9. PERIODIC CHECK SECTION

9 PERIODIC CHECK SECTION

Contents

PERIODIC CHECK LIST

The following table shows the items of the periodic check for the DKC210I and DKU205I.

When the parts are replaced , refer to 'PARTS REPLACEMENT SECTION' of this manual.

No.	Item	Tools	Frequency of Periodic Check	Check Time	DKC210I/ DKU205I	Reference Page
1	Check of DC voltage	· Flathead screwdriver · Digital voltmeter · Voltage check fixture	Once per year	5 min. per logical part	DKC210I DKU205I	PERIOD 02-10 to PERIOD 02-100
2	Check of air filter	· Vacuum cleaner	Once per year	10 min.	DKC210I DKU205I	PERIOD 03-10
3	Check and Replace-ment of battery	· Philips screwdriver	See Table 9.3.2-2 on page PERIOD 04-20	Replacement time: 10 min. per battery.	DKC210I	PERIOD 04-10 to PERIOD 04-20

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1. Check of DC Voltage

a. Measure DC +5V, DC +12V, and DC +3.3V current at the check point with a digital voltmeter.
Refer to the following table and figure:

- Table 9.1-1 'Range of Acceptable DC Voltage on PERIOD 02-10
- Fig. 9.1-1 'Location of Voltage Check Point on PERIOD 02-20
- Fig. 9.1-2 'Location of ADJ. Screw (PS Type 'xxxx-P, R') on PERIOD 02-30
- Fig. 9.1-3 'Location of ADJ. Screw (PS Type 'xxxx-V') on PERIOD 02-30

Table 9.1-1 Range of Acceptable DC Voltage

No.	Logic Part	Standard DC Voltage (Between +DC and GRD)	Acceptable Range (Between +DC and GRD)	Power Supply Location	Remarks
1	Cluster 1 Logic	+5V	+4.85V to +5.25V	5VPS10	
2				5VPS11	
3				5VPS12	
4		+3.3V	+3.20V to +3.45V	3VPS10	
5				3VPS11	
6		+5V/+12V	5V : +4.75V to +5.25V	MPS10	
7		(multi)	12V : +11.4V to +12.6V	MPS11	
8	Cluster 2 Logic	+5V	+4.85V to +5.25V	5VPS20	
9				5VPS21	
10				5VPS22	
11		+3.3V	+3.20V to +3.45V	3VPS20	
12				3VPS21	
13		+5V/+12V	5V : +4.75V to +5.25V	MPS20	
14		(multi)	12V : +11.4V to +12.6V	MPS21	
15	Cache 1	+5V	+4.85V to +5.25V	5VPSC10	
16				5VPSC11	
17		+3.3V	+3.20V to +3.45V	3VPSC10	
18				3VPSC11	
19	Cache 2	+5V	+4.85V to +5.25V	5VPSC20	
20				5VPSC21	
21		+3.3V	+3.20V to +3.45V	3VPSC20	
22				3VPSC21	
23	HDU-XX0	+5V/+12V	5V : +4.75V to +5.25V	MPSXX00	
24		(multi)	12V : +11.4V to +12.6V	MPSXX01	
23	HDU-XX1	+5V/+12V	5V : +4.75V to +5.25V	MPSXX10	
26		(multi)	12V : +11.4V to +12.6V	MPSXX11	
27	HDU-XX2	+5V/+12V	5V : +4.75V to +5.25V	MPSXX20	
28		(multi)	12V : +11.4V to +12.6V	MPSXX21	
29	HDU-XX3	+5V/+12V	5V : +4.75V to +5.25V	MPSXX30	
30		(multi)	12V : +11.4V to +12.6V	MPSXX31	
31	HDU-XX4	+5V/+12V	5V : +4.75V to +5.25V	MPSXX40	
32		(multi)	12V : +11.4V to +12.6V	MPSXX41	
33	HDU-XX5	+5V/+12V	5V : +4.75V to +5.25V	MPSXX50	
34		(multi)	12V : +11.4V to +12.6V	MPSXX51	
35	HDU-XX6	+5V/+12V	5V : +4.75V to +5.25V	MPSXX60	
36		(multi)	12V : +11.4V to +12.6V	MPSXX61	
37	HDU-XX7	+5V/+12V	5V : +4.75V to +5.25V	MPSXX70	
38		(multi)	12V : +11.4V to +12.6V	MPSXX71	

b. To test the output voltage of the power supplies, measure it with the voltmeter, by connecting the voltmeter to the voltage check point.

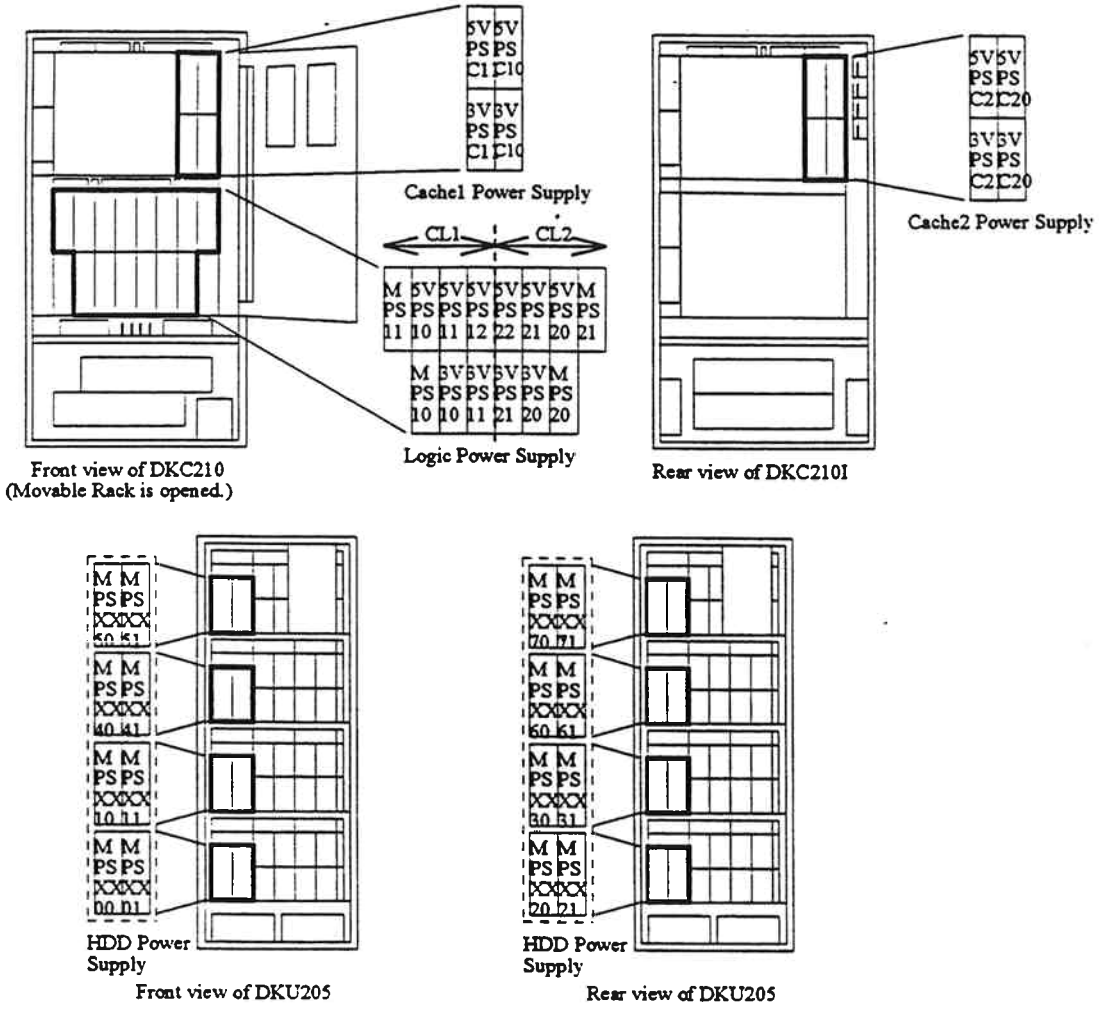
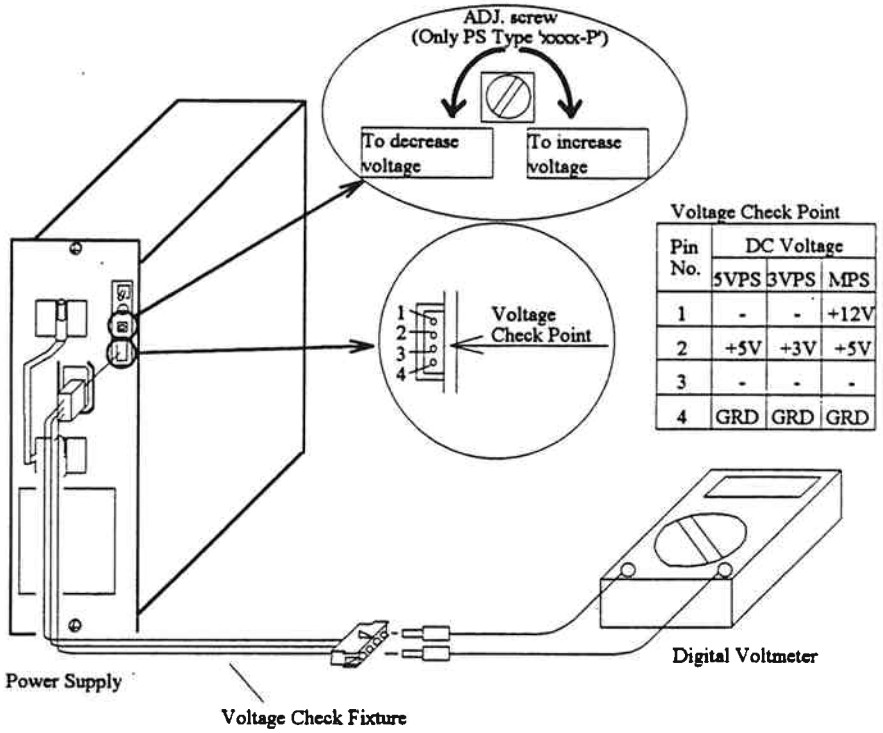


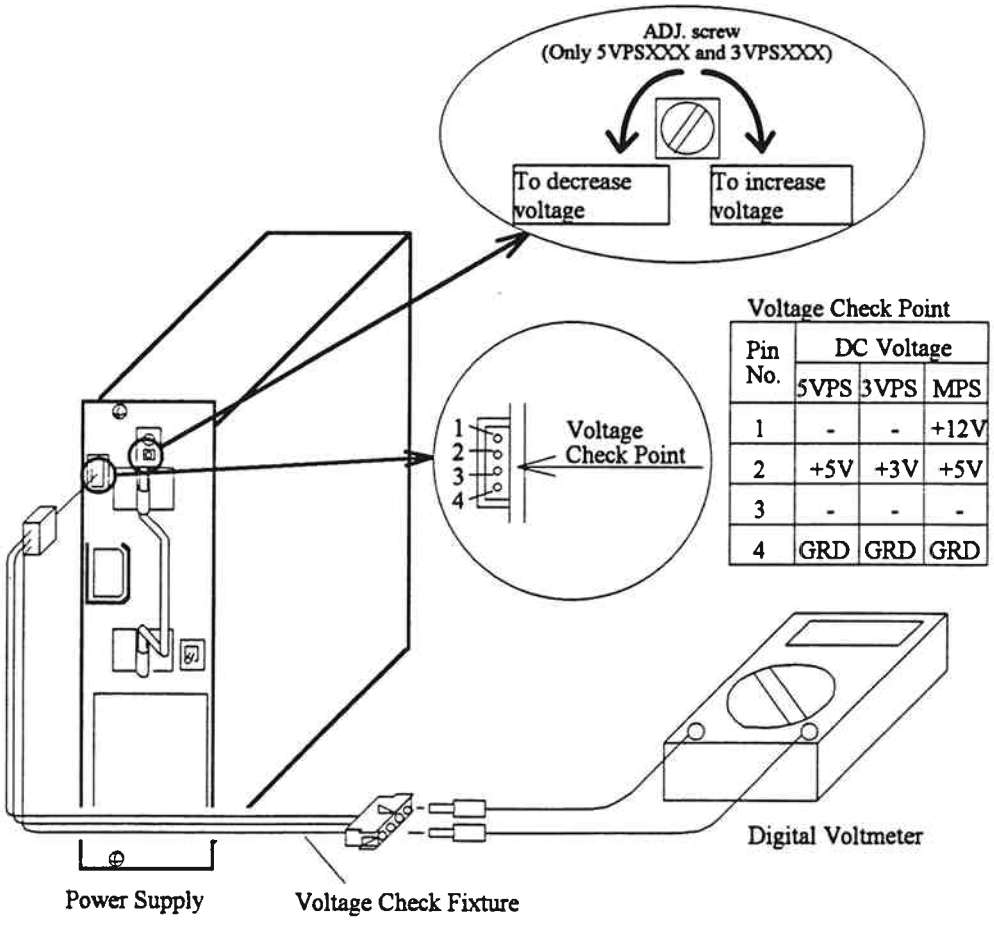
Fig. 9.1-1 Location of Voltage Check Point



Voltage Check Point

Pin No.	DC Voltage		
	5VPS	3VPS	MPS
1	-	-	+12V
2	+5V	+3V	+5V
3	-	-	-
4	GRD	GRD	GRD

Fig. 9.1-2 Location of ADJ. Screw (PS Type 'xxxx-P, R')



Voltage Check Point

Pin No.	DC Voltage		
	5VPS	3VPS	MPS
1	-	-	+12V
2	+5V	+3V	+5V
3	-	-	-
4	GRD	GRD	GRD

Fig. 9.1-3 Location of ADJ. Screw (PS Type 'xxxx-V')

5VPS voltage adjustment

WARNING

The voltage shows the power supply that has the highest voltage output. The voltage measured at the check point differs from the output voltage of every power supply. If there is a power supply which output voltage is below the logical operating voltage in the same power supply group, and you turn the switches of the other power supplies in the same group to 'Disable', the output voltage will be below the logical operating voltage with the possibility that the Cluster may power off. Therefore, you have to adjust the voltage according to the 'Flowchart'.

NOTE

1. In '5VPSx*', 'x' means CL1 or CL2, '*' means ; 0= Basic , 1= Additional , 2= Redundant
2. CW = clockwise . CCW = counter clockwise.
3. 1/8 Revolution is approximate when adjusting power supply to a specific voltage.

REFERENCE

step ① : Check the voltage at the voltage check point.

step ② : If voltage is less than '5.00V' , adjust it to '5.00V'. (One of two or three power supplies should be set to '5.00V'.)

step ③ : If voltage is higher than '5.00V' ,adjust it to '5.00V'.

step ④ : After step ② and ③ , the voltage should have been set to '5.00V'. Adjust other 2 power supplies (except the power supply adjusted to '5.00V') to '5.10V' and '5.20V' respectively.

step ⑤ : Adjust power supplies other than the power supply set to '5.20V' to '5.22V' and '5.24V' respectively.

step ⑥ : Voltage of all power supplies should be near '5.20V' after ⑤. Decrease voltage of all power supplies slowly to '4.90V'.

step ⑦ : If redundant power supply is 'HS05060C-PX(4.9v) adjust it to '4.92V'. If redundant power supply is 'HS05070C-V ' adjust it to '5.00V'.

step ⑧ : Adjust the voltage of basic power supply to '5.02V'.

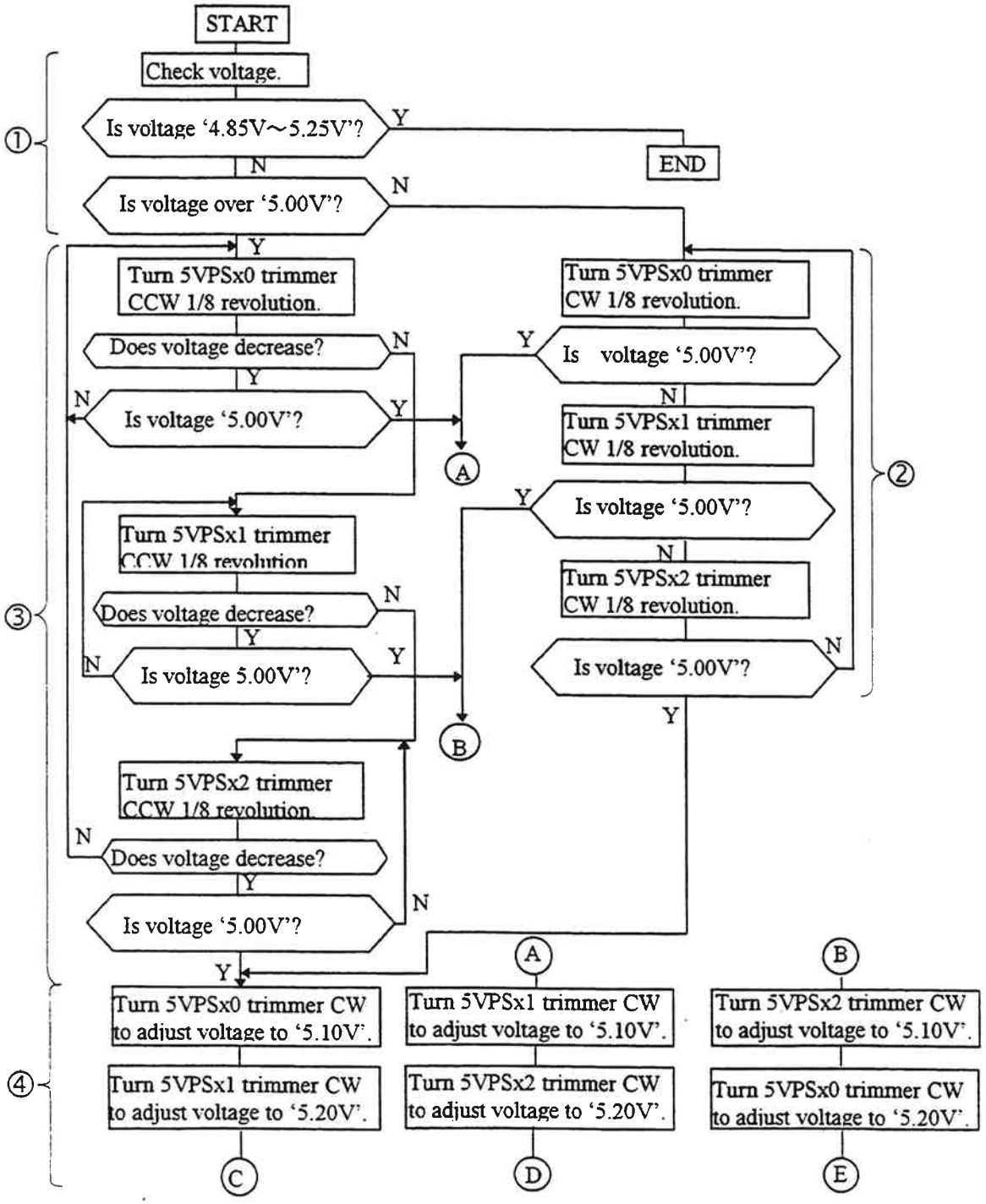
step ⑨ : Adjust the voltage of additional power supply to '5.04V'.

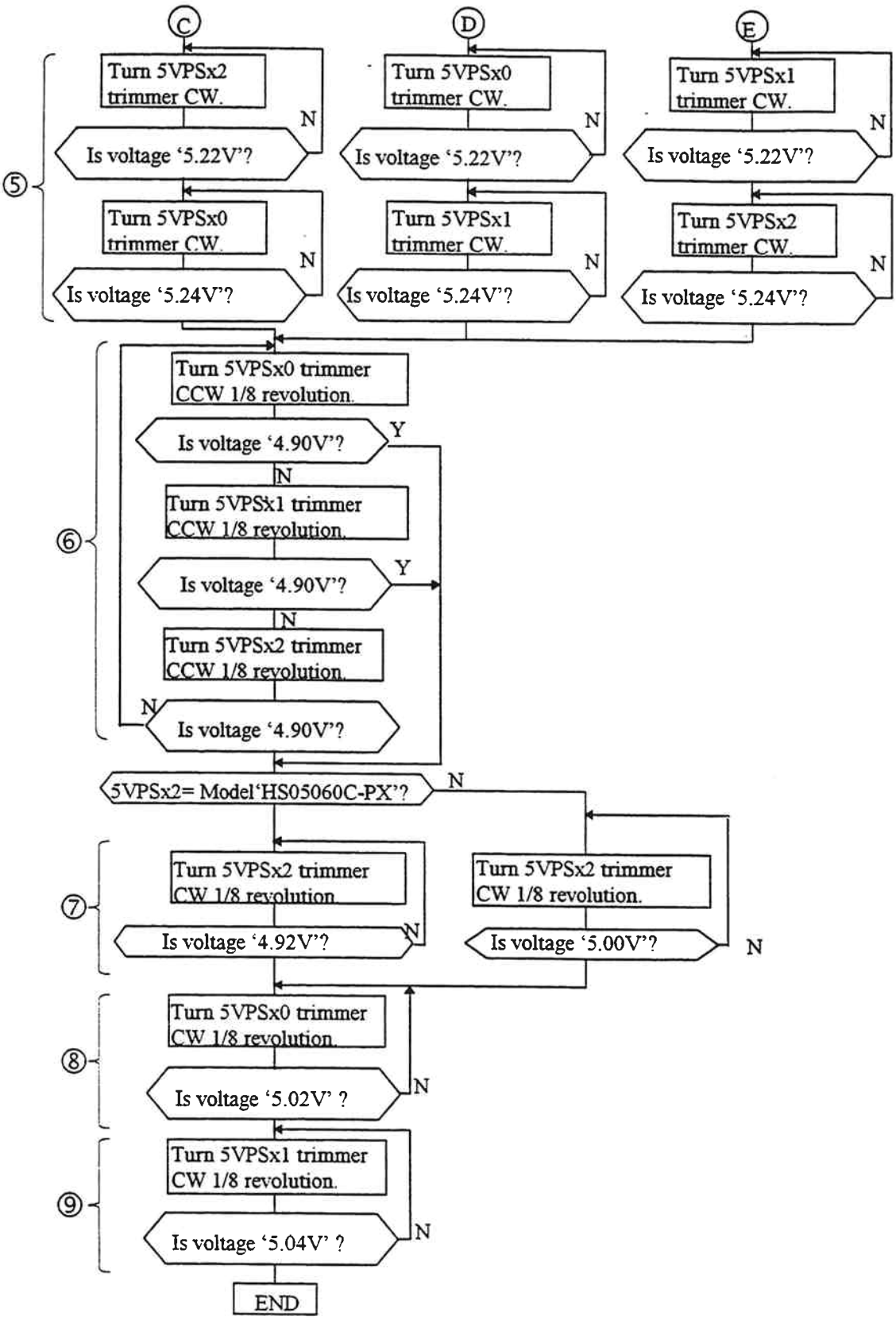
Flowchart of 5VPS voltage adjustment

Procedure

Please read 'WARNING',' NOTE ' and ' Reference ' before using the Procedure.

(refer to Reference for details)





3VPS voltage adjustment

WARNING

The voltage shows the power supply that has the highest voltage output. The voltage measured at the check point differs from the output voltage of every power supply. If there is a power supply which output voltage is below the logical operating voltage in the same power supply group, and you turn the switches of the other power supplies in the same group to 'Disable', the output voltage will be below the logical operating voltage with the possibility that the Cluster may power off. Therefore, you have to adjust the voltage according to the 'Flowchart'.

NOTE

1. In '3VPSx*', 'x' means CL1 or CL2, '*' means ; 0= Basic , 1= Redundant
2. CW = clockwise . CCW = counter clockwise.
3. 1/8 Revolution is approximate when adjusting power supply to a specific voltage.

REFERENCE

step ① : Check the voltage at the voltage check point.

step ② : If voltage is less than '3.30V' , adjust it to '3.30V'. (One of two power supplies should be set to '3.30V'.)

step ③ : If voltage is higher than '3.30V' ,adjust it to '3.30V'.

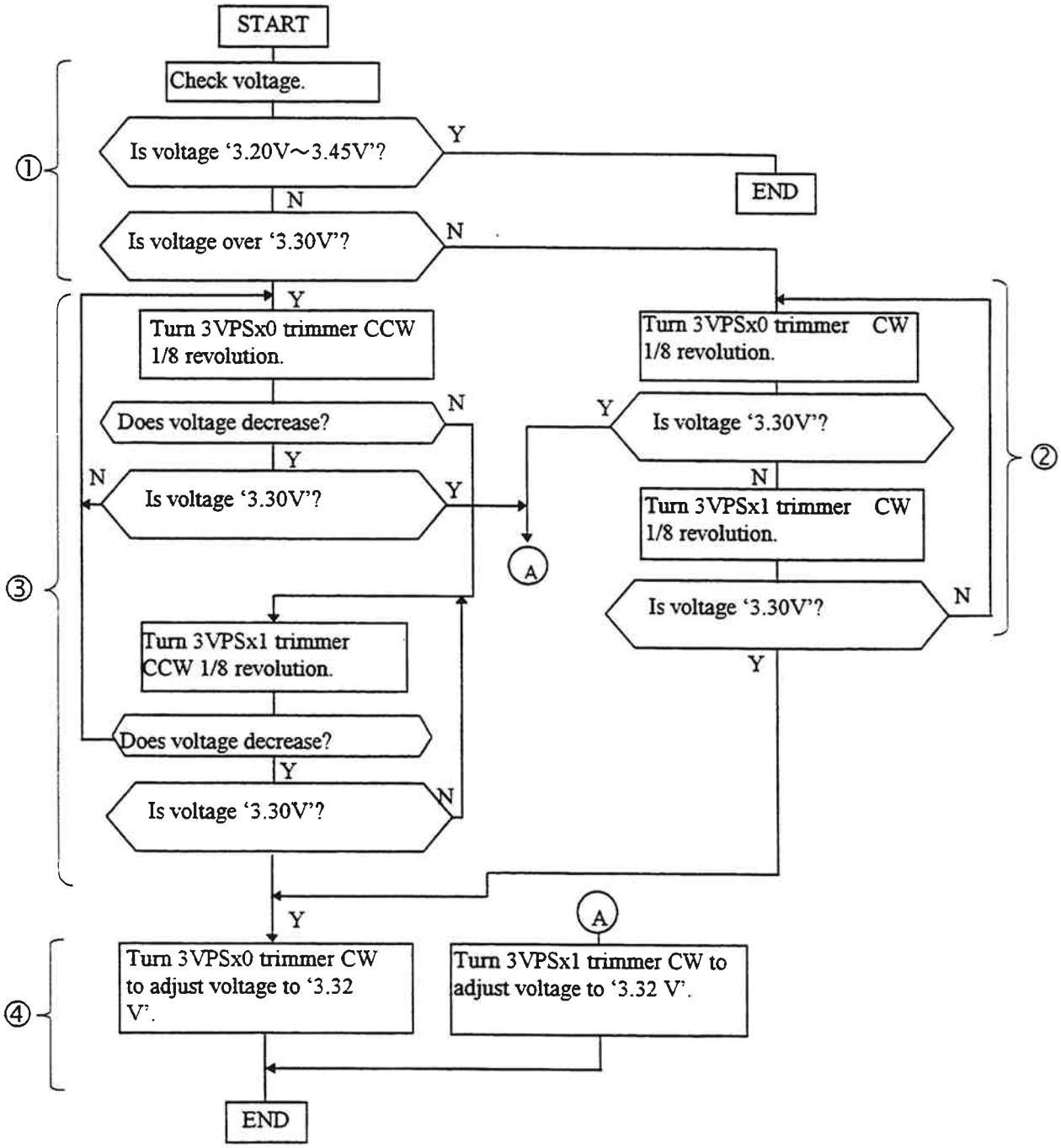
step ④ : After step ② and ③ , the voltage should have been set to '3.30V'. Adjust power supply other than power supply set to '3.30V' to '3.32V'.

Flowchart of 3VPS voltage adjustment

Procedure

Please read 'WARNING',' NOTE ' and ' Reference ' before using the Procedure.

(refer to Reference for details)



MPS voltage adjustment

WARNING

The voltage shows the power supply that has the highest voltage output. The voltage measured at the check point differs from the output voltage of every power supply. If there is a power supply which output voltage is below the logical operating voltage in the same power supply group, and you turn the switches of the other power supplies in the same group to 'Disable', the output voltage will be below the logical operating voltage with the possibility that the Cluster may power off. Therefore, you have to adjust the voltage according to the 'Flowchart'.

NOTE

1. In 'MVPSx*', 'x' means CL1 or CL2, '*' means ; 0= Basic , 1= Redundant
2. CW = clockwise . CCW = counter clockwise.
3. Only MPS model HS300-04C-P is adjustable.
   The other model of MPS are not adjustable, if out of spec, they must be replaced.
4. 1/8 Revolution is approximate when adjusting P/S to a specific voltage.

REFERENCE

step ① : Check the voltage at the voltage check point (Both 5V & 12v). The 5V of multi power supply is not adjustable. If it is out of spec., it must be replaced.

step ② : If voltage is less than '12.00V' , adjust it to '12.00V'. (One of two power supplies should be set to '12.00V'.)

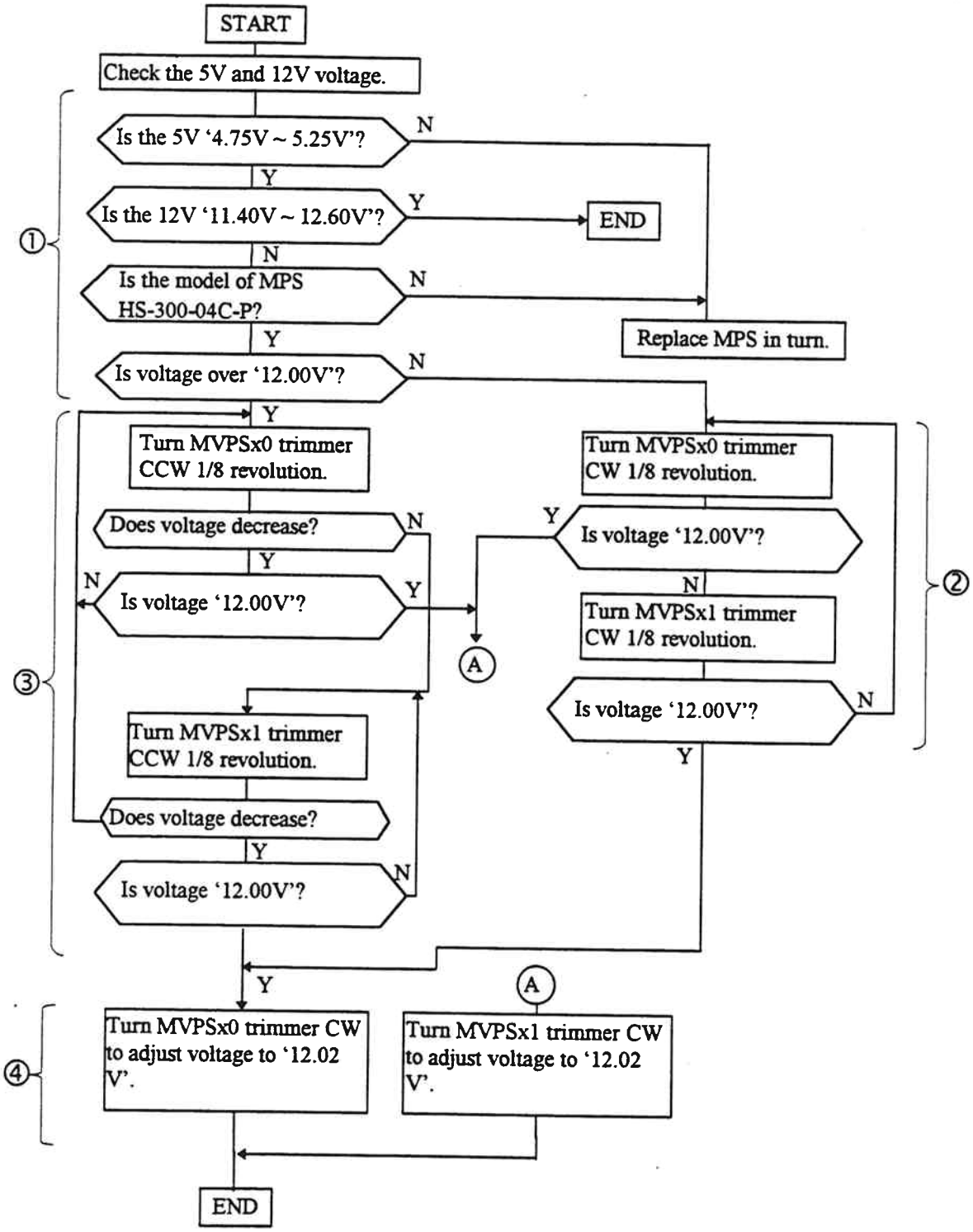
step ③ : If voltage is higher than the '12.00V' ,adjust it to '12.00V'.

step ④ : After step ② and ③ , the voltage should have been set to '12.00V'. Adjust power supply other than power supply set to '12.00V' to '12.02V'.

Flowchart of MPS voltage adjustment

Procedure

Please read 'WARNING',' NOTE ' and ' Reference ' before using the Procedure.
(refer to Reference for details)



2. Cleaning of Air Filter

2.1 DKC210I

Clean the air filter located at the bottom of the Logic-Gate and Logic-PS and inside the rear door.

The location of the air filter is shown in Fig. 9.2-1.

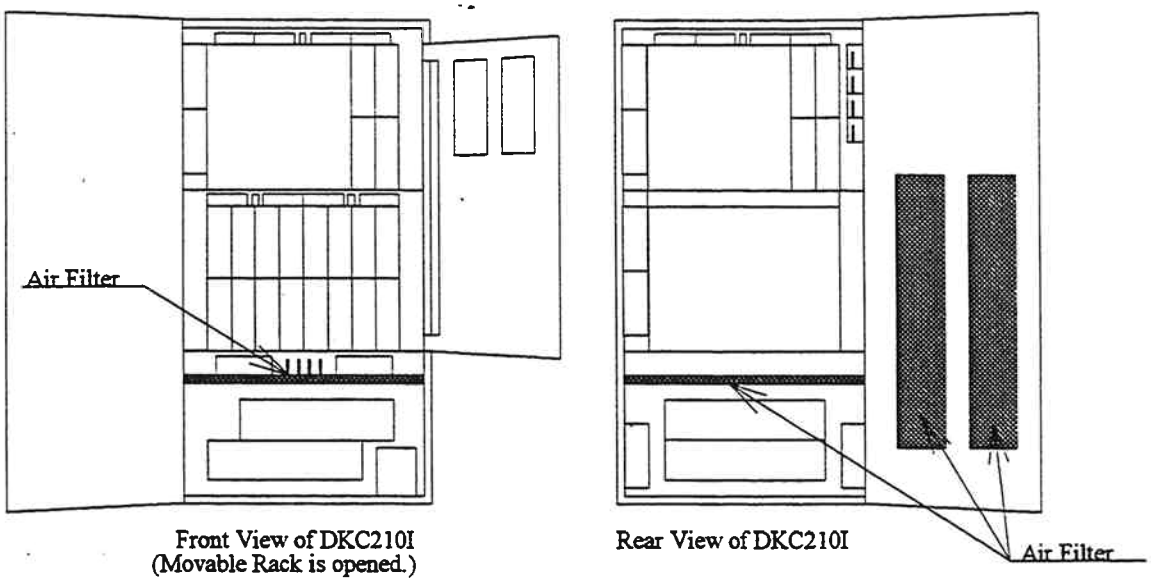


Fig. 9.2-1 Air Filter Location in DKC210I

2.2 DKU205I

Clean the air filter located inside the front and rear doors.

The location of the air filter is shown in Fig. 9.2-2.

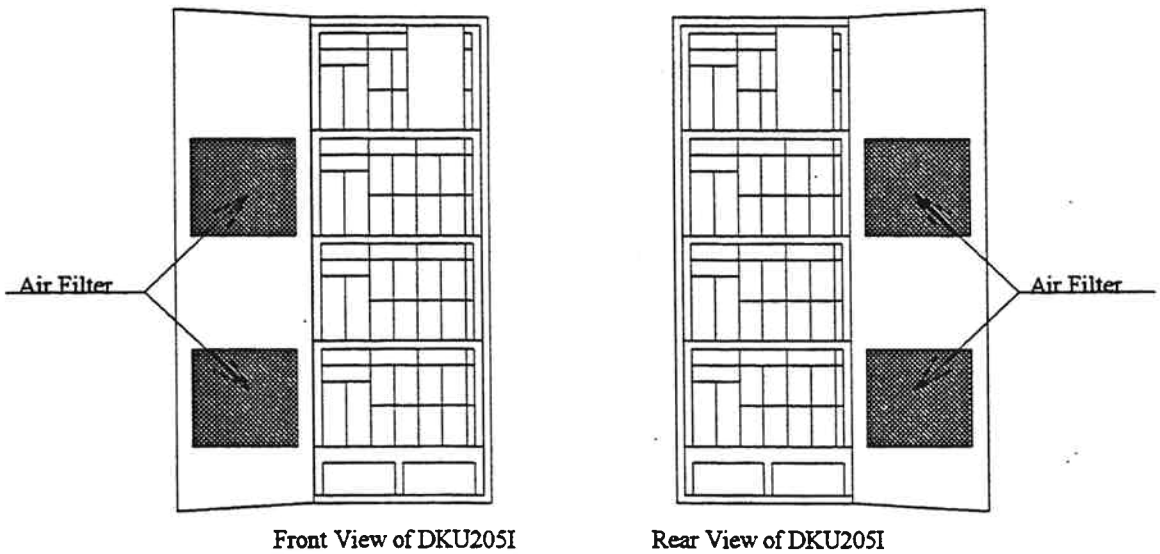


Fig. 9.2-2 Air Filter Location in DKU205I

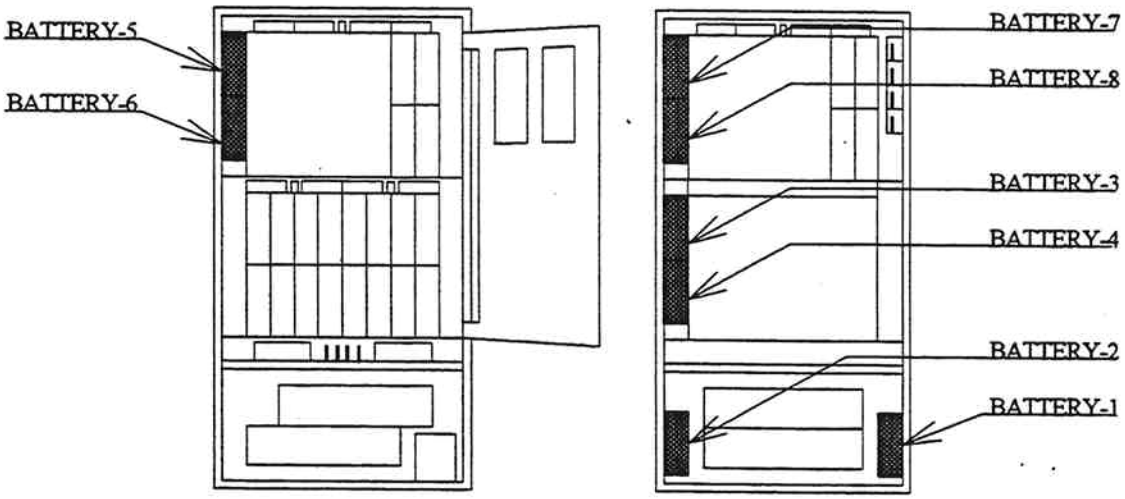
3. Check and Replacement of Battery

3.1 Type of battery

The DKC210I has the batteries shown in Table 9.3.1.-1 and Fig. 9.3.1-1.

Table 9.3.1-1 Batteries used in DKC210I

NO.	Battery Name	Logic Part	ALARM LED on Operator Panel	Warning Detecting Voltage
1	BATTERY-1	Cluster 1 SM	SUB-SYSTEM ALARM	Less than 3.8V
2	BATTERY-2	Cluster 2 SM		
3	BATTERY-3	Cluster 1 CM / Cache 1 CM		
4	BATTERY-4	Cluster 2 CM / Cache 2 CM		
5	BATTERY-5	Cache 1 CM		
6	BATTERY-6			
7	BATTERY-7	Cache 2 CM		
8	BATTERY-8			



Front View of DKC210I (Movable Rack is opened.)

Rear View of DKC210I

Fig. 9.3.1.-1 Battery Location

3.2 Specification of battery

Specifications of the batteries mounted on the DKC210I are shown in Table 9.3.2-1.

Replace the battery, in case that a battery warning is detected, even though battery charging time passes 8 hours.

Table 9.3.2-1 Specification of the battery

No.	Type of Battery	Maximum Back-up Time	Charging Time Necessary after Back-up
1	For SM	96 hours (4 days)	8 hours
2	For CM	48 hours (2 days)	8 hours

Specifications of the batteries for the spare parts are shown in Table 9.3.2.-2.

Replace the battery, in case that the battery is used more than 3 years.

Table 9.3.2-2 Specification of the battery (spare parts)

No.	Type of Battery	Charging Time and Frequency of Battery for Spare Parts	Life
1	For SM	Time : 48 hours (2 days) Frequency : Once every six months (Note) Use the DKC210I for charging.	3 years
2	For CM		3 years

3.3 Replacing of battery

Refer to " REPLACE SECTION " [REPLACE 01-150 Work ID RT17] in this manual.