

## ***3. INSTALLATION SECTION***

### 3 INSTALLATION

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### 3 INSTALLATION

#### 3.1 Subsystem Configuration Outline

##### 3.1.1 Table of DKC210I/DKU205I Subsystem Options

Table 3.1.1-1 shows the DKC210I / DKU205I subsystem basic components, Table 3.1.1-2 shows the DKC210I / DKU205I subsystem options (for DKC) and Table 3.1.1-3 shows the DKC210I / DKU205I subsystem options (for DKU).

Table 3.1.1-1 DKC210I / DKU205I Subsystem Basic Components (1/2)

| Item No. | Model Number                          | Model Name              | Comments                                                                                                                                                                                                              | Major Part                                                                                                                                                                                                                                                                                                                                                                                                              | Remarks                                                                                                                                                                                                                                        |
|----------|---------------------------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | DKC210I-5<br>DKC210IU-5<br>DKC210IE-5 | Disk Controller (RAID5) | <ul style="list-style-type: none"> <li>• Not include CH</li> <li>• Disk Adapter :<br/>4-path×2</li> <li>• Cache Memory :<br/>128MB×2</li> <li>• Shared Memory :<br/>16MB×2</li> <li>• RAID5 Booster chip×2</li> </ul> | <ul style="list-style-type: none"> <li>• Breaker Box×2</li> <li>• LP466-A(Logic Box)</li> <li>• LP468-A(Logic PS Box)</li> <li>• Cache Memory PCB ×2</li> <li>• Terminator PCB for Logic Box ×4</li> <li>• DKA PCB ×2</li> <li>• FAN ASSY×4</li> <li>• 5V Power Supply ×2</li> <li>• 3V Power Supply ×2</li> <li>• Multi Power Supply ×2</li> <li>• Battery Assy ×4</li> <li>• Cable between DKC and 1st DKU</li> </ul> | <p>The basic part of the disk controller has no CHA. Consequently, one of the following CHAs must be installed as an option:</p> <ul style="list-style-type: none"> <li>•DKC-F210I-4S</li> <li>•DKC-F210I-8S</li> <li>•DKC-F210I-8P</li> </ul> |
| 2        | DKC210I-0<br>DKC210IU-0<br>DKC210IE-0 | Disk Controller (RAID0) | <ul style="list-style-type: none"> <li>• Not include CH</li> <li>• Disk Adapter :<br/>4-path×2</li> <li>• Cache Memory :<br/>32MB×2</li> <li>• Shared Memory :<br/>16MB×2</li> </ul>                                  | <ul style="list-style-type: none"> <li>• Breaker Box×2</li> <li>• LP466-A(Logic Box)</li> <li>• LP468-A(Logic PS Box)</li> <li>• Cache Memory PCB ×2</li> <li>• Terminator PCB for Logic Box ×4</li> <li>• DKA PCB ×2</li> <li>• FAN ASSY×4</li> <li>• 5V Power Supply ×2</li> <li>• 3V Power Supply ×2</li> <li>• Multi Power Supply ×2</li> <li>• Battery Assy ×4</li> <li>• Cable between DKC and 1st DKU</li> </ul> | <p>The basic part of the disk controller has no CHA. Consequently, one of the following CHAs must be installed as an option:</p> <ul style="list-style-type: none"> <li>•DKC-F210I-4S</li> <li>•DKC-F210I-8S</li> <li>•DKC-F210I-8P</li> </ul> |

Table 3.1.1-1 DKC210I / DKU205I Subsystem Basic Components (2/2)

| Item No. | Model Number                             | Model Name                    | Comments                                                                                                                                                                                                              | Major Part                                                                                                                                                                                                                                                                                                                                                                                                                           | Remarks                                                                                                                                                                                                                                                  |
|----------|------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3        | DKC210I-5E<br>DKC210IU-5E<br>DKC210IE-5E | Disk Controller (RAID5/RAID1) | <ul style="list-style-type: none"> <li>• Not include CH</li> <li>• Disk Adapter :<br/>4-path×2</li> <li>• Cache Memory :<br/>128MB×2</li> <li>• Shared Memory :<br/>16MB×2</li> <li>• RAID5 Booster Chip×2</li> </ul> | <ul style="list-style-type: none"> <li>• Breaker Box ×2</li> <li>• LP466-A(Logic Box)</li> <li>• LP468-A(Logic PS Box)</li> <li>• Cache Memory PCB ×2</li> <li>• Terminator PCB for Logic Box ×4</li> <li>• High Speed DKA PCB ×2</li> <li>• FAN ASSY×4</li> <li>• 5V Power Supply ×2</li> <li>• 3V Power Supply ×2</li> <li>• Multi Power Supply ×2</li> <li>• Battery Assy ×4</li> <li>• Cable between DKC and 1st DKU</li> </ul>  | <p>The basic part of the disk controller has no CHA.</p> <p>Consequently, one of the following CHAs must be installed as an option:</p> <ul style="list-style-type: none"> <li>•DKC-F210I-4SE</li> <li>•DKC-F210I-8SE</li> <li>•DKC-F210I-8PE</li> </ul> |
| 4        | DKC210I-0E<br>DKC210IU-0E<br>DKC210IE-0E | Disk Controller (RAID0)       | <ul style="list-style-type: none"> <li>• Not include CH</li> <li>• Disk Adapter :<br/>4-path×2</li> <li>• Cache Memory :<br/>128MB×2</li> <li>• Shared Memory :<br/>16MB×2</li> <li>• RAID5 Booster Chip×2</li> </ul> | <ul style="list-style-type: none"> <li>• Breaker Box ×2</li> <li>• LP466-A(Logic Box)</li> <li>• LP468-A(Logic PS Box)</li> <li>• Cache Memory PCB ×2</li> <li>• Terminator PCB for Logic Box ×4</li> <li>• High Speed DKA PCB ×2</li> <li>• FAN ASSY ×4</li> <li>• 5V Power Supply ×2</li> <li>• 3V Power Supply ×2</li> <li>• Multi Power Supply ×2</li> <li>• Battery Assy ×4</li> <li>• Cable between DKC and 1st DKU</li> </ul> | <p>The basic part of the disk controller has no CHA.</p> <p>Consequently, one of the following CHAs must be installed as an option:</p> <ul style="list-style-type: none"> <li>•DKC-F210I-4SE</li> <li>•DKC-F210I-8SE</li> <li>•DKC-F210I-8PE</li> </ul> |
| 5        | DKU205I-14<br>DKU205IU-14<br>DKU205IE-14 | Disk Unit                     | <ul style="list-style-type: none"> <li>• AC BOX×2</li> <li>• DKU internal monitor cable</li> <li>• HDU Box</li> </ul>                                                                                                 | <ul style="list-style-type: none"> <li>• AC BOX×2</li> <li>• DKUMN PCB ×2</li> <li>• DKU internal monitor cable</li> <li>• AC cable</li> <li>• Input Power Cable</li> <li>• HDU Box×4</li> <li>• LP472-A×4(HDU Box)</li> <li>• SCSI BFR PCB ×8</li> <li>• FAN ASSY×12</li> <li>• HDU(5V/12V)PS×8</li> </ul>                                                                                                                          | <p>The basic part of the disk unit has no HDD canister.</p>                                                                                                                                                                                              |

Table 3.1.1-2 DKC210I/DKU205I Subsystem Options (for DKC) (1/2)

| Item No. | Model Number   | Model Name                             | Comments                       | Major Part                                                                                                                                                                                  | Remarks                                                             |
|----------|----------------|----------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 1        | DKC-F210I-20   | Additional Cache Platform for Board    | No SM installable              | • Cache Memory PCB ×2<br>(0MB)                                                                                                                                                              |                                                                     |
| 2        | DKC-F210I-256  | Additional Cache Memory Module         | Cache 256MB                    | • (Cache Memory Module (32MB)×4)×2                                                                                                                                                          |                                                                     |
| 3        | DKC-F210I-64   | Additional Cache Memory Module (64MB)  | Cache 64MB                     | • (Cache Memory Module (8MB)×4)×2                                                                                                                                                           | RAID 0                                                              |
| 4        | DKC-F210I-32   | Additional Shared Memory Module        | Shared Memoey 32MB             | • Shared Memory Module(16MB) ×2                                                                                                                                                             |                                                                     |
| 5        | DKC-F210I-2048 | Additional Cache Assembly              | Cache 2GB                      | • Cache Memory PCB ×2<br>• (Cache Memory Module (32MB)×4)×16                                                                                                                                | Unit of expansion cache memory used when cache size exceeds 4 GB    |
| 6        | DKC-F210I-40   | Platform for Additional Cache Assembly |                                | • LP471-A×2(Cache Box)<br>• CPM PCB ×2<br>• CPS PCB ×2<br>• Cache Terminator PCB ×4<br>• FAN Assy×8<br>• CPM←→CPS cable<br>• 5V Power Supply ×2<br>• 3V Power Supply ×2<br>• Battery Assy×4 | Required when cache size exceeds 4 GB.                              |
| 7        | DKC-F210I-50   | Additional 8-path Box Adapter          |                                | • DKA PCB ×2                                                                                                                                                                                |                                                                     |
| 8        | DKC-F210I-51   | RAID5 booster                          | RAID5 or RAID1 required option | • RAID5 Booster Chip ×2                                                                                                                                                                     | Installed on DKA.                                                   |
| 9        | DKC-F210I-4S   | Serial 4-port Adapter                  | 4 ports / DKC                  | • CHA PCB ×2<br>• Serial I/F CON. panel                                                                                                                                                     | Must be installed as basic parts when installed for the first time. |
| 10       | DKC-F210I-8S   | Serial 8-port Adapter                  | 8 ports / DKC                  | • CHA PCB ×2<br>• Serial I/F CON. panel                                                                                                                                                     |                                                                     |
| 11       | DKC-F210I-8P   | Parallel 8-CH switch                   | 8 CH / DKC                     | • CHA PCB ×2<br>• Parallel I/F CON. panel<br>• Internal I/F Cables                                                                                                                          |                                                                     |
| 12       | DKC-F210I-70   | DKC Additional Power Supply            |                                | • 5V Power Supply (Redundant) ×2                                                                                                                                                            |                                                                     |
| 13       | DKC-F210I-71   | CL Redundant Power Supply              |                                | • 5V Power Supply ×2<br>• 3V Power Supply ×2<br>• Multi Power Supply ×2                                                                                                                     |                                                                     |
| 14       | DKC-F210I-72   | Cache Redundant Power Supply           |                                | • 5V Power Supply ×2<br>• 3V Power Supply ×2                                                                                                                                                |                                                                     |
| 15       | DKC-F210I-56   | Hz Conversion Kit (50Hz→60Hz)          |                                | • OUTLET Box(IU)<br>• Name Plate(IE→IU)                                                                                                                                                     |                                                                     |
| 16       | DKC-F210I-65   | Hz Conversion Kit (60Hz→50Hz)          |                                | • OUTLET Box(IE)<br>• Name Plate(IU→IE)                                                                                                                                                     |                                                                     |

Table 3.1.1-2 DKC210I/DKU205I Subsystem Options (for DKC) (2/2)

| Item No. | Model Number   | Model Name                                 | Comments                      | Major Part                                                                                                                                 | Remarks |
|----------|----------------|--------------------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 17       | DKC-F210I-4SE  | High Speed Serial 4-port Adapter           | 4-ports/DKC                   | <ul style="list-style-type: none"> <li>• High Speed CHA PCB ×2</li> <li>• Serial I/F Con. Panel</li> </ul>                                 |         |
| 18       | DKC-F210I-8SE  | High Speed Serial 8-port Adapter           | 8-ports/DKC                   | <ul style="list-style-type: none"> <li>• High Speed CHA PCB ×2</li> <li>• Serial I/F Con. Panel</li> </ul>                                 |         |
| 19       | DKC-F210I-8PE  | High Speed Parallel 8CH Switch             | 8CH/DKC                       | <ul style="list-style-type: none"> <li>• High Speed CHA PCB ×2</li> <li>• Parallel I/F Con. Panel</li> <li>• Internal I/F Cable</li> </ul> |         |
| 20       | DKC-F-210I-50E | High Speed Additional 8-path Box Adapter   | 8-path to DKU                 | <ul style="list-style-type: none"> <li>• High Speed DKA PCB ×2</li> </ul>                                                                  |         |
| 21       | DKC-F210I-5E   | High Speed Upgrade Kit                     | For DKC210IU-5 and DKC210IE-5 | <ul style="list-style-type: none"> <li>• High Speed DKA PCB ×2</li> </ul>                                                                  |         |
| 22       | DKC-F210I-8C   | SCSI 8-port Adapter                        | 8-ports/DKC                   | <ul style="list-style-type: none"> <li>• CHA PCB ×2</li> <li>• SCSI I/F Con. Panel</li> <li>• Internal I/F Cable</li> </ul>                |         |
| 23       | DKC-F210I-8CD  | SCSI 8-port Adapter (Dual Processor)       | 8-ports/DKC                   | <ul style="list-style-type: none"> <li>• CHA PCB ×2</li> <li>• SCSI I/F Con. Panel</li> <li>• Internal I/F Cable</li> </ul>                |         |
| 24       | DKC-F210I-M80  | Backup/Restore Function for Multi-Platform |                               | <ul style="list-style-type: none"> <li>• Micro Program</li> </ul>                                                                          |         |
| 25       | DKC-F210I-DR   | Front Door Conversion Kit                  |                               | <ul style="list-style-type: none"> <li>• Front Door</li> <li>• Plate (CE)</li> </ul>                                                       |         |
| 26       | DKC-F310I-256  | Additional Cache Memory Module             | Cache 256MB                   | <ul style="list-style-type: none"> <li>• (Cache Memory Module (32MB) × 4) × 2</li> </ul>                                                   | Note 1  |
| 27       | DKC-F310I-32   | Additional Shared Memory Module            | Shared Memory 32MB            | <ul style="list-style-type: none"> <li>• Shared Memory Module (16MB) × 2</li> </ul>                                                        | Note 2  |

Note 1 : It is usable for DKC210I, but DKC-F210I-256 is unusable for DKC310I.

Note 2 : It is usable for DKC210I, but DKC-F210I-32 is unusable for DKC310I.

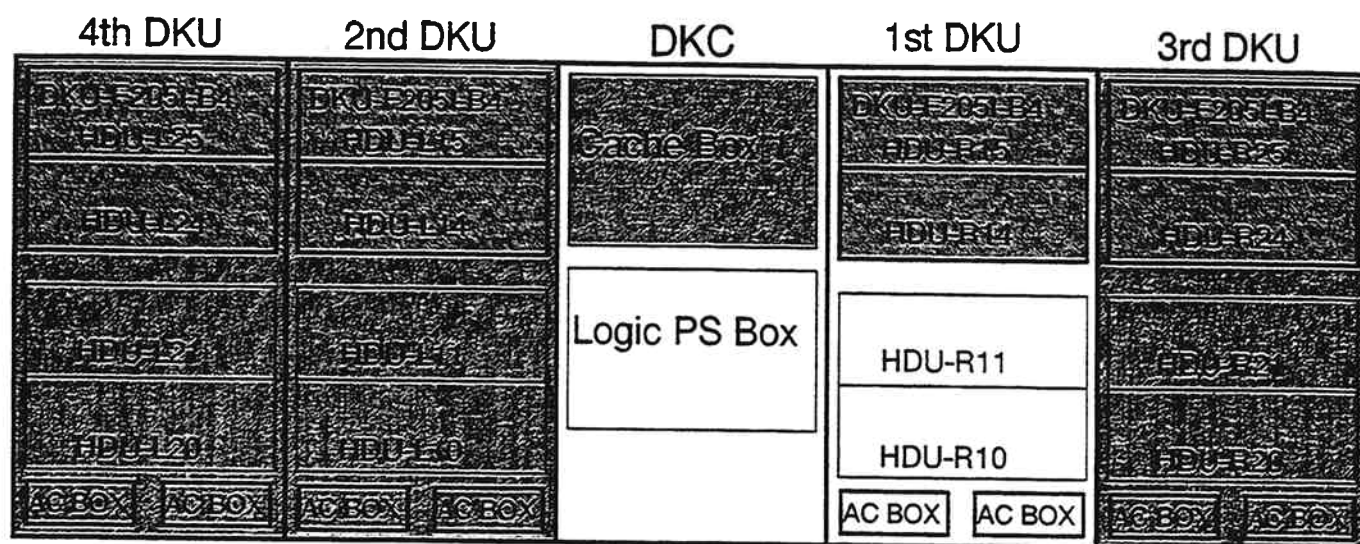
Table 3.1.1-3 DKC210I/DKU205I Subsystem Options (for DKU)

| Item No. | Model Number   | Model Name                           | Comments                    | Major Part                                                                                                                                          | Remarks                                       |
|----------|----------------|--------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| 1        | DKU-F205I-B4   | Platform for Canister mount          |                             | <ul style="list-style-type: none"> <li>• SCSI BFR PCB ×8</li> <li>• FAN ASSY×12</li> <li>• HDU PS(5/12V)×8</li> <li>• LP472-A×4(HDU BOX)</li> </ul> | HDD PS is identical to 5/12V PS for DKC 210I. |
| 2        | DKU-F205I-406  | 6 HDD Canisters                      |                             | • DK306-45×6 or DK308-45×6                                                                                                                          |                                               |
| 3        | DKU-F205I-401  | 1 HDD Canister                       | Parity / Spare              | • DK306-45×1 or DK308-45×1                                                                                                                          |                                               |
| 4        | DKU-F205I-2C   | DEV I/F Cable (1)                    | DKC←→2ndDKU                 | • SCSI Cable ×16                                                                                                                                    |                                               |
| 5        | DKU-F205I-34C  | DEV I/F Cable (2)                    | 1st/2nd DKU<br>←→3rd/4thDKU | • SCSI Cable ×16                                                                                                                                    |                                               |
| 6        | DKU-F205I-56   | Hz Conversion Kit (50Hz→60Hz)        |                             | <ul style="list-style-type: none"> <li>• Input Power cable</li> <li>• Name Plate(IE→IU)</li> </ul>                                                  |                                               |
| 7        | DKU-F205I-65   | Hz Conversion Kit (60Hz→50Hz)        |                             | <ul style="list-style-type: none"> <li>• Input Power cable</li> <li>• Name Plate(IU→IE)</li> </ul>                                                  |                                               |
| 8        | DKU-F205I-304  | 4 HDD Canisters                      |                             | • DKC306-35 × 4                                                                                                                                     |                                               |
| 9        | DKU-F205I-054  | HDD Conversion Kit-4 (RAID0 → RAID5) | • 4 HDD Canisters           | <ul style="list-style-type: none"> <li>• ROM × 4</li> <li>• HDA Lable × 4</li> </ul>                                                                |                                               |
| 10       | DKU-F205I-906  | 6 HDD Canisters                      |                             | • DK308-90 × 6                                                                                                                                      |                                               |
| 11       | DKU-F205I-904  | 4 HDD Canisters                      |                             | • DK308-90 × 4                                                                                                                                      |                                               |
| 12       | DKU-F205I-901  | 1 HDD Canister                       | Parity/Spare                | • DK308-90 × 1                                                                                                                                      |                                               |
| 13       | DKU-F305I-1804 | 4 HDD Canisters                      |                             | • DK309-180 × 4                                                                                                                                     |                                               |
| 14       | DKU-F305I-1801 | 1 HDD Canister                       |                             | • DK309-180 × 1                                                                                                                                     |                                               |

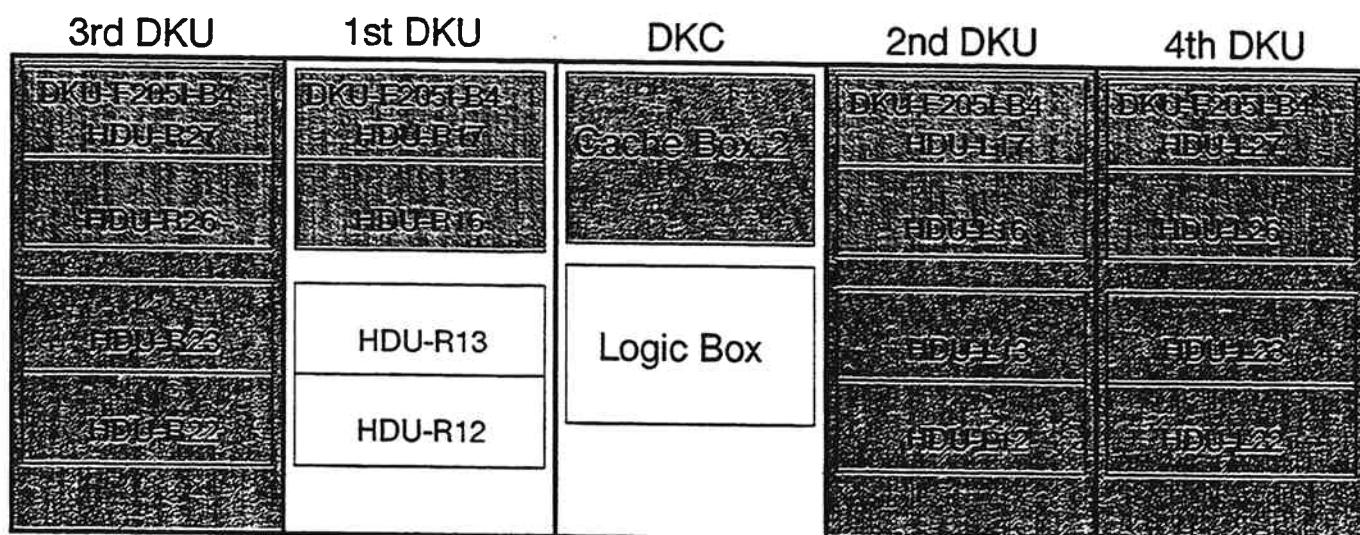
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## 3.1.2 DKC210I/DKU205I Subsystem Frame Configuration

Fig.3.1.2-1 shows the subsystem frame configuration.



Front View



Rear View

Shaded parts are optional.

Fig. 3.1.2-1 Subsystem Frame configuration

The DKC frame and the first DKU frame make up the basic part of the DKC210I/DKU205I subsystem, however, the basic part contains no HDD. DKU-F205I-B4 options must be added in the order of the ordinal number of the DKUs (i.e., 1st through 4th DKUs and there must be no DKU that has no DKU-F205I-B4 between the DKUs having an expansion DKU-F205I-B4) except for intermix installation.

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### 3.1.3 Drive Expansion Sequence

The order in which DKU-F205I-406 (6-HDD canister) units are to be installed in a DKU-F205I-B4 is shown in Figs. 3.1.3-1 and the order in which DKU-F205I-401 (parity/spare HDD) units are to be installed in Fig. 3.1.3-2 and Fig. 3.1.3-3.

The order in which DKU-F205I-906 (6-HDD canister) units are to be installed in a DKU-F205I-B4 is shown in Figs. 3.1.3-4 and the order in which DKU-F205I-901 (parity/spare HDD) units are to be installed in Fig. 3.1.3-5 and Fig. 3.1.3-6.

The order in which DKU-F205I-304 (4-HDD canister) units are to be installed in a DKU-F205I-B4 is shown in Figs. 3.1.3-7.

The order in which DKU-F205I-904 (4-HDD canister) units are to be installed in a DKU-F205I-B4 is shown in Figs. 3.1.3-8 and the order in which DKU-F205I-901 (spare HDD) units are to be installed in Fig. 3.1.3-9.

#### Notice

- (1) The position to be installed in the 3rd or 4th DKU is different from one in the 1st or 2nd DKU.  
Be sure to set the HDDs in the right position.
- (2) Don't use the position marked as X in the 3rd and 4th DKU.  
Wrong setting of a HDD in the 3rd or 4th DKU may cause DKU failure on the same SCSI path.

| No. | Model Number  | Model Name      | Data / Parity / Spare |
|-----|---------------|-----------------|-----------------------|
| 1   | DKU-F205I-406 | 6 HDD Canisters | Data Drive            |

01 - 32 : 6HDD canister expansion sequence

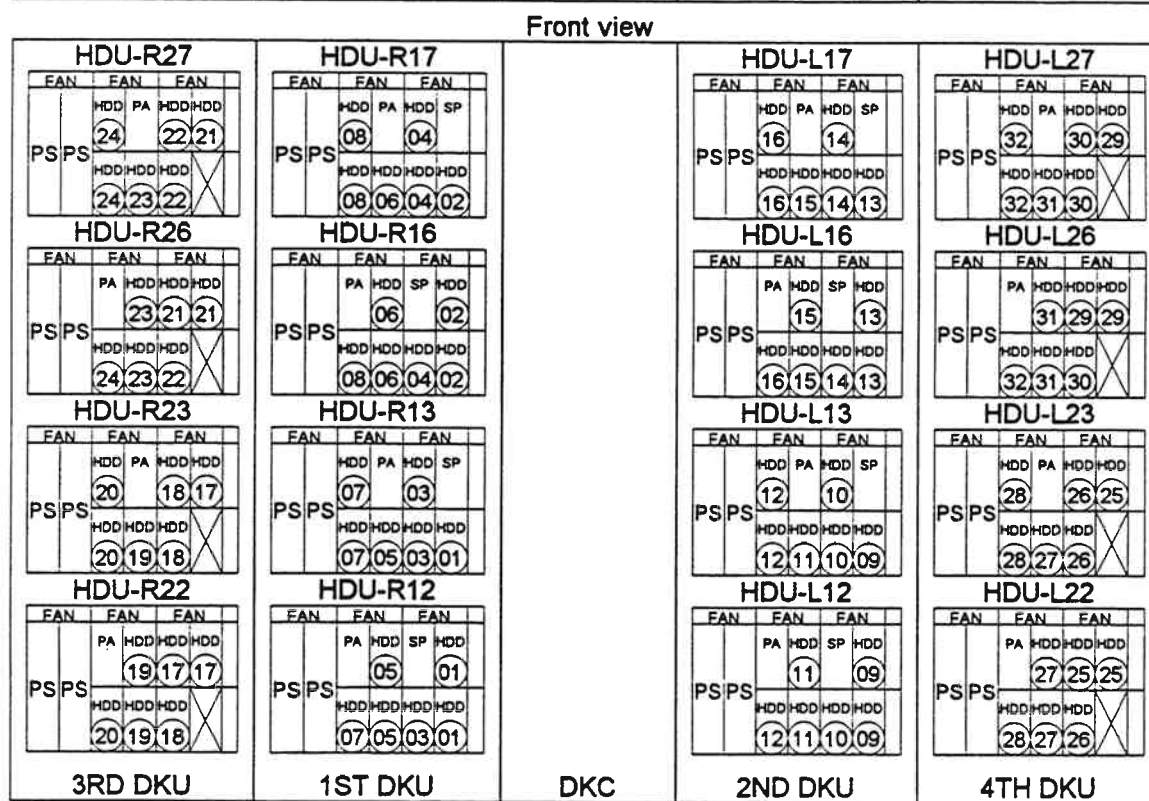
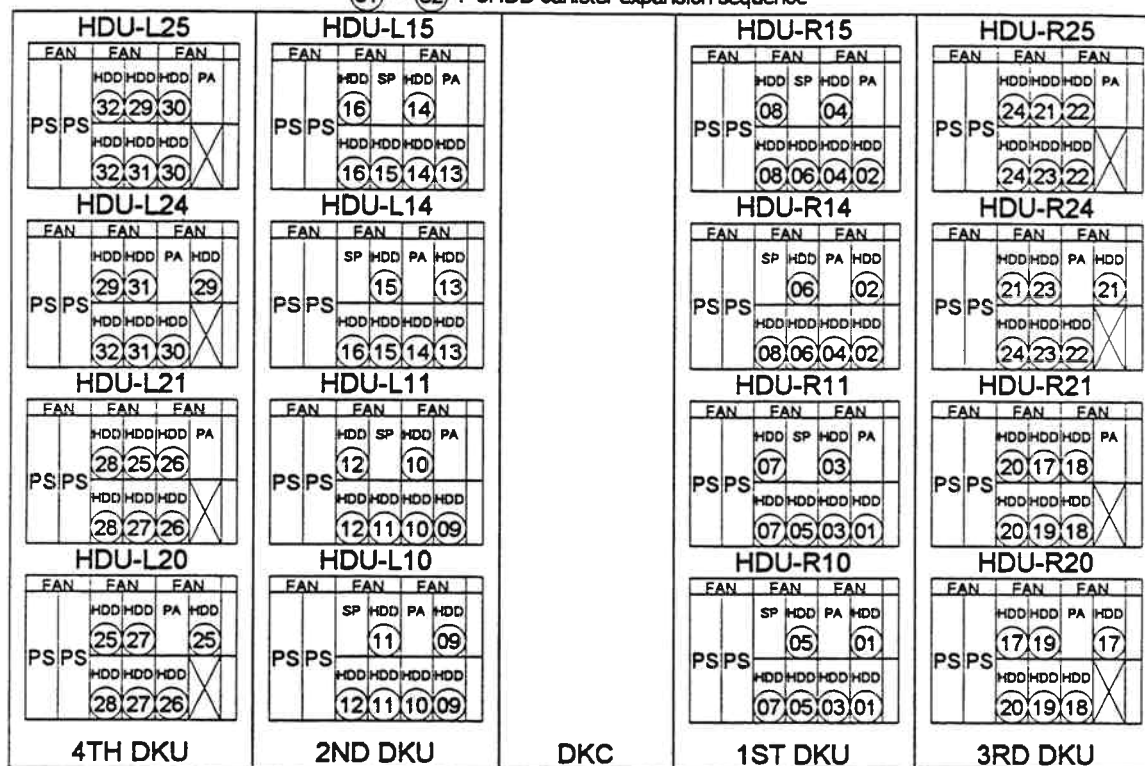
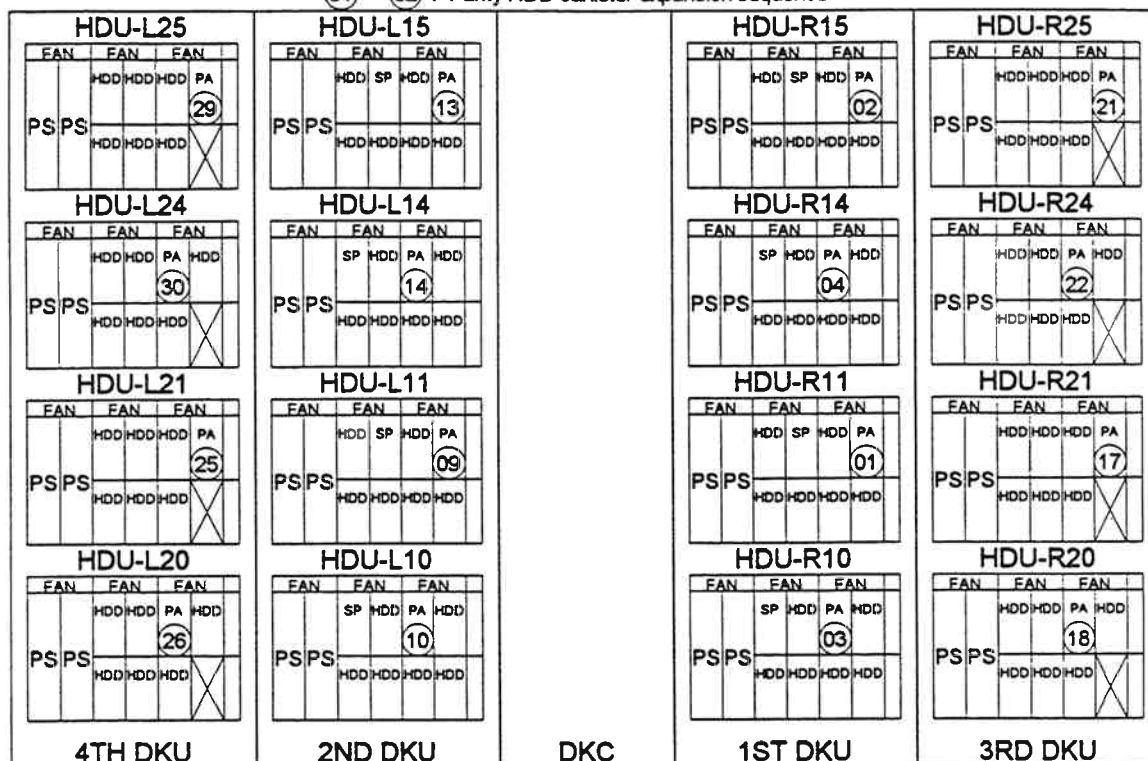


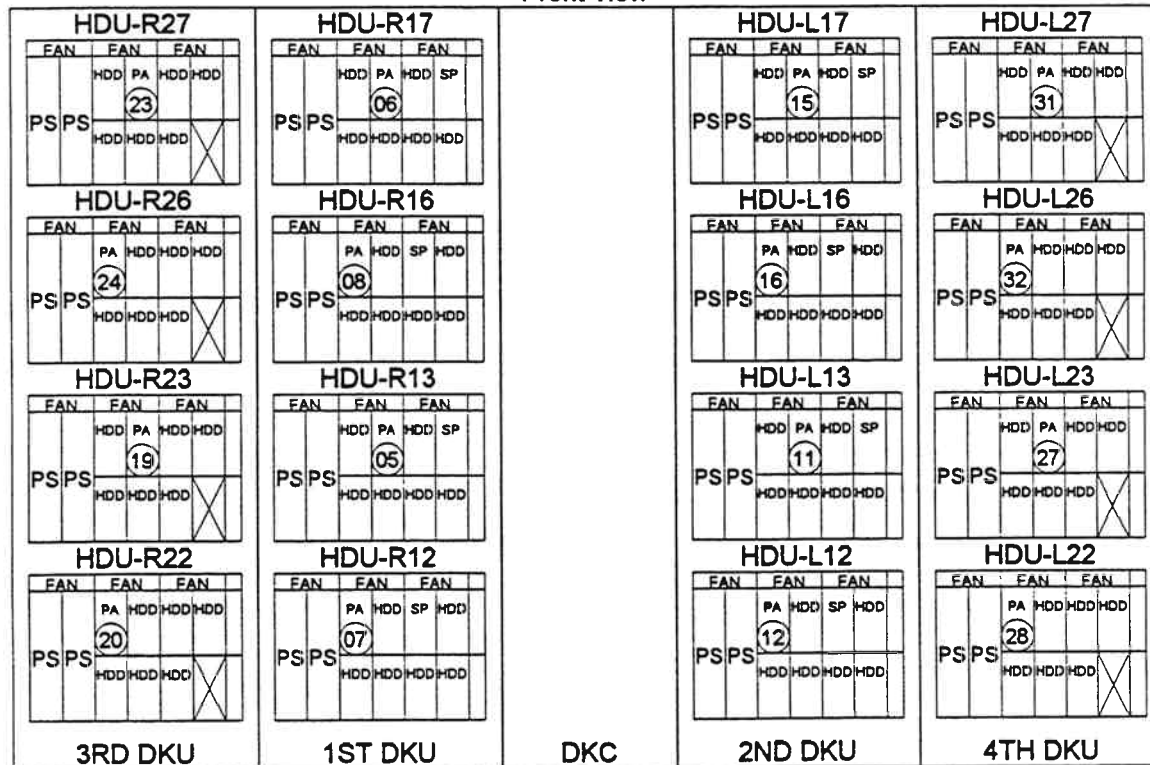
Fig. 3.1.3-1 Data Drive Expansion Sequence

| No. | Model Number  | Model Name      | Data / Parity / Spare |
|-----|---------------|-----------------|-----------------------|
| 2   | DKU-F205I-401 | 1 HDD Canisters | Parity Drive          |

(01) - (32) : Parity HDD canister expansion sequence



Front view

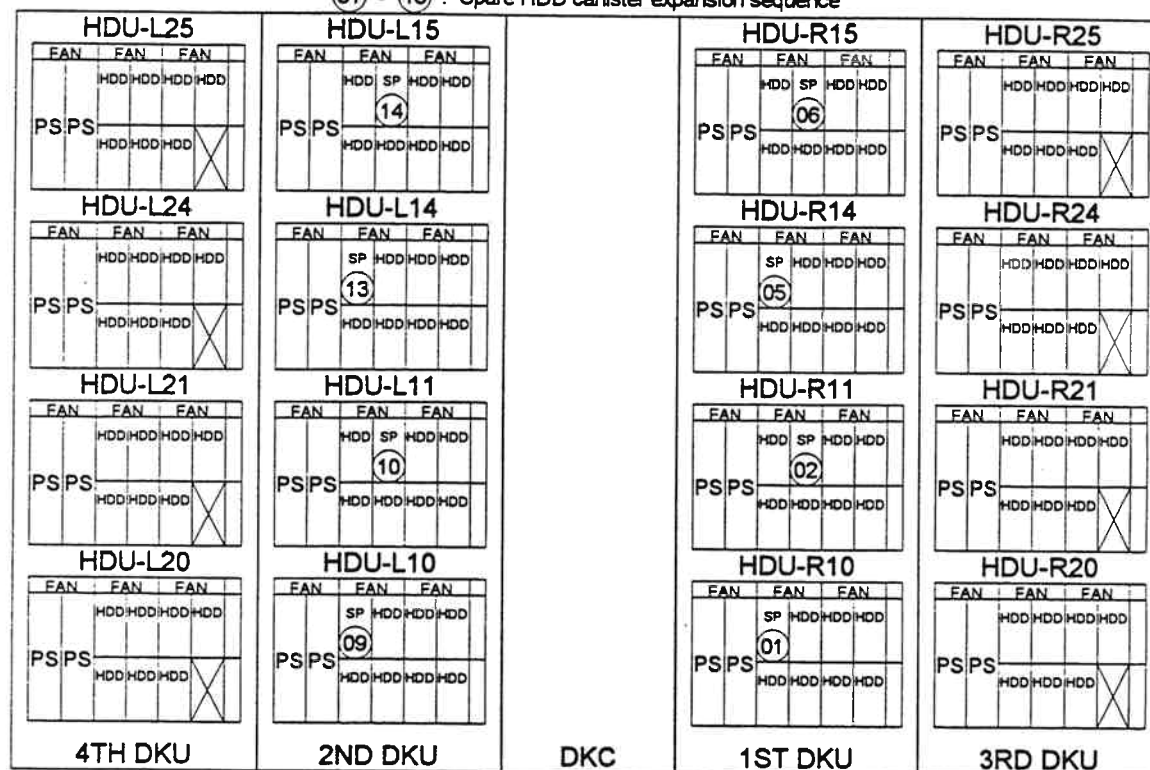


Rear view

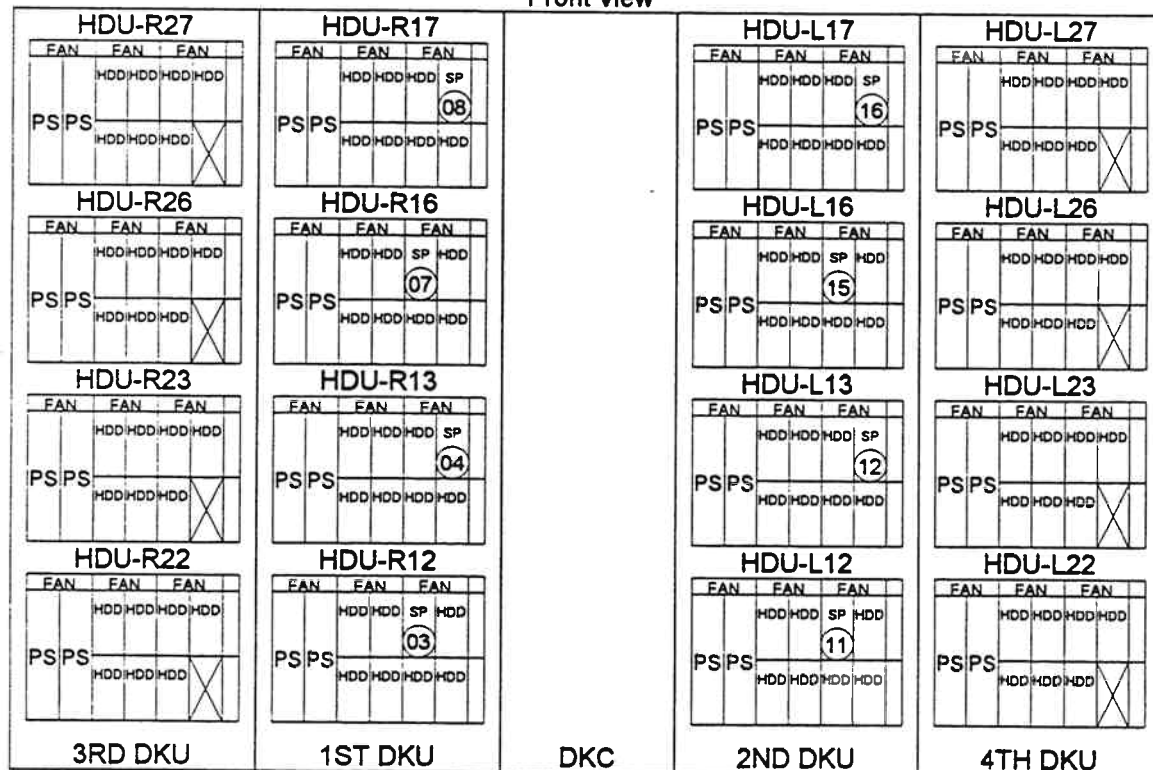
Fig. 3.1.3-2 Parity Drive Expansion Sequence

| No. | Model Number  | Model Name      | Data / Parity / Spare |
|-----|---------------|-----------------|-----------------------|
| 3   | DKU-F205I-401 | 1 HDD Canisters | Spare Drive           |

① - ⑬ : Spare HDD canister expansion sequence



Front view



Rear view

Fig. 3.1.3-3 Spare Drive Expansion Sequence

Note: Install spare drive corresponding to the number of parity groups installed in each DKU-F205-B4 option according to Fig. 3.1.3-3.

| No. | Model Number  | Model Name      | Data / Parity / Spare |
|-----|---------------|-----------------|-----------------------|
| 4   | DKU-F205I-906 | 6 HDD Canisters | Data Drive            |

① - ⑮ : 6HDD canister expansion sequence

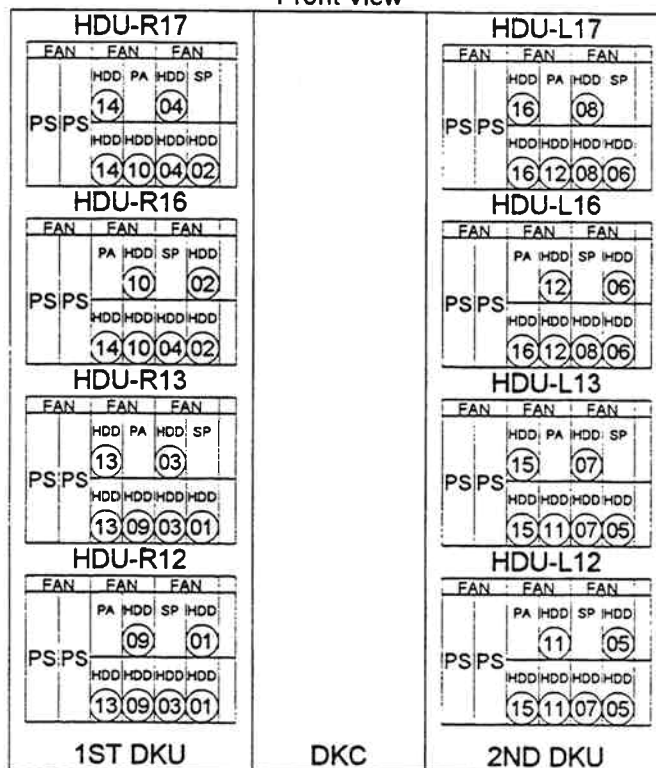
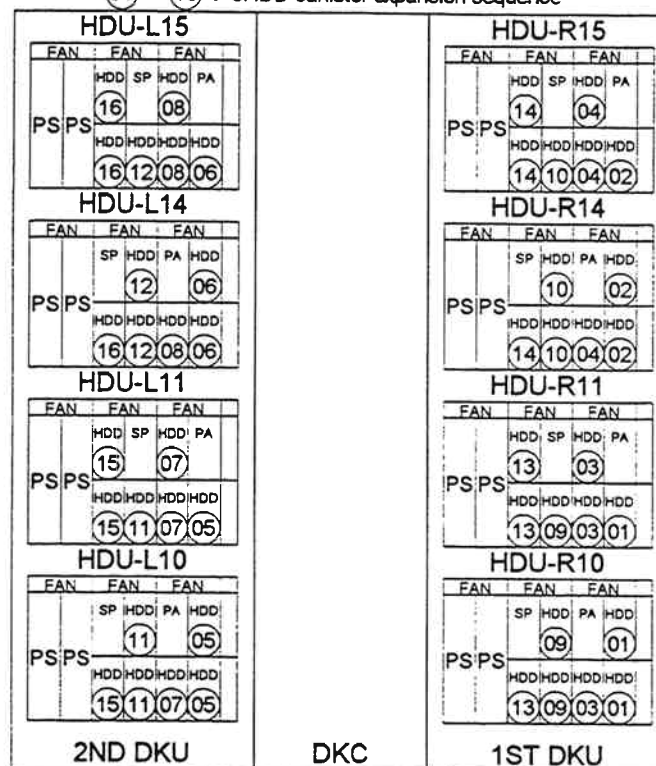


Fig. 3.1.3-4 Data Drive Expansion Sequence

| No. | Model Number  | Model Name      | Data / Parity / Spare |
|-----|---------------|-----------------|-----------------------|
| 5   | DKU-F205I-901 | 1 HDD Canisters | Parity Drive          |

① - ⑯ : Parity HDD canister expansion sequence

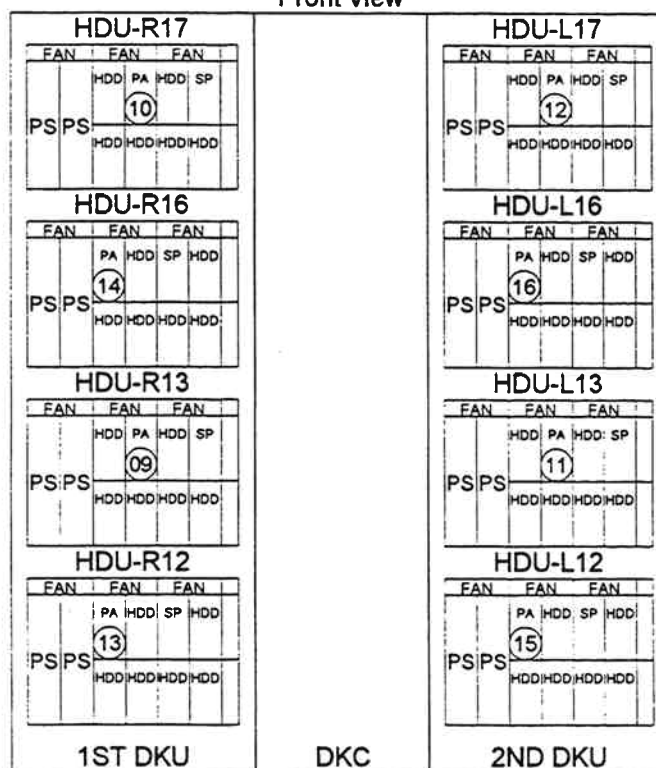
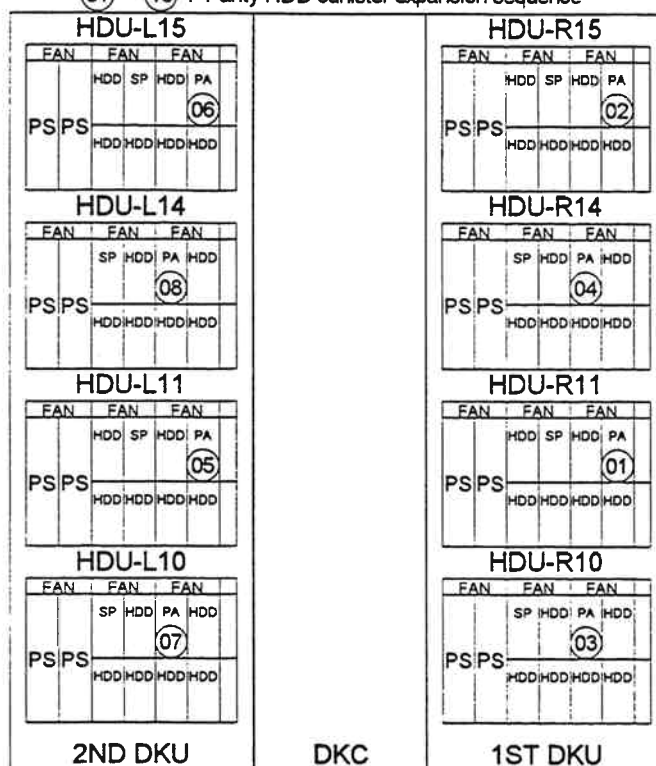


Fig. 3.1.3-5 Parity Drive Expansion Sequence

| No. | Model Number  | Model Name      | Data / Parity / Spare |
|-----|---------------|-----------------|-----------------------|
| 6   | DKU-F205I-901 | 1 HDD Canisters | Spare Drive           |

① - ⑬ : Spare HDD canister expansion sequence

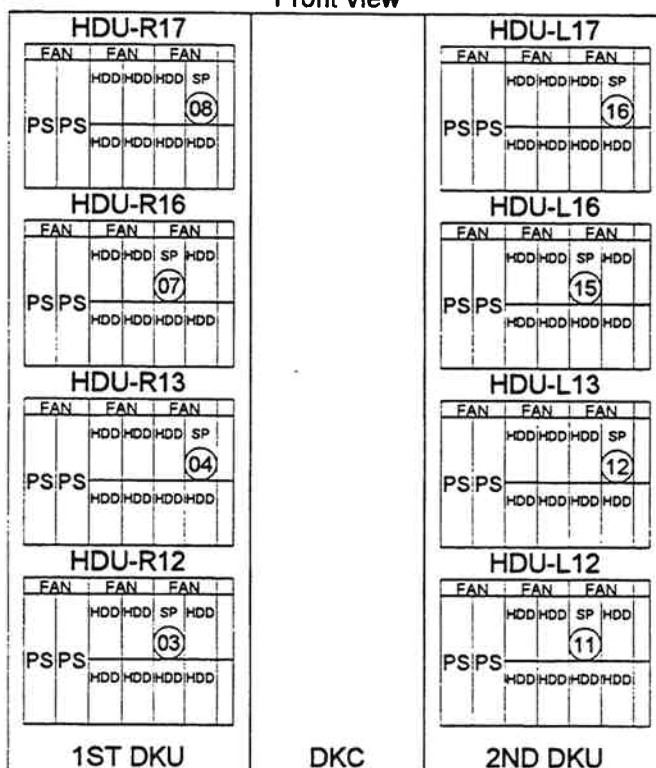
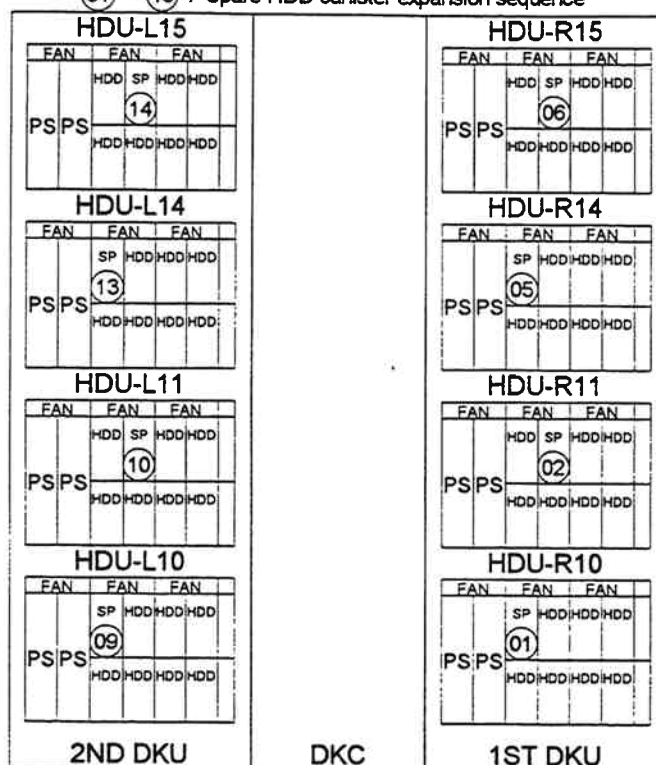
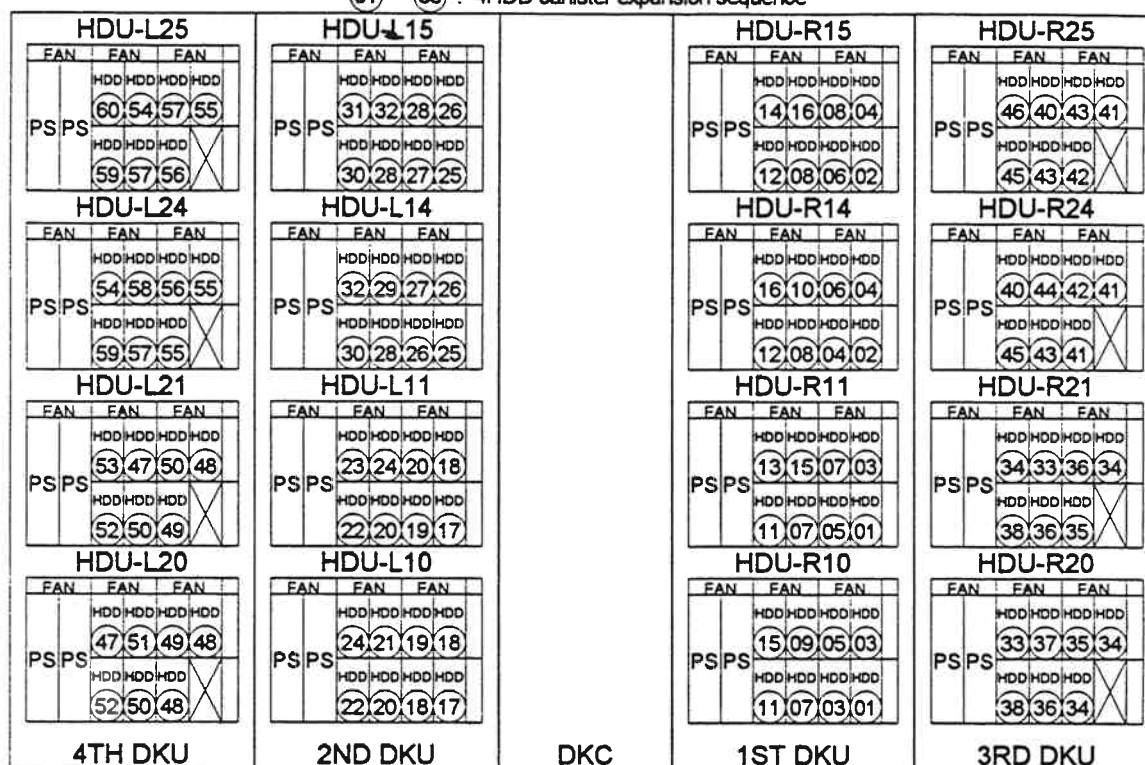


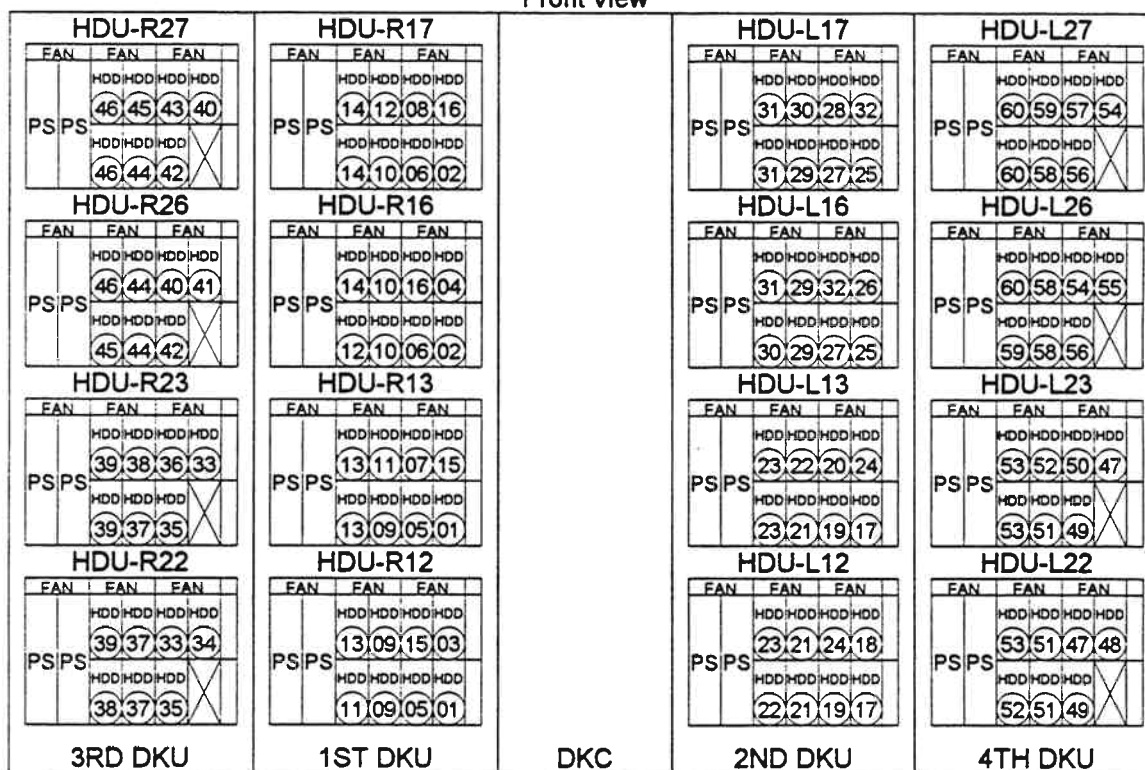
Fig. 3.1.3-6 Spare Drive Expansion Sequence

| No. | Model Number  | Model Name      | Data / Parity / Spare |
|-----|---------------|-----------------|-----------------------|
| 7   | DKU-F205I-304 | 4 HDD Canisters | Data Drive            |

(01) - (60) : 4HDD canister expansion sequence



Front view



Rear view

Fig. 3.1.3-7 Data Drive Expansion Sequence

| No. | Model Number  | Model Name      | Data / Parity / Spare |
|-----|---------------|-----------------|-----------------------|
| 8   | DKU-F205I-904 | 4 HDD Canisters | Data Drive            |

(01) - (42) : 4HDD canister expansion sequence

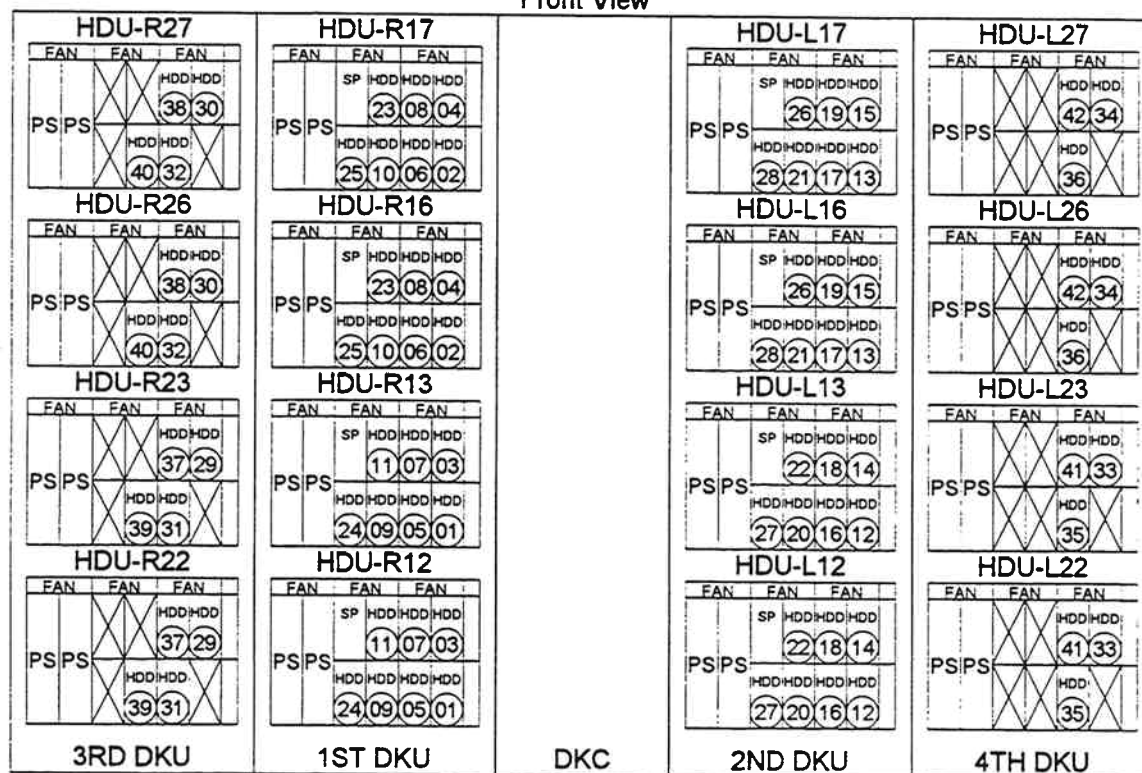
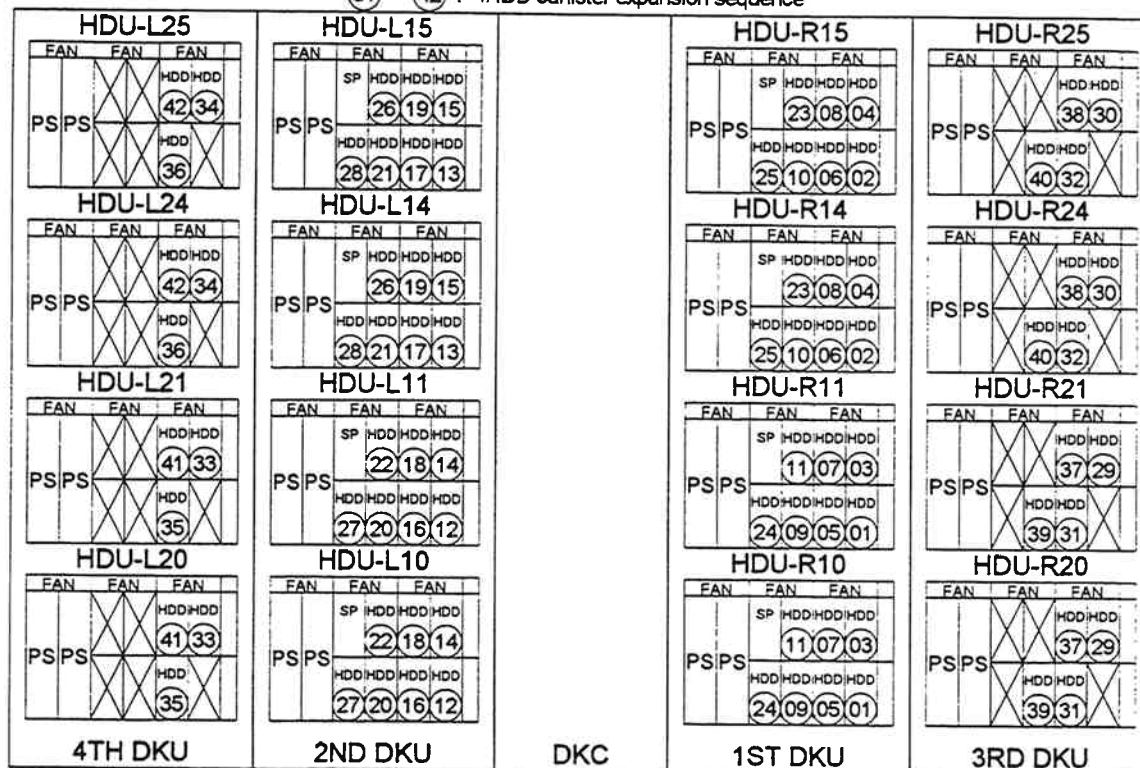


Fig. 3.1.3-8 Data Drive Expansion Sequence

| No. | Model Number  | Model Name     | Data / Parity / Spare |
|-----|---------------|----------------|-----------------------|
| 9   | DKU-F205I-901 | 1 HDD Canister | Spare Drive           |

① - ⑬ : Spare HDD canister expansion sequence

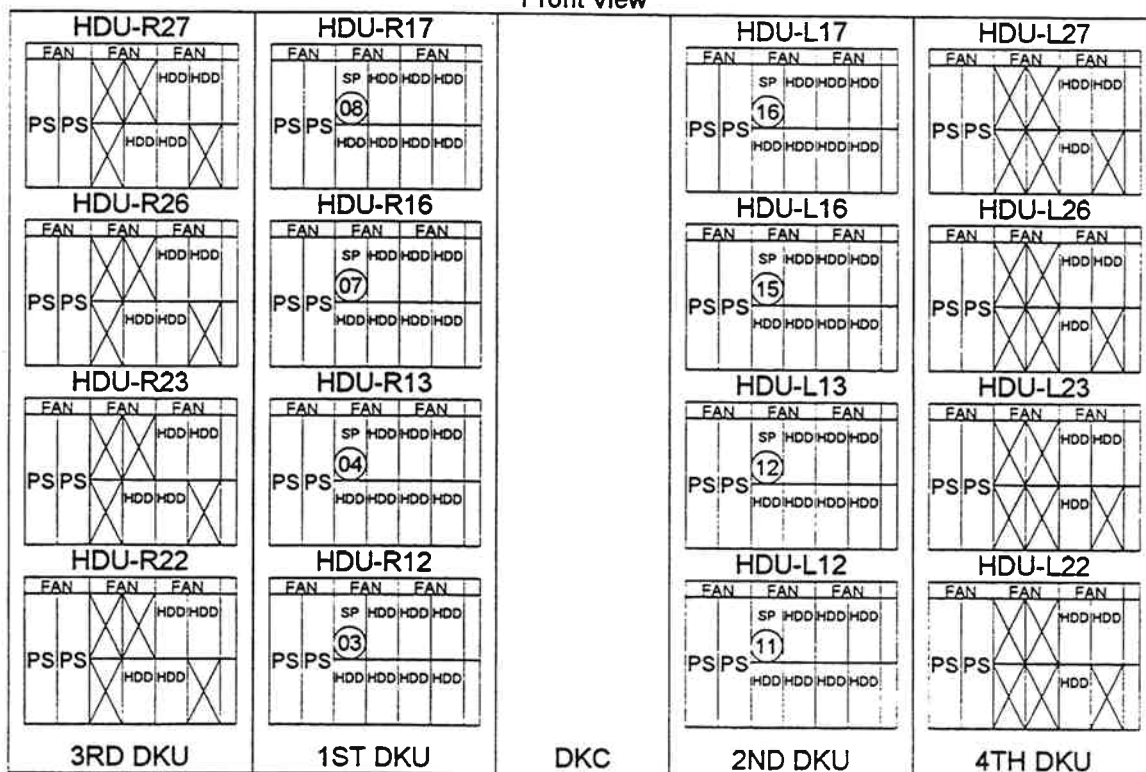
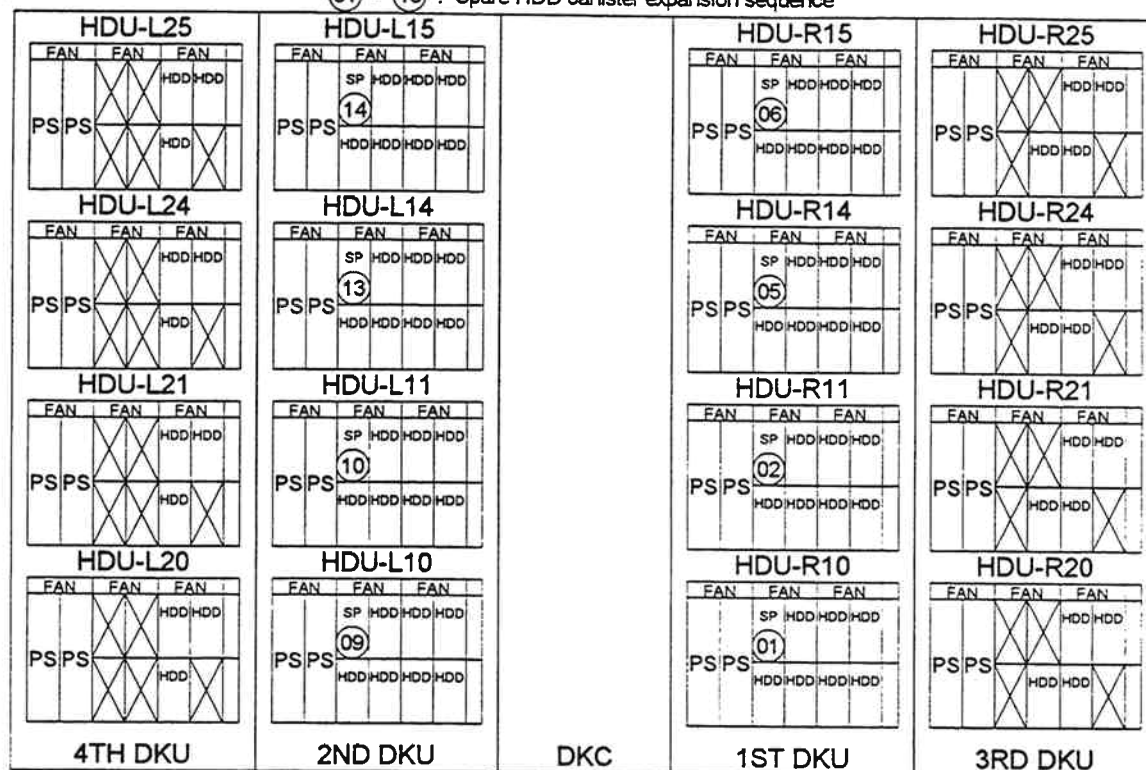


Fig. 3.1.3-9 Spare Drive Expansion Sequence

### 3.1.4 Cache Configuration Explained

Cache is configured into several patterns according to its size. This subsection explains how cache memory is installed on platters according to the size of cache memory.

#### 1. Cache sizes of 256 MB to 2048 MB

Cache Memory Modules (DKC-F210I-256) are installed on basic Cache Memory PCBs (for storing Shared Memory) that are installed as standard at Logic Box locations 'C' and 'T', in increments of 128 MB per PCB. The maximum cache capacity of a PCB is 1 GB.

| V                          | U                          | T                             | S                     | R                          | Q                          | P                          | N                          | M                          | L                          | K                          | J                          | H                          | G                          | F                          | E                          | D                     | C                             | B                          | A                          |
|----------------------------|----------------------------|-------------------------------|-----------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------|-------------------------------|----------------------------|----------------------------|
| L<br>T<br>M<br>—<br>2<br>V | L<br>T<br>M<br>—<br>2<br>U | Cache-2T<br>WP008-A / WP018-A | E<br>M<br>P<br>T<br>Y | C<br>H<br>A<br>—<br>2<br>R | C<br>H<br>A<br>—<br>2<br>Q | D<br>K<br>A<br>—<br>2<br>P | D<br>K<br>A<br>—<br>2<br>N | D<br>K<br>A<br>—<br>2<br>M | D<br>K<br>A<br>—<br>2<br>L | D<br>K<br>A<br>—<br>1<br>K | D<br>K<br>A<br>—<br>1<br>J | D<br>K<br>A<br>—<br>1<br>H | D<br>K<br>A<br>—<br>1<br>G | C<br>H<br>A<br>—<br>1<br>F | C<br>H<br>A<br>—<br>1<br>E | E<br>M<br>P<br>T<br>Y | Cache-1C<br>WP008-A / WP018-A | L<br>T<br>M<br>—<br>1<br>B | L<br>T<br>M<br>—<br>1<br>A |

Logic Box PCB locations

Fig. 3.1.4-1 Cache Installation Pattern 1

#### 2. Cache sizes of 2304 MB to 4 GB

Cache Memory PCBs (DKC-F210I-20) are installed, in addition to basic Cache Memory PCBs, at Logic Box locations 'D' and 'S'. Cache Memory Modules (DKC-F210I-256) are installed on the Cache Memory PCBs, in increments of 128 MB per PCB. The maximum cache capacity of a PCB is 1 GB.

| V                          | U                          | T                             | S                             | R                          | Q                          | P                          | N                          | M                          | L                          | K                          | J                          | H                          | G                          | F                          | E                          | D                             | C                             | B                          | A                          |
|----------------------------|----------------------------|-------------------------------|-------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-------------------------------|-------------------------------|----------------------------|----------------------------|
| L<br>T<br>M<br>—<br>2<br>V | L<br>T<br>M<br>—<br>2<br>U | Cache-2T<br>WP008-A / WP018-A | Cache-2S<br>WP008-B / WP018-B | C<br>H<br>A<br>—<br>2<br>R | C<br>H<br>A<br>—<br>2<br>Q | D<br>K<br>A<br>—<br>2<br>P | D<br>K<br>A<br>—<br>2<br>N | D<br>K<br>A<br>—<br>2<br>M | D<br>K<br>A<br>—<br>2<br>L | D<br>K<br>A<br>—<br>1<br>K | D<br>K<br>A<br>—<br>1<br>J | D<br>K<br>A<br>—<br>1<br>H | D<br>K<br>A<br>—<br>1<br>G | C<br>H<br>A<br>—<br>1<br>F | C<br>H<br>A<br>—<br>1<br>E | Cache-1D<br>WP008-B / WP018-B | Cache-1C<br>WP008-A / WP018-A | L<br>T<br>M<br>—<br>1<br>B | L<br>T<br>M<br>—<br>1<br>A |

Logic Box PCB locations

Fig. 3.1.4-2 Cache Installation Pattern 2

## 3. Cache sizes of 6 GB to 16 GB

Cache Memory PCBs, which are installed in Logic Box Fig. 3.1.4-1 and Fig. 3.1.4-2, are installed at locations 'D' and 'E' of Cache Boxes 1 and 2 and CPS PCBs are installed at Logic Box locations 'C' and 'T'. The Shared Memory Modules are not installed on Cache Memory PCB but on CPM PCB. CPS PCBs are installed at locations 'M' of Cache Boxes 1 and 2 and connected to the CPM PCBs through subedges. In addition, Cache Memory PCBs (DKC-F210I-2048) are added at Cache Box locations 'F' through 'L' in increments of 1GB x 2.

Note: Cache Boxes 1 and 2 are expanded in 1 GB units.

| V           | U           | T                                                                       | S                          | R                     | Q           | P           | N           | M           | L           | K           | J           | H           | G           | F           | E           | D                     | C                                                                       | B           | A           |
|-------------|-------------|-------------------------------------------------------------------------|----------------------------|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------------|-------------------------------------------------------------------------|-------------|-------------|
| L<br>T<br>M | L<br>T<br>M | W<br>P<br>0<br>0<br>4<br>-<br>A<br>/<br>W<br>P<br>0<br>1<br>4<br>-<br>A | C<br>P<br>M<br>-<br>1<br>T | E<br>M<br>P<br>T<br>Y | C<br>H<br>A | C<br>H<br>A | D<br>K<br>A | D<br>K<br>A | D<br>K<br>A | D<br>K<br>A | D<br>K<br>A | D<br>K<br>A | D<br>K<br>A | C<br>H<br>A | C<br>H<br>A | E<br>M<br>P<br>T<br>Y | W<br>P<br>0<br>0<br>4<br>-<br>A<br>/<br>W<br>P<br>0<br>1<br>4<br>-<br>A | L<br>T<br>M | L<br>T<br>M |
| 2<br>V      | 2<br>U      |                                                                         |                            |                       | 2<br>R      | 2<br>Q      | 2<br>P      | 2<br>M      | 2<br>L      | 1<br>K      | 1<br>J      | 1<br>H      | 1<br>G      | 1<br>F      | 1<br>E      |                       |                                                                         | 1<br>B      | 1<br>A      |

Logic Box PCB locations

| N                               | M                                                   | L                                                   | K                                                   | J                                                   | H                                                   | G                                                   | F                                                   | E                                                   | D                                                   | C                               | B                                         | A                                         | N                                    | M                                         | L                                                   | K                                                   | J                                                   | H                                                   | G                                                   | F                                                   | E                                                   | D                                                   | C                               | B                                         | A                                         |
|---------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|---------------------------------|-------------------------------------------|-------------------------------------------|--------------------------------------|-------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|---------------------------------|-------------------------------------------|-------------------------------------------|
| C<br>T<br>M<br>-<br>C<br>1<br>N | C<br>W<br>P<br>S<br>-<br>C<br>2<br>M<br>/<br>B<br>/ | C<br>W<br>P<br>0<br>0<br>8<br>-<br>C<br>1<br>L<br>/ | C<br>W<br>P<br>0<br>0<br>8<br>-<br>C<br>1<br>K<br>/ | C<br>W<br>P<br>0<br>0<br>8<br>-<br>C<br>1<br>J<br>/ | C<br>W<br>P<br>0<br>0<br>8<br>-<br>C<br>1<br>H<br>/ | C<br>W<br>P<br>0<br>0<br>8<br>-<br>C<br>1<br>G<br>/ | C<br>W<br>P<br>0<br>0<br>8<br>-<br>C<br>1<br>F<br>/ | C<br>W<br>P<br>0<br>0<br>8<br>-<br>C<br>1<br>E<br>/ | C<br>W<br>P<br>0<br>0<br>8<br>-<br>C<br>1<br>D<br>/ | C<br>T<br>M<br>-<br>C<br>1<br>C | 5<br>V<br>P<br>S<br>-<br>C<br>1<br>1<br>/ | 5<br>V<br>P<br>S<br>-<br>C<br>1<br>0<br>/ | T<br>E<br>R<br>M<br>I<br>N<br>A<br>T | C<br>W<br>P<br>S<br>-<br>C<br>1<br>M<br>/ | C<br>W<br>P<br>0<br>0<br>8<br>-<br>C<br>2<br>L<br>/ | C<br>W<br>P<br>0<br>0<br>8<br>-<br>C<br>2<br>K<br>/ | C<br>W<br>P<br>0<br>0<br>8<br>-<br>C<br>2<br>J<br>/ | C<br>W<br>P<br>0<br>0<br>8<br>-<br>C<br>2<br>H<br>/ | C<br>W<br>P<br>0<br>0<br>8<br>-<br>C<br>2<br>G<br>/ | C<br>W<br>P<br>0<br>0<br>8<br>-<br>C<br>2<br>F<br>/ | C<br>W<br>P<br>0<br>0<br>8<br>-<br>C<br>2<br>E<br>/ | C<br>W<br>P<br>0<br>0<br>8<br>-<br>C<br>2<br>D<br>/ | C<br>T<br>M<br>-<br>C<br>2<br>C | 5<br>V<br>P<br>S<br>-<br>C<br>2<br>1<br>/ | 5<br>V<br>P<br>S<br>-<br>C<br>2<br>0<br>/ |
| B                               | B                                                   | B                                                   | B                                                   | B                                                   | B                                                   | B                                                   | B                                                   | B                                                   | A                                                   |                                 | 3<br>V<br>P<br>S<br>-<br>C<br>1<br>1<br>/ | 3<br>V<br>P<br>S<br>-<br>C<br>1<br>0<br>/ | B                                    | B                                         | B                                                   | B                                                   | B                                                   | B                                                   | B                                                   | B                                                   | B                                                   | A                                                   |                                 | 3<br>V<br>P<br>S<br>-<br>C<br>2<br>1<br>/ | 3<br>V<br>P<br>S<br>-<br>C<br>2<br>0<br>/ |

Cache Box 1 PCB locations

Cache Box 2 PCB locations

Fig. 3.1.4-3 Cache Installation Pattern 3

### 3.1.5 Installation/de-installation of Shared Memory

Shared Memory need be expanded as Cache Memory is expanded. The relationship between the sizes of Cache Memory and Shared Memory is listed in Table 3.1.5-1, Table 3.1.5-2, Table 3.1.5-3 or Table 3.1.5-4.

Table 3.1.5-1 Sizes of Cache Memory and Shared Memory  
(DK306-35/45, DK308-90 except 3390-9 and RAID1)

| Item No. | Cache Memory capacity | Shared Memory capacity | Number of DKC-F210I-32/<br>DKC-F310I-32 sets additional | Remarks                                                                     |
|----------|-----------------------|------------------------|---------------------------------------------------------|-----------------------------------------------------------------------------|
| 1        | 256 MB to 1024 MB     | 32 MB                  | Basic                                                   | Cache is expanded in a 256 MB unit up to 4GB, then in a 2GB unit up to 6GB. |
| 2        | 1280 MB to 3072 MB    | 64 MB                  | 1 set                                                   |                                                                             |
| 3        | 3328 MB to 6 GB       | 96 MB                  | 2 sets                                                  |                                                                             |
| 4        | 8 GB                  | 128 MB                 | 3 sets                                                  |                                                                             |
| 5        | 10 GB                 | 160 MB                 | 4 sets                                                  |                                                                             |
| 6        | 12 GB                 | 192 MB                 | 5 sets                                                  |                                                                             |
| 7        | 14 GB                 | 224 MB                 | 6 sets                                                  |                                                                             |
| 8        | 16 GB                 | 256 MB                 | 7 sets                                                  |                                                                             |

Table 3.1.5-2 Sizes of Cache Memory and Shared Memory (DK308-90 with 3390-9, RAID1)

| Item No. | Cache Memory capacity | Shared Memory capacity | Number of DKC-F210I-32/<br>DKC-F310I-32 sets additional | Remarks |
|----------|-----------------------|------------------------|---------------------------------------------------------|---------|
| 1        | 256 MB to 1024 MB     | 64 MB                  | 1 set                                                   |         |
| 2        | 1280 MB to 3072 MB    | 96 MB                  | 2 sets                                                  |         |
| 3        | 3328 MB to 6 GB       | 128 MB                 | 3 sets                                                  |         |
| 4        | 8 GB                  | 160 MB                 | 4 sets                                                  |         |
| 5        | 10 GB                 | 192 MB                 | 5 sets                                                  |         |
| 6        | 12 GB                 | 224 MB                 | 6 sets                                                  |         |
| 7        | 14 GB                 | 256 MB                 | 7 sets                                                  |         |

Table 3.1.5-3 Sizes of Cache Memory and Shared Memory (RAID1 TPF)

| Item No. | Cache Memory capacity | Shared Memory capacity | Number of DKC-F210I-32/<br>DKC-F310I-32 sets additional | Remarks |
|----------|-----------------------|------------------------|---------------------------------------------------------|---------|
| 1        | 256 MB to 1024 MB     | 96 MB                  | 2 sets                                                  |         |
| 2        | 1280 MB to 3072 MB    | 128 MB                 | 3 sets                                                  |         |
| 3        | 3328 MB to 6 GB       | 160 MB                 | 4 sets                                                  |         |
| 4        | 8 GB                  | 192 MB                 | 5 sets                                                  |         |
| 5        | 10 GB                 | 224 MB                 | 6 sets                                                  |         |
| 6        | 12 GB                 | 256 MB                 | 7 sets                                                  |         |

Table 3.1.5-4 Sizes of Cache Memory and Shared Memory (RAID5 TPF)

| Item No. | Cache Memory capacity | Shared Memory capacity | Number of DKC-F210I-32/<br>DKC-F310I-32 sets additional | Remarks |
|----------|-----------------------|------------------------|---------------------------------------------------------|---------|
| 1        | 256 MB to 1024 MB     | 64 MB                  | 1 set                                                   |         |
| 2        | 1280 MB to 3072 MB    | 96 MB                  | 2 sets                                                  |         |
| 3        | 3328 MB to 6 GB       | 128 MB                 | 3 sets                                                  |         |
| 4        | 8 GB                  | 160 MB                 | 4 sets                                                  |         |
| 5        | 10 GB                 | 192 MB                 | 5 sets                                                  |         |
| 6        | 12 GB                 | 224 MB                 | 6 sets                                                  |         |

Table 3.1.5-5 Sizes of Cache Memory and Shared Memory (DK309-180)

| Item No. | Cache Memory capacity | Shared Memory capacity | Number of DKC-F210I-32/<br>DKC-F310I-32 sets additional | Remarks |
|----------|-----------------------|------------------------|---------------------------------------------------------|---------|
| 1        | 256 MB to 1024 MB     | 64 MB                  | 1 set                                                   |         |
| 2        | 1280 MB to 3072 MB    | 96 MB                  | 2 sets                                                  |         |
| 3        | 3328 MB to 6 GB       | 128 MB                 | 3 sets                                                  |         |
| 4        | 8 GB                  | 160 MB                 | 4 sets                                                  |         |
| 5        | 10 GB                 | 192 MB                 | 5 sets                                                  |         |
| 6        | 12 GB                 | 224 MB                 | 6 sets                                                  |         |
| 7        | 14 GB                 | 256 MB                 | 7 sets                                                  |         |

### 3.1.6 Subsystem Configuration Example

Subsystem Configuration Example is different depending on SVP version.

SVP version : Before 01-02-XX

For this version of Subsystem Configuration Example, refer to Subsystem Configuration Example (SVP Version : Before 01-02-XX).

SVP version : From 01-03-XX to 01-04-XX

For this version of Subsystem Configuration Example, refer to Subsystem Configuration Example (SVP Version : From 01-03-XX to 01-04-XX).

SVP version : After 01-05-XX

For this version of Subsystem Configuration Example, refer to Subsystem Configuration Example (SVP Version : After 01-05-XX).

## 3.1.6.1 Subsystem Configuration Example (SVP version : Before 01-02-XX)

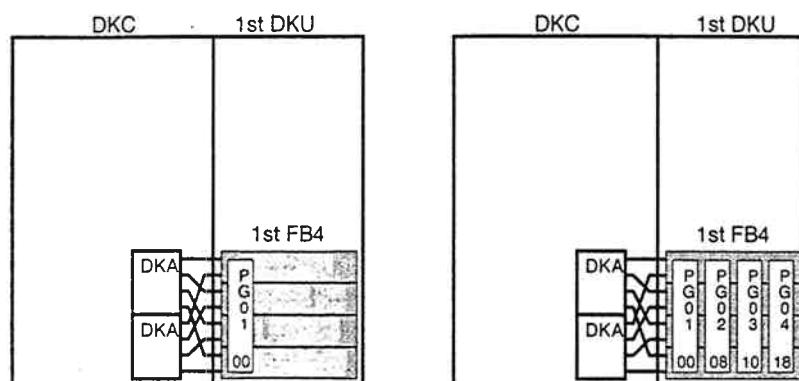
: HDU BOX

PGXX: Parity Group Number XX

A two-dedit in PG means the front L-DEV address in the parity group.

1 PG = 8 L-DEV = 7 P-DEV (HDD)

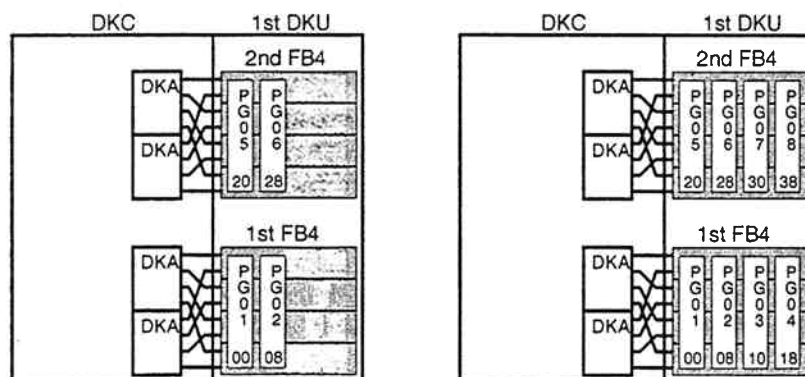
## ① First FB4(HDU BOX) installation



You should set one of the following CU addresses during parallel channel installation.

00,20,40,60,80,A0,C0,E0

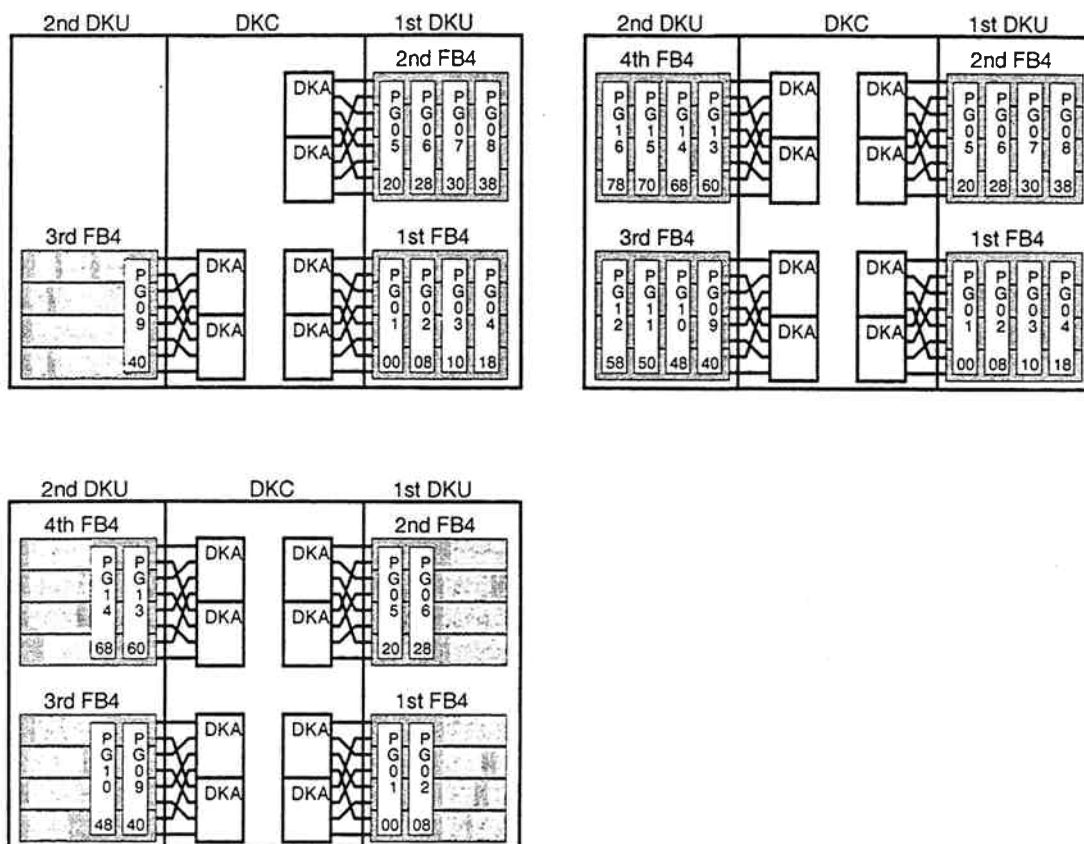
## ② Second FB4 installation



You should set one of the following CU addresses during parallel channel installation.

00,40,80,C0

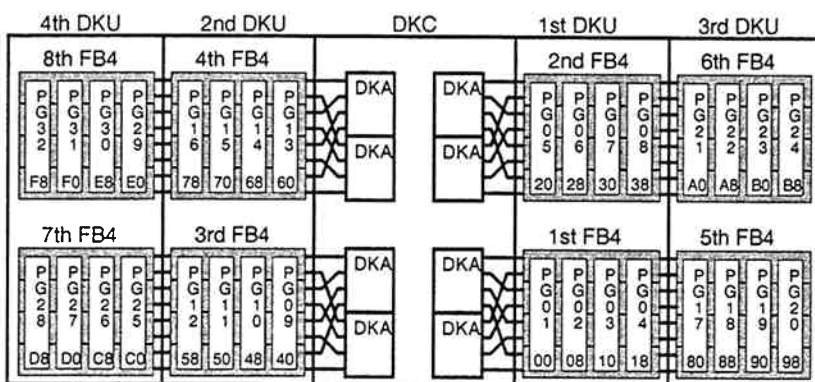
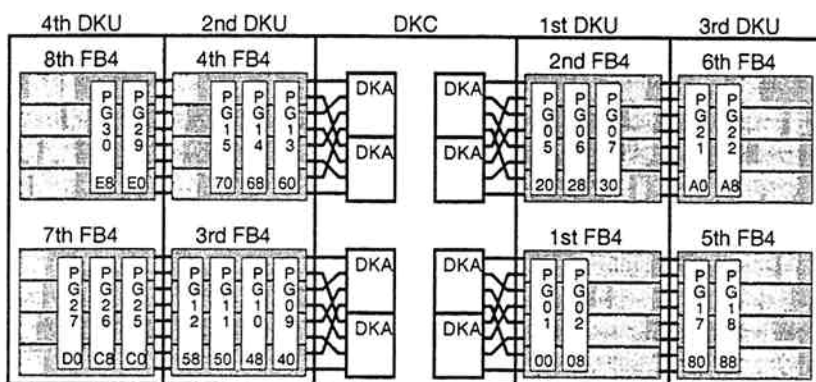
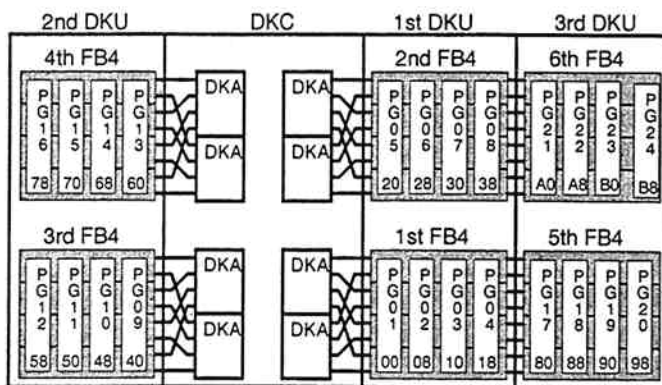
## ③ Third or Fourth FB4 installation



You should set one of the following CU addresses during parallel channel installation.

00,80

## ④ Fifth, Sixth, Seventh or Eighth FB4 installation



CU address setting is not necessary during parallel channel installation.

### 3.1.6.2 Subsystem Configuration Example (SVP version : From 01-03-XX to 01-04-XX)

During System Configuration setup, one must be aware of drive configuration, logical device No., and CU address. A number of logical volume per 1 parity group is depending on the combination of drive type and emulation type of the system configuration and it is possible to setup multiple logical volumes. For this reason, one must be aware of host generation configuration (logical device address setup : 32/64 addressing) when setting system configuration such as logical device address and number of logical device per parity group.

This supports the following DKU emulation types and their intermix per 2 DKA configuration. Spare disk can be shared for all emulation types.

Table 3.1.6.2-1 shows a number of logical device corresponding to drive/emulation types.

Table 3.1.6.2-1 Number of logical device corresponding to drive/emulation types

| Drive type | Emulation type | Nuber of logical device per parity group |
|------------|----------------|------------------------------------------|
| DK306-45   | 3390-3         | 8                                        |
|            | 3390-1,2       | 12 or 8                                  |
|            | 3380-J,E,K     |                                          |

#### (1) 3390-3 System Configuration Example

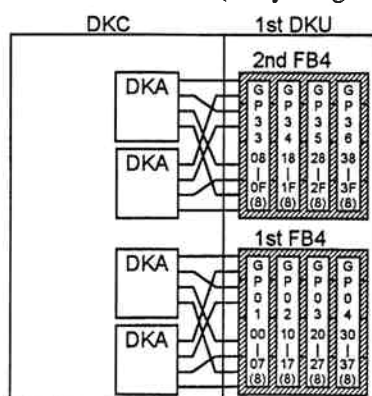
GP: GROUP No. (Corresponding to parity group No. displayed on SVP panel)

There is 1 ~ 256 GROUP No. and an address of GROUP No. is assigned every FB4 in the following way.

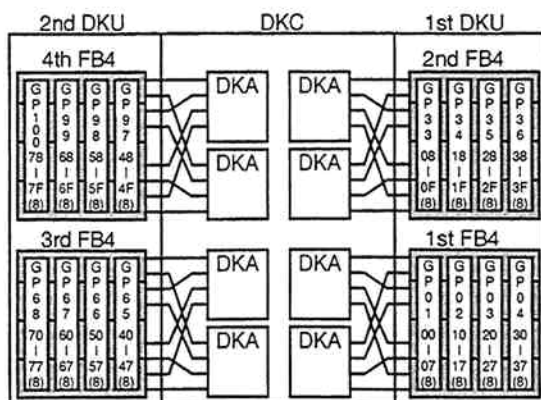
| FB4 | GROUP No. Address |                      |
|-----|-------------------|----------------------|
| 1st | 1 ~ 4             | (5 ~ 32 Not used)    |
| 2nd | 33 ~ 36           | (37 ~ 64 Not used)   |
| 3rd | 65 ~ 68           | (69 ~ 96 Not used)   |
| 4th | 97 ~ 100          | (101 ~ 128 Not used) |
| 5th | 129 ~ 132         | (133 ~ 160 Not used) |
| 6th | 161 ~ 164         | (165 ~ 192 Not used) |
| 7th | 193 ~ 196         | (197 ~ 224 Not used) |
| 8th | 225 ~ 228         | (229 ~ 256 Not used) |

XX-XX in GPXX shows a first logical device address and a last logical device address of parity group  
A value ( ) shows a number of logical device.

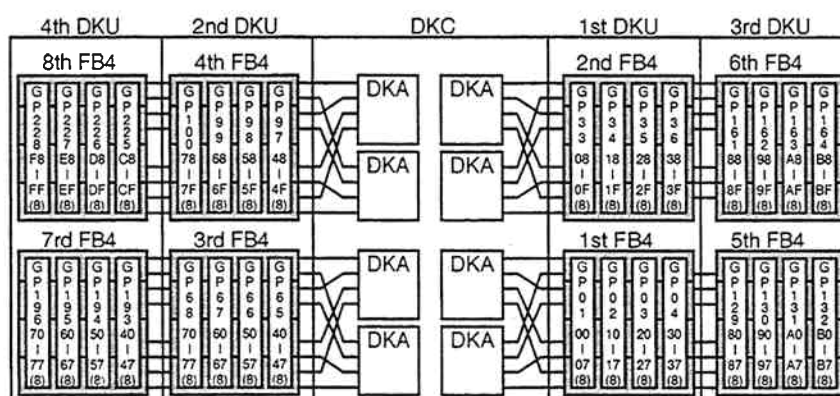
#### ① Second FB4 installtion (every 8 logical device)



## ② Fourth FB4 installation (every 8 logical devices)



## ③ Maximum FB4 installation (every 8 logical devices)



## (2) 3380-J/E/K, 3390-1/2 Emulation System Configuration Example

GP: GROUP No. (corresponding to parity group No. displayed on SVP panel)

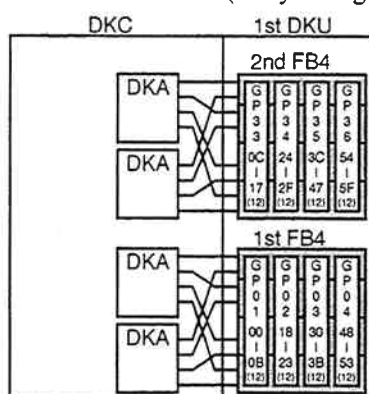
There is 1 ~ 256 GROUP No. and an address of GROUP No. is assigned every FB4 in the following way.

| FB4 | GROUP No. Address |                      |
|-----|-------------------|----------------------|
| 1st | 1 ~ 4             | (5 ~ 32 Not used)    |
| 2nd | 33 ~ 36           | (37 ~ 64 Not used)   |
| 3rd | 65 ~ 68           | (69 ~ 96 Not used)   |
| 4th | 97 ~ 100          | (101 ~ 128 Not used) |
| 5th | 129 ~ 132         | (133 ~ 160 Not used) |
| 6th | 161 ~ 164         | (165 ~ 192 Not used) |
| 7th | 193 ~ 196         | (197 ~ 224 Not used) |
| 8th | 225 ~ 228         | (229 ~ 256 Not used) |

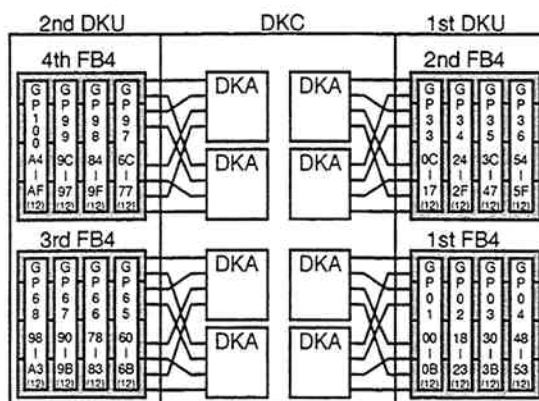
XX-XX in GPXX shows a first logical device address and a last logical device address of parity group.

A value ( ) shows a number of logical device.

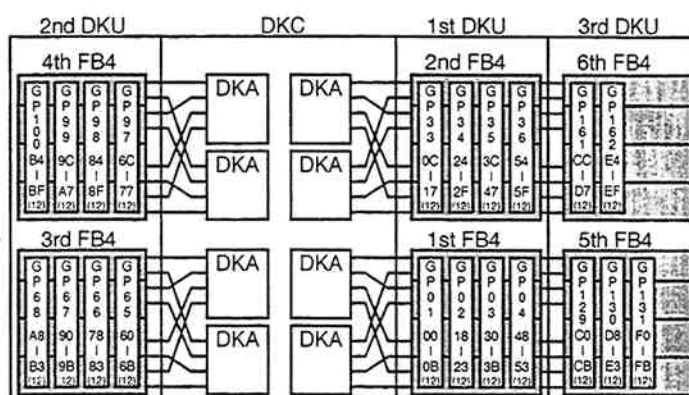
## ① Second FB4 installation (every 12 logical devices)



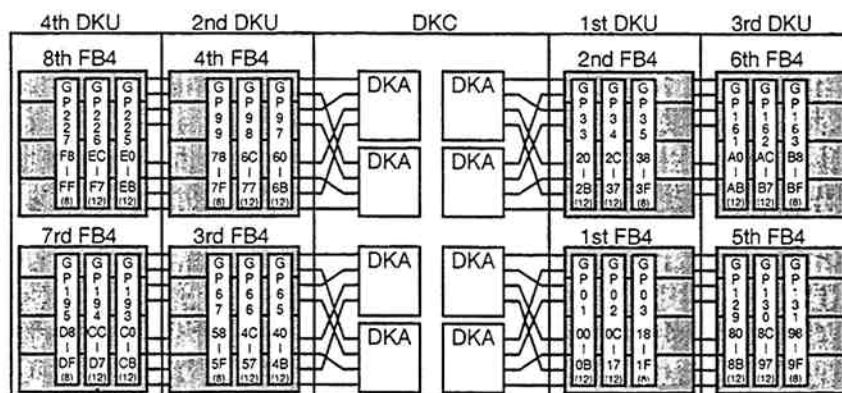
## ② Forth FB4 installation (every 12 logical devices)



## ③ Maximum FB4 installation (every 12 logical devices)



## ④ Maximum FB4 installation (12 and 8 logical devices)



## (3) 3380/3390 Emulation Intermix

You should be aware that any combination of at least two emulation types should not be addressed within the same 32-address space.

GP: GROUP No. (corresponding to parity group No. displayed on SVP panel)

There is 1 ~ 256 GROUP No. and an address of GROUP No. is assigned every FB4 in the following way.

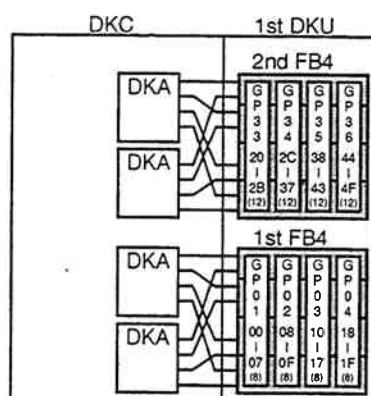
| FB4 | GROUP No. Address |                      |
|-----|-------------------|----------------------|
| 1st | 1 ~ 4             | (5 ~ 32 Not used)    |
| 2nd | 33 ~ 36           | (37 ~ 64 Not used)   |
| 3rd | 65 ~ 68           | (69 ~ 96 Not used)   |
| 4th | 97 ~ 100          | (101 ~ 128 Not used) |
| 5th | 129 ~ 132         | (133 ~ 160 Not used) |
| 6th | 161 ~ 164         | (165 ~ 192 Not used) |
| 7th | 193 ~ 196         | (197 ~ 224 Not used) |
| 8th | 225 ~ 228         | (229 ~ 256 Not used) |

XX-XX in GPXX shows a first logical device address and a last logical device address of parity group.  
A value ( ) shows a number of logical device.

① Second FB4 installation (a.b:Definition of Host Address 96, c.d:Definition of Host Address 64)

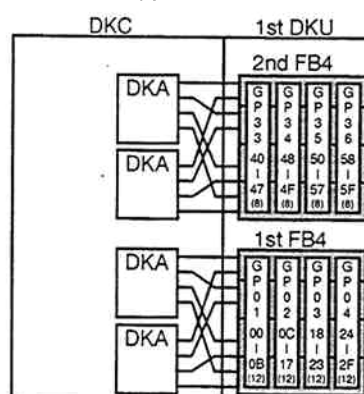
a. 2ndFB4-3380

1stFB4-3390



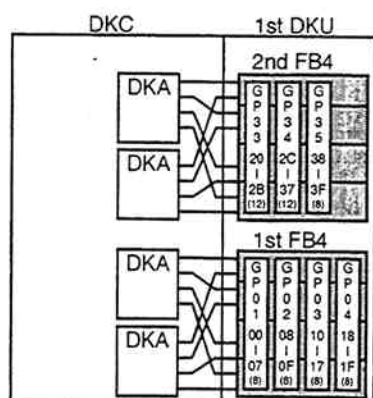
b. 2ndFB4-3390

1stFB4-3380



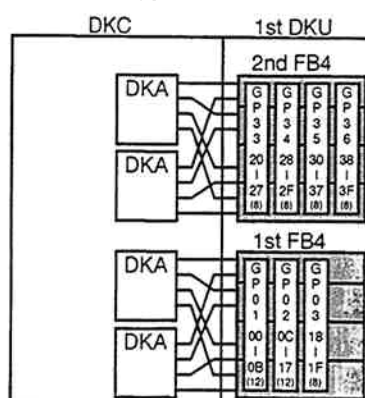
c. 2ndFB4-3380

1stFB4-3390



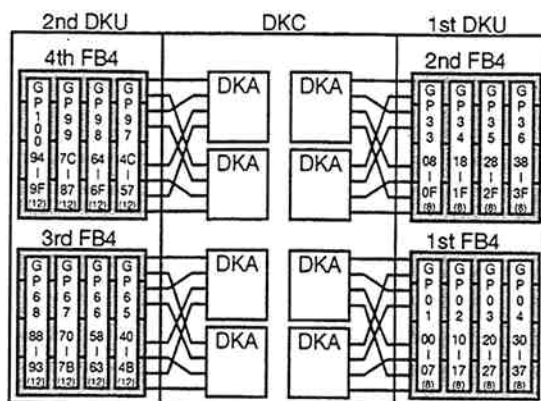
d. 2ndFB4-3390

1stFB4-3380

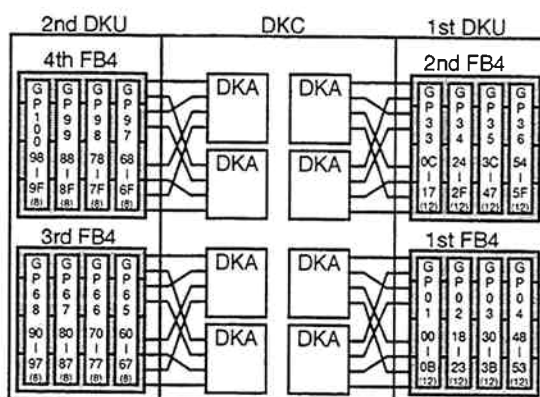


② Fourth FB4 installation (a,b : Definition of Host Address 160)

- a. 4thFB4-3380      2ndFB4-3390  
3rdFB4-3380      1stFB4-3390

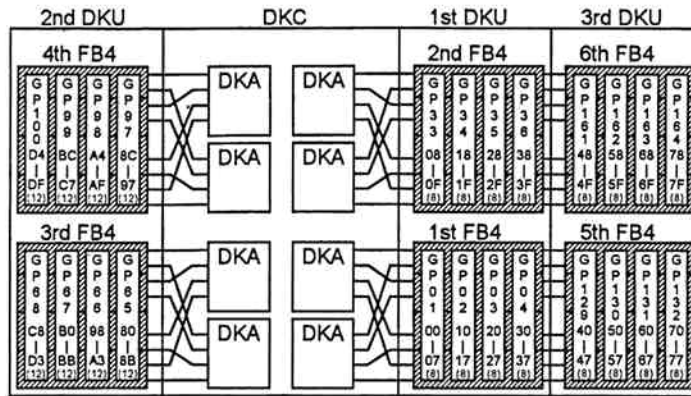


- b. 4thFB4-3390      2ndFB4-3380  
3rdFB4-3390      1stFB4-3380

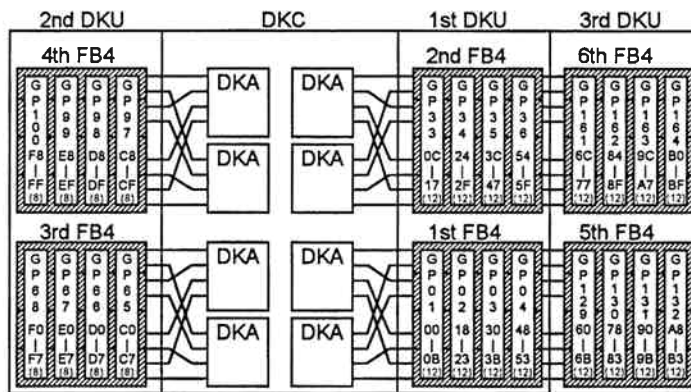


## ③ Sixth FB4 Installation (a : Definition of Host Address 96, b,c : Definition of Host Address 256)

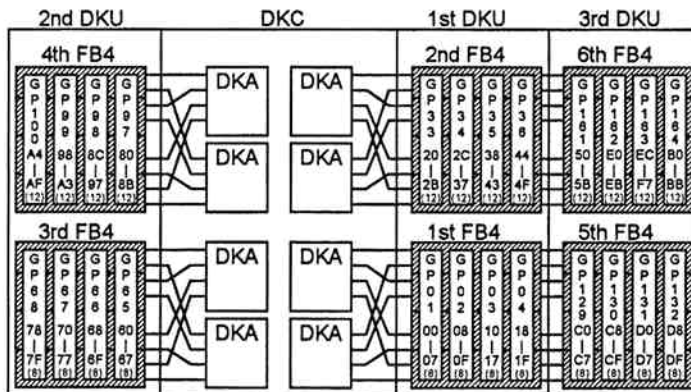
- a. 4thFB4-3380      2ndFB4-3390      6thFB4-3390  
 3rdFB4-3380      1stFB4-3390      5thFB4-3390



- b. 4thFB4-3390      2ndFB4-3380      6thFB4-3380  
 3rdFB4-3390      1stFB4-3380      5thFB4-3380

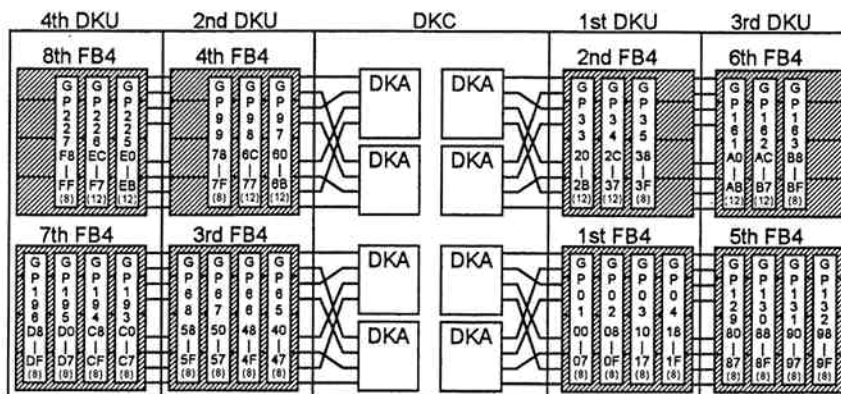


- c. 4thFB4-3380      2ndFB4-3380      6thFB4-3380  
 3rdFB4-3390      1stFB4-3390      5thFB4-3390

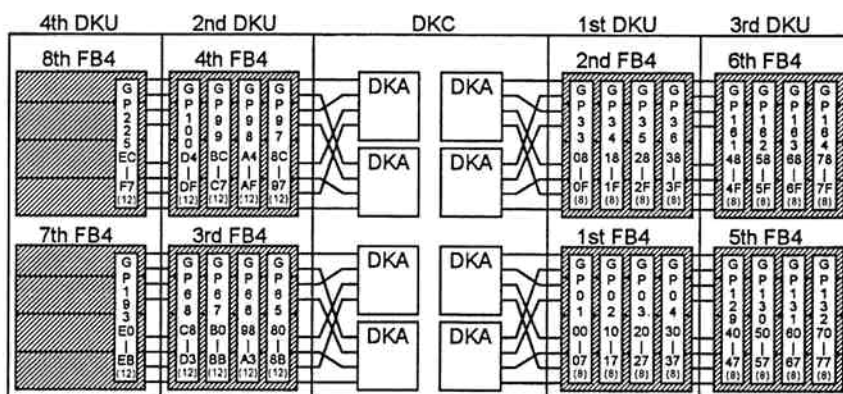


## ④ Maximum FB4 Installation (a.b.c : Definition of Host Address 256)

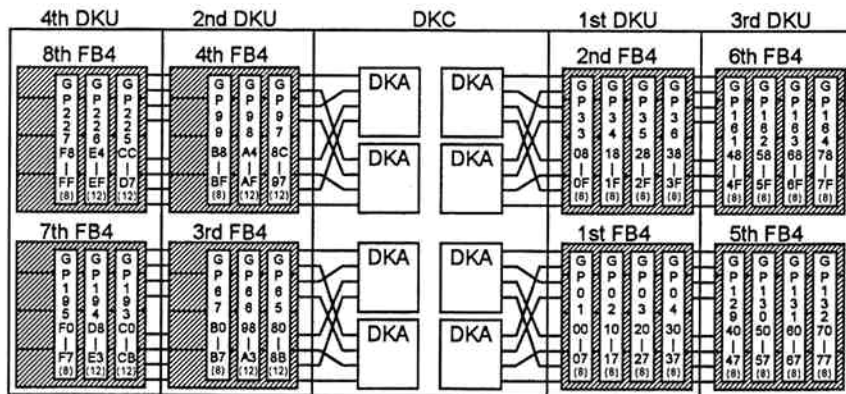
- a. 8thFB4-3380      4thFB4-3380      2ndFB4-3380      6thFB4-3380  
 7thFB4-3390      3rdFB4-3390      1stFB4-3390      5thFB4-3390



- b. 8thFB4-3380      4thFB4-3380      2ndFB4-3390      6thFB4-3390  
 7thFB4-3380      3rdFB4-3380      1stFB4-3390      5thFB4-3390



- c. 8thFB4-3380      4thFB4-3380      2ndFB4-3390      6thFB4-3390  
 7thFB4-3380      3rdFB4-3380      1stFB4-3390      5thFB4-3390



### 3.1.6.3 Subsystem Configuration Example (SVP version : After 01-05-XX)

During System Configuration setup, one must be aware of drive configuration, logical device No., and CU address. A number of logical volume per 1 parity group is depending on the combination of drive type and emulation type of the system configuration and it is possible to setup multiple logical volumes. For this reason, one must be aware of host generation configuration (logical device address setup : 32/64 addressing) when setting system configuration such as logical device address and number of logical device per parity group.

This supports the following DKU emulation types and their intermix per parity group configuration. And RAID level intermix supports by RAID5 and RAID1 per 2DKA configuration.\*1 Spare disk can be shared for all emulation types and 2 RAID level. In DKAs which controls RAID1, spare HDD type should be DK308-90 or DK309-180.

Table 3.1.6.3-1 shows a number of logical device corresponding to drive/emulation types.

\*1 RAID level intermix was supported After 01-06-XX.

Table 3.1.6.3-1 Number of logical device corresponding to drive/emulation types

| Drive type | RAID level | Emulation type | Nuber of logical device per parity group |
|------------|------------|----------------|------------------------------------------|
| DK306-45   | RAID5      | 3390-3         | 8                                        |
|            |            | 3390-2         | 12 or 8                                  |
|            |            | 3390-1         | 12 or 8                                  |
|            |            | 3380-J         | 12 or 8                                  |
|            |            | 3380-K         | 12 or 8                                  |
| DK308-90   | RAID5      | 3390-9         | 6                                        |
|            |            | 3390-3         | 16                                       |
|            |            | 3390-2         | 24 or 16                                 |
|            |            | 3390-1         | 24 or 16                                 |
|            |            | 3380-J         | 16 or 24 or 32                           |
|            |            | 3380-E         | 24 or 16                                 |
|            |            | 3380-K         | 24 or 16                                 |
|            | RAID1      | 3390-3         | 3                                        |
|            |            | 3390-2         | 4                                        |
|            |            | 3390-1         | 8                                        |
|            |            | 3380-J         | 8                                        |
|            |            | 3380-E         | 6                                        |
|            |            | 3380-K         | 4                                        |
| DK309-180  | RAID5      | 3390-9         | 6                                        |
|            |            | 3390-3         | 16 or 18                                 |
|            |            | 3380-K         | 16 or 18                                 |
|            | RAID1      | 3390-9         | 2                                        |
|            |            | 3390-3         | 6                                        |
|            |            | 3380-K         | 8                                        |

#### (1) 3390-3 System Configuration Example

GP: GROUP No. (Corresponding to parity group No. displayed on SVP panel)

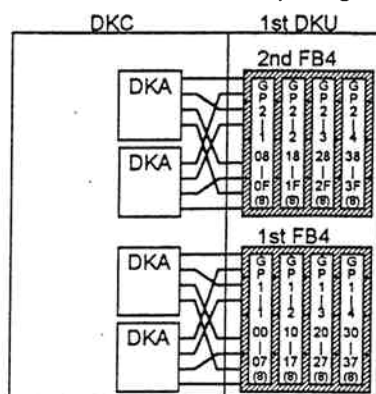
There is 1-1 ~ 8-4 GROUP No. and an address of GROUP No. is assigned every FB4 in the following way.

| FB4 | GROUP No. Address |
|-----|-------------------|
| 1st | 1-1 ~ 1-4         |
| 2nd | 2-1 ~ 2-4         |
| 3rd | 3-1 ~ 3-4         |
| 4th | 4-1 ~ 4-4         |
| 5th | 5-1 ~ 5-4         |
| 6th | 6-1 ~ 6-4         |
| 7th | 7-1 ~ 7-4         |
| 8th | 8-1 ~ 8-4         |

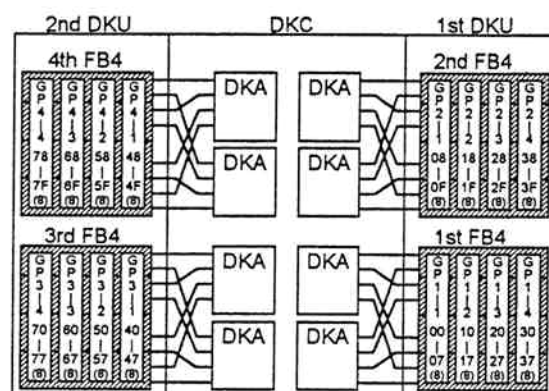
XX-XX in GPX-X shows a first logical device address and a last logical device address of parity group.

A value ( ) shows a number of logical device.

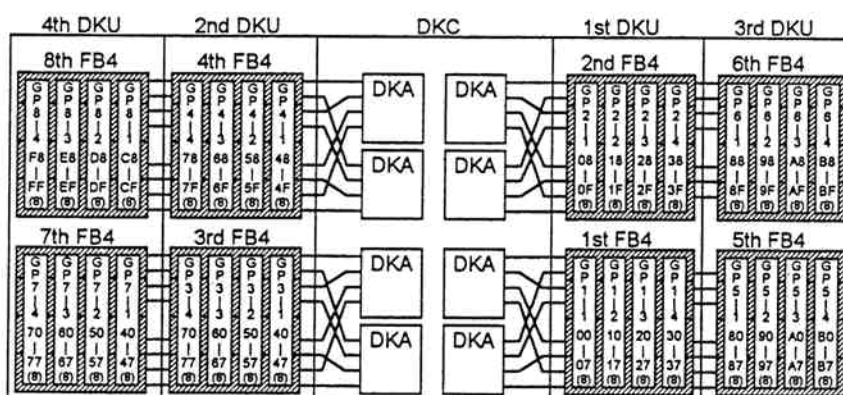
## ① Second FB4 installation (every 8 logical device)



## ② Fourth FB4 installation (every 8 logical devices)



## ③ Maximum FB4 installation (every 8 logical devices)



## (2) 3380-J/E/K, 3390-1/2 Emulation System Configuration Example

GP: GROUP No. (corresponding to parity group No. displayed on SVP panel)

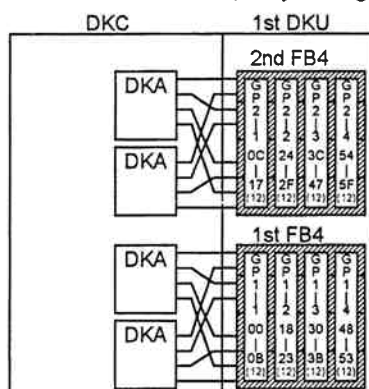
There is 1-1 ~ 8-4 GROUP No. and an address of GROUP No. is assigned every FB4 in the following way.

| FB4 | GROUP No. Address |
|-----|-------------------|
| 1st | 1-1 ~ 1-4         |
| 2nd | 2-1 ~ 2-4         |
| 3rd | 3-1 ~ 3-4         |
| 4th | 4-1 ~ 4-4         |
| 5th | 5-1 ~ 5-4         |
| 6th | 6-1 ~ 6-4         |
| 7th | 7-1 ~ 7-4         |
| 8th | 8-1 ~ 8-4         |

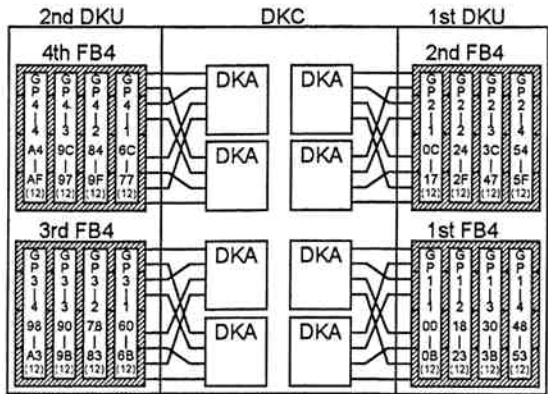
XX-XX in GPX-X shows a first logical device address and a last logical device address of parity group.

A value ( ) shows a number of logical device.

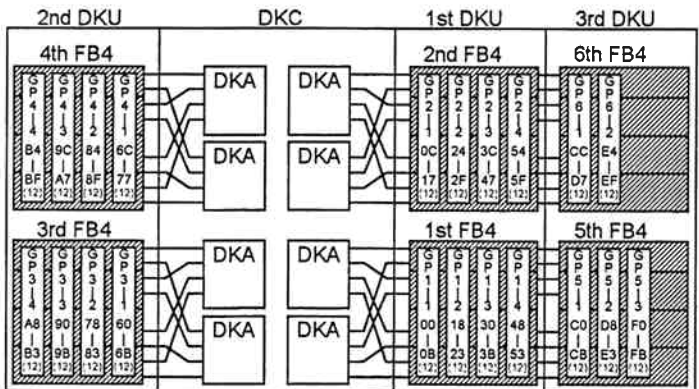
## ① Second FB4 installation (every 12 logical devices)



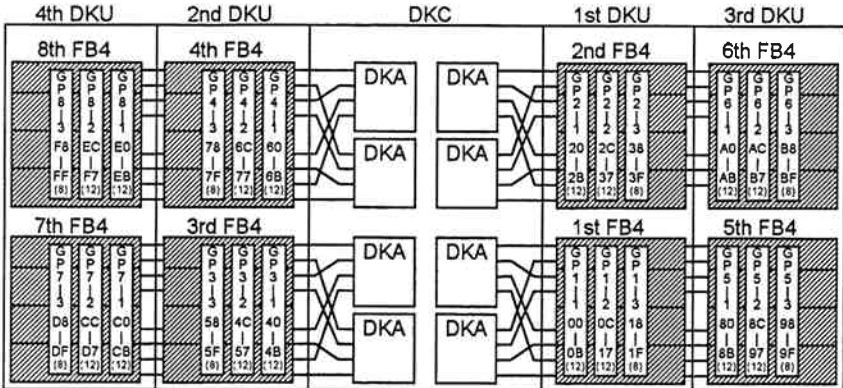
② Foruth FB4 installation (every 12 logical devices)



③ Maximum FB4 installation (every 12 logical devices)



④ Maximum FB4 installation (12 and 8 logical devices)



## (3) 3380/3390 Emulation Intermix

You should be aware that any combination of at least two emulation types should not be addressed within the same 32-address space.

GP: GROUP No. (corresponding to parity group No. displayed on SVP panel)

There is 1-1 ~ 8-4 GROUP No. and an address of GROUP No. is assigned every FB4 in the following way.

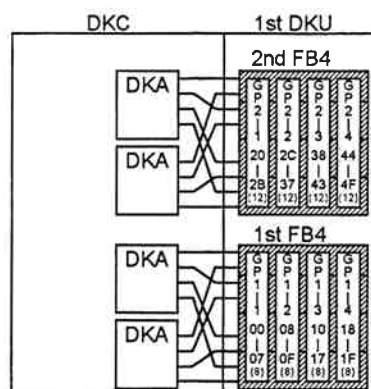
| FB4 | GROUP No. Address |
|-----|-------------------|
| 1st | 1-1 ~ 1-4         |
| 2nd | 2-1 ~ 2-4         |
| 3rd | 3-1 ~ 3-4         |
| 4th | 4-1 ~ 4-4         |
| 5th | 5-1 ~ 5-4         |
| 6th | 6-1 ~ 6-4         |
| 7th | 7-1 ~ 7-4         |
| 8th | 8-1 ~ 8-4         |

XX-XX in GPX-X shows a first logical device address and a last logical device address of parity group.  
A value ( ) shows a number of logical device.

## ① Second FB4 installation (a.b:Definition of Host Address 96, c.d:Definition of Host Address 64)

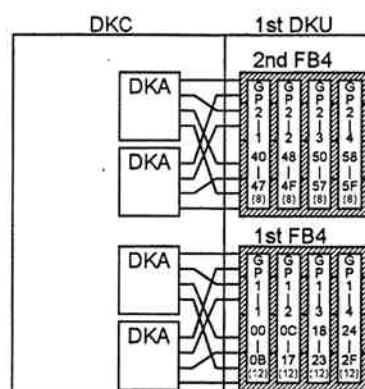
## a. 2ndFB4-3380

1stFB4-3390



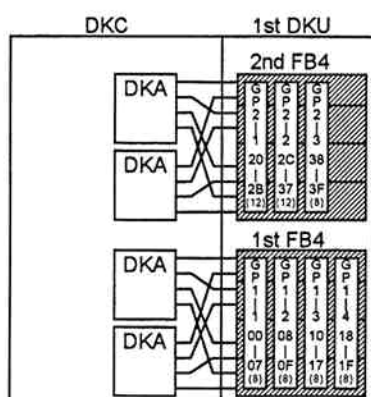
## b. 2ndFB4-3390

1stFB4-3380



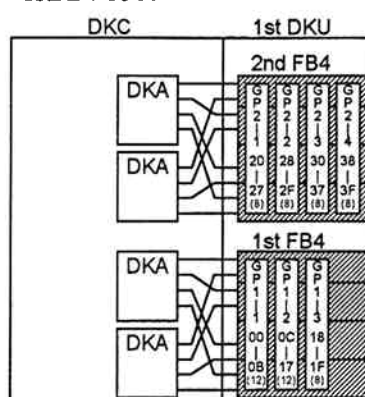
## c. 2ndFB4-3380

1stFB4-3390



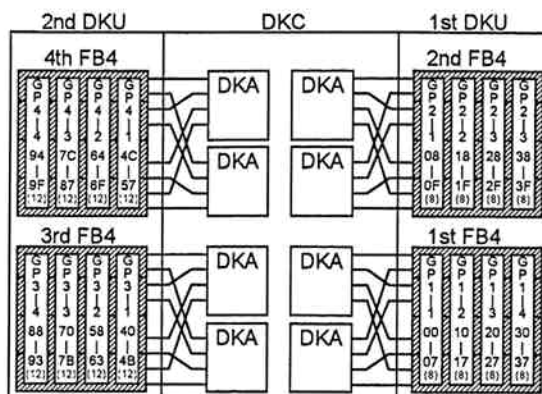
## d. 2ndFB4-3390

1stFB4-3380

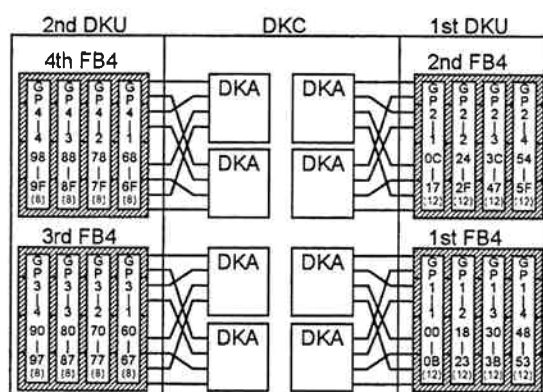


② Fourth FB4 installation (a,b : Definition of Host Address 160)

- a. 4thFB4-3380      2ndFB4-3390  
3rdFB4-3380      1stFB4-3390

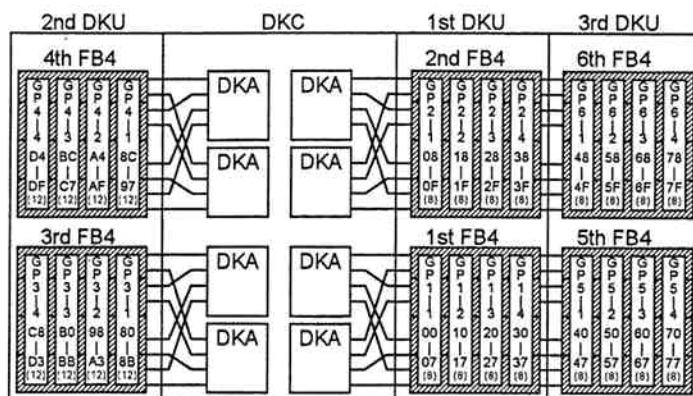


- b. 4thFB4-3390      2ndFB4-3380  
3rdFB4-3390      1stFB4-3380

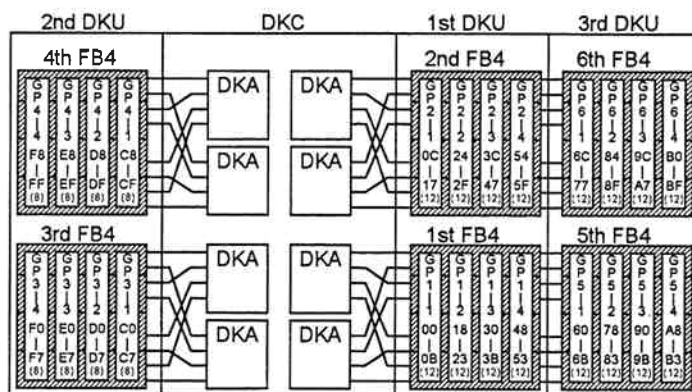


## ③ Sixth FB4 Installation (a : Definition of Host Address 96, b,c : Definition of Host Address 256)

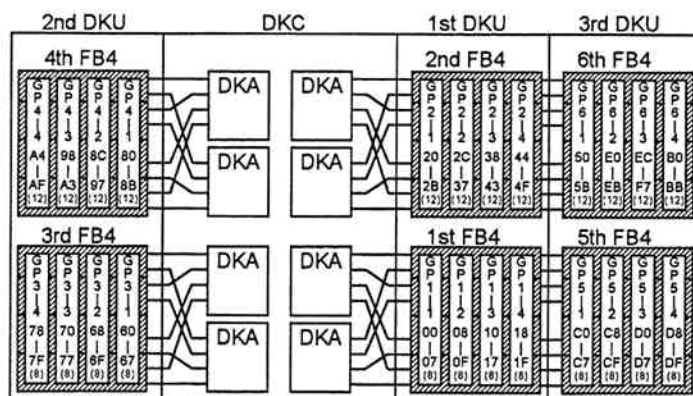
- a. 4thFB4-3380      2ndFB4-3390      6thFB4-3390  
 3rdFB4-3380      1stFB4-3390      5thFB4-3390



- b. 4thFB4-3390      2ndFB4-3380      6thFB4-3380  
 3rdFB4-3390      1stFB4-3380      5thFB4-3380

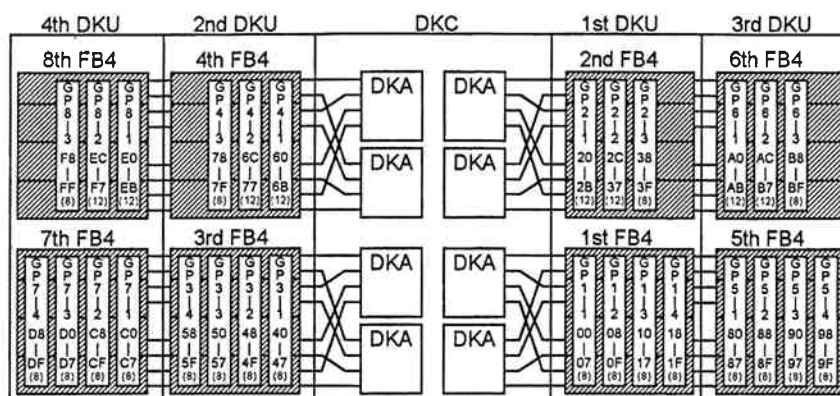


- c. 4thFB4-3380      2ndFB4-3380      6thFB4-3380  
 3rdFB4-3390      1stFB4-3390      5thFB4-3390

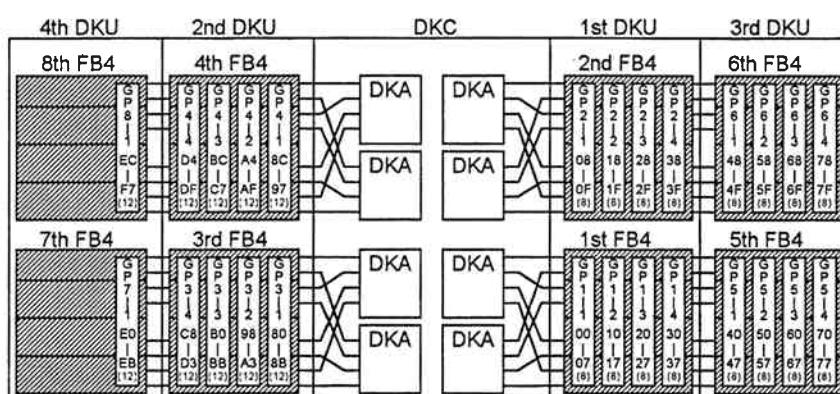


## ④ Maximum FB4 Installation (a.b.c : Definition of Host Address 256)

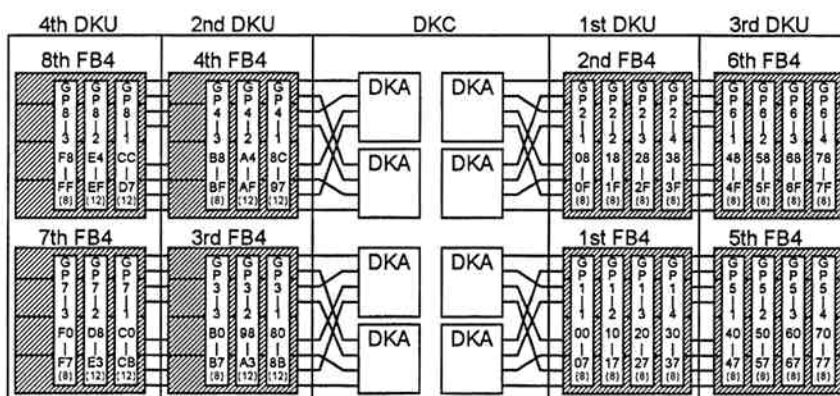
- a. 8thFB4-3380      4thFB4-3380      2ndFB4-3380      6thFB4-3380  
 7thFB4-3390      3rdFB4-3390      1stFB4-3390      5thFB4-3390



- b. 8thFB4-3380      4thFB4-3380      2ndFB4-3390      6thFB4-3390  
 7thFB4-3380      3rdFB4-3380      1stFB4-3390      5thFB4-3390



- c. 8thFB4-3380      4thFB4-3380      2ndFB4-3390      6thFB4-3390  
 7thFB4-3380      3rdFB4-3380      1stFB4-3390      5thFB4-3390



## (4) DK308-90 RAID5 System Configuration Example

## a. 3390-3 System Configuration Example

GP: GROUP No. (corresponding to parity group No. displayed on SVP panel)

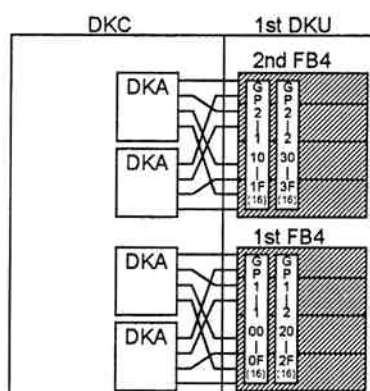
There is 1-1 ~ 4-4 GROUP No. and an address of GROUP No. is assigned every FB4 in the following way.

| FB4 | GROUP No. Address |
|-----|-------------------|
| 1st | 1-1 ~ 1-4         |
| 2nd | 2-1 ~ 2-4         |
| 3rd | 3-1 ~ 3-4         |
| 4th | 4-1 ~ 4-4         |

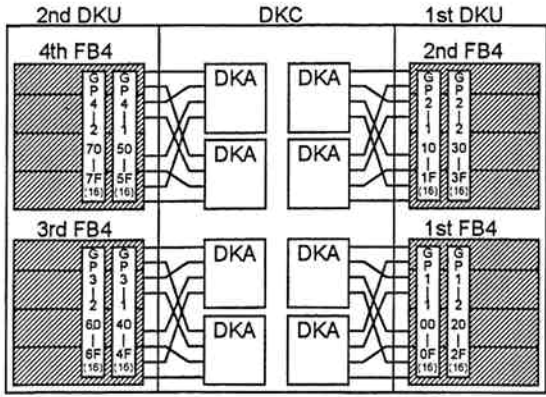
XX-XX in GPX-X shows a first logical device address and a last logical device address of parity group.

A value ( ) shows a number of logical device.

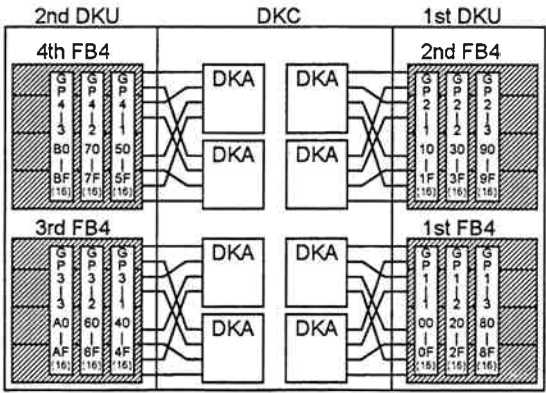
## ① 180GB Configuration (every 16 logical device)



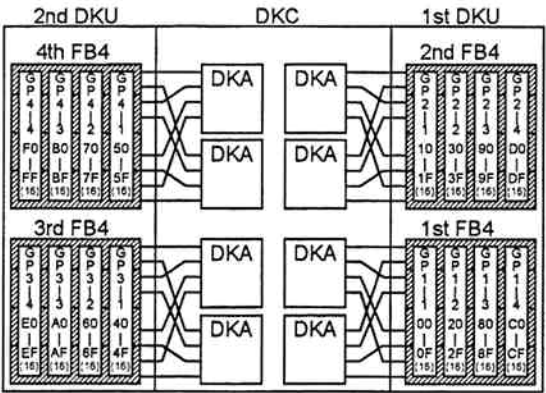
② 360GB Configuration (every 16 logical devices)



③ 540GB Configuration (every 16 logical devices)



④ 720GB Configuration (every 16 logical devices)



## b. 3390-9 System Configuration Example \*1

GP: GROUP No. (corresponding to parity group No. displayed on SVP panel)

There is 1-1 ~ 8-4 GROUP No. and an address of GROUP No. is assigned every FB4 in the following way.

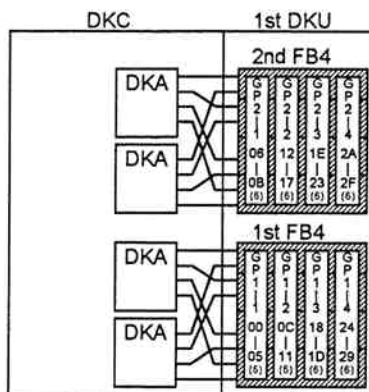
| FB4 | GROUP No. Address |
|-----|-------------------|
| 1st | 1-1 ~ 1-4         |
| 2nd | 2-1 ~ 2-4         |
| 3rd | 3-1 ~ 3-4         |
| 4th | 4-1 ~ 4-4         |
| 5th | 5-1 ~ 5-4         |
| 6th | 6-1 ~ 6-4         |
| 7th | 7-1 ~ 7-4         |
| 8th | 8-1 ~ 8-4         |

XX-XX in GPX-X shows a first logical device address and a last logical device address of parity group.

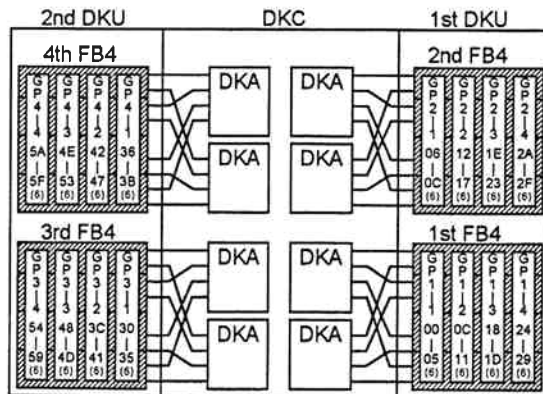
A value ( ) shows a number of logical device.

\*1 : You need additional Shared Memory.

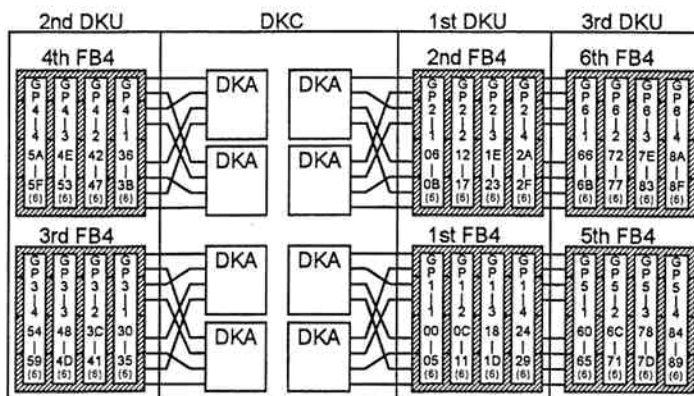
## ① 407GB Configuration (every 6 logical device)



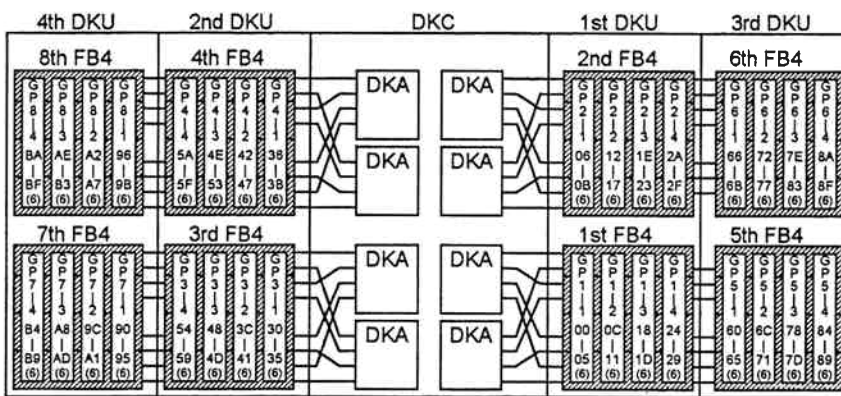
## ② 815GB Configuration (every 6 logical devices)



## ③ 1222GB Configuration (every 6 logical device)



## ④ 1630GB Configuration (every 6 logical devices)



## c. 3380-J/E/K, 3390-1/2 Emulation System Configuration Example

GP: GROUP No. (corresponding to parity group No. displayed on SVP panel)

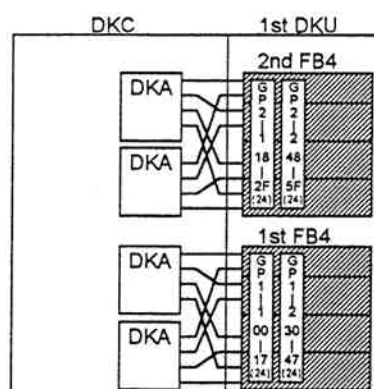
There is 1-1 ~ 8-4 GROUP No. and an address of GROUP No. is assigned every FB4 in the following way.

| FB4 | GROUP No. Address |
|-----|-------------------|
| 1st | 1-1 ~ 1-4         |
| 2nd | 2-1 ~ 2-4         |
| 3rd | 3-1 ~ 3-4         |
| 4th | 4-1 ~ 4-4         |
| 5th | 5-1 ~ 5-4         |
| 6th | 6-1 ~ 6-4         |
| 7th | 7-1 ~ 7-4         |
| 8th | 8-1 ~ 8-4         |

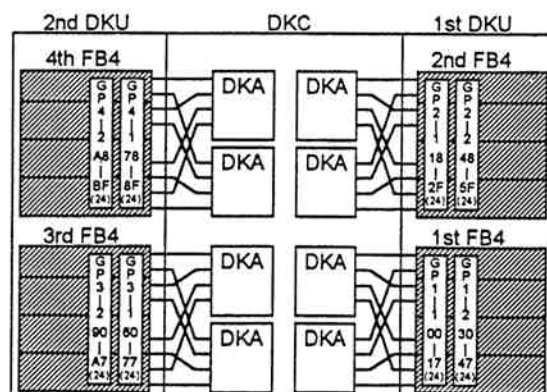
XX-XX in GPX-X shows a first logical device address and a last logical device address of parity group.  
A value ( ) shows a number of logical device.

## c-1. 3380-K/3390-2 Emulation

① 182GB (every 24 logical devices)

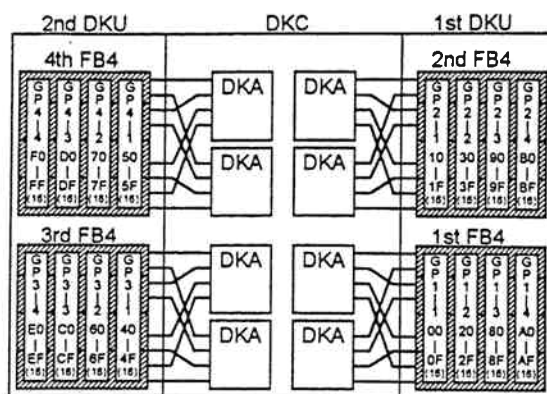


② 363GB (every 24 logical devices)

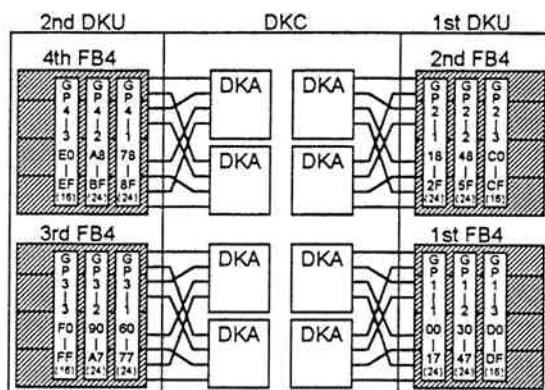


## ③ 484GB

a. every 16 logical devices

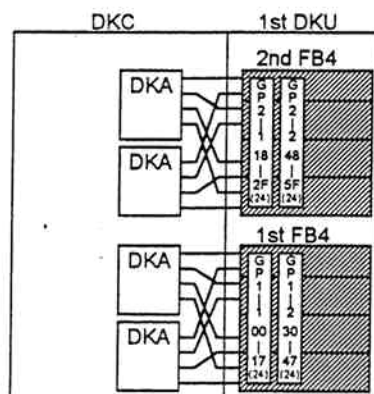


b. 24 and 16 logical devices



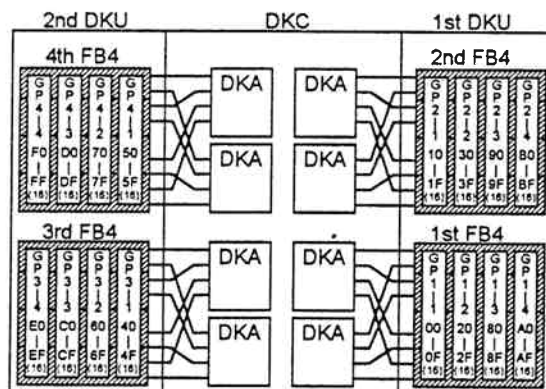
## c-2. 3390-1 Emulation

① 91GB (every 24 logical devices)

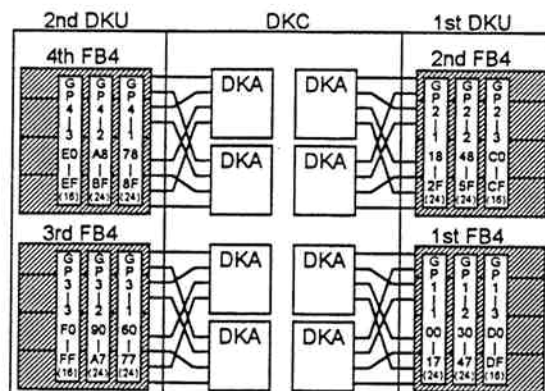


② 243GB

a. every 16 logical devices

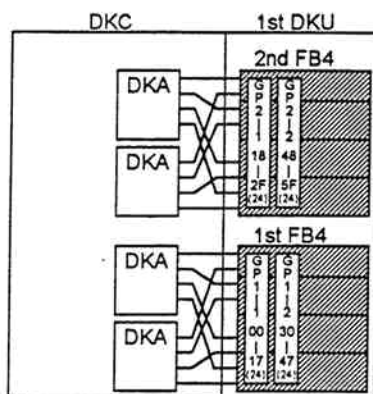


b. 24 and 16 logical devices



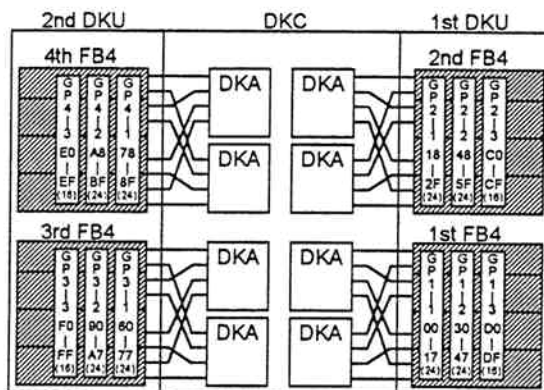
## c-3. 3380-J Emulation

① 61GB (every 24 logical devices)

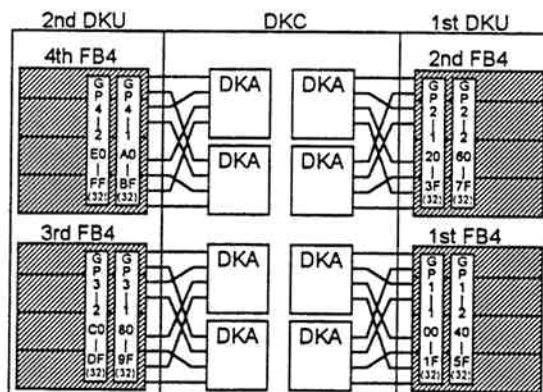


② 161GB

a. 24 and 16 logical devices

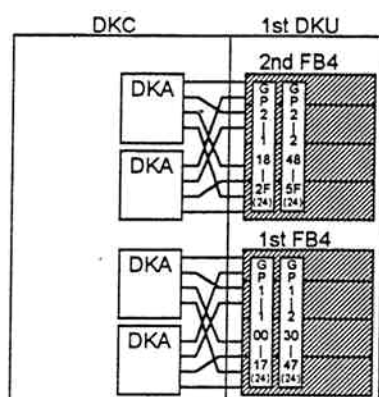


b. every 32 logical devices



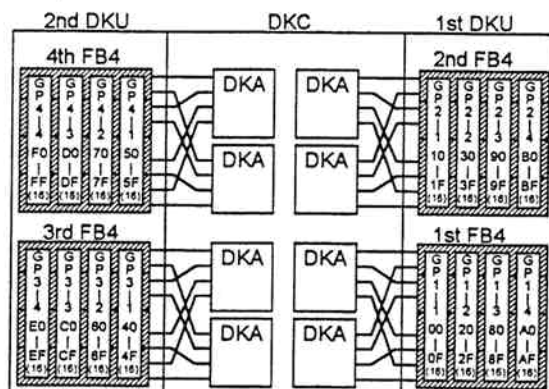
## c-4. 3380-E Emulation

① 121GB (every 24 logical devices)

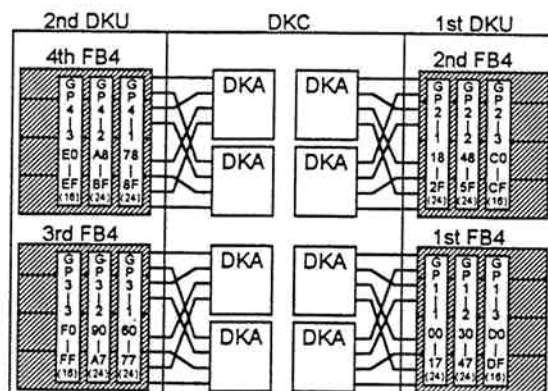


② 323GB

a. every 16 logical devices



b. 24 and 16 logical devices



## d. 3390-3/3390-9 Emulation Intermix System Configuration Example

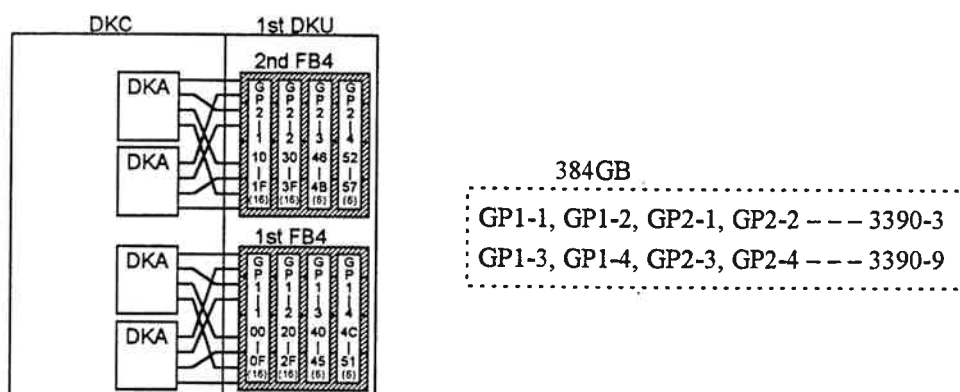
GP: GROUP No. (corresponding to parity group No. displayed on SVP panel)

There is 1-1 ~ 8-4 GROUP No. and an address of GROUP No. is assigned every FB4 in the following way.

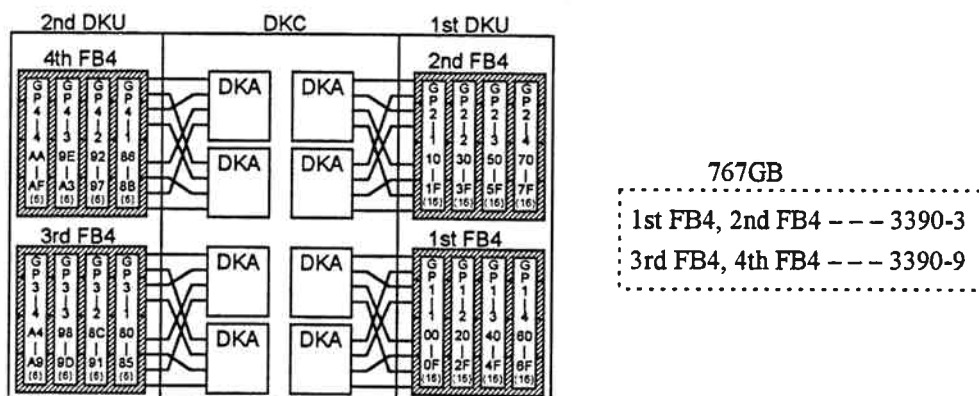
| FB4 | GROUP No. Address |
|-----|-------------------|
| 1st | 1-1 ~ 1-4         |
| 2nd | 2-1 ~ 2-4         |
| 3rd | 3-1 ~ 3-4         |
| 4th | 4-1 ~ 4-4         |
| 5th | 5-1 ~ 5-4         |
| 6th | 6-1 ~ 6-4         |
| 7th | 7-1 ~ 7-4         |
| 8th | 8-1 ~ 8-4         |

XX-XX in GPX-X shows a first logical device address and a last logical device address of parity group.  
A value ( ) shows a number of logical device.

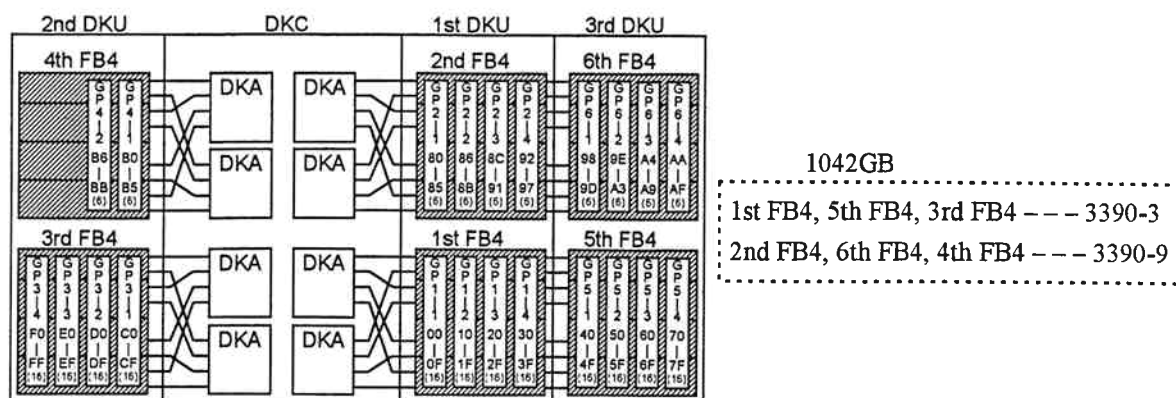
## ① Second FB4 installation (Definition of Host Address 96)



## ② Fourth FB4 installation (Definition of Host Address 192)



### ③ Sixth FB4 installation (Definition of Host Address 256)



## e. 3390-1/2/3/9, 3380-J/E/K Emulation Intermix System Configuration Example

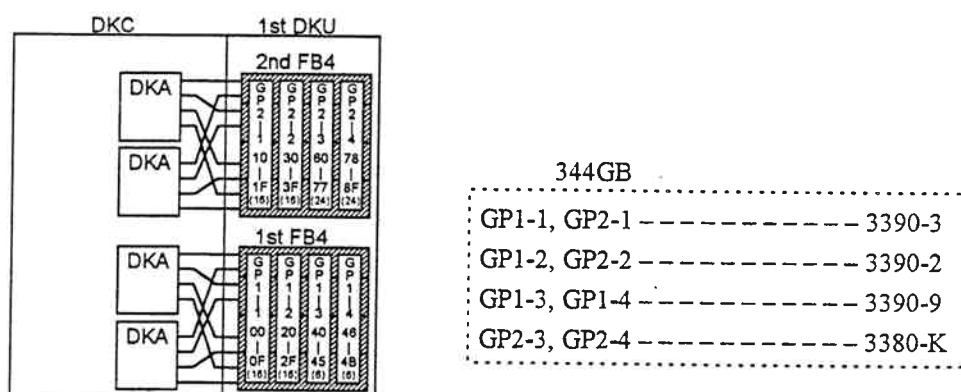
GP: GROUP No. (corresponding to parity group No. displayed on SVP panel)

There is 1-1 ~ 8-4 GROUP No. and an address of GROUP No. is assigned every FB4 in the following way.

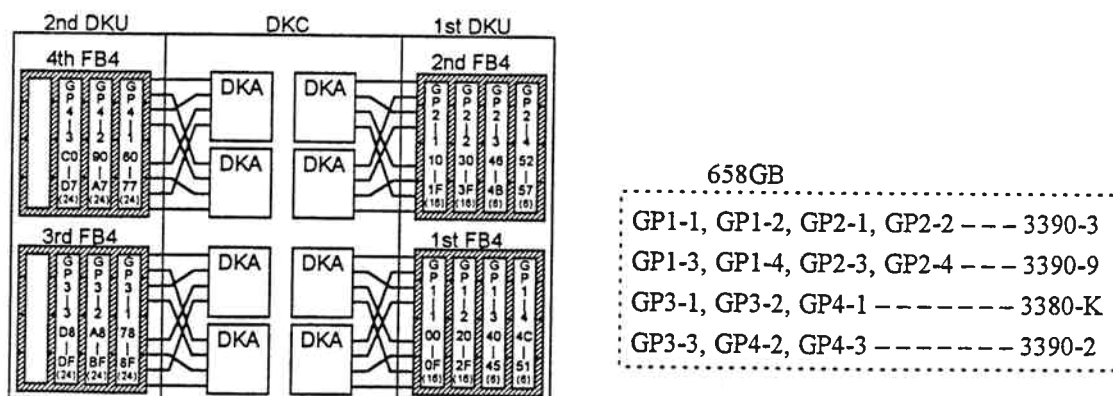
| FB4 | GROUP No. Address |
|-----|-------------------|
| 1st | 1-1 ~ 1-4         |
| 2nd | 2-1 ~ 2-4         |
| 3rd | 3-1 ~ 3-4         |
| 4th | 4-1 ~ 4-4         |
| 5th | 5-1 ~ 5-4         |
| 6th | 6-1 ~ 6-4         |
| 7th | 7-1 ~ 7-4         |
| 8th | 8-1 ~ 8-4         |

XX-XX in GPX-X shows a first logical device address and a last logical device address of parity group.  
A value ( ) shows a number of logical device.

## ① Second FB4 installation (Definition of Host Address 160)



## ② Fourth FB4 installation (Definition of Host Address 256)



## (5)DK308-90 RAID1 System Configuration Example

GP: GROUP No. (corresponding to parity group No. displayed on SVP panel)

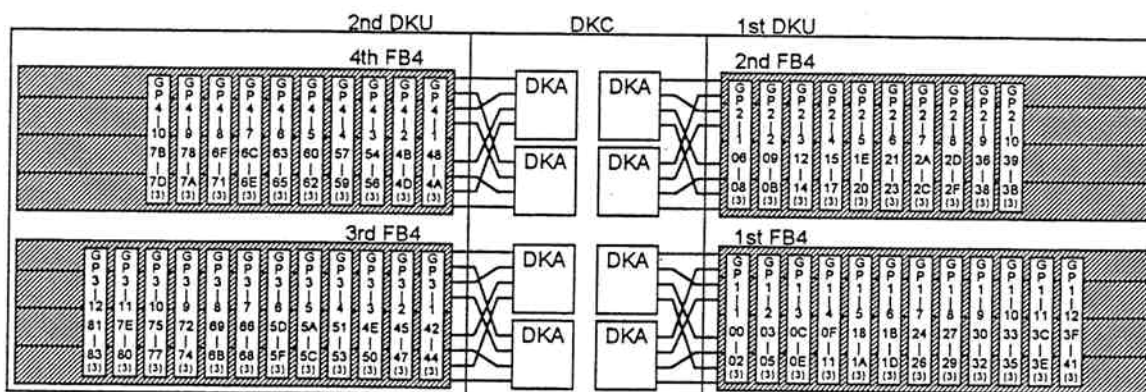
There is 1-1 ~ 8-6 GROUP No. and an address of GROUP No. is assigned every FB4 in the following way.

| FB4 | GROUP No. Address |
|-----|-------------------|
| 1st | 1-1 ~ 1-14        |
| 2nd | 2-1 ~ 2-14        |
| 3rd | 3-1 ~ 3-14        |
| 4th | 4-1 ~ 4-14        |
| 5th | 5-1 ~ 5-8         |
| 6th | 6-1 ~ 6-8         |
| 7th | 7-1 ~ 7-6         |
| 8th | 8-1 ~ 8-6         |

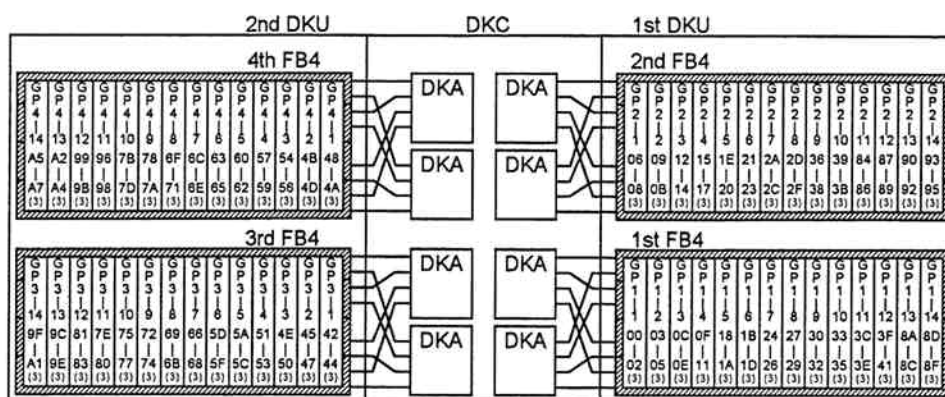
XX-XX in GPX-X shows a first logical device address and a last logical device address of parity group.  
A value ( ) shows a number of logical device.

## a. 3390-3 Emulation

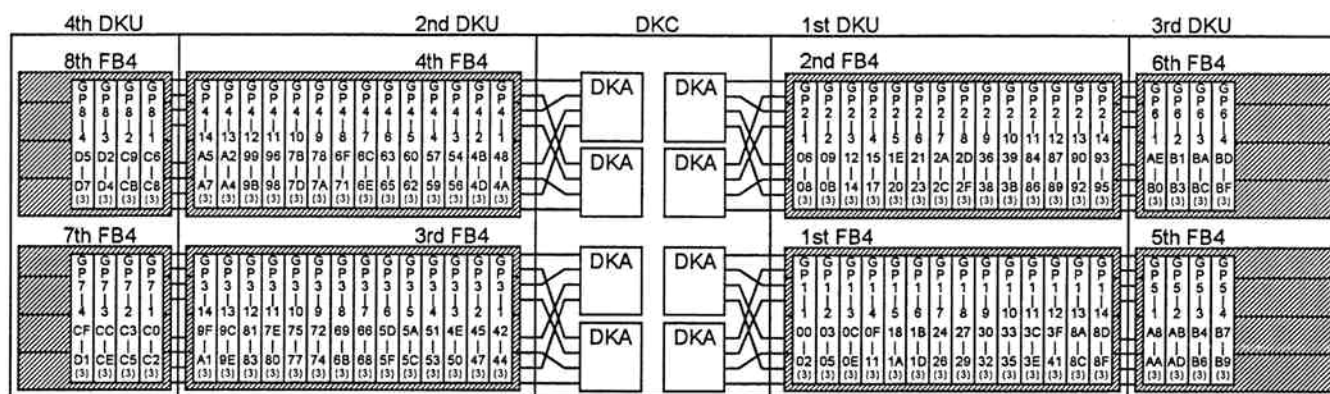
① 370GB Configuration (every 3 logical devices)



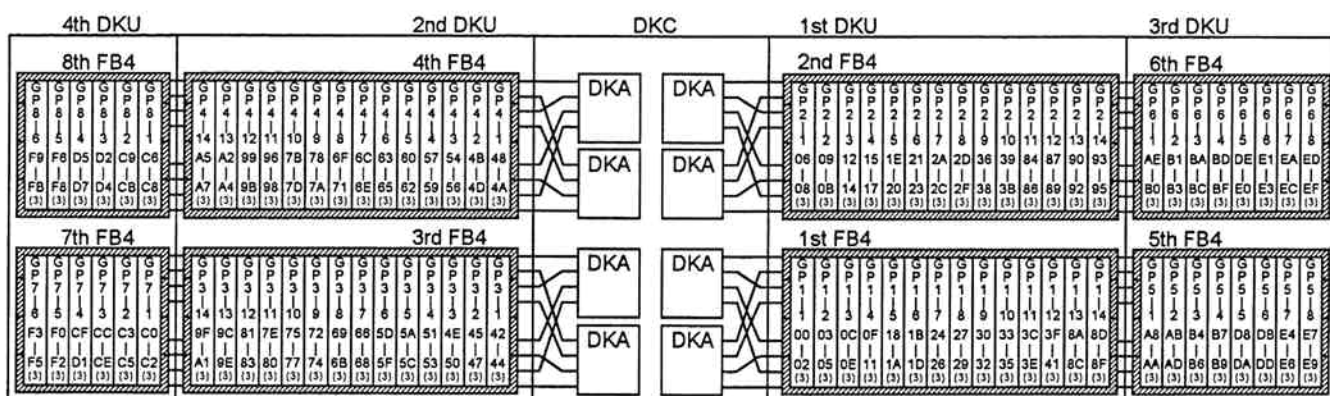
## ② 475GB Configuration (every 3 logical devices)



## ③ 610GB Configuration (every 3 logical devices)

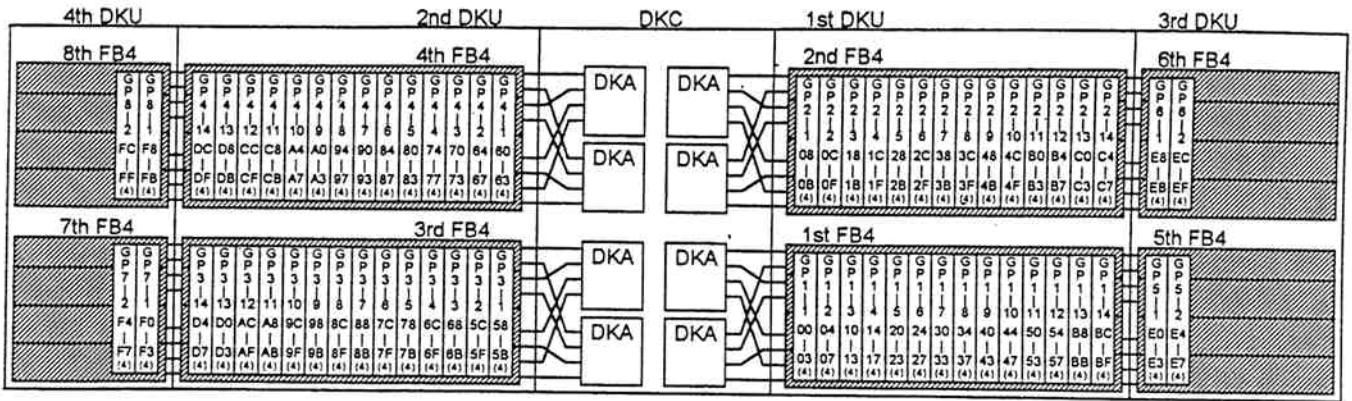


## ④ 714GB Configuration (every 3 logical devices)



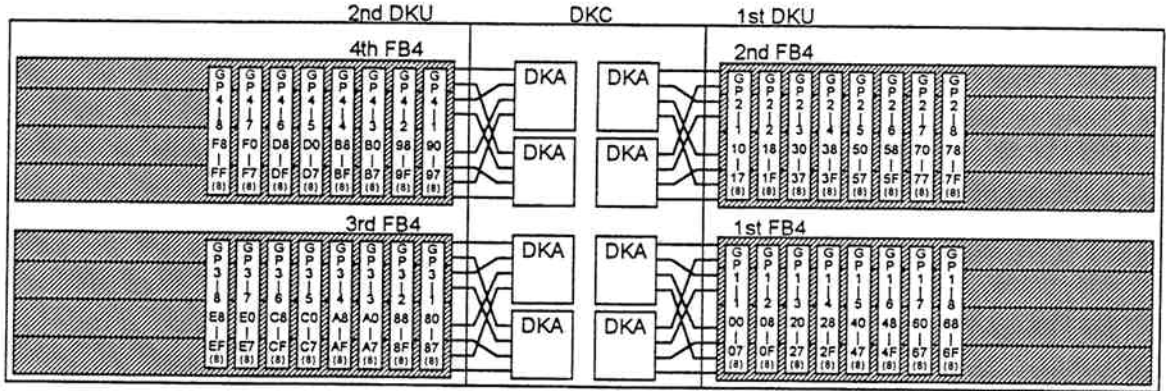
b. 3390-2/3380-K Emulation

① 484GB (every 4 logical devices)



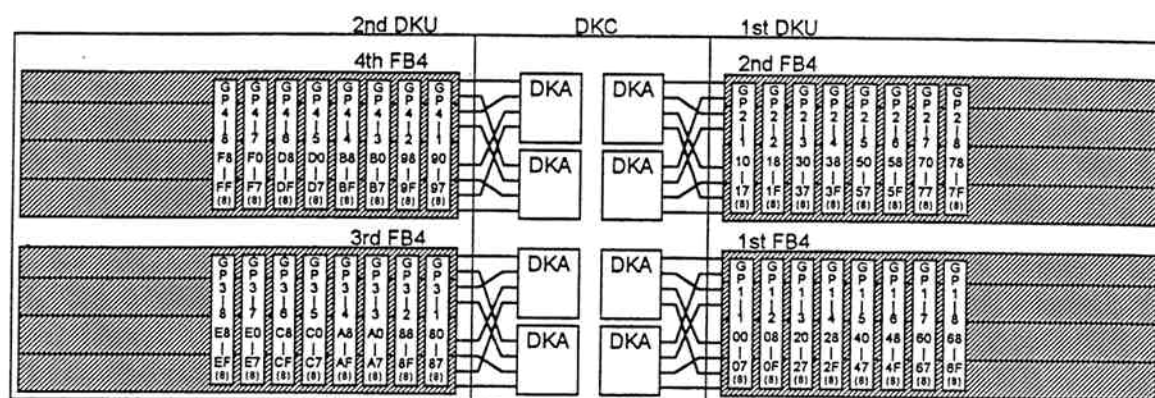
c. 3390-1 Emulation

① 243GB (every 8 logical devices)



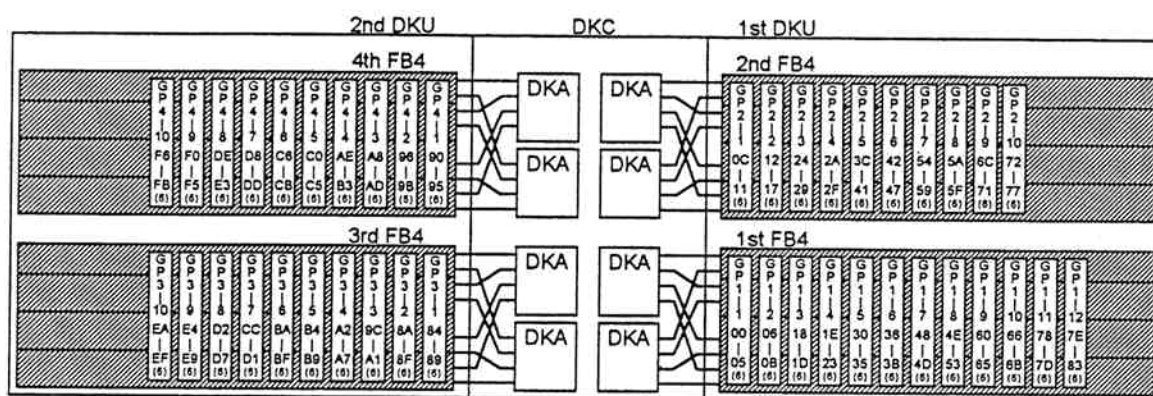
## d. 3380-J Emulation

① 161GB (every 8 logical devices)



## e. 3380-E Emulation

① 318GB (every 6 logical devices)



## (6) DK308-90 RAID5 and RAID1 Intermix System Configuration Example

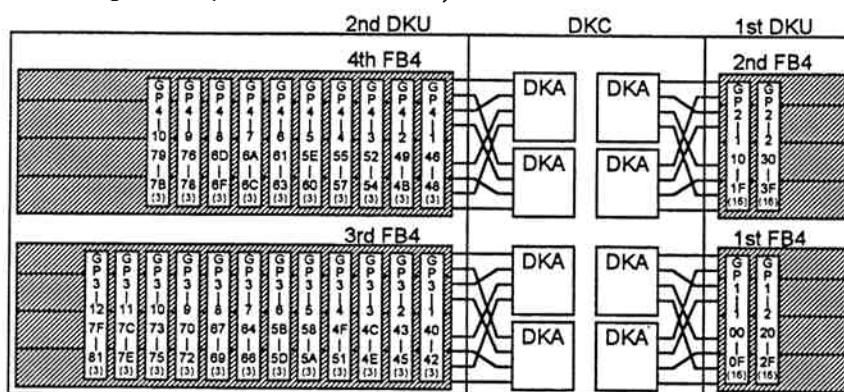
GP: GROUP No. (corresponding to parity group No. displayed on SVP panel)

There is 1-1 ~ 8-6 GROUP No. and an address of GROUP No. is assigned every FB4 in the following way.

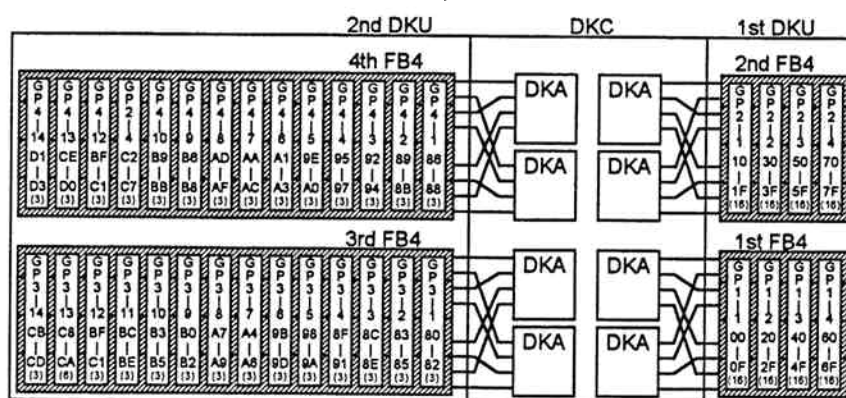
| FB4 | GROUP No. Address |
|-----|-------------------|
| 1st | 1-1 ~ 1-14        |
| 2nd | 2-1 ~ 2-14        |
| 3rd | 3-1 ~ 3-14        |
| 4th | 4-1 ~ 4-14        |
| 5th | 5-1 ~ 5-8         |
| 6th | 6-1 ~ 6-8         |
| 7th | 7-1 ~ 7-6         |
| 8th | 8-1 ~ 8-6         |

XX-XX in GPX-X shows a first logical device address and a last logical device address of parity group.  
A value ( ) shows a number of logical device.

## ① 365GB Configuration (all 3390-3 emulation)



## ② 594GB Configuration (all 3390-3 emulation)



## (7) DK309-180 RAID5 System Configuration Example

## a. 3390-3 System Configuration Example

GP: GROUP No. (corresponding to parity group No. displayed on SVP panel)

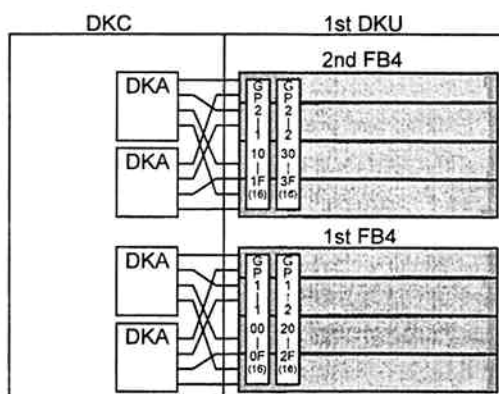
There is 1-1 ~ 4-4 GROUP No. and an address of GROUP No. is assigned every FB4 in the following way.

| FB4 | GROUP No. Address |
|-----|-------------------|
| 1st | 1-1 ~ 1-4         |
| 2nd | 2-1 ~ 2-4         |
| 3rd | 3-1 ~ 3-4         |
| 4th | 4-1 ~ 4-4         |

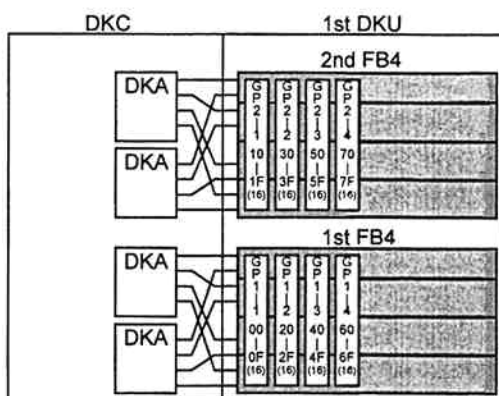
XX-XX in GPX-X shows a first logical device address and a last logical device address of parity group.

A value ( ) shows a number of logical device.

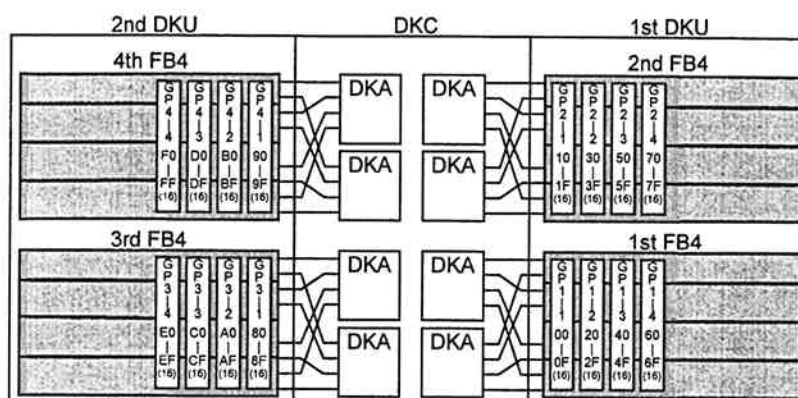
## ① 180GB Configuration (every 16 logical devices)



## ② 360GB Configuration (every 16 logical devices)



## ③ 720GB Configuration (every 16 logical devices)



## b. 3390-9 System Configuration Example

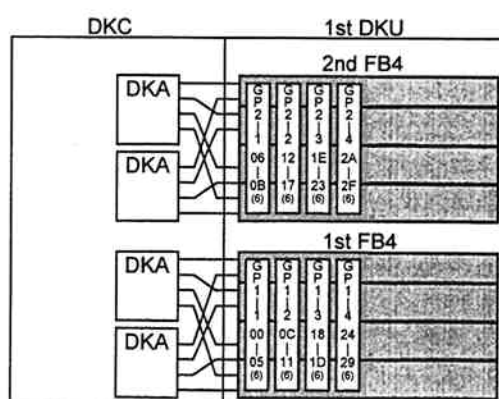
GP: GROUP No. (corresponding to parity group No. displayed on SVP panel)

There is 1-1 ~ 8-4 GROUP No. and an address of GROUP No. is assigned every FB4 in the following way.

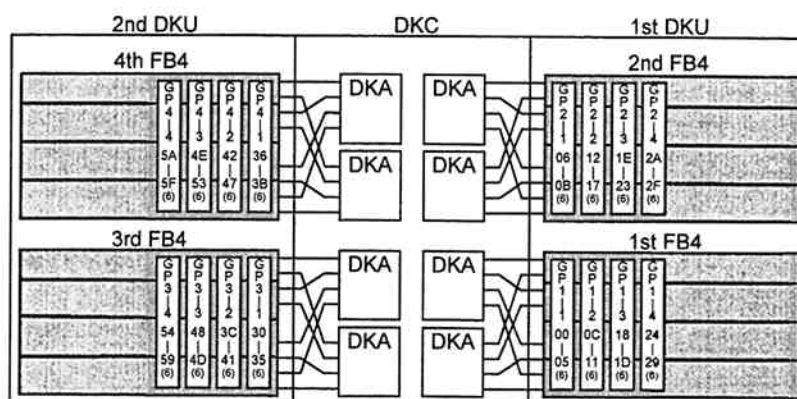
| FB4 | GROUP No. Address |
|-----|-------------------|
| 1st | 1-1 ~ 1-4         |
| 2nd | 2-1 ~ 2-4         |
| 3rd | 3-1 ~ 3-4         |
| 4th | 4-1 ~ 4-4         |
| 5th | 5-1 ~ 5-4         |
| 6th | 6-1 ~ 6-4         |
| 7th | 7-1 ~ 7-4         |
| 8th | 8-1 ~ 8-4         |

XX-XX in GPX-X shows a first logical device address and a last logical device address of parity group.  
A value ( ) shows a number of logical device.

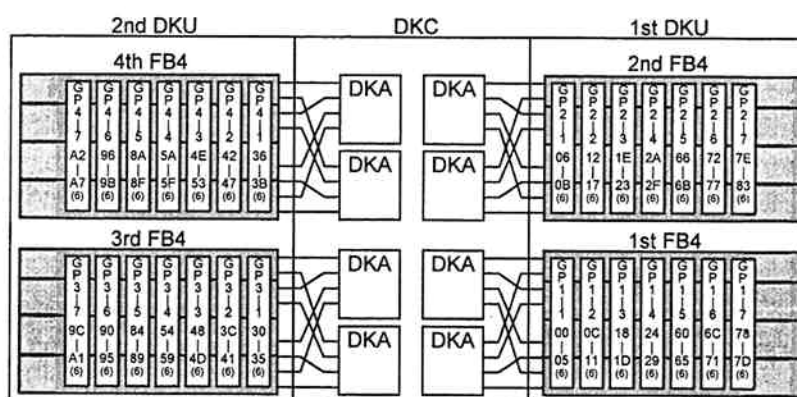
## ① 407GB Configuration (every 6 logical devices)



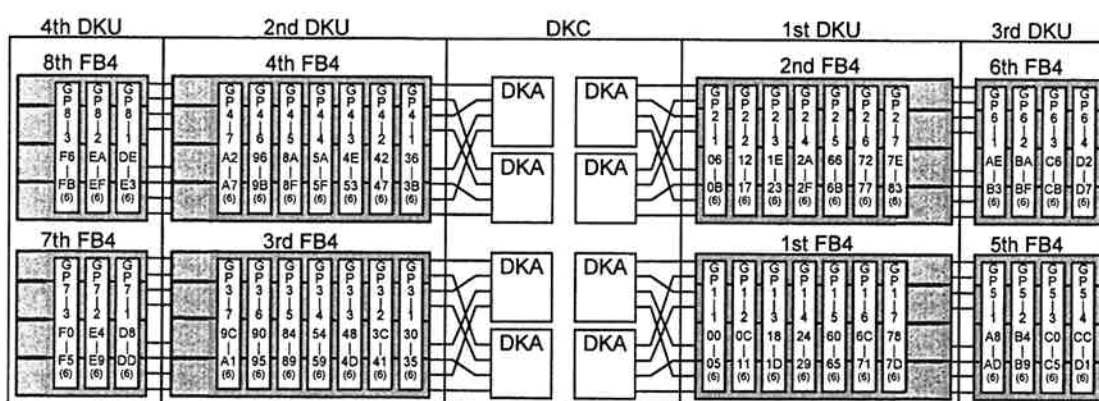
## ② 815GB Configuration (every 6 logical devices)



## ③ 1425GB Configuration (every 6 logical devices)



## ④ 2140GB Configuration (every 6 logical devices)





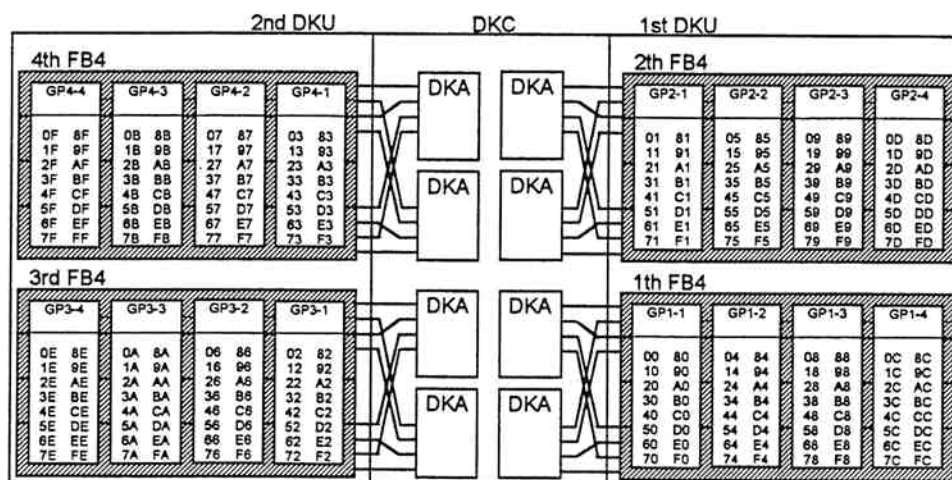
### 3.1.6.4 Dispersion of LDEV addressing

Following LDEV addressing patterns are recommended to disperse over all ECC groups install in order to decrease the drive access contention.

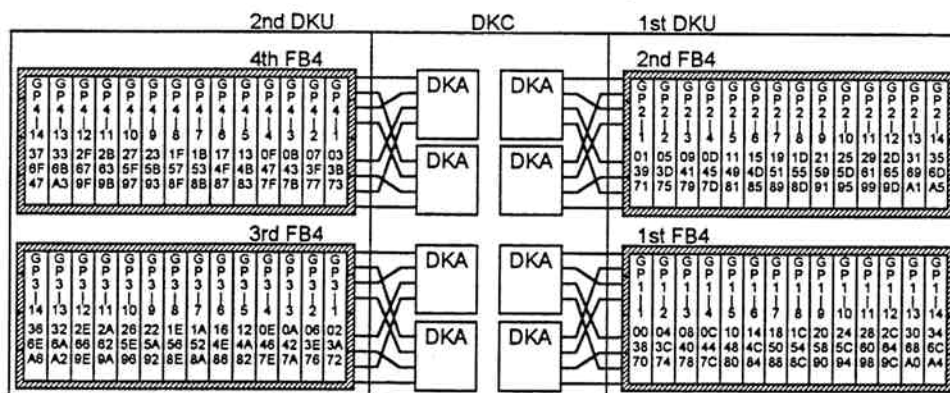
In the following examples, XX-XX in GPX-X shows first logical device address and last logical device address of parity group.

A value in ( ) shows the emulation type.

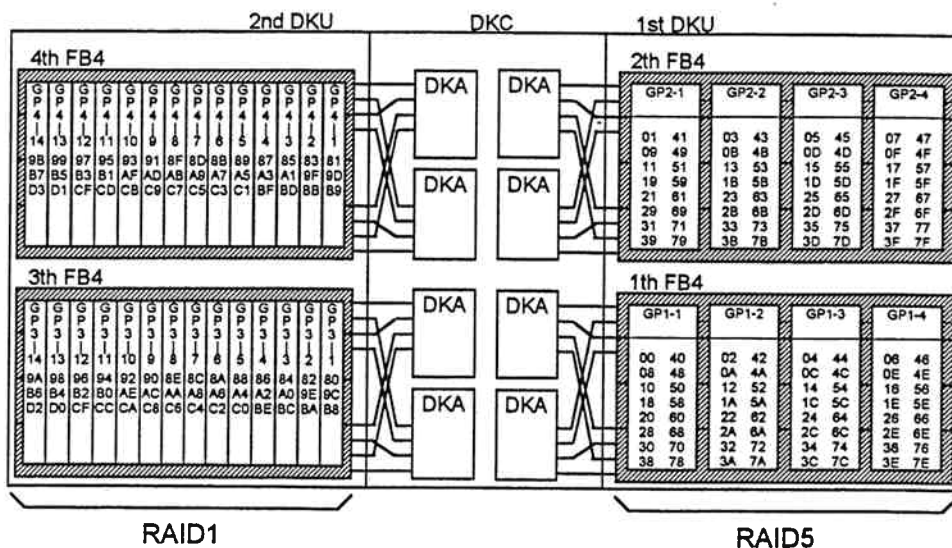
#### ① RAID5 in 3390-3 emulation



#### ② RAID1 in 3390-3 emulation

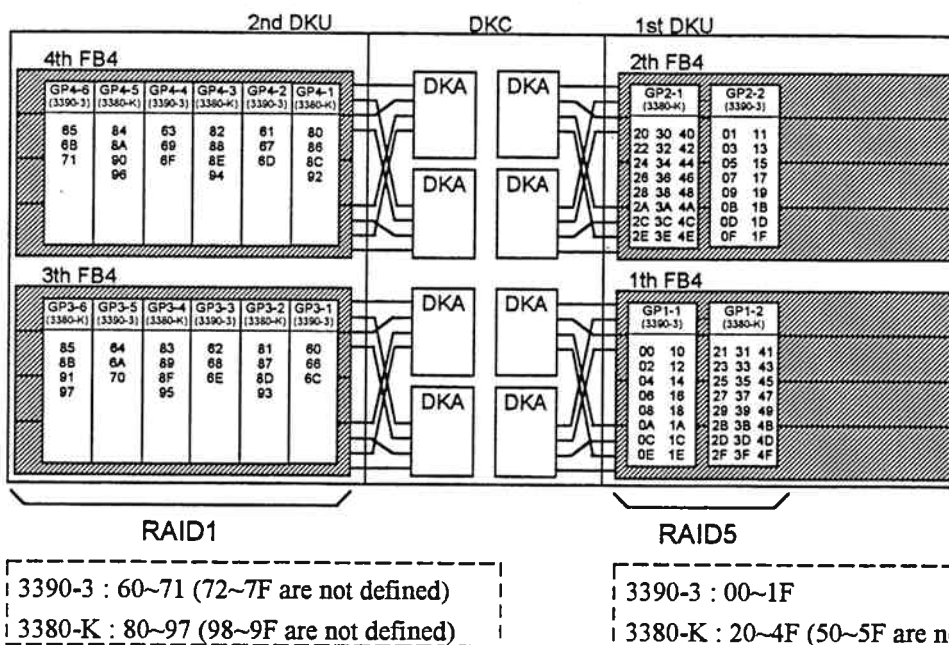


## ③ RAID5 and RAID1 intermix in 3390-3 emulation



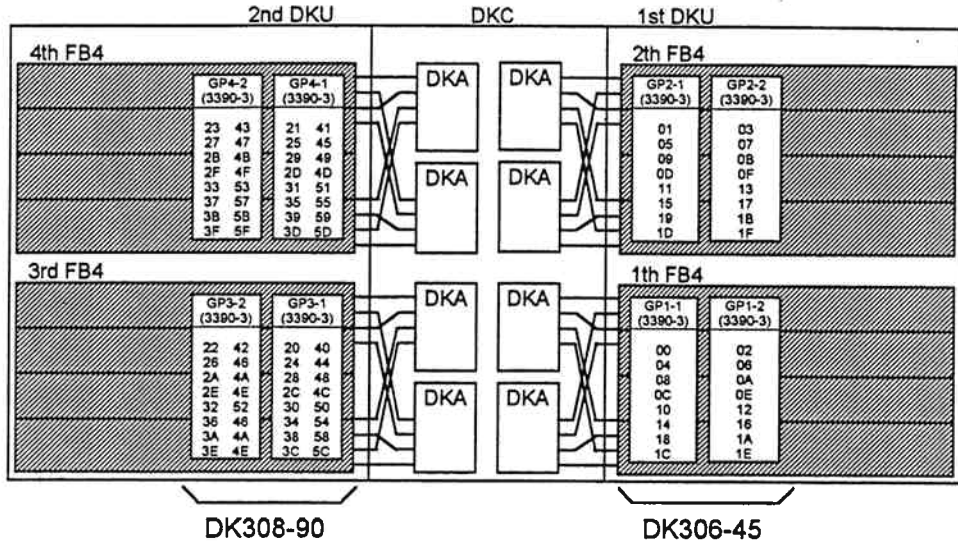
When RAID levels are intermixed, logical address should be sequential in each RAID level.

## ④ 3390/3380 emulation intermix



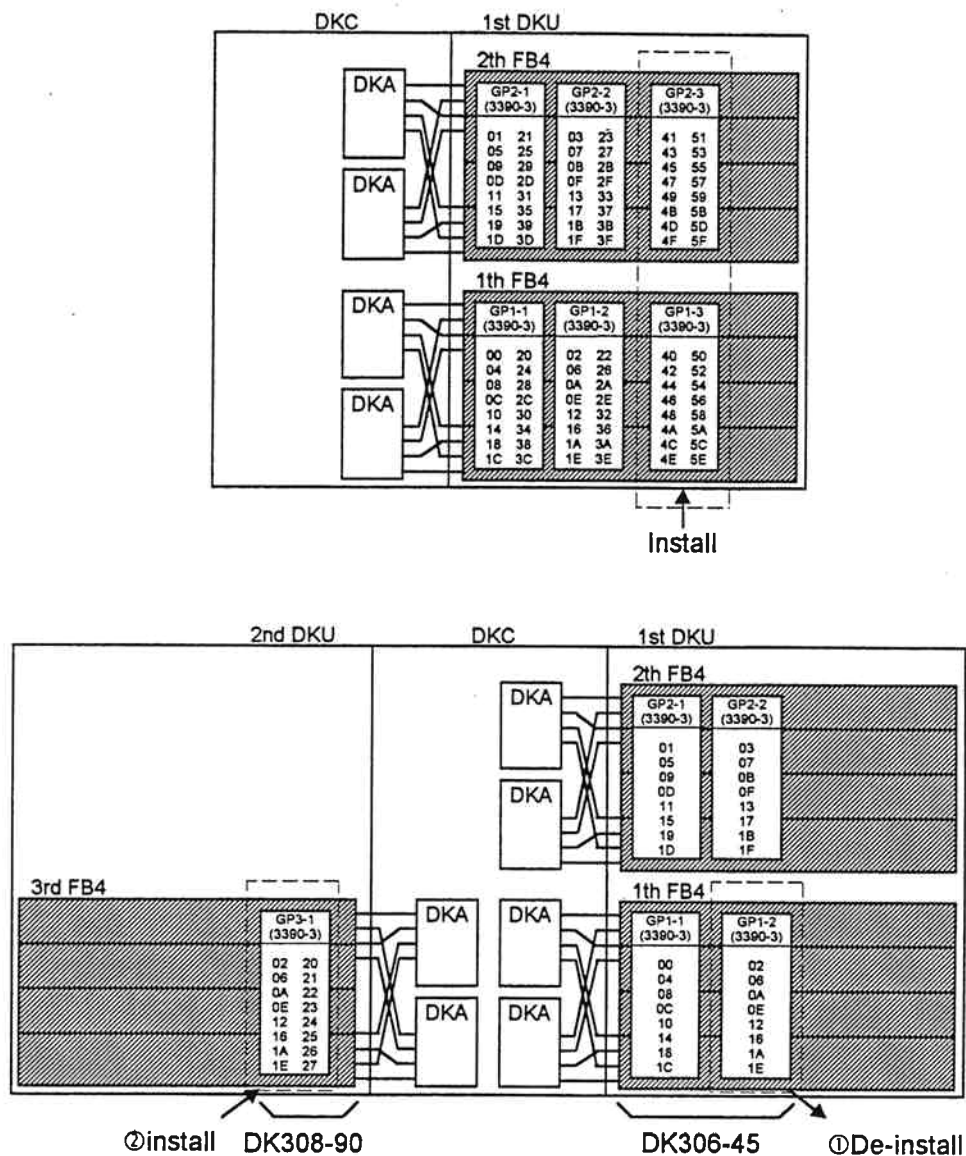
When 3390/3380 emulation are intermixed, logical address should be sequential in each emulation mode.

⑤ HDD type intermix



When DK308-90 and DK306-45 are intermixed, logical address should be sequential in each HDD type.

## ⑥ Drive installation/De-installation



When a ECC group is de-installed, the missed logical address should be succeeded at the next installation of a ECC group.

### 3.1.7 Configuration Information

The configuration information that is defined via the SVP is classified into the following two categories:

- Device structure setup
- Channel configuration

When Parallel 4ch is selected in Channel configuration , channel configuration information must be defined separately for Parallel 4ch.

\* Configuration Information is different depending on SVP version.

- (1) SVP version : Before 01-02-XX (RAID5)

Refer to INST01-170

- (2) SVP version : From 01-03-XX to 01-04-06 (RAID5)

Refer to INST01-172

- (3) SVP version : From 01-04-07 to 01-04-XX (RAID5)

Refer to INST01-174

- (4) SVP version : After 01-05-XX (RAID5)

Refer to INST01-177

- (5) SVP version : After 01-05-XX (RAID1)

Refer to INST01-178

### 3.1.7.1 Configuration Information Work Sheet For RAID5 (SVP version : Before 01-02-XX)

| Device Structure Setup      |        | System Option Setup       |                                                                                                          |
|-----------------------------|--------|---------------------------|----------------------------------------------------------------------------------------------------------|
| Sub system ID               | (1)    | CHA Packages(5)           | <input type="checkbox"/> Basic <input type="checkbox"/> Option                                           |
| Cache Capacity (128-8192)2x | (2) MB | Redundant Power Supply(6) | <input type="checkbox"/> Cluster <input type="checkbox"/> Cache                                          |
| Emulation Type : DKC :      | (3)    | Cache Module Size(7)      | <input type="checkbox"/> 128MB <input type="checkbox"/> 32MB                                             |
| DKA Packages (2.4.6.8)      | (4)    | Spare Disk Recovering(8)  | <input type="checkbox"/> Interleave <input type="checkbox"/> Background <input type="checkbox"/> Offline |
|                             |        | Dynamic Sparring(9)       | <input type="checkbox"/> Do <input type="checkbox"/> Donot                                               |
|                             |        | Correction Copy(10)       | <input type="checkbox"/> Do <input type="checkbox"/> Donot                                               |

| : PG (** ~ **) ..... Parity Group No.(Logical Device No.)                                                                                                                                            |                                                                                                                                                                                                      |                                                                                                                                                                                                      |                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>8th FB4</b><br>RAID level: (11)<br>Data Drives(0-28): (12)<br>Spare Drives(0-4): (13)<br>Emulation Type DKU: (14)<br>PG 1D (** - **):<br>PG 1E (** - **):<br>PG 1F (** - **):<br>PG 20 (** - **): | <b>4th FB4</b><br>RAID level: (11)<br>Data Drives(0-28): (12)<br>Spare Drives(0-4): (13)<br>Emulation Type DKU: (14)<br>PG 0D (** - **):<br>PG 0E (** - **):<br>PG 0F (** - **):<br>PG 10 (** - **): | <b>2nd FB4</b><br>RAID level: (11)<br>Data Drives(0-28): (12)<br>Spare Drives(0-4): (13)<br>Emulation Type DKU: (14)<br>PG 05 (** - **):<br>PG 06 (** - **):<br>PG 07 (** - **):<br>PG 08 (** - **): | <b>6th FB4</b><br>RAID level: (11)<br>Data Drives(0-28): (12)<br>Spare Drives(0-4): (13)<br>Emulation Type DKU: (14)<br>PG 15 (** - **):<br>PG 16 (** - **):<br>PG 17 (** - **):<br>PG 18 (** - **): |
| <b>7th FB4</b><br>RAID level: (11)<br>Data Drives(0-28): (12)<br>Spare Drives(0-4): (13)<br>Emulation Type DKU: (14)<br>PG 19 (** - **):<br>PG 1A (** - **):<br>PG 1B (** - **):<br>PG 1C (** - **): | <b>3rd FB4</b><br>RAID level: (11)<br>Data Drives(0-28): (12)<br>Spare Drives(0-4): (13)<br>Emulation Type DKU: (14)<br>PG 09 (** - **):<br>PG 0A (** - **):<br>PG 0B (** - **):<br>PG 0C (** - **): | <b>1st FB4</b><br>RAID level: (11)<br>Data Drives(0-28): (12)<br>Spare Drives(0-4): (13)<br>Emulation Type DKU: (14)<br>PG 01 (** - **):<br>PG 02 (** - **):<br>PG 03 (** - **):<br>PG 04 (** - **): | <b>5th FB4</b><br>RAID level: (11)<br>Data Drives(0-28): (12)<br>Spare Drives(0-4): (13)<br>Emulation Type DKU: (14)<br>PG 11 (** - **):<br>PG 12 (** - **):<br>PG 13 (** - **):<br>PG 14 (** - **): |
| DKU-4                                                                                                                                                                                                | DKU-2                                                                                                                                                                                                | DKC                                                                                                                                                                                                  | DKU-1    DKU-3                                                                                                                                                                                       |

Logical Device ID Sequence (15)    ☐ in each FB4s    ☐ through two FB4s

| Basic Channel Configuration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Option Channel Configuration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Adapter: CHA-1E/2Q (16)<br>CH Type/Number per Adapter<br><input type="checkbox"/> Serial 2ch <input type="checkbox"/> Serial 4ch <input type="checkbox"/> Parallel 4ch<br><br>Adapter: CHA-1E (Only Parallel 4ch option installed)<br><div style="display: flex; justify-content: space-between;"> <div>             Channel A Channel Speed (18)<br/>             Channel B Channel Speed (18)<br/>             Channel C Channel Speed (18)<br/>             Channel D Channel Speed (18)           </div> <div>             Control (17) devices<br/>             Device Address (19)<br/>             Device Address (19)<br/>             Device Address (19)<br/>             Device Address (19)           </div> </div><br>Adapter: CHA-2Q (Only Parallel 4ch option installed)<br><div style="display: flex; justify-content: space-between;"> <div>             Channel A Channel Speed (18)<br/>             Channel B Channel Speed (18)<br/>             Channel C Channel Speed (18)<br/>             Channel D Channel Speed (18)           </div> <div>             Device Address (19)<br/>             Device Address (19)<br/>             Device Address (19)<br/>             Device Address (19)           </div> </div> | Adapter: CHA-1F/2R (16)<br>CH Type/Number per Adapter<br><input type="checkbox"/> Serial 2ch <input type="checkbox"/> Serial 4ch <input type="checkbox"/> Parallel 4ch<br><br>Adapter: CHA-1F (Only Parallel 4ch option installed)<br><div style="display: flex; justify-content: space-between;"> <div>             Channel E Channel Speed (18)<br/>             Channel F Channel Speed (18)<br/>             Channel G Channel Speed (18)<br/>             Channel H Channel Speed (18)           </div> <div>             Control (17) devices<br/>             Device Address (19)<br/>             Device Address (19)<br/>             Device Address (19)<br/>             Device Address (19)           </div> </div><br>Adapter: CHA-2R (Only Parallel 4ch option installed)<br><div style="display: flex; justify-content: space-between;"> <div>             Channel E Channel Speed (18)<br/>             Channel F Channel Speed (18)<br/>             Channel G Channel Speed (18)<br/>             Channel H Channel Speed (18)           </div> <div>             Device Address (19)<br/>             Device Address (19)<br/>             Device Address (19)<br/>             Device Address (19)           </div> </div> |

## [Note]

- (1): The user can specify any value of (0004)<sub>16</sub> to (FFF8)<sub>16</sub>, enter an integral multiple of (0004)<sub>16</sub>.
- (2): For cache size values of 128 to 2048, enter an intergral multiple 128. For cache size value of 2048 to 8192, enter an integral multiple of 1024.
- (3): Specify DKC emulation type.
- (4): Specify the check of installed DKAs.
- (5): Specify the check of installed CHAs.
- (6): Specify the Redundant Power Supply to be installed.
- (7): Specify the check of installed cache module size.
- (8): Select "Interleave"
- (9): Specify the Dynamic Sparing Mode
- (10): Specify the Correction Copy Mode
- (11): Specify the RAID level.
- (12): Specify the number of data disk drives to be installed. Enter a multiple of 7 between 7 and 28.  
Enter zero if no FB4 is to be insatlld, except for the first FB4.
- (13): Specify the number of spare disk drives to be installed.
- (14): Specify the DKU emulation type.
- (15): Select Logical Device ID Sequence.
- (16): Specify the CHA type.
- (17): Specify the Control devices.  
Enter one of the following values.  
(32), (64), (128), (256)

| Control Devices | Device Address                          |
|-----------------|-----------------------------------------|
| 32              | (00),(20),(40),(60),(80),(A0),(C0),(E0) |
| 64              | (00),(40),(80),(C0)                     |
| 128             | (00),(80)                               |
| 256             | (00)                                    |

- (18): Specify the data transfer rate for the channel. Select one of the following value.  
3MB/s, 4.5MB/s, 6MB/s, 9MB/s
- (19): Specify the CU adderss of the channel. Enter one of the following values.(the CU address must be unique within those for the channel for the other DKCs connected in daisy chain configration.)  
(00)x, (20)x, (40)x, (60)x, (80)x, (A0)x, (C0)x, (E0)x

## 3.1.7.2 Configuration Information Work Sheet For RAID5 (SVP version : From 01-03-XX to 01-04-06)

| Device Structure Setup       |     |                           |                                                                 | System Option Setup      |  |  |                                                                                                          |
|------------------------------|-----|---------------------------|-----------------------------------------------------------------|--------------------------|--|--|----------------------------------------------------------------------------------------------------------|
| Sub system ID                | (1) | CHA Packages(5)           | <input type="checkbox"/> Basic <input type="checkbox"/> Option  | Spare Disk Recovering(8) |  |  | <input type="checkbox"/> Interleave <input type="checkbox"/> Background <input type="checkbox"/> Offline |
| Cache Capacity (128-8192):2× | (2) | Redundant Power Supply(6) | <input type="checkbox"/> Cluster <input type="checkbox"/> Cache | Dynamic Sparring(9)      |  |  | <input type="checkbox"/> Do <input type="checkbox"/> Donot                                               |
| Emulation Type : DKC :       | (3) | Cache Module Size(7)      | <input type="checkbox"/> 128MB <input type="checkbox"/> 32MB    | Correction Copy(10)      |  |  | <input type="checkbox"/> Do <input type="checkbox"/> Donot                                               |
| DKA Packages (2.4.6.8)       | (4) |                           |                                                                 |                          |  |  |                                                                                                          |

| : PG ** ..... Group No.       |         |                               |         |                               |         |                               |         |
|-------------------------------|---------|-------------------------------|---------|-------------------------------|---------|-------------------------------|---------|
| 8th FB4                       |         | 4th FB4                       |         | 2nd FB4                       |         | 6th FB4                       |         |
| RAID level: (11)              |         | RAID level: (11)              |         | RAID level: (11)              |         | RAID level: (11)              |         |
| GRP(1-4): (12)                |         | GRP(1-4): (12)                |         | GRP(1-4): (12)                |         | GRP(1-4): (12)                |         |
|                               |         | Spare Drives(0-4): (13)       |         |                               |         | Spare Drives(0-4): (13)       |         |
| (14) LDEV Drive Emulation P:L |         | (14) LDEV Drive Emulation P:L |         | (14) LDEV Drive Emulation P:L |         | (14) LDEV Drive Emulation P:L |         |
| GR225                         | ① ② ③ ④ | GR97                          | ① ② ③ ④ | GR33                          | ① ② ③ ④ | GR161                         | ① ② ③ ④ |
| GR226                         | ① ② ③ ④ | GR98                          | ① ② ③ ④ | GR34                          | ① ② ③ ④ | GR162                         | ① ② ③ ④ |
| GR227                         | ① ② ③ ④ | GR99                          | ① ② ③ ④ | GR35                          | ① ② ③ ④ | GR163                         | ① ② ③ ④ |
| GR228                         | ① ② ③ ④ | GR100                         | ① ② ③ ④ | GR36                          | ① ② ③ ④ | GR164                         | ① ② ③ ④ |
| 7th FB4                       |         | 3rd FB4                       |         | 1st FB4                       |         | 5th FB4                       |         |
| RAID level: (11)              |         | RAID level: (11)              |         | RAID level: (11)              |         | RAID level: (11)              |         |
| GRP(1-4): (12)                |         | GRP(1-4): (12)                |         | GRP(1-4): (12)                |         | GRP(1-4): (12)                |         |
|                               |         | Spare Drives(0-4): (13)       |         |                               |         | Spare Drives(0-4): (13)       |         |
| (14) LDEV Drive Emulation P:L |         | (14) LDEV Drive Emulation P:L |         | (14) LDEV Drive Emulation P:L |         | (14) LDEV Drive Emulation P:L |         |
| GR193                         | ① ② ③ ④ | GR65                          | ① ② ③ ④ | GR01                          | ① ② ③ ④ | GR129                         | ① ② ③ ④ |
| GR194                         | ① ② ③ ④ | GR66                          | ① ② ③ ④ | GR02                          | ① ② ③ ④ | GR130                         | ① ② ③ ④ |
| GR195                         | ① ② ③ ④ | GR67                          | ① ② ③ ④ | GR03                          | ① ② ③ ④ | GR131                         | ① ② ③ ④ |
| GR196                         | ① ② ③ ④ | GR68                          | ① ② ③ ④ | GR04                          | ① ② ③ ④ | GR132                         | ① ② ③ ④ |
| DKU-4                         |         | DKU-2                         |         | DKC                           |         | DKU-1                         |         |
|                               |         |                               |         |                               |         | DKU-3                         |         |

| Basic Channel Configuration                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Option Channel Configuration                                                                                                                                                 |                |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|---------|-------------------------|------|----------------|------|-------------------------|------|----------------|------|-------------------------|------|----------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------|----------------|---------|-------------------------|------|----------------|------|-------------------------|------|----------------|------|-------------------------|------|----------------|------|
| Adapter: <u>CHA-1E2Q</u> (16)<br>CH Type/Number per Adapter<br><input type="checkbox"/> Serial 2ch <input type="checkbox"/> Serial 4ch <input type="checkbox"/> Parallel 4ch                                                                                                                                                                                                                                                                                                                  | Adapter: <u>CHA-1F2R</u> (16)<br>CH Type/Number per Adapter<br><input type="checkbox"/> Serial 2ch <input type="checkbox"/> Serial 4ch <input type="checkbox"/> Parallel 4ch |                |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Adapter: <u>CHA-1E</u> (Only Parallel 4ch option installed)<br><table style="width: 100%;"> <tr> <td>Channel A Channel Speed</td><td>(18)</td> <td>Control (17)</td><td>devices</td> </tr> <tr> <td>Channel B Channel Speed</td><td>(18)</td> <td>Device Address</td><td>(19)</td> </tr> <tr> <td>Channel C Channel Speed</td><td>(18)</td> <td>Device Address</td><td>(19)</td> </tr> <tr> <td>Channel D Channel Speed</td><td>(18)</td> <td>Device Address</td><td>(19)</td> </tr> </table> | Channel A Channel Speed                                                                                                                                                      | (18)           | Control (17)   | devices | Channel B Channel Speed | (18) | Device Address | (19) | Channel C Channel Speed | (18) | Device Address | (19) | Channel D Channel Speed | (18) | Device Address | (19) | Adapter: <u>CHA-1F</u> (Only Parallel 4ch option installed)<br><table style="width: 100%;"> <tr> <td>Channel E Channel Speed</td><td>(18)</td> <td>Control (17)</td><td>devices</td> </tr> <tr> <td>Channel F Channel Speed</td><td>(18)</td> <td>Device Address</td><td>(19)</td> </tr> <tr> <td>Channel G Channel Speed</td><td>(18)</td> <td>Device Address</td><td>(19)</td> </tr> <tr> <td>Channel H Channel Speed</td><td>(18)</td> <td>Device Address</td><td>(19)</td> </tr> </table> | Channel E Channel Speed | (18) | Control (17)   | devices | Channel F Channel Speed | (18) | Device Address | (19) | Channel G Channel Speed | (18) | Device Address | (19) | Channel H Channel Speed | (18) | Device Address | (19) |
| Channel A Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (18)                                                                                                                                                                         | Control (17)   | devices        |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel B Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (18)                                                                                                                                                                         | Device Address | (19)           |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel C Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (18)                                                                                                                                                                         | Device Address | (19)           |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel D Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (18)                                                                                                                                                                         | Device Address | (19)           |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel E Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (18)                                                                                                                                                                         | Control (17)   | devices        |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel F Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (18)                                                                                                                                                                         | Device Address | (19)           |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel G Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (18)                                                                                                                                                                         | Device Address | (19)           |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel H Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (18)                                                                                                                                                                         | Device Address | (19)           |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Adapter: <u>CHA-2Q</u> (Only Parallel 4ch option installed)<br><table style="width: 100%;"> <tr> <td>Channel A Channel Speed</td><td>(18)</td> <td>Device Address</td><td>(19)</td> </tr> <tr> <td>Channel B Channel Speed</td><td>(18)</td> <td>Device Address</td><td>(19)</td> </tr> <tr> <td>Channel C Channel Speed</td><td>(18)</td> <td>Device Address</td><td>(19)</td> </tr> <tr> <td>Channel D Channel Speed</td><td>(18)</td> <td>Device Address</td><td>(19)</td> </tr> </table>  | Channel A Channel Speed                                                                                                                                                      | (18)           | Device Address | (19)    | Channel B Channel Speed | (18) | Device Address | (19) | Channel C Channel Speed | (18) | Device Address | (19) | Channel D Channel Speed | (18) | Device Address | (19) | Adapter: <u>CHA-2R</u> (Only Parallel 4ch option installed)<br><table style="width: 100%;"> <tr> <td>Channel E Channel Speed</td><td>(18)</td> <td>Device Address</td><td>(19)</td> </tr> <tr> <td>Channel F Channel Speed</td><td>(18)</td> <td>Device Address</td><td>(19)</td> </tr> <tr> <td>Channel G Channel Speed</td><td>(18)</td> <td>Device Address</td><td>(19)</td> </tr> <tr> <td>Channel H Channel Speed</td><td>(18)</td> <td>Device Address</td><td>(19)</td> </tr> </table>  | Channel E Channel Speed | (18) | Device Address | (19)    | Channel F Channel Speed | (18) | Device Address | (19) | Channel G Channel Speed | (18) | Device Address | (19) | Channel H Channel Speed | (18) | Device Address | (19) |
| Channel A Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (18)                                                                                                                                                                         | Device Address | (19)           |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel B Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (18)                                                                                                                                                                         | Device Address | (19)           |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel C Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (18)                                                                                                                                                                         | Device Address | (19)           |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel D Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (18)                                                                                                                                                                         | Device Address | (19)           |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel E Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (18)                                                                                                                                                                         | Device Address | (19)           |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel F Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (18)                                                                                                                                                                         | Device Address | (19)           |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel G Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (18)                                                                                                                                                                         | Device Address | (19)           |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel H Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (18)                                                                                                                                                                         | Device Address | (19)           |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |      |                |         |                         |      |                |      |                         |      |                |      |                         |      |                |      |

## [Note]

- (1): The user can specify any value of (0004)<sub>16</sub> to (FFF8)<sub>16</sub>, enter an integral multiple of (0004)<sub>16</sub>.
- (2): For cache size values of 128 to 2048, enter an intergral multiple 128. For cache size value of 2048 to 8192, enter an integral multiple of 1024.
- (3): Specify DKC emulation type.
- (4): Specify the check of installed DKAs.
- (5): Specify the check of installed CHAs.
- (6): Specify the Redundant Power Supply to be installed.
- (7): Specify the check of installed cache module size.
- (8): Select "Interleave"
- (9): Specify the Dynamic Sparing Mode
- (10): Specify the Correction Copy Mode
- (11): Specify the RAID level.
- (12): Specify the group number on FB4
- (13): Specify the number of spare disk drives to be installed.
- (14): 1.LDEV; Specify the Device address
  - 2.Drive; Specify the P-dev type  
DK306-45="45"
  - 3.Emulation; Specify the DKU emulation type
  - 4.P:L P-dev number and L-dev number
- (15): Select Logical Device ID Sequence.
- (16): Specify the CHA type.
- (17): Specify the Control devices.  
Enter one of the following values.  
(32), (64), (128), (256)

| Control Devices | Device Address                          |
|-----------------|-----------------------------------------|
| 32              | (00),(20),(40),(60),(80),(A0),(C0),(E0) |
| 64              | (00),(40),(80),(C0)                     |
| 128             | (00),(80)                               |
| 256             | (00)                                    |

- (18): Specify the data transfer rate for the channel. Select one of the following value.  
3MB/s, 4.5MB/s, 6MB/s, 9MB/s
- (19): Specify the CU addresss of the channel. Enter one of the following values.(the CU address must be unique within those for the channel for the other DKCs connected in daisy chain configuration.)  
(00)x, (20)x, (40)x, (60)x, (80)x, (A0)x, (C0)x, (E0)x

## 3.1.7.3 Configuration Information Work Sheet For RAID5 (SVP version : From 01-04-07 to 01-04-XX)

| Device Structure Setup       |     | System Option Setup                                             |                                                                                                 |
|------------------------------|-----|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Sub System ID                | (1) | CHA Packages (5)                                                | Spare Disk Recovering (8)                                                                       |
| Cache Capacity (128-8192):2× | (2) | <input type="checkbox"/> Basic <input type="checkbox"/> Option  | <input type="checkbox"/> Interleave <input type="checkbox"/> Offline                            |
| DKC Emulation Type           | (3) | Redundant Power Supply (6)                                      | Dynamic Sparring (9)                                                                            |
| DKA Packages (2,4,6,8)       | (4) | <input type="checkbox"/> Cluster <input type="checkbox"/> Cache | <input type="checkbox"/> Do <input type="checkbox"/> Donot                                      |
|                              |     | Cache Module Size (7)                                           | Correction Copy (10)                                                                            |
|                              |     | <input type="checkbox"/> 128MB                                  | <input type="checkbox"/> Do <input type="checkbox"/> Donot                                      |
|                              |     |                                                                 | Disk Copy Pace (11)                                                                             |
|                              |     |                                                                 | <input type="checkbox"/> Medium <input type="checkbox"/> Faster <input type="checkbox"/> Slower |
|                              |     |                                                                 | High speed adapter check (12)                                                                   |
|                              |     |                                                                 | <input type="checkbox"/> Do <input type="checkbox"/> Donot                                      |
|                              |     |                                                                 | BUS Mode (13)                                                                                   |
|                              |     |                                                                 | <input type="checkbox"/> Sequential <input type="checkbox"/> Transaction                        |

| Basic Channel Configuration                                                                                   |                     | Option Channel Configuration                                                                                  |                     |
|---------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------|---------------------|
| Adapter: <u>CHA-1E/2Q</u> (18)                                                                                |                     | Adapter: <u>CHA-1F/2R</u> (18)                                                                                |                     |
| CH Type/Number per Adapter                                                                                    |                     | CH Type/Number per Adapter                                                                                    |                     |
| <input type="checkbox"/> Serial 2ch <input type="checkbox"/> Serial 4ch <input type="checkbox"/> Parallel 4ch |                     | <input type="checkbox"/> Serial 2ch <input type="checkbox"/> Serial 4ch <input type="checkbox"/> Parallel 4ch |                     |
| Adapter: <u>CHA-1E</u> (Only Parallel 4ch option installed)                                                   |                     | Adapter: <u>CHA-1F</u> (Only Parallel 4ch option installed)                                                   |                     |
| Control (19) Devices                                                                                          |                     | Control (19) Devices                                                                                          |                     |
| Channel A Channel Speed (20)                                                                                  | Device Address (21) | Channel E Channel Speed (20)                                                                                  | Device Address (21) |
| Channel B Channel Speed (20)                                                                                  | Device Address (21) | Channel F Channel Speed (20)                                                                                  | Device Address (21) |
| Channel C Channel Speed (20)                                                                                  | Device Address (21) | Channel G Channel Speed (20)                                                                                  | Device Address (21) |
| Channel D Channel Speed (20)                                                                                  | Device Address (21) | Channel H Channel Speed (20)                                                                                  | Device Address (21) |
| Adapter: <u>CHA-2Q</u> (Only Parallel 4ch option installed)                                                   |                     | Adapter: <u>CHA-2R</u> (Only Parallel 4ch option installed)                                                   |                     |
| Channel A Channel Speed (20)                                                                                  | Device Address (21) | Channel E Channel Speed (20)                                                                                  | Device Address (21) |
| Channel B Channel Speed (20)                                                                                  | Device Address (21) | Channel F Channel Speed (20)                                                                                  | Device Address (21) |
| Channel C Channel Speed (20)                                                                                  | Device Address (21) | Channel G Channel Speed (20)                                                                                  | Device Address (21) |
| Channel D Channel Speed (20)                                                                                  | Device Address (21) | Channel H Channel Speed (20)                                                                                  | Device Address (21) |

## [Note]

- (1): The user can specify any value of (0004)<sub>16</sub> to (FFF8)<sub>16</sub> enter an integral multiple of (0004)<sub>16</sub>.
- (2): For cache size values of 128 to 2048, enter an integral multiple of 128.  
For cache size value of 2048 to 8192, enter an integral multiple of 1024.
- (3): Specify DKC emulation type.
- (4): Specify the check of installed DKAs.
- (5): Specify the check of installed CHAs.
- (6): Specify the Redundant Power Supply to be installed.
- (7): Specify the check of installed cache module size.
- (8): Select "Interleave".
- (9): Specify the Dynamic Sparing Mode.
- (10): Specify the Correction Copy.
- (11): Select "Medium"
- (12):
  - In case of High speed DKC (For example, DKC210I-5E/DKC210IU-5E/DKC210IE-5E) : Select "Do".
  - In case of Up-grade (From Previous DKC to High speed DKC) : Select "Do".
  - In case of Previous DKC (For example, DKC210I-5/DKC210IU-5/DKC210IE-5) : Select "Do not".
  - In case of Intermix (Both High Speed Adapter and Previous Adapter on Previous DKC) : Select "Do not".

## [Note]

Intermix Specification of High Speed Adapter and Previous Adapter

- (a) High speed DKC;
  - High speed DKC does not allow intermix between High Speed Adapter and Previous Adapter.
- (b) Previous DKC;
  - Previous DKC allow intermix by Installation and Configuration change (ex. From Parallel CH to Serial CH).
  - Unit of installation is two adapter (Unit of Subsystem options for DKC).
  - Both High Speed Adapter and Previous Adapter intermix is allowed at voluntary.
- (c) Failure PCB (Adapter);
  - In case of failure at High Speed Adapter; Replace it with only High Speed Adapter.
  - In case of failure at Previous Adapter ; Replace it with only Previous Adapter.
- (13): Specify the BUS Mode.  
BUS Mode is displayed after 01-04-12/00 or 01-05-09 of SVP version.
- (14): Specify the RAID level.
- (15): Specify the group number on FB4.
- (16): Specify the group number of spare disk drives to be installed.
- (17):
  - ① LDEV; Specify the Device Address.
  - ② Drive; Specify the P-dev type.  
DK306-45 = "45"
  - ③ Emulation; specify the DKU emulation type.
  - ④ P:L; P-dev number and L-dev number.
- (18): Specify the CHA type.
- (19): Specify the Control Devices.

Enter one of the following values.

(32), (64), (128), (256)

| Control Devices | Device Address                          |
|-----------------|-----------------------------------------|
| 32              | (00),(20),(40),(60),(80),(A0),(C0),(E0) |
| 64              | (00),(40),(80),(C0)                     |
| 128             | (00),(80)                               |
| 256             | (00)                                    |

(20): Specify the data transfer rate for the channel. Select one of the following values.

3MB/s, 4.5MB/s, 6MB/s, 9MB/s

(21): Specify the CU address of the channel.

Enter one of the following values.

(the CU address must be unique within those for the channel for the other DKCs connected in daisy chain configuration.)

(00)<sub>x</sub>, (20)<sub>x</sub>, (40)<sub>x</sub>, (60)<sub>x</sub>, (80)<sub>x</sub>, (A0)<sub>x</sub>, (C0)<sub>x</sub>, (E0)<sub>x</sub>

## 3.1.7.4 Configuration Information Work Sheet For RAID5 (SVP version : After 01-05-XX)

| Device Structure Setup       |     | CHA Packages (5)                                                                              |                                 | System Option Setup                                                                                                    |  |
|------------------------------|-----|-----------------------------------------------------------------------------------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------|--|
| Sub System ID                | (1) | <input type="checkbox"/> Basic                                                                | <input type="checkbox"/> Option | Spare Disk Recovering (8)<br><input type="checkbox"/> Interleave <input type="checkbox"/> Offline                      |  |
| Cache Capacity (128-8192):2x | (2) | Redundant Power Supply (6)<br><input type="checkbox"/> Cluster <input type="checkbox"/> Cache |                                 | Dynamic Sparing (9)<br><input type="checkbox"/> Do <input type="checkbox"/> Donot                                      |  |
| DKC Emulation Type           | (3) | Cache Module Size (7)<br><input type="checkbox"/> 128MB                                       |                                 | Correction Copy (10)<br><input type="checkbox"/> Do <input type="checkbox"/> Donot                                     |  |
| DKA Packages (2,4,6,8)       | (4) | SM Addition (22)<br><input type="checkbox"/>                                                  |                                 | Disk Copy Pace (11)<br><input type="checkbox"/> Medium <input type="checkbox"/> Faster <input type="checkbox"/> Slower |  |
|                              |     |                                                                                               |                                 | High speed adapter check (12)<br><input type="checkbox"/> Do <input type="checkbox"/> Donot                            |  |
|                              |     |                                                                                               |                                 | BUS Mode (13)<br><input type="checkbox"/> Sequential <input type="checkbox"/> Transaction                              |  |

| 8th FB4                      |         | 4th FB4                |         | 2nd FB4                |         | 6th FB4                |         |
|------------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|
| RAID level:                  | (14)    | RAID level:            | (14)    | RAID level:            | (14)    | RAID level:            | (14)    |
| GRP(1-4):                    | (15)    | GRP(1-4):              | (15)    | GRP(1-4):              | (15)    | GRP(1-4):              | (15)    |
| (17)LDEV Drive Emulation P:L |         | Spare Drive(0-4): (16) |         | Spare Drive(0-4): (16) |         | Spare Drive(0-4): (16) |         |
| GR8-1                        | ① ② ③ ④ | GR4-1                  | ① ② ③ ④ | GR2-1                  | ① ② ③ ④ | GR6-1                  | ① ② ③ ④ |
| GR8-2                        | ① ② ③ ④ | GR4-2                  | ① ② ③ ④ | GR2-2                  | ① ② ③ ④ | GR6-2                  | ① ② ③ ④ |
| GR8-3                        | ① ② ③ ④ | GR4-3                  | ① ② ③ ④ | GR2-3                  | ① ② ③ ④ | GR6-3                  | ① ② ③ ④ |
| GR8-4                        | ① ② ③ ④ | GR4-4                  | ① ② ③ ④ | GR2-4                  | ① ② ③ ④ | GR6-4                  | ① ② ③ ④ |

| 7th FB4                      |         | 3rd FB4                |         | 1st FB4                |         | 5th FB4                |         |
|------------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|
| RAID level:                  | (14)    | RAID level:            | (14)    | RAID level:            | (14)    | RAID level:            | (14)    |
| GRP(1-4):                    | (15)    | GRP(1-4):              | (15)    | GRP(1-4):              | (15)    | GRP(1-4):              | (15)    |
| (17)LDEV Drive Emulation P:L |         | Spare Drive(0-4): (16) |         | Spare Drive(0-4): (16) |         | Spare Drive(0-4): (16) |         |
| GR7-1                        | ① ② ③ ④ | GR3-1                  | ① ② ③ ④ | GR1-1                  | ① ② ③ ④ | GR5-1                  | ① ② ③ ④ |
| GR7-2                        | ① ② ③ ④ | GR3-2                  | ① ② ③ ④ | GR1-2                  | ① ② ③ ④ | GR5-2                  | ① ② ③ ④ |
| GR7-3                        | ① ② ③ ④ | GR3-3                  | ① ② ③ ④ | GR1-3                  | ① ② ③ ④ | GR5-3                  | ① ② ③ ④ |
| GR7-4                        | ① ② ③ ④ | GR3-4                  | ① ② ③ ④ | GR1-4                  | ① ② ③ ④ | GR5-4                  | ① ② ③ ④ |

| Basic Channel Configuration                                                                                                                                                                                                                                                 |                     | Option Channel Configuration                                                                                                                                                                                                                                                |                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Adapter: <u>CHA-1E/2Q</u> (18)<br>CH Type/Number per Adapter<br><input type="checkbox"/> Serial 2ch <input type="checkbox"/> Serial 4ch <input type="checkbox"/> Parallel 4ch                                                                                               |                     | Adapter: <u>CHA-1F/2R</u> (18)<br>CH Type/Number per Adapter<br><input type="checkbox"/> Serial 2ch <input type="checkbox"/> Serial 4ch <input type="checkbox"/> Parallel 4ch                                                                                               |                     |
| Adapter: <u>CHA-1E</u> (Only Parallel 4ch option installed)<br>Control (19) Devices                                                                                                                                                                                         |                     | Adapter: <u>CHA-1F</u> (Only Parallel 4ch option installed)<br>Control (19) Devices                                                                                                                                                                                         |                     |
| Channel A Channel Speed (20)                                                                                                                                                                                                                                                | Device Address (21) | Channel E Channel Speed (20)                                                                                                                                                                                                                                                | Device Address (21) |
| Channel B Channel Speed (20)                                                                                                                                                                                                                                                | Device Address (21) | Channel F Channel Speed (20)                                                                                                                                                                                                                                                | Device Address (21) |
| Channel C Channel Speed (20)                                                                                                                                                                                                                                                | Device Address (21) | Channel G Channel Speed (20)                                                                                                                                                                                                                                                | Device Address (21) |
| Channel D Channel Speed (20)                                                                                                                                                                                                                                                | Device Address (21) | Channel H Channel Speed (20)                                                                                                                                                                                                                                                | Device Address (21) |
| Adapter: <u>CHA-2Q</u> (Only Parallel 4ch option installed)<br>Channel A Channel Speed (20) Device Address (21)<br>Channel B Channel Speed (20) Device Address (21)<br>Channel C Channel Speed (20) Device Address (21)<br>Channel D Channel Speed (20) Device Address (21) |                     | Adapter: <u>CHA-2R</u> (Only Parallel 4ch option installed)<br>Channel E Channel Speed (20) Device Address (21)<br>Channel F Channel Speed (20) Device Address (21)<br>Channel G Channel Speed (20) Device Address (21)<br>Channel H Channel Speed (20) Device Address (21) |                     |

## [Note]

- (1): The user can specify any value of (0004)<sub>16</sub> to (FFF8)<sub>16</sub> enter an integral multiple of (0004)<sub>16</sub>.
- (2): For cache size values of 128 to 2048, enter an integral multiple of 128.  
For cache size value of 2048 to 8192, enter an integral multiple of 1024.
- (3): Specify DKC emulation type.
- (4): Specify the check of installed DKAs.
- (5): Specify the check of installed CHAs.
- (6): Specify the Redundant Power Supply to be installed.
- (7): Specify the check of installed cache module size.
- (8): Select "Interleave".
- (9): Specify the Dynamic Sparing Mode.
- (10): Specify the Correction Copy.
- (11): Select "Medium"
- (12):
  - In case of High speed DKC (For example, DKC210I-5E/DKC210IU-5E/DKC210IE-5E) : Select "Do".
  - In case of Up-grade (From Previous DKC to High speed DKC) : Select "Do".
  - In case of Previous DKC (For example, DKC210I-5/DKC210IU-5/DKC210IE-5) : Select "Do not".
  - In case of Intermix (Both High Speed Adapter and Previous Adapter on Previous DKC) : Select "Do not".

## [Note]

Intermix Specification of High Speed Adapter and Previous Adapter

- (a) High speed DKC;
    - High speed DKC does not allow intermix between High Speed Adapter and Previous Adapter.
  - (b) Previous DKC;
    - Previous DKC allow intermix by Installation and Configuration change (ex. From Parallel CH to Serial CH).
    - Unit of installation is two adapter (Unit of Subsystem options for DKC).
    - Both High Speed Adapter and Previous Adapter intermix is allowed at voluntary.
  - (c) Failure PCB (Adapter);
    - In case of failure at High Speed Adapter; Replace it with only High Speed Adapter.
    - In case of failure at Previous Adapter ; Replace it with only Previous Adapter.
- (13): Specify the BUS Mode.  
BUS Mode is displayed after 01-04-12/00 or 01-05-09 of SVP version.
- (14): Specify the RAID level.
- (15): Specify the group number on FB4.
- [Note]
- In case of RAID5 (DK306-45);  
Maximum Configuration is eight FB4.
  - In case of RAID5 (DK308-90);  
Maximum Configuration is four FB4.
- (16): Specify the group number of spare disk drives to be installed.
- (17):
  - ① LDEV; Specify the Device Address.
  - ② Drive; Specify the P-dev type.  
DK306-45 = "45"  
DK308-90 = "90"
  - ③ Emulation; specify the DKU emulation type.
  - ④ P:L; P-dev number and L-dev number.
- (18): Specify the CHA type.

(19): Specify the Control Devices.

Enter one of the following values.

(32), (64), (128), (256)

| Control Devices | Device Address                          |
|-----------------|-----------------------------------------|
| 32              | (00),(20),(40),(60),(80),(A0),(C0),(E0) |
| 64              | (00),(40),(80),(C0)                     |
| 128             | (00),(80)                               |
| 256             | (00)                                    |

(20): Specify the data transfer rate for the channel. Select one of the following values.

3MB/s, 4.5MB/s, 6MB/s, 9MB/s

(21): Specify the CU address of the channel.

Enter one of the following values.

(the CU address must be unique within those for the channel for the other DKCs connected in daisy chain configuration.)

(00)<sub>x</sub>, (20)<sub>x</sub>, (40)<sub>x</sub>, (60)<sub>x</sub>, (80)<sub>x</sub>, (A0)<sub>x</sub>, (C0)<sub>x</sub>, (E0)<sub>x</sub>

(22): SM Addition

In case of RAID level = RAID 1 or DKU Emulation = 3390-9

## 3.1.7.5 Configuration Information Work Sheet For RAID1 (SVP version : After 01-05-XX)

| Device Structure Setup       |     | CHA Packages (5)                                                                              |                                 | System Option Setup                                                                                                    |  |
|------------------------------|-----|-----------------------------------------------------------------------------------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------|--|
| Sub System ID                | (1) | <input type="checkbox"/> Basic                                                                | <input type="checkbox"/> Option | Spare Disk Recovering (8)<br><input type="checkbox"/> Interleave <input type="checkbox"/> Offline                      |  |
| Cache Capacity (128-8192):2× | (2) | Redundant Power Supply (6)<br><input type="checkbox"/> Cluster <input type="checkbox"/> Cache |                                 | Dynamic Sparring (9)<br><input type="checkbox"/> Do <input type="checkbox"/> Donot                                     |  |
| DKC Emulation Type           | (3) |                                                                                               |                                 | Correction Copy (10)<br><input type="checkbox"/> Do <input type="checkbox"/> Donot                                     |  |
| DKA Packages (2,4,6,8)       | (4) | Cache Module Size (7)<br><input type="checkbox"/> 128MB                                       |                                 | Disk Copy Pace (11)<br><input type="checkbox"/> Medium <input type="checkbox"/> Faster <input type="checkbox"/> Slower |  |
|                              |     | SM Addition (22)<br><input type="checkbox"/>                                                  |                                 | High speed adapter check (12)<br><input type="checkbox"/> Do <input type="checkbox"/> Donot                            |  |
|                              |     |                                                                                               |                                 | BUS Mode (13)<br><input type="checkbox"/> Sequential <input type="checkbox"/> Transaction                              |  |

| Basic Channel Configuration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Option Channel Configuration                                                                                                                                                  |                |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|------|-------------------------|------|----------------|------|-------------------------|------|----------------|------|-------------------------|------|----------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------|----------------|------|-------------------------|------|----------------|------|-------------------------|------|----------------|------|-------------------------|------|----------------|------|
| Adapter: <u>CHA-1E/2Q</u> (18)<br>CH Type/Number per Adapter<br><input type="checkbox"/> Serial 2ch <input type="checkbox"/> Serial 4ch <input type="checkbox"/> Parallel 4ch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Adapter: <u>CHA-1F/2R</u> (18)<br>CH Type/Number per Adapter<br><input type="checkbox"/> Serial 2ch <input type="checkbox"/> Serial 4ch <input type="checkbox"/> Parallel 4ch |                |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Adapter: <u>CHA-1E</u> (Only Parallel 4ch option installed)<br><div style="display: flex; justify-content: space-between;"> <div>Control (19)</div> <div>Devices</div> </div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Channel A Channel Speed</td> <td style="width: 10%; text-align: center;">(20)</td> <td style="width: 30%;">Device Address</td> <td style="width: 10%; text-align: center;">(21)</td> </tr> <tr> <td>Channel B Channel Speed</td> <td style="text-align: center;">(20)</td> <td>Device Address</td> <td style="text-align: center;">(21)</td> </tr> <tr> <td>Channel C Channel Speed</td> <td style="text-align: center;">(20)</td> <td>Device Address</td> <td style="text-align: center;">(21)</td> </tr> <tr> <td>Channel D Channel Speed</td> <td style="text-align: center;">(20)</td> <td>Device Address</td> <td style="text-align: center;">(21)</td> </tr> </table> | Channel A Channel Speed                                                                                                                                                       | (20)           | Device Address | (21) | Channel B Channel Speed | (20) | Device Address | (21) | Channel C Channel Speed | (20) | Device Address | (21) | Channel D Channel Speed | (20) | Device Address | (21) | Adapter: <u>CHA-1F</u> (Only Parallel 4ch option installed)<br><div style="display: flex; justify-content: space-between;"> <div>Control (19)</div> <div>Devices</div> </div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Channel E Channel Speed</td> <td style="width: 10%; text-align: center;">(20)</td> <td style="width: 30%;">Device Address</td> <td style="width: 10%; text-align: center;">(21)</td> </tr> <tr> <td>Channel F Channel Speed</td> <td style="text-align: center;">(20)</td> <td>Device Address</td> <td style="text-align: center;">(21)</td> </tr> <tr> <td>Channel G Channel Speed</td> <td style="text-align: center;">(20)</td> <td>Device Address</td> <td style="text-align: center;">(21)</td> </tr> <tr> <td>Channel H Channel Speed</td> <td style="text-align: center;">(20)</td> <td>Device Address</td> <td style="text-align: center;">(21)</td> </tr> </table> | Channel E Channel Speed | (20) | Device Address | (21) | Channel F Channel Speed | (20) | Device Address | (21) | Channel G Channel Speed | (20) | Device Address | (21) | Channel H Channel Speed | (20) | Device Address | (21) |
| Channel A Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (20)                                                                                                                                                                          | Device Address | (21)           |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel B Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (20)                                                                                                                                                                          | Device Address | (21)           |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel C Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (20)                                                                                                                                                                          | Device Address | (21)           |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel D Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (20)                                                                                                                                                                          | Device Address | (21)           |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel E Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (20)                                                                                                                                                                          | Device Address | (21)           |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel F Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (20)                                                                                                                                                                          | Device Address | (21)           |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel G Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (20)                                                                                                                                                                          | Device Address | (21)           |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel H Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (20)                                                                                                                                                                          | Device Address | (21)           |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Adapter: <u>CHA-2Q</u> (Only Parallel 4ch option installed)<br><table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Channel A Channel Speed</td> <td style="width: 10%; text-align: center;">(20)</td> <td style="width: 30%;">Device Address</td> <td style="width: 10%; text-align: center;">(21)</td> </tr> <tr> <td>Channel B Channel Speed</td> <td style="text-align: center;">(20)</td> <td>Device Address</td> <td style="text-align: center;">(21)</td> </tr> <tr> <td>Channel C Channel Speed</td> <td style="text-align: center;">(20)</td> <td>Device Address</td> <td style="text-align: center;">(21)</td> </tr> <tr> <td>Channel D Channel Speed</td> <td style="text-align: center;">(20)</td> <td>Device Address</td> <td style="text-align: center;">(21)</td> </tr> </table>                                                                                                                | Channel A Channel Speed                                                                                                                                                       | (20)           | Device Address | (21) | Channel B Channel Speed | (20) | Device Address | (21) | Channel C Channel Speed | (20) | Device Address | (21) | Channel D Channel Speed | (20) | Device Address | (21) | Adapter: <u>CHA-2R</u> (Only Parallel 4ch option installed)<br><table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Channel E Channel Speed</td> <td style="width: 10%; text-align: center;">(20)</td> <td style="width: 30%;">Device Address</td> <td style="width: 10%; text-align: center;">(21)</td> </tr> <tr> <td>Channel F Channel Speed</td> <td style="text-align: center;">(20)</td> <td>Device Address</td> <td style="text-align: center;">(21)</td> </tr> <tr> <td>Channel G Channel Speed</td> <td style="text-align: center;">(20)</td> <td>Device Address</td> <td style="text-align: center;">(21)</td> </tr> <tr> <td>Channel H Channel Speed</td> <td style="text-align: center;">(20)</td> <td>Device Address</td> <td style="text-align: center;">(21)</td> </tr> </table>                                                                                                                | Channel E Channel Speed | (20) | Device Address | (21) | Channel F Channel Speed | (20) | Device Address | (21) | Channel G Channel Speed | (20) | Device Address | (21) | Channel H Channel Speed | (20) | Device Address | (21) |
| Channel A Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (20)                                                                                                                                                                          | Device Address | (21)           |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel B Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (20)                                                                                                                                                                          | Device Address | (21)           |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel C Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (20)                                                                                                                                                                          | Device Address | (21)           |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel D Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (20)                                                                                                                                                                          | Device Address | (21)           |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel E Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (20)                                                                                                                                                                          | Device Address | (21)           |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel F Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (20)                                                                                                                                                                          | Device Address | (21)           |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel G Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (20)                                                                                                                                                                          | Device Address | (21)           |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |
| Channel H Channel Speed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (20)                                                                                                                                                                          | Device Address | (21)           |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |      |                |      |                         |      |                |      |                         |      |                |      |                         |      |                |      |

| 8th FB4      |      |       |           |      |  |
|--------------|------|-------|-----------|------|--|
| RAID Level : |      |       |           |      |  |
| GRP(1-6) :   |      |       |           |      |  |
| (17)         |      |       | (14)      | (15) |  |
| GRP          | LDEV | Drive | Emulation | P.L. |  |
| 8-1          | ①    | ②     | ③         | ④    |  |
| 8-2          |      |       |           |      |  |
| 8-3          |      |       |           |      |  |
| 8-4          |      |       |           |      |  |
| 8-5          |      |       |           |      |  |
| 8-6          |      |       |           |      |  |

| 4th FB4            |      |       |           |      |      |
|--------------------|------|-------|-----------|------|------|
| RAID Level :       |      |       |           |      |      |
| GRP(1-14) :        |      |       |           |      |      |
| Spare Drive(0-4) : |      |       |           |      |      |
| (17)               |      |       | (14)      | (15) | (16) |
| GRP                | LDEV | Drive | Emulation | P.L. |      |
| 4-1                | ①    | ②     | ③         | ④    |      |
| 4-2                |      |       |           |      |      |
| 4-3                |      |       |           |      |      |
| 4-4                |      |       |           |      |      |
| 4-5                |      |       |           |      |      |
| 4-6                |      |       |           |      |      |
| 4-7                |      |       |           |      |      |
| 4-8                |      |       |           |      |      |
| 4-9                |      |       |           |      |      |
| 4-10               |      |       |           |      |      |
| 4-11               |      |       |           |      |      |
| 4-12               |      |       |           |      |      |
| 4-13               |      |       |           |      |      |
| 4-14               |      |       |           |      |      |

| 2nd FB4            |      |       |           |      |      |
|--------------------|------|-------|-----------|------|------|
| RAID Level :       |      |       |           |      |      |
| GRP(1-14) :        |      |       |           |      |      |
| Spare Drive(0-4) : |      |       |           |      |      |
| (17)               |      |       | (14)      | (15) | (16) |
| GRP                | LDEV | Drive | Emulation | P.L. |      |
| 2-1                | ①    | ②     | ③         | ④    |      |
| 2-2                |      |       |           |      |      |
| 2-3                |      |       |           |      |      |
| 2-4                |      |       |           |      |      |
| 2-5                |      |       |           |      |      |
| 2-6                |      |       |           |      |      |
| 2-7                |      |       |           |      |      |
| 2-8                |      |       |           |      |      |
| 2-9                |      |       |           |      |      |
| 2-10               |      |       |           |      |      |
| 2-11               |      |       |           |      |      |
| 2-12               |      |       |           |      |      |
| 2-13               |      |       |           |      |      |
| 2-14               |      |       |           |      |      |

| 6th FB4      |      |       |           |      |  |
|--------------|------|-------|-----------|------|--|
| RAID Level : |      |       |           |      |  |
| GRP(1-8) :   |      |       |           |      |  |
| (17)         |      |       | (14)      | (15) |  |
| GRP          | LDEV | Drive | Emulation | P.L. |  |
| 6-1          | ①    | ②     | ③         | ④    |  |
| 6-2          |      |       |           |      |  |
| 6-3          |      |       |           |      |  |
| 6-4          |      |       |           |      |  |
| 6-5          |      |       |           |      |  |
| 6-6          |      |       |           |      |  |
| 6-7          |      |       |           |      |  |
| 6-8          |      |       |           |      |  |

| 7th FB4      |      |       |           |      |  |
|--------------|------|-------|-----------|------|--|
| RAID Level : |      |       |           |      |  |
| GRP(1-6) :   |      |       |           |      |  |
| (17)         |      |       | (14)      | (15) |  |
| GRP          | LDEV | Drive | Emulation | P.L. |  |
| 7-1          | ①    | ②     | ③         | ④    |  |
| 7-2          |      |       |           |      |  |
| 7-3          |      |       |           |      |  |
| 7-4          |      |       |           |      |  |
| 7-5          |      |       |           |      |  |
| 7-6          |      |       |           |      |  |

4th DKU

| 3rd FB4            |      |       |           |      |      |
|--------------------|------|-------|-----------|------|------|
| RAID Level :       |      |       |           |      |      |
| GRP(1-14) :        |      |       |           |      |      |
| Spare Drive(0-4) : |      |       |           |      |      |
| (17)               |      |       | (14)      | (15) | (16) |
| GRP                | LDEV | Drive | Emulation | P.L. |      |
| 3-1                | ①    | ②     | ③         | ④    |      |
| 3-2                |      |       |           |      |      |
| 3-3                |      |       |           |      |      |
| 3-4                |      |       |           |      |      |
| 3-5                |      |       |           |      |      |
| 3-6                |      |       |           |      |      |
| 3-7                |      |       |           |      |      |
| 3-8                |      |       |           |      |      |
| 3-9                |      |       |           |      |      |
| 3-10               |      |       |           |      |      |
| 3-11               |      |       |           |      |      |
| 3-12               |      |       |           |      |      |
| 3-13               |      |       |           |      |      |
| 3-14               |      |       |           |      |      |

2nd DKU

| 1st FB4            |      |       |           |      |      |
|--------------------|------|-------|-----------|------|------|
| RAID Level :       |      |       |           |      |      |
| GRP(1-14) :        |      |       |           |      |      |
| Spare Drive(0-4) : |      |       |           |      |      |
| (17)               |      |       | (14)      | (15) | (16) |
| GRP                | LDEV | Drive | Emulation | P.L. |      |
| 1-1                | ①    | ②     | ③         | ④    |      |
| 1-2                |      |       |           |      |      |
| 1-3                |      |       |           |      |      |
| 1-4                |      |       |           |      |      |
| 1-5                |      |       |           |      |      |
| 1-6                |      |       |           |      |      |
| 1-7                |      |       |           |      |      |
| 1-8                |      |       |           |      |      |
| 1-9                |      |       |           |      |      |
| 1-10               |      |       |           |      |      |
| 1-11               |      |       |           |      |      |
| 1-12               |      |       |           |      |      |
| 1-13               |      |       |           |      |      |
| 1-14               |      |       |           |      |      |

1st DKU

| 5th FB4      |      |       |           |      |  |
|--------------|------|-------|-----------|------|--|
| RAID Level : |      |       |           |      |  |
| GRP(1-8) :   |      |       |           |      |  |
| (17)         |      |       | (14)      | (15) |  |
| GRP          | LDEV | Drive | Emulation | P.L. |  |
| 5-1          | ①    | ②     | ③         | ④    |  |
| 5-2          |      |       |           |      |  |
| 5-3          |      |       |           |      |  |
| 5-4          |      |       |           |      |  |
| 5-5          |      |       |           |      |  |
| 5-6          |      |       |           |      |  |
| 5-7          |      |       |           |      |  |
| 5-8          |      |       |           |      |  |

3rd DKU

## [Note]

- (1): The user can specify any value of (0004)<sub>16</sub> to (FFF8)<sub>16</sub> enter an integral multiple of (0004)<sub>16</sub>.
- (2): For cache size values of 128 to 2048, enter an integral multiple of 128.  
For cache size value of 2048 to 8192, enter an integral multiple of 1024.
- (3): Specify DKC emulation type.
- (4): Specify the check of installed DKAs.
- (5): Specify the check of installed CHAs.
- (6): Specify the Redundant Power Supply to be installed.
- (7): Specify the check of installed cache module size.
- (8): Select "Interleave".
- (9): Specify the Dynamic Sparing Mode.
- (10): Specify the Correction Copy.
- (11): Select "Medium"
- (12): • In case of High speed DKC (For example, DKC210I-5E/DKC210IU-5E/DKC210IE-5E) : Select "Do".  
• In case of Up-grade (From Previous DKC to High speed DKC) : Select "Do".  
• In case of Previous DKC (For example, DKC210I-5/DKC210IU-5/DKC210IE-5) : Select "Do not".  
• In case of Intermix (Both High Speed Adapter and Previous Adapter on Previous DKC) : Select "Do not".

## [Note]

Intermix Specification of High Speed Adapter and Previous Adapter

- (a) High speed DKC;
  - High speed DKC does not allow intermix between High Speed Adapter and Previous Adapter.
- (b) Previous DKC;
  - Previous DKC allow intermix by Installation and Configuration change (ex. From Parallel CH to Serial CH).
  - Unit of installation is two adapter (Unit of Subsystem options for DKC).
  - Both High Speed Adapter and Previous Adapter intermix is allowed at voluntary.
- (c) Failure PCB (Adapter);
  - In case of failure at High Speed Adapter; Replace it with only High Speed Adapter.
  - In case of failure at Previous Adapter ; Replace it with only Previous Adapter.
- (13): Specify the BUS Mode.  
BUS Mode is displayed after 01-04-12/00 or 01-05-09 of SVP version.
- (14): Specify the RAID level.
- (15): Specify the group number on FB4.
- (16): Specify the group number of spare disk drives to be installed.
- (17): ① LDEV; Specify the Device Address.

## [Note]

- In case of LDEV dispersement; Input "\*"
- In case of Non LDEV dispersement; Input number
- ② Drive; Specify the P-dev type.  
DK308-90 = "90"
- ③ Emulation; specify the DKU emulation type.
- ④ P:L; P-dev number and L-dev number.
- (18): Specify the CHA type.
- (19): Specify the Control Devices.

Enter one of the following values.

(32), (64), (128), (256)

| Control Devices | Device Address                          |
|-----------------|-----------------------------------------|
| 32              | (00),(20),(40),(60),(80),(A0),(C0),(E0) |
| 64              | (00),(40),(80),(C0)                     |
| 128             | (00),(80)                               |
| 256             | (00)                                    |

(20): Specify the data transfer rate for the channel. Select one of the following values.

3MB/s, 4.5MB/s, 6MB/s, 9MB/s

(21): Specify the CU address of the channel.

Enter one of the following values.

(the CU address must be unique within those for the channel for the other DKCs connected in daisy chain configuration.)

(00)<sub>x</sub>, (20)<sub>x</sub>, (40)<sub>x</sub>, (60)<sub>x</sub>, (80)<sub>x</sub>, (A0)<sub>x</sub>, (C0)<sub>x</sub>, (E0)<sub>x</sub>

(22): SM Addition

In case of RAID level = RAID 1 or DKU Emulation = 3390-9

### 3.1.8 GENERAL INFORMATION

#### 3.1.8.1 Model List

##### 3.1.8.1.1 Models of DKC210I

The DKC210I Disk Controller has the following three models:

DKC210IE-5/DKC210IU-5/DKC210IE-5E/DKC210IU-5E supporting RAID 5, DKC210IE-0/DKC210IU-0/DKC210IE-0E/DKC210IU-0E supporting RAID 0 and DKC210IE/IU-5E supporting RAID 1.

Model List of DKC210I shows the model names of DKC210I and its options.

Model List of DKC210I

| Model Name                                 | Model Number                |              |
|--------------------------------------------|-----------------------------|--------------|
|                                            | 50Hz                        | 60Hz         |
| Disk Controller (RAID 5)                   | DKC210IE-5                  | DKC210IU-5   |
| Disk Controller (RAID 0)                   | DKC210IE-0                  | DKC210IU-0   |
| Disk Controller (RAID 5/1)                 | DKC210IE-5E                 | DKC210IU-5E  |
| Disk Controller (RAID 0)                   | DKC210IE-0E                 | DKC210IU-0E  |
| Additional Cache Platform for Board        | DKC-F210I-20                | ←            |
| Additional Cache Memory Module (256MB)     | DKC-F210I-256/DKC-F310I-256 | ←            |
| Additional Cache Memory Module (64MB)      | DKC-F210I-64                | ←            |
| Additional Shared Memory Module (32MB)     | DKC-F210I-32/DKC-F310I-32   | ←            |
| Additional Cache Assembly                  | DKC-F210I-2048              | ←            |
| Platform for Additional Cache Assembly     | DKC-F210I-40                | ←            |
| Additional 8-path Box Adapter              | DKC-F210I-50                | ←            |
| RAID5 Booster                              | DKC-F210I-51                | ←            |
| Serial 4-port Adapter                      | DKC-F210I-4S                | ←            |
| Serial 8-port Adapter                      | DKC-F210I-8S                | ←            |
| Parallel 8CH Switch                        | DKC-F210I-8P                | ←            |
| High Speed Serial 4-port Adapter           | DKC-F210I-4SE               | ←            |
| High Speed Serial 8-port Adapter           | DKC-F210I-8SE               | ←            |
| High Speed Parallel 8CH Switch             | DKC-F210I-8PE               | ←            |
| SCSI 8-port Adapter                        | DKC-F210I-8C                | ←            |
| SCSI 8-port Adapter (Dual Processor)       | DKC-F210I-8CD               | ←            |
| High Speed Additional 8-path Box Adapter   | DKC-F210I-50E               | ←            |
| High Speed Upgrade Kit                     | DKC-F210I-5E                | ←            |
| DKC Additional Power Supply                | DKC-F210I-70                | ←            |
| CL Redundant Power Supply                  | DKC-F210I-71                | ←            |
| Cache Redundant Power Supply               | DKC-F210I-72                | ←            |
| Backup/Restore Function for Multi-Platform | DKC-F210I-M80               | ←            |
| Front Door Conversion Kit                  | DKC-F210I-DR                | ←            |
| Hz Conversion Kit (50Hz→60Hz)              | DKC-F210I-56                | —            |
| Hz Conversion Kit (60Hz→50Hz)              | —                           | DKC-F210I-65 |

Note: In the following sections, DKC210I stands for DKC210I-5/5E or DKC210I-0/0E, DKC210I-5 stands for DKC210IE-5 or DKC210IU-5, DKC210I-0 stands for DKC210IE-0 or DKC210IU-0, DKC210I-5E stands for DKC210IE-5E or DKC210IU-5E, and DKC210I-0E stands for DKC210IE-0E or DKC210IU-0E.

## 3.1.8.1.2 Models of DKU205I

Model List of DKU205I shows model names of DKU205I and its options.

Model List of DKU205I

| Model Name                                     | Model Number   |              |
|------------------------------------------------|----------------|--------------|
|                                                | 50Hz           | 60Hz         |
| Disk Drive Unit                                | DKU205IE-14    | DKU205IU-14  |
| Platform for Canister mount                    | DKU-F205I-B4   | ←            |
| 6 HDD Canisters (DK306-45 or DK308-45)         | DKU-F205I-406  | ←            |
| Parity / Spare Canister (DK306-45 or DK308-45) | DKU-F205I-401  | ←            |
| DEV I/F Cable (1)                              | DKU-F205I-2C   | ←            |
| DEV I/F Cable (2)                              | DKU-F205I-34C  | ←            |
| Hz Conversion Kit (50Hz→60Hz)                  | DKU-F205I-56   | —            |
| Hz Conversion Kit (60Hz→50Hz)                  | —              | DKU-F205I-65 |
| 4 HDD Canisters (DK306-35)                     | DKU-F205I-304  | ←            |
| HDD Conversion Kit-4 (RAID 0→RAID5)            | DKU-F205I-054  | ←            |
| 6 HDD Canisters (DK308-90)                     | DKU-F205I-906  | ←            |
| 4 HDD Canisters (DK308-90)                     | DKU-F205I-904  | ←            |
| 1 HDD Canister (DK308-90)                      | DKU-F205I-901  | ←            |
| 4 HDD Canisters (DK309-180)                    | DKU-F305I-1804 | ←            |
| 1 HDD Canister (DK309-180)                     | DKU-F305I-1801 | ←            |

Note: In the following sections, DKU205I stands for DKU205IE-14 or DKU205IU-14.

### 3.1.8.1.3 Function of each model

#### 1. Function of DKC210I

##### (1) DKC210I-5 Disk Controller (RAID 5)

The DKC210I-5 Disk Controller supports RAID 5, and consists of two storage clusters with 256 megabytes of cache standard. In order to connect the channels, it is necessary to attach one of channel options:

- DKC-F210I-4S Serial 4-port Adapter
- DKC-F210I-8S Serial 8-port Adapter
- DKC-F210I-8P Parallel 8CH Switch
- DKC-F210I-8C SCSI 8-port Adapter
- DKC-F210I-8CD SCSI 8-port Adapter (Dual Processor)

##### (2) DKC210I-0 Disk Controller (RAID 0)

The DKC210I-0 Disk Controller supports RAID 0, and consists of two storage clusters with 256 megabytes of cache standard. In order to connect the channels, it is necessary to attach one of channel options:

- DKC-F210I-4S Serial 4-port Adapter
- DKC-F210I-8S Serial 8-port Adapter
- DKC-F210I-8P Parallel 8CH Switch

##### (3) DKC210I-5E Disk Controller (RAID 5/1)

The DKC210I-5E Disk Controller supports RAID 1 and RAID 5, and consists of two storage clusters with 256 megabytes of cache standard. When installing more additional 8-path Box Adapter, be sure to attach DKC-F210I-50E High Speed Additional 8-path Box Adapter. In order to connect the channels, it is necessary to attach one of channel options:

- DKC-F210I-4SE High Speed Serial 4-port Adapter
- DKC-F210I-8SE High Speed Serial 8-port Adapter
- DKC-F210I-8PE High Speed Parallel 8CH Switch
- DKC-F210I-8C SCSI 8-port Adapter
- DKC-F210I-8CD SCSI 8-port Adapter (Dual Processor)

##### (4) DKC210I-0E Disk Controller (RAID 0)

The DKC210I-0E Disk Controller supports RAID 0, and consists of two storage clusters with 256 megabytes of cache standard. When installing more additional 8-path Box Adapter, be sure to attach DKC-F210I-50E High Speed Additional 8-path Box Adapter. In order to connect the channels, it is necessary to attach one of channel options:

- DKC-F210I-4SE High Speed Serial 4-port Adapter
- DKC-F210I-8SE High Speed Serial 8-port Adapter
- DKC-F210I-8PE High Speed Parallel 8CH Switch

##### (5) DKC-F210I-4S Serial 4-port Adapter

This model is attached to the DKC210I Disk Controller, and provides serial 2 port adapters for channel portion of both storage clusters (two ports for each storage cluster).

##### (6) DKC-F210I-8S Serial 8-port Adapter

This model is attached to the DKC210I Disk Controller, and provides serial 4 port adapters for channel portion of both storage clusters (four ports for each storage cluster).

##### (7) DKC-F210I-8P Parallel 8CH Switch

This model is attached to the DKC210I Disk Controller, and provides parallel 4 channel switch for channel portion of both storage clusters (four channels for each storage cluster).

- (8) DKC-F210I-4SE High Speed Serial 4-port Adapter  
This model is attached to the DKC210I-5E/0E Disk Controller, and provides serial 2 port adapters for channel portion of both storage clusters (two ports for each storage cluster).
- (9) DKC-F210I-8SE High Speed Serial 8-port Adapter  
This model is attached to the DKC210I-5E/0E Disk Controller, and provides serial 4 port adapters for channel portion of both storage clusters (four ports for each storage cluster).
- (10) DKC-F210I-8PE High Speed Parallel 8CH Switch  
This model is attached to the DKC210I-5E/0E Disk Controller, and provides parallel 4 channel switch for channel portion of both storage clusters (four channels for each storage cluster).
- (11) DKC-F210I-20 Additional Cache Platform for Board  
This model is attached to the DKC210I Disk Controller. This model is used to add between 2 and 4 gigabytes of cache.
- (12) DKC-F210I-256/DKC-F310I-256 Additional Cache Memory Module  
Extends cache capacity of 256 mega bytes per model.
- (13) DKC-F210I-64 Additional Cache Memory Module (64MB)  
This model is attached to the DKC210I-0, and extends cache capacity of 64 megabytes per model.
- (14) DKC-F210I-32/DKC-F310I-32 Additional Shared Memory Module  
Extends shared capacity of 32 megabytes per model.
- (15) DKC-F210I-2048 Additional Cache Assembly  
Extends cache capacity 2 gigabytes per model when the DKC-F210I-40 Platform for Additional Cache Assembly is attached to DKC210I.
- (16) DKC-F210I-40 Platform for Additional Cache Assembly  
This model is necessary for extension of cache capacity of 6 giga bytes or more.
- (17) DKC-F210I-50 Additional 8-path Box Adapter  
An additional disk adapter for 8-path connection between DKC210I and DKU205I.
- (18) DKC-F210I-5E High Speed Upgrade kit  
This model is high speed upgrade kit from DKC210I-5/0 to DKC210I-5E/0E. When installing this model, replace the DKC-F210I-4S/8S/8P/50 already installed by the DKC-F210I-4SE/8SE/8PE/50E. When installing more additional 8-path Box Adapter, be sure to attach DKC-F210I-50E High Speed Additional 8-path Box Adapter. When installing more channel options, be sure to attach DKC-F210I-4SE/8SE/8PE.
- (19) DKC-F210I-50E High Speed Additional 8-path Box Adapter  
An additional disk adapter for 8-path connection between DKC210I and DKU205I.
- (20) DKC-F210I-51 RAID5 Booster  
This model is necessary for supporting the RAID 5 control method.
- (21) DKC-F210I-70 DKC Additional Power Supply  
This model has two power supplies.
- (22) DKC-F210I-71 CL Redundant Power Supply  
A backup power supply for the power supplies of the clusters 1 and 2 to allow non-stop maintenance if the power supply fails.

**(23) DKC-F210I-72 Cache Redundant Power Supply**

A backup power supply for the power supply of the cache assembly to allow non-stop maintenance if the power supply fails.

**(24) DKC-F210I-56 Hz Conversion Kit (50Hz→60Hz)**

This model is frequency conversion kit from DKC210IE to DKC210IU.

**(25) DKC-F210I-65 Hz Conversion Kit (60Hz→50Hz)**

This model is frequency conversion kit from DKC210IU to DKC210IE.

**(26) DKC-F210I-8C SCSI 8-port Adapter**

This model is attached to DKC210I-5/0, DKC210I-5E/0E Disk Controller, and provides SCSI 4-port adapter for channel portion of both storage clusters (four ports for each storage cluster).

**(27) DKC-F210I-8CD SCSI 8-port Adapter (Dual Processor)**

This model is attached to DKC210I-5/5E Disk Controller, and provides SCSI 4-port adapters for channel portion of both storage clusters (four ports for each storage cluster).

This SCSI 4-port adapter includes two processors for channel processing.

**(28) DKC-F210I-M80 Backup/Restore function for Multi-Platform**

This model is a function for backing up and restoring SCSI volume data in volumes (LU) in the multi-platform configuration using the Backup Restore Utility on the mainframe side.

**(29) DKC-F210I-DR Front Door Conversion Kit**

This model modifies the front door to enable powering-ON/OFF the subsystem without opening the front door.

## 2. Function of DKU205I

### (1) DKU205I-14 Disk Drive Unit

This model is connected to the DKC210I Disk Controller, and provides one set of DKU-F205I-B4 which can contain the HDD canisters.

### (2) DKU-F205I-B4 Platform for Canister mount

This model is attached to DKU205I, and can contain the HDD canisters (max. storage capacity: 90GB). One set of this model can be attached to DKU205I, and expand the storage capacity up to max. 181GB in DKU205I.

### (3) DKU-F205I-406 6 HDD Canisters (DK306-45 or DK308-45)

Six HDD canisters for addition, mounted on DKU-F205I-B4.

### (4) DKU-F205I-401 1 HDD Canister (DK306-45 or DK308-45)

HDD canister for parity or spare disk, mounted on DKU-F205I-B4.

### (5) DKU-F205I-2C DEV I/F Cable (1)

This model is necessary to connect the second Disk Drive Unit to Disk Controller.

### (6) DKU-F205I-34C DEV I/F Cable (2)

This model is necessary to connect between first/second Disk Drive Unit and third/fourth Disk Drive Unit.

### (7) DKU-F205I-56 Hz Conversion Kit (50Hz→60Hz)

This model is frequency conversion kit from DKU205IE to DKU205IU.

### (8) DKU-F205I-65 Hz Conversion Kit (60Hz→50Hz)

This model is frequency conversion kit from DKU205IU to DKU205IE.

### (9) DKU-F205I-054 HDD Conversion Kit-4 (RAID0 →RAID5)

This model is four HDDs conversion kit from RAID 0 to RAID 5.

### (10) DKU-F205I-304 4 HDD Canisters (DK306-35)

Four HDD canisters for addition, mounted on DKU-F205I-B4.

### (11) DKU-F205I-906 6 HDD Canisters (DK308-90)

Six HDD canisters for addition, mounted on DKU-F205I-B4.

### (12) DKU-F205I-904 4 HDD Canisters (DK308-90)

Four HDD canisters for addition, mounted on DKU-F205I-B4.

### (13) DKU-F205I-901 1 HDD Canister (DK308-90)

HDD canister for parity or spare disk, mounted on DKU-F205I-B4.

### (14) DKU-F305I-1804 4 HDD Canisters (DK309-180)

Four HDD canisters for addition, mounted on DKU-F205I-B4.

### (15) DKU-F305I-1801 1 HDD Canister (DK309-180)

HDD canister for spare disk, mounted on DKU-F205I-B4.

Maximum number of spare disk is 8.

## 3.1.8.2 Specifications

## 3.1.8.2.1 DKU205I Specifications

The DKU205I specifications are shown in the following table:

DKU205I Specifications (1/5) (DK306-45, RAID5)

| Item                              |                           | Specification                       |         |        |        |        |        |        |        |         |
|-----------------------------------|---------------------------|-------------------------------------|---------|--------|--------|--------|--------|--------|--------|---------|
|                                   |                           | 3390-3                              | 3390-2  | 3390-1 | 3380-J | 3380-E | 3380-K | OPEN-3 | OPEN-9 | 3390-3B |
| Logical volumes<br>per unit       | Minimum                   | 8                                   | 12 or 8 |        |        |        |        | 20     | 7      | 8       |
|                                   | Maximum                   | 256                                 |         |        |        |        |        | 240    | 224    | 256     |
|                                   | Increment                 | 8                                   | 12 or 8 |        |        |        |        | 20     | 7      | 8       |
| RAID level                        |                           | 5 (6 data + 1 parity configuration) |         |        |        |        |        | 5      | 5      | 5       |
| Spare drives (optional)           |                           | Max. 2 per 32 logical volumes       |         |        |        |        |        |        |        |         |
| Logical volume<br>characteristics | Capacity (GB)             | 2.83                                | 1.89    | 0.95   | 0.63   | 1.26   | 1.89   | 2.4    | 7.3    | 2.83    |
|                                   | Data format               | CKD                                 |         |        |        |        |        | FBA    | FBA    | CKD     |
|                                   | Bytes per track           | 56,664                              |         |        | 47,476 |        |        | —      | —      | 56,664  |
|                                   | Tracks per cylinder       | 15                                  |         |        |        |        |        | —      | —      | 15      |
|                                   | Cylinders                 | 3,339                               | 2,226   | 1,113  | 885    | 1,770  | 2,655  | —      | —      | 3,339   |
| Drive<br>characteristics          | Capacity (GB)             | 4.36                                |         |        |        |        |        |        |        |         |
|                                   | Data format               | FBA                                 |         |        |        |        |        |        |        |         |
|                                   | Average latency (ms)      | 4.8                                 |         |        |        |        |        |        |        |         |
|                                   | Average seek time (ms)    | 11.5                                |         |        |        |        |        |        |        |         |
|                                   | Data transfer rate (MB/s) | 4.7 - 6.9                           |         |        |        |        |        |        |        |         |
|                                   | Ports                     | 2                                   |         |        |        |        |        |        |        |         |
|                                   | Access mechanism          | 1                                   |         |        |        |        |        |        |        |         |
| Drive/Unit                        |                           | Max. 64 (Containing 8 spare drives) |         |        |        |        |        |        |        |         |