



AMARA RAJA
Gotta be a better way

Incomparable Power Incredible Performance

— THE ULTIMATE MOTIVE POWER BATTERY —

AMARON  **BRUTE**™
HI LIFE BATTERIES



Unmatched Cyclic Life

100% Leakage Proof

Highly Energy Efficient

**RUGGED
POWER
FOR
HEAVY
LIFTS**





From the Amara Raja Stable

**A Bold, Aggressive & Enduring
Performer**



Heavy duty MOTIVE POWER BATTERY for electric forklifts

Once again, an outstanding product from Amara Raja, that is born out of an obsession with latest technology, the passion to keep making things better and an undying quest for continuous excellence. Built to the highest technical competence in its class, the super strong Amaron Brute™ comes with the standard promise of Brand Amaron – Lasts Long, Really Long.

Amara Raja Batteries Limited- Pioneers in Innovation



At Amara Raja, a bright future is real, living, functioning, and built every day. It is the guiding principle at Amara Raja, powering us to ceaselessly innovate, to explore the new and never-before.

Amara Raja are the pioneers of VRLA- Valve Regulated Lead Acid batteries in India, bringing the first major advancement in battery technology to the country.

Applying its vision to business practices, Amara Raja has consolidated its position in the power management industry as one of the leading players in the Asia-Pacific Region. Amara Raja pioneers the next generation battery technology in India, harnessing technologies that deliver higher power and lasting performance.



Specially made for 24/7 Forklift Operations

Rugged power for electric forklifts

Be it any scale industries, warehouses or outdoor operations, Amaron Brute™, by virtue of having higher latent energy delivers high power discharge for longer periods. It is specifically designed to power heavy duty forklifts that keep toiling multiple shifts a day, every day.

Sturdy from the Inside-out



Amaron Brute™ is a beast of a battery built to the highest specifications of quality using the best of modern technology and raw materials. Right from the inner components made of optimized alloys to the plastic powder coated outer tray, Amaron Brute™ reeks of superior mechanical strength that can withstand the harshest of conditions.

Plastic powder coated tray isolates the battery from the fork lift & prevents the electrolyte from penetrating the metallic part of the container.

Factors that feature in the extra-long life



99.99% Primary lead & 100% red lead in the positive mass, precise & consistent plate weight.



Electrolytes with lower specific gravity, high performance of cells with less boost.



Patented paste mix on positive & negative plates, significantly reducing water consumption.



Gauntlet design - Reinforced non-woven polyester with unique small pores size - no positive active material shedding : no cell shorts & no excess capacity drop.



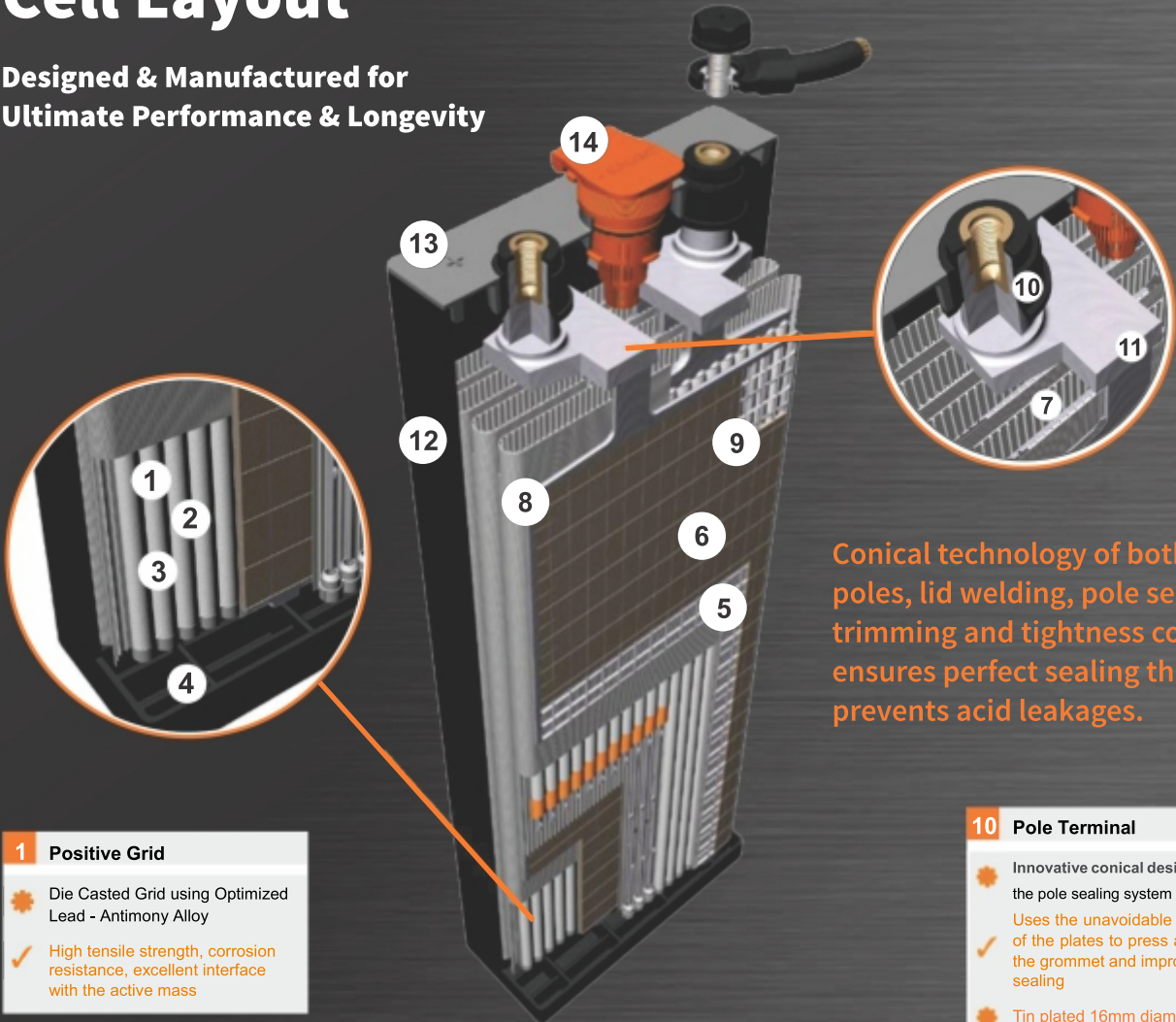
Ultrasonic welding of the bottom bar eliminates active mass shedding & failures, increases longevity of product.



Closed loop circular formation enables cell-to-cell performance consistently in a rank.

Cell Layout

Designed & Manufactured for
Ultimate Performance & Longevity



Conical technology of both poles, lid welding, pole sealing, trimming and tightness control ensures perfect sealing that prevents acid leakages.

1 Positive Grid

Die Casted Grid using Optimized Lead - Antimony Alloy

High tensile strength, corrosion resistance, excellent interface with the active mass

2 Positive Active Mass

100% Red Lead

Efficient formation ensures that full cell capacity is achieved after 3.5 cycles

Dry filling Process

Uniformly filled positive plates, 100% weight controlled

In-house Red Lead production

Constant quality, homogeneous tamped density

Produced by 99.99% Primary Lead

Long service life, high conductivity, increased performance

3 Gauntlet

Non woven, high quality polyester

Prevents mass shedding, high mechanical stability

4 Bottom Bar

Ultrasonically Welded

Provides space for the unavoidable growth of the spine longer life

5 Negative Grid

Gravity Casted Grid using Optimized Lead - Antimony Alloy

High tensile strength, corrosion resistance, low water consumption

6 Negative Active Mass

In-house production of Lead Oxide

Constant quality

Fully automatic Vacuum Negative Paste Mixing Process

Consistency of the Negative Active Mass

7 Separator

Highly porous Polyethylene, enveloped using mechanically crimped sleeve

Increased performance preventing short-circuits

8 Formation & Activation

Fully automatic Jar Formation process

Constant quality in each and every cell

9 Electrolyte

High Purity

Long life performance

Low Specific Gravity

Less Energy consumption While charging

10 Pole Terminal

Innovative conical design of the pole sealing system

Uses the unavoidable growth of the plates to press against the grommet and improve the sealing

Tin plated 16mm diameter inserts

11 Pole Bridge

Cast On Strap manufactured pole bridge

Consistent & uniform composition ensures superior connections

12 Lid

Polypropylene reinforced lid thermo-welded to the container

13 Cell Container

Polypropylene container, with sufficient sediment space

14 Operational Vent Plug

Electrolyte level marking, anti-surge baffle, free cell gassing

Increased operational safety

Key Features

Design Features

Benefits



Amaron Brute™ - Built to Perform Forever

Amaron Brute's unique design with Electrolyte Circulation System reduces water consumption by upto 60%, minimizes maintenance and reduces energy consumption by upto 20%.

Cutting edge design features

Brute-Spine™

Positive Plates are made with Tubular Spine with 100% pure Red Lead Dry filling, ensuring weight consistency of the plates

- Long Life Performance with Higher power delivery resulting in high service life
- Higher Cyclic Life of 1600 - 1700 cycles @ 80% DoD @ 25°, offering unmatched lower TCO

BI- COS Flow™

Best in class Cast on Strap (HADI Automatic Machines) provides consistent and uniform Pole - Bridge Composition

- Every cell tested with air pressure for acid leakage
- Insured from acid leakages
- High conductivity of the current, results in lower charging costs and prolonged life performance

HI-Def- Tray™

Plastic powder coating with cutting edge technology

- Good mechanical support for the cells
- Defending leakage current & corrosion

Bridge Eneron +™

Pole terminal designed on Conical Design (10°) with 16 mm Insert Diameter, with run of Bolton Connector with fully Insulated Terminals

- Energy on Connectors
- Passive to Heat and Corrosion
- Aqua Filing Plug (optional)

DIY Rx™

User friendly diagnosis & maintenance

- Accessories provided with Flip- top Plugs, Electrolyte level indicators with blinking system
- Low Maintenance Requirements, saving AMC cost to the user



Robust design and construction

Amaron Brute™ is designed and tested in one of the premier organizations of Europe with end-to-end automated process, using state-of-the-art HADI machines, employing the same technology that goes into the making of submarine & torpedo batteries in different countries.



DIN Cell Range

THE HEAVY DUTY MOTIVE POWER BATTERY

Plate Type	Type Designation	Nominal Capacity Ah (C5)*	max.cell dimensions in mm***				Weight in KG**
			L (mm)	W (mm)	H1 (mm)	H2 (mm)	
60 AH	AB 2 PzS 120	120	47	198	343	370	8.5
	AB 3 PzS 180	180	65	198	343	370	12.0
	AB 4 PzS 240	240	83	198	343	370	15.4
	AB 5 PzS 300	300	101	198	343	370	19.0
	AB 6 PzS 360	360	119	198	343	370	22.5
	AB 7 PzS 420	420	137	198	343	370	26.0
	AB 8 PzS 480	480	155	198	343	370	29.5
	AB 9 PzS 540	540	174	198	343	370	33.0
	AB 10 PzS 600	600	192	198	343	370	36.5
80 AH	AB 2 PzS 160	160	47	198	408	435	10.0
	AB 3 PzS 240	240	65	198	408	435	14.2
	AB 4 PzS 320	320	83	198	408	435	18.4
	AB 5 PzS 400	400	101	198	408	435	22.6
	AB 6 PzS 480	480	119	198	408	435	26.7
	AB 7 PzS 560	560	137	198	408	435	31.3
	AB 8 PzS 640	640	155	198	408	435	35.1
	AB 9 PzS 720	720	174	198	408	435	39.3
	AB 10 PzS 800	800	192	198	408	435	43.4
90 AH	AB 2 PzS 180	180	47	198	478	505	11.9
	AB 3 PzS 270	270	65	198	478	505	17.0
	AB 4 PzS 360	360	83	198	478	505	22.1
	AB 5 PzS 450	450	101	198	478	505	27.1
	AB 6 PzS 540	540	119	198	478	505	32.2
	AB 7 PzS 630	630	137	198	478	505	37.2
	AB 8 PzS 720	720	155	198	478	505	42.3
	AB 9 PzS 810	810	174	198	478	505	47.4
	AB 10 PzS 900	900	192	198	478	505	52.4
105 Ah	AB 2 PzS 210	210	47	198	514	541	13.5
	AB 3 PzS 315	315	65	198	514	541	19.1
	AB 4 PzS 420	420	83	198	514	541	24.6
	AB 5 PzS 525	525	101	198	514	541	30.5
	AB 6 PzS 630	630	119	198	514	541	36.1
	AB 7 PzS 735	735	137	198	514	541	41.8
	AB 8 PzS 840	840	155	198	514	541	47.4
	AB 9 PzS 945	945	174	198	514	541	53.1
	AB 10 PzS 1050	1050	192	198	514	541	58.4
115 Ah	AB 2 PzS 230	230	47	198	548	575	14.2
	AB 3 PzS 345	345	65	198	548	575	20.3
	AB 4 PzS 460	460	83	198	548	575	26.4
	AB 5 PzS 575	575	101	198	548	575	32.4
	AB 6 PzS 690	690	119	198	548	575	39.0
	AB 7 PzS 805	805	137	198	548	575	44.7
	AB 8 PzS 920	920	155	198	548	575	50.6
	AB 9 PzS 1035	1035	174	198	548	575	56.6
	AB 10 PzS 1150	1150	192	198	548	575	62.7
125 Ah	AB 2 PzS 250	250	47	198	568	595	15.0
	AB 3 PzS 375	375	65	198	568	595	21.2
	AB 4 PzS 500	500	83	198	568	595	27.4
	AB 5 PzS 625	625	101	198	568	595	33.9
	AB 6 PzS 750	750	119	198	568	595	40.3
	AB 7 PzS 875	875	137	198	568	595	46.5
	AB 8 PzS 1000	1000	155	198	568	595	53.1
	AB 9 PzS 1125	1125	174	198	568	595	59.4
	AB 10 PzS 1250	1250	192	198	568	595	66.0
140 Ah	AB 2 PzS 280	280	47	198	688	715	17.5
	AB 3 PzS 420	420	65	198	688	715	24.7
	AB 4 PzS 560	560	83	198	688	715	31.8
	AB 5 PzS 700	700	101	198	688	715	39.3
	AB 6 PzS 840	840	119	198	688	715	46.7
	AB 7 PzS 980	980	137	198	688	715	53.9
	AB 8 PzS 1120	1120	155	198	688	715	61.3
	AB 9 PzS 1260	1260	174	198	688	715	68.6
	AB 10 PzS 1400	1400	192	198	688	715	76.0
155 Ah	AB 2 PzS 310	310	47	198	713	740	18.9
	AB 3 PzS 465	465	65	198	713	740	26.7
	AB 4 PzS 620	620	83	198	713	740	34.6
	AB 5 PzS 775	775	101	198	713	740	42.6
	AB 6 PzS 930	930	119	198	713	740	50.5
	AB 7 PzS 1085	1085	137	198	713	740	58.5
	AB 8 PzS 1240	1240	155	198	713	740	66.4
	AB 9 PzS 1395	1395	174	198	713	740	74.4
	AB 10 PzS 1550	1550	192	198	713	740	82.4

* According to IEC 60254-Part 1

** Filled and charged cell weights ± 5%

*** Cell dimensions according to IEC 60254-Part 2

BS Cell Range

THE HEAVY DUTY MOTIVE POWER BATTERY

Plate Type	Type Designation	Nominal Capacity Ah (C5)*	max.cell dimensions in mm***				Weight in KG**
			L (mm)	W (mm)	H1 (mm)	H2 (mm)	
23 Ah	AB 2 PzB 46	46	45	158	203	230	3.9
	AB 3 PzB 69	69	61	158	203	230	5.3
	AB 4 PzB 92	92	77	158	203	230	6.7
	AB 5 PzB 115	115	93	158	203	230	8.1
	AB 6 PzB 138	138	109	158	203	230	9.5
32 Ah	AB 2 PzB 64	64	45	158	265	292	5.0
	AB 3 PzB 96	96	61	158	265	292	6.8
	AB 4 PzB128	128	77	158	265	292	8.7
	AB 5 PzB 160	160	93	158	265	292	10.6
	AB 6 PzB 192	192	109	158	265	292	12.5
	AB 7 PzB 224	224	125	158	265	292	14.4
	AB 8 PzB 256	256	141	158	265	292	16.2
42 Ah	AB 2 PzB 84	84	45	158	331	358	6.5
	AB 3 PzB 126	126	61	158	331	358	8.9
	AB 4 PzB 168	168	77	158	331	358	11.4
	AB 5 PzB 210	210	93	158	331	358	13.8
	AB 6 PzB 252	252	109	158	331	358	16.3
	AB 7 PzB 294	294	125	158	331	358	18.8
	AB 8 PzB 336	336	141	158	331	358	21.2
55 Ah	AB 2 PzB 110	110	45	158	401	428	7.9
	AB 3 PzB 165	165	61	158	401	428	11.0
	AB 4 PzB 220	220	77	158	401	428	14.0
	AB 5 PzB 275	275	93	158	401	428	17.1
	AB 6 PzB 330	330	109	158	401	428	20.1
	AB 7 PzB 385	385	125	158	401	428	23.2
	AB 8 PzB 440	440	141	158	401	428	26.2
	AB 9 PzB 495	495	157	158	401	428	29.2
	AB 10 PzB 550	550	173	158	401	428	32.3
65 Ah	AB 2 PzB 130	130	45	158	457	484	9.1
	AB 3 PzB 195	195	61	158	457	484	12.5
	AB 4 PzB 260	260	77	158	457	484	16.1
	AB 5 PzB 325	325	93	158	457	484	19.5
	AB 6 PzB 390	390	109	158	457	484	23.0
	AB 7 PzB 455	455	125	158	457	484	26.5
	AB 8 PzB 520	520	141	158	457	484	30.1
	AB 9 PzB 585	585	157	158	457	484	33.5
	AB 10 PzB 650	650	173	158	457	484	37.0
75 Ah	AB 2 PzB 150	150	45	158	514	541	10.3
	AB 3 PzB 225	225	61	158	514	541	14.2
	AB 4 PzB 300	300	77	158	514	541	18.2
	AB 5 PzB 375	375	93	158	514	541	22.2
	AB 6 PzB 450	450	109	158	514	541	26.2
	AB 7 PzB 525	525	125	158	514	541	30.2
	AB 8 PzB 600	600	141	158	514	541	34.2
	AB 9 PzB 675	675	157	158	514	541	38.2
	AB 10 PzB 750	750	173	158	514	541	42.2
85 Ah	AB 2 PzB 170	170	45	158	570	597	11.5
	AB 3 PzB 255	255	61	158	570	597	16.2
	AB 4 PzB 340	340	77	158	570	597	20.5
	AB 5 PzB 425	425	93	158	570	597	25.0
	AB 6 PzB 510	510	109	158	570	597	29.4
	AB 7 PzB 595	595	125	158	570	597	33.8
	AB 8 PzB 680	680	141	158	570	597	38.4
	AB 9 PzB 765	765	157	158	570	597	42.6
	AB 10 PzB 850	850	173	158	570	597	47.2
100 Ah	AB 2 PzB 200	200	45	158	606	633	12.3
	AB 3 PzB 300	300	61	158	606	633	16.8
	AB 4 PzB 400	400	77	158	606	633	21.5
	AB 5 PzB 500	500	93	158	606	633	26.1
	AB 6 PzB 600	600	109	158	606	633	30.8
	AB 7 PzB 700	700	125	158	606	633	35.4
	AB 8 PzB 800	800	141	158	606	633	40.1
	AB 9 PzB 900	900	157	158	606	633	44.5
	AB 10 PzB1000	1000	173	158	606	633	48.9
105 Ah	AB 2 PzB 210	210	45	158	686	713	14.1
	AB 3 PzB 315	315	61	158	686	713	19.4
	AB 4 PzB 420	420	77	158	686	713	24.8
	AB 5 PzB 525	525	93	158	686	713	30.1
	AB 6 PzB 630	630	109	158	686	713	35.4
	AB 7 PzB 735	735	125	158	686	713	40.9
	AB 8 PzB 840	840	141	158	686	713	46.3

* According to IEC 60254-Part 1

** Filled and charged cell weights ± 5%

*** Cell dimensions ± 2 mm, according to IEC 60254-Part 2



Contains Lead Please
handover at approved
waste handling point



Electrical
Hazard



Completely
Recyclable



Read
Instructions



Protect eyes
from Electrolyte

ISO 9001 : 2015
ISO 14001 : 2015
OHSAS 18001 :2007



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