TIANNENG

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Tianneng Group

TIANNENG

LEAD ACID BATTERY

PRODUCT BROCHURE



www.tiannengglobal.com

TIANNENG

Global Leading Green Energy Solution Provider



Company Profile

Tianneng is a Global Leading New Energy Company committed to providing environmentally-friendly battery solutions for various industries worldwide since 1986.

Tianneng now has more than 30,000 employees and more than 130 subsidiaries around the world.There are 17 production bases in 7 provinces in China and 1 oversea manufacturing center in Vietnam is under construction. Tianneng set up 7 R&D centers to constantly develop technology and keep innovation in the area of lead acid batteries, lithium batteries,hydrogen Fuel Cells, and Sodium-ion batteries.

Honor:

- Top 1 in China Lead Acid Battery
- Top 10 in the Chinese battery industry
- Top 500 Chinese enterprises
- Global top 500 new energy enterprises

Main Business areas:

- Battery and system Solutions (Motive, SLI, Energy Storage)
- Battery Recycling Solutions (Lead Acid battery recycling, Lithium-ion battery recycling)

Milestone

1986

Founded

Tianneng is located in the southern part of the Yangtze River Delta along the southeast coast of China.

1998

VRLA Battery
Developed for E-bike

2004

Lithium Battery
Developed

2007

Listed on Hongkong

Tianneng successfully listed on the main board of Hong Kong as "China's first power battery stock" (Stock Name:Tianneng Power; Stock Code: 00819. HK).

2009

TN Circular Economy
Base Estabilised

2010

National Honors
for 18650 Series

2014

National Honors
for Pb-C Battery

2018

PESS for Gambia
President

2019

TN & SAFT Joint Venture

Tianneng and SAFT entered a strategic cooperation by signing the contract with the presence of Chinese and French presidents and then established a joint venture.

2021

Listed on SSE

Tianneng Battery was listed on the STAR Market of Shanghai Stock Exchange (Stock Name: Tianneng Shares;Stock Code: 688819). Tianneng Group became the first company in the industry to own two listed companies (A shares + H shares). Tianeng New Energy (Huzhou) Co., Ltd. was established

2022

Build and launched the world's first whole industry chain intelligent factory for lead-acid battery



Global Footprint

- 100+ Countries Footprint.
- 11+ Oversea Branches.
- Tianneng has a global footprint around the world, our business covering more than 100 countries and regions.

- **Market Performance**
  2022 Global Delivery: **110Gwh+**

Headquarters

HQ: Huzhou, Zhejiang, China
INT HQ: Hongkong, China

Branch

APAC: Vietnam, Thailand, Indonesia, Philippines, Australia & New Zealand
India: India
MENA (Middle East and North Africa) : South Africa, Turkey
Americas: America, Argentina, Colombia
Europe: Netherlands, Germany



● Headquarters ● Office ● Office & factory

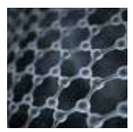
Research & Development

Strong research and development strength

170+
Define industry standards

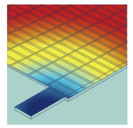
4800+
Industry patents

2
CNAS laboratories



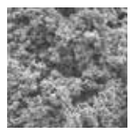
Material Upgrade

Green rare earth alloy, graphene, carbon fiber; Reduced plate grid corrosion and creep, enhanced conductivity and heat transfer, and increased discharge power; Longer life, wider operating temperature, and more power.



Ecological Design

3D model simulation，Large data simulation by finite element analysis. Simulation of current and potential distribution to optimize plate grid design; Better pole plates for longer battery life



Lead Carbon Technology

Negative carbon technology, Inhibiting irreversible sulfation of the negative electrode, reducing the softening of the active material, and maintaining a durable internal assembly pressure; Excellent PSoC usage performance, long cycle life, wider use temperature. Inhibit the irreversible sulfation of the negative electrode, reduce the softening of the active material, and maintain the internal lasting assembly pressure; Excellent PSoC performance, long cycle life, wider operating temperature, greater charge acceptance;



Leading-edge design and craftsmanship

Vacuum and paste, high temperature curing, fully impregnated direct connection structure and double-layer double-effect patented third electrode design, etc.;
More reliable battery structure, better battery performance;

ISO IATF RoHS CE TLC SON

Intelligent Manufacturing

Automatic Production

Tianneng has the first domestic motive battery with an automatic continuous casting, rolling, continuous punching, and continuous coating production demonstration line, the domestic first small-density battery with an intelligent automatic assembly demonstration production line, which the energy and lead consumption have been greatly reduced, equipment operators have been reduced by 9/10, productivity has been increased by 50%, material costs have been reduced by 10%, corrosion resistance of the plate grids has been effectively improved, and cycle life has been increased by 10%.

Intelligent Brain

Based on industrial Internet design, Tianneng combines information technology and the advanced manufacturing industry to create an enterprise-level industrial Internet that integrates industrial data collection, product digitization, manufacturing process digitization, edge computing, industrial big data, and industrial APP.







Application

- Moped
- E-scooter
- Electric Two-wheeler



Application

- Electric Tricycle
- Electric four-wheel
- Low-speed EV



Application

- Golf Cart
- Wheelchair
- Sweeper

Motive Battery Solution

We provides green motive battery solutions for mobilities and all kinds of deep-cycle battery applications, involved with commuting, sightseeing, distribution, sanitation, etc. Our motive battery driving force is strong, long range endurance, products have a number of national patent protection technology, widely used in the global market, is a reliable choice for short-haul travel.

Product Series

TNE Series

TNEH Series

TNEP Series

TNE Series

General Deep Cycle battery

The TNE Series are specifical designed and developed for deep cycle application. This series with a number of national patent technologies and the cycle life can reach 400-600 cycles at 100% DOD, it is highly suitable to cyclic application such as electrical bicycle/tricycle, Golf trolleys and golf cart , EV etc. TN Power's deep cycle motive batteries take more than 45% market share in China domestic motive battery market.

Product Appearance



PRODUCT FEATURE

- **400~600 Cycles @100%DOD**
- **↑10% Energy Density**
  Patent Structure Design
- **0% Acid Stratification**
  Nano Silicon Gel Electrolytes
- **↓50% Anti-corrosion**
  Patent Rare-earth Alloy

CERTIFICATES

APPLICATION

- Electric Two-wheeler
- E-scooter
- Electric Tricycle
- Electric four-wheel
- Electric Motorcycle
- Key's Electric Bike
- Wheelchair
- Sweeper
- Low-speed EV
- Golf Cart

TNE (General Deep Cycle battery)

S/N	Model	Nominal Voltage (V)	Nominal Capacity C2/C3(Ah) 1.75Vpc/25°C	Nominal Capacity C5 (Ah) 1.75Vpc/25°C	Nominal Capacity C20 (Ah) 1.80Vpc/25°C	Dimension (±3mm)				Terminal
						L	W	H	TH	
1	TNE12-15	12	12	12.8	15	151	99	98	103	T2-1/I9
		12	12.6	13.9	15	151	99	98	103	I9
2	TNE12-20	12	16	17.1	20	180	77	140	140	I10
3	TNE12-23	12	18	19.4	23	180	77	150	150	I10
4	TNE12-25	12	20	21.5	25	180	77	171	171	I10
		12	21.6	23.2	25	181	77	171	171	I10
5	TNE12-38	12	32	32.9	38	262	77	170	170	I10
		12	32.6	34.0	38	267	77	171	171	I10
6	TNE12-45L	12	38	39.8	45	222	105	175	175	I10
		12	40.6	41.8	45	222	106	173	173	I10
7	TNE12-52	12	45	46.8	52	224	120	175	175	I1
		12	46.6	47.7	52	224	120	175	175	I1
8	TNE12-58	12	52	53.5	58	224	135	175	175	I1
		12	52.6	54.0	58	224	135	175	175	I1
9	TNE12-65	12	58	58.5	65	224	150	175	175	I1
10	TNE6-190	6	150	160	190	260	180	245	251	I7
11	TNE6-250	6	200	213	250	260	180	270	275	I7
12	TNE6-250L	6	200	213	250	330	180	222	222	I7
13	TNE6-270	6	220	233	270	260	180	270	275	I7
14	TNE8-180	8	150	158	182	262	182	280	280	I7
15	TNE8-190	8	155	164	190	262	182	280	280	I7
16	TNE12-70	12	60	64	70	260	150	180	180	I3
17	TNE12-75	12	60	64	75	262	165	170	170	I3
18	TNE12-90	12	71	76	90	259	170	210	210	I3
19	TNE12-100	12	80	85	100.0	259	170	210	210	I3
20	TNE12-125	12	100	106	125	330	171	216	216	I7
		12	107	120	130	330	171	222	222	I7
21	TNE12-150	12	120	128	150	407	171	240	240	I7
22	TNE12-175	12	140	149	175	339	172	281	281	I7
23	TNE12-190	12	150	160	190	480	170	236	236	I7
24	TNE12-200	12	160	170	200	484	235	170	170	I7
25	TNE12-230	12	180	200	230	532	207	220	226	I7

TNEH Series

Long Cycle Life Black Gold Battery

The TNEH Series are specifical designed and developed for long life deep cycle application. This series combined advanced carbon and graphene tech and its cycle life can reach 500-600 cycles at 100% DOD, it is highly suitable to cyclic application such as electrical bicycle/tricycle, Golf trolleys and golf cart , EV etc. TN Power's deep cycle motive batteries take more than 45% market share in China domestic motive battery market.

Product Appearance



PRODUCT FEATURE

- **↑20% Cycle Life**
  500~600 Cycles @100%DOD
- **↑10% Discharge Power**
  Positive Carbon Fieber
- **↑5% Low Temp. Performance**
  Negative Graphene
- **↑50% Anti-corrosion**
  Patent Rare-earth Alloy

CERTIFICATES

CE RoHS COP SON ISO GB/T

APPLICATION

- Electric Two-wheeler
- E-scooter
- Electric Tricycle
- Electric four-wheel
- Electric Motorcycle
- Key's Electric Bike
- Wheelchair
- Sweeper
- Low-speed EV
- Golf Cart

TNEH (Deep Cycle Black Gold Battery)

S/N	Model	Nominal Voltage (V)	Nominal Capacity C2/C3(Ah) 1.75Vpc/25°C	Nominal Capacity C5 (Ah) 1.75Vpc/25°C	Nominal Capacity C20 (Ah) 1.80Vpc/25°C	Dimension (±3mm)				Terminal
						L	W	H	TH	
1	TNEH12-15	12	13.2	13.7	15	151	99	98	104	T2-1
2	TNEH12-27	12	22.3	23.5	27	181	77	171	171	I10
3	TNEH12-40	12	35.5	36.5	40	267	77	171	171	I10

TNEP Series

Long Mileage Battery

The TNEP Series are specifical designed and developed for long life deep cycle application. This series with a number of national patent technologies and the cycle life can reach 500-600 cycles at 100% DOD, it is highly durable to cyclic application such as electrical bicycle/tricycle, golf cart , EV etc. TN Power's deep cycle motive batteries take more than 45% market share in China domestic motive battery market.

Product Appearance



PRODUCT FEATURE

- **↑10% Capacity Improved**
  Special Active Formula
- **↑15% Discharge Power**
  Positive Carbon Fieber
- **500~600 Cycles @100%DOD**
- **↑50% Anti-corrosion**
  Patent Rare-earth Alloy

CERTIFICATES

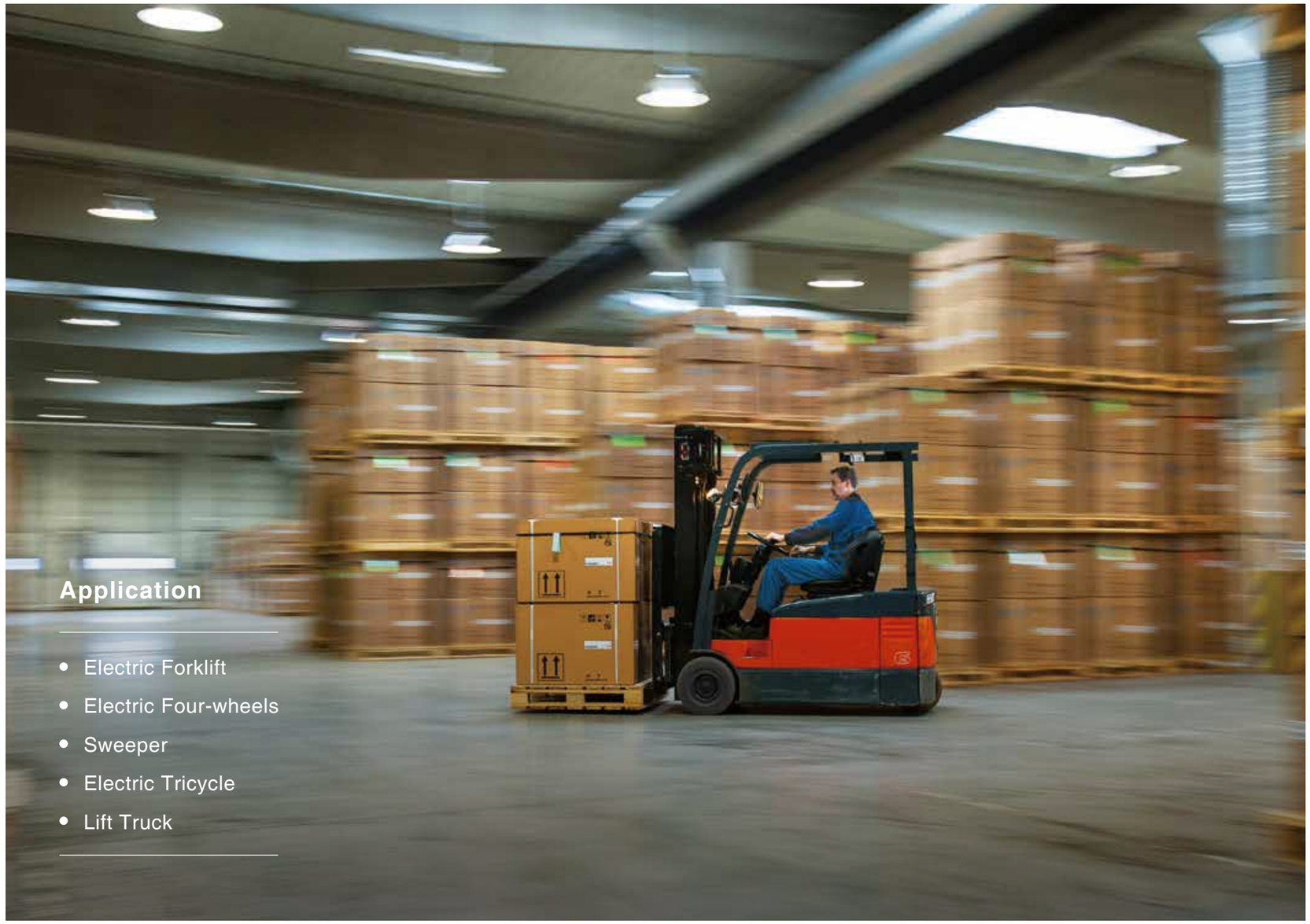
CE RoHS COP SON ISO GB/T

APPLICATION

- Electric Two-wheeler
- E-scooter
- Electric Tricycle
- Electric four-wheel
- Electric Motorcycle
- Key's Electric Bike
- Wheelchair
- Sweeper
- Low-speed EV
- Golf Cart

TNEP (Deep Cycle Premium Battery)

S/N	Model	Nominal Voltage (V)	Nominal Capacity C2/C3(Ah) 1.75Vpc/25°C	Nominal Capacity C5 (Ah) 1.75Vpc/25°C	Nominal Capacity C20 (Ah) 1.80Vpc/25°C	Dimension (±3mm)				Terminal
						L	W	H	TH	
1	TNEP12-16	12	14	15	16	151	99	98	99	I9
2	TNEP12-28	12	23	24	28	181	77	170	170	I10
3	TNEP12-41	12	36	37	41	267	77	171	171	I10
4	TNEP12-42	12	34	36	42	195	130	157.5	162	I1
5	TNEP12-50	12	41	43	50	198.5	166	174	174	I3
6	TNEP12-60	12	46	49	60	229	138.5	211	216	I3
7	TNEP12-66	12	56	59	66	229	138.5	211	216	I3
8	TNEP6-240	6	187	200	240	260	180	245	251	I7
9	TNEP6-290	6	231	240	290	260	180	270	275	I7
10	TNEP6-400	6	285	320	400	295	178	345	350	I7



Application

- Electric Forklift
- Electric Four-wheels
- Sweeper
- Electric Tricycle
- Lift Truck

Traction Battery Solution

TIANNENG provides a wide range of power battery solutions for electric forklift and stacker, our products comply with DIN and BS standards, our products have a very good user experience, high stability, easy operation, low noise, no pollution, a large number of applications in warehousing, logistics, handling and other places, and have extensive cooperation with various car manufacturers.

Product Series

PzB Series

PzS Series

PzB Series

BS Standard Forklift Battery

The PZB Series forklift battery provides is consistent with BS standard, its cycle life could reach 1500 cycles @80%DOD. The series boaste a high level of power and reliability for industrial traction application.

Product Appearance



PRODUCT FEATURE

- **Comply with BS standards;**
- **Longer service life, Up to 1500 cycles @80%DOD;**
- **Less water loss, Less maintenance;**
- **Perfect soft connection, easy to install.**

CERTIFICATES

CE RoHS ISO

APPLICATION

- Electric Forklift
- Sweeper
- Electric Tricycle
- Electric Four-wheels
- Lift Truck

PzB (Traction Battery BS Series)

S/N	Model	Nominal Voltage (V)	Nominal Capacity C5 (Ah) 1.75Vpc/30°C	Dimension (±2mm)			
				L	W	H	TH
1	2PzB100	2	100	45	158	389	421
2	3PzB150	2	150	61	158	389	421
3	4PzB200	2	200	77	158	389	421
4	5PzB250	2	250	93	158	389	421
5	6PzB300	2	300	109	158	389	421
6	7PzB350	2	350	125	158	389	421
7	8PzB400	2	400	141	158	389	421
8	9PzB450	2	450	157	158	389	421
9	10PzB500	2	500	173	158	389	421
10	2PzB110	2	110	45	158	405	437
11	3PzB165	2	165	61	158	405	437

PzB (Traction Battery BS Series)

S/N	Model	Nominal Voltage (V)	Nominal Capacity C5 (Ah) 1.75Vpc/30°C	Dimension (±2mm)			
				L	W	H	TH
12	4PzB220	2	220	77	158	405	437
13	5PzB275	2	275	93	158	405	437
14	6PzB330	2	330	109	158	405	437
15	7PzB385	2	385	125	158	405	437
16	8PzB440	2	440	141	158	405	437
17	9PzB495	2	495	157	158	405	437
18	10PzB550	2	550	173	158	405	437
19	2PzB120	2	120	45	158	405	437
20	3PzB180	2	180	61	158	405	437
21	4PzB240	2	240	77	158	405	437
22	5PzB300	2	300	93	158	405	437
23	6PzB360	2	360	109	158	405	437
24	7PzB420	2	420	125	158	405	437
25	8PzB480	2	480	141	158	405	437
26	9PzB540	2	540	157	158	405	437
27	10PzB600	2	600	173	158	405	437
28	2PzB130	2	130	45	158	451	483
29	3PzB195	2	195	61	158	451	483
30	4PzB260	2	260	77	158	451	483
31	5PzB325	2	325	93	158	451	483
32	6PzB390	2	390	109	158	451	483
33	7PzB455	2	455	125	158	451	483

PzB (Traction Battery BS Series)

S/N	Model	Nominal Voltage (V)	Nominal Capacity C5 (Ah) 1.75Vpc/30°C	Dimension (±2mm)			
				L	W	H	TH
34	8PzB520	2	520	141	158	451	483
35	9PzB585	2	585	157	158	451	483
36	10PzB650	2	650	173	158	451	483
37	2PzB140	2	140	45	158	480	512
38	3PzB210	2	210	61	158	480	512
39	4PzB280	2	280	77	158	480	512
40	5PzB350	2	350	93	158	480	512
41	6PzB420	2	420	109	158	480	512
42	7PzB490	2	490	125	158	480	512
43	8PzB560	2	560	141	158	480	512
44	9PzB630	2	630	157	158	480	512
45	10PzB700	2	700	173	158	480	512
46	2PzB150	2	150	45	158	506	538
47	3PzB225	2	225	61	158	506	538
48	4PzB300	2	300	77	158	506	538
49	5PzB375	2	375	93	158	506	538
50	6PzB450	2	450	109	158	506	538
51	7PzB525	2	525	125	158	506	538
52	8PzB600	2	600	141	158	506	538
53	9PzB675	2	675	157	158	506	538
54	10PzB750	2	750	173	158	506	538
55	2PzB160	2	160	45	158	506	538

PzB (Traction Battery BS Series)

S/N	Model	Nominal Voltage (V)	Nominal Capacity C5 (Ah) 1.75Vpc/30°C	Dimension (±2mm)			
				L	W	H	TH
56	3PzB240	2	240	61	158	506	538
57	4PzB320	2	320	77	158	506	538
58	5PzB400	2	400	93	158	506	538
59	6PzB480	2	480	109	158	506	538
60	7PzB560	2	560	125	158	506	538
61	8PzB640	2	640	141	158	506	538
62	9PzB720	2	720	157	158	506	538
63	10PzB800	2	800	173	158	506	538
64	2PzB180	2	180	45	158	548	580
65	3PzB270	2	270	61	158	548	580
66	4PzB360	2	360	77	158	548	580
67	5PzB450	2	450	93	158	548	580
68	6PzB540	2	540	109	158	548	580
69	7PzB630	2	630	125	158	548	580
70	8PzB720	2	720	141	158	548	580
71	9PzB810	2	810	157	158	548	580
72	10PzB900	2	900	173	158	548	580
73	2PzB200	2	200	45	158	625	657
74	3PzB300	2	300	61	158	625	657
75	4PzB400	2	400	77	158	625	657
76	5PzB500	2	500	93	158	625	657
77	6PzB600	2	600	109	158	625	657

PzB (Traction Battery BS Series)

S/N	Model	Nominal Voltage (V)	Nominal Capacity C5 (Ah) 1.75Vpc/30°C	Dimension (±2mm)			
				L	W	H	TH
78	7PzB700	2	700	125	158	625	657
79	8PzB800	2	800	141	158	625	657
80	9PzB900	2	900	157	158	625	657
81	10PzB1000	2	1000	173	158	625	657
82	2PzB210	2	210	45	158	685	717
83	3PzB315	2	315	61	158	685	717
84	4PzB420	2	420	77	158	685	717
85	5PzB525	2	525	93	158	685	717
86	6PzB630	2	630	109	158	685	717
87	7PzB735	2	735	125	158	685	717
88	8PzB840	2	840	141	158	685	717
89	9PzB945	2	945	157	158	685	717
90	10PzB1050	2	1050	173	158	685	717
91	2PzB220	2	220	45	158	685	717
92	3PzB330	2	330	61	158	685	717
93	4PzB440	2	440	77	158	685	717
94	5PzB550	2	550	93	158	685	717
95	6PzB660	2	660	109	158	685	717
96	7PzB770	2	770	125	158	685	717
97	8PzB880	2	880	141	158	685	717
98	9PzB990	2	990	157	158	685	717
99	10PzB1100	2	1100	173	158	685	717

PzS Series

DIN Standard Forklift Battery

The PZS Series forklift battery provides is consistent with DIN standard, its cycle life could reach 1500 cycles @80%DOD. The series boaste a high level of power and reliability for industrial traction application.

Product Appearance



PRODUCT FEATURE

- **Comply with DIN standards;**
- **Longer service life, Up to 1500 cycles @80%DOD;**
- **Less water loss, Less maintenance;**
- **Perfect soft connection, easy to install.**

CERTIFICATES

CE RoHS ISO

APPLICATION

- Electric Forklift
- Sweeper
- Electric Tricycle
- Electric Four-wheels
- Lift Truck

PzS (Traction Battery DIN Series)

S/N	Model	Nominal Voltage (V)	Nominal Capacity C5 (Ah) 1.70Vpc/30°C	Dimension (±2mm)			
				L	W	H	TH
1	2PzS120	2	120	47	198	323	355
2	3PzS180	2	180	65	198	323	355
3	4PzS240	2	240	83	198	323	355
4	5PzS300	2	300	101	198	323	355
5	6PzS360	2	360	119	198	323	355
6	7PzS420	2	420	137	198	323	355
7	8PzS480	2	480	155	198	323	355
8	9PzS540	2	540	174	198	323	355
9	10PzS600	2	600	192	198	323	355
10	2PzS140	2	140	47	198	380	412

PzS (Traction Battery DIN Series)

S/N	Model	Nominal Voltage (V)	Nominal Capacity C5 (Ah) 1.70Vpc/30°C	Dimension (±2mm)			
				L	W	H	TH
11	3PzS210	2	210	65	198	380	412
12	4PzS280	2	280	83	198	380	412
13	5PzS350	2	350	101	198	380	412
14	6PzS420	2	420	119	198	380	412
15	7PzS490	2	490	137	198	380	412
16	8PzS560	2	560	155	198	380	412
17	9PzS630	2	630	174	198	380	412
18	10PzS700	2	700	192	198	380	412
19	2PzS160	2	160	47	198	403	435
20	3PzS240	2	240	65	198	403	435
21	4PzS320	2	320	83	198	403	435
22	5PzS400	2	400	101	198	403	435
23	6PzS480	2	480	119	198	403	435
24	7PzS560	2	560	137	198	403	435
25	8PzS640	2	640	155	198	403	435
26	9PzS720	2	720	174	198	403	435
27	10PzS800	2	800	192	198	403	435
28	2PzS180	2	180	47	198	473	505
29	3PzS270	2	270	65	198	473	505
30	4PzS360	2	360	83	198	473	505

PzS (Traction Battery DIN Series)

S/N	Model	Nominal Voltage (V)	Nominal Capacity C5 (Ah) 1.70Vpc/30°C	Dimension (±2mm)			
				L	W	H	TH
31	5PzS450	2	450	101	198	473	505
32	6PzS540	2	540	119	198	473	505
33	7PzS630	2	630	137	198	473	505
34	8PzS720	2	720	155	198	473	505
35	9PzS810	2	810	174	198	473	505
36	10PzS900	2	900	192	198	473	505
37	2PzS210	2	210	47	198	513	545
38	3PzS315	2	315	65	198	513	545
39	4PzS420	2	420	83	198	513	545
40	5PzS525	2	525	101	198	513	545
41	6PzS630	2	630	119	198	513	545
42	7PzS735	2	735	137	198	513	545
43	8PzS840	2	840	155	198	513	545
44	9PzS945	2	945	174	198	513	545
45	10PzS1050	2	1050	192	198	513	545
46	2PzS230	2	230	47	198	548	580
47	3PzS345	2	345	65	198	548	580
48	4PzS460	2	460	83	198	548	580
49	5PzS575	2	575	101	198	548	580
50	6PzS690	2	690	119	198	548	580

PzS (Traction Battery DIN Series)

S/N	Model	Nominal Voltage (V)	Nominal Capacity C5 (Ah) 1.70Vpc/30°C	Dimension (±2mm)			
				L	W	H	TH
51	7PzS805	2	805	137	198	548	580
52	8PzS920	2	920	155	198	548	580
53	9PzS1035	2	1035	174	198	548	580
54	10PzS1150	2	1150	192	198	548	580
55	2PzS240	2	240	47	198	576	608
56	3PzS360	2	360	65	198	576	608
57	4PzS480	2	480	83	198	576	608
58	5PzS600	2	600	101	198	576	608
59	6PzS720	2	720	119	198	576	608
60	7PzS840	2	840	137	198	576	608
61	8PzS960	2	960	155	198	576	608
62	9PzS1080	2	1080	174	198	576	608
63	10PzS1200	2	1200	192	198	576	608
64	2PzS250	2	250	47	198	576	608
65	3PzS375	2	375	65	198	576	608
66	4PzS500	2	500	83	198	576	608
67	5PzS625	2	625	101	198	576	608
68	6PzS750	2	750	119	198	576	608
69	7PzS875	2	875	137	198	576	608
70	8PzS1000	2	1000	155	198	576	608
71	9PzS1125	2	1125	174	198	576	608
72	10PzS1250	2	1250	192	198	576	608
73	2PzS280	2	280	47	198	680	712
74	3PzS420	2	420	65	198	680	712
75	4PzS560	2	560	83	198	680	712

PzS (Traction Battery DIN Series)

S/N	Model	Nominal Voltage (V)	Nominal Capacity C5 (Ah) 1.70Vpc/30°C	Dimension (±2mm)			
				L	W	H	TH
76	5PzS700	2	700	101	198	680	712
77	6PzS840	2	840	119	198	680	712
78	7PzS980	2	980	137	198	680	712
79	8PzS1120	2	1120	155	198	680	712
80	9PzS1260	2	1260	174	198	680	712
81	10PzS1400	2	1400	192	198	680	712
82	2PzS300	2	300	47	198	680	712
83	3PzS450	2	450	65	198	680	712
84	4PzS600	2	600	83	198	680	712
85	5PzS750	2	750	101	198	680	712
86	6PzS900	2	900	119	198	680	712
87	7PzS1050	2	1050	137	198	680	712
88	8PzS1200	2	1200	155	198	680	712
89	9PzS1350	2	1350	174	198	680	712
90	10PzS1500	2	1500	192	198	680	712
91	2PzS310	2	310	47	198	723	755
92	3PzS465	2	465	65	198	723	755
93	4PzS620	2	620	83	198	723	755
94	5PzS775	2	775	101	198	723	755
95	6PzS930	2	930	119	198	723	755
96	7PzS1085	2	1085	137	198	723	755
97	8PzS1240	2	1240	155	198	723	755
98	9PzS1395	2	1395	174	198	723	755
99	10PzS1550	2	1550	192	198	723	755



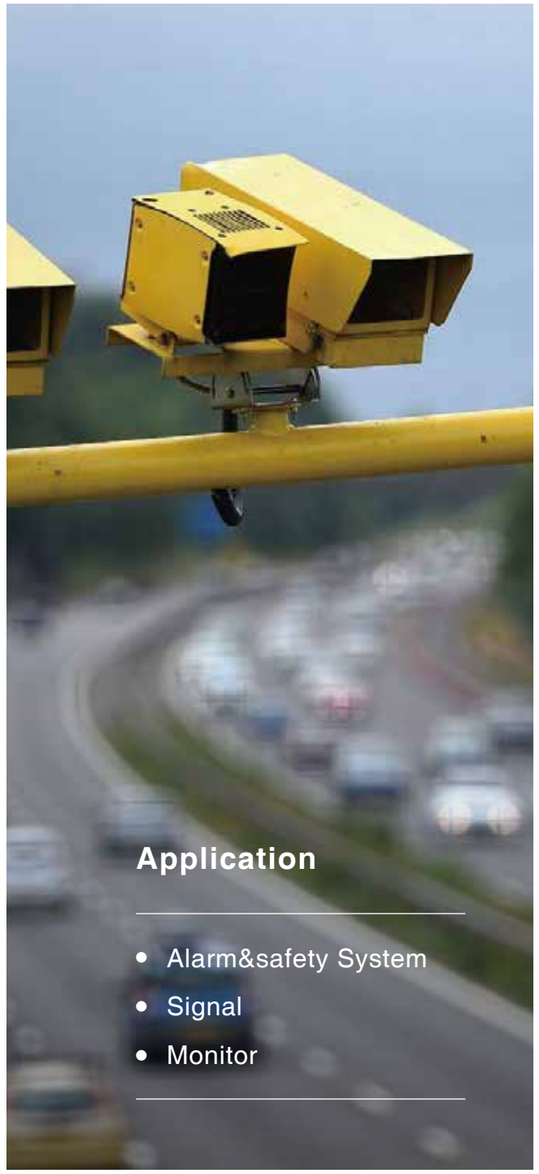
Application

- Residential
- Solar Energy
- Other renewable energy



Application

- UPS/EPS
- Telecommunication
- Electric Power



Application

- Alarm&safety System
- Signal
- Monitor

Reserve/Energy Storage Solution

Tianneng provides solutions for energy storage, reserve and other industrial scenarios, with excellent product cycle performance, stability and reliability, to provide customers with solid green energy guarantee.

Product Series

- TN Series
- TNG Series
- TNC Series

TN Series

General Purpose AGM Battery

The TN series is a general-purpose valve regulate lead-acid (VRLA) AGM battery that combines the TN Group's industry scale and advanced equipment to offer highly reliable products at the most competitive prices. With a design life of 5 to 8 years, the series has excellent cycling performance and is ideal for a variety of applications in reserve and cycling.

Product Appearance



PRODUCT FEATURE

- **100% Model Coverage**
  Both Float & Cycle Application
- **>98% 28d Capacity Retention**
  High Purity Eletrolyte
- **↑20% Charging Acceptance**
  Special Negative Addictive
- **↑50% Anti-corrosion**
  Patent Rare-earth Alloy

CERTIFICATES

APPLICATION

- Residential
- Solar Energy
- Wind Energy
- UPS/EPS
- Telecommunication
- Electric Power
- Alarm&safety System
- Signal
- Monitor

TN（GENERAL PURPOSE AGM BATTERY）

S/N	Model	Nominal Voltage (V)	Nominal capacity 1.8V/cell(Ah)	Dimension (±3mm)				Terminal
				L	W	H	TH	
1	TN12-4.5	12	4.5 (C20)	90	70	101	107	T2
2	TN12-5.5	12	5.5 (C20)	90	70	101	107	T2
3	TN12-7.0	12	7.0 (C20)	151	65.5	94	100	T2
4	TN12-9.0	12	9.0 (C20)	151	65.5	94	100	T2
5	TN12-10	12	10 (C20)	151	98	94	100	T2
6	TN12-12	12	12 (C20)	151	98	94	100	T2
7	TN12-17	12	17 (C20)	182	77	167	167	L2
8	TN12-20	12	20 (C20)	182	77	167	167	L2
9	TN12-24	12	24 (C20)	166	175	125	125	I1
10	TN12-24H	12	24 (C20)	166	126.5	173	173	I1
11	TN12-38	12	38(C10)	198.5	166	174	174	I3
12	TN12-38E	12	38(C20)	198.5	166	174	174	I3
13	TN12-50E	12	50(C20)	198.5	166	174	174	I3
14	TN12-65	12	65(C10)	350	165.5	174	174	I3
15	TN12-65E	12	65(C20)	350	165.5	174	174	I3
16	TN12-80E	12	80(C20)	260	168	211	213.5	I3
17	TN12-100	12	100(C10)	330	172	214	221.5	I7
18	TN12-100E	12	100(C20)	330	172	214	221.5	I7
19	TN12-100ZE	12	100(C20)	330	172	216	216	I7
20	TN12-120	12	120(C10)	408	171	225	225	I7
21	TN12-120E	12	120(C20)	408	171	225	225	I7
22	TN12-150	12	150(C10)	480	170	240	240	I7
23	TN12-150E	12	150(C20)	480	170	240	240	I7
24	TN12-200	12	200(C10)	520	239	220	225	I7
25	TN12-200E	12	200(C20)	520	239	220	225	I7
26	TN12-250	12	250(C10)	520	268	220	225	I7
27	TN12-250E	12	250(C20)	520	268	220	225	I7

TNG Series

General Purpose GEL Battery

The TNG Series integrates patent nano gel electrolyte with up-to-date AGM structure. The range offers over 12 years design life with very high deep cycling capability. This range is highly suited to telecom outdoor application, renewable energy system and other harsh environment applications.

Product Appearance



PRODUCT FEATURE

- **GEL Technology**
- **↑20% Cycle Life**
  260~300 Cycle Times
- **↑10% Low Temp Capacity**
  Nano Gel Electrolyte
- **↑20% Charge Acceptance**
  Special Negative Additive

CERTIFICATES

APPLICATION

- Residential
- Solar Energy
- Wind Energy
- UPS/EPS
- Telecommunication
- Electric Power
- Alarm&safety System
- Signal
- Monitor

TNG（General Purpose GEL Battery）

S/N	Model	Nominal Voltage (V)	Nominal Capacity C10 (Ah) 1.80Vpc/25°C	Dimension (mm)				Terminal
				L	W	H	TH	
1	TNG12-80	12	80	260	168	211	213.5	I3
2	TNG12-90	12	90	306.5	168	208.5	211	I3
3	TNG12-100	12	100	330	172	214	221.5	I7
4	TNG12-120	12	120	408	171	225	225	I7
5	TNG12-150	12	150	480	170	240	240	I7
6	TNG12-200	12	200	520	239	220	225	I7
7	TNG12-250	12	250	520	268	220	225	I7

TNC Series

Lead Carbon (Pb-C) Battery

The TNC series adopts newest lead carbon technology which add carbon material into negative electrode to slow down the sulfation. The TNC series battery provides not only high energy density, but also high power, rapid charge and discharge, longer cycle life. It's very suitable for renewable energy storage or where commercial power is unstable.

Product Appearance



PRODUCT FEATURE

- **Lead carbon Technology**
- **60% DOD≥2500 Times**
- **Multi-element Patent Rare Earth Alloy**
- **HRPSoC Technology**

CERTIFICATES

CE RoHS GB/T SON ISO

APPLICATION

- Residential
- Solar Energy
- Wind Energy
- UPS/EPS
- Telecommunication
- Electric Power
- Alarm&safety System
- Signal
- Monitor

TNC（LEAD CARBON (Pb-C) BATTERY)

S/N	Model	Nominal Voltage (V)	Nominal Capacity C10 (Ah) 1.80Vpc/25°C	Dimension (mm)				Terminal
				L	W	H	TH	
1	TNC12-65P	12	65	260	168	211	213.5	I3
2	TNC12-80P	12	80	330	172	214	221.5	I7
3	TNC12-100P	12	100	408	171	225	225	I7
4	TNC12-150P	12	150	532	207	220	226	I7
5	TNC12-170P	12	170	520	239	220	225	I7
6	TNC12-200P	12	200	520	268	220	225	I7



Application

- Car starting



Application

- Ship starting



Application

- Oiler starting

Starter Battery Solution

TIANNENG provides starter battery solutions for passenger cars. The battery manufacturing strictly follows multiple standards such as JIS, DIN and SCI, and combines EFB and AGM technologies for excellent capacity performance, energy saving and consumption reduction, making the environment greener and life healthier.

Product Series

- TA Series
- TAS Series
- TAA Series

TA Series

General Starter Battery

The TA Series keeps consistent with JIS, SCI, DIN and EN standards with super cranking power which ensures denpendable start in cold weather, excellent corrosion-resistence performance in high temperature condition and great vibration resistence. The Series has longer life and lower internal resistence, is highly suited for cars, trucks, tractor and the starter for other vehicles as automobile battery.

Product Appearance



PRODUCT FEATURE

- **SLA battery,Maintenance Free**
- **Stronger Starting Capacity**
- **Excellent Charging Acceptance**
- **Excellent Vibration Resistance**

CERTIFICATES

CE RoHS CCS ISO IATF

APPLICATION

- Car starting
- Ship starting
- Oiler starting

STARTER BATTERY-C SERIES

S/N	Model	International Model	International Standard	Nominal Voltage (V)	RC (min)	CCA/-18°C (A)	Dimension(mm)				Weight(kg)	Terminal	Layout
							L	W	H	TH			
1	46B24LS TA-C	46B24	JIS	12	61	360	238	129	203	227	11.1±1.0	T2	L
2	46B24RS TA-C	46B24	JIS	12	61	360	238	129	203	227	11.1±1.0	T2	R
3	46B24L TA-C	46B24	JIS	12	61	360	238	129	203	227	11.1±1.0	T1	L
4	46B24R TA-C	46B24	JIS	12	61	360	238	129	203	227	11.1±1.0	T1	R
5	46B24LX TA-C	46B24	JIS	12	61	360	238	129	203	227	11.1±1.0	T1	L
6	46B24LSX TA-C	46B24	JIS	12	61	360	238	129	203	227	11.1±1.0	T2	L
7	55D23LX TA-C	55D23	JIS	12	82	485	232	173	204	225	14.1±1.0	T2	L
8	55D23RX TA-C	55D23	JIS	12	82	485	232	173	204	225	14.1±1.0	T2	R
9	55D26LX TA-C	55D26	JIS	12	88	485	260	173	204	225	15.3±1.0	T2	L
10	55D26RX TA-C	55D26	JIS	12	88	485	260	173	204	225	15.3±1.0	T2	R
11	80D26LX TA-C	80D26	JIS	12	100	500	260	173	204	225	16.5±1.0	T2	L
12	80D26RX TA-C	80D26	JIS	12	100	500	260	173	204	225	16.5±1.0	T2	R
13	95D31LX TA-C	95D31	JIS	12	140	630	306	173	204	225	19.4±1.0	T2	L
14	95D31RX TA-C	95D31	JIS	12	140	630	306	173	204	225	19.4±1.0	T2	R
15	105E41R TA-C	105E41	JIS	12	180	700	410	176	213	234	24.8±1.0	T2	R
16	105E41RB TA-C	105E41	JIS	12	180	700	410	176	213	234	24.8±1.0	B	R
17	115E41R TA-C	115E41	JIS	12	170	730	410	176	213	234	25.5±1.0	T2	R
18	58500 TA-C	58500	SAE	12	65	370	250	174	158	177	11.8±1.0	T2	R
19	85610 TA-C	85610	SAE	12	90	470	230	173	181	203	14±1.0	T2	L
20	86610 TA-C	86610	SAE	12	90	470	230	173	181	203	14±1.0	T2	R
21	L2-400 TA-C	L2-400	EN	12	85	485	242	175	190	190	14.1±1.0	T2	L
22	L2-400R TA-C	L2-400	EN	12	85	485	242	175	190	190	14.1±1.0	T2	R
23	T6 TA-C	T6	EN	12	100	525	278	175	175	175	15.5±1.0	T2	L
24	N150R TA-C	N150	JIS	12	240	800	510	216	194	217	35.8±1.0	T2	R
25	N150RB TA-C	N150	JIS	12	240	800	510	216	194	229	36±1.0	B	R
26	N180L TA-C	N180	JIS	12	275	850	510	216	194	217	38.5±1.0	T2	L
27	N180R TA-C	N180	JIS	12	275	900	510	216	194	217	38.5±1.0	T2	R
28	N200L TA-C	N200	JIS	12	340	1100	510	216	194	217	46.5±1.5	T2	L
29	N200R TA-C	N200	JIS	12	340	1100	510	216	194	217	46.5±1.5	T2	R
30	N225L TA-C	N225	JIS	12	400	1180	514	267	213	236	54.5±3	T2	L
31	N225R TA-C	N225	JIS	12	400	1180	514	267	213	236	54.5±3	T2	R

STARTER BATTERY-S SERIES

S/N	Model	International Model	International Standard	Nominal Voltage (V)	Nominal Capacity (Ah)	CCA/-18°C (A)	Dimension				Weight(kg)	Terminal	Layout
							L	W	H	TH			
1	38B20L TA-S	38B20	JIS	12	36	325	197	129	203	227	10.1±0.5	T1	L
2	38B20R TA-S	38B20	JIS	12	36	325	197	129	203	227	10.1±0.5	T1	R
3	55B24LS TA-S	55B24	JIS	12	45	400	238	129	203	227	11.8±1.0	T2	L
4	55B24RS TA-S	55B24	JIS	12	45	400	238	129	203	227	11.8±1.0	T2	R
5	55B24L TA-S	55B24	JIS	12	45	400	238	129	203	227	11.8±1.0	T1	L
6	55B24LSX TA-S	55B24	JIS	12	45	400	238	129	203	227	11.9±1.0	T2	L
7	55D23LX TA-S	55D23	JIS	12	60	500	232	173	204	225	15.4±1.0	T2	L
8	75D23LX TA-S	75D23	JIS	12	65	520	232	173	204	225	15.8±1.0	T2	L
9	55D26LX TA-S	55D26	JIS	12	60	500	260	173	204	225	16.5±1.0	T2	L
10	55D26RX TA-S	55D26	JIS	12	60	500	260	173	204	225	16.5±1.0	T2	R
11	80D26LX TA-S	80D26	JIS	12	70	600	260	173	204	225	17.8±1.0	T2	L
12	80D26RX TA-S	80D26	JIS	12	70	600	260	173	204	225	17.8±1.0	T2	R
13	95D31LX TA-S	95D31	JIS	12	80	660	306	173	204	225	20.1±1.0	T2	L
14	95D31RX TA-S	95D31	JIS	12	80	660	306	173	204	225	20.1±1.0	T2	R
15	105E41R TA-S	105E41	JIS	12	100	720	410	176	213	234	26±1.0	T2	R
16	115E41R TA-S	115E41	JIS	12	120	850	410	176	213	234	27.8±1.0	T2	R
17	31S750 TA-S	G31	SAE	12	90	750	334	176	222	239	24.7±1.0	S	R

STARTER BATTERY-S SERIES

S/N	Model	International Model	International Standard	Nominal Voltage (V)	Nominal Capacity (Ah)	CCA/-18°C (A)	Dimension				Weight(kg)	Terminal	Layout
							L	W	H	TH			
18	58500 TA-S	58500	SAE	12	48	430	250	174	158	177	12.9±1.0	T2	R
19	85610 TA-S	85610	SAE	12	55	550	230	173	181	203	15.1±1.0	T2	L
20	86610 TA-S	86610	SAE	12	55	550	230	173	181	203	15.1±1.0	T2	R
21	L2-400 TA-S	L2-400	EN	12	60	550	242	175	190	190	15.1±1.0	T2	L
22	L2-400R TA-S	L2-400	EN	12	60	550	242	175	190	190	15.1±1.0	T2	R
23	57220 TA-S	57220	EN	12	72	650	278	175	190	190	18±1.0	T2	L
24	20-82 TA-S	20-82	EN	12	80	680	315	175	190	190	19.9±1.0	T2	L
25	20-100 TA-S	20-100	EN	12	100	750	353	175	190	190	23±1.0	T2	L
26	54565 TA-S	54565	EN	12	45	350	207	175	175	175	11.8±1.0	T2	L
27	54565R TA-S	54565	EN	12	45	350	207	175	175	175	11.8±1.0	T2	R
28	T6 TA-S	T6	EN	12	66	590	278	175	175	175	16.5±1.0	T2	L
29	N120R TA-S	N120	JIS	12	120	780	507	183	194	216	32.5±1.0	T2	R
30	N135R TA-S	N135	JIS	12	135	850	507	183	194	216	33.8±1.0	T2	R
31	N150R TA-S	N150	JIS	12	150	850	510	216	194	217	38.5±1.0	T2	R
32	N150RB TA-S	N150	JIS	12	150	850	510	216	194	229	38.8±1.0	B	R
33	N165R TA-S	N165	JIS	12	165	900	510	216	194	217	40±1.0	T2	R
34	N180R TA-S	N180	JIS	12	180	950	510	216	194	217	41.5±1.0	T2	R
35	N200L TA-S	N200	JIS	12	200	1100	514	267	213	236	50±1.0	T2	L

TAS Series

EFB Start-Stop Battery

The TAS Series keeps consistent with JIS and EN standards with super cranking power which ensures denpendable start in cold weather, excellent corrosion-resistence performance in high temperature condition and great vibration resistence. The Series has longer life and lower internal resistence, is highly suited for cars, trucks, tractor and the starter for other vehicles as automobile battery.

Product Appearance



PRODUCT FEATURE

- **2 Times Longer Cycle life than SLA Battery**
- **1.1 Times Larger CCA than SLA Battery**
- **Excellent Charging Acceptance**
- **Excellent Vibration Resistance**

CERTIFICATES

CE RoHS IATF ISO

APPLICATION

- Car starting
- Ship starting
- Oiler starting

TAS (EFB START-STOP)

S/N	Model	International Model	International Standard	Nominal Voltage (V)	Nominal Capacity (Ah)	CCA/-18°C（A）	Dimension				Terminal	Layout
							L	W	H	TH		
1	Q-85 TAS	Q-85	JIS	12	60	610	232	173	204	225	T2	L
2	Q-85R TAS	Q-85R	JIS	12	60	610	232	173	204	225	T2	R
3	S-95 TAS	S-95	JIS	12	75	660	260	173	204	225	T2	L
4	H5(LN2) TAS	H5(LN2)	EN	12	60	640	242	175	190	190	T2	L
5	H5(LN2)R TAS	H5(LN2)	EN	12	60	640	242	175	190	190	T2	R
6	H6(LN3) TAS	H6(LN3)	EN	12	70	700	278	175	190	190	T2	L
7	H7(LN4) TAS	H7(LN4)	EN	12	80	750	315	175	190	190	T2	L
8	T7(LBN4) TAS	T7(LBN4)	EN	12	75	700	315	175	175	175	T2	L

TAA Series

AGM Start-Stop Battery

The TAS Series keeps consistent with EN standards with super cranking power which ensures denpendable start in cold weather, excellent corrosion-resistence performance in high temperature condition and great vibration resistence. The Series has longer life and lower internal resistence, is highly suited for cars, trucks, tractor and the starter for other vehicles as automobile battery.

Product Appearance



PRODUCT FEATURE

- **3 Times Longer Cycle life than SLA Battery**
- **1.2 Times Larger CCA than SLA Battery**
- **Excellent Charging Acceptance**
- **Excellent Vibration Resistance**

CERTIFICATES

CE RoHS IATF ISO

APPLICATION

- Car starting
- Ship starting
- Oiler starting

TAA (AGM START-STOP)

S/N	Model	International Model	International Standard	Nominal Voltage (V)	Nominal Capacity (Ah)	CCA/-18°C (A)	Dimension /+2mm				Terminal	Layout
							L	W	H	TH		
1	H4(LN1) TAA	H4(LN1)	EN	12	50	570	207	175	190	190	T2	L
2	H5(LN2) TAA	H5(LN2)	EN	12	60	660	242	175	190	190	T2	L
3	H6(LN3) TAA	H6(LN3)	EN	12	70	720	278	175	190	190	T2	L
4	H7(LN4) TAA	H7(LN4)	EN	12	80	800	315	175	190	190	T2	L
5	H8(LN5) TAA	H8(LN5)	EN	12	92	850	353	175	190	190	T2	L
6	H9(LN6) TAA	H9(LN6)	EN	12	105	950	394	175	190	190	T2	L



Cooperation case product

TNC series

Customer M's lead-acid motive TNE series

Application	**Customized demand**	**Strong power**	**Standard** IEC60254 SAE/CE/RoHS/UL	**Durability** Good service life
Solution	**Flexible design** Battery size is designed according to the space of the battery bin	**3 Crate** Compatible with high-rate and high-capacity designs, enabling batteries to adapt to high loads and long mileage requirements	**Compliance** The battery design meets the requirements of the IEC60254 standard Meet the safety requirements of wheelchairs and obtain SAE, CE, RoHS, UL and other certificates	**400 ~ 600** The special lead paste formula and rare earth alloy patent technology make the battery have good tolerance, and the cycle life can reach 400 to 600 times, which is suitable for the use of the vehicle body.

Customer information:

Customer M is a global electric wheelchair giant;

Background:

the pain points of M customers are:
1) At present, the cost of local batteries is high, Customers have demand for cost reduction.
2) The low-cost AGM valve-regulated batteries on the market have average cycle performance, and most of them can only be used in the after-sales replacement market;



Product matching:

As a leading enterprise of power batteries, Tianneng can provide products with competitive life and cost

Highlights:

The cooperation with this customer has increased year by year, and the cooperative manufacturers in this industry have gradually covered other Top wheelchair companies in the world;The total market share of cooperative wheel chair manufacturers accounts for more than 50% of the world.



Cooperation case product

TNC series

Lead carbon TNC series

In 2019, Tianneng began to sell TNC series lead-carbon batteries overseas. The products are mainly sold to Europe, Australia and America. They are mostly used in new energy base stations, home storage and other application scenarios, and sales have increased rapidly year by year. The growth rate has exceeded 200% for three consecutive years.

Background:

In 2010, Tianneng and Harbin Institute of Technology jointly developed lead-carbon super batteries. In 2015, the industrialization of lead-carbon batteries was certified by Zhejiang Province.





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