

Introduction

This training course deals with new motorcycle battery commissioning & in-service care.

It will provide you with information on the correct process for new battery commissioning and caring for batteries to prolong service life.

The course consists of the following modules:

- Battery commissioning introduction
- Health & safety precautions
- Battery & electrolyte preparation
- Battery filling procedure
- Initial battery charge
- Battery in-service care

Each module has its own training video, downloadable resources and some will be followed by a short multiple-choice test.

Once you have completed all modules there will be a final test to check your understanding and knowledge.

Once passed you will earn a certificate for the completion of this course.

Module 1 - Battery Commissioning Introduction

Depending on type and technology some GS Yuasa motorcycle batteries require commissioning.

This process 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

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

Module 2 - Health & Safety Precautions

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.

Also, the battery must not be fitted to the vehicle prior to or whilst commissioning.

The first stage of commissioning is filling the battery with electrolyte.

For this course, we will use a YTX14-BS. Other batteries in the GS and Yuasa ranges may require a slightly different process.

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 and never use electrolyte from any other source.

Module 3 - Battery & Electrolyte Preparation

Remove the battery from its packaging and check its condition paying special attention to foil strip covering the filler ports.

If the seal is broken do not commission as the battery may be damaged internally.

If the foil strip is intact, carefully remove it and place the battery on a solid, flat level surface that is capable of supporting the battery's weight.

Take the electrolyte container and remove the plastic sealing strip.

Put this aside for use later.

Do not pierce or peel the sealed areas on the electrolyte container.

Module 4 - Battery Filling Procedure

Now position the electrolyte container in line with the six filler ports on the battery.

Once aligned push the container fully down.

This will break the seals and the electrolyte will begin to flow in to the battery.

Do not tilt the container as this may interrupt the flow of electrolyte or cause leakage.

You should now be able to see air bubbles rising from all the filler ports.

If not, gently tap the electrolyte container and battery casing two or three times to assist the flow (like so).

Do not squeeze, remove or cut the container.

Allow the battery to fill up naturally.

When all 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.

Now allow the battery to stand for a further 2 hours while the electrolyte soaks into the plates.

Module 5 - Initial Battery 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 loosley over the filling ports.

Do not force the sealing strip into its final position.

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.

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.

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.

Module 6 - Battery In-Service Care

Once fully commissioned the constant chemical reaction within the battery 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. This rate doubles with every 10°C temperature rise.

When left connected the extra electrical demands of the motorcycle consumers increases the discharge rate significantly.

If the battery voltage falls to and below 12.40 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.

If removing the battery, fully charge it prior to storage.

Check its voltage is more than 12.40 every month and charge as required.

Recharge every three months regardless of the voltage to refresh and mix the electrolyte solution.

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.