
REDOX
BATTERIES
REDOX
BATTERIES
NATO
OTAN
CERTIFICATE 11821
TÜV NORD
PN/EN ISO 9001
TÜV NORD
IATF 16949
MADE IN EU
ISO 9001
ISO 14001

CERTIFICATES

Quality and management systems:

IATF 16949 : 2016

Technical Specification Allows to sell to OEM

PN-EN ISO 9001 : 2015

Quality Management System

ISO 14001:2015

Environment Management System

CERTIFICATE NATO 1182H

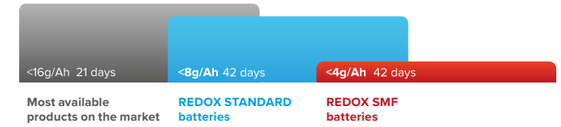
NATO Commercial and Government Entity Code

REDOX BATTERIES

HEAT RESISTANCE

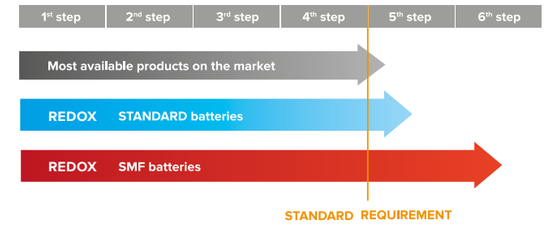
WATER CONSUMPTION TEST

Water consumption in heat resistance batteries is up to 75% lower than in standard batteries!



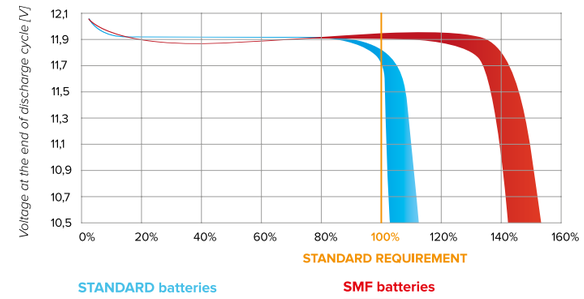
CORROSION TEST

Battery durability increased by as much as 25%.



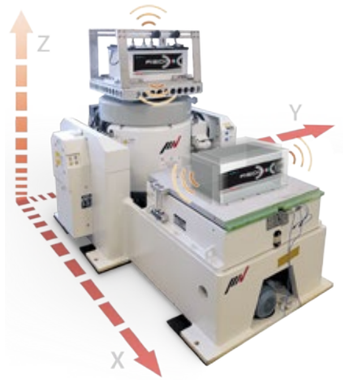
ENDURANCE CYCLE TEST

50% longer cycle life than standard battery.



VIBRATION AND SHOCK RESISTANCE TESTING STAND

Vibration durability testing is strategically employed when evaluating the suitability of vehicle batteries when subject to vibration in operating real-world environments. The importance of such tests is widely accepted within industry, as poorly integrated structures subject to vibration can result in a significantly reduced service life .
Our in-house vibration and shock resistance testing stand, stresses batteries among the three perpendicular axes X,Y,Z which is a common requirement especially among commercial vehicle manufacturer.



UNIQUE FEATURES

ADVANTAGES

The factory R&D team is a group of engineers with many years of experience in the battery industry. New products and solutions are being developed and range from design, prototype creation, cycle check processes including laboratory tests and research in real conditions, to approval stage and introduction to series production. Thanks to the unique know-how and support by EC funds, in co-operation with companies from Europe, the USA and Asia, many innovative technologies and designs were developed.

Each process is supervised by a series of controlling devices. Test results are collected and saved by software and factory laboratories equipped with specialized analytic tools. Factory focuses on innovations, observing development of worldwide technologies and selecting the most interesting solutions.

1 PLATE PRODUCTION

- BARTON reactors (the biggest in the world)
- Double-side pasting

2 ASSEMBLY

- Automatic assembly lines
- High-frequency welding (1000 Hz)
- Thermal separation of lid welding
- Automatic control of each battery piece

3 FORMATION

- Quick formation with electrolyte circulation (the first in the world for car batteries)
- High-frequency formation

4 PACKAGING

- Automatic packaging lines (plug screwing machine, high voltage leakage tester, robots)
- Automatic control of each battery piece

PRODUCTS

REDOX Battery
EFB II DIN

Enhanced Flooded Battery
2nd Generation
Start & Stop

REDOX Battery
EFB II JAPANESE

Enhanced Flooded Battery
2nd Generation
Start & Stop

REDOX Battery
SMF DIN

Sealed Maintenance Free
Passenger Vehicle

REDOX Battery
SMF JAPANESE

Sealed Maintenance Free

REDOX Battery
SMF TRUCK

Sealed Maintenance Free
Commercial Vehicle
Heavy Duty

REDOX Battery
MF TRUCK

Maintenance Free
Commercial Vehicle
Heavy Duty

REDOX Battery
VOYAGER

Marine / RV / Solar / Deep Cycle

REDOX EFB II DIN

Enhanced Flooded Battery
2nd Generation **Start & Stop**

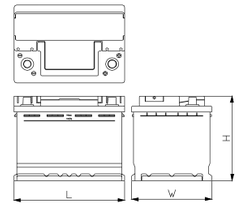
- Ideal solutions coupled with very high efficiency for vehicles with a large number of electrical power consumers, intensively operated in urban traffic, with frequent start-up cycles such as START-STOP and commercial vehicles
- The negative plate uses a new type of special Nano Power carbon additive which improves the battery's strength and load handling
- Thanks to its robust internal design and improved plate, the battery achieves up to 4 times the life cycle of conventional products
- A high dynamic load acceptance rate triples the standard requirements for booster batteries, which saves fuel and reduces CO2 emissions
- High stability and resistance to extreme temperatures, both external and in the engine compartment
- Top operational safety (explosion preventer and sealed battery design allow for use both in the passenger cabin and in the luggage boot)
- Perfect solution for vehicles with large number of accessories and frequent starting cycles (urban cycles), utility vehicles (eg. taxis)

572-382
L3

600-582
L5

BATTERY SPECIFICATION

Catalogue No.	Capacity Ah	Voltage V	Cold crancking performance A EN	Length L (mm)	Width W (mm)	Height H (mm)	Layout	Terminals	Base hold down	Charge indicator	Box type	Technical drawing
560-282	60	12	560	242	175	175	0	1	B13	-	LB2	
560-283	60	12	600	242	175	190	0	1	B13	-	L2	
562-282	62	12	640	242	175	190	0	1	B13	-	L2	
570-382	70	12	700	278	175	175	0	1	B13	-	LB3	
572-382	72	12	760	278	175	190	0	1	B13	-	L3	
575-482	75	12	780	315	175	175	0	1	B13	-	LB4	
582-482	82	12	820	315	175	190	0	1	B13	-	L4	
595-582	95	12	850	353	175	175	0	1	B13	-	LB5	
600-582	100	12	900	353	175	190	0	1	B13	-	L5	
605-582	105	12	950	394	175	190	0	1	B13	-	L6	



REDOX EFB II JAPANESE
Enhanced Flooded Battery
2nd Generation **Start & Stop**

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- The negative plate uses a new type of special Nano Power carbon additive which improves the battery's strength and load handling
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- Perfect solution for vehicles with large number of accessories and frequent starting cycles (urban cycles), utility vehicles (eg. taxis)

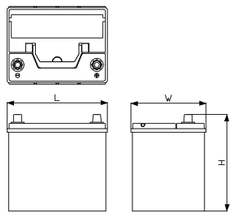
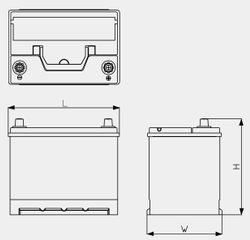
ENGINE START STOP

565-082
D23

ENGINE START STOP

585-082
D31

BATTERY SPECIFICATION

Cataloque No.	Capacity Ah	Voltage V	Cold crancking performance A EN	Lenght L (mm)	Width W (mm)	Height H (mm)	Layout	Terminals	Base hold down	Charge indicator	Box type	Technical drawing
565-082	65	12	620	230	172	222	0	1	B00	-	D23	
570-082	70	12	720	259	175	222	0	1	B01	-	D26	
572-082	72	12	750	259	175	222	0	1	B01	-	D26	
585-082	85	12	820	305	173	221	0	1	B01	-	D31	
590-082	90	12	850	305	173	221	0	1	B01	-	D31	

THE DIAGRAM OF THE INTERNAL STRUCTURE
Of the REDOX Enhanced Flooded Battery (EFB II)

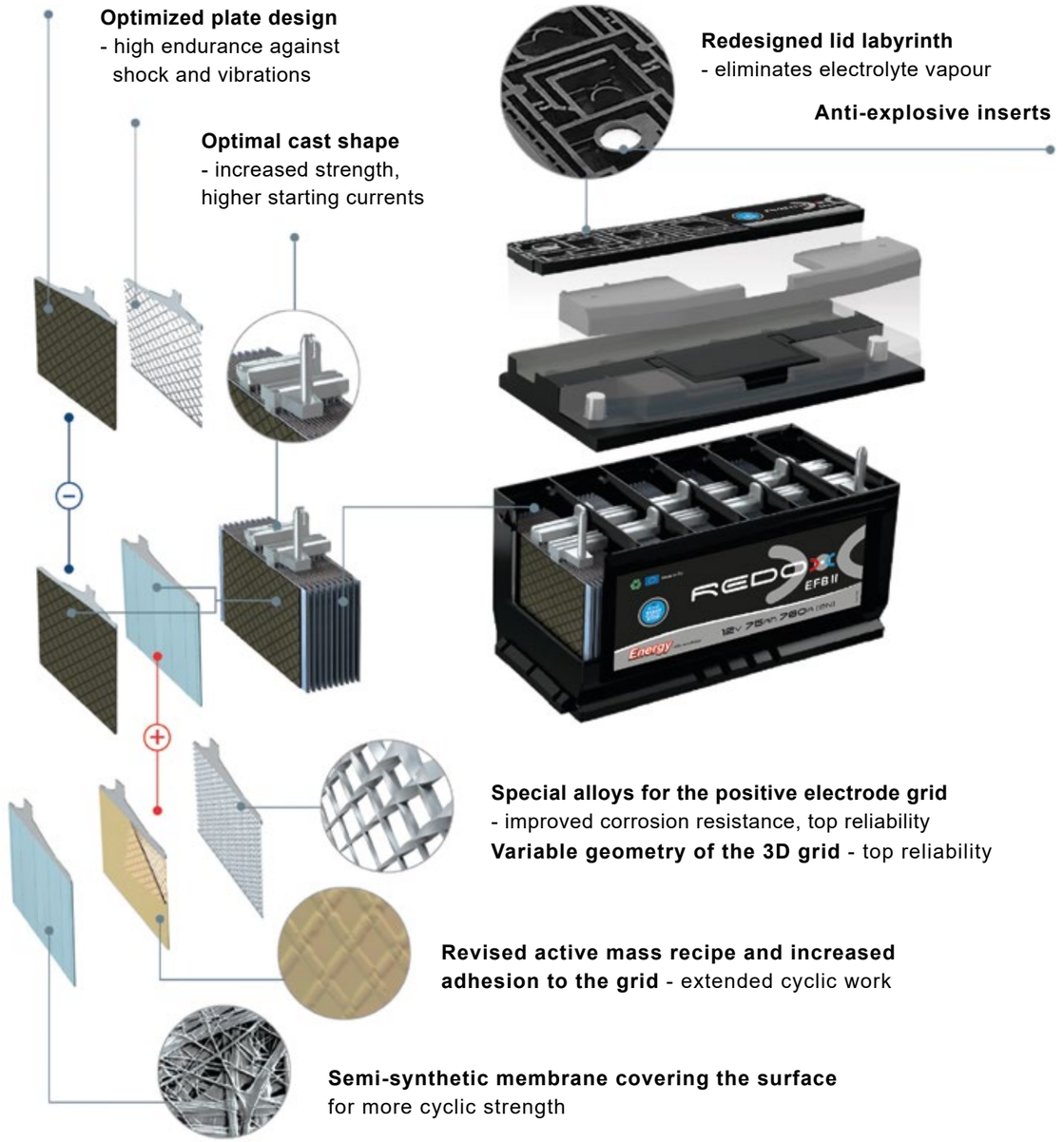
Addition - Nano Power Carbon -
high charge-carrying capacity,
high microcyclicic strength

Optimized plate design
- high endurance against shock and vibrations

Optimal cast shape
- increased strength, higher starting currents

Redesigned lid labyrinth
- eliminates electrolyte vapour

Anti-explosive inserts



Special alloys for the positive electrode grid
- improved corrosion resistance, top reliability
Variable geometry of the 3D grid - top reliability

Revised active mass recipe and increased adhesion to the grid - extended cyclic work

Semi-synthetic membrane covering the surface
for more cyclic strength

REDOX SMF DIN
Sealed Maintenance Free
Passenger Vehicle

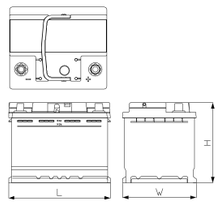
- Sealed (hermetic) battery casing
- Positive electrodes with special composition of active mass and semi-synthetic membrane
- Lid equipped with anti-explosion inserts
- High stability and resistance to high temperatures in the engine compartment
- High safety of use (anti-explosion inserts and tightness of battery allow it to be used also in the passenger compartment or in the trunk)
- High vibration resistance
- Reliable start even at the load of a large number of current consumers

545-190
L1 SMF

570-391
L3 SMF

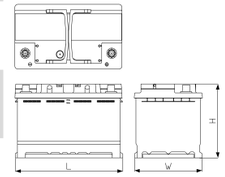
BATTERY SPECIFICATION

Catalogue No.	Capacity Ah	Voltage V	Cold crancking performance A EN	Length L (mm)	Width W (mm)	Height H (mm)	Layout	Terminals	Base hold down	Charge indicator	Box type	Technical drawing
540-190	40	12	480	207	175	175	0	1	B13	✓	LB1 SMF	
540-191	40	12	480	207	175	175	1	1	B13	✓	LB1 SMF	
545-190	45	12	380	207	175	190	0	1	B13	✓	L1 SMF	
545-191	45	12	380	207	175	190	1	1	B13	✓	L1 SMF	
550-190	50	12	450	207	175	190	0	1	B13	✓	L1 SMF	
550-191	50	12	450	207	175	190	1	1	B13	✓	L1 SMF	
555-292	55	12	500	242	175	175	0	1	B13	✓	LB2 SMF	
555-293	55	12	500	242	175	175	1	1	B13	✓	LB2 SMF	
555-290	55	12	450	242	175	190	0	1	B13	✓	L2 SMF	
555-291	55	12	450	242	175	190	1	1	B13	✓	L2 SMF	
560-290	60	12	550	242	175	190	0	1	B13	✓	L2 SMF	
560-291	60	12	550	242	175	190	1	1	B13	✓	L2 SMF	



REDOX SMF DIN
Sealed Maintenance Free
Passenger Vehicle

Catalogue No.	Capacity Ah	Voltage V	Cold crancking performance A EN	Length L (mm)	Width W (mm)	Height H (mm)	Layout	Terminals	Base hold down	Charge indicator	Box type	Technical drawing
570-390	70	12	620	278	175	190	0	1	B13	✓	L3 SMF	
570-391	70	12	620	278	175	190	1	1	B13	✓	L3 SMF	
572-390	72	12	650	278	175	175	0	1	B13	✓	LB3 SMF	
572-391	72	12	650	278	175	175	1	1	B13	✓	LB3 SMF	
575-392	75	12	700	278	175	175	0	1	B13	✓	LB3 SMF	
575-393	75	12	700	278	175	175	1	1	B13	✓	LB3 SMF	
575-390	75	12	720	278	175	190	0	1	B13	✓	L3 SMF	
575-391	75	12	720	278	175	190	1	1	B13	✓	L3 SMF	
585-490	85	12	830	315	175	175	0	1	B13	✓	LB4 SMF	
585-491	85	12	830	315	175	175	1	1	B13	✓	LB4 SMF	
588-390	88	12	750	278	175	190	0	1	B13	✓	L3 SMF	
590-590	90	12	800	353	175	190	0	1	B13	✓	L5 SMF	
590-591	90	12	800	353	175	190	1	1	B13	✓	L5 SMF	
592-490	92	12	800	315	175	190	0	1	B13	✓	L4 SMF	
592-491	92	12	800	315	175	190	1	1	B13	✓	L4 SMF	
600-590	100	12	800	353	175	190	0	1	B13	✓	L5 SMF	
600-591	100	12	800	353	175	190	1	1	B13	✓	L5 SMF	
610-590	110	12	900	353	175	190	0	1	B13	✓	L5 SMF	
610-591	110	12	900	353	175	190	1	1	B13	✓	L5 SMF	



THE DIAGRAM OF THE INTERNAL STRUCTURE

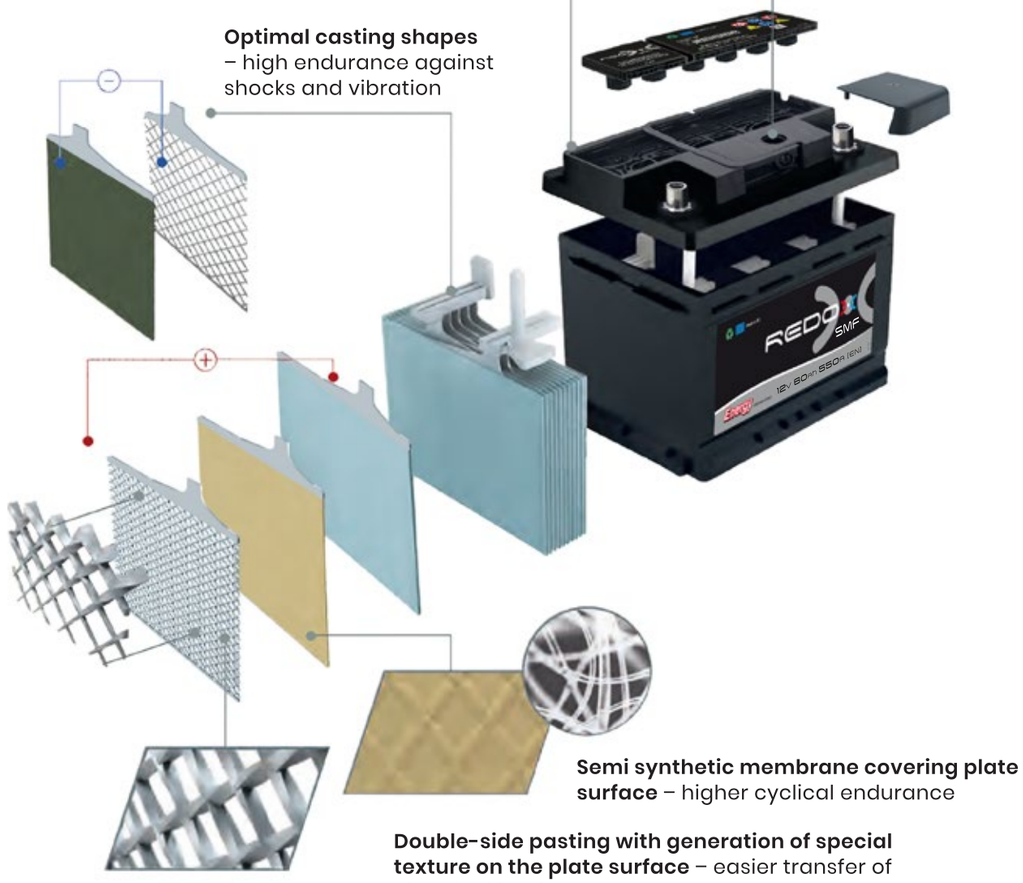
Of the Sealed Maintenance Free Redox Battery

Lid labyrinth construction – reduction of electrolyte fumes emisssion

Magic eye
(battery charge status indicator)

Anti-explosion insert set

Optimal casting shapes
– high endurance against shocks and vibration



Semi synthetic membrane covering plate surface – higher cyclical endurance

Double-side pasting with generation of special texture on the plate surface – easier transfer of electrical loads

Changeable geometry of 3D grid pattern – higher stability
Enhanced frame construction – higher cold cranking

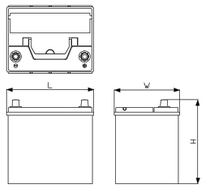
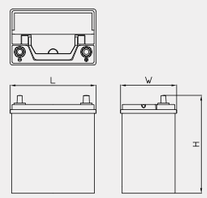
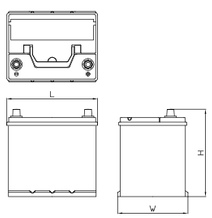
REDOX SMF JAPANESE
Sealed Maintenance Free

- A wide range of starter batteries for Asian cars
- Optimal plate design and special formula of battery active mass which guarantee enhanced inner battery construction
- Perfect starting parameters
- Universal battery terminals
- Ergonomic handles

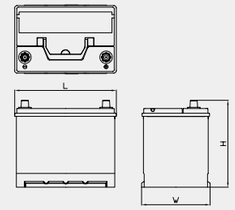
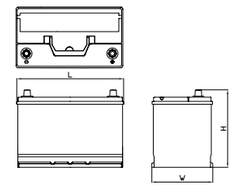
535-090
NS40

570-092
D26

BATTERY SPECIFICATION

Catalogue No.	Capacity Ah	Voltage V	Cold crancking performance A EN	Length L (mm)	Width W (mm)	Height H (mm)	Layout	Terminals	Base hold down	Charge indicator	Box type	Technical drawing
535-090	35	12	300	187	127	225	0	3	B00	-	NS40 SMF	
535-091	35	12	300	187	127	225	1	3	B00	-	NS40 SMF	
545-090	45	12	360	237	127	225	0	3	B00	-	NS60 SMF	
545-091	45	12	360	237	127	225	1	3	B00	-	NS60 SMF	
560-092	60	12	480	230	127	224	0	1	B01	-	D23 SMF	
560-093	60	12	480	230	170	224	1	1	B01	-	D23 SMF	

REDOX SMF JAPANESE
Sealed Maintenance Free

Catalogue No.	Capacity Ah	Voltage V	Cold crancking performance A EN	Length L (mm)	Width W (mm)	Height H (mm)	Layout	Terminals	Base hold down	Charge indicator	Box type	Technical drawing
570-092	70	12	570	261	170	225	0	1	B01	-	D26 SMF	
570-093	70	12	570	261	175	225	1	1	B01	-	D26 SMF	
590-090	90	12	780	303	175	227	0	1	B01	-	D31 SMF	
590-091	90	12	780	303	175	227	1	1	B01	-	D31 SMF	
600-092	100	12	800	303	175	227	0	1	B01	-	D31 SMF	
600-093	100	12	800	303	175	227	1	1	B01	-	D31 SMF	

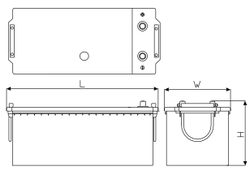
REDOX SMF TRUCK
Sealed Maintenance Free
Commercial Vehicle Heavy Duty

- Increased resistance to shocks and mechanical overloads due to the use of an anti-vibration insert, additional gluing of plate groups and their unique assembly system in the battery
- The special system of internal plate reinforcements obtained by using the separator with a glass non-woven fabric, so called „Glassmat”
- Increased corrosion resistance thanks to the improved design of the grid and thicker plate
- Batteries formed by innovative technology, during which the density of electrolyte changes in the continuous circulation process
- Technology of battery plates production based on Ca/Ca alloys
- Extremely low water consumption and self-discharge

680-785
Typ B

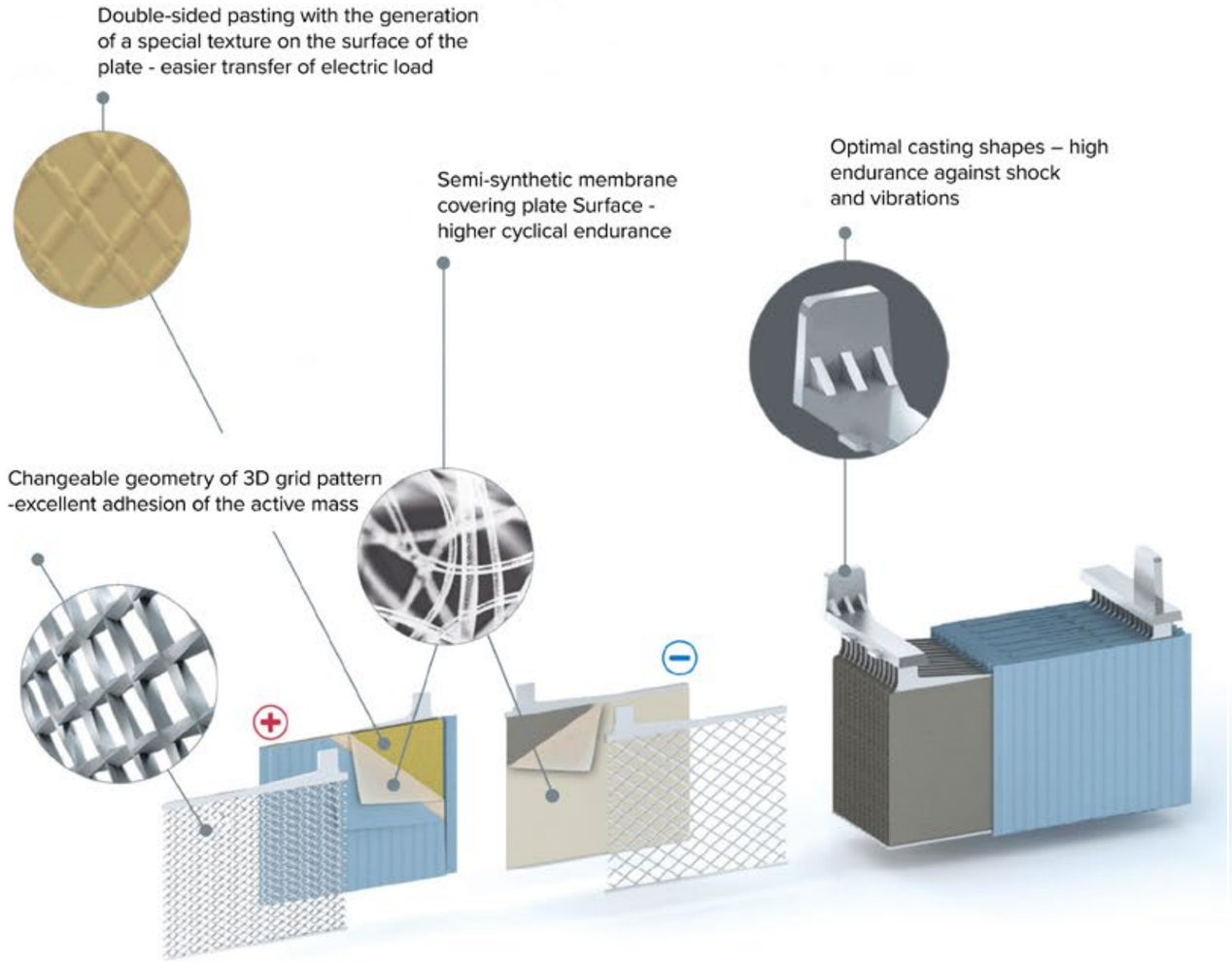
725-785
Typ C

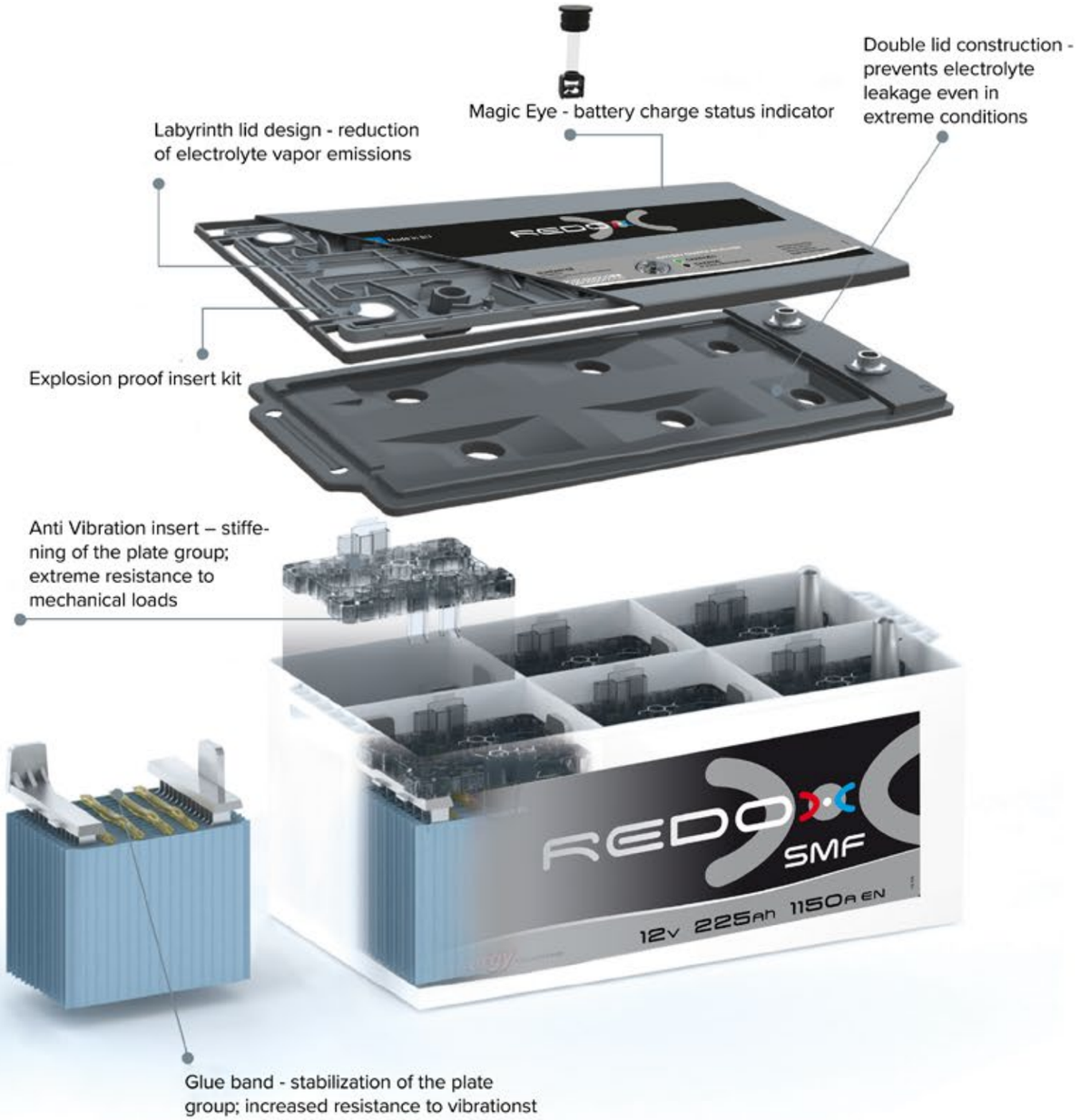
BATTERY SPECIFICATION

Catalogue No.	Capacity Ah	Voltage V	Cold crancking performance A EN	Length L (mm)	Width W (mm)	Height H (mm)	Layout	Terminals	Base hold down	Charge indicator	Box type	Technical drawing
645-780	145	12	800	513	189	218	3	1	B00	-	Typ A Flat SMF	
680-780	180	12	1000	513	222	218	3	1	B00	-	Typ B Flat SMF	
720-780	200	12	1100	518	273	237	3	1	B00	-	Typ C Flat SMF	
725-780	225	12	1150	518	273	237	3	1	B00	-	Typ C Flat SMF	

THE DIAGRAM OF THE INTERNAL STRUCTURE

Of the Sealed Maintenance Free Redox Battery





REDOX MF TRUCK
Maintenance Free
Commercial Vehicle Heavy Duty

- Dedicated for trucks of high motor powers additionally equipped with devices using electric power
- High anti-vibration and anti-shock resistance thanks to application of Glass Mat separator and gluing of plate packets
- Full range for trucks of high motor powers
- Dedicated for long-distance vehicles e.g. international transport
- Ideal for assembly in the car cabin

730-700
Typ C Kamina M18

730-701
Typ C FLAT M27

BATTERY SPECIFICATION

Catalogue No.	Capacity Ah	Voltage V	Cold crancking performance A EN	Length L (mm)	Width W (mm)	Height H (mm)	Layout	Terminals	Base hold down	Charge indicator	Box type	Technical drawing
650-703	150	12	950	513	222	217	3	1	B00	✓	Typ B Kamina M18	
670-700	170	12	1000	513	222	217	4	1	B00	✓	Typ B Kamina M18	
670-702	170	12	1000	513	222	217	3	1	B00	✓	Typ B Kamina M18	
685-700	185	12	1100	513	222	217	3	1	B00	✓	Typ B Kamina M18	
700-700	200	12	1150	518	276	236	3	1	B00	✓	Typ C Kamina M18	
710-700	210	12	1200	518	276	236	3	1	B00	✓	Typ C Kamina M18	
730-700	230	12	1250	518	276	236	3	1	B03	✓	Typ C Kamina M18	
730-701	230	12	1250	518	273	237	3	1	B03	-	TYP C FLAT M27	

REDOX VOYAGER
Marine / RV / Solar / Deep Cycle

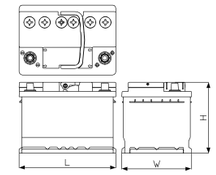
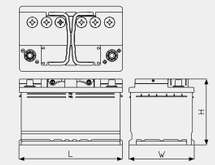
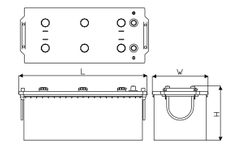
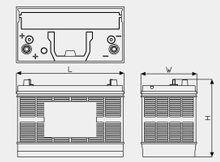
- Portable power generator for supplying energy to electric devices such as: sail boats, boats equipped with electric motors, camping trailers, others
- Plates of higher thickness and anti-corrosion resistance thanks to application of unique lead alloys
- Outstanding results in the rotation test in accordance with the Volkswagen's specifications
- Special plate grid of diagonal geometry resistant to cyclic work tensions that warrants optimal contact with battery active mass
- Separator of microporous structure connected with glass wool (Glass Mat) which results in optimal energy - efficiency and anti-vibration resistance
- Protection against backfire originating from outer fire sources

605-801
GR31 Dual Terminal

730-800
Typ C

REDOX VOYAGER
Marine / RV / Solar / Deep Cycle

BATTERY SPECIFICATION

Catalogue No.	Capacity Ah 5h/20h/100h	Voltage V	Length L (mm)	Width W (mm)	Height H (mm)	Layout	Terminals	Base hold down	Charge indicator	Box type	Technical drawing
550-800	38/50/60	12	207	175	190	0	1	B13	✓	L1 K2 DUPLEX	
560-800	50/60/70	12	242	175	190	0	1	B13	✓	L2 K2 DUPLEX	
575-800	60/75/85	12	278	175	190	0	1	B13	✓	L3 K2 DUPLEX	
590-800	75/90/100	12	353	175	190	0	1	B13	✓	L5 K2 DUPLEX	
605-800	90/105/115	12	353	175	190	0	1	B13	✓	L5 K2 DUPLEX	
640-800	115/140/155	12	513	189	218	3	1	B00	-	Typ A Flat M27	
680-800	155/180/200	12	513	222	218	3	1	B00	-	Typ B Flat M27	
730-800	185/230/260	12	518	273	237	3	1	B00	-	Typ C Flat M27	
605-801	90/105/115	12	330	172	237	1	7	B00	✓	GR31 DUAL TERMINAL (Marine twin)	

INDICATION IN THE TABLE

SCHEME OF CONNECTIONS

12V

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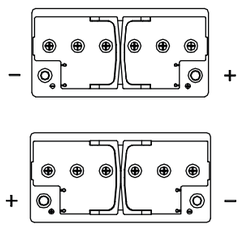

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12V

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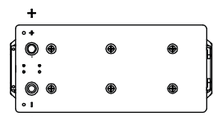

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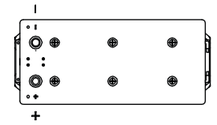

TERMINALS

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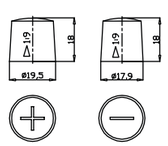

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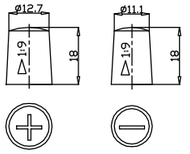

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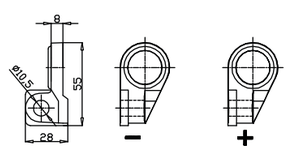

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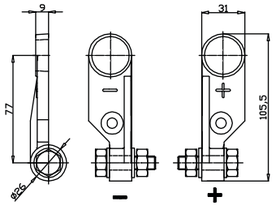

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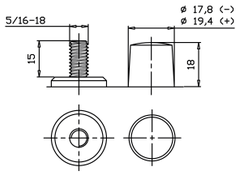
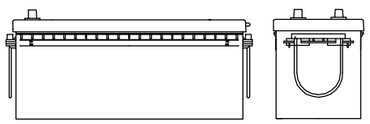


BASE HOLD DOWN

B00



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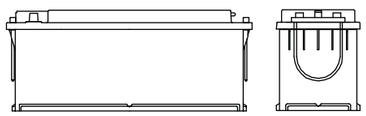

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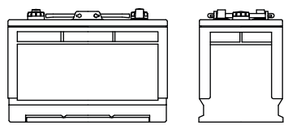

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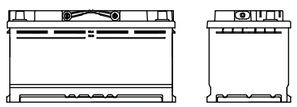

NOTES

REDOX
BATTERIES

Pb8 Ltd.
POLAND 39-300 Mielec
1 Sienkiewicza Str.
www.pb8.pl

tel.: +48 17 250 66 77
e-mail: pb8@pb8.pl