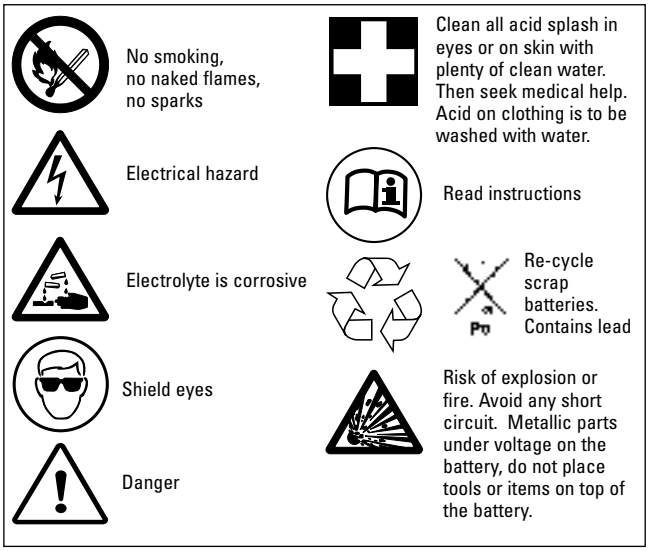


California Proposition 65 Warning – Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

SBS monoblocs are supplied in a charged condition, and are capable of extremely high short circuit currents. Take care to avoid short-circuiting terminals of opposite polarity.

1. Receiving

1.1 In-Transit Damage or Short Shipments

Upon receipt of a shipment, check that the items delivered are undamaged and match the carriers Bill of Lading. Report any damage or shortages to the carrier. EnerSys Inc is not responsible for shipment damage or shortages, which the receiver does not report to the carrier.

1.2 Shipment Damage or Shortages

Open the shipping containers and check the contents for damage and against the packing slip. Immediately inform EnerSys Inc of any damaged or missing items.

EnerSys Inc is not responsible for damaged or missing items after a shipment has been in storage.

2. Storage

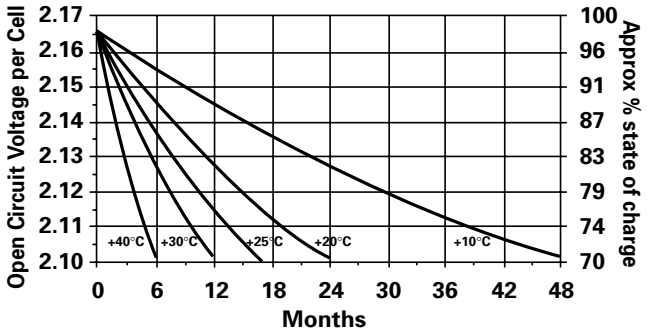
2.1 Storage Conditions and Time

If a battery cannot be immediately installed it should be stored in a clean, cool, dry area.

During storage batteries lose capacity through self-discharge.

High temperature increases the rate of self-discharge and reduces the storage life.

The chart below shows the relationship between open-circuit voltage (OCV) and storage time at various temperatures.



Instruction Sheet

The maximum storage times before a freshening charge is required and recommended open circuit voltage audit intervals are:

Temperature °C / °F	Storage Time Months	OCV Audit Interval Months
10 / 50	48	6
15 / 59	34	6
20 / 68	24	4
25 / 77	17	4
30 / 86	12	3
35 / 95	8.5	2
40 / 104	6	2

Monoblocs must be given a freshening charge when bloc voltages approach the equivalent of 2.10 volts per cell or when the maximum storage time is reached, whichever occurs first.

2.2 Freshening Charge

Charge the monoblocs, or strings at a constant voltage equivalent to 2.27 to 2.4 volts per cell with 10% of the C_{10} current available for a period of 24 hours.

3. Battery Location

The battery compartment/room must have adequate ventilation to limit hydrogen accumulation to a maximum of 1% by volume of free air.

4. Installation

Each monobloc is supplied with the terminal/connector fasteners.

On each monobloc the positive terminal is identified by a "+" symbol. Install the batteries in accordance with the instructions and/or layout drawing, taking care to ensure correct terminal location and polarity.

Connect the blocs with the connectors and fasteners provided. The fastener torque value is:

Model	Fastener Size	Torque Nm / in lbs
SBS 8	M4	1.0 / 9
SBS 15-60	M6	3.9 / 35
SBS 110-390	M8	5.0 / 44
SBS J13-70	M6	6.8 / 60
SBS B8-14	M8	5.0 / 44
SBS C11	M8	5.0 / 44

Place the insulating covers in position immediately after tightening the fasteners.

5. Operation

Constant voltage chargers are recommended. The charging voltage should be set at the equivalent of 2.29 volts per cell at 20°C/68°F or 2.27 volts per cell at 25°C/77°F.
The recommended float voltage temperature compensation is:

Temperature °C / °F						
10/50	15/59	20/68	25/77	30/86	35/95	40/104
*2.33	2.31	2.29	2.27	2.25	2.23	2.21
†2.31	2.29	2.27	2.25	2.23	2.21	2.19

* Recommended
† Minimum

6. Maintenance

In practice the user usually specifies the maintenance schedule based on site criticality, location and manpower.

Below is a suggested maintenance schedule.

Monthly (Record All Readings)

Measure the battery string voltage.
If necessary, adjust the float voltage to the correct value.

Six Months (Record All Readings)

Measure the battery string voltage.
If necessary, adjust the float voltage to the correct value.

Measure individual bloc voltages. The blocs should be within + 5% of the average.

Inspect for contamination by dust, loose or corroded connections. If necessary isolate the string/bloc and clean with a damp soft cloth.

Do not use solvents or scouring powders to clean the blocs.

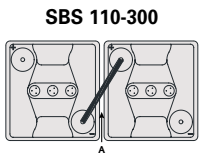
Contact EnerSys Inc if you have any questions regarding maintenance.

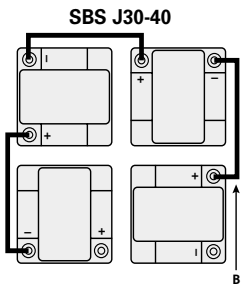
7. Disposal

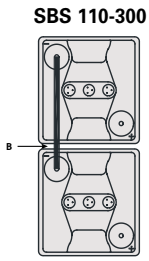
SBS batteries are recyclable. Scrap batteries must be packaged and transported in accordance with prevailing transportation rules and regulations.

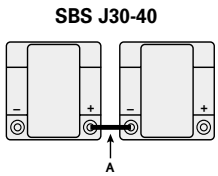
Scrap batteries must be disposed of in compliance with local and national laws by a licensed or certified lead acid battery recycler.

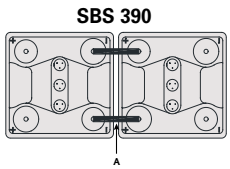
Type	Connector Part No.	
	A	B
SBS15	2205-9850	2205-9851
SBS30	2205-4215	2205-4090
SBS40	2205-4215	2205-4090
SBS60	2205-4255	2205-4090
SBS110-300	2205-9887	2205-9886
SBS390	2205-9759 x 2	N/A
SBS B8-14, C11 Front Terminal	2205-8919	2205-8919
SBS J30-40	2205-4090	2205-4230
SBS J13-16	2205-9851	2205-9850
SBS J70	2205-4090	2205-4420

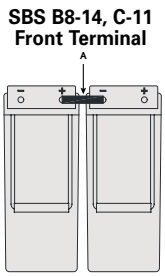


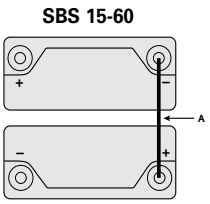


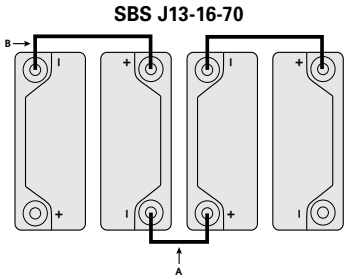


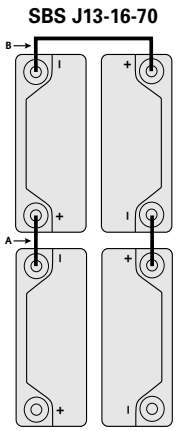


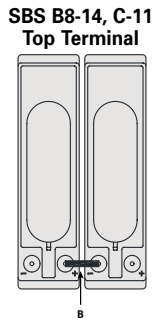


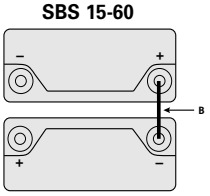


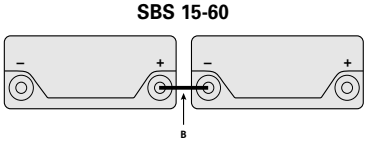












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