Exide Training Graphic Assets
Module 06 | (ML) Marine Leisure Batteries

Edition 2
Revised 05.2021

EXIDE® TECHNOLOGIES | THE POWER OF NEW

Introduction

Module 06 | (ML) Marine Leisure Batteries

Exide Lead-Acid Batteries
Training Modules

Module 01 | Lead-Acid Battery Basics

Module 02 | Battery Evolution and the Environment

Module 03 | (LV) Light Vehicle Batteries

Module 04 | (CV) Commercial Vehicle Batteries

Module 05 | (MC) Motorcycle Batteries

Module 06 | (ML) Marine Leisure Batteries

Module 07 | Battery Testing and Installation

Module 08 | Battery Handling, Storage and Recycling

Module 09 | Battery Aftermarket

Important Notes regarding
Exide Training Graphic Assets

Marine Leisure European Market

Module 06 | (ML) Marine Leisure Batteries

5.7 million
recreational boats*

5.4 million
leisure vehicles*

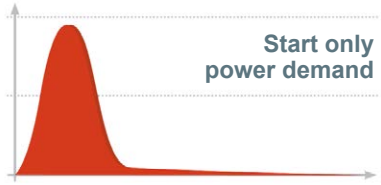
*International Boat Industry (2015) and European Caravan Federation (2018)

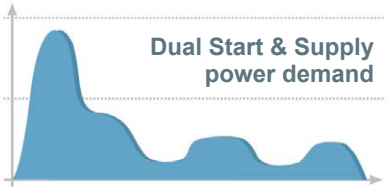
Pre-Covid-19 pandemic figures
Future trends suggest significant increase in this type of activity

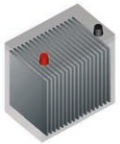
EXIDE TECHNOLOGIES | THE POWER OF NEW

Comparing Starter and Supply Batteries

Module 06 | (ML) Marine Leisure Batteries







Starter Battery

Thinner plates allow for more plates in the battery. Better for short bursts of high energy needed for starting.

Supply (Deep Cycle) Batteries

Thicker plates improve the cyclability for deeper and longer discharge.

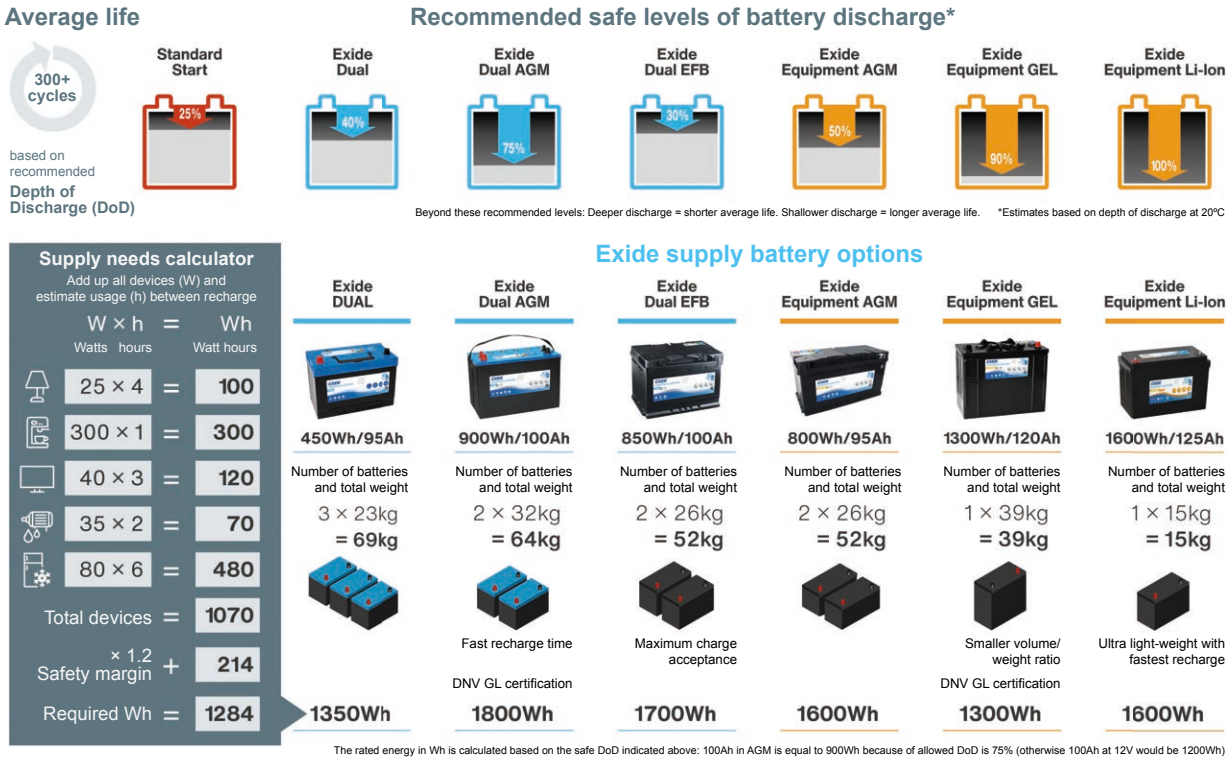
	Starter Battery	Dual batteries for starting and supply needs	Equipment batteries supply needs
		Available as Dual, Dual AGM, Dual Orbital AGM and Dual EFB	Available as Equipment Standard Flooded, Equipment AGM, Equipment GEL and Equipment Li-Ion for greater Depth of Discharge
Caravan		Cabin lighting and appliances	Cabin lighting and appliances
Motorhome	SLI	Engine cranking plus cabin lighting and appliances	Cabin lighting and appliances
Boat	SLI	Engine cranking plus cabin lighting and appliances	+ specialist marine equipment

SLI = Starting, Lighting (standard vehicle), and Ignition

EXIDE TECHNOLOGIES | THE POWER OF NEW

Supply Batteries – energy needs formula

Module 06 | (ML) Marine Leisure Batteries

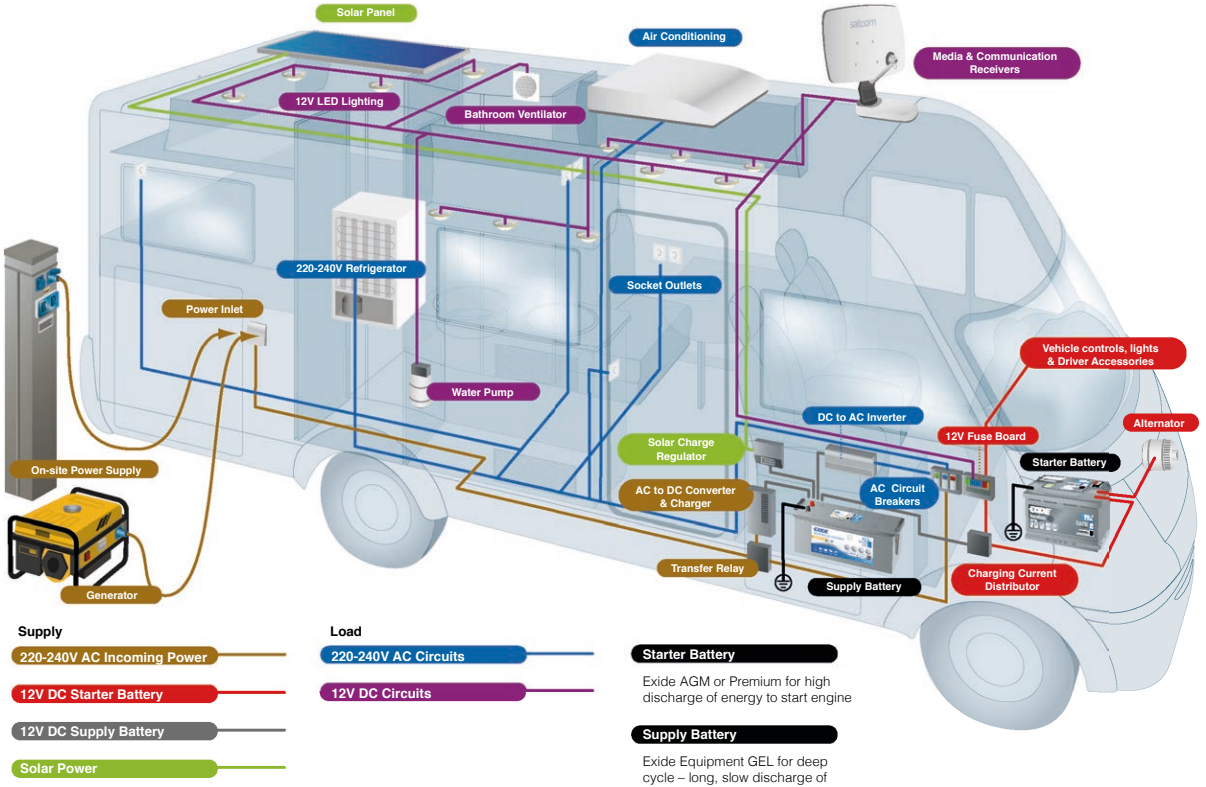


EXIDE TECHNOLOGIES | THE POWER OF NEW

Electrical systems in a typical leisure vehicle

Module 06 | (ML) Marine Leisure Batteries

Similar devices are found in a marine vessel with the addition of navigation equipment, electric winches and thrusters.



EXIDE TECHNOLOGIES | THE POWER OF NEW

Independent battery testing and verification

Module 06 | (ML) Marine Leisure Batteries

DNV is the world's largest classification society, providing services for sea-going vessels.

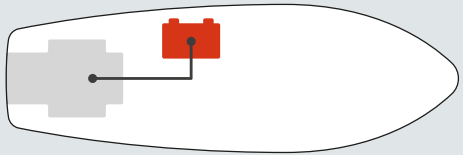
Batteries approved for use at sea:
Exide Start AGM, Dual AGM and Equipment GEL

Some Exide leisure batteries are NCC verified and approved for use in motorhomes and caravans.

Battery configurations for recreational boats

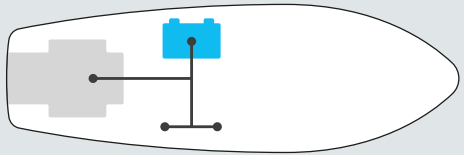
Module 06 | (ML) Marine Leisure Batteries

Engine only



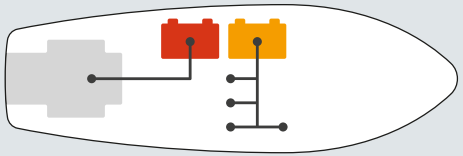
Single or bank of batteries provides engine starting power

Engine & Equipment



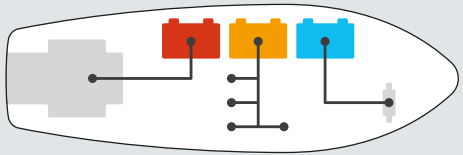
Single or bank of Dual batteries provide engine starting and equipment supply power

Engine + Equipment

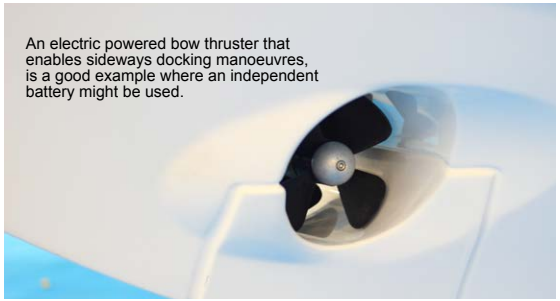


Separate batteries provide engine starting and equipment supply power

Engine + Equipment + Other



In addition to separate starter and supply batteries, independent batteries can provide direct power for high-demands of electrical winches, thrusters or trolling motors.



An electric powered bow thruster that enables sideways docking manoeuvres, is a good example where an independent battery might be used.

EXIDE TECHNOLOGIES | THE POWER OF NEW

Exide ML Start Batteries

Module 06 | (ML) Marine Leisure Batteries

Start

Standard flooded with plug venting.

Benefits:

- Superior starting power
- Absolutely maintenance free
- Very low gas emission
  Spark arrestor & central degassing
  for safe gas conduction
- Slight inclination

Start AGM

Absorbent Glass Mat flat or orbital with VRLA venting.

Benefits:

- Superior starting power
- Absolutely maintenance free
  Suitable for long resting periods
- Internal gas recombination
  No location constraints (cabin safe)
  Safe and clean (spark & spill-proof)
- High inclination
  High vibration & tilt resistant
- Up to 50% faster recharging

EXIDE TECHNOLOGIES | THE POWER OF NEW

Exide Dual Batteries

Module 06 | (ML) Marine Leisure Batteries

Dual

Standard flooded with central degassing

Benefits:

- Start and supply
- Low maintenance
- Low gas emission
  To be installed in special container
- Upright mount
  Medium vibration & tilt resistant
- Top indicator for electrolyte & charge inspection (except ER660)

Dual AGM

Absorbent Glass Mat flat or orbital with VRLA venting.

Benefits:

- Extra start & supply
- Absolutely maintenance free
  Suitable for long resting periods
- Faster recharge
  Up to 50% faster recharging
- High inclination
  High vibration & tilt resistant
- Internal gas recombination
  No location constraints (cabin safe)
  Safe and clean (spark & spill-proof)

Dual EFB

Enhanced Flooded Battery

Benefits:

- Extra start & supply
- Maintenance free
- Maximum Charge Acceptance

EXIDE TECHNOLOGIES | THE POWER OF NEW

Exide Equipment Batteries

Module 06 | (ML) Marine Leisure Batteries

Equipment

Standard flooded with glass mat separators and plug venting.

Benefits:

- Superior cycling
- Low maintenance
- Slight inclination
  Medium vibration & tilt resistant
- Recommend installation in special compartments (due to gassing)

Equipment AGM

Absorbent Glass Mat

Benefits:

- Superior cycling
- Internal gas recombination
- Maintenance free
- High inclination
- Faster recharging

Equipment GEL

GEL (electrolyte fixed in gel) with venting.

Benefits:

- Extreme cycling (2 x AGM)
- Internal gas recombination
  No location constraints (cabin safe)
  Safe and clean (spark & spill-proof)
- High inclination
  High vibration & tilt resistant
- Absolutely maintenance free
  Suitable for long resting periods
- High energy density
  Space saving of up to 30%

Equipment Li-Ion

Lithium-Ion technology

Benefits:

- Ultra light weight
- Extreme cycling (5 x GEL)
- Up to 50% faster recharging
- Ready to use
- Multiple positions
- Absolutely maintenance free
  Suitable for long resting periods

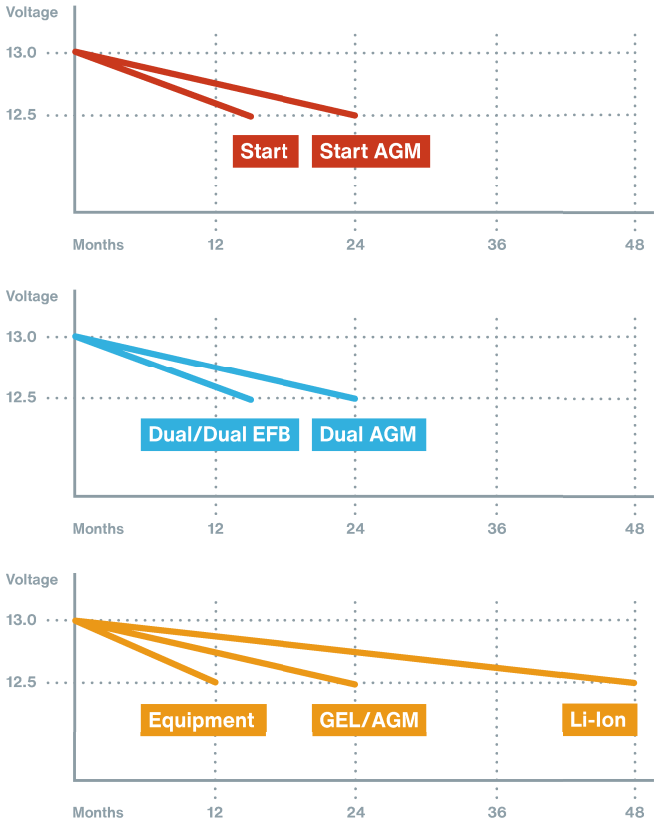
EXIDE TECHNOLOGIES | THE POWER OF NEW

Seasonal use – winter battery care

Module 06 | (ML) Marine Leisure Batteries

- Fully charge batteries before any prolonged period of inactivity.
- Disconnect battery to avoid any parasite load (a small but continuous discharging load).
- Store as close as possible to an ideal temperature of 20º C. This may require removal from vehicle or vessel.
- Avoid battery freezing causing permanent damage.
- Connect battery to a trickle charger or top-up charge monthly.
- Only use a high quality charger designed for the specific battery type i.e. AGM, EFB, GEL or Li-Ion.

Shelf life at 20º



EXIDE TECHNOLOGIES | THE POWER OF NEW

Exide Technical Guide Lead-Acid Batteries

Exide Technologies has been at the forefront of Lead-Acid battery innovation since 1880 to the current day. The company was the inventor of the world's first starter battery in 1912 and more recently the first manufacturer to introduce AGM and EFB battery technology into the European aftermarket.

Exide's expertise and knowledge enabled the publication of the easy-to-understand Exide Technical Guide. The latest edition is available to view and download as a PDF at:

www.exidegroup.media/techguide

EXIDE TECHNOLOGIES | THE POWER OF NEW