Energywith

Traction Battery

SUPER ‹*LIFTTOP*› ECO

For battery forklift

LIFTTOP

日本品質

JAPAN QUALITY

Thai Energy Storage Technology PLC.

Traction Battery
SUPER ‹*LIFTTOP*› ECO

History of LIFTTOP

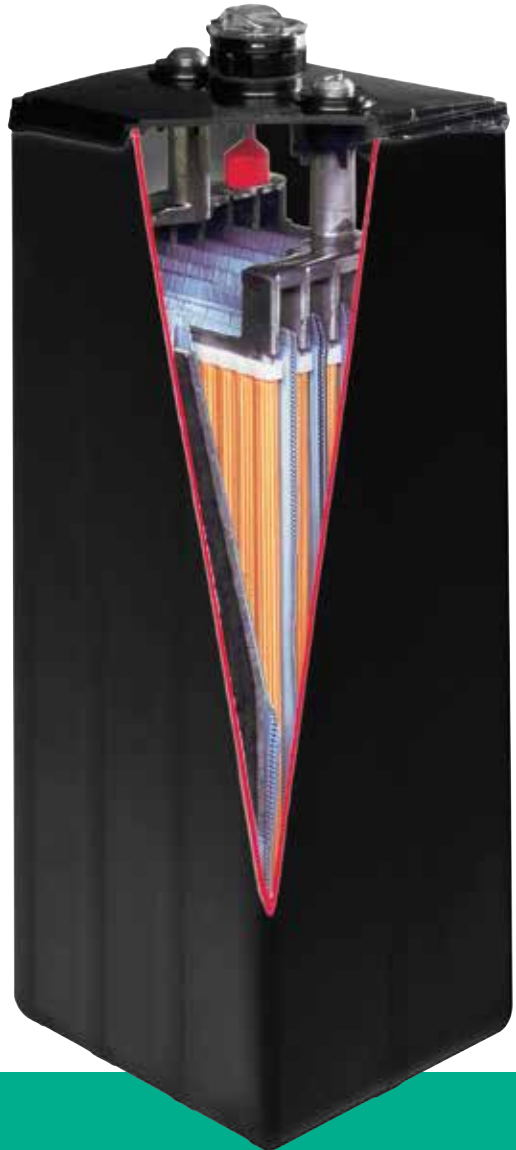
With more than 100 years of history, we aim to be a leading global battery supplier.

1916	Shin Kobe Electric Machinery was established and began manufacturing of lead acid battery in Japan.
1979	Began manufacturing and sales of traction battery in Japan.
1987	Began manufacturing and sales of “LIFTTOP” series in Japan.
2010	Began manufacturing and sales of “SUPER<LIFTTOP>ECO” series in Japan.
2016	Shin Kobe Electric Machinery was merged with Hitachi Chemical Co., Ltd. in Japan.
2019	Hitachi Chemical expanded production base of “SUPER<LIFTTOP>ECO” series to Thailand, using same design and technology with Japan.
2020	Hitachi Chemical changed its name to “Showa Denko Materials” Thailand factory changed its name to “Thai Energy Storage Technology PLC.” and become one of Showa Denko Materials group company, and promoting LIFTTOP brand together with Japan.
2021	LEAD ACID Battery Business spin-off from Showa Denko to be Energywith.

Battery forklift have replaced conventional forklift (i.e.,internal-combustion engine type) as measures for the increasing demand on clean environments in various sites where forklift take an active role, such as factories, distribution centers, warehouses, ports and harbors, airports, etc.
The batteries as a driving source of battery forklift are an outcome of integrating a number of superior technologies based on long-time practices and affluent experiences, and still advancing by inheriting these.

Thai Energy Storage Technology PLC. has adopted the same high-reliable technology that has been successfully equipped to Traction Battery “**SUPER ‹*LIFTTOP*› ECO**” manufactured by Energywith Co., Ltd. in Japan. The technology contributes to provide well-balanced battery which can meet various user needs such as using at low and High temperatures. In addition quality control is also fully supported by Energywith Co., Ltd.

We produce all products under the quality management system based on the certificated standard of ISO9001 (Ver.2008).
Also, we acquired the certificate of ISO14001 (Environmental Management standard) in May 2004 to perform manufacturing activities by positioning the harmony with the environment to be an essetial theme.

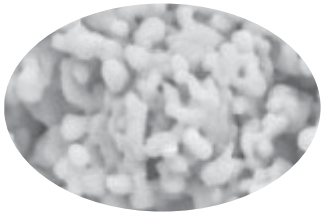


Good discharge characteristics both under the low and high temperatures and life cycle.

Features

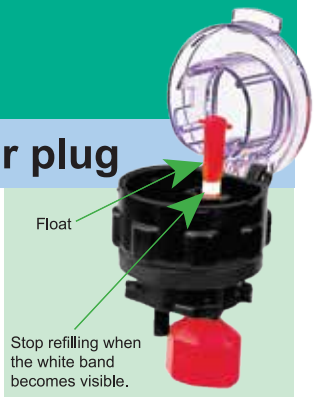
- The active material density of the positive plate has been optimized by changing the electrode plate structure. The specification of well-balanced battery between capacity and life performance has been realized.
- To adopt a glass tube is not only superior in mechanical, but also in chemical and electric characteristics .
- Low-temperature characteristics have been improved by adopting new additives, and we can meet more diverse needs.
  Characteristics have been enhanced by adopting glass tube same as Energywith Co., Ltd.

Negative-electrode active materials on SEM photographs



Float mounted water plug

- The large diameter type facilitates water refilling.
- The float enables verification of the water level at a glance.
- Overflow prevention structure offers superior vibration-proof.



Positive plate

Glass tube

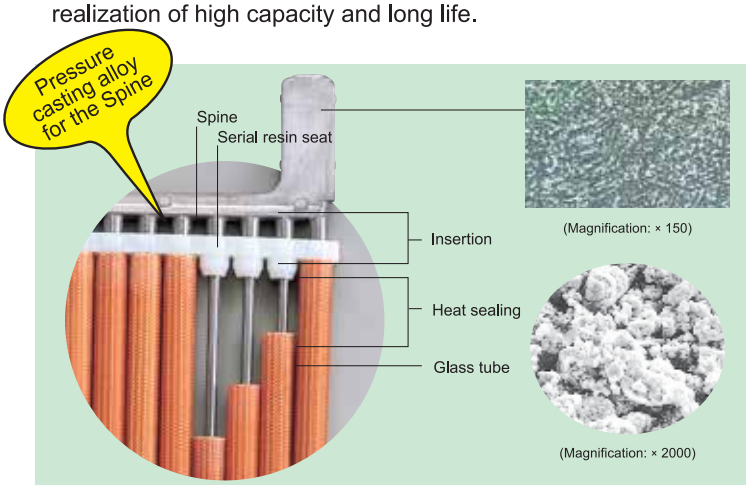
The glass tube used for the positive plate is made of special glass fibers having superior mechanical, electrical, and chemical properties, thereby contributing to the realization of long life.

Spine

The Spine comprising the conductor portion is fabricated by applying the pressure casting method, which we have practiced for a long time. This method enables the crystal architecture denser than that by the gravity casting method, thereby offering the enhanced durability in severe temperature environments.

Active material

Our unique lead powder is adopted for the positive-electrode active material, which takes on a role of accumulation of electricity in the positive plate, thereby contributing to the realization of high capacity and long life.



Positive plate active material

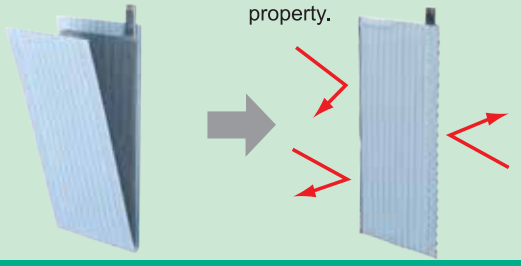
The positive plate of high capacity and long life has been realized by adopting our unique lead powder.

Negative plate

The negative plate is equipped with a clean separator made of polymer polyethylene, which elutes a significantly less amount of oil contained therein and thus results in less contamination of electrolyte.

The separator is laterally folded in two, and then ---

The circumference is adhered together to enhance the sealing property.



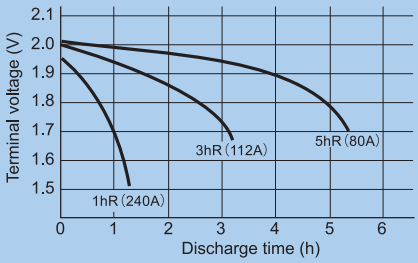
One example of the battery used for a forklift

As the battery for a forklift, a battery pack of 24 V or 48 V is installed thereon depending of the specification of the forklift.

Standard discharge characteristics (example)

The battery capacity varies depending on the magnitude of discharge current. For example, the capacity at the 1 hour-rate discharge rate is reduced to about 60 to 65% of the 5 hour-rate discharge capacity (rating). In addition, discharge at large current may not only reduce an available quantity of electricity but also shorten the battery life.

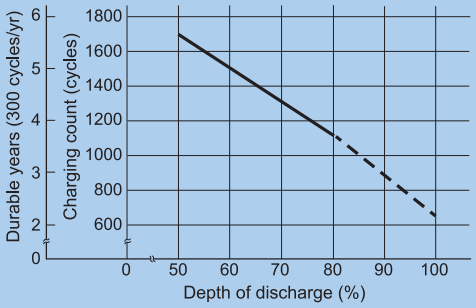
<Initial characteristics>
400Ah/5hR Electrolyte temperature:30℃



Relation of depth of discharge and cycle life (example)

The cycle life of a battery is affected by driving conditions of a vehicle (daily discharge amount), vibration, heat, and the quality of daily maintenance. In particular, the discharge amount significantly affects the life, where repetitive, deep discharge tends to reduce the life.

Approx. 700 cycles (approx. 2 years) of 100% discharge
Approx. 1100 cycles (approx. 4 years) of 80% discharge
Characteristics in static tests in the laboratory.
Depth of discharge: 75%
Electrolyte temperature: 33-45°C
Charge capacity: 120% of discharged capacity



How to calculate the electricity rate (approximation)

$$\text{Electricity rate} = \frac{\text{Electric power unit price} \times \text{nominal voltage} \times \text{nominal capacity} \times \text{charge amount}}{\text{Efficiency of a charger} \times 1000}$$

Example: Calculation of electricity rate at 280 Ah/5hR, 48V
Electric power unit price: **US$/kWh (Ask an electric power company.) (Assumed unit price)
Nominal capacity: 280Ah/5hR
Nominal voltage: 48V
Charge amount: 120%
Efficiency of a charger: 0.85

$$\frac{**\text{US\$/kwh} \times 280\text{Ah} \times 48\text{V} \times 1.2}{0.85 \times 1000} = **\text{US\$}$$

Electricity cost of each country

Country	USD Cents /kWh
Singapore	0.189
Philippines	0.18
HongKong	0.159
Indonesia	0.093
Malaysia	0.089
Vietnam	0.056

This information is just reference. This price isn't guaranteed.

Range and specification

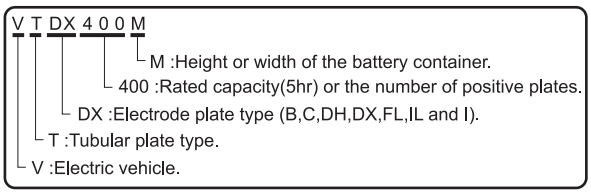
Type	Rated capacity (5hR)	External dimensions (mm)				Weight with electrolyte (In approx. kg)	Electrolyte amount (In approx. liter)
		Length (L)	Width (W)	Box height (h)	Total height (H)		
VTB4	160	90	158	320	352	11.6	2.8
VTB4Z	195	90	158	320	352	12.9	2.6
VTB5	200	109	158	320	352	14.2	3.4
VTB6	240	128	158	320	352	16.6	4.0
VTB7	280	148	158	320	352	19.2	4.7
VTB8	320	167	158	320	352	21.7	5.3
VTB400MZ	400	177	158	320	352	25.0	5.3
VTC3M	129	58	158	350	382	8.8	1.7
VTC4	172	90	158	350	382	11.7	2.6
VTC5	215	109	158	350	382	14.7	3.7
VTC6	258	128	158	350	382	17.2	4.4
VTC7	301	148	158	350	382	20.0	5.1
VTC344	344	148	158	350	382	21.3	4.9
* VTC10	430	206	158	350	382	28.4	7.1
* VTC12	516	244	158	350	382	33.4	8.5
VTDH390L	390	148	158	380	412	23.6	5.5
VTDH450L	450	148	158	380	412	25.1	5.2
VTDH480L	480	186	158	380	412	29.8	6.9
VTDH3M	164	58	158	395	427	10.3	1.8
VTDH4N	208	81	158	395	427	13.7	2.8
VTDH160A	160	90	158	395	427	12.9	3.6
VTDH250	250	90	158	395	427	16.0	3.0
VTDH480M	480	161	158	395	427	28.0	5.6
VTDH9M	500	177	158	395	427	29.1	5.7
VTDX500M	500	177	158	395	427	28.7	6.2
VTDH9	490	186	158	395	427	30.0	7.0
VTDH560	560	186	158	395	427	33.2	6.4
VTDX330	330	128	158	395	427	21.5	4.9
VTDX360	360	128	158	395	427	23.7	4.9
VTDX330M	330	144	158	395	427	23.0	5.8
VTDX400M	400	144	158	395	427	24.7	5.5
VTDX470M	470	144	158	395	427	26.4	5.2
VTDX450M	450	161	158	395	427	27.7	6.1
VTDX540M	540	161	158	395	427	29.4	5.8
VTDX560M	560	177	158	395	427	30.7	6.7
VTDX620	620	186	158	395	427	34.9	6.5
* VTDX690	690	206	158	395	427	38.6	7.3
VTDX165MH	165	58	158	410	442	10.9	1.9
VTDX485MH	485	144	158	410	442	26.6	5.3
VTDX545MH	545	161	158	410	442	29.7	5.8
VTDX565MH	565	177	158	410	442	31.0	6.8
VTDX600MH	600	177	158	410	442	32.7	6.5
* VTDX700H	700	206	158	410	442	38.9	7.4
* VTFL660L	660	186	158	450	482	37.1	7.3
* VTFL715L	715	186	158	450	482	39.1	7.1
* VTFL740L	740	206	158	450	482	43.4	8.0

Notes 1. Symbols and a numeric numbers of the “Type” have the following meanings.

Notes 2. Marking of “*” indicates a double pole.

Notes 3. Some of the designs and specifications are subject to change without prior notice.

Notes 4. The normal voltage of single battery is 2V.



Range and specification

Type	Rated capacity (5hR)	External dimensions (mm)				Weight with electrolyte (In approx. kg)	Electrolyte amount (In approx. liter)
		Length (L)	Width (W)	Box height (h)	Total height (H)		
VTFL201M	201	58	158	490	522	12.7	2.3
VTFL268M	268	75	158	490	522	16.3	3.2
VTFL210A	210	90	158	490	522	16.0	4.6
VTFL280	280	90	158	490	522	17.8	4.2
VTFL320	320	90	158	490	522	19.7	3.9
VTFL5	335	109	158	490	522	21.5	5.2
VTFL390	390	109	158	490	522	23.5	4.8
VTFL6	402	128	158	490	522	25.4	6.1
VTFL545	545	148	158	490	522	31.2	6.8
*VTFL9ZD	670	186	158	490	522	39.5	8.7
*VTFL10	670	206	158	490	522	41.5	10.1
*VTFL11	737	225	158	490	522	45.3	11.0
*VTFL858	858	225	158	490	522	49.2	10.3
VTIL220ML	220	58	158	490	522	13.3	2.3
VTIL445L	445	109	158	490	522	24.3	4.4
VTIL515L	515	128	158	490	522	28.7	5.5
VTIL545ML	545	144	158	490	522	32.5	6.3
*VTIL730ML	730	177	158	490	522	40.1	7.7
*VTIL865L	865	206	158	490	522	47.6	8.9
*VTIL935L	935	225	158	490	522	51.5	9.8
VTIL225M	225	58	158	520	552	13.8	2.5
VTIL288M	288	75	158	520	552	17.7	3.4
VTIL4	312	90	158	520	552	19.2	4.4
VTIL370	370	90	158	520	552	21.5	4.1
VTIL435	435	109	158	520	552	25.4	5.0
VTIL6	468	128	158	520	552	27.4	6.4
VTIL510	510	128	158	520	552	29.7	6.0
VTIL7	536	148	158	520	552	31.8	7.5
VTIL580	580	148	158	520	552	33.8	7.1
VTIL8	612	167	158	520	552	35.9	8.5
VTIL9	702	186	158	520	552	40.1	9.5
*VTIL10	780	206	158	520	552	44.8	10.6
*VTIL11	858	225	158	520	552	49.1	11.6
*VTIL12	936	244	158	520	552	53.1	12.5
VTI240M	240	58	158	520	552	14.4	2.4
VTI5	415	109	158	520	552	24.8	5.3
VTI470	470	109	158	520	552	26.7	4.9
VTI565	565	128	158	520	552	31.2	5.9
VTI645	645	148	158	520	552	35.5	6.9
VTI725M	725	161	158	520	552	39.2	7.4
*VTI845	845	186	158	520	552	47.1	8.4
*VTI925	925	206	158	520	552	51.5	9.5
*VTI1080	1080	244	158	520	552	60.3	11.4

Traction Battery

SUPER ‹*LIFTTOP*› ECO

For battery forklift

NEW

Traction Battery

SUPER ‹*LIFTTOP*› ECO

For Electric forklift

DIN-TYPE

Traction Battery

LIFTTOP MODEL	Rated capacity (5hR)	External dimensions (mm)				Weight with electrolyte (In approx. kg)	Electrolyte amount (In approx. liter)
		Length (L)	Width (W)	Height (h)	Total height (H)		
3PZE345	345	65	198	545	575	21.4	3.6
3PZH465	465	65	198	720	750	27.9	4.9
4PZE460	460	83	198	545	575	27.8	5.2
4PZG560	560	83	198	685	715	33.7	3.6
4PZH620	620	83	198	720	750	35.5	6.3
5PZE575	575	101	198	545	575	33.3	5.6
5PZG700	700	101	198	685	715	40.9	7.4
5PZH775	775	101	198	720	750	43.5	7.9
6PZH930	930	119	198	720	750	52.0	9.3

Improved efficiency of water refilling operation.

New Water Filling System
‹NEW QUICK FILLER›

Only need to turn the couplings and stop water automatically.

Water sealing structure for induced explosion prevention

A water sealing portion is provided for preventing entry of gas produced during charging into the water refilling hose in order to eliminate the hazard of induced explosion.

Automatic water stopping structure

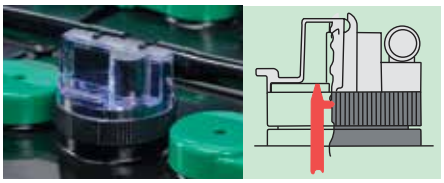
The water shutoff valve rises when water reaches the specified level, and stops water refilling automatically.

Opening/closing the cap is unnecessary during water refilling operation

The user only needs to snap-connect the couplings of the hoses on the tank and battery sides and open the faucet.
Water is fed into all cells.

The liquid level is easily visible. Maintenance is also easy.

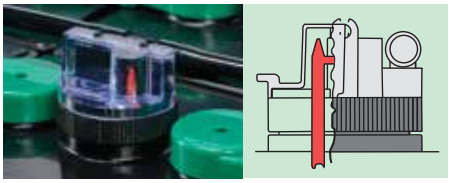
The liquid level is identifiable at a glance, thanks to the large level display. In addition, the large hole for measuring the specific gravity enables quick measurement of the specific gravity.



Liquid level checking: The fallen liquid level indicator bar (red color) indicates that water must be refilled.

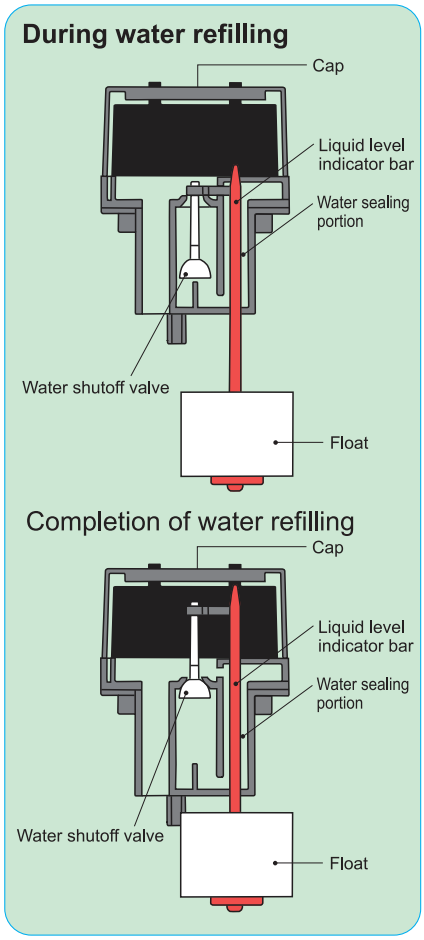
Refilling preparation: Snap-connect the couplings of the hoses on the tank and battery sides and open the faucet.

Start of water refilling: Opening the faucet automatically starts refilling water into all batteries (be sure to open the faucet fully).



Completion of water refilling: Refilling water is complete when the liquid level indicator bar rises to the upper limit. Close the faucet and disconnect the coupling.

■ Structural diagram



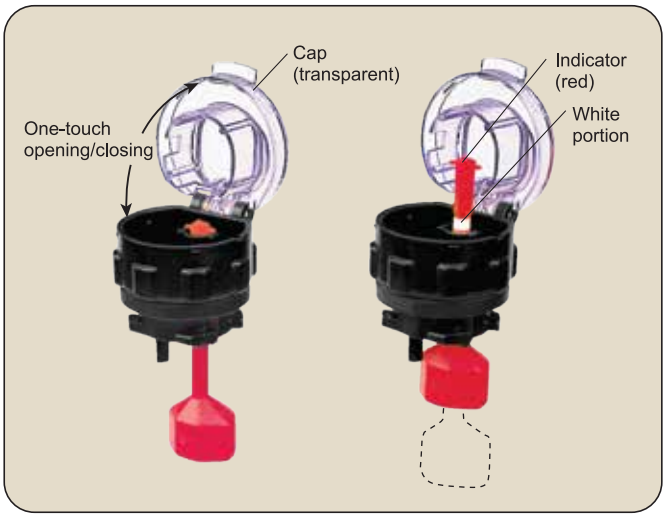
Please read the instructions carefully when handling.

Float mounted water plug

Easy water filling
The spout wide and it is easy to fill water.

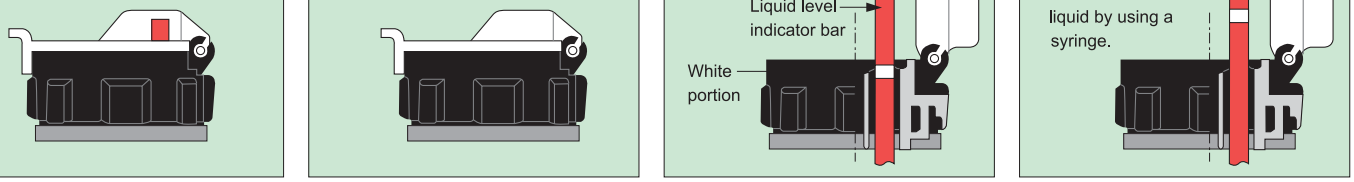
Excessive refilling prevented
As the appropriate liquid level is displayed as an indicator band, an appropriate amount of liquid is understood at a glance, thereby preventing excessive refilling.

Easy replacement
Installation and removal of the float mounted plug is easy, thanks to the use of the quarter turn method.



The liquid level is obvious at a glance, so the level can be accurately managed.

Appropriate liquid level	Insufficient amount of liquid	Completion of water refilling	Excessive water refilling
●The indicator bar looks floating.	●The indicator bar lowers. Water must be refilled.	●The white portion of the indicator bar becomes visible.	●The white portion of the indicator bar has risen too high. Remove some amount of the liquid by using a syringe.



- *When insufficient amount of liquid is observed, refill water to the level equivalent to the completion of water refilling.*
- *Care should be taken that the water refill cap might be damaged in case a person steps on or an object drops thereon*

Liquid level meter <SUPER DELSIGN>

Easy-to-see warning display
The green lamp is normally lit. The red lamp goes on to alert the timing of water refilling.

One-touch mounting on the side surface of the iron box
Adhesive is provided on the backside of the panel. Tear off the seal to mount the level meter with ease.

Mounting the sensor and the power source is also easy.
Simply mount the sensor provided inside the water refill faucet. Solder the power source on the lead connector.

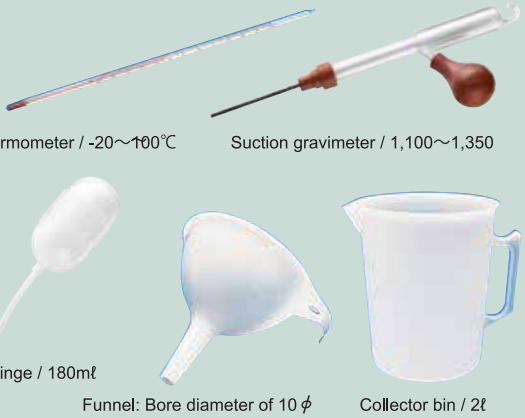
Float mounted type water addition plug with sensor

Float-type water refill faucet

Accommodated for the filling device for plural cells

Note: The liquid level sensor detects the level of only one cell and does not indicate the liquid level of the entire assembled batteries.

Products for maintenance



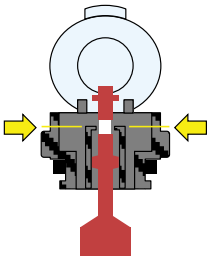
Battery connector

■ Outside dimensions

SB350.6320 --- Length 108.0 × Width 70 × Height 33 (mm)
SB175.6325 --- Length 79.4 × Width 55 × Height 26 (mm)

TRACTION BATTERY HANDLING SUGGESTION

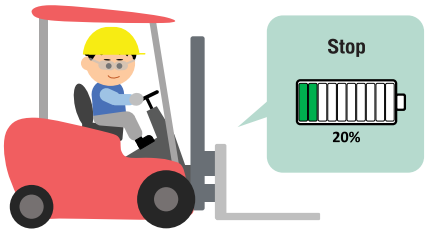
1. Keep proper electrolyte level



The white line appear as shown in the picture, this is the best level.

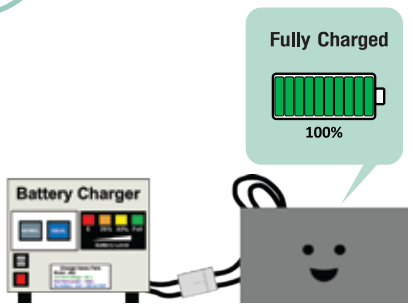
Always maintain electrolyte to be proper level.
Check electrolyte level before charging
If it is low, add distilled water.

2. Don't use over 80%



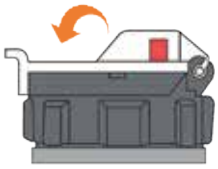
Don't use over 80% of capacity.
(Remain ≥ 20%)

3. Sufficiently charge



Don't let battery undercharged and amount of battery should be enough for usage.
Use hands to hold and pull on the plug when disconnecting. Do not pull on the cable.

4. Close the cap during charging

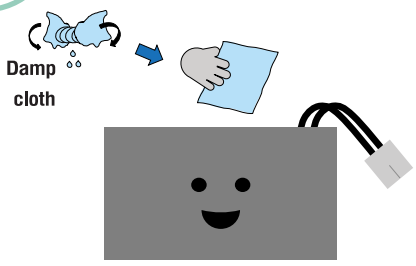


Closing the cap to prevents acid splash out during charging.

5. Equalizing once a month

- Do equalizing charging to reduces voltage differences between cells.
- There are many types of chargers. Please read the charger manual before use.

6. Keep battery clean

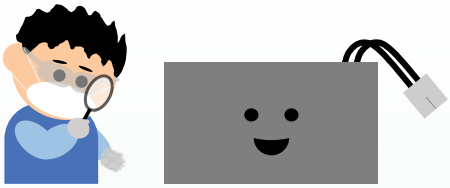


Use a damp cloth, not a dry cloth to avoid electrostatic.

7. Check regularly

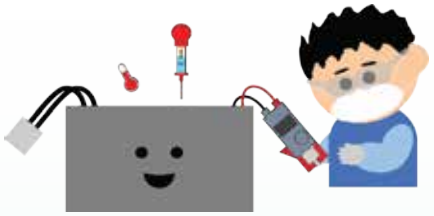
Check the appearance

Check appearance of battery, cable, plug, etc.
If found the abnormal, consider to solve them before use.

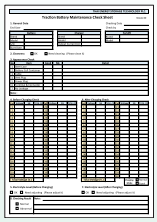


Battery status measurement

It would be nice if you can measure and record Voltage,
SG of electrolyte for each cell periodically, such as monthly check



The measurement helps to know
the status of the battery.
For example, after charging,
is the battery fully charged ?
And how is the voltage in each cell ?



Check & Record

Fully Charged specs
- Voltage per cell : ≥ 2.12 V
- SG : 1.280 ± 0.01 at 20˚C

Equation to convert a measured SG to be SG at 20 °C
SG at 20 °C = ((Acid Temp. - 20) X 0.0007) + Measured SG

Precautions for maintenance and handling

Classification of harm and damage

⚠Danger	Degree of harm in which improper handling may cause death or serious injury to the user and in which the degree of urgency is high.
⚠Warnings	Degree of harm in which possibility of improper handling causing death or serious injury to the user is expected. When minor injuries or property damage happen frequently.
⚠Cautions	Degree of harm or damage in which improper handling is expected to cause injury to the user or damage to properties.

Graphic symbol and meaning

 No fire	Do not bring the battery near fire or cause it to short circuit or spark. Doing so may cause ignition-induced explosion.	 No children	Do not let those without full understanding on the handling and danger of the battery (children, etc.) to touch it.
 Caution for rupture and explosion	The battery generates hydrogen gas which may cause ignition-induced explosion if handled improperly.	 Caution for battery electrolyte	Electrolytic solution of the battery is dilute sulfuric acid, which can cause blindness and burns if it gets in to your eyes or on your skin.
 Caution for electric shock	At voltage of 42V or higher, direct contact to a conductive part by human body may cause electric shock.	 Caution for static electricity	Cleaning the battery with dry cloth or handling it when your body is electrically charged may cause a spark of static electricity that may cause ignition-induced explosion.
 Caution for ignition	Improper use of the battery may cause it to ignite.	 Careful reading of the instructions	Read the operating instructions carefully before using the battery to ensure proper use.
 Wearing glasses	To protect your body from explosion or diluted sulfuric acid, wear protective goggles and rubber gloves when handling the battery.		

⚠Danger

 No fire

- Do not use or charge the battery in a sealed or poorly ventilated place. The battery generates hydrogen gas which may cause ignition-induced explosion.
- Keep fire away from the battery. The battery generates hydrogen gas, and making it short-circuited or spark or bringing a flame of cigarette near it may cause ignition-induced explosion.

 Caution for rupture and explosion

- Do not install the battery near a heating element (such as transformer) or something that generates a spark (such as welding machine, grinder, switch, and fuse). The battery generates hydrogen gas which may cause ignition-induced explosion.
- Do not short-circuit the terminals of the battery with things such as tools for removing and tightening bolts and nuts. Generated sparks may cause burns or ignition-induced explosion.

 Caution for static electricity

- Do not use the battery (i.e., the fork lift) with its liquid level below the minimum level. It may overheat, or if its internal parts have been deteriorated, short circuit inside may cause an explosion.
- Do not use dry cloth or feather duster to clean the surface and connecting parts of the battery. The battery generates hydrogen gas which may cause ignition-induced explosion by static electricity. Clean top surface of the battery with a cloth moist with water.

 Caution for battery electrolyte

- When electrolytic solution (dilute sulfuric acid) gets into your eyes, immediately wash the eyes with a large amount of clean water such as tap water, and immediately seek medical attention. It may cause blindness.

⚠Warnings

 Caution for rupture and explosion

 No children

 Wearing glasses

 Caution for battery electrolyte

 No fire

 Caution for static electricity

- Do not store the battery in poorly ventilated place or a place with fire. Doing so may accumulates hydrogen gas which may cause an explosion.
- Charge the battery with the charger dedicated for it or the one that matches its rated capacity and voltage. Do not charge it with anything other than those as it may not fully charge the battery or cause liquid leakage, heat generation, or electric leakage.
- Those who have not fully learned how to handle the battery and of its danger should not mount or install it. Doing so may cause injury or damage to the storage battery.
- Do not allow anyone who is not familiar with handling of the battery (children, etc.) to touch it. Electrolyte (dilute sulfuric acid) inside the storage battery may cause blindness and burns.
- Do not drop the battery in a fire. Do not heat it. Doing so may cause liquid leakage, smoke, or explosion.
- Do not connect the terminals of the battery mistaking the positive and negative poles. Doing so may cause heat generation, ignition, smoke, or ignition-induced explosion.
- Do not discharge the battery with current exceeding the rated capacity. Its internal parts may melt and cause an explosion.
- Before checking or cleaning the battery, remove static electricity from your body by touching a metal part away from the battery or by other means. Touching the battery with charged body may generate a spark, which may cause ignition-induced explosion.
- Do not use the battery or leave it as it is with dirt or foreign material stuck on its surface or connecting parts. Doing so may cause ignition-induced explosion or fire by electric leakage. Remove dirt and foreign material with a cloth moist with water or the like to keep the battery clean and dry at all times.
- When electrolytic solution of the battery (dilute sulfuric acid) gets on your skin, body, or clothes, immediately wash it off with plenty of water, and then thoroughly wash it with soap. It may cause burns.
- If the electrolytic solution (dilute sulfuric acid) gets into your mouth or if you swallowed it by mistake, immediately gargle with a large amount of drinking water, and then drink plenty of drinking water or milk. Then, seek medical attention immediately. It may cause burns inside the mouth.
- Do not disassemble or repair the battery. Doing so may cause ignition-induced explosion and injury.

⚠Cautions

 Careful reading of the instructions

- Follow the operating instructions of the device manufacturer for handling of batch water feeder, battery level warning device, and other devices.
- Do not wet the battery with rainwater or seawater. Doing so may damage the battery or cause a fire.

 Caution for electric shock

- When charging the battery, do not let the charging conditions to exceed what specified in the operating instructions of the specified charger. It may cause heat generation and liquid leakage.

 No fire

- The battery shall not be inspected or handled by anyone other than a person with full understanding on how to handle it in inspection and maintenance, an expert, or a service shop personnel. It may cause electric shock or injury.

 Caution for rupture and explosion

- Do not install the battery near a heating element (such as transformer) or something that generates a spark (such as welding machine, grinder, switch, and fuse). The battery generates hydrogen gas which may cause ignition-induced explosion.

 Caution for battery electrolyte

- We are working on securing effective use of resources as well as preservation and maintenance of the environments by recycling the material of the spent batteries (re-using lead, plastic, etc. as raw materials). When disposing of a spent battery, use the disposal service provider in accordance with the law on waste disposal and environmental laws. If you have any questions, please contact the distributor or us.

When placing an order:

Please kindly inform us the following when you place a purchasing order:

- About the battery forklift or battery carrier
  (1) Manufacturer name, (2) Model, and (3) Weight (tonnage)
- About the battery (if you currently use one)
  (1) Manufacturer name, (2) Model, (3) Capacity, (4) Voltage, and (5) Battery product No. (the number shown on the nameplate)

- The data shown in this catalog are as of 2024
- The contents of this catalog are based on tests we performed with meticulous care; however, they do not guarantee actual on-site results.
- Product use examples shown in photographs and illustrations may be different from current use situations.
- It is not guaranteed that methods to use this product, and parts or equipment using this product do not infringe industrial properties possessed by third parties.
- Please note that specifications and appearance of the product are subject to change without prior notice.
- Please note that the colored design appearing in product photographs may be different from the actual one more or less due to printing conditions.
- Be sure to read the operation manual prior to use of the product.

LIFTTOP

For battery forklift

SUSTAINABILITY, ENSURING THE FUTURE
OF LIFE ON EARTH, IS AN INFINITE GAME,
THE ENDLESS EXPRESSION OF GENEROSITY
ON BEHALF OF ALL

LIFTTOP

More than 100 years of history in Japan

Thai Energy Storage Technology PLC.

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