NorthBat

Power for Life

MOTIVE POWER

LEAD ACID CELLS & BATTERIES

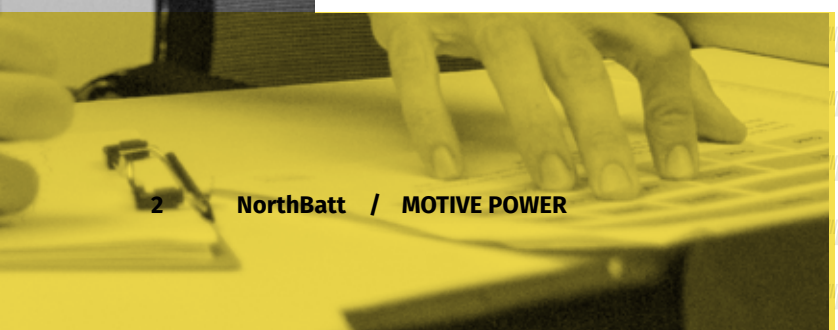
PzS DIN & PzB BS

EXECUTIVE SUMMARY

Our company ranks amongst the leaders in energy solutions companies in Greece, currently expanding in the global market. Northbatt specializes in batteries for industrial applications. (i.e. batteries for motive and reserve power).

Having four decades of experience, Northbatt is committed to provide the most efficient solutions to cover its customer's industrial needs, giving power to people's life. Our company has long-lasting collaborations, high quality product standards and comprehensive after-sales technical support, offering solutions for batteries, chargers and all the relevant equipment.

Our products are designed to satisfy the needs for the following applications like industrial vehicles, forklifts, solar & renewable energy sources, IT information technology, utility networks, tellecommunications, UPS, marine, etc. We proudly welcome you to our battery and energy solutions family!



We are driven by our passion to create products that deliver great results for your business.

MOTIVE POWER PRODUCTS

PzS & PzB

Cells & Batteries
Excellent solution withpositive tubular constructed design for heavy duty applications, provides high performance, reliability, low maintenance and longer life.

PzV & PzVB

Cells and Batteries
Unique gell technology for high cycle life, maintenance free.

ACCESSORIES

A complete range of accessories like connectors, battery chargers, electrolyte, level indicators, battery filling and monitoring system etc is also available.

Connectors

Manufactured of thermoplastic rubber
Acid resistance.
High flexibility
Easy to fit and replace.

Bolt

Insulated plastic- head connector bolt.

Tray

Steel construction protected with plastic powder coating offering high protection against corrosion.

DIN
CELL RANGE

Plate Type: 60 Ah

Type Designation	Nominal Capacity Ah (C5)*	max cell dimensions mm***			Weight (KG)**
		b: 198	h1: 343	h2: 370	
		l			
2 PzS 120	120	47			8.5
3 PzS 180	180	65			12.0
4 PzS 240	240	83			15.4
5 PzS 300	300	101			19.0
6 PzS 360	360	119			22.5
7 PzS 420	420	137			26.0
8 PzS 480	480	155			29.5
9 PzS 540	540	174			33.0
10 PzS 600	600	192			36.5

Plate Type: 80 Ah

Type Designation	Nominal Capacity Ah (C5)*	max cell dimensions mm***			Weight (KG)**
		b: 198	h1: 408	h2: 435	
		l			
2 PzS 160	160	47			10.5
3 PzS 240	240	65			14.2
4 PzS 320	320	83			18.4
5 PzS 400	400	101			22.6
6 PzS 480	480	119			26.7
7 PzS 560	560	137			31.3
8 PzS 640	640	155			35.1
9 PzS 720	720	174			39.3
10 PzS 800	800	192			43.4

Plate Type: 90 Ah

Type Designation	Nominal Capacity Ah (C5)*	max cell dimensions mm***			Weight (KG)**
		b: 198	h1: 478	h2: 505	
		l			
2 PzS 180	180	47			11.9
3 PzS 270	270	65			17.0
4 PzS 360	360	83			22.1
5 PzS 450	450	101			27.1
6 PzS 540	540	119			32.2
7 PzS 630	630	137			37.2
8 PzS 720	720	155			42.3
9 PzS 810	810	174			47.4
10 PzS 900	900	192			52.4

Plate Type: 105 Ah

Type Designation	Nominal Capacity Ah (C5)*	max cell dimensions mm***			Weight (KG)**
		b: 198	h1: 343	h2: 370	
		l			
2 PzS 210	210	47			13.5
3 PzS 315	315	65			19.1
4 PzS 420	420	83			24.6
5 PzS 525	525	101			30.5
6 PzS 630	630	119			36.1
7 PzS 735	735	137			41.8
8 PzS 840	840	155			47.4
9 PzS 945	945	174			53.0
10 PzS 1050	1050	192			58.4

* According to IEC 60254- Part 1
** Filled and charged cell weights ± 5%
*** Cells' dimensions according to IEC 60254-Part 2

DIN CELL RANGE

Plate Type: 115 Ah

Type Designation	Nominal Capacity Ah (C5)*	max cell dimensions mm***		Weight (KG)**
		b: 198	h1: 548 h2: 575	
		l		
2 PzS 230	230	47		14.2
3 PzS 345	345	65		20.3
4 PzS 460	460	83		26.4
5 PzS 575	575	101		32.4
6 PzS 690	690	119		39.0
7 PzS 805	805	137		44.7
8 PzS 920	920	155		50.6
9 PzS 1035	1035	174		56.6
10 PzS 1150	1150	192		62.7

Plate Type: 125 Ah

Type Designation	Nominal Capacity Ah (C5)*	max cell dimensions mm***		Weight (KG)**
		b: 198	h1: 568 h2: 595	
		l		
2 PzS 250	250	47		15.0
3 PzS 375	375	65		21.2
4 PzS 500	500	83		27.4
5 PzS 625	625	101		33.9
6 PzS 750	750	119		40.3
7 PzS 875	875	137		46.5
8 PzS 1000	1000	155		53.1
9 PzS 1125	1125	174		59.4
10 PzS 1250	1250	192		66.0

Plate Type: 140 Ah

Type Designation	Nominal Capacity Ah (C5)*	max cell dimensions mm***		Weight (KG)**
		b: 198	h1: 688 h2: 715	
		l		
2 PzS 280	280	47		17.5
3 PzS 420	420	65		24.7
4 PzS 560	560	83		31.8
5 PzS 700	700	101		39.3
6 PzS 840	840	119		46.7
7 PzS 980	980	137		53.9
8 PzS 1120	1120	155		61.3
9 PzS 1260	1260	174		68.6
10 PzS 1400	1400	192		76.0

Plate Type: 155 Ah

Type Designation	Nominal Capacity Ah (C5)*	max cell dimensions mm***		Weight (KG)**
		b: 198	h1: 713 h2: 740	
		l		
2 PzS 310	310	47		18.9
3 PzS 465	465	65		26.7
4 PzS 620	620	83		34.6
5 PzS 775	775	101		42.6
6 PzS 930	930	119		50.5
7 PzS 1085	1085	137		58.5
8 PzS 1240	1240	155		66.4
9 PzS 1395	1395	174		74.4
10 PzS 1550	1550	192		82.4

BS
CELL RANGE

Plate Type: 55 Ah

Type Designation	Nominal Capacity Ah (C5)*	max cell dimensions mm***		Weight (KG)*
			h1: 401	
			h2: 428	
		l		
2 PzB 110	110	45		7.9
3 PzB 165	165	61		11.0
4 PzB 220	220	77		14.0
5 PzB 275	275	93		17.1
6 PzB 330	330	109		20.1
7 PzB 385	385	125		23.2
8 PzB 440	440	141		26.2
9 PzB 495	495	157		29.2
10 PzB 550	550	173		32.3

Plate Type: 65 Ah

Type Designation	Nominal Capacity Ah (C5)*	max cell dimensions mm***		Weight (KG)*
		b: 158	h1: 457	
			h2: 484	
		l		
2 PzB 130	130	45		9.1
3 PzB 195	195	61		12.5
4 PzB 260	260	77		16.1
5 PzB 325	325	93		19.5
6 PzB 390	390	109		23.0
7 PzB 455	455	125		26.5
8 PzB 520	520	141		30.1
9 PzB 585	585	157		33.5
10 PzB 650	650	173		37.0

Plate Type: 75 Ah

Type Designation	Nominal Capacity Ah (C5)*	max cell dimensions mm***		Weight (KG)
		b: 158	h1: 514	
			h2: 541	
		l		
2 PzB 150	150	45		10.3
3 PzB 225	225	61		14.2
4 PzB 300	300	77		18.2
5 PzB 375	375	93		22.2
6 PzB 450	450	109		26.2
7 PzB 525	525	125		30.2
8 PzB 600	600	141		34.2
9 PzB 675	675	157		38.2
10 PzB 750	750	173		42.2

Plate Type: 85 Ah

Type Designation	Nominal Capacity Ah (C5)*	max cell dimensions mm***		Weight (KG)
		b: 158	h1: 570	
			h2: 597	
		l		
2 PzB 170	170	45		11.5
3 PzB 255	255	61		16.2
4 PzB 340	340	77		20.5
5 PzB 425	425	93		25.0
6 PzB 510	510	109		29.4
7 PzB 595	595	125		33.8
8 PzB 680	680	141		38.4
9 PzB 765	765	157		42.6
10 PzB 850	850	173		47.2

BS
CELL RANGE

Plate Type: 100 Ah

Type Designation	Nominal Capacity Ah (C5)*	max cell dimensions mm***		Weight (KG)*
		b: 158	h1: 606 h2: 633	
		l		
2 PzB 200	200	45		12.3
3 PzB 300	300	61		16.8
4 PzB 400	400	77		21.5
5 PzB 500	500	93		26.1
6 PzB 600	600	109		30.8
7 PzB 700	700	125		35.4
8 PzB 800	800	141		40.1
9 PzB 900	900	157		44.5
10 PzB 1000	1000	173		48.9

Plate Type: 105 Ah

Type Designation	Nominal Capacity Ah (C5)*	max cell dimensions mm***		Weight (KG)
		b: 158	h1: 686 h2: 713	
		l		
2 PzB 210	210	45		14.1
3 PzB 315	315	61		19.4
4 PzB 420	420	77		24.8
5 PzB 525	525	93		30.1
6 PzB 630	630	109		35.4
7 PzB 735	735	125		40.9
8 PzB 840	840	141		46.3
9 PzB 945	945	157		52.5
10 PzB 1050	1050	173		58.4

* According to IEC 60254- Part 1
** Filled and charged cell weights ± 5%
*** Cells' dimensions according to IEC 60254-Part 2

Power for Life

PzV
CELLS DIN

158mm wide, with bolted connectors

Plate Type: 55 Ah*			
wide 198mm	cap Ah (C5)	weight (kg)	Length (mm)
2 PzV	110	9,0	47
3 PzV	165	12,7	65
4 PzV	220	16,7	83
5 PzV	275	20,5	101
6 PzV	330	24,2	119
7 PzV	385	28,0	137
8 PzV	440	32,0	155
9 PzV	495	35,6	173
10 PzV	550	39,7	191

Plate Type: 70 Ah*			
wide 198mm	cap Ah (C5)	weight (kg)	Length (mm)
2 PzV	150	11,6	47
3 PzV	225	16,4	65
4 PzV	300	20,7	83
5 PzV	375	25,3	101
6 PzV	450	30,3	119
7 PzV	525	35,1	137
8 PzV	600	40,0	155
9 PzV	675	45,3	173
10 PzV	750	49,9	191

Plate Type: 100 Ah*			
wide 198mm	cap Ah (C5)	weight (kg)	Length (mm)
2 PzV	220	19,3	47
3 PzV	330	26.1	65
4 PzV	440	32,8	83
5 PzV	550	40,1	101
6 PzV	660	47,0	119
7 PzV	770	53,8	137
8 PzV	880	60,0	155
9 PzV	990	68,8	173
10 PzV	1100	75,4	191

Plate Type: 120 Ah*			
wide 198mm	cap Ah (C5)	weight (kg)	Length (mm)
2 PzV	250	22,0	47
3 PzV	375	30,3	65
4 PzV	500	38,0	83
5 PzV	625	46,5	101
6 PzV	750	54,4	119
7 PzV	875	62,2	137
8 PzV	1000	69,3	155
9 PzV	1125	79,5	173
10 PzV	1250	87,1	191

PzV
CELLS BS

158mm wide, with bolted connectors

Plate Type: 61 Ah*			
wide 158mm	cap Ah (C5)	weight (kg)	Length (mm)
2 PzV-BS	122	9,7	45
3 PzV-BS	183	13,5	61
4 PzV-BS	244	16,9	77

Plate Type: 71 Ah*			
wide 158mm	cap Ah (C5)	weight (kg)	Length (mm)
2 PzV-BS	142	10,6	45
3 PzV-BS	213	14,8	61
4 PzV-BS	284	18,5	77

Plate Type: 85 Ah*		
wide 158mm	cap Ah (C5)	weight (kg)
2 PzV-BS	170	11,8
3 PzV-BS	255	16,1
4 PzV-BS	340	20,7

* Capacity per positive plate Ah (C5) at 30° C.
Weight cell is filled and charged ± 5%.
Heights given ± 2mm.

Batteries for forklifts, trucks, cleaning machines and different kind of electrical vehicles.

Battery Features & Advantages

- MAXIMUM STRENGTH
- EXTRA CAPACITY
- LONGER LIFE
- RELIABILITY
- EASY AT OPERATION

MOTIVE POWER CELL

OPERATION & MAINTENANCE (Flooded Tubular)

GENERAL

It is recommended that the battery is not discharged beyond 80% of nominal capacity. When the battery has been discharged it should be recharged as soon as possible on the appropriate charger. Open the battery compartment to get additional ventilation during a charge. Leave the vent plugs firmly in position.

- A battery is ready for operation after its properly charged.
- Batteries must be put on recharge immediately after discharge.
- Recharging to be done with Recommended Traction Taper Chargers only.
- Carry out Equalizing Charge once every 2 weeks if the battery is worked heavily (80% DOD). If the battery is discharged up to 50% everyday, equalizing charge can be carried out once in 4 weeks.
- Keep battery top clean and dry. Check earth leakage and if the leakage voltage is more than 7-8 % of the battery voltage, thoroughly wash the battery and dry it.
- Water topping-up with battery grade water has to be done on a regular basis.

METHODS OF RECHARGING

Taper Charging or Constant Current followed by Taper Charger : it is important that the output of the charger is matched to the caoacity of the battery

Typical IUI Recharge:

Taper Charging or Constant Current followed by Taper Charger : it is important that the output of the charger is matched to the caoacity of the battery.

01

@ 15% of rated C% till 2.35 vpc

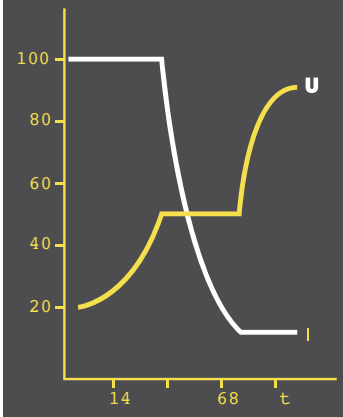
02

Constant Volt @ 2.35 vpc till the current tapers to 7-8% of C5

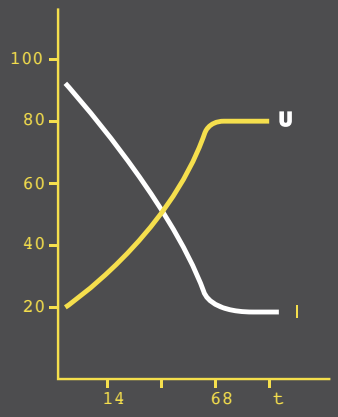
03

@ 7-8% of C5 till the voltage reaches 2.65 volt per cell

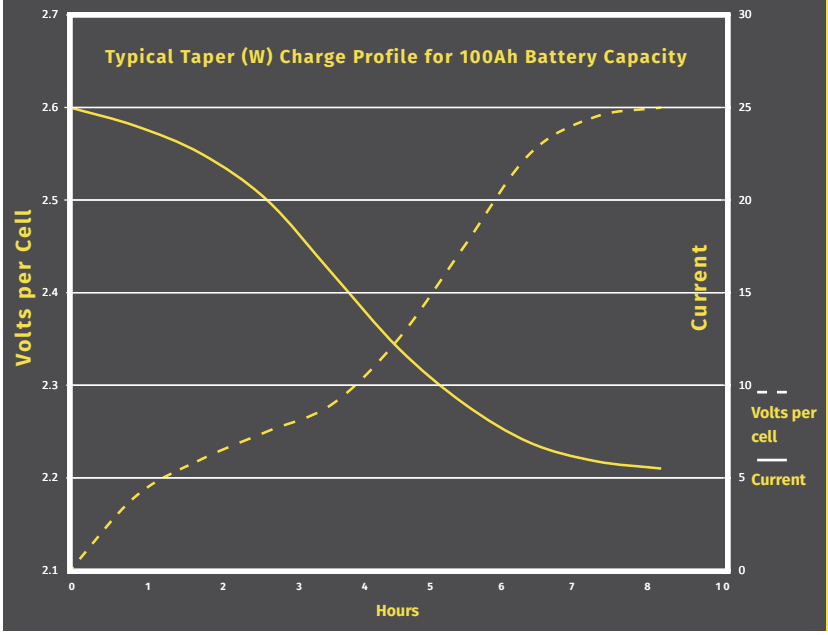
IUI charge characteristic



W charge characteristic



A TYPICAL SINGLE STEP 8 HOUR TAPER CHARGE (W CHARGE)



EQUALIZING CHARGE

Traction cells over a period of use develop unequal state of charge (unequal specific gravities) and need to be equa-lized from time to time. If this state of inequality is allowed to continue , the battery loses effective capacity, the weakest cell capacity being the deciding factor for battery capacity.

01

Connect the battery to a charger and commence charging at 3% of battery capacity in Amperes. The current has
to be kept constant throughout the charging process.

02

Top Up all cells up to requisite level with DM water.

03

Take hourly readings of specific gravity, voltage and temperature.

04

Equalizing charges to be continued till.

CHARGING REGIME WITH IUI

- t1: Initial current: I1 = 15.20 A per 100 Ah C 5 h
- t2: Charging at 2.4 V per cell, current reduction to I2
- t3: Gas charging with I2 = 1.2 A to 1.6 A per 100 Ah C 5 h

t1, t2 and t3 are time intervals of charging steps.
(t1 + t2), is set of maximum 10 h for safety reasons
t3 should be equal to (t1 + t2), but at least 1 h and maximum 4h.

Warning:

If higher Charging currents are used (during t3), the cells will dry out. Using the above EIL charging regime and maintaining operating guidelines recommended by EIL, following cycle life can be expected.

20% DOD ——— 3000 Cycles
40% DOD ——— 1500 Cycles
60% DOD ——— 1000 Cycles
80% DOD ——— 800 Cycles

MOTIVE
POWER CELL **GEL**

APPLICATION

- PzV - Batteries are maintenance-free and designed for a high cycle life and a high operational safety.
- PzV - Batteries are ideal for Motive Power applications.
- Where no maintenance people are available.
- Where charging should be made outside of charging stations between the goods.
- Where sensible goods like fresh food are transported.

DESIGN

- Positive plate: Robust Tubular Plate.
- Alloy: PbCaSn Alloy free from Cadmium and Antimony.
- Electrolyte: Gelled Electrolyte Using Silica.
- Pole bushing: 100% acid and gas tight.
- Poles: With brass insert and thread M10 female.
- Connectors: Bolt-on flexible, fully insulated intercell and terminal connectors
- Valve: With optimized opening pressure and with backfire barrier

OPERATION

- Operational temperature: -10 °C to +45 °C Regular.
- Discharges: Up to 60 %.
- Final charging current: Maximum 1.6 A/100 Ah C 5 h
- Self discharge: Less than 2 % per month
- No topping up during the whole life.
- No electrolyte spilling from the battery.
- Reduced ventilation requirements.

Accesories
Technical Features

Chargers

Battery chargers range available in several voltage versions to meet the charging requirements of most battery sizes.

Battery watering system

Complete system for water filling of lead acid traction batteries automatically without manual intervention.

Electrolyte circulation system

The electrolyte circulation system ensures a permanent electrolyte movement inside the cell. The air pumped into the base of the cell maintains an electrolyte circulation offering lower water consumption, lower battery temperature and long life.

Electrolyte level monitoring system

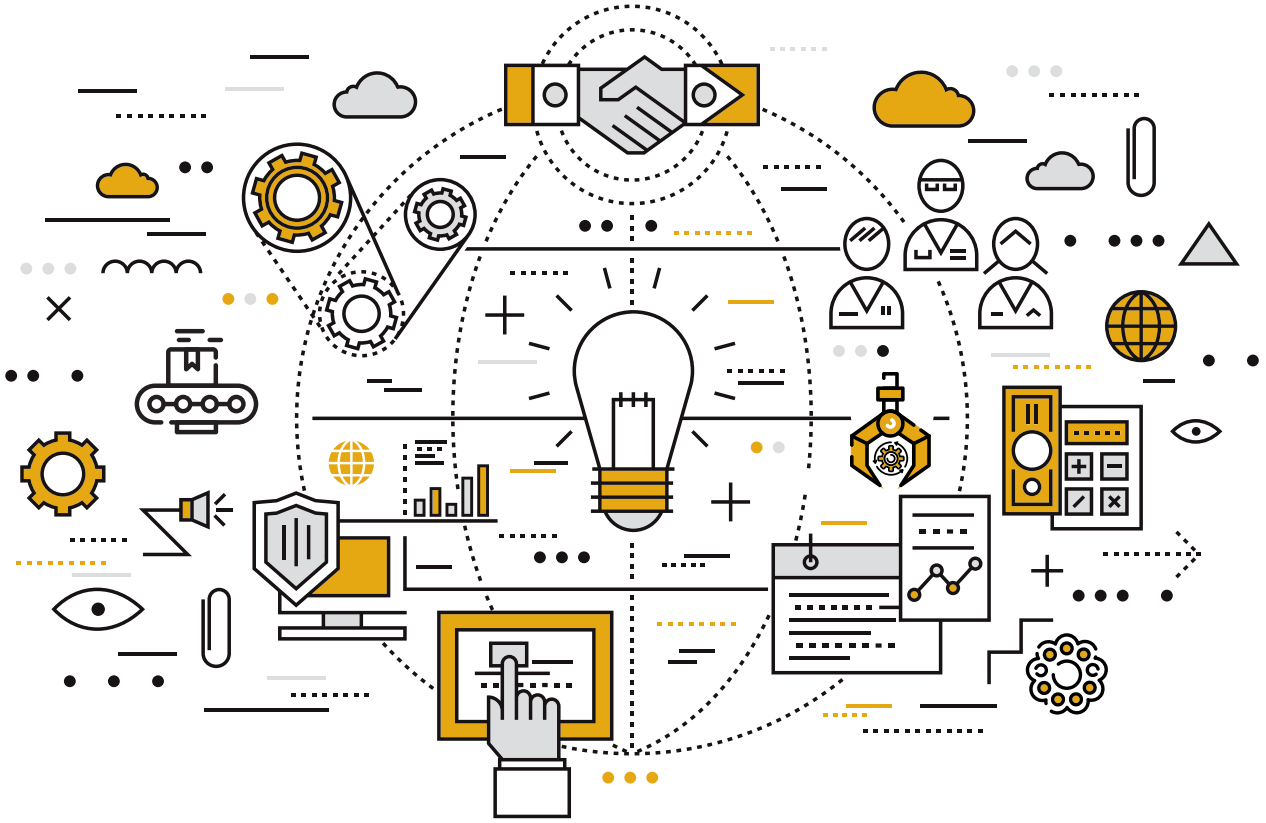
A simple yet extremely efficient monitoring system for the electrolyte level of the cells.

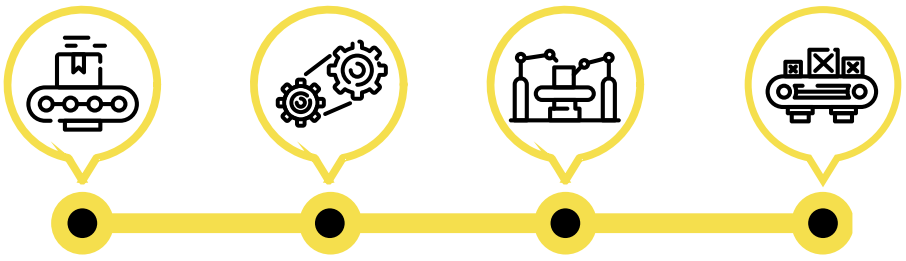
Battery status monitoring system

A high-quality product that provides essential information on the status of the battery such as voltage, temperature etc.

NorthBatt

Power for Life





Legal Notice

Our Company reserves the right to terminate, revoke, modify, alter, add and delete any one or more of the terms and conditions outlined in the brochure. The Company shall be under noobligation to notify the user of the amendment to the terms and conditions and the user shall bebound by such amended terms and conditions. Images, walkthroughs and render images used on this brochure might be indicative of the actual designs. The information on this brochure is presented as general information and no representation or warranty is expressly or impliedly given as to its accuracy, completeness or correctness. It does not constitute part of a legal offer or contract. The user must verify all the details and specifications, including but not limited to the area, amenities, specifications, services, terms of sales, payments and all other relevant terms independently with oursales/ marketing team prior to concluding any decision for buying any product. All data contained in this leaflet are proprietary of our Company.

NorthBa+

Power for Life

MOTIVE POWER

LEAD ACID CELLS & BATTERIES

PZS DIN & PZB BS

HEADQUARTERS
SCHOLIOU 6, IONIA,
THESSALONIKI, GREECE
PC: 57 008 PO BOX: 485
E.: info@northbatt.com
T.: +30 2310 785722
F.: +30 2310 760882

MANUFACTURING PLANT
AT 53B ROAD 14, IND. SINDOU
E.: info@northbatt.com
Tel.: +30 2310 570203

OFFICES-ATHENS
PEUKON 147,
N. IRAKLEIO, ATHENS
PC: 14122
E.: info@northbatt.com
T.: +30 2310 785722