to guarantee proper operation.

CABLES

◗ See Figures 58, 59, 60 and 61

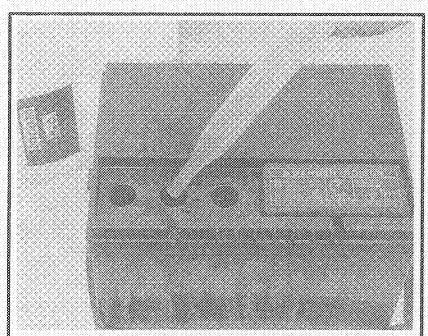
Once a year (or as necessary), the battery terminals and the cable clamps should be cleaned. Loosen the clamps and remove the cables, negative cable first. On top post batteries, the use of a puller specially made for this purpose is recommended. These are inexpensive and available in most parts stores. Side terminal battery cables are secured with a small bolt.

Clean the cable clamps and the battery terminal with a wire brush, until all corrosion, grease, etc., is



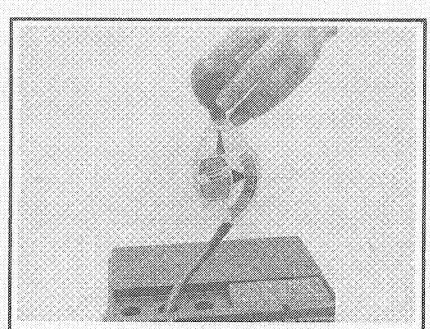
TCCA1P07

Fig. 55 On non-sealed batteries, the fluid level can be checked by removing the cell caps



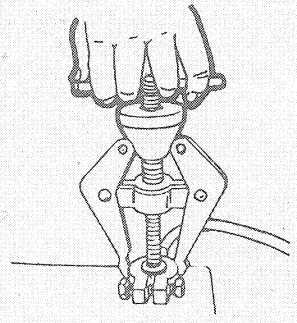
TCCA1P08

Fig. 56 If the fluid level is low, add only distilled water until the level is correct



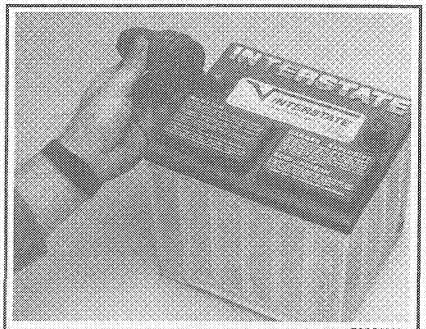
TCCA1P09

Fig. 57 Check the specific gravity of the battery's electrolyte with a hydrometer



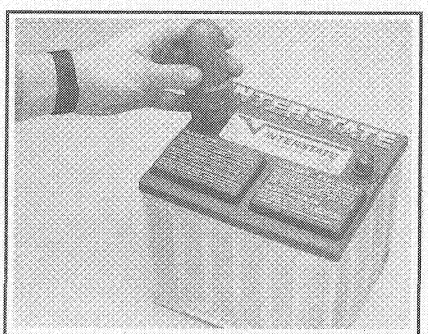
TCCS1254

Fig. 58 A special tool is available to pull the clamp from the post



TCCS1207

Fig. 59 The underside of this special battery tool has a wire brush to clean post terminals



TCCS1208

Fig. 60 Place the tool over the battery posts and twist to clean until the metal is shiny