

# ***PERIODIC CHECK SECTION***

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## 1. PERIODIC CHECK LIST

The following table shows the items of the periodic check for the unit.  
When the parts are replaced, refer to “REPLACE SECTION” of this manual.

Confirm the following conditions of the storage system before periodic check.

- There is no blinking part on the maintenance screen of the SVP.
- The MESSAGE LED on the front side of the DKC does not light.
- There is no SIM that is not completed.

Table 1-1 Periodic Check List

No.	Item	Tools	Frequency of Periodic Check	Check Time	Reference Page
1	Cleaning	<ul style="list-style-type: none"> <li>• Vacuum cleaner</li> <li>• Dry cloth</li> <li>• Philips screwdriver</li> </ul>	Once per year	15 min. per Unit.	<a href="#">PERIOD02-10</a> to <a href="#">PERIOD02-50</a>
2	Check of battery	—	Once per year	5 min. per Unit.	<a href="#">PERIOD03-20</a> to <a href="#">PERIOD03-30</a>
3	Replacement of battery	<ul style="list-style-type: none"> <li>• Philips screwdriver</li> </ul>	Once per 3 years	10 min. per battery.	<a href="#">PERIOD03-40</a> to <a href="#">PERIOD03-60</a>

## 2. Cleaning

To clear the Rack frame, check whether or not air vents are clogged by dust. If they are clogged, remove the dust with a vacuum cleaner or wipe the dust out from them with a dry cloth.

### 2.1 In the Case of Rack Frame with Bezel on the Front

#### CAUTION

- Be sure to keep the Bezel and rear door clean. Or else, the ventilation is deteriorated so that the temperature inside the Rack may rise causing a failure or even a fire.
- Be careful not to move the Rack frame during cleaning.

- (1) Clean the front side of the bezel. (See Fig. 2.1-1.)
- (2) Insert the key into the bezel and turn the key in the direction of the arrow ① to release the lock.
- (3) Remove the bezel from the front of the rack frame. (See “3.1.1 Bezel Opening-Closing Procedure” ([INST03-01-10](#)).)
- (4) Remove the air filters from the bezel and clean them. After cleaning, put back the air filters in place. (See Fig. 2.1-2 and Fig. 2.1-3.)
- (5) Install the bezel.
- (6) Turn the key in the direction of the arrow ② to fasten the bezel.
- (7) Clean the front side of the rear door.
- (8) Open the rear door.
  - a. Insert the key into the key hole on the door and turn the key to the left to release the lock (①).
  - b. Press the upper part of the lever to pull up the lower part of the lever toward you (②, ③).
  - c. Turn the lever to the left and pull it toward you to open the door (④).
- (9) Clean the back side of the rear door.
- (10) Close the rear door.
  - a. Close the door and push and turn the lever to the right (⑤).
  - b. Bring down the lever and press the lower part of the lever (⑥).
  - c. Insert the key into the key hole on the door and turn the key to the right to lock the door (⑦).

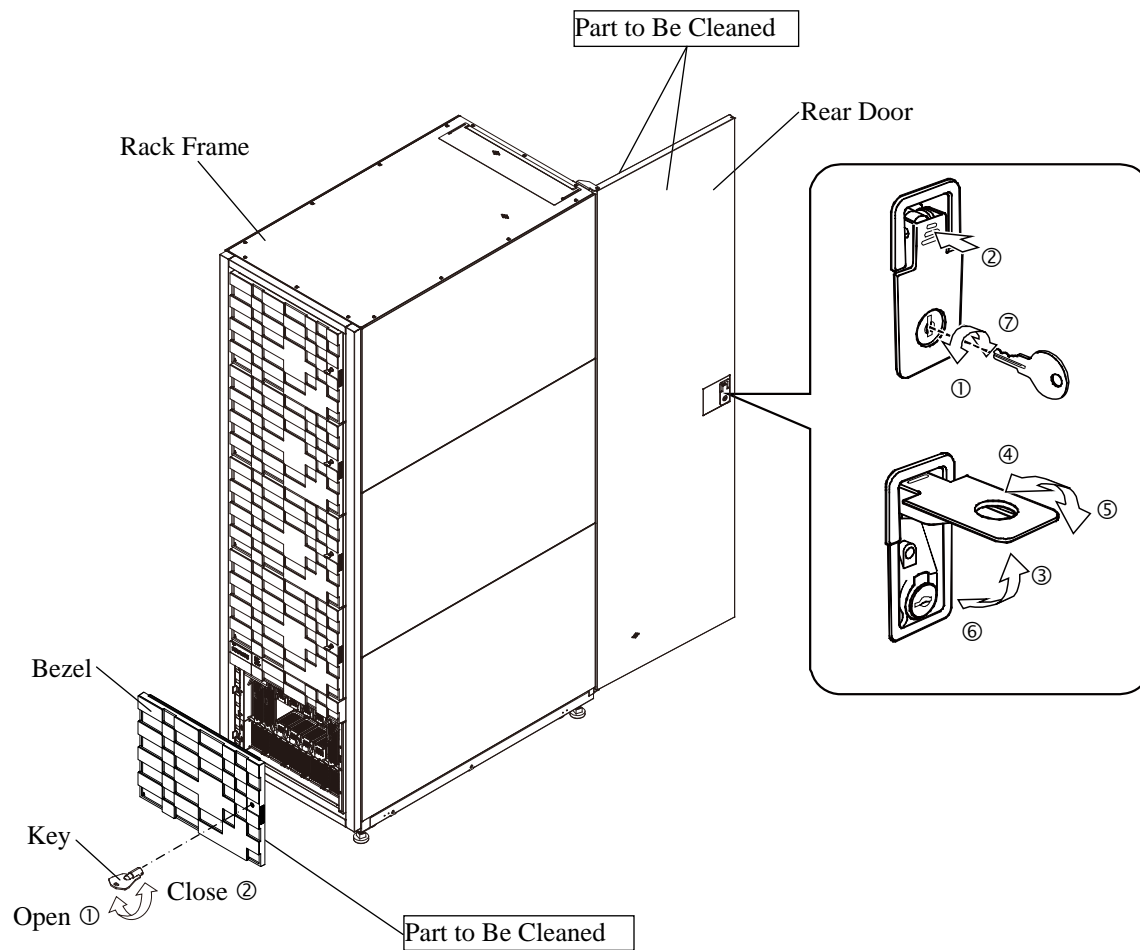


Fig. 2.1-1 Cleaning of Rack Frame

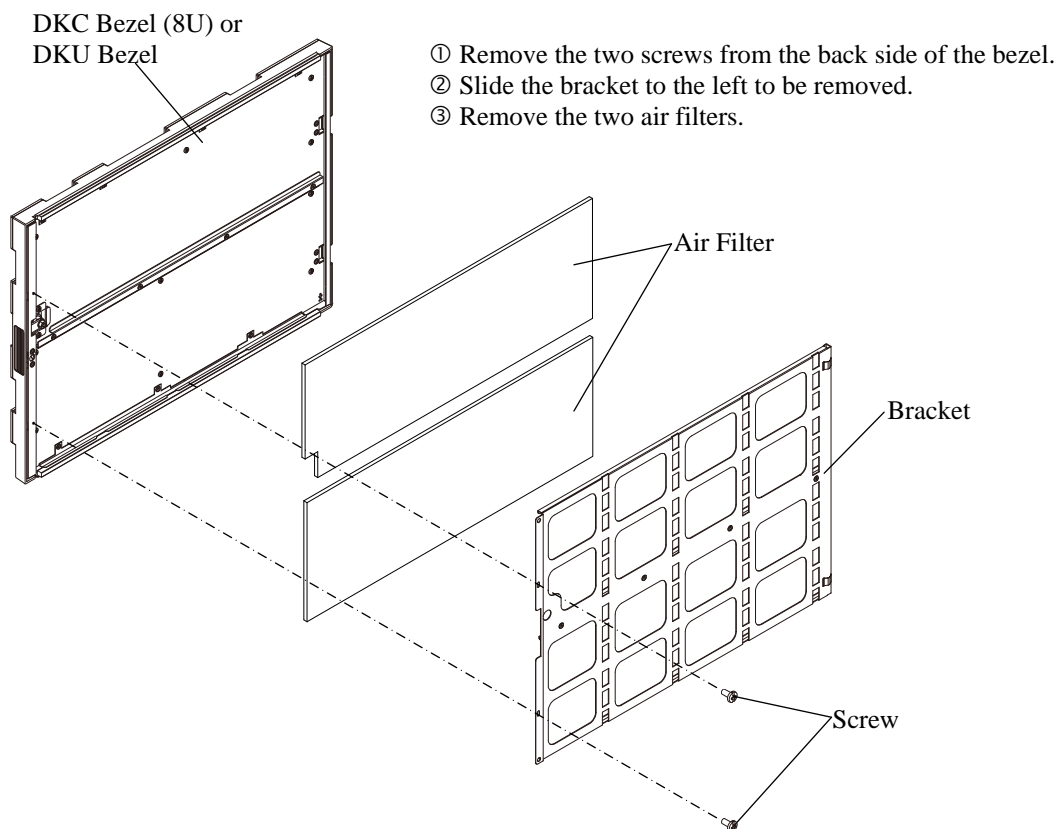


Fig. 2.1-2 Removal of Air Filters (DKC Bezel (8U) or DKU Bezel)

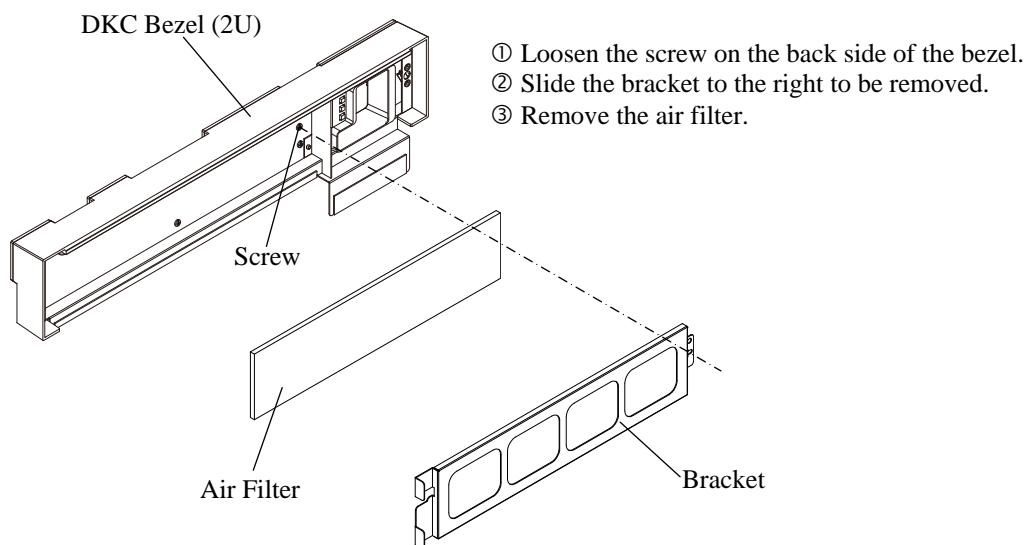


Fig. 2.1-3 Removal of Air Filter (DKC Bezel (2U))

## 2.2 In the Case of Rack Frame with Front Door on the Front

### CAUTION

- Be sure to keep the front door and rear door clean. Or else, the ventilation is deteriorated so that the temperature inside the Rack may rise causing a failure or even a fire.
- Be careful not to move the Rack frame during cleaning.

- (1) Clean the front side of the front door.
- (2) Open the front door.
  - a. Insert the key into the key hole on the door and turn the key to the left to release the lock (①).
  - b. Press the upper part of the lever to pull up the lower part of the lever toward you (②, ③).
  - c. Turn the lever to the left and pull it toward you to open the door (④).
- (3) Remove the air filters from the front door and clean them. After cleaning, put back the air filters in place. (See Fig. 2.2-2.)
- (4) Close the front door.
  - a. Close the door and push and turn the lever to the right (⑤).
  - b. Bring down the lever and press the lower part of the lever (⑥).
  - c. Insert the key into the key hole on the door and turn the key to the right to lock the door (⑦).
- (5) Clean the front side of the rear door.
- (6) Open the rear door.
- (7) Clean the back side of the rear door.
- (8) Close the rear door.

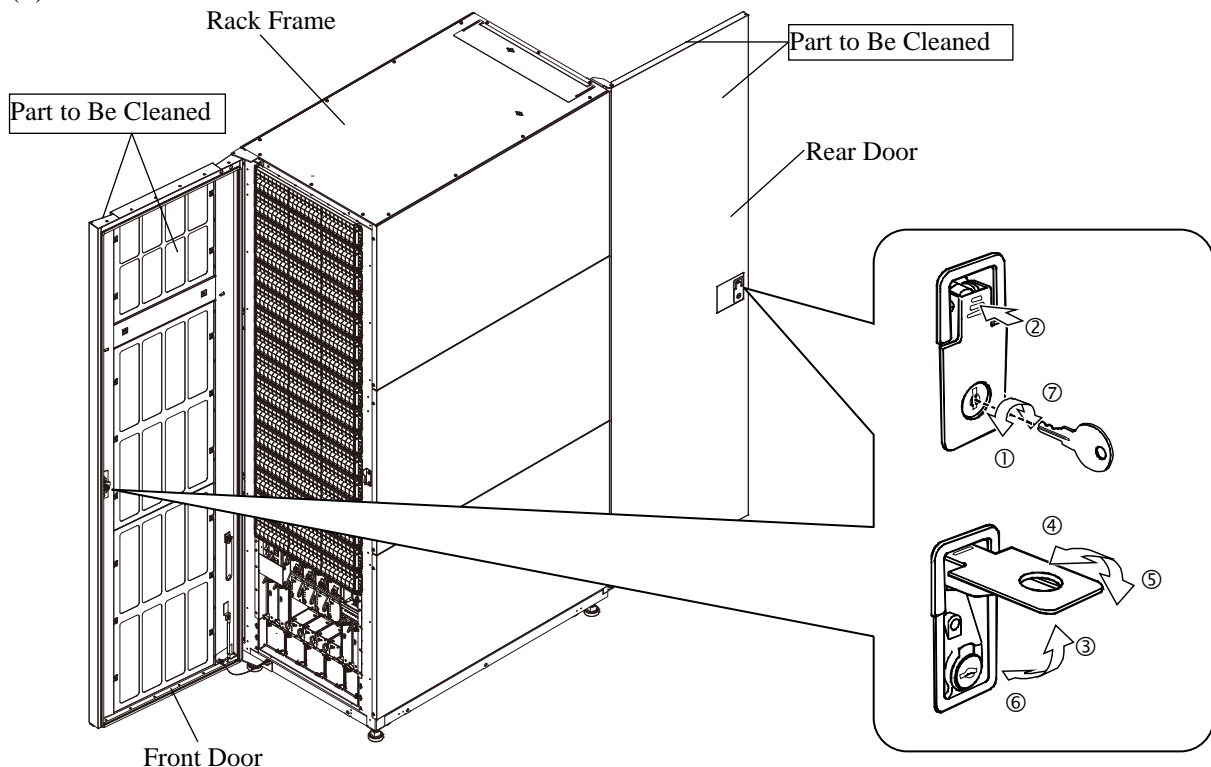
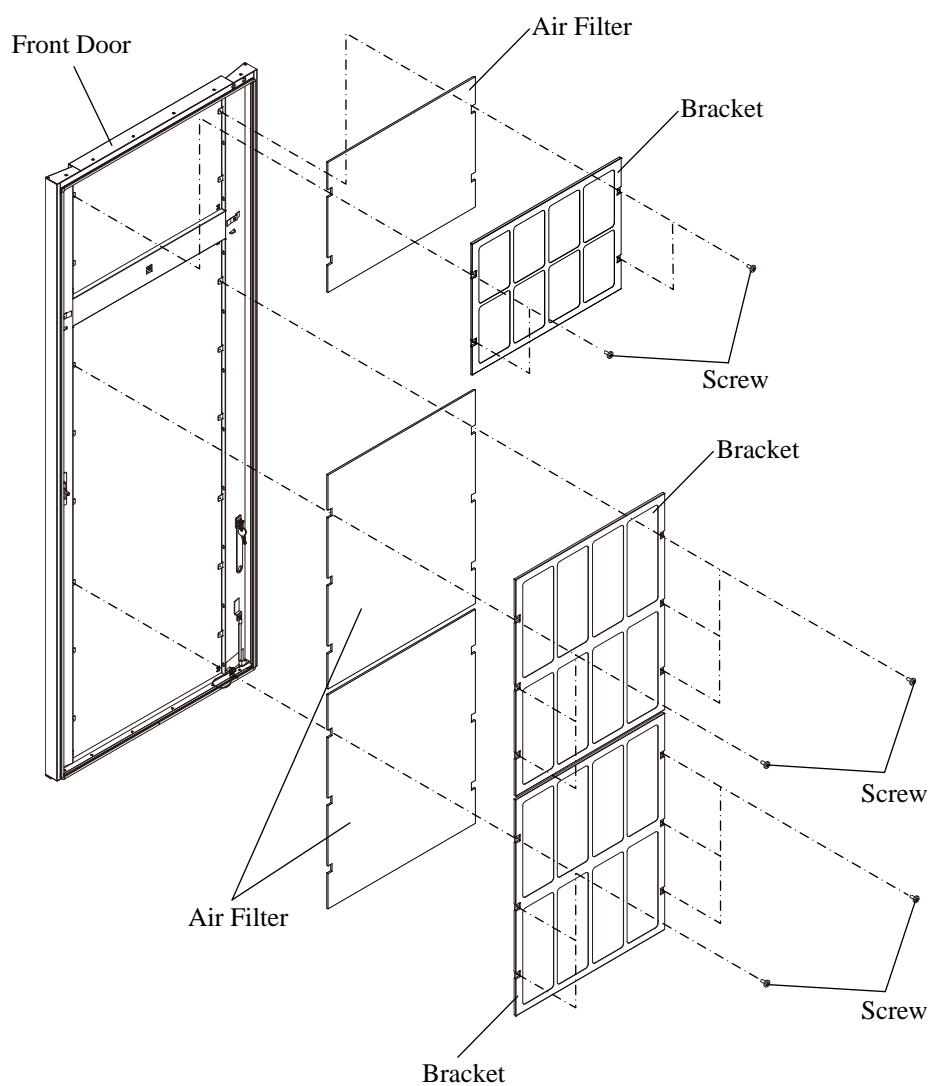


Fig. 2.2-1 Cleaning of Rack Frame



- ① Remove the sixteen screws from the back side of the front door.
- ② Remove the three brackets from the front door.
- ③ Remove the three air filters.

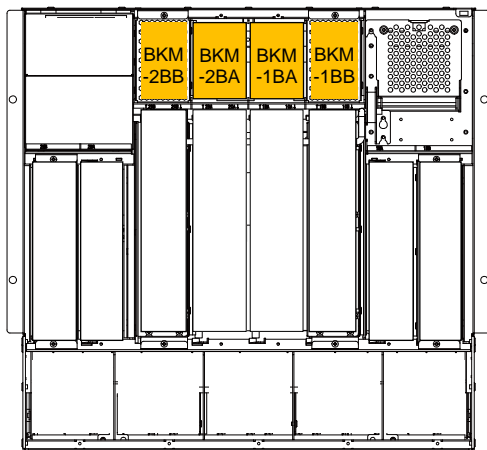
Fig. 2.2-2 Removal of Air Filters (Front Door)



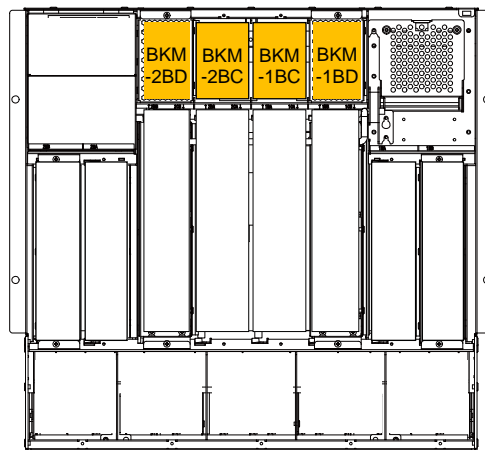
### 3. Check and Replacement of Battery

#### 3.1 Installation Location of Battery

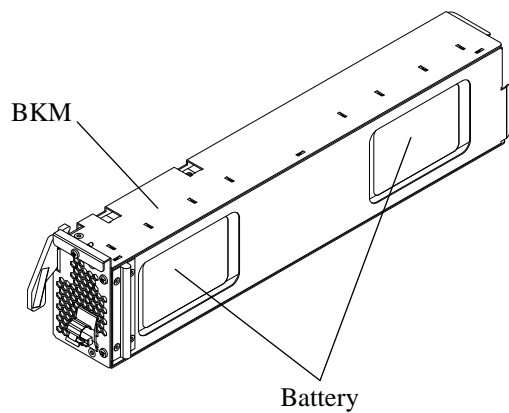
The Basic Rack has the batteries shown in Fig. 3.1-1.



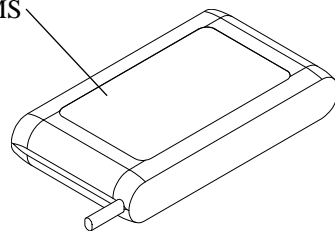
Front View of DKC-0



Front View of DKC-1

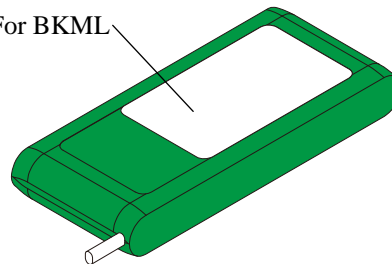


For BKMS



Battery (Ni-MH)

For BKML



Battery (Ni-MH)

Fig. 3.1-1 Battery Location

### 3.2 Inspecting Battery

**NOTICE:**

- Execute all inspections without removing the battery.
- Be sure to wear your wrist strap and attach to ground prior to performing the following work. This will ensure that the IC and LSI on the PCB are protected from static electricity. Refer to “Attaching the Wrist Strap” in [INST03-01-70](#).

#### (1) Periodic Check of the battery

Execute the annual check of the battery that is installed in the storage system on the following items.

① Check whether Battery Warning SIM (SIMRC = FFFA0X) and Battery Life Warning SIM (SIMRC = 7C0100) has been issued.

② Check whether there is anything abnormal on the battery.

②-1 If the cables are attached to the BKMs, check that the screws to secure the BKMs are tightened.

If the cables are not attached to the BKMs, go to Step ②-3.

NOTE: If the screw is loose, the BKM may be extracted when the cables or the locking clamp is moved.

②-2 Open the four locking clamps and move all the cables to where they cannot obstruct your view of the BKMs.

②-3 Check whether there is any battery fluid leakage or rust on the bottom front of the BKMs, and replace the battery when there is abnormality.

Refer to Work ID RBT1 on the page [REP01-310](#) of REPLACE SECTION for the replacement procedure.

②-4 If the cables were moved aside in Step ②-2, put them back in place.

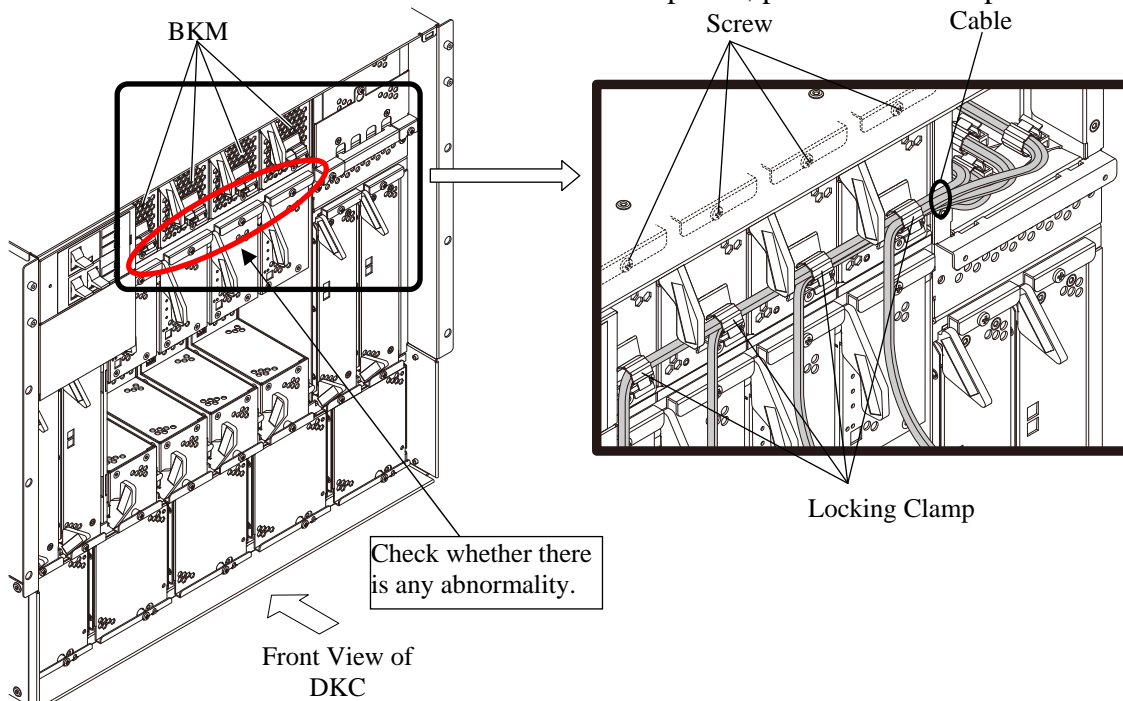
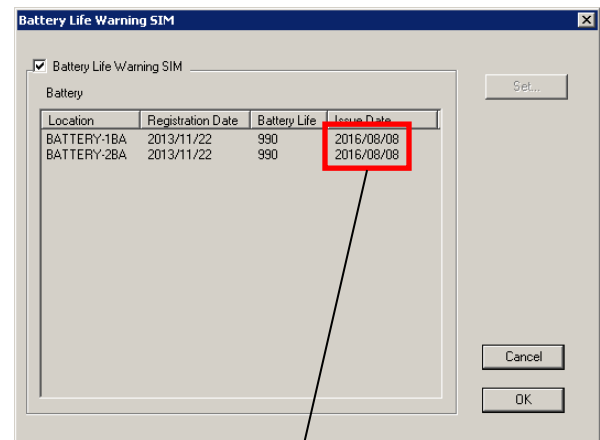


Fig. 3.2-1 Checking Abnormality of Battery

- ③ Check the date of Battery Warning SIM \*1 (Battery Life Warning SIM) of all the BKM.

- ③-1 Check the date with reference to the page [SVP02-15-10](#) of SVP SECTION.

NOTE: At this time, do not change either the check box of [Battery Life Warning SIM] or the [Set...] button.



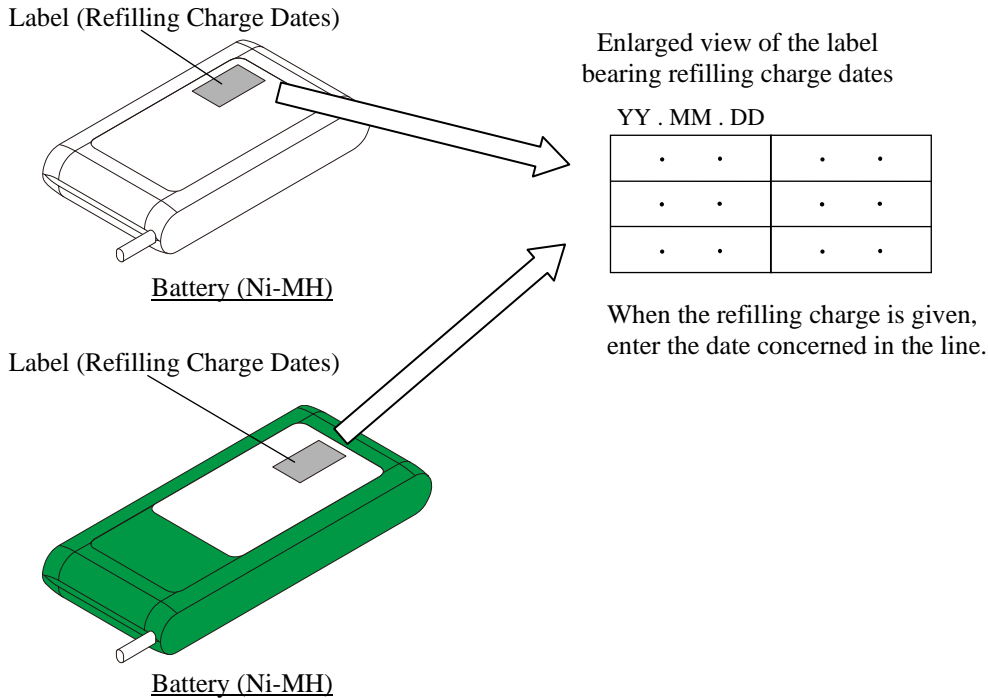
Replacement Date

- ③-2 Replace the battery when the replacement date approaches.

- \*1: The battery must be replaced before reaching the end of the battery life (three years).  
Battery Warning SIM must be set per battery that is installed in each BKM to execute the periodic replacement maintenance before reaching the end of the life (three years) of the battery in the storage system.

### 3.3 Replacing the battery

- (1) Inspection of battery being stored (Batteries installed in the stored Rack are included)  
Allowable storage period and specifications for refilling charge of batteries stored as maintenance parts are shown in the following table.



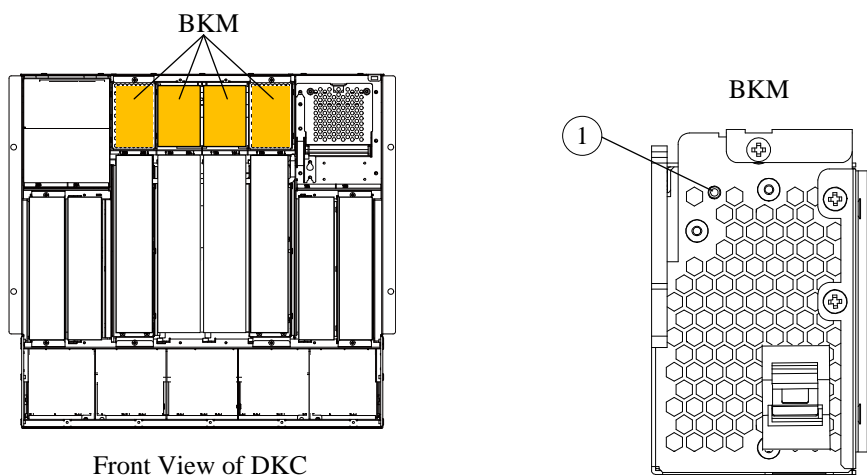
Date of the latest refilling charge			Shipment from the factory			The first refilling charge						The second refilling charge			
Months elapsed	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
				Allowable period of storage at the HDS/HP: 12 months at the longest											
				Period of storage at the factory: 3 months at the longest (①)			Period of storage at the HDS/HP: 6 months (②)						Period of storage at the HDS/HP: 6 months (③)		
	↔ Charging is done within 3 months before shipment.						↔ Charging is done within 3 months before shipment.						↔ Charging is done within 3 months before shipment.		
										➡ Discard the battery when it has been stored for 9 months (①+②) after the latest refilling charge.			➡ Discard the battery when it has been stored for 6 months (③) after the first refilling charge.		

Fig.3.3-1 Storage Period and Refilling Charge Specifications for Spare Batteries

Table 3.3-1 Specifications for Spare Batteries

No.	Allowable storage period	Allowable times of refilling charges	Time when refilling charge is to be done	Method of refilling charge
1	Six months (when stored at 25°C or lower)	Two times	Refer to Fig. 3.3-1.	Mount the battery in the BKM and apply power to it for longer than 3 hours.

\*1: When the refilling charge is done, update the production date of the battery written on the label to the date when the refilling charge is done.



Front View of DKC

Fig. 3.3-2 LED on BKM

Table 3.3-2 Functions of LED on BKM

No.	Parts Name	Class	Function
1	SHUT DOWN	LED (Red)	Indicates that the removal of the PCB is possible when the storage system is powered on.
	PS FAILURE	LED (Amber)	Indicates that the voltage in the PCB is abnormal.
	BATTERY CHARGE	LED (Green)	<p>This LED (Green) indicates the status of battery.</p> <ul style="list-style-type: none"> <li>• Lighting: The battery charge is completed.</li> <li>• High-Speed Blinking (ON: about one second, OFF: about one second): The battery is charging.</li> <li>• Low-Speed Blinking (ON: about one second, OFF: about five seconds): The battery is discharging.</li> <li>• Going out: The power is off. The battery discharge is completed. The battery has trouble.</li> </ul> <p>After the power is turned on, the Battery Box is started to be charged and the LED blinks. Though the LED becomes kept on after the charge is completed, it repeats the operation that indicates the refilling charge (blink) and completion of the refilling charge (being kept on) after that.</p>

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- (2) The battery must be replaced before the service life (3 years). For the replacement procedure, refer to the REPLACE SECTION (Work ID RBT1 on page [REP01-310](#)).  
When the replacement is completed, set the warning SIM concerning the battery that demands the next periodic replacement following the directions given on page [SVP02-15-10](#) in the SVP SECTION.
- (3) When re-installing the Rack, replace all the batteries.

**CAUTION**

The Battery is an industrial waste. Dispose of it following the directions given by the manufacturer.