

GS Yuasa E-Learning Support Documentation

Motorcycle battery commissioning & care

Overview:

This support documentation has been designed to work in conjunction with the GS Yuasa e-learning course “Motorcycle battery commissioning & care” and covers of the following subjects:

- **Battery commissioning introduction**
- **Health & safety precautions**
- **Battery & electrolyte preparation**
- **Battery filling procedure**
- **Battery charging**
- **In-service battery care**

Battery commissioning introduction

Commissioning procedure time frame

Depending on type and technology some GS Yuasa motorcycle batteries require commissioning which prepares the battery for service. The procedure is extensive and must be planned and given a suitable timeframe.

It can be broken down into the following segments:

- Battery preparation
- Electrolyte preparation
- Battery filling
- Post filling stand time
- Initial battery charge
- Post charge stand time

Commissioning procedure overview

Procedure support documentation is supplied with the product, failure to properly commission the battery can result in:

- Internal damage
- Reduced performance
- Premature failure
- Increased warranty claims
- Customer complaints



Health & safety precautions

Health & safety overview

Before starting the commissioning, process read the hazard warnings and instructions supplied. Ensure your work area is well-ventilated and you are wearing all the appropriate personal protective equipment as electrolyte solution contains highly corrosive sulphuric acid. It is also essential that the battery is not be fitted to the vehicle prior to or whilst commissioning.

Electrolyte handling

The first stage of commissioning is filling the battery with electrolyte. Initially check that the electrolyte is correct using the reference table supplied to cross reference the battery type with the ECR code number on the electrolyte container. Do not use if the ECR code numbers are not identical for the battery type or use electrolyte from any other source.

Battery & electrolyte preparation

Battery preparation

Remove the battery from its packaging and check its condition paying special attention to the battery filler port sealing foil strip. If the seal is broken do not commission as the battery may be damaged internally. If intact place on a flat level surface and remove the foil strip.

Electrolyte preparation

Take the electrolyte container and remove the plastic sealing strip and put this aside for use later. Do not pierce or peel the sealed areas on the electrolyte container.

Battery filling

Initial filling

Position the electrolyte container in line with the six filler ports on the battery. Once aligned push the container fully down which will break the seals and allow the electrolyte to begin flowing in to the battery. Do not tilt the container as this may interrupt the flow of electrolyte or cause leakage.

When the electrolyte is flowing into the battery you should be able to see air bubbles rising from all the filler ports. If no bubbles are visible, gently tap the electrolyte container and battery casing two or three times to assist the flow. Do not squeeze, remove or cut the container but allow the battery to fill up naturally.

Post filling

When all the electrolyte has drained into the battery the container must be left in position for a minimum of 30 minutes for 3Ah to 12Ah and 60 minutes for batteries more than 12 Ah. After this time remove the container and dispose of appropriately and allow the battery to stand for a further 2 hours while the electrolyte soaks into the plates.



Battery charging

Initial charge

After the correct standing time has elapsed it is **essential** that the battery is charged before being fitted. Failure to do so could result in reduced service life, premature failure and damage to the motorcycle.

Place the sealing strip loosely over the filling ports but do not force into its final position then charge the battery in a well ventilated area using an appropriate smart charger or if using a constant current charger consult the charging information printed on the battery.

Make sure the charging leads are correctly fitted before switching on the mains power. If the battery gets hot during charging turn off the charger and allow it to cool before switching back on. Once charging has finished, wait at least 5 minutes before disconnecting and take care that cables and connections are handled in a way that avoids accidental sparking. Always switch off the mains power before disconnecting the charging leads as there is a risk of explosion

Post charging

After the charger has been disconnected push down firmly on the port sealing cap with both hands applying pressure evenly. Do not pound or hammer on the sealing cap as this will cause damage and once fitted, never remove the sealing cap for any reason.

Allow the battery to stand for a further hour before checking and recording its voltage. Install the battery on the motorcycle and remember to connect the red positive lead first.

In-service battery care

Discharge overview

Once fully commissioned the constant chemical reaction within the battery that has been started and cannot be stopped. This means that the battery is now continuously releasing electrical energy and self-discharging.

When in service the self-discharge rate is dependent on temperature and the number of permanent electrical consumers on the motorcycle. When disconnected and at 10°C a battery self-discharges at approximately 0.1 Volts per month which doubles with every 10°C temperature rise. However, when left connected to the vehicle the extra electrical demands of the permanent electrical consumers increase the discharge rate significantly.

Discharge damage

If the battery voltage falls to and below 12.40 Volts for a long-time period irreversible sulphation damage and battery failure will occur. To prevent this GS Yuasa, advise the battery is connected to a suitable charger when the motorcycle is not used for extended periods of time. This can be done on or off the vehicle and will maintain the battery in an optimum condition.

Periodic maintenance

If removing the battery fully charge it prior to storage. Check its voltage is more than 12.40 Volts every month and charge as required. Recharge every three months regardless of the voltage to refresh and mix the electrolyte solution.



Constant maintenance

If leaving the battery on the motorcycle, connect a smart charger featuring a pulse mode. This will maintain the battery a 95 to 100% capacity by monitoring voltage and applying a pulse charge when required.

