

PRONTUFORZ

CHLORIDE



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VRLA

TRUSTED BATTERY SYSTEMS

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VRLA

Sealed Maintenance Free Batteries

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ABOUT CEIL

The competitive world today is borderless. Major industries of the world require speed and agility to ensure business sustainability; downtime is simply no excuse. These same driving forces have led to the inception of CEIL – Trusted Battery Systems.

CEIL is designed to drive principal economic sectors globally. This is achieved by developing products in tandem with innovative technology and creating contemporary methods of utilising energy in mobility.

CEIL is no commonplace battery. It is designed to be Tougher & Hassle-Free. These brand values are born out of the same values of CBSEA and EXIDE Industries Ltd (EIL); CEIL's proud parents, trusted for their advancement in battery technology. CEIL's parentage reflects strength and technological advancement which ensure that CEIL provides a reliable flow of constant energy.

CEIL thrives on being the unrivalled choice as a battery systems brand. CEIL will enable your business to be more reliable. This hassle-free reliability will enhance your operational efficiency. By hassle-free, we mean focusing on making your processes free of downtime. You will experience this in our products, process and people.

Your needs remain at the center of everything we do at CEIL, and the dynamics of our customers' trends will lead us to focus on innovative delivery. Within each CEIL Traction battery system, Uninterrupted Standby Power System and Automotive Battery, CEIL is designed to deliver a complete system allowing you to stay reliable and efficient. This is the Trusted value of CEIL.



POWER SAFE

Critical applications like in banks, where the need for stable power back up cannot be stressed enough, rely on Chloride's VRLA batteries. Our 50 year existence in the market is testimony to our quality and commitment.

THE INSIDE STORY

About Valved Regulated Lead Acid (VRLA) Battery

In 1880, Emile Alphonse Fauré in France patented the pasted plates lead acid battery, and the first sealed lead acid battery was manufactured in Germany in 1934. In 1957, Germany patented the VRLA battery, and the development of the VRLA battery was continued in the mid 1970's. By the 1980's, the VRLA was commercialized.

The advantages of using the VRLA battery lie in its compactness, optimum space utilization, commercial affordability, minimum maintenance, safe, and it can deliver the highest instantaneous power within a short time for the lead acid type batteries, thus, industries such as Telecommunication, UPS, Solar application, Transmission and Distribution, etc., will find the batteries quite irresistible.

Chloride has been manufacturing lead acid batteries since the 1930's, and through the years of development, advance research, and technology transfer, today, we are proud to have the durable, long life, highly reliable, and electrical efficient VRLA battery, such as our AGM, GEL, and the Hybrid Gel that cater to our customers need, and their environment.



Valve (One way valve)

The valve is comprised of a one-way valve made of material such as neoprene. When gas is generated in the battery under extreme overcharge condition due to erroneous charging, charger malfunctions or other abnormalities, the vent valve opens to release excessive pressure in the battery and maintain the gas pressure within specific range (7.1 to 43.6 kPa.). During ordinary use of the battery, the vent valve is closed to shut out outside air and prevent oxygen in the air from reacting with active material in the negative electrodes.

Positive and Negative Electrodes Terminals

Positive and negative electrodes terminals may be faston tab type, bolt fastening type, threaded post type, or lead wire type, depending on the type of the battery. Sealing of the terminal is achieved by a structure which secures long adhesive-embedded paths and by the adoption of strong epoxy adhesives.

Negative Plate

It is a Lead-tin-calcium alloy grid with a thickness of at least 2.3mm, and filled with spongy lead as its active materials that ensure optimum discharge performance, and long service life.

Positive Plate

Radial design lead-tin-calcium alloy grid with a thickness of 3.2mm to 3.6mm, and it's filled with porous lead dioxide as its active materials that able to deliver the optimum discharge performance through the shortest radial grid path.

Battery Case Materials

Material of CHLORIDE Powersafe AGM Battery Series case is ABS resins. UL94 V0 frame retardant material case is optional.

AGM Separators

Absorbent Glass Mat (AGM) separator that is used to retain the acid electrolyte or the Gel acid catalyse, and it provides longevity in the battery life through minimal ions loses.

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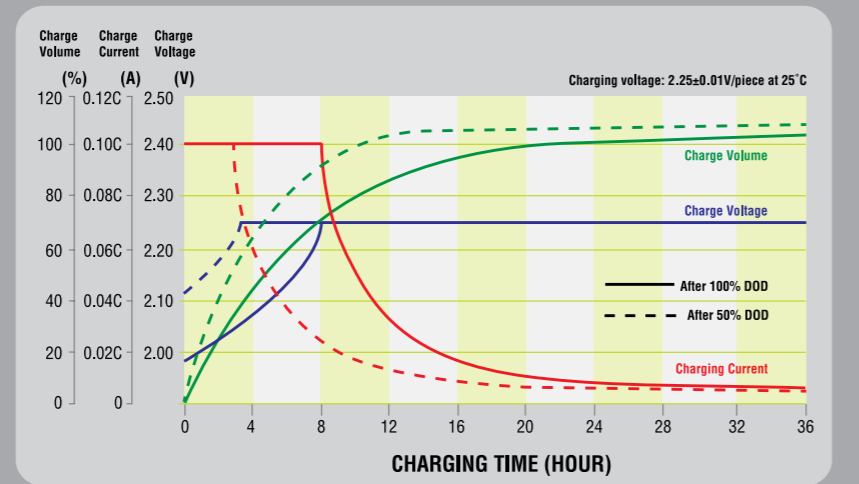


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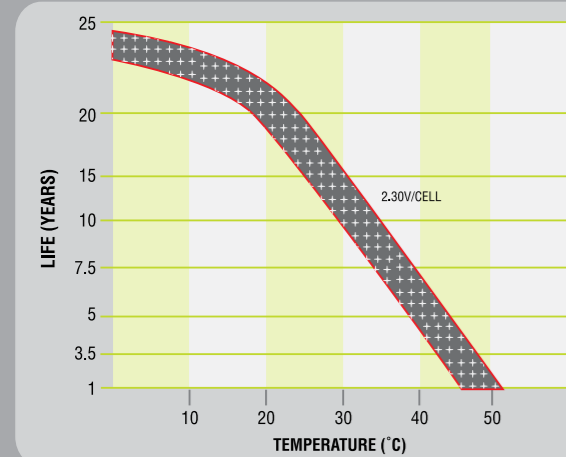
BATTERY CHARACTERISTICS

CHARACTERISTICS OF THE 2VB VRLA BATTERY

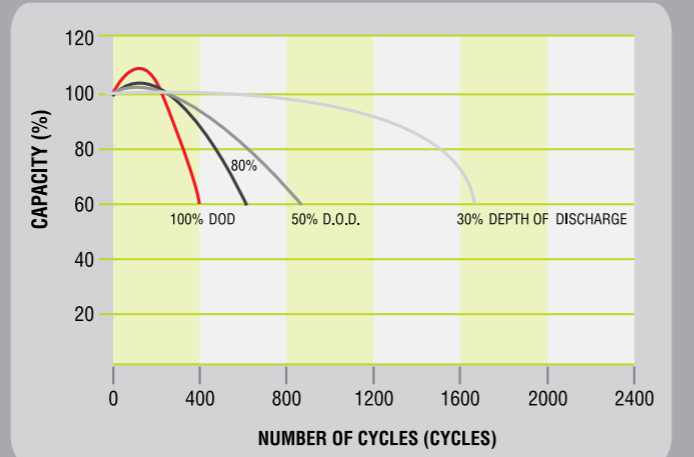
CHARGING REGIME FOR 2VB SERIES BATTERY



TEMPERATURE EFFECTS ON THE FLOAT LIFE OF THE VB BATTERIES

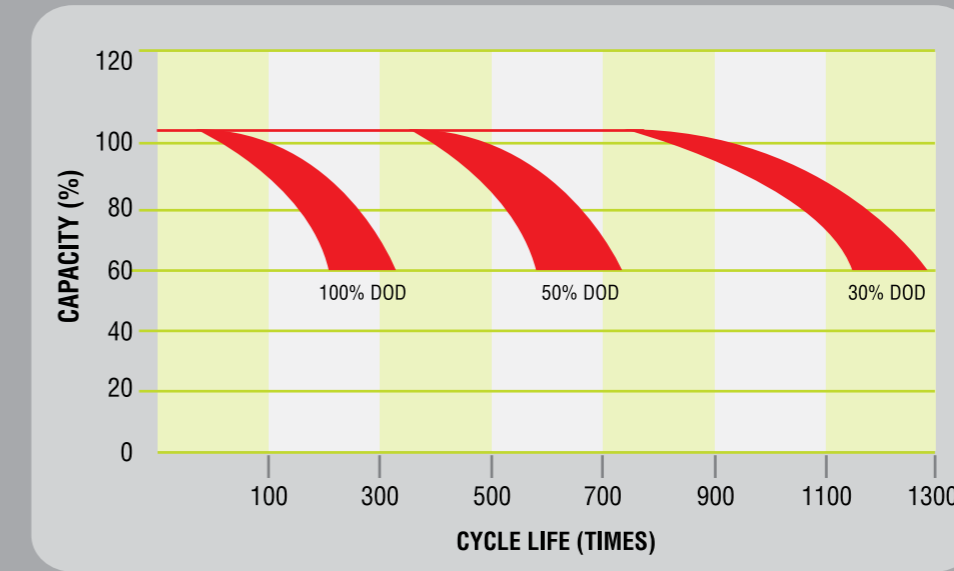


CYCLE LIFE VS DEPTH OF DISCHARGE OF THE VB BATTERIES

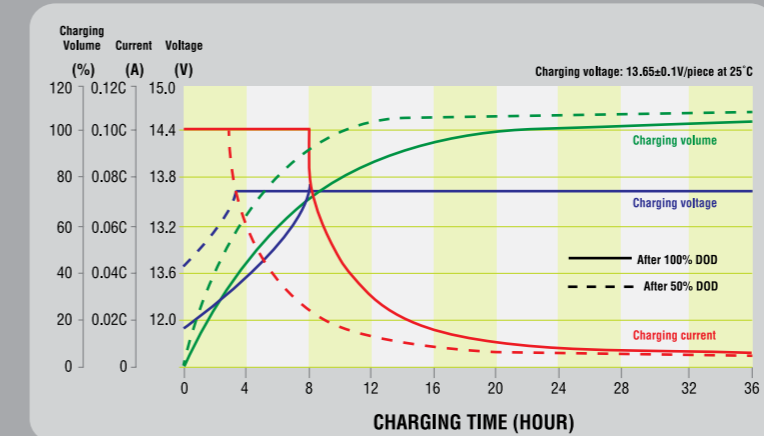


CHARACTERISTICS OF THE VA & VC VRLA BATTERY

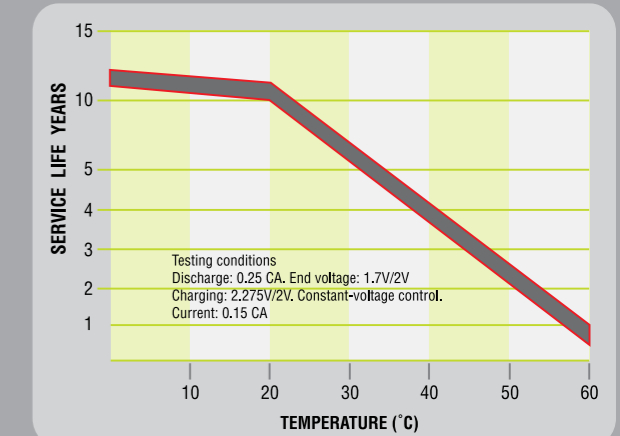
CYCLE LIFE VS. DEPTH OF DISCHARGE (25°C)



CHARGING REGIME FOR VA & VC SERIES BATTERY



INFLUENCE OF TEMPERATURE ON TRICKLE LIFE



In order to fully utilize the characteristics of Sealed Lead Acid Batteries, constant-voltage charging is recommended.

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VA BATTERY SPECIFICATIONS

Complying Standards

IEC 60896-21 : 2004

IEC 60896-22 : 2004

POWER UNINTERRUPTED

The thrills and excitement of the charged capacity crowd during the game. Chloride's VRLA batteries silently standing by, also charged, to ensure there is no interruption in the action.

CHLORIDE POWERSAFE "VA" SERIES BATTERY SPECIFICATION - AGM WITH GEL OPTION

Type	Nominal Voltage	C20 1.75V/C 25C	Length (l)	Width (w)	Height (h1)	Height (h2)	Weight	Average Internal Resistance Fully Charged 25C	Terminal/Type
	V	Ah	mm	mm	mm	mm	kg	m Ω	
4VA4.0	4	4	47	47	101	107	0.5	14	F1/B
6VA1.3	6	1.3	97	24	52	58	0.25	46	F1/A
6VA3.3	6	3.3	134	34	61	67	0.59	18	F1/A
6VA3.6	6	3.6	70	47	101	107	0.68	22	F1/E
6VA4.0	6	4	70	47	101	107	0.71	20	F1/E
6VA4.5	6	4.5	70	47	101	107	0.75	19	F1/E
6VA5.0	6	5	70	47	101	107	0.8	18	F1/E
6VA7.0	6	7	151	34	95	101	1.15	16	F1/A
6VA8.5	6	8.5	99	57	115	115	1.38	14	F1/F
6VA10	6	10	151	50	95	101	1.73	14	F1/A
6VA12	6	12	151	50	95	101	1.8	12	F1/A
12VA1.3	12	1.3	97	43	52	58	0.5	46	F1/C
12VA2.0	12	2	117	35	61	67	0.82	40	F1/A
12VA3.3	12	3.3	134	67	61	67	1.28	36	F1/D
12VA4.0	12	4	90	70	101	107	1.31	34	F1/A
12VA4.5	12	4.5	90	70	101	107	1.38	32	F1/A
12VA5.0	12	5	90	70	101	107	1.55	30	F1/A
12VA5.5	12	5.5	151	65	95	101	1.86	27	F2/D
12VA6.5	12	6.5	151	65	95	101	2	24	F2/D
12VA7.0	12	7	151	65	95	101	2.15	22	F2/D
12VA7.5	12	7.5	151	65	95	101	2.25	21	F2/D
12VA8.5	12	8.5	151	65	95	101	2.35	20	F2/D
12VA10	12	10	151	99	95	101	3.2	16	F2/D
12VA12	12	12	151	99	95	101	3.4	14	F2/D
12VA14.5	12	14.5	151	99	95	101	4.2	13	F2/D
12VA17	12	17	181	77	167	167	5.5	12	L1/B
12VA20	12	20	181	77	167	167	5.8	11	L1/B
6VA130	6	130	260	180	247	252	20	4.5	T5/F
6VA150	6	150	306	169	220	226	22.5	4	T5/F
6VA180A	6	180	260	180	245	251	28	3	T5/F
6VA180B	6	180	306	169	221	226	27.5	3	T5/F
6VA200A	6	200	260	180	246	251	30	2.8	T5/E
6VA200B	6	200	322	177	226	230	31	2.8	T5/E
12VA24	12	24	166	126	174	174	8.1	14	T2/B
12VA26	12	26	165	176	125	125	8.2	13	T2/B
12VA33	12	33	196	131	155	167	10.5	11	T2/A
12VA35	12	35	196	131	155	167	10.7	12	T2/A
12VA38	12	38	197	166	174	174	12.4	10	T2/B
12VA40	12	40	197	166	174	174	12.6	12	T2/B
12VA42	12	42	198	166	174	174	12.8	9	T2/B
12VA45	12	45	198	166	174	174	13	8.8	T2/B
12VA50A	12	50	260	134	200	200	16.5	8.4	L8/A
12VA50B	12	50	229	138	208	212	16	8.4	T3/A
12VA55A	12	55	260	134	200	200	18.2	8.2	L3/A
12VA55B	12	55	229	138	208	212	18.2	8.2	T3/A
12VA60	12	60	229	138	208	212	18.5	7	T3/A
12VA65	12	65	351	167	176	176	20.5	7	T3/B
12VA70A	12	70	351	167	176	176	22.5	6.5	T3/B
12VA70B	12	70	260	169	211	215	22.5	6.5	T3/A
12VA75	12	75	260	169	211	215	22.8	6.2	T3/A
12VA80	12	80	260	169	211	215	24.5	6	T3/A
12VA90	12	90	307	169	211	215	27	5.5	T3/A
12VA100A	12	100	331	174	214	219	30	5	T4/A
12VA100B	12	100	328	172	217	222	29.5	5	T4/A
12VA120A	12	120	331	174	214	219	32	4	T4/B
12VA120B	12	120	407	174	210	233	34	4	T5/A
12VA150	12	150	484	171	241	241	44	3.5	T4/A
12VA170	12	170	532	206	216	221	49	3.4	T4/C
12VA200	12	200	532	206	216	221	52	3.2	T4/C
12VA220	12	220	522	240	219	224	60	2.5	T5/C
12VA240	12	240	522	240	219	224	62.5	2.1	T5/C
12VA260	12	260	521	269	220	224	70	2	T5/C

Design life span for the AGM "VA" series and the GEL"VG" (option) series is 10+ years

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VB & VC BATTERY SPECIFICATIONS

Complying Standards

IEC 60896-21 : 2004

IEC 60896-22 : 2004

CHLORIDE POWERSAFE "2VB" SERIES BATTERY SPECIFICATION - AGM WITH GEL OPTION

Type	Nominal Voltage	C10 1.80V/C 25C	Length (l)	Width (w)	Height (h1)	Height (h2)	Weight	Average Internal Resistance Fully Charged 25C	Terminal/Type
	V	Ah	mm	mm	mm	mm	kg	m Ω	
2VB100	2	100	172	72	206	229	6.6	2	T5/G
2VB150	2	150	172	102	206	228	9	1.5	T5/G
2VB200	2	200	172	110	330	367	13	0.47	T5/G
2VB300	2	300	172	150	330	365	19	0.39	T5/G
2VB400	2	400	211	175	330	368	25.5	0.39	T5/H
2VB500	2	500	241	172	330	366	31	0.31	T5/H
2VB600	2	600	301	175	330	368	38	0.27	T5/H
2VB800	2	800	411	175	330	365	51	0.26	T5/I
2VB1000	2	1000	474	175	328	366	62	0.19	T5/I
2VB1500	2	1500	401	347	342	378	100	0.13	T5/J
2VB2000	2	2000	490	349	342	383	130	0.12	T5/K
2VB3000	2	3000	711	353	342	383	200	0.08	T5/K

- Design life span for the AGM "2VB" series and the GEL"2VG" (option) series is 20+ years
- For Float application, the Float Voltage setting is set between 2.24Vdc to 2.32Vdc or 2.28Vdc +/-0.04Vdc
- For Cyclic application, the Cyclic Voltage setting is set between 2.35Vdc to 2.43Vdc or 2.39Vdc +/-0.04Vdc
- Not recommended to have 2 stage constant voltage charging, as any boost charge will reduce life span

CHLORIDE POWERSAFE "VC" FRONT ACCESS TERMINAL SERIES BATTERY SPECIFICATION - AGM WITH GEL OPTION

Type	Nominal Voltage	C10 1.80V/C 25C	Length (l)	Width (w)	Height (h1)	Height (h2)	Weight	Average Internal Resistance Fully Charged 25C	Terminal/Type
	V	Ah	mm	mm	mm	mm	kg	m Ω	
12VC55F	12	55	278	106	223	223	17	8	T2/C
12VC80F	12	80	562	114	188	188	28.5	6.4	T3/C
12VC100F	12	100	508	111	227	227	32	4	T5/C
12VC110F	12	110	394	110	285	285	34	3.5	T5/C
12VC125F	12	125	550	110	240	240	40	2.5	T5/C
12VC160F	12	160	550	110	287	287	47	2.5	T5/C
12VC170F	12	170	560	125	316	316	56	2.3	T5/C

- Design life span for the AGM "VC" series and the GEL"VG F" (option) series is 12+ years
- For Float application, the Float Voltage setting is set between 2.25Vdc to 2.29Vdc or 2.27Vdc +/-0.02Vdc
- For Equalizing Charge, the Equalizing Voltage setting is set between 2.3Vdc to 2.4Vdc or 2.35Vdc +/-0.05Vdc
- Although equalizing charge is not recommended as this will reduce life span, but it is necessary if a fast charge is required