

TCS® | SONGLI GROUP

TCS®

SONGLI BATTERY



SALES CENTER:

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FACTORY INFORMATION:

SONGLI (JINJIANG) NEW ENERGY TECHNOLOGY CO., LTD

Add: Songshan Development Area, Jinjiang, Fujian

FUJIAN MINHUA POWER SOURCE CO., LTD

Add: Longqiao Industrial Park, Anxi Economic Development Zone, Quanzhou, Fujian



SINCE 1995

TCS Sales Network ★ TCS FACTORY ● CUSTOMERS



Official Website



WeChat Homepage



Online Store
Power Battery



Online Store
Storage Battery

01-04

COMPANY PROFILES

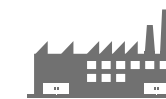
Founded in 1995, TCS Songli Battery is one of the earliest battery manufacturers in China, specializing in R&D, manufacturing and marketing for storage batteries.



05-08

PRODUCTION WORKSHOP

Professional manufacturing process;
First-class production facility;
Sophisticated technical know-how.



09-20

MOTORCYCLE BATTERY

Dry Charge Conventional Lead Acid Battery
Dry Charge Maintenance Free Lead Acid Battery
Sealed Maintenance Free Lead Acid Battery
Sealed Maintenance Free Gel Battery
All of them are basically applicable to universal models of motorcycle worldwide.



21-24

POWER BATTERY

They are mainly used in two-wheeler, three-wheeler and electric road vehicles. Common voltage of battery packs includes 36V, 48V, 60V and 72V, etc.



25-34

CAR BATTERY

There are two main types of batteries for large vehicles, Dry Charge Conventional Lead Acid Battery and Sealed Maintenance Free Battery, widely used in diverse cars and trucks.



35-46

STORAGE BATTERY

The industries Storage Battery being used cover Electric system, Electronic toys, Electric tools, Security system, Emergency lighting, Back-up power supply, Solar energy system and Wind power system, etc.





FACTORY VIEW



Office

Exhibition Room

Innovation Incubation Center

SINCE 1995

Songli Battery was founded in 1995, which specializes in advanced battery research, development, production and marketing. Songli Battery is one of the earliest battery brands in China. Company's products are widely used in motorcycles, electric bicycles, cars and industries and all kinds of special purposes with more than two hundred varieties and specifications.

After more than 20 years of development, Songli Battery keeps growing. The production base covers an area of more than 400,000 square meters with more than 3000 employees. It has a complete set of modern standard factory buildings, office buildings and employee apartment buildings. Songli Battery has advanced battery production lines and technology, and has been continuously introducing the world's leading automated assembly welding, auto wrapping machines and other equipments. Songli Battery actively cooperates with the government to develop the Non-Cadmium Container Formation Technology of battery, and constantly expands the self-brand advantage. The factory produces nearly 4,000,000 batteries per month, and the total annual production capacity is more than 6,000,000 KVAh.

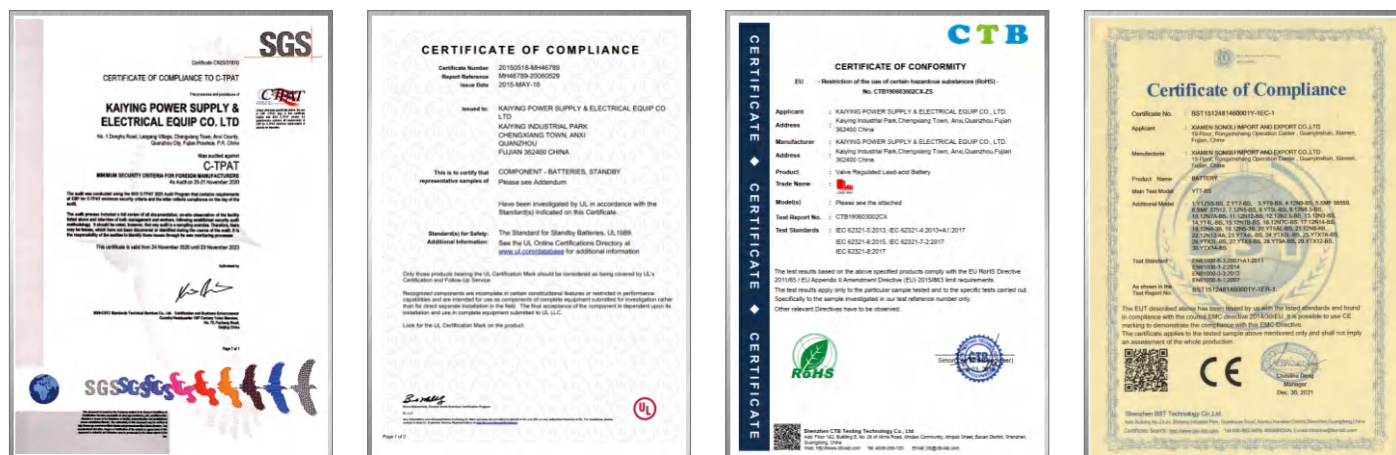


Songli Battery has become a major enterprise, which gradually develops into one of the largest domestic battery manufacturers. The company has perfect quality assurance system, and has passed ISO9001/14001/18001 quality management system certification. With rich experience in production of battery, perfect innovation system, good relationship with customers and reliable pre-sales, sales and after-sales service, company maintains the stable dealership in China and abroad and has service agencies in many cities. In overseas, the business has been expanded to the Middle East, America, Africa, Southeast Asia and more than 100 countries and regions.

In order to participate in market competition, Songli Battery has developed quickly through technical innovation, technology development, joint venture cooperation, merger and joint operations. The company has now formed a group business model with Hongkong Songli Group as the core, Xiamen Songli New Energy Technology Co., Ltd, Xiamen Songli Import and Export Co., Ltd and Jin Jiang Songli Battery Co., Ltd as subsidiaries, holding (participating) shares of the company, while constantly integrating market resources. It has invested and cooperated with many battery enterprises.

Enterprise certificate

We apply for the certifications for our products, to provide customers with the most powerful reputation guarantee ...



CERTIFICATES



TCS Brand Explanatory Comments

T-Technology Oriented: Based on lead acid battery products, seek and make researches on the new technologies of battery products and develop new products catering the market trend and requirements.

C-Customer Cared: Provide the high quality products for customers as well as improve the corporate philosophy on customer service and care.

S-Superior Quality: Centered on products quality and always insisted on providing superior quality batteries for customers.



PRODUCTION LINE



We have the international first-class battery production equipments and technologies, introducing and strictly following the international advanced standards and production process. With strict quality control procedures, to produce high quality products and provide a powerful guarantee, to lay a solid foundation for our reputation.





SINCE
1995

PRODUCT TYPE

Songli Battery was founded in 1995, which specializes in advanced battery research, development, production and marketing. Songli Battery is one of the earliest battery brands in China. Company's products are widely used in motorcycles, electric bicycles, cars and industries and all kinds of special purposes with more than two hundred varieties and specifications.



MOTORCYCLE BATTERY

Motorcycle Battery, there are four main categories: Dry Charged Conventional Lead Acid Battery, Dry Charged Maintenance-free Lead Acid Battery, Sealed Maintenance-free Lead Acid Battery, Sealed Maintenance-free Gel Lead Acid Battery.

BATTERY BASICS AND SAFETY

The Lead Acid Battery

Let's look first at the battery basics; what a battery is and how it works.

Lead acid batteries are used as a power source for vehicles that demand a constant and uninterrupted source of energy. Just about every vehicle today does. For example, street motorcycles need lights that operate when the engine isn't running. They get it from the battery-driven. Starting your vehicle depends on a battery.

Technically speaking, the battery is an electrochemical device that converts chemical energy to electrical energy. The first thing you notice inside a battery is the cells. Each cell has about two volts (actually, 2.12 to 2.2 volts, measured on a DC scale). A 6-volt battery will have three cells. A 12-volt battery, six cells.

Applicable models:



Color Box



Outer Box

BATTERY TYPE



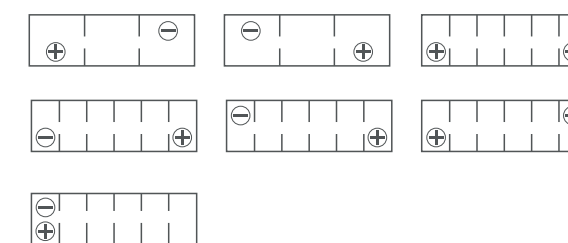
Dry Charge Conventional Lead Acid Battery

Dry Charge Maintenance Free Lead Acid Battery

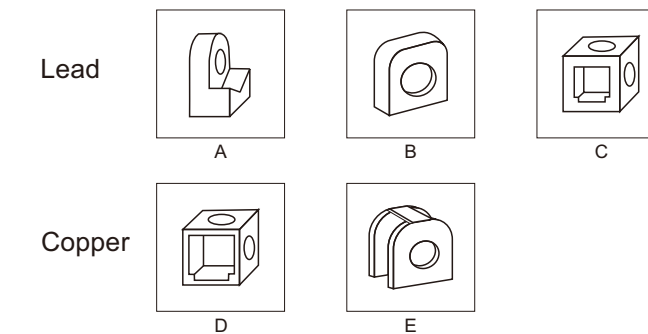
Sealed Maintenance Free; Lead Acid Battery

Sealed Maintenance Free; Gel Battery

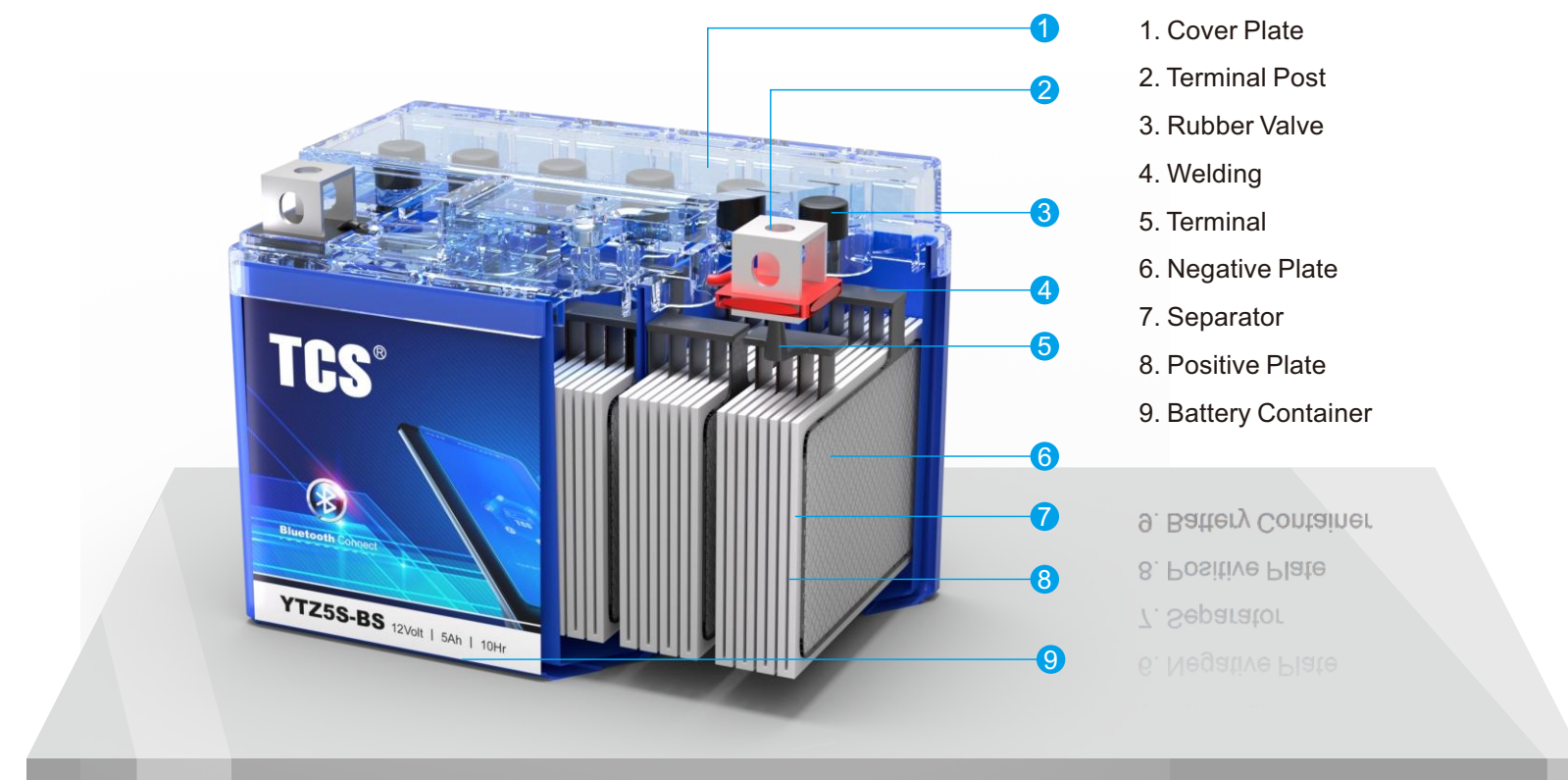
TERMINAL DIRECTION:



TERMINAL SHAPE:



BATTERY STRUCTURE



1. Cover Plate
2. Terminal Post
3. Rubber Valve
4. Welding
5. Terminal
6. Negative Plate
7. Separator
8. Positive Plate
9. Battery Container

6. Battery Container
8. Positive Plate
7. Separator
6. Negative Plate

CHARGING MATTERS NEEDING ATTENTION

Read the instruction of charger carefully before use. Charger for motorcycle use usually adopts chargers with method of alternate constant-current/ voltage, which enjoy advantages of short-time recharge and high-efficiency.

- > Charging time: 10-12 hours usual
- > Charging current: Charging current value (A)=capacity of battery (Ah)*1/10

For example

Model	Capacity	Charging current
12N3-BS	3Ah	0.3A
GT4B-5	4Ah	0.4A
12N7A-BS	7Ah	0.7A
YT9A-BS	9Ah	0.9A

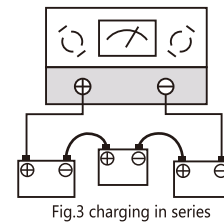


Fig.3 charging in series

- > Charger is required to be used under guidance of instructions to the charger lest damaging charger or battery.
- > When connecting charger and battery, be aware not misconnecting polar wrongly and bear principle of linking positive polar of charger to positive polar of battery, and linking negative polar of charger to negative polar of battery.
- > If several batteries are subject to recharge together, number of batteries should depend on capacity of the charger(see the instructionsto charger), and series connection is required.NOTE:Battery long-term stored in status of discharge may lose function due to rejecting recharge.
- > Temperature during recharge: temperature in the course of recharge will increase and over-high temperature will impose adverse effect on battery. If the temperature is higher than 45°C, cooling of the battery is required.
- > Fire spark is forbidden during recharge: a great amount of mixed gases as oxygen and hydrogen will appear during course of recharge, if fire spark apperas in the near, it may cause explosion of the battery.

BATTERY'S FAULTS AND HANDLING

Location	Status	Cauues	Tactics
Electrolyte	Terminal voltage is lowerthan 2.10v/cell (3 cellssustain 6v and 6 cells sustain 12v)	<ul style="list-style-type: none"> •Insufficient recharge: There have faults in the motorcycle's recharge system •Over-discharge: Overload,insufficient capacity of generat or of the motorcycle. 	Recharge
	Insufficient electeolyte	<ul style="list-style-type: none"> •Over-recharge •Flowing away of elcetroyte due to upside-down of the motorcycle 	Supple mentation of water and electrolyte
	Normal display of the voltage but discharge fails	<ul style="list-style-type: none"> •Poor contact of terminals •Short-circuit in connecting line 	Repair and maintenance
Battery container and cover	<ul style="list-style-type: none"> •Damaging •Cracks •Electrolyte leakage 	<ul style="list-style-type: none"> •Bounced at landing •Exploration by fire spark •Over-loose or over-tight assemblage •Clogged air outlet opening •Loosed bolt of electrolyte opening 	Repair and discard
	•Deformation	<ul style="list-style-type: none"> •Over-heat of electrolyte dueto over-current recharge •Over-tight assemblage atbea-er •Over-high preset of voltage output at motorcycle's adjuster •Over-high temperature of surroundings 	Repair and discard
Filling ports	<ul style="list-style-type: none"> •Rift •Electrolyte leakage 	<ul style="list-style-type: none"> •Over-tingt screwed •Poor seal packing ring •Over-loose screwed 	Adjusting or displacing parts
Terminals	•Erosion	<ul style="list-style-type: none"> •Electrolyte leakage •Electrolyte leakage at perforation part between capand polar pole 	Repair or discard
	•Melting damage	<ul style="list-style-type: none"> •Over-heat or breakdown due to motorcycle's short-circuit •Electric erosion at contact areas •Recharge with over-big current 	
	•Damaging	<ul style="list-style-type: none"> •Misuse 	

Dry Charge Conventional Lead Acid Battery

 <p>Model:6N2-2A Voltage(V) : 6 Capacity(Ah) : 2 Weight(kg) : 0.37 Dimension(mm) : 70*46*95</p>	 <p>Model:6N4 Voltage(V) : 6 Capacity(Ah) : 4 Weight(kg) : 0.44 Dimension(mm) : 72*71*95</p>	 <p>Model:12N3 Voltage(V) : 12 Capacity(Ah) : 3 Weight(kg) : 0.96 Dimension(mm) : 98*56*113</p>
 <p>Model:12N4-3B Voltage(V) : 12 Capacity(Ah) : 4 Weight(kg) : 1.15 Dimension(mm) : 120*70*93</p>	 <p>Model:12N5-3B Voltage(V) : 12 Capacity(Ah) : 5 Weight(kg) : 1.36 Dimension(mm) : 120*62*130</p>	 <p>Model:12N6-3B Voltage(V) : 12 Capacity(Ah) : 6 Weight(kg) : 1.43 Dimension(mm) : 137*72*94</p>
 <p>Model:12N6.5-3B Voltage(V) : 12 Capacity(Ah) : 6.4 Weight(kg) : 1.54 Dimension(mm) : 140*67*102</p>	 <p>Model:12N7-4A Voltage(V) : 12 Capacity(Ah) : 7 Weight(kg) : 1.75 Dimension(mm) : 137*75*133</p>	 <p>Model:12N7B-3A Voltage(V) : 12 Capacity(Ah) : 7 Weight(kg) : 1.72 Dimension(mm) : 150*60*131</p>
 <p>Model:12N7B-4B Voltage(V) : 12 Capacity(Ah) : 7 Weight(kg) : 1.80 Dimension(mm) : 149*87*96</p>	 <p>Model:12N9-4B Voltage(V) : 12 Capacity(Ah) : 9 Weight(kg) : 1.95 Dimension(mm) : 135*75*136</p>	 <p>Model:12N10-3B Voltage(V) : 12 Capacity(Ah) : 10 Weight(kg) : 2.30 Dimension(mm) : 135*92*146</p>
 <p>Model:12N12-4A Voltage(V) : 12 Capacity(Ah) : 12 Weight(kg) : 2.65 Dimension(mm) : 134*81*160</p>	 <p>Model:12N14-3A Voltage(V) : 12 Capacity(Ah) : 14 Weight(kg) : 3.06 Dimension(mm) : 134*89*166</p>	 <p>Model:YB7-A Voltage(V) : 12 Capacity(Ah) : 7 Weight(kg) : 1.90 Dimension(mm) : 137*75*133</p>
 <p>Model:YB16CL-B Voltage(V) : 12 Capacity(Ah) : 16 Weight(kg) : 3.75 Dimension(mm) : 175*100*175</p>	 <p>Model:YB30CL-B Voltage(V) : 12 Capacity(Ah) : 30 Weight(kg) : 5.70 Dimension(mm) : 168*131*192</p>	 <p>Model:Y60-N30-A Voltage(V) : 12 Capacity(Ah) : 30 Weight(kg) : 5.70 Dimension(mm) : 182*124*172</p>

Notic: All the data in the brochure are just for your reference. If the actual data differ from the expected data, the former should prevail. The company reserves the final interpretation.

No.	Model No.	Volts (v)	Capacity (Ah) 10HR	Dimension (±2mm)			Dry Weight (Kg±3%)	Acid Volume(L)	Assembly Figure	Regular charge current(AMP)
				L	W	H				
001	6N2-2A	6	2.0	70	46	95	0.37	0.14		0.20
002	6N2A-2C	6	2.0	70	46	103	0.42	0.15		0.20
003	6N4-2A	6	4.0	72	71	95	0.44	0.20		0.40
004	6N4A-4D	6	4.0	60	56	125	0.63	0.17		0.40
005	6N4B-2A	6	4.0	100	47	96	0.51	0.21		0.40
006	6N4C-1B	6	4.0	70	70	103	0.61	0.16		0.40
007	6N4.5-1D	6	4.5	124	50	105	0.78	0.26		0.45
008	6N5.5-1D	6	5.5	88	68	97	0.80	0.27		0.55
009	6N6	6	6.0	99	57	111	0.85	0.27		0.60
010	6N11A-1B	6	11.0	121	59	129	1.31	0.41		1.10
011	6N11-2D	6	11.0	151	71	100	1.46	0.45		1.00
012	6N12-1B	6	12.0	104	77	141	1.48	0.40		1.20
013	6N12A-2C	6	12.0	155	56	114	1.38	0.42		1.20
014	6N18B-1B	6	14.0	106	82	143	1.73	0.57		1.40
015	6N18B-3B	6	13.0	122	86	140	1.70	0.60		1.30
016	B39-6	6	7.0	126	48	126	0.93	0.33		0.70
017	B49-6	6	10.0	91	83	160	1.18	0.54		1.00
018	B38-6A	6	13.0	119	83	161	1.52	0.77		1.30
019	12N3	12	3.0	98	56	113	0.96	0.30		0.30
020	12N4-3B	12	4.0	120	70	93	1.15	0.31		0.40
021	12N5-3B	12	5.0	120	62	130	1.36	0.40		0.50
022	12N5-4B	12	5.0	120	62	130	1.36	0.41		0.50
023	12N5.5A-3B	12	5.5	104	91	115	1.71	0.45		0.55
024	12N5.5-3A	12	5.5	138	61	131	1.59	0.48		0.55
025	12N5.5-3B	12	5.5	138	61	131	1.59	0.48		0.55
026	12N6-3B	12	6.0	137	72	94	1.43	0.34		0.60
027	12N6-4A	12	6.0	141	73	94	1.45	0.34		0.60
028	12N6-4B	12	6.0	141	73	94	1.45	0.34		0.60
029	12N6.5-3B	12	6.5	140	67	102	1.54	0.41		0.65
030	12N6.5	12	6.5	138	72	107	1.65	0.41		0.65
031	12N7-3A	12	7.0	137	75	133	1.75	0.64		0.70
032	12N7-3B	12	7.0	137	75	133	1.75	0.64		0.70
033	12N7-4A	12	7.0	137	75	133	1.75	0.64		0.70
034	12N7-4B	12	7.0	137	75	133	1.75	0.64		0.70
035	12N7B-4B	12	7.0	149	87	96	1.80	0.64		0.70
036	12N7	12	7.0	135	75	120	1.73	0.58		0.70
037	12N7B-3A	12	7.0	150	60	131	1.72	0.50		0.70
038	12N7C-3D	12	8.0	130	90	116	2.35	0.50		0.80
039	12N7D-3B	12	7.0	134	76	141	1.82	0.66		0.70
040	12N9-3A	12	9.0	135	75	136	1.88	0.59		0.90
041	12N9-3B	12	9.0	135	75	136	1.88	0.59		0.90
042	12N9-4A	12	9.0	135	75	136	1.95	0.59		0.90
043	12N9-4B	12	9.0	135	75	136	1.95	0.59		0.90
044	12N10-3A	12	10.0	135	92	146	2.30	0.78		1.00
045	12N10-3B	12	10.0	135	92	146	2.30	0.78		1.00

*The battery weight only for reference

No.	Model No.	Volts (v)	Capacity (Ah) 10HR	Dimension (±2mm)			Dry Weight (Kg±3%)	Acid Volume(L)	Assembly Figure	Regular charge current(AMP)
				L	W	H				
046	12N11-3B	12	11.0	134	90	155	2.60	0.84		1.10
047	12N12A-4A	12	12.0	134	81	160	2.65	0.73		1.20
048	12N12-3A	12	12.0	200	75	135	2.65	0.96		1.20
049	12N12-3B	12	12.0	200	75	135	2.65	0.96		1.20
050	12N14-3A	12	14.0	134	89	166	3.06	0.87		1.40
051	12N14-3B	12	14.0	134	89	166	3.06	0.87		1.40
052	12N14-4A	12	14.0	134	89	166	3.06	0.87		1.40
053	12N14-4B	12	14.0	134	89	166	3.06	0.87		1.40
054	12N18-3	12	18.0	205	90	160	4.00	1.35		1.80
055	12N24-3	12	24.0	182	124	172	4.87	1.80		2.40
056	12N28-3	12	28.0	182	124	177	5.50	1.80		2.80
057	YB2.5L	12	2.5	79	70	105	0.73	0.24		0.25
058	YB3L-A	12	3.0	98	56	113	1.02	0.23		0.30
059	YB3L-B	12	3.0	98	56	113	1.02	0.23		0.30
060	YB4L-A	12	4.0	120	70	93	1.15	0.29		0.40
061	YB4L-B	12	4.0	120	70	93	1.15	0.29		0.40
062	YB5L-A	12	5.0	120	62	130	1.36	0.40		0.50
063	YB6-A	12	6.0	137	72	94	1.46	0.34		0.60
064	YB6-B	12	6.0	137	72	94	1.46	0.34		0.60
065	YB7-A	12	7.0	137	75	133	1.90	0.64		0.70
066	YB7-B	12	7.0	137	75	133	1.90	0.64		0.70
067	YB7B-A	12	7.0	150	60	131	1.72	0.50		0.70
068	YB7B-B	12	7.0	150	60	131	1.72	0.50		0.70
069	YB7C-A	12	8.0	130	90	116	2.26	0.50		0.80
070	YB7A-A	12	8.0	136	76	144	2.06	0.64		0.80
071	YB9-A	12	9.0	135	75	136	1.95	0.59		0.90
072	YB9-B	12	9.0	135	75	136	1.95	0.59		0.90
073	YB10-A	12	11.0	135	92	146	2.35	0.72		1.10
074	YB10-B	12	11.0	135	92	146	2.35	0.72		1.10
075	YB10A-A	12	11.0	134	90	158	2.73	0.72		1.10
076	YB12-A	12	12.0	134	81	160	2.69	0.72		1.20
077	YB12-B	12	12.0	134	81	160	2.69	0.72		1.20
078	YB12C-A	12	12.0	134	81	176	2.97	0.70		1.20
079	YB12B-B2	12	12.0	134	91	131	2.97	0.78		1.20
080	YB14A-A	12	14.0	134	89	176	3.06	0.87		1.40
081	YB14A-B	12	14.0	134	89	176	3.06	0.87		1.40
082	YB16B-A	12	16.0	158	89	160	3.50	1.02		1.60
083	YB16L-A	12	19.0	175	100	155	4.59	1.23		1.90
084	YB16L-B	12	19.0	175	100	155	4.59	1.23		1.90
085	YB16CL-B	12	19.0	175	100	175	3.85	1.23		1.90
086	Y60-N24L-A	12	28.0	182	124	172	4.87	1.77		2.80
087	Y60-N30L-A	12	28.0	182	124	172	5.70	1.77		2.80
088	YB30L-B	12	30.0	168	131	176	5.70	1.74		3.00
089	YB30CL-B	12	30.0	168	131	192	5.70	1.74		3.00

*The battery weight only for reference

Dry Charge Maintenance Free Lead Acid Battery

 <p>Model: YTX3L-BS Voltage(V) : 12 Capacity(Ah) : 3 Weight(kg) : 0.94 Dimension(mm) : 97*56*108</p>	 <p>Model: YTX4L-BS Voltage(V) : 12 Capacity(Ah) : 4 Weight(kg) : 1.10 Dimension(mm) : 112*68*86</p>	 <p>Model: YTZ5S-BS Voltage(V) : 12 Capacity(Ah) : 4 Weight(kg) : 1.17 Dimension(mm) : 112*68*86</p>
 <p>Model: YT5AL-BS Voltage(V) : 12 Capacity(Ah) : 5 Weight(kg) : 1.40 Dimension(mm) : 119*60*126</p>	 <p>Model: YTX5L-BS Voltage(V) : 12 Capacity(Ah) : 5 Weight(kg) : 1.43 Dimension(mm) : 113*69*105</p>	 <p>Model: YTX6.5L-BS Voltage(V) : 12 Capacity(Ah) : 6.5 Weight(kg) : 1.55 Dimension(mm) : 138*65*100</p>
 <p>Model: DB7B-BS Voltage(V) : 12 Capacity(Ah) : 7 Weight(kg) : 1.69 Dimension(mm) : 150*67*93</p>	 <p>Model: YTX7L-BS Voltage(V) : 12 Capacity(Ah) : 7 Weight(kg) : 1.78 Dimension(mm) : 113*70*126</p>	 <p>Model: YTX7A-BS Voltage(V) : 12 Capacity(Ah) : 7 Weight(kg) : 1.80 Dimension(mm) : 148*86*93</p>
 <p>Model: YTX7BL-BS Voltage(V) : 12 Capacity(Ah) : 7 Weight(kg) : 1.75 Dimension(mm) : 150*60*130</p>	 <p>Model: YT9A-BS Voltage(V) : 12 Capacity(Ah) : 9 Weight(kg) : 2.12 Dimension(mm) : 135*75*134</p>	 <p>Model: YT9B-BS Voltage(V) : 12 Capacity(Ah) : 9 Weight(kg) : 2.10 Dimension(mm) : 150*68*105</p>
 <p>Model: YTX9-BS Voltage(V) : 12 Capacity(Ah) : 9 Weight(kg) : 2.22 Dimension(mm) : 150*86*105</p>	 <p>Model: YTZ10-BS Voltage(V) : 12 Capacity(Ah) : 10 Weight(kg) : 2.48 Dimension(mm) : 150*87*95</p>	 <p>Model: YTZ12-BS Voltage(V) : 12 Capacity(Ah) : 12 Weight(kg) : 2.93 Dimension(mm) : 150*87*110</p>
 <p>Model: YTX12-BS Voltage(V) : 12 Capacity(Ah) : 12 Weight(kg) : 2.65 Dimension(mm) : 150*85*130</p>	 <p>Model: YTX14-BS Voltage(V) : 12 Capacity(Ah) : 14 Weight(kg) : 3.05 Dimension(mm) : 150*87*145</p>	 <p>Model: YTX20-BS Voltage(V) : 12 Capacity(Ah) : 20 Weight(kg) : 4.04 Dimension(mm) : 175*85*154</p>

Notice: All the data in the brochure are just for your reference. If the actual data differ from the expected data, the former should prevail.
The company reserves the final interpretation.

No.	Model No.	Volts (v)	Capacity (Ah) 10HR	Dimension (±2mm)			Dry Weight (Kg±3%)	ACID VOLUME(L)	Assembly Figure	Regular charge current(AMP)
				L	W	H				
001	YTX2.5L-BS	12	2.5	79	70	105	0.67	0.19		0.25
002	YTX2.5L-BS	12	2.5	79	70	105	0.72	0.19		0.25
003	YTX3L-BS	12	3.0	97	56	108	0.94	0.20		0.30
004	YTX4L-BS	12	3.5	112	68	86	1.02	0.20		0.40
005	YTX4L-BS	12	4.0	112	68	86	1.10	0.20		0.40
006	YTZ5S-BS	12	4.0	112	68	86	1.17	0.20		0.40
007	YTX5L-BS	12	5.0	113	69	105	1.43	0.26		0.50
008	YTZ7S-BS	12	6.0	113	69	105	1.56	0.30		0.60
009	YT5AL-BS	12	5.0	119	60	126	1.40	0.33		0.50
010	YTX6.5L-BS	12	6.5	138	65	100	1.55	0.34		0.65
011	YTX7-BS	12	7.0	113	70	126	1.78	0.36		0.70
012	YTX7L-BS	12	7.0	113	70	126	1.78	0.36		0.70
013	YTX7A-BS	12	7.0	148	86	93	1.80	0.39		0.70
014	YTX7BL-BS	12	7.0	150	60	130	1.75	0.39		0.70
015	YTX9-BS	12	9.0	150	86	105	2.22	0.45		0.90
016	YTX9L-BS	12	9.0	150	86	105	2.22	0.45		0.90
017	YTR9-BS	12	9.0	150	86	105	2.33	0.45		0.90
018	YT9A-BS	12	9.0	135	75	134	2.12	0.50		0.90
019	YT9B-BS	12	9.0	150	68	105	2.07	0.50		0.90
020	YTZ10-BS	12	10.0	150	87	95	2.48	0.55		1.00
021	YTX12-BS	12	12.0	150	85	130	2.65	0.58		1.20
022	YTX12L-BS	12	12.0	150	85	130	2.65	0.58		1.20
023	YT12A-BS	12	12.0	150	87	106	2.31	0.49		1.20
024	YT12B-BS	12	12.0	150	70	130	2.63	0.54		1.20
025	YTZ12-BS	12	12.0	150	87	110	2.93	0.55		1.20
026	YTX14-BS	12	14.0	150	87	145	3.05	0.73		1.40
027	YTX14L-BS	12	14.0	150	87	145	3.05	0.73		1.40
028	YTX16-BS	12	16.0	150	87	159	3.85	0.77		1.60
029	YTX16L-BS	12	16.0	150	87	159	3.85	0.77		1.60
030	YTX20-BS	12	20.0	175	85	154	4.04	0.89		2.00
031	YTX20L-BS	12	20.0	175	85	154	4.04	0.89		2.00
032	YTX20CH-BS	12	20.0	150	85	161	4.00	0.81		2.00
033	YTX30L-BS	12	30.0	168	127	177	5.60	1.50		3.00
034	DB5L-BS	12	5.0	119	60	126	1.40	0.33		0.50
035	DB7B-BS	12	7.0	150	67	93	1.69	0.33		0.70
036	DB7BL-BS	12	7.0	150	67	93	1.69	0.33		0.70
037	DB7-BS	12	7.0	136	76	133	1.88	0.50		0.70
038	DB7L-BS	12	7.0	136	76	133	1.88	0.50		0.70
039	DB9-BS	12	9.0	135	75	134	2.12	0.50		0.90
040	DB10-BS	12	11.0	134	89	145	3.07	0.55		1.10
041	DB10L-BS	12	11.0	134	89	145	3.07	0.55		1.10
042	DB12A-BS	12	12.0	134	80	160	3.38	0.61		1.20
043	DB12AL-BS	12	12.0	134	80	160	3.38	0.61		1.20

*The battery weight only for reference

Sealed Maintenance Free Lead Acid Battery

 <p>Model: 6N4-BS Voltage(V) : 6 Capacity(Ah) : 4 Weight(kg) : 0.75 Dimension(mm) : 71*71*94</p>	 <p>Model: 12N2.5-BS Voltage(V) : 12 Capacity(Ah) : 2.5 Weight(kg) : 1.11 Dimension(mm) : 80*77*105</p>	 <p>Model: 12N3-BS Voltage(V) : 12 Capacity(Ah) : 3 Weight(kg) : 1.16 Dimension(mm) : 98*56*110</p>
 <p>Model: GT4B-5-BS Voltage(V) : 12 Capacity(Ah) : 2.3 Weight(kg) : 0.87 Dimension(mm) : 115*39*87</p>	 <p>Model: YT4L-BS Voltage(V) : 12 Capacity(Ah) : 4 Weight(kg) : 1.38 Dimension(mm) : 113*69*89</p>	 <p>Model: YTZ5S-BS Voltage(V) : 12 Capacity(Ah) : 4.5 Weight(kg) : 1.45 Dimension(mm) : 113*69*85</p>
 <p>Model: YT5L-BS Voltage(V) : 12 Capacity(Ah) : 5 Weight(kg) : 1.75 Dimension(mm) : 113*69*107</p>	 <p>Model: YT5L-BS Voltage(V) : 12 Capacity(Ah) : 5 Weight(kg) : 1.75 Dimension(mm) : 113*69*105</p>	 <p>Model: 12N5-BS Voltage(V) : 12 Capacity(Ah) : 5 Weight(kg) : 1.88 Dimension(mm) : 119*60*129</p>
 <p>Model: 12N6.5-BS Voltage(V) : 12 Capacity(Ah) : 6.5 Weight(kg) : 1.98 Dimension(mm) : 138*66*121</p>	 <p>Model: 12N7A-BS Voltage(V) : 12 Capacity(Ah) : 7 Weight(kg) : 2.25 Dimension(mm) : 113*69*132</p>	 <p>Model: 12N7B-BS Voltage(V) : 12 Capacity(Ah) : 7 Weight(kg) : 2.20 Dimension(mm) : 147*59*130</p>
 <p>Model: 12N7C-BS Voltage(V) : 12 Capacity(Ah) : 7 Weight(kg) : 2.58 Dimension(mm) : 136*76*123</p>	 <p>Model: YT7-BS Voltage(V) : 12 Capacity(Ah) : 7 Weight(kg) : 2.48 Dimension(mm) : 149*85*93</p>	 <p>Model: 12N9-BS Voltage(V) : 12 Capacity(Ah) : 9 Weight(kg) : 2.81 Dimension(mm) : 136*76*134</p>
 <p>Model: YT9-BS Voltage(V) : 12 Capacity(Ah) : 8.5 Weight(kg) : 2.62 Dimension(mm) : 150*86*107</p>	 <p>Model: 12N12-BS Voltage(V) : 12 Capacity(Ah) : 11 Weight(kg) : 3.40 Dimension(mm) : 150*86*131</p>	 <p>Model: 12N14-BS Voltage(V) : 12 Capacity(Ah) : 11 Weight(kg) : 3.8 Dimension(mm) : 132*89*163</p>

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No.	Model No.	Volts (v)	Capacity (Ah) 10HR	Dimension (±2mm)			Dry Weight (Kg±3%)	CCA -18°C(A)	Assembly Figure	Regular charge current(AMP)
				L	W	H				
001	6N4-BS	6	4.0	71	71	94	0.75	N/A		0.40
002	12N2.5-BS	12	2.5	80	77	105	1.11	25		0.25
003	12N3-BS	12	3.0	98	56	110	1.16	30		0.30
004	GT4B-5-BS	12	2.3	115	39	87	0.87	25		0.23
005	YTR4A-BS	12	3.3	115	50	85	1.07	30		0.33
006	YT4L-BS	12	3.8	113	69	85	1.28	40		0.38
007	YT4L-BS	12	4.0	113	69	85	1.36	45		0.40
008	YT4L-BS	12	4.0	113	69	85	1.40	47		0.40
009	YTZ5S-BS	12	4.5	113	69	85	1.45	50		0.45
010	YTZ5S-BS	12	4.5	113	69	85	1.48	55		0.45
011	YT4L-BS	12	4.0	113	69	89	1.38	45		0.40
012	YTZ5S-BS	12	4.5	113	69	89	1.45	50		0.45
013	YT5L-BS	12	4.8	113	69	105	1.65	60		0.48
014	YT5L-BS	12	5.0	113	69	107	1.75	65		0.50
015	YT5L-BS	12	5.5	113	69	107	2.00	75		0.55
016	YTZ7V-BS	12	5.0	113	69	122	1.95	70		0.50
017	YTZ7V-BS	12	7.0	113	69	122	2.15	80		0.70
018	12N5-BS	12	4.8	119	60	129	1.78	60		0.48
019	12N5-BS	12	5.0	119	60	129	1.88	65		0.50
020	12N6.5-BS	12	6.5	138	66	101	1.98	70		0.65
021	12N7A-BS	12	7.0	113	69	132	2.25	80		0.70
022	12N7B-BS	12	7.0	147	59	130	2.20	75		0.70
023	12N7C-BS	12	7.0	136	76	123	2.58	74		0.70
024	YT7-BS	12	7.0	149	85	93	2.48	90		0.70
025	YT7B-BS	12	7.0	150	65	95	2.15	80		0.70
026	YT9B-BS	12	9.0	150	70	105	2.93	115		0.90
027	12N9-BS	12	7.0	136	76	134	2.62	75		0.70
028	12N9-BS	12	9.0	136	76	134	2.81	85		0.90
029	YT9-BS	12	7.5	150	86	107	2.62	90		0.75
030	YT9-BS	12	8.5	150	86	107	3.00	110		0.85
031	YTZ10S-BS	12	8.6	150	87	95	2.75	100		0.86
032	YTZ12S-BS	12	12.0	150	86	110	3.30	140		1.20
033	12N12-BS	12	11.0	150	86	131	3.40	90		1.10
034	YB12-BS	12	11.0	150	86	131	3.40	120		1.10
035	YT12B-BS	12	12.0	150	70	130	3.64	125		1.20
036	YT14B-BS	12	14.0	151	87	145	4.54	150		1.40
037	12N14-BS	12	11.0	132	89	163	3.80	100		1.10
038	YB14-BS	12	14.0	132	89	163	4.80	160		1.30
039	YTX16-BS	12	16.0	151	87	161	5.17	200		1.40
040	YTX20HL-BS	12	20.0	175	87	155	6.21	210		2.00
041	YTX24HL-BS	12	24.0	205	87	162	7.40	280		2.40
042	12N24-BS	12	24.0	188	125	175	6.90	280		2.40
043	12N28-BS	12	28.0	188	125	175	7.05	300		2.80
044	12N30L-BS	12	30.0	168	127	177	9.43	320		3.00

Sealed Maintenance Free Gel Battery

 <p>Model: 12N2.5-BS Voltage(V) : 12 Capacity(Ah) : 2.5 Weight(kg) : 1.11 Dimension(mm) : 80*77*105</p>	 <p>Model: 12N3-BS Voltage(V) : 12 Capacity(Ah) : 3 Weight(kg) : 1.16 Dimension(mm) : 98*56*110</p>	 <p>Model: YT4L-BS Voltage(V) : 12 Capacity(Ah) : 4 Weight(kg) : 1.36 Dimension(mm) : 113*69*87</p>
 <p>Model: YTZ5S-BS Voltage(V) : 12 Capacity(Ah) : 4.5 Weight(kg) : 1.45 Dimension(mm) : 113*69*87</p>	 <p>Model: YT5L-BS Voltage(V) : 12 Capacity(Ah) : 5 Weight(kg) : 1.73 Dimension(mm) : 113*69*105</p>	 <p>Model: 12N5-BS Voltage(V) : 12 Capacity(Ah) : 5 Weight(kg) : 1.88 Dimension(mm) : 119*60*129</p>
 <p>Model: 12N6.5-BS Voltage(V) : 12 Capacity(Ah) : 6.5 Weight(kg) : 1.96 Dimension(mm) : 138*66*101</p>	 <p>Model: 12N7A-BS Voltage(V) : 12 Capacity(Ah) : 7 Weight(kg) : 2.20 Dimension(mm) : 113*69*130</p>	 <p>Model: 12N7B-BS Voltage(V) : 12 Capacity(Ah) : 7 Weight(kg) : 2.18 Dimension(mm) : 147*59*130</p>
 <p>Model: 12N7C-BS Voltage(V) : 12 Capacity(Ah) : 7 Weight(kg) : 2.58 Dimension(mm) : 136*76*123</p>	 <p>Model: YT7-BS Voltage(V) : 12 Capacity(Ah) : 7 Weight(kg) : 2.45 Dimension(mm) : 149*85*93</p>	 <p>Model: 12N9-BS Voltage(V) : 12 Capacity(Ah) : 9 Weight(kg) : 2.77 Dimension(mm) : 136*76*134</p>
 <p>Model: YT9-BS Voltage(V) : 12 Capacity(Ah) : 7.5 Weight(kg) : 2.62 Dimension(mm) : 150*86*107</p>	 <p>Model: 12N12-BS Voltage(V) : 12 Capacity(Ah) : 12 Weight(kg) : 3.40 Dimension(mm) : 150*86*131</p>	<p>M O R E</p>

No.	Model No.	Volts (v)	Capacity (Ah) 10HR	Dimension (±2mm)			Dry Weight (Kg±3%)	CCA -18° (A)	Assembly Figure	Regular charge current(AMP)
				L	W	H				
001	12N2.5-BS(GEL)	12	2.5	80	77	105	1.11	25		0.25
002	12N3-BS(GEL)	12	3.0	98	56	110	1.16	30		0.30
003	YT4L-BS(GEL)	12	3.8	113	69	87	1.28	40		0.38
004	YT4L-BS(GEL)	12	4.0	113	69	87	1.36	45		0.40
005	YTZ5S-BS(GEL)	12	4.5	113	69	87	1.45	50		0.45
006	YT5L-BS(GEL)	12	5.0	113	69	105	1.73	65		0.50
007	12N5-BS(GEL)	12	4.8	119	60	129	1.75	60		0.48
008	12N5-BS(GEL)	12	5.0	119	60	129	1.88	65		0.50
009	12N6.5-BS(GEL)	12	6.5	138	66	101	1.96	70		0.65
010	12N7A-BS(GEL)	12	7.0	113	69	130	2.20	80		0.70
011	12N7B-BS(GEL)	12	7.0	147	59	130	2.18	75		0.70
012	12N7C-BS(GEL)	12	7.0	136	76	123	2.58	74		0.70
013	YT7-BS(GEL)	12	7.0	149	85	93	2.45	90		0.70
014	YTZ7V-BS(GEL)	12	5.0	113	69	122	1.92	70		0.50
015	YTZ7V-BS(GEL)	12	7.0	113	69	122	2.12	80		0.70
016	12N9-BS(GEL)	12	9.0	136	76	134	2.77	85		0.90
017	YT9-BS(GEL)	12	7.5	150	86	107	2.62	90		0.75
018	YT9-BS(GEL)	12	8.5	150	86	107	3.00	110		0.85
019	12N12-BS(GEL)	12	11.0	150	86	131	3.40	90		1.10
020	12N14-BS(GEL)	12	11.0	132	89	163	3.80	100		1.10

MORE COLOR TYPE



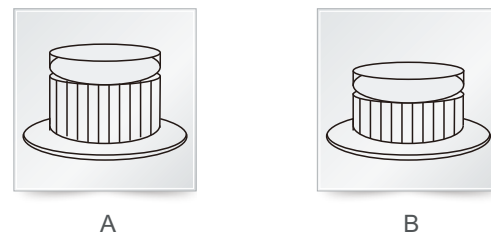
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ELECTRIC BIKE / SCOOTER BATTERY

TCS DZM/EVF Series VRLA Gel Battery is specially designed for motive power applications, i.e. electric bikes/scooters, electric tricycles, electric motorcycles and other device require DC power source. The Series adopts international leading technologies to ensure the batteries with features of long cycle life, large current discharge capability, high reliability and safety, and environmental-friendly.

TERMINAL SHAPE/DIRECTION:



STRUCTURAL FEATURES

- 1. Precision valve design**
Safe valve to ensure battery reaction gas to escape, and effective to control water loss of the battery.
- 2. Special alloy formula**
No cadmium lead calcium alloy formula, ensure the battery cycle life.
- 3. Long life lead paste recipe**
Improved the system of the active material additives to make the battery has a large capacity, high specific energy, good low temperature performance characteristics.
- 4. AGM separator**
AGM separator to ensure the battery reaction efficiency, no need to add water in the life cycle.
- 5. Grid aging**
The battery has long cycle life after the special grid aging



Electric Motorbike Battery

			
6-DZM-12 (12Ah)	6-DZM-12 (12.2Ah)	6-DZM-12 (13Ah)	6-DZM-20 (20Ah)
Voltage(V) : 12 Capacity(Ah) : 12 Weight(kg) : 3.93 Dimension(mm) : 151*99*99 Q'ty/Ctn(pcs) : 3/4/5 Polarity Direction : 	Voltage(V) : 12 Capacity(Ah) : 12.2 Weight(kg) : 4.2 Dimension(mm) : 151*99*99 Q'ty/Ctn(pcs) : 3/4/5 Polarity Direction : 	Voltage(V) : 12 Capacity(Ah) : 13 Weight(kg) : 4.32 Dimension(mm) : 151*99*99 Q'ty/Ctn(pcs) : 3/4/5 Polarity Direction : 	Voltage(V) : 12 Capacity(Ah) : 20 Weight(kg) : 6.2 Dimension(mm) : 178*77*170 Q'ty/Ctn(pcs) : 3/4/5 Polarity Direction : 
			
6-DZM-20 (22Ah)	6-EVF-33	6-EVF-35	6-EVF-45
Voltage(V) : 12 Capacity(Ah) : 22 Weight(kg) : 6.55 Dimension(mm) : 178*77*170 Q'ty/Ctn(pcs) : 3/4/5 Polarity Direction : 	Voltage(V) : 12 Capacity(Ah) : 33 Weight(kg) : 9.35 Dimension(mm) : 267*77*170 Q'ty/Ctn(pcs) : 3/4/5 Polarity Direction : 	Voltage(V) : 12 Capacity(Ah) : 35 Weight(kg) : 9.85 Dimension(mm) : 267*77*170 Q'ty/Ctn(pcs) : 3/4/5 Polarity Direction : 	Voltage(V) : 12 Capacity(Ah) : 45 Weight(kg) : 12.5 Dimension(mm) : 223*120*177 Q'ty/Ctn(pcs) : 2/3 Polarity Direction : 
			...
6-EVF-48	6-EVF-52	6-EVF-54	
Voltage(V) : 12 Capacity(Ah) : 48 Weight(kg) : 12.85 Dimension(mm) : 223*120*177 Q'ty/Ctn(pcs) : 2/3 Polarity Direction : 	Voltage(V) : 12 Capacity(Ah) : 52 Weight(kg) : 14 Dimension(mm) : 223*135*177 Q'ty/Ctn(pcs) : 2/3 Polarity Direction : 	Voltage(V) : 12 Capacity(Ah) : 54 Weight(kg) : 14.2 Dimension(mm) : 223*135*177 Q'ty/Ctn(pcs) : 2/3 Polarity Direction : 	



MOTIVE BATTERY

TCS motive battery has the main characteristics of no cadmium, maintenance free, long life, high power, large capacity, high and low temperature environment adaptability.

It is widely used on electric vehicles (electric forklifts, golf carts, tour cars, sanitation trucks and scooters).

- The plate material is made of corrosion resistant, low gas production, excellent deep cycle life alloy.
- Apply with high density, special deep cycle life lead paste formula material.
- Adopt high strength ABS plastic shell and valve control seal structure design.




No.	Model No.	Volts (v)	Capacity (Ah)	Dimension (±2mm)				Dry Weight (Kg±3%)	Terminal Type	Colour
				L	W	H	TH			
001	6-EVF-48	12	48	220	138	212	215	17.0	Ø14	Gray
002	6-EVF-55	12	55	220	138	212	215	19.0	Ø14	Gray
003	6-EVF-70	12	70	260	169	213	218	24.0	Ø14	Gray
004	6-EVF-75	12	75	260	169	213	218	24.5	Ø14	Gray
005	6-EVF-80	12	80	260	169	213	218	26.5	Ø14	Gray
006	6-EVF-90	12	90	330	173	217	222	31.5	Ø20	Gray
007	6-EVF-100L	12	100	330	173	217	222	33.0	Ø20	Gray
008	6-EVF-100	12	105	330	173	217	222	34.0	Ø20	Gray
009	6-EVF-120	12	120	406	173	217	220	42.6	Ø20	Gray
010	6-EVF-150	12	150	485	170	240	240	51.6	Ø20	Gray
011	4-EVF-150	8	150	260	180	280	280	36.2	Ø20	Gray
012	4-EVF-170	8	170	330	180	221	221	37.6	Ø20	Gray
013	3-EVF-150	6	150	261	180	247	251	28.5	Ø18	Gray
014	3-EVF-170	6	170	261	180	247	251	31.5	Ø18	Gray
013	3-EVF-180	6	180	261	180	270	274	33.5	Ø20	Gray
014	3-EVF-200	6	200	261	180	270	274	34.5	Ø20	Gray
015	3-EVF-225	6	225	261	180	270	274	36.2	Ø20	Gray

MOTIVE BATTERY





Model:3-EVF-180

Voltage(V) : 6
Capacity(Ah) : 180
Weight(kg) : 33.5
Dimension(mm) : 261*180*270*274
Polarity Direction : 





Model:3-EVF-200

Voltage(V) : 6
Capacity(Ah) : 200
Weight(kg) : 34.5
Dimension(mm) : 261*180*270*274
Polarity Direction : 




Model:4-EVF-150

Voltage(V) : 8
Capacity(Ah) : 180
Weight(kg) : 33.5
Dimension(mm) : 260*180*280*280
Polarity Direction : 





Model:6-EVF-48

Voltage(V) : 12
Capacity(Ah) : 48
Weight(kg) : 17.0
Dimension(mm) : 220*138*212*215
Polarity Direction : 





Model:6-EVF-70

Voltage(V) : 12
Capacity(Ah) : 70
Weight(kg) : 24
Dimension(mm) : 260*169*213*218
Polarity Direction : 





Model:6-EVF-100

Voltage(V) : 12
Capacity(Ah) : 105
Weight(kg) : 34.0
Dimension(mm) : 330*173*217*222
Polarity Direction : 




Model:6-EVF-120

Voltage(V) : 12
Capacity(Ah) : 120
Weight(kg) : 42.6
Dimension(mm) : 406*173*217*220
Polarity Direction : 



Model:6-EVF-150

Voltage(V) : 12
Capacity(Ah) : 150
Weight(kg) : 51.6
Dimension(mm) : 485*170*240*240
Polarity Direction : 

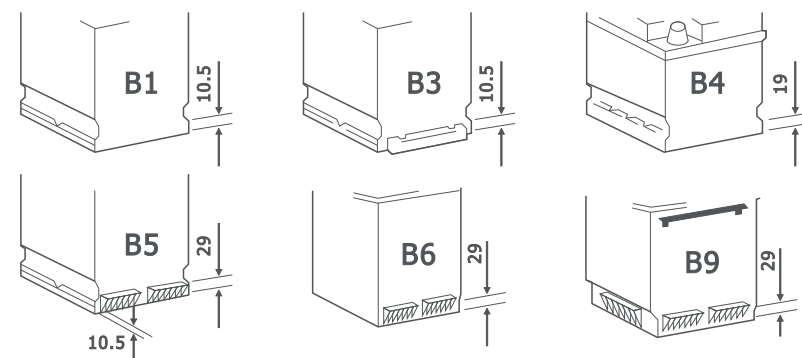
Notic: All the data in the brochure are just for your reference. If the actual data differ from the expected data, the former should prevail. The company reserves the final interpretation.



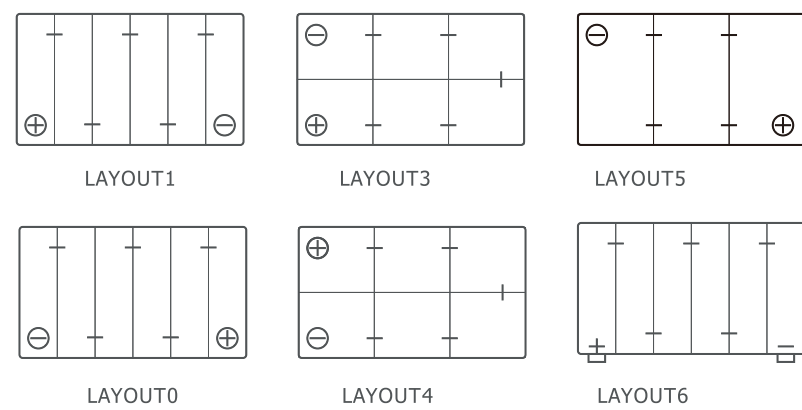
CAR BATTERY

TCS BATTERY has always been dedicated to the research and development of high-performance, long-life, wide temperature range, high security starting battery products, including AGM starts and stops battery, sealed maintenance-free battery and dry charged battery.

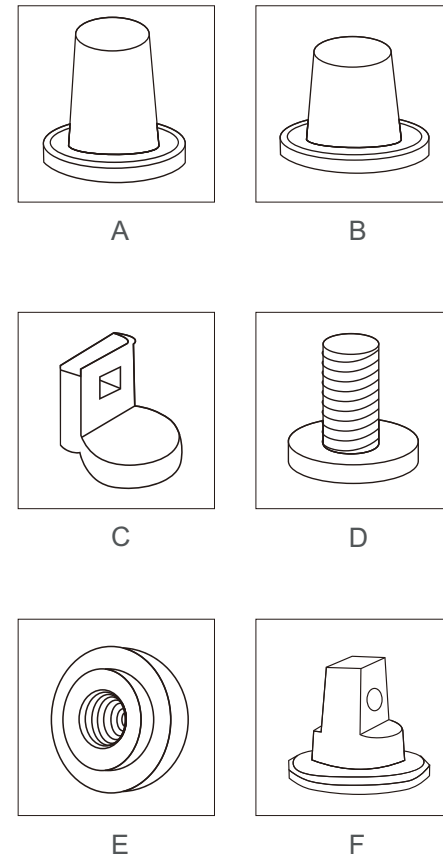
HOLD DOWNS:



CELL LAYOUT:



TERMINAL TYPE:



AGM TECHNOLOGY FOR START-STOP

- 
 Technology
- 
 More power
- 
 Excellence starting
- 
 Cycle life



AGM Start stop battery

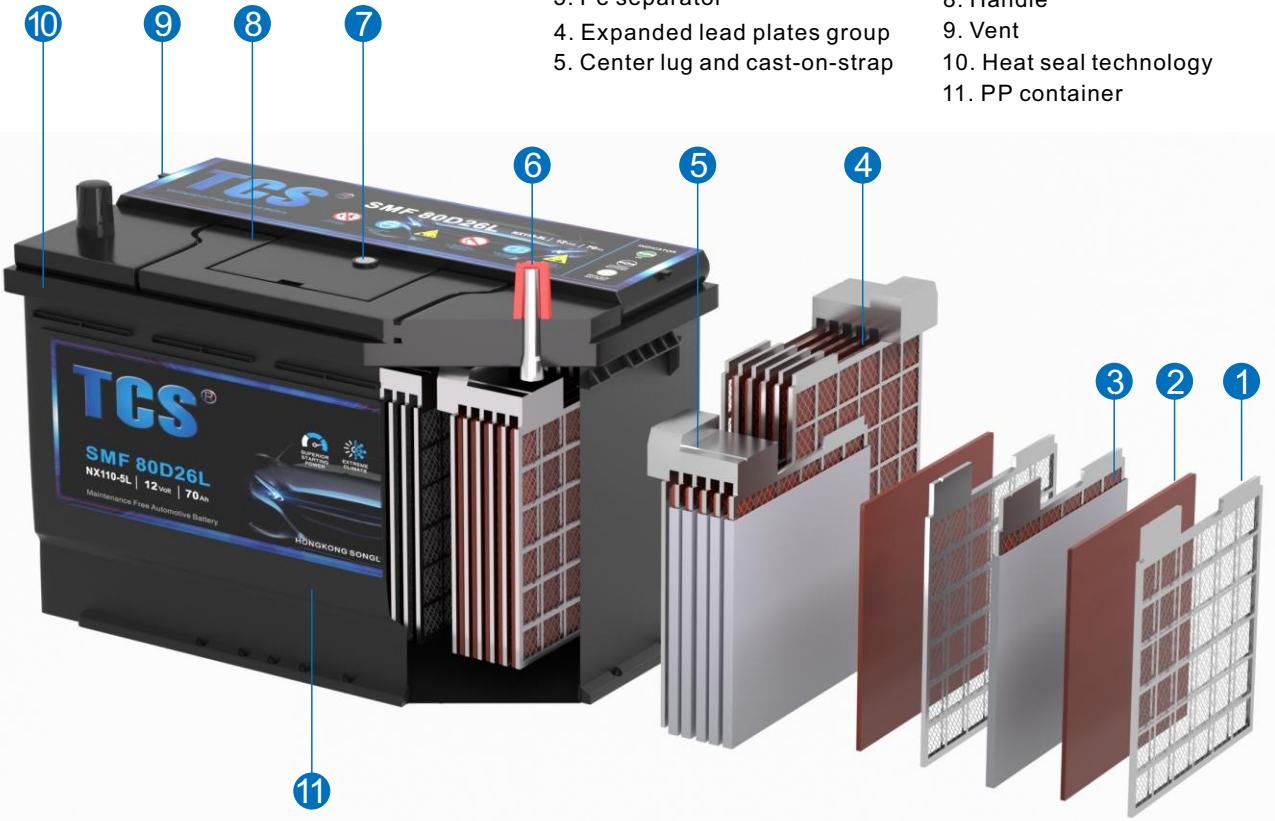
	<p>Model:6-QTF-60</p> <p>Voltage(V) : 12 Capacity(Ah) : 60 Weight(kg) : 17.3 CCA(-18°C) : 660 Dimension(mm) : 242*175*192*192</p>		<p>Model:6-QTF-70</p> <p>Voltage(V) : 12 Capacity(Ah) : 70 Weight(kg) : 20.0 CCA(-18°C) : 720 Dimension(mm) : 277*175*192*192</p>
	<p>Model:6-QTF-80</p> <p>Voltage(V) : 12 Capacity(Ah) : 80 Weight(kg) : 23 CCA(-18°C) : 800 Dimension(mm) : 316*175*192*192</p>		<p>Model:6-QTF-92</p> <p>Voltage(V) : 12 Capacity(Ah) : 92 Weight(kg) : 25.8 CCA(-18°C) : 850 Dimension(mm) : 353*175*192*192</p>

Model No.	Volts (v)	Capacity (Ah)	Dimension (±2mm)				Weight (Kg±3%)	Terminal	CCA - 18°C	Warranty (Months)
			L	W	H	TH				
High performance										
6-QTF-60	12	60	242	175	192	192	17.3	F28	660	24
6-QTF-70	12	70	277	175	192	192	20.0	F28	720	24
6-QTF-80	12	80	316	175	192	192	23.0	F28	800	24
6-QTF-92	12	92	353	175	192	192	25.8	F28	850	24
6-QTF-105	12	105	393	175	192	192	28.8	F28	950	24

Ordinary type										
6-QTF-60	12	60	242	175	192	192	17.3	F28	528	12
6-QTF-70	12	70	277	175	192	192	20.0	F28	624	12
6-QTF-80	12	80	316	175	192	192	23.0	F28	704	12
6-QTF-92	12	92	353	175	192	192	25.8	F28	784	12

Notic: All the data in the brochure are just for your reference. If the actual data differ from the expected data, the former should prevail.
The company reserves the final interpretation.

SEALED MAINTENANCE-FREE BATTERY



BATTERY STRUCTURE & CHARACTERISTICS

1. Expanded lead plates	6. Terminal
2. Expanded grid	7. Magic-eye indicator
3. Pe separator	8. Handle
4. Expanded lead plates group	9. Vent
5. Center lug and cast-on-strap	10. Heat seal technology
	11. PP container

The Characteristic, Usage And Maintenance:

- For new battery, it's no need to charge, to add liquid, you can use it after fitting on the car. During the usage, liquid is never in need.
- When using, keep the battery clean, make sure the connection contacts well. Coated some Vaseline on connection between the pole and line and fasten the batteries well.
- Strong polypropylene container, advance lead calcium alloy and special diachylum method, anti-acid mist filter plate, anti-shake, prevent coldness, low discharge, less water losing, well cold starting capability.
- If need to offload the battery to charge, you can charge it with constant current of less than 0.1C20A, and keep the voltage in 14.2~14.6v.
- Keep batteries in a dry place, avoiding the sunshine. Batteries with half year storage, before use, you should charge them. Charging method:0.1C20A. Eg:60AH battery: charging with 6A for 6 hours.
- The battery is suitable for a car with 14.2-14.4v charging voltage.



SA Standard Battery (SMF)

MAINTENANCE FREE BATTERY

No.	TYPE No.	Capacity (20HR)	Dimension(mm)				R C (MINS.)	Layout	Terminal	Qty/ Pallet	Hold-Down
			Length	Width	Height	T.Height					
1	610	45	230	177	203	203	69	0	B1	126	B1
2	611	45	230	177	203	203	69	1	B1	126	B1
3	612CV	45	240	174	190	190	62	0	B1	168	B3
4	617	36	208	174	175	175	51	0	B	168	B3
5	618	36	208	174	175	175	51	1	B	168	B3
6	619	36	208	174	175	175	51	1	B	168	B3
7	621	50	261	177	203	203	81	1	B	126	B1
8	622	50	261	177	203	203	81	0	B	126	B1
9	628	45	240	174	177	177	62	1	B	168	B3
10	629	45	240	174	177	177	62	1	B	168	B3
11	630	36	238	134	202	202	53	0	B	175	B1
12	631	36	238	134	202	202	53	1	B	175	B1
13	634	45	238	134	202	202	71	0	B	175	B1
14	635	45	240	174	177	177	62	0	B	168	B3
15	636CV	45	241	134	203	203	62	1	B	168	B1
16	637CV	60	235	173	203	203	90	0	B	147	B1
17	638	60	230	177	203	203	90	0	B	126	B1
18	639	60	230	177	203	203	90	1	B	126	B1
19	643	60	240	175	190	190	90	0	B	168	B3
20	645	60	240	175	190	190	90	1	B	168	B3
21	646	60	240	175	190	190	90	1	B	168	B3
22	647CV	54	284	175	175	175	81	1	B	144	B3
23	649	65	230	170	227	227	90	1	B	147	B1
24	650	65	305	173	220	220	100	0	B	119	B1
25	651CV	60	275	175	175	175	90	1	B	144	B3
26	652CV	65	278	175	190	190	108	1	B	144	B3
27	653	65	278	175	190	190	108	1	B	144	B3
28	654CV	80	350	175	175	175	140	1	B	84	B3
29	657CV	65	278	175	190	190	108	0	B	144	B3
30	674	90	332	171	218	252	149	1	B	84	B3
31	674J	90	332	171	218	252	149	1	B	84	B3
32	674(A31)	90	332	171	218	252	149	1	B	168	B3
33	659CV	80	315	175	175	175	-	0	B	84	B3
34	665	60	242	175	190	190	90	1	B	168	B3
35	667	65	278	175	190	190	108	1	B	144	B3
36	668	90	315	175	190	190	130	1	B	84	B3
37	680/3	120	510	180	219	219	218	4	B	48	
38	681/2	120	510	180	219	219	218	3	B	48	
39	685	120	504	180	214	214	218	4	B	48	
40	687	200	515	264	235	235	365	4	B	36	
41	688	200	515	264	235	235	365	3	B	36	
42	689	140	512	224	219	219	248	4	B	48	
43	690	140	512	224	219	219	248	3	B	48	
44	692	165	512	224	219	219	300	4	B	48	

AS Standard Battery (SMF)

MAINTENANCE FREE BATTERY

No.	TYPE No.	Capacity (20HR)	Dimension(mm)				R C (MINS.)	Layout	Terminal	Qty/ Pallet	Hold-Down
			Length	Width	Height	T.Height					
1	NS40Z	36	196	128	200	220	53	1	A	224	—
2	NS40ZL	36	196	128	200	220	53	0	A	224	—
3	NS40ZS	36	196	128	200	220	53	1	B	224	—
4	NS40ZLS	36	196	128	200	220	53	0	B	224	—
5	N41	41	236	133	182	204	65	1	B	175	—
6	N43	43	236	133	182	204	65	1	B	175	—
7	NS60	45	236	128	200	220	71	1	A	175	—
8	NS60L	45	236	128	200	220	71	0	A	175	—
9	NS60(S)	45	236	128	200	220	71	1	B	175	—
10	NS60L(S)	45	236	128	200	220	71	0	B	175	—
11	NS50P	55	234	172	183	203	90	1	B	147	B1
12	NS50PL	55	234	172	183	203	90	0	B	147	B1
13	N50EF	55	228	172	183	203	90	1	B	147	B1
14	N51EB	55	228	172	183	203	90	0	B	147	B1
15	55D23R	60	228	172	200	220	100	1	B	147	B1
16	55D23L	60	228	172	200	220	100	0	B	147	B1
17	N50Z	60	258	172	198	218	100	1	B	126	B1
18	N50ZL	60	258	172	198	218	100	0	B	126	B1
19	NS70	65	258	172	198	218	100	1	B	126	B1
20	NS70L	65	258	172	198	218	100	0	B	126	B1
21	N70Z	75	302	172	200	220	112	1	B	119	B1
22	N70ZL	75	302	172	200	220	112	0	B	119	B1
23	N100	100	406	173	210	230	180	1	B	84	—
24	N100L	100	406	173	210	230	180	0	B	84	—
25	NS120	110	406	173	210	230	218	1	B	84	—
26	NS120L	110	406	173	210	230	218	0	B	84	—
27	DIN36	36	208	175	190	190	81	0	A	192	—
28	DIN44	44	208	175	175	175	81	0	B	168	—
29	DIN55	55	240	175	175	175	81	0	B	168	B3
30	DIN66	66	278	175	175	175	90	0	B	144	B3
31	DIN77	77	311	175	175	175	125	0	B	120	B3
32	DIN88	88	352	175	175	175	130	0	B	96	B3
33	31-800	96	330	172	218	242	182	1	B	84	—
34	31-800	96	330	172	218	242	182	1	D	84	—
35	78-675	63	260	178	182	182	90	1	D	144	B1
36	N120MF	120	505	180	208	231	218	3	B	63	—
37	N150MF	150	506	221	210	233	276	3	B	56	—
38	N200MF	200	515	265	215	238	365	3	B	42	—
39	62034MF	120	505	184	194	215	218	3	B	63	—
40	65012MF	150	505	220	192	214	276	3	B	56	—
41	70027MF	170	515	265	215	235	365	3	B	42	—



DRY CHARGED CAR BATTERY

BEST BATTERY FOR THE **BETTER JOURNEY**

For Japanese Vehicles(JIS)

DRY CHARGED BATTERY

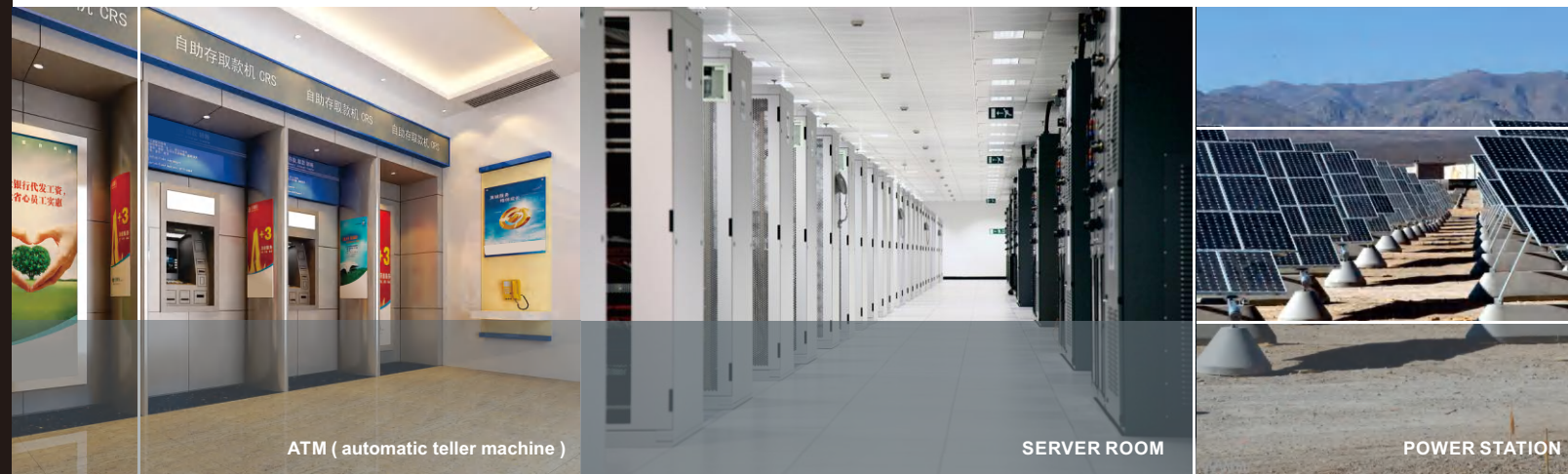
No.	JIS Gr.No.	New JIS No.	Old JIS No.	Capacity (20HR)	Dimension(mm)				GW(kg)	Layout	Terminal	Qty/Pallet
					Length	Width	Height	T.Height				
1	B19	32B19R	NS40	32	195	130	200	223	6.4	1	A	224
2		32B19L	NS40L	32	195	130	200	223	6.4	0	A	224
3	B20	36B20R	NS40Z	36	195	130	200	223	7.1	1	A/B	224
4		36B20L	NS40ZL	36	195	130	200	223	7.1	0	A/B	224
5	B24	50B24R	N40	40	235	130	185	215	8.0	1	A/B	175
6		50B24L	N40L	40	235	130	185	215	8.0	0	A/B	175
7		55B24R	NS60	45	235	130	185	215	8.5	1	A/B	175
8		55B24L	NS60L	45	235	130	185	215	8.5	0	A/B	175
9	D26	48D26R	N50	50	260	170	200	230	9.5	1	B	126
10		48D26L	N50L	50	260	170	200	230	9.5	0	B	126
11		55D26R	NS0Z	60	260	170	200	230	11.5	1	B	126
12		55D26L	NS0ZL	60	260	170	200	230	11.5	0	B	126
13		75D26R	NS70	65	260	170	200	230	11.5	1	B	126
14		75D26L	NS70L	65	260	170	200	230	11.5	0	B	126
15		80D26R	NX110-5	70	260	170	200	230	12.2	1	B	126
16		80D26L	NX110-5L	70	260	170	200	230	12.2	0	B	126
17	D23	55D23R		60	230	173	200	220	11.2	1	B	147
18		55D23L		60	230	173	200	220	11.2	0	B	147
19		75D23R		65	230	173	200	220	11.2	1	B	147
20		75D23L		65	230	173	200	220	11.2	0	B	147
21		85D23R		68	230	173	200	220	12.0	1	B	147
22		85D23L		68	230	173	200	220	12.0	0	B	147

No.	JIS Gr.No.	New JIS No.	Old JIS No.	Capacity (20HR)	Dimension(mm)				GW(kg)	Layout	Terminal	Qty/Pallet	
					Length	Width	Height	T.Height					
23	D31	65D31R	N70	70	300	170	210	230	13.2	1	B	119	
24		65D31L	N70L	70	300	170	210	230	13.2	0	B	119	
25		75D31R	N70Z	75	300	170	210	230	13.2	1	B	119	
26		75D31L	N70ZL	75	300	170	210	230	13.2	0	B	119	
27		95D31R	NX120-7	80	300	170	210	230	13.8	1	B	119	
28		95D31L	NX120-7L	80	300	170	210	230	13.8	0	B	119	
29		105D31R		90	300	170	210	230	14.5	1	B	119	
30		105D31L		90	300	170	210	230	14.5	0	B	119	
31		E41	95E41R	N100	100	435	170	208	232	17.3	1	B	84
32			95E41L	N100L	100	435	170	208	232	17.3	0	B	84
33	115E41R		NS120	110	435	170	208	232	18.8	1	B	84	
34	115E41L		NS120L	110	435	170	208	232	18.8	0	B	84	
35		6TN		100	277	265	204	256	16.0	3/5	B	72	
36	F51	135F51R	N120	120	515	185	200	220	21.1	3	B	56	
38	G51	160G51R	N150	150	515	210	208	230	24.8	3	B	56	
40	H52	210H52R	N200	200	545	275	215	238	30.6	3	B	42	

Truck Battery Specification

DRY CHARGED BATTERY

No.	DIN Gr.No.	New JIS No.	Capacity (20HR)	Dimension(mm)				GW(kg)	Layout	Terminal	Qty/Pallet
				Length	Width	Height	T.Height				
1	D4	62034	120	509	180	195	220	21.3	3	B	63
2		62038	120	509	180	195	220	21.3	4	B	63
3		63530	135	509	180	195	220	22.0	3	B	63
4		63532	135	509	180	195	220	22.0	4	B	63
5		64020	140	509	180	195	220	22.8	3	B	63
6		64028	140	509	180	195	220	22.8	4	B	63
7	D5	64317	143	517	220	200	222	25.2	3	B	63
8		64318	143	517	220	200	222	25.2	4	B	63
9		65513	155	517	220	200	222	25.2	3	B	63
10		65514	155	517	220	200	222	25.2	4	B	63
11		67043	170	517	220	200	222	26.7	3	B	63
12		67044	170	517	220	200	222	26.7	4	B	63
13		68022	180	517	220	200	222	26.7	3	B	63
14		68029	180	517	220	200	222	26.7	4	B	63
15		68039	180	506	264	216	238	28.8	3	B	35
16		68040	180	506	264	216	238	28.8	3	B	35
17		70027	200	506	264	216	238	30.6	3	B	35
18		70029	200	506	264	216	238	30.6	4	B	35
19	D6	71014	210	506	264	216	238	31.4	3	B	35
20		71015	210	506	264	216	238	31.4	3	B	35
21		72511	225	506	264	216	238	32.1	3	B	35
22		73010	230	506	264	216	238	32.1	3	B	35
23		73011	230	506	264	216	238	32.1	3	B	35



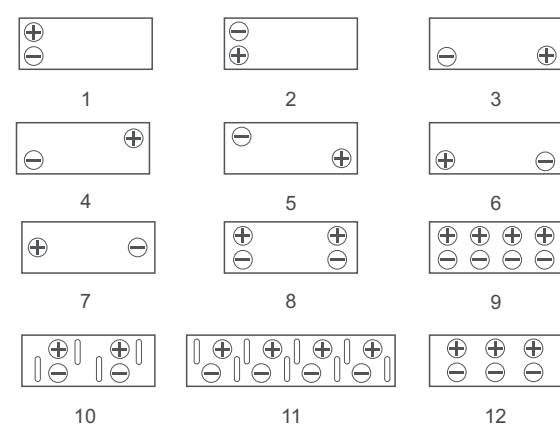
STORAGE BATTERY APPLICATIONS

- Engine starter
- Electric tools
- Electric toys
- Electric power system
- Marine equipment
- Computer backup power
- Solar system/Wind system
- Emergency lightening system
- Communication equipment
- Fire& Security& Alarm system
- Cable TV
- Control system
- Nuclear power plant
- Generating station
- Telecom system
- Peak load compensation energy storage device
- Uninterrupted Power Supply(UPS)
- Backup& Standby power

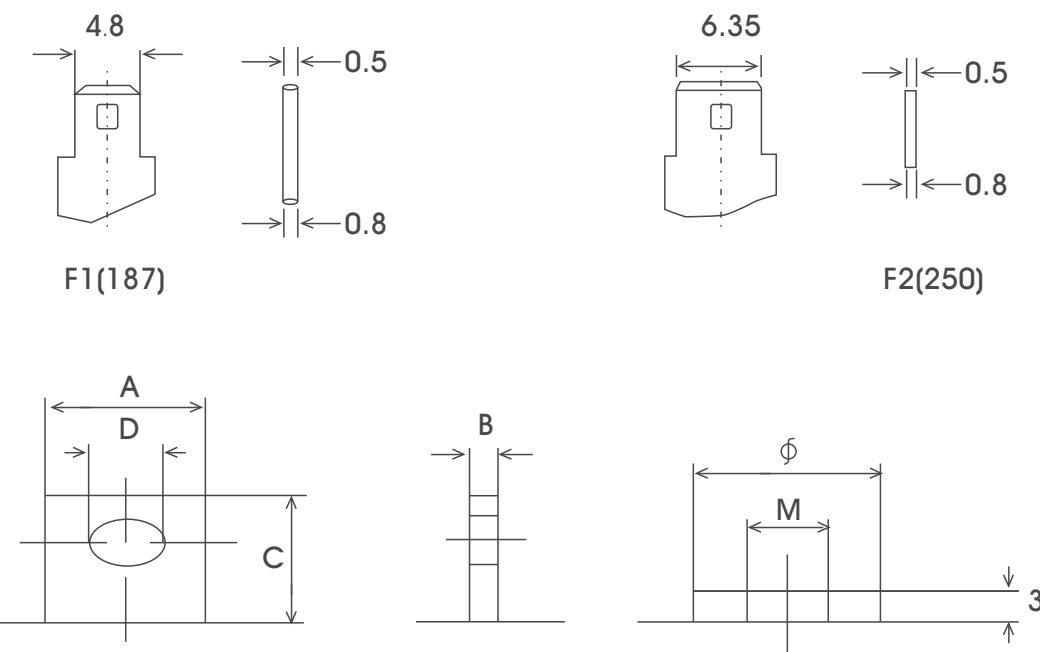
PRODUCT DESCRIPTION

- ◆ **Safety:** no leakage on battery terminal, ensure using in safe and reliable
- ◆ **Maintenance free:** due to all internal generated gas restore to water, do not need water replenishment
- ◆ **Exhaust air system:** it can exhaust excess gas and make air pressure up to normal range when battery overcharges and internal pressure is over high, this time safe valve will close by itself, so there will be not additional gas accumulate.
- ◆ **No free acid:** special separator adsorb electrolyte, so there is no free acid inside battery, then battery can be installed in various position.

TERMINAL DIRECTION:



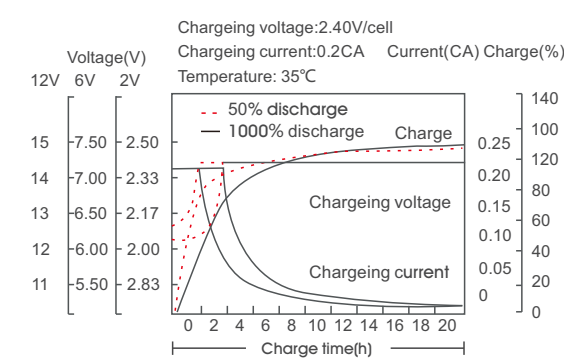
TERMINAL DIMENSIONS(mm):



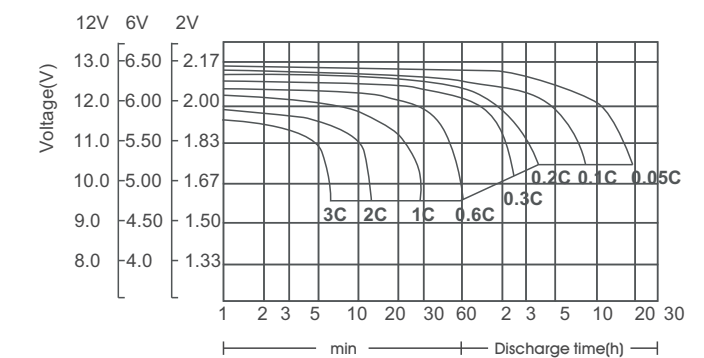
Type	A	B	C	D	Material
F5	16.5	6	15	6.2	Lead
F6	18	3	19	7	Copper
F7	18	9.6	18	9.5	Lead
F8	26	8	24	8.6	Lead
F9	26.5	10	23	8.5	Lead
F10	26	8.3	23	8.5	Lead
F11	27	8.3	26	9	Lead
F17	12	2	14	5.5	Copper

Type	M	φ	Material
D1	4	10	Copper
D2	5	10	Copper
F12	8	20	Copper
F13	8	16	Copper
F14	6	14	Copper
F15	8	18	Copper
F16	10	18	Copper
F18	5	12	Copper
F19	6	16	Copper
M6	6	14/16	Copper

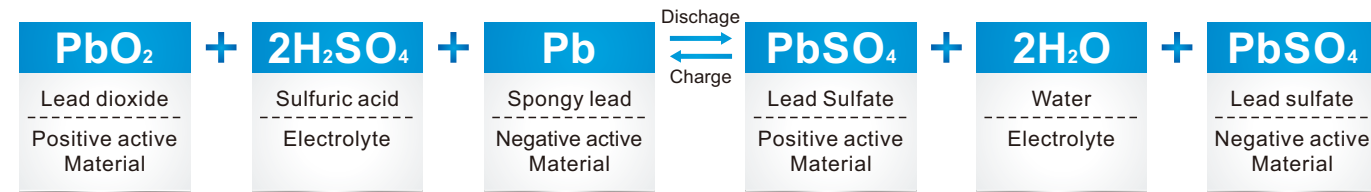
● Charge characteristic curve as follows



● Small size battery Discharge characteristic curve



CHEMICAL REACTION IN VRLA BATTERY AS FOLLOWS



While battery is discharged, the concentration of sulfuric acid is gradually decreased and lead sulfate is formed under the reaction between lead dioxide of positive electrode, spongy lead of negative electrode and the sulfuric acid in the electrolyte. While charging, lead sulfate in the positive and negative electrode is transformed to lead dioxide and spongy lead, and with the separation of sulfuric ions, the concentration of sulfuric acid will increase.

During the last charging period of traditional lead acid battery, water is consumed by the reaction of hydrogen evolution. So it requires compensation of water. With the application of moist spongy lead, it promptly reacts with oxygen, which effectively controls the decrease of water.

It is same as the traditional batteries from the beginning of charge to before the final stage, but when it is over-charged and in the last period of charge, the electric power will start to decompose water, negative electrode will be in discharge condition because oxygen from the positive plate reacts with spongy lead of negative plate and sulfuric acid of electrolyte. That restrains the hydrogen evolution on the negative plates.

The part of negative electrode in discharge condition will transform to spongy lead while charging. The quantity of spongy lead formed from charging equals to the quantity of sulfate lead as the result of absorbing the oxygen from positive electrode, which keeps the balance of negative electrode, and also make it possible to seal battery.

Reaction after the final stage of charge and chemical equation as below:

Fig.3:Reaction From Beginning Of Charge To Before the Final Stage

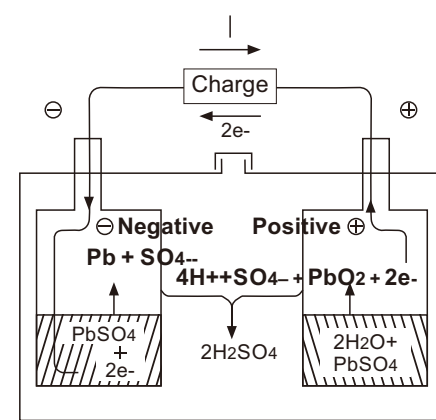
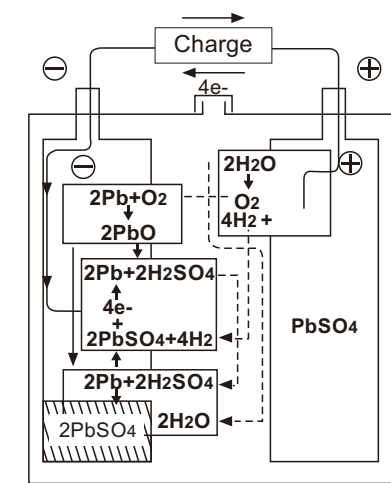


Fig.4:Reaction after final stage of charge:



- ① $2H_2O \rightarrow O_2 + 4H^+ + 4e^-$
Reaction at positive plate
- ② $2Pb + O_2 \rightarrow 2PbO$
Migrates to negative plate surface
- ③ $PbO + 2H_2SO_4 \rightarrow 2PbSO_4 + 2H_2O$
Chemical reaction of spongy lead with oxygen
- ④ **Reduction of PbSO₄**
 $PbSO_4 + 4H^+ + 4e^- \rightarrow 2Pb + 2H_2SO_4$
Chemical reaction of pbo with electrolytes
- $O_2 + 4H^+ + 4e^- \rightarrow 2H_2O$
Chemical reaction of pbo with electrolytes

MAINTENANCE In order to prevent battery troubles, inspect the battery regularly in the following manner and keep records.

Monthly check			
What to inspect	Method	Stand spec	.Measures in case of irregularity
Total battery voltage during float charge	Measure total voltage by voltmeter	Float charge voltage* number of batteries	Adjusted to the float charge voltage number of batteries
Half year check			
Total battery voltage during float charge	Measure total battery voltage by voltmeter of class 0.5 or better	Total battery voltage shall be product of float charge voltage with battery quanting	Adjust if the voltage value is outside standard
Individual battery voltage during float charge	Measure total battery voltage by voltmeter of lass 0.5 or better	Within 2.25+_ 0.1V/cell	Contact us for remedy; Any battery showing errors greater than permissible value shall be repaired or replaced
Appearance	Check for damage or leakage at container and cover	Replaced by electric tank or roof without damage or leakage acid	If leakage is found verify the cause, for container and cover having cracks, the battery shall be replaced
	Check for contamination by dust, etc	Battery no dust pollution	If contaminated, clean with wet cloth.
	Check for rust in the cubicle, battery stand, connecting plates, connecting wires and terminals	Battery holder Plate Connecting cable Termination rust	Perform cleaning, rust preventive treatment, painting of touch up.
One-year inspection (following inspection shall be added to six-months inspection)			
Connecting parts	Tighten bolts and nuts	Checking (connecting screw stud books and torque)	

BATTERY CONSTRUCTION

Safety valve

Synthesized with EPDM rubber and Teflon, the function of safety valve is to release gas when the internal pressure rises abnormally which can prevent water losses and protect battery from explosion by over-pressure and over-heat.

Container&cover

Battery case includes container and cover. Container is used to hold positive and negative plates and electrolyte. Preventing impurities entering cells, cover also can avoid acid leakage and venting. Containing all materials relating charge and discharge, ABS and PP material are chosen as battery case because of their well performance in insulativity, mechanical strength, anti-corrosion and heat resistance.

Electrolyte

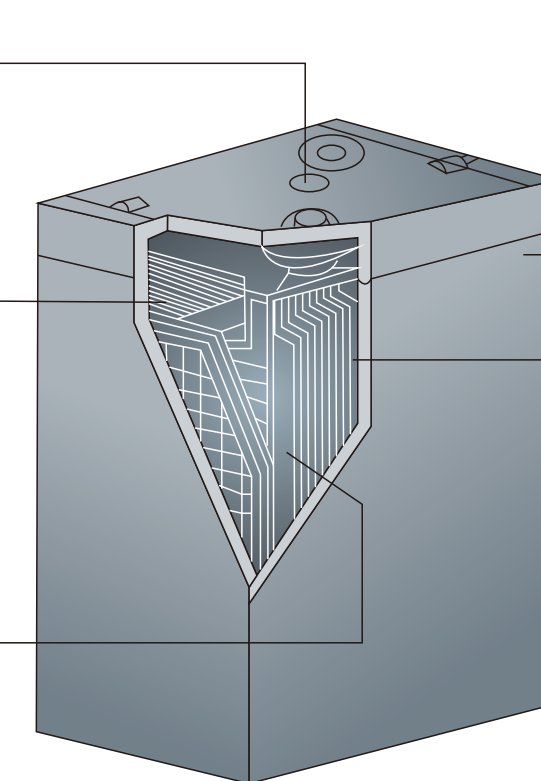
Electrolyte is compounded with sulfuric acid, deionized water or distilled water. It takes part in the electrochemical reaction and plays as the medium of positive and negative ions in liquid and temperature between plates.

Separator

Separator in VRLA battery should consist of porous mass and adsorb massive electrolyte to make sure the free movement of electrolyte, positive and negative ions. As the carrier of electrolyte, separator also should prevent the short circuit between positive and negative plates. Providing the shortest distance for negative and positive electrode, separator prevents lead paste to be damaged and dropped, and prevents the contact between the cast and electrode even when the active materials is off the plates. It also can stop the spread and shift of hazardous substance. Glass fiber, as the normal and frequent choice, is characterized with strong adsorbability, tiny aperture, high porosity, large pore area, high mechanical strength, strong resistance to acid corrosion and chemical oxidizing.

Grid

To collect and transfer current, grid-shape alloy (PB-CA-SN) plays a part of supporting active materials and distributing current in active materials equally.





SMALL SIZE BATTERY SERIES

storage battery

No.	Model	Voltage	Capacity	Dimensions(mm)				Terminal Type	Terminal Position	Weight (Kg)±5%
		(V)	(Ah)	(L)±1.5	(W)±1.0	(H)±2.0	(TH)±2.0			
1	SL4-3.5S	4	3.5	48	48	102	108	F1	3	0.41
2	SL4-4.5	4	4.5					F1	3	0.47
3	SL4-4.5A	4	4.5					F1	3	0.58
4	SL4-7.5	4	7.5	70	47	100	104	F1	3	0.70
5	SL6-1.2	6	1.2					97	24	52
6	SL6-2.8	6	2.8	66	33	97	104	F1	4	0.43
7	SL6-3.5S	6	3.2							
8	SL6-4E	6	3.5	70	47	101	107	F1	4	0.65
9	SL6-4	6	4.0							0.67
10	SL6-4.5	6	4.5							0.71
11	SL6-4.5H	6	4.5							0.73
12	SL6-5.0	6	5.0							0.79
13	SL6-6.5	6	6.5	151	35	94	100	F1/F2	6	1.05
14	SL6-7	6	7.0							1.10
15	SL6-7.5	6	7.5							1.18
16	SL6-10	6	10.0	151	50	94	100	F1/F2	6	1.55
17	SL6-10H	6	10.0							1.65
18	SL6-12	6	12.0							1.73
19	SL12-1.2	12	1.2	97	43	52	58	F1	2	0.53
20	SL12-2	12	2.0	178	35	61	67	F1	6	0.79
21	SL12-2.3	12	2.3							0.90
22	SL12-2.3A	12	2.3	70	48	98	104	F1	6	0.71
23	SL12-2.6A	12	2.6							0.75
24	SL12-2.9	12	2.9	79	56	99	105	F1	3	1.05
25	SL12-3.2	12	3.2	134	67	61	67	F1	2	1.21
26	SL12-4	12	4.0	90	70	101	107	F1/F2	6	1.36
27	SL12-4.5	12	4.5							1.43
28	SL12-5	12	5.0							1.53
29	SL12-4.8	12	4.8	151	65	94	100	F1/F2	1	1.82
30	SL12-5.3	12	5.3							1.85
31	SL12-6	12	6.0							1.86
32	SL12-6.5	12	6.5							1.95
33	SL12-7	12	7.0							2.07
34	SL12-7.2	12	7.2	151	98	95	101	F1/F2	1	2.13
35	SL12-7.5	12	7.5							2.23
36	SL12-8.5	12	8.5							2.37
37	SL12-9	12	8.7	175	166	125	125	F17/F18	3	2.48
38	SL12-10	12	10.0							2.80
39	SL12-10H	12	10.0							3.12
40	SL12-12	12	11.5	181	77	167	167	F17/F18	3	3.23
41	SL12-12H	12	13.0							3.45
42	SL12-15	12	15.0	175	166	125	125	F17/F18	3	4.60
43	SL12-17	12	17.0							4.95
44	SL12-18	12	18.0	165	125	175	175	F18	3	5.20
45	SL12-20	12	20.0							5.40
46	SL12-24	12	24.0	180	73	70	70	/	1	7.60
47	SL12-26	12	26.0							7.80
48	SL12-28	12	28.0	165	125	175	175	F18	3	8.10
49	SL12-24A	12	28.0							7.60
50	SL12-28A	12	32.0	180	73	70	70	/	1	8.80
51	SL24-3.5	24	2.4							2.07



MIDDLE SIZE BATTERY SERIES

storage battery

No.	Model	Voltage	Capacity	Dimensions(mm)				Terminal Type	Terminal Position	Weight (Kg)±5%
		(V)	(Ah)	(L)±1.5	(W)±1.0	(H)±2.0	(TH)±2.0			
1	SL6-36	6	36	162	88	164	170	F2	5	5.6
2	SL6-42	6	42							6.1
3	SL6-100	6	100							15.5
4	SL6-150	6	150	260	180	245	250	F13	5	23.0
5	SL6-300	6	300	295	178	345	348	F12	5	52.0
6	SL12-19	12	19	195	130	155	166	F14	6	6.8
7	SL12-29	12	29							9.0
8	SL12-31	12	31							9.5
9	SL12-33	12	33							10.0
10	SL12-35	12	35							10.5
11	SL12-38	12	38							12.0
12	SL12-40	12	40							12.3
13	SL12-42	12	42	197	165	170	170	F19	3	12.7
14	SL12-45	12	45							13.4
15	SL12-33S	12	35	229	138	211	214	M6	6	12.7
16	SL12-50	12	50							15.0
17	SL12-55	12	55							17.0
18	SL12-50A	12	50	229	138	205	210	M6	6	15.5
19	SL12-55A	12	55	260	168	211	214	M6	6	18.5
20	SL12-60	12	60							19.1
21	SL12-75	12	75							21.3
22	SL12-80	12	80							22.5
23	SL12-40S	12	40							15.7
24	SL12-50S	12	50							17.0
25	SL12-54	12	54							17.8
26	SL12-60A	12	60	350	167	179	179	F12	3	18.6
27	SL12-65	12	65							20.0
28	SL12-70A	12	70							21.0
29	SL12-80A	12	80	306	169	211	214	M6	6	23.5
30	SL12-90V	12	90							22.5
31	SL12-90E	12	90							26.0
32	SL12-70S	12	70							24.3
33	SL12-80S	12	80							25.5
34	SL12-90AE	12	90							26.8
35	SL12-90A	12	90							330
36	SL12-100E	12	100	28.5						
37	SL12-100	12	100	29.2						
38	SL12-110	12	110	32.0						

No.	Model	Voltage	Capacity	Dimensions(mm)				Terminal Type	Terminal Position	Weight (Kg)±5%
		(V)	(Ah)	(L)±1.5	(W)±1.0	(H)±2.0	(TH)±2.0			
39	SL12-120A	12	120	406	173	237	237	F12	6	34.5
40	SL12-90S	12	90	406	173	208	238	F12	6	29.5
41	SL12-100S	12	100							31.0
42	SL12-110S	12	110							32.0
43	SL12-120	12	120							34.0
44	SL12-135	12	135	340	172	282	284	F13	6	41.5
45		12	135							44.0
46	SL12-110S	12	110	485	172	240	240	F12	6	35.0
47	SL12-120S	12	120							37.1
48	SL12-135S	12	135							40.0
49	SL12-150	12	150							42.2
50	SL12-150A	12	150	530	207	210	213	F12	2	46.5
51	SL12-180	12	180							49.5
52	SL12-150S	12	150	522	238	218	221	F12	2	50.0
53	SL12-180S	12	180							55.4
54	SL12-190S	12	190							57.0
55	SL12-200	12	200							59.3
56	SL12-225	12	225	521	269	220	223	F12	2	60.5
57	SL12-250	12	250							70.5



FRONT TERMINAL BATTERY SERIES

storage battery

No.	Model	Voltage	Capacity	Dimensions(mm)				Terminal Type	Terminal Position	Weight (Kg)±5%
		(V)	(Ah)	(L)±1.5	(W)±1.0	(H)±2.0	(TH)±2.0			
1	SL12-50FT	12	50	277	106	221	221	F14	2	15.5
2	SL12-75FT	12	75	562	114	189	189	F19	2	24.5
3	SL12-100FT	12	100	506	110	224	239	F13	2	31.0
4	SL12-100AFT	12	100	395	110	286	286	F13	2	31.0
5	SL12-110FT	12	110	395	110	286	286	F13	2	33.0
6	SL12-120FT	12	120	551	110	239	239	F13	2	36.0
7	SL12-125FT	12	125	549	105	315	315	F13	2	40.0
8	SL12-150FT	12	150	551	110	287	287	F13	2	48.2
9	SL12-175FT	12	180	560	125	317	323	F13	2	53.8
10	SL12-180FT	12	180	560	125	317	323	F13	2	56.0
11	SL12-200FT	12	195	560	125	317	323	F13	2	57.0



DEEP CYCLE BATTERY SERIES

storage battery

No.	Model	Voltage (V)	Capacity (Ah)	Dimensions(mm)				Terminal Type	Terminal Position	Weight (Kg)±5%
				(L)±1.5	(W)±1.0	(H)±2.0	(TH)±2.0			
1	SLD6-36	6	36	162	88	164	170	F2	5	5.6
2	SLD6-42	6	42							6.1
3	SLD6-100	6	100	194	170	205	210	F14	4	15.5
4	SLD6-150	6	150	260	180	245	250	F13	5	23.0
5	SLD6-300	6	300	295	178	345	348	F12	5	52.0
6	SLD12-31	12	31	195	130	155	166	F14	6	9.5
7	SLD12-38	12	38	197	165	170	170	F19	3	12.0
8	SLD12-45	12	45							13.4
9	SLD12-50	12	50	229	138	211	214	M6	6	15.0
10	SLD12-55	12	55	229	138	205	210	M6	6	17.0
11	SLD12-50A	12	50							15.5
12	SLD12-60	12	60	260	168	211	214	M6	6	19.1
13	SLD12-75	12	75							21.3
14	SLD12-80	12	80	350	167	179	179	F12	3	22.5
15	SLD12-54	12	54							17.8
16	SLD12-65	12	65	350	167	179	179	F12	3	20.0
17	SLD12-70A	12	70							21.0
18	SLD12-80A	12	80	306	169	211	214	M6	6	23.5
19	SLD12-90V	12	90							22.5
20	SLD12-90E	12	90	330	171	214	220	F12	6	26.0
21	SLD12-90A	12	90							27.3
22	SLD12-100	12	100	330	171	214	220	F12	6	29.2
23	SLD12-110	12	110							32.0
24	SLD12-120A	12	120	406	173	237	237	F12	6	34.5
25	SLD12-100S	12	100	406	173	208	238	F12	6	31.0
26	SLD12-110S	12	110							32.0
27	SLD12-120	12	120	530	207	210	213	F12	2	34.0
28	SLD12-135	12	135							44.0
29	SLD12-135S	12	135	485	172	240	240	F12	6	40.0
30	SLD12-150	12	150							42.2
31	SLD12-150A	12	150	530	207	210	213	F12	2	46.5
32	SLD12-180	12	180							49.5
33	SLD12-200	12	200	522	238	218	221	F12	2	59.3
34	SLD12-225	12	225							60.5
35	SLD12-250	12	250	521	269	220	223	F12	2	70.5



GEL BATTERY SERIES

storage battery

No.	Model	Voltage (V)	Capacity (Ah)	Dimensions(mm)				Terminal Type	Terminal Position	Weight (Kg)±5%
				(L)±1.5	(W)±1.0	(H)±2.0	(TH)±2.0			
1	SLG6-36	6	36	162	88	164	170	F2	5	5.6
2	SLG6-42	6	42							6.1
3	SLG6-100	6	100	194	170	205	210	F14	4	15.5
4	SLG6-150	6	150	260	180	245	250	F13	5	23.0
5	SLG6-300	6	300	295	178	345	348	F12	5	52.0
6	SLG12-31	12	31	195	130	155	166	F14	6	9.5
7	SLG12-38	12	38	197	165	170	170	F19	3	12.0
8	SLG12-45	12	45							13.4
9	SLG12-50	12	50	229	138	211	214	M6	6	15.0
10	SLG12-55	12	55	229	138	205	210	M6	6	17.0
11	SLG12-50A	12	50							15.5
12	SLG12-60	12	60	260	168	211	214	M6	6	19.1
13	SLG12-75	12	75							21.3
14	SLG12-80	12	80	350	167	179	179	F12	3	22.5
15	SLG12-54	12	54							17.8
16	SLG12-65	12	65	350	167	179	179	F12	3	20.0
17	SLG12-70A	12	70							21.0
18	SLG12-80A	12	80	306	169	211	214	M6	6	23.5
19	SLG12-90V	12	90							22.5
20	SLG12-90E	12	90	330	171	214	220	F12	6	26.0
21	SLG12-90A	12	90							27.3
22	SLG12-100	12	100	330	171	214	220	F12	6	29.2
23	SLG12-110	12	110							32.0
24	SLG12-120A	12	120	406	173	237	237	F12	6	34.5
25	SLG12-100S	12	100	406	173	208	238	F12	6	31.0
26	SLG12-110S	12	110							32.0
27	SLG12-120	12	120	530	207	210	213	F12	2	34.0
28	SLG12-135	12	135							44.0
29	SLG12-135S	12	135	485	172	240	240	F12	6	40.0
30	SLG12-150	12	150							42.2
31	SLG12-150A	12	150	530	207	210	213	F12	2	46.5
32	SLG12-180	12	180							49.5
33	SLG12-200	12	200	522	238	218	221	F12	2	59.3
34	SLG12-225	12	225							60.5
35	SLG12-250	12	250	521	269	220	223	F12	2	70.5



OPzV BATTERY SERIES

storage battery

No.	Model	Voltage	Capacity (Ah)	Dimensions(mm)				Terminal Type	Terminal Position	Weight (Kg)±5%
		(V)		(L)±1.5	(W)±1.0	(H)±2.0	(TH)±2.0			
1	OPzV 200	2	200	103	206	355	390	F15	7	18.2
2	OPzV 250	2	250	124	206	355	390	F15	7	22.4
3	OPzV300	2	300	145	206	355	390	F15	7	26.4
4	OPzV350	2	350	124	206	471	506	F15	7	29.0
5	OPzV 420	2	420	145	206	471	506	F15	7	34.5
6	OPzV 490	2	490	166	206	471	506	F15	7	39.0
7	OPzV 600	2	600	145	206	646	681	F15	7	48.0
8	OPzV 800	2	800	191	210	646	681	F15	8	65.0
9	OPzV 1000	2	1000	233	210	646	681	F15	8	78.5
10	OPzV 1200	2	1200	275	210	646	681	F15	8	93.0
11	OPzV 1500	2	1500	275	210	796	931	F15	8	115
12	OPzV 2000	2	2000	397	212	772	807	F15	12	155
13	OPzV 2500	2	2500	487	212	772	807	F15	9	192
14	OPzV 3000	2	3000	576	212	772	807	F15	9	228

OPzS BATTERY SERIES

storage battery

No.	Model	Voltage	Capacity (Ah)	Dimensions(mm)				Terminal Type	Terminal Position	Weight(Kg ±5%)		
		(V)		(L)±1.5	(W)±1.0	(H)±2.0	(TH)±2.0			Dry weight	Wet weight	Acid weight
1	OPzS 200	2	200	103	206	355	410	F16	7	12.9	17.4	4.5
2	OPzS 250	2	250	124	206	355	410	F16	7	15.4	20.4	5.0
3	OPzS 300	2	300	145	206	355	410	F16	7	17.8	23.8	6.0
4	OPzS 350	2	350	124	206	471	526	F16	7	21.3	28.3	7.0
5	OPzS 420	2	420	145	206	471	526	F16	7	24.5	32.7	8.2
6	OPzS 490	2	490	166	206	471	526	F16	7	28.2	38.0	9.8
7	OPzS 600	2	600	145	206	646	701	F16	7	33.4	45.4	12.0
8	OPzS 800	2	800	191	210	646	701	F16	8	46.9	62.9	14.0
9	OPzS 1000	2	1000	233	210	646	701	F16	8	57.4	77.4	20.0
10	OPzS 1200	2	1200	275	210	646	701	F16	8	67.7	91.7	24.0
11	OPzS 1500	2	1500	275	210	796	851	F16	8	83.8	113.8	30.0
12	OPzS 2000	2	2000	397	212	772	827	F16	12	110	150	40.0
13	OPzS 2500	2	2500	487	212	772	827	F16	9	139.4	189.4	50.0
14	OPzS 3000	2	3000	576	212	772	827	F16	9	164.8	224.8	60.0



2V BATTERY SERIES

storage battery

No.	Model	Voltage	Capacity (Ah)	Dimensions(mm)				Terminal Type	Terminal Position	Weight (Kg)±5%
		(V)		(L)±1.5	(W)±1.0	(H)±2.0	(TH)±2.0			
1	SL2-100	2	100	171	72	205	210	F13	7	5.6
2	SL2-200	2	160	171	111	330	364	F12	7	12.0
3		2	200	171	111	330	364	F12	7	12.4
4	SL2-250	2	250	171	111	330	364	F12	7	14.0
5	SL2-300	2	300	171	151	330	364	F12	7	17.5
6	SL2-400	2	400	210	175	330	367	F12	8	25.0
7	SL2-500	2	500	241	175	330	365	F12	8	29.5
8	SL2-600	2	600	302	175	330	367	F12	8	33.5
9	SL2-650	2	650	302	175	330	367	F12	8	37.0
10	SL2-800	2	800	410	175	330	367	F12	9	49.5
11	SL2-1000	2	1000	475	175	330	367	F12	9	58.0
12	SL2-1500	2	1500	400	350	345	382	F12	10	94.0
13	SL2-2000	2	2000	490	350	345	382	F12	11	118
14	SL2-3000	2	3000	710	352	345	382	F12	11	165

APPLICATION FIELD

