

GET A BATTERY THAT LASTS LONG, REALLY LONG



AMARON[®]

LASTS LONG, REALLY LONG.

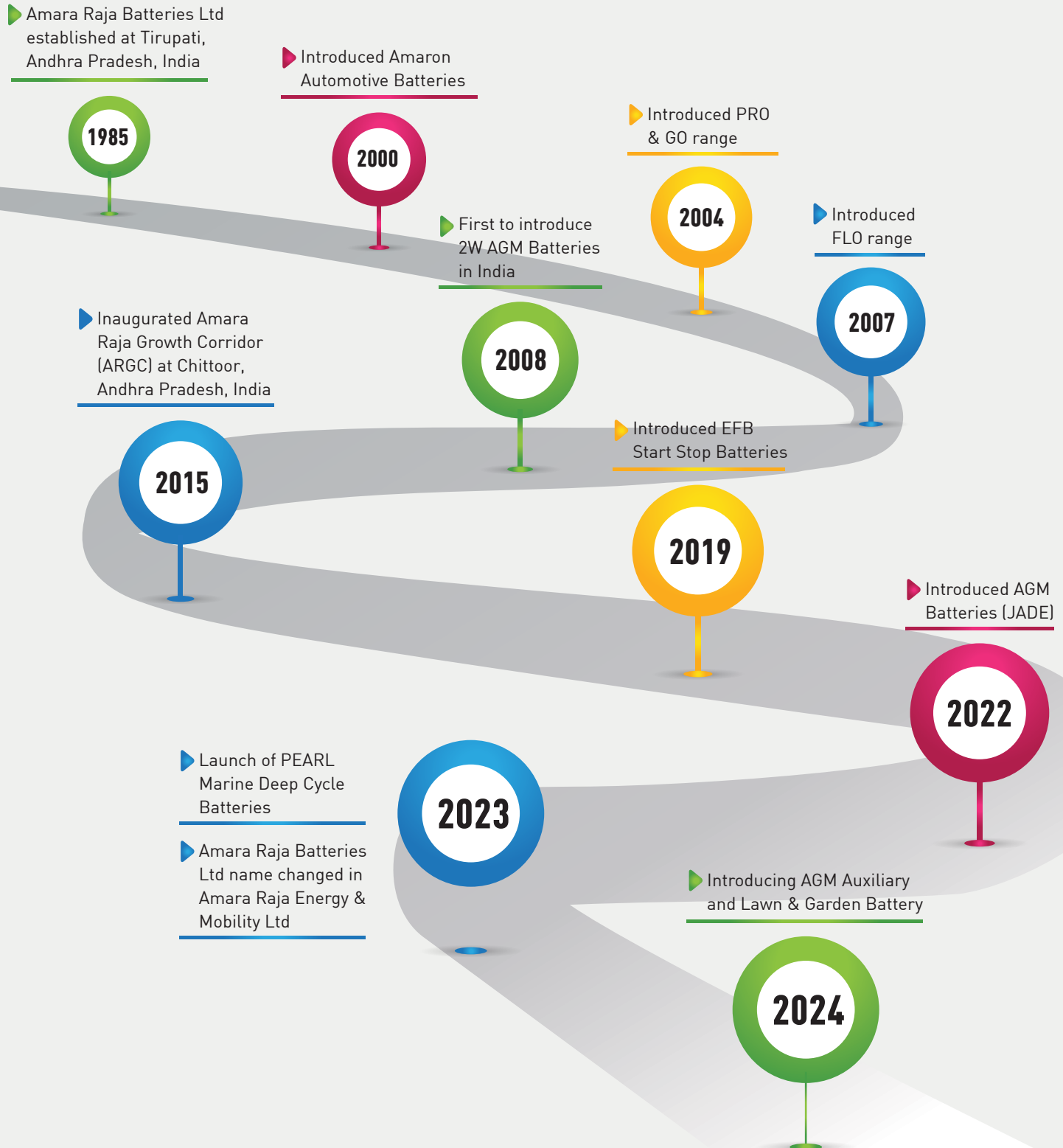
INTRODUCTION

Amaron has firmly established itself as a distinguished force within the global automotive battery sector, renowned for its cutting edge and reliable battery solutions that resonate with a diverse and widespread audience. Amaron's high performance products, trusted by car owners worldwide, exemplify enduring strength and consistent power. Amaron's utilization of state of the art technology ensures not only smooth vehicle starts but also optimal operational efficiency. This technological prowess positions Amaron as the preferred choice among discerning drivers on a truly international scale.

Amara Raja Energy Mobility Limited, formerly known as Amara Raja Batteries Ltd, plays a pivotal role as a technological trailblazer within the esteemed Amara Raja Group. As a leading manufacturer of lead acid batteries, Amaron caters comprehensively to the diverse needs of both the industrial and automotive sectors in India's dynamic storage battery industry. Going beyond national borders, Amaron's industrial and automotive batteries have found homes in over 55 countries worldwide, cementing the company's status as a key player on the global stage. This global reach underscores Amaron's unwavering commitment to deliver top tier solutions that captivate audiences around the world.



MILESTONES



PASSENGER CAR BATTERIES



ADD FORCE TO YOUR FOUR-WHEELER

In the fusion of our daily automotive experiences, cars seamlessly integrate into our lives, offering a sense of comfort and connection. The key to unlocking the ultimate driving comfort lies in a powerful start. This unparalleled experience is made possible only with a hi-cranking power battery, the heartbeat of your vehicle. Elevating this experience to new heights is the unmatched performance of Amaron automotive batteries, where every ignition is not merely a mechanical start but a symphony of power and precision.

Engineered with a meticulous focus on high heat tolerance, Amaron automotive batteries stand as beacons of reliability in the face of challenging conditions. What sets us apart is the ground-breaking ASG Duraframe technology, ensuring not just a powerful start but sustained power and an extended cyclic life. In the realm of automotive batteries, Amaron emerges as the standard-bearer of excellence, where every turn of the key is a testament to our commitment to superior performance. Since our inception in 2000, Amaron has consistently elevated the driving experience, earning unwavering customer satisfaction and loyalty across the expansive landscape of rural, semi-urban, and urban markets pan India and Global markets. Welcome to a journey where technology meets trust, and every start is a testament to Amaron's enduring excellence.

DURAFRAME SLI BATTERY CONSTRUCTION

BIC Vent

Superior design with Built in Vent Seal, Flame Arrestor and Improved Gas Exit Profile - prevents acid spewing during Recharge and Improved Safety feature. Superior Drain- Back design supports zero maintenance

Cast on Strap

The wide cast-on strap supports better conductivity and allows for more current, resulting in faster cranking

Positive Grid Design

Radial grid design facilitates quick current flow and offers high heat tolerance, with the advanced paste recipe in the grid enhancing corrosion resistance for increased durability.

PE Separator

High Performance robust PE separator – lowering internal resistance and higher CCA



SLI BATTERIES WITH DURAFRAME TECHNOLOGY



WHAT POWERS OUR BATTERIES!

AMARON with ASG DuraFrame™ Technology

Batteries with the break-through ASG (Advanced Stamped Grid) DuraFrame technology are built with punched plate making process for excellent conductivity and optimum construction.

This ensures superior battery performance with longer life in all type of passenger vehicles.

ADVANTAGES OF DURAFRAME TECHNOLOGY

- Higher cranking performance
- Low self discharge
- Optimized weight to performance
- Consistence in battery performance
- Higher cyclical life (Longer life)



SLI DURAFRAME SERIES



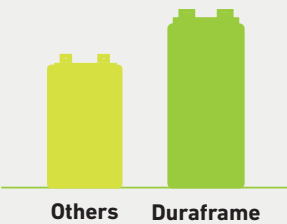
Battery	ASG DuraFrame 	Applications	Consumers	Cold Cranking Amps
PRO	✓	All premium vehicles with high power needs		
FLO	✓	All standard vehicles with medium power needs		
GO	✓	All standard vehicles with basic power needs		

DURAFRAME TECHNOLOGY DESIGN AND FEATURES

Rolling

Enhanced corrosion resistance
Better mechanical strength

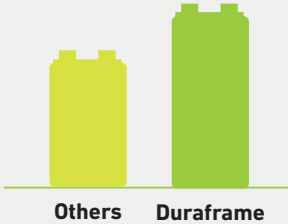
Longer life



Stamping & Coining

Improved grid to active mass adhesion

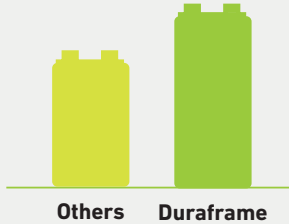
Superior vibration resistance



Grid Design

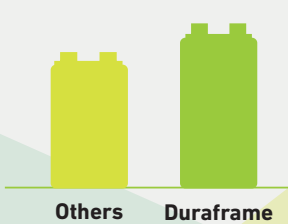
Optimized shape
50% Enhanced conductivity

Enhanced CCA



Alloy

High Tin Calcium alloy
advanced paste recipe for superior conductivity
Increased charge acceptance





DATA SHEET
AMARON PRO

Battery Model	OLD JIS Designation	Ref. AH @ C20	CCA @ -18°C Amps(SAE)	RC in mins	Assembly Layout	L (mm)	B (mm)	H (mm)	Terminal	Case Type	Hold Down
50B19R		40	370	55		187	127	227	T1	B19	B0
50B19L		40	370	55		187	127	227	T1	B19	B0
65B24R	NX100-S6PMF	50	420	80		238	129	227	T1	B24	B0
65B24L	NX100-S6LPMF	50	420	80		238	129	227	T1	B24	B0
65B24RS	NX100-S6PMF	50	420	80		238	129	227	T2	B24	B0
65B24LS	NX100-S6LPMF	50	420	80		238	129	227	T2	B24	B0
90D23R		65	560	114		232	173	225	T2	D23	B0
BH90D23R		65	560	114		232	173	225	T2	D23	B13
90D23L		65	560	114		232	173	225	T2	D23	B0
BH90D23L		65	560	114		232	173	225	T2	D23	B13
100D26R	NX110-5MF	70	620	128		260	173	225	T2	D26	B0
BH100D26R	NX110-5MF	70	620	128		260	173	225	T2	D26	B13
100D26L	NX110-5LMF	70	620	128		260	173	225	T2	D26	B0
BH100D26L	NX110-5+ C35LMF	70	620	128		260	173	225	T2	D26	B13
110D26R		80	670	150		260	173	225	T2	D26	B0
BH110D26R		80	670	150		260	173	225	T2	D26	B13
110D26L		80	670	150		260	173	225	T2	D26	B0
BH110D26L		80	670	150		260	173	225	T2	D26	B13
125D31R		95	775	165		306	173	225	T2	D31	B0
BH125D31R		95	775	165		306	173	225	T2	D31	B13
125D31L		95	775	165		306	173	225	T2	D31	B0
BH125D31L		95	775	165		306	173	225	T2	D31	B13

DATA SHEET
AMARON PRO DIN



Battery Model	OLD JIS Designation	Ref. AH @ C20	CCA @ -18°C Amps(EN)	RC in mins	Assembly Layout	L (mm)	B (mm)	H (mm)	Terminal	Case Type	Hold Down
DIN 45	545106036	45	365	76		207	175	175	T2	LB1/T4	B13
DIN 50	550154045	50	450	86		207	175	190	T2	LN1/H4	B13
DIN 55	555112050	55	500	103		242	175	190	T2	LN2/H5	B13
DIN 55R	555111050	55	500	103		242	175	190	T2	LN2/H5	B13
DIN 55	555155050	55	500	95		242	175	175	T2	LB2/T5	B13
DIN 60	560170055	60	550	109		242	175	175	T2	LB2/T5	B13
DIN 60		60	550	109		242	175	190	T2	LN2/H5	B13
DIN 60R		60	550	105		242	175	190	T2	LN2/H5	B13
DIN 65	565106590	65	590	115		278	175	175	T2	LB3/T6	B13
DIN 66	566112061	66	610	121		242	175	190	T2	LN2/H5	B13
DIN 66R	566111061	66	610	121		242	175	190	T2	LN2/H5	B13
DIN 74	574102069	74	690	131		278	175	190	T2	LN3/H6	B13
DIN 74R	574103069	74	690	131		278	175	190	T2	LN3/H6	B13
DIN 80	580122073	80	730	143		315	175	175	T2	LB4/T7	B13
DIN 90	590109080	90	800	162		353	175	190	T2	LN5/H8	B13
DIN 100	600109090	100	900	181		353	175	190	T2	LN5/H8	B13



DATA SHEET
AMARON FLO



Battery Model	OLD JIS Designation	Ref. AH @ C20	CCA @ -18°C Amps(SAE)	RC in mins	Assembly Layout	L (mm)	B (mm)	H (mm)	Terminal	Case Type	Hold Down
46B19R		35	330	52		187	127	227	T1	B19	B0
46B19L		35	330	52		187	127	227	T1	B19	B0
42B20R	NS40ZMF	35	335	55		197	129	227	T1	B20	B0
BH42B20R	NS40ZMF	35	335	55		197	129	227	T1	B20	B0
42B20L	NS40ZLMF	35	335	55		197	129	227	T1	B20	B0
BH42B20L	NS40ZLMF	35	335	55		197	129	227	T1	B20	B0
42B20RS	NS40ZSMF	35	335	55		197	129	227	T2	B20	B0
42B20LS	NS40ZLSMF	35	335	55		197	129	227	T2	B20	B0
55B24R	NS60PMF	45	380	75		238	129	227	T1	B24	B0
55B24L	NS60LPMF	45	380	75		238	129	227	T1	B24	B0
55B24RS	NS60SPMF	45	380	75		238	129	227	T2	B24	B0
55B24LS	NS60LSPMF	45	380	75		238	129	227	T2	B24	B0
70D20R		45	420	100		202	173	225	T2	D20	B0
BH70D20R		45	420	100		202	173	225	T2	D20	B13
70D20L		45	420	100		202	173	225	T2	D20	B0
BH70D20L		45	420	100		202	173	225	T2	D20	B13
85D23R	85BR60K	60	550	110		232	173	225	T2	D23	B0
BH85D23R	85BR60K	60	550	110		232	173	225	T2	D23	B13
85D23L	85B60K	60	550	110		232	173	225	T2	D23	B0
BH85D23L	85B60K	60	550	110		232	173	225	T2	D23	B13
65D26R	N50PMF	50	420	90		260	173	225	T2	D26	B0

DATA SHEET
AMARON FLO



Battery Model	OLD JIS Designation	Ref. AH @ C20	CCA @ -18°C Amps(SAE)	RC in mins	Assembly Layout	L (mm)	B (mm)	H (mm)	Terminal	Case Type	Hold Down
BH65D26R	N50PMF	50	420	90		260	173	225	T2	D26	B13
65D26L	N50LPMF	50	420	90		260	173	225	T2	D26	B0
BH65D26L	N50LPMF	50	420	90		260	173	225	T2	D26	B13
80D26R	N50ZPMF	60	500	110		260	173	225	T2	D26	B0
BH80D26R	N50ZPMF	60	500	110		260	173	225	T2	D26	B13
80D26L	N50ZLPMF	60	500	110		260	173	225	T2	D26	B0
BH80D26L	N50ZLPMF	60	500	110		260	173	225	T2	D26	B13
95D26R	NS70MF	65	600	115		260	173	225	T2	D26	B0
BH95D26R	NS70MF	65	600	115		260	173	225	T2	D26	B13
95D26L	NS70LMF	65	600	115		260	173	225	T2	D26	B0
BH95D26L	NS70LMF	65	600	115		260	173	225	T2	D26	B13
105D31R	NX120-7MF	80	670	160		306	173	225	T2	D31	B0
BH105D31R	NX120-7MF	80	670	160		306	173	225	T2	D31	B13
105D31L	NX120-7LPMF	80	670	160		306	173	225	T2	D31	B0
BH105D31L	NX120-7LPMF	80	670	160		306	173	225	T2	D31	B13
115D31R		90	750	160		306	173	225	T2	D31	B0
BH115D31R		90	750	160		306	173	225	T2	D31	B13
115D31L		90	750	160		306	173	225	T2	D31	B0
BH115D31L		90	750	160		306	173	225	T2	D31	B13
GR65-72		75	700	150		260	173	225	T2	D26	B13

DATA SHEET

AMARON GO



Battery Model	OLD JIS Designation	Ref. AH @ C20	CCA @ -18°C Amps(mm)	RC in mins	Assembly Layout	L (mm)	B (mm)	H (mm)	Terminal	Case Type	Hold Down
34B19R		32	240	38		187	129	227	T1	B19	B0
34B19L		32	240	38		187	129	227	T1	B19	B0
38B20R		35	265	43		197	129	227	T1	B20	B0
38B20L		35	265	43		197	129	227	T1	B20	B0
46B24R		45	295	56		238	129	227	T1	B24	B0
46B24L		45	295	56		238	129	227	T1	B24	B0
46B24RS		45	295	56		238	129	227	T2	B24	B0
46B24LS		45	295	56		238	129	227	T2	B24	B0
55D23R		60	320	74		232	173	225	T2	D23	B0
BH55D23R		60	320	74		232	173	225	T2	D23	B13
55D23L		60	320	74		232	173	225	T2	D23	B0
BH55D23L		60	320	74		232	173	225	T2	D23	B13
75D26R		60	450	98		260	173	225	T2	D26	B0
BH75D26R		60	450	98		260	173	225	T2	D26	B13
75D26L		60	450	98		260	173	225	T2	D26	B0
BH75D26L		60	450	98		260	173	225	T2	D26	B13
95D31R	N70PMF	70	600	125		306	173	225	T2	D31	B0
BH95D31R	N70PMF	70	600	125		306	173	225	T2	D31	B13
95D31L	N70PLPMF	70	600	125		306	173	225	T2	D31	B0
BH95D31L	N70LPMF	70	600	125		306	173	225	T2	D31	B13

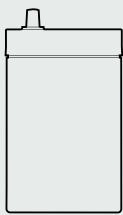
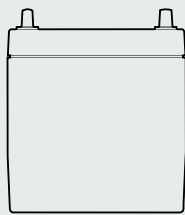
DATA SHEET
AMARON GO DIN



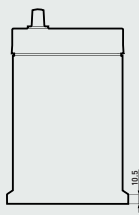
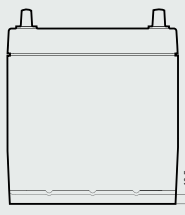
Battery Model	OLD JIS Designation	Ref. AH @ C20	CCA @ -18°C Amps(EN)	RC in mins	Assembly Layout	L (mm)	B (mm)	H (mm)	Terminal	Case Type	Hold Down
LN0-DIN 42		42	390	60		175	175	190	T2	LN0/H3	B13
LN1-DIN 50		50	400	80		207	175	190	T2	LN1/H4	B13
LN2-DIN 55		55	430	90		242	175	190	T2	LN2/H5	B13
LN2-DIN 55R		55	430	90		242	175	190	T2	LN2/H5	B13
LN2-DIN 60		60	500	100		242	175	190	T2	LN2/H5	B13
LN2-DIN 60R		60	500	100		242	175	190	T2	LN2/H5	B13
LN2-DIN 66		66	530	105		242	175	190	T2	LN2/H5	B13
LN3-DIN 74		74	600	115		278	175	190	T2	LN3/H6	B13
LN4-DIN 80		80	650	125		315	175	190	T2	LN4/H7	B13
LN5-DIN 90		90	725	140		353	175	190	T2	LN5/H8	B13
LN5-DIN 100		100	825	160		353	175	190	T2	LN5/H8	B13
T4-DIN 45		45	330	73		207	175	175	T2	LB1/T4	B13
T5-DIN 55		55	430	85		242	175	175	T2	LB2/T5	B13
T5-DIN 60		60	500	95		242	175	190	T2	LB2/T5	B13
T6-DIN 65		65	540	100		278	175	175	T2	LB3/T6	B13
T7-DIN 80		80	650	130		315	175	175	T2	LB4/T7	B13



HOLD DOWN AND CONTAINER FEATURES

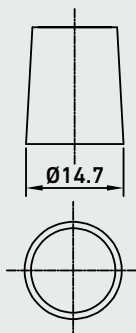


B0-NORMAL

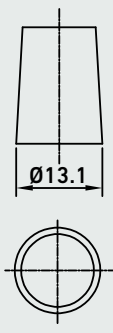


B13-BOTTOM HOLD

TERMINAL TYPE

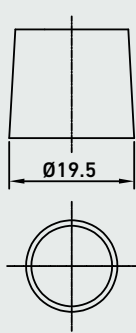


Positive Terminal

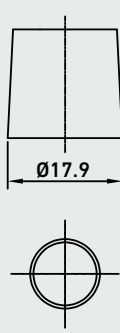


Negative Terminal

T-1



Positive Terminal



Negative Terminal

T-2



WORLD SCALE MANUFACTURING PLANTS



AGM/EFB

ADVANCEMENT OF BATTERY TECHNOLOGY FOR HYBRID VEHICLES

Governments are continually updating emission regulations to curb pollution, compelling automobile manufacturers to confront the challenges of compliance. These regulatory pressures have driven technical research, resulting in significant advancements in both engine and battery technologies. As a consequence, a new generation of hybrid vehicles has emerged, spanning from compact mini and micro hybrids to advanced hybrid models, featuring innovative idle-stop-start systems.

The advantages of these advancements are manifold:

Emission Reduction: The implementation of hybrid technology has led to a substantial reduction in emission particles, contributing to cleaner air and a more sustainable environment.

Fuel Efficiency: Hybrid vehicles harness the power of multiple engine stops and starts, resulting in noteworthy fuel savings. This not only benefits consumers by reducing their fuel expenses but also helps in minimizing the overall carbon footprint.

To meet the stringent emission standards, battery technology has seen remarkable progress. This progress has resulted in the development of Enhanced Flooded Batteries (EFB) for entry-level hybrid vehicles and Absorbent Glass Mat (AGM) batteries for advanced hybrid models. These advanced batteries are pivotal in enhancing the performance and efficiency of hybrid vehicles while also meeting the demanding requirements of modern emission standards.



AGM/EFB

EFFICIENCY AND INNOVATION

HOW AUTOMATIC START-STOP SYSTEMS AND REGENERATIVE BREAKING SYSTEM ARE CHANGING THE FUTURE OF VEHICLE TECHNOLOGY

► Automatic start-stop system function:

Detects when the car is stationary

Based on sensors, determines various factors about the car's operating mode

Stops the engine when the car is stationary and in neutral or when speed falls below a certain value

Electrical systems are still powered by the vehicle's battery when the engine is off

Engine restarts when the clutch is actuated or the brake is released (for automatic/dual-clutch transmission vehicles)

► Sensors involved in the automatic start-stop system:

Neutral Gear Sensor

Wheel Speed Sensor

Crankshaft Sensor

Electronic Battery Sensor (EBS)

► Components of the starter unit are reinforced to handle the increased number of starts

► Batteries for automatic start-stop systems:

AGM (Absorbent Glass Mat) batteries are designed for vehicles with start-stop and Regenerative Breaking systems

AGM batteries can efficiently accept energy generated through Regenerative Breaking System

EFB (Enhanced Flooded Battery) batteries are for entry-level start-stop systems

► Regenerative Breaking System (generation of electricity from braking energy):

Electrical energy is generated when the vehicle brakes, and the engine goes into thrust mode

The recovered energy is fed back into the battery for use during stop phases

AGM batteries are essential for efficient Regenerative Breaking System

Some vehicles decouple the generator during acceleration phases to improve efficiency and use the battery to power electrical functions

ISS VS CONVENTIONAL VEHICLES

Feature	Advanced Hybrid ISS Vehicle	Conventional Non ISS Vehicle
Powertrain	Uses an internal combustion engine (ICE) and one or more electric motors to power the vehicle	Uses an ICE only to power the vehicle
Battery	High-capacity battery that can be recharged by the ICE, electric motors, and regenerative braking	Smaller battery that is used to start the engine and run electrical accessories
Fuel economy	Typically achieves better fuel economy than conventional vehicles due to the use of electric motors	Fuel economy depends on the size and efficiency of the engine, as well as the driving conditions
Emissions	Produces fewer emissions than conventional vehicles due to the use of electric motors	Emissions depend on the size and efficiency of the engine, as well as the driving conditions
Charging system	Optimizes for AGM batteries	Not optimized for AGM batteries

Operating Mode	Advanced Hybrid Vehicle
Electric-only mode	The vehicle is powered by the electric motors and the ICE is turned off. This is typically the most fuel-efficient mode and produces the lowest emissions.
Hybrid mode	The ICE and electric motors work together to power the vehicle. This mode is typically used when the vehicle needs more power, such as when accelerating or driving uphill.
Engine-only mode	The ICE is the only source of power for the vehicle. This mode is typically used when the vehicle is travelling at high speeds or when the battery is depleted.



CARS HAVE MORE POWER DEMAND AND WE HAVE SOLUTIONS FOR THAT

When it comes to battery power, cars can be pretty demanding. Even in older cars, there are huge differences when it comes to energy consumption. The number of electronic devices, the climatic conditions, or the type of traffic (e.g., around town vs. highway) can all play a role. We provide ranges of batteries to meet all customer needs.

Battery technology	Start-Stop	Cold Cranking Amps	Cycle life compared to conventional batteries	Type of Vehicle Application
AGM must be replaced with AGM.			Enhanced	Amaron Jade AGM All start-stop applications + modern cars with superior needs.
EFB can be replaced with EFB or AGM start stop batteries.			Improved	Amaron Onyx EFB Cars with entry-level start –stop power needs.
CONVENTIONAL Batteries should always be replaced with the equivalent battery to meet the car’s needs. You need more power because of extreme climate conditions or more electronic devices? AGM or upgrade within our SLI product range.				Non Start Stop PRO-FLO. Conventional cars with Superior Power needs.
				GO Cars with lower power needs.

***Beware of the dangers of replacing AGM or EFB with a conventional battery.**

Serious performance and safety risks might occur when a conventional battery is fitted to a start-stop vehicle. This applies even if the start-stop function will be deactivated by the driver.



Loss of warranty



Failure of comfort functions



Acid spillage can cause damage to other engine parts



Overcharging may cause the battery to become hot and rupture



Start-Stop function will not work properly

JADE AGM BATTERIES

WHAT SETS OUR BATTERIES APART! AMARON with Absorbent Glass Mat (AGM) construction



AGM, or Absorbent Glass Mat, is a type of improved lead-acid battery that provides greater power to satisfy today's increased energy demands in cars and start-stop applications. AGM batteries are exceptionally vibration resistant, completely sealed, non-spillable, and require no maintenance. AGM batteries designed with superior safety features. Thus, making them the most suitable for big automobiles, SUVs, vans, and other vehicles with increased energy throughout battery life.

ADVANTAGES OF AGM TECHNOLOGY

- | | | |
|----------------------------------|-----------------------|--|
| Higher cold cranking performance | Higher Safety | Higher Corrosion Resistance |
| Higher Life | No Terminal Corrosion | Faster Recharge |
| Zero Maintenance | Low self discharge | Recombinant VRLA (valve regulated) |
| Non Spill able/Leak Proof | Fit and forget | Long shelf life |
| Vibration resistant | Absorbent glass mat | Supports Start Stop system Aids Reduced Fuel Consumption and CO ₂ Emissions |
| Fully sealed battery | Regenerative braking | |

FUTURE READY
TECHNOLOGIES
FOR FUTURISTIC
VEHICLES



AGM BATTERY CONSTRUCTION

Polypropylene Container:

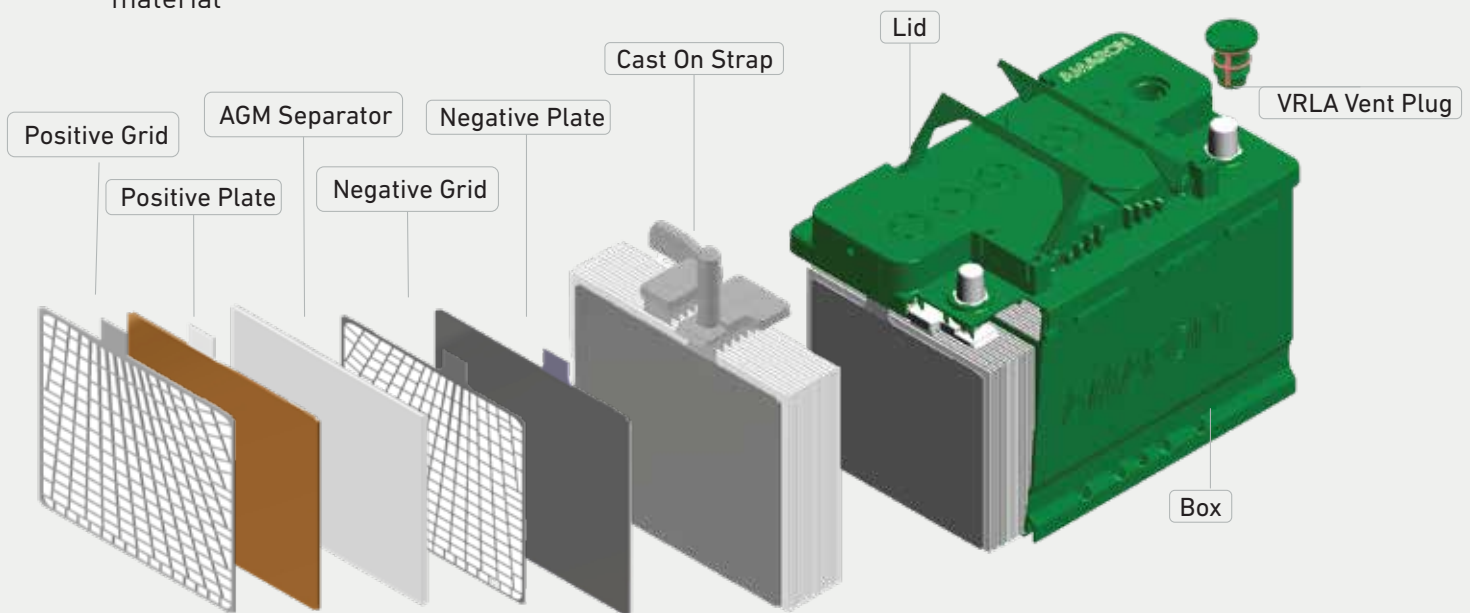
- Made of high quality durable material strengthens to withstand internal pressure

Largest cast on Strap Area:

- Helps in High Vibration resistance minimizing the shedding of Active material

Special Cover Structure assures Safety.:

- Sealed and Non-Spillable AGM Design eliminated need for frequent Maintenance & Top-Up
- Eliminates emission of Gases due to its recombinant nature



Advance Stamped Grid:

- Constructed with more lead and uniform wire/mesh thickness maximizes current flow and increases charge efficiency
- Dynamic Charge Acceptance: Faster charging and discharging performance
- High Tin calcium alloy ensures highest corrosion resistance
- Low Internal resistance leads to Highest Cranking Power

AGM Separator:

- Ultra High Strength glass mat micro-Porous separator absorbs electrolyte eliminates acid spills & terminal corrosion
- Optimized component compressed packing reduces loss of active material
- Highly efficient and maximum charge reaction due to even distribution of electrolyte

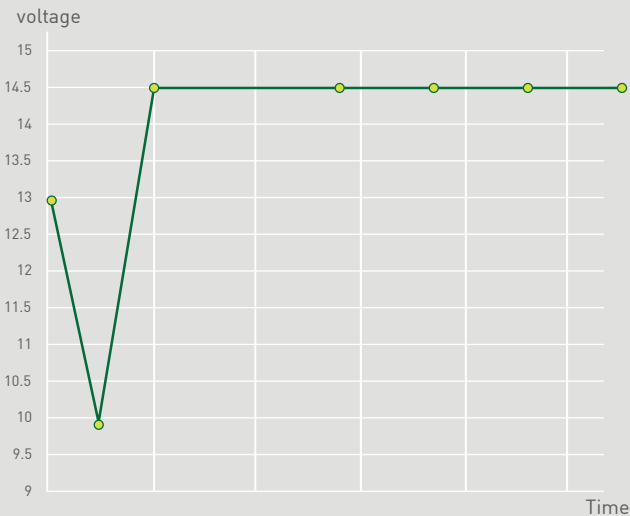
LOAD DIAGRAM

Battery in conventional vehicle

The battery requirements from charge/discharge cycles are in the “normal” range.

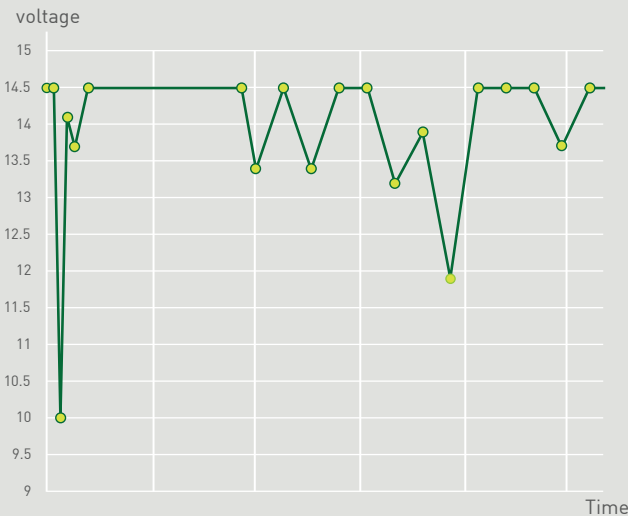
Battery in start-stop vehicle

Start-stop system dramatically altered the load profile. It demands a battery which can withstand high cyclic frequency, ensuring a reliable power supply.



Characteristic

A start operation followed by recharging.



Characteristic

Large number of start operations, resulting in higher load on the battery.

Battery Model	OLD JIS Designation	Ref. AH @ C20	CCA @ -18°C Amps(mm)	RC in mins	Assembly Layout	L (mm)	B (mm)	H (mm)	Terminal	Case Type	Hold Down
50B20L		38	380[SAE]	52		197	129	227	T1	B20	B0
H4-Din 50		50	500	80		207	175	190	T2	LN1/H4	B13
H5-Din 60		60	600	105		242	175	190	T2	LN2/H5	B13
H6-Din 70		70	700	120		278	175	190	T2	LN3/H6	B13
H7-Din 80		80	800	140		315	175	190	T2	LN4/H7	B13
H8-Din 95		95	900	160		353	175	190	T2	LN5/H8	B13

ONYX EFB (ISS)

WHAT SETS OUR BATTERIES APART!



EFB Batteries are Conventional Flooded Lead Acid batteries in design with improved specification and Performance. EFB Batteries features with increased cyclic durability and an improved charge acceptance by current and designed with various changes to battery construction and materials.

EFB Batteries offers a cost effective solution for entry Level Idle Stop Start (ISS) vehicles where the battery will not be operating at such a low State of charge (SOC) as an AGM Battery. Entry Level Vehicles already have lower CO₂ emission than High performance and advanced specification vehicles which requires AGM Battery.

Dynamic Charge Acceptance (DCA) to accept charge immediately after starting the engine and from energy produced by Regenerative Breaking system is twice that of a conventional flooded battery.



EFB TECHNOLOGY

-  High dynamic charge acceptance over battery lifespan
-  Extra energy and extra life for vehicles with ISS systems
-  Optimised regenerative braking functionality in vehicles with Start-Stop systems - ensuring maximum fuel savings and less CO₂ emissions
-  Optimal operation in engine compartment
-  Duraframe technology
-  Large number of vehicle models coverage from a limited number of SKUs
-  Long shelf life

Conventional Battery	EFB Battery with Carbon Plus
Charge acceptance	x2
Cycle life	x3
Energy availability	x3



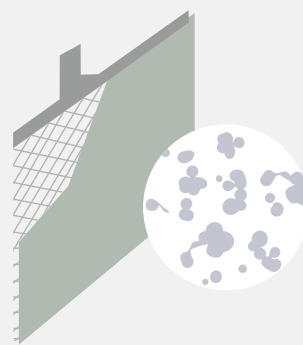


CARBON PLUS IN EFB BATTERIES

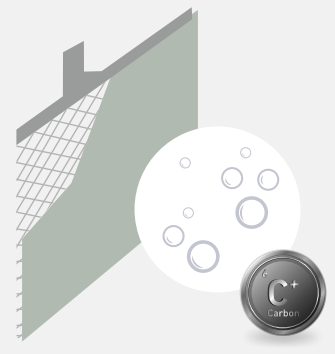
Idle Stop Start system vehicles have multiple stops and starts everyday due to short runs, engine switch off when vehicle is not moving causing frequent discharges. In city driving, there will be higher number of charge discharge cycles and normal batteries without longer duration of charging are prone to sulphation and acid stratification, damaging battery life span.

Sulphation

During life span of batteries lead sulphate particles formed during chemical reaction creates a layer on the negative plates. This lead sulphate layer delays recharging process, as current supplied is mainly used for dissolving the lead sulphate.



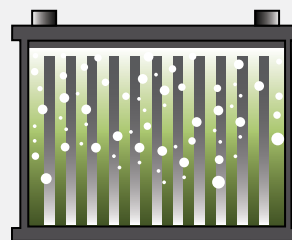
Without Carbon Plus
The plates are covered with sulfate



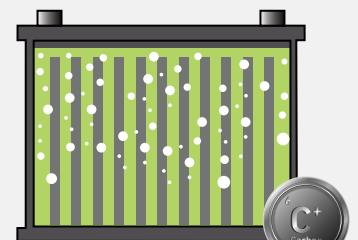
With Carbon Plus
Sulfate is reduced due to Carbon Plus Technology

Acid Stratification

Lead Sulphate particles formed on the plates during discharging, starts dissolving into electrolyte during charging and turn into sulphuric acid. This is heavier than the electrolyte, so it sinks to the bottom, creating a range of negative effects, including reduced capacity. Stratification also occurs if the battery charge is regularly around 80-90%, which is common in EFB batteries which are fitted in Idle start stop system.



Without Carbon Plus
Causing uneven acid concentration at plate surface level



With Carbon Plus
Controlled gassing mixes the electrolytes and reduces stratification. Even distribution of acid in the electrolyte boosts controlled gassing and reduces stratification

Amaron EFB batteries are added with unique carbon additives which dissolves the lead sulphate particles from negative plate at higher speed. This causes faster recharging of the battery hence safeguards from sulphation and acid stratification-This boost Dynamic Charge Acceptance (DCA).

The carbon additives also supports controlled gassing during recharging , which keeps the electrolyte mixed with even distribution of sulphuric acid and further reduces stratification.

THE BENEFITS OF CARBON PLUS



Improved charge acceptance



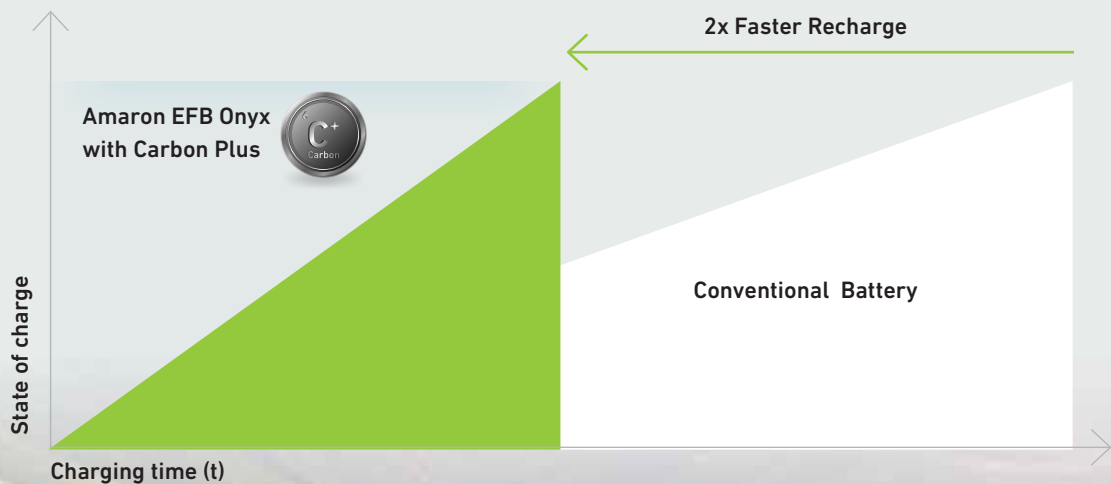
Reduced acid stratification



Faster recharging



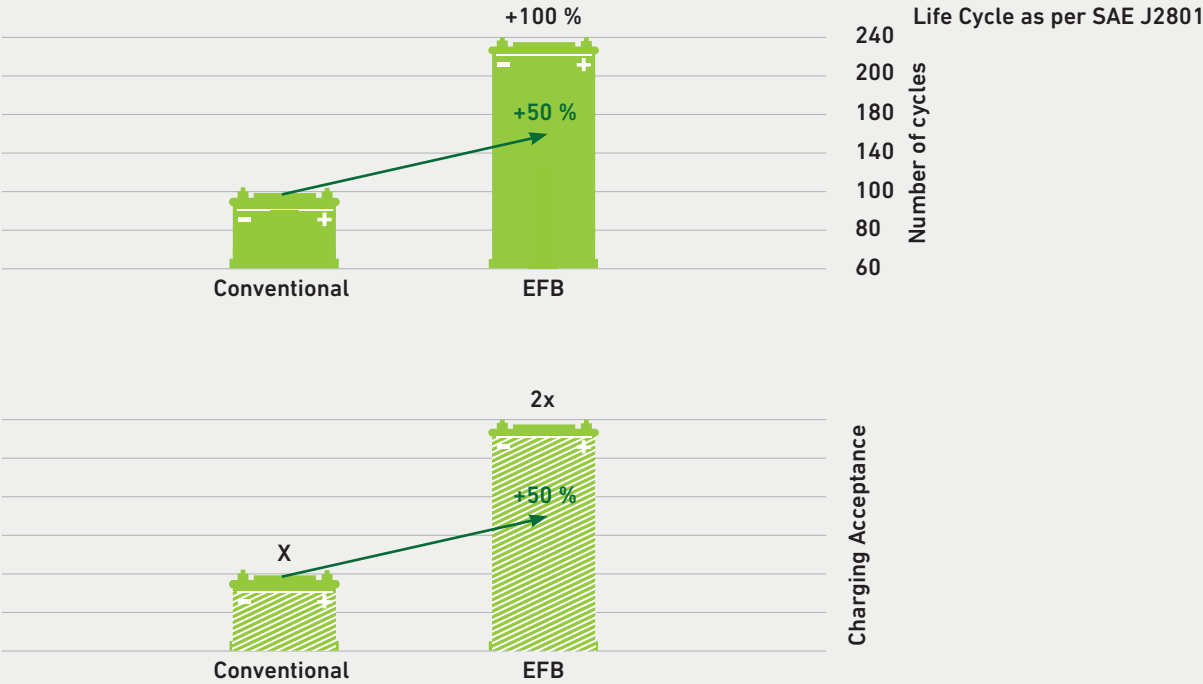
Enhanced cycling endurance



Lab tests show that it takes significantly less time to recharge an Amaron EFB Onyx Carbon Plus Battery than a conventional battery under the same conditions.



ONYX EFB (ISS) FEATURE



Battery Model	OLD JIS Designation	Ref. AH @ C20	CCA @ -18°C Amps(mm)	RC in mins	Assembly Layout	L (mm)	B (mm)	H (mm)	Terminal	Case Type	Hold Down
M42-60B20R		40	400	65		197	129	227	T1	B20	B0
M42-60B20L		40	400	65		197	129	227	T1	B20	B0
N55-70B24L		45	480	75		238	129	227	T1	B24	B0
N55-70B24R		45	480	75		238	129	227	T1	B24	B0
Q85-100D23L		70	660	125		232	173	225	T2	D23	B0
S95-110D26L		75	720	135		260	173	225	T2	D26	B0
T110-130D31L		95	800	160		306	173	225	T2	D31	B0
L3-DIN 70L		70	760 (EN)	140		278	175	190	T2	H6	B13

HIWAY- HEAVY DUTY COMMERCIAL VEHICLE BATTERY



BATTERIES THAT MEAN BUSINESS



If you want your commercial vehicle to be as professional as yourself, look no further than Amaron. Our batteries are subjected to rigorous performance tests so that they deliver without fail every time. After all, there is no room for interruption or breakdown in a hyper competitive business environment. Your battery needs to be fighting fit in the harshest of terrains and in extreme weather conditions. Amaron's advanced zero maintenance batteries make sure that they will go the extra mile without any fear.

FEATURES

- ⚡ • High Cranking Power
- ✓ • Improved Safety
- 🔊 • Vibration Resistance
- 🔋 • Factory Charged- Ready to Use
- 🔥 • High Heat Tolerance
- ⚙️ • Highest Reserve Capacity
- 🕒 • Long Life

DATA SHEET
AMARON HIWAY & HARVEST



Battery Model	OLD JIS Designation	Ref. AH @ C20	CCA @ -18°C Amps(mm)	RC in mins	Assembly Layout	L (mm)	B (mm)	H (mm)	Terminal	Case Type	Hold Down
HCV620D31R		80	550	160		306	173	225	T2	D31	B0
NT700H29R		100	700	180		364	176	234	T2	H29	B0
NT115E41R (N100R)		100	700	195		410	176	234	T2	E41	B0
NT115E41L (N100RL)		100	700	195		410	176	234	T2	E41	B0
NT150F51R (N120R)		120	750	240		505	182	237	T2	F51	B0
NT800D04R		130	800	240		540	222	240	T2	D04	B0
NTX00D04R		150	1000	300		540	222	240	T2	D04	B0
NTX00D04L		150	1000	300		540	222	240	T2	D04	B0
NT165D04R		165	1050	325		540	222	240	T2	D04	B0
NT180D04R		180	1150	355		540	222	240	T2	D04	B0
NT180D04L		180	1150	355		540	222	240	T2	D04	B0
245H52R(N200)		200	1200	400		520	277	247	T2	H52	B0
NT750E41R - N100		100	750	160		410	176	234	T2	E41	B0
NT700F51R - N120		120	700	210		505	182	237	T2	F51	B0
NT900D04R - N150		150	900	270		540	222	240	T2	D04	B0
1000H52R - N200		200	1100	360		520	277	247	T2	H52	B0
1250H52R - N200		220	1250	380		520	277	247	T2	H52	B0
TRA500D31R		75	500	120		306	173	225	T2	D31	B0
TRA600H29R		90	600	160		359	173	234	T2	H29	B0

THE JOY OF RIDING STARTS FROM THE GENTLE PUSH OF THE SELF-START

Amaron Two Wheeler Batteries

INSTANT CRANKING THAT REVS UP ALL CAPACITY ENGINES



Zero Maintenance



Corrosion Resistance



Long Service Life



ANY WEATHER. ANY TERRAIN. HASSLE-FREE STARTING

ROBUST BATTERY TECHNOLOGY FOR ALL TYPES OF 2 WHEELERS

Whether you're an adventure sports enthusiast or a regular commuter, riding becomes a pleasure only when the engine is powered to life without a hitch, any time, every time. As one of the world's largest battery manufacturers, Amara Raja understands this universal need of two-wheelers - be it a sports bike or a scooter - only too well.

Amaron is a Sealed AGM Battery manufactured with state-of-art Lead Acid Battery Technology. Its availability in a wide array of power options makes it a battery with global appeal, ideal for any two wheeler model anywhere in the world.

STURDY AND RESILIENT TO THE CORE

High Corrosion Resistance



Lowest corrosion due to durable alloy materials and molecular realignment.

Vibration Resistance



Integrated material reduces vibration extends the battery life, making it highly durable and reliable

Hi-Cranking Power



Unique internal design delivers higher cranking power, allowing for an instant vehicle start

Zero-Maintenance



Fit and forget, designed for reliable performance during the entire life

Long Service Life



Oxygen recombination principle prevents water loss and MSG grid making process increases battery life.

Spill-Proof



Absorbed glass mat, makes the battery spill-proof unlike conventional batteries.



OXYGEN RECOMBINATION PRINCIPLE

Increased efficiency and extended life span

Possible only in Sealed AGM Batteries, this recombination process reduces the amount of water lost from the battery while also preventing the build-up of pressure inside the battery. This makes Amaron ideally the best batteries for high powered engines that require long-term backup power.

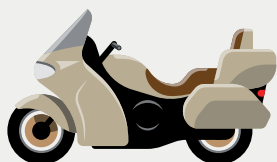
ULTRA-LIGHT WEIGHT YET HIGHLY DURABLE

Ease of handling and maintenance

Light weight yet highly durable battery cover and container are made of eco-friendly, non-corrosive PPCP material. The significant light weight feature enables easy handling of the batteries while also contributing to reduced weight of the two wheeler



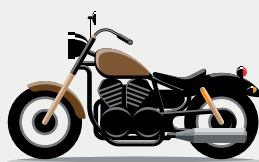
Amaron Batteries – Instant Power for Every Engine Type



Cruiser Bikes



Sports Bikes



Adventure Bikes



Standard Bikes



Scooters

MADE FOR INSTANT CRANKING - WHEREVER YOUR RIDE TAKES YOU

Blazing summers or chilly winters, heavy rains or snowfall, Amaron two-wheeler batteries ensure your engine comes to life without the least struggle. Whichever part of the world you are in and whatever the 2 wheeler you drive, be sure of the highest levels of performance in any climatic conditions.

Tested in some of the world's harshest terrains for higher cranking performance, Amaron never lets you down. Be it a dirt road or a hilly or forest area, just crank the engine with ease and rev up through any kind of terrain with ultimate confidence.

Battery Model	Assembly Layout	Volt	Capacity @ 10hrs	L	W	H
ETX2.5L		12	2.5	80	70	105
ETX5L		12	5	120	60	130
ETX9R		12	9	137	75	139
ETX7R		12	7	152	59	132
ETZ4L		12	3	113	70	85
ETZ5S		12	3	113	70	85
ETZ5L		12	4	113	70	105
ETZ7L		12	6	113	70	130
ETZ9R		12	8	150	87	105
ETZ14R		12	12	150	87	145

CERTIFICATIONS EARNED,
TRUST GAINED

YOUR ASSURANCE OF QUALITY



AMARON[®]

LASTS LONG, REALLY LONG.

LONG LIFE FOR EVERY VEHICLE



- * Modification of the catalogue is not permitted.
- * Images shown in the catalogue are indicative, actual images may differ and for representational purposes only.
- * Amara Raja's design improvement is a continuous process. As a result, specifications may change without prior notice.

LONG LASTING PERFORMANCE FOR EVERY VEHICLE



AMARON[®]

LASTS LONG, REALLY LONG.

Amara Raja Energy & Mobility Limited

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