

SEBANG GLOBAL BATTERY

| Since 1952

Battery For Better Life



SEBANG

SEBANG GLOBAL BATTERY CO., LTD

Head Office

433, Seolleung-ro, Gangnam-gu, Seoul, 06212
Tel : 82-2-3451-6201

Gwangju Plant

287, Sonjae-ro, Gwangsan-gu, Gwangju,
Republic of Korea 62209

SEBANG BATTERIES EUROPE GmbH

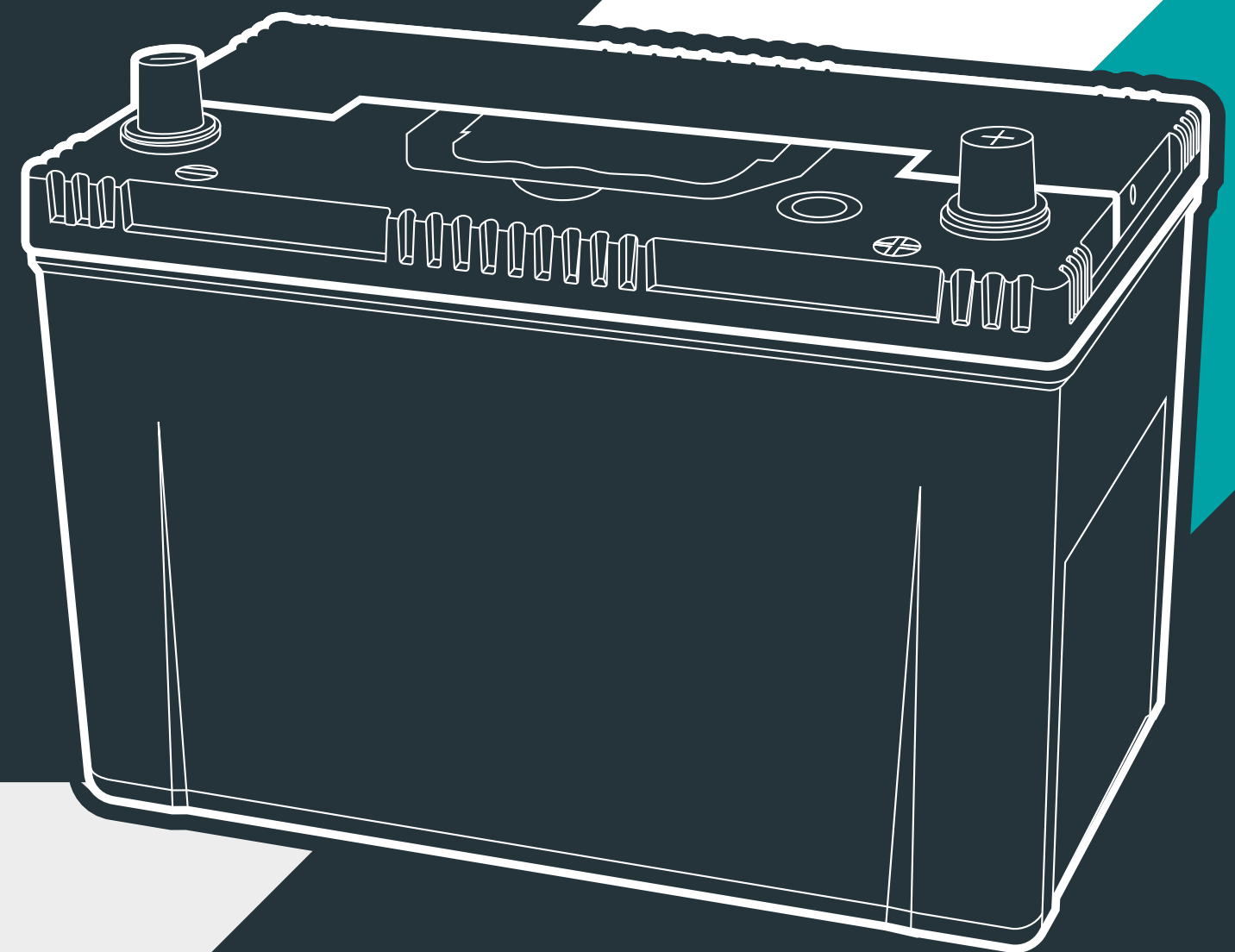
Mergenthalerallee 79-81
65760 Eschborn, Germany

Changwon Plant

122, Jeongdong-ro, Seongsan-gu, Changwon-si,
Gyeongsangnam-do, Korea, 51537

www.sebang-europe.com | www.gbattery.com

Ver. 240424



BATTERY FOR BETTER LIFE

| Automotive

| Commercial

| Marine & RV

| Lawn & Garden

| Golf Cart

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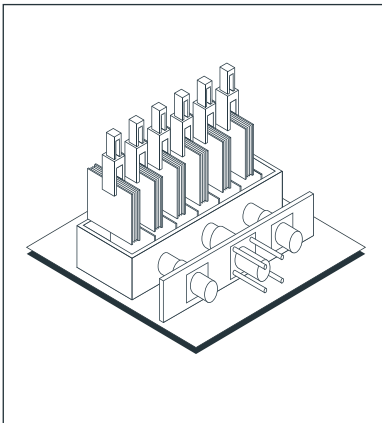
CHAPTER

01.

COMPANY INTRODUCTION

- SEBANG GLOBAL BATTERY OVERVIEW
- SEBANG BATTERIES EUROPE GMBH

Battery For Better Life



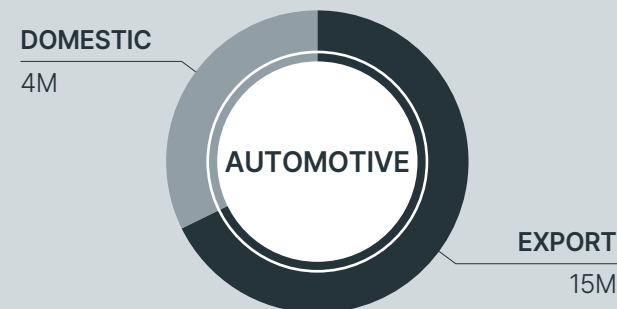
Sebang Global Battery is a specialized manufacturer of automotive and industrial batteries that exports products to more than 130 countries worldwide. Since its establishment in 1952, Sebang Global Battery has achieved stable growth through management innovation and technological development, and currently holds approximately 43% of the domestic lead-acid battery market share, making it the top player. Sebang Global Battery has a variety of product lines that suit different usage environments and continues to invest in research and development to lead the battery market. Its high-quality products have passed international standards (KS, ISO/TS16949), and it boasts the largest domestic production capacity through expanding production lines at factories and establishing new ones.

PRODUCTION CAPACITY

OPERATION RATE

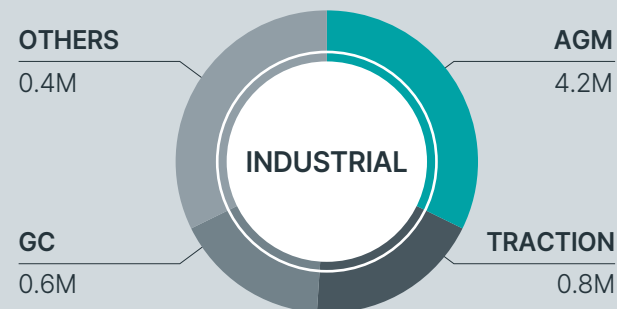
GWANGJU_19 Mio / year

CHANGWON_6 Mio / year



GWANGJU PLANT

- Production Capacity : 19Mpcs / yr
- Highly Automated Production Line
- Flooded Battery & EFB
(Auto/Commercial/Marine & RV/Lawn & Garden)



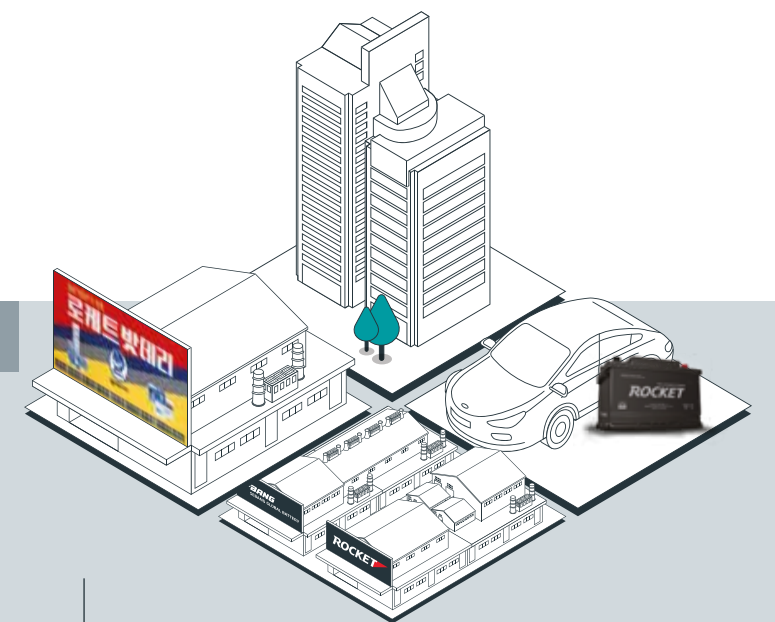
CHANGWON PLANT

- Production Capacity : 6 Mpcs / yr
- AGM Technology
- Only Manufacturer for Industrial Battery in Korea
(Back-up Power Solution, Telecommunications, Golf Cart, Folk Lift, etc.)

SEBANG

SEBANG GLOBAL BATTERY

In addition, Sebang Global Battery supplies products to global automotive companies, and actively invests in independent technology research and development since expanding its R&D center in 2016. Its subsidiary, Sebang Lithium Battery, also has the world's highest level of product portfolio by producing auxiliary power devices for vehicles, battery modules and packs for electric vehicle drives using lithium batteries. Sebang Global Battery secures the competitiveness of future growth businesses based on new technologies and strict quality management. In the future, Sebang Global Battery aims to expand its business scope and become a global battery company by leveraging its accumulated technological capabilities and sales networks established in major regions worldwide to expand not only in the existing product market but also in the next-generation battery market.

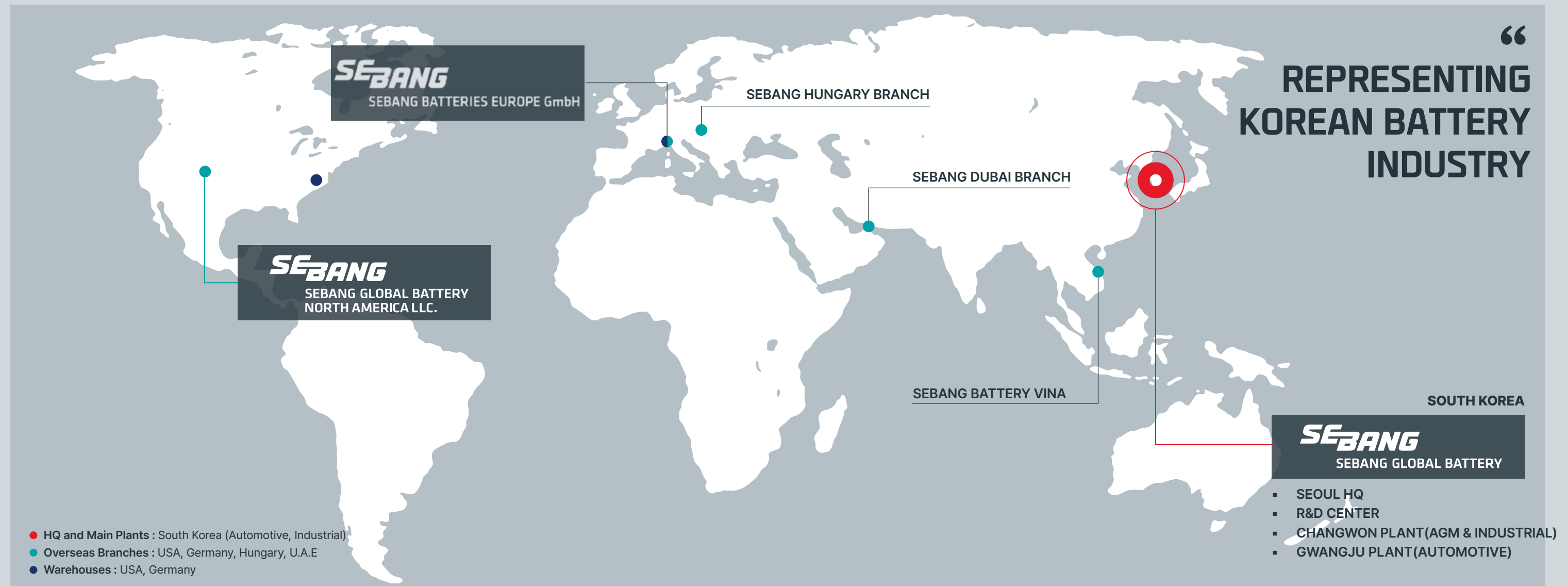


SEBANG GLOBAL BATTERY HISTORY

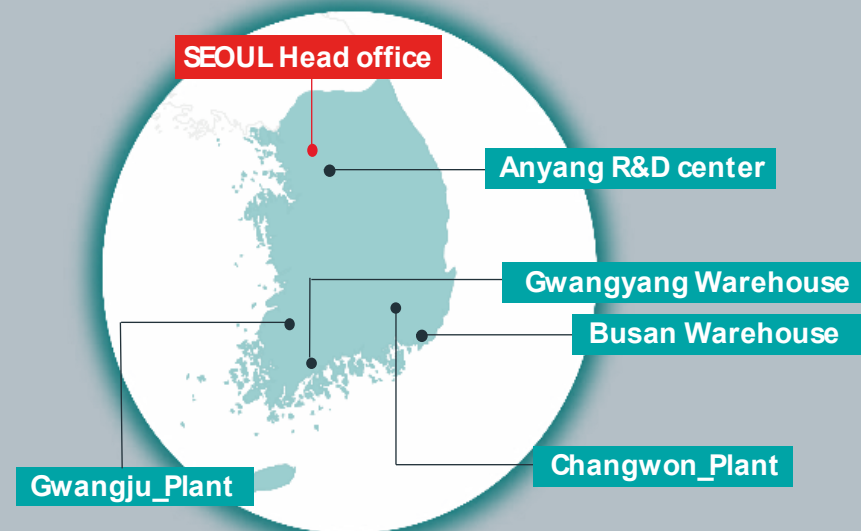
- 1952**
Starting the first step as the Naval Institute of Technology
- 1966**
The first battery company in Korea
- 1975**
Opened Changwon plant for Industrial battery
- 1989**
Opened GwangJu plant for Automotive battery
- 2006**
Golf Car Battery LONGEST launched

- 2010**
Premium AGM Battery launched
- 2014**
EFB Battery launched
- 2015**
Opened Europe Overseas Office in Germany
- 2022**
SEBANG 70th anniversary

SEBANG GLOBAL BATTERY BRANCHES



SEBANG GLOBAL BATTERY, SOUTH KOREA



SEBANG
SEBANG BATTERIES EUROPE GmbH

Sebang Global Battery established a European Branch in June 2015 to continuously expand its global business, especially expanding its influence in Europe, which is one of the world's largest market for lead-acid batteries. Through European office, we made a real-time sales activities possible. SEBANG Batteries Europe GmbH is diversifying supply channels (Local importer and Distributor) by utilizing a logistics warehouse in Germany and expanding our house brand sales to local markets.

| SEBANG EUROPE HOUSE BRANDS |



CHAPTER 02.

“

**SEBANG GLOBAL BATTERY' S
HALF-CENTURY OF
ACCUMULATED EXPERIENCE
AND UNIQUE TECHNOLOGY
IS CONTAINED WITHIN
ITS PRODUCTS**

”

TECHNOLOGIES

- SMF
- AGM & EFB

SMF

CONVENTIONAL



Battery that protects cars from extreme environments.

As our flagship product, it has been selected as the best battery by consumers for a long time and has been steadily upgrading to meet consumers' expectations for performance.



Improved starting performance with a special calcium alloy grid and high purity refined water that prevents lifespan degradation at high temperatures and ensures strong starting performance even in extreme environments.



Minimized self-discharge and maximized recovery performance with new materials: special tissue and special alloy. (HTC)



With a fully sealed structure and a labyrinth water recovery system, we have achieved a completely maintenance-free (MF) design that eliminates any electrolyte leakage and requires no maintenance.

COMPARISON

SMF / EFB / AGM

	SMF (STANDARD)	EFB (ENHANCED FLOODED BATTERY)	AGM (ABSORBENT GLASS MAT)
VEHICLE SYSTEM	ENGINE START	ENGINE START/STOP	· ENGINE START/STOP · REGENERATIVE BRAKING SYSTEM · ENHANCED POWER CONTROL SYSTEM
VEHICLE APP.	STANDARD TYPE	SMALL AND MID SIZE START/STOP	PREMIUM & DIESEL TYPE START/STOP
FUEL EFFICIENCY	-	ABOUT 2~5% ↑	ABOUT 5~10% ↑
TYPE	FLOODED		ABSORBENT GLASS MAT
FUNCTION	SLI	· MULTIPLE REPETITIVE START · LIMITED(SHORT TERM) ENGINE STOP	· MULTIPLE REPETITIVE START · LONG TERM ENGINE STOP
CCA	100% (STD)	150%(VS STD)	165%(VS STD)
LIFE CYCLE	100% (STD)	200%(VS STD)	300%(VS STD)

As a leading battery technology company

Sebang Global Battery is committed to continuous research and development, focusing on performance enhancement and product development of premium batteries such as the AGM series and EFB series for vehicles that provide charging-importance, durability, and longevity, which are used in Start -Stop vehicles

1 Indicator (Magic Eye / Easy Power Check)

Indicator shows the charging and discharging status of the battery. "Green" means charged, "Black" means discharged (requires re-charging), and "White" means replacement needed.

INDICATOR ● OK ● CHARGE ● REPLACE

2 Double lid with labyrinth structure

- Prevent electrolyte losses by collection and returning liquid to the reservoir.
- Vents allow the battery to "breathe" during temperature changes and charging.



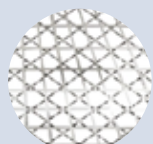
3 Flame Arrester

- Safety system
- Prevent the explosion from spark of outside
- Minimize the acid-leakage
- Prevent the inflow of dust

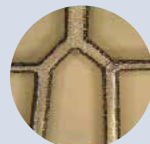
4 Lead-Calcium Grids

- Offer considerable strength
- Resistant to grid corrosion
- Over-charge resistant
- Minimal gassing and water usage
- Less self-discharge
- Resist thermal runaway

Grid Technology



Expanded Grid



Punched Grid

Creating sub grain boundary which provide longer life span against corrosion.

- Good for endurance life span
- High corrosion resistant
- High conductivity

SMF
CONVENTIONAL

Ergonomic easy carry
down fold handle



Cold forging terminal

High strength from fine structure
and prevent the leakage



5 Centered Cast-on Plate Straps

- Stronger than the thinner gas-burned conventional connectors.
- Reduce the lever action movement resulting from road shock.

6 Low-Resistance Envelope Separators

- Encapsulate negative plates
- Prevent "treeing" and internal shorting between positive and negative plates.

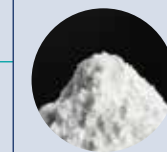
Hot-melting



Hot melt or Bonding

- Strong vibration durability and long life in the automobile
- Improve resistance of tough road condition

Special additives



High density active material with special additives

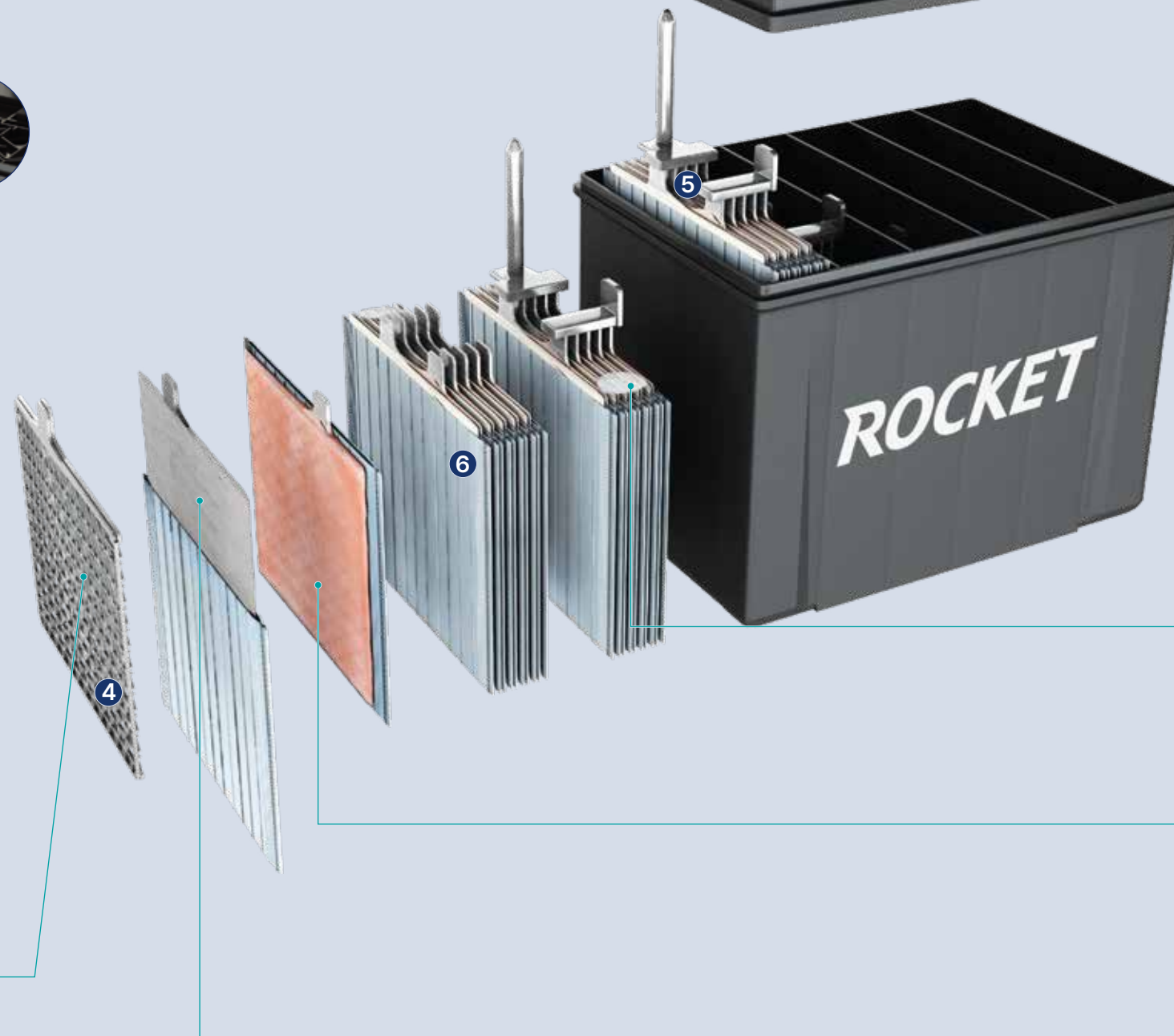
- Improve charge acceptance
- Good for retention from deep discharge state

NST Special Tissue for positive pastes



Prevent the active material shedding from frequent charging and discharging.

- Offer good adhesion of active mass on the plate
- Strong resistance of Acid
- Improve of endurance life cycle

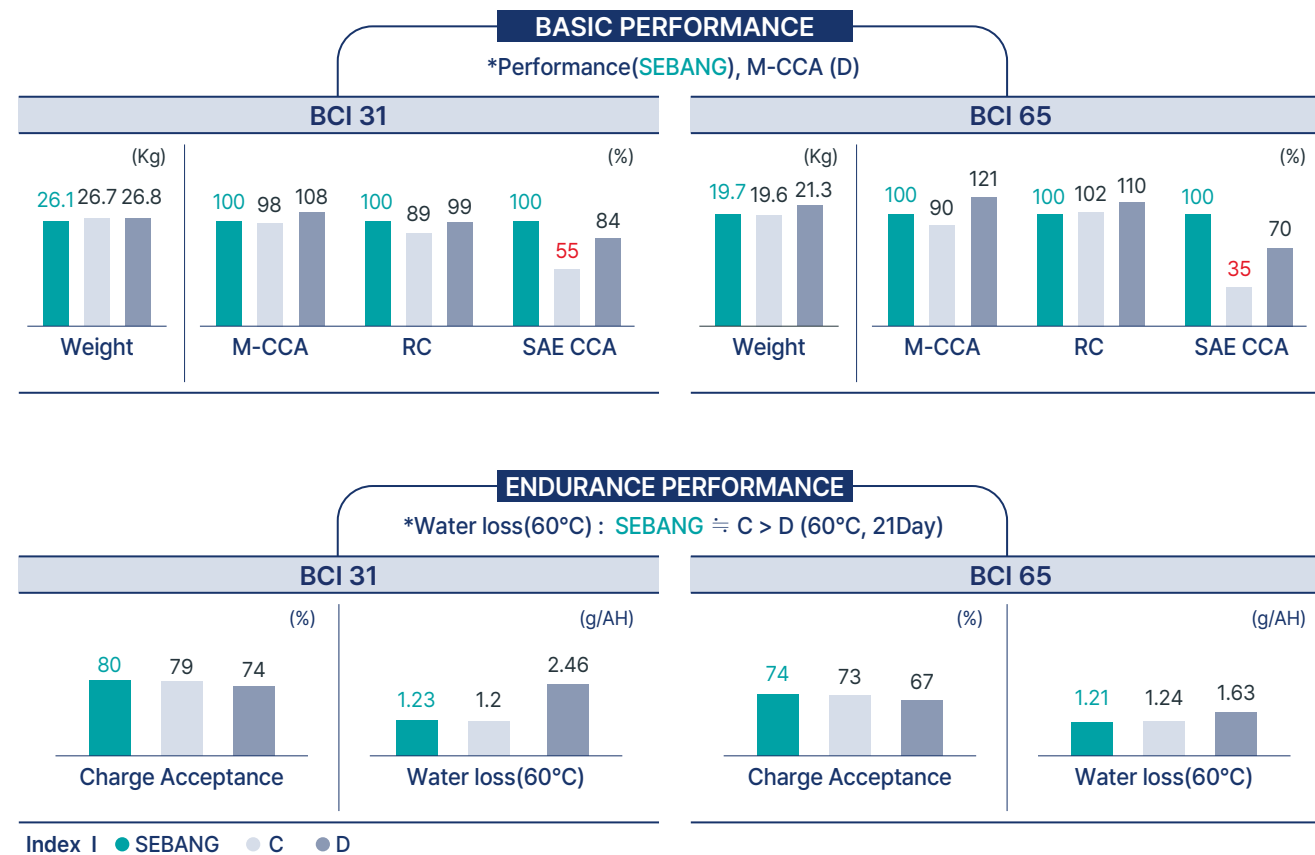


SEBANG GLOBAL BATTERY'S HALF-CENTURY OF ACCUMULATED EXPERIENCE AND UNIQUE TECHNOLOGY IS CONTAINED WITHIN ITS PRODUCTS

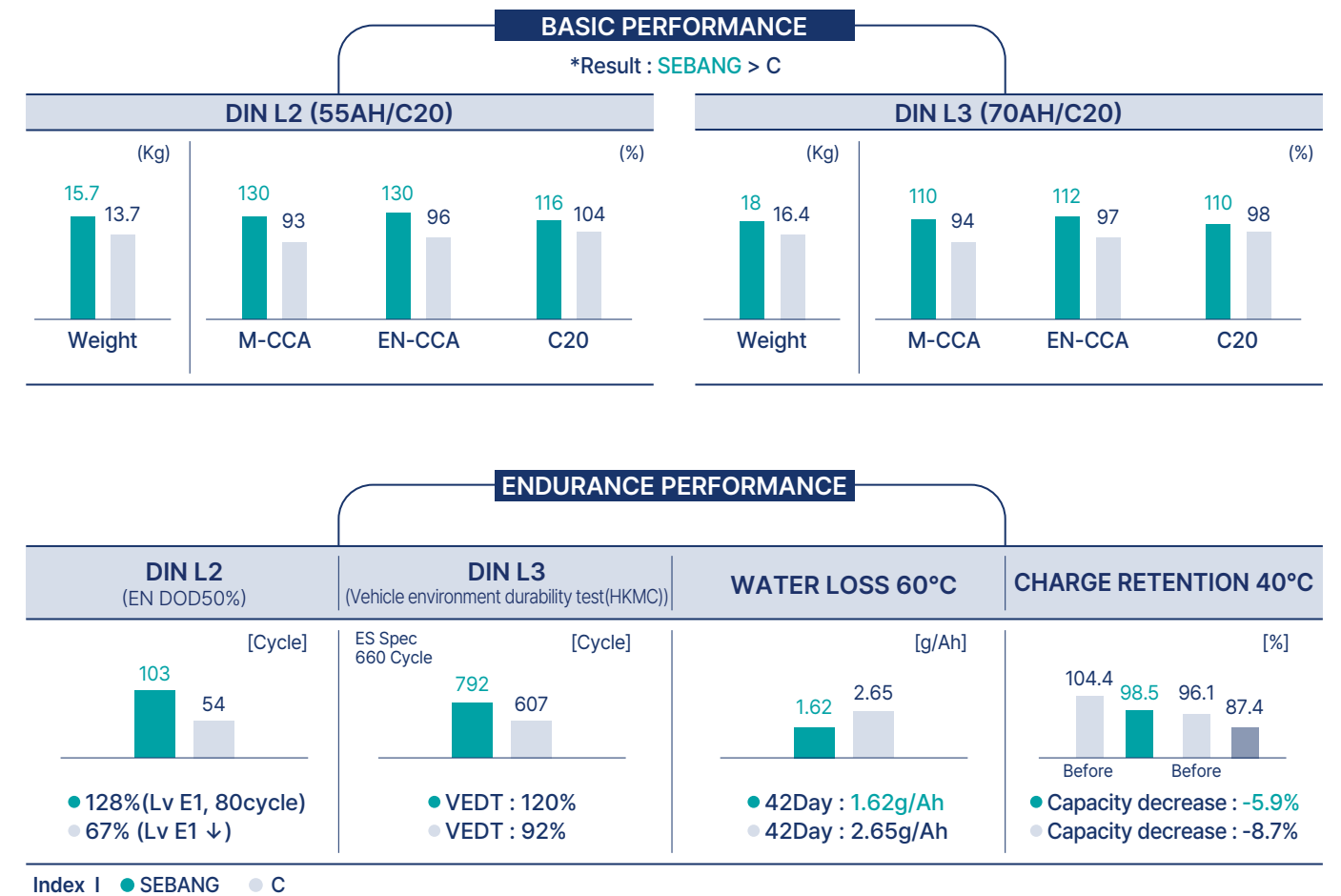


MEDIUM-SIZED BATTERY OVERVIEW OF SEBANG _ BENCHMARKING

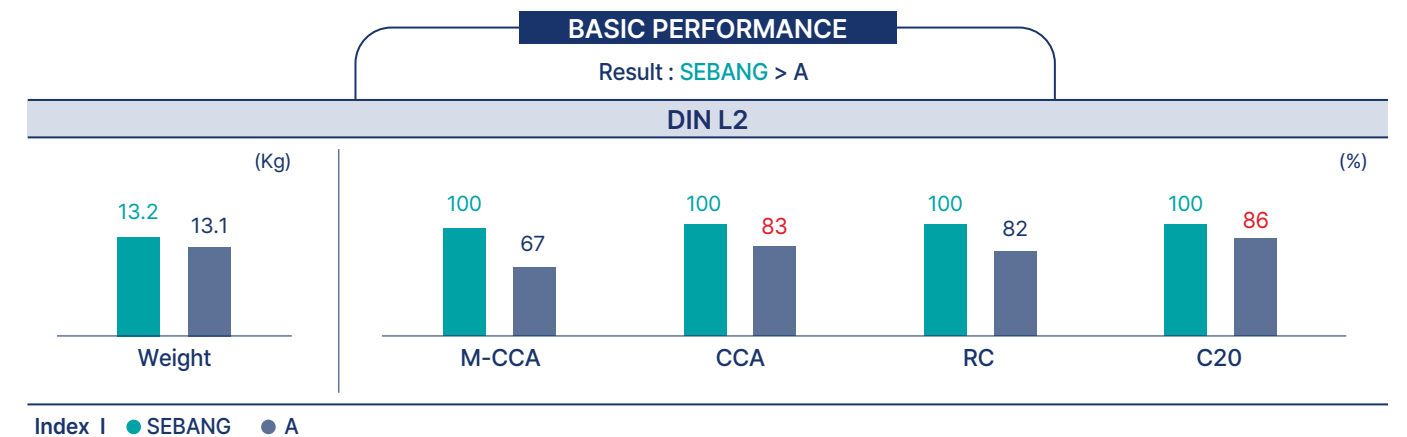
01 | NORTH AMERICA



02 | EUROPE



03 | MIDDLE EAST

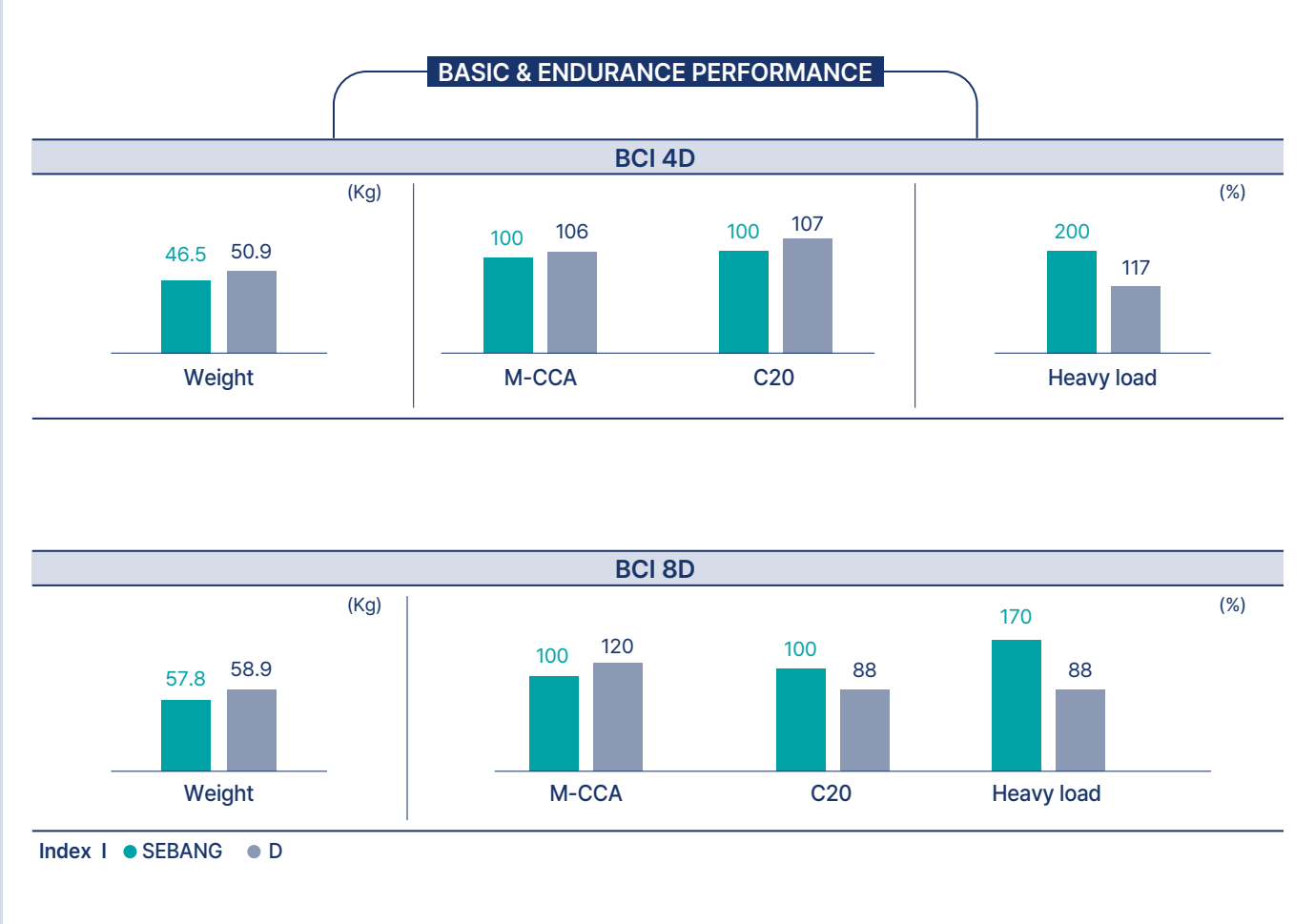


SEBANG GLOBAL BATTERY'S
HALF-CENTURY OF ACCUMULATED
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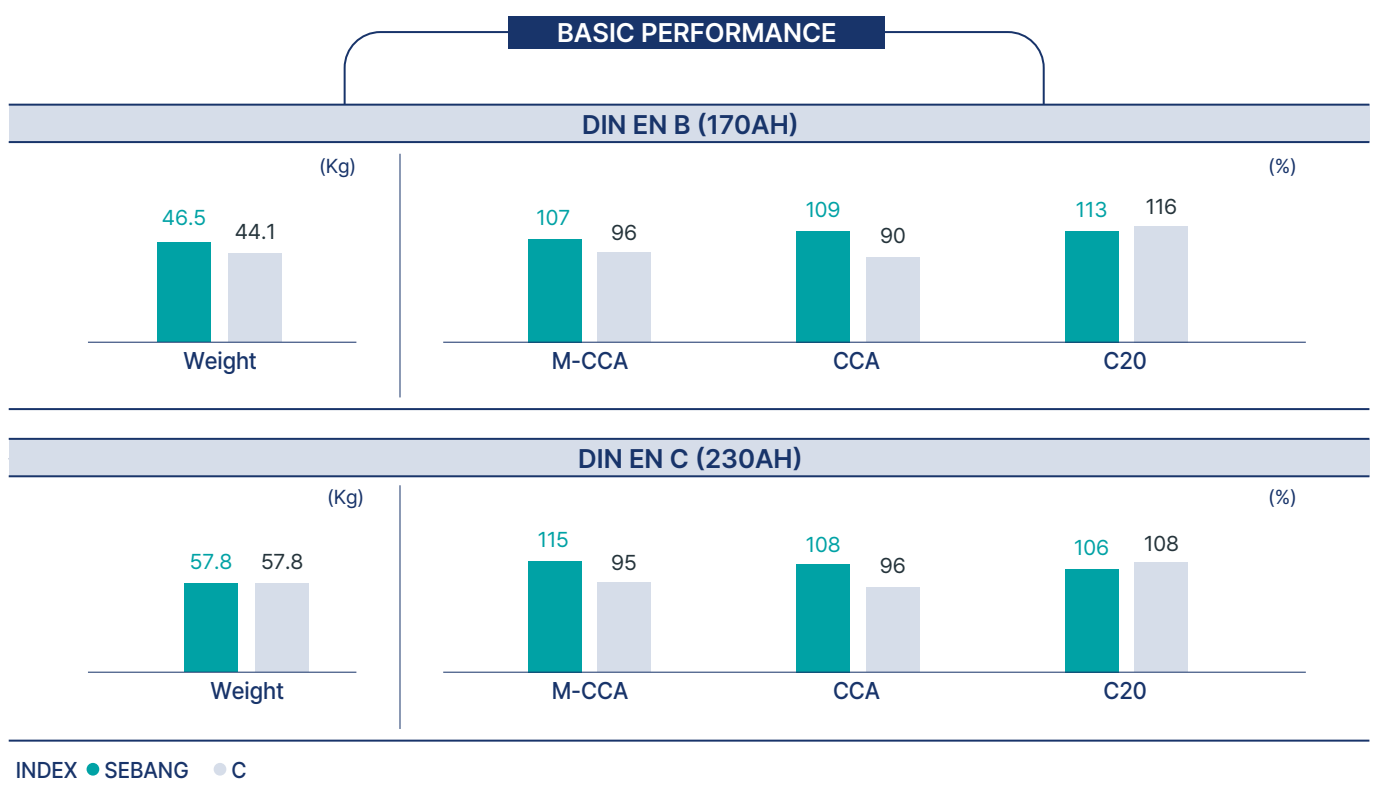


HEAVY DUTY BATTERY OVERVIEW OF SEBANG _ BENCHMARKING

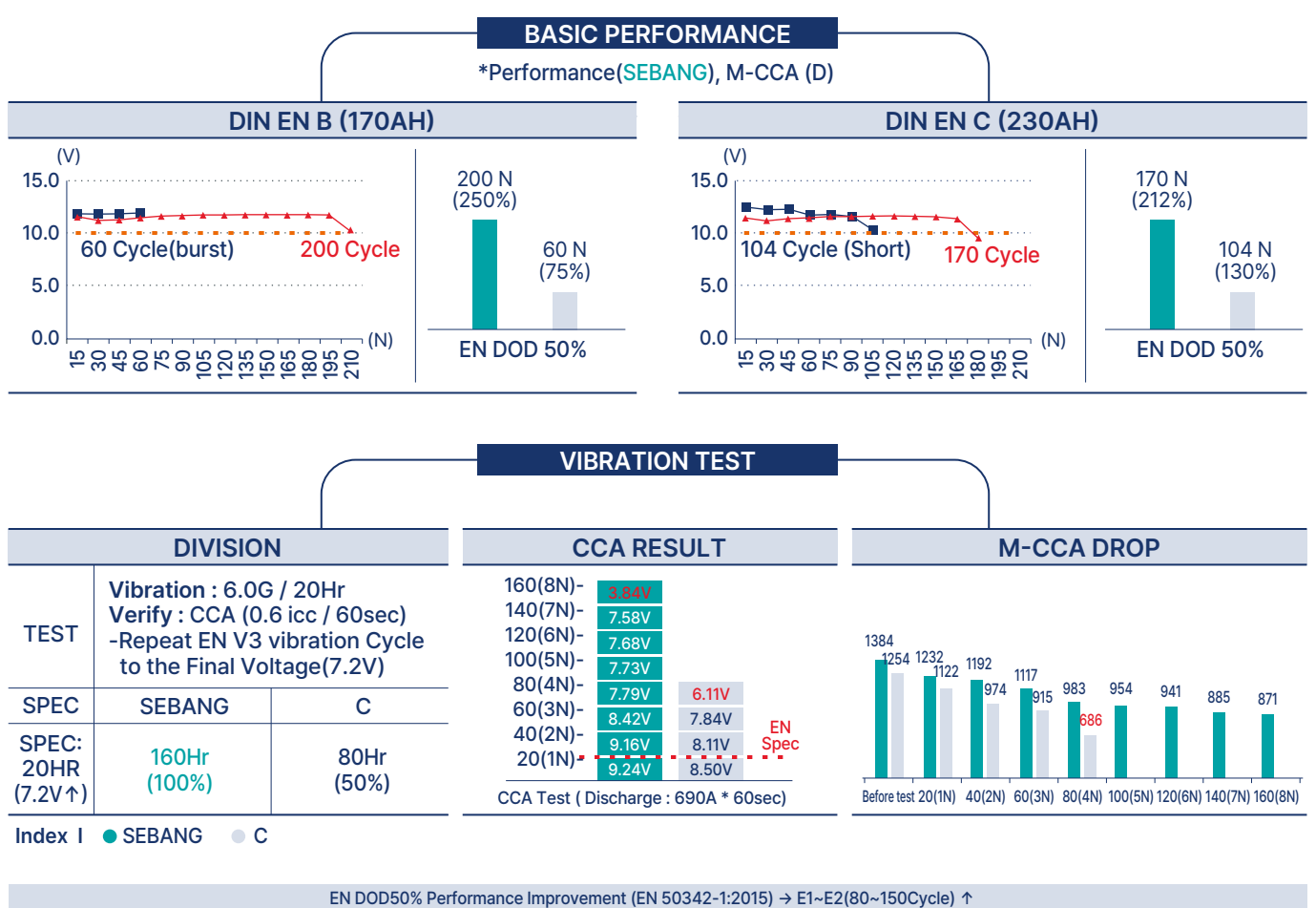
01 | NORTH AMERICA



02 | EUROPE



03 | MIDDLE EAST



SEBANG GLOBAL BATTERY IS
THE NO.1 BATTERY BRAND IN
SOUTH KOREA AND RECOGNIZED WORLDWIDE



AGM & EFB

START & STOP

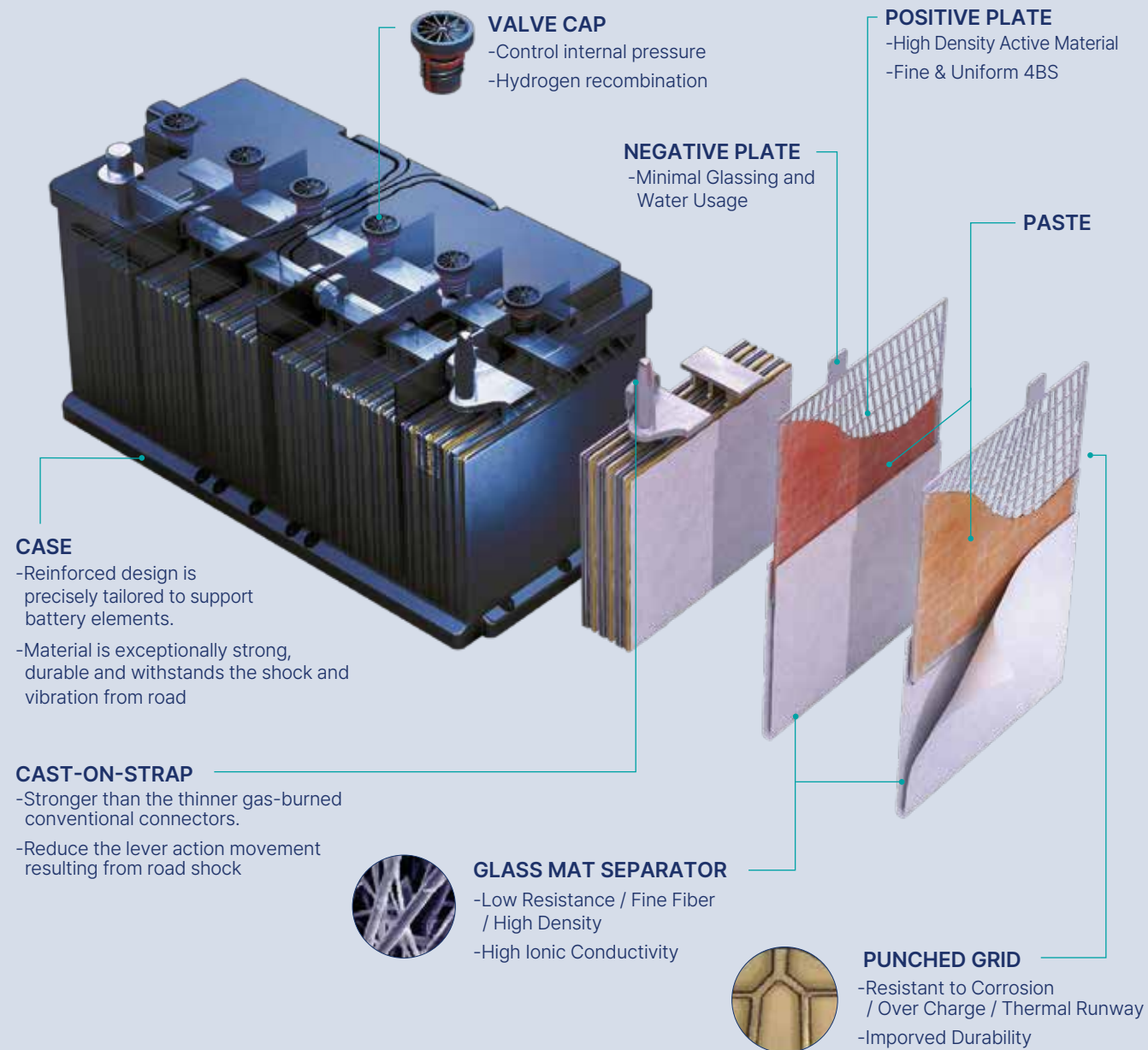
The **AGM battery** is a next-generation vehicle battery developed for vehicles equipped with SMART power generation control systems. In traditional vehicles, the battery was only used briefly for providing starting current for the engine and 12V power for accessories like radio, lights, AC compressors, and the charging was done by sending a continuous current to maintain a fully charged state while driving, which lowered energy efficiency and fuel economy. However, most modern vehicles now have SMART power generation control systems installed to improve fuel efficiency. Since charging is intermittent, tailored to the battery's remaining capacity, fuel efficiency has been improved, but battery usage has increased. Therefore, equipping vehicles with AGM products optimized to manage various functions and sustain more cycles compared to conventional batteries is helpful in increasing economy. AGM batteries have a longer product life and improved safety by its non-spillable nature and the use of dedicated lead plates and absorbent glass mat.

EFB battery is suitable for small and midsize vehicles with start-stop systems and no regenerative braking system. They have a longer lifespan than standard batteries and provide effects such as reduced gas emissions and improved vehicle convenience features, similar to AGM batteries.

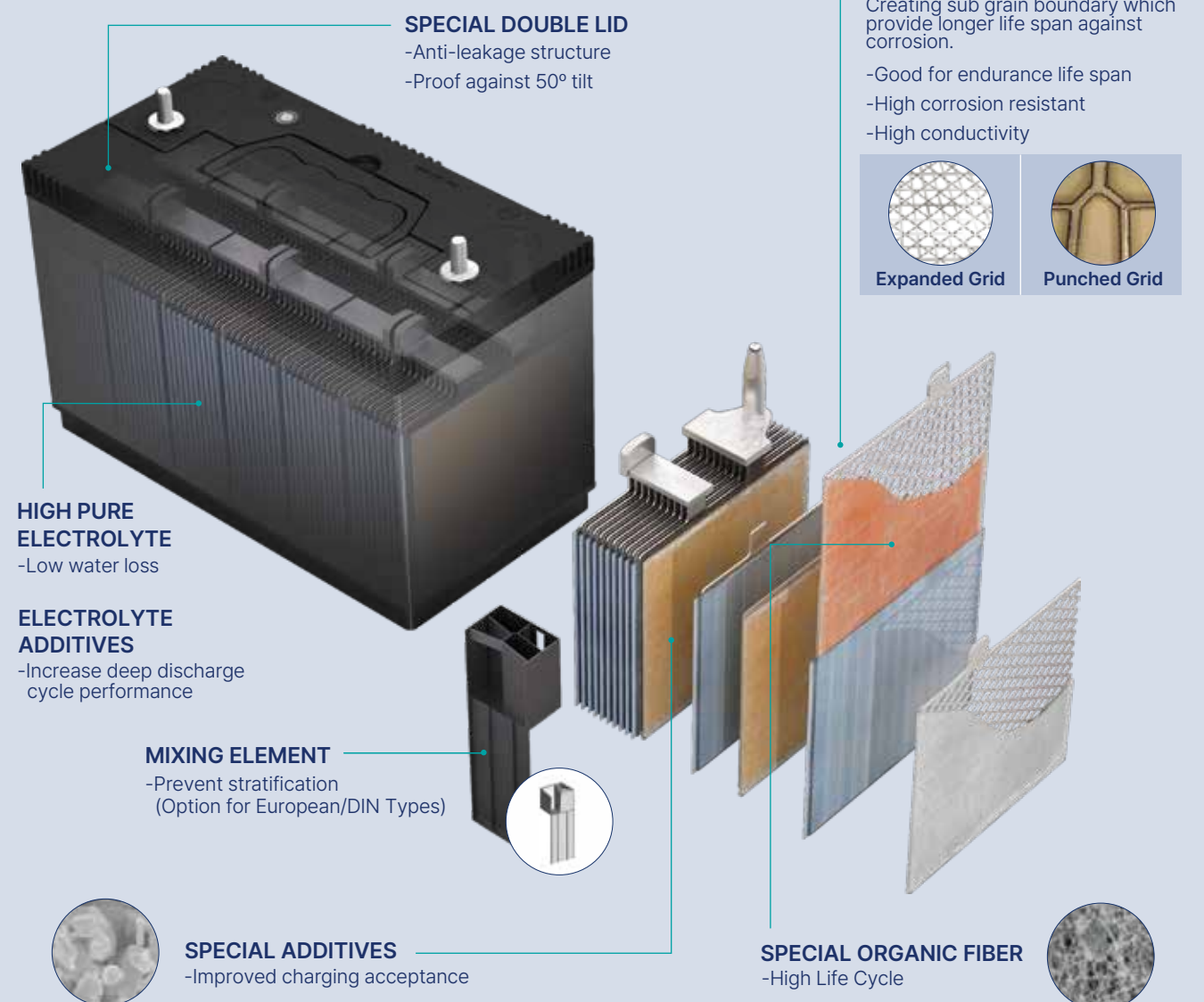
AGM
(Absorbent Glass Mat)

	AUTO STOP	Improved stratification of electric poles, substrates, active materials, and electrolytes optimized for AUTO STOP system application
	ELECTROLYTE ABSORPTION	Application of PUNCH substrate to prevent leakage by absorbing electrolyte, high-density hygroscopic GLASS MAT separator, glass fiber mat
	REUNION	Recombination of gases occurring inside the battery
	VALVE REGULATED	Application of VALVE REGULATED using one-way valve
	IMPROVE FUEL EFFICIENCY	Car manufacturers are adapting new technologies like Start & Stop and Regenerative Braking System, which requires significant energies from battery. Sebang Global AGM batteries are suitable for these applications and let you save fuel 5~10%.
	CO2 REDUCTION	Reducing the CO2 emission is key task of car industry. Coping with climate change and resource depletion, we all care for Earth, Green Globe. Sebang Global AGM battery is supporting human kind's efforts with the most advanced technologies which are reliable for this purpose.
	OE QUALITY + CHARGING RELIABILITY	Sebang Global Battery produces AGM batteries at a dedicated production line where we produce the original equipment and after-market batteries which guarantee the best quality with OE requirements. Sebang Global Battery meets the highest environmental standards at every stage of the manufacturing process. Sebang Global Battery ensures that you get the OE quality standard product.
	ECO FRIENDLY	If you can't plant a tree in your garden, plant Sebang Global AGM battery in your car. It creates energy and saves CO2 as tree does.

AGM

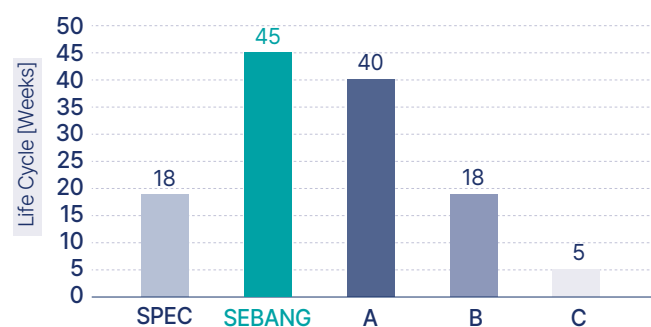


EFB



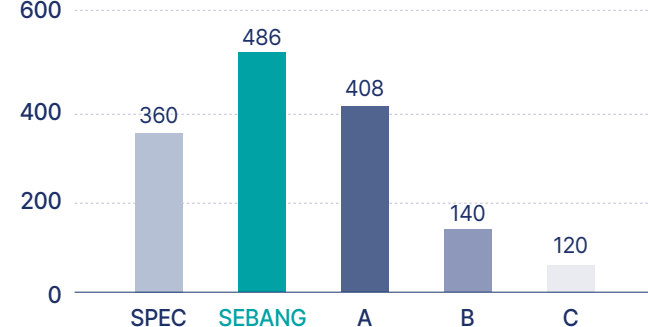
DOD 17.5%

Model L3 (70Ah / 20HR)
Test Method : EN VDA
Temp : 25 °C

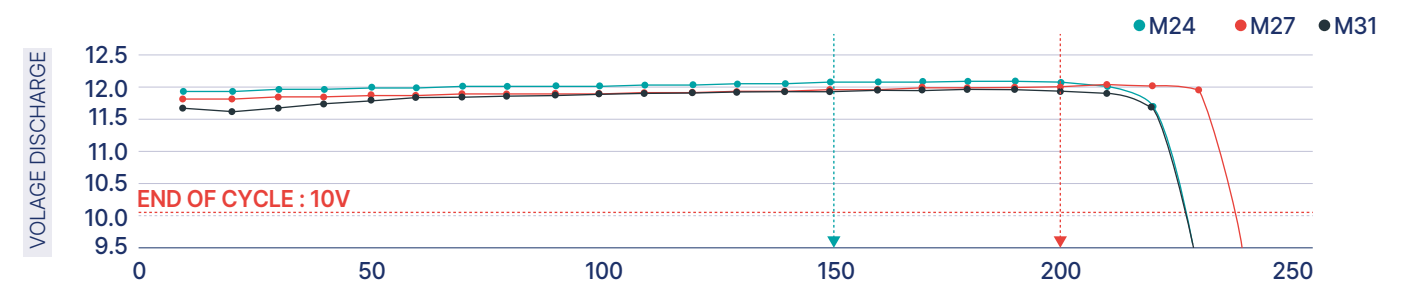


DOD 50%

Model L3 (70Ah / 20HR)
Test Method : EN VDA
Temp : 40 °C



DOD 50% CYCLE

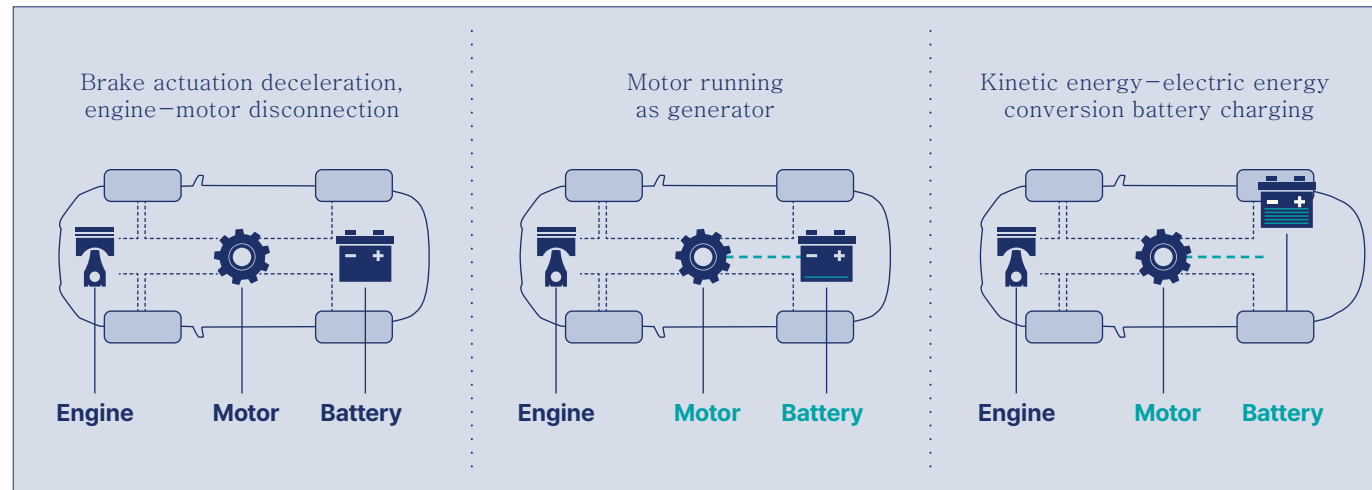


Category		EFB M 24		EFB M 27		EFB M 31	
		Specifications	Test Results	Specifications	Test Results	Specifications	Test Results
PERFORMANCE	C20	80 Ah	85.7 Ah	90 Ah	100.5 Ah	100 Ah	108 Ah
	SAE CCA	7.2 V (600 A)	7.49 V	7.2 V (720 A)	7.57 V	7.2 V (850 A)	7.67 V
LIFE CYCLE	DOD 50 %	200 Cycle	238 Cycle	200 Cycle	220 Cycle	200 Cycle	229 Cycle

WHAT IS AMS?

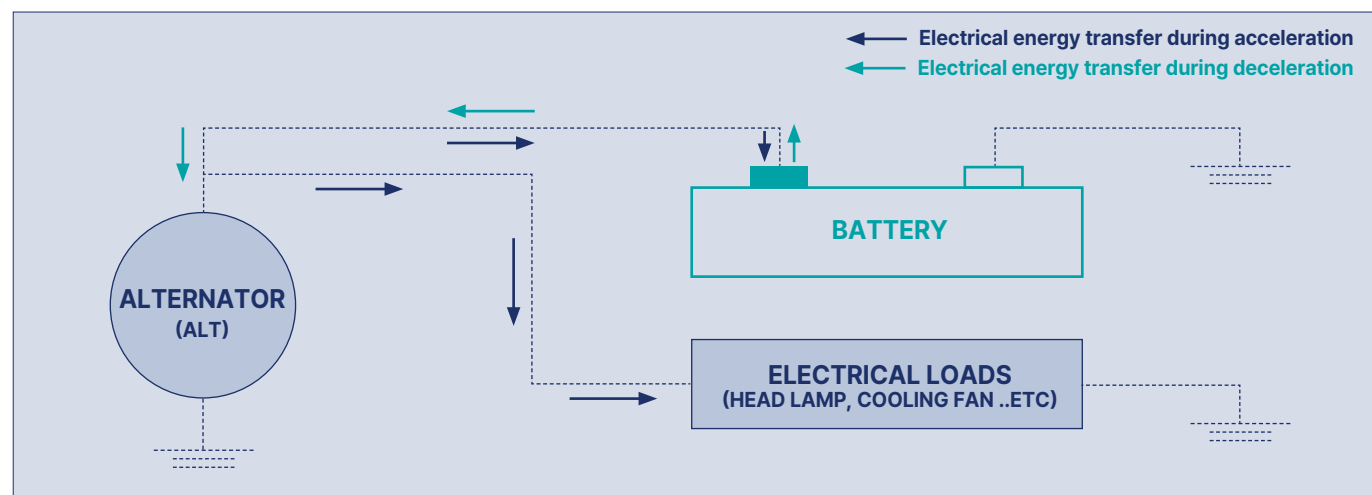
(ALTERNATOR MANAGEMENT SYSTEM)

Controls the alternator voltage variably depending on the vehicle operating conditions to improve vehicle fuel efficiency.



The alternator management system detects vehicle operating conditions, electrical loads, and battery charging status to control the alternator's voltage through the Engine Control Module (ECM), thereby improving fuel efficiency and maintaining optimal battery charging status. It performs charging control, discharging control, and normal control depending on the battery's charging status and driving conditions. During acceleration, it performs discharging control to consume battery power and reduce the alternator's voltage to reduce its workload, while during deceleration, it performs charging control to increase the alternator's voltage and replenish the consumed battery voltage.

AGM BATTERY SERIES



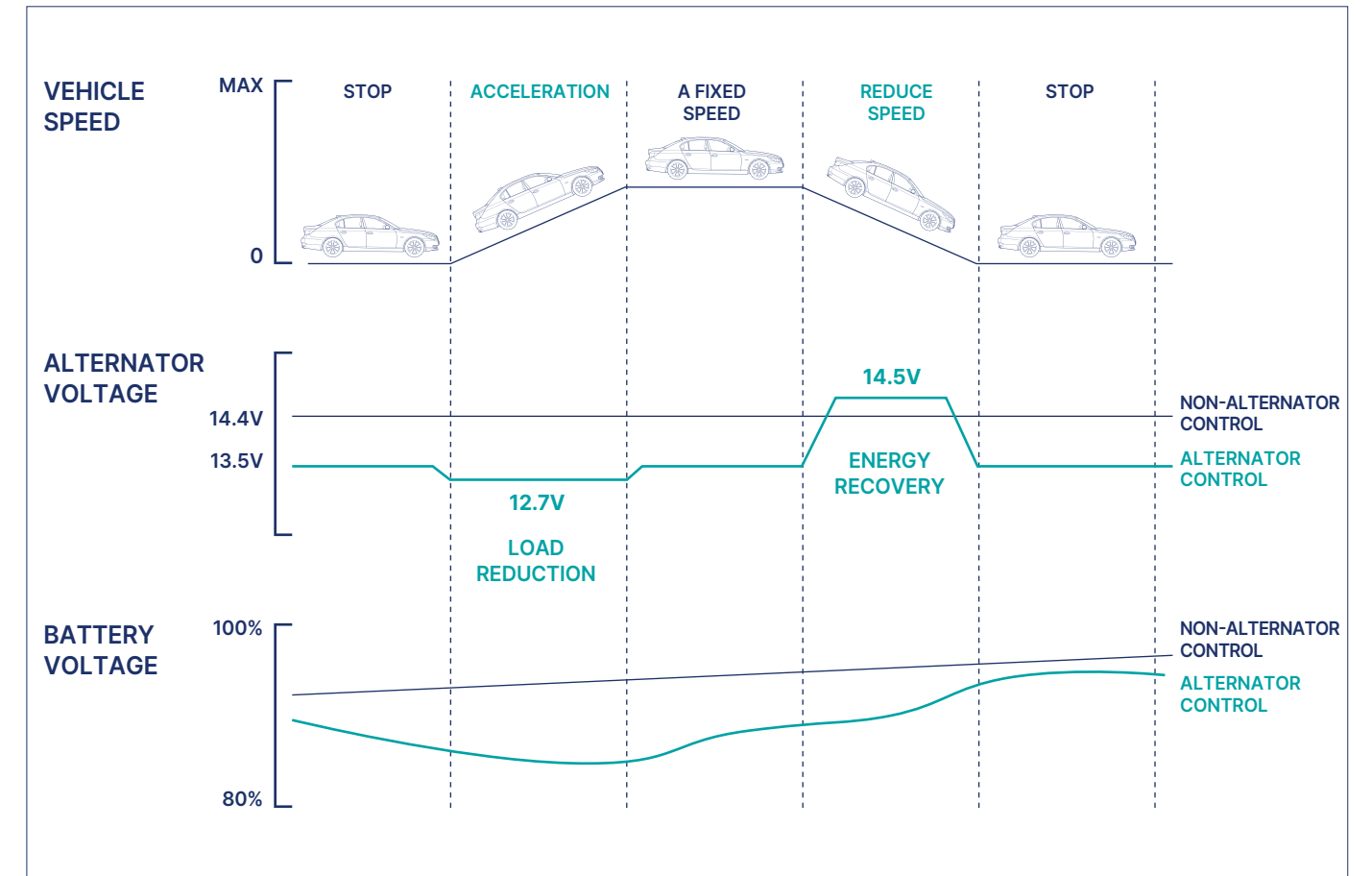
MAJOR COMPONENTS

ALTERNATOR (ALT) Produces electrical energy and supplies power to the battery and electrical loads

BATTERY Supplies power to start the vehicle and supports the alternator during operation

ELECTRICAL LOADS Devices that consume electrical energy, such as ignition systems, lighting systems, and control units

HOW DOES THE ALTERNATOR MANAGEMENT SYSTEM WORK?



BASIC PRINCIPLE

The movement of electrical energy by potential difference. (from high potential to low potential)

NON-ALTERNATOR CONTROL VEHICLE

Continues to charge with a fixed voltage of 14.4V regardless of vehicle operating conditions. (-35mA/°C is applied when the temperature rises)

ALTERNATOR CONTROL VEHICLE

During vehicle acceleration, to reduce the engine's load, the alternator's voltage is lowered to 12.7V, Battery's OCV becomes 12.8~12.9V, which causes a potential difference, discharging the battery.

*Discharging occurs only when the battery voltage is above 12.7V, and charging occurs when it is below 12.7V

VEHICLE DECELERATION

During vehicle deceleration, the alternator's voltage is increased to 14.5V to create a potential difference, charging the battery. (energy recovery)

CHAPTER 03.

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**SEBANG GLOBAL BATTERY IS
THE NO.1 BATTERY BRAND
IN SOUTH KOREA AND
RECOGNIZED WORLDWIDE.**

”

PRODUCT RANGES

- AUTOMOTIVE
- COMMERCIAL
- MARINE & RV
- LAWN & GARDEN
 - AGM
 - EFB
- GOLF CART



AUTOMOTIVE

Sebang Global Battery is a global automotive battery manufacturer that supplies OE (Original Equipment) batteries to global automakers.



Box Size	GLOBAL No.	Ah (20h)	CCA A (EN)	Length (mm)	Width (mm)	Height (mm)	Layout	Terminal	Base Hold-down	Quantity per Pallet
SMF Premium Starterbatteries (DIN)										
L0	GR040B	40	350	175	175	190	0	1	B3	120
LB1	GR040A	40	340	207	175	175	0	1	B3	115
	GR045EU	45	420	207	175	175	0	1	B3	115
	GR052A	52	460	207	175	175	0	1	B3	115
L1	GL044B	44	350	207	175	190	1	1	B3	115
L1	GR050B	50	400	207	175	190	0	1	B3	115
LB2	GR050A	50	460	242	175	175	0	1	B3	90
	GR055EU	55	510	242	175	175	0	1	B3	90
	GR065EU	65	540	242	175	175	0	1	B3	90
L2	GR055B	55	440	242	175	190	0	1	B3	90
	GL055B	55	440	242	175	190	1	1	B3	90
	GR062B	62	480	242	175	190	0	1	B3	90
	GL062B	62	480	242	175	190	1	1	B3	90
	GR066B	66	530	242	175	190	0	1	B3	90
LB3	GR068A	68	580	278	175	175	0	1	B3	75
	GR075EU	75	620	278	175	175	0	1	B3	75
L3	GL072B	72	580	278	175	190	1	1	B3	75
	GR078EU	78	660	278	175	190	0	1	B3	75
LB4	GR080A	80	730	315	175	175	0	1	B3	75
L4	GR080B	80	660	315	175	190	0	1	B3	75
LB5	GR088A	88	770	353	175	175	0	1	B3	60
	GR090EU	90	820	353	175	175	0	1	B3	60
L5	GR095EU	95	780	353	175	190	0	1	B3	60
	GR100EU	100	820	353	175	190	0	1	B3	60
L6	GR110B	110	900	394	175	190	0	1	B3	48
SMF ASIA Starterbatteries (JIS)										
B19	GR035C	35	280	187	127	225	0	3	B0	128
	GL035C	35	280	187	127	225	1	3	B0	128
	GR035CBL	35	280	187	127	225	0	3	B1	128
	GL035CBL	35	280	187	127	225	1	3	B1	128
B24	GR045C	45	380	238	129	225	0	3	B0	96
	GL045C	45	380	238	129	225	1	3	B0	96
	GR045D	45	380	238	129	225	0	1	B0	96
	GL045D	45	380	238	129	225	1	1	B0	96
D20	GR050C	50	380	202	173	225	0	1	B0	96
	GL050C	50	380	202	173	225	1	1	B0	96
	GR050CBL	50	380	202	173	225	0	1	B1	96
	GL050CBL	50	380	202	173	225	1	1	B1	96
D23	GR065C	65	520	232	173	225	0	1	B0	80
	GL065C	65	520	232	173	225	1	1	B0	80
	GR065CBL	65	520	232	173	225	0	1	B1	80
	GL065CBL	65	520	232	173	225	1	1	B1	80
D26	GR070CBL	70	570	260	174	225	0	1	B1	72
	GL070CBL	70	570	260	174	225	1	1	B1	72
	GR080CBL	80	660	260	174	225	0	1	B1	72
	GL080CBL	80	660	260	174	225	1	1	B1	72
D31	GR100C	100	780	303	173	225	0	1	B0	60
	GL100C	100	780	303	173	225	1	1	B0	60
	GR100CBL	100	780	303	173	225	0	1	B1	60
	GL100CBL	100	780	303	173	225	1	1	B1	60

*Specifications are subject to change without notice.



COMMERCIAL



COMMERCIAL(HEAVY DUTY) BATTERY for trucks and buses is a battery with technology accumulated over half a century. It provides not only excellent durability but also powerful strength and outstanding performance even in tough environmental conditions.



Box Size	GLOBAL No.	Ah (20h)	CCA A (EN)	Length (mm)	Width (mm)	Height (mm)	Layout	Terminal	Base Hold-down	Quantity per Pallet
MF Truck Starterbatteries										
LOT7	GR110C	110	780	346	173	233	0	1	B0	48
	GL110C	110	780	346	173	233	1	1	B0	48
SMF Truck Starterbatteries										
MAC	GR110SHD	110	800	513	175	210	3	1	B3	32
	GRD135SHD	135	910	513	175	210	3	1	B3	32
A	GR140SHD	140	950	513	189	223	3	1	B0	32
B	GR155SHD	165	950	513	222	220	3	1	B0	28
	GR180SHD	180	1000	513	222	220	3	1	B0	28
C	GR230SHD	230	1200	518	273	241	3	1	B0	24
EFB Truck Starterbatteries										
B	GR180EFBA	185	1200	513	222	220	3	1	B0	28
C	GR230EFBA	230	1350	518	276	241	3	1	B0	24
BCI Starterbatteries (z.B. US Car & Light Commercial)										
BCI 75	GL055BS	55	620	231	179	185	1	SIDE	B7	72
BCI 78	GR070BS	70	740	260	179	185	1	SIDE	B7	72
BCI Starterbatteries (z.B. Heavy-Duty Commercial)										
BCI 31	GR100UNI	100	800	330	173	239	9	1	B0	48
	GR115UNI	115	1000	330	173	239	9	1	B0	48

*Specifications are subject to change without notice.





MARINE & RV

Leisure batteries used for marine vessels such as boats, yachts, and RVs are designed to be highly resistant to shocks and vibrations.

Sebang Global Battery guarantees best performance available in the market.



Box Size	GLOBAL No.	Ah (20h)	CCA A (EN)	Length (mm)	Width (mm)	Height (mm)	Layout	Terminal	Base Hold-down	Quantity per Pallet
M24	GL082DCM	82	600	260	174	222	1	TM	B1	72
M27	GL095DCM	95	700	304	173	225	1	TM	B1	60
M31	GL0100DCM	100	710	330	173	239	1	TM	B1	48

*Specifications are subject to change without notice.



LAWN & GARDEN

Sebang Global Battery's LAWN & GARDEN battery is also the perfect battery for powerful engines such as those found in tractors and snowmobiles.



Box Size	GLOBAL No.	Ah (20h)	CCA A (EN)	Length (mm)	Width (mm)	Height (mm)	Layout	Terminal	Base Hold-down	Quantity per Pallet
U1	GL026U1	26	250	195	127	182	1	LUG	B0	160
	GR026U1R	26	250	195	127	182	0	LUG	B0	160
	GL032U1	32	330	195	127	182	1	LUG	B0	160
	GR032U1R	32	330	195	127	182	0	LUG	B0	160

*Specifications are subject to change without notice.



AGM (ABSORBENT GLASS MAT)

Box Size	GLOBAL No.	Ah (20h)	CCA A (EN)	Length (mm)	Width (mm)	Height (mm)	Layout	Terminal	Base Hold-down	Quantity per Pallet
L1	GR050AGM	50	540	207	175	190	0	1	B3	80
L2	GR060AGM	60	640	242	175	190	0	1	B3	64
L3	GR070AGM	70	760	278	175	190	0	1	B3	64
L4	GR080AGM	80	800	315	175	190	0	1	B3	48
L5	GR095AGM	95	850	353	175	190	0	1	B3	48
L6	GR105AGM	105	950	394	175	190	0	1	B3	48

*Specifications are subject to change without notice.



EFB (ENHANCED FLOODED BATTERY)

Box Size	GLOBAL No.	Ah (20h)	CCA A (EN)	Length (mm)	Width (mm)	Height (mm)	Layout	Terminal	Base Hold-down	Quantity per Pallet
EFB Starterbatteries (DIN)										
L2	GR060EFBA	60	560	242	175	190	0	1	B3	90
LB3	GR065EFBA	65	650	278	175	175	0	1	B3	75
L3	GR070EFBA	70	680	278	175	190	0	1	B3	75
LB4	GR075EFBA	75	730	315	175	175	0	1	B3	75
L4	GR080EFBA	80	730	315	175	190	0	1	B3	75
L5	GR095EFBA	95	850	353	175	190	0	1	B3	60
EFB ASIA Starterbatteries (JIS)										
B19	GR035EFBB	35	360	187	127	225	0	3	B0	128
B19	GR040EFBB	40	420	197	129	225	0	3	B0	128
B24	GR055EFBB	55	460	238	129	225	0	3	B0	96
D23	GR065EFBB	65	550	232	173	225	0	1	B0	80
D26	GR070EFBB	70	680	260	174	225	0	1	B0	72
D31	GR095EFBB	95	760	303	173	225	0	1	B0	60

*Specifications are subject to change without notice.



GOLF CART

Longest Series is developed with Sebang Global Battery's unrivaled technology accumulated over half a century. It is a dedicated product for golf carts, electric vehicles, and unmanned transporters with the best performance.

APPLICATIONS

[Aerial Work Platform]

[Golf Cart]

[Ride-on Scrubber]

[Solar Power]



Voltage	GLOBAL No.	Capacity		RC	Dimensions			Layout	Terminal	Quantity per Pallet
		C20 (Ah)	C5 (Ah)	@75A (Min)	Length (mm)	Width (mm)	Height (mm)			
6V	L-605	210	175	105	264	181	276	0	EHPT	54
	L-105	225	185	115	264	181	276	0	EHPT	54
	L-125	240	195	132	264	181	276	0	EHPT	54
	L-145	260	215	145	264	181	295	0	EHPT	54
8V	L-875	170	145	80	264	181	276	0	EHPT	54
	L-890	190	155	90	264	181	276	0	EHPT	54
	L-8125	240	190	110	264	181	314	0	EHPT	54
12V	L-1275	150	125	70	329	181	276	0	EHPT	36

*Specifications are subject to change without notice.

CAP OPTIONS

GANG CAP

INDIVIDUAL CAPS

TERMINAL CONFIGURATIONS

EHPT
(Embedded High Profile Terminal)

Terminal Height Inches (mm)	1.50 (38)
Torque Values in-lb (Nm)	95 - 105 (11 - 12)
Bolt	5/16"

EAPT
(Embedded Automotive Post Terminal)

Terminal Height Inches (mm)	0.95 (24)
Torque Values in-lb (Nm)	50 - 70 (5.6 - 7.9)

CHAPTER 04.

“

**AS A LEADING BATTERY
TECHNOLOGY COMPANY**

”

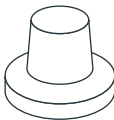
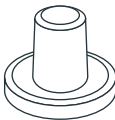
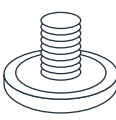

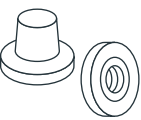
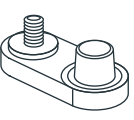
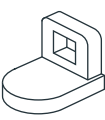
REFERENCES

- CONVERSION TABLE
- TERMINAL / BHD / BCI FIGURE
- BATTERY PRINCIPLES AND FEATURES
- PROCEDURE OF REPLACEMENT
- PRECAUTIONS

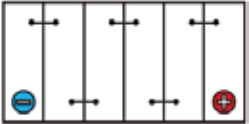
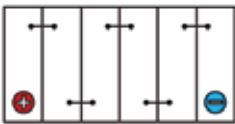
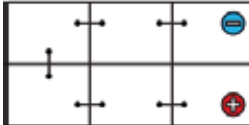
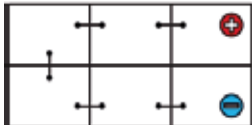
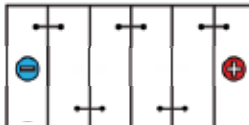
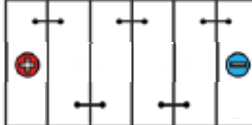
TECHNICAL INFORMATION

TERMINAL / BHD / LAYOUT

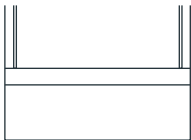

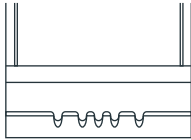
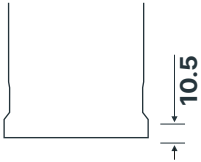
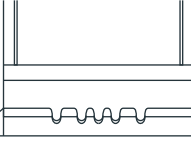
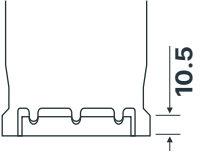
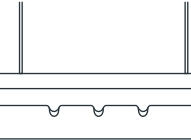
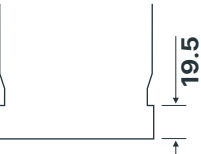
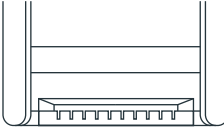
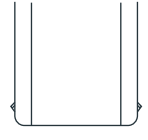
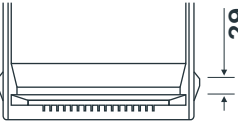
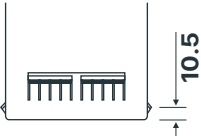
TERMINAL

1 (Standard)	3 (Small)	STUD	SIDE	DUAL	TM	LUG
						

LAYOUT

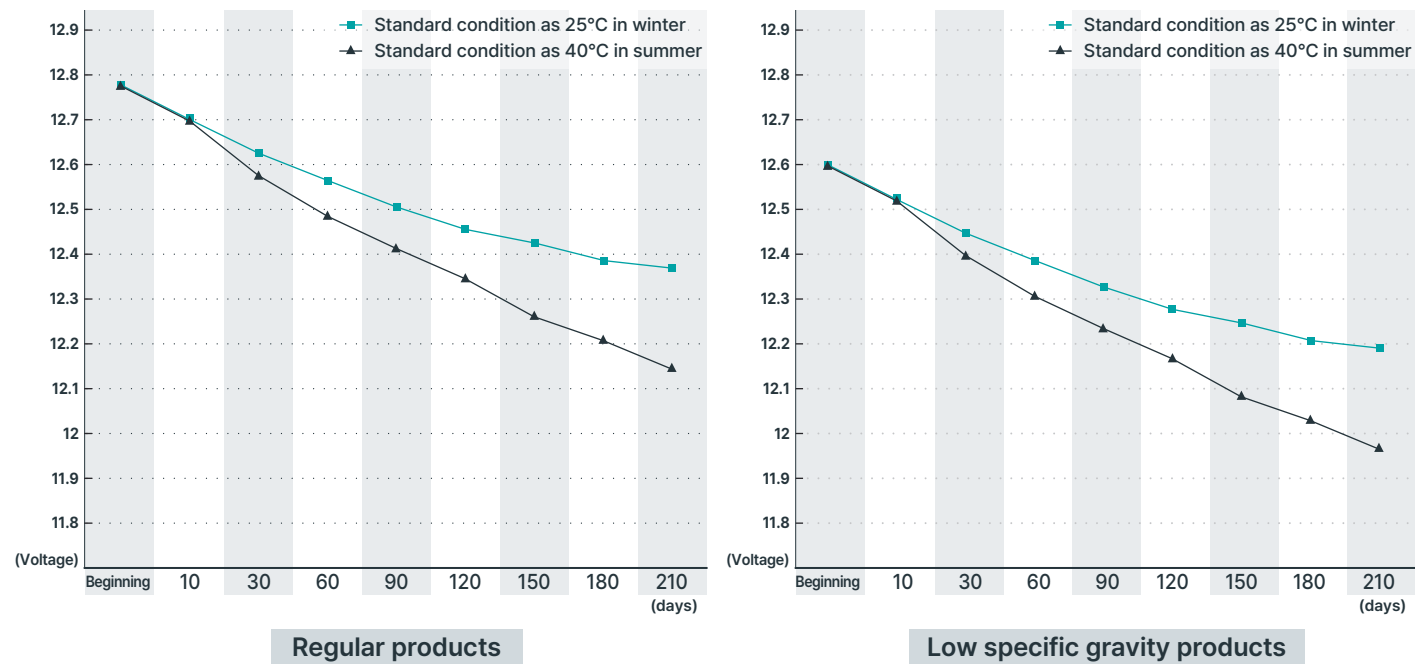
0		1	
3		4	
9		18	

BHD

B0			without Bottom Hold Down
B1			2 Bottom Hold Down 10.5mm high on long sides
B3			4 Bottom Hold Down 10.5mm high on all four sides
B4			2 Bottom Hold Down 19mm high on long sides
B7			2 Bottom Hold Down 9.7mm high on long sides
B9			4 Bottom Hold Down 10.5mm high on long sides 29mm on short sides

BATTERY PRINCIPLES AND FEATURES

SELF-DISCHARGE RATE BY TEMPERATURE

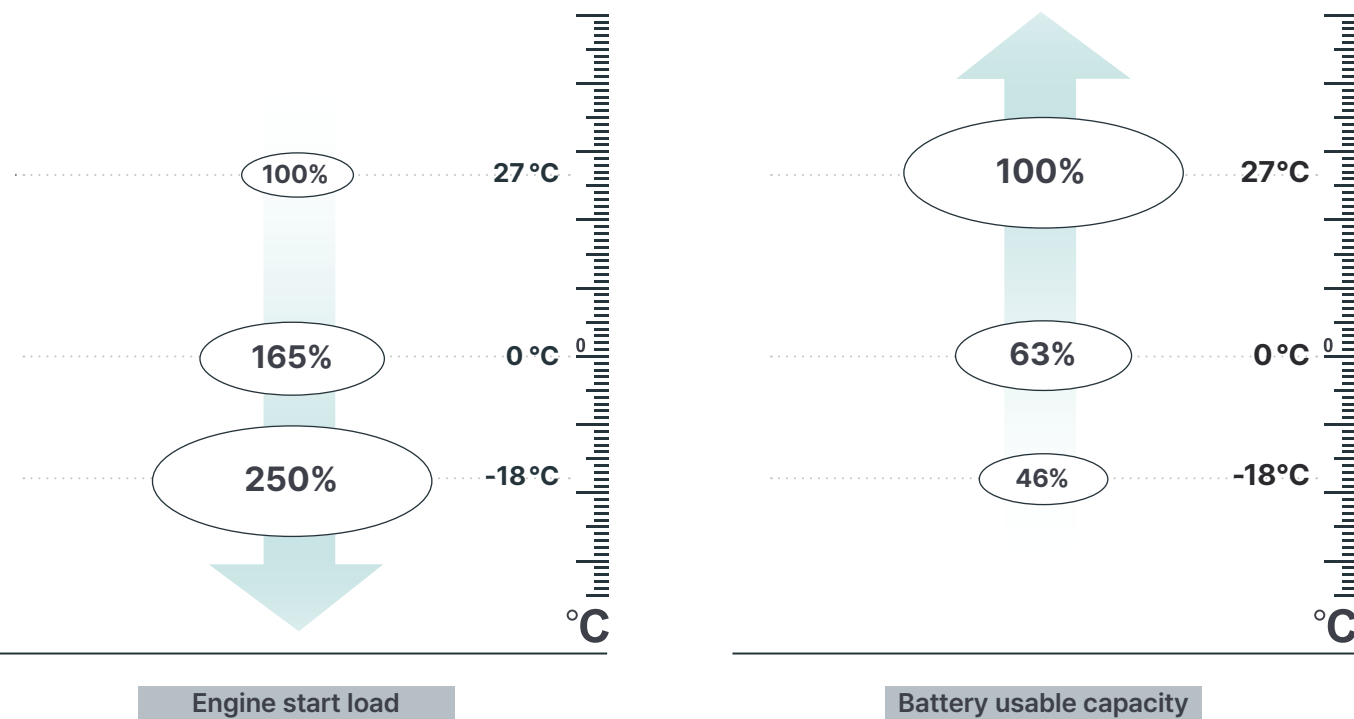


-The higher the temperature, the more battery self-discharged.

[Self discharge : summer season (April to September) > winter season (October to March)]

* This data is a test number. It uses as a reference value and it can be changed depending on region and season.

CHANGES IN THE REQUIRED ENGINE STARTING LOAD AND AVAILABLE CAPACITY OF THE BATTERY BY TEMPERATURE



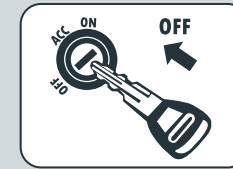
-Batteries increase their usable capacity at higher temperatures

-The lower the car's engine temperature, the greater the load required to start it.

▷ Difficult to start due to bad conditions in both battery and engine starting characteristics at low temperatures

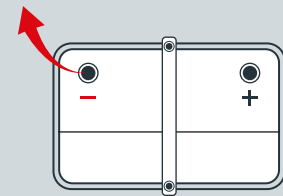
PROCEDURE OF REPLACEMENT

1



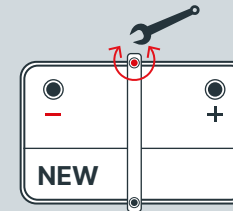
Switch off the engine and Keep sparks, flames, cigarettes away from battery at all times, before removing the old battery.

2



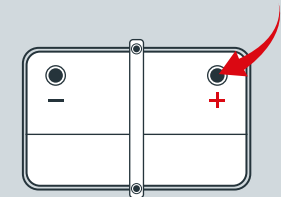
Disconnect the negative terminal, first and avoid short-circuit caused by tools, when removing old battery.

3



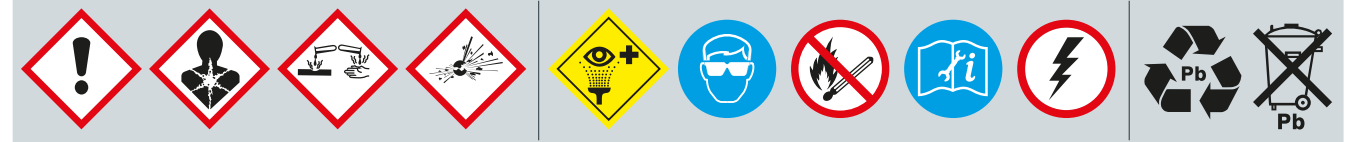
Clean corroded parts in tray and cable clamps, before installation of new battery.

4



Connect the positive terminal, first and check the terminal clamps for tight fit, when installing new battery.

PRECAUTIONS



DANGER

Contains: Lead, Sulfuric Acid(Electrolyte), Lead Compounds, Arsenic

- Harmful if swallowed, inhaled, or in contact with skin.
- Acid causes severe skin burns and eye damage.
- May damage fertility or the unborn child if ingested or inhaled.
- May cause harm to breast-fed children.
- May cause cancer if ingested or inhaled.
- Causes skin irritation, serious eye damage.
- Contact with internal components may cause irritation or severe burns.
- Causes damage to central nervous system, blood and kidneys through prolonged or repeated exposure if ingested or inhaled.
- Irritating to eyes, respiratory system, and skin.
- May form explosive air/gas mixture during charging.
- Extremely flammable gas(hydrogen).
- Explosive, fire, blast or projection hazard.
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Avoid contact during pregnancy / while nursing.
- Wear protective gloves / protective clothing, eye protection / face protection.
- Use only outdoors or in a well-ventilated area.
- Avoid contact with internal acid.
- Do not breathe dust / fume / gas / mist / vapors / spray.
- Keep away from heat / sparks / open flames / hot surfaces. No smoking.
- IF SWALLOWED OR CONSUMED: rinse mouth. Do NOT induce vomiting.
- Call a poison center / doctor if you feel unwell.
- IF ON CLOTHING OR SKIN(or hair): Remove / Take off immediately all contaminated clothing and wash it before reuse.
- Rinse skin with water / shower.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- Immediately call a POISON CENTER or doctor / physician.
- IF IN EYES: Rinse cautiously with water for several minutes.
- Remove contact lenses, if present and easy to do. Continue rinsing.
- If exposed / concerned, or if you feel unwell seek medical attention / advice.
- Store locked up, in a well-ventilated area, in accordance with local and national regulation.
- Store locked up, in a well-ventilated area, in accordance with local and national regulation.
- Dispose of contents / container in accordance with local and national regulation.
- Keep out of reach of children.

PROPOSITION 65 WARNING:

Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.

WARNING: Risk of fire, explosion or burns. Do not disassemble, heat above 60°C / 140°F or incinerate. Not recommended for inverted use. Follow product charging instructions.

High Voltage: Risk of shock. Do not touch uninsulated terminals or connectors.

Keep Vent Caps Tightly in Place.

Do not Tip.