

**Durable Battery Choose CSBattery**

**A full range manufacturer Since 2003  
Durable Battery Choose CSBattery  
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**Since 2003**

# CSBattery Since 2003

CSBattery is a professional battery company established in May 2003, CSBattery manufactures and sells environmentally friendly Sealed Lead Acid (SLA) and Lithium batteries. CSBattery introduces and develops advanced technology, and adopts the world's most advanced production equipments and testing measures to ensure long product life, high energy density, and environmental protection features such as cadmium-free, leading the domestic counterparts.

The company is a high-tech enterprise headquartered in Gaoming, Foshan city Guangdong Province China, and has three manufacturing bases in Foshan, Hengyang, Shenzhen and Jiangsu. It has approximately 1,000 employees, including two professors who have experience over 40 years in batteries research, and over 50 research engineers. CSBattery also has invested strongly in domestic and foreign institutions and scientific research institutions to overcome difficulties in battery technology. The performance of the batteries independently researched and developed by CSBattery has met and exceeded international standards, and a variety of technologies have been granted national and international patents.

CSBattery products are exported to more than 190 countries and regions all over the world, such as South East Asia, Europe, America, South America, Australia, etc. CSBattery batteries are applied to light electric Vehicles (LEVs), uninterruptible power supply (UPS) systems, electricity and telecommunications backup systems, automatic control, wind and solar power systems. With its reliable products and quality services, CSBattery battery has won high praise from users at home and abroad.



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# SX Series



## Deep cycle Gel Batteries for Solar Applications

SX12 SX6 SX2 series designed for true-deep cycle solar applications, with features like thick, pure virgin lead plates (99.996%), heavy-duty over-the-partition welds, super-C additive and a proprietary gel formulation designed for years of cycling long service life. SX is well-suited to all deep-cycle off-grid solar power system, from commercial to personal, solar sites. SX can provide the best and reliable service under extreme conditions such as high temperature and frequent power outages for Solar project .SX is the highly reliable, safe, and maintenance-free option.

## Product Features

SX series is specially High-temperature sealed free maintenance deep cycle GEL battery with 15-20 years design life in float service, 30% more than standard Gel battery, and 50% more than Lead Acid AGM battery.

It meets with UL , CE and ISO standards. With up-dated patented technology and high purity raw GEL materials, the SX series battery maintains high consistency for better performance and reliable standby service life. It is designed specially for using under high and cold temperature sites.

- Three years warranty at 35-40° C average
- Able to operate at -20° C to 60° C
- Longer life and higher stability under high temp, environment (no air-con needed)
- Use super-C additives lead plates: Deep discharge recovery capability
- Cycle usage: 50% DOD, 1500 Cycle work in high/cold temp, area.

## Construction

- SX series adopts super corrosion-resistant alloy and unique patented grid structure, so can improve the lead plates corrosion-resistant performance in high temperature.
- It adopts special positive negative lead plates ratio and unique nano gel electrolyte, so can improve battery over potential of hydrogen evolution effectively and high reduce the water loss in high temperature environment.
- Its paste formula is added anti-high temperature expanding agent, so can work continuously in high temperature environment.
- SX's shell adopts anti-high temperature ABS material, so the battery inside will not be over heat lead to water loss because of high temperature environment, ensure the battery super long life and the shell will not swell even use in extreme high temperature area.
- SX series adopts patented gel electrolyte by nano-meter fumed silica, which advantage is high heat capacity and excellent heat release performance, can avoid the thermal runaway problem of normal battery, and discharge capacity can increase by over 30% in low-temp area. So SX battery can work very well in severe environment between -40 C-65 C.
- Its formula is added special super expanding agent which ensure battery discharge capacity is higher than other normal battery when work in low temperature, thus even SX battery work in -40 \*C area, it can work stable and continuously.

## Standards

- IEC 60896-21/22:2004;
- IEC 61247-2014;
- DIN 43539-t5:1984;
- DIN 40742-1999;
- GB/T 22473-2008;
- Passed ISO9001,ISO4001
- OHSA18001,CE,UL and Golden Sun Certification

## Applications

- Off-Grid Solar System
- Wind Power System
- Inverter System



## Main Parameters Table

Model	Nominal Voltage (V)	Capacity (Ah)	Dimension (mm)				Net Weight kgs	Gross Weight kgs	Terminal
			Length	Width	Height	Total Height			
SX12-14	12	14	152	99	96	102	3.8	3.9	F1/F2
SX12-20	12	20	181	77	167	167	6	6.1	T1/L1
SX12-24	12	24	166	175	126	126	8.3	8.4	M6
SX12-26	12	26	165	126	174	179	8.4	8.5	M6
SX12-35	12	35	196	130	155	167	10.5	10.7	M6
SX12-40	12	40	198	166	174	174	14.2	14.4	M6
SX12-55	12	55	229	138	208	212	16	16.5	M6
SX12-70	12	70	350	167	178	178	23.3	23.8	M6
SX12-75	12	75	260	169	208	227	25	25.5	M6
SX12-85	12	85	260	169	208	227	26.1	26.6	M6
SX12-90	12	90	307	169	211	216	28.2	28.7	M6
SX12-100	12	100	307	169	211	216	30.2	30.7	M6
SX12-110	12	110	328	172	218	222	33.5	34	M8
SX12-120	12	120	407	173	210	233	39.2	39.7	M8
SX12-135	12	135	344	172	280	285	40.8	41.3	M8
SX12-150	12	150	484	171	241	241	45.5	46	M8
SX12-180	12	180	532	206	216	222	56	56.5	M8
SX12-200	12	200	532	206	216	222	58.6	59.1	M8
SX12-230	12	230	522	240	219	225	65	65.5	M8
SX12-250	12	250	520	269	203	207	71	71.5	M8
SX12-300	12	300	520	269	220	226	77	77.5	M8
SX6-200	6	200	306	168	220	222	30	30.1	M8
SX6-210	6	210	260	180	247	249	29.5	29.6	M8
SX6-220	6	220	306	168	220	222	31.5	31.6	M8
SX6-225	6	225	243	187	275	275	30.5	30.6	M8
SX6-250	6	250	260	180	265	272	34.5	34.6	M8
SX6-310	6	310	295	178	346	366	46	46.2	M8
SX6-330	6	330	295	178	354	360	46.6	46.8	M8
SX6-380	6	380	295	178	404	410	55.3	55.8	M8
SX6-420	6	420	295	178	404	410	56.8	57.3	M8
SX8-170	8	170	260	182	266	271	34.3	34.8	M8
SX8-200	8	170	260	182	295	300	38.3	38.8	M8





# OPzV Series



## Super Deep Cycle Tubular Gel Batteries

By combining the newly developed tubular positive plates with fumed gelled electrolyte, CSBattery created the innovative OPzV range of batteries. The OPzV series is designed and manufactured according to DIN standards, with die-casted positive grid and patented active material formula, they exceed the DIN standard values. They offer 20-25 years design life in float service at 25° C and are more suitable for cyclic use under extreme operating conditions. This range is recommended for telecom outdoor applications, renewable energy systems, photovoltaic / wind energy storage and UPS and other harsh environment applications.

## Product Features

- 20 years design life at floating condition @25° C
- Wide operating temperature range from -40° C to 60° C
- Tubular positive plate with prolonged cycle life
- Fumed Silica gel electrolyte
- Lead Calcium die cast grid with improved corrosion resistance capability
- Low self-discharge rate and long shelf life
- Excellent deep discharge recovery capability

## Construction

- Positive Plates: Robust tubular plates consisting of Pb-Ca-Sn alloy, optimized for high corrosion resistance, offer an extreme high cycling expectancy;
- Negative Plates: Grid plate construction consisting of lead calcium alloy;
- Separator: Microporous and robust PVC-SiO2 separator, for positive and negative plates and optimized for low internal resistance; Container: ABS (UL94-HB), Flammability resistance of UL94-V1 can be available upon request;
- Terminal Poles: Screw connection for easy and safe assembly and maintenance-free connection with excellent conductivity;
- Valves: Release gas in case of excess pressure and protects the cell against atmosphere, reasonable open and close valve pressure, high reliable on performance.

## Standards

- IEC 60896-21/22:2004;
- IEC 61247-2014;
- DIN 43539-t5:1984;
- DIN 40742-1999;
- GB/T 22473-2008;
- Passed ISO9001,ISO4001
- OHS18001,CE,UL and Golden Sun Certification

## Applications

- Security Systems
- Telecom
- Electric Utilities
- UPS systems
- Control Equipment
- Photovoltaic Systems
- Solar Power Systems
- Medical Equipment
- Renewable Energy System



## Main Parameters Table

Model	Nominal Voltage (V)	Capacity (Ah)	Dimension (mm)				Net Weight kgs	Gross Weight kgs	Terminal
			Length	Width	Height	T H			
4OPzV200	2	200	103	206	375	390	18	19	M8
5OPzV250	2	250	124	206	375	390	22.5	23.5	M8
6OPzV300	2	300	145	206	375	390	25	26	M8
5OPzV350	2	350	124	206	473	505	28	29	M8
6OPzV420	2	420	145	206	473	505	32	33	M8
7OPzV490	2	490	166	206	491	506	38	39	M8
6OPzV600	2	600	145	206	666	681	46	47	M8
8OPzV800	2	800	191	210	666	681	65	66	M8
10OPzV1000	2	1000	233	210	666	681	74	75	M8
12OPzV1200	2	1200	275	210	666	681	93	94	M8
12OPzV1500	2	1500	275	210	795	831	112	113	M8
16OPzV2000	2	2000	399	214	792	807	152	153	M8
24OPzV2500	2	2500	487	212	792	807	187	188	M8
24OPzV3000	2	3000	576	212	792	807	225	226	M8
12VOPzV100	12	100	407	177	225	225	36	37	M8
12VOPzV140	12	140	532	207	214	219	53.5	54.5	M8
12VOPzV160	12	160	532	207	214	219	57	58	M8
12VOPzV200	12	200	521	262	220	225	73	74	M8





# OPzS Series



## Tubular Flooded Batteries

Classic OPzS batteries have been proven energy suppliers for decades, which convince in robustness, reliability and extremely long design- or cycle life. OPzS is a flooded Lead Acid battery that adopts Tubular Plate technology to offer high reliability and performance. OPzS is designed and manufactured according to DIN40736-2/IEC60896-11 standards and with die-casting positive spine and patent formula of active material. OPzS series batteries offer 400% more cyclic life than the standby series. It is suitable for solar and wind renewable energy storage, traction etc. OPzS series is the best choice for energy system in high altitude area.

### Product Features

- Low maintenance due to optimised alloy and large electrolyte reserve
- Tubular plates in block and single cell version – most robust design
- Excellent standby and cycling behavior – long life
- Completely recyclable – low CO2 footprint
- 20 years design life at 20 ° C ambient temperature (80 % remaining capacity from C10)
- Wide operating temperature range from -40° C to 60° C
- Tubular positive plate with prolonged cycle life
- Lead Calcium die cast grid with improved corrosion resistance capability
- Low self-discharge rate and long shelf life
- Excellent deep discharge recovery capability
- Very high operational reliability under rough operating conditions
- Container made from high quality transparent or translucent plastics
- Also available in dry charged condition with separate electrolyte
- Low gassing (EN 50272-2) thanks to low antimony alloy:< 2% for cells; < 3% for blocks
- Designed in accordance with IEC 60896-11, DIN 40736 and DIN 40737 T3
- Manufactured in Europe in our ISO 9001 certified production plants

### Construction

- Positive Plates: Robust tubular plates consisting of Pb-Ca-Sn alloy, optimized for high corrosion resistance, offer an extreme high cycling expectancy
- Negative Plates: Grid plate construction consisting of lead calcium alloy
- Separator: Microporous and robust PVC-SiO2 separator, for positive and negative plates and optimized for low internal resistance
- Container: ABS (UL94-HB), Flammability resistance of UL94-V1 can be available upon request
- Terminal Poles: Screw connection for easy and safe assembly and maintenance-free connection with excellent conductivity
- Electrolyte: diluted sulphuric acid  $d_N = 1.24 \text{ kg/l}$
- Valves: Release gas in case of excess pressure and protects the cell against atmosphere, reasonable open and Dose valve pressure, high reliable on performance.

### Standards

- IEC 60896-21/22:2004;
- IEC 61247-2014;
- DIN 43539-t5:1984;
- DIN 40742-1999;
- GB/T 22473-2008;
- Passed ISO9001,ISO4001
- OHS18001,CE,UL and Golden Sun Certification

### Applications

- > Security Systems
- > Telecom
- > Electric Utilities
- > UPS systems
- > Control Equipment
- > Photovoltaic Systems
- > Solar Power Systems
- > Medical Equipment
- > Renewable Energy System



## Main Parameters Table

Model	Nominal Voltage (V)	Capacity (Ah)	Dimension (mm)				Net Weight kgs	Gross Weight kgs	Terminal
			Length	Width	Height	Total Height			
4OPzS200	2	200	103	206	355	410	12.8	17.5	M8
5OPzS250	2	250	124	206	355	410	15.1	20.5	M8
6OPzS300	2	300	145	206	355	410	17.5	24	M8
5OPzS350	2	350	124	206	471	526	19.8	27	M8
6OPzS420	2	420	145	206	471	526	23	32	M8
7OPzS490	2	490	166	206	471	526	26.2	38	M8
6OPzS600	2	600	145	206	646	701	32.6	47	M8
8OPzS800	2	800	191	210	646	701	45	64	M8
10OPzS1000	2	1000	233	210	646	701	54	78	M8
12OPzS1200	2	1200	275	210	646	701	63.6	92	M8
12OPzS1500	2	1500	275	210	773	828	81.7	112	M8
16OPzS2000	2	2000	399	210	773	828	119.5	150	M8
24OPzS2500	2	2500	487	212	771	826	152	204	M8
24OPzS3000	2	3000	576	212	772	806	170	230	M8





# DC 2V GEL Series



## Deep Cycle Gel 2V Batteries

CSBattery DC 2V series pure GEL battery is with 15-20 years floating design life, equal to DC2 2V series deep cycle gel batteries, it is ideal for standby or frequent cyclic discharge applications under extreme environments. By adopting thicker grids, high purity 99.997% lead and patented Silicon Gel electrolyte, DC2V series offers excellent recovery performance after deep discharge under frequent cyclic discharge use, and can deliver 1500 cycles at 50% DOD even work in hot or cold area. Suitable for Solar, CATV, marine, industry, RV and deep discharge UPS, communication, and telecommunication , etc.

## Product Features

- This Energy storage battery utilizes gel electrolyte technology. The uniformly distributed gel electrolyte is made by mixing sulfuric acid with silica fume.
- The electrolyte can hold the battery plates securely in an immobile gel.
- Radial grid design offers this power storage device excellent discharge performance.
- Due to 4BS lead paste technology, our deep cycle gel battery provides long lasting service life.
- Employing unique grid alloy, special gel formulation and distinct positive and negative lead paste ratio, the maintenance free battery boasts outstanding deep cycle service performance and over discharge recovery ability.
- Completely manufactured from high purity raw materials, CSBattery deep cycle gel battery has extremely low self discharge.
- Gas recombination technology ensures excellent seal reaction efficiency, thus delivering no pollution such as acid mist to the environment.
- The gel VRLA battery boasts reliable sealing technology which enables security seal performance.

## Construction

- DC 2V series adopts super corrosion-resistant alloy and unique patented grid structure, so can improve the lead plates corrosion-resistant performance in high temperature.
- It adopts special positive negative lead plates ratio and unique nano gel electrolyte, so can improve battery over potential of hydrogen evolution effectively and high reduce the water loss in high temperature environment.
- Its paste formula is added anti-high temperature expanding agent, so can work continuously in high temperature environment.
- DC 2V series adopts patented gel electrolyte by nano-meter fumed silica, which advantage is high heat capacity and excellent heat release performance, can avoid the thermal runaway problem of normal battery, and discharge capacity can increase by over 30% in low temperature area. So DC 2V battery can work very well in severe environment between -40 C-65 C.
- Its formula is added special super expanding agent which ensure battery discharge capacity is higher than other normal battery when work in low temperature, thus even DC 2V battery work in -40 \*C area, it can work stable and continuously.

## Standards

- IEC 60896-21/22:2004;
- IEC 61247-2014;
- DIN 43539-t5:1984;
- DIN 40742-1999;
- GB/T 22473-2008;
- Passed ISO9001,ISO4001
- OHSA18001,CE,UL and Golden Sun Certification

## Applications

- Communication equipment,
- Telecommunication control equipment;
- Electric power systems;
- Golf carts; Caravan; Power station; Nuclear power station;
- Solar power and wind power systems;
- UPS and inverters



## Main Parameters Table

Model	Nominal Voltage (V)	Capacity (Ah)	Dimension (mm)				Net Weight kgs	Gross Weight kgs	Terminal
			Length	Width	Height	Total Height			
DC2-200G	2	200/10HR	170	106	330	367	13.2	13.4	M8
DC2-300G	2	300/10HR	171	151	330	365	18.7	18.9	M8
DC2-400G	2	400/10HR	211	176	329	367	26.3	26.5	M8
DC2-500G	2	500/10HR	241	172	330	364	31.2	31.4	M8
DC2-600G	2	600/10HR	301	175	331	366	37.9	38.2	M8
DC2-800G	2	800/10HR	410	176	330	365	51.8	52.1	M8
DC2-1000G	2	1000/10HR	475	175	328	365	62.5	62.8	M8
DC2-1200G	2	1200/10HR	472	172	338	355	69	69.3	M8
DC2-1500G	2	1500/10HR	401	351	342	378	97	97.5	M8
DC2-2000G	2	2000/10HR	491	351	343	383	130.5	131	M8
DC2-2500G	2	2500/10HR	712	353	341	382	180.5	181	M8
DC2-3000G	2	3000/10HR	712	353	341	382	190.5	191	M8





# FB12 GEL Series



## Front Terminal GEL Batteries

CSBattery FB12 (Front Terminal) GEL Series is specially designed for telecom use with 12-15 years design life in float service. By adopting a new AGM separator and centralized venting system, the battery can be installed in any position while maintaining high reliability. The dimensions of the FB12 GEL series is designed for 19" and 23" cabinet installation. It is suitable for UPS/EPs applications.

## Product Features

- This GEL battery for telecom industry comes with slim shape design and front terminal connection. Thus, easy installation and maintenance can be ensured and space can be saved.
- Radial grid design plus tight assembly technology assures this rechargeable battery prominent high rate discharge performance.
- Our front access battery features unique design which makes it sure that the electrolyte volume can be hardly reduced during use and addition of water is not necessary in its service life.
- Due to unique corrosion resistant grid alloy, the power storage cell can serve for more than 12-15years in standby current at a temperature of 25 degree.
- Fully made from high purity materials, the front access GEL battery comes with extremely low self discharge.
- Gas recombination technology makes this power supply device environment friendly and pollution free. To be specific, due to this technology, the battery can have super high seal reaction efficiency, thus generating no acid mist.
- The use of best-in-DCass sealing technology ensures that this UPS battery is perfectly sealed, providing high security and reliability.

## Applications

- 1. Suitable for 19inch and 23inch power cabinet.
- 2. Used in telecom system including exchange board, microwave station, mobile base station, data center, radio and broadcast station.
- 3. Great for power supply system of private network or LAN.
- 4. Used as signal system battery and emergency lighting system battery

## Construction

- Narrow structure: each cell has same heat dissipation efficiency thus good to prevent "thermal runaway" ;
- Plate: Pasted flat type, with patent formula of AM ensure good service life;
- Front terminal is convenient for connection and maintenance;
- Centralized vent system: battery internal gas can be vented out of the system, and flame arrester is equipped;
- Terminal cover: avoiding short circuit and dust ,the inspection hole is available for maintenance;
- Separator: use improved AGM separator, makes lower resistance, higher assembling pressure to increase deep cycle life;
- Electrolyte: Silicon Gel import from Germany Evonik.

## Standards

- IEC 60896-21/22:2004;
- IEC 61247-2014;
- DIN 43539-t5:1984;
- DIN 40742-1999;
- GB/T 22473-2008;
- Passed ISO9001,ISO4001
- OHSA18001,CE,UL and Golden Sun Certification



## Main Parameters Table

Model	Nominal Voltage (V)	Capacity (Ah)	Dimension (mm)				Net Weight kgs	Gross Weight kgs	Terminal
			Length	Width	Height	TH			
FB12-55G	12	55/10HR	277	106	223	223	16.1	16.4	M6
FB12-80G	12	80/10HR	562	114	188	188	25.1	25.4	M6
FB12-100G	12	100/10HR	507	110	223	223	29.6	30	M8
FB12-105G	12	105/10HR	394	110	286	286	30.7	31.1	M8
FB12-125G	12	125/10HR	552	110	239	239	38.2	38.6	M8
FB12-150G	12	150/10HR	551	110	288	288	44.2	44.7	M8
FB12-160G	12	160/10HR	551	110	288	288	44.7	45.2	M8
FB12-175G	12	175/10HR	546	125	316	323.5	53.7	54.2	M8
FB12-180G	12	180/10HR	560	125	316	316	55.2	55.7	M8
FB12-200BG	12	200/10HR	560	125	316	316	57.2	57.7	M8
FB12-200AG	12	200/10HR	560	125	316	316	58.2	58.7	M8





# HDC Series



## Lead Carbon Batteries

CSBattery HDC series lead-carbon batteries use functional activated carbon and graphene carbon materials, which are added to the negative plate of the battery to make lead carbon batteries have the advantages of both lead-acid batteries and super capacitors. It not only improves the ability of rapid charge and discharge, but also greatly prolongs the battery life, more than 2000 cycles at 80%DOD. It is more suitable for the application of PSOC.

## Product Features

- Terminal: M6/M8 Copper Insert
- Cycle Use Voltage: 2.30~2.33Vpc(25°C)
- Temperature Compensation : -4mV/°C/Cell
- Operating Temperature Range:15°C~30°C
- Max. Operating Temperature Range:-20°C~60°C
- Prevent Sulfuration
- Fast Recharge/Discharge

The main application of Lead-carbon battery is Energy Storage. Lead-carbon battery has the fast recharge and big current charge/discharge function to offer stable performance. Adding carbon is to eliminate the polarization of the negative electrode. Under the same process conditions, the charging voltage of lead acid battery without carbon can reach to 16V ~ 17V, and the lead-carbon battery voltage is 15.5V ~ 16.5V only. Our lead-carbon technology battery's recharge voltage is controlled at approx 14.6V, about 1V lower under the same process than those with less carbon. Furthermore, lead-carbon offered fast recharge function, because of its electrical conductivity and thermal conductivity, which can save 40% ~50% charging time.

## Applications

- Home energy storage system
- smart power grid and micro-grid system
- Distributed energy storage system
- Solar and wind energy storage system
- Electric power Vehicles
- Solar power generation grid or off-grid energy storage system
- Generation and battery hybrid energy storage system



## Standards

- IEC 60896-21/22:2004;
- IEC 61247-2014;
- DIN 43539-t5:1984;
- DIN 40742-1999;
- GB/T 22473-2008;
- Passed ISO9001,ISO4001
- OHSAS18001,CE,UL and Golden Sun Certification

## Main Parameters Table

Model	Nominal Voltage (V)	Capacity (Ah)	Dimension (mm)				Net Weight kgs	Gross Weight kgs	Terminal
			Length	Width	Height	Total Height			
HDC6-200	6	200	306	168	220	226	31	31.5	M8
HDC6-205	6	205	260	180	246	252	30	30.5	M8
HDC6-225	6	225	243	187	275	275	32.5	33	M8
HDC6-230	6	230	260	180	265	272	34.2	34.7	M8
HDC6-280	6	280	295	178	346	350	45.8	46.3	M8
HDC6-300	6	300	295	178	346	350	46.5	47	M8
HDC6-340	6	340	295	178	404	408	55	55.5	M8
HDC6-380	6	380	295	178	404	408	57.2	57.7	M8
HDC12-20	12	20	166	175	126	126	8.35	8.85	M5
HDC12-24	12	24	165	126	174	174	8.6	9.1	M5
HDC12-30	12	30	196	130	155	167	10.2	10.7	M5
HDC12-35	12	35	198	166	174	174	14	14.5	M5
HDC12-50	12	50	229	138	208	212	17.7	18.2	M5
HDC12-60	12	60	350	167	178	178	23	23.5	M5
HDC12-75	12	75	260	169	211	215	26	26.5	M6
HDC12-90	12	90	307	169	211	215	30	30.5	M6
HDC12-100	12	100	331	176	215	219	33	33.5	M8
HDC12-110	12	110	407	174	208	233	39	39.5	M8
HDC12-120	12	120	341	173	283	287	40.5	41	M8
HDC12-135	12	135	484	171	241	241	45.5	46	M8
HDC12-180	12	180	532	206	215	219	58.5	59	M8
HDC12-200	12	200	522	240	219	223	64.8	65.3	M8
HDC12-220	12	220	520	268	203	207	70.8	71.3	M8
HDC12-250	12	250	520	268	220	224	77.5	78	M8





# GB GEL Series



## Durable Gel VRLA Batteries

CSBattery VRLA standard GEL battery is designed for frequent cyclic charge and discharge applications under extreme environments. By combining the newly developed Nano Silicone Gel electrolyte with high density paste, the Solar range offers high recharge efficiency at very low charge current. The acid stratification is highly reduced by adding Nano Gel.

## Product Features

- This Energy storage battery utilizes gel electrolyte technology. The uniformly distributed gel electrolyte is made by mixing sulfuric acid with silica fume.
- The electrolyte can hold the battery plates securely in an immobile gel.
- Radial grid design offers this power storage device excellent discharge performance.
- Due to 4BS lead paste technology, our deep cycle gel battery provides long lasting service life.
- Employing unique grid alloy, special gel formulation and distinct positive and negative lead paste ratio, the maintenance free battery boasts outstanding deep cycle service performance and over discharge recovery ability.
- Completely manufactured from high purity raw materials, CSBatteryVRLA standard gel battery has extremely low self discharge.
- Gas recombination technology ensures excellent seal reaction efficiency, thus delivering no pollution such as acid mist to the environment.
- The gel VRLA battery boasts reliable sealing

## Construction

- Container/Cover: Made of UL94HB and UL 94-OABS Plastic, fire resistance and water proof.
- 99.997% pure new lead NEVER use recycle lead.
- Negative Plates: Use the special PbCa alloy grids, optimize the recombination efficiency and less gassing.
- High quality AGM separator: Absord acid electrolyte, the best retainer mat for VRLA batteries.
- Positive plates: PbCa grids minimize corrosion and prolong life.
- Terminal post: Copper or lead material with maximum conductivity, enhance the high current rapidly.
- Vent Valve: Allows the release of the excess gas automatically for safety.
- Three steps of Seal procedures: Ensure battery completely sealed with safety, never leakage and volatile acid, longer life.
- Silicone Nano GEL electrolyte: Import from Germany Degussy famous brand silicone.

## Standards

- IEC 60896-21/22:2004;
- IEC 61247-2014;
- DIN 43539-t5:1984;
- DIN 40742-1999;
- GB/T 22473-2008;
- Passed ISO9001,ISO4001
- OHS18001,CE,UL and Golden Sun Certification

## Applications

- > Electric Powered Vehicles
- > Wheel Chairs
- > Electric Powered Toys
- > Medical Equipment
- > Solar and Wind
- > Golf Cars and Buggies
- > Power Tools
- > Control System
- > UPS systems
- > Emergency systems



## Main Parameters Table

Model	Nominal Voltage (V)	Capacity (Ah)	Dimension (mm)				Net Weight kgs	Gross Weight kgs	Terminal
			Length	Width	Height	Total Height			
GB12-33G	12	33/10HR	196	130	155	167	10.2	10.5	M6
GB12-38G	12	38/10HR	198	166	172	172	12.5	12.8	M6
GB12-45G	12	45/10HR	198	166	174	174	13.2	13.5	M6
GB12-50G	12	50/10HR	229	138	208	212	15.7	16.2	M6
GB12-55G	12	55/10HR	229	138	208	212	16.4	16.9	M6
GB12-65G	12	65/10HR	350	167	178	178	20.8	21.3	M6
GB12-70G	12	70/10HR	350	167	178	178	21.8	22.3	M6
GB12-75G	12	75/10HR	260	169	211	215	22.3	22.8	M6
GB12-80G	12	80/10HR	260	169	211	215	23.8	24.3	M6
GB12-85AG	12	85/10HR	331	174	214	219	25.3	25.8	M6
GB12-90G	12	90/10HR	307	169	211	216	27	27.5	M6
GB12-100GC	12	100/20HR	307	169	211	216	27.5	28	M6
GB12-100GB	12	100/10HR	331	174	214	219	28.5	29	M8
GB12-100GA	12	100/10HR	331	174	214	219	29.5	30	M8
GB12-120G	12	120/20HR	407	173	210	233	33.5	34	M8
GB12-120GA	12	120/10HR	407	173	210	233	34.5	35	M8
GB12-135G	12	135/10HR	341	173	283	288	41.5	42	M8
GB12-150GB	12	150/20HR	484	171	241	241	41.5	42	M8
GB12-150GA	12	150/10HR	484	171	241	241	44.5	45	M8
GB12-160G	12	160/10HR	532	206	216	222	49	49.5	M8
GB12-180G	12	180/10HR	532	206	216	222	53.5	54	M8
GB12-200GB	12	200/20HR	522	240	219	225	56.5	57	M8
GB12-200GA	12	200/10HR	522	240	219	225	58.7	59.2	M8
GB12-230G	12	230/10HR	522	240	219	225	61.5	62	M8
GB12-250G	12	250/10HR	520	268	220	225	70.5	71	M8
GB12-300G	12	300/10HR	520	268	220	226	77.5	78	M8



# GB AGM Small Capacity Series



## Small Capacity Sealed Lead Acid AGM Battery

CSBattery GB series batteries are designed to have a large amount of stored current discharged between charging sessions, with very heavy non-porous battery plates to withstand repeated major discharging and charging cycle. The CSBattery durable AGM battery uses a different chemistry for the plates active paste material, and a slightly stronger electrolyte than normal battery electrolyte, thus the GB range features 30% higher cyclic life with 5 years of float life when compared to the standard Duration range.

### Product Features

- 30% more cyclic life through innovation at the PAM additives
- Long life expectancy of 5 years in floating condition
- Thick flat plate with high Tin low Calcium alloy
- Wide operating temperature range from -20 ° C to 40 ° C
- 3% Low self-discharge rate
- Very good cycle performance: up to 700 cycles@50% DOD
- Excellent deep discharge recovery capability

### Construction

- Positive plate - Thick high Sn low Ca grid with special paste
- Negative plate - Balanced Pb-Ca grid for improved recombination efficiency
- Separator - Advanced AGM separator for high pressure cell design
- Electrolyte - Dilute high purity sulfuric acid
- Battery container and cover - Fire resistance ABS, water proof
- Pillar seal - Two layers epoxy resin seal
- Relief valve - Complete with integrated flame arrestor

### Standards

- IEC 60896-21/22:2004;
- IEC 61247-2014;
- DIN 43539-t5:1984;
- DIN 40742-1999;
- GB/T 22473-2008;
- Passed ISO9001,ISO4001
- OHSA18001,CE,UL and Golden Sun Certification

### Applications

- UPS systems
- Emergency systems
- Electric Powered Vehicles
- Wheel Chairs
- Electric Powered Toys
- Medical Equipment
- Solar and Wind
- Golf Cars and Buggies
- Power Tools
- Control System



## Main Parameters Table

Model	Nominal Voltage (V)	Capacity (Ah)	Dimension (mm)				Net Weight kgs	Gross Weight kgs	Terminal
			Length	Width	Height	Total Height			
GB6-4.0	6	4/20HR	70	47	101	107	0.7	0.8	F1
GB6-4.5	6	4.5/20HR	70	47	101	107	0.75	0.85	F1
GB6-5	6	5/20HR	70	47	101	107	0.8	0.9	F1
GB6-7.0	6	7.0/20HR	151	34	95	101	1.15	1.25	F1
GB6-10	6	10/20HR	151	50	94	100	1.6	1.7	F1
GB6-12	6	12/20HR	151	50	94	100	1.75	1.85	F1
GB12-4	12	4/20HR	90	70	101	107	1.35	1.45	F1
GB12-4.5	12	4.5/20HR	90	70	101	107	1.48	1.58	F1
GB12-5	12	5/20HR	90	70	101	107	1.58	1.68	F1
GB12-6.5	12	6.5/20HR	151	65	94	100	1.9	2	F2
GB12-7.0	12	7.0/20HR	151	65	94	100	2.05	2.15	F1/F2
GB12-7.2	12	7.2/20HR	151	65	94	100	2.15	2.25	F2
GB12-7.5	12	7.5/20HR	151	65	94	100	2.2	2.3	F2
GB12-9	12	9/20HR	151	65	94	100	2.4	2.5	F2
GB12-10	12	10/20HR	152	99	96	102	3.2	3.3	F2
GB12-12	12	12/20HR	152	99	96	102	3.5	3.6	F2
GB12-15	12	15/20HR	152	99	96	102	3.8	3.9	F2
GB12-18	12	18/20HR	181	77	167	167	5.2	5.4	L1
GB12-20	12	20/20HR	181	77	167	167	6	6.2	L1
GB12-24	12	24/10HR	166	126	174	174	7.7	7.9	M6
GB12-26	12	26/10HR	166	175	126	126	8.3	8.5	M6
GB12-1.3	12	1.3/20hr	97	43	52	58	0.56	0.66	M6
GB12-2.3	12	2.3/20hr	178	35	61	67	0.9	1	M6



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# GB AGM Series



## Durable AGM VRLA Batteries

CSBattery GB series batteries are designed to have a large amount of stored current discharged between charging sessions, with very heavy non-porous battery plates to withstand repeated major discharging and charging cycle. The CSBattery durable AGM battery uses a different chemistry for the plates active paste material, and a slightly stronger electrolyte than normal battery electrolyte, thus the GB range features 30% higher cyclic life with 10 years of float life when compared to the standard Duration range.

## Product Features

- 30% more cyclic life through innovation at the PAM additives
- Long life expectancy of 10 years in floating condition
- Thick flat plate with high Tin low Calcium alloy
- Wide operating temperature range from -15 ° C to 45 ° C
- 3% Low self-discharge rate
- Very good cycle performance: up to 700 cycles @50% DOD
- Excellent deep discharge recovery capability

## Construction

- Positive plate - Thick high Sn low Ca grid with special paste
- Negative plate - Balanced Pb-Ca grid for improved recombination efficiency
- Separator - Advanced AGM separator for high pressure cell design
- Electrolyte - Dilute high purity sulfuric acid
- Battery container and cover - Fire resistance ABS, water proof
- Pillar seal - Two layers epoxy resin seal
- Relief valve - Complete with integrated flame arrestor

## Standards

- IEC 60896-21/22:2004;
- IEC 61247-2014;
- DIN 43539-t5:1984;
- DIN 40742-1999;
- GB/T 22473-2008;
- Passed ISO9001,ISO4001
- OHS18001,CE,UL and Golden Sun Certification

## Applications

- UPS systems
- Emergency systems
- Electric Powered Vehicles
- Wheel Chairs
- Electric Powered Toys
- Medical Equipment
- Solar and Wind
- Golf Cars and Buggies
- Power Tools
- Control System



## Main Parameters Table

Model	Nominal Voltage (V)	Capacity (Ah)	Dimension (mm)				Net Weight kgs	Gross Weight kgs	Terminal
			Length	Width	Height	Total Height			
GB12-15	12	15/10HR	152	99	96	102	3.8	4	F2
GB12-18	12	18/20HR	181	77	167	167	5.2	5.4	L1
GB12-20	12	20/20HR	181	77	167	167	6	6.2	L1
GB12-24	12	24/10HR	166	126	174	174	7.7	7.9	M6
GB12-26	12	26/10HR	166	175	126	126	8.3	8.6	M6
GB12-33	12	33/10HR	196	130	155	167	10	10.3	M6
GB12-38	12	38/10HR	198	166	172	172	12.3	12.6	M6
GB12-45	12	45/10HR	198	166	174	174	13	13.3	M6
GB12-50	12	50/10HR	229	138	208	212	15.5	16	M6
GB12-55	12	55/10HR	229	138	208	212	16.2	16.7	M6
GB12-65	12	65/10HR	350	167	178	178	20.5	21	M6
GB12-70	12	70/10HR	350	167	178	178	21.5	22	M6
GB12-75	12	75/10HR	260	169	211	215	22	22.5	M6
GB12-80	12	80/10HR	260	169	211	215	23.5	24	M6
GB12-85A	12	85/10HR	331	174	214	219	25	25.5	M6
GB12-90	12	90/10HR	307	169	211	216	26.5	27	M6
GB12-100C	12	100/20HR	307	169	211	216	27	27.5	M6
GB12-100B	12	100/10HR	331	174	214	219	28	28.5	M8
GB12-100A	12	100/10HR	331	174	214	219	29	29.5	M8
GB12-120	12	120/20HR	407	173	210	233	33	33.5	M8
GB12-120A	12	120/10HR	407	173	210	233	34	34.5	M8
GB12-135	12	135/10HR	341	173	283	288	41	41.5	M8
GB12-150B	12	150/20HR	484	171	241	241	41	41.5	M8
GB12-150A	12	150/10HR	484	171	241	241	44	44.5	M8
GB12-160	12	160/10HR	532	206	216	222	48.5	49	M8
GB12-180	12	180/10HR	532	206	216	222	53	53.5	M8
GB12-200B	12	200/20HR	522	240	219	225	56	56.5	M8
GB12-200A	12	200/10HR	522	240	219	225	58.2	58.7	M8
GB12-230	12	230/10HR	522	240	219	225	61	61.5	M8
GB12-250	12	250/10HR	520	268	220	225	70	70.5	M8
GB12-300	12	300/10HR	520	268	220	226	77	77.5	M8

RESERVE POWER BATTERIES



# FB12 AGM Series



## 12V Front Terminal AGM Batteries

CSBattery FB12 (Front Terminal) Series is specially designed for telecom use with 12 years design life in float service. By adopting a new AGM separator and centralized venting system, the battery can be installed in any position while maintaining high reliability. The dimensions of the F12 series is designed for 19" and 23" cabinet installation. It is suitable for UPS/EP applications.

### Product Features

- This AGM battery for telecom industry comes with slim shape design and front terminal connection. Thus, easy installation and maintenance can be ensured and space can be saved.
- Radial grid design plus tight assembly technology assures this rechargeable battery prominent high rate discharge performance.
- Our front access battery features unique design which makes it sure that the electrolyte volume can be hardly reduced during use and addition of water is not necessary in its service life.
- Due to unique corrosion resistant grid alloy, the power storage cell can serve for more than 8-10 years in standby current at a temperature of 25 degree.
- Fully made from high purity materials, the front access AGM battery comes with extremely low self discharge.
- Gas recombination technology makes this power supply device environment friendly and pollution free. To be specific, due to this technology, the battery can have super high seal reaction efficiency, thus generating no acid mist.
- The use of best-in-Class sealing technology ensures that this UPS battery is perfectly sealed, providing high security and reliability.

### Applications

- Suitable for 19inch and 23inch power cabinet.
- Used in telecom system including exchange board, microwave station, mobile base station, data center, radio and broadcast station.
- Great for power supply system of private network or LAN.
- Used as signal system battery and emergency lighting system battery

### Construction

- Narrow structure each cell has same heat dissipation efficiency thus good to prevent "thermal runaway" ;
- Plate: Pasted flat type, with patent formula of AM ensure good service life;
- Front terminal is convenient for connection and maintenance;
- Centralized vent system: battery internal gas can be vented out of the system, and flame arrester is equipped;
- Terminal cover: avoiding short circuit and dust ,the inspection hole is available for maintenance;
- Separator: use improved AGM separator, makes lower resistance, higher assembling pressure to increase deep cycle life;
- Terminal sealing: double sealing technics(mechanical + epoxy glue).

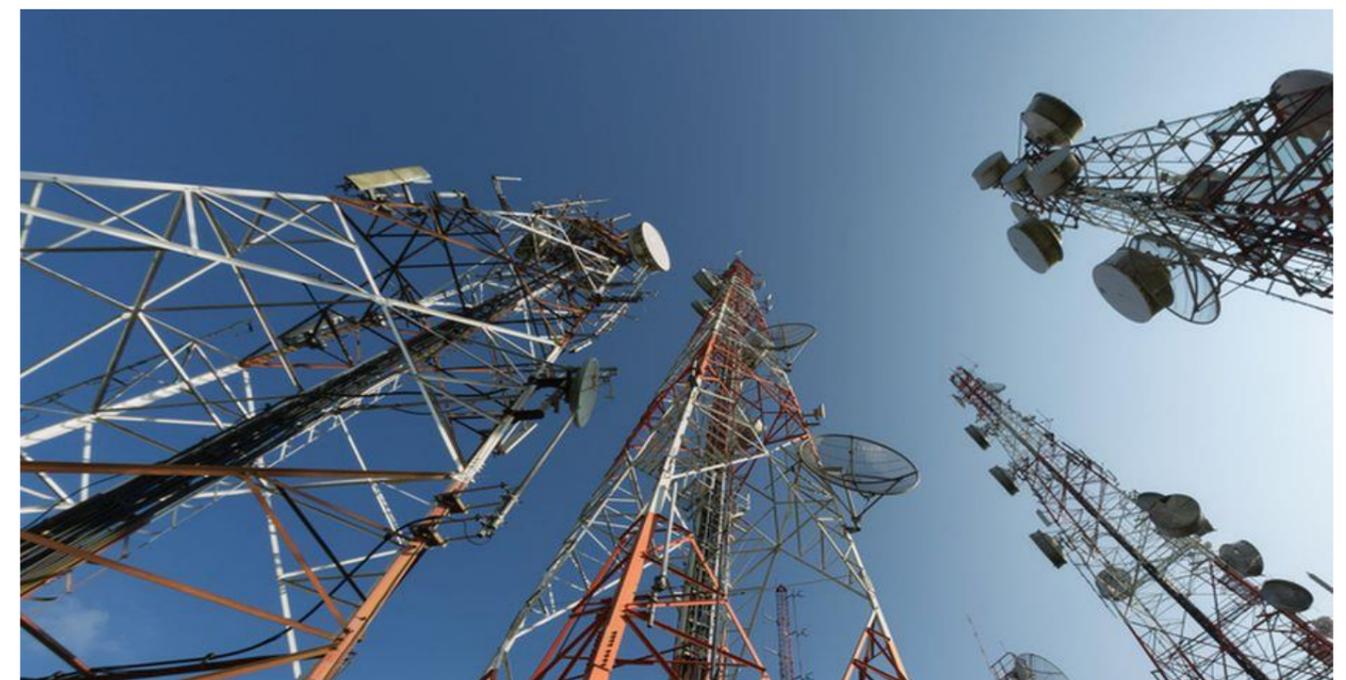
### Standards

- IEC 60896-21/22:2004;
- IEC 61247-2014;
- DIN 43539-t5:1984;
- DIN 40742-1999;
- GB/T 22473-2008;
- Passed ISO9001,ISO4001
- OHSAS18001,CE,UL and Golden Sun Certification



## Main Parameters Table

Model	Nominal Voltage (V)	Capacity (Ah)	Dimension (mm)				Net Weight kgs	Gross Weight kgs	Terminal
			Length	Width	Height	Total Height			
FB12-55	12	55/10HR	277	106	223	223	16	16.3	M6
FB12-80	12	80/10HR	562	114	188	188	25	25.3	M6
FB12-100	12	100/10HR	507	110	223	223	29.4	29.8	M8
FB12-105	12	105/10HR	394	110	286	286	30.5	30.9	M8
FB12-125	12	125/10HR	552	110	239	239	38	38.4	M8
FB12-150	12	150/10HR	551	110	288	288	44	44.5	M8
FB12-160	12	160/10HR	551	110	288	288	44.5	45	M8
FB12-175	12	175/10HR	546	125	316	323.5	53.5	54	M8
FB12-180	12	180/10HR	560	125	316	316	55	55.5	M8
FB12-200B	12	200/10HR	560	125	316	316	57	57.5	M8
FB12-200A	12	200/10HR	560	125	316	316	58	58.5	M8



RESERVE POWER BATTERIES



# DC 2V AGM Series



## Deep Cycle AGM 2V Batteries

CSBattery DC series of 2V VRLA AGM batteries up to 2V3000Ah are recognized as the most reliable and high quality battery system in the industry. They are designed with advanced AGM (Absorbent Glass Mat) technology, Long service life designed with 10-15 years, the batteries comply to the most popular international standards, such as IEC60896-21/22, CE, ISO and Eurobat Guide long life.

## Product Features

- Stable Quality & High Reliability: CSBattery battery is we known for its stable and reliable performance. Sealed AGM batteries are all free maintenance; thus permitting a safe and proper operation of the equipment. The battery can withstand overcharge, over discharge, vibration, and shock. It is also capable of extended storage.
- Long Service Life, Float or cyclic: The CSBattery VRLA battery has a long life in float or cyclic service. The expected life of float service is 12 years @ 25 C.
- Low Pressure Venting System: CSBattery batteries are equipped with a safe low pressure venting system, which operates from 1 psi to 6 psi. The venting system is designed to release excess gas in the event that the gas pressure rises to a level above the normal rate. Afterwards, the venting system automatically re-seals itself when the gas pressure level returns its normal rate. This feature prevents excessive build up of gas in the batteries. This low pressure venting system, coupled with the extraordinarily high recombination efficiency, ensure CSBattery batteries be the safest VRLA batteries available.
- Heavy Duty Grids: The heavy-duty lead calcium-alloy grids in CSBattery batteries provide an extra margin of performance and service life in both float and cyclic applications, even in conditions of deep discharge.

## Construction

- DC2 series battery adopts unique grid structure, special super corrosion-resistant alloy and unique active material formula, which can improve the efficiency, so DC2 battery recover performance is excellent after deep discharge even discharge to empty, also with the advantage of high durability, enough capacity and long cycle life.
- All in DC12/8/6 battery adopts high pure raw materials since original, so its self discharge rate is very low below 3% every month.
- The electrolyte of DC2 battery adopts low density electrolyte and add particular electrolyte additive, so can lower the corrosion of lead plates by electrolyte, reduce the problem of stratification of electrolyte density, result in to improve the battery charge receive capacity and over discharge performance, finally can extend the battery cycle life on a higher level.
- DC2 deep cycle agm battery adopts unique radial grid structure and super thick lead plates, in order to extend battery cycle life. Enhancing lead plates thickness ensure that battery can realize self protect of over discharge so can avoid battery over discharge.
- Newest DC2 deep cycle battery adopts patent technology of high strength tight assemble and 4BS lead paste, so can extend the battery cycle life obviously.

## Standards

- IEC 60896-21/22:2004;
- IEC 61247-2014;
- DIN 43539-t5:1984;
- DIN 40742-1999;
- GB/T 22473-2008;
- Passed ISO9001,ISO4001
- OHS18001,CE,UL and Golden Sun Certification

## Applications

- Communication equipment,
- Telecommunication control equipment;
- Electric power systems;
- Golf carts; Caravan; Power station; Nuclear power station;
- Solar power and wind power systems;
- UPS and inverters



## Main Parameters Table

Model	Nominal Voltage (V)	Capacity (Ah)	Dimension (mm)				Net Weight kgs	Gross Weight kgs	Terminal
			Length	Width	Height	Total Height			
DC2-200	2	200/10HR	170	106	330	367	13	13.2	M8
DC2-300	2	300/10HR	171	151	330	365	18.5	18.7	M8
DC2-400	2	400/10HR	211	176	329	367	26.1	26.3	M8
DC2-500	2	500/10HR	241	172	330	364	31	31.2	M8
DC2-600	2	600/10HR	301	175	331	366	37.7	38	M8
DC2-800	2	800/10HR	410	176	330	365	51.6	51.9	M8
DC2-1000	2	1000/10HR	475	175	328	365	62	62.3	M8
DC2-1200	2	1200/10HR	472	172	338	355	68.5	68.8	M8
DC2-1500	2	1500/10HR	401	351	342	378	96.5	97	M8
DC2-2000	2	2000/10HR	491	351	343	383	130	130.5	M8
DC2-2500	2	2500/10HR	712	353	341	382	180	180.5	M8
DC2-3000	2	3000/10HR	712	353	341	382	190	190.5	M8



RESERVE POWER BATTERIES



# HR Series



## High Rate Discharged VRLA Batteries

High discharge rate AGM battery series is especially designed for heavy load discharge applications with 8 to 15 years design life in float service. By using strong grids and specially designed active material the HR series offers stable performance during high current discharge. The HR series offers 30% more power output than the standard range. Suitable for UPS/EPS where high current loads are required.

## Product Features

- Due to special and unique design, this electric power storage comes with high rate discharge performance, high specific power, and over 20% higher energy output than an ordinary battery.
- The industry battery employs unique corrosion resistant grid alloy and special electrolyte solution, thus keeping excellent low temperature performance and long service life.
- It is completely made from high purity materials, our AGM lead acid battery has nearly no self discharge, thus can put in stock long time.
- The CSBattery high rate battery adopts gas recombination technology, this power supply equipment boasts super high seal reaction efficiency and thereby generates no acid mist. Thus, it is environmentally friendly.
- The improve structure design and advance sealing technology ensures reliable seal, and so bringing clients high safety.

## Applications

- Suitable for 19inch and 23inch power cabinet.
- Used in telecom system including exchange board, microwave station, mobile base station, data center, radio
- Great for power supply system of private network or LAN.
- Used as signal system battery and emergency lighting system battery.



## Construction

- Structure: compact design, shorter internal connectors between cells, thus low internal resistance
- Plate: Pasted flat type, with patent high rate formula of AM
- Terminal: two or more types terminals are convenient for selection
- Safety valve: flame arrester / filter is equipped with safety valve system;
- Separator: using improved AGM separator, makes lower resistance higher assembling pressure to increase deep cycle life;
- Battery case: made of high strength ABS(UL94-HB) and UL94-V0 is optional;
- Terminal sealing: double sealing technics(mechanical + epoxy gule).

## Standards

- IEC 60896-21/22:2004;
- IEC 61247-2014;
- DIN 43539-t5:1984;
- DIN 40742-1999;
- GB/T 22473-2008;
- Passed ISO9001, ISO4001
- OHSAS18001, CE, UL and Golden Sun Certification

## Main Parameters Table

Model	Nominal Voltage (V)	Rated Capability (Ah) 10HR	Dimension (mm)				Net Weight kgs	Gross Weight kgs	Terminal
			Length	Width	Height	Total Height			
HR6-720W	6	190	260	180	247	252	30.8	30.9	M8
HR12-85W	12	20	181	77	167	167	6.5	6.6	M6
HR12-115W	12	28	165	126	174	174	8.7	8.8	M6
HR12-145W	12	34	196	130	155	167	11	11.1	M6
HR12-170W	12	42	198	166	174	174	13.8	14	M6
HR12-300W	12	80	260	169	211	215	25	25.2	M6
HR12-370W	12	95	307	169	211	216	31	31.5	M6
HR12-420W	12	110	331	176	214	220	33.3	33.8	M8
HR12-470W	12	135	407	174	210	233	39	39.5	M8
HR12-520W	12	150	484	171	241	241	47	47.5	M8
HR12-540W	12	155	328	182	267	272	46	46.5	M8
HR12-680W	12	170	532	206	216	222	58.5	59	M8
HR12-770W	12	220	522	240	219	225	67	67.5	M8
HR12-800W	12	230	520	269	203	209	70	70.5	M8
HR12-900W	12	260	520	269	220	226	79	79.5	M8





# DC12/6/8 Series



## Long Life Deep cycle VRL AGM Batteries

Since 2003, CSBattery start the research and produce sealed free maintenance AGM and GEL storage batteries. Our batteries are always in the process of innovation according to market and environment: AGM Battery GB12 series/GEL battery GB12 GEL series—Deep cycle AGM battery DC12/8/6 series—High Temperature Long Life Deep cycle GEL battery HTB series. DC12/8/6 series deep cycle AGM battery is specially valve regulated sealed free maintenance deep cycle AGM battery with 12-15 years design life in float service, perfect choice for deep cycle use, 30% longer life than regular AGM battery, reliable for backup use and solar cycle use.

## Product Features

CSBattery DC12/8/6 series deep cycle long life vrla agm battery uses a different chemistry additives in the positive plates and special AGM separators, The DC12/8/6 series features 50% higher cyclic life with 12-15 years of float life when compared to the standard Duration range. This series is highly suited for very unreliable power applications requiring the batteries to provide extra cyclic life performance such as PV solar system applications, BTS systems and electric Vehicles.

- Three years warranty for solar cycle use.
- 30% longer life than regular AGM lead acid battery.
- Longer life and higher stability for deep cycle use.
- Use Super-C additives lead plates: Deep discharge recovery capability
- cycle usage: 50% DOD, >1200 cycles.

## Construction

- DC12/8/6 series battery adopts unique grid structure, special super corrosion-resistant alloy and unique active material formula, which can improve the efficiency, so DC12/8/6 battery recover performance is excellent after deep discharge even discharge to empty, also with the advantage of high durability, enough capacity and long cycle life.
- All in DC12/8/6 battery adopts high pure raw materials since original, so its self discharge rate is very low below 3% every month.
- The electrolyte of DC12/8/6 battery adopts low density electrolyte and add particular electrolyte additive, so can lower the corrosion of lead plates by electrolyte, reduce the problem of stratification of electrolyte density, result in to improve the battery charge receive capacity and over discharge performance, finally can extend the battery cycle life on a higher level.
- DC12/8/6 deep cycle agm battery adopts unique radial grid structure and super thick lead plates, in order to extend battery cycle life. Enhancing lead plates thickness ensure that battery can realize self protect of over discharge so can avoid battery over discharge.
- Newest DC12/8/6 deep cycle battery adopts patent technology of high strength tight assemble and 4BS lead paste, so can extend the battery cycle life obviously.

## Standards

- IEC 60896-21/22:2004;
- IEC 61247-2014;
- DIN 43539-t5:1984;
- DIN 40742-1999;
- GB/T 22473-2008;
- Passed ISO9001,ISO4001
- OHSA18001,CE,UL and Golden Sun Certification

## Applications

- Electric Powered Vehicles
- Golf Cars and Buggies
- Wheel Chairs
- BTS Stations
- Medical Equipment
- Solar and Wind
- Power Tools
- Control System
- UPS systems
- Emergency systems



## Main Parameters Table

Model	Nominal Voltage (V)	Capacity (Ah)	Dimension (mm)				Net Weight kgs	Gross Weight kgs	Terminal
			Length	Width	Height	Total Height			
DC12-14	12	14	152	99	96	102	3.8	3.9	F1/F2
DC12-20	12	20	181	77	167	167	6	6.1	T1/L1
DC12-24	12	24	166	175	126	126	8.3	8.4	M6
DC12-26	12	26	165	126	174	179	8.4	8.5	M6
DC12-35	12	35	196	130	155	167	10.5	10.7	M6
DC12-40	12	40	198	166	174	174	14.2	14.4	M6
DC12-55	12	55	229	138	208	212	16	16.5	M6
DC12-70	12	70	350	167	178	178	23.3	23.8	M6
DC12-75	12	75	260	169	208	227	25	25.5	M6
DC12-85	12	85	260	169	208	227	26.1	26.6	M6
DC12-90	12	90	307	169	211	216	28.2	28.7	M6
DC12-100	12	100	307	169	211	216	30.2	30.7	M6
DC12-110	12	110	328	172	218	222	33.5	34	M8
DC12-120	12	120	407	173	210	233	39.2	39.7	M8
DC12-135	12	135	344	172	280	285	40.8	41.3	M8
DC12-150	12	150	484	171	241	241	45.5	46	M8
DC12-180	12	180	532	206	216	222	56	56.5	M8
DC12-200	12	200	532	206	216	222	58.6	59.1	M8
DC12-230	12	230	522	240	219	225	65	65.5	M8
DC12-250	12	250	520	269	203	207	71	71.5	M8
DC12-300	12	300	520	269	220	226	77	77.5	M8
DC6-200	6	200	306	168	220	222	30	30.1	M8
DC6-210	6	210	260	180	247	249	29.5	29.6	M8
DC6-220	6	220	306	168	220	222	31.5	31.6	M8
DC6-225	6	225	243	187	275	275	30.5	30.6	M8
DC6-250	6	250	260	180	265	272	34.5	34.6	M8
DC6-310	6	310	295	178	346	366	46	46.2	M8
DC6-330	6	330	295	178	354	360	46.6	46.8	M8
DC6-380	6	380	295	178	404	410	55.3	55.8	M8
DC6-420	6	420	295	178	404	410	56.8	57.3	M8
DC8-170	8	170	260	182	266	271	34.3	34.8	M8
DC8-200	8	170	260	182	295	300	38.3	38.8	M8



# LiFePO4 Battery Pack



## Lithium Iron Phosphate (LiFePO4) Batteries

Due to the demand for energy saving strategies, CSBattery delivers a full range of battery power systems with multiple nominal voltages (12V/24V/48V/240V/etc.). It is smaller in size and lighter in weight, but it has longer cycle life, temperature durability is stronger, and energy storage is more efficient. With the accurate and reliable battery management system (BMS), our lithium battery power system is a better solution for achieving highest efficiency and reliability. After years of practice, we have the most extensive experience in backup power supply in the industry, and we will continue to provide the best battery products.

### Product Features

- Energy density is high. The volume and weight of lithium battery is 1/3 to 1/4 of the traditional lead acid battery with the same capacity.
- Energy conversion rate is 15% higher than that of a traditional lead acid battery, the advantage of energy saving is obvious. Self-discharge rate < 2% per month.
- Broad temperature adaptability. Products perform well at a temperature of -20° C to 60° C, without air conditioning system.
- Cycle durability for a single cell is 2000 cycles, which is 3 to 4 times more than the cycle durability of a traditional lead acid battery.
- Higher discharge rate, faster charging and discharging when there is a need for backup power supply for a period of 10 hours or less, we could reduce up to 50% of the capacity configuration, comparing to lead acid battery.
- High security. Our lithium battery is safe, electro chemical materials are stable, no fire or explosion under extreme conditions such as high temperature, short circuit, drop impact, piercing, etc
- Increased Flexibility: Modular Design enables deployment of up to four batteries in series and up to ten battery in parallel. ^ Optional LCD digital display. Optional LCD digital display can install in the front panel of battery and show battery voltage, capacity, current information, etc.

### BMS of LiFePO4 Battery

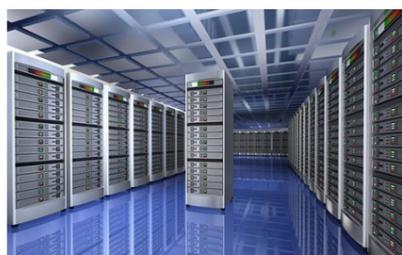
- Overcharge detection function
- Over discharge detection function
- Over current detection function
- Short detection function
- Balance function
- Temperature protection

### Standards

- IEC 60896-21/22:2004;
- IEC 61247-2014;
- DIN 43539-t5:1984;
- DIN 40742-1999;
- GB/T 22473-2008;
- Passed ISO9001,ISO4001
- OHSAS18001,CE,UL and Golden Sun Certification

### Applications

- Electric Vehicle, electric mobility
- Solar/wind energy storage system
- UPS, backup power
- Telecommunication
- Medical equipment
- Lighting and so on



## Main Parameters Table

Model	Voltage	Capacity	Dimension (mm)			Weight
	(V)	(Ah)	L	W	H	kgs
LFP Series LifePO4 Battery Replace SLA Battery						
LFP12V7.0	12	7	151	65	94	0.71
LFP12V12	12	12	151	99	99	1.5
LFP12V20	12	20	181	77	170	3.5
LFP12V40	12	40	267	77	172	5.4
LFP12V50	12	50	223	150	177	6.5
LFP12V60	12	60	223	150	177	7.2
LFP12V75	12	75	256	165	210	9.4
LFP12V100	12	100	330	173	216	14
LFP12V120	12	120	406	173	236	16
LFP12V150	12	150	490	171	240	20
LFP12V200	12	200	520	238	218	25
LFP24V10	24	10	181	77	170	3.5
LFP24V20	24	20	223	120	175	6
LFP24V50	24	50	330	173	216	13
LFP24V100	24	100	520	238	218	25
LFP24V150	24	150	520	266	220	39
LPR Series LifePO4 Battery 19'R						
LPR12V50	12	50	390	442	45	11
LPR12V100	12	100	365	442	88	17
LPR12V200	12	200	405	442	177	34
LPR24V10	24	10	240	442	45	7
LPR24V20	24	20	365	442	45	10
LPR24V50	24	50	365	442	88	16
LPR24V100	24	100	405	442	177	34
LPR24V200	24	200	573	442	210	57
LPR48V10	48	10	300	442	45	9
LPR48V20	48	20	300	442	88	14
LPR48V30	48	30	375	442	88	17
LPR48V50	48	50	405	442	133	33
LPR48V75	48	75	445	442	177	46
LPR48V100	48	100	475	442	210	53
LPR48V200	48	200	600	600	1000	145
LPR48V10H	51.2	10	300	442	45	9.4
LPR48V20H	51.2	20	300	442	88	14.7
LPR48V30H	51.2	30	375	442	88	17.9
LPR48V50H	51.2	50	405	442	133	34.7
LPR48V75H	51.2	75	445	442	177	48.3
LPR48V100H	51.2	100	475	442	210	55.7
LPR48V200H	51.2	200	600	600	1000	152.3



# HTB Series



## High-Temp Deep cycle Gel Batteries

NEWEST IN 2016, CSBattery HIGH TEMPERATURE LONG LIFE GEL BATTERY, BEST CHOICE TO WORK IN HOT/COLD TEMPERATURE SITES AND LONG LIFE OVER 15YEARS. Considering the challenge that when normal battery work in hot or cold environment the battery will be derate, we developed a new range type of battery adapted for these environments. We are proud to introduce High/COLD Temperature Long Life Deep Cycle GEL Battery-HTB series. Using thick plate design with special additives (super-C). This newly developed battery can work even high temperature up to 60° C or down to -20° C without the use of any air-conditioner.

## Product Features

HTB series is specially High-temperature sealed free maintenance deep cycle GEL battery with 15-20 years design life in float service, 30% more than standard Gel battery, and 50% more than Lead Acid AGM battery. It meets with UL, CE and ISO standards. With up-dated patented technology and high purity raw GEL materials, the HTB series battery maintains high consistency for better performance and reliable standby service life. It is designed specially for using under high and cold temperature sites.

- Three years warranty at 35-40° C average
- Able to operate at -20° C to 60° C
- Longer life and higher stability under high temp, environment (no air-con needed)
- Use super-C additives lead plates: Deep discharge recovery capability
- Cycle usage: 50% DOD, 1500 Cycle work in high/cold temp, area.

## Construction

- HTB series adopts super corrosion-resistant alloy and unique patented grid structure, so can improve the lead plates corrosion-resistant performance in high temperature.
- It adopts special positive negative lead plates ratio and unique nano gel electrolyte, so can improve battery over potential of hydrogen evolution effectively and high reduce the water loss in high temperature environment.
- Its paste formula is added anti-high temperature expanding agent, so can work continuously in high temperature environment.
- HTB's shell adopts anti-high temperature ABS material, so the battery inside will not be over heat lead to water loss because of high temperature environment, ensure the battery super long life and the shell will not swell even use in extreme high temperature area.
- HTB series adopts patented gel electrolyte by nano-meter fumed silica, which advantage is high heat capacity and excellent heat release performance, can avoid the thermal runaway problem of normal battery, and discharge capacity can increase by over 30% in low-temp area. So HTB battery can work very well in severe environment between -40 C-65 C.
- Its formula is added special super expanding agent which ensure battery discharge capacity is higher than other normal battery when work in low temperature, thus even HTB battery work in -40 \*C area, it can work stable and continuously.

## Standards

- IEC 60896-21/22:2004;
- IEC 61247-2014;
- DIN 43539-t5:1984;
- DIN 40742-1999;
- GB/T 22473-2008;
- Passed ISO9001,ISO4001
- OHSA18001,CE,UL and Golden Sun Certification

## Applications

- Electric Powered Vehicles
- Wheel Chairs
- BTS Stations
- Medical Equipment
- Solar and Wind
- Golf Cars and Buggies
- Power Tools
- Control System
- UPS systems
- Emergency systems



## Main Parameters Table

Model	Nominal Voltage (V)	Capacity (Ah)	Dimension (mm)				Net Weight kgs	Gross Weight kgs	Terminal
			Length	Width	Height	Total Height			
HTB12-14	12	14	152	99	96	102	3.8	3.9	F1/F2
HTB12-20	12	20	181	77	167	167	6	6.1	T1/L1
HTB12-24	12	24	166	175	126	126	8.3	8.4	M6
HTB12-26	12	26	165	126	174	179	8.4	8.5	M6
HTB12-35	12	35	196	130	155	167	10.5	10.7	M6
HTB12-40	12	40	198	166	174	174	14.2	14.4	M6
HTB12-55	12	55	229	138	208	212	16	16.5	M6
HTB12-70	12	70	350	167	178	178	23.3	23.8	M6
HTB12-75	12	75	260	169	208	227	25	25.5	M6
HTB12-85	12	85	260	169	208	227	26.1	26.6	M6
HTB12-90	12	90	307	169	211	216	28.2	28.7	M6
HTB12-100	12	100	307	169	211	216	30.2	30.7	M6
HTB12-110	12	110	328	172	218	222	33.5	34	M8
HTB12-120	12	120	407	173	210	233	39.2	39.7	M8
HTB12-135	12	135	344	172	280	285	40.8	41.3	M8
HTB12-150	12	150	484	171	241	241	45.5	46	M8
HTB12-180	12	180	532	206	216	222	56	56.5	M8
HTB12-200	12	200	532	206	216	222	58.6	59.1	M8
HTB12-230	12	230	522	240	219	225	65	65.5	M8
HTB12-250	12	250	520	269	203	207	71	71.5	M8
HTB12-300	12	300	520	269	220	226	77	77.5	M8
HTB6-200	6	200	306	168	220	222	30	30.1	M8
HTB6-210	6	210	260	180	247	249	29.5	29.6	M8
HTB6-220	6	220	306	168	220	222	31.5	31.6	M8
HTB6-225	6	225	243	187	275	275	30.5	30.6	M8
HTB6-250	6	250	260	180	265	272	34.5	34.6	M8
HTB6-310	6	310	295	178	346	366	46	46.2	M8
HTB6-330	6	330	295	178	354	360	46.6	46.8	M8
HTB6-380	6	380	295	178	404	410	55.3	55.8	M8
HTB6-420	6	420	295	178	404	410	56.8	57.3	M8
HTB8-170	8	170	260	182	266	271	34.3	34.8	M8
HTB8-200	8	170	260	182	295	300	38.3	38.8	M8





# Traction Battery



## Durable Traction/Forklift Batteries

CSBattery traction lead-acid batteries as a DC power widely supplied in forklifts, tractors and other equipment. Widely used in air ports, stations, ports, vegetables and fruit market, factory warehouses and so on. At the same time, it widely used in buses, sports and entertainment as a clean and pollution-free DC power supply . Battery size in line with Chinese GB standards, the British BS standards, the Germanic DIN standard, also respectively passed DIN / N60254-2 and IEC60254-2 standards.

## Product Features

- Long design life, more than 1500 cycles at 80% DOD
- Excellent cycle performance and recovery ability after deep discharge
- Excellent low temperature performance
- Reliable sealing structure
- Special design to prevent the short circuit of battery
- Automatic watering system and gas mixing system (optional)

## Construction

- No electrolyte and temperature stratification during partial or complete charging process, increased every cell's consistency in the battery tray.
- Less heating during recharging, 15° C lower than the normal recharging mode, allowing use in warm ambient conditions.
- More rapid battery availability for the same nominal charging current due to shorter charging time and therefore higher battery utilization.
- Top-grade raw and processed materials. Pure lead is 99.994% content, longer maintenance intervals, lower maintenance costs.
- Advanced technology tubular positive plate.
- Capacity for DIN product range: 120-1550Ah and for BS product range: 46- 1260Ah.
- Available both as 2V cells and as complete batteries with various voltages ranging from 12V to 96V.
- Fully insulated terminals.

## Standards

- DIN / N60254-2
- IEC60254-2
- Passed ISO9001,ISO4001
- OHS18001,CE,UL and Golden Sun Certification

## Applications

- Traction
- Forklift
- Mine/Factory Explosion-proof traction
- Electric Stacker
- Electric Truck
- Electric Flat Car
- Electric Locomotive



# Start-Stop Car Batteries



## Start-Stop AGM Car Batteries

With Start-Stop vehicles, the engine is switched off during short stops for instance at traffic lights in order to save fuel and to reduce co2 emissions by 5-10%.  
 Technology Focus : In response to co2 reduction targets set by EU that require engine to be shut off instead of idling while the vehicle is stopped, nearly all vehicle manufacturers launch Start-Stop platforms in Europe automotive battery.  
 Requirements : Battery is required to start engine more frequently and provide energy for device support while "stop" mode. Battery is integrated within a sophisticated energy and battery management system.  
 Battery Technology : Advanced AGM technology for: super high power and cold cranking ampere; very good charging acceptance performance; much longer cycle life compared to normal flooded car batteries.

## Advantage

- Innovative AGM technology (Absorbent Glass Mat) with high compression separator
- Latest OE technology for advanced Start-Stop vehicles.
- At least three to four times more cycle life and can meet the requirement of all Start-Stop vehicles and high-end luxury vehicles.
- High charging acceptance for absorbing large surges of electrical energy generated via brake energy recuperation.
- 100% leak-proof and spill-proof to 360°.
- Excellent starting power, so you can rely on the engine starting even at a low state of charge.
- Longer lifespan.
- Totally maintenance-free.

## Features & Benefits

- Superior starting power, high reserve capacity, and long lasting life.
- Maintenance-free advanced AGM technology battery built in same BCI group case/configuration.
- 100% sealed construction and completely spill-proof and leak-proof design is smart choice for your critical equipment.
- Flat plate design makes completed usage of active material, and provides maximum performance and efficiency.
- Special micro-porous glass separators can absorb electrolyte completely, eliminate acid spills and terminal corrosion.
- Tightly packed construction and calcium reinforced grids plates to prevent plate separation and guard against vibration damage.
- Easy fit and easy installation design.
- Superb dual terminal design delivers great starting and deep cycle service.
- Advanced plate casting machine assures the consistency of plate highest quality and optimum performance.

## Applications

- AGM start-stop battery is widely used for the vehicle with start/stop system
- Automotive
- Stereo Systems
- Boats & RVs
- Hydraulic Lifts
- Winches
- On-board Electronics



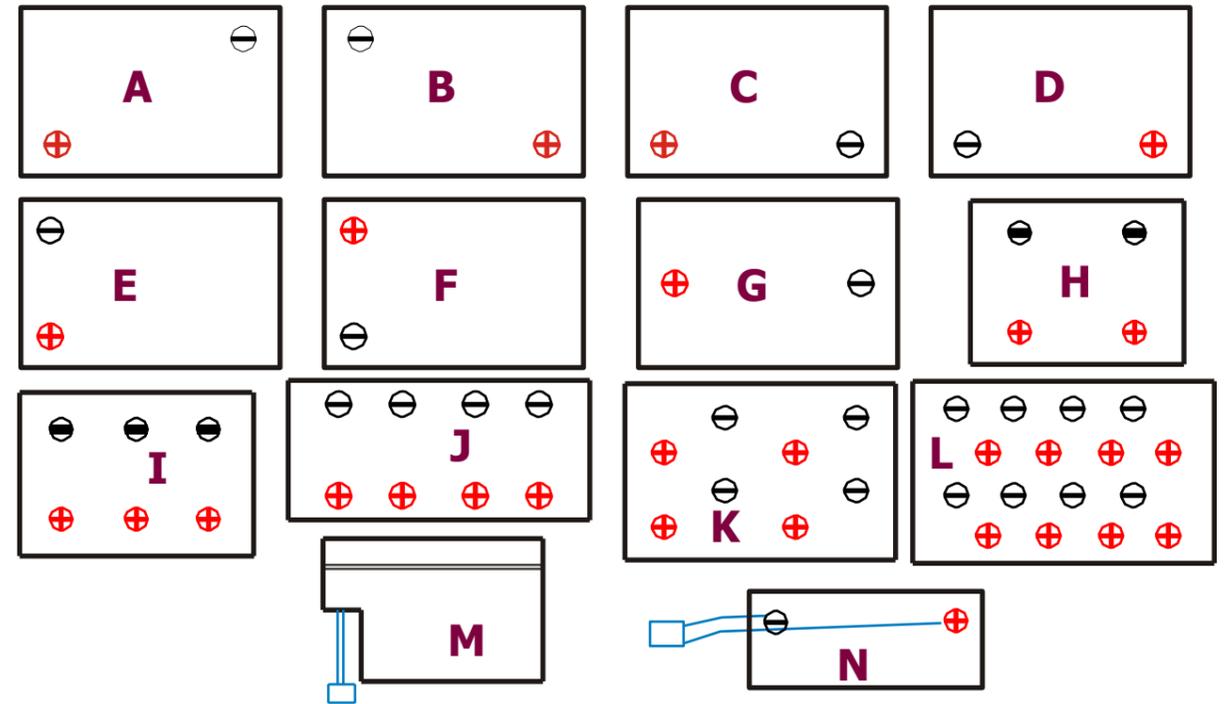
Model	Name In Chinese Market	Rated Voltage (V)	Rated Capacity (C20/Ah)	Reserve Capacity (min)	CCA (A)	Size (mm)			Weight (Kg)	Terminal Type
						L	M	H		
VRL2 60-H5	6-QTF-60	12	60	100	660	242	175	190	18.7+0.3	AP
VRL3 70-H6	6-QTF-70	12	70	120	720	278	175	190	21.5+0.3	AP
VRL4 80-H7	6-QTF-80	12	80	140	800	315	175	190	24.5+0.3	AP
VRL5 92-H8	6-QTF-92	12	92	160	850	353	175	190	27.0+0.3	AP
VRL6 105-H9	6-QTF-105	12	105	190	950	394	175	190	30.0+0.3	AP



# Terminal Drawing

 F1 Terminal	 F2 Terminal	 F3 Terminal	 F4 Terminal	 F5 Terminal
 F6 Terminal	 F7 Terminal	 F8 Terminal	 F9 Terminal	 F10 Terminal
 F11 Terminal	 F12 Terminal	 F13 Terminal	 F14 Terminal	 F15 Terminal
 F16 Terminal	 F17 Terminal	 F18 Terminal	 F19 Terminal	 F20 Terminal
 T23 Terminal	 T24 Terminal	 T25 Terminal	 T26 Terminal NEG	 L1 Terminal POS
 L2 Terminal	 T1 Terminal	 T9 Terminal	 F22 Terminal	

# Post Position



# Certificates



ISO9004, ISO14001, ISO18001,  
 CE 12V/6V/2V, IEC61427, MH63727-UL, IEC60896,  
 MSDS, CNAS L0748, CNAS IB0071

# Battery Assembling



# Our advantages

- \* One of TOP10 manufacturer in Guangdong lead-acid battery industry, and we have own lead plates workshop.
- \* More than 16 years experience in design, manufacture and export of AGM/GEL battery.
- \* ISO 9001 and 14001 certificated company, All batteries are complaint with standard ISO, UL, CE approved.
- \* Complete own production lines from lead material to finished batteries, and control the quality since origin, battery range from 0.8Ah to 3000Ah, 2V/4V/6V/8V/12V all series for choice.
- \* 100% load testing to ensure uniform capacity, strict quality control from IQC, PQC to QA to ensure defective rate less than 0.1%.

# CSBattery Projects

