



# SBS<sup>®</sup>

## STORAGE BATTERY SYSTEMS, LLC

*Power Solutions™ Since 1915*

### Service, Maintenance & Repair for Batteries and Chargers



#### ***If a Battery isn't Operating Efficiently, Neither is the Equipment it Powers.***

Without proper maintenance even the best equipment will fail prematurely and increase your costs.

#### ***Well-Maintained Batteries are Safe Batteries***

Avoid exposing your employees to acid and corrosion. Contract SBS to service and clean your batteries on site. All hazardous waste will be collected and disposed of per EPA regulations, freeing your company of hazardous waste disposal responsibilities.

#### ***Storage Battery Systems Offers:***

- Field Service
- Full Maintenance
- Preventative Maintenance
- Battery Wash Service
- In-Shop Repair/Reconditioning
- Environmental Assistance
- Personalized Training
- Battery Changing System Repair & Maintenance
- Battery Monitoring Systems w/ Remote Access
- Rental Batteries & Chargers



# Custom Preventative Maintenance (P.M.)

## Batteries – Battery Chargers – Battery Changing Systems

### Does Your Forklift P.M. Cover the Maintenance You Need for the Battery?

Forklift contracts typically cover only very basic items, whereas SBS offers more:

- SBS has developed a comprehensive preventative maintenance program that draws from over 100 years of battery service expertise
- Comprehensive tests are performed on batteries, chargers, and battery changing equipment, as well as any accessories such as single point filling systems
- Safety and OSHA compliance audits are performed as well

### Your Time is Valuable!

Using a clear, brief format, our reports identify all problem areas and describe:

- What the problem is
- What will happen if it continues
- How to solve the problem

### How Often Should A P.M. Be Performed?

Preventative Maintenance Programs can require weekly, monthly, quarterly, semiannually or yearly inspections. Our service representative will evaluate your application and recommend a program that fits both your needs and your application.

The image shows two forms from SBS. The top form is a 'GENERAL APPLICATION SURVEY FOR ELECTRIC TRUCK BATTERIES AND CHARGERS' which includes sections for 'BATTERIES', 'CHARGERS', and 'SAFETY'. The bottom form is a 'PREVENTATIVE MAINTENANCE CONDITION REPORT (Individual Battery and Charger)' which includes a 'Battery Information' section, a 'Condition Report' table with columns for various components like 'Cells', 'Cables', 'Terminals', and 'Water System', and a 'Notes' section.

# On-Site Battery Cleaning and Wash Service

*Lengthen Service Life and Eliminate Environmental Concerns by Having SBS Clean Your Batteries with our Self-Contained Wash System*

### What Can Happen if a Battery is Not Cleaned Regularly?

- Battery life can be reduced
- Corrosion can cause battery cells to rupture and leak
- Metal cases can corrode away
- Electrolyte can damage operator's clothes and irritate the skin
- Voltage leaks to ground can create nuisance electrical faults
- Lifting ears can corrode, affecting the structural integrity of the lift ear and causing potential safety issues

### How Often Should a Battery Be Cleaned?

This depends mainly on how well the batteries are watered. In many instances an annual wash is adequate. However, if over watering occurs regularly and/or it is a dusty or dirty environment, more frequent washing may be required.



# In-Shop and Field Service

*Servicing All Makes and Models*

## Field Service

In many cases, we can fix your battery or charger right in your plant, so you don't have the inconvenience of extended downtime.

SBS mobile service trucks are equipped to provide immediate field service; SBS service technicians can also provide in-plant battery and charger surveys, OSHA regulation information and maintenance training.

Our service technicians are not only highly skilled and seasoned trouble-shooters, they are also advisors, educators and consultants.

## In-Shop Service

SBS is one of the Midwest's largest and most experienced battery facilities. Our modern shops are equipped with the latest in computerized charging and discharge testing equipment, and our facilities meet or exceed all state and federal environmental safety standards.

## Rental Batteries & Chargers

SBS has a large fleet of rental batteries and chargers for short term or long term needs.

## Pick-Up & Delivery Service

SBS personnel will assist in ensuring that the battery removal and installation is done safely.

## 24/7 Emergency Service

SBS offers 24/7 service for SBS-supplied battery systems.

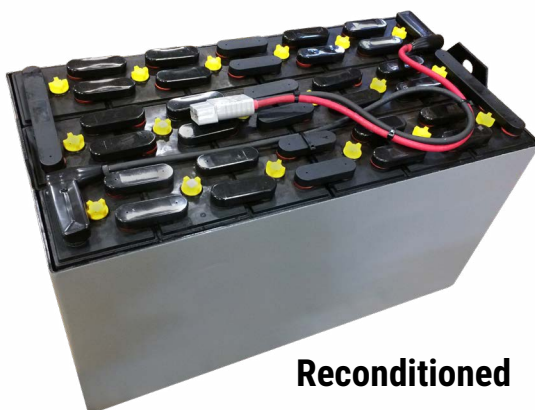
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## Battery and Charger Repair/Reconditioning

*You May Be Surprised to Learn How Much Money that Poorly-Performing Battery is Really Costing You!*



**Before Repair**



**Reconditioned**

### Batteries Can Be Repaired To

- Extend battery life
- Prevent damage to trucks
- Reduce motor and contact replacement
- Increase productivity
- Augment running hours
- Improve safety

Reconditioning during early detection can often double useful life, but if you delay you may totally destroy the battery and damage your truck's drive motor as well as other electrical components.

Unlike most service providers who simply replace cells because they do not possess hazardous waste treatment facilities, SBS can perform internal evaluations (i.e. why did it fail?) and internal cell repairs, saving you money by determining the root cause of the failure.

### Typical Reconditioning Includes (But is Not Limited To)

- Steam clean and paint
- Remove corrosion
- Equalize charge
- Adjust specific gravity
- Six hour discharge test
- Replace or repair defective cells
- Repair cover to jar leaks
- Remove sulfation
- Replace broken jars or covers
- Replace cables and connectors

**All SBS Repairs are  
Fully Warranted**

# The Environment

SBS can relieve you of the burden of safely disposing worn out batteries. All SBS service technicians and drivers are equipped and licensed to transport batteries. The spent batteries are then stored inside an SBS facility until they are transported directly to an EPA-approved recycler.



## Battery and Charger On-Site or Remote Monitoring Service

*(Requires Additional Equipment)*

Description Of Report Parameters													Charge Termination Codes				
AMPH - Amp Hours	SOCT - Start Time	0 - Disconnect Prior to Charge	9 - Charge Curve Error														
CHGT - Total Charge Time	EOCT - End Time	1 - Normal	10 - Rectifier Over Heating														
80-CC - Time, 80% to Charge Complete	BID - Battery	2 - Low Current Shut Down	11 - Unbalanced Line Amps														
STRTA - Start Amps	BST - Battery Start Temp.	3 - Manual Stop	12 - DIDT														
STRTV - Start Volts	BET - Battery End Temperature	4 - Disconnect While Charging	13 - Low Voltage Shutdown														
FINA - Finish Amps	CYCL - Battery Cell Size	5 - Backup Timer (0-80%)	14 - BID AH Shutdown														
TERM - Termination Code	CYAH - Battery AH Rating	6 - Backup Timer (80%-CC)	15 - Bad BID Shutdown														
EQTM - Equalize Time	STOCV - Start Open Circuit Voltage	7 - Cooldown Interruption															

Ametek DataLink<sup>®</sup> UC2000 Report  
4/20/2012  
2:48 PM

Blue = Equalize  
Green = Charge Complete  
Red = Abnormal Termination

REPORT GENERATED FROM FILE : C:\Documents and Settings\SBS\Desktop\thysen #18.txt DOWNLOADED ON 4/12/2012 10:23:28 AM

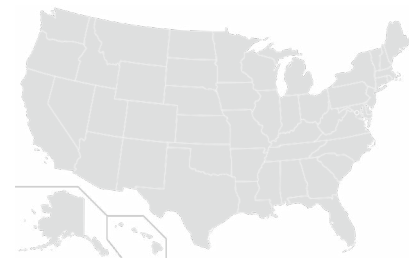
MONTH	DATE	AMPH	CHGT	80-CC	STRTA	STRTV	FINA	ENY	TERM	EQTM	SOCT	EOCT	STOCK	ABR	BST	BET	CYCL	CYAH
04	11	0563	07:13	02:30	0105	2.11	0028	2.60	01	00:00	02:03	09:21	1.97	00:10	100	84	40	0645
04	10	0598	07:57	03:00	0105	2.12	0029	2.62	01	00:00	16:31	00:34	1.97	00:07	99	84	40	0645
04	10	0607	07:55	02:53	0106	2.12	0028	2.61	01	00:00	04:31	12:32	1.96	00:05	93	86	40	0645
04	09	0597	08:07	03:13	0106	2.16	0030	2.64	01	00:00	13:20	21:32	1.96	00:07	93	84	40	0645
04	09	0056	03:18	00:16	0029	2.61	0015	2.68	01	03:00	02:10	05:30	2.17	00:06	73	79	40	0645
04	08	0477	04:57	00:16	0104	2.23	0047	2.40	04	00:00	21:05	02:07	1.97	00:08	72	77	40	0645
04	04	0634	08:40	03:29	0105	2.09	0028	2.59	01	00:00	11:39	20:24	1.93	00:10	99	90	40	0645
04	04	0234	02:12	00:00	0107	2.13	0106	2.23	04	00:00	03:12	05:26	1.96	00:10	91	82	40	0645
04	03	0602	07:57	03:00	0104	2.12	0029	2.59	01	00:00	11:37	19:40	1.98	00:09	104	90	40	0645

By adding wireless remote monitoring to a P.M., SBS can monitor batteries and chargers 24 hours a day, 7 days a week, to help detect fault or maintenance issues before they cost you money.

It also helps determine when battery replacements may need to be budgeted and allows for periodic review of fleet utilization.

Reports show a comprehensive analysis of equipment statuses, error codes, etc. Fleet management becomes streamlined, organized and efficient.

### Servicing the USA



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