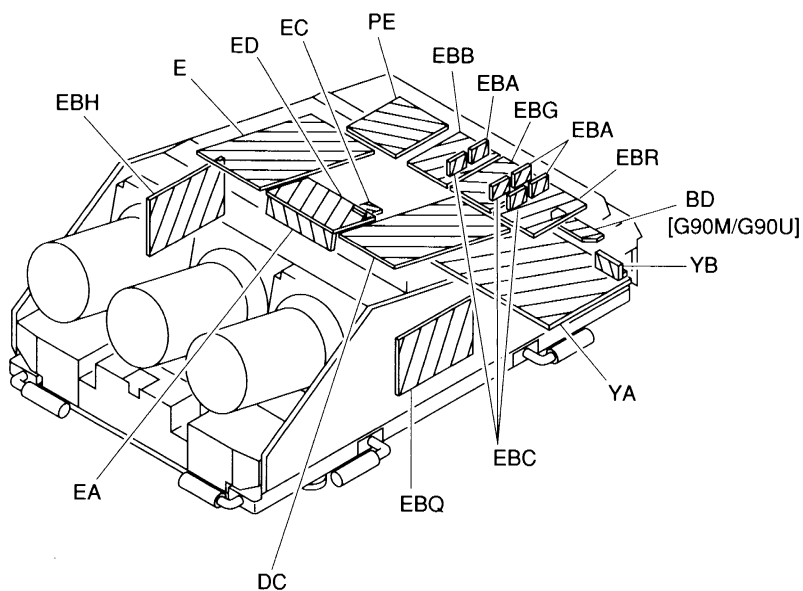


## SECTION 2

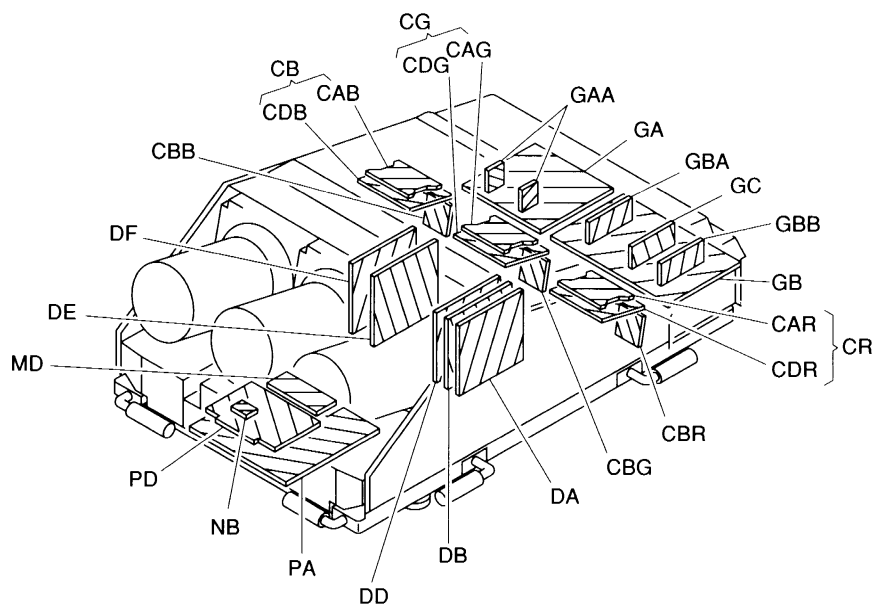
### SERVICE INFORMATION

#### 2-1. CIRCUIT BOARDS LOCATION

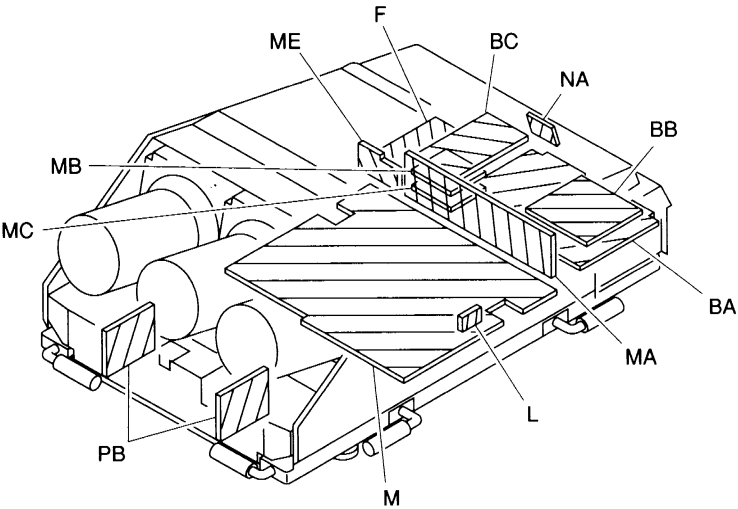
##### 2-1-1. Location 1



##### 2-1-2. Location 2

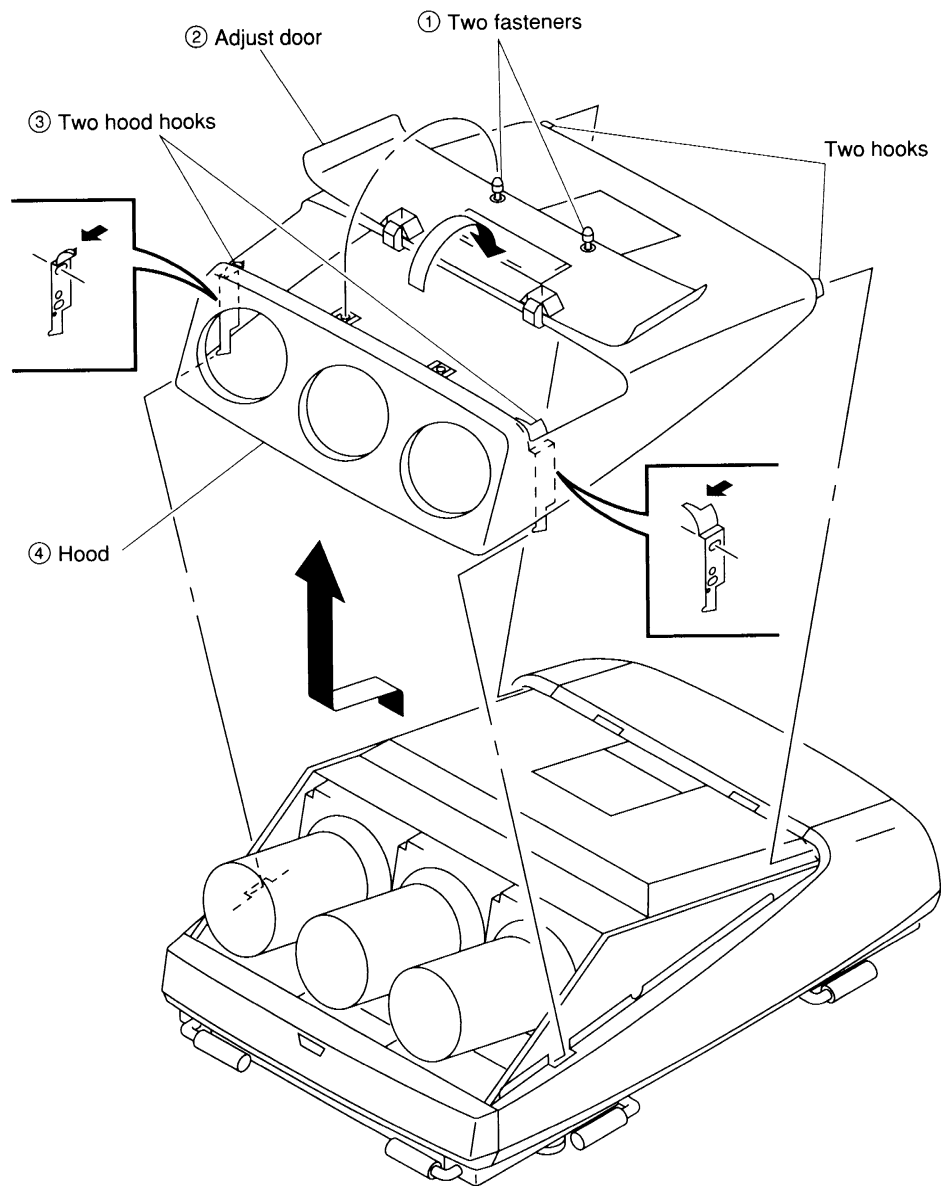


2-1-3. Location 3

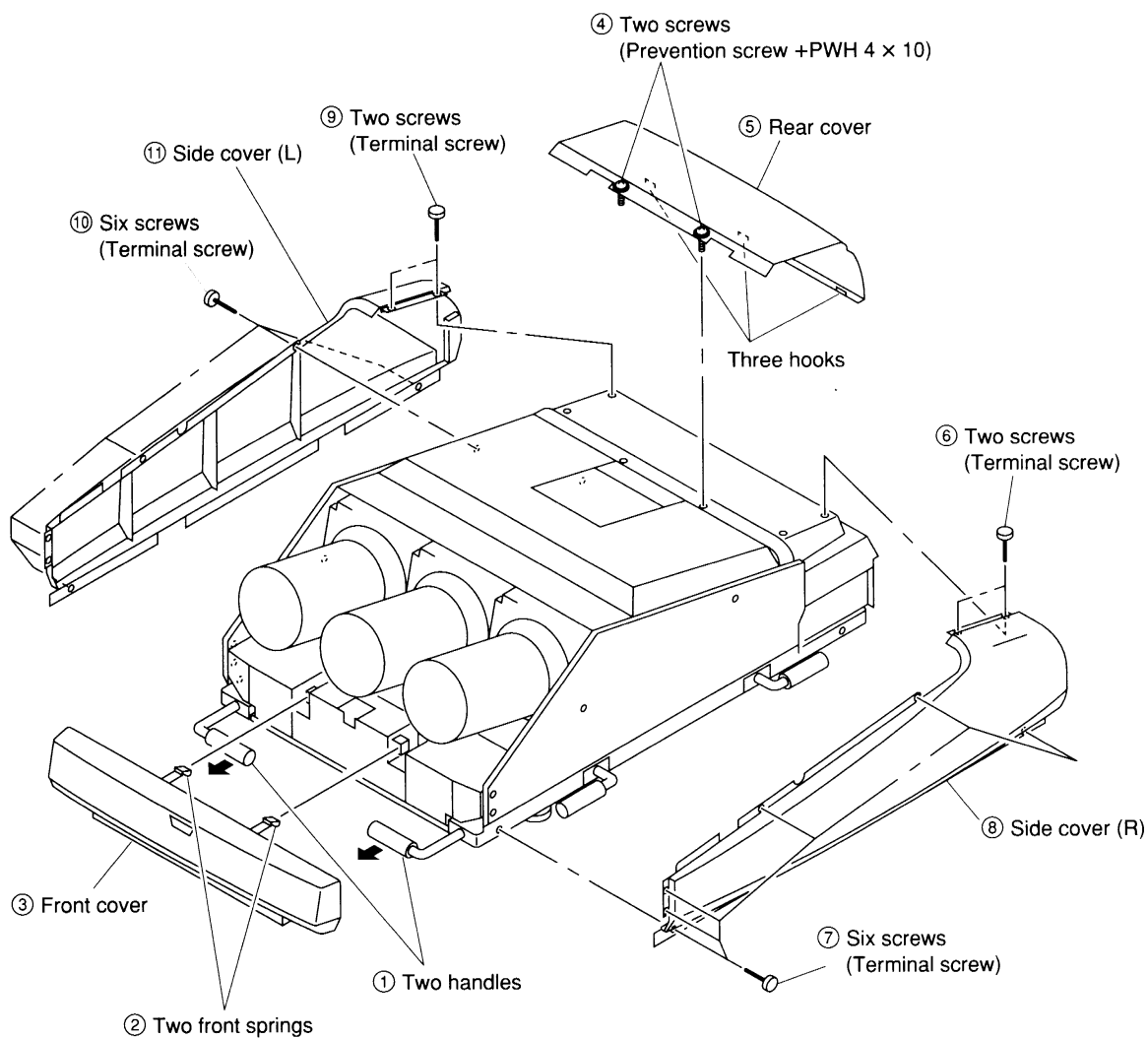


## 2-2. DISASSEMBLY

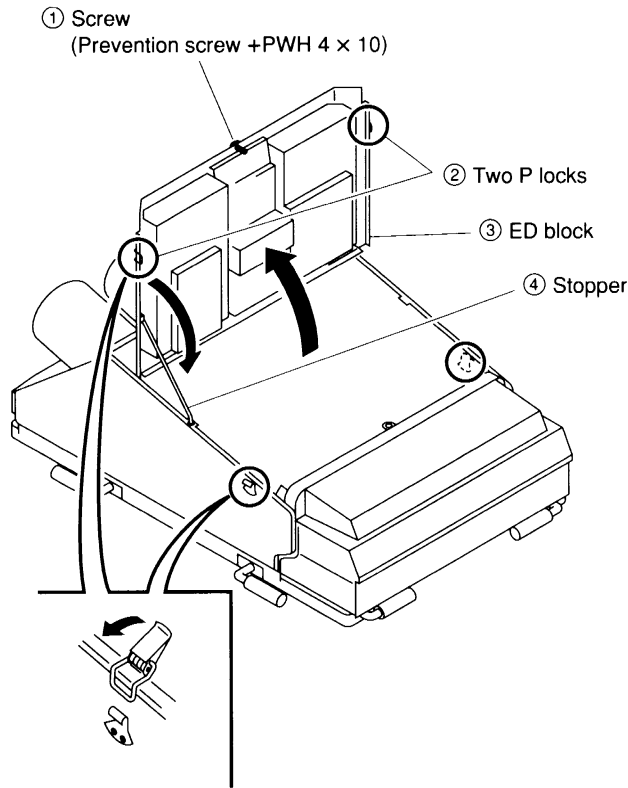
### 2-2-1. Hood Removal



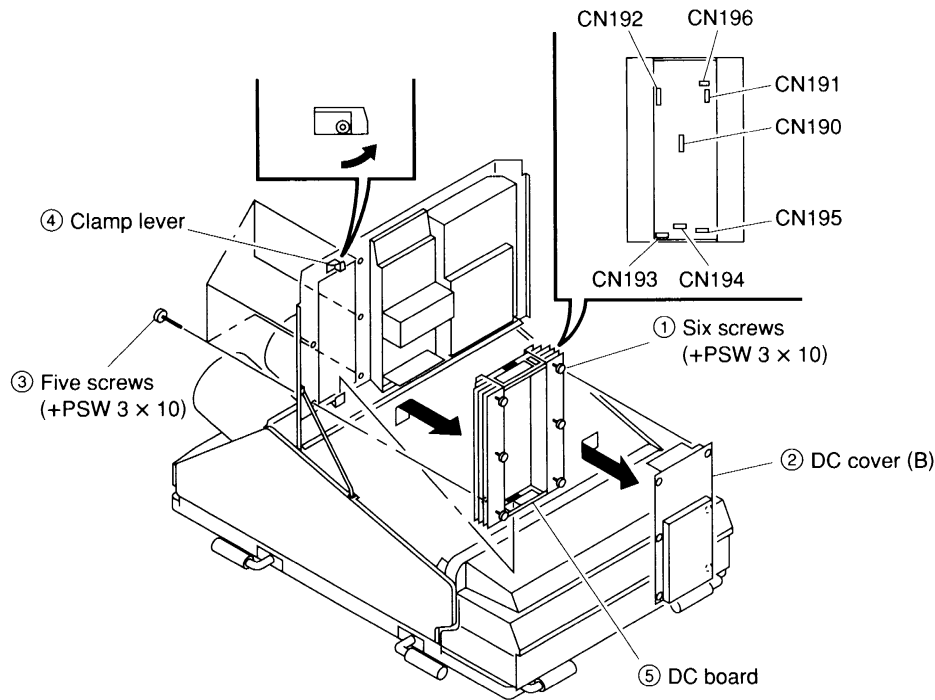
## 2-2-2. Cover Removal



2-2-3. Opening ED Block

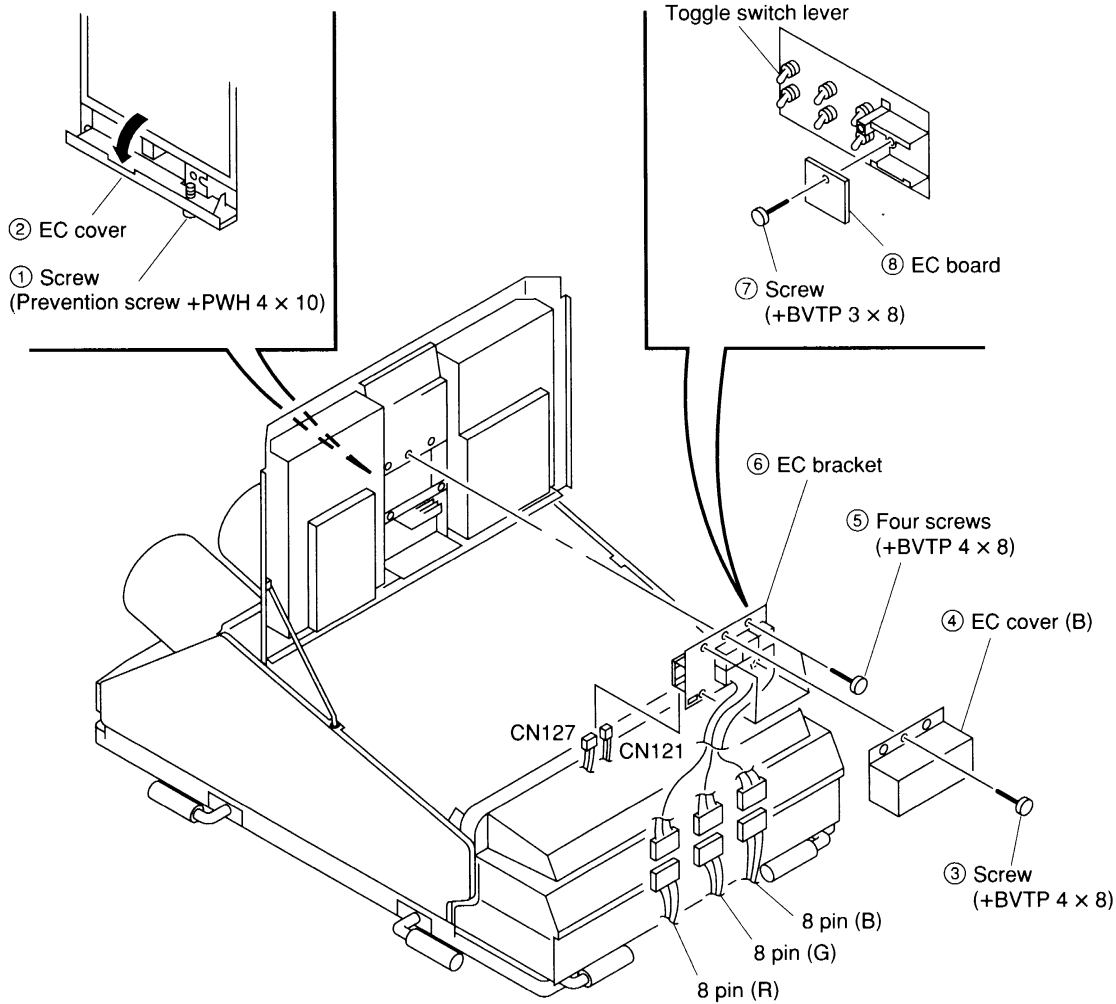


2-2-4. DC Board Removal

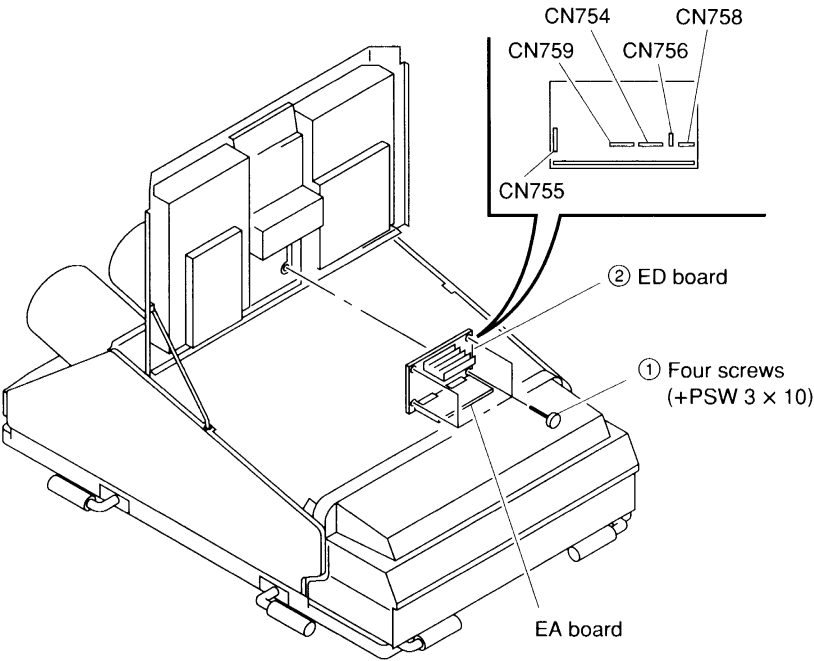


2-2-5. EC Board Removal

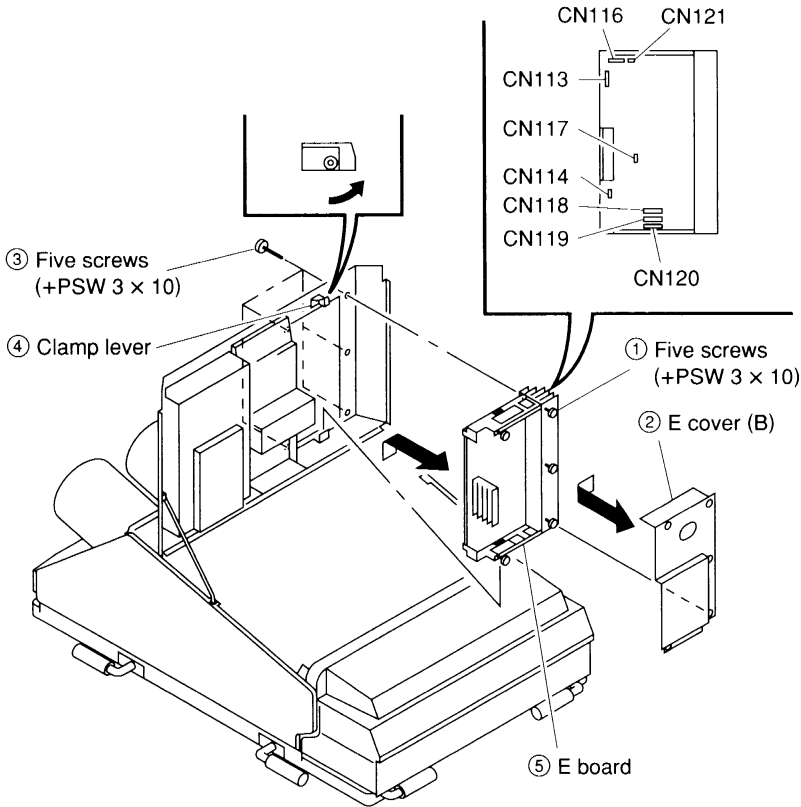
[CAUTION]  
When installing the EC bracket, position all of the six toggle switch levers in the same direction.



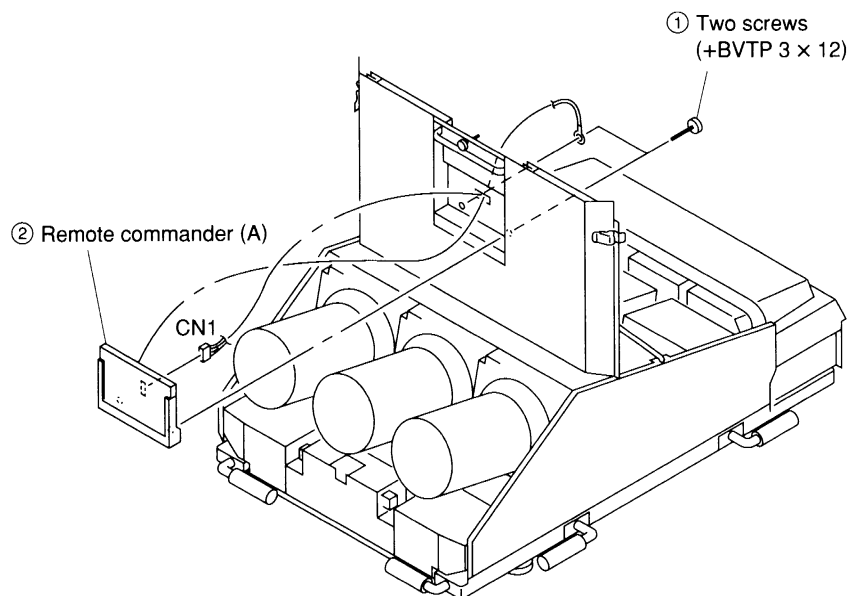
2-2-6. ED Board Removal



2-2-7. E Board Removal

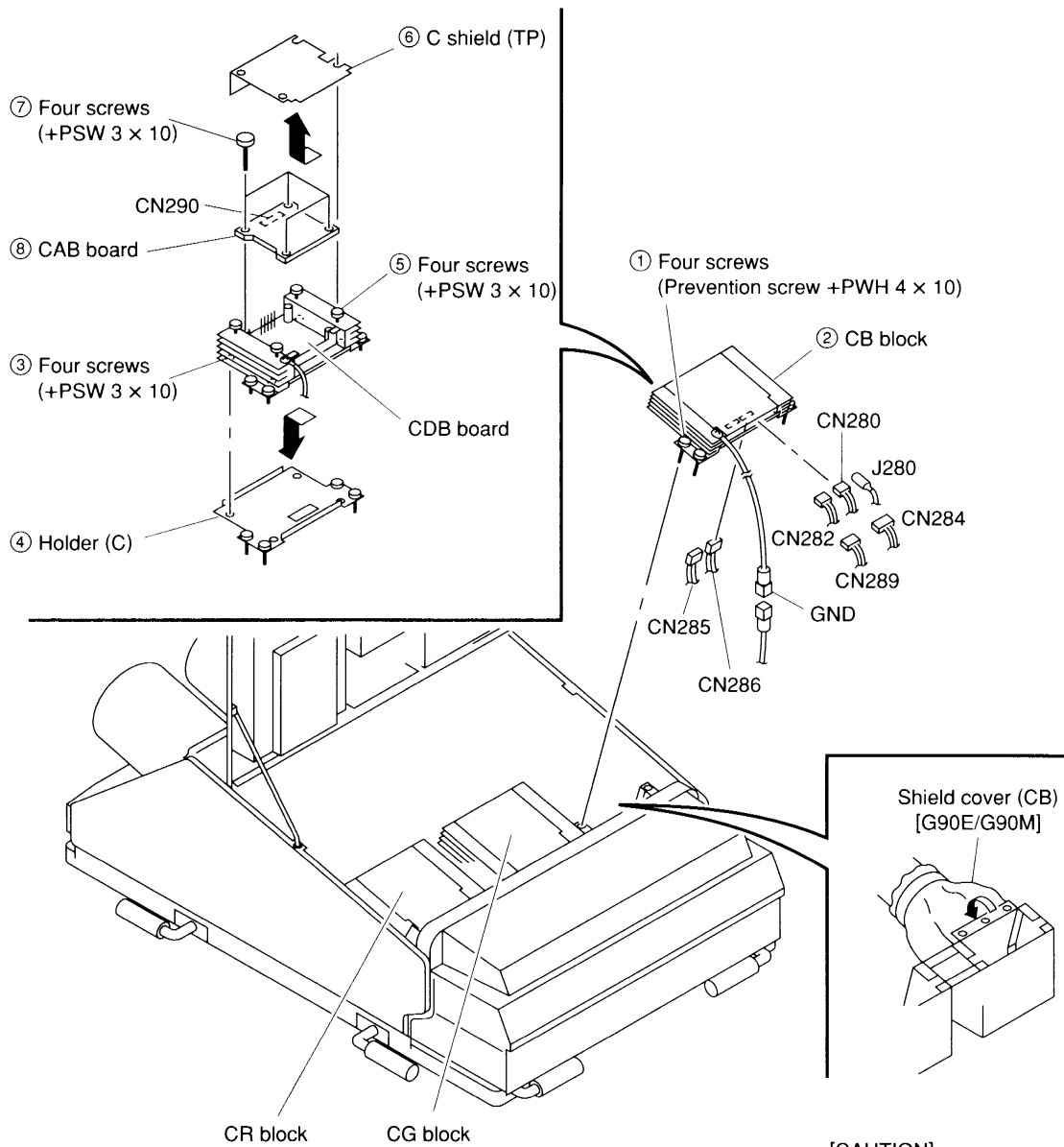


## 2-2-8. Remote Commander Removal





2-2-9. CB, CG and CR Blocks Removal

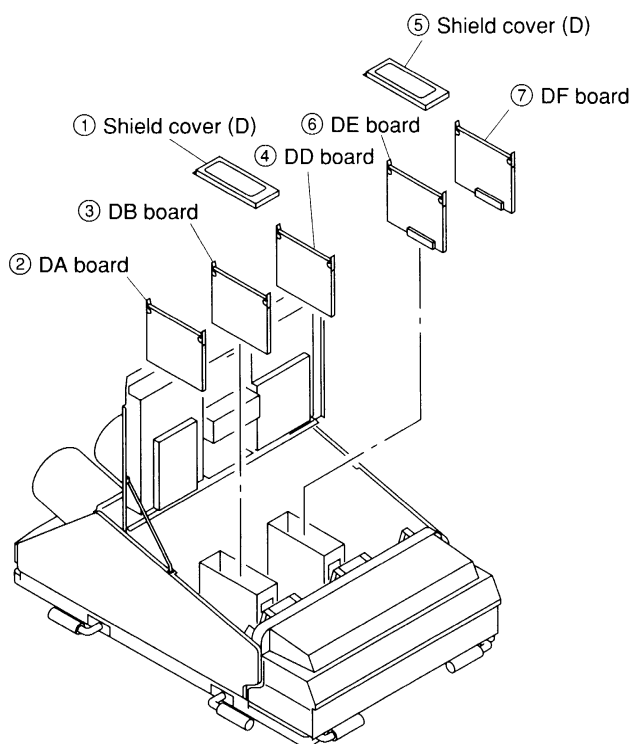


The CG and CR blocks can be removed in the same manner as the CB block.

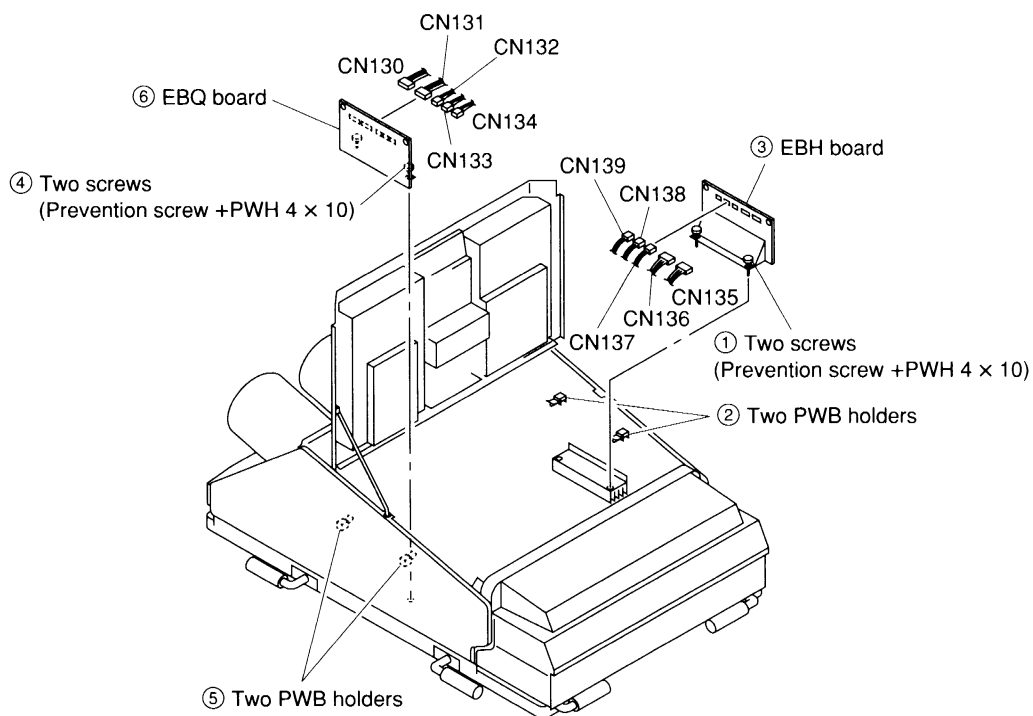
[CAUTION]  
When installing the CB block, fold the top side of the shield cover (CB) in the arrow direction.  
[G90E/G90M]

## 2-2-10. DA, DB, DD, DE and DF Boards Removal

- Remove the CB, CG and CR blocks. (Refer to Section 2-2-9.)

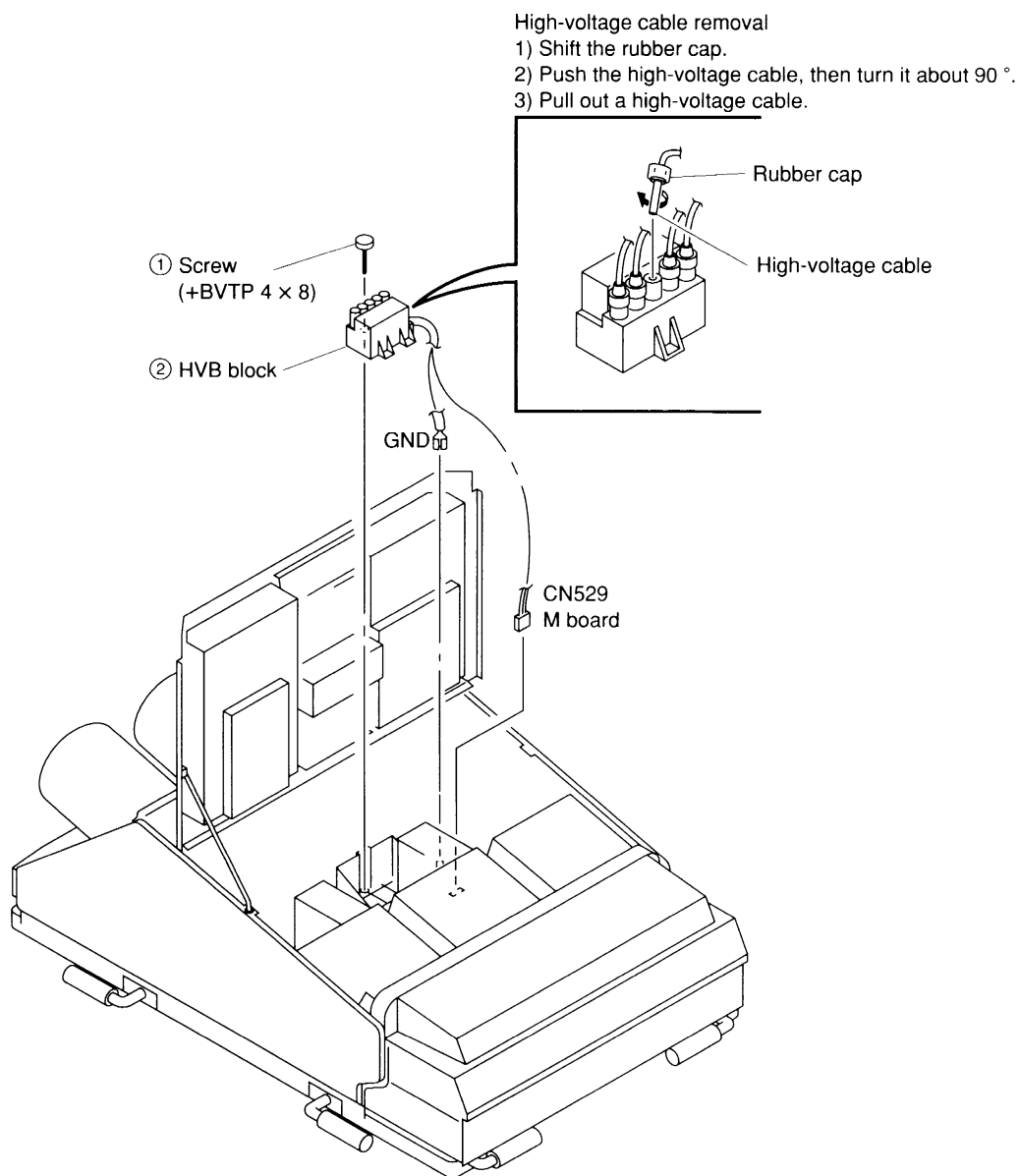


## 2-2-11. EBH and EBQ Boards Removal

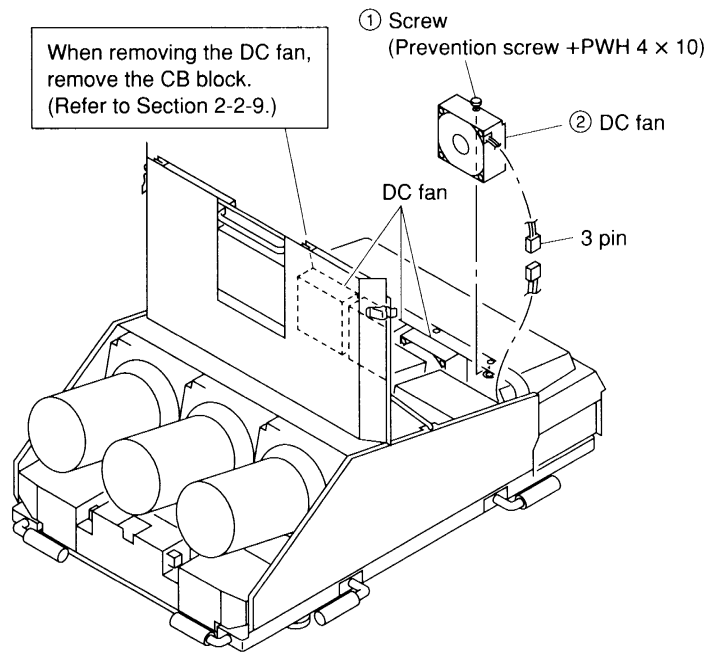


## 2-2-12. HVB Block and High-voltage Cable Removal

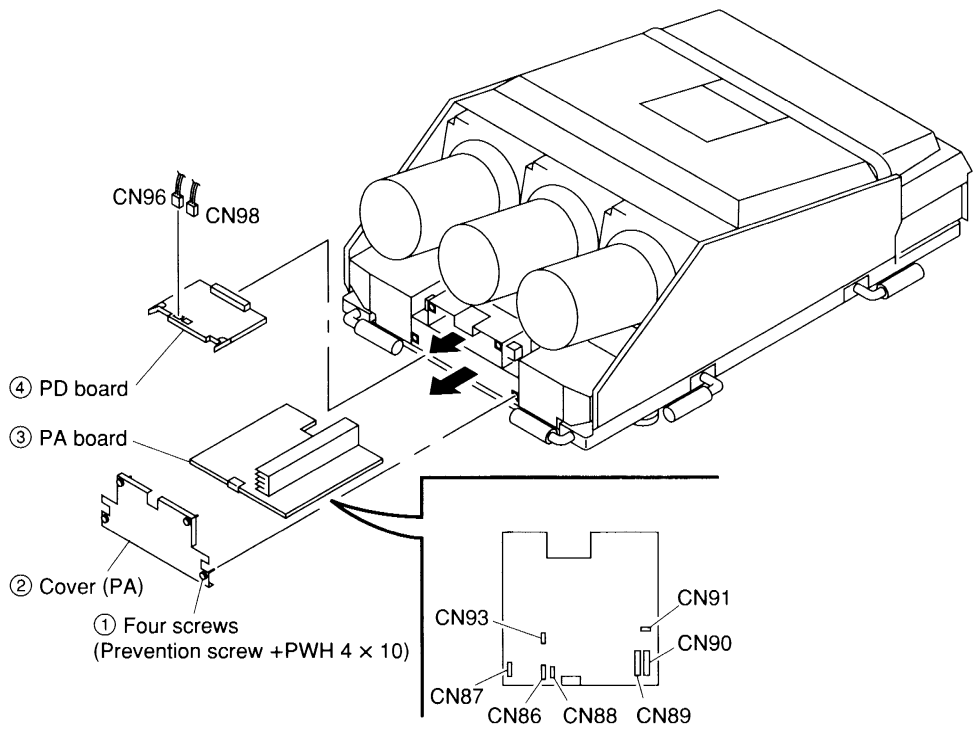
- Remove the picture tube (B) (Refer to Section 2-2-22.)



2-2-13. DC Fan Removal

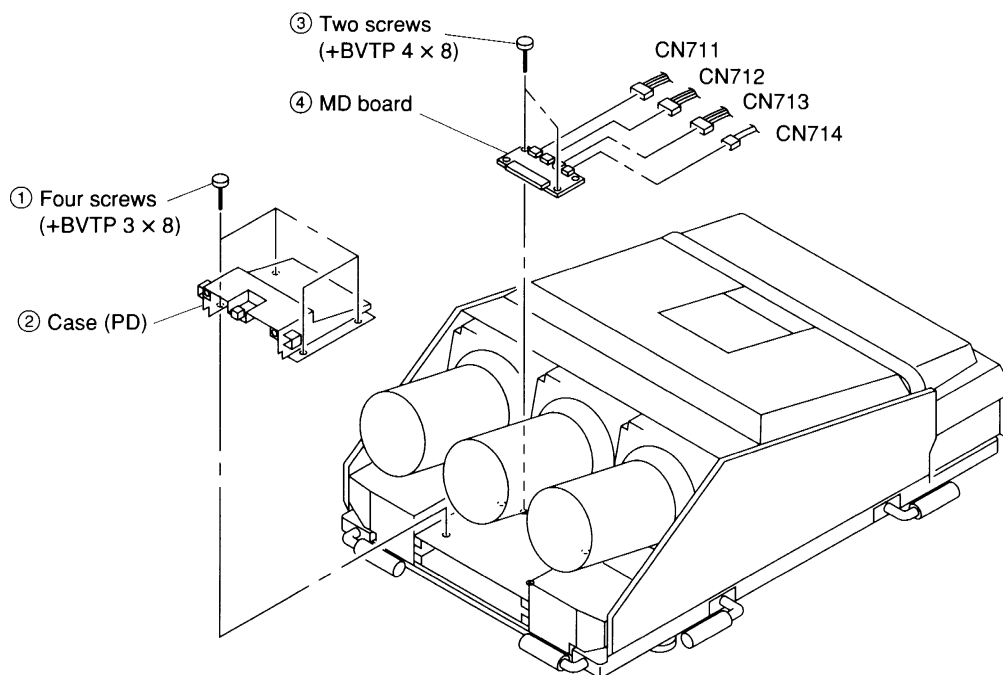


2-2-14. PA and PD Boards Removal

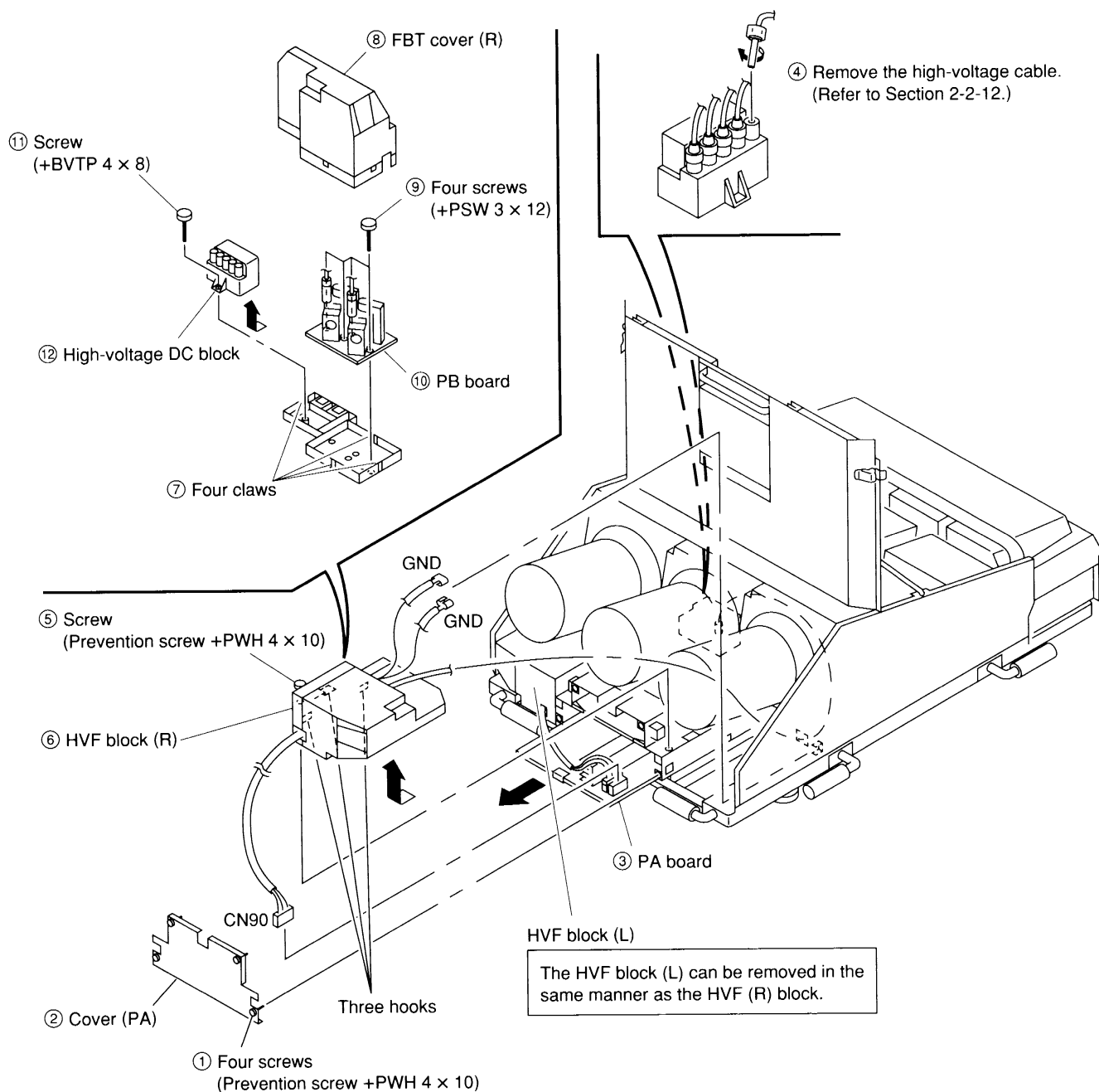


## 2-2-15. MD Board Removal

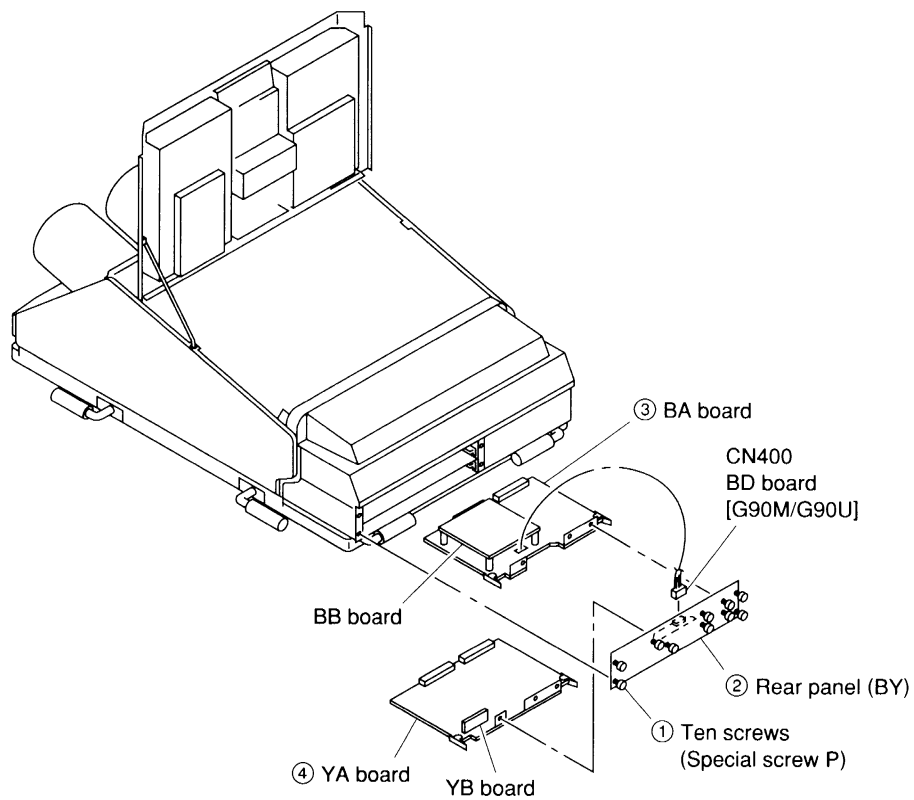
- Remove the PD board. (Refer to Section 2-2-14.)



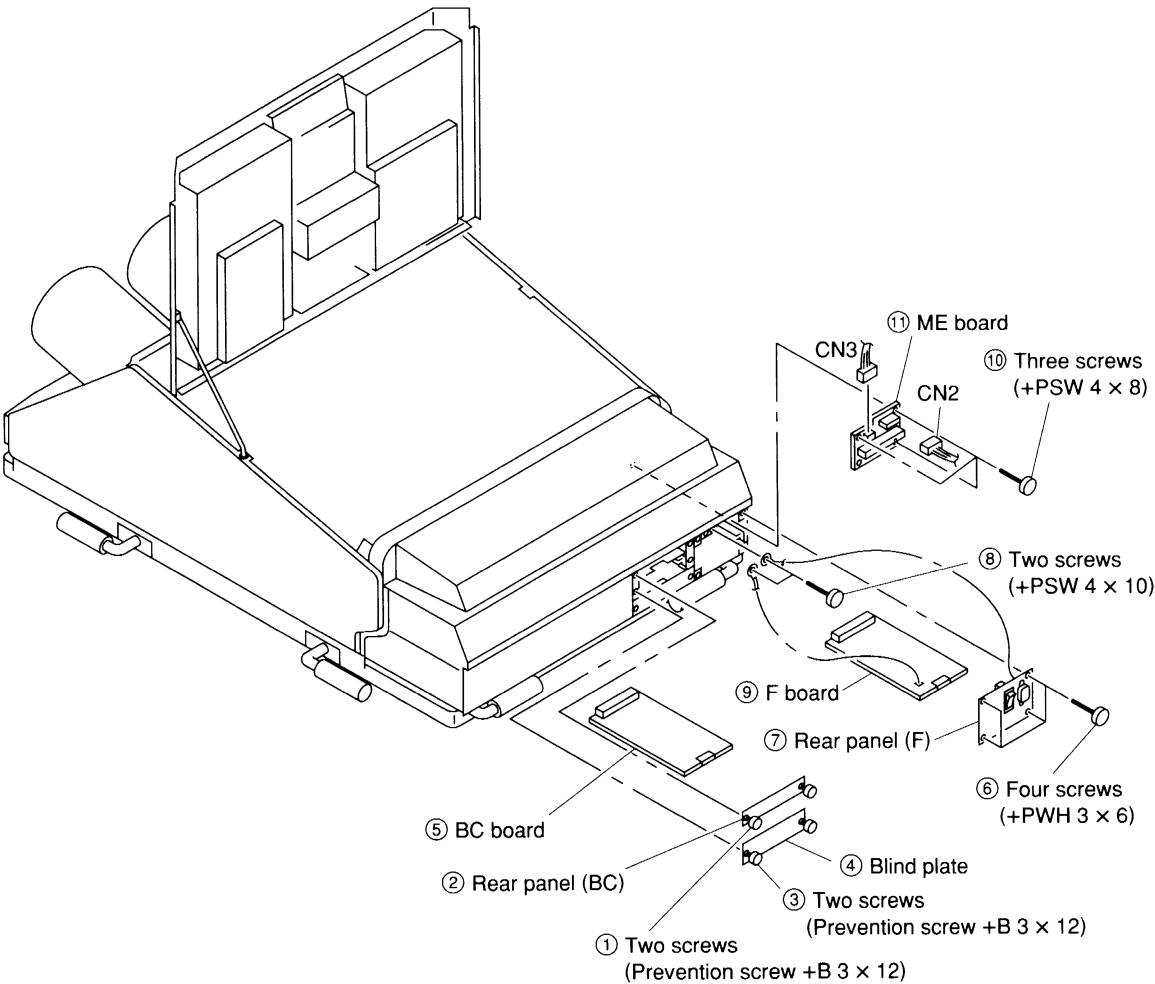
## 2-2-16. HVF Block Removal



## 2-2-17. BA and YA Boards Removal

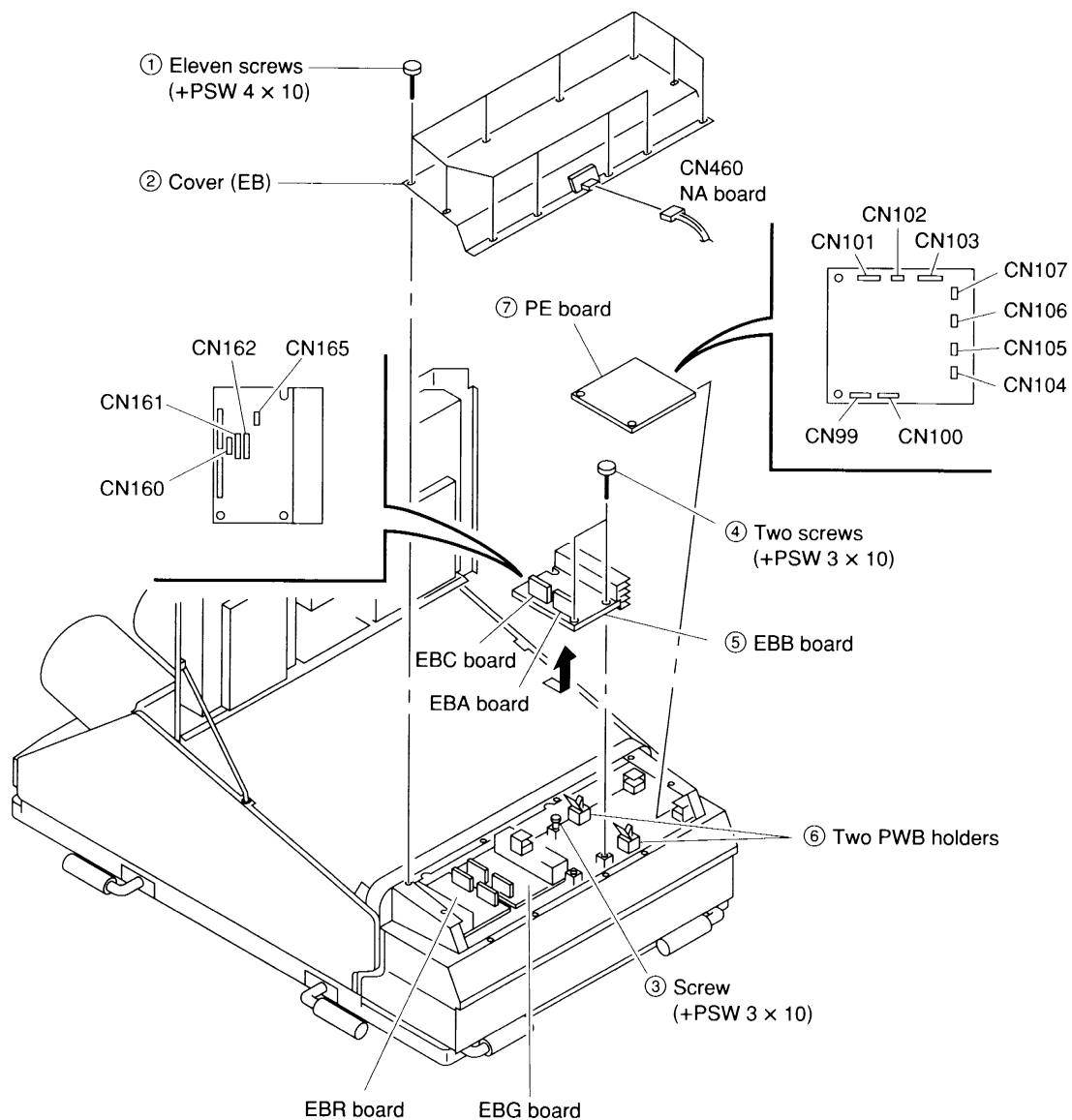


2-2-18. BC, F and ME Boards Removal



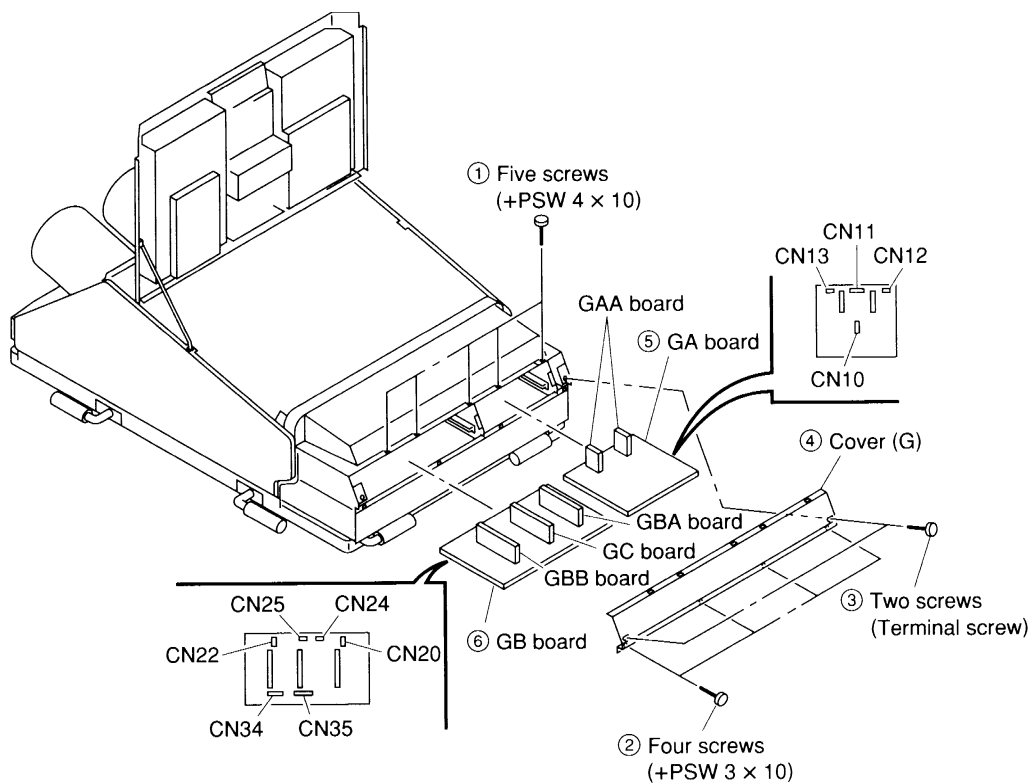


## 2-2-19. EBB, EBG, EBR and PE Boards Removal



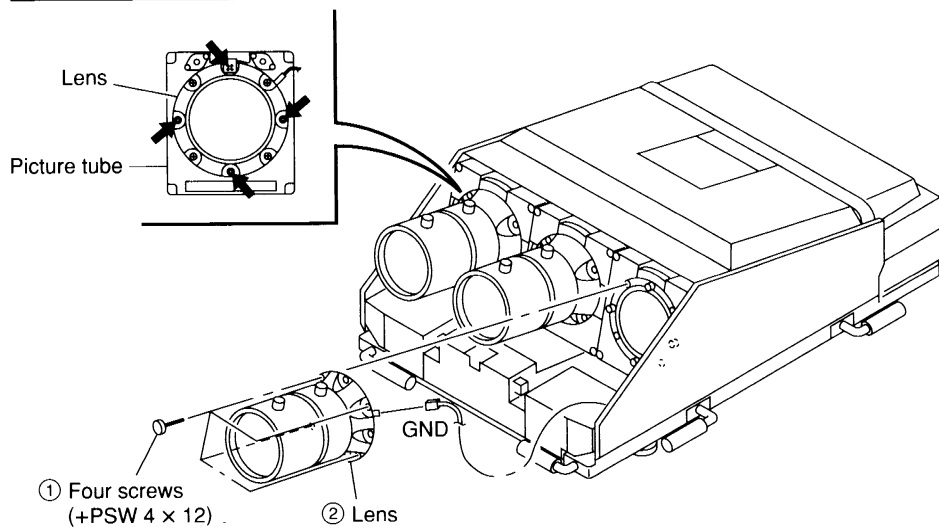
The EBG and EBR boards can be removed in the same manner as the EBB board.

## 2-2-20. GA and GB Boards Removal



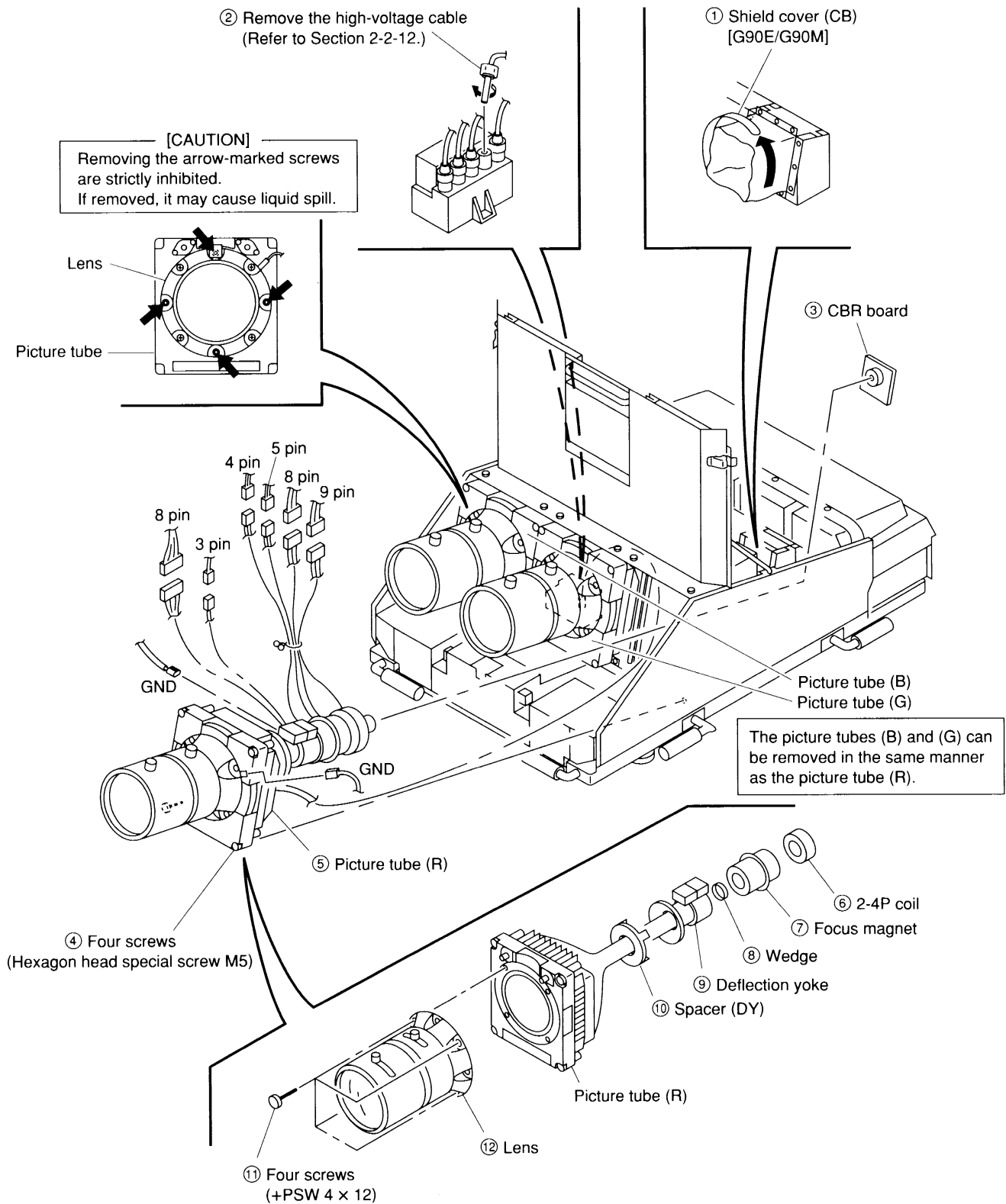
## 2-2-21. Lens Removal

**[CAUTION]**  
 Removing the arrow-marked screws are strictly inhibited.  
 If removed, it may cause liquid spill.



## 2-2-22. (1) Picture Tube Removal

- Remove the CB, CG and CR blocks.

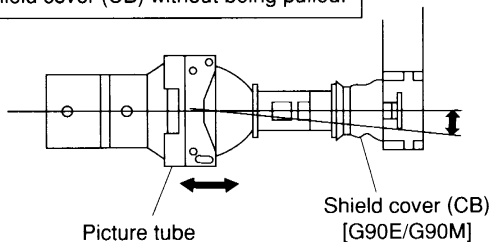


## 2-2-22. (2) Picture Tube Installation

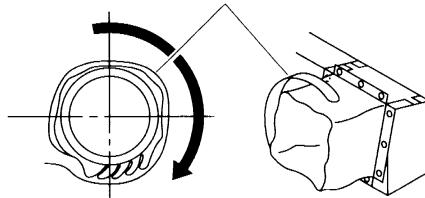
- ⑦ Tighten the shield cover (CB).  
[G90E/G90M]

[CAUTION]

After installing the picture tubes (B) and (R), move them in the right and left directions in order to tighten the shield cover (CB) without being pulled.



Shield cover (CB)  
[G90E/G90M]



[CAUTION]

Make creases of the shield cover (CB) at the bottom.

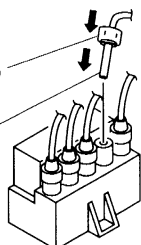
- ⑥ Install the high-voltage cable and rubber cap.

Rubber cap

High-voltage cable

[CAUTION]

Check that the high-voltage cable is firmly installed.



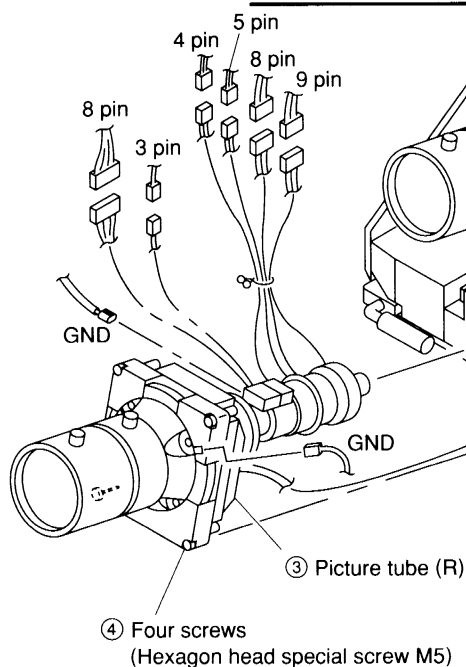
Install the picture tube (B) in the same manner as the picture tube (R).

Picture tube (B)

⑤ CBR board

Picture tube (G)

Install the picture tube (G) in the steps of ③ to ⑦.



① Loosen the four screws.

⑧ Tighten the four screws after adjustment.

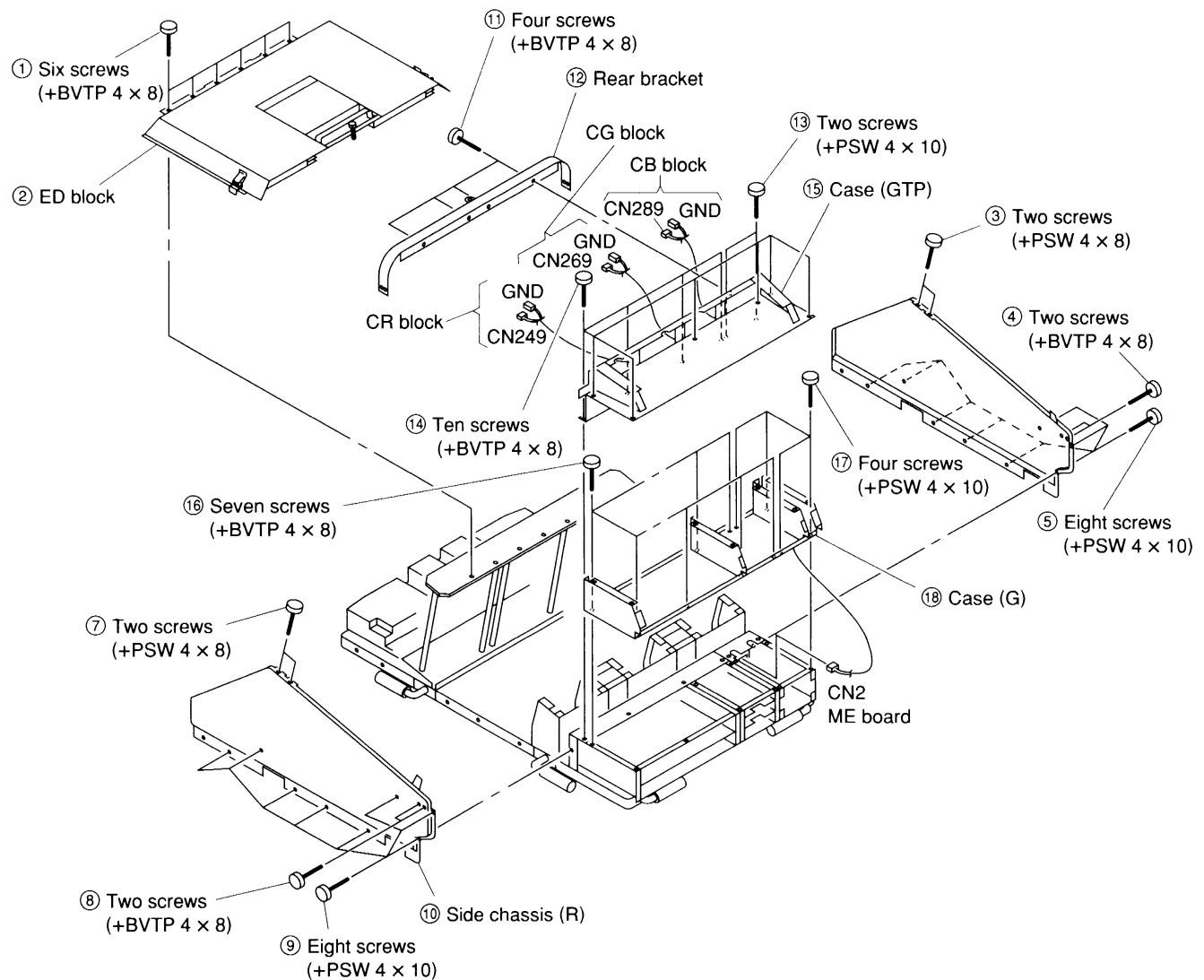
Two shafts (B)

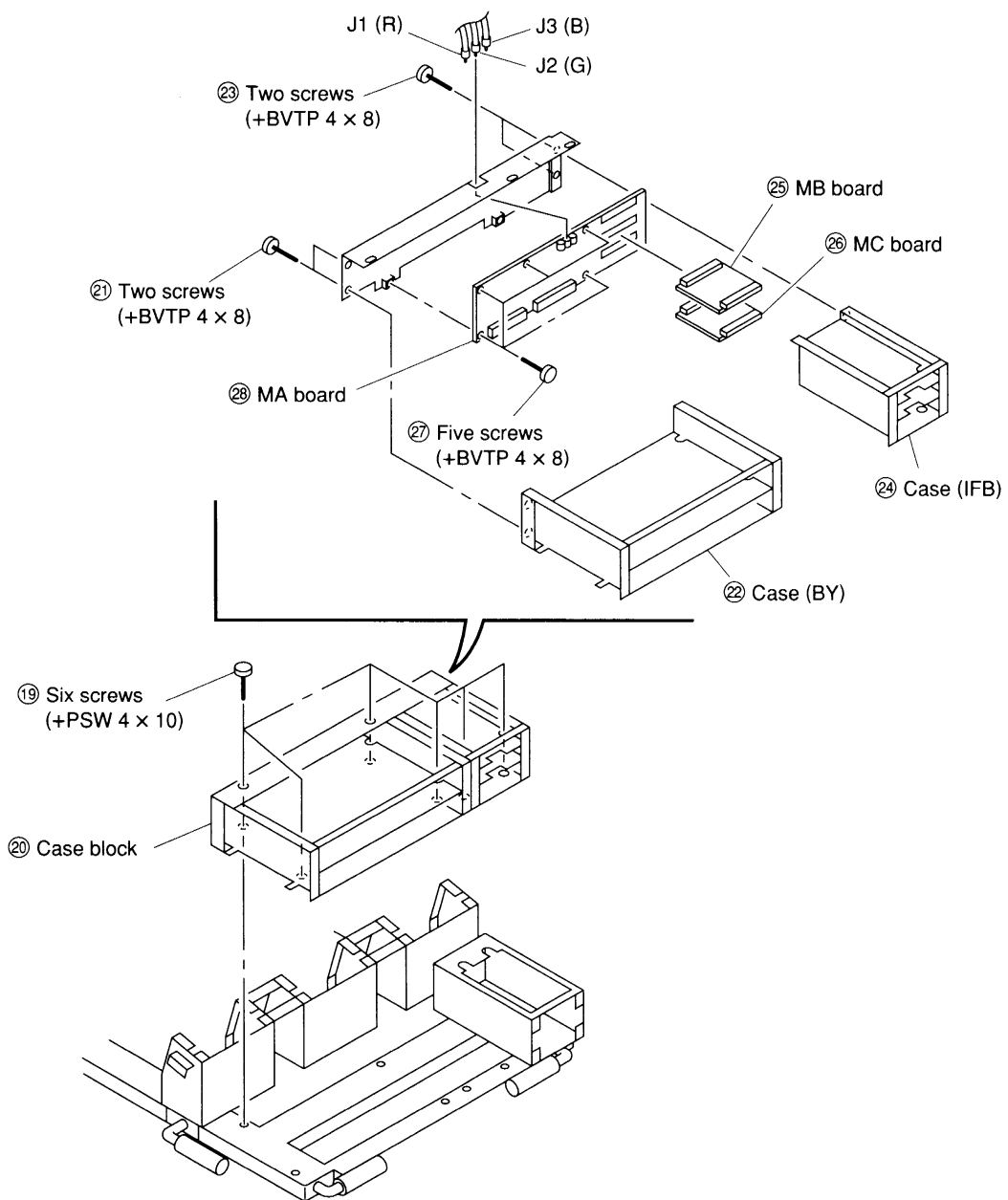
Two screws  
(SW hexagon head screw  
M5 x 12)

② Two stay

## 2-2-23. MA, MB and MC Boards Removal

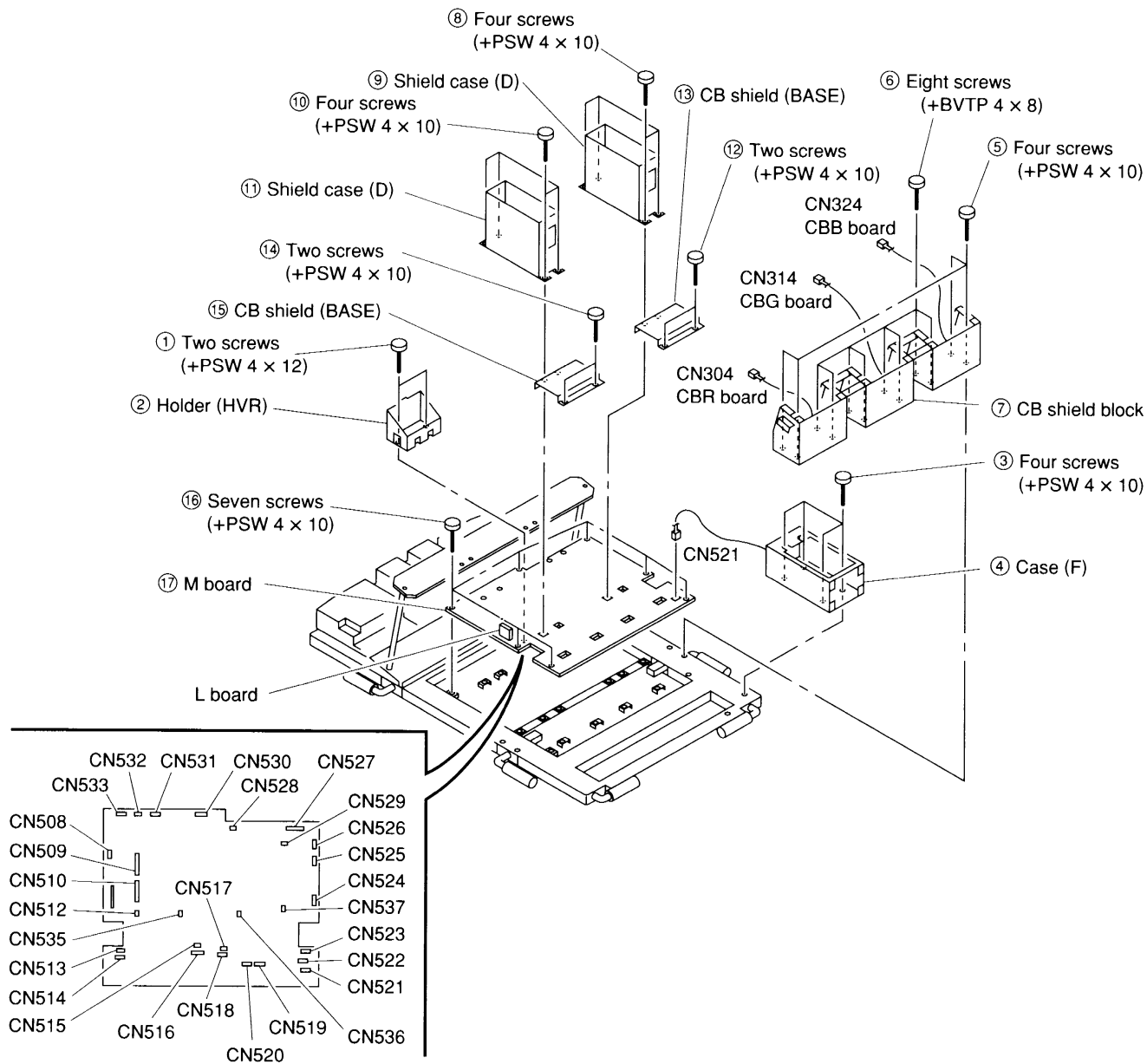
1. Open the ED block and remove the harness. (Refer to Section 2-2-3 to 2-2-8.)
2. Remove the CB, CG and CR blocks. (Refer to Section 2-2-9.)
3. Remove the EBH and EBQ boards. (Refer to Section 2-2-11.)
4. Remove the DC fan. (Refer to Section 2-2-13.)
5. Remove the BA, F, and ME boards. (Refer to Section 2-2-17.)
6. Remove the BC and F boards. (Refer to Section 2-2-18.)
7. Remove the EBB, EBG, EBR and PE boards. (Refer to Section 2-2-19.)
8. Remove the GA and GB boards. (Refer to Section 2-2-20.)
9. Remove the three picture tubes. (Refer to Section 2-2-22.(1))



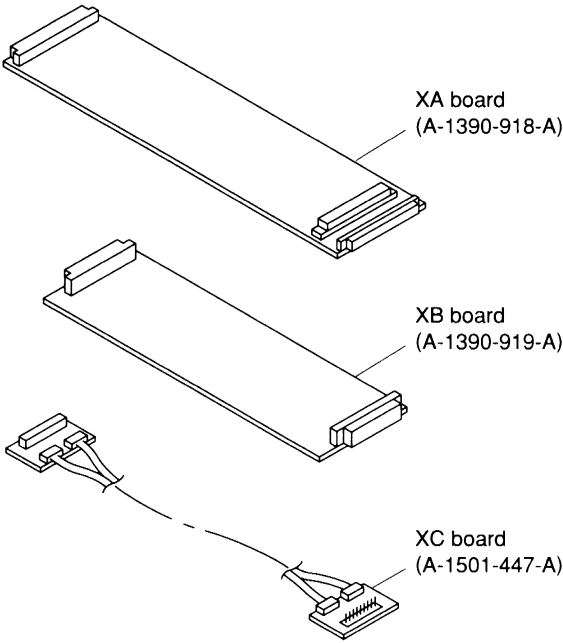


## 2-2-24. M Board Removal

1. Remove the case block. (Refer to Section 2-2-23.)
2. Remove the DA, DB, DD, DE and DF boards. (Refer to Section 2-2-10.)
3. Remove the HVB block and high-voltage cable. (Refer to Section 2-2-12.)



2-2-25. Extension Board





## 2-3. ERROR CODE

### 2-3-1. Warning Code on 7-Segment LED

Error no.	LED color	Note	Description
01	Green	Main CS incorrect	Check Sum of Main Program is incorrect. Main Program is not written correctly on Flash Memory. Upload Mode starts immediately after this error is displayed.
03	Green	Font CS incorrect	Check Sum of Font Data is incorrect. Upload Mode starts immediately after this error is displayed.
10	Green	Upload mode Start	Displayed when Upload mode starts. (Flash twice.)
11	Green	Upload data from Comm	Mode of uploading data from communication.
12	Green	Udata data to FM	Mode of writing data uploaded from communication on Flash Memory.
18	Green	Transport Error1	Transport Error (Upload Mode)
19	Green	Transport Error2	Transport Error: Start Code Low Byte Error (Upload Mode)
1A	Green	Transport Error3	Transport Error: Packet Length Error (Upload Mode)
1B	Green	Transport Error4	Transport Error: Data Length Error (Upload Mode)
1C	Green	Transport Error5	Transport Error: Header Check Sum Error (Upload Mode)
1D	Green	Transport Error6	Transport Error: Data Check Sum Error (Upload Mode)
1E	Green	Transport Error7	Transport Error: Data End Low Byte Error (Upload Mode)
1F	Green	Transport Error8	Transport Error: Data End High Byte Error (Upload Mode)
20	Green	Transport Error9	Transport Error: Invalid Error (Upload Mode)
21	Green	Transport Error10	Transport Error: Retry Occur (Upload Mode)
24	Green	Session Error	Session Error (Upload Mode)
2F	Green	Return to Normal	Upload Mode is finished. Return to Normal Mode.
30	Green	User NVM format not available !	User Domain NVM is not formatted.
31	Green	User NVM formatting...	User Domain NVM is being formatted.
32	Green	User NVM writing...	Data is being written on User Domain NVM.
33	Green	Service NVM format not available !	Service Domain NVM is not formatted.
34	Green	Service NVM formatting...	Service Domain NVM is being formatted.
35	Green	Service NVM writing...	Data is being written on Service Domain NVM.
36	Green	Factory NVM format not available !	Factory Domain NVM is not formatted.
37	Green	Factory NVM formatting...	Factory Domain NVM is being formatted.
38	Green	Factory NVM writing...	Data is being written on Factory Domain NVM.
3A	Green	Input memory changing...	Displayed when Input signals are considered unstable.
3B	Green	Now Power on delay waiting...	Waiting for ON in the "ON DELAY" mode.
40	Green	Configuring the system	System Setting is being performed.
41	Green	Same DEVICE INDEX for Projector detected	There are other projectors that have the same device index number.
42	Green	Same DEVICE INDEX for Switcher detected	There are other switchers that have the same device index number.
43	Green	Master Switcher not exist	There is no Master Switcher.

When any of these codes is output in the ON condition, the device cannot be in the Standby state.

## 2-3-2. Protector Code on 7-Segment LED

Error no.	LED color	Note	Description
60	Orange	Unknown	In this mode, the reason why the protect works is unknown. There is no way other than inspecting GA/GB board steadily or checking each protect detection line on YA board.
61	Orange	POW1	This protect works when the 200V line of the power source has dropped. Since this line is used only on PA board, the points to look into are GB/PA/L (it contains the power protect circuit)/M board.
62	Orange	POW2	This protect works when the 115 V line of the power source has dropped. This line is used on PA/PE/ED/CDR/CDG/CDB boards, therefore, the points to look into are these boards and GB, L and M boards. The past experiences tell that the defects were often found at the VIDEO PACK of C board.
63	Orange	POW3	This protect works when the 50 V line of the power source has dropped. This line is used on DC/EBR/EBG/EBB boards. There are two possible modes for which this protect works. One is the case of failure on the OUT circuit of the above boards. This case can be readily found out because the error code of each board is displayed simultaneously. Another case is caused by the excessive Reg/Mg compensation. In this case, it is necessary to look into whether the Reg/Mg compensation wave forms are normal. If they are abnormal, look into DA/DB/DD/DE board or YA board.
64	Orange	POW4	This protect works when the 15 V line of the power source has dropped. This line is used on most of boards. It is rare that this error is displayed alone. The error code is always displayed by any other board at the same time. If the error is displayed alone, look into GB/LM boards.
65	Orange	POL	This protect concerns with the polarity change. As the possible causes of error, the cover for polarity change is open or the connector in this line is disconnected.
66	Orange	H.STOP	This protect works when the horizontal deflection is inactivated. The most possible failure is H.OUT of E board. If not, failures might be found in H. Drive series or the negative power source series. Look into DA/EA/ED/PD board.
67	Orange	V.STOP	This protect works when the vertical deflection is inactivated. In most cases, inspection of DF board will solve the problem.
68	Orange	SUB	This error code comes from DC board. Failures around OUT/Reg might be considered. Refer to the protect items for POW3.
69	Orange	HV	This protect works when the high voltage rises high. Failures of PA board/PB board/HV BLOCK/HV FILTER might be considered. In some cases, the connector of the detection lines of HV BLOCK is disconnected.
6A	Orange	LOT	Failure around L.O.T. of the PE board.
6B	Orange	Ik	This protect works when the current excessively flows to the CRT of any of R, G and B. Since it is for protection from X-ray, it may be hardly activated. If indicated, look into BA board.
6C	Orange	$\Sigma$ Ik	This protect works when abnormality occurred in the CRT. If no defect is found in the CRT, look into PA/PB boards.
6D	Orange	FAN1	This protect works when any of four FANs attached at the rear of the unit stopped. In some cases, it is caused by the failure of FAN itself. In other cases, the connector is disconnected or the line materials are caught in.
6E	Orange	FAN2	This protect works when the FAN at the far end of PA board stopped.
6F	Orange	LENS	This protect works when the detection line attached to the LENS of any of R, G and B is disconnected. In some unusual cases, it works due to poor connection of the screw.
70	Orange	CRTR	This protect works when the current excessively flows to RED CRT. Look into CAR/CBR/CDR boards. If no defect is found, suspect RED CRT.
71	Orange	CRTG	This protect works when the current excessively flows to GREEN CRT. Look into CAG/CBG/CDG boards. If no defect is found, suspect GREEN CRT.
72	Orange	CRTB	This protect works when the current excessively flows to BLUE CRT. Look into CAB/CBB/CDB boards. If no defect is found, suspect BLUE CRT.
73	Orange	IFBB	This protect works with the defect of the board inserted into INPUT-B.
74	Orange	IFBC	This protect works with the defect of the board inserted into INPUT-C.

Error no.	LED color	Note	Description
80	Orange	BA	This protect works when the power line of BA board has dropped. Since this is included in the secondary troubleshooting for BA board, it does not usually work. However, for this unit, this protect is very sensitive and the error is displayed even with the trifle power drop. In such a case, look into GB board.
81	Orange	DA	This protect works when the power line of DA board has dropped. Since this is included in the secondary troubleshooting for DA board, it does not usually work.
82	Orange	DB	This protect works when the power line of DB board has dropped. Since this is included in the secondary troubleshooting for DB board, it does not usually work.
83	Orange	DD	This protect works when the power line of DD board has dropped. Since this is included in the secondary troubleshooting for DD board, it does not usually work.
84	Orange	DE	This protect works when the power line of DE board has dropped. Since this is included in the secondary troubleshooting for DE board, it does not usually work.
85	Orange	EBR	This error code comes from EBR board. Failures around OUT/Mg might be considered. Refer to the protect items for POW3.
86	Orange	EBG	This error code comes from EBG board. Failures around OUT/Mg might be considered. Refer to the protect items for POW3.
87	Orange	EBB	This error code comes from EBB board. Failures around OUT/Mg might be considered. Refer to the protect items for POW3.
88	Orange/Red	Initialize	Message during initialization. Software does not start up yet.
89	Orange	EBH	This error code comes from EBH board. Failures around OUT/Mg might be considered. Refer to the protect items for POW3.
8A	Orange	EBQ	This error code comes from EBQ board. Failures around OUT/Mg might be considered. Refer to the protect items for POW3.

When any of these codes is output, the device is set in the Standby state once, however it can be set in the ON state again.

### 2-3-3. Error Code on 7-Segment LED

Error no.	LED color	Note	Description
D0	Red	User NVM format not available !	User Domain NVM cannot be formatted. This NMV device itself might be destroyed.
D1	Red	User NVM write error !	Data cannot be written on User Domain NVM. This NMV device itself might be destroyed.
D2	Red	Service NVM format not available !	Service Domain NVM cannot be formatted. This NMV device itself might be destroyed.
D3	Red	Service NVM write error !	Data cannot be written on Service Domain NVM. This NMV device itself might be destroyed.
D4	Red	Factory NVM format not available !	Factory Domain NVM cannot be formatted. This NMV device itself might be destroyed.
D5	Red	Factory NVM write error !	Data cannot be written on Factory Domain NVM. This NMV device itself might be destroyed.

When any of these codes is displayed, the device cannot be in the ON state.

## 2-4. MEMORY ACCESS SYSTEM

### 2-4-1. Memory Structure

There are three memory areas-USER area, SERVICE area, and FACTORY area.

#### 1. USER area

Memory area always used in the market.

Area in which data is saved when automatic saving or when the MEMORY key is pressed.

<Contents of Memory Structure>

SET MEMORY

CH MEMORY

INPUT MEMORY × 150 (Original + Custom)

At shipment, data of the Original Input Memory (No. 0 to 12) when placed on the floor and front projected to a 120-inch screen is memorized in INPUT MEMORY.

#### 2. SERVICE area

Memory area used for backing up data set or adjusted on the market (user area).

<Contents of Memory Structure>

SET MEMORY

CH MEMORY

INPUT MEMORY ×150 (Original + Custom)

Like the USER area, at shipment, data of the Original Input Memory (No. 0 to 12) is memorized in INPUT MEMORY.

#### 3. FACTORY area

Memory area for saving setting and adjustment data adjusted when placed on the floor and front projected to a 120-inch screen in the factory.

The registration data value of INPUT MEMORY of this area is the Standard Data Save reference value.

<Contents of Memory Structure>

SET MEMORY

CH MEMORY

INPUT MEMORY ×13 (Original)

At shipment, the contents of the memory data in each memory area are the same.

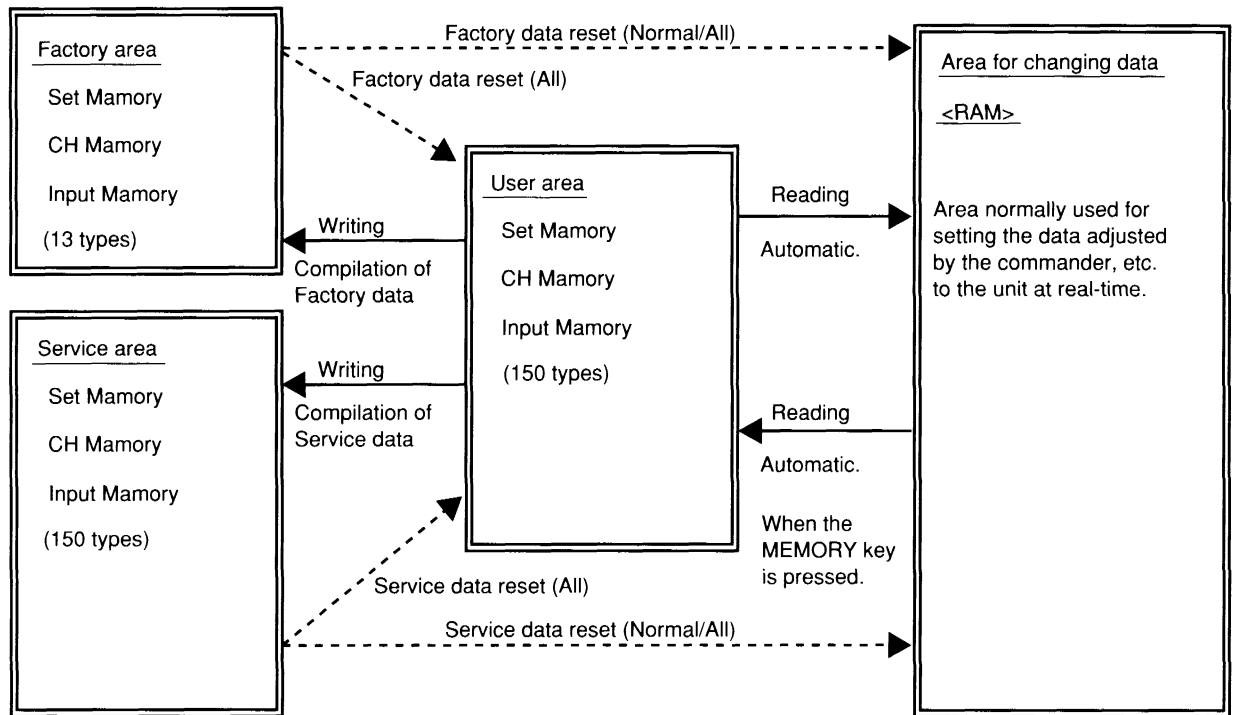
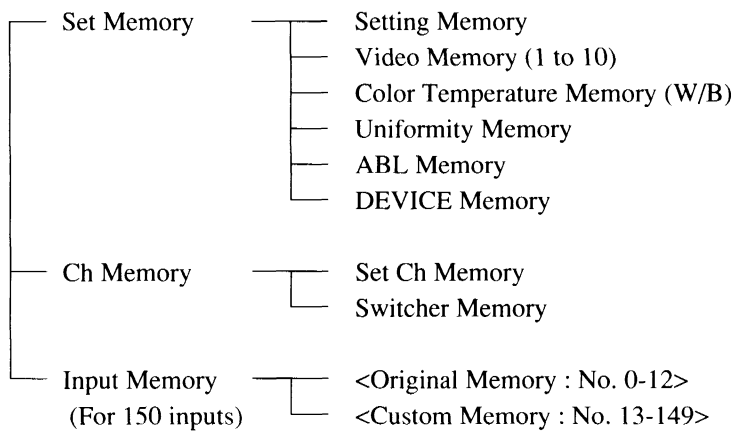


Fig. 1 Memory Area and Structure

## 2-4-2. Various Memory Data

The basic VPH-G90 memory structure and types are as follows.



## 1. Set Memory

Memory for saving set and adjusted values which the unit has only one of each.

- Setting Memory  
Various setting values of the unit.

Items	Contents
Last CH	VIDEO/INPUT-A/INPUT-B/INPUT-C Sw'cr
Set Serial No.	Unit's serial number
Operation Timer	Unit's total operating time
CRT Timer	CRT total operating time
USER MODE	Normal/PRO
Status	ON/OFF
Group INDEX	1-99
Device INDEX	0-99
SIRCS RECEIVER	FRONT&REAR/FRONT/REAR/ALL OFF
OSD Language	E/F/G/S/I/J/C
Baud Rate <PJ-COM>	38.4 k/19.2 k/9600
Baud Rate <RS-232C/422A>	38.4 k/19.2 k/9600
INPUT-MEMORY SEARCH MODE	AUTO/MANUAL
ALL WHITE MODE	0-99 min 0 min = All White Mode OFF
POWER SAVING MODE	ON/OFF
DIRECT POWER ON MODE	ON/OFF
ON DELAY MODE	ON/OFF
SCREEN SELECT	Screen B/Screen M
ABG MODE	ON/OFF
Normal Defocus MODE	ON/OFF
5BNC MODE	ON/OFF
PIC.ORBING MODE	ON/OFF
SCAN LINE SHIFT MODE	ON/OFF
INT.OSC PATTERN	OSC1-OSC9
TEST PATTERN	OFF, TP1-TP13, TPU1-TPU5
COLOR UNIFORMITY MODE	OFF/STANDARD/MANUAL
BRIGHTNESS UNIFORMITY MODE	OFF/STANDARD/MANUAL
ABL LINK MODE	ON/OFF

**Table 1. Setting memory**

- Reading and writing of set memory other than video memory

Timing	Memory Type	Memory Area
When AC is ON	All set memories (Other than video memory)	Reads data from the set memory of the user area to the area changing various data (RAM), and sets the changes in the unit.

**Table 2. Reading of Set Memory (Other than Video Memory) (Load)**

Timing	Memory Type	Memory Area
When the MEMORY key is pressed	All set memories (Other than video memory)	Writes data in the area changing various data (RAM) to the set memory of the user area (Save).
When the input ch changes (When input instability is confirmed)		
When the input signal changes (When input instability is confirmed)		
When the mode of the unit changes		
When the power is turned off		

**Table 3. Writing of Set Memory (Other than Video Memory) (Save)**

- Video Memory

Various data of video memory setting values 1 to 10.

The data types in the respective setting values are the same.

VIDEO MEMORY OFF is inside INPUT MEMORY.

Items	Contents
Video Memory Label	ASCII character
Color Temperature Select	9300/6500/5400/3200/Custom
W/B Adjust Data of Custom	Gain/BiasCoarse/BiasFine/ $\gamma$ (for Adj R/G/B, Screen Sel)
Dynamic PICTURE	ON/OFF
V.SHIFT Select	WIDE/NARROW
NTSC Setup Select	0/7.5
COMPONENT FORMAT Select	SMPTE.EBU-N10/BETACAM7.5
COMB Filter Select	3D/3Line
DRC Level Select	High/Low
Picture Control Adjust Data	Contrast/Brightness/Color/Hue/Sharpness
RGB SIZE Adjust Data	Hc/Hf/Vc/Vf
RGB SHIFT Adjust Data	Hc/Hf/Vc
Blanking Adjust Data	Top/Bottom/Left/Right TopPhase/TopKey/TopPin Bottom Phase/BottomKey/BottomPin
W/B Custom Adjust Data	By Screen Select Gain R/G/B Bias Coarse/Fine R/G/B $\gamma$ R/G/B

**Table 4. Video Memory**

- Reading and Writing of Video Memory Data

Data writing and reading of the video memory (Load/Save) differ according to the selected setting values of Video Memory.

These set and selected values are saved in INPUT-MEMORY.

# ① Reading (Load)

Timing	Memory Type	Memory Area (from)
When the POWER is turned ON (As soon as the input signal is confirmed)	Video Memory	Reads data from the input memory of the user area to the area changing various data (RAM), and sets the changes in the unit.
When the input signal is input (As soon as the input signal is confirmed)		
When the CH is switched (As soon as the input signal is confirmed)		
When the input signal is changed (As soon as the input signal is confirmed)		
When the video memory setting is set to OFF (SIRCS, communication, etc.)		

**Table 5. Reading of Data When Video Memory OFF**

<When Video Memory = 1-10>

Timing	Memory Type	Memory Area
When AC is ON	All data of Video Memory 1-10	Reads various data from the input memory of the user area to the area changing data (RAM). Reads the video memory of the user area expanded.
When POWER is ON (As soon as the input signal is confirmed)	Selected video memory	Sets the video memory selected from the area changing data (RAM) in the unit.
When the input signal is input (As soon as the input signal is confirmed)		
When the CH is switched (As soon as the input signal is confirmed)		
When the input signal is changed (As soon as the input signal is confirmed)		
When the video memory setting value is changed (SIRCS, communication, etc.)		

**Table 6. Reading of Data When Video Memory 1-10**



## ② Writing (Save)

Basically, the unit writes and saves the data in the user memories at all writing timings.

However, the data will not be written if the MEMORY key is not pressed only when set to Video Memory = OFF and when the input memory is new.

<When Video Memory = OFF>

Timing	Memory Type	Memory Area
When the MEMORY key is pressed	All data when Video Memory is OFF.	Saves the data of the area changing various data (RAM) in the new (custom) input memory of the user area and INPUT-MEMORY of the memory read from.

**Table 7. Writing of Data When Video Memory = OFF <When Input-Memory is New>**

Timing	Memory Type	Memory Area
When the MEMORY Key is pressed	All data when the video memory is off	Saves the data of the area changing various data (RAM) in the custom input memory of the memory read from of the user area and original memory of the new memory.
When the input Ch is changed (As soon as input instability is confirmed)		
When the input signal is changed (When input instability is confirmed)		
When the mode of the unit is changed		
When the power is turned off		

**Table 8. Writing of Data When Video Memory = OFF <When Input-Memory Exists>**

<When Video Memory = 1-10>

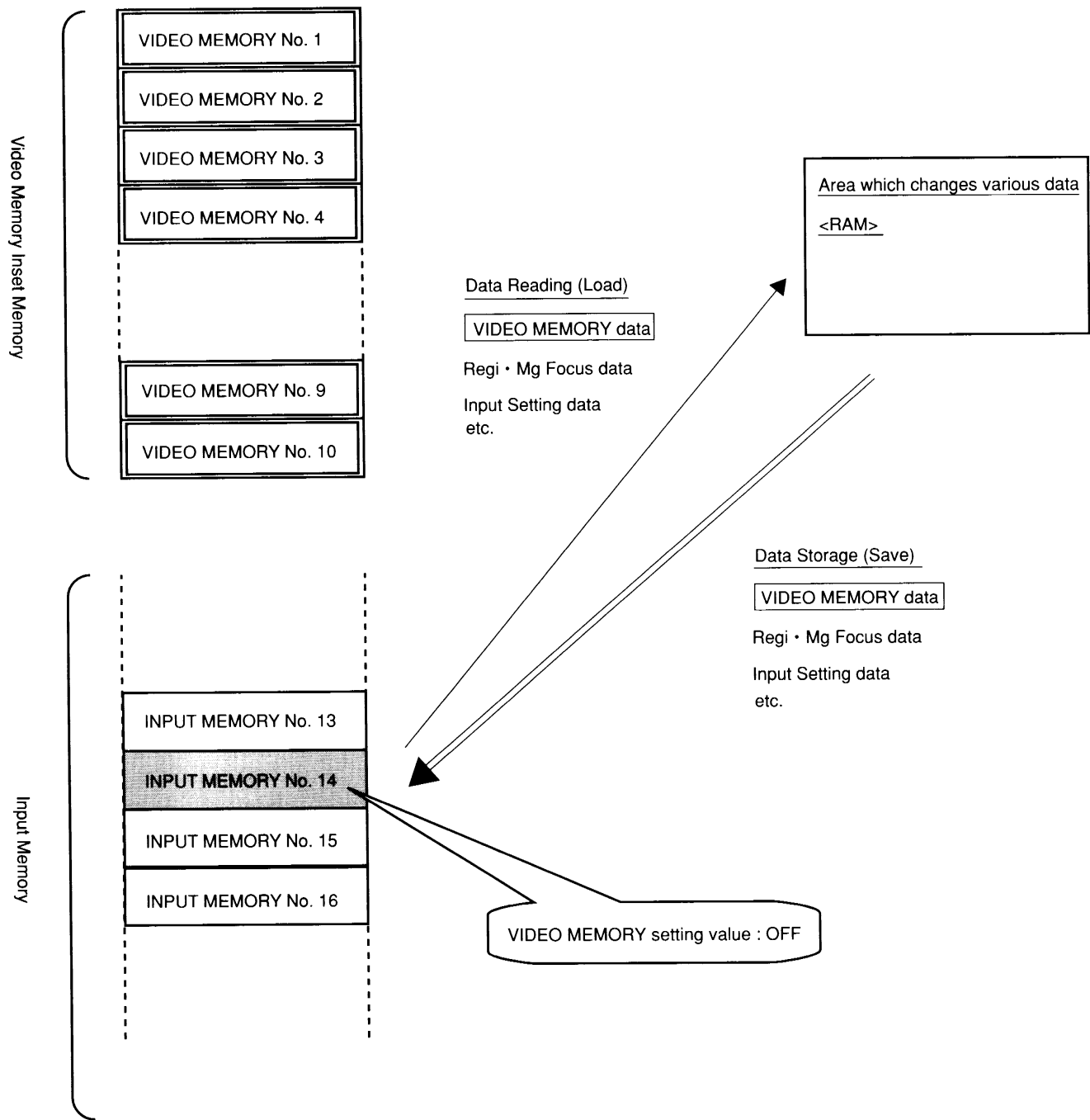
Timing	Memory Type	Memory Area (to)
When the MEMORY key is pressed	All data of video memory 1-10 (Including video memory that is not selected)	Writes (saves) data of the area changing various data (RAM) in Video-Memory 1-10 in the set memory of the User Area.

**Table 9. Writing of Data When Video Memory = 1-10 <When Input-Memory is New>**

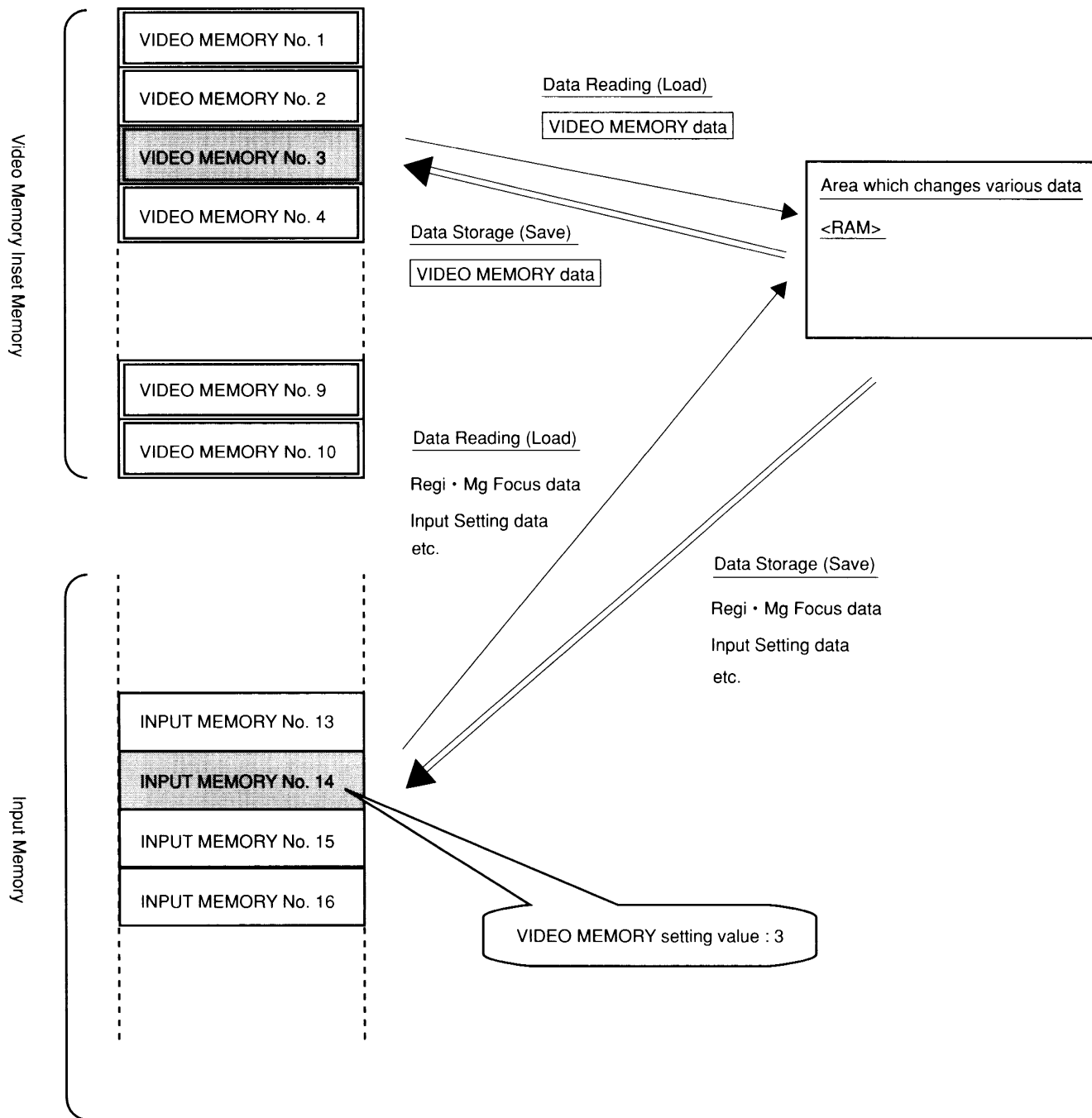
Timing	Memory Type	Memory Area (to)
When the MEMORY key is pressed	All data of Video Memory 1-10 (Including video memory that is not selected)	Writes (Saves) data of the area changing various data (RAM) in Video-Memory 1-10 in the set memory of the user area.
When the input Ch is changed (When input instability is confirmed)		
When the input signal is changed (When input instability is confirmed)		
When the mode of the unit is changed		
When the power is turned off		

**Table 10. Writing of Data When Video Memory = 1-10 <When Input-Memory Exists>**

Example : When set to VIDEO MEMORY OFF for an input (Input Memory No. 14)



Example : When set to VIDEO MEMORY 3 for an input (Input Memory No. 14)

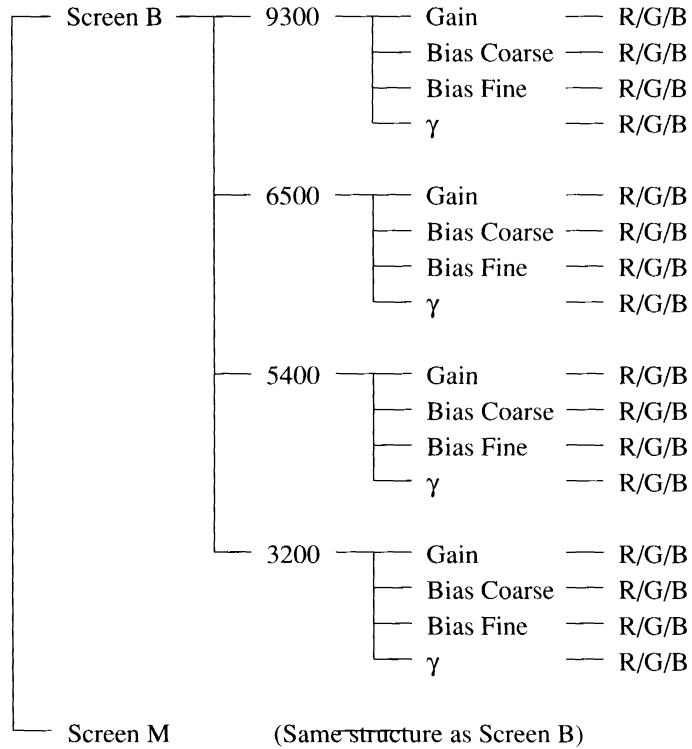


- Color Temperature Memory

The Screen B and Screen M of Screen Sel are set with color temperatures 9300 k, 6500 k, 5400 k, and 3200 k.  
The data of each color temperature consists of GAIN/BIAS/ $\gamma$  data.

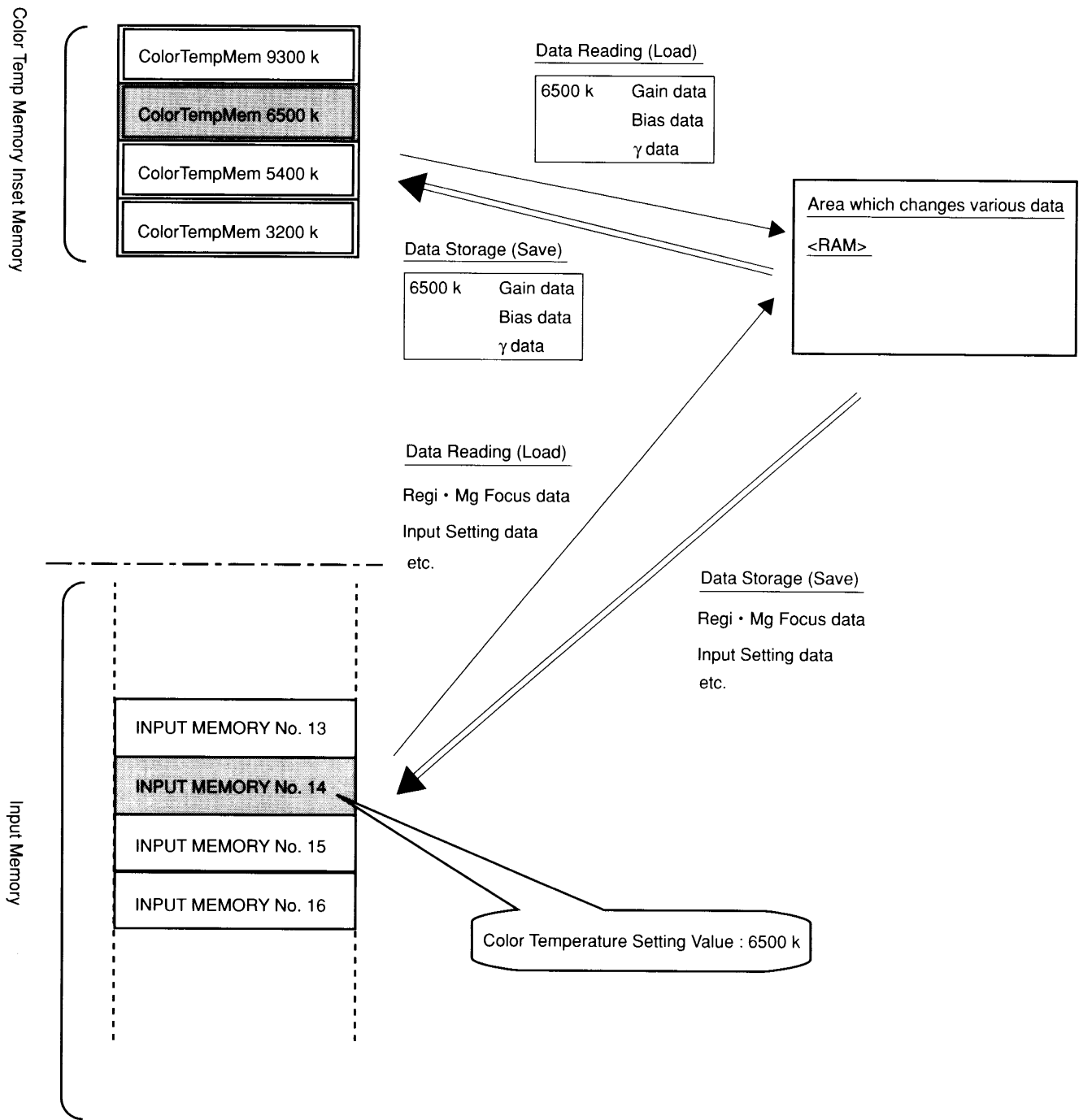
The color temperature setting value custom is the GAIN/BIAS/ $\gamma$  data in the following memories;

- Input-memory when Video Memory = OFF
- Various video memories when Video Memory = 1-10

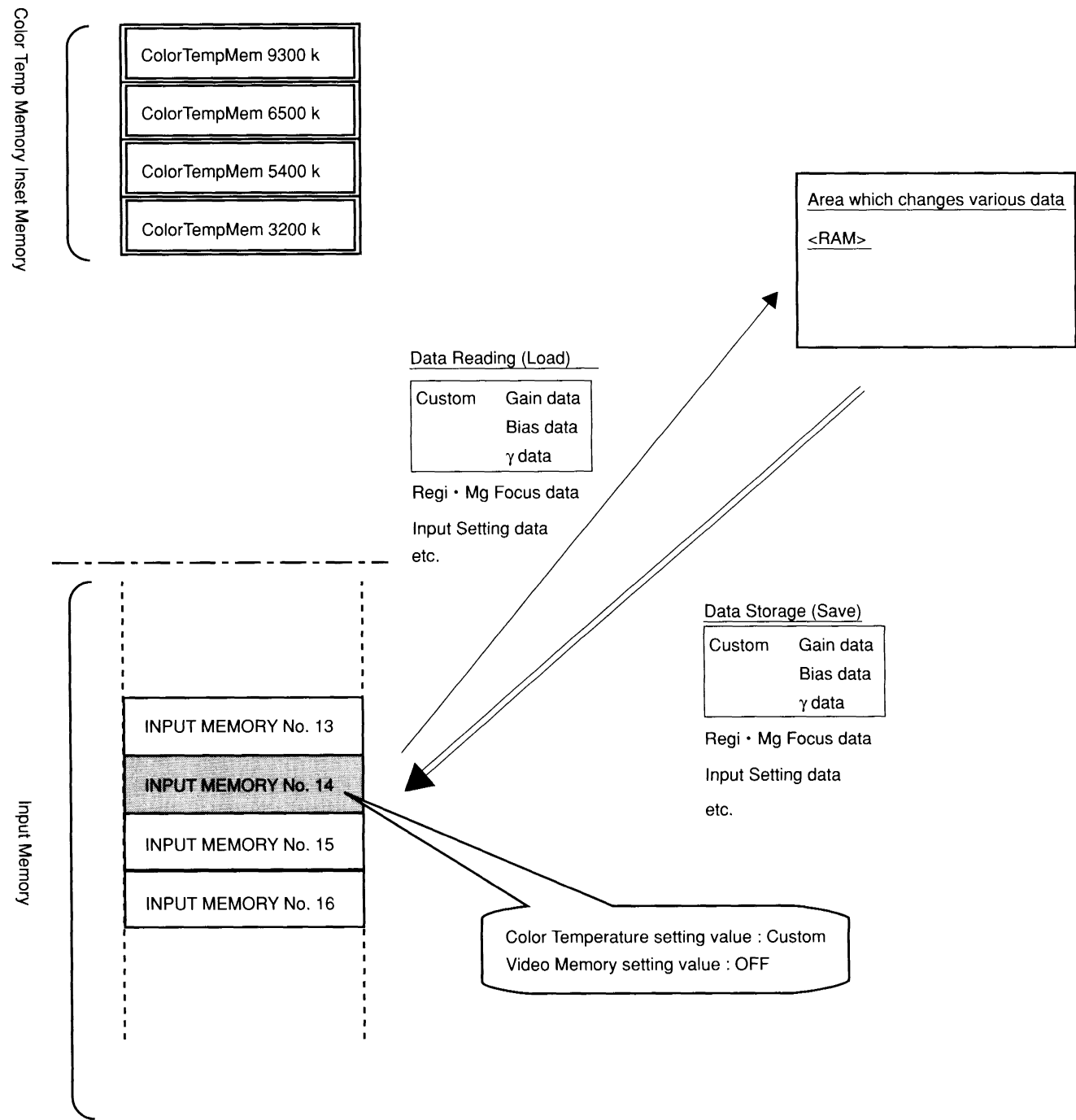


The reading and writing of the data of this memory are as shown in “Table 2 Reading of Set Memory (Other than Video Memory) (Load)” and “Table 3 Writing of Set Memory (Other than Video Memory) (Save).”

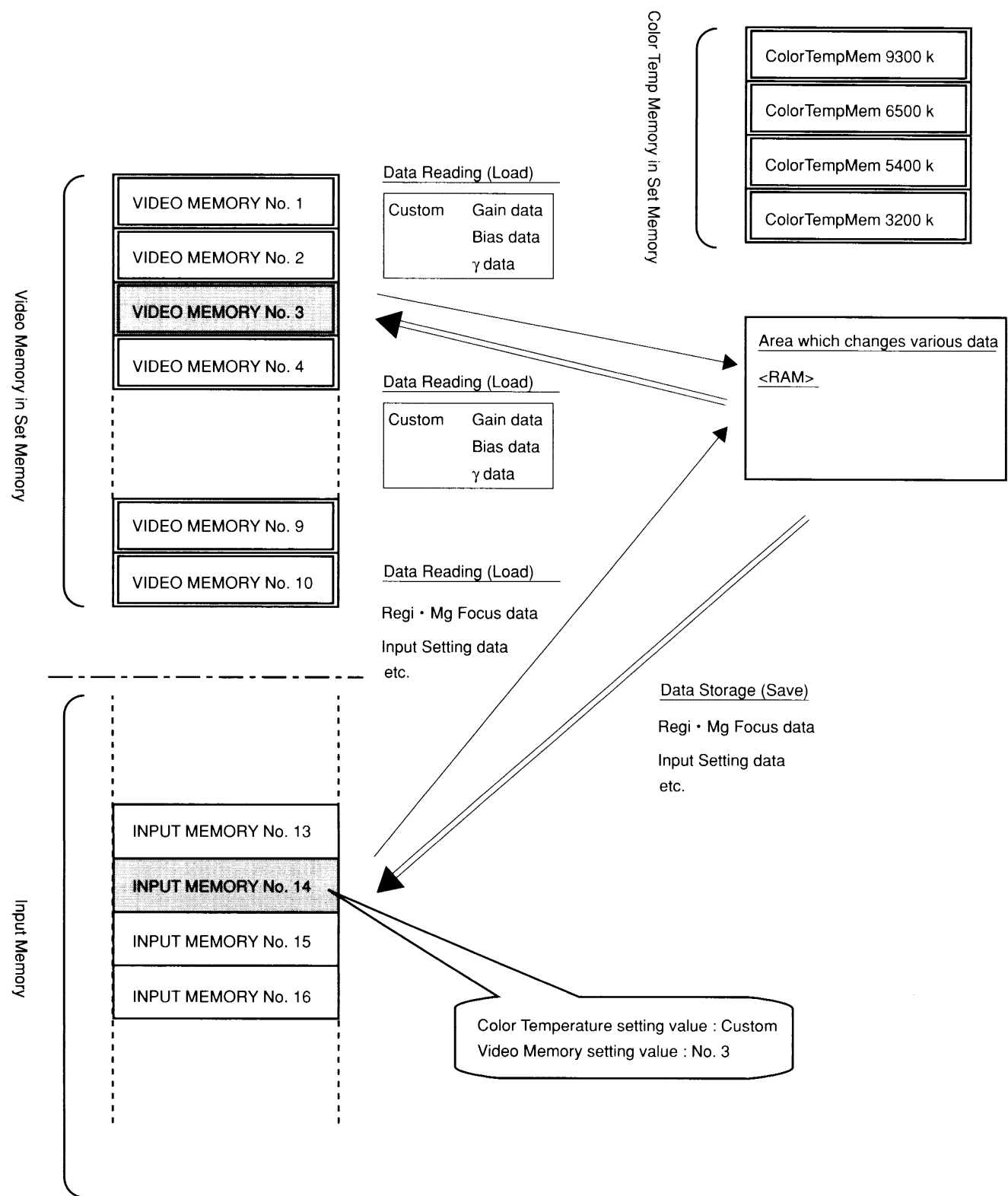
Example : When set to Color Temperature: 6500K for an input (Input Memory No. 14)



Example : When set to Color Temperature: Custom for an input (Input Memory No. 14)  
(When VIDEO MEMORY OFF)



Example : When set to Color Temperature: Custom for an input (Input Memory No. 14)  
(When VIDEO MEMORY 3)

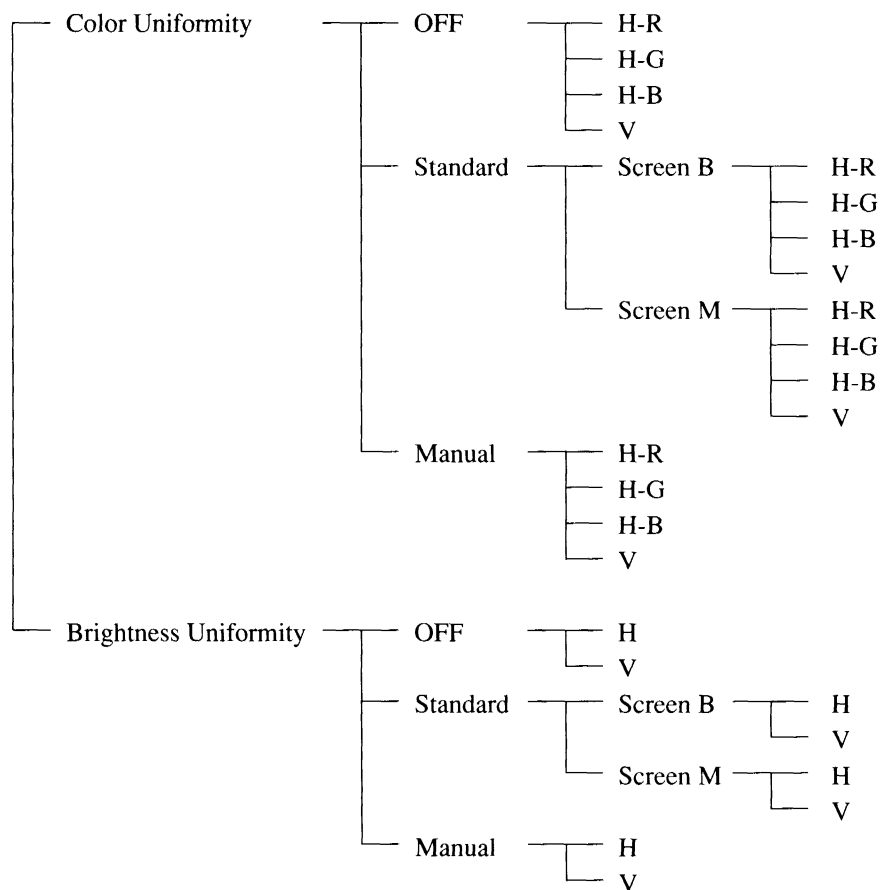


- Uniformity Memory

Memory which saves the uniformity data.

The unit has one data for the Uniformity mode : OFF and Manual mode each, and data for every screen for the Standard mode.

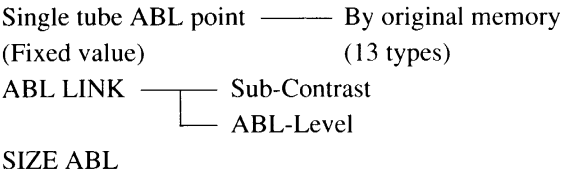
The setting values of the Uniformity mode are in Setting Memory.



The reading and writing of the data of this memory are as shown in “Table 2 Reading of Set Memory (Other than Video Memory) (Load)” and “Table 3 Writing of Set Memory (Other than Video Memory) (Save).”



- ABL Memory  
Stores various data for ABL control.



The reading and writing of the data of this memory are as shown in “Table 2 Reading of Set Memory (Other than Video Memory) (Load)” and “Table 3 Writing of Set Memory (Other than Video Memory) (Save).”

- Device Memory

Items	Contents
PIC.CONTROL.DEVICE IC DIRECT CTRL	Various register settings of CXA2101
VPS Limit control	VPS limit data of 3 colors-R, G, B : Adjustments of unit

Table 11. Device Memory

The reading and writing of the data of this memory are as shown in “Table 2 Reading of Set Memory (Other than Video Memory) (Load)” and “Table 3 Writing of Set Memory (Other than Video Memory) (Save).”

## 2. Ch Memory

Broadly, part of the set memory, but memorizes the values set for every channel collectively.  
Contains the channel data on the channels and switchers of the unit.

Items	Contents
VIDEO Input-System	Video (Composite) / S-Video (YC)
INPUT-A Input-System	Video/S-Video/RGB/Component/HDTV-YPBPR/HDTV-GBR
INPUT-B Input-System	Video/S-Video/RGB/Component/HDTV-YPBPR/HDTV-GBR
INPUT-C Input-System	Video/S-Video/RGB/Component/HDTV-YPBPR/HDTV-GBR
Switcher Input-System	Video/S-Video/RGB/Component/HDTV-YPBPR/HDTV-GBR
VIDEO DRC setting	OFF /ON
INPUT-A DRC setting	
INPUT-B DRC setting	
INPUT-C DRC setting	
Switcher DRC setting	
Various information by switcher channel	

Table 12. Ch Memory

Timing	Memory Type	Memory Area (from)
When AC is ON	All ch memories (Other than video memory)	Reads the data from the ch memory of the user area to the area changing various data (RAM), and sets the data in the unit.

**Table 13. Reading of Ch Memory (Load)**

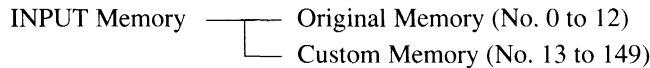
Timing	Memory Type	Memory Area
When the MEMORY key is pressed	All ch memories	Writes data in the area changing various data (RAM) to the ch memory of the user area (Save).
When the input ch changes (When input instability is confirmed)		
When the input signal changes (When input instability is confirmed)		
When the mode of the unit changes		
When the power is turned off		

**Table 14. Writing of Ch Memory (Save)**

### 3. INPUT Memory

Memory for storing setting values and adjustment values by input signal.

There are altogether 150 standard input memories.

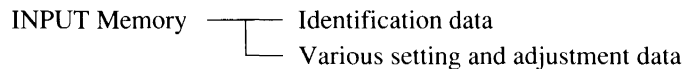


As shown above, the input memory is divided into original memory and custom memory.

The structure of each memory is basically the same.

#### • Structure of INPUT Memory

Consists of the identification data for identifying the input signal and setting and adjustment data by input signal.



Items	Contents
CH information <Custom Only>	Input channel selected when the input memory is registered (newly created) : Video/S-Video/INPUT-A/INPUT-B/INPUT-C/Switcher1-1 to 8-8/Other
Input signal type information <Original & Custom>	Signal type information of input signal when the input memory is registered (newly created) : Video, S-Video, Component, RGB, 15 k RGB, HDTV-YPBPR, HDTV-GBR, SDI-4:2:2, DRC, IDTV (Component60), IDTV (notComponent60), INT IDTV
Sync Status information <Custom Only>	Sync status information of input signal when the input memory is registered (newly created) : H/C-Pos/Neg/—, V-Pos/Neg/—, SonG/Neg/—
Input frequency information <Original & Custom>	fH, fV, number of scanning line

**Table 15. Input Memory Identification Information Data**

Items	Contents	
Video Memory No.	Video Memory setting value set for input signal: OFF, 1 to 10	
Various data when Video Memory is OFF	Video Memory Label	
	Color Temperature Select	
	W/B Adjust Data of Custom	
	Dynamic PICTURE	
	V.SHIFT Select	
	NTSC Setup Select	
	COMPONENT FORMAT Select	
	COMB Filter Select	
	DRC Level Select	
	Picture Control Adjust Data	
	RGB SIZE Adjust Data	
	RGB SHIFT Adjust Data	
	Blanking Adjust Data	
Clamp Select	Clamp pulse selected setting value : Auto, SonG, H/C, HP, Tri-Level Sync	
VIDEO LOCK Select	VIDEO LOCK selected setting value : Nomal, Wide	
SYNC Select	SYNC selected setting value : Auto, SonG/INT, C/EXT C, HV/EXT HV	
SYNC ROUTE	Sync route selection value of RGB signal input to INPUT-A : Auto, Normal, SYNC w VIDEO	
Normal DEFOCUS Select	Defocus mode selected setting value for normal : ON, OFF	
Registration Adjust	CENT	R/G/B, Hc/Hf/Vc/Vf, User/Service (fine), by deflection polarity
	SIZE	R/G/B, Hc/Hf/Vc/Vf/H/V
	LIN	R/G/B, Hc/Hf/Vc/Vf,
	SKEW	R/G/B, Hc/Hf/Vc/Vf
	BOW	R/G/B, Hc/Hf/Vc/Vf
	KEY	R/G/B, H/V/Top/Bottom/Left/Right,
	PIN	R/G/B, H/V/Top/Bottom/Left/Right,
	ZONE	R/G/B, Hc/Hf/Vc/Vf/H/V, Position1-25
Focus Adjust	Mg	R/G/B, All (Position1-9), H-Phase,
	Pole	R/G/B, 2H/2V/4AQP/4DQP/6AHP/6DHP
	AQP	R/G/B, Position1-9
	DQP	R/G/B, Position1-9
	AHP	R/G/B, Position1-9
	DHP	R/G/B, Position1-9
W/B Adjust <Custom>	GAIN	Screen B/M/, R/G/B,
	BIAS	Screen B/M, R/G/B, Coarse/Fine
	$\gamma$	Screen B/M, R/G/B

**Table 16. Input Memory-Variou Setting and Adjustment Data**

- Original Memory

Input memory which stores preset and preadjusted data at shipment.

Serves as the memory read from for new input signals of the unit and in internal oscillation modes such as No-INPUT and INT.OSC mode : ON.

<Difference with Custom Memory>

① Identification conditions in identification data of input memory consist of only;

\* Input signal type

\* Input frequency (For RGB inputs)

The original memory closest to the input signal based on these conditions is therefore selected and the data is loaded.

② In all cases, various data is also saved in the original memory.

③ In all cases, the memory frame is not erased.

[Does not apply to automatic erasure when the input memory becomes full with registrations.]

[Does not apply to erasure of "Delete function" of the input memory editing function.]

No.	fH (kHz)	fV (Hz)	Scanning Lines	Input Signal Type
00	15.73	60.00	262	VIDEO line (NTSC3.58)
01	15.73	60.00	262	RGB
02	24.83	56.40	440	RGB
03	31.47	59.94	525	RGB
04	48.36	60.00	806	RGB
05	63.98	60.02	1066	RGB
06	75.00	60.00	1250	RGB
07	93.75	75.00	1250	RGB
08	106.25	85.00	1250	RGB
09	126.84	60.00	2114	RGB
10	145.00	60.00	2417	RGB
11	31.47	60.00	525	Double speed line DRC (NTSC 3.58)
12	33.75	60.00	562	HDTV line (YPBPR)

**Table 17. Original INPUT MEMORY**

- Custom Memory

Input memory for the input signal after shipment.

When the number of input memory registrations become 150 (including the 13 original memories), the memory of the custom memory area is replaced from the smallest number.

## [Writing and Reading of Input Memory]

The reading and writing (load/save) of data differs between new input signals and existing input signals.

### ① Data reading (load)

<For new input signals>

When determined as “new input signal” as a result of the differentiation of the input signal, the most appropriate memory (memory with the signal most resembling the input signal <input signal type, and fH> ) is determined from the original input memories, and it is read (loaded) in the area for changing various data (RAM).

<For existing input signals>

If a signal with the same identification conditions exist in the custom input memory as a result of differentiation of input signals, it is determined that the input memory for that signal has been already created, that is, it is an existing input signal, and the data of the custom input memory is read (loaded) to the area changing various data (RAM).

Timing
When the POWER is turned ON (As soon as the input signal is confirmed)
When the input signal is input (As soon as the input signal is confirmed)
When the CH is switched (As soon as the input signal is confirmed)
When the input signal is changed (As soon as the input signal is confirmed)
When Video Memory is set to OFF (SIRCS, communication, etc.)

**Table 18. Reading of Input Memory (Loading)**

<When NO-INPUT>

When determined as NO-INPUT as a result of the differentiation of the input signal, data from the original input memory set in that channel or determined from the input signal type in the board information is read to the area changing various data (RAM) and set in the unit.

Memory loaded from for every input signal type immediately before NO-INPUT

- VIDEO/S-VIDEO/COMPONENT/SDI : Original INPUT Memory No. 0
- RGB (Including 15 kRGB) : Same No. as the oscillation frequency of fH set at INT.OSC pattern of original input memories No. 1 to 10.
- HDTV system (YPBPR, GBR) : Original INPUT Memory No. 12
- Signal set to DRC ON : Original INPUT Memory NO. 11

## ② Data Writing and Storage (Save)

The writing and storing timing of the data and memory in which the data is written in differ between the new input signal and existing input signal.

<For new input signals>

By pressing the MEMORY Key, the INPUT-MEMORY data “in the area (RAM) changing various data” at that point is written and stored (save) in the new memory set as the custom input memory.

At the same time, the same data is also written and stored in the original input memory from which the data is read from (load).

Timing	Memory Type	Memory Area (to)
When the MEMORY key is pressed	All data in the input memory	New custom input memory of the user area and input memory from which the data is loaded from (original).

**Table 19. Writing and Storing of Data in Input Memory <New> (Save)**

<For existing input signals>

At all timings for writing and storing data in the unit (save), data of the input memory for the input signals in the area for changing various data (RAM) is collectively written and stored in the custom input memory from which the data is read from (load) of the user area.

Timing	Memory Type	Memory Area (to)
When the MEMORY key is pressed	All data of the input memory	Custom input memory read from of the user area (load) and original input memory read (loaded) when this memory is newly created.
When the input channel is changed (When input instability is confirmed)		
When the input signal is changed (When input instability is confirmed)		
When the mode of the unit is changed		
When the POWER is turned OFF		

**Table 20. Writing and Storing of Data in Input Memory <Exist> (Save)**

#### <When NO-INPUT>

At all timings for writing and storing data in the unit (save), data of the input memory for the input signals in the area for changing various data (RAM) is collectively written and stored in the original input memory from which the data is read from (load) of the user area.

#### <INPUT-Memory No. in which the data is written and stored :>

When the input memory load/save is Auto :

Until the number of registrations of the custom input memory becomes max. (150 — 13), assigned automatically to unused memories starting from the smallest memory number in order.

When the number of registrations of the custom input memory is max, new input memories are created by overwriting from No. 13.

Data cannot be written when the input memory written in is protected ;

In this case, take note that adjustments will be possible.

At the same time, when the memory key is pressed, an OSD message indicating that data cannot be written will be displayed.

If all input memories are protected, since there is no memory to save the data, an error message will be displayed when determined as new data.

When the protect of several input memories is canceled, the data to be newly registered will be written in the memory with the smallest number.

When input memory load and save is manual :

The memory of the input memory No. specified will be the input memory for the new input signal.

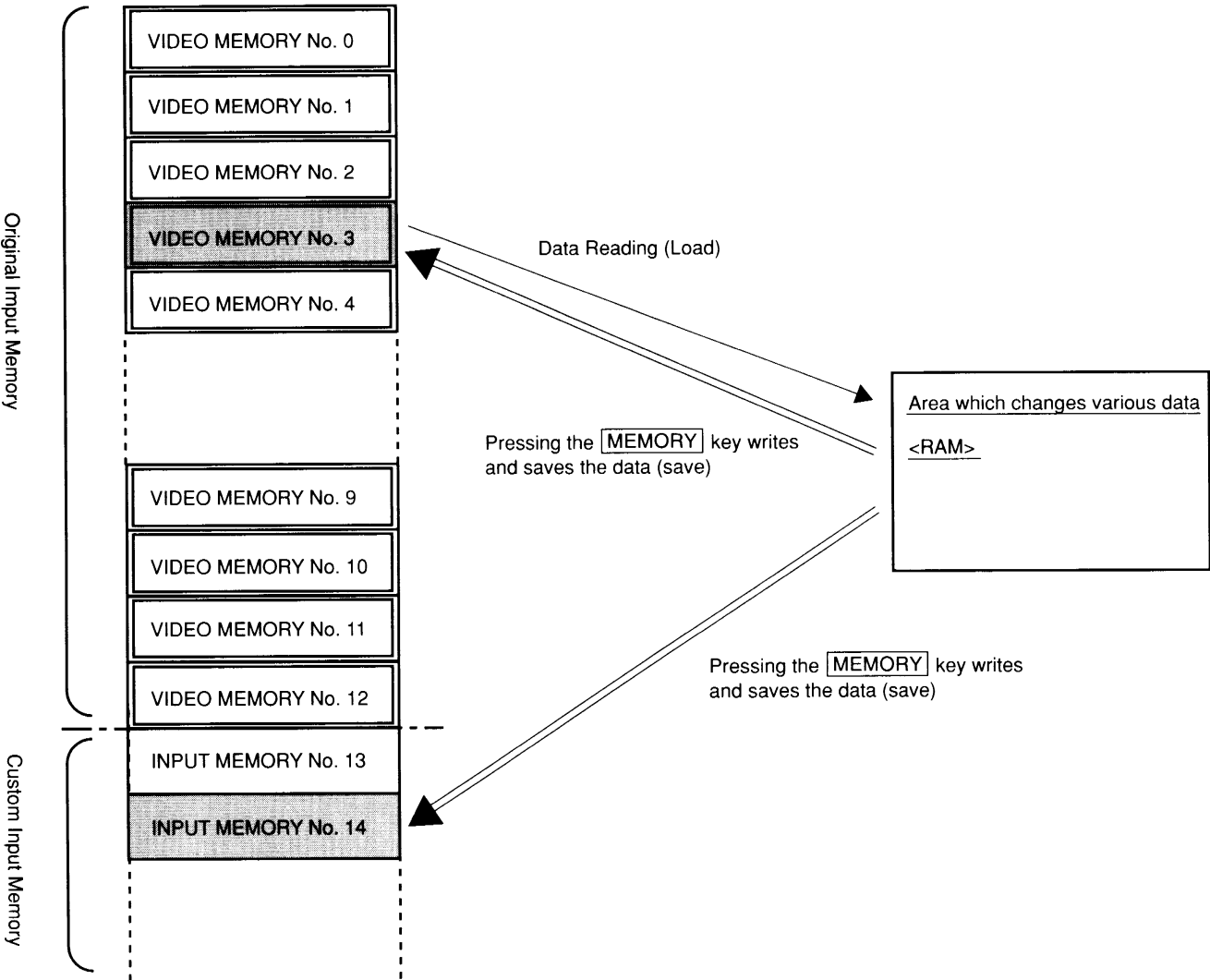
Data cannot be saved when the input memory saved in is protected ;

In this case, take note that adjustments will be possible.

At the same time, when the memory key is pressed, an OSD message indicating that data cannot be saved will be displayed.

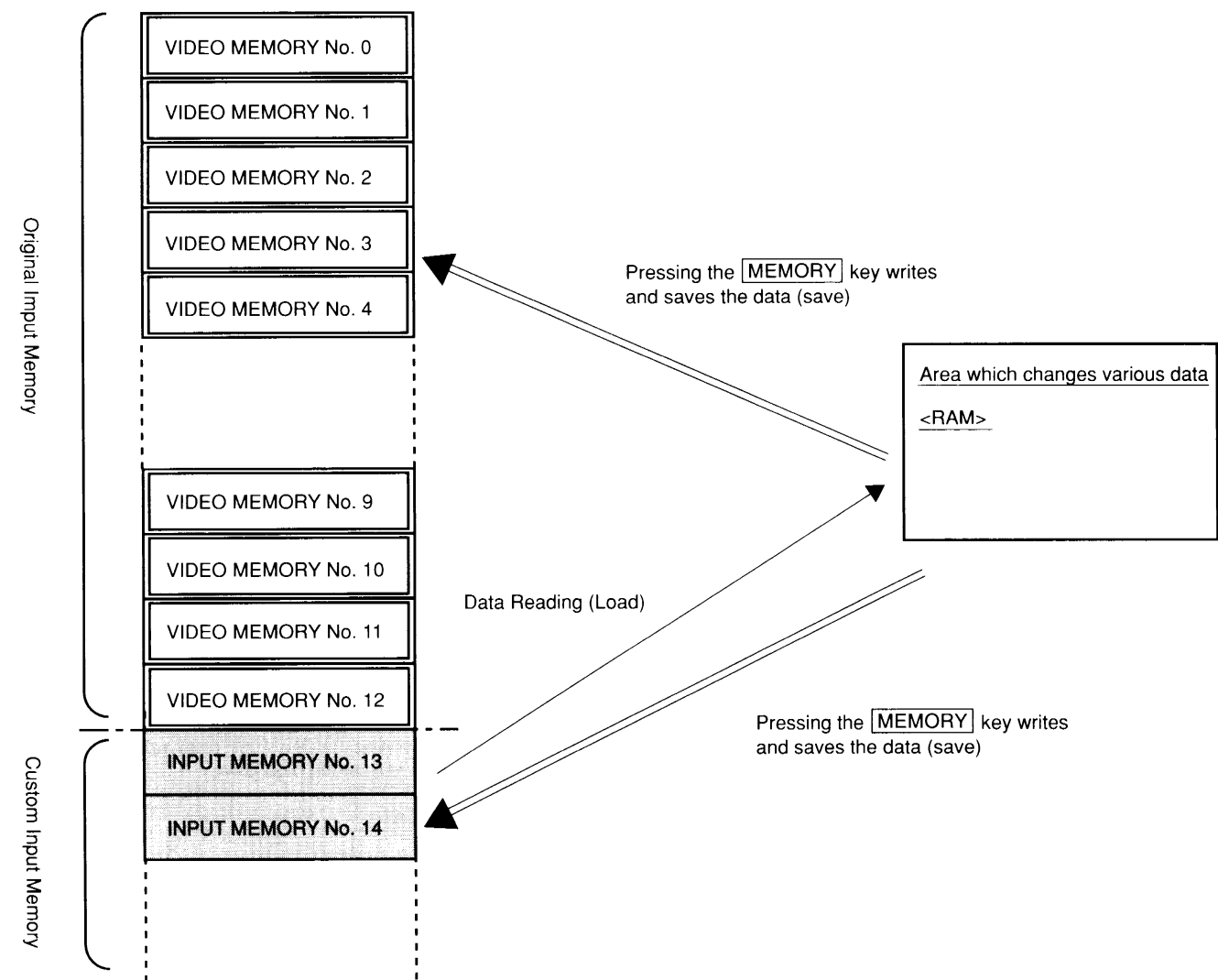
If all input memories are protected, since there is no memory to save the data, an error message will be displayed when determined as new data.

Example : When the input signal is new to the unit (fH = 31.5 kHz)  
State in which data is already registered to input memory No. 13

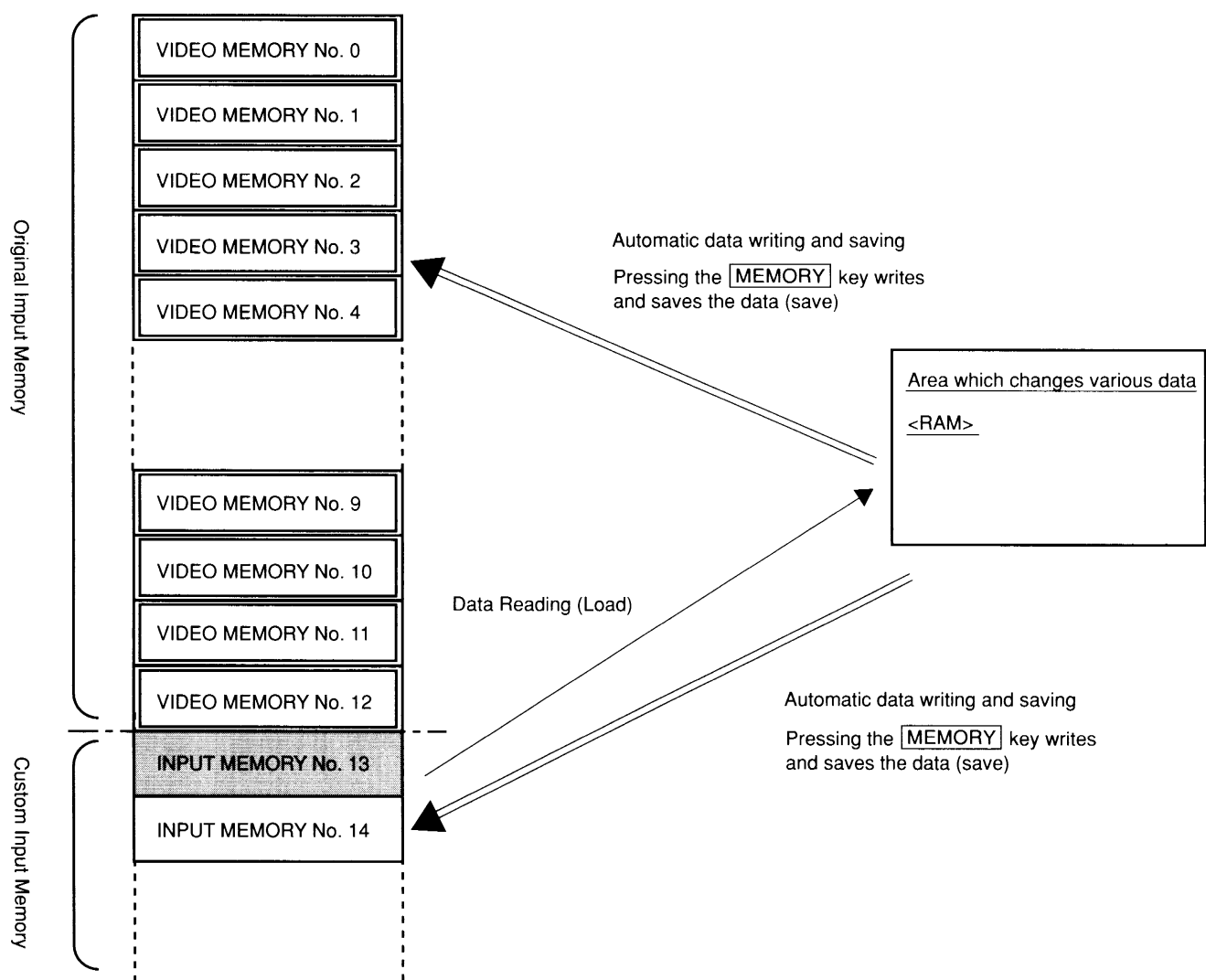




Example : When the input signal was previously input to a different channel (fH = 31.5 kHz: No. 13) to the unit  
State in which data is already registered to input memory No. 13



Example : When the input signal has already been input to the unit (fH = 31.5 kHz: No. 13)  
State in which data is already registered to input memory No. 14



## 2-5. MEMORY DATA RESET

Refer to page 139 of the installation manual.