

## Introduction

This training course deals with the GS Yuasa battery range

The object of this training course is to give you an overview of the battery range, associated products and services offered by GS Yuasa.

Additional training material specific to the battery range is available in the GS Yuasa product range course. This course will include additional information on the products and services offered by GS Yuasa including details regarding the features, advantages and benefits of each battery type, important information on specifications and applications.

This training course consists of the following modules:

- Vehicle range overview
- Motorcycle range overview
- Industrial VRLA range overview
- Other industrial battery types
- Accessories and other services

## Module 1 - Vehicle Range Overview

All GS and Yuasa batteries are OE quality performance and specification. They are manufactured with the highest quality materials and production processes, and feature the latest battery technology.

Engineered to provide long life, reliability and dependable power. They also have advanced safety features and are the number one choice globally.

The Yuasa conventional battery range is for cars and light commercial vehicles with standard ignition systems.

The Yuasa range consists of three tiers.

YBX1000, YBX3000 and the premium YBX5000 series

The GS SMF range consists of a single tier.

These ranges are optimised for use on conventional vehicles.

For vehicles equipped with emission reduction technologies such as Start - Stop, GS Yuasa have designed a range of next generation batteries.

The starting specifications of these have been greatly increased to ensure they can meet the higher cyclic demands placed on them by these systems.

The Yuasa range consists of YBX7000 Enhanced Flooded Battery or EFB and YBX9000 Absorbed Glass Mat or AGM.

The GS range consists of GS EFB and GS AGM types.

The GS Yuasa auxiliary range features batteries that are suitable for use in vehicles that feature an auxiliary or back-up battery system.

The range features a variety of application specific types including conventional flooded and AGM technologies.

The GS Yuasa commercial vehicle range has been designed to support both the starting needs of large diesel engines and the deep cycle requirements placed on the battery by vehicle systems.

These batteries provide high levels of power, excellent resistance to vibration and are ideal for deep cyclic applications.

The Yuasa range features YBX1000, YBX3000, and YBX5000 Super Heavy Duty conventional flooded types and for ultimate service capability YBX7000 EFB batteries.

GS Yuasa also produce a range of batteries for leisure, marine, specialist and garden applications.

The ranges are tiered and feature conventional, EFB and AGM types.

Yuasa Active leisure and marine, and GS leisure batteries are optimised for caravans, motorhomes and small watercraft.

The Watt/Hour rating, number of available cycles, marine cranking amps and NCC verification class is published on the label.

Yuasa Active marine start and GS marine batteries are specially developed for boats and larger watercraft.

They feature high marine cranking amps and are built to cope with the extreme vibration caused by waves and trailer transport.

Specialist and garden batteries are small footprint batteries optimised for starting engines on garden tractors and kit cars. They can also be used for a wide range of other applications.

To find out more about GS Yuasa's products visit: [Yuasa.com](http://Yuasa.com) for Yuasa products or [gs-battery.com](http://gs-battery.com) for GS products.

Here you will be able to browse the full product range, view full specifications, details and images, and download technical data sheets.

## Module 2 - Motorcycle & Powersport Range Overview

Motorcycle manufacturers demand the best so overwhelmingly choose GS Yuasa as their OE supplier.

With over 40 years of development, every Yuasa and GS motorcycle battery provides the same high performance, quality and reliability as the bike's original battery.

GS Yuasa motorcycle technology has been developed and improved over time to fulfil the increasing demands of both bike manufacturers and customers.

All GS Yuasa motorcycle batteries feature sulphate-stop.

This chemical formula prolongs battery life by drastically reducing sulphate crystal build up on the batteries plates.

The Yuasa high performance maintenance free battery range includes YTX, GYZ and some YTX references.

These batteries feature AGM technology, are fully maintenance free and deliver maximum power from minimum space and weight.

Due to their unique spill-proof design YTX and GYZ batteries can be installed at multiple mounting angles.

These features make the GS Yuasa high performance battery range ideal for use in modern applications where reduced battery weight and high-power delivery is required but small fitment space is available.

GS and Yuasa maintenance free batteries include YTX and GTX types.

These batteries feature AGM technology, designed to be maintenance free and are supplied with separate electrolyte.

Once the battery has been commissioned and sealed it is virtually leak and spill proof.

These types provide up to 3 times the service life and more starting power than conventional battery types.

Yuasa YuMicron and YuMicron CX batteries are designed for accessory laden motorcycles.

These batteries are supplied with separate electrolyte and once commissioned require low maintenance during service.

They offer higher starting power and longer life than conventional battery types.

YuMicron CX batteries use lead calcium grid technology to reduce water loss and self-discharge.

The GS and Yuasa conventional range features both 6 and 12-volt battery types which are suitable for low specification motorcycles where high levels of cranking power are not essential.

These batteries are supplied with separate electrolyte and once commissioned require normal maintenance during service.

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## Module 3 - Industrial Range Overview

The Yuasa industrial battery range features a wide selection of VRLA lithium-ion, NiCd and NiMh battery types suitable for stand-by and cyclic applications.

The Yuasa NP and RE Series have been designed for stand-by and light cyclic use

The Yuasa NP series features 6 and 12-volt types with capacities from 0.8Ah to 65Ah.

NP batteries offers guaranteed capacity, are VDF approved and have a 3 to 5-year standard commercial Eurobat classification.

Yuasa RE types are 12 volts and have capacities from 5Ah to 12Ah. RE batteries offer the same benefits as NP but also incorporate a flame retardant case and have a 6 to 9-year general purpose Eurobat classification.

NP and RE batteries can be used in a wide range of applications including fire, security alarm systems, emergency lighting, UPS and toys.

The Yuasa NPL series features 6 and 12-volt types with a capacity ranging from 24Ah to 200Ah.

Batteries in the series have a 10 to 12 long life Eurobat classification and AGM construction.

This series are flame retardant to UL94HBO with FR options flame retardant options to UL94VO.

NPL batteries are typically used in stand-by applications including security & fire, emergency lighting and telecoms.

The Yuasa SWL series features 6 and 12-volt types with a capacity ranging from 24Ah to 180Ah.

Batteries in the series have a 10 to 12 long life Eurobat classification and AGM construction.

They have excellent high-rate discharge efficiency, typically 40% higher than equivalent standard product.

This series are flame retardant to UL94HBO with FR options flame retardant options to UL94VO.

SWL batteries are typically used in UPS systems and all other high rate discharge applications.

Yuasa EN and ENL batteries feature 2, 4 and 6 volts types ranging from 18Ah to 540Ah. They are AGM type batteries with an over 12 year very long life Eurobat classification.

The range has unique mix and match parallel assembly to allow extensive variations of network capacity and low self-discharge rate for long storage life.

The ENL series is a 15-year design life version of the EN series.

Both are used in a range of stand-by applications including UPS and telecoms.

The Yuasa FXH series have front terminal connections for ease of installation and maintenance.

FXH batteries are 12-volt with a capacity ranging from 45Ah to 200Ah.

Batteries in the series have a 10 to 12 long life Eurobat classification and AGM construction.

The FXH series are flame retardant to UL94VO.

FXH batteries are typically used in UPS, telecoms and emergency lighting applications.

Yuasa SLE & SLR larger cyclic batteries are for specialist applications including large scale utility, commercial and renewable energy storage.

They are also suitable for load shedding off grid UPS and telecoms.

These batteries are 2-volt types with a capacity of 500 or 1000Ah.

SLE batteries have a cyclic design life of up to 3000 cycles, for SLR this rises to 5500

Yuasa REC and NPC series batteries are AGM types designed for cyclic. They offer double the cyclic life of standard VRLA with up to 600 cycles.

Each has the durability for deep discharge and a modern construction to prolong service life.

The NPC series are 12-volt types from 24Ah to 100Ah. The larger REC series are 12 volts with 10Ah to 80Ah.

REC and NPC types are used in cyclic applications including golf, mobility, renewable energy and professional tools.



## Module 4 - Other Industrial Battery Types

The GS Yuasa LIM Li-ion Series utilises advanced lithium-ion technology.

When compared to VRLA types lithium-ion is lighter, higher powered, has a longer service life, and is fully sealed.

These modules feature a built-in battery monitoring system and are capable of high charge and discharge currents of up to 600 amps.

LIM batteries have a cyclic design life of up to 20000.

Lithium-ion is being adopted for use in UPS, energy storage, smart grid, AGV traction power and many other high energy applications.

GS Yuasa supply a range of Nickel Cadmium and Nickel Metal Hydride battery packs.

These are available in a wide range of configurations and tailored to a range of small power applications including emergency lighting, toys and electronic equipment.

GS Yuasa also supply CR123A and CR2 non-rechargeable lithium batteries.

The Yuasa multi-purpose Pro-Spec range has been designed for deep cycle applications.

The range features 6 8 and 12-volt battery types from 150 to 260Ah.

All have dual terminal types excellent vibration resistance and are capable of over 500 cycles.

Pro spec are suitable for deep cyclic traction applications including golf carts, mobility vehicles, fork lifts, access platforms and floor cleaners.

## Module 5 - Accessories & Other Services

GS Yuasa also offer a range of chargers, testers and specialist fitting equipment suitable for vehicle and motorcycle battery types.

GS Yuasa chargers feature switch mode SMART technology that provides fully automatic safe on or off vehicle charging, maintenance and care for all battery types.

GS Yuasa battery testers use the latest conductance testing technologies to accurately test batteries for warranty claim administration purposes and the general testing of condition and serviceability.

Modern vehicles featuring the latest emission reduction systems feature technology that now has a requirement for system reprogramming after battery replacement.

The GS Yuasa YU-FIT battery configuration tool can interrogate the appropriate vehicle system and carry out a battery configuration procedure. This ensures correct vehicle system functionality and optimum battery performance.

The GS Yuasa industrial range also features chargers charging accessories battery monitoring devices and testers for all the battery types within the range.

The charger range features multi-stage proportional timing technology that provides fully automatic safe charging, maintenance and care for all lead acid battery types.

The battery testers use the latest conductance testing technologies to accurately test batteries for state of health and impedance testing technology to accurately diagnose VRLA battery faults on systems including:

- UPS
- Large back-up battery installations
- Central lighting systems

The GS Yuasa technical department can provide a full battery design and quotation service for all industrial battery projects including:

- Battery sizing
- Rack, cladded rack and cubical design & supply
- Gas & heat calculations
- AutoCAD drawings
- Battery system testing

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