MOTOMA®

Power into the Future

NEW ENERGY BATTERY

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To be a quality brand

Brief Introduction

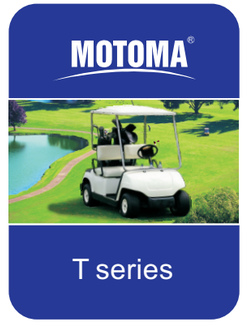
MOTOMA POWER is a leading clean energy supplier in South China, offering a wide rang of high performance batteries to meet the market needs.

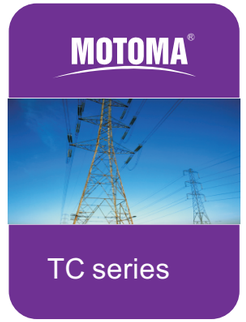
Growing clean energy appliances are looking for batteries with reliable, durable, energy-efficient, powerful, longer service life and higher energy density. MOTOMA new energy batteries come into meeting all these requirements.

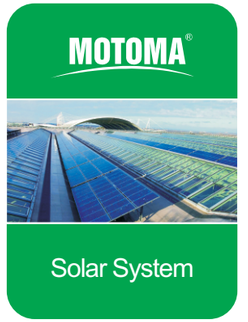
Our new energy batteries include the following series for different applications:

1. T series
2. P series
3. TG series
4. TC series
5. Solar System

Core Products







T Series

Descriptions:

MOTOMA T-TECH batteries are a success of combination with raw material reconstruction, technology improvement and internal & external design. It delivers multi functions: energy storage, back-up power supply, electric vehicle traction, etc. T-TECH battery does not only provides extra long service life but also ensures deep cycle charge and discharge performance.The advanced technology of anode tube positioning, design of high density Lead grid and PE seperator strongly guarantee batteries quality and reliability.

Typical Applications:

- Sightseeing car
- Golf car
- Electric car
- Electric tricycle
- Electric transportation vehicle
- Electric cleaning vehicle
- Electric tractor
- Electric patrol car
- Electric yacht
- Electric wheelchair
- Electric flat car
- Energy storage systems (solar & wind)
- Uninterruptable Power System

General Features:

- Long Service Life
- High Capacity
- Good Performance under Low-temperature Discharge
- Easy Use & Low Maintenance
- Embedded Terminal

General Specifications

Battery Type	Nominal Voltage (V)	Nominal Capacity (AH)	Dimensions（mm）				Weight (approx) (Kg)	Terminal Type
			Length	Width	Height	Total Height		
6V210TMF	6	210	260	180	254	275	35.0	AM
T6V210T		210	260	182	266	305	35.0	LPT/WNT
8V170TMF	8	170	260	180	255	275	29.0	AM
T8V170T		170	260	182	249	290	35.0	LPT/WNT
12V12TMF	12	12	151	99	97	103	4.5	F2
12V20TMF		20	181	77	170	170	7.2	F24
12V33TMF		33	195	130	155	165	10.2	F11
12V45TMF		45	197	165	172	172	14.6	F11
12V55TMF		55	229	138	208	213	18.0	F11
12V75TMF		75	260	169	210	217	23.5	F11
12V150TMF		150	327	176	254	274	40.6	AM
T12V120T		120	360	172	260	260	32.0	LPT/WNT
T12V150TA		150	327	181	246	296	42.0	LPT/WNT

P Series

Descriptions:

MOTOMA P-TECH series batteries are one of the latest newly-developed technology. Special Lead plates design enlarge the chemical reaction area and improves the efficiency of capacity recovery during charging. New technical design with different metal propotion in alloy strengthens anti-corrosion capability of the grid, which ensures longer battery life time.

P-TECH batteries successfully solve the problem of unstable charging & discharging conditions, especially in severe power supply shortage environment.

Typical Applications:

- Solar / wind energy system
- Telecommunication system
- Radio & broadcasting station
- Power plant & power transformer station
- Navigator aid signal system

General Features:

- High charging efficiency and capacity recovery
- Strong anti-corrosion of Lead grid
- Improved resistance against high temperature
- High rate discharge current up to 7C
- Longer working life under heavy duty
- Design life: 12 years

General Specifications

Battery Type	Nominal Voltage (V)	Nominal Capacity (AH)	Dimensions（mm）				Weight (approx) (Kg)	Terminal Type
			Length	Width	Height	Total Height		
2V1000P	2	1000	410	175	330	367	55.5	F10
12V80P	12	80	306	170	220	225	25.5	F12
12V100P		100	339	173	215	220	27.5	F12
12V150P		150	482	172	240	240	40.0	F12
12V200P		200	526	238	246	246	59.5	F38

TG(OPzV) series

Descriptions:

MOTOMA TG (OPzV) Series batteries are designed with a proven combination of GEL and Tubular technologies to offer a very high level of reliability.

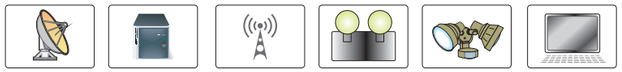
OPzV batteries benefit from an optimized plate design which gives capacities in excess of the DIN standard values, applicable in wide industrial fields. Excellent design life is up to 18 years and more cycles can be achieved with this series.

Typical Applications:

- IT / telecommunication system
- Emergency lighting equipment
- Control & monitoring system
- Signaling & regulation system
- Railway station
- Automation

General Features:

- Low maintenance
- Horizontal operation
- Long cycle life: up to 1800 cycles(80% DoD)
- Compatible with existing installations of DIN design
- Short circuit prevention during installation
- Design life:18 years(float charge)



General Specifications

Battery Type	Cross	Nominal Capacity (AH)	Dimensions(mm)				Weight (approx) (Kg)	Terminal Type
			Length	Width	Height	Total Height		
TG2V200	4OPzV200	200	103	206	357	399	20.0	F10
TG2V250	5OPzV250	250	124	206	357	399	23.0	F10
TG2V300	6OPzV300	300	145	206	357	390	28.0	F10
TG2V350	6OPzV350	350	124	206	470	512	29.0	F10
TG2V420	6OPzV420	420	145	206	470	512	35.0	F10
TG2V490	7OPzV490	490	166	206	470	512	40.0	F10
TG2V500	7OPzV500	500	166	206	470	512	41.0	F10
TG2V600	6OPzV600	600	145	206	645	680	49.0	F10
TG2V800	8OPzV800	800	191	210	650	680	67.0	F10
TG2V1000	10OPzV1000	1000	233	210	650	680	78.0	F10
TG2V1200	12OPzV1200	1200	275	210	645	680	95.0	F10
TG2V1500	12OPzV1500	1500	275	210	800	840	111.0	F10
TG2V1500B	12OPzV1500	1500	340	210	645	680	119.0	F10
TG2V2000	16OPzV2000	2000	399	212	775	810	158.0	F10
TG2V2500	20OPzV2500	2500	487	215	775	810	194.0	F10
TG2V3000	24OPzV3000	3000	576	215	775	810	225.0	F10

T-C(OPzS) series

Descriptions:

MOTOMA TG-C (OPzS) Series batteries are designed with a combination of die-casting tubular positive framework and flooded-liquid electrolyte technologies to create higher level of reliability and longer service life.

OPzS batteries contain special filter to ensure no acid fog running over and burningproof, which is also convenient for examination and maintenance.

Typical Applications:

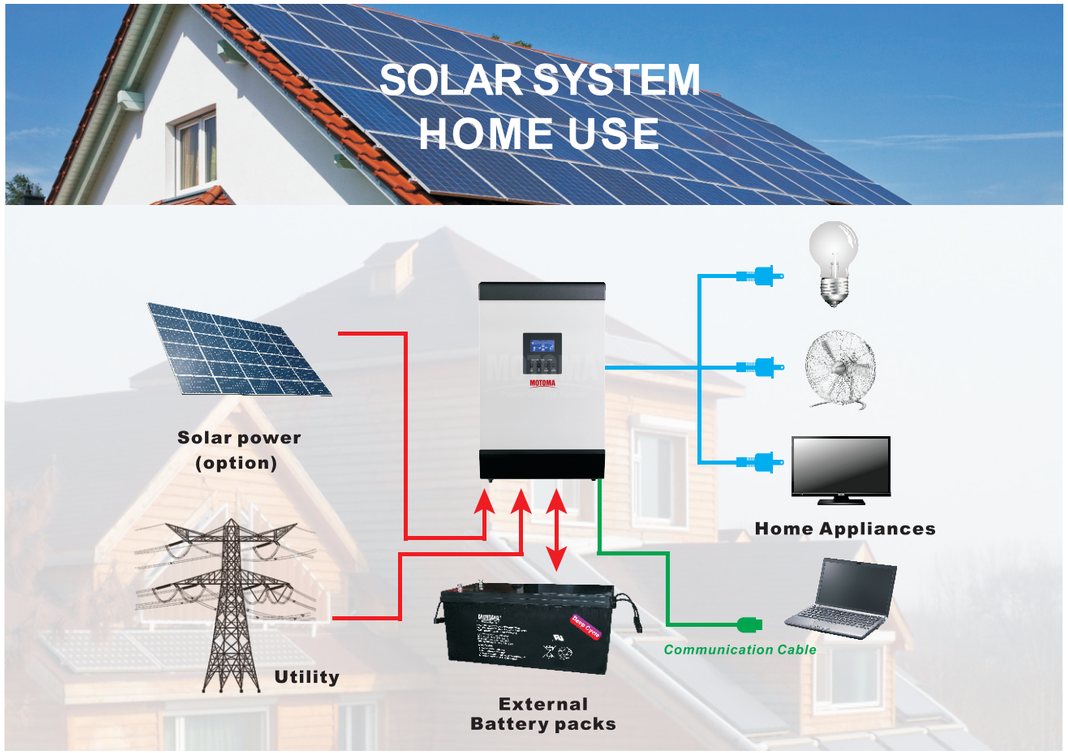
- Telecommunication system
- Photovoltaic system
- BTS station
- Railroad utility
- Control equipment
- Ciril construction

General Features:

- Excellent high drain discharge and charge performance
- Transparent container, convenient to observe
- Special filter design
- Super long design life: ＞20 years (float charge)
- High integrity post seal design
- Low water consumption, low maintenance

General Specifications

Battery Type	Cross	Nominal Capacity C120(AH)	Dimensions(mm)				Weight (approx)(Kg)		Terminal Type
			Length	Width	Height	Total Height	Without Acid	With Acid	
T2V100C	2OPzS100	142	103	206	355	410	8.8	10.8	F10
T2V150C	3OPzS150	215	103	206	355	410	10.6	13.5	F10
T2V200C	4OPzS200	284	103	206	355	410	13.5	18.5	F10
T2V250C	5OPzS250	355	124	206	355	410	16.0	23.0	F10
T2V300C	6OPzS300	425	145	206	355	410	19.0	27.0	F10
T2V350C	5OPzS350	510	124	206	470	525	21.5	29.0	F10
T2V420C	6OPzS420	610	145	206	470	525	25.5	34.5	F10
T2V490C	7OPzS490	715	166	206	470	525	29.0	39.0	F10
T2V600C	6OPzS600	870	145	206	645	700	34.0	46.0	F10
T2V800C	8OPzS800	1160	191	210	645	700	48.0	64.5	F10
T2V1000C	10OPzS1000	1450	233	210	645	700	57.0	77.0	F10
T2V1200C	12OPzS1200	1740	275	210	645	700	68.0	94.0	F10
T2V1500C	12OPzS1500	2130	275	210	795	850	82.0	112.0	F10
T2V2000C	16OPzS2000	2820	399	214	772	827	110.0	150.0	F10
T2V2500C	20OPzS2500	3540	487	212	772	827	140.0	190.0	F10
T2V3000C	24OPzS3000	4250	576	212	772	827	153.0	222.0	F10



SOG2-48V5KW					
Main	Components	Model	Specification	QTY	Unit
	PV Module	SO-SPN-MC156-255	255Wp	20	Pcs
	Battery	SLA-MS2V600D	2V600AH	24	Pcs
	Combiner Box		10 Strings	1	Pcs
	Inverter with controller	SO-SIV-G4KS-48V5KW-RS	48V5kW	1	Pcs
Accessory	Cable			1	Set
	User Manual			1	Set
	Connection Diagram			1	Set
Option	Spare Battery	SLA-MS2V600D	2V600AH	1	Pcs
	DC Breaker			1	Pcs
	Tool		Crimping Plier*1 MC4 wrench*1	1	Set
	Battery Rack	DSE-SLA Rack-1x24x2V600AH-2C2L-WY-V15A		1	Set
	PV Module Rack		Floor	1	Set

Remark:

1. DOD 0.8
2. 5 Sunshine Peak hours.
3. System generate power about 25kWH/day.
4. Battery can storage power about 28kWH.
5. Maximum Load Power is less than 4000W.
6. Backup time is up to real load power.

SOG2-48V2KW					
Main	Components	Model	Specification	QTY	Unit
	PV Module	SO-SPN-MC156-255	255Wp	8	Pcs
	Battery	SLA-MS12V200D	12V200AH	4	Pcs
	Combiner Box		6 Strings	1	Pcs
	Inverter with controller	SO-SIV-G4KS-48V5KW-RS	48V5kW	1	Pcs
Accessory	Cable			1	Set
	User Manual			1	Set
	Connection Diagram			1	Set
Option	Spare Battery	SLA-MS12V200D	12V200AH	1	Pcs
	DC Breaker			1	Pcs
	Tool		Crimping Plier*1 MC4 wrench*1	1	Set
	Battery Rack	DSE-SLA Rack-1x4x12V200AH-1C1L-WY-V15A		1	Set
	PV Module Rack		Floor	1	Set

Remark:

1. DOD 0.8
2. 5 Sunshine Peak hours.
3. System generate power about 10kWH/day.
4. Battery can storage power about 10kWH.
5. Maximum Load Power is less than 4000W.
6. Backup time is up to real load power.

SOG2-24V3KW					
Main	Components	Model	Specification	QTY	Unit
	PV Module	SO-SPN-MC156-255	255Wp	12	Pcs
	Battery	SLA-MS2V600D	2V600AH	12	Pcs
	Combiner Box		12 Strings	1	Pcs
	Inverter with controller	SO-SIV-G4KS-24V3KW-RS	24V3kW	1	Pcs
Accessory	Cable			1	Set
	User Manual			1	Set
	Connection Diagram			1	Set
Option	Spare Battery	SLA-MS2V600D	2V600AH	1	Pcs
	DC Breaker			1	Pcs
	Tool		Crimping Plier*1 MC4 wrench*1	1	Set
	Battery Rack	DSE-SLA Rack-1x12x2V600AH-1C2L-WY-V15A		1	Set
	PV Module Rack		Floor	1	Set

Remark:

1. DOD 0.8
2. 5 Sunshine Peak hours.
3. System generate power about 15kWH/day.
4. Battery can storage power about 15kWH.
5. Maximum Load Power is less than 2400W.
6. Backup time is up to real load power.

SOG2-24V2KW					
	Components	Model	Specification	QTY	Unit
Main	PV Module	SO-SPN-MC156-255	255Wp	8	Pcs
	Battery	SLA-MS2V400D	2V400AH	12	Pcs
	Combiner Box		8 Strings	1	Pcs
	Inverter with controller	SO-SIV-G4KS-24V3KW-RS	24V3kW	1	Pcs
Accessory	Cable			1	Set
	User Manual			1	Set
	Connection Diagram			1	Set
Option	Spare Battery	SLA-MS2V400D	2V400AH	1	Pcs
	DC Breaker			1	Pcs
	Tool		Crimping Plier*1 MC4 wrench*1	1	Set
	Battery Rack	DSE-SLA Rack-1x12x2V400AH-1C2L-WY-V15A		1	Set
	PV Module Rack		Floor	1	Set

Remark:

1. DOD 0.8
2. 5 Sunshine Peak hours.
3. System generate power about 10kWH/day.
4. Battery can storage power about 10kWH.
5. Maximum Load Power is less than 2400W.
6. Backup time is up to real load power.

SOG2-24V1KW					
	Components	Model	Specification	QTY	Unit
Main	PV Module	SO-SPN-MC156-255	255Wp	4	Pcs
	Battery	SLA-MS12V200D	12V200AH	2	Pcs
	Combiner Box		6 Strings	1	Pcs
	Inverter with controller	SO-SIV-G4KS-24V2KW-RS	24V2kW	1	Pcs
Accessory	Cable			1	Set
	User Manual			1	Set
	Connection Diagram			1	Set
Option	Spare Battery	SLA-MS12V200D	12V200AH	1	Pcs
	DC Breaker			1	Pcs
	Tool		Crimping Plier*1 Mc4 wrench*1	1	Set
	Battery Rack			1	Set
	PV Module Rack		Floor	1	Set

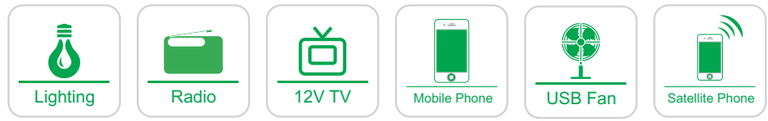
Remark:

1. DOD 0.8
2. 5 Sunshine Peak hours.
3. System generate power about 5kWH/day.
4. Battery can storage power about 5kWH.
5. Maximum Load Power is less than 1500W.
6. Backup time is up to real load power.

System Components: (SOG3-12V30W)

Solar Panel and Cables	Power Box	Lamp and Cable
		
1 Pcs	1 Pcs	4 Set

Typical Applications:



General Specifications

Model No.	SOG3-12V30W	SOG3-12V100W	SOG3-12V150W
Code No.	1601	1603	1604
PV Module	SO-SPN-PC-30W*1pcs	SO-SPN-PC-100W*1pcs	SO-SPN-PC-150W*1pcs
Controller	O-SCT-12V3A*1pcs	O-SCT-12V10A*1pcs	O-SCT-12V10A*1pcs
Battery	SLA-12V12AH*1pcs	SLA-12V65AH*1pcs	SLA-12V100AH*1pcs
DC Outlet Socket	12V Socket*4pcs USB Socket*1pcs	12V Socket*4pcs USB Socket*1pcs	12V Socket*4pcs USB Socket*1pcs
Lamp	3W LED*4pcs	5W LED*3pcs	5W LED*3pcs

Home Use Solar System

Schematic Diagram

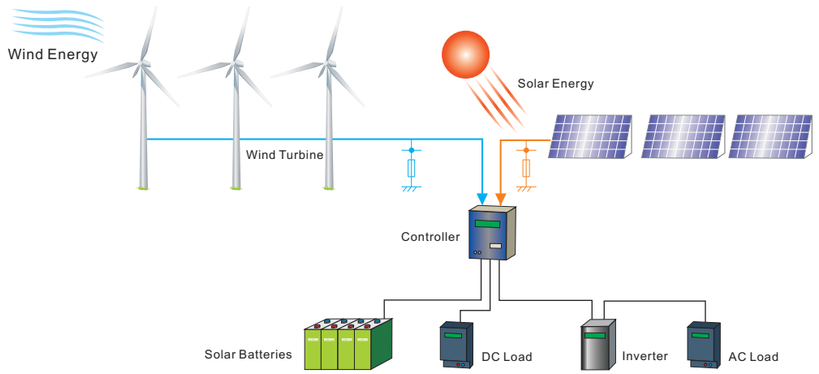
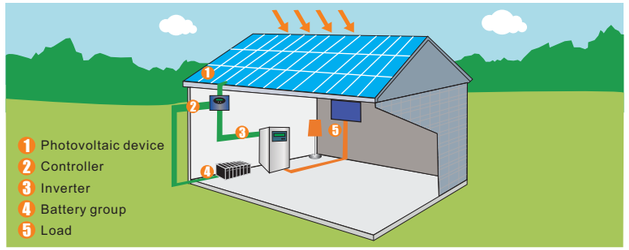


Diagram Drawing

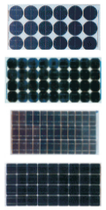


Applications



Office power, home power, agriculture, farming industry, crop farming, fish breeding, poultry rearing, advertisement, seaport, railway, signal lamp and place of power shortage etc.

Component Elements


Monocrystalline Panel

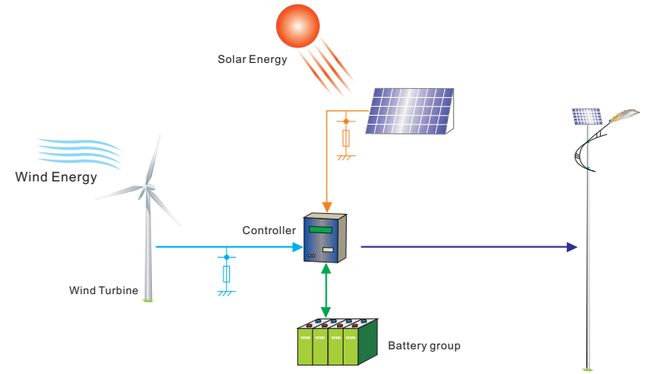

Battery Group


Wind Turbine


Inverter

Street Lighting System

Schematic Diagram



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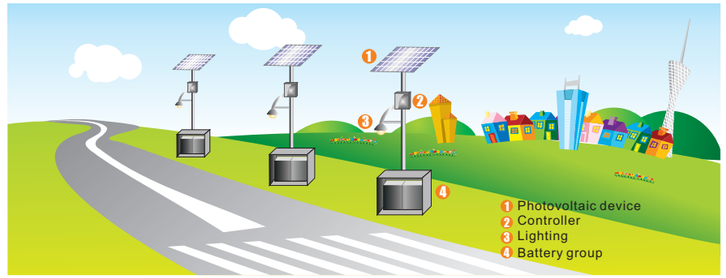
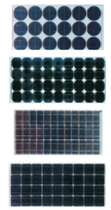


Applications



Component Elements


Monocrystalline Panel

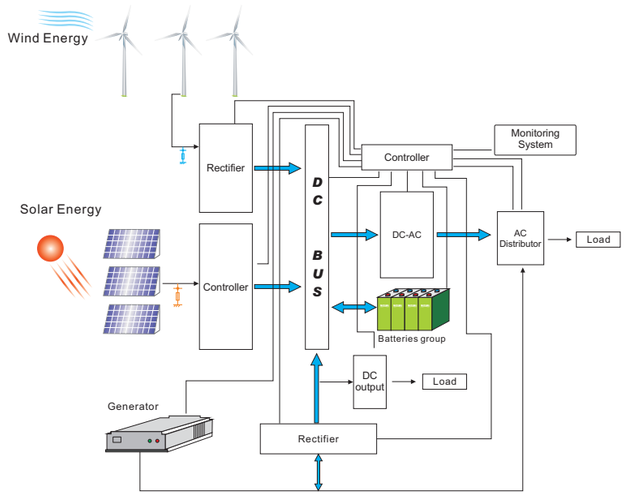

Battery Group


Wind Turbine


Inverter

Telecommunication System

Schematic Diagram



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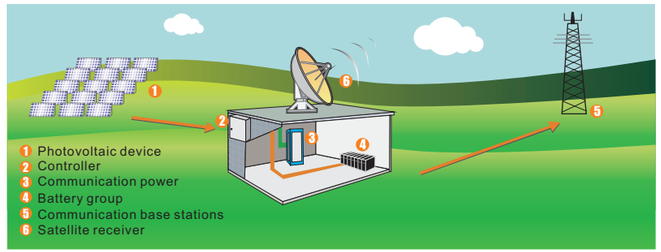


Solar controller for telecommunication:

Solar, wind hybrid grouping control battery charging/discharging management, temperature compensation and emergency charging. Network monitoring for telecom with RS232/RS485 terminal and dry contact available. IP55, wall-mounted or pole-mounted available upon request for outdoor environment.

Applications

Warning

1. Charge the battery with a specified charger following the charging condition specified by MOTOMA. Charging the battery under any other condition may cause overheating, emission of hydrogen gas, leakage, fire or burst.

2. When using battery in medical equipments, provide a back-up system other than the main battery. Otherwise it may cause injury.

3. Avoid direct contact of the battery with metallic containers. Acid-resistant and heat-resistant insulators should be employed. Leakage of the battery in the absence of such insulators may cause fumes and fire.

4. Do not place the battery near a device that may cause sparks(such as a switch or a fuse). The battery may generate flammable gas when being charged. Keep the battery away from fire or an open flame to prevent any spark from igniting or causing explosions.

5. Avoid placing the battery near a heat source(such as a transformer). Otherwise it may cause overheating, emission of hydrogen gas, leakage, fire or burst.

6. In applications which use more than one battery, first make sure all batteries are connected correctly, then connect the battery with the charger or the load. Make sure battery terminals are firmly connected with the charger or load. If the terminals of batteries, the charger or the load are connected improperly, explosion, ignition or damage to the batteries and/or equipments may occur, which may cause injury.

7. Be extremely careful not to drop the battery onto feet to avoid personal injury.

8. Do not contact any plastic or resin containing a migrating plasticizer with the batteries. Avoid using organic solvents such as thinner, gasoline, lamp oil, benzene and liquid detergent to clean the batteries. Use of any of the above materials may cause crack, leakage or fire to the battery container or cover(ABS resin).

9. Take safety measures such as wearing rubber gloves for insulation when handling battery of voltage higher than 45V. Operation without safety measures may result in electric shocks to the operator.

10. Avoid placing battery in an environment which is susceptible to floods.

11. Do not throw the battery in fire or heat the battery, otherwise it may burst or generate a toxic gas.

12. Do not disassemble, remodel or destroy the battery, it may cause leakage, fire or burst, and could create sulfuric acid spilling from the battery resulting in burns to personnel and damage to the immediate environment.

13. Battery posts, terminals and related accessories contain lead and lead compounds. Handling the battery may expose you to sulfuric acid mist, chemicals unknown which may cause cancer and reproductive harm. Wash hands after handling.

14. Clean the battery with a slightly damp cloth, ensure there is no excess water on the cloth by squeezing it well. Do not use a dry cloth or a duster, as it may generate static electricity, which may cause fire or burst.

15. Replace the battery with a new one within the time period specified in the " Handling Book " .

16. The battery should be replaced when its capacity has decreased to 50% of the initial capacity (at an ambient temperature of 77℉(25℃) or below). In the trickle or float application of the battery (application as stand-by power) at an ambient temperature higher than 77℉(25℃), the period for which the battery can be used before replacement is shortened by a half for every 10℃ rise of temperature. When the discharge current becomes higher than 0.25CA, the run time and battery life is also shortened.

17. The usable period for the battery is remarkably shortened near the end of its service life (when discharge time has decreased to 50% of the initial). During this period, problems such as internal short, dry-up of electrolyte (increase in internal resistance) and corrosion of the cathode grids will occur. Replace the battery before these problems occur. If the battery continues to be used under these conditions, maximum discharge current will continue flowing, which may lead to thermal runaway or leakage.

18. The battery contains diluted sulfuric acid, a very toxic substance. If the battery leaks and the liquid inside spills on the skin or clothing, immediately wash it off with plenty of clean water. If the liquid splashes into eyes, immediately flush the eyes with plenty of clean water and consult a doctor. Sulfuric acid in the eyes may cause loss of eyesight and acid on the skin will cause burns.

19. The batteries should be used in non life critical medical equipment. When any medical equipment incorporating a MOTOMA VRLA batteries is planned, please notify MOTOMA Power.

For more details, please read "Handling Book" which comes with the batteries.
All descriptions are subject to modification without prior notice.

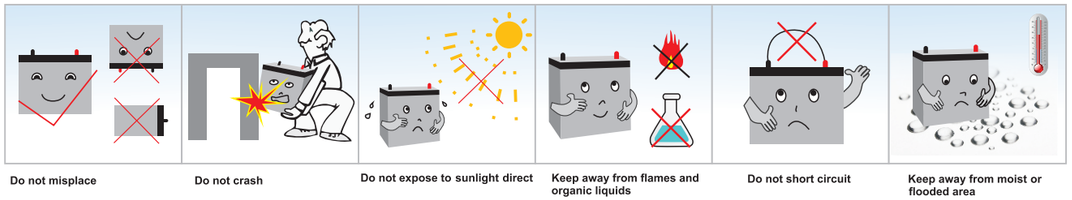
Maintenance

Make sure of clean surface, no corrosion on terminals, no leakage

keep away from non-professionals

Can be stored at 0-35°c within 6 months

Charge every 90 days



Do not misplace

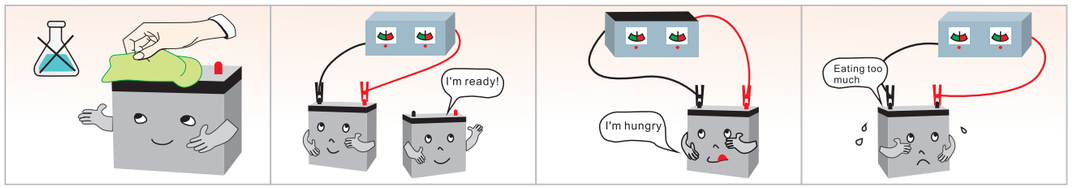
Do not crash

Do not expose to sunlight direct

Keep away from flames and organic liquids

Do not short circuit

Keep away from moist or flooded area

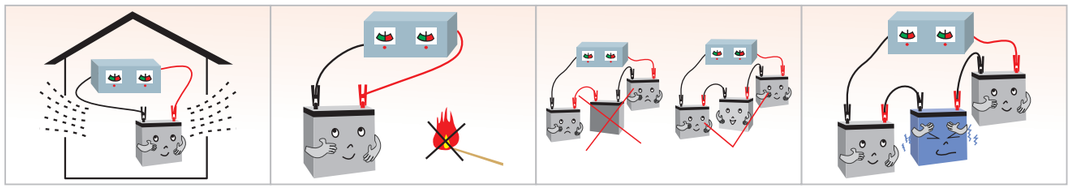


Do not apply organic liquids for cleaning

Precharge before use

Charge in time after discharge

Do not over charge



Charge in airy environment

Keep away from fires

Connect right anodes and cathodes (red cable=anode; black cable=cathode)

Do not connect batteries with different capacity