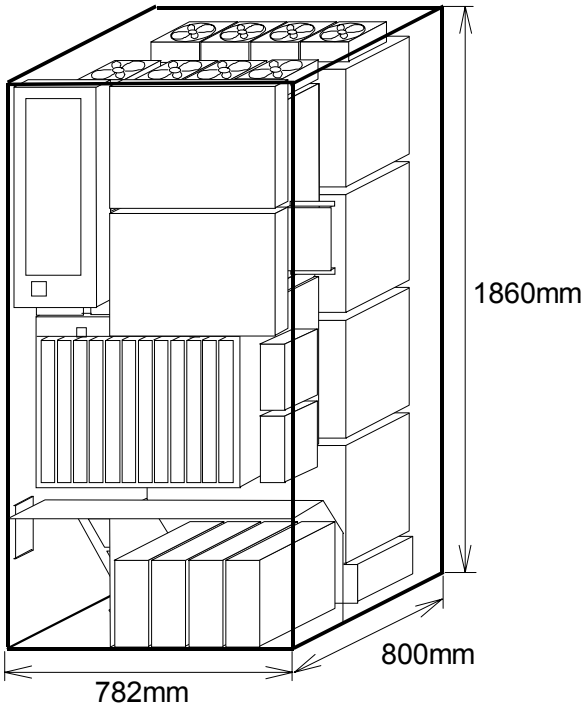
LOCATION SECTION

Contents

LOCATION

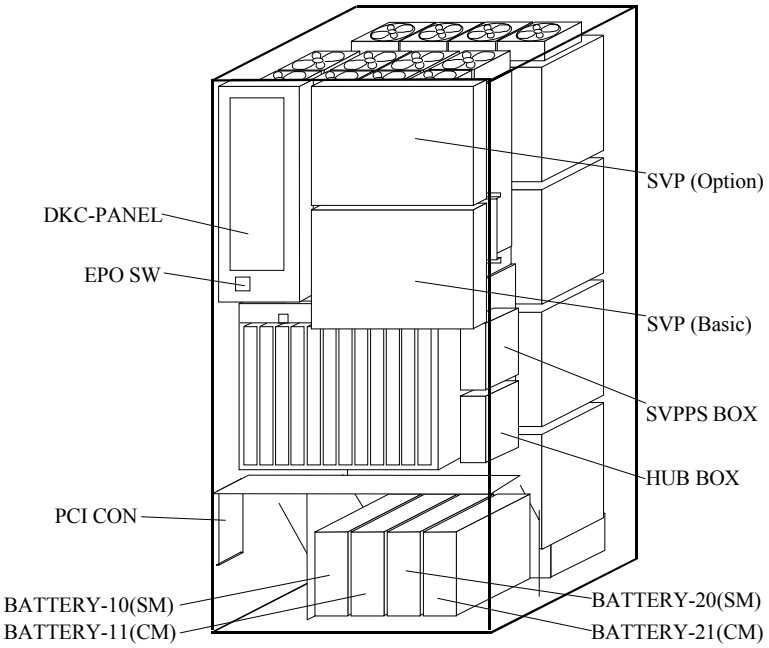
1 Overview of Disk Subsystem



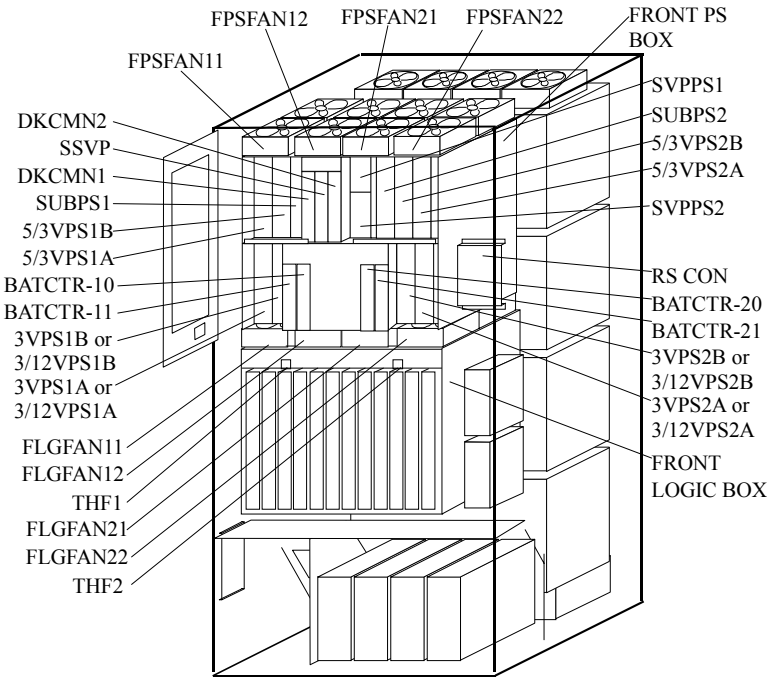
Front View

2 Parts Location

2.1 Disk Controller Unit

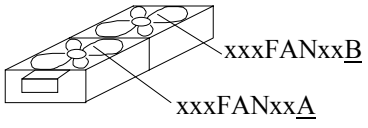


Front View

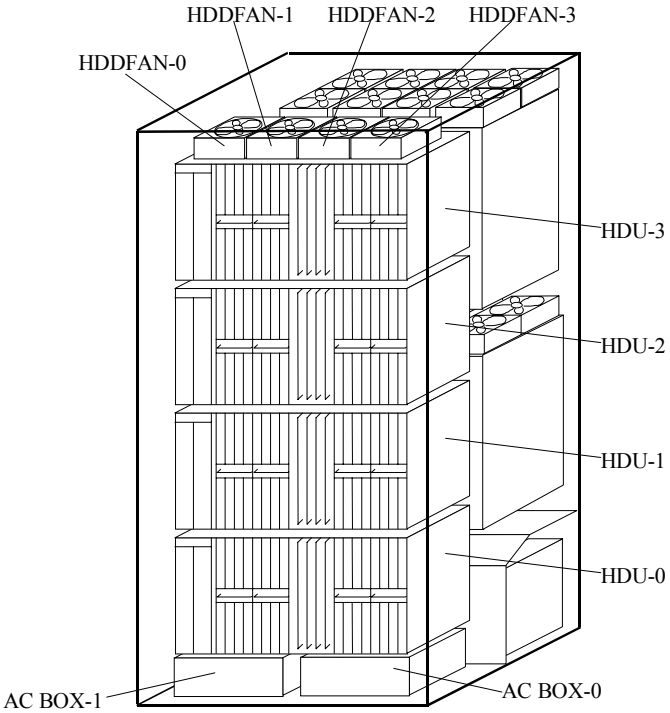


Front View

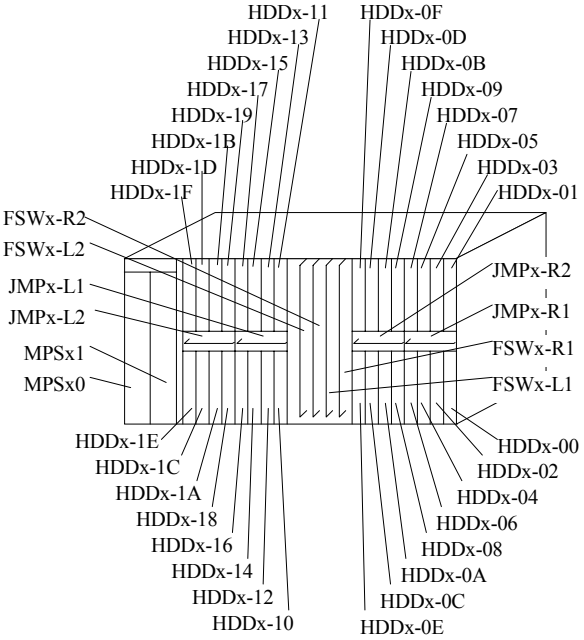
FAN ASSY



(Note)
xxxFANxx : FAN ASSY Location



Rear View



(Note) x: HDU Box No. (0, 1, 2, 3)

2.2 PCB and Power Supply Location

FRONT LOGIC BOX PCB LOCATION

CL1									CL2							
A	B				C	D	E	F			G	H	J	K			L			M
WP4811/C	WP4711/A	SH2811/B	WP4711/B	SH2811/B	1st CHA	2nd CHA	WP4900/A	3rd CHA	WP4711/B	SH2811/B	1st CHA	WP4900/A	2nd CHA	3rd CHA	WP4711/B	SH2811/B	WP4711/A	SH2811/B	WP4711/B	SH2811/B	WP4811/C
	*A1		*A2		*B	*B		*B	*C		*B		*B	*B	*C		*A1		*A2		
CSW-1A	DKA-1B				CHA-1C	CHA-1D	CACHE-1E	CHA-1F	DKA-1F		CHA-2G	CACHE-2H	CHA-2J	CHA-2K	DKA-2K		DKA-2L				CSW-2M
	Basic				Basic	Add.1		Add.2	Add.1		Basic		Add.1	Add.2	Add.1		Basic				

*A1: DKC-F465I-100x1set *A2: DKC465I-5EN or DKC-F460I-200x1set *C: DKC-F460I-200x2 sets

*B: Description of CHA PCBs

CL1 C, D, F																
WP4621/Ax1	SH2811/Cx4	WP4611/Dx1	SH2811/Ax2	WP4611/Ex1	SH2811/Ax2	WP4611/Bx1	SH2811/Ax4	WP4611/Cx1	SH2811/Ax4	WP4651/Ax1	SH2811/Dx4	WP4651/Bx1	SH2811/Dx4	WP4611/Fx1	SH2811/Ax4	WP4611/Gx1
*1	*2	*3	*4	*5	*6	*7	*8	*9								

SH2811/Ax4	WP4611/Hx1	SH2811/Ax2	WP4611/Jx1	SH2811/Ax2	WP4631/Bx1	SH2811/Dx4	WP4671/Ax1	SH2811/Dx2	WP4681/Ax1	SH2811/Cx4	WP4661/Ax1	SH2811/Dx4
*10	*11	*12	*13	*14	*15							

CL2 G, J, K																
WP4621/Ax1	SH2811/Cx4	WP4611/Dx1	SH2811/Ax2	WP4611/Ex1	SH2811/Ax2	WP4611/Bx1	SH2811/Ax4	WP4611/Cx1	SH2811/Ax4	WP4651/Ax1	SH2811/Dx4	WP4651/Bx1	SH2811/Dx4	WP4611/Fx1	SH2811/Ax4	WP4611/Gx1
*1	*2	*3	*4	*5	*6	*7	*8	*9								

SH2811/Ax4	WP4611/Hx1	SH2811/Ax2	WP4611/Jx1	SH2811/Ax2	WP4631/Bx1	SH2811/Dx4	WP4671/Ax1	SH2811/Dx2	WP4681/Ax1	SH2811/Cx4	WP4661/Ax1	SH2811/Dx4
*10	*11	*12	*13	*14	*15							

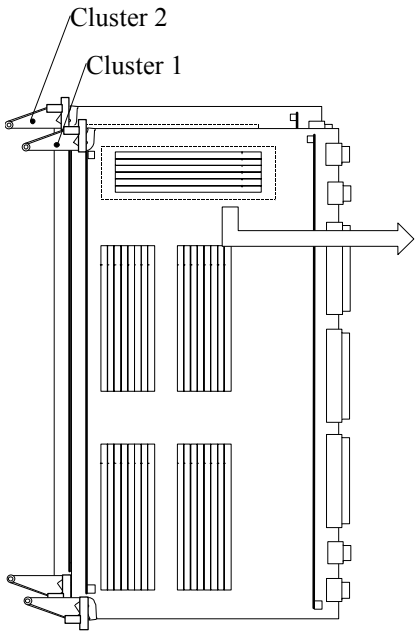
*1: DKC-F460I-8S
*2: DKC-F460I-8GSE
*3: DKC-F460I-4HSE
*4: DKC-F460I-8HSE
*5: DKC-F460I-8HLE
*6: DKC-F460I-8MS
*7: DKC-F460I-8ML
*8: DKC-F460I-8HSF
*9: DKC-F460I-8HLF
*10: DKC-F460I-8GSF
*11: DKC-F460I-4HSF
*12: DKC-F460I-16HSF
*13: DKC-F460I-4NS (Installation number of DKC-F460I-4NS is restricted to two sets.)
*14: DKC-F460I-8SE
*15: DKC-F460I-8IS

FRONT PS BOX PS AND PCB LOCATION

CL1					CL1/CL2	CL2		CL1	CL2			
—	—	—	AU		BU	CU		DU	—	—	—	
5/3VPS1A	5/3VPS1B	SUBPS1	DKCMN1		SSVP	DKCMN2		SVPPS1	SUBPS2	5/3VPS2B	5/3VPS2A	
5/3VPS	5/3VPS	SUBPS	SH307-A	SH307-B *A	SH313-A	SH307-A	SH307-B *A	SH1111-B	SUBPS	5/3VPS	5/3VPS	
								SH1111-B				
								SVPPS2				
								EU				
								CL2				
3VPS *B	3/12VPS *C	3VPS *B	3/12VPS *C	SH2000-A	SH2000-A			SH2000-A	SH2000-A	3VPS *B	3/12VPS *C	3VPS *B	3/12VPS *C
3VPS1A	3/12VPS1A	3VPS1B	3/12VPS1B	BATCTR-11	BATCTR-10			BATCTR-20	BATCTR-21	3VPS2B	3/12VPS2B	3VPS2A	3/12VPS2A
—		—		AL	BL			CL	DL	—		—	
CL1								CL2					

*A: DKC-F460I-UPS
*B: DKC465I-5 or DKC465I-5F
*C: DKC465I-5FE, DKC465I-5EN or DKC-F465I-NENB

2.3 Shared Memory Module Location



Shared Memory Module Location

① SM00 : SH287-B/C	Black
② SM01 : SH287-B/C	
③ SM02 : SH287-B/C	White
④ SM03 : SH287-B/C	
⑤ SM04 : SH287-B/C	
⑥ SM05 : SH287-B/C	

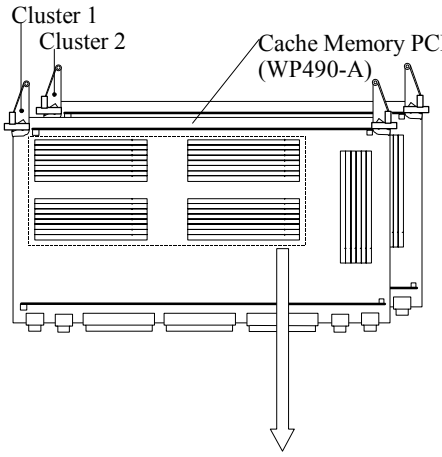
Color of Socket

[Basic consideration]

① for Feature expansion 1
② for Feature expansion 2
③ BASIC
④ for CACHE or Feature expansion 1
⑤ for CACHE or Feature expansion 2
⑥ for CACHE or Feature expansion 3

2.4 Cache Memory Module Location

1. Standard Cache Memory PCB



*1 : DKC-F460I-2048/4096 (1 set)
*2 : DKC-F460I-2048/4096 (2 sets)
*3 : DKC-F460I-2048/4096 (3 sets)
*4 : DKC-F460I-2048/4096 (4 sets)
*5 : DKC-F460I-2048/4096 (5 sets)
*6 : DKC-F460I-2048/4096 (6 sets)
*7 : DKC-F460I-2048/4096 (7 sets)
*8 : DKC-F460I-2048/4096 (8 sets)
*9 : DKC-F460I-2048/4096 (9 sets)
*A : DKC-F460I-2048/4096 (10 sets)
*B : DKC-F460I-2048/4096 (11 sets)
*C : DKC-F460I-2048/4096 (12 sets)
*D : DKC-F460I-2048/4096 (13 sets)
*E : DKC-F460I-2048/4096 (14 sets)
*F : DKC-F460I-2048/4096 (15 sets)
*G : DKC-F460I-2048/4096 (16 sets)

Cache Memory Module Location

BCM007 : SH288-B/C	*G	ACM007 : SH288-B/C	*F

BCM007 (MG#15) : SH288-B/C	*G	ACM007 (MG#14) : SH288-B/C	*F	D
BCM006 (MG#13) : SH288-B/C	*E	ACM006 (MG#12) : SH288-B/C	*D	B
BCM005 (MG#11) : SH288-B/C	*C	ACM005 (MG#10) : SH288-B/C	*B	9
BCM004 (MG#9) : SH288-B/C	*A	ACM004 (MG#8) : SH288-B/C	*9	7
BCM003 (MG#7) : SH288-B/C	*8	ACM003 (MG#6) : SH288-B/C	*7	5
BCM002 (MG#5) : SH288-B/C	*6	ACM002 (MG#4) : SH288-B/C	*5	3
BCM001 (MG#3) : SH288-B/C	*4	ACM001 (MG#2) : SH288-B/C	*3	1
BCM000 (MG#1) : SH288-B/C	*2	ACM000 (MG#0) : SH288-B/C	*1	

BCM107 (MG#15) : SH288-B/C	*G	ACM107 (MG#14) : SH288-B/C	*F	F
BCM106 (MG#13) : SH288-B/C	*E	ACM106 (MG#12) : SH288-B/C	*D	D
BCM105 (MG#11) : SH288-B/C	*C	ACM105 (MG#10) : SH288-B/C	*B	B
BCM104 (MG#9) : SH288-B/C	*A	ACM104 (MG#8) : SH288-B/C	*9	9
BCM103 (MG#7) : SH288-B/C	*8	ACM103 (MG#6) : SH288-B/C	*7	7
BCM102 (MG#5) : SH288-B/C	*6	ACM102 (MG#4) : SH288-B/C	*5	5
BCM101 (MG#3) : SH288-B/C	*4	ACM101 (MG#2) : SH288-B/C	*3	3
BCM100 (MG#1) : SH288-B/C	*2	ACM100 (MG#0) : SH288-B/C	*1	1

Fig. 2.4-1 Cache Memory Module Location

3 Panel

3.1 Operator Panel

[1] Operator Panel
Fig. 3.1-1 and Table 3.1-1 show the Operator Panel and its functions respectively.
Circled numbers in Fig. 3.1-1 correspond to the numbers in Table 3.1-1.

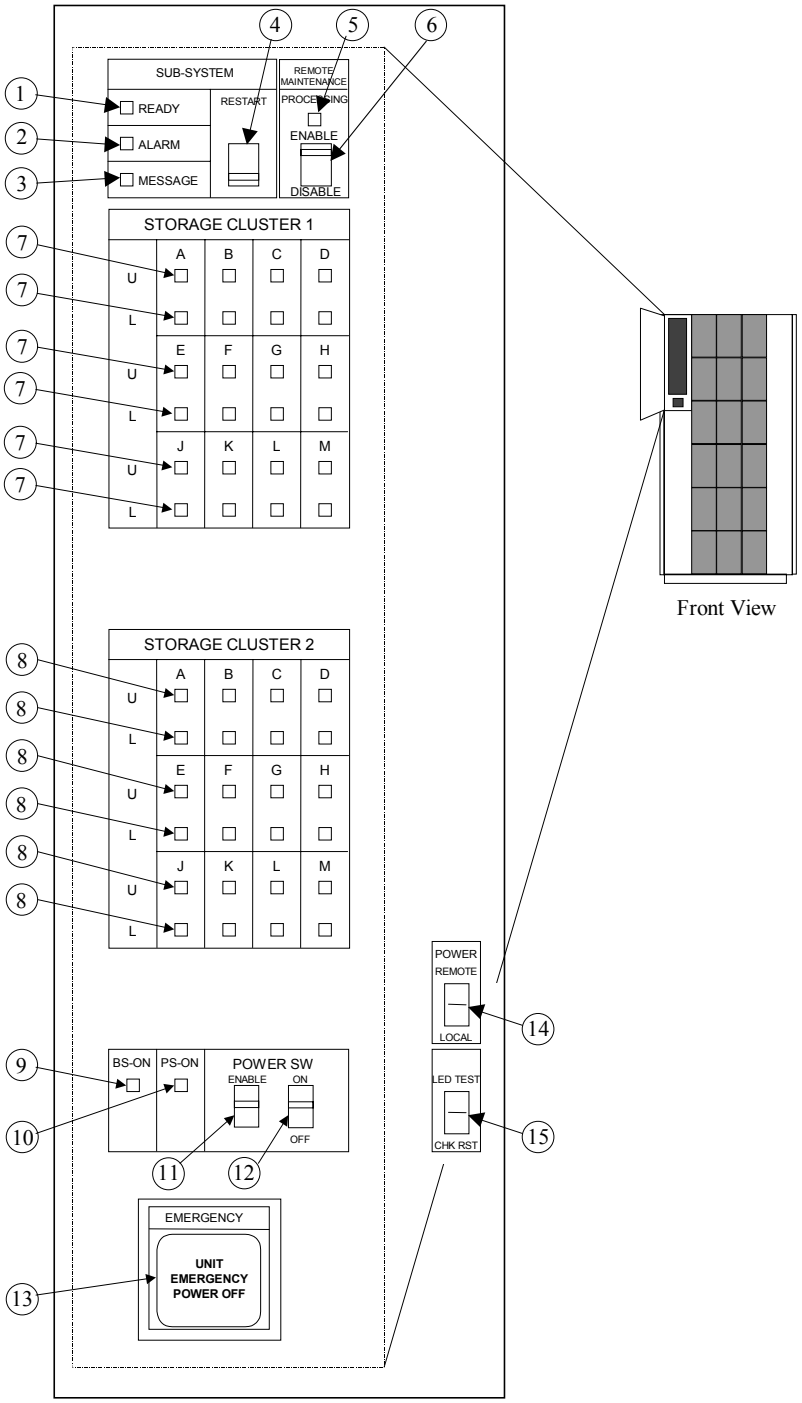


Fig. 3.1-1 Operator Panel

Table 3.1-1 Part Function on Operator Panel

No.	Parts Name	Class	Function
1	SUBSYSTEM READY	LED (Green)	At least 1-port indicates that input/output operation on the channel interface is enabled.
2	SUBSYSTEM ALARM	LED (Red)	ON : Indicates DC under voltage of DKC part, DC over current, abnormally high temperature, or an unrecoverable failure occurred. Blinking : Indicates DC under voltage of DKU part.
3	SUBSYSTEM MESSAGE	LED (Amber)	ON : Indicates that a SIM (Message) was generated from either of the clusters. Applied to both storage clusters. Blinking : Indicates that the SVP failure has occurred.
4	SUBSYSTEM RESTART	Switch	Used to recover a FICON/ESCON port failure. (See "17 Mainframe Port Error Recovery")
5	REMOTE MAINTENANCE PROCESSING	LED (Amber)	Indicates that remote maintenance is being processed.
6	REMOTE MAINTENANCE ENABLE/DISABLE	Switch	Used to permit remote maintenance.
7	STORAGE CLUSTER 1 CHANNEL A-R ENABLE U: Upper L: Lower	LED (Green)	Serial Channel/Fibre Channel/NAS Channel: (1) On : Indicates some of the logical paths are established. (2) Fast blinking : Indicates that the corresponding channel route is executing the channel command. (Only Serial Channel) (3) Slow blinking : Indicates none of the logical path is established. When the NAS Channel is connected, the interval of blinks varies depending on whether the NAS OS is installed or not. • When the NAS OS is installed: Once per 0.5 second • When the NAS OS is not installed: Once per 2 seconds (4) Off : Indicates that the corresponding channel route is not enabled. When the 16-port CHA is installed, LED of the L side is effective.
8	STORAGE CLUSTER 2 CHANNEL A-R ENABLE U: Upper L: Lower	LED (Green)	Serial Channel/Fibre Channel/NAS Channel: (1) On : Indicates some of the logical paths are established. (2) Fast blinking : Indicates that the corresponding channel route is executing the channel command. (Only Serial Channel) (3) Slow blinking : Indicates none of the logical path is established. When the NAS Channel is connected, the interval of blinks varies depending on whether the NAS OS is installed or not. • When the NAS OS is installed: Once per 0.5 second • When the NAS OS is not installed: Once per 2 seconds (4) Off : Indicates that the corresponding channel route is not enabled. When the 16-port CHA is installed, LED of the L side is effective.

(To be continued.)

(Continued from preceding sheet.)

No.	Parts Name	Class	Function
9	BS ON	LED (Yellow)	Indicates that the Sub-PS is on.(CL 1 or CL 2)
10	PS ON	LED (Green)	Indicates that the subsystem is powered on.
11	PWR SW ENABLE	Switch	Used to enable the PWR on/off switch. To enable the PWR on/off switch, turn the PWR SW ENABLE switch to the ENABLE position.
12	PWR ON/PWR OFF	Switch	To switch on/off the subsystem, use this switch while turning the PWR SW ENABLE switch to the ENABLE position. This switch is valid when the REMOTE/LOCAL switch is set to the LOCAL position.
13	EMERGENCY POWER OFF	Switch	Used to power off the storage subsystem in an emergency situation.
14	PWR ON/PWR OFF REMOTE/LOCAL	Switch	REMOTE position : Subsystem is powered on/off by the instructions from the CPU. LOCAL position : Subsystem is powered on/off by PWR ON/PWR OFF switch.
15	LED TEST/CHK RESET	Switch	LED TEST position : The LEDs on DKC panel go on. CHK RESET position : The PS ALARM and TH ALARM is reset.

3.2 Other Switches and LEDs

Fig. 3.2-1, Fig.3.2-2, Fig.3.2-3 and Table 3.2-1 show the other switches and LEDs and their functions respectively.
Circled numbers in Fig. 3.2-1 and Fig.3.2-2 correspond to the numbers in Table 3.2-1.

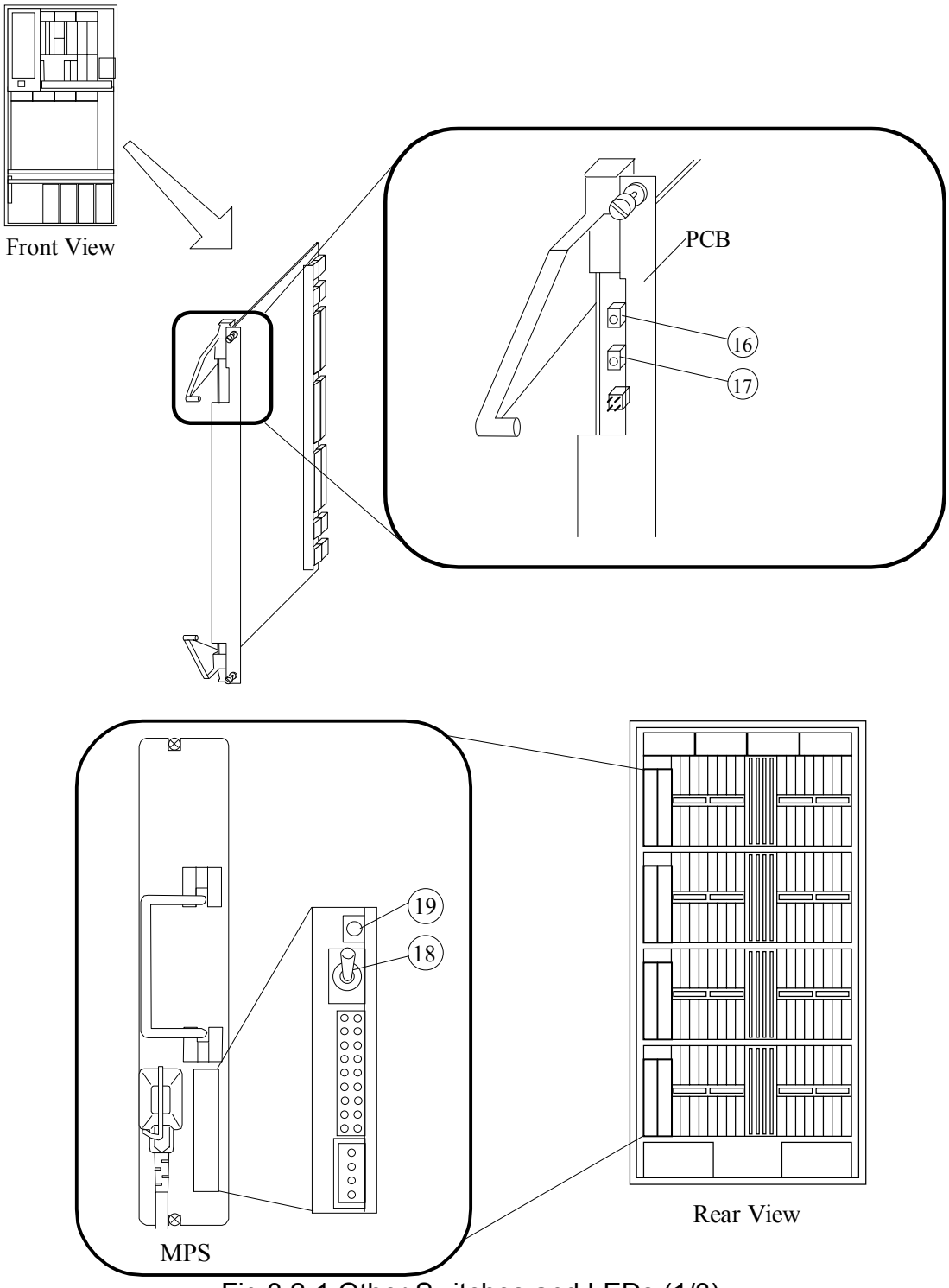
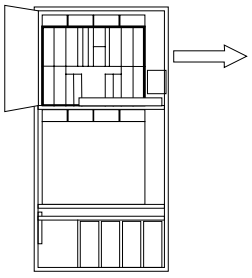
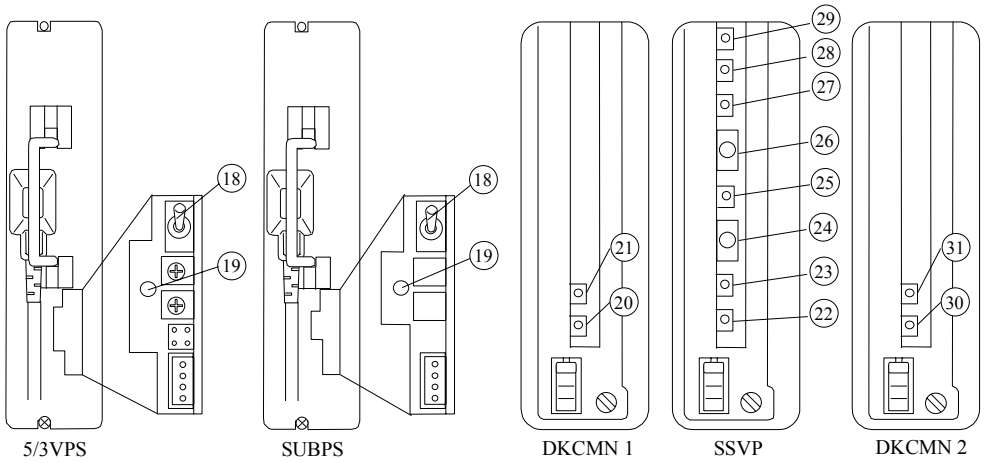


Fig 3.2-1 Other Switches and LEDs (1/3)


Front View

–	–	–	AU	BU	CU	DU	–	–	–
5/3V PS 1A	5/3V PS 1B	SUB PS 1	DKC MN 1	SSVP	DKC MN 2	SVP PS 1 SVP PS 2 EU	SUB PS 2	5/3V PS 2B	5/3V PS 2A
3V PS 1A 3/12V PS 1A	3V PS 1B 3/12V PS 1B	BAT CTR -11	BAT CTR -10			BAT CTR -20	BAT CTR -21	3V PS 2B 3/12V PS 2B	3V PS 2A 3/12V PS 2A
–	–	AL	BL			CL	DL	–	–



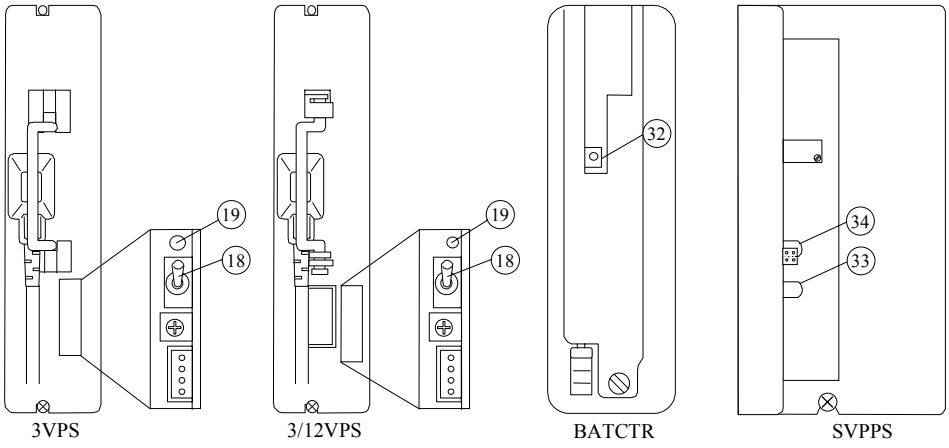
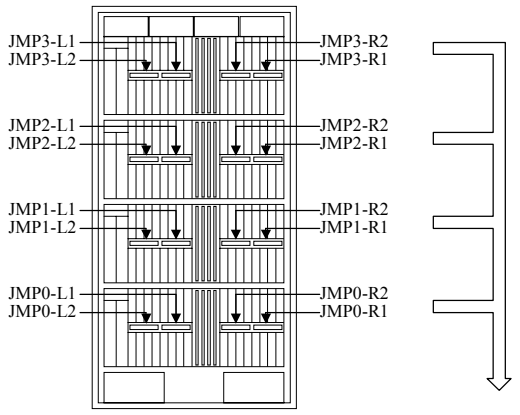


Fig 3.2-2 Other Switches and LEDs (2/3)



Rear View

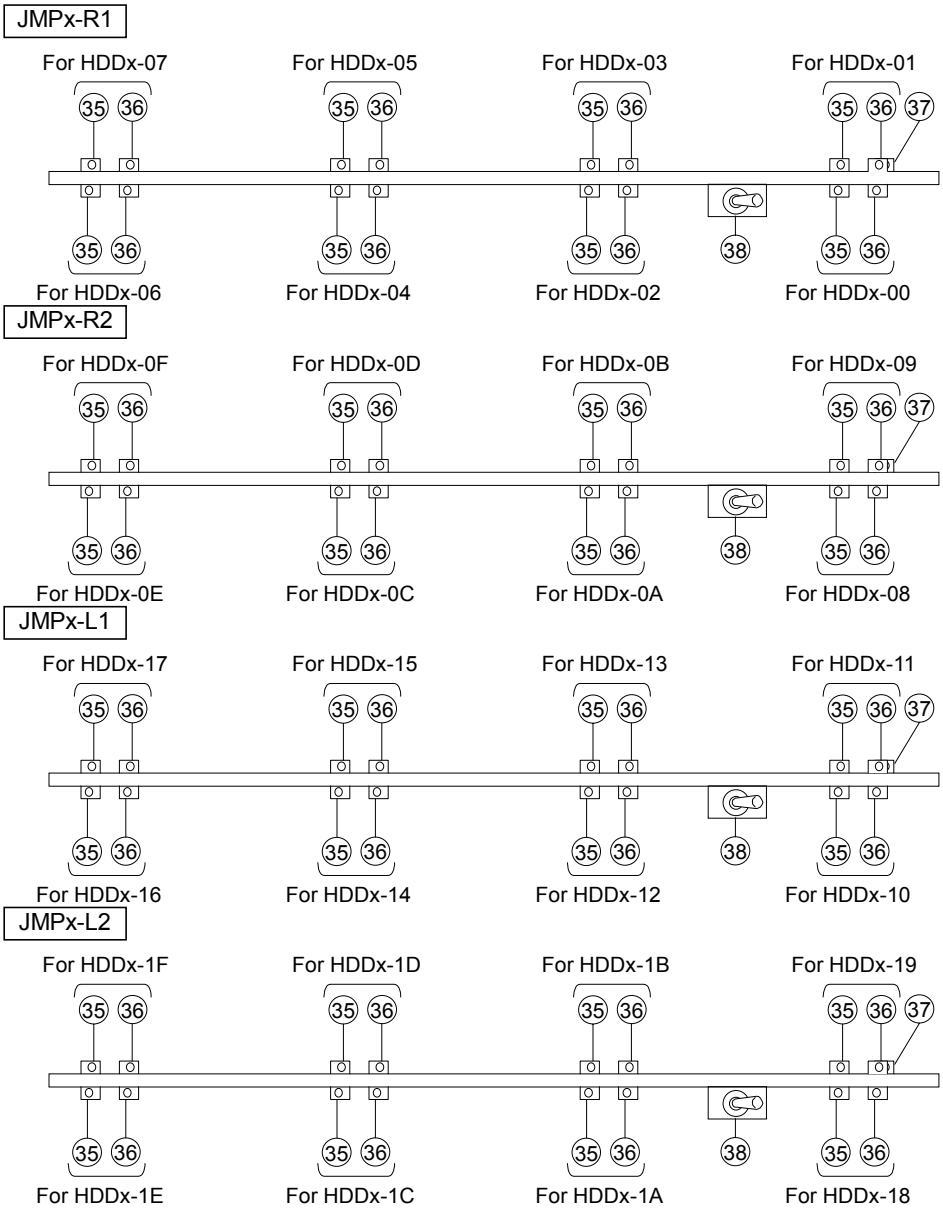


Fig 3.2-3 Other Switches and LEDs (3/3)

Table 3.2-1 Function of Other Switches and LEDs

No.	Parts Name	Class	Function
16	Shut Down LED	LED (Red)	Indicates that the removal of the PCB is possible when the subsystem is powered on.
17	PS Failure LED	LED (Amber)	Indicate that the voltage in the PCB is abnormal.
18	PS Enable/Disable	Switch	Used to power on/off the PS.
19	PS Enable	LED (Green)	Indicates that the PS is providing output voltage.
20	DKCMN-1 ENABLE	LED (Green)	Indicates that the DKCMN-1 is powered on.
21	DKCMN-1 Shut Down LED	LED (Red)	Indicates that the removal of the DKCMN-1 is possible when the subsystem is powered on.
22	SSVP ENABLE	LED (Green)	Indicates that the SSVP is powered on.
23	SSVP Shut Down LED	LED (Red)	Indicates that the removal of the SSVP is possible when the subsystem is powered on.
24	SSVP DUMP	Switch	The data in SVP memory is written to the HDD.
25	SSVP ALARM	LED (Red)	This LED shows the state of SSVP. Lighting..... BOOT detected abnormality of hardware. Slow blinking .. The dump acquisition of SSVP ended. Fast blinking ... Micro Code of SSVP ended abnormally.
26	SSVP ALARM RESET	Switch	The SSVP detection alarm is reset. Then IMPL of the SVP is executed.
27	—	LED (Red)	Not used
28	—	LED (Red)	Not used
29	—	LED (Red)	Not used
30	DKCMN-2 ENABLE	LED (Green)	Indicates that the DKCMN-2 is powered on.
31	DKCMN-2 Shut Down LED	LED (Red)	Indicates that the removal of the DKCMN-2 is possible when the subsystem is powered on.
32	BATCTR Shut Down LED	LED (Red)	Indicates that the removal of the BATCTR is possible when the subsystem is powered on.
33	SVPPS Shut Down LED	LED (Red)	Indicates that the removal of the SVPPS is possible when the subsystem is powered on.
34	SVPPS ENABLE	LED (Green)	Indicates that the SVPPS is powered on.
35	HDD ENABLE	LED (Green)	Indicates that the HDD is active.
36	HDD Shut Down LED	LED (Red)	Indicates that the removal of the HDD is possible when the subsystem is powered on.
37	JMP Shut Down LED	LED (Red)	Indicates that the removal of the JMP is possible when the subsystem is powered on.
38	DKU Frame ID	Switch	Set this switch according to the position in the fame in which the JMP PCB is set. Setting..... Set the switch to the right side position.

Switches and LEDs of SVPPS BOX and HUB BOX

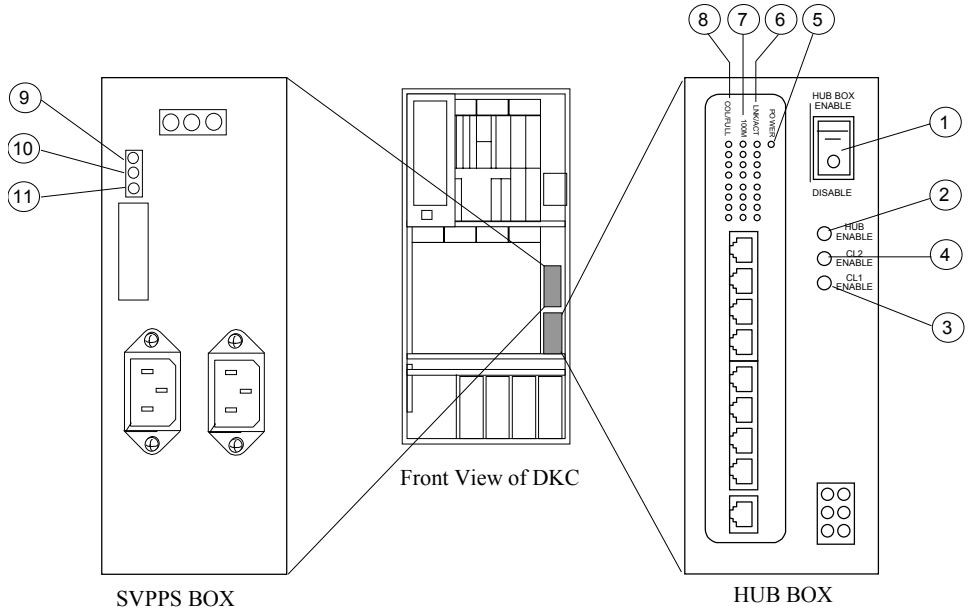


Fig.3.2-2 Switches and LEDs of SVPPS BOX and HUB BOX

Table 3.2-2 Function of Switch and LEDs of SVPPS BOX and HUB BOX

No.	Parts Name	Class	Function
1	HUB BOX ENABLE/DISABLE	Switch	Used to power on/off the HUB BOX
2	HUB BOX ENABLE	LED (Green)	Indicate that the HUB BOX is powered on.
3	CL1 ENABLE	LED (Green)	Indicate that the HUB BOX is powered on (Cluster1)
4	CL2 ENABLE	LED (Green)	Indicate that the HUB BOX is powered on (Cluster2)
5	HUB BOX POWER	LED (Green)	Indicate that the HUB BOX is powered on.
6	LNK/ACK	LED (Green)	This LED shows the state of HUB ports. Lighting ----- Link detected Blinking ----- Data transferred
7	100M	LED (Green)	Indicate that the 100Mbps mode of HUB port
8	COL/FULL	LED (Green)	This LED shows the state of HUB ports. Lighting ----- Full Duplex mode Blinking ----- Collision detected
9	CTL1-PS-READY	LED (Green)	Indicate that the SVPPS-BOX is powered on (Cluster1)
10	CTL2-PS-READY	LED (Green)	Indicate that the SVPPS-BOX is powered on (Cluster2)
11	OUTPUT	LED (Green)	Indicate that the SVPPS-BOX is powered on.

3.3 Circuit Breakers

3.3.1 Single Phase Model

Fig. 3.3.1-1 shows the locations of Circuit Breakers.
Fig. 3.3.1-2 and Fig. 3.3.1-2A show the connection of power supplies.

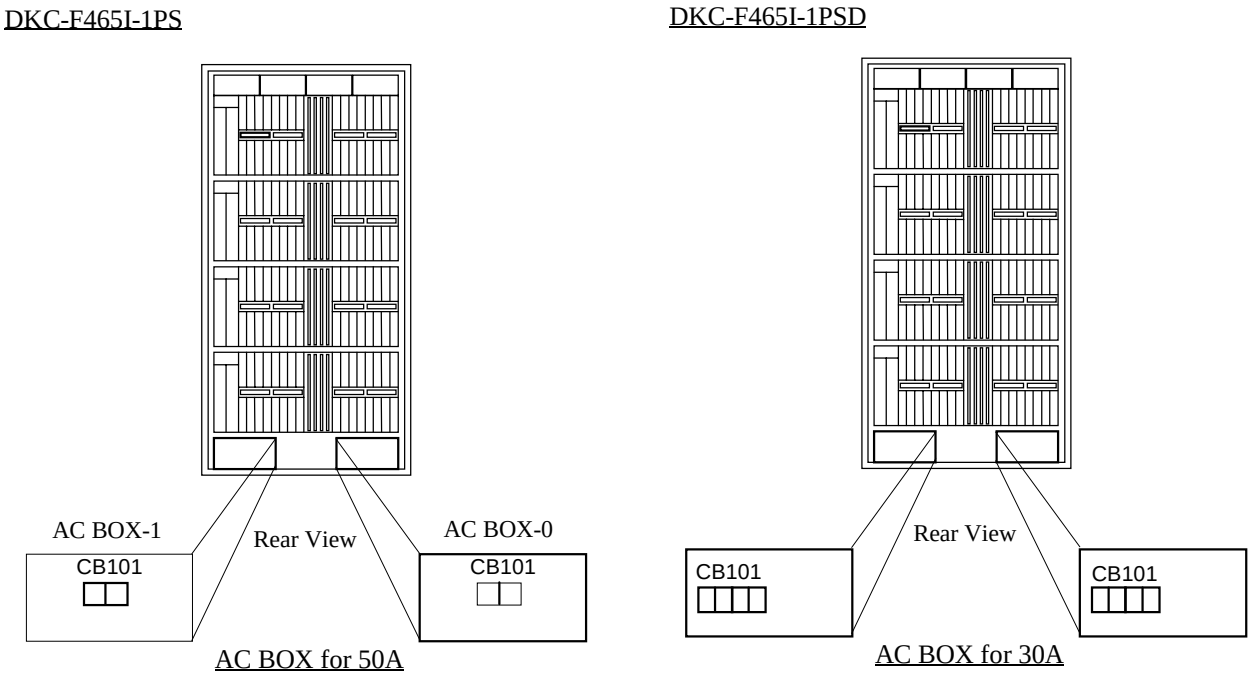


Fig. 3.3.1-1 Locations of Circuit Breakers

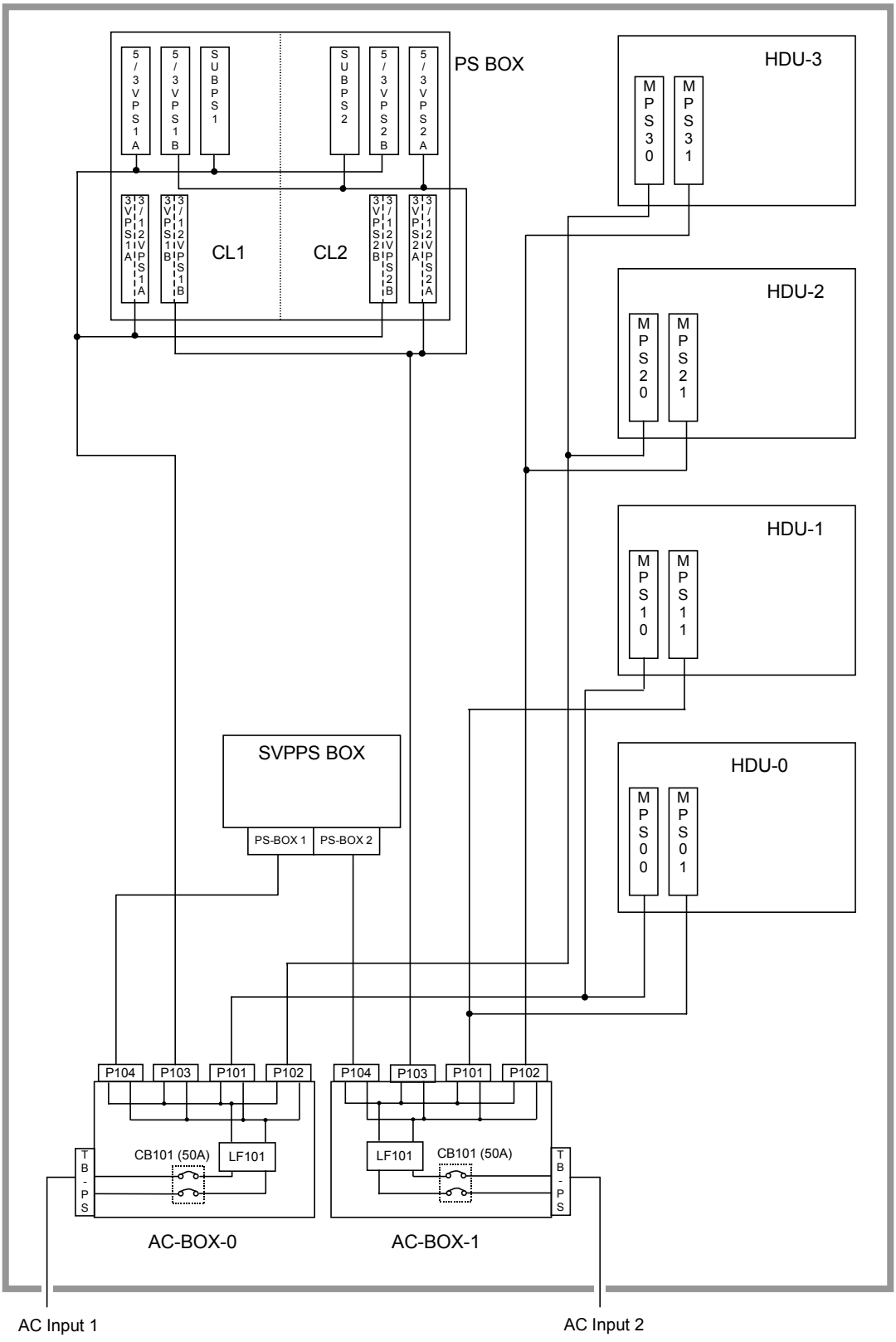


Fig. 3.3.1-2 Connection of Power Supplies for 50A

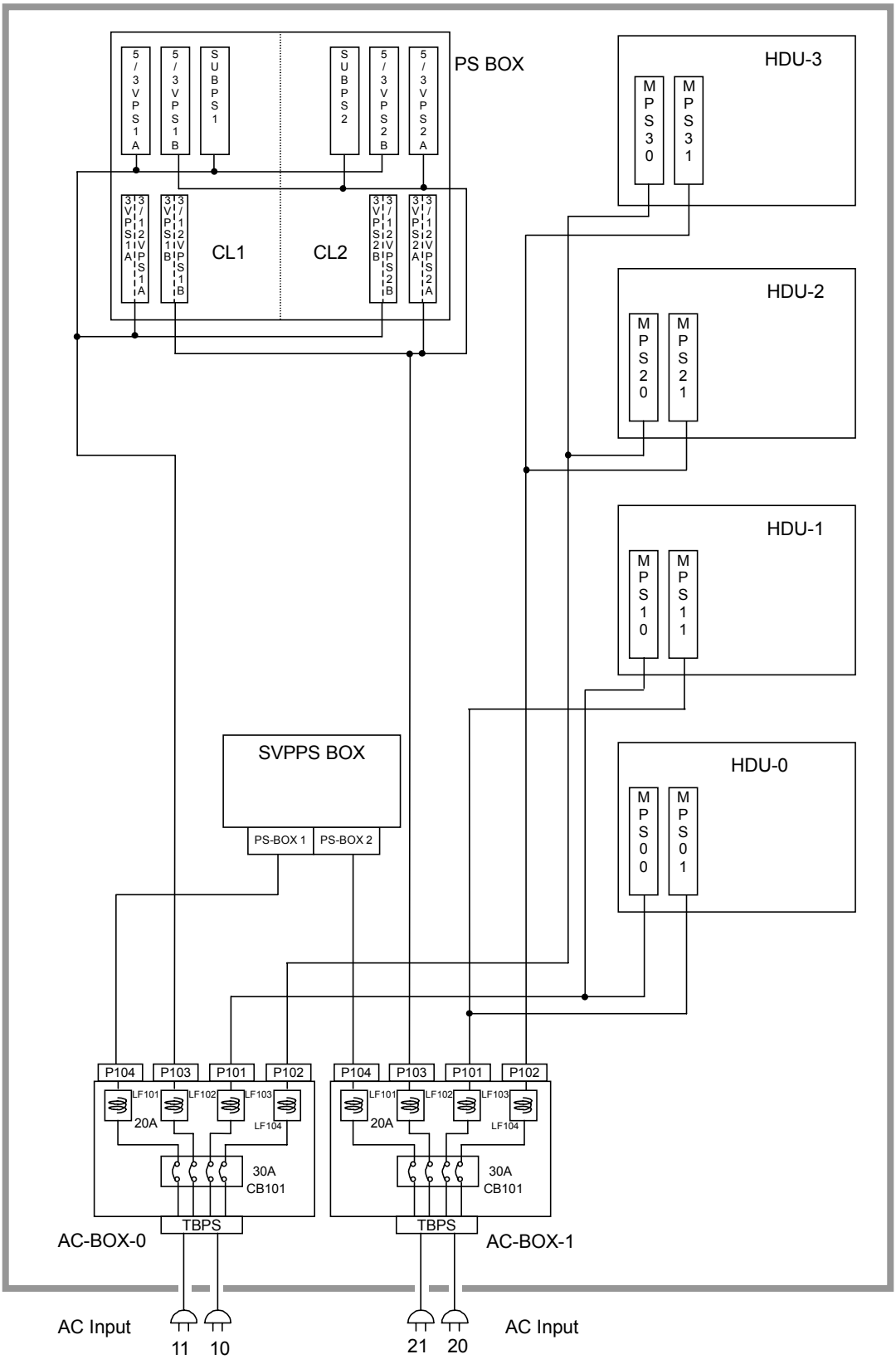


Fig. 3.3.1-2A Connection of Power Supplies for 30A

3.3.2 3 Phase Model

Fig. 3.3.2-1 shows the locations of Circuit Breakers.
Fig. 3.3.2-2 shows the connection of power supplies.

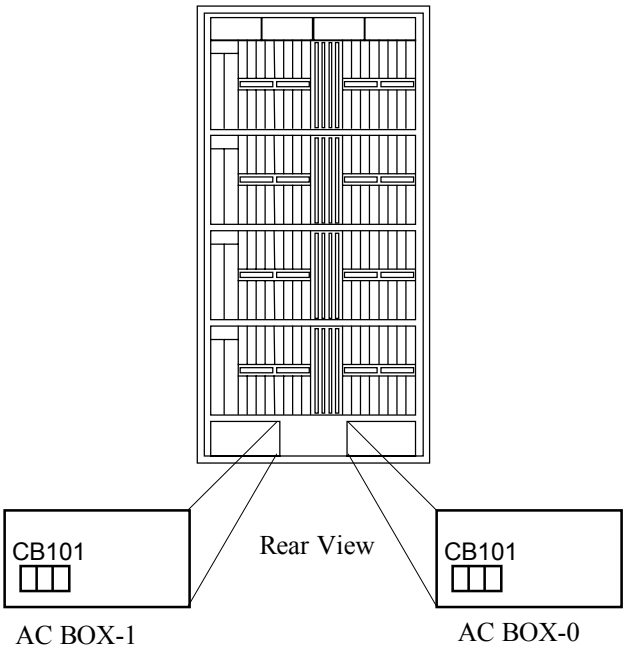


Fig. 3.3.2-1 Locations of Circuit Breakers

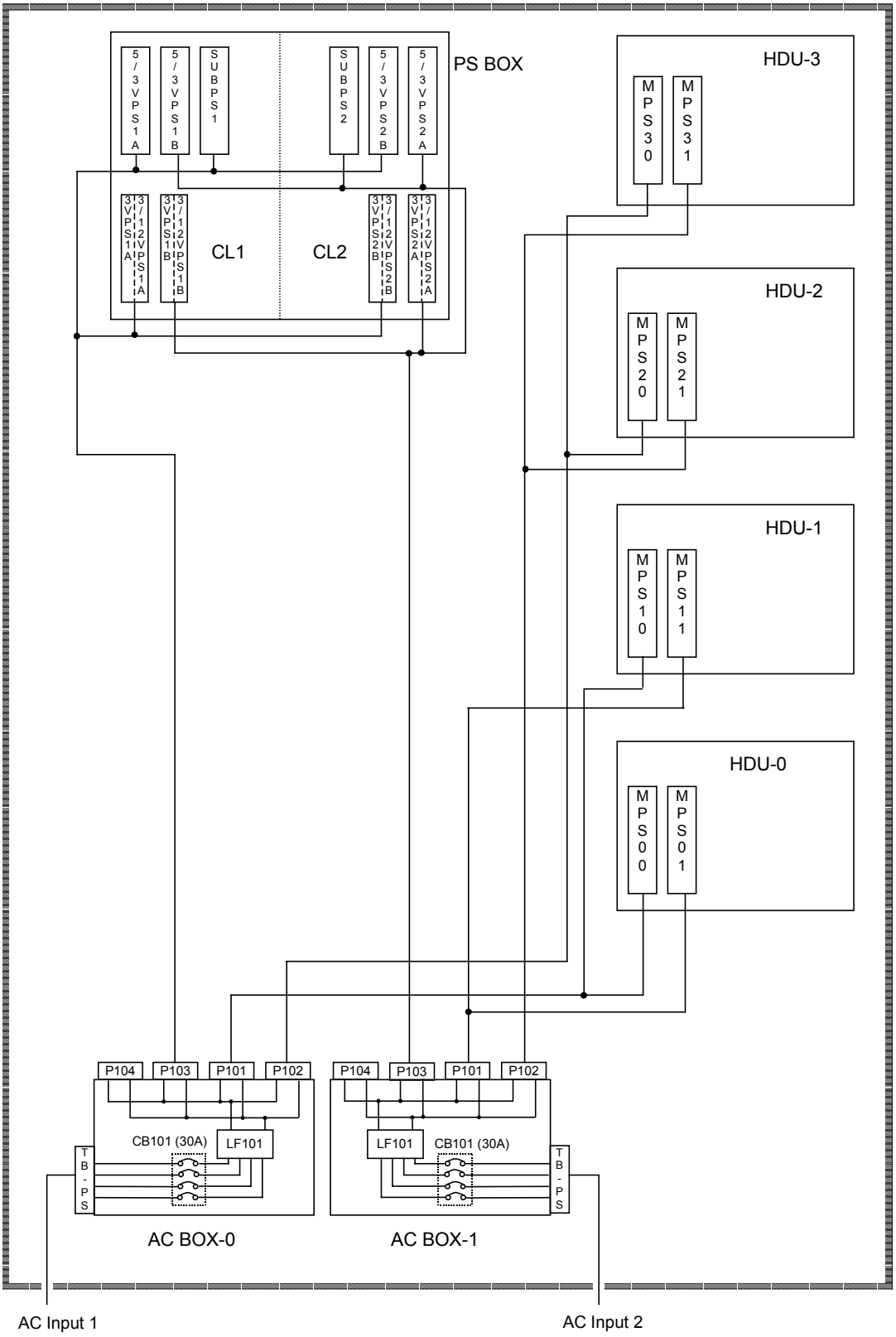


Fig. 3.3.1-2 Connection of POWER SUPPLIES

4 Connection of External Cable

4.1 AC Cabling

4.1.1 3 Phase/30A Model for USA

DANGER

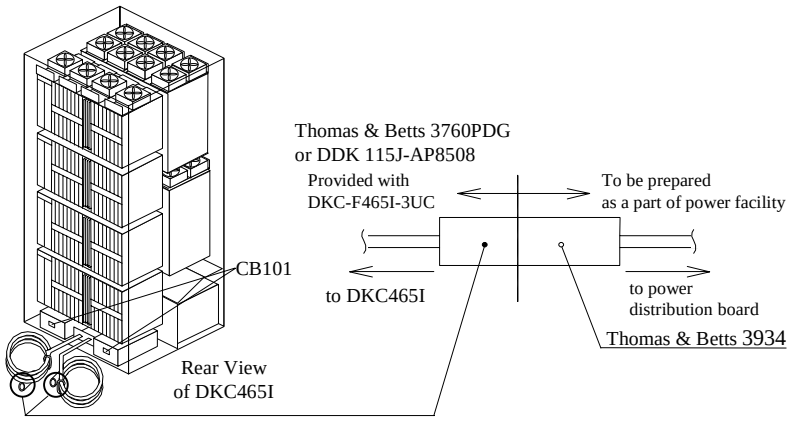
The DKC465I has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines) so that AC Power of the unit can be supplied from the separate power distribution board with Two Power Supply Cords. Refer to LOCATION03-90 "Circuit Breakers".
Observe all instructions described in this manual before connecting the equipment to the power source and before servicing.

A. Connection of Power Supply Cord
The unit has two power supply cords with attachment plug type Thomas & Betts 3760PDG or DDK 115J-AP8508. Be sure to prepare the following socket receptacles and power cords between the power distribution board of the building and the attachment plugs for the unit.

Socket Receptacle : Thomas & Betts 3934
Power Cord : Type ST or equivalent, shielded type, with four min. #8 AWG conductors. Terminated at one end with an assembled on above socket receptacle cap.

B. Requirements to Branch Circuit
This unit relies on the building installation for protection of the internal components of the equipment. Each line (R/S/T line) should be protected by a short circuit protective device and by an over current protective device rated 30 amp on building installation.
The protective device on building installation shall comply with the NEC requirements (or CEC requirements when installed in Canada), and if a protective device interrupts a conductor, it shall also interrupt all other supply conductors.
This protection is not required for the neutral line of this unit.

C. Disconnection from Power Supply
DKC465I has Two Main Disconnect Device (Two Main Breaker CB101s for Dual Power Lines). To remove all utility power from the unit, turn off both main disconnect device CB101s at the same time.



4.1.2 3 Phase/30A Model for Europe

DANGER

The DKC465I has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines) so that AC Power of the unit can be supplied from the separate power distribution board with Two Power Supply Cords. Refer to LOCATION03-90 "Circuit Breakers".
Observe all instructions described in this manual before connecting the equipment to the power source and before servicing.

A. Connection of Power Supply Cord

The unit has two power supply cords. Be sure to prepare the following socket receptacles and power cords between the power distribution board of the building and the power cords for the unit.

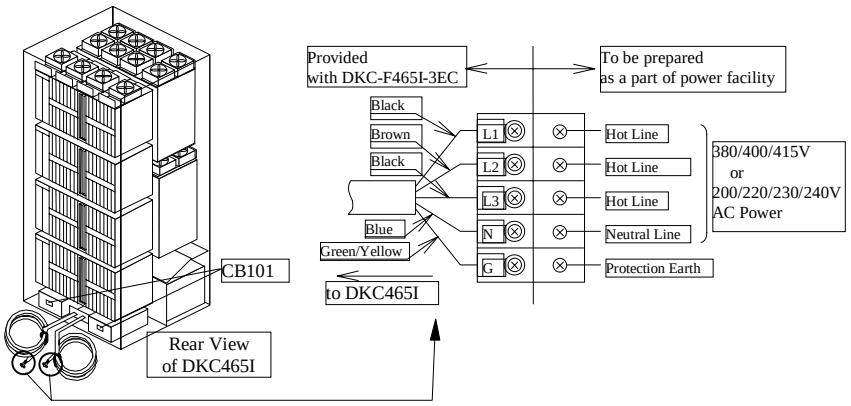
Socket Receptacle : As shown in the following figure.
Power Cord : Type H07RN-F or equivalent, with five 6 mm^2 conductors.
Be sure to connect a power cord to the distribution box as illustrated in the following figure. The wrong connection of neutral line may cause damages or fire of the equipment.
To reduce the risk of wrong connection, you should use approved type attachment plug and socket for power cord connection.
High leakage current may be caused between the power supply and this unit. To avoid an electric shock by high leakage current, perform the protective earth connection before the supply connections and disconnect it after the supply connections.

B. Requirements to Branch Circuit

This unit relies on the building installation for protection of the internal components of the equipment. Each line (R/S/T line) should be protected by a short circuit protective device and by an over current protective device rated 30 amp on building installation.
The protective device on building installation shall be comply with National Standards of the country where the units shall be installed, and if a protective device interrupts a conductor, it shall also interrupt all other supply conductors.
This protection is also required for the neutral line of this unit.

C. Disconnection from Power Supply

DKC465I has Two Main Disconnect Device (Two Main Breaker CB101s for Dual Power Lines). To remove all utility power from the unit, turn off both main disconnect device CB101s at the same time.



4.1.3 Single Phase/50A Model for USA

DANGER

The DKC465I has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines) so that AC Power of the unit can be supplied from the separate power distribution board with Two Power Supply Cords. Refer to LOCATION03-70 "Circuit Breakers".
Observe all instructions described in this manual before connecting the equipment to the power source and before servicing.

A. Connection of Power Supply Cord

The unit has two power supply cords with attachment plug type Thomas & Betts 9P53U2. Be sure to prepare the following socket receptacles and power cords between the power distribution board of the building and the attachment plugs for the unit.

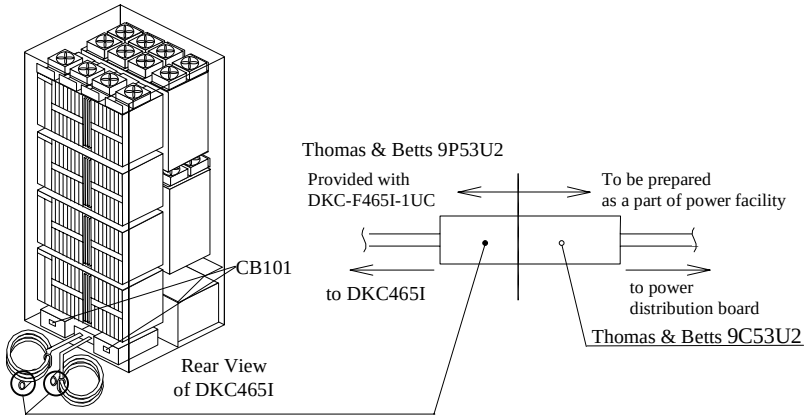
Socket Receptacle : Thomas & Betts 9C53U2
Power Cord : Type ST or equivalent, non-shielded type, with three min. #6 AWG conductors. Terminated at one end with an assembled on above socket receptacle cap.

B. Requirements to Branch Circuit

This unit relies on the building installation for protection of the internal components of the equipment. Each line (U/L1, V/L2 line) should be protected by a short circuit protective device and by an over current protective device rated 50 amp on building installation.
The protective device on building installation shall comply with the NEC requirements (or CEC requirements when installed in Canada), and if a protective device interrupts a conductor, it shall also interrupt all other supply conductors.
This protection is not required for the neutral line of this unit.

C. Disconnection from Power Supply

DKC465I has Two Main Disconnect Device (Two Main Breaker CB101s for Dual Power Lines). To remove all utility power from the unit, turn off both main disconnect device CB101s at the same time.



4.1.4 Single Phase/50A Model for Europe

DANGER

The DKC465I has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines) so that AC Power of the unit can be supplied from the separate power distribution board with Two Power Supply Cords. Refer to LOCATION03-70 "Circuit Breakers".
Observe all instructions described in this manual before connecting the equipment to the power source and before servicing.

A. Connection of Power Supply Cord

The unit has two power supply cords. Be sure to prepare the following socket receptacles and power cords between the power distribution board of the building and the power cords for the unit.

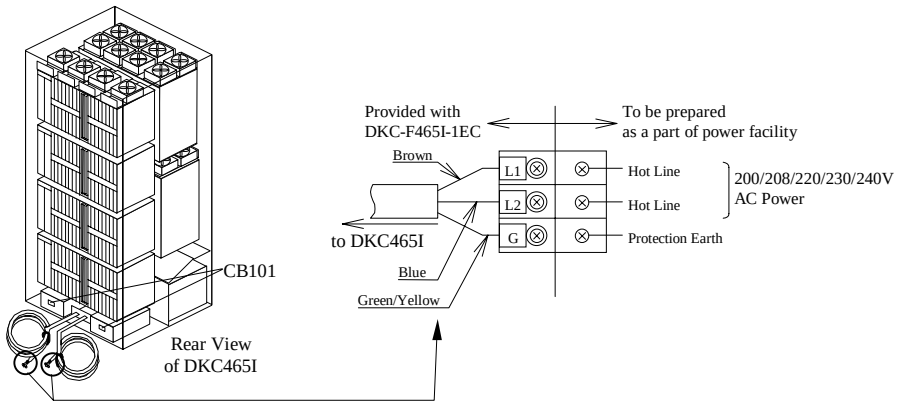
Socket Receptacle : As shown in the following figure.
Power Cord : Type H07RN-F or equivalent, with three 10 mm^2 conductors.
Be sure to connect a power cord to the distribution box as illustrated in the following figure. The wrong connection of neutral line may cause damages or fire of the equipment.
To reduce the risk of wrong connection, you should use approved type attachment plug and socket for power cord connection.
High leakage current may be caused between the power supply and this unit. To avoid an electric shock by high leakage current, perform the protective earth connection before the supply connections and disconnect it after the supply connections.

B. Requirements to Branch Circuit

This unit relies on the building installation for protection of the internal components of the equipment. Each line (U/L1, V/L2 line) should be protected by a short circuit protective device and by an over current protective device rated 50 amp on building installation.
The protective device on building installation shall be comply with National Standards of the country where the units shall be installed, and if a protective device interrupts a conductor, it shall also interrupt all other supply conductors.
This protection is also required for the neutral line of this unit.

C. Disconnection from Power Supply

DKC465I has Two Main Disconnect Device (Two Main Breaker CB101s for Dual Power Lines). To remove all utility power from the unit, turn off both main disconnect device CB101s at the same time.



4.1.5 Single Phase/30A Model for USA

DANGER

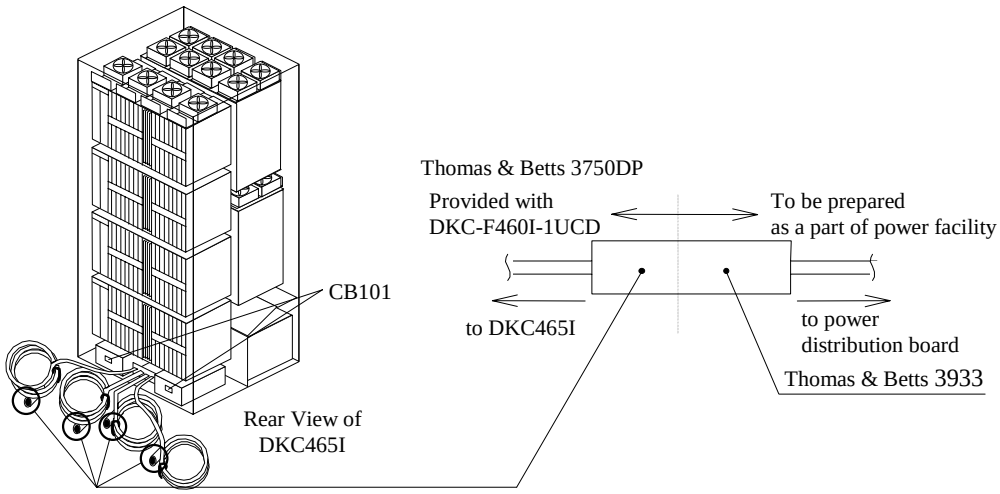
The DKC465I has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines) so that AC Power of the unit can be supplied from the separate power distribution board with Four Power Supply Cords. Refer to LOCATION03-70 "Circuit Breakers".
Observe all instructions described in this manual before connecting the equipment to the power source and before servicing.

A. Connection of Power Supply Cord
The unit has four power supply cords with attachment plug type Thomas & Betts 3750DP. Be sure to prepare the following socket receptacles and power cords between the power distribution board of the building and the attachment plugs for the unit.

Socket Receptacle : Thomas & Betts 3933
Power Cord : Type SJT or equivalent, non-shielded type, with three min. #10 AWG conductors. Terminated at one end with an assembled on above socket receptacle cap.

B. Requirements to Branch Circuit
This unit relies on the building installation for protection of the internal components of the equipment. Each line (U/L1, V/L2 line) should be protected by a short circuit protective device and by an over current protective device rated 30 amp on building installation.
The protective device on building installation shall comply with the NEC requirements (or CEC requirements when installed in Canada), and if a protective device interrupts a conductor, it shall also interrupt all other supply conductors.
This protection is not required for the neutral line of this unit.

C. Disconnection from Power Supply
DKC465I has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines). To remove all utility power from the unit, turn off both main disconnect device CB101s at the same time.



4.1.6 Single Phase/30A Model for Europe

DANGER

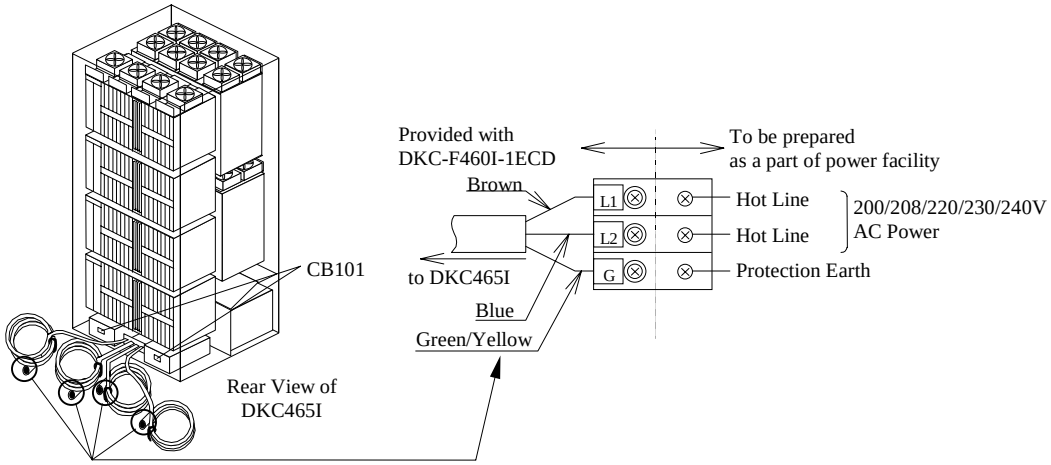
The DKC465I has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines) so that AC Power of the unit can be supplied from the separate power distribution board with Four Power Supply Cords. Refer to LOCATION03-70 "Circuit Breakers".
Observe all instructions described in this manual before connecting the equipment to the power source and before servicing.

A. Connection of Power Supply Cord
The unit has four power supply cords. Be sure to prepare the following socket receptacles and power cords between the power distribution board of the building and the power cords for the unit.

Socket Receptacle : As shown in the following figure.
Power Cord : Type H07RN-F or equivalent, with three 6 mm^2 conductors.
Be sure to connect a power cord to the distribution box as illustrated in the following figure. The wrong connection of neutral line may cause damages or fire of the equipment.
To reduce the risk of wrong connection, you should use approved type attachment plug and socket for power cord connection.
High leakage current may be caused between the power supply and this unit. To avoid an electric shock by high leakage current, perform the protective earth connection before the supply connections and disconnect it after the supply connections.

B. Requirements to Branch Circuit
This unit relies on the building installation for protection of the internal components of the equipment. Each line (U/L1, V/L2 line) should be protected by a short circuit protective device and by an over current protective device rated 30 amp on building installation.
The protective device on building installation shall be comply with National Standards of the country where the units shall be installed, and if a protective device interrupts a conductor, it shall also interrupt all other supply conductors.
This protection is also required for the neutral line of this unit.

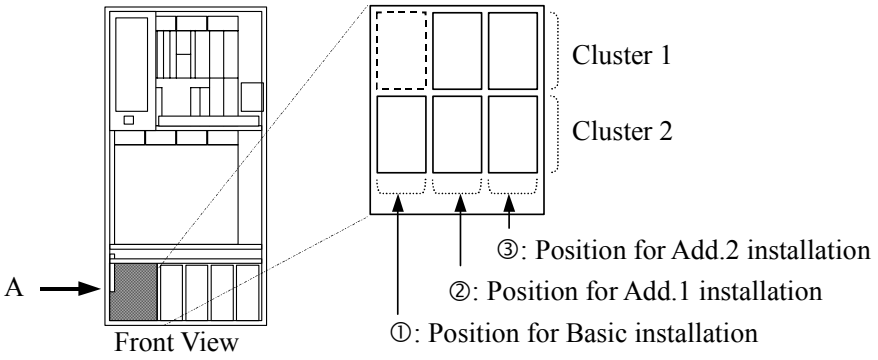
C. Disconnection from Power Supply
DKC465I has Two Main Disconnect Devices (Two Main Breaker CB101s for Dual Power Lines). To remove all utility power from the unit, turn off both main disconnect device CB101s at the same time.



4.2 Channel Interface

Fig. 4.2-1 show the interface connector panel locations.

DKC-F460I-8S/8GSE/4HSE/8HSE/8HLE/8MS/8ML/8GSF/4HSF/8HSF/8HLF/4NS/8SE/8IS



Refer to the following figure for how to attach the cable clamp and cable routing.

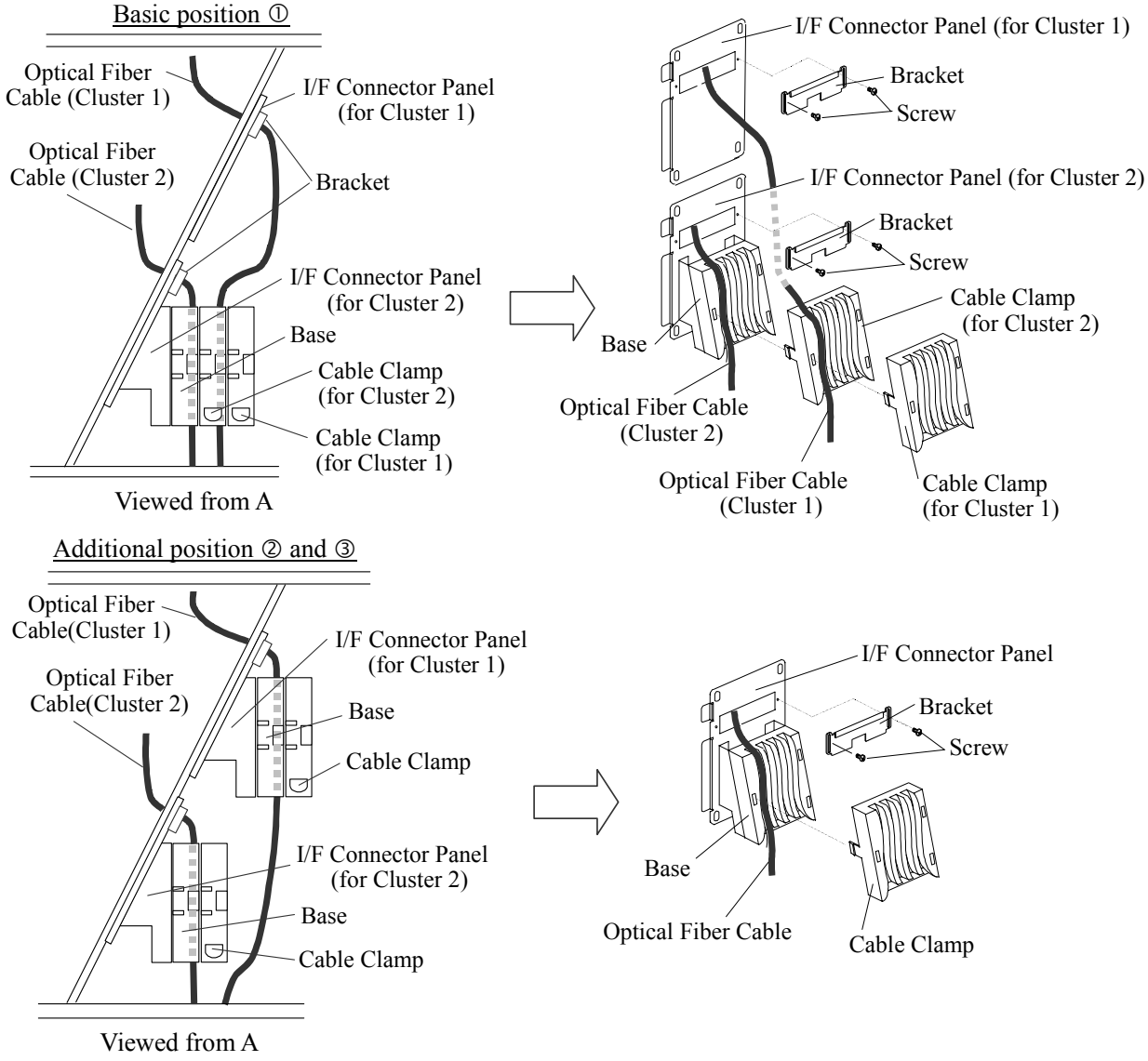
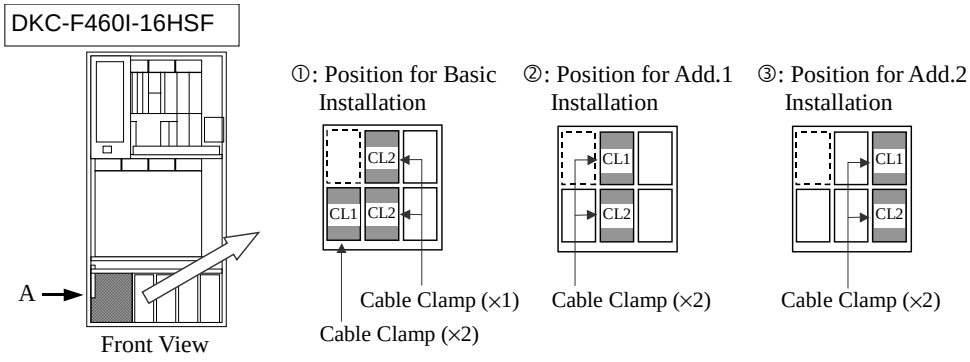


Fig. 4.2-1 The Mounting Location of Channel Options (1/3)



Refer to the following figure for how to attach the cable clamp and cable routing.

① Position for Basic Installation

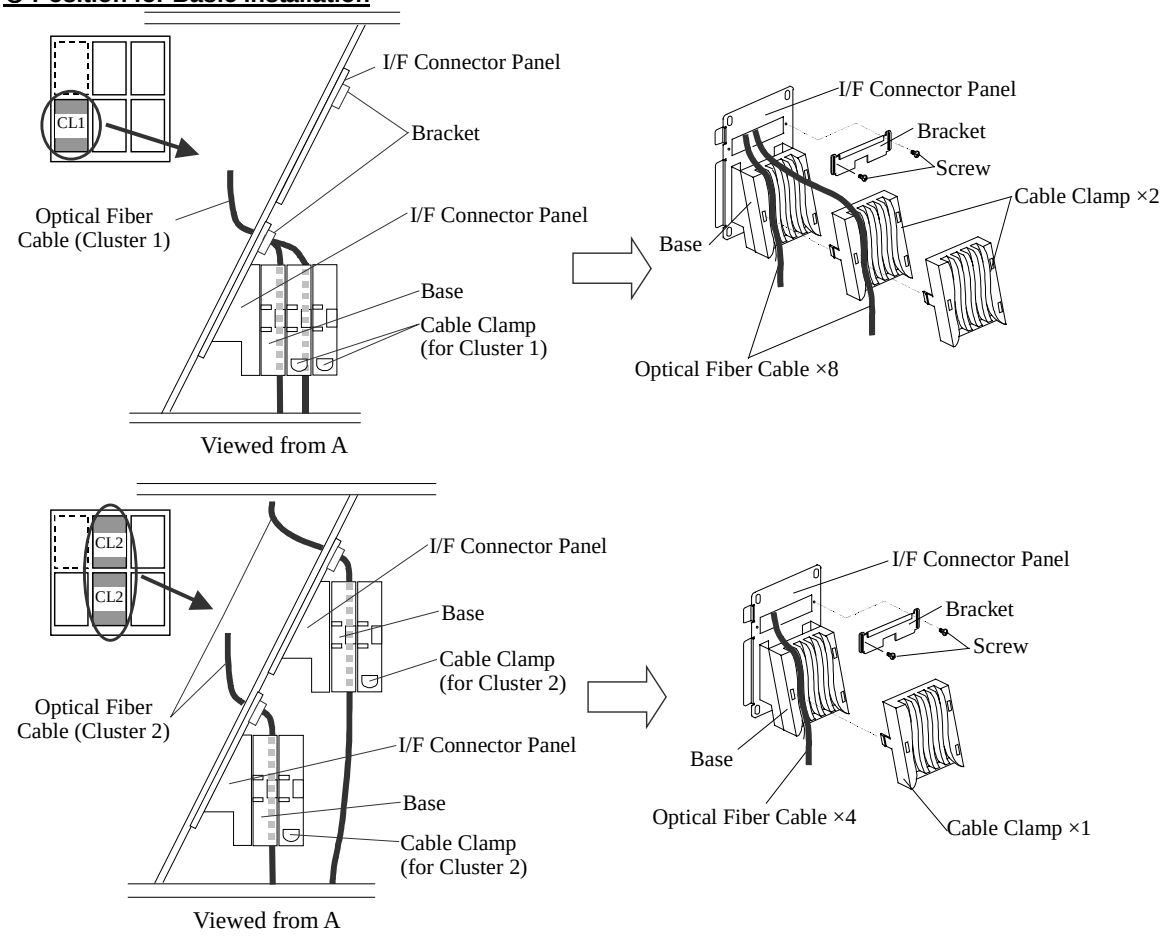
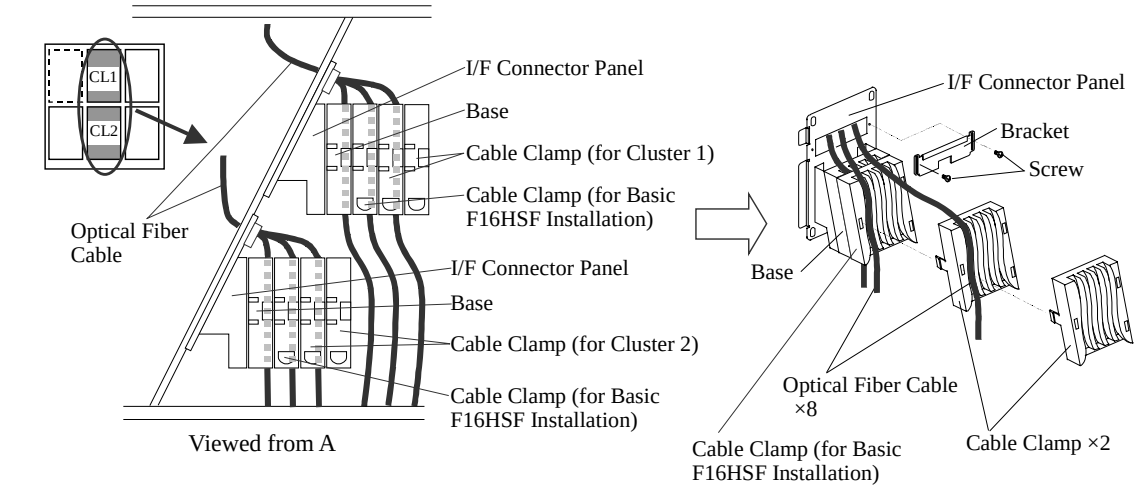


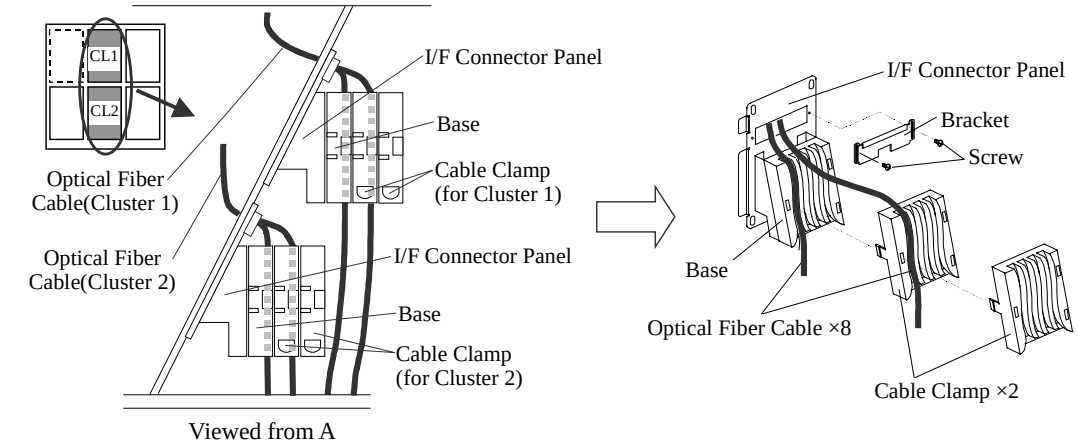
Fig. 4.2-1 The Mounting Location of Channel Options (2/3)

② Position for Add.1 Installation

When the basic DKC-F460I-16HSF is installed



When the basic DKC-F460I-16HSF is not installed



③ Position for Add.2 Installation

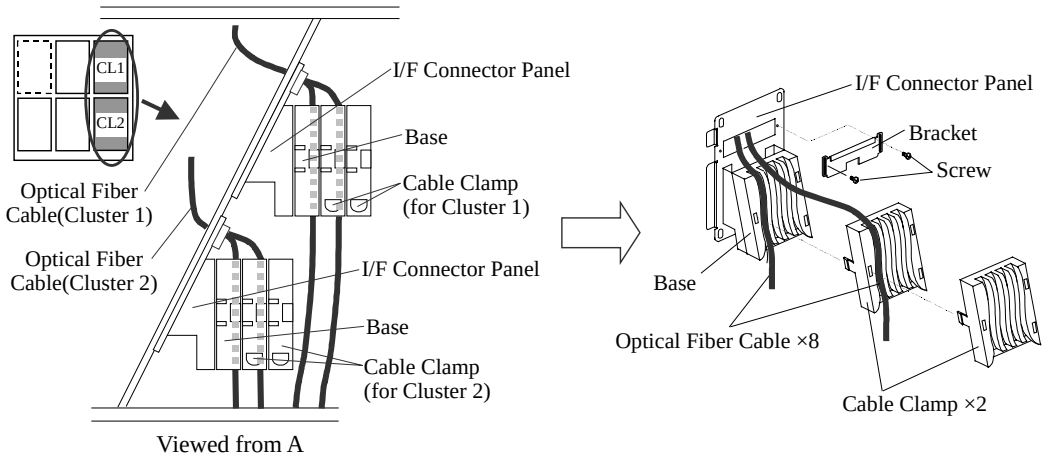
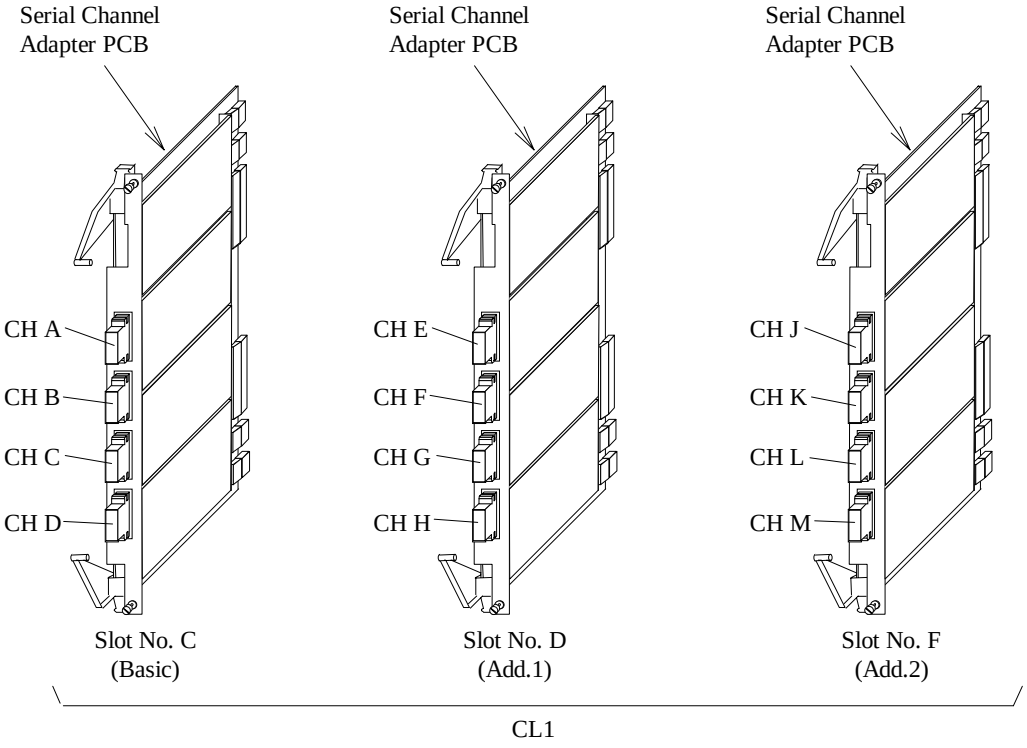
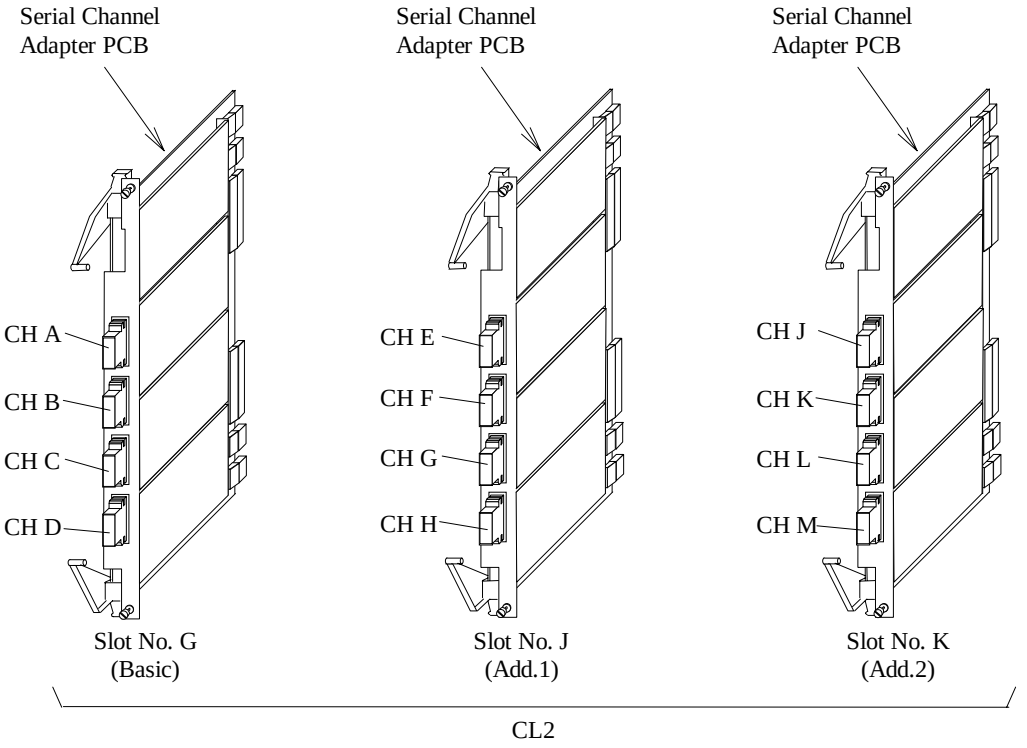


Fig. 4.2-1 The Mounting Location of Channel Options (3/3)

[1] Serial Channel Interface

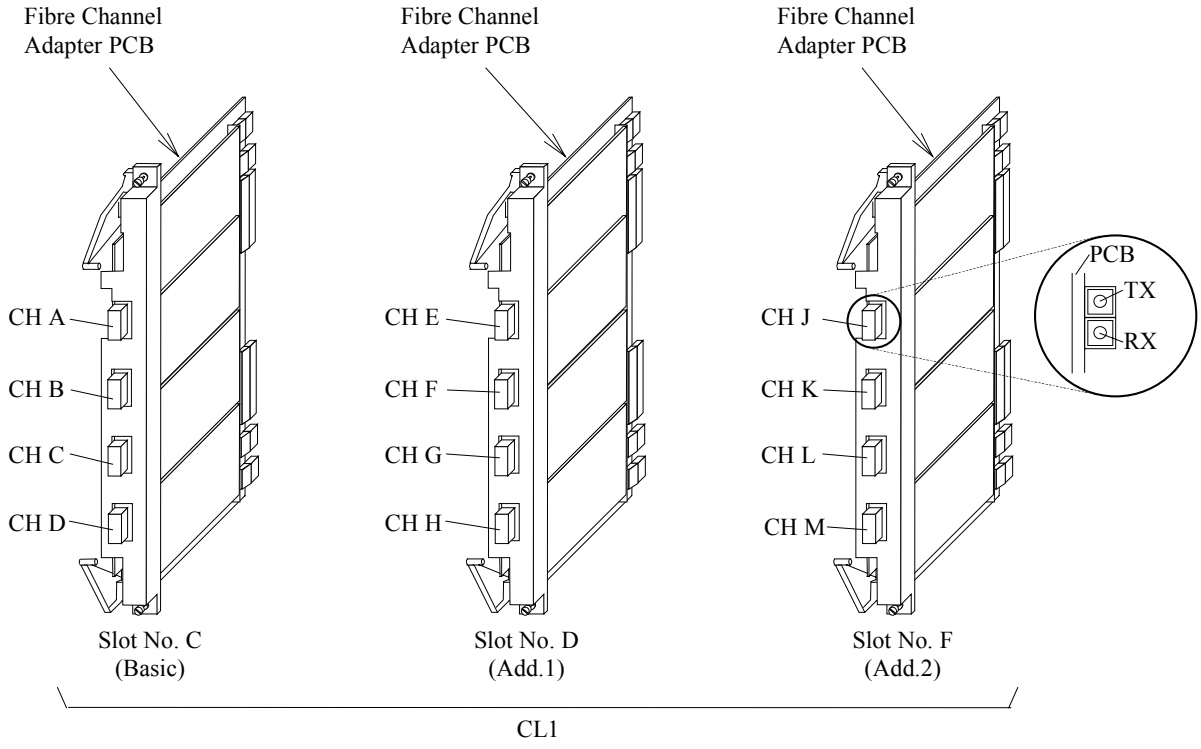
CH A to CH M are effective to LED by the side of U of STORAGE CLUSTER 1 and STORAGE CLUSTER 2 on the Operator Panel.



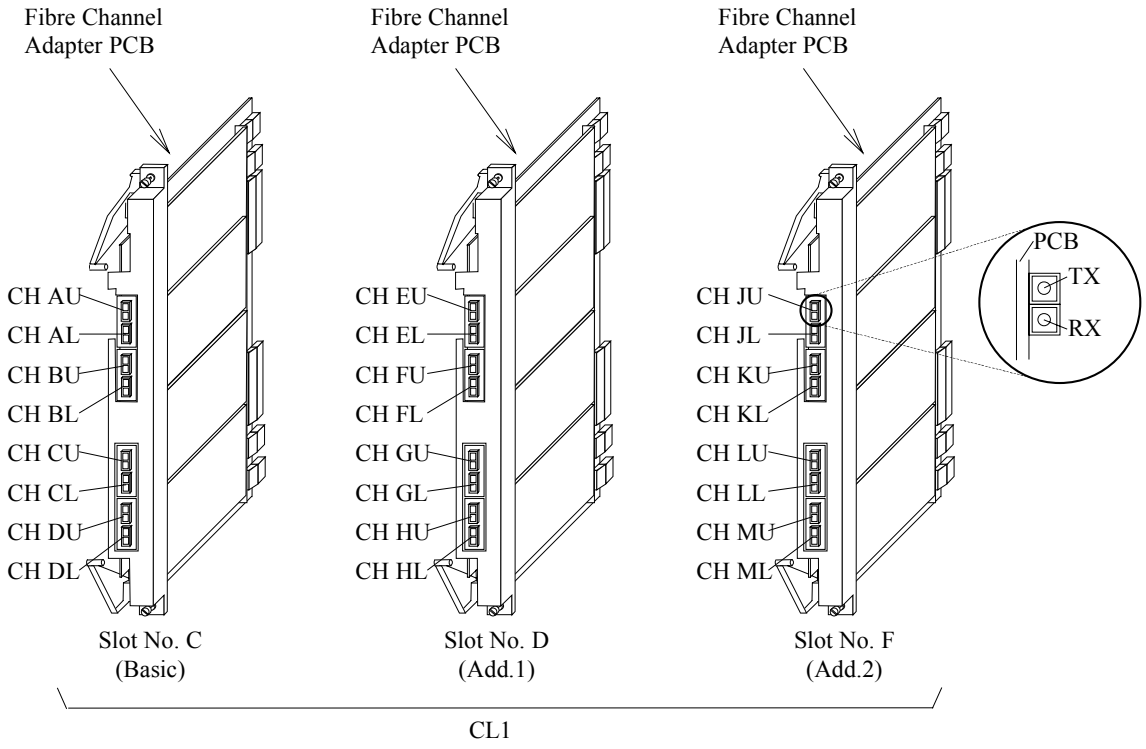


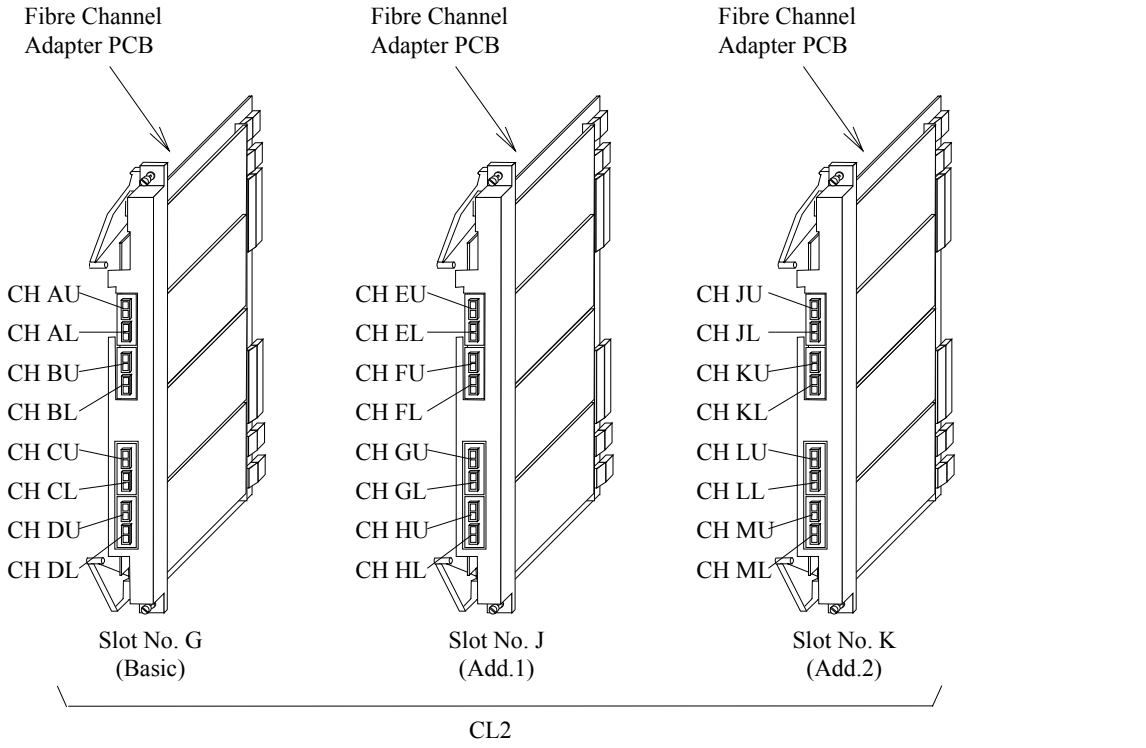
[2] Fibre Channel Interface (4/8-port)

CH A to CH M are effective to LED by the side of U of STORAGE CLUSTER 1 and STORAGE CLUSTER 2 on the Operator Panel.



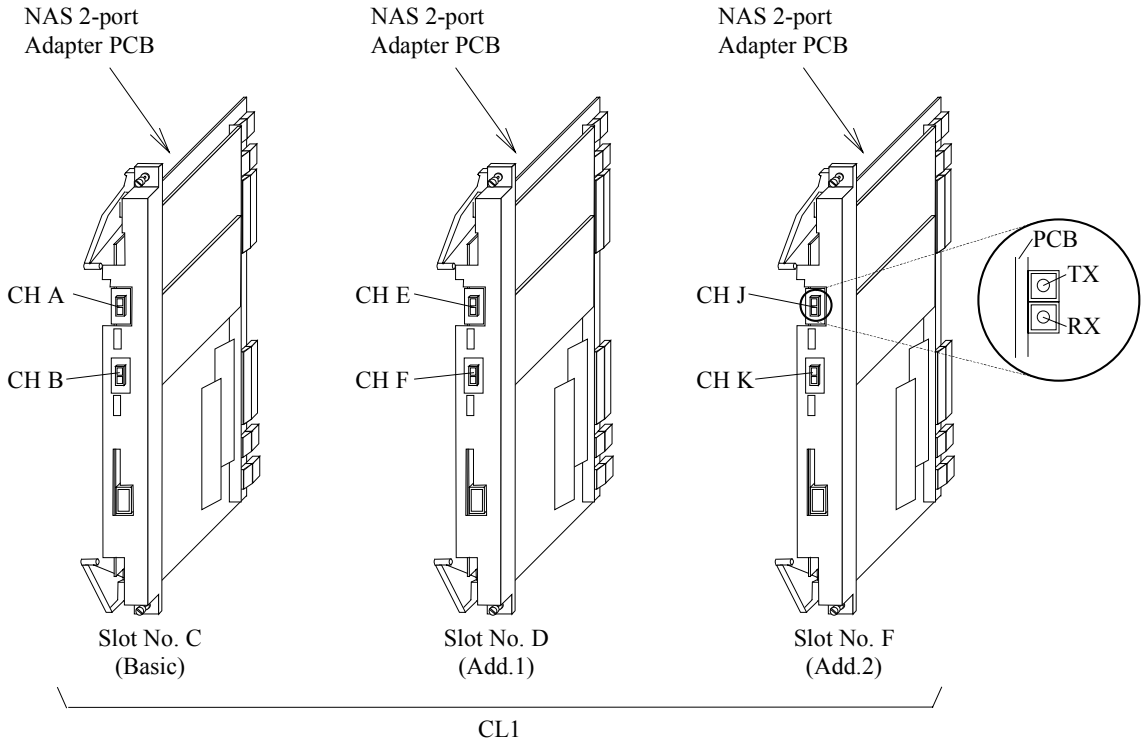
[3] Fibre Channel Interface (16-port)

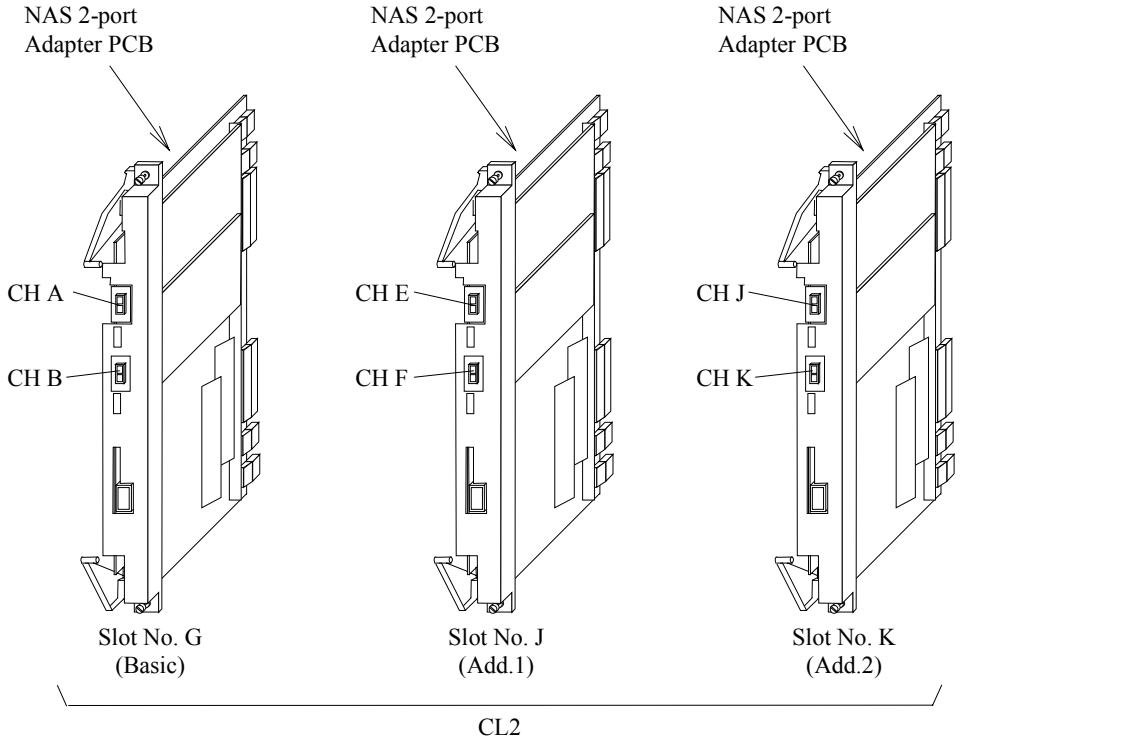




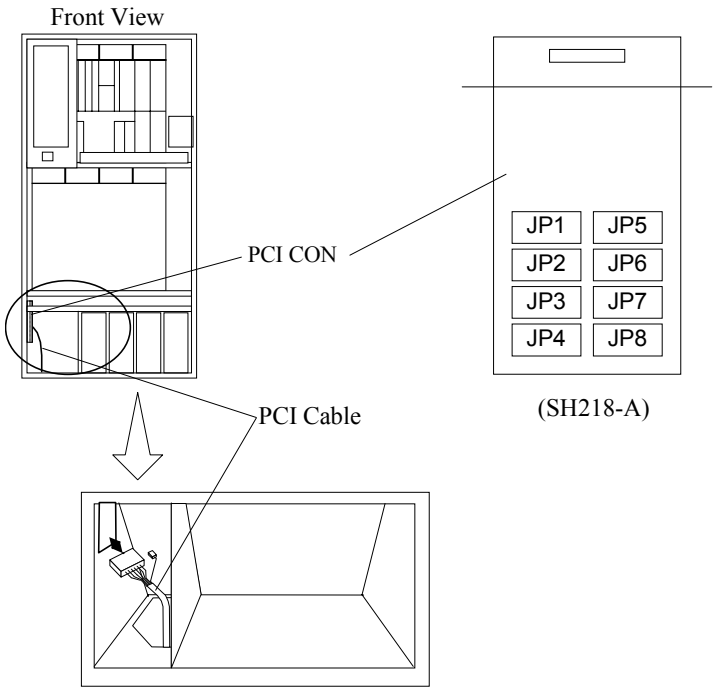
[4] Fibre Channel Interface (NAS 4-port)

CH A to CH K are effective to LED by the side of U of STORAGE CLUSTER 1 and STORAGE CLUSTER 2 on the Operator Panel.

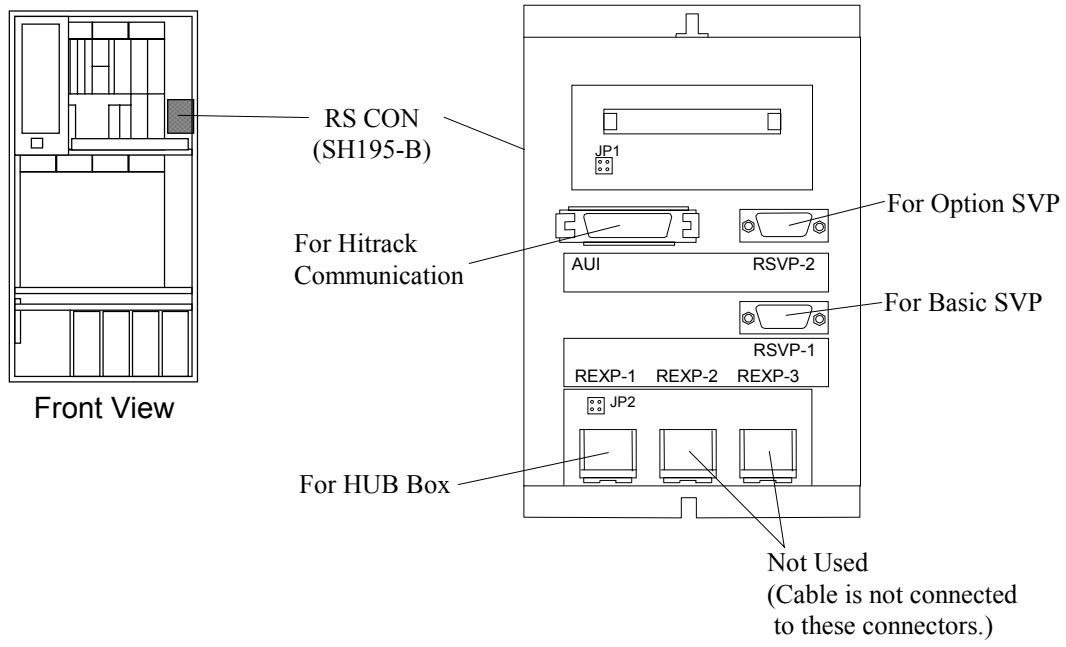




4.3 PCI Cabling



4.4 RS CON Interface



5 Internal Cabling Block Diagram

5.1 Internal Cable Connection of Disk Controller

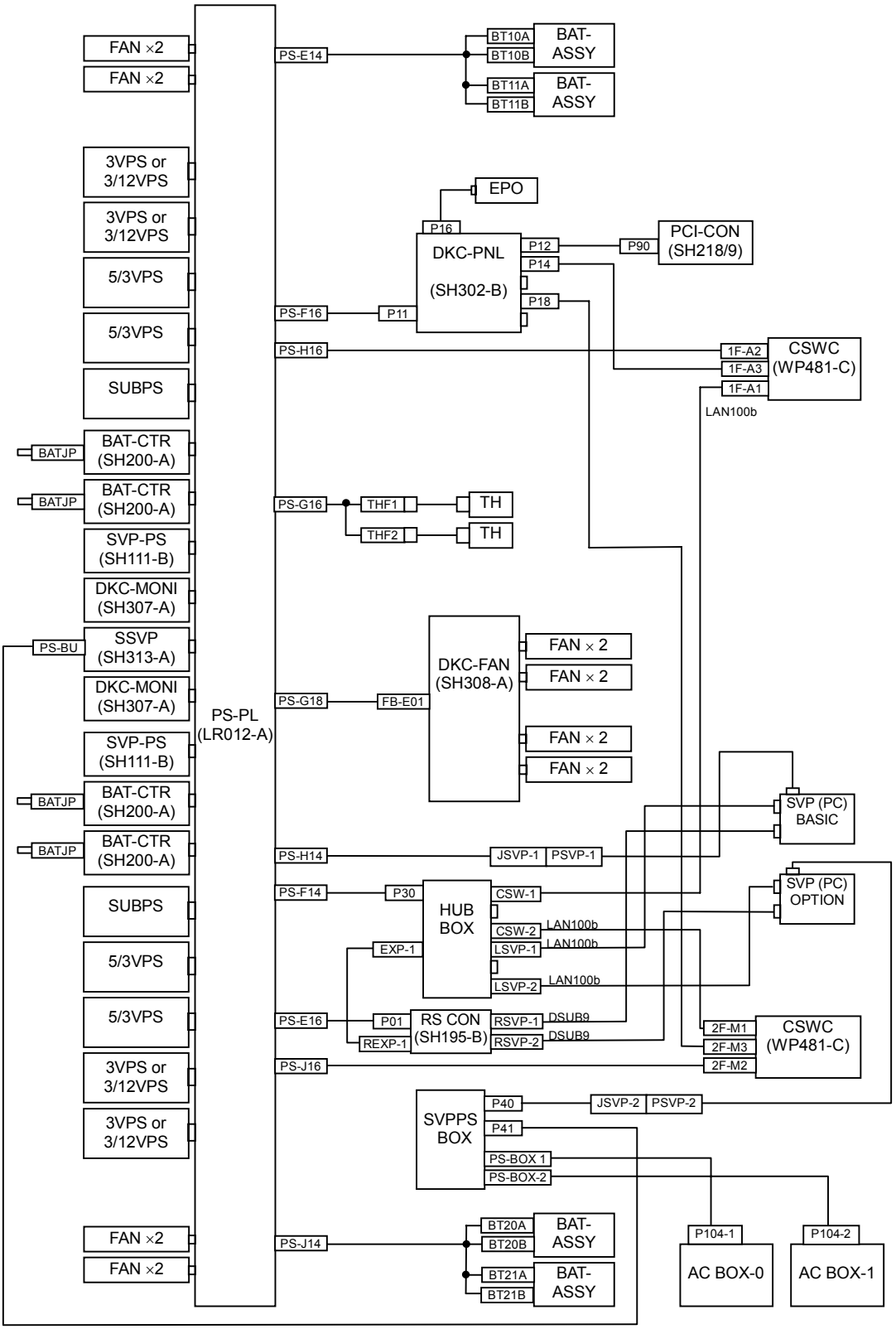


Fig. 5-1 Subsystem Internal Cabling Diagram

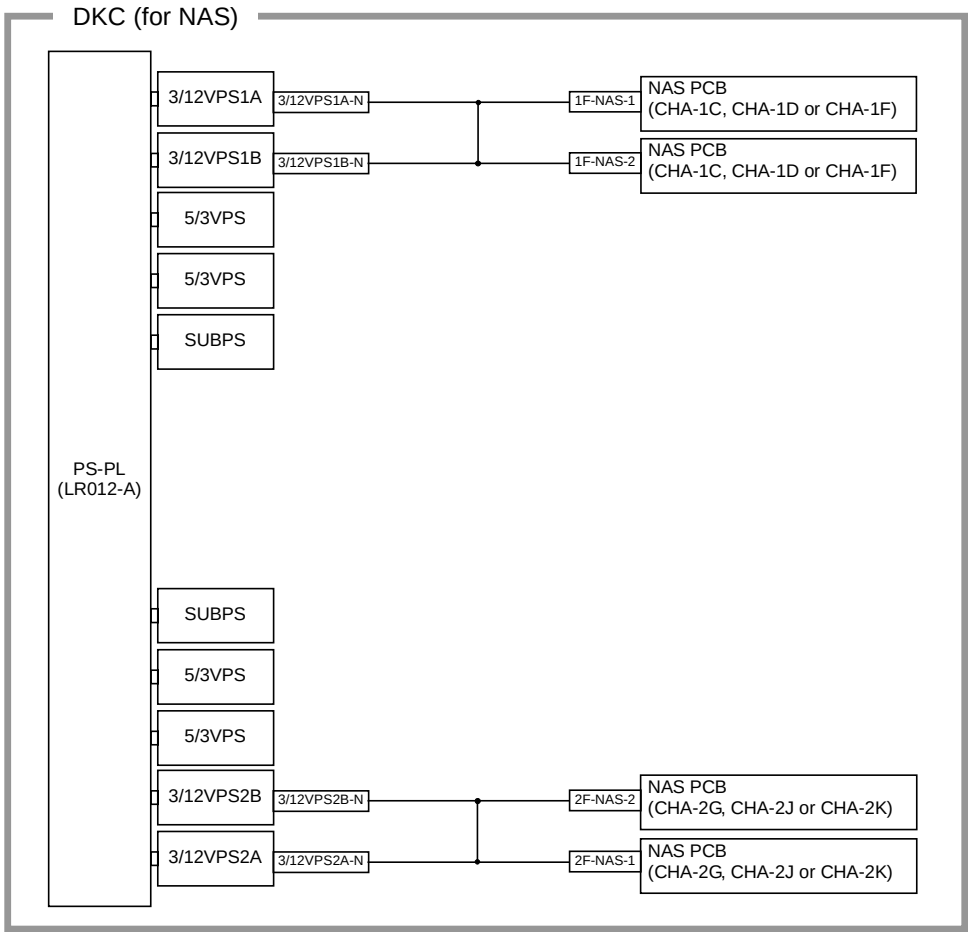


Fig. 5-1A Subsystem Internal Cabling Diagram

5.2 Cable Connection between DKA and HDU

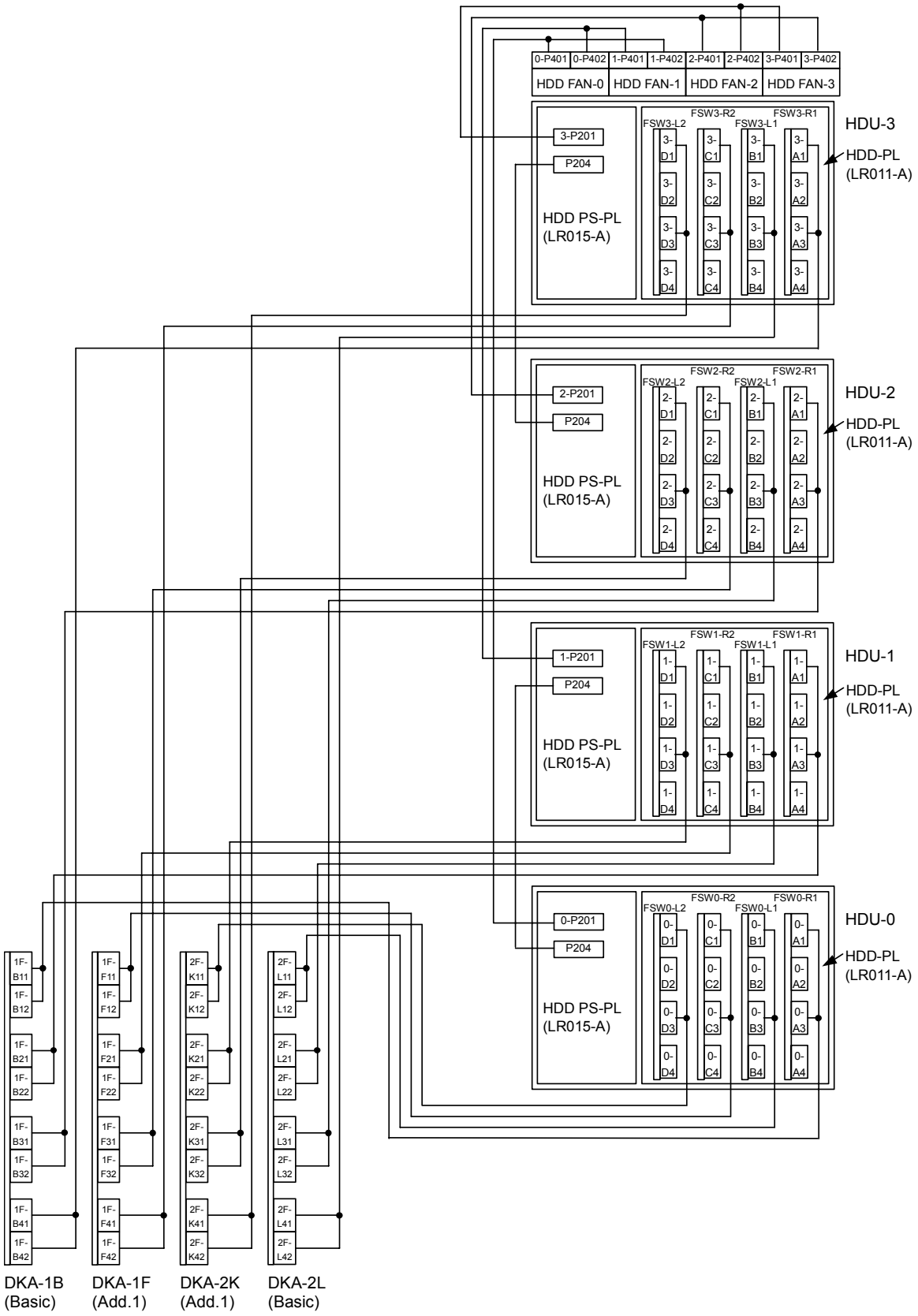


Fig. 5-2 Cable Connection Diagram between DKA and HDU

5.3 Channel Interface Cabling

DKC-F460I-8S/8SE

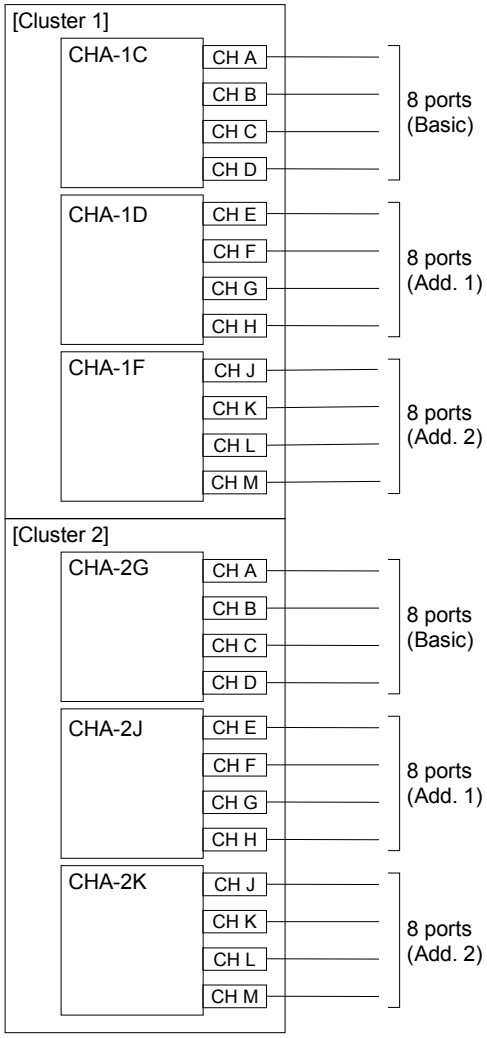


Fig. 5-3 Channel Interface Cabling Diagram ①

DKC-F460I-8GSE/4HSE/8HSE/8HLE/8MS/8ML/8GSF/4HSF/8HSF/8HLF/8IS

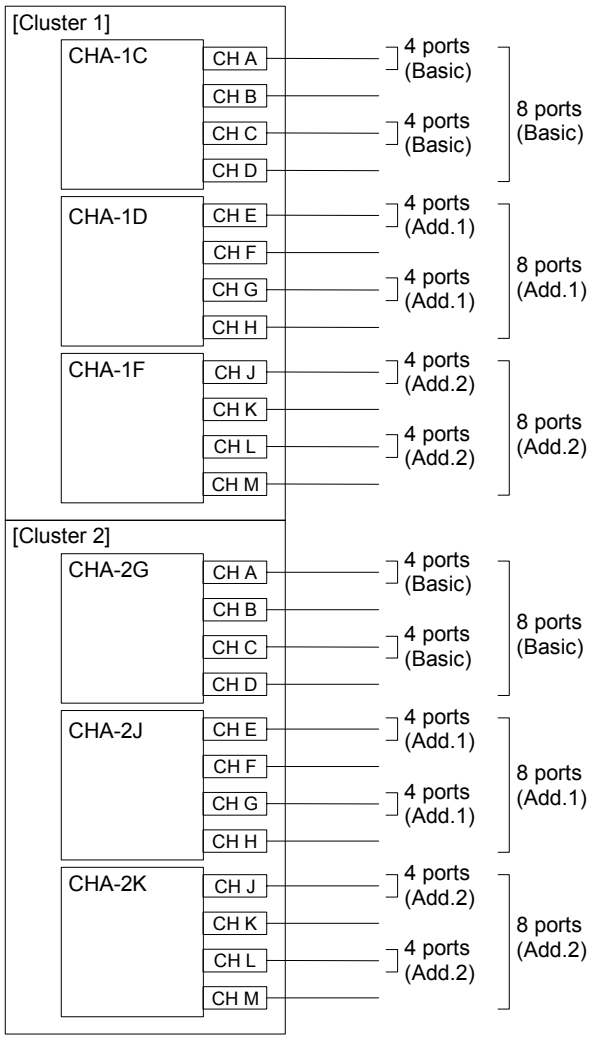
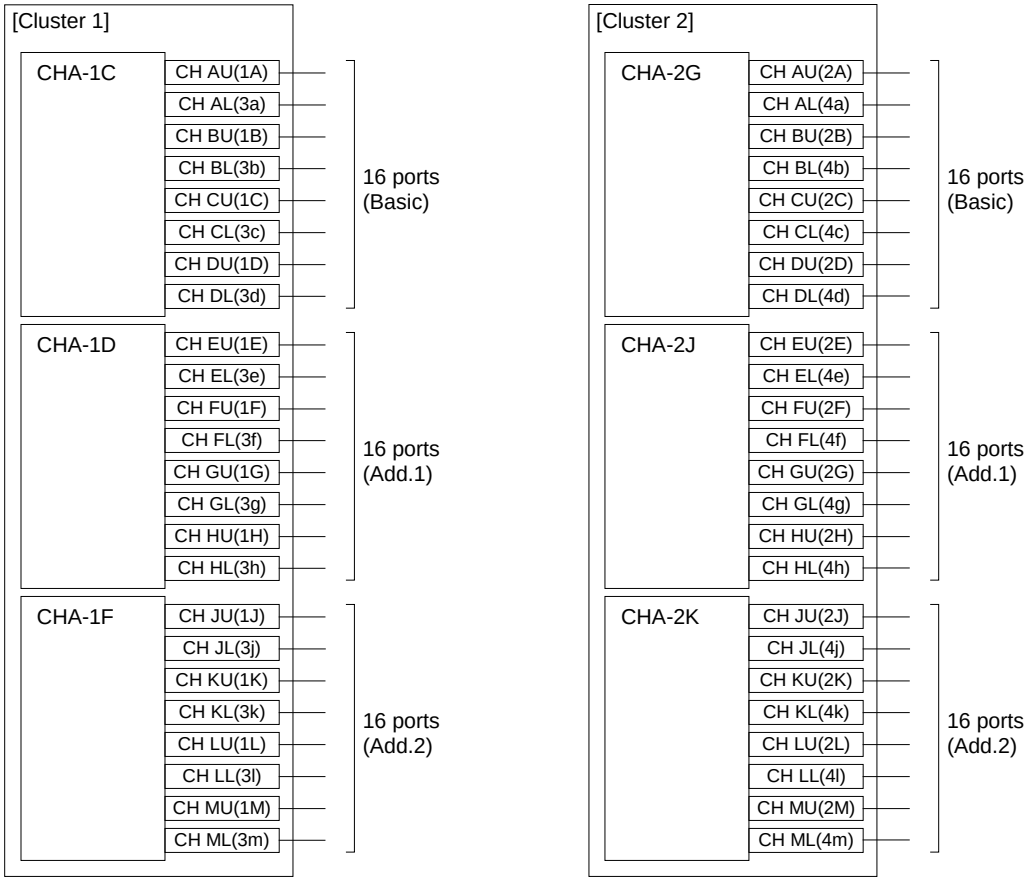


Fig. 5-3 Channel Interface Cabling Diagram ②

DKC-F460I-16HSF



Note: The numbers in the parentheses in the above figure are port numbers displayed on the SVP screen.

Fig. 5-3 Channel Interface Cabling Diagram ③

DKC-F460I-4NS

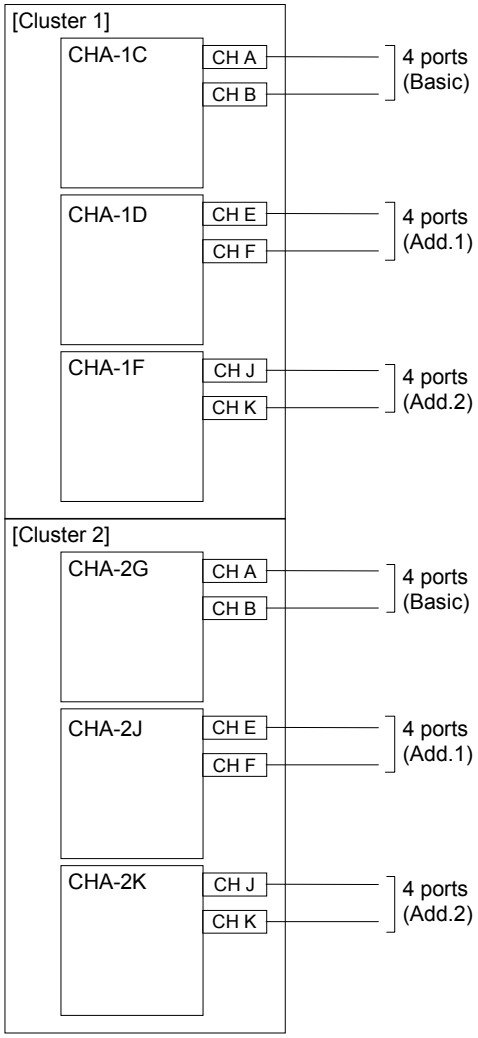


Fig. 5-3 Channel Interface Cabling Diagram ④

5.4 LAN Cabling

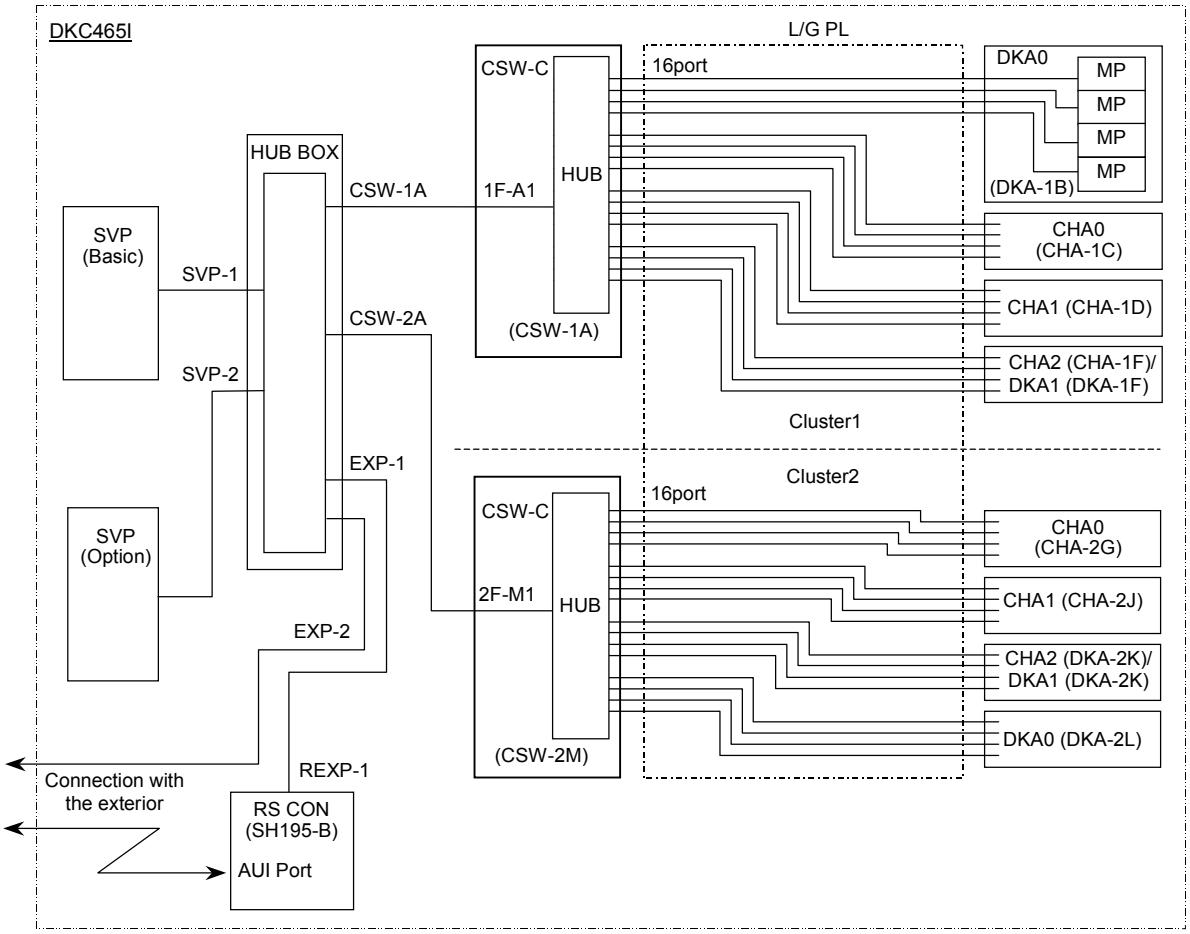


Fig.5-4 LAN Cabling Diagram

6 Jumper Setting

6.1 Shut Down Jumpers

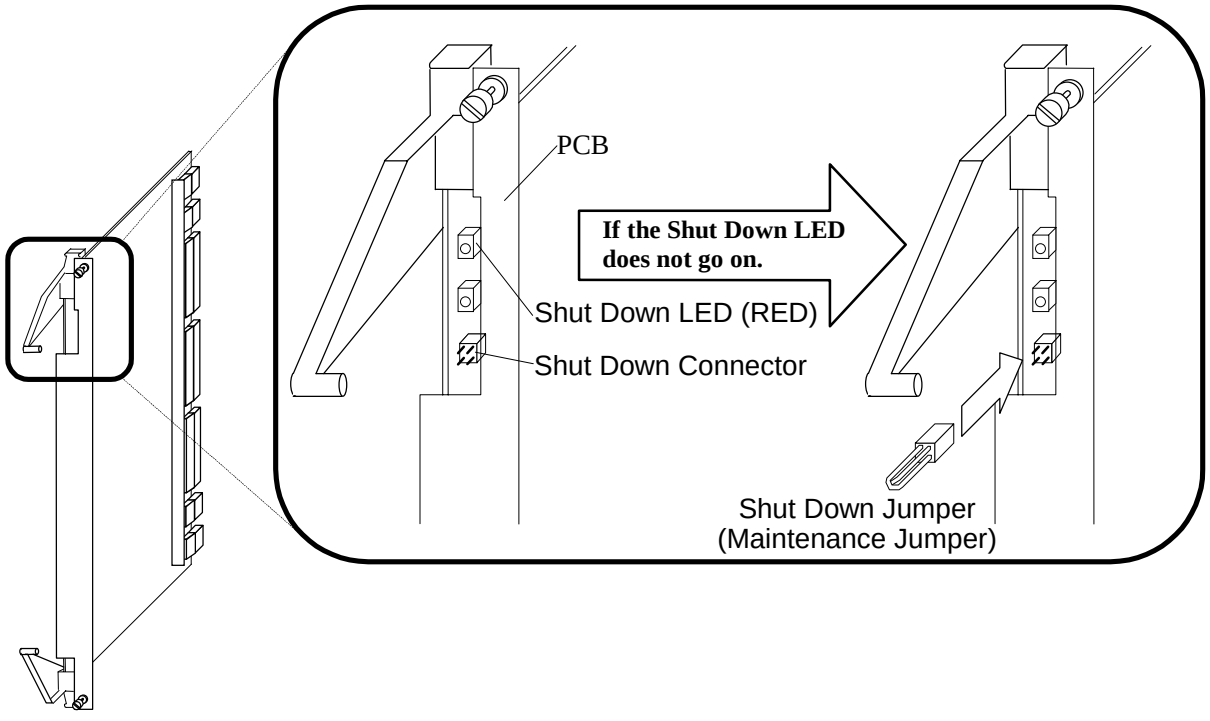
[1] Front Logic Box
Check that the Shut Down LED is turned on. If not, connect the Shut Down Jumper (Maintenance Jumper) to the Shut Down Connector. (Only hot replace procedure)

CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be replaced. Make sure that it is the PCB to be replaced.

Table 6.1 Shut Down Jumpers List

No.	Function Name	Function	Remarks
1	Channel Adapter	Shut down jumper	
2	Disk Adapter		
3	Cache		
4	CSW		

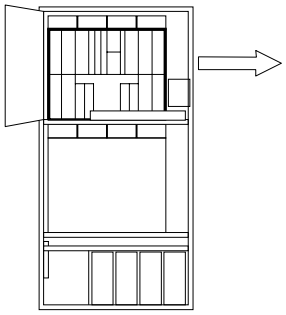


[2] SVP PS

When replacing the SVP PS PCB, perform the replacement after blocking it forcibly by inserting the Shut Down Jumper (Maintenance Jumper) regardless of turning on or off of the Shut Down LED.

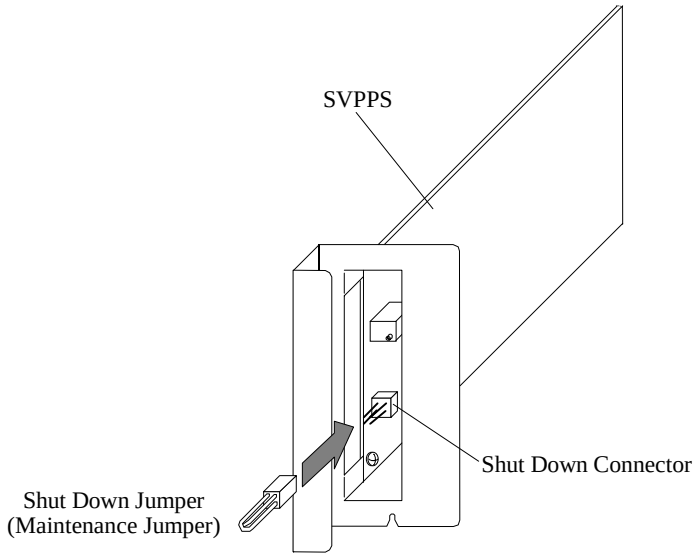
CAUTION

A system down may be caused if the Maintenance jumper is inserted in a PCB other than that to be replaced. Make sure that it is the PCB to be replaced.



Front View

–	–	–	AU	BU	CU	DU	–	–	–
5/3V PS 1A	5/3V PS 1B	SUB PS 1	DKC MN 1	SSVP	DKC MN 2	SVP PS 1	SUB PS 2	5/3V PS 2B	5/3V PS 2A
						SVP PS 2			
						EU			
3V PS 1A	3V PS 1B	BAT CTR -11	BAT CTR -10			BAT CTR -20	BAT CTR -21	3V PS 2B	3V PS 2A
–	–	AL	BL			CL	DL	–	–

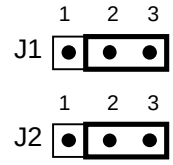
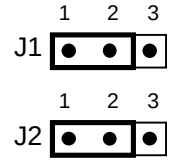


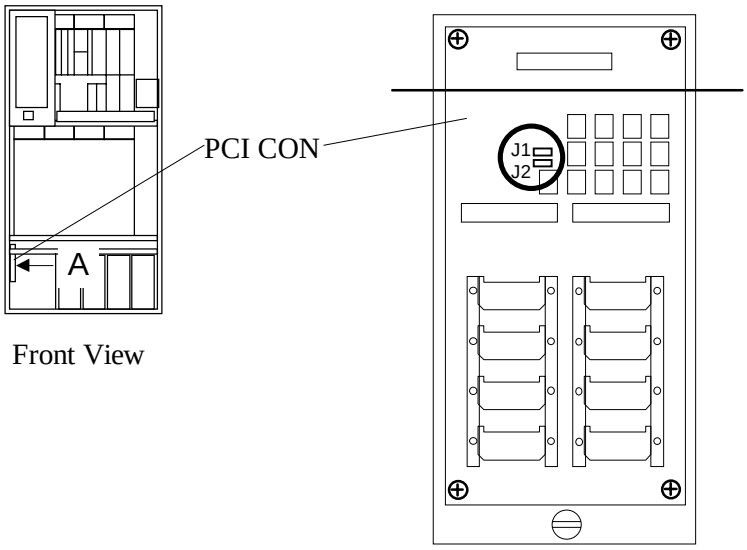
6.2 Other Jumpers

Table 6.2 Jumper Stetting List

No.	Function Name	Jumper No.	Settings	Remarks
1	PCI CON	J1	EPO signal	
		J2	EPO signal	
2	RS CON	JP1	Shut Down Jumper	
		JP2	SVP PS ON/OFF INH Jumper	
3	SVPPS BOX	PS SD	Shut Down Jumper	
		PS CTLINH	SVP PS ON/OFF INH Jumper	
4	BAT CTR	—	Jumper connector (BATJP)	
5	DKC PANEL	JP1	Not used	
		JP2	Alarm INH Jumper (AI)	
		JP3	Not used	
		JP4	Not used	
6	DKCMN	JP1	DKC Panel INH Jumper	
7	DKCMN for UPS	JPA2	Server Shutdown Setup Jumper	
8	SVPPS	JP1	Output Voltage	
9	MPS	—	Specification of HDU Box ID	
		—	Specification of DKU Frame ID	
10	JMP	Switch	Specification of DKU frame ID	

[1] PCI CON

Function Name	Setting	J1 and J2 Setting
PCI CON	When power is controlled from the host (at least one PCI cable attached to JP1-JP8 on PCI CON PCB), set the jumpers as shown.	
	When power is not controlled from the host, no PCI Cable attached to JP1-JP8 PCI CON PCB or to disable the EPO of host, set the jumpers as shown.	

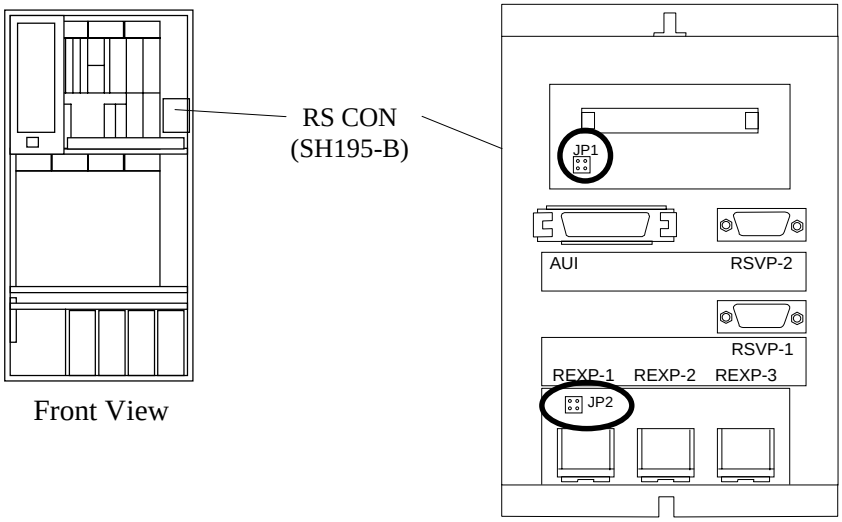


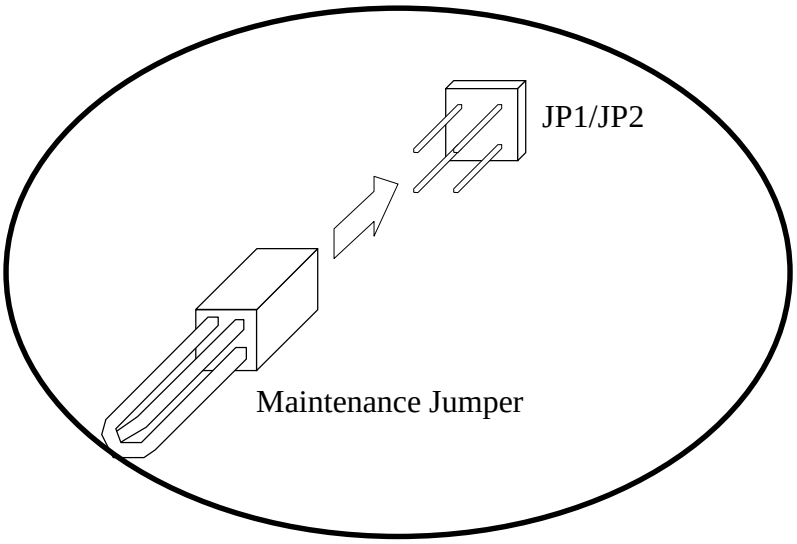
Front View

Viewed from A

[2] RS CON

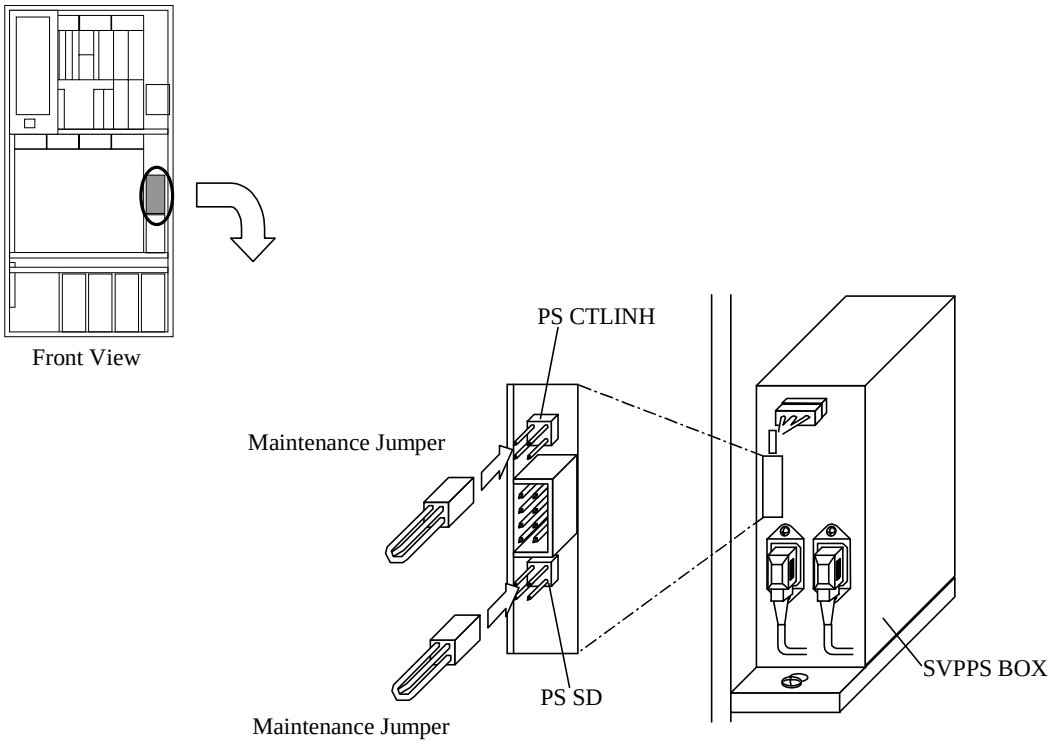
Function Name	Jumper No.	Setting	Remarks
RS CON	JP1	The basic SVP is powered off forcibly by inserting the Maintenance Jumper.	
	JP2	The basic SVP Power ON/OFF Function of SVP/HUB is inhibited by inserting the Maintenance Jumper.	





[3] SVPPS BOX

Function Name	Jumper No.	Setting	Remarks
SVPPS BOX	PS SD	The additional SVP is powered off forcibly by inserting the Maintenance Jumper.	
	PS CTLINH	The additional SVP Power ON/OFF Function of SVP/HUB is inhibited by inserting the Maintenance Jumper.	



[4] BAT CTR

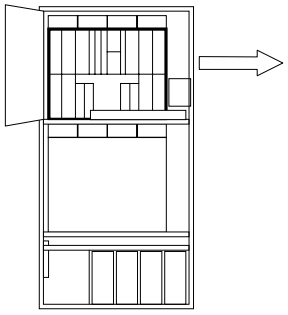
This jumper is set in order to validate the battery for backing up data on the cache memory and shared memory when an AC power failure occurs.

Table 6.3 Backup Duration Time for Each Memory

No.	Memory to be backed up	Maximum backup duration time
1	Shared Memory	168 hours (seven days)
2	Cache Memory	48 hours (two days)

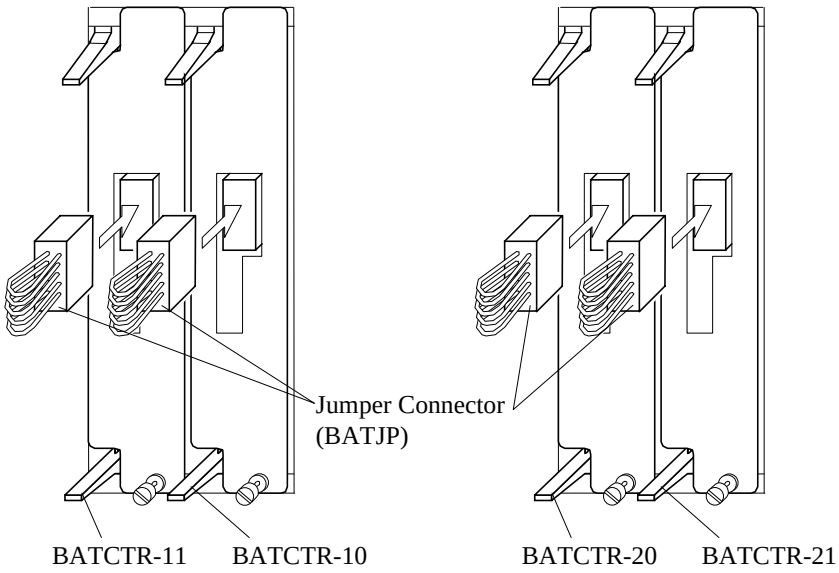
Caution: When the battery jumper is not set, data on the cache memory and shared memory are not assured when an power failure occurs. As a result, all the data on the cache memory and shared memory are lost causing a destruction of user data.
Be sure to set the battery jumper.

Notice: When the subsystem power is to be turned off for longer than 48 hours, the battery jumper must be removed to protect the battery from deterioration. In this case, remove the battery jumper after making sure that the powering off process of the subsystem has been completed normally.



Front View

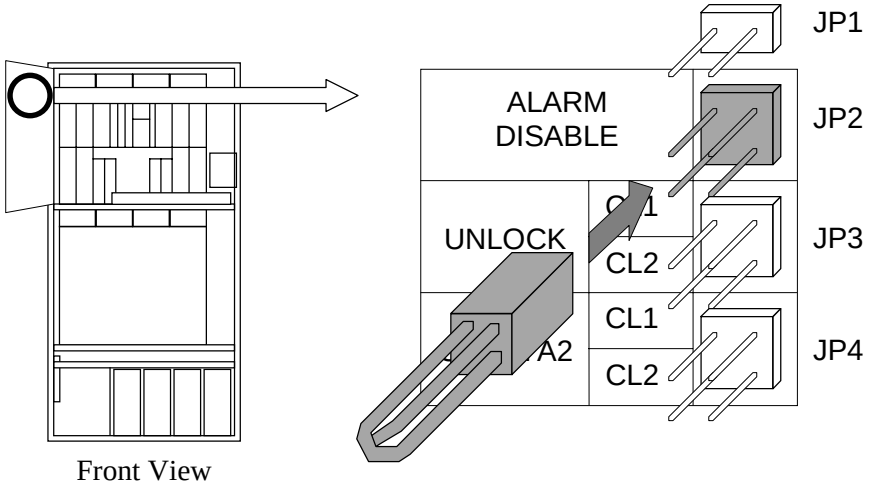
–	–	–	AU	BU	CU	DU	–	–	–
5/3V PS 1A	5/3V PS 1B	SUB PS 1	DKC MN 1	SSVP	DKC MN 2	SVP PS 1 SVP PS 2 EU	SUB PS 2	5/3V PS 2B	5/3V PS 2A
3V PS 1A	3V PS 1B	BAT CTR -11	BAT CTR -10			BAT CTR -20	BAT CTR -21	3V PS 2B	3V PS 2A
–	–	AL	BL			CL	DL	–	–



[5] DKC PANEL

Function Name	Jumper No.	Setting	Remarks
DKC PANEL	JP1	Not used	
	JP2	The voltage and thermal alarm signals are inhibited by inserting Maintenance Jumper.	
	JP3	Not used	
	JP4	Not used	

Rear View of DKC PANEL

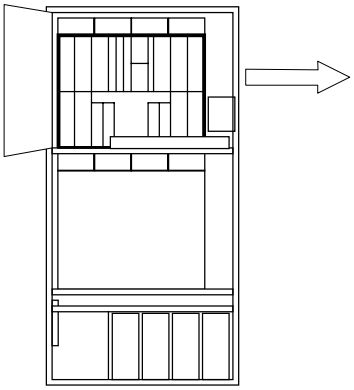


Front View

Maintenance Jumper

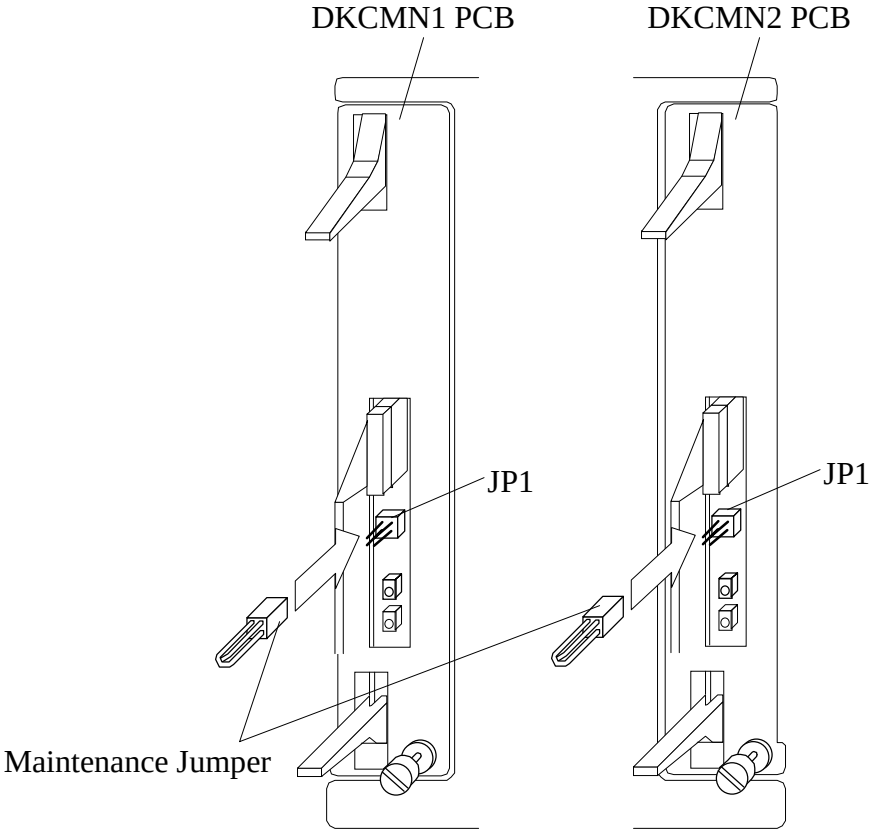
[6] DKCMN

Function Name	Jumper No.	Setting	Remarks
DKCMN1 or DKCMN2	JP1	The Power ON/OFF function is inhibited by inserting Maintenance Jumper.	

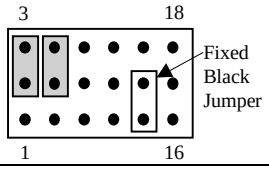
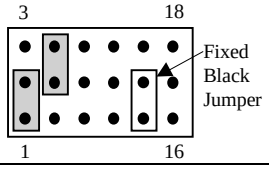
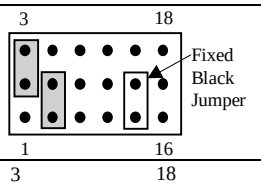
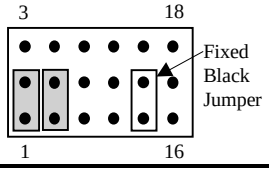


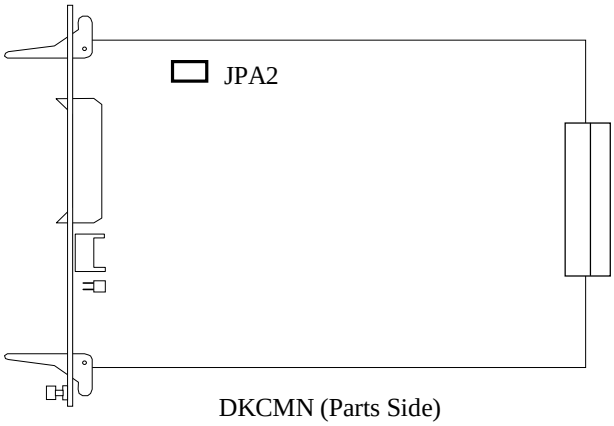
Front View

–	–	–	AU	BU	CU	DU	–	–	–
5/3V PS 1A	5/3V PS 1B	SUB PS 1	DKC MN 1	SSVP / HUB	DKC MN 2	SVP PS 1 SVP PS 2 EU	SUB PS 2	5/3V PS 2B	5/3V PS 2A
3V PS 1A	3V PS 1B	BAT CTR -11	BAT CTR -10			BAT CTR -20	BAT CTR -21	3V PS 2B	3V PS 2A
–	–	AL	BL			CL	DL	–	–



[7] DKCMN for UPS

Function Name	Jumper No.	Setting	Time	JPA2 Setting
DKCMN 1 or DKCMN 2	JPA2	Select the necessary time from four of right column and set it up to shutdown a server. When set time elapsed, a PS OFF sequence of a subsystem is started.	2.5 minutes	
			5 minutes	
			10 minutes	
			20 minutes	

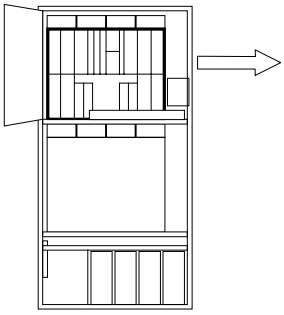


DKCMN (Parts Side)

[8] SVP PS

JP1: Output Voltage

Function Name	Jumper No.	Setting	JP1 Setting
SVP PS 1 or SVP PS 2	JP1	By setting these jumper pins output voltage of the SVP PS PCB to be supplied to the SVP is determined.	JP1 3 1 6 4 9 7 12 10

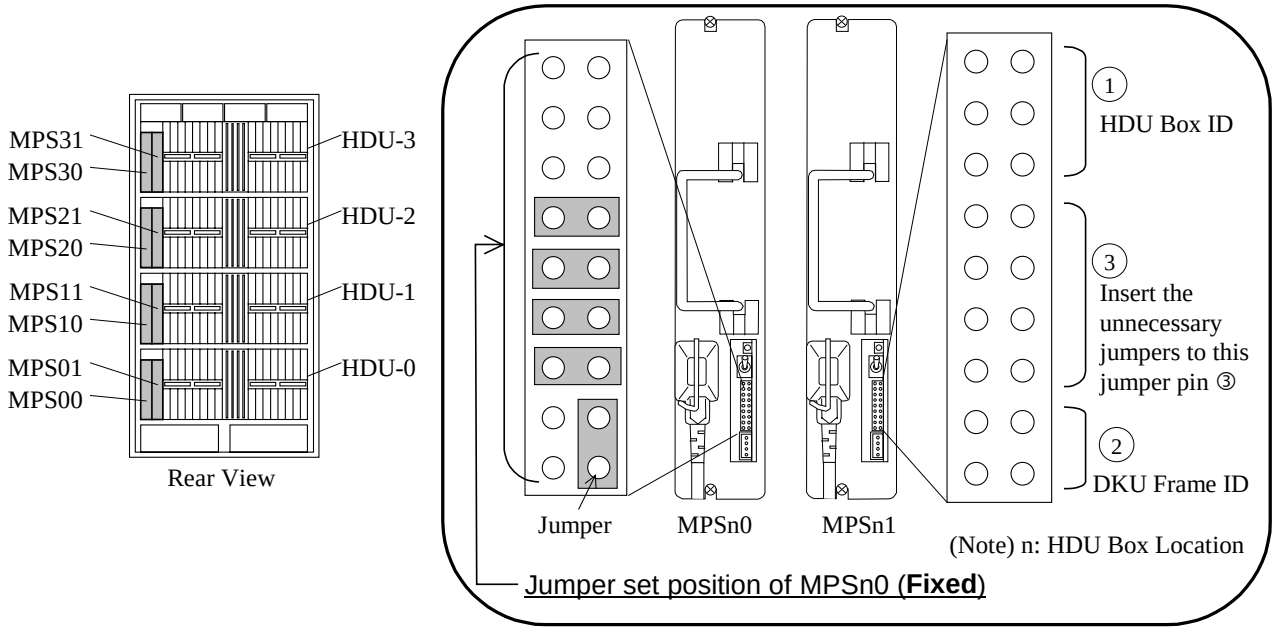


Front View

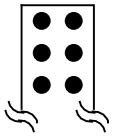
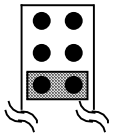
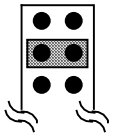
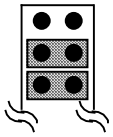
–	–	–	AU	BU	CU	DU	–	–	–
5/3V PS 1A	5/3V PS 1B	SUB PS 1	DKC MN 1	SSVP	DKC MN 2	SVP PS 1 SVP PS 2 EU	SUB PS 2	5/3V PS 2B	5/3V PS 2A
3V PS 1A	3V PS 1B	BAT CTR -11	BAT CTR -10			BAT CTR -20	BAT CTR -21	3V PS 2B	3V PS 2A
–	–	AL	BL			CL	DL	–	–

SVP PS1 or SVP PS 2 (Parts Side)

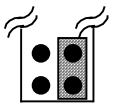
[9] MPS



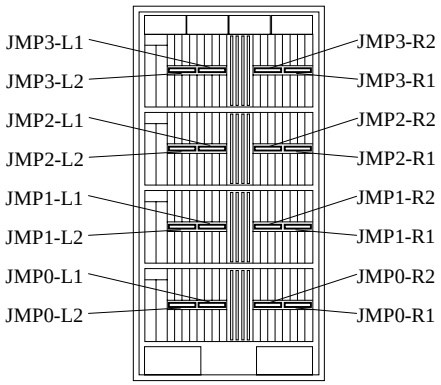
Specification of HDU Box ID

Setting	MPS Location	Location	JP01 Setting
Specification of HDU Box ID	MPS01	HDU-0	
	MPS11	HDU-1	
	MPS21	HDU-2	
	MPS31	HDU-3	

Specification of DKU Frame ID

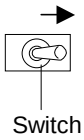
Setting	MPS Location	Location	Setting
Specification of DKU Frame ID	MPS01	HDU-0	
	MPS11	HDU-1	
	MPS21	HDU-2	
	MPS31	HDU-3	

[10] JMP



Rear View

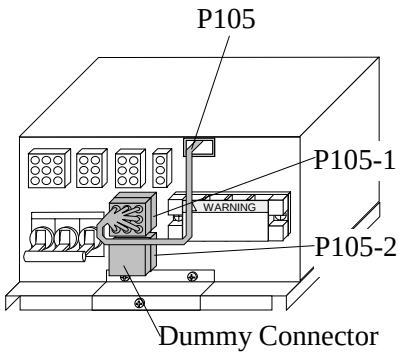
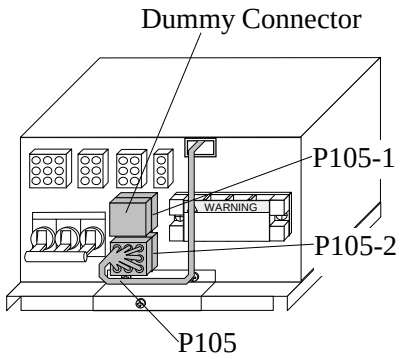
JMPx-xx

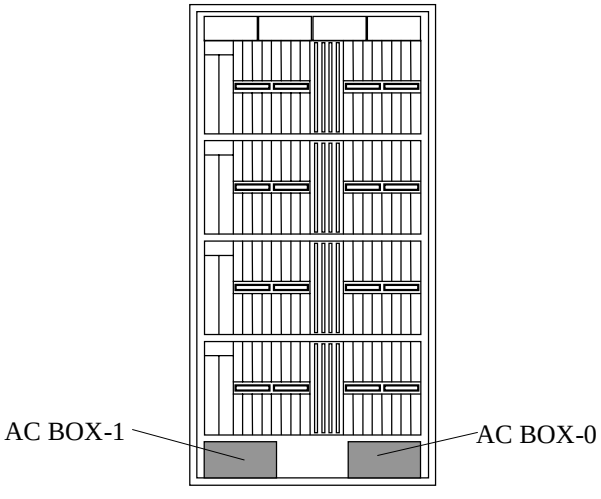
Setting	Function Name	Jumper No.	Switch Setting
Specification of DKU Frame ID	JMPx-xx	Switch	 Set the switch to the right side position (fixed).

6.3 Voltage Selector

[1] AC BOX (3 Phase Model)

P105: AC Input Voltage

AC Input Voltage	200 - 240 Vac		J105-2: dummy connector
	380 - 415 Vac		J105-1: dummy connector



Rear View