

NEC

MODEL NP-NC900C-A
NP-NC900C-A+

DLP Cinema® Projector
SERVICE MANUAL

PART No. 3N9911183 (3rd Edition)

Better Service
Better Reputation
Better Profit



Copyright	Contents	1. Safety precautions
2. Specifications	3. User's Manual	4. Troubleshooting
5. Key part replacement (Method of disassembly/Photo taken from life)	6. Method of disassembly (Illustration/Photo taken from life)	7. Disassembly (Illustration/Photo taken from life)
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Back cover		

SAFETY CAUTION:

Before servicing this chassis, it is important that the service technician read and follow the "Safety Precautions" and "Product Safety Notice" in this Service Manual.

WARNING:

SHOCK HAZARD - Use an isolation transformer when servicing.

NEC

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SAFETY PRECAUTIONS

CAUTION		
	RISK OF ELECTRIC SHOCK DO NOT OPEN	


CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.


 This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside of this unit.



 This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

ATTENTION		
	RISQUE D'ELECTROCUTION NE PAS OUVRIR	

MISE EN GARDE: AFIN DE REDUIRE LES RISQUES D' ELECTROCUTION, NE PAS DEPOSER LE COUVERCLE, IL N'Y A AUCUNE PIECE UTILISABLE A L'INTERIEUR DE CET APPAREIL. NE CONFIER LES TRAVAUX D'ENTRETIEN QU'A UN PERSONNEL QUALIFIE.

 Ce symbole a pour but de prévenir l' utilisateur de la présence d' une tension dangereuse, non isolée se trouvant à l' intérieur de l' appareil. Elle est d' une intensité suffisante pour constituer un risque d' électrocution. Eviter le contact avec les pièces à l' intérieur de cet appareil.

 Ce symbole a pour but de prévenir l' utilisateur de la présence d' importantes instructions concernant l' entretien et le fonctionnement de cet appareil. Par conséquent, elles doivent être lues attentivement afin d' éviter des problèmes.

	<p>WARNING</p> <p>HEATSINK MAY BE ENERGIZED. TEST BEFORE TOUCHING.</p> <p>Heat sink located on the power board, is electrified.</p> <p> mark is putted on the primary heat sink. Pay attention to this area.</p>
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SAFETY PRECAUTIONS

During servicing carefully observe the following.

1. OBSERVE ALL PRECAUTIONS

Items and locations that require special care during servicing, such as the cabinet, chassis, and parts are labelled with individual safety instructions. Carefully comply with these instructions and all precautions in the instruction manual.

2. BE CAREFUL OF ELECTRIC SHOCK

The chassis carries an AC voltage. If you touch the chassis while it is still alive, you will get a severe shock. If you think the chassis is alive, use an isolating transformer or gloves, or pull out the plug before replacing any parts.

3. USE SPECIFIED PARTS

The components have been chosen for minimum flammability and for specific levels of resistance value and withstand voltage. Replacement parts must match these original specifications. Parts whose specifications are particularly vital to safe use and maintenance of the set are marked \triangle on the circuit diagrams and parts list.

Substitution of these parts can be dangerous for you and the customer, so use only specified parts.

4. REMOUNT ALL PARTS AND RECONNECT ALL WIRES AS ORIGINALLY INSTALLED

For safety, insulating tape and tubes are used throughout, but some lift-off parts on the printed wiring board require special attention.

All wires are positioned away from high-temperature and high-voltage parts, and, if removed for servicing, they must be retuned precisely to their original positions.

5. LAMP

Be very careful of the lamp because it generates high heat while it is used at high voltage. When replacing the bulb, make sure it is cool enough.

6. LENS

Do not look into the lens during projection. This important to avoid damage to the eyes.

7. SERVICING

At the time of repair or inspection services, use an earth band (wrist band), without fail.

8. RUN A COMPLETE SAFETY CHECK AT THE COMPLETION OF SERVICING

After completion of servicing, confirm that all screws, parts, and wiring, removed or disconnected for servicing, have been returned to their original positions. Also examine if the serviced sections and peripheral areas have suffered from any deterioration as a result of servicing. In addition, check insulation between external metallic parts and blades of wall-outlet plugs. This examination is indispensable in confirming complete establishment of safety.

(Insulation check)

Pull out a plug from a wall outlet to disconnect the connection cable. Then turn on the POWER switch. Use a 500V megger (Note 2) and confirm that the insulation resistance is 1M Ω or more between each terminal of the plug and exposed external metal (Note 1). If the measured value is below the specified level, then it is necessary to inspect and fix the set.

(Note 1)

Exposed external metal....RGB input terminals, control terminals, etc.

(Note 2)

If a 500V megger is not available for an unavoidable reason, then use a circuit tester or the like for inspection.

SAFETY PRECAUTIONS

MAINTENANCE

1. Cleaning the projector

1-1 Cleaning the Cabinet

Refer to the following guide to clean the projector cabinet.

- a. Wipe off dust with a clean dampened cloth.
- b. Moisten the cloth with warm water and mild detergent and wipe the cabinet.
- c. Rinse all detergent from the cloth and wipe the projector again.

CAUTION



To prevent discoloration or fading of the case, do not use abrasive alcohol-based cleaners.

1-2 Cleaning the Lens

Refer to the following guide to clean the projector lens.

- a. Apply a little optic lens cleaner to a clean, lint free cloth (do not apply the cleaner directly to the lens).
- b. Lightly wipe the lens in a circular motion.

CAUTION



Do not use abrasive cleaners or solvents.

To prevent discoloration or fading, avoid getting cleaner on the projector case.

1-3 Cleaning the Filters

The projector uses two filters to keep the fans free of dust and other particles, and should be cleaned every 500 hours of operation. In dustier environments, it is recommended to clean the filters more frequently. If the filter is dirty or clogged, your projector may overheat. When the message below is displayed the filters must be cleaned.

Please clean filter.

Note:

When the Please clean filter message is displayed, please clean or replace all two filters at the same time to synchronize the hours used display.

The Filter Message item should be enabled in the Options menu.

SPECIFICATIONS

1. SPECIFICATIONS

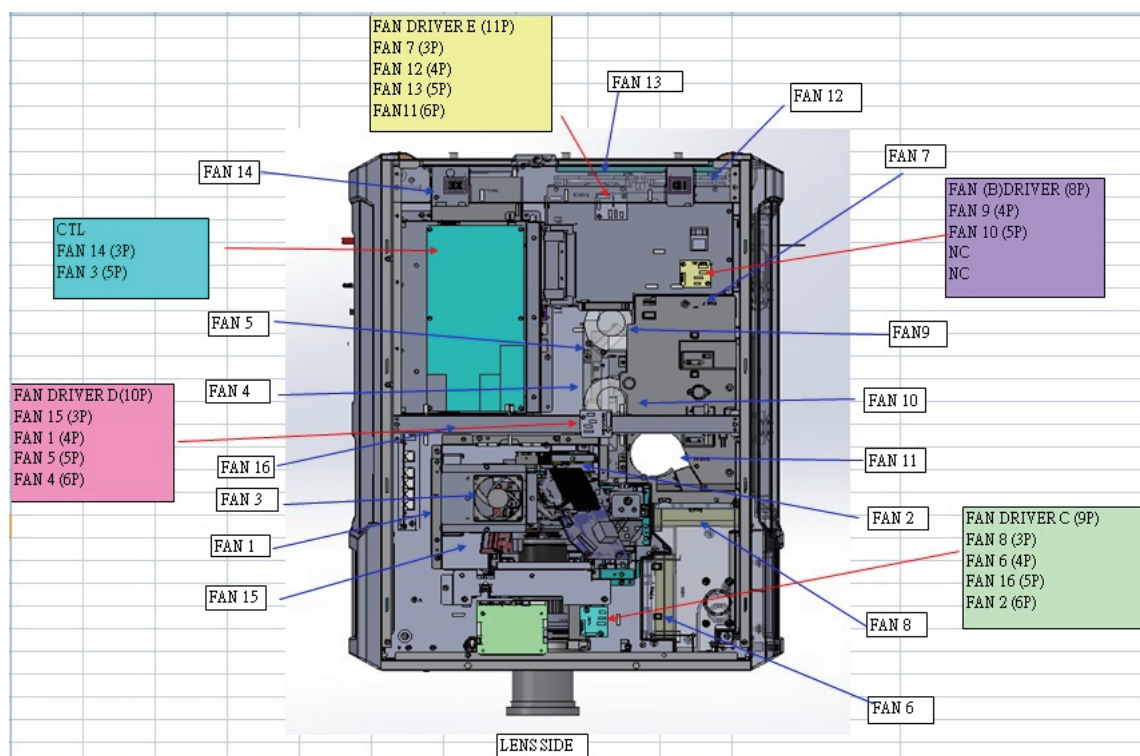
This section provides technical information about the projector's performance.

1-1 Specifications

Model Name	NP-NC900C-A
Projection method	3 chip DLP Cinema ® method
	0.69-inch DC2K chip
Panel resolution	2048 x 1080
Lamp type	350W AC lamp
Screen sizes	7m to 8.1 m @14ft-L/Screen Gain 1.3, Max. 9.5m @14ft-L/Screen Gain 1.8 (Depends on setup conditions)
Contrast ratio	1600: 1 with DCI specified color representation
Lens adjustment function	Motorized lens shift (vertical/horizontal), motorized zoom, motorized focus, douser
Signal input ports	When shipped from factory. Empty (for mounting optional components) (Note 1)
External Control	RS-232C (D-sub 9pin) x1 GPIO port (D-sub 37 pin) x1 Service terminal (stereo mini jack) x1 3D CTL (D-sub 15 pin) x1 USB (Type A) x1 Interlock port x1 Ethernet port (G-bit RJ-45) x1
Power supply voltage	AC 100 to 120V, 50/60Hz signal phase AC 200 to 240V, 50/60Hz signal phase
Input current	10.3 to 7.9 A (100 to 130 V) 5.1 to 4.3 A (200 to 240 V)
Power consumption	1023 W (100 to 130 V) 985 W (200 to 240 V)
Cooling method	Cooling air system (Includes dust filter)
Noise level	Less than 52 dB
Installation	Orientation: Desktop/front, Desktop/rear, Ceiling/front, Ceiling/rear
Net weight	44 kg (Excluding lens)
Dimensions	621mm (W) x 798mm (D) x314mm (H) (Does not include protruding portions, Includes foot.)
Environment	Operating temperature: 10 to 35°C Operating humidity: 10 to 85% (non-condensing) Storage temperature: -10 to 50°C Storage humidity: 10 to 85% (non-condensing) Operating altitude: 0 to 3000m/9800 feet (1600m/5500 feet to 3000m/9800 feet: Set "Fan Speed Mode" to "High Altitude")

SPECIFICATIONS

1-2 Fan Location

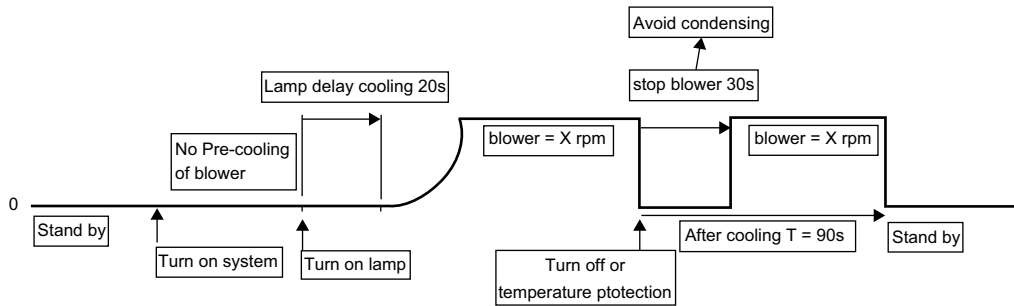


FAN No.	FAN PART No. (TYPE)	CONNECTOR	LOCATION
FAN1	79TY1171(AFB1212H-SM09)	FAN D-4P	FIP inlet (DMD R)
FAN2	79TY1201(AFB-0612HC-F00)	FAN C-6P	DMD B
FAN3	79TY1221(AFB0712VHE-F00)	CTL 5P	PRISM
FAN5	79TY1121(AFB0512VHD-F00)	FAN D-5P	ROD-FRONT(LAMP 1)
FAN4	79TY1131(AFB0512VHD-F00)	FAN D-6P	ROD-REAR (LAMP 2)
FAN6	79GP1121(AFB1212H-SM09)	FAN C-4P	PRISM+SYSTEM-OUT
FAN7	79TM1351(AFB1212H-SM09)	FAN E-3P	LAMP IN
FAN8	79TM1351(AFB1212H-SM09)	FAN C-3P	LAMP-OUT
FAN9	79TM1311(BFB0712HD-SP01)	FAN B-4P	LAMP 2-BURNER
FAN10	79TM1321(BFB0712HD-SP01)	FAN B-5P	LAMP 1-BURNER
FAN11	79TY1211(BFB0712LD-SE01)	FAN P-6P	FOR FAN 8
FAN12	79GP1121(AFB1212H-SM09)	FAN E-4P	POWER IN
FAN13	79TY1161(AFB1212H-SM09)	FAN E-5P	POWER IN
FAN14	79TY1141(AFB1212HHE-CF00)	CTL 3P	NEC MUDULE OUT
FAN15	79TY1191(AFB-0612HC-F00)	FAN D-3P	DMD R
FAN16	79TY1151(AFB1212H-SM09)	FAN E-5P	POWER IN
ICP FAN	79TY1181(EFB0512HA-F00)		On CPU Board

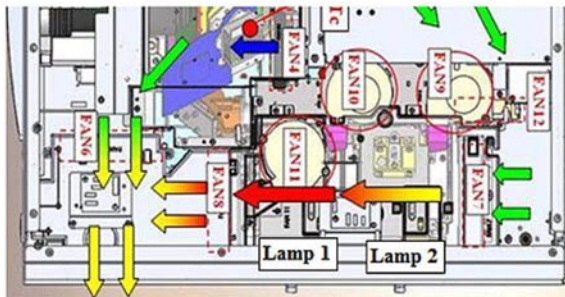
SPECIFICATIONS

Normal condition to turn on lamp.

Fan9/Fan10 operation.



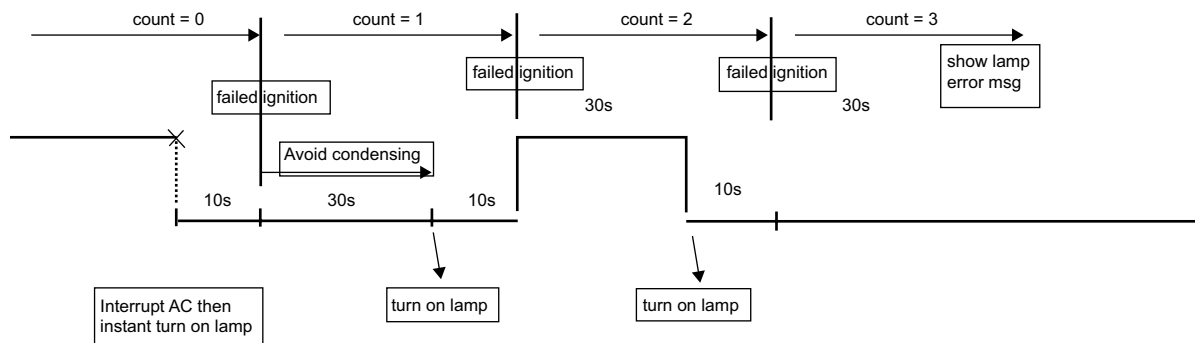
1. Delay Cooling for normal situation is 20s; for abnormal (AC off) is 20s; for lamp mode switch from single lamp to dual lamp is 20s
2. For system fan: After cooling is 90s for all ssystem fans except fan9 and Fan10 (Fan tables of After Cooling follow the last operating status.)
3. For lamp blower. After cooling blower stop 30s when the lamp be switched off. After 30s blower restart and continue cooling for 60s.
4. Lamp mode switch from Dual lamp to Lamp1 only, Fan10 stop running right away and follow lamp blower rule of after cooling. Then, stop the blower.
from Dual lamp to Lamp2 only, Fan9 stop running right away and follow lamp blower rule of after cooling. Then, stop the blower.
(please lock lamp mode switch function for 90s)



Two worse cases to turn on lamp.

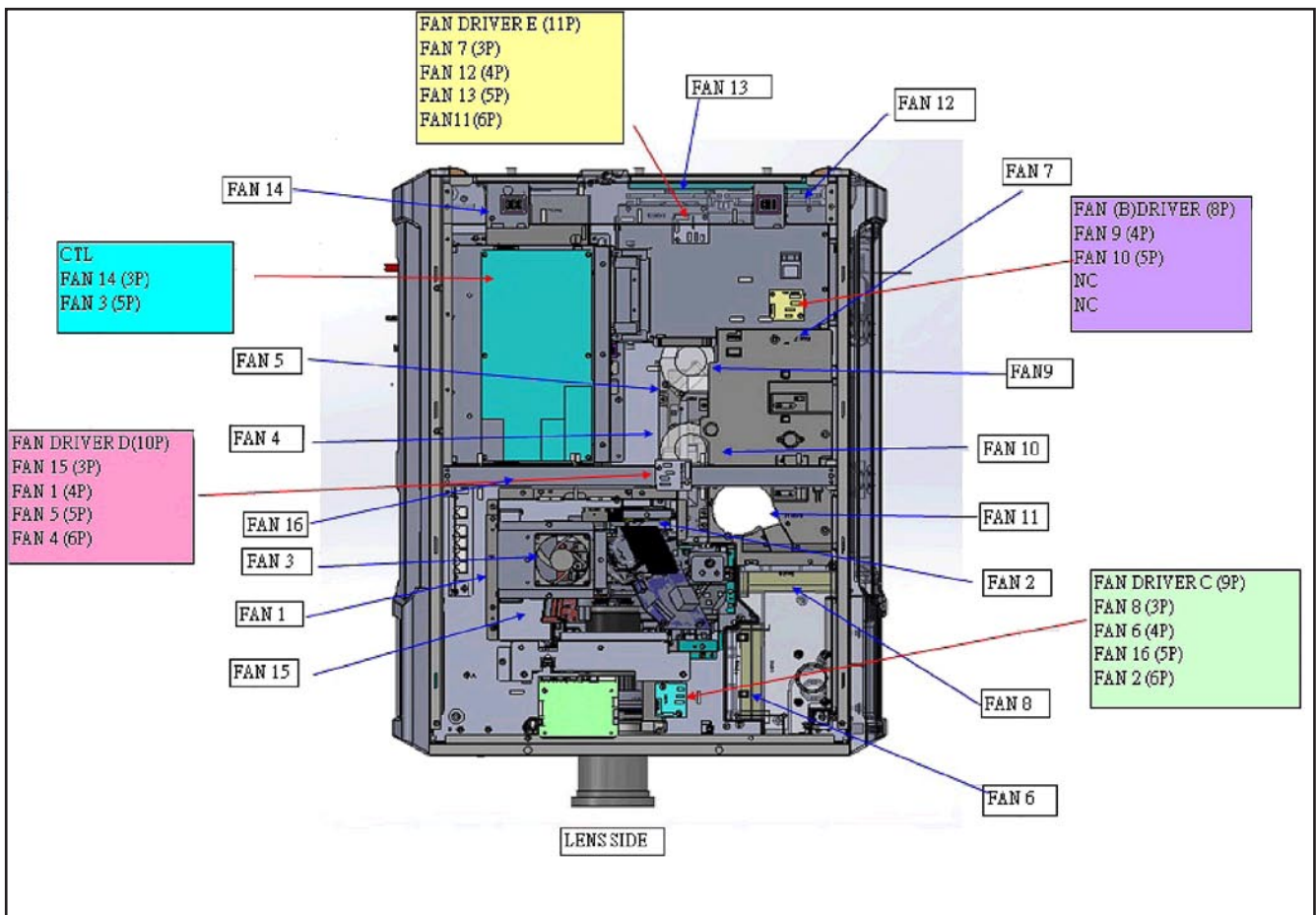
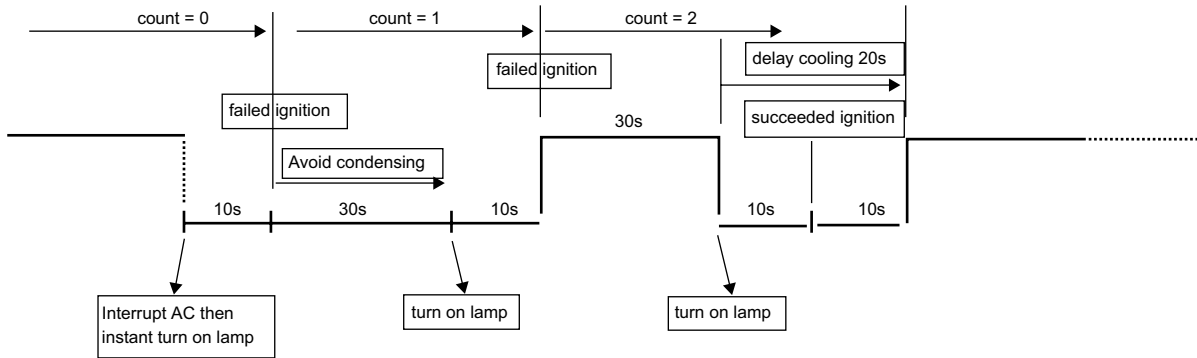
Fan9/Fan10 operation.

Not lit in the end.



SPECIFICATIONS

succeeded ignition at 4th time.



1. TROUBLESHOOTING

1-1. RS-232 Protocol Command & System Flow

Use Tera Term as RS232 console

Set up the serial port of tera Term with the menu item “Setup/Serial Port...” as figure 1. Here, the Port field is, for example, COM4 which is the corresponding RS232 port connecting to the slave MCU.

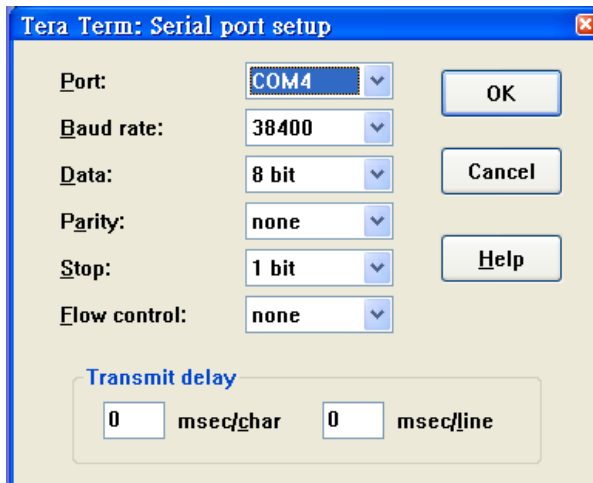


Figure 1: Serial port setting of Tera Term

Setup the terminal of Tera Term with menu item “Setup/Terminal...” as figure 2.

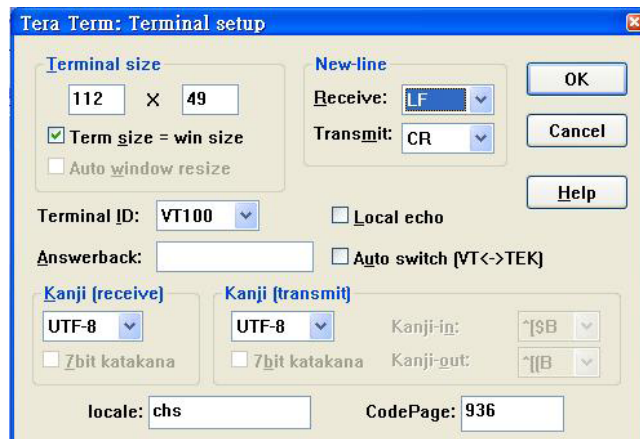


Figure 2: Terminal setting of Tera Term

TROUBLESHOOTING

Use Tera Term to log message

Tera Term provides a way to log messages of RS232 console with time stamp included. Execute menu item “File/Log...” of Tera Term, check plain text and time stamp in the option box as figure 3.

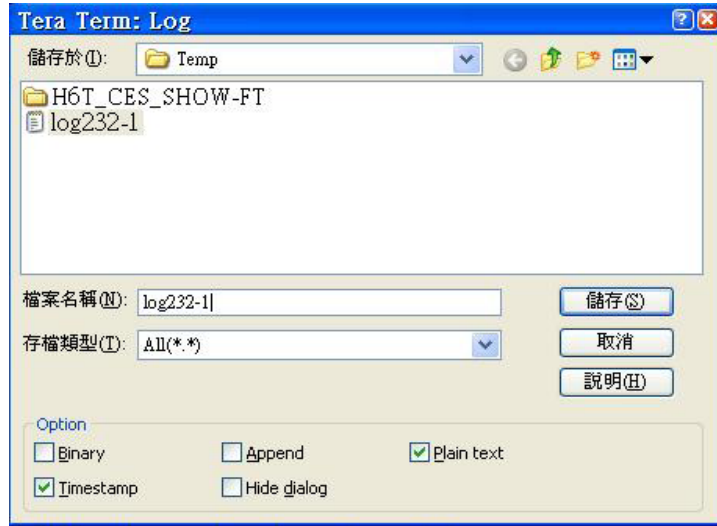


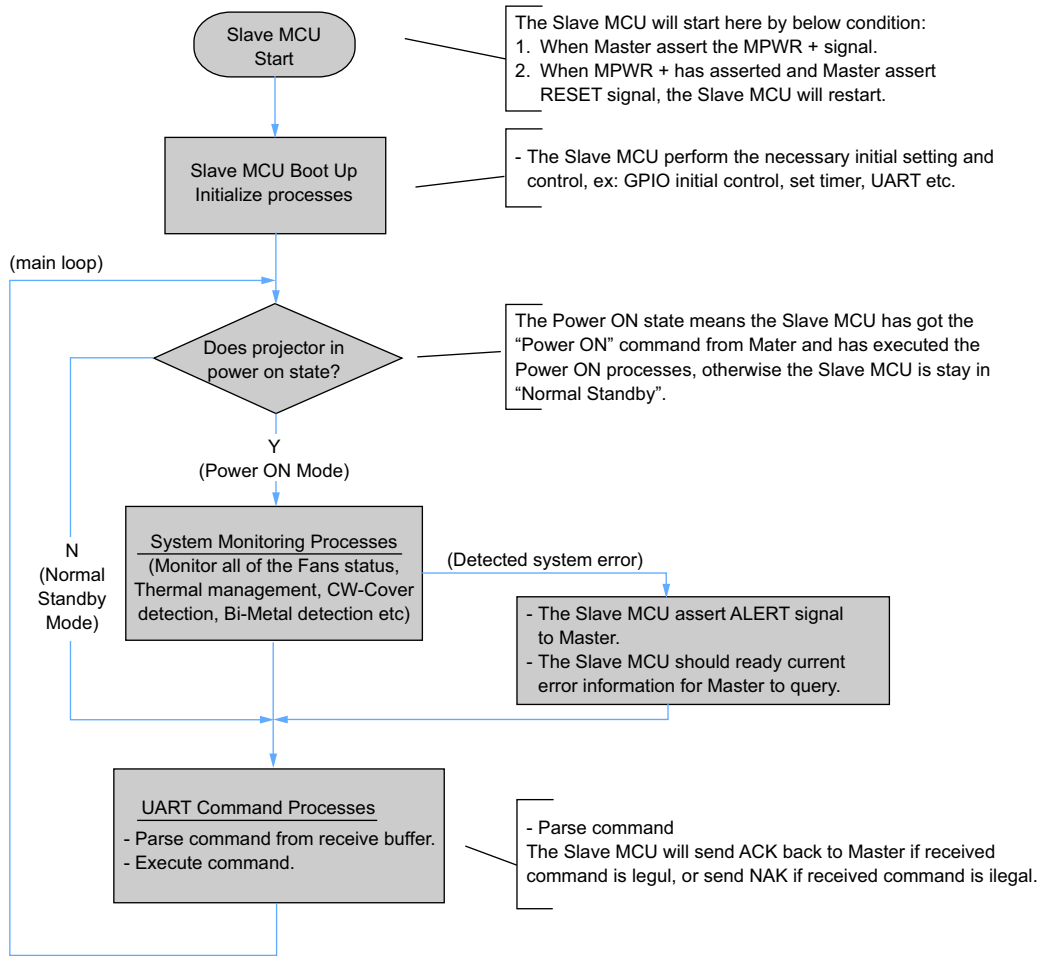
Figure 3: Message log setting of Tera Term

** RS-232 Retrieve Error Code Comment

- Step1. Connect RS-232, and enter RS-232 comment interface.
Key in “op demsg = 1”, then system will feedback “OP DEMSG = 1”.
- Step2. Next, key in “op r_err”, and then it will show 3 error codes.
And, the first error code will be the current root cause of defective symptom.

TROUBLESHOOTING

The Main Flow Chart of Slave MCU

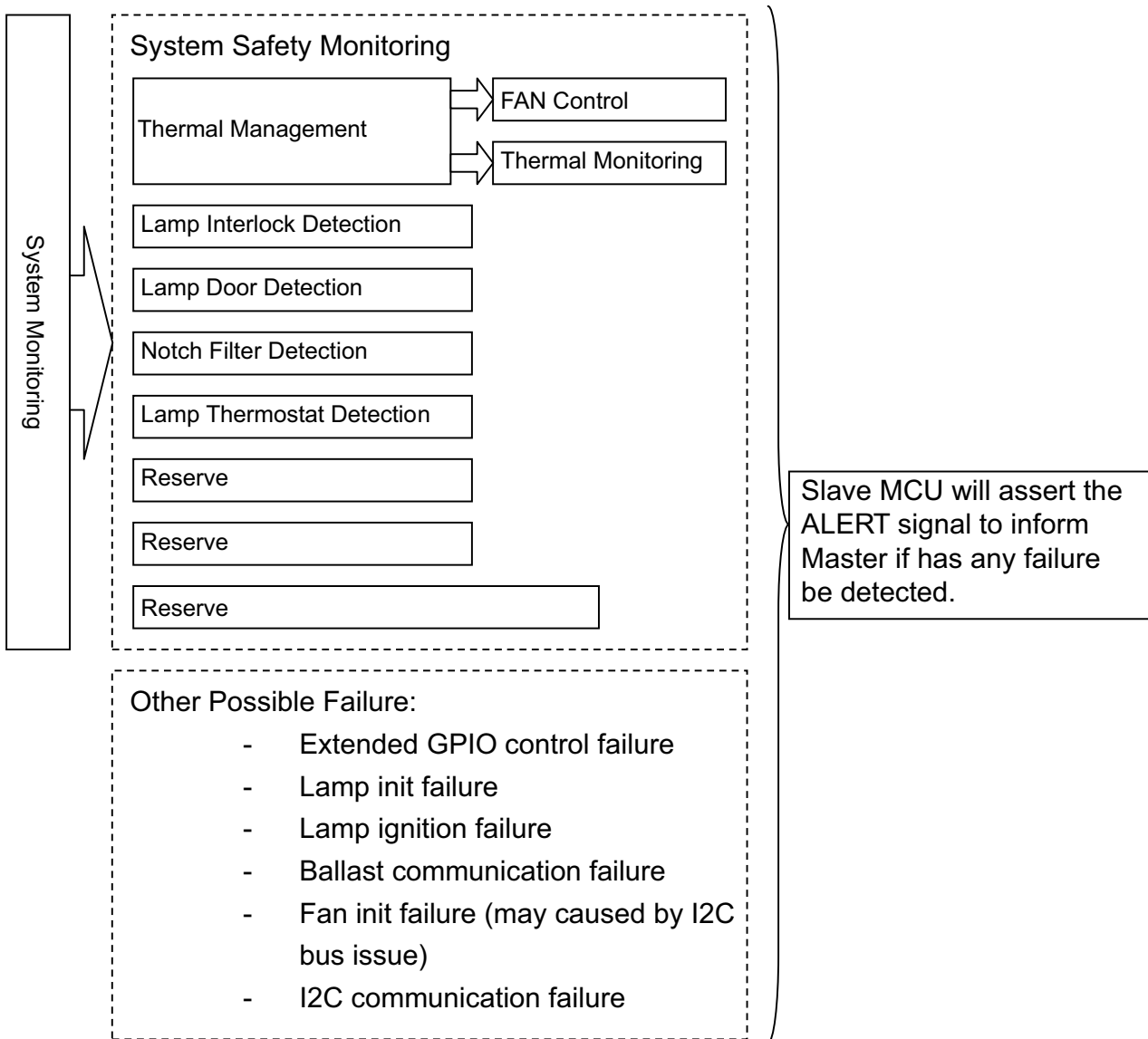


Notes:

- The Slave MCU will always running the main loop after the Master assert the MPWR+ signal, the Slave MCU should not stuck in any error state.
- If Slave MCU detected any system error,
 - The Slave MCU asserts the ALERT signal.
 - The Master should send query command to Slave to get error code back.
 - The Slave MCU waiting Master's instruction to execute following operation.

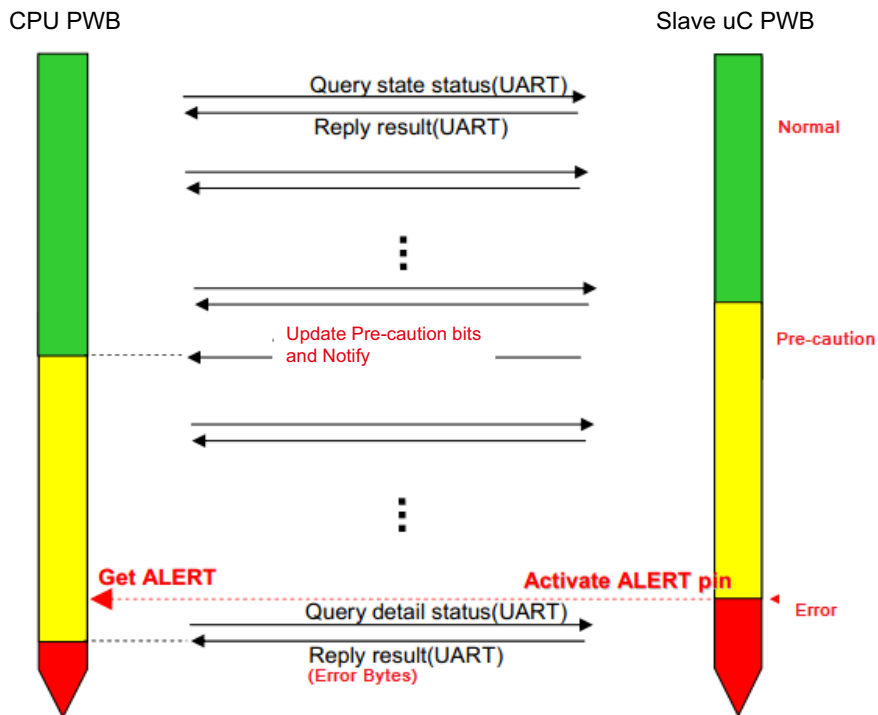
TROUBLESHOOTING

System Monitoring Processes

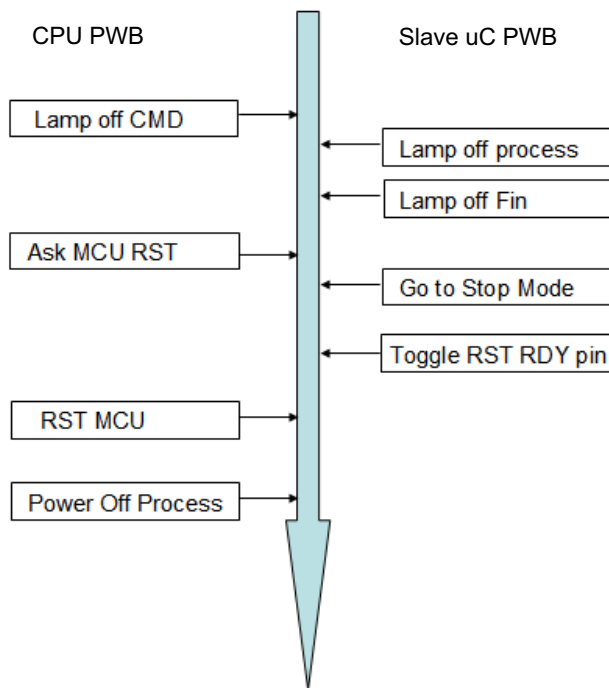


TROUBLESHOOTING

Process pre-caution and error sequence:

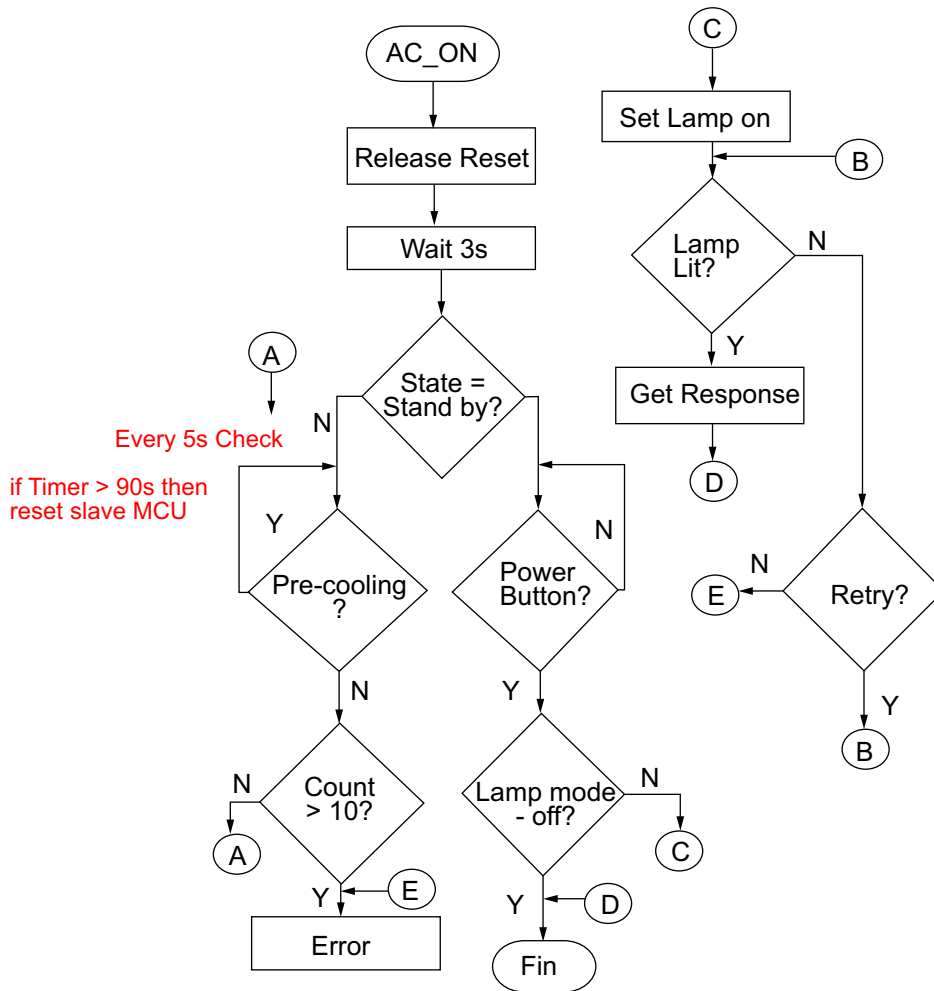


Process Power off and Lamp off only Sequence:



TROUBLESHOOTING

Process AC-ON, Lamp Control Sequence:



TROUBLESHOOTING

1-2. Troubleshooting & Error Code

Error Code Definition

In Delta RS232 debug mode, the slave MCU will response with error code in case of system error like lamp fail, or thermal situation failure, etc. They are defined as below table.

System error codes were defined as following tables

Byte 0	Definition	Byte 1	Definition
Bit 0	ErrMsgOverTempInlet	Bit 0	ErrMsgFan1RotateError
Bit 1	ErrMsgOverTempDMD	Bit 1	ErrMsgFan2RotateError
Bit 2	ErrMsgOverTempLamp	Bit 2	ErrMsgFan3RotateError
Bit 3	Reserved	Bit 3	ErrMsgFan4RotateError
Bit 4	ErrMsgOverTempBallast1	Bit 4	ErrMsgFan5RotateError
Bit 5	ErrMsgOverTempBallast2	Bit 5	ErrMsgFan6RotateError
Bit 6	ErrMsgInletSensorError [5]	Bit 6	ErrMsgFan7RotateError
Bit 7	ErrMsgInDMDSensorError	Bit 7	ErrMsgFan8RotateError

Byte 2	Definition	Byte 3	Definition
Bit 0	ErrMsgFan9RotateError	Bit 0	ErrMsgInterLockOpen
Bit 1	ErrMsgFan10RotateError	Bit 1	ErrMsgSystemI2cFail
Bit 2	ErrMsgFan11RotateError	Bit 2	ErrMsgEepromFail
Bit 3	ErrMsgFan12RotateError	Bit 3	Reserved
Bit 4	ErrMsgFan13RotateError	Bit 4	Reserved
Bit 5	ErrMsgFan14RotateError	Bit 5	ErrMsgLampDoorOpen [5]
Bit 6	ErrMsgFan15RotateError	Bit 6	Reserved
Bit 7	ErrMsgFan16RotateError	Bit 7	ErrMsgSoftwareI2cFail

Byte 4	Definition	Byte 5	Definition
Bit 0	ErrMsgPreCooling	Bit 0	ErrMsgFan1DriverError
Bit 1	ErrMsgLamp1DoorOpen [5]	Bit 1	ErrMsgFan2DriverError
Bit 2	ErrMsgLamp2DoorOpen [5]	Bit 2	ErrMsgFan3DriverError
Bit 3	ErrMsg12VOverSpec[7]	Bit 3	ErrMsgFan4DriverError
Bit 4	ErrMsgBallast1UartError	Bit 4	ErrMsgFan5DriverError
Bit 5	ErrMsgBallast2UartError	Bit 5	ErrMsgFan6DriverError
Bit 6	ErrMsgFanInitError	Bit 6	ErrMsgFan7DriverError
Bit 7	ErrMsgExGpioFail	Bit 7	ErrMsgFan8DriverError

TROUBLESHOOTING

Byte 6	Definition	Byte 7	Definition
Bit 0	ErrMsgFan9DriverError	Bit 0	ErrMsgNotchFilterOpen [5]
Bit 1	ErrMsgFan10DriverError	Bit 1	Reserved
Bit 2	ErrMsgFan11DriverError	Bit 2	Reserved
Bit 3	ErrMsgFan12DriverError	Bit 3	Reserved
Bit 4	ErrMsgFan13DriverError	Bit 4	Reserved
Bit 5	ErrMsgFan14DriverError	Bit 5	Reserved
Bit 6	ErrMsgFan15DriverError	Bit 6	Reserved
Bit 7	ErrMsgFan16DriverError	Bit 7	Reserved

[1] Detect rule:

Error Code Message – Troubleshooting and what parts need to replace

- ErrMsgOverTempInlet
When Inlet temp > 45 in stand by mode or
Force ECO mode toggle and Inlet temp > 43 continue 5 mins
Temp. is over spec. Check if there is anything blocks in inlet or replace Inlet thermal sensor.
- ErrMsgOverTempDMD
When DMD temp > 70 in stand by mode or
Force ECO mode toggle and DMD temp > 70 continue 5 mins
Temp. is over spec. Check or replace DMD thermal sensor.
- ErrMsgOverTempLamp
Thermal Break toggle and Polling time is 500ms.
Check or replace Lamp thermal break.
- ErrMsgOverTempBallast1
When Blaster temp > 90 in stand by mode or
Force ECO mode toggle and Blaster temp > 90 continue 5 mins
Check or replace Ballast1 thermal break.

TROUBLESHOOTING

- ErrMsgOverTempBallast2
When Blaster temp > 90 in stand by mode or
Force ECO mode toggle and Blaster temp > 90 continue 5 mins
Check or replace Ballast2 thermal break.
- ErrMsgInletSensorError
When Inlet Sensor read value = -20 or Inlet Sensor loss connect.
Check or replace Inlet thermal sensor.
- ErrMsgInDMDSensorError
When DMD Sensor read value = -20 or Inlet Sensor loss connect.
Check or replace DMD thermal sensor.
- ErrMsgFan1RotateError - Fan1 gets error during projector working. Check and replace fan 1
- ErrMsgFan2RotateError - Fan2 gets error during projector working. Check and replace fan 2
- ErrMsgFan3RotateError - Fan3 gets error during projector working. Check and replace fan 3
- ErrMsgFan4RotateError - Fan4 gets error during projector working. Check and replace fan 4
- ErrMsgFan5RotateError - Fan5 gets error during projector working. Check and replace fan 5
- ErrMsgFan6RotateError - Fan6 gets error during projector working. Check and replace fan 6
- ErrMsgFan7RotateError - Fan7 gets error during projector working. Check and replace fan 7
- ErrMsgFan8RotateError - Fan8 gets error during projector working. Check and replace fan 8
- ErrMsgFan9RotateError - Fan9 gets error during projector working. Check and replace fan 9
- ErrMsgFan10RotateError-Fan10 gets error during projector working. Check and replace fan 10
- ErrMsgFan11RotateError-Fan11 gets error during projector working. Check and replace fan 11
- ErrMsgFan12RotateError-Fan12 gets error during projector working. Check and replace fan 12
- ErrMsgFan13RotateError-Fan13 gets error during projector working. Check and replace fan 13
- ErrMsgFan14RotateError-Fan14 gets error during projector working. Check and replace fan 14
- ErrMsgFan15RotateError-Fan15 gets error during projector working. Check and replace fan 15
- ErrMsgFan16RotateError-Fan16 gets error during projector working. Check and replace fan 16

When FanX speed < Target speed 80% keep 15 seconds.

TROUBLESHOOTING

- ErrMsgInterLockOpen
Inter Lock Open toggle and Polling time is 500ms.
Check if connectors are unplugged from slave board to interlock board or replace slave board and interlock board.
- ErrMsgSystemI2cFail
Read Exter IO fail and Polling time is 500ms.
Check or replace slave board.
- ErrMsgEepromFail
When read EEPROM fail in system initial.
Check or replace slave board.
- ErrMsgLampDoorOpen
Lamp Door (1 or 2) Open toggle and Polling time is 500ms.
Check the lamp1 & Lamp2 door.
- ErrMsgSoftwareI2cFail
It's blaster UART Fail
Check or replace slave board.
- ErrMsgPreCooling
When fan initial fail in pre-cooling mode.
Check or replace all Fan Driver boards and Fans.
- ErrMsgLamp1DoorOpen
When Lamp Door 1 Open toggle and Polling time is 500ms.
Check the lamp1 door.
- ErrMsgLamp2DoorOpen
When Lamp Door 2 Open toggle and Polling time is 500ms.
Check the Lamp2 door.

TROUBLESHOOTING

- ErrMsg12VOverSpec
When 12V voltage >12.6 or <11.4 and Polling time is 1s.
Check 12V input voltage on slave board or replace power board.
- ErrMsgBallast1UartError
When ballast1 communication no response.
Check or replace Ballast1 or slave board.
- ErrMsgBallast2UartError
When ballast2 communication no response.
Check or replace Ballast2 or slave board
- ErrMsgFanInitError
When AC on make fan to high speed, if it is fail toggle.
When Lamp on make fan to target speed, if it is fail toggle.
Check or replace all Fan Driver boards and Fans.
- ErrMsgExGpioFail
When Lamp on process get ExGpio fail.
Check or replace slave board
- ErrMsgFan1DriverError - Check or replace Fan Driver D board.
- ErrMsgFan2DriverError - Check or replace Fan Driver C board.
- ErrMsgFan3DriverError - Check or replace slave board.
- ErrMsgFan4DriverError- Check or replace Fan Driver D board.
- ErrMsgFan5DriverError- Check or replace Fan Driver D board.
- ErrMsgFan6DriverError- Check or replace Fan Driver C board.
- ErrMsgFan7DriverError- Check or replace Fan Driver E board
- ErrMsgFan8DriverError- Check or replace Fan Driver C board.
- ErrMsgFan9DriverError- Check or replace Fan Driver B board.
- ErrMsgFan10DriverError- Check or replace Fan Driver B board.
- ErrMsgFan11DriverError- Check or replace Fan Driver E board

TROUBLESHOOTING

- ErrMsgFan12DriverError- Check or replace Fan Driver E board
- ErrMsgFan13DriverError- Check or replace Fan Driver E board
- ErrMsgFan14DriverError- Check or replace slave board.
- ErrMsgFan15DriverError- Check or replace Fan Driver D board.
- ErrMsgFan16DriverError- Check or replace Fan Driver C board.
When Fan Driver IC no response.

- ErrMsgNotchFilterOpen
Notch Filter Open toggle and Polling time is 500ms.
Check or replace Notch Filter

[2] Detect rule:
Polling time 100ms, if there have detect continue 10 times. It will issue the statue change.

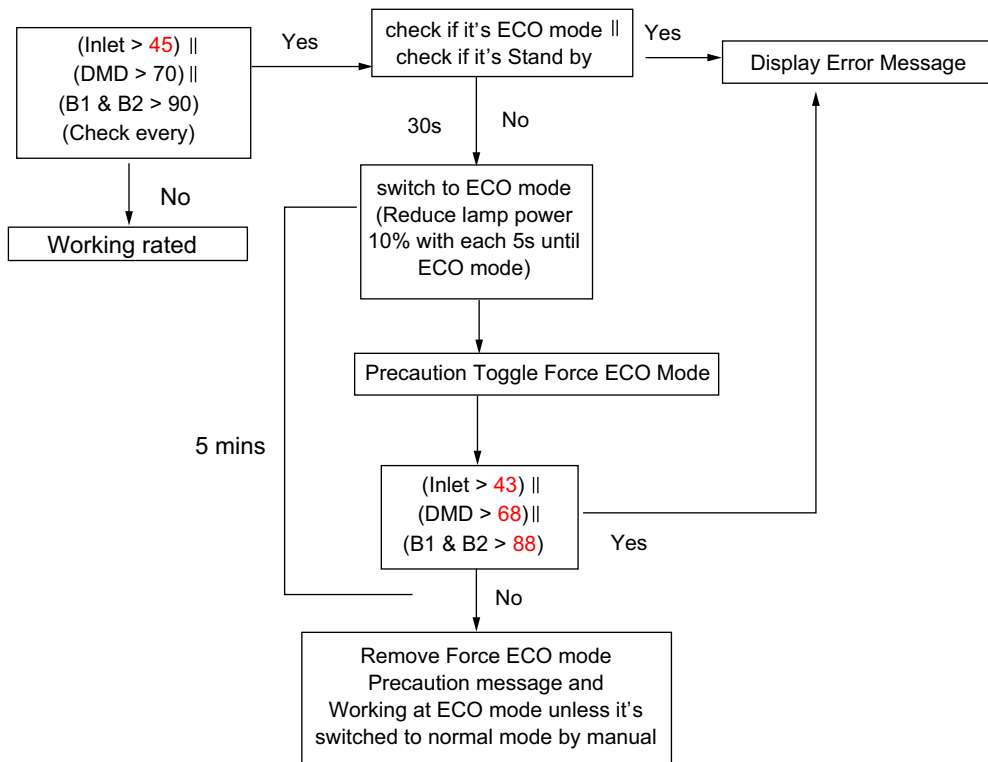
- [3] Detect rule: When those 3 errors happen, the blaster error will filter. To avoid user misunderstand.
- a. HW toggle to cut off lamp time:
During Lamp off: 4.89ms
During Lamp on: 0.471ms
 - b. The error code show up in software.

Lamp Door1	Lamp Door1	ErrMsgLampDoorOpen	ErrMsgLampDoor1Open	ErrMsgLampDoor2Open
Close	Close	0	0	0
Close	Open	1	0	1
Open	Close	1	1	0
Open	Open	1	1	1

TROUBLESHOOTING

[4] Detect rule: Toggle Force ECO mode rule

(Temp. define is for Sensor read value.)



Precaution	Toggle Temp	Clear Temp
Inlet Sensor	> 41	< 39
DMD Sensor	> 68	< 66
Blaster1&2 Sensor	> 88	< 86

Error (Force ECO Mode)	Toggle Temp	Clear Temp
Inlet Sensor	> 45	< 43
DMD Sensor	> 70	< 68
Blaster1&2 Sensor	> 90	< 88

TROUBLESHOOTING

[5] Detect rule:

Hardware & Software Failure Detection

- By hardware, the hardware design will cut off the power of ballast to protect system immediately.
- By software, the Slave MCU should polling all the FAN status via the P00~P04 of PCA9555 (IC338), if detect any failure that come from FAN driver IC, the Slave MCU will assert the ALERT signal, then go back to the main loop processes of Slave MCU.

Lamp Thermostat Detection

The Slave MCU polling the signal status from the P13 of PCA9555 (IC27), the status '1' indicates failure and '0' indicates normal.

Lamp Interlock Detection

The Slave MCU polling the signal status from the P15 of PCA9555 (IC27), the status '1' indicates failure and '0' indicates normal.

Lamp Door Detection

The Slave MCU polling the signal status from the P16 of PCA9555 (IC27), the status '1' indicates failure and '0' indicates normal.

Notch Filter Detection

The Slave MCU polling the signal status from the P17 of PCA9555 (IC27), the status '1' indicates failure and '0' indicates normal.

* Software Design Notes *

- The Slave MCU should polling these statuses of "Lamp Thermostat Detection", "Lamp Interlock Detection", "Lamp Door Detection" and "Notch Filter Detection" by order.
- When Slave MCU detected one of above mentioned failure, the Slave MCU will assert the ALERT signal.
- There is hardware protection design to cut off the power of ballast 1 and ballast 2 when system occur any one of above mentioned failure.

TROUBLESHOOTING

1-3. Connection Diagrams Troubleshooting

1-3-1. Slave uC Board

SLAVE uC Board side

CN202 to SMPS BD

VFB12+	1	→	12.V +/- 5%
	2		
VFB12-	3	-	GND
	4		

J6 To Router BD Power

12V	1	→	12.V +/- 5%
GND	2	-	GND

J3 To LED Status with Buzzer BD (CN1)

Note: Pin to Pin

5V	1	→	LED power source.
STL2	2	←	When low status, R LED will light (Open Drain) (Hi = 5V)
STL3	3	←	When low status, G LED will light (Open Drain) (Hi = 5V)
5V	4	→	Buzzer power source.
BZ	5	←	Buzzer Control Signal When low status, Buzzer will alert. (Open Drain) (Hi = 5V)

J100 To MOTOR BD (J100)

Note: Pin to Pin

GND	1	-	GND
GND	2	-	GND
12V	3	→	12V +/- 5% Power output to Motor BD
12V	4		
GND	5	-	GND
MOTO TX2	6	→	UART Interface between SLAVE uC BD and Motor BD (Hi = 3.3V)
MOTO RX2	7	←	
3.3V	8	→	3.3V +/- 5% Power output to Motor BD

J91 for Fan14

FG1	1	←	FAN Speed indication. (Pluse) (5V)
Vout	2	→	Fan voltage out
GND	3	-	GND

J92 for Fan3

FG1	1	←	FAN Speed indication. (Pluse) (5V)
Vout	2	→	Fan voltage out
GND	3	-	GND
-	4	-	
-	5	-	
-	6	-	

TROUBLESHOOTING

J7 To PWM Fan Driver BD – B (J9850)

Note: Pin to Pin

12V	1	→	12V Output
12V	2		
GND	3	–	GND
5V	4	→	5V Output
GND	5	–	GND
I2C_SCL	6	→	I2C communication between uC BD and Fan Driver BD
I2C_SDA	7	↔	
FAN_Driver BD_Flag	8	←	If FAN actual RPM is out of the programmed value, ALERT pin goes low.

J8 To Fan Driver BD – C (J9810)

Note: Pin to Pin

12V	1	→	12V Output
12V	2		
GND	3	–	GND
5V	4	→	5V Output
GND	5	–	GND
I2C_SCL	6	→	I2C communication between uC BD and Fan Driver BD
I2C_SDA	7	↔	
FAN_Driver BD_Flag	8	←	If FAN actual RPM is out of the programmed value, ALERT pin goes low.
–	9	–	–

J9 To Fan Driver BD – D (CN9817)

Note: Pin to Pin

12V	1	→	12V Output
12V	2		
GND	3	–	GND
5V	4	→	5V Output
GND	5	–	GND
I2C_SCL	6	→	I2C communication between uC BD and Fan Driver BD
I2C_SDA	7	↔	
FAN_Driver BD_Flag	8	←	If FAN actual RPM is out of the programmed value, ALERT pin goes low.
–	9	–	–
–	10	–	–

TROUBLESHOOTING

J10 To Fan Driver BD – E (CN9820)

Note: Pin to Pin

12V	1	→	12V Output
12V	2		
GND	3	–	GND
5V	4	→	5V Output
GND	5	–	GND
I2C_SCL	6	→	I2C communication between uC BD and Fan Driver BD
I2C_SDA	7	↔	
FAN_Driver BD_Flag	8	←	If FAN actual RPM is out of the programmed value, ALERT pin goes low.
–	9	–	–
–	10	–	–
–	11	–	–

J17 To Ballast 1 Control Interface

Note: Pin to Pin

TXD	1	←	Ballast UART Interface.
GND	2	–	GND
3.3V	3	→	Ballast Control Interface Power Source
SCI/Lampsync	4	→	Lamp Lit input/Lamp sync input
RXD	5	→	Ballast UART Interface.

J18 To Ballast 2 Control Interface

Note: Pin to Pin

TXD	1	←	Ballast UART Interface.
GND	2	–	GND
3.3V	3	→	Ballast Control Interface Power Source
SCI/Lampsync	4	→	Lamp Lit input/Lamp sync input
RXD	5	→	Ballast UART Interface.
–	6	–	–

J11 NTC1

DC Voltage	1	←	Per the temperature.
3V3	2	←	Normal: 3V3/Other voltage: SLAVE uC BD 3V3 suppling is something wrong.

J12 NTC2

DC Voltage	1	→	Per the temperature.
–	2	–	–
3V3	3	←	Normal: 3V3/Other voltage: SLAVE uC BD 3V3 suppling is something wrong.

J28 Tamper Switch

TAMP0_1	1	←	When the Tamp. Switch is pressed, it is Lo status. (Normal, no issue) Unpressed, it is Hi status. (NG, 4.5V +/- 5%)
GND	2	–	–
SD_NO_TAMPER_O	3	→	Notice!! This pin is connected to a battery. Don't measure this line by any equipment in board slot-in condition.

TROUBLESHOOTING

J29 Tamper Switch

TAMP1_1	1	←	When the Tamp. Switch is pressed, it is low status. (Normal, no issue) Unpressed, it is Hi status. (NG, 4.5V +/- 5%)
GND	2	–	GND
SD_NO_TAMPER_O	3	→	Notice!! This pin is connected to a battery. Don't measure this line by any equipment in board slot-in condition.

J30 Tamper Switch

TAMP2_1	1	←	When the Tamp. Switch is pressed, it is low status. (Normal, no issue) Unpressed, it is Hi status. (NG, 4.5V +/- 5%)
GND	2	–	GND
SD_NO_TAMPER_O	3	→	Notice!! This pin is connected to a battery. Don't measure this line by any equipment in board slot-in condition.

J24 for Notch Filter SW

3.3V	1	←	Normal: 3V3/Other voltage: SLAVE uC BD 3V3 suppling is something wrong.
–	2	–	–
3.3V	3	→	Normal: 3V3/Other voltage: (1) Notch filter is not at right position. (2) Notch Filter Switch had broken.

J25 for Lamp Door 1

3.3V	1	←	Normal: 3V3/Other voltage: Check J24.
3.3V	2	–	Normal: 3V3/0V: (1) Lamp Door 1 had been opened. (2) Lamp Door 1 switch had broken.

J52 for Lamp Door 2

3.3V	1	←	Normal: 3V3/Other voltage: Check J24.
–	2	–	–
3.3V	3	→	Normal: 3V3/0V: (1) Lamp Door 2 had been opened. (2) Lamp Door 2 switch had broken.

J26 for Lamp Thermostat

3V3	1	←	Normal: 3V3/0V: To go back to check J25
3V3	2	→	Normal: 3.3V/0V: Lamp Thermostat is detecting the lamp (s) is (are) temperature.

		LMP2_Dr_NG	Lamp2_OTP	Lamp1_OTP	Interlock_ExIO	LMP_Dr_NG	Notch_NG	LMP1_CONTn	LMP2_CONTn
J52 Open	Lamp2 Door open	1	X	X	X	X	X	X	X
J27 Open	Lamp2 cover temp (Reserved)	X	1	0	X	0	0	X	X
J26 Open	Lamp1 cover temp	X	1	1	X	0	0	X	X
J4 Open	Interlock SW NG	X	X	X	1	X	X	X	X
J25 Open	Lamp1 Door open	X	1	1	X	1	0	X	X
J24 Open	Notch Filter Door Open	X	1	1	X	1	1	X	X
J33 between pin 1&3 Open	Lamp2 Model Insert NG (Reserved)	X	X	X	X	X	X	X	1
J33 between pin 4&6 Open	Lamp1 Model Insert NG (Reserved)	X	X	X	X	X	X	1	X

Note: (1) X: Don't Core (2) 1: Hi Level 0: Lo Level

J4 To Interlock BD

5V	1	→	Normal: 5V3/0V: Check PTC3 resistor value by Multimeter. (Normal value < 10ohm)
Photo Diode positive, (input)	2	←	Normal: 5V/0V: The circuit loop between pin1 & pin2 is opened.
Photo Diode positive, (output)	3	→	Normal: 0V/5V: The circuit loop between pin3 & pin4 is opened.
GND	4	–	GND

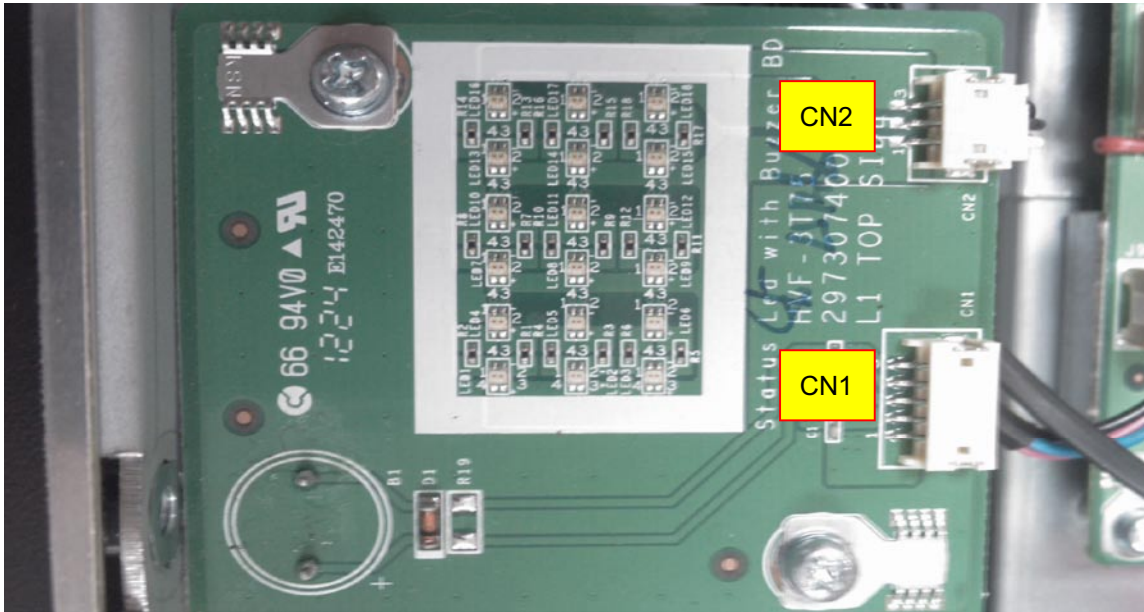
TROUBLESHOOTING

J604 to Key BD & LCD Module

SCL	1	→	I2C communication between EEBOX and keypad
SDA	2	↔	
GND	3	–	GND
GND	4	–	GND
5V	5	→	Keypad BID & LCD Module 5V Power Supply
5V	6	→	Keypad BID & LCD Module 5V Power Supply
–	7	–	–
–	8	–	–
GND	9	–	GND
GND	10	–	GND
KEYIN_3	11	←	Key detection, Matrix in _3
KEYIN_4	12	←	Key detection, Matrix in _4
KEYIN_2	13	←	Key detection, Matrix in _2
KEYOUT_0	14	→	Key detection, Matrix out _0
KEYIN_1	15	←	Key detection, Matrix in _1
KEYOUT_1	16	→	Key detection, Matrix out _1
KEYIN_0	17	←	Key detection, Matrix in _0
KEYOUT_2	18	→	Key detection, Matrix out _2
LED_ST1	19	→	Key Lock Indicator LED Control_Green; Hi: LED off. Lo: on
KEYOUT_3	20	→	Key detection, Matrix out _3
LED_ST0	21	→	Key Lock Indicator LED Control_White; Hi: LED off. Lo: on
KEYOUT_4	22	→	Key detection, Matrix out _4
LED_PW1	23	→	No connection at Keypad BD
LCD_R_Wn	24	→	LCD Module,; H: Read Mode, L: Write Mode
GND	25	–	GND
GND	26	–	GND
5V	27	→	Keypad BD & LCD Module 5V Power Supply
5V	28	→	Keypad BD & LCD Module 5V Power Supply
LCD_PW0	29	→	LCD Module Back Light & LED illumination BD Power Control signal: Hi: Light off, Lo: Light On.
LCD_RS	30	→	LCD Module; H Data signal, L: Instruction signal
LCD_B7	31	→	LCD Module Data stream 7
LCD_E	32	→	LCD Module; Read/Write enable signal
GND	33	–	GND
LCD_B4	34	→	LCD Module Data stream 4
LCD_B6	35	→	LCD Module Data stream 6
LCD_B5	36	→	LCD Module Data stream 5
GND	37	–	GND
GND	38	–	GND
GND	39	–	GND
–	40	–	–

TROUBLESHOOTING

1-3-2. Status LED with Buzzer Board



Status LED with Buzzer BD

CN1 From SLAVE uC BD (J3)
Note: Pin to Pin

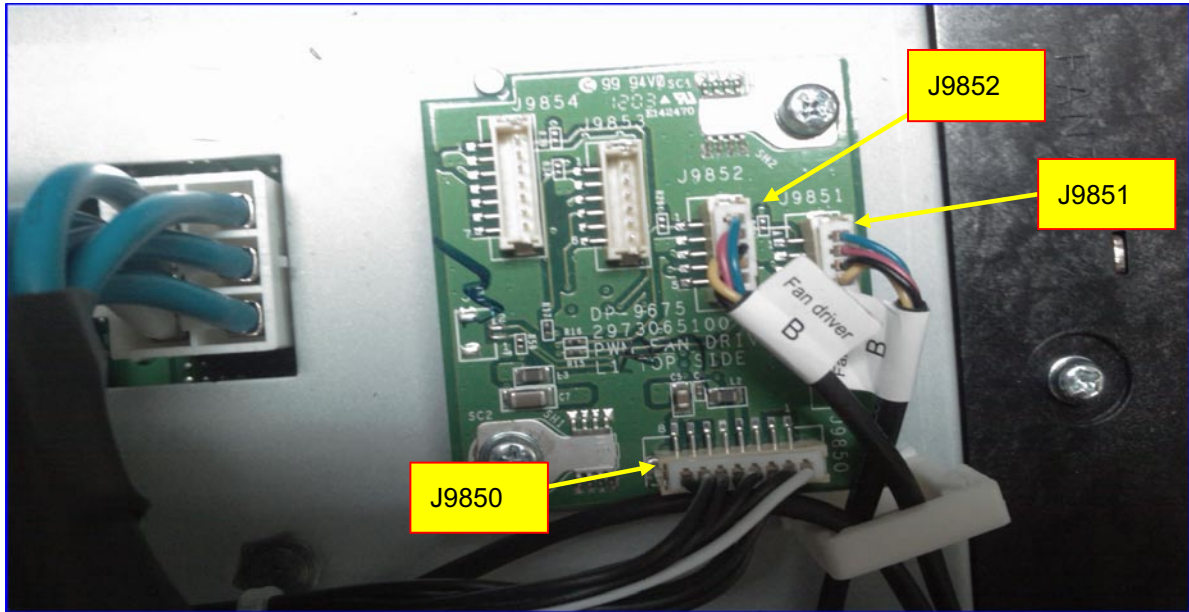
5V	1	←	LED power source.
STL2	2	→	When low status, R LED will light
STL3	3	→	When low status, G LED will light
5V	4	←	Buzzer power source.
BZ	5	→	When low status, Buzzer will alert.

CN2 To Status LED BD (J3)
Note: Pin to Pin

5V	1	→	LED power source.
STL2	2	←	When low status, R LED will light
STL3	3	←	When low status, G LED will light

TROUBLESHOOTING

1-3-3. PWM Fan Driver Board – B side



PWM Fan Driver BD -B side

J9850 From SLAVE uC BD (J7)

Note: Pin to Pin

12V	1	←	12V Input
12V	2		
GND	3	–	GND
5V	4	←	5V Input
GND	5	–	GND
I2C_SCL	6	←	I2C communication between uC BD and Fan Driver BD
I2C_SDA	7	↔	
FAN_Driver BD_Flag	8	→	If Fan actual RPM is out of the programmed value, ALERT pin goes low.

TROUBLESHOOTING

J9851 for Fan9

TACH1	1	←	FAN Speed indication. (Pluse)(5V)
12V	2	→	The PWM Fan Voltage input
GND	3	–	GND
PWM1	4	→	FAN Speed control Output(PWM)

J9852 for Fan10

TACH2	1	←	FAN Speed indication. (Pluse)(5V)
12V	2	→	The PWM Fan Voltage input
GND	3	–	GND
PWM2	4	→	FAN Speed control Output(PWM)
–	5	–	–

J9853 –

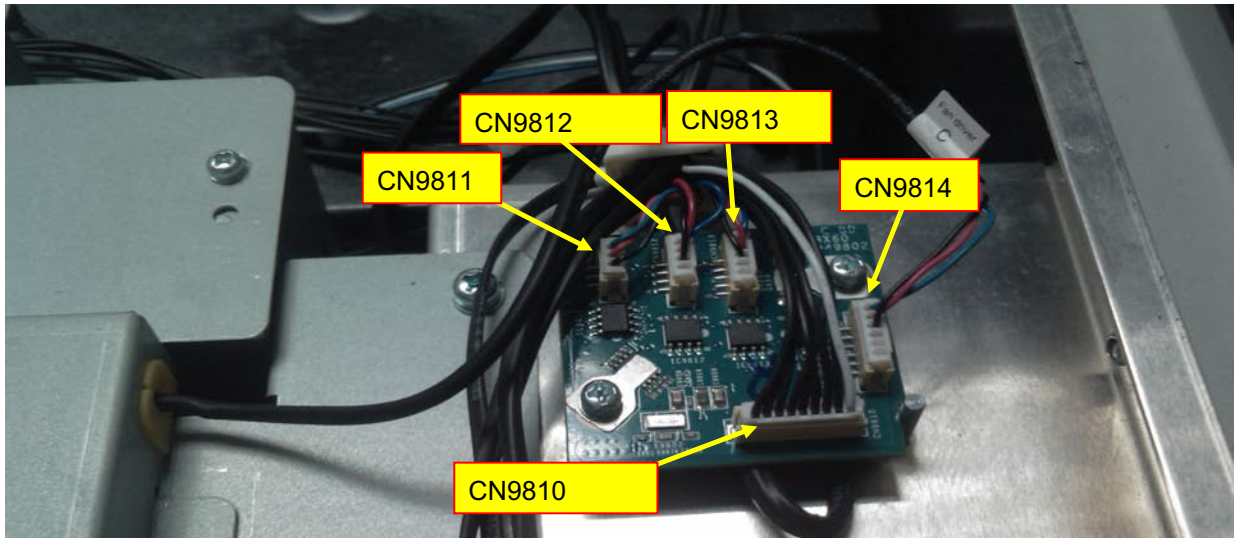
TACH3	1	←	FAN Speed indication. (Pluse)(5V)
12.5V	2	→	The PWM Fan Voltage input
GND	3	–	GND
PWM3	4	→	FAN Speed control Output(PWM)
–	5	–	–
–	6	–	–

J9854 –

TACH4	1	←	FAN Speed indication. (Pluse)(5V)
12.5V	2	→	The PWM Fan Voltage input
GND	3	–	GND
PWM4	4	→	FAN Speed control Output(PWM)
–	5	–	–
–	6	–	–
–	7	–	–

TROUBLESHOOTING

1-3-4. Fan Driver Board – C side



Fan Driver BD – C side

J9810 From SLAVE uC BD (J8)
Note: Pin to Pin

12V	1	←	12V Input
12V	2		
GND	3	–	GND
5V	4	←	5V Input
GND	5	–	GND
I2C_SCL	6	←	I2C communication between uC BD and Fan Driver BD
I2C_SDA	7		
FAN_Driver BD_Flag	8	→	If FAN actual RPM is out of the programmed value, ALERT pin goes low.
–	9	–	–

J9811 for Fan8

FG1	1	←	FAN Speed indication. (Pluse)(5V)
Vout	2	→	Fan voltage out
GND	3	–	GND

J9812 for Fan6

FG1	1	←	FAN Speed indication. (Pluse)(5V)
Vout	2	→	Fan voltage out
GND	3	–	GND
–	4	–	–

TROUBLESHOOTING

CN9813 for Fan16

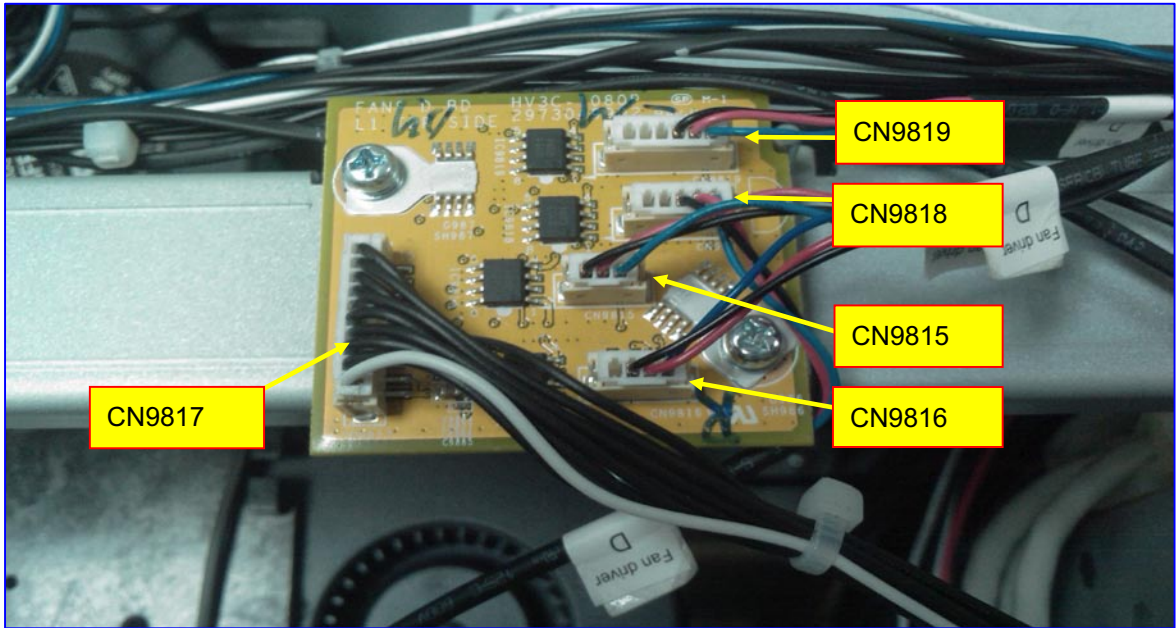
FG1	1	←	FAN Speed indication. (Pluse)(5V)
Vout	2	→	Fan voltage out
GND	3	–	GND
–	4	–	–
–	5	–	–

CN9814 for Fan2

FG1	1	←	FAN Speed indication. (Pluse)(5V)
Vout	2	→	Fan voltage out
GND	3	–	GND
–	4	–	–
–	5	–	–
–	6	–	–

TROUBLESHOOTING

1-3-5. Fan Driver Board – D side



TROUBLESHOOTING

Fan Driver BD – D side

CN9817 From SLAVE uC BD (J9)

Note: Pin to Pin

12V	1	←	12V Input
12V	2		
GND	3	–	GND
5V	4	←	5V Input
GND	5	–	GND
I2C_SCL	6	←	I2C communication between uC BD and Fan Driver BD
I2C_SDA	7	↔	
FAN_Driver BD_Flag	8	→	If FAN actual RPM is out of the programmed value, ALERT pin goes low.
–	9	–	–
–	10	–	–

CN9815 for Fan8

FG1	1	←	FAN Speed indication. (Pluse)(5V)
Vout	2	→	Fan voltage out
GND	3	–	GND

CN9816 for Fan6

FG1	1	←	FAN Speed indication. (Pluse)(5V)
Vout	2	→	Fan voltage out
GND	3	–	GND
–	4	–	–

CN9818 for Fan16

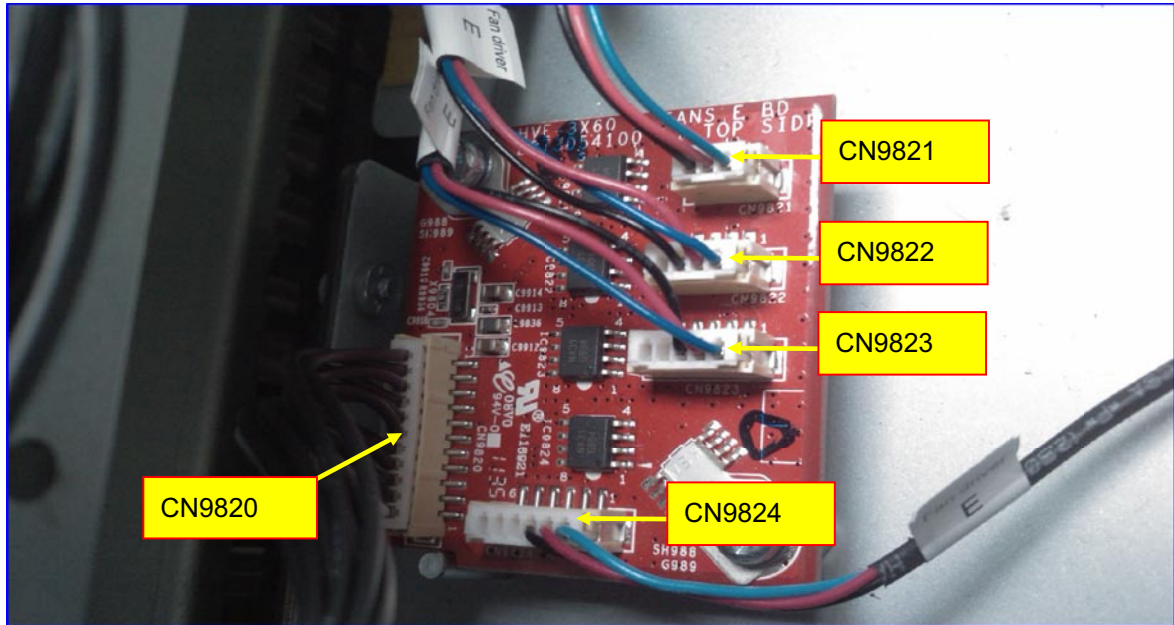
FG1	1	←	FAN Speed indication. (Pluse)(5V)
Vout	2	→	Fan voltage out
GND	3	–	GND
–	4	–	–
–	5	–	–

CN9819 for Fan2

FG1	1	←	FAN Speed indication. (Pluse)(5V)
Vout	2	→	Fan voltage out
GND	3	–	GND
–	4	–	–
–	5	–	–
–	6	–	–

TROUBLESHOOTING

1-3-6. Fan Driver Board – E side



TROUBLESHOOTING

Fan Driver BD – E side

CN9820 From SLAVE uC BD (J10)

Note: Pin to Pin

12V	1	←	12V Input
12V	2		
GND	3	–	GND
5V	4	←	5V Input
GND	5	–	GND
I2C_SCL	6	←	I2C communication between uC BD and Fan Driver BD
I2C_SDA	7	↔	
FAN_Driver BD_Flag	8	→	If FAN actual RPM is out of the programmed value, ALERT pin goes low.
–	9	–	–
–	10	–	–
–	11	–	–

CN9821 for Fan7

FG1	1	←	FAN Speed indication. (Pluse)(5V)
Vout	2	→	Fan voltage out
GND	3	–	GND

CN9822 for Fan12

FG1	1	←	FAN Speed indication. (Pluse)(5V)
Vout	2	→	Fan voltage out
GND	3	–	GND
–	4	–	–

CN9823 for Fan13

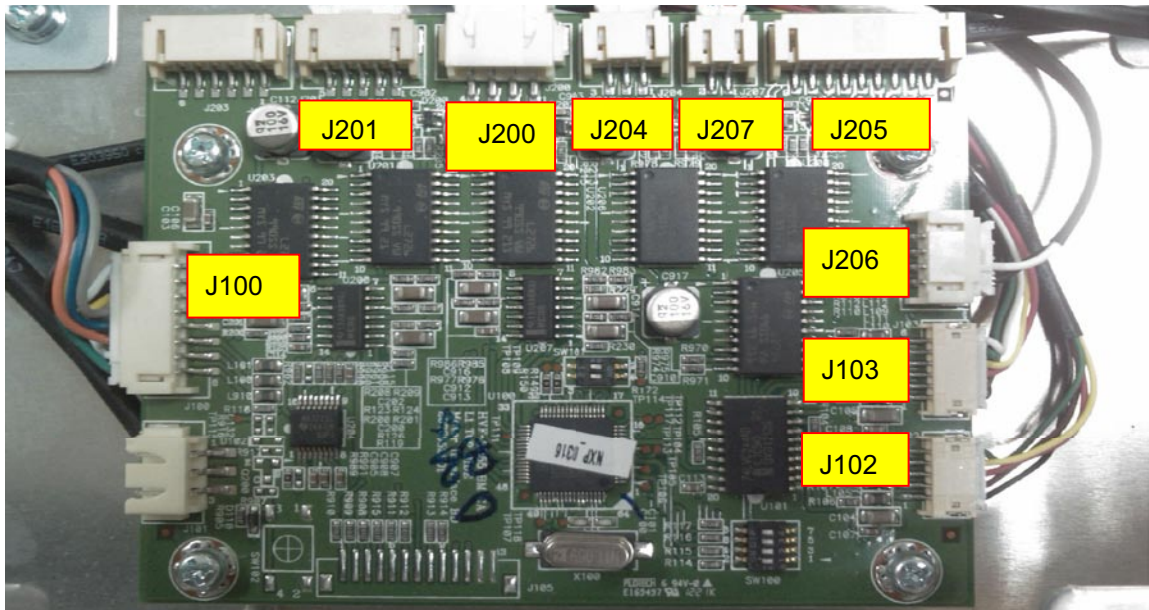
FG1	1	←	FAN Speed indication. (Pluse)(5V)
Vout	2	→	Fan voltage out
GND	3	–	GND
–	4	–	–
–	5	–	–

CN9824 for Fan11

FG1	1	←	FAN Speed indication. (Pluse)(5V)
Vout	2	→	Fan voltage out
GND	3	–	GND
–	4	–	–
–	5	–	–
–	6	–	–

TROUBLESHOOTING

1-3-7. Motor Board side



Motor BD side

J100 From SLAVE uC BD (J100)

Note: Pin to Pin

GND	1	–	GND
GND	2	–	GND
12.5V	3	←	12.5V Power output to Motor BD
12.5V	4		
GND	5	–	GND
MOTO_TX2	6	→	UART Interface between SLAVE uC BD and Motor BD.
MOTO_RX2	7	←	
3.3V	8	←	3.3V Power output to Motor BD

J102 to Horizontal Sensor (on Lens Holder)

SDOUT_H1	1	←	Serial data output. Data Out is clocked on the falling edge of SCLK.
SDIN_H1	2	→	Serial data input. Data In is clocked on the rising edge of SCLK.
3.3V	3	→	The voltage is sent to HORI. SENSOR BD
SCLK_H1	4	→	System clock input for serial I/O and all internal logic
GND	5	–	GND

J103 to Vertical Sensor (on lens holder)

SDOUT_H1	1	←	Serial data output. Data Out is clocked on the falling edge of SCLK.
SDIN_H1	2	→	Serial data input. Data In is clocked on the rising edge of SCLK.
3.3V	3	→	The voltage is sent to HORI. SENSOR BD
SCLK_H1	4	→	System clock input for serial I/O and all internal logic
GND	5	–	GND
EE_SDA	6	↔	EEPROM I2C interface (EE_SDA / SCLK_H1).

TROUBLESHOOTING

J200 to Lens Up/Down Motor

Down signal return path	1	←	Down signal return path
Down	2	→	Motor Control signal for Lens position down (12V / 0V)
Up	3	→	Motor Control signal for Lens position up (12V / 0V)
Up signal return path	4	←	Up signal return path

J201 to Lens Left/Right Motor

Left signal return path	1	←	Left signal return path
Left	2	→	Motor Control signal for Lens position left. (12V / 0V)
Floating	3	–	Floating
Right	4	→	Motor Control signal for Lens position Right. (12V / 0V)
Right signal return path	5	←	Right signal return path

J204 ZOOM IN/OUT

ZOOM In	1	←	ZOOM IN control signal (12V / 0V)
–	2	←	–
ZOOM Out	3	→	ZOOM OUT control signal (12V / 0V)

J207 FOCUS NEAR/FAR

Focus Near	1	←	FOCUS NEAR control signal (12V / 0V)
Focus Far	2	←	FOCUS FAR control signal (12V / 0V)

J206 SHUTTER OPEN/CLOSE

OSP_OUT	1	→	Shutter out off the optical path.
OSP_IN	2	→	Shutter out off the optical path.
SHTR_O_C	3	←	No used
GND	4	–	GND

J205 Encoder ZOOM In/Out ; Encoder Focus Near/Far

E_Q_ZOOM	1	→	Zoom Encoder Signal A
F_I_ZOOM	2	→	Zoom Encoder Signal B
GND	3	–	GND
Vin	4	→	12V
F_Q_FCS	5	→	Focus Encoder Signal A
F_I_FCS	6	→	Focus Encoder Signal B
GND	7	–	GND
Vin	8	→	12V
–	9	–	–

TROUBLESHOOTING

1-3-8. Keypad Board side

Keypad Board side

J602 LCD Module

GND	1	–	GND
5V	2	→	LCD Module Power Source
V0	3	←	Input Voltage for LCD
LCD_RS	4	→	LCD Module; H : Data signal, L : Instruction signal
LCD_R_Win	5	→	LCD Module; H : Read Mode, L : Write Mode
LCD_E	6	→	LCD Module; Read/Write enable signal
–	7	–	–
–	8	–	–
–	9	–	–
–	10	–	–
LCD_B4	11		LCD Module Data stream 4
LCD_B5	12		LCD Module Data stream 5
LCD_B6	13		LCD Module Data stream 6
LCD_B7	14		LCD Module Data stream 7
VLED	15		LED Module Backlight Power source
GND	16	–	GND
–	17	–	–
–	18	–	–
–	19	–	–
–	20	–	–

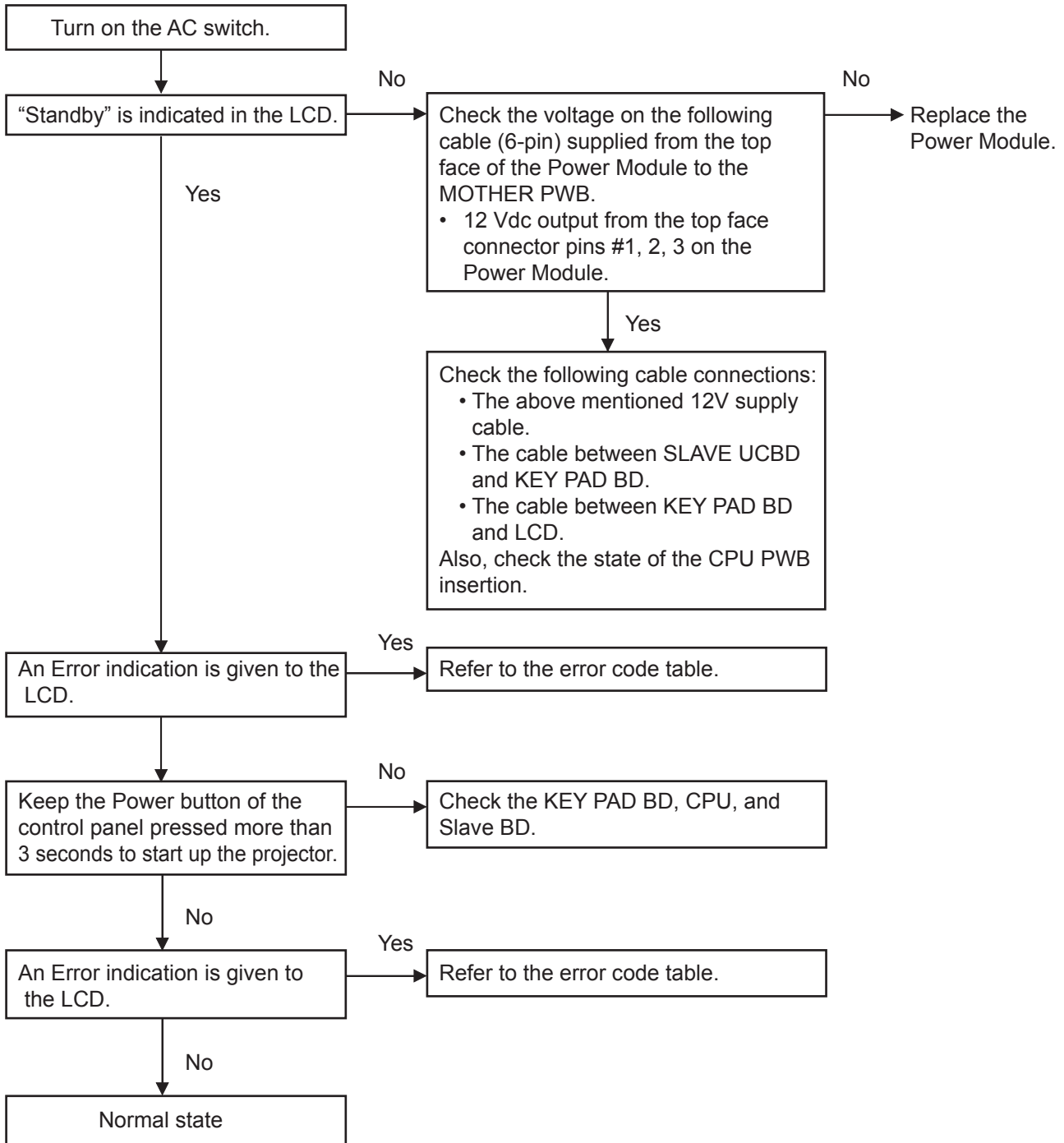
TROUBLESHOOTING

J604 to Key BD & LCD Module

SCL	1	→	I2C communication between EEBOX and Keypad
SDA	2	↔	
GND	3	–	GND
GND	4	–	GND
5V	5	→	Keypad BD & LCD Module 5V Power Supply
5V	6	→	Keypad BD & LCD Module 5V Power Supply
–	7	–	–
–	8	–	–
GND	9	–	GND
GND	10	–	GND
KEYIN_3	11	←	Key detection, Matrix in_3
KEYIN_4	12	←	Key detection, Matrix in_4
KEYIN_2	13	←	Key detection, Matrix in_2
KEYOUT_0	14	→	Key detection, Matrix out_0
KEYIN_1	15	←	Key detection, Matrix in_1
KEYOUT_1	16	→	Key detection, Matrix out_1
KEYIN_0	17	←	Key detection, Matrix in_0
KEYOUT_2	18	→	Key detection, Matrix out_2
LED_ST1	19	→	Key Lock Indicator LED Control _ Green; Hi : LED off, Lo : LED on
KEYOUT_3	20	→	Key detection, Matrix out_3
LED_ST0	21	→	Key Lock Indicator LED Control _ White; Hi : LED off, Lo : LED on
KEYOUT_4	22	→	Key detection, Matrix out_4
LCD_PW1	23	→	No connection at Keypad BD
LCD_R_Wn	24	→	LCD Module; H : Read Mode, L : Write Mode
GND	25	–	GND
GND	26	–	GND
5V	27	→	Keypad BD & LCD Model 5V Power Supply
5V	28	→	Keypad BD & LCD Model 5V Power Supply
LED_PW0	29	→	LCD Module Back Light & LED illumination BD Power Control signal; Hi : off, Lo :off
LCD_RS	30	→	LCD Module; H : Data signal, L : Instruction signal
LCD_B7	31	→	LCD Module Data stream7
LCD_E	32	→	LCD Module; Read/Write enable signal
GND	33	–	GND
LCD_B4	34	→	LCD Module Data stream 4
LCD_B6	35	→	LCD Module Data stream 6
LCD_B5	36	→	LCD Module Data stream 5
GND	37	–	GND
GND	38	–	GND
GND	39	–	GND
–	40	–	

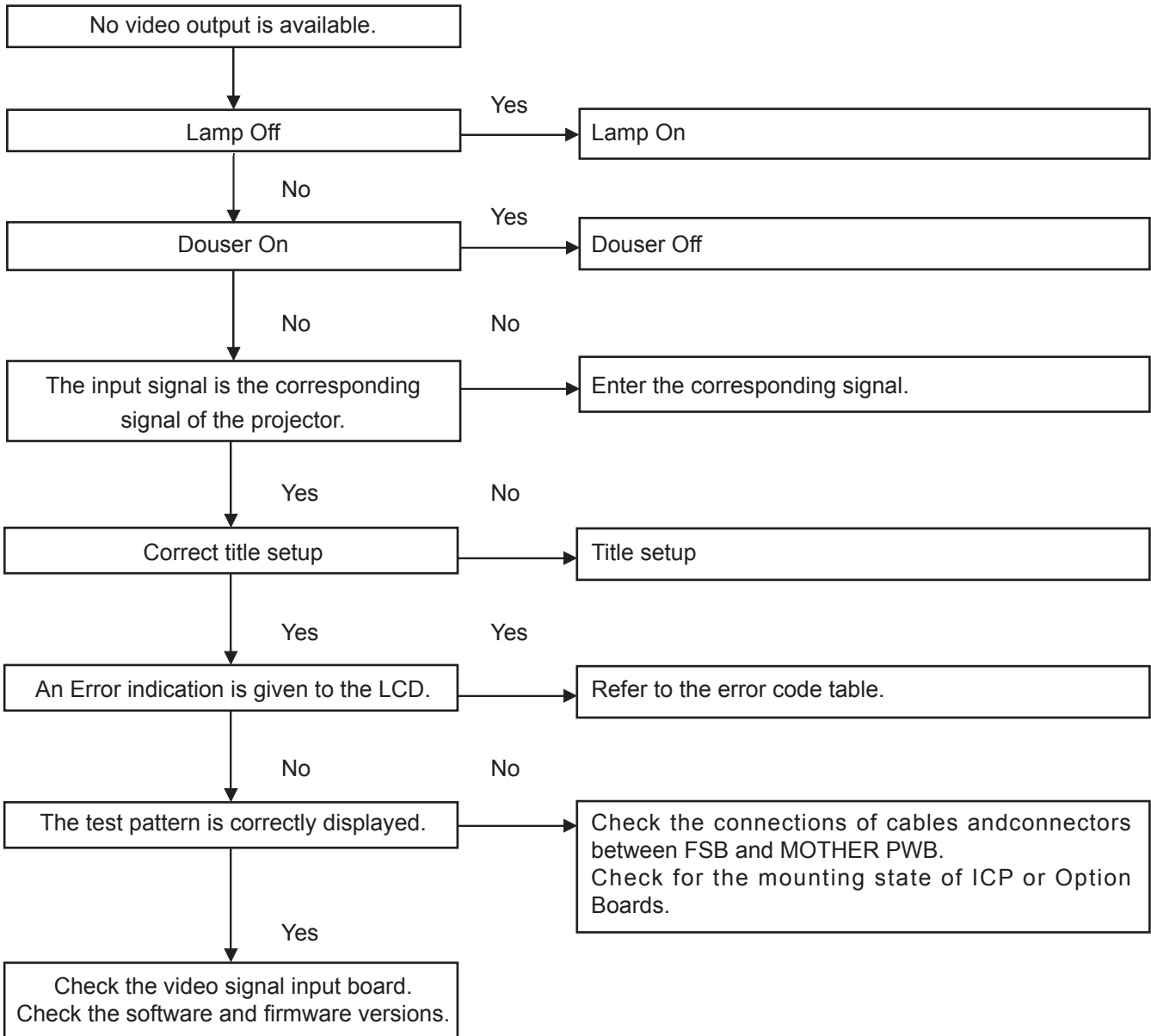
TROUBLESHOOTING

Troubleshooting when start-up failure occurred



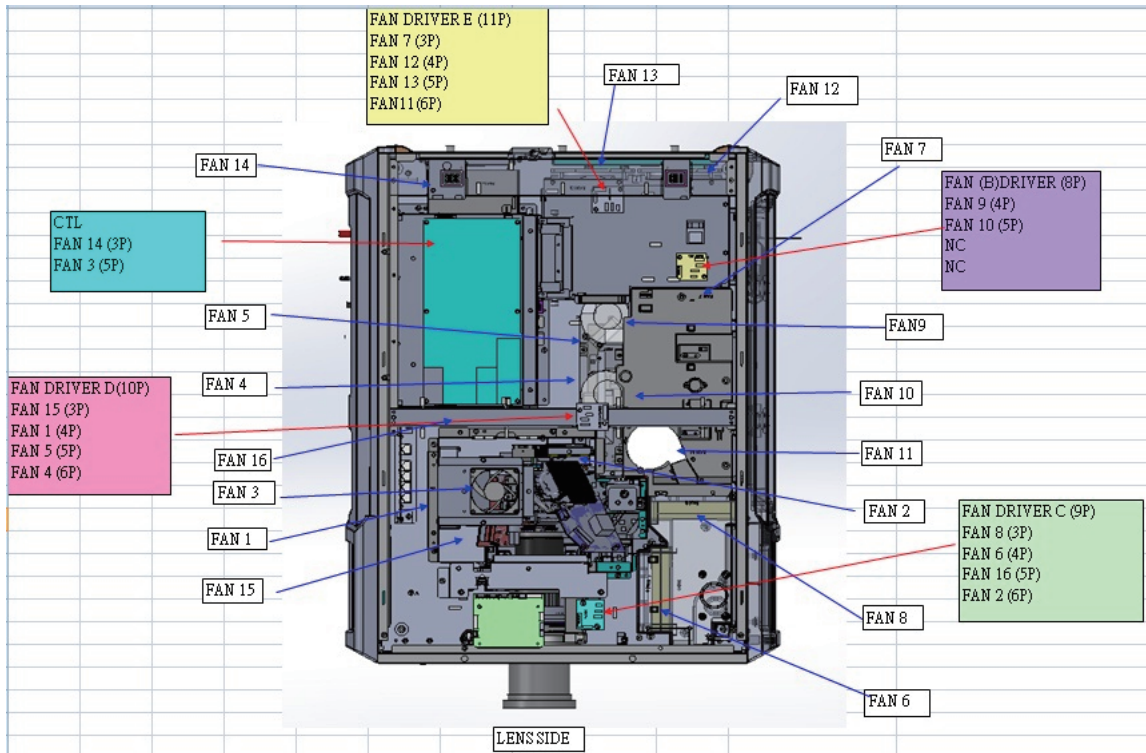
TROUBLESHOOTING

Troubleshooting when output video is abnormal



TROUBLESHOOTING

FAN layout



FAN No.	FAN PART No. (TYPE)	CONNECTOR	LOCATION
FAN1	79TY1171(AFB1212H-SM09)	FAN D-4P	FIP inlet (DMD R)
FAN2	79TY1201(AFB-0612HC-F00)	FAN C-6P	DMD B
FAN3	79TY1221(AFB0712VHE-F00)	CTL 5P	PRISM
FAN5	79TY1121(AFB0512VHD-F00)	FAN D-5P	ROD-FRONT(LAMP 1)
FAN4	79TY1131(AFB0512VHD-F00)	FAN D-6P	ROD-REAR (LAMP 2)
FAN6	79GP1121(AFB1212H-SM09)	FAN C-4P	PRISM+SYSTEM-OUT
FAN7	79TM1351(AFB1212H-SM09)	FAN E-3P	LAMP IN
FAN8	79TM1351(AFB1212H-SM09)	FAN C-3P	LAMP-OUT
FAN9	79TM1311(BFB0712HD-SP01)	FAN B-4P	LAMP 2-BURNER
FAN10	79TM1321(BFB0712HD-SP01)	FAN B-5P	LAMP 1-BURNER
FAN11	79TY1211(BFB0712LD-SE01)	FAN P-6P	FOR FAN 8
FAN12	79GP1121(AFB1212H-SM09)	FAN E-4P	POWER IN
FAN13	79TY1161(AFB1212H-SM09)	FAN E-5P	POWER IN
FAN14	79TY1141(AFB1212HHE-CF00)	CTL 3P	NEC MUDULE OUT
FAN15	79TY1191(AFB-0612HC-F00)	FAN D-3P	DMD R
FAN16	79TY1151(AFB1212H-SM09)	FAN E-5P	POWER IN
ICP FAN	79TY1181(EFB0512HA-F00)		On CPU Board

TROUBLESHOOTING

Error Code List

Error code	Error message	Description	Solution
4	GPSU(12V) Fail	Power supply is abnormal.	Confirm that 12 Vdc is output from #1, 2, 3 pins of the Power Supply cable (6-pin) supplied from the top face of the Power Module to the MOTHER PWB. If not confirmed, replace the Power Module. (Refer to the Start-up failure page.)
5	Lamp Unlit	Lamp doesn't light up.	Check the J17 and J18 cable of the Slave uC PWB.
12	E2PROM R Fail	E2PROM data read error is detected.	Check the respective boards (cables) of the CPU and KEYPAD.
15	E2PROM W Fail	E2PROM data write error is detected.	Check the respective boards (cables) of the CPU and KEYPAD.
120	DLP Ack Fail	ICP failed operation. It could be caused by configuration files lost, disk space issue, or DISKCHIP corruption issue.	ICP, CPU, ROUTER, LAN cable Check the following and correct them if any error is discovered. ① Check version info to examine whether the firmware and data of the CPU PWB has been written correctly. Rewrite it if it is written wrong. ② Check version info to examine whether the firmware and data of the ICP board has been written correctly. Rewrite it if it is written wrong. ③ Confirmation of PWB mounting conditions 1) Is the CPU PWB correctly mounted on the MOTHER PWB? 2) Is the ICP PWB correctly mounted on the MOTHER PWB? After confirming the above mentioned conditions, turn the power supply ON. If there is still an error, replace the ICP and CPU PWBs in this order. If the error disappears, then the replaced PWB is found to be faulty.
121	Lens Fail	Lens unit control error	Check the MOTHER PWB.
140	DLP CommR Fail	No communication with the ICP board. (Communication I/F is RS-232C)	Confirm that the RS-232 I/F between CPU and ICP is normally started (The status of front LED).
141	DLP CommE Fail	No communication with the ICP board and DCC. (Communication I/F is Ethernet)	Confirm that the Ethernet I/F between CPU and ICP is normally started (The status of front LED).
151	Fan1 Stop	Fan1 has stopped.	Check the corresponding FAN (referring to the layout), cable, and Fan Drive board.
152	Fan2 Stop	Fan2 has stopped.	
153	Fan3 Stop	Fan3 has stopped.	
154	Fan4 Stop	Fan4 has stopped.	
155	Fan5 Stop	Fan5 has stopped.	
156	Fan6 Stop	Fan6 has stopped.	
157	Fan7 Stop	Fan7 has stopped.	
158	Fan8 Stop	Fan8 has stopped.	
159	Fan9 Stop	Fan9 has stopped.	
164	ICP Fan Stop	ICP Fan has stopped.	Check the CPU board and the fan of the sameboard.
165	GPI MACRO(n) Selection Invalid	Selection of preset button (n) through GPI is invalid because metadata is enabled.	Indicates control prohibitions status (command).
166	GPI Control Invalid	Projector control through GPI is invalid because projector is busy.	Indicates control prohibitions status (command).
177	Tamper Fail	Service door tamper switch of projector is open.	Examine the fixing method for the related installations. Check the J28, J29, J30 cables of the Slave uC PWB
178	Marriage Tamper Fail	Marriage tamper switch of projector is open.	Check the fitting conditions of the ICP/NC-80LB with the MOTHER board, and ENIGMA boards provided on the NC-80LB. Check the NC-80LB front cover mounting, the MOTHER PWB, TAMPER board, Tamper Switches, and cables.
180	CPU Fail(Mem)	System Test Failed during lamp on. (Memory)	Check the CPU board.
201	Error Log Write Fail	Failed to write error log.	Check the CPU board.
215	Filter Time Over	The time to exchange filters.	Filter cumulative time exceeded.
220	Fan Exchange Time	The time to exchange fans	Fan cumulative time exceeded.
230	Router Fail	Failed to control router.	Check the router (including power supply), LAN cables, and the CPU.
232	MAC Write Fail	Failed to setup MAC address of CPU board.	Check the CPU board.
235	Router Self Check Fail	Router health-check error.	Confirm to the separate sheet of troubleshooting. (Router Trouble Shooting LDD0017 rev*.*.pdf)
240	SIB Comm Fail	Failed to communicate with SIB.	Check the LAN cable. Check the fitting conditions of the NC-80LB/DS board (IC1600, IC1604) with the MOTHER board. After confirming the above mentioned conditions, turn the power supply ON and examine the error-related status. If there is still an error, replace the NC-80LB/DS and check the error-related status.
241	SIB Error	SIB internal error.	Check the NC-80LB/DS
242	SIB FPGA Reboot	Executed to re-boot SIB FPGA for recovery.	Indicates SIB FPGA Status.
245	Fan10 Stop	Fan10 has stopped.	Check the corresponding FAN (referring to the layout), cable, and Fan Drive board.
246	Fan 11 Stop	Fan11 has stopped.	
247	Fan 12 Stop	Fan12 has stopped.	
248	Fan 13 Stop	Fan13 has stopped.	
249	Fan 14 Stop	Fan14 has stopped.	

TROUBLESHOOTING

Error code	Error message	Description	Solution
251	Fan1 Stop Precaution	Fan1 Stop Precaution.	Prepare for a corresponding FAN for replacement.
252	Fan2 Stop Precaution	Fan2 Stop Precaution.	
253	Fan3 Stop Precaution	Fan3 Stop Precaution.	
254	Fan4 Stop Precaution	Fan4 Stop Precaution.	
255	Fan5 Stop Precaution	Fan5 Stop Precaution.	
256	Fan6 Stop Precaution	Fan6 Stop Precaution.	
257	Fan7 Stop Precaution	Fan7 Stop Precaution.	
258	Fan8 Stop Precaution	Fan8 Stop Precaution.	
259	Fan9 Stop Precaution	Fan9 Stop Precaution.	
263	ICP Fan Stop Precaution	ICP Fan Stop Precaution.	
264	Fan10 Stop Precaution	Fan10 Stop Precaution.	
265	Fan11 Stop Precaution	Fan11 Stop Precaution.	
266	Fan12 Stop Precaution	Fan12 Stop Precaution.	
267	Fan13 Stop Precaution	Fan13 Stop Precaution.	
268	Fan14 Stop Precaution	Fan14 Stop Precaution.	
270	SD Tamper Terminate	Terminated service door tamper event latched by Enigma board.	No actions needed. (This is a message to indicate that the Enigma SDT event has been cleared. This is not a specific problem.)
271	IMB:SD Tamper Terminate	Terminated service door tamper event latched by IMB. * This message would be shown on Log, not on LCD.	No actions needed. (This is a message to indicate that the IMB/IMS SDT event has been cleared. This is not a specific problem.)
301	System Error	ICP system status error	Check the ICP PWB and FSB PWB connection.
302	Self Test Error	ICP system status error To recover the issue, update ICP to higher than Prod3.0 or equal. If that can not remove the issue, remove and reseat the ICP board.	Check the ICP (including the S/W, F/W versions). Check the following and correct them if any error is discovered. ① Check the connecting conditions around the connectors on the FSB PWB in the following points: I insufficient connection, S slantwise insertion, W wrong insertion. ② Check connections at the relay PWB (FSB side 1). Are all connectors mounted correctly? Search for slantwise insertion, insufficient insertion, and/or wrong insertion. MOTHER PWB side 1) Is the relay PWB correctly mounted on the MOTHER PWB? 2) Pull it out of the MOTHER PWB and check whether any pin is broken. ③ Is the ICP PWB correctly mounted on the MOTHER PWB? Is the ICP PWB inserted completely? Pull out the ICP PWB and insert it again. ④ Is there any fault in the connector cable? Is there any broken connector cable? After confirming the above mentioned conditions, turn the power supply ON again and check the error-related status. If there is still an error regardless of the above-mentioned actions, take the following actions: 1) Replace the ICP PWB and check the error-related status. 2) Replace the FSB PWB and check the error-related status. If the error disappears, then the replaced PWB is found to be faulty.
303	Install Release Package Error	ICP system status error It could be caused by disk space issue or DISKCHIP corruption issue.	If there is still an error after installing the ICP SW, replace the ICP PWB.
304	Load Release Package Error	ICP system status error It could be caused by disk space issue or DISKCHIP corruption issue.	
305	Key Error	ICP system status error	If this error still stays even after the projector power supply turned OFF and ON, this is due to a fault (data disappearance) in the ICP PWB. Replace the PWB.
306	Certificate Error	ICP system status error	If this error still stays even after the projector power supply turned OFF and ON, replace the PWB.
317	ICP Normal Configuration Error	ICP system status error	Check the ICP PWB and FSB PWB connection.
318	ICP Boot Configuration Error	ICP system status error	
319	FMT Normal Configuration Error	ICP system status error	
320	FMT Boot Configuration Error	ICP system status error	
321	FMT Satellite Configuration Error	ICP system status error	
322	1.20V Supply out of range	ICP system status error	
323	1.80V Supply out of range	ICP system status error	
324	2.50V Supply out of range	ICP system status error	
325	3.30V Regulator out of range	ICP system status error	
326	ICP FPGA Temperature out of range	ICP system status error	
327	FMT FPGA Temperature out of range	ICP system status error	
328	ICP Flash Update Error	ICP system status error	
329	FMT Sequence Data File Mismatch	ICP system status error	
330	FMT DMD Data File Mismatch	ICP system status error	
331	FMT Flash Checksum Error - Sequence Data	ICP system status error	
332	FMT Flash Checksum Error - DMD Data	ICP system status error	
333	Satellite Hardware Mismatch	ICP system status error	
334	FMT Flash Update Error	ICP system status error	
335	Red Satellite Reports Reset	ICP system status error	
336	Red Satellite Serial Link Error	ICP system status error	
337	Red Satellite Firmware Configuration Error	ICP system status error	

TROUBLESHOOTING

Error code	Error message	Description	Solution
338	Red DAD1000 Bias Under Voltage Error	ICP system status error	Check the cable between FSB and MOTHER PWB, and ICP.
339	Red DAD1000 Reset Under Voltage Error	ICP system status error	
340	Red DAD1000 Offset Under Voltage Error	ICP system status error	
341	Red DAD1000 Thermal Shutdown Error	ICP system status error	
342	Green Satellite Reports Reset	ICP system status error	
343	Green Satellite Serial Link Error	ICP system status error	
344	Green Satellite Firmware Configuration Error	ICP system status error	
345	Green DAD1000 Bias Under Voltage Error	ICP system status error	
346	Green DAD1000 Reset Under Voltage Error	ICP system status error	
347	Green DAD1000 Offset Under Voltage Error	ICP system status error	
348	Green DAD1000 Thermal Shutdown Error	ICP system status error	
349	Blue Satellite Reports Reset	ICP system status error	
350	Blue Satellite Serial Link Error	ICP system status error	
351	Blue Satellite Firmware Configuration Error	ICP system status error	
352	Blue DAD1000 Bias Under Voltage Error	ICP system status error	
353	Blue DAD1000 Reset Under Voltage Error	ICP system status error	
354	Blue DAD1000 Offset Under Voltage Error	ICP system status error	
355	Blue DAD1000 Thermal Shutdown Error	ICP system status error	
356	RTC Error	Indicates that ICP RTC is set to a date before January 1, 2009, and is likely invalid. If the year value is less than 2009, then the time is considered to be "invalid".	When IMB/IMS/Enigma is mounted, check if RTC of each board is incorrect (before 01.01.2009).
370	ICP Frame Memory Test Result Fail	ICP self test error due to "Frame memory error"	Check the ICP PWB and FSB PWB connection.
372	ICP Data Path Signature Test Result Fail	ICP self test error due to "Data Path Signature Test Result"	Check the ICP PWB and FSB PWB connection.
400	Enigma Comm Fail	No communication with the Enigma board.	Check the connection with NC-80LB, LAN I/F, and firmware version. Check points: ① Check the cable connected to the router. Check whether the power and LAN cables are correctly connected. ② Confirm that the CPU PWB is firmly inserted in the MOTHER PWB. ③ Confirm that the NC-80LB is firmly inserted in the MOTHER PWB. ④ Confirm that the Enigma board is correctly mounted on the NC-80LB After conforming the above mentioned conditions, turn the power supply ON and examine the error-related status. If there is still an error, replace the Enigma and NC-80LB PWBs in this order. Turn the power supply ON each time a PWB is replaced. The faulty PWB can be identified according to the error status.
410	System Error	Enigma Status error	Check connections between the Enigma board and NC-80LB/DS, and also the versions of LAN I/F and F/W.
411	Self Test Error	Enigma Status error	
412	Install Release Package Error	Enigma Status error	
413	Load Release Package Error	Enigma Status error	
414	TI Login List Package Error	Enigma Status error	
415	Security Officer Login List Package Error	Enigma Status error	
419	Certificate or Key Error	Enigma Status error	
420	ICP Communications Status	Enigma fails to do logical marriage to ICP when Enigma powers up. Because of no communications with ICP during logical marriage.	Confirm that the ICP PWB is normally started. Check LAN I/F.
426	User Loader Integrity Error	Enigma is in FIPS error state.(Integrity check error)	Check connections between the Enigma board and NC-80LB, LAN I/F, and the firmware version.
427	Main Application Integrity Error	Enigma is in FIPS error state.(Integrity check error)	
428	RNG Hardware Integrity Error	Enigma is in FIPS error state.(Integrity check error)	
429	DRNG Algorithm Integrity Error	Enigma is in FIPS error state.(Integrity check error)	
430	RSA Algorithm Integrity Error	Enigma is in FIPS error state.(Integrity check error)	
431	AES Algorithm Integrity Error	Enigma is in FIPS error state.(Integrity check error)	
432	HMAC Algorithm Integrity Error	Enigma is in FIPS error state.(Integrity check error)	
433	SHA Algorithm Integrity Error	Enigma is in FIPS error state.(Integrity check error)	
434	TLS Integrity Error	Enigma is in FIPS error state.(Integrity check error)	
435	FPGA Configuration Integrity Error	Enigma is in FIPS error state.(Integrity check error)	
436	FPGA CineLink 2 Decryption Integrity Error	Enigma is in FIPS error state.(Integrity check error)	
437	RTC Error	Indicates that Enigma RTC is set to a date before January 1, 2009, and is likely invalid. If the year value is less than 2009, then the time is considered to be "invalid"	
442	FPGA Configuration Error	Enigma Status error	Check connections between the Enigma board and NC-80LB, LAN I/F, and the firmware version.
443	FPGA Temperature out of range	Enigma Status error	
446	RNG Hardware Duplicate Output Error	Enigma is in FIPS error state.(Integrity check error)	
447	DRNG Algorithm Duplicate Output Error	Enigma is in FIPS error state.(Integrity check error)	
450	1.20V Supply out of range	Enigma Status error	
451	1.80V Supply out of range	Enigma Status error	
452	2.50V Supply out of range	Enigma Status error	
453	3.30V Regulator out of range	Enigma Status error	
458	SelfTest User Loader Integrity Error	Enigma is in FIPS error state.(Self test result)	
459	SelfTest Main Application Integrity Error	Enigma is in FIPS error state.(Self test result)	
460	SelfTest RNG Hardware Integrity Error	Enigma is in FIPS error state.(Self test result)	
461	SelfTest DRNG Algorithm Integrity Error	Enigma is in FIPS error state.(Self test result)	
462	SelfTest RSA Algorithm Integrity Error	Enigma is in FIPS error state.(Self test result)	
463	SelfTest AES Algorithm Integrity Error	Enigma is in FIPS error state.(Self test result)	
464	SelfTest HMAC Algorithm Integrity Error	Enigma is in FIPS error state.(Self test result)	
465	SelfTest SHA Algorithm Integrity Error	Enigma is in FIPS error state.(Self test result)	
466	SelfTest TLS Integrity Error	Enigma is in FIPS error state.(Self test result)	
467	SelfTest FPGA Configuration Integrity Error	Enigma is in FIPS error state.(Self test result)	
468	SelfTest FPGA CineLink. 2 Decryption Integrity Error	Enigma is in FIPS error state.(Self test result)	

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TROUBLESHOOTING

Error code	Error message	Description	Solution
458	SelfTest User Loader Integrity Error	Enigma is in FIPS error state.(Self test result)	Check connections between the Enigma board and NC-80LB, LAN I/F, and the firmware version.
459	SelfTest Main Application Integrity Error	Enigma is in FIPS error state.(Self test result)	
460	SelfTest RNG Hardware Integrity Error	Enigma is in FIPS error state.(Self test result)	
461	SelfTest DRNG Algorithm Integrity Error	Enigma is in FIPS error state.(Self test result)	
462	SelfTest RSA Algorithm Integrity Error	Enigma is in FIPS error state.(Self test result)	
463	SelfTest AES Algorithm Integrity Error	Enigma is in FIPS error state.(Self test result)	
464	SelfTest HMAC Algorithm Integrity Error	Enigma is in FIPS error state.(Self test result)	
465	SelfTest SHA Algorithm Integrity Error	Enigma is in FIPS error state.(Self test result)	
466	SelfTest TLS Integrity Error	Enigma is in FIPS error state.(Self test result)	
467	SelfTest FPGA Configuration Integrity Error	Enigma is in FIPS error state.(Self test result)	
468	SelfTest FPGA CineLink. 2 Decryption Integrity Error	Enigma is in FIPS error state.(Self test result)	
474	Security Tamper	Security tamper condition exists in Enigma.	Indicates Enigma security tamper is detected.
475	Top Side Security Enclosure Open	Security tamper condition exists in Enigma.	Indicates details of security tamper detection information. (Replace Enigma board.)
476	Bottom Side Security Enclosure Open	Security tamper condition exists in Enigma.	
477	Security Battery Event	Battery tamper condition exists in Enigma.	
478	Software Commanded Zeroization	Destroyed Enigma key by software command.	Replace Enigma board.
481	Security Enclosure Not Armed	Enigma security not armed.	Press the [Arm Tamper] button that is available in the SETUP-Installation menu of the DCC to set the Enigma Tamper function effective.
482	Physical Marriage Tamper	Latched physical marriage tamper condition on Enigma board.	Press the [Re-Marriage] button that is available in the SETUP-Installation menu of the DCC to clear the Enigma Physical Marriage event. At the time of clearing, confirm that there are no errors of Nos. 270 and 271.
483	Logical Marriage Tamper	Logical marriage tamper condition exists in Enigma.	Press the [Re-Marriage] button that is available in the SETUP-Installation menu of the DCC to establish Logical Marriage between Enigma and ICP. At the time of Marriage, confirm that there are no errors of Nos. 270 and 271.
484	Marriage NOT Active	Marriage between ICP and Enigma has NOT been established (active).	Press the [Re-Marriage] button that is available in the SETUP-Installation menu of the DCC to establish Logical Marriage between Enigma and ICP. At the time of Marriage, confirm that there are no errors of Nos. 270 and 271.
486	Service Door Tamper	Latched service door tamper condition on Enigma board.	Close all the SDT switches. After that, use a main unit key and make a login (anyone of the Advanced User, Installation, and Service) into the projector main unit and clear the SDT event.
487	Security Log Error	Security log is full and no more log entries can be created in Enigma. It is the server's responsibility to avoid the issue.	Replace Enigma board.
488	Security Battery Low Warning	Close to "(477) Security Battery Event".	Charge up the battery cells for the Enigma PWB.
489	Security Log Warning	Security log is almost full in Enigma. Close to "(487) Security Log Error".	Since the Security Log is almost full, log drains required on server side. (This treatment is a server's role.)
500	IMB Comm Fail	No communication with the IMB.	Check the connection with IMB/IMS board, and LAN I/F, firmware versions.
510	IMB: System Error	IMB Status error	Check the IMB/IM PWB.
511	IMB: Self Test Error	IMB Status error	
519	IMB: Certificate or Key Error	IMB Status error	
520	IMB: ICP Communications Status	IMB fails to do logical marriage to ICP when IMB powers up. Because of no communications with ICP during logical	Check the connection of IMB/IMS PWBs, LAN I/F, and firmware version. Confirm that the ICP PWB is normally started
537	IMB: RTC Error	IMB RTC is "invalid".	Replace the IMB/IM PWB.
543	IMB: FPGA Temperature out of range	IMB Status error	Check the IMB/IM PWB.
550	IMB: Supply voltage out of range	IMB Status error	
574	IMB: Security Tamper	Security tamper condition exists in IMB.	Replace the IMB/IM PWB.
577	IMB: Security Battery Event	Battery tamper condition exists in IMB.	
581	IMB: Security Enclosure Not Armed	IMB security not armed.	
582	IMB: Physical Marriage Tamper	Latched physical marriage tamper condition on IMB.	Press the [Re-Marriage] button that is available in the SETUP-Installation menu of the DCC to clear the IMB Physical Marriage event. At the time of clearing, confirm that there are no errors of Nos. 270 and 271.
583	IMB: Logical Marriage Tamper	Logical marriage tamper condition exists in IMB.	Press the [Re-Marriage] button that is available in the SETUP-Installation menu of the DCC to establish Logical Marriage between IMB and ICP. At the time of Marriage, confirm that there are no errors of Nos. 270 and 271.
584	IMB: Marriage NOT Active	Marriage between ICP and IMB has NOT been established (active).	Press the [Re-Marriage] button that is available in the SETUP-Installation menu of the DCC to establish Logical Marriage that has been canceled between IMB and ICP.
586	IMB: Service Door Tamper	Latched service door tamper condition on IMB.	Close all the SDT switches. After that, use a main unit key and make a login (anyone of the Advanced User, Installation, and Service) into the projector main unit and clear the SDT event.
588	IMB: Security Battery Low Warning	Close to "(577) IMB: Security Battery Event".	Charge up the battery cells for the IMB/IMS PWBs.
700	Slave Comm Fail	Failed to communicate with slave MCU.	Communication with Slave uC PWB failed. Check the Slave uC PWB
701	Slave Status Fail	Slave MCU is in unexpected status.	The status of the Slave uC PWB is out of expectation. Check the Slave uC PWB
702	Lamp Lit Change	Lamp lit status becomes with unexpected state. (It could appear while dual lamp mode.)	Started in 2 lamps light-up mode, and succeeded in one lamp activation. In 2 lamps light-up status, only one lamp turned off.

TROUBLESHOOTING

Error code	Error message	Description	Solution
703	Slave Comm Ack Fail	Slave fails to execute the command.	① Check version info to examine whether the firmware of the Slave uC PWB has been written correctly. Rewrite it if it is written wrong. ② Check version info to examine whether the firmware and data of the CPU board has been written correctly. Rewrite it if it is written wrong. ③ Confirmation of Slave uC PWB mounting conditions After confirming the above conditions, turn the power supply ON. If there is still an error, replace the Slave uC and CPU PWBs in this order. If the error disappears then the replaced PWB is found to be faulty.
710	Lamp1 OverTime	Lamp1 cumulative time is over.	Lamp 1 Cumulative time is exceeded.
711	Lamp2 OverTime	Lamp2 cumulative time is over.	Lamp 2 Cumulative time is exceeded.
740	SensorFail Inlet	Failed to read inlet sensor.	Check the J4 cable of the Slave uC PWB.
741	SensorFail DMD	Failed to read DMD sensor.	Check the J11 cable of the Slave uC PWB.
750	OverTemp.DMD Precaution	Set inside temperature (DMD) is close to over temperature.	Check ambient temperature, suction air and exhaust. Check the J11 cable of the Slave uC PWB.
751	OverTemp.Inlet Precaution	Set inside temperature (Inlet) is close to over temperature.	Check ambient temperature, suction air and exhaust. Check the J12 cable of the Slave uC PWB.
752	Down Lamp Power Activated	Down lamp power to decrease set inside temperature.	The Power is lowered to Min level, because of the temperature error in the Set. Check ambient temperature, suction air and exhaust.
753	OverTemp.Ballast1 Precaution	Set inside temperature (Ballast1) is close to over temperature.	Check ambient temperature, suction air and exhaust. Check the Ballast2.
754	OverTemp.Ballast2 Precaution	Set inside temperature (Ballast2) is close to over temperature.	Check ambient temperature, suction air and exhaust. Check the Ballast2.
760	OverTemp.DMD	Set inside temperature (DMD) is abnormal.	Check ambient temperature, suction air and exhaust. Check the J11 cable of the Slave uC PWB.
761	OverTemp.Inlet	Set inside temperature (Inlet) is abnormal.	Check ambient temperature, suction air and exhaust. Check the J4 cable of the Slave uC PWB.
762	OverTemp.Lamp	Set inside temperature (Lamp) is abnormal.	Check ambient temperature, suction air and exhaust. Check the J26 cable of the Slave uC PWB. * Supplementary explanation is in the margin.
764	OverTemp.Ballast1	Set inside temperature (Ballast1) is abnormal.	Check ambient temperature, suction air and exhaust. Check the Ballast1.
765	OverTemp.Ballast2	Set inside temperature (Ballast2) is abnormal.	Check ambient temperature, suction air and exhaust. Check the Ballast2.
781	Interlock Open	Interlock is open.	Short-circuit between each 1-2 pins, 3-4 pins on the Interlock BD (on lens' left). Check the Slave uC PWB, J4 cable.
782	SystemI2cFail	Failed to control sensors connecting to GPIO chip. (Slave board internal abnormality)	Replace the Slave uC PWB.
783	EepromFail	Slave MCU failed to read back all of data from EEPROM on slave MCU board due to unexpected data or something. (Slave board internal abnormality)	
785	SoftwareI2cFail	I2C/UART conversion chip control failed on slave board. (Slave board internal abnormality)	
786	PreCooling	Failed to precool.	If there's no other error than this Pre-Cooling failure and in the case the error stays after turning AC-ON, replace the Slave uC PWB.
787	Lamp1 Door Open	Lamp1 door (cover) is open	Check the Lamp 1 door. Check the J25 cable of the Slave uC board. Check the Lamp 1 door switch. * Supplementary explanation is in the margin.
788	Lamp2 Door Open	Lamp2 door (cover) is open	Check the Lamp 2 door. Check the J52 cable of the Slave uC PWB. Check the Lamp 2 door switch. * Supplementary explanation is in the margin.
789	Ballast1UartError	Communication error between slave MCU and ballast1.	Check the J17 cable of the Slave uC PWB. Check the Ballast1.
790	Ballast2UartError	Communication error between slave MCU and ballast2.	Check the J18 cable of the Slave uC PWB. Check the Ballast2.
791	FanInitError	Failed to initialize fans.	Check the FanDrive board B/C/D/E (including cable connections). * For FanDrive board, refer to the FAN layout.
792	ExGpioFail	Failed to control the signal connecting to Ballast. (Slave board internal abnormality)	Replace the Slave uC PWB.
793	Notch Filter Open	Notch Filter Cover is open.	Check the Notch Filter Cover. Check the Slave uC PWB, J24 cable. * Supplementary explanation is in the margin.
800	Fan15 Stop	Fan15 has stopped.	Check the corresponding FAN (referring to the layout), cable, and Fan Drive board.
801	Fan16 Stop	Fan16 has stopped.	
810	Fan15 Stop Precaution	Fan15 Stop Precaution	Prepare for a corresponding FAN for replacement.
811	Fan16 Stop Precaution	Fan16 Stop Precaution	

[Supplementary explanation]

The following 4 errors will be output according to the priority order.
If multiple errors occurred at same time, the error of the higher priority will be output and others will not be displayed.

• Error output priority order (from the top)

793 Notch Filter Open (J24 = Open)

↓

762 OverTemp.Lamp (J26 = Open)

↓

787 Lamp1 Door Open (J25 = Open)

↓

788 Lamp2 Door Open (J52 = Open)

“Confidential, Do Not Duplicate without written authorization from NEC.”

TROUBLESHOOTING

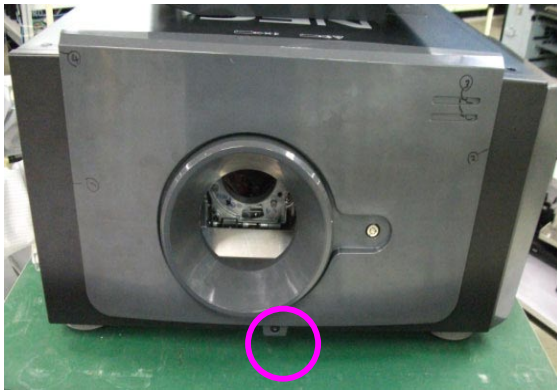
ICP_LEDs

LED Identifier	Short Description	Full Description
PWR		<p>Indicates the presence of the internal regulator enable signal. This signal enables the following regulators:</p> <p><u>ICP</u> 3.3VDC, 2.5VDC, 1.8VDC, and 1.2VDC</p> <p><u>Satellites</u> 3.3VDC and 2.5VDC</p> <p><u>USB</u> 5.0VDC</p> <p>Off = Internal regulators not enabled Blue = Internal regulators enabled</p>
SOFT	Software State	<p>Indicates the state of the software application.</p> <p>Off = FAIL (State 0) Red = FAIL (State 1) Yellow = FAIL (State 2) Green = OK</p>
OS	Operating System State	<p>Indicates the state of the Operating System.</p> <p>Off = FAIL (State 0) Red = FAIL (State 1) Yellow = FAIL (State 2) Green = OK</p>
FMT	FMT FPGA State	<p>Indicates the configured state of the FMT FPGA.</p> <p>Off = N/A Red = Unable to configure FPGA with Main or Boot application Yellow = Boot Application Green = Main Application</p>
ICPS	ICP FPGA State	<p>Indicates the configured state of the ICP FPGA.</p> <p>Off = N/A Red = Unable to configure FPGA with Main or Boot application Yellow = Boot Application Green = Main Application</p>
PORT A	Status of Port A	<p>Indicates the status of ICP input port A.</p> <p>Off = No Source Present Red = TBD Yellow = TBD Green = Active Source Present</p>
PORT B	Status of Port B	<p>Indicates the status of ICP input port B.</p> <p>Off = No Source Present Red = TBD Yellow = TBD Green = Active Source Present</p>



1. KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

1-1 Top/Left Outside Cover & Fan Driver D Board & Slave UC Board



Use key to unlock the screw and open the front cover. Torque: 7~8 kgf-cm.



Use key to unlock the screw and open the top cover. Then, loosen 3 screws on the top cover. Torque: 7~8 kgf-cm.



Use key to unlock the screw and open the left outside cover. Torque: 7~8 kgf-cm.



Loosen 2 screws and open and take out 2 pcs left outside cover.

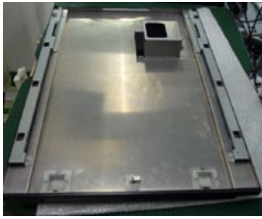


Loosen 2 screws on the top cover. Torque: 7~8 kgf-cm.

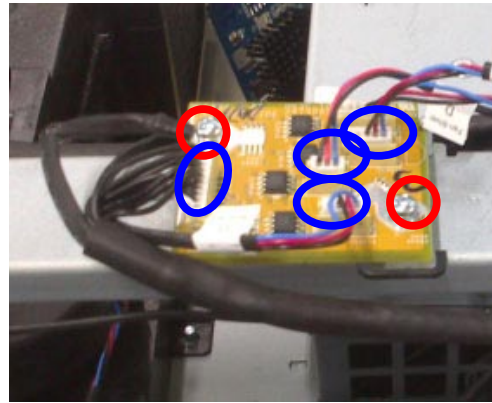


Open and take out the top cover.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)



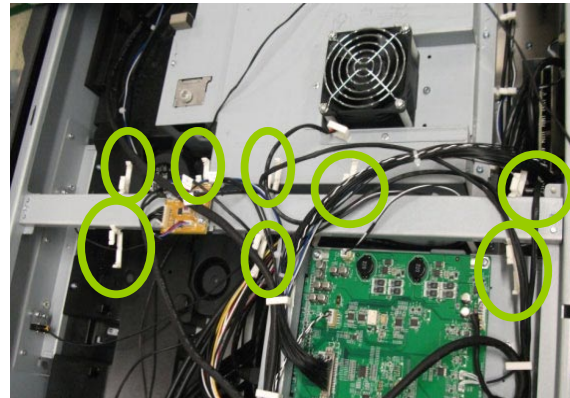
Take the top cover and 2 pcs left outside cover on the desk.



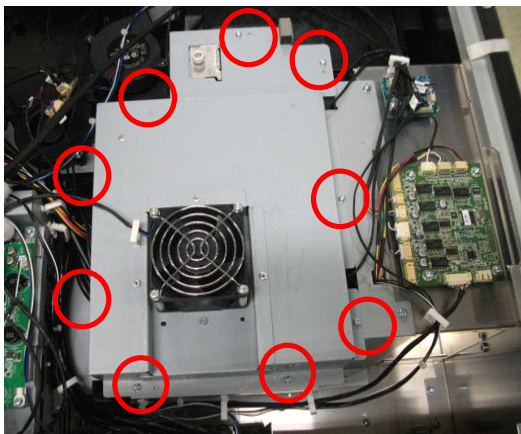
Loosen 2 screws on the FAN DRIVER D board and unplug 4 connectors. Torque: 5~6 kgf-cm



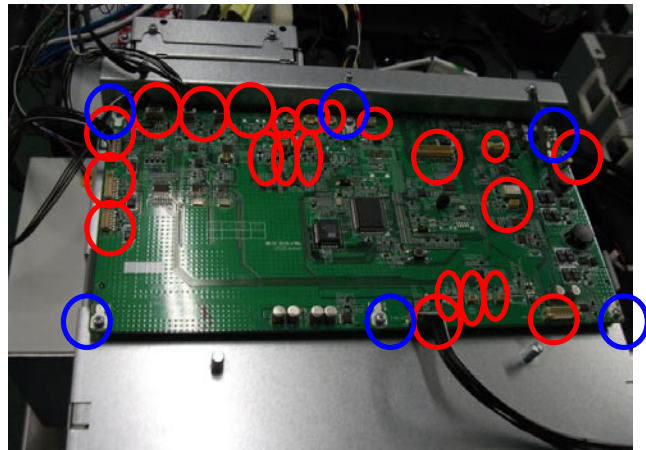
Loosen 2 screws on the bracket. Torque: 5~6 kgf-cm. Then, take the bracket off.



Open the 8 pcs fasteners to loosen all cables.



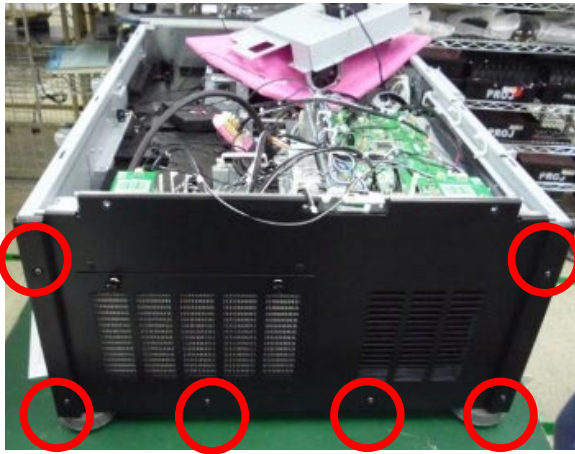
Loosen 9 screws on the FIP shield cover and take it off. Torque: 5~6 kgf-cm



Loosen 6 screws on the Slave UC BD and unplug 22 pcs connectors. Then, take it off. Torque: 5~6 kgf-cm

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

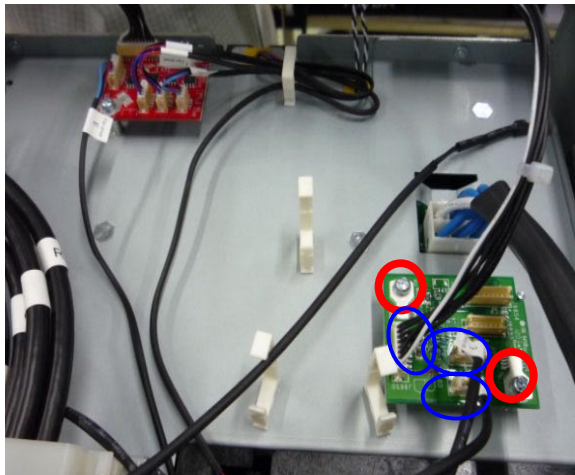
1-2 Rear Outside Cover & Fan B Board & Fan E Board



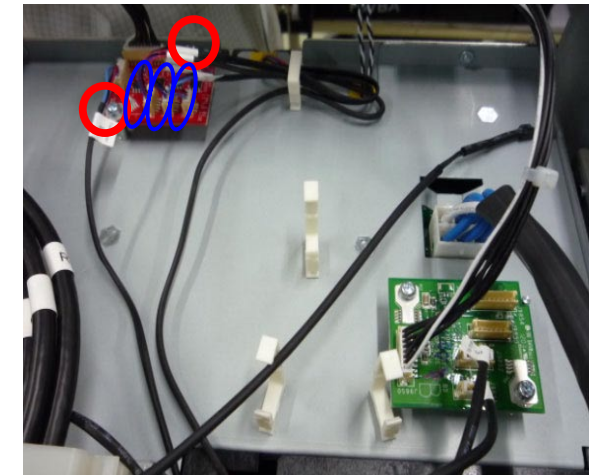
Loosen 6 screws on the rear cover. Then, take out the rear cover. Torque: 7~8 kgf-cm



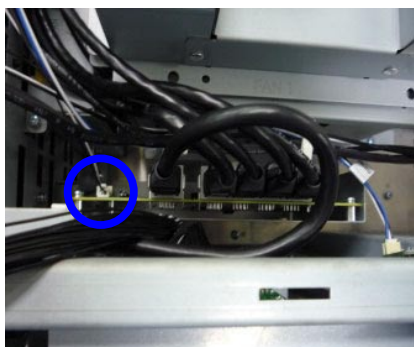
Loosen 2 screws on the rear LED bracket. Torque: 5~6 kgf-cm. Then, take it off.



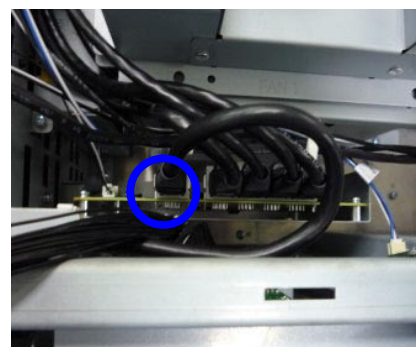
Loosen 2 screws on the Fan B board and unplug 3 connectors. Then, take it off. Torque: 5~6 kgf-cm



Loosen 2 screws on the Fan E board and unplug 3 connectors. Then, take it off. Torque: 5~6 kgf-cm



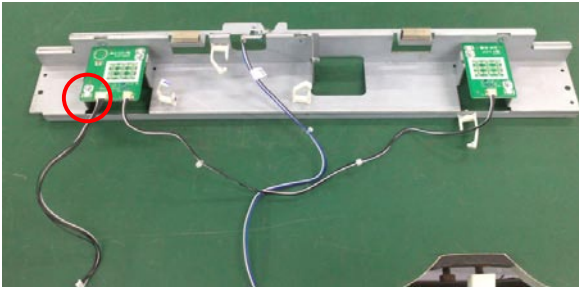
Unplug 1 connector on the Router board.



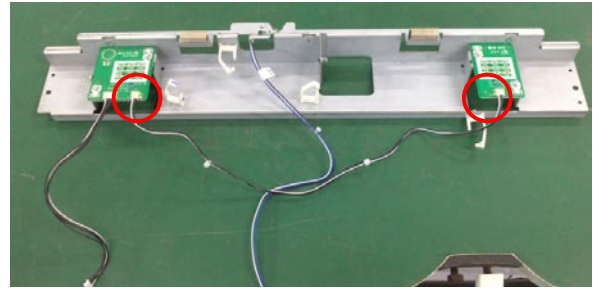
Unplug 1 Internet cable on the Router board.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

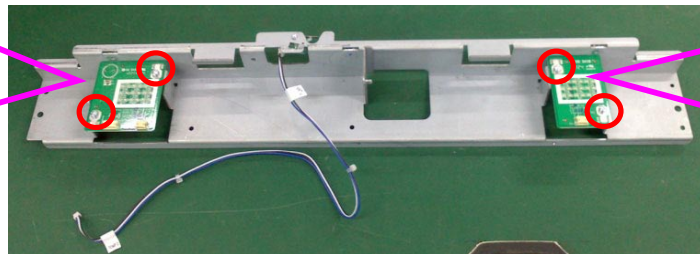
1-3 LED Status Board & LED Buzzer Board & Security Board



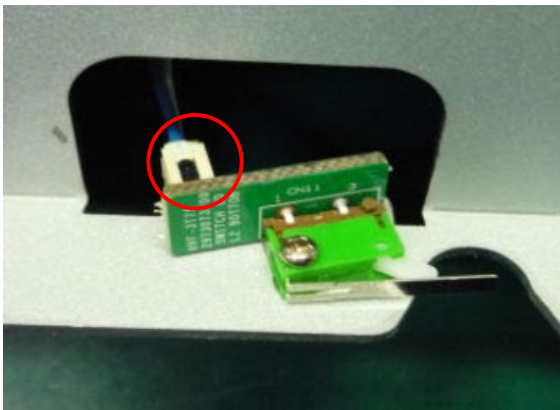
Unplug 1 connector from the LED Buzzer Board.



Unplug 2 connectors from the LED Status Board & LED Buzzer Board.



Loosen 4 screws on LED Status Board & LED Buzzer BD. Torque: 5~6 kgf-cm.



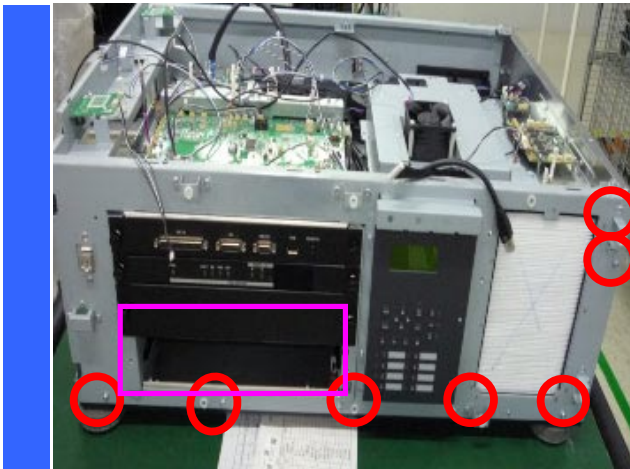
Unplug 1 connector from security switch board. Then, take it off.



Put security switch board on the desk.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

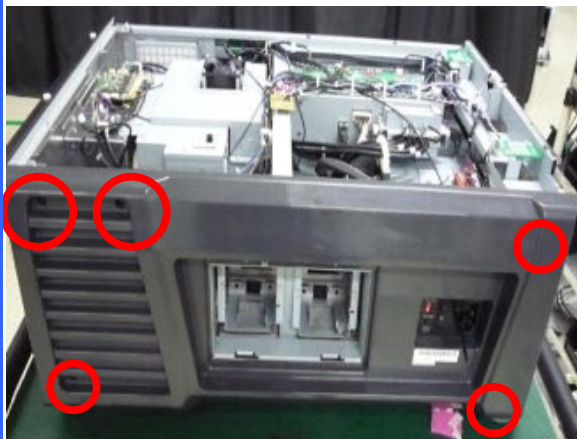
1-4 Left Inside / Lamp Door / Right Outside / Right Inside Cover & Lamp Door Switch



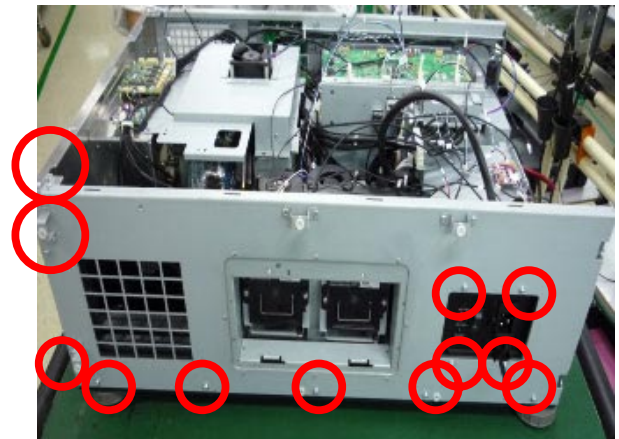
Loosen 7 screws and take the right outside cover off. Torque: 7~8 kgf.cm. Take off the Bracket. Torque: 1.25~1.75 kgf.cm.



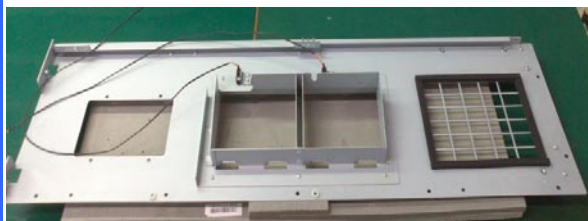
Loosen 2 screws and take the Lamp door cover off. Torque: 7~8 kgf-cm



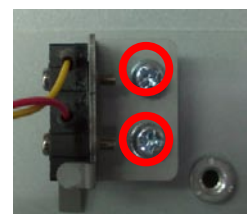
Loosen 3 screws on right outside cover and take the right outside cover off. Torque: 7~8 kgf-cm



Loosen 12 screws on right inside cover and take the right outside cover off. Torque: 7~8 kgf-cm.



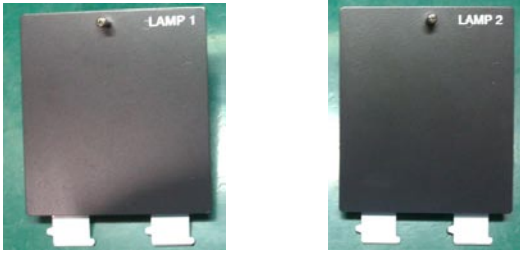
Put right inside cover on the desk.



Loosen 2 screws on right inside cover and take the Lamp door switch off. Torque: 1.5~2 kgf-cm.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

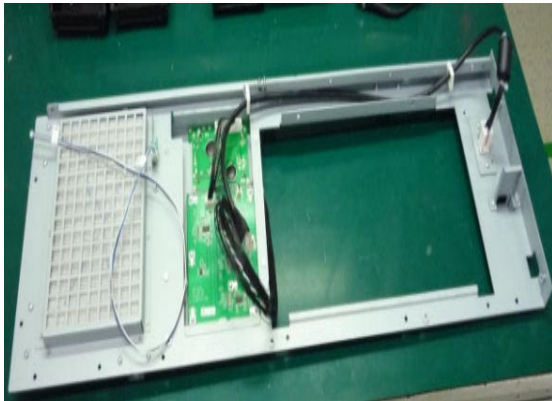
1-5 Lamp Door / Right Outside / Right Filter



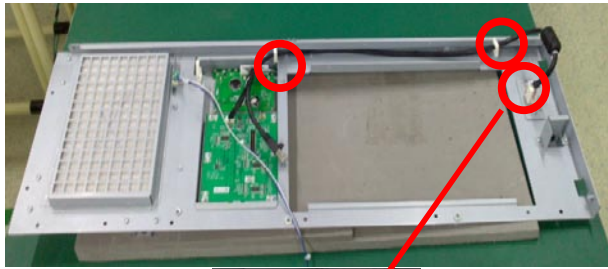
Put Lamp1 & Lamp 2 cover on the desk.



Put right outside cover on the desk.



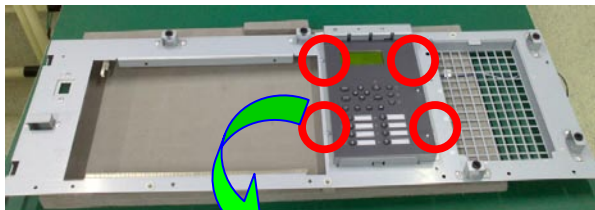
Loosen 3 screws on right inside cover and take the right outside cover off.
Torque: 7~8 kgf-cm



Unplug the 2 pcs fastener and one cable connector.



Take the right filter off from the right inside cover.

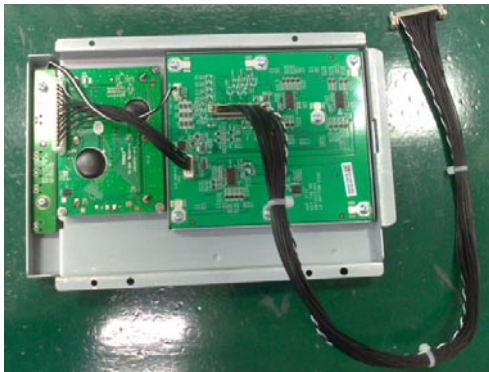


Loosen 4 screws on right inside cover and take the LCD/Keypad/Backlight module off.
Torque: 1.5~2 kgf-cm.

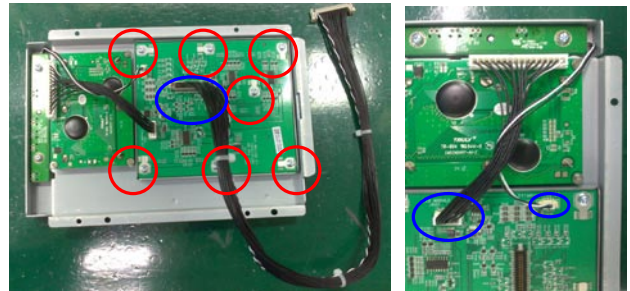


KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

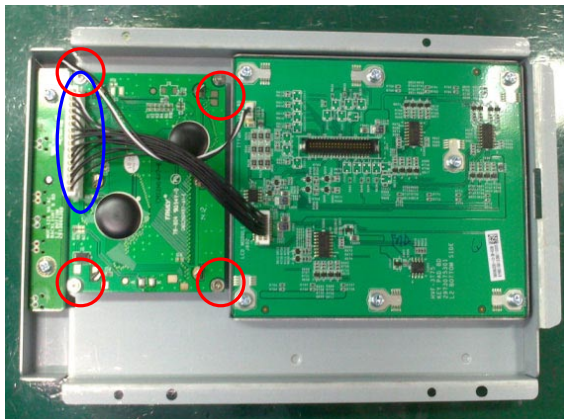
1-6 LCD/Keypad/Backlight Board



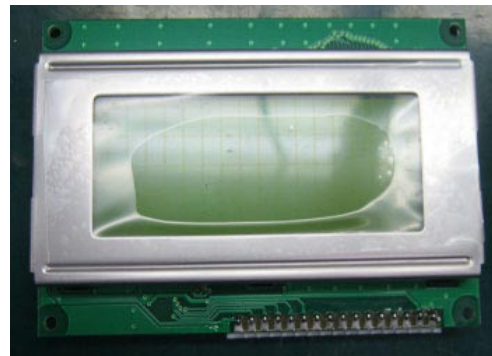
Put LCD/Keypad/Backlight module on the desk.



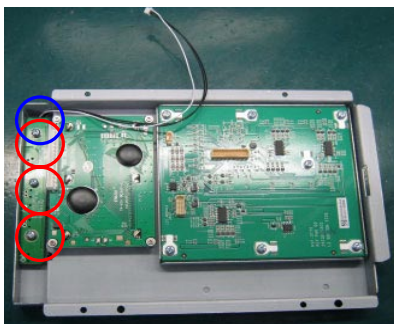
Loosen 7 screws and unplug the 3 pcs connectors from the keypad board.
Torque: 5~6 kgf-cm. Then, take it off.



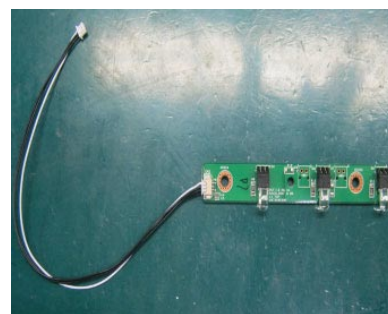
Loosen 4 screws and unplug the 3 pcs connectors on the LCD board.
Torque: 1.5~2 kgf-cm.



Put LCD board on the desk.



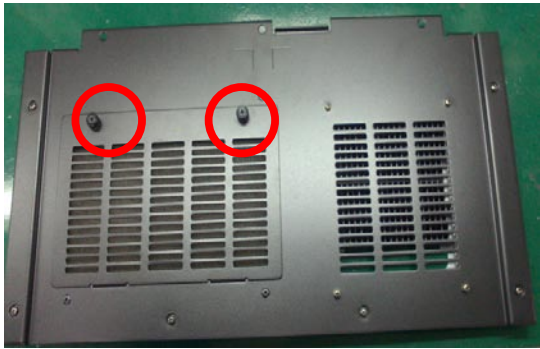
Loosen 3 screws and unplug the 1 pc connector from the Backlight board.
Torque: 5~6 kgf-cm. Then, take it off.



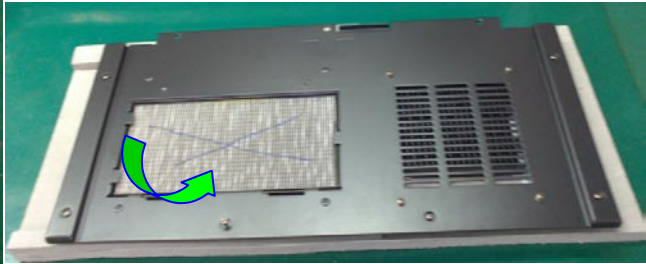
Put Backlight board on the desk.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

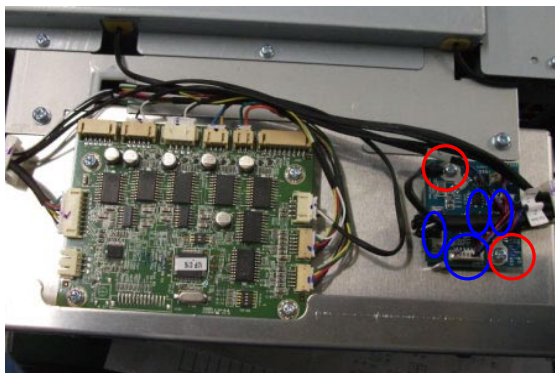
1-7 Rear Outside Cover & Rear Filter & Fan C board & Motor Driver Board



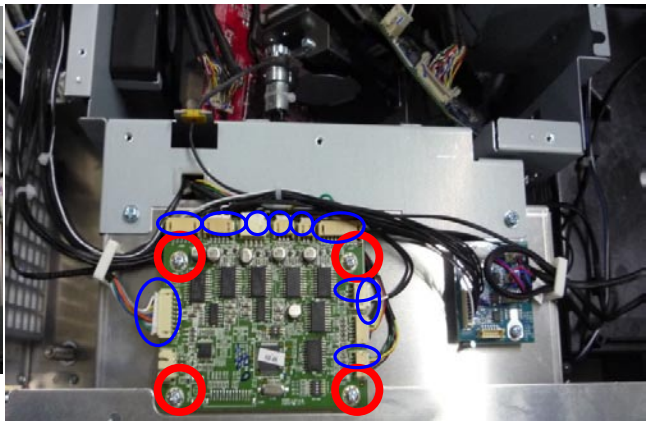
Loosen 2 screws on the rear outside cover.



Take the rear filter off.



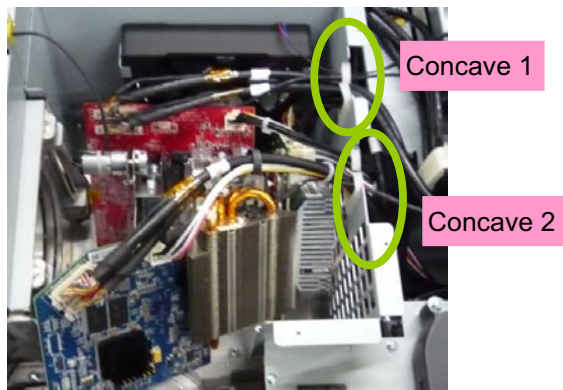
Loosen 2 screws and unplug 4 connectors on the Fan C board. Then, take off it.



Unplug 10 connectors on the Motor driver board, and loosen 4 screws. Finally, take out it.



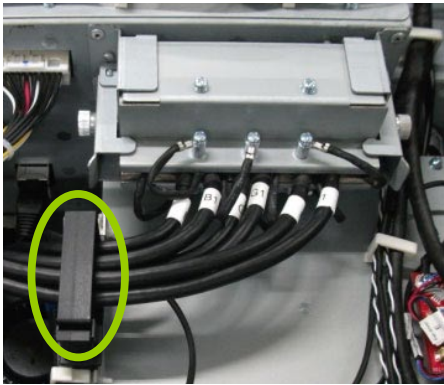
Loosen Fan 15 wire from R formatter board signal cable.



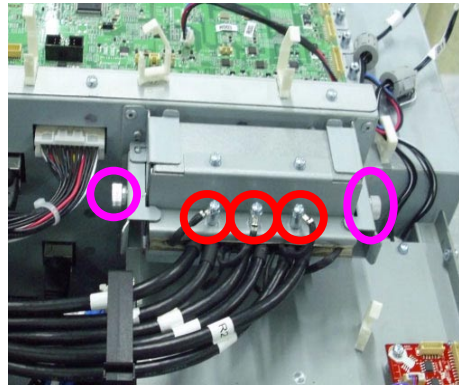
Pull the R/G/B power cable, B signal cable, heat-sink cable from concave 2. And, pull R/G signal cable, Fan 1 and Fan 15 wire from concave 2.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

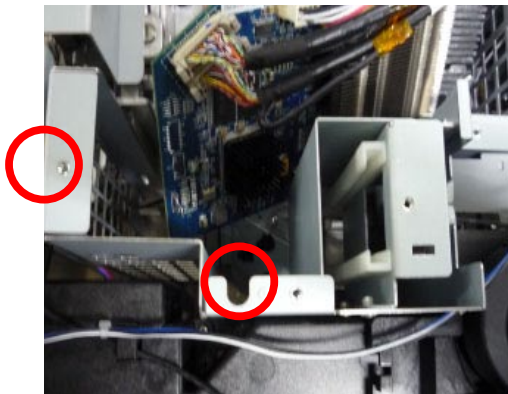
1-8 FIP Bracket Shield & Lamp Shield



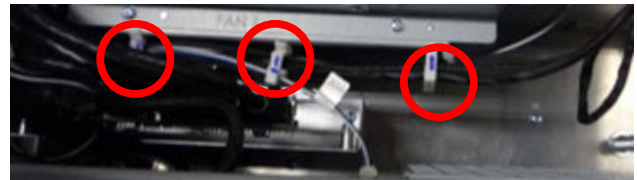
Open the big fastener to pull the FIP signal cables and Fan 9 & F10 wires.



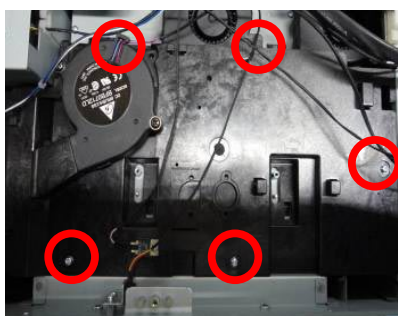
Loosen these 3 pcs screws and 2 pcs fixed screws on two sides. Torque: 1.25~1.75 kgf-cm



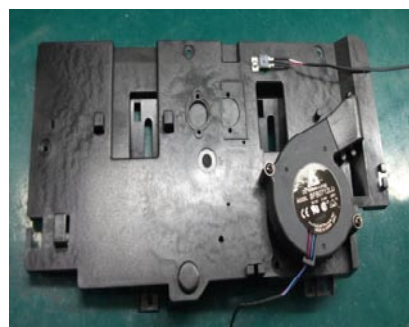
Loosen 1 left screw (Torque: 7~8 kgf-cm) and 1 middle screw (Torque: 5~6 kgf-cm) on the FIP bracket shield.



Loosen 3 fasteners from FIP bracket shield. And, then pull Fan 11 wire from lamp shield.



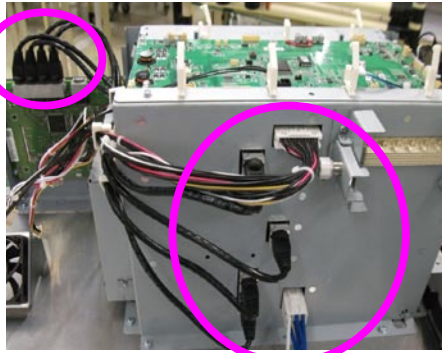
Loosen 5 pcs screws on the lamp shield. Torque: 5~6 kgf-cm



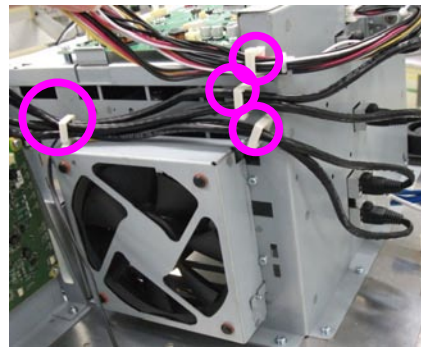
Take lamp shield off on the desk.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

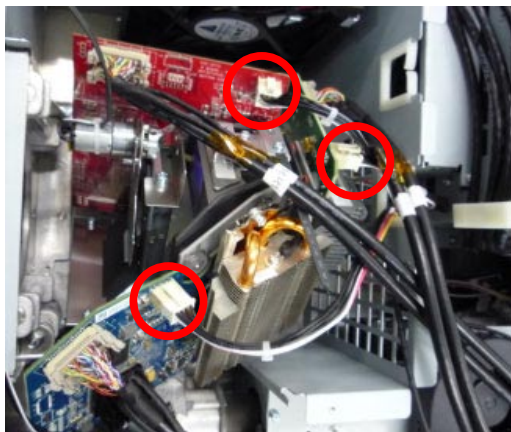
1-9 Fan 14 Module & Power Module & Control Module



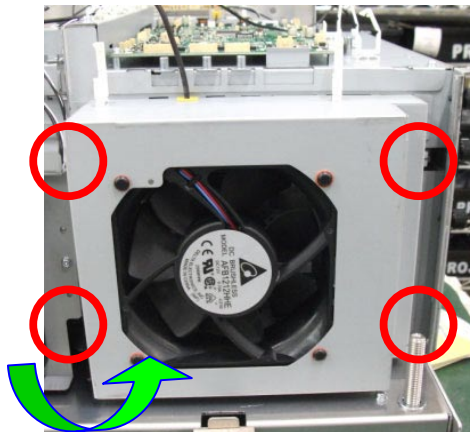
Unplug 3 connectors from control module.



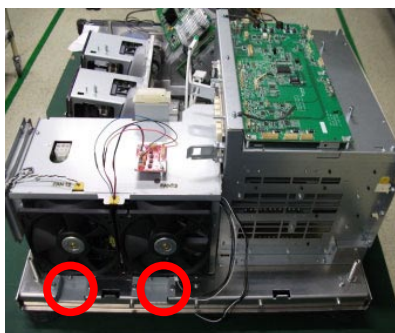
Loosen 4 fasteners to release all cables from control module.



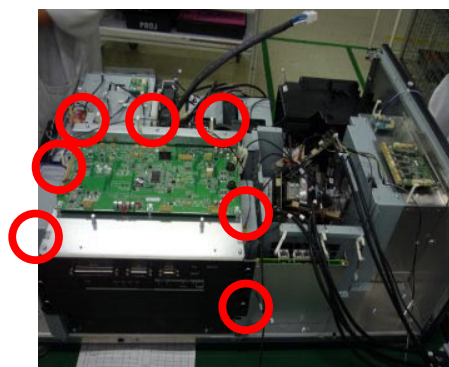
Unplug 3 connectors from R/G/B formatter board.



Loosen 4 screws and then take out Fan 14 module. Torque: 5~6 kgf-cm.



Loosen 2 screws on the power module. Torque: 7~8 kgf-cm



Loosen 7 screws on the control module. Then, take it off. Torque: 7~8 kgf-cm

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

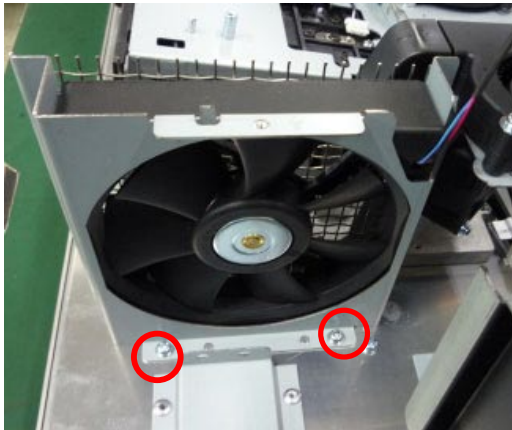
1-10 Power Module & Control Module & Fan 7 Module & Air Flow Guide Cover



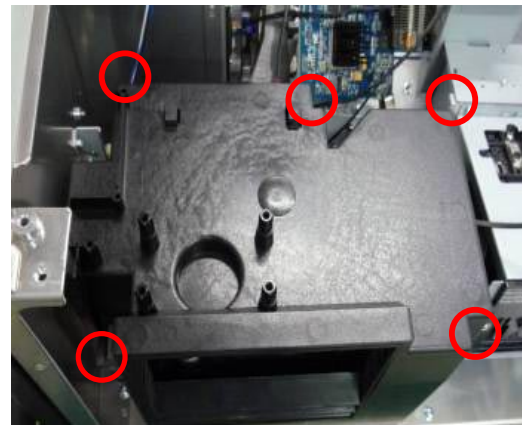
Take control module off on the desk.



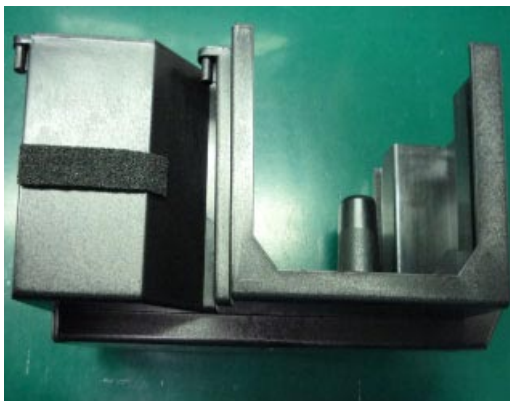
Unplug the 2 pcs lamps and ballasts cables to take power module off.



Loosen 2 screws on the Fan 7 module to take it off. Torque: 7~8 kgf-cm.



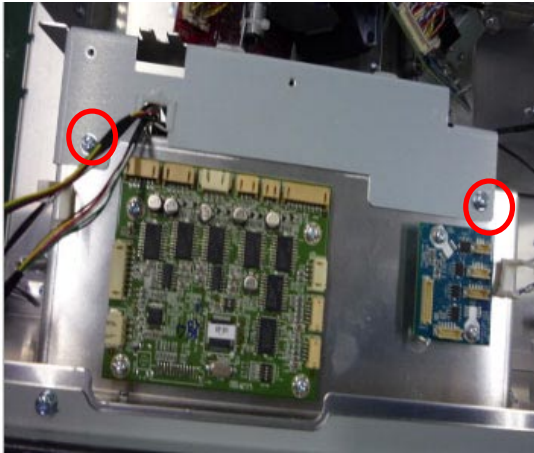
Loosen 5 screws on the air flow guide cover and then take it off. Torque: 7~8 kgf-cm.



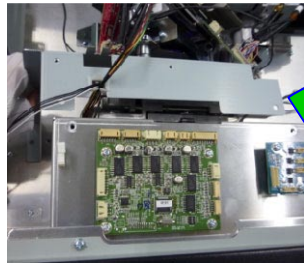
Take air flow guide cover off.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

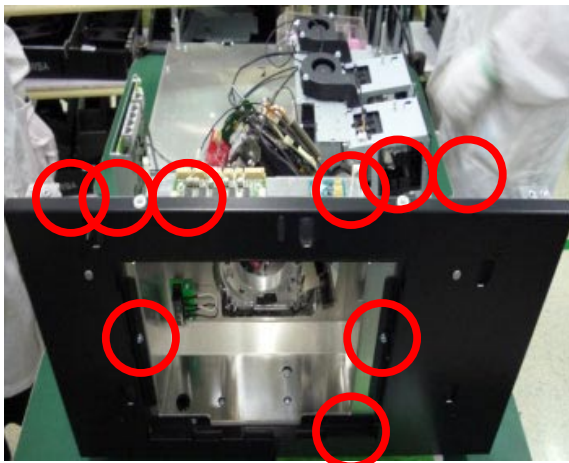
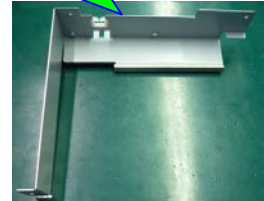
1-11 L Type Bracket & Front Outside Cover & Security Switch Module



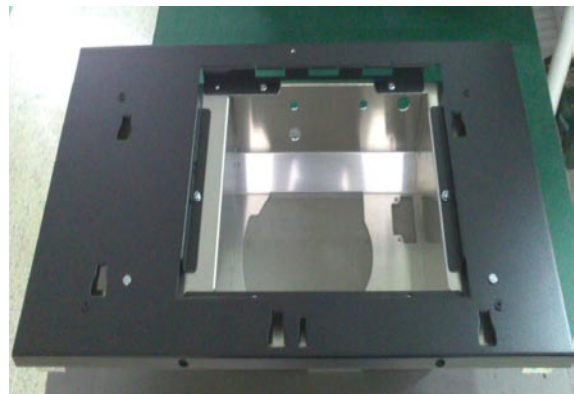
Loosen 2 screws on the L type bracket of Lens Mount. Torque: 7~8 kgf-cm.



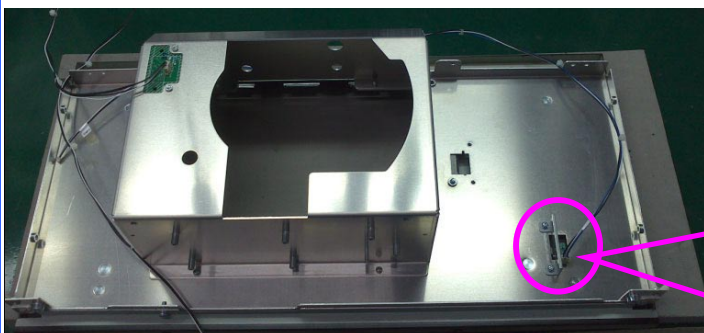
Take the L type bracket off.



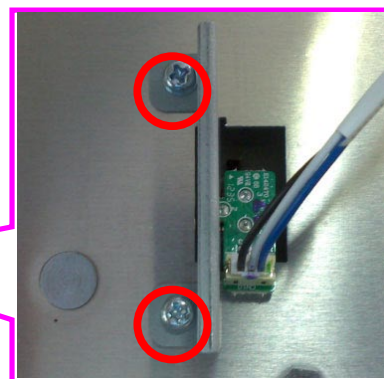
Loosen 9 screws on the front outside cover. Torque: 7~8 kgf-cm.



Take the front outside cover off and put it on the desk.

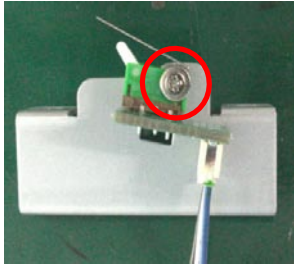


Loosen 2 screws on the front outside cover to take security switch module off. Torque: 5~6 kgf-cm.



KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

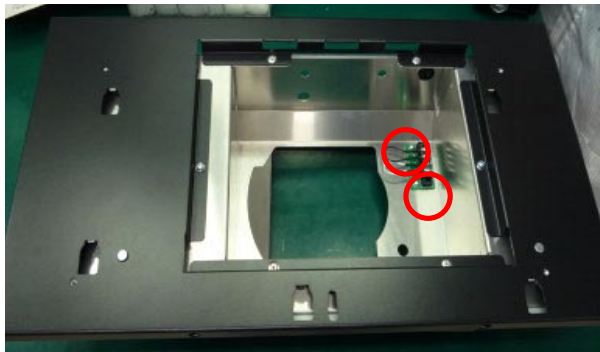
1-12 Security Switch & Interlock Board



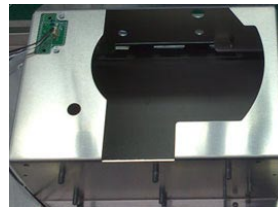
Loosen 1 screw on the security switch module to take it off. Torque: 1.5~2 kgf-cm.



Take security switch off to put on the desk.



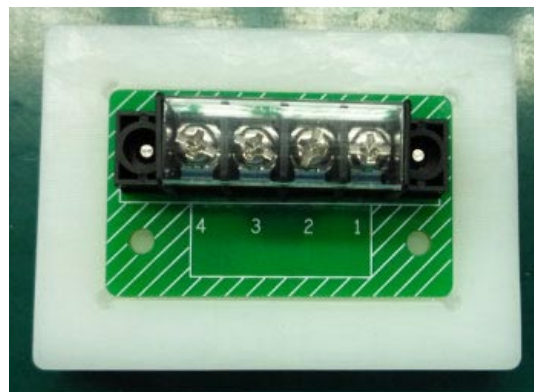
Loosen 2 screws on the front outside cover to take interlock board off. Torque: 1.5~2 kgf-cm.



Take interlock board off to put on the desk.



Loosen 4 screws on the interlock board to take it off. Torque: 5~6 kgf-cm.



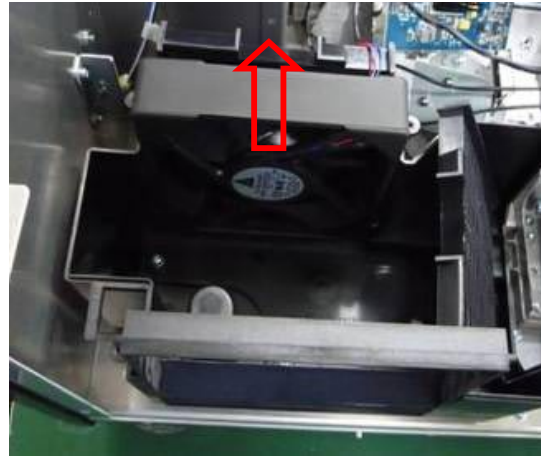
Put the interlock board on the desk.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

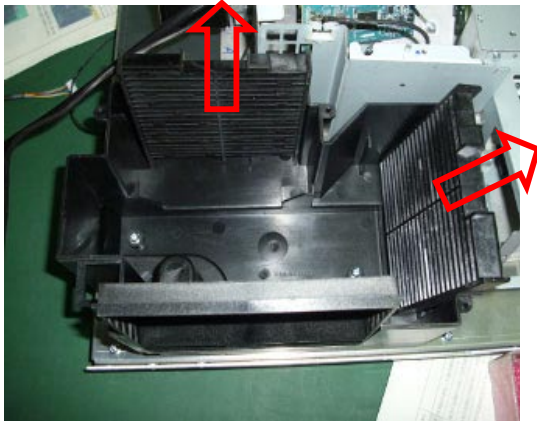
1-13 Fan 6 & Fan 8 & Air Window & Air Flow Guide



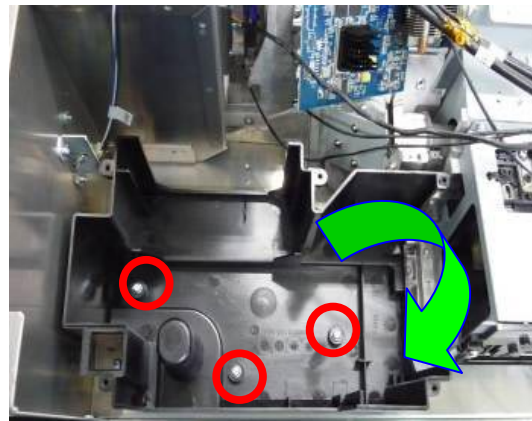
Pull the Fan 8 from air flow guide.



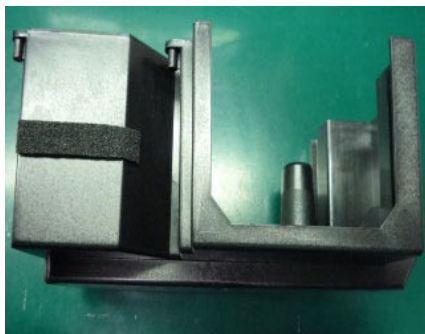
Pull the Fan 6 from air flow guide.



Pull the Fan 8 and Fan 6 air window from air flow guide.



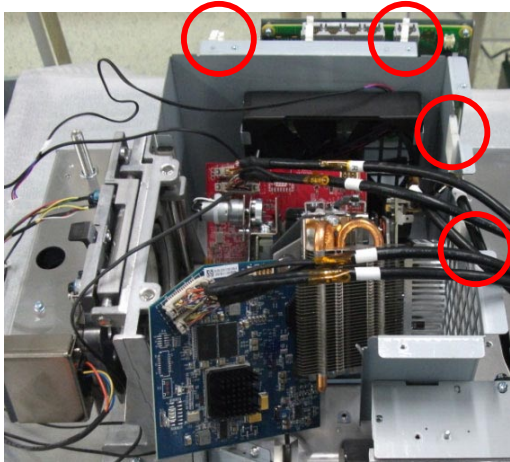
Loosen 3 screws on the air flow guide to take it off. Torque: 7~8 kgf-cm.



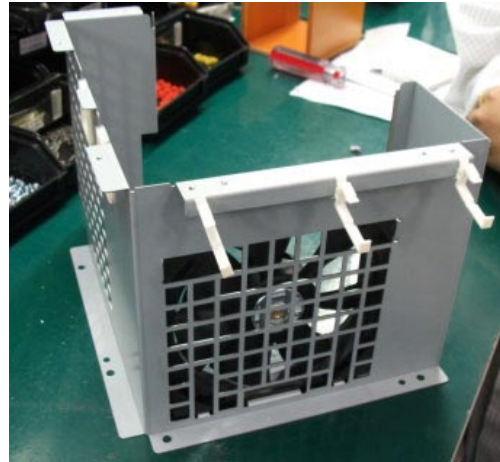
Put the air flow guide on the desk.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

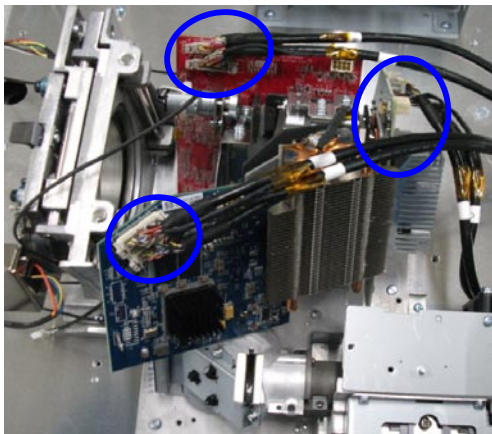
1-14 FIP Bracket Shield & R/G/B Signal Connector Module



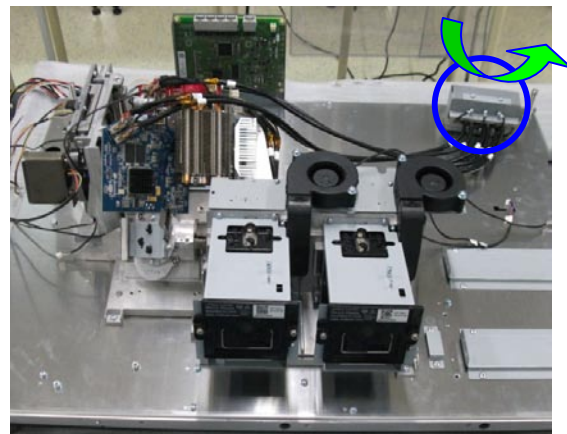
Loosen 4 screws on FIP bracket shield to take it off. Torque: 7~8 kgf-cm



Put FIP bracket shield on the desk.



Unplug R/G/B signal cables from R/G/B formatter board.



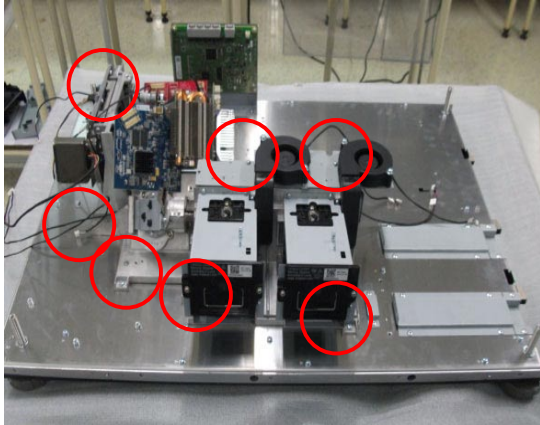
Take the R/G/B signal connector module off.



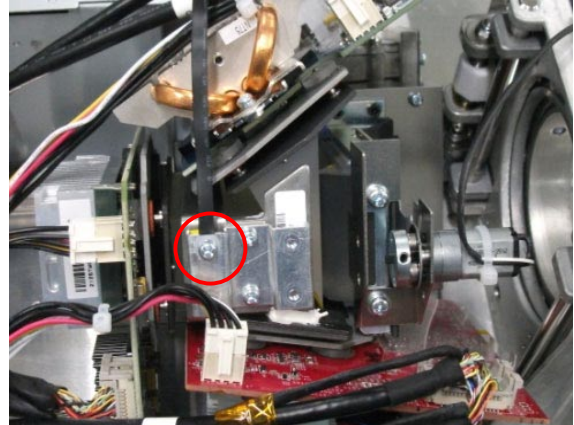
Put R/G/B signal connector module on the desk.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

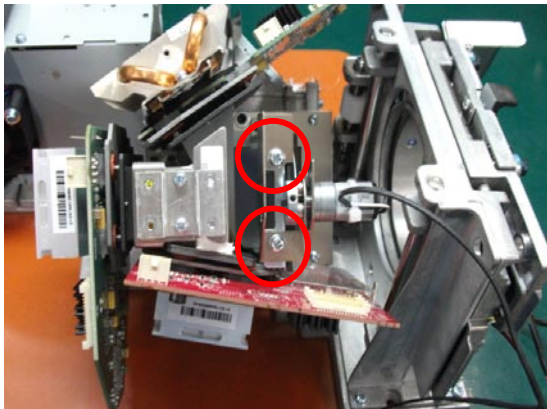
1-15 Light Engine & Shutter & Fan 9 / Fan 10 Module & Lamp Module & Lens Mount



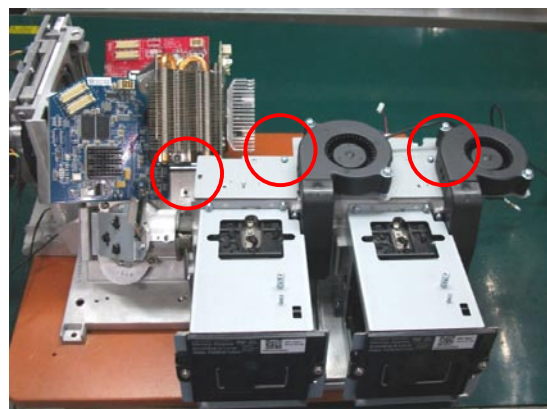
Loosen 7 screws on the bottom of light engine module. Torque: 7~8 kgf-cm



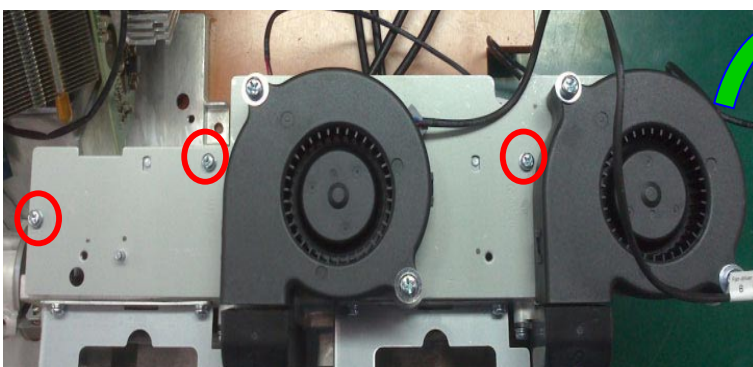
Loosen 1 screw on the FIP to take off the buckle. Torque: 5~6 kgf-cm



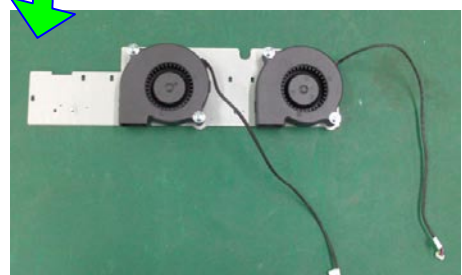
Loosen 2 screws on the FIP to take off the shutter. Torque: 6~7 kgf-cm



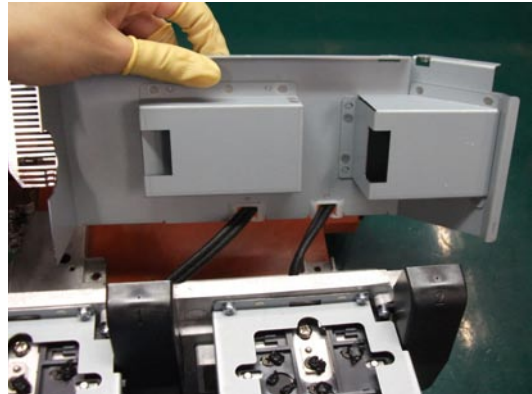
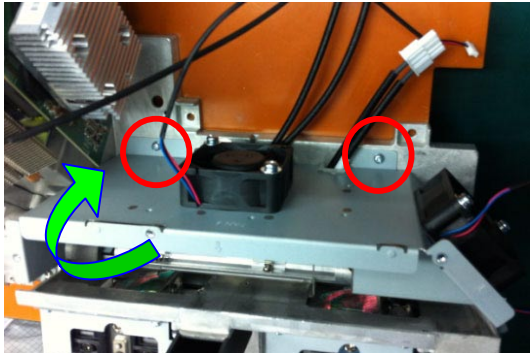
Loosen 3 screws on the Lamp shield to take off the Fan 9 & 10 module. Torque: 5~6 kgf-cm



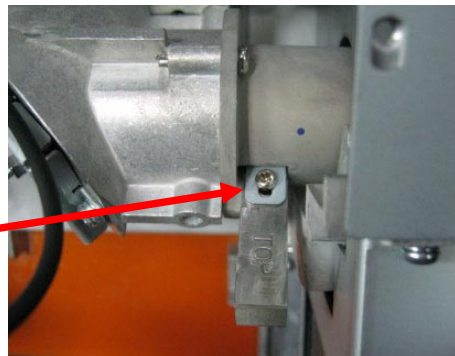
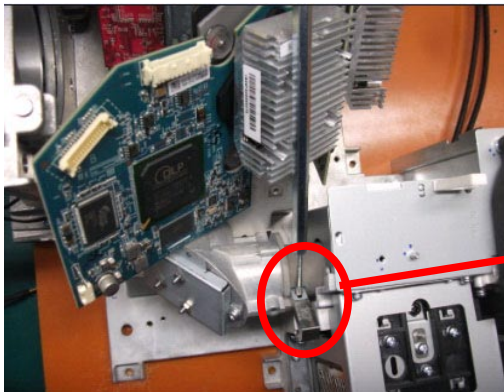
Loosen 3 screws on the Lamp shield to take off the Fan 9 & 10 module. Torque: 5~6 kgf-cm



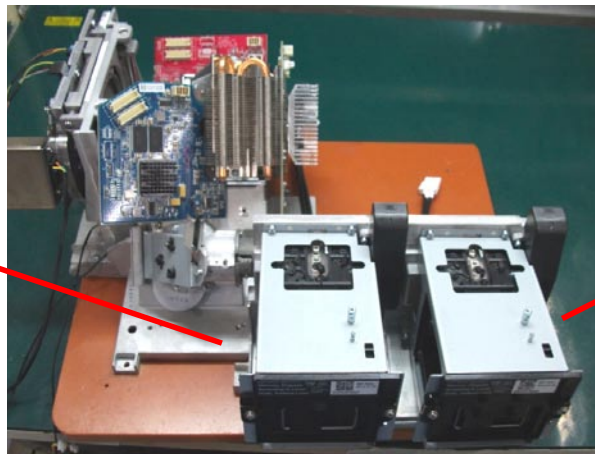
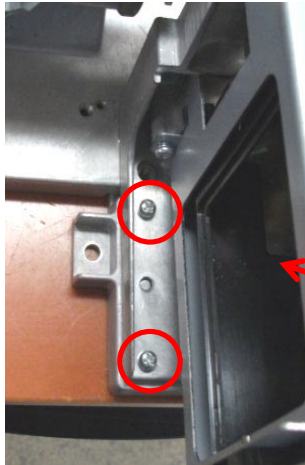
KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)



Loosen 2 screws on the Fan 4 & 5 module. And, then take off the Fan 4 & 5 module.
Torque: 5~6 kgf-cm

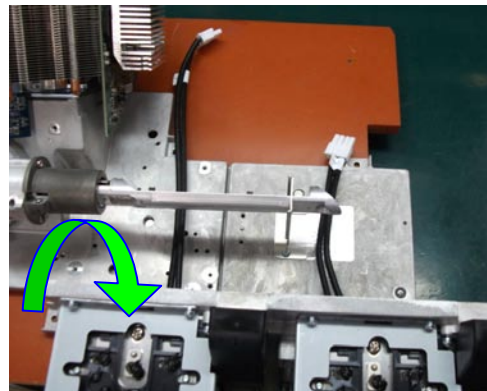
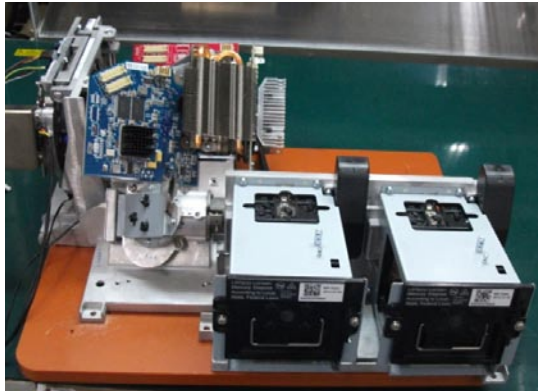


Loosen 1 screw on the FIP lightpipe. Torque: 2~3 kgf-cm.

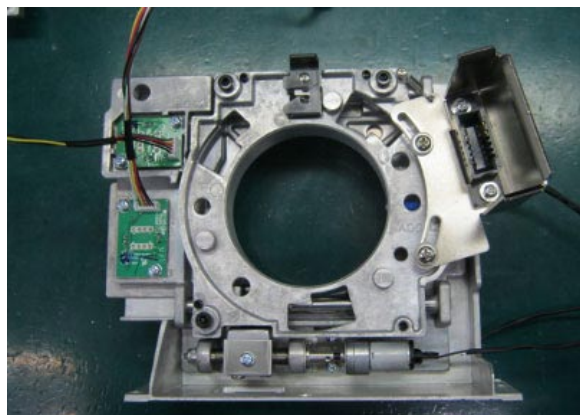
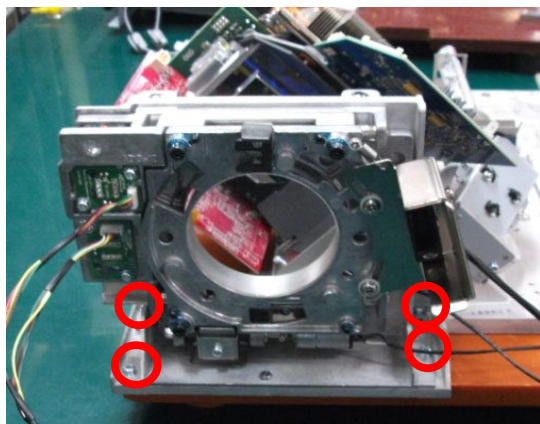


Loosen 4 screws on the Lamp module. Torque: 5~6 kgf-cm

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)



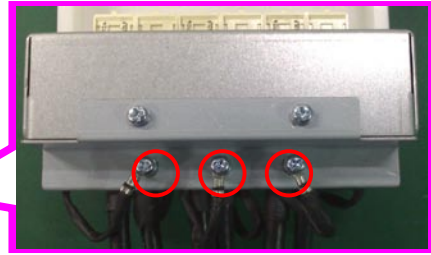
Take off the Lamp module.



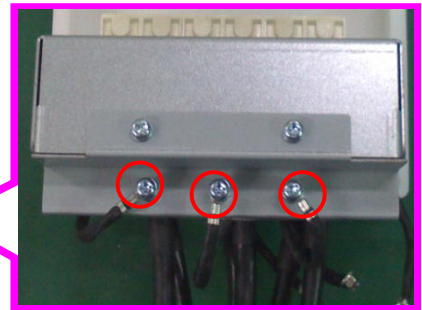
Loosen 4 screws on the Lens Mount to take it off. Torque: 7~8 kgf-cm.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

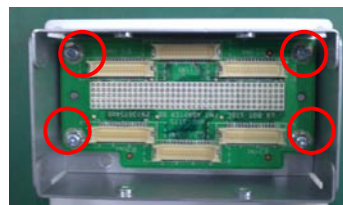
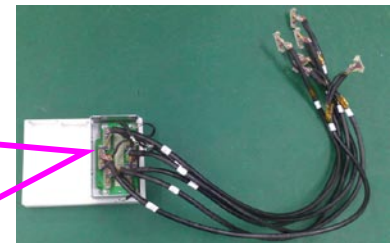
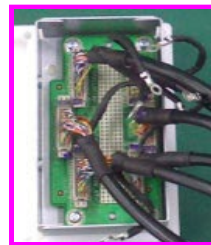
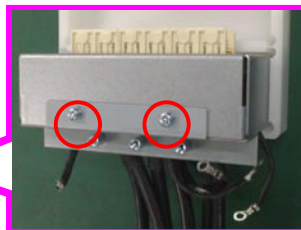
1-16 R/G/B Signal Connector Module & FMT Adapter Board



Put R/G/B signal connector module on the desk. Loosen 3 grounding screws on signal connector module, and then release R2/G2/B2 cable. Torque: 5~6 kgf-cm



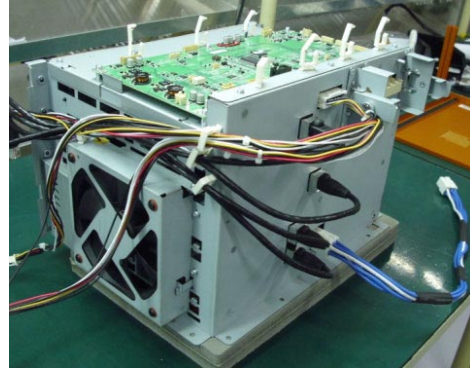
Reverse the R/G/B signal connector module on the desk. Loosen 3 grounding screws on signal connector module, and then release R1/G1/B1 cable. Torque: 5~6 kgf-cm



Loosen 2 screws on signal connector module, and then take the shield off. And, unplug 6 pcs signal cables from FMT adapter board. Loosen 4 screws on FMT adapter board and take it off. Torque: 5~6 kgf-cm.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

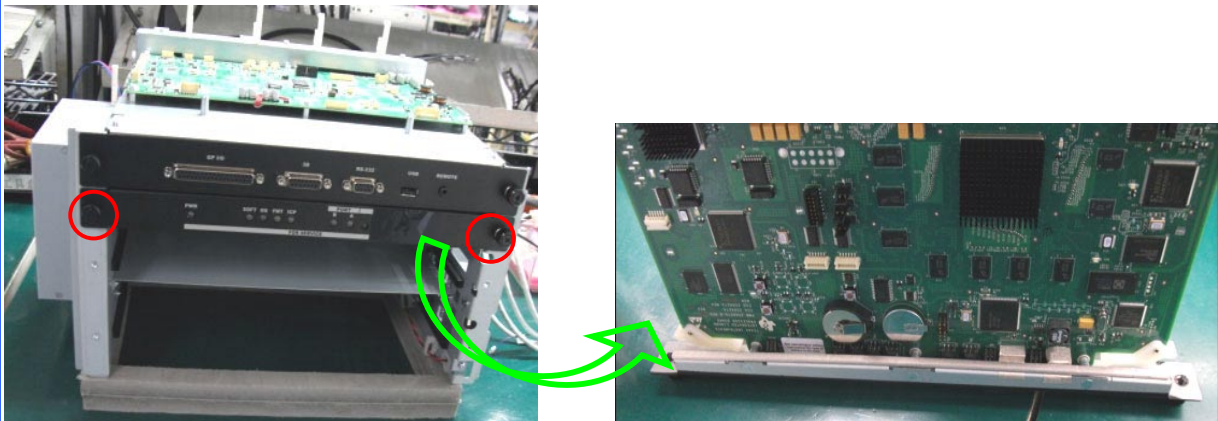
1-17 ICP Board



Put control module on the desk to strip down.

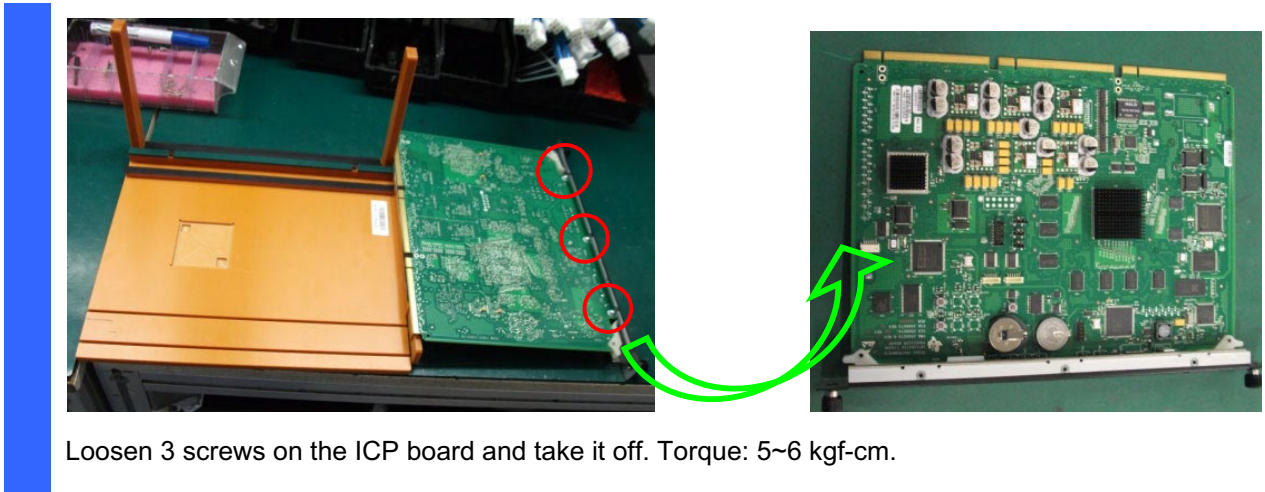


Unplug 6 pcs cables from control module. Loosen 2 screws on third level of control module and take it off. Torque: 1.25~1.75 kgf-cm.



Loosen 2 screws on second level of control module and take it off. Torque: 1.25~1.75 kgf-cm.

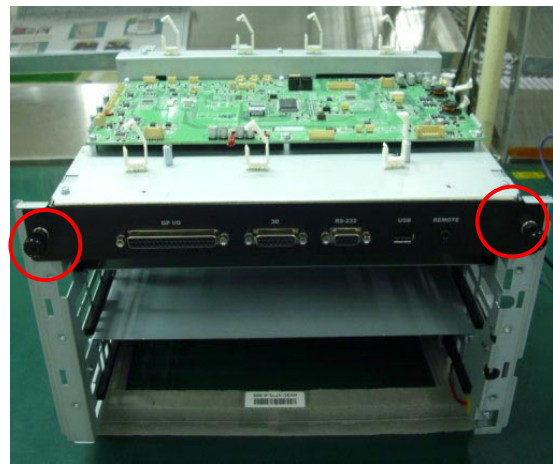
KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)



Loosen 3 screws on the ICP board and take it off. Torque: 5~6 kgf-cm.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

1-18 CPU Module



Loosen 2 screws on first level of control module and take it off. Torque: 1.25~1.75 kgf-cm.



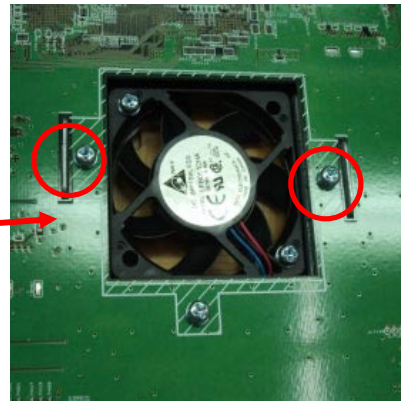
Loosen 6 inner hexagonal screws on the CPU module to take off shield cover. Torque: 5~6 kgf-cm.



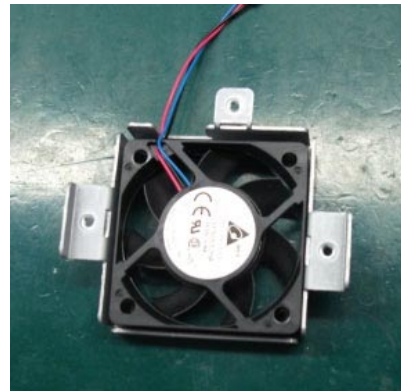
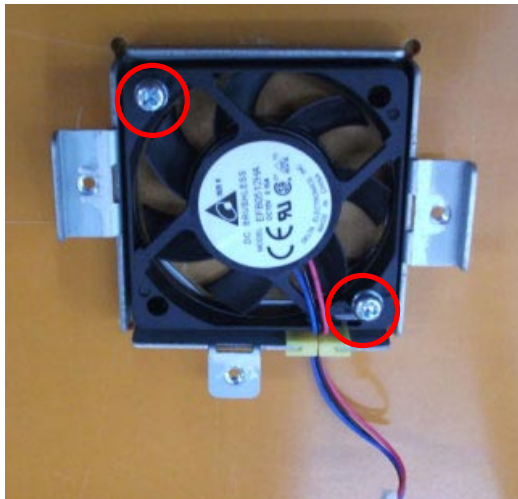
Loosen 3 screws on the CPU board. And, then reverse the CPU board. Torque: 5~6 kgf-cm.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

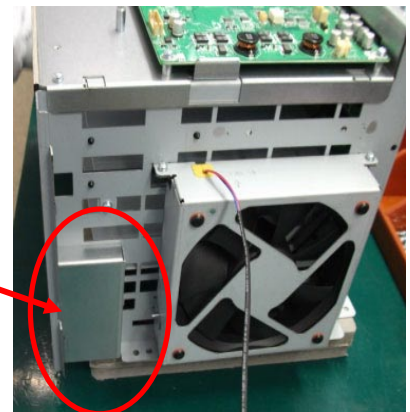
1-19 CPU Board & Fan 17 Module



Loosen 3 screws on the CPU board. And, then take the Fan 17 off. Torque: 5~6 kgf-cm.



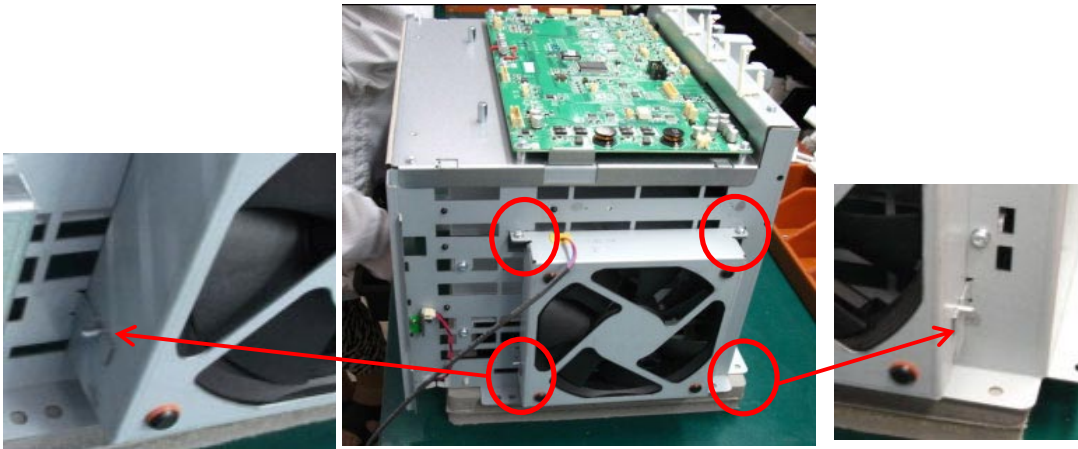
Loosen 2 screws on the Fan 17 module to take Fan 17 off. Torque: 5~6 kgf-cm.



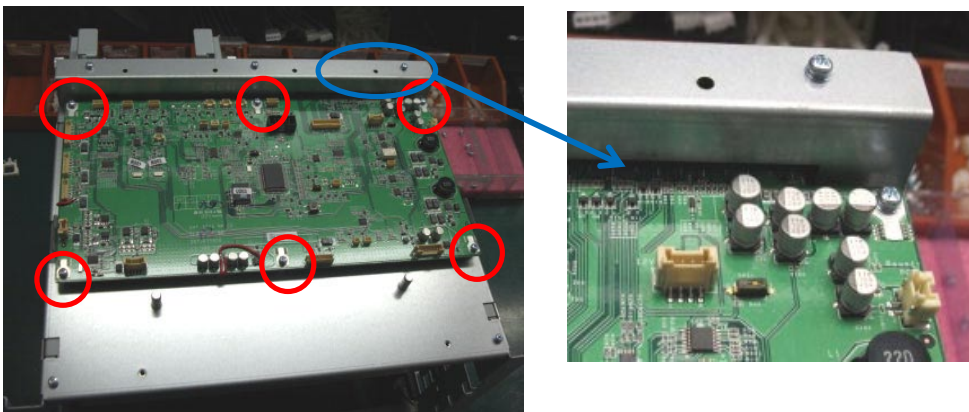
Loosen 1 screw on the control module. And, then release 3 pin hooks to take shield cover off. Torque: 5~6 kgf-cm.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

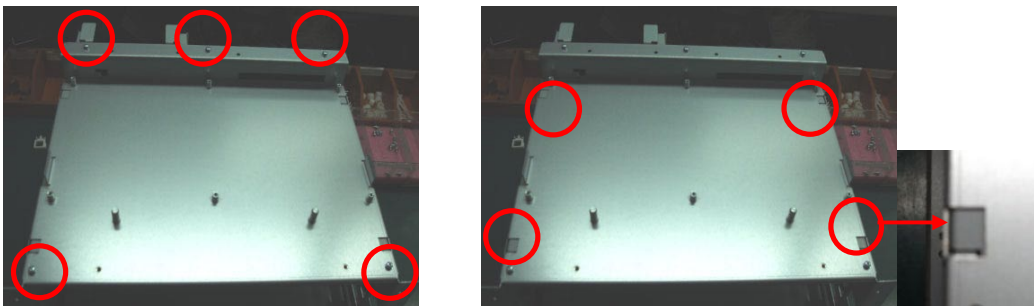
1-20 Fan 16 Module & Slave UC Board



Loosen 2 screws on the Fan 16 module and release 2 pin hooks to take off the Fan 16 module. Torque: 5~6 kgf-cm.



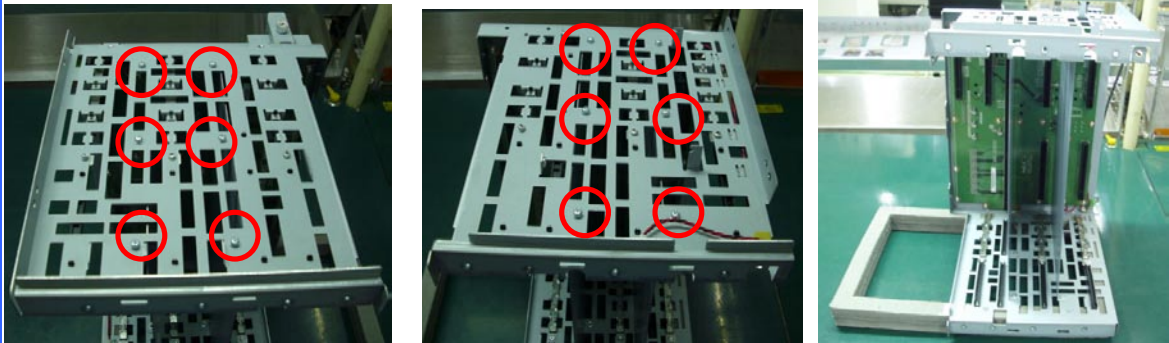
Loosen 6 screws on Slave UC Board. Then, take it off from mother board (Board To Board). Torque: 5~6 kgf-cm



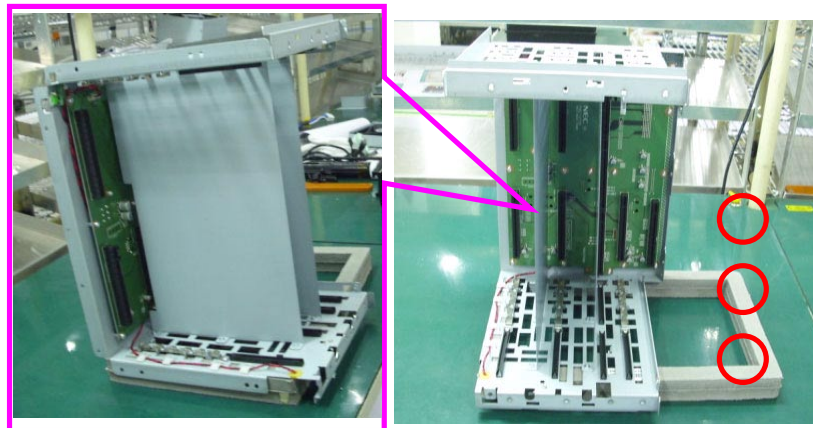
Loosen 5 screws on the top cover of control module and release 4 pin hooks to take it off. Torque: 5~6 kgf-cm

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

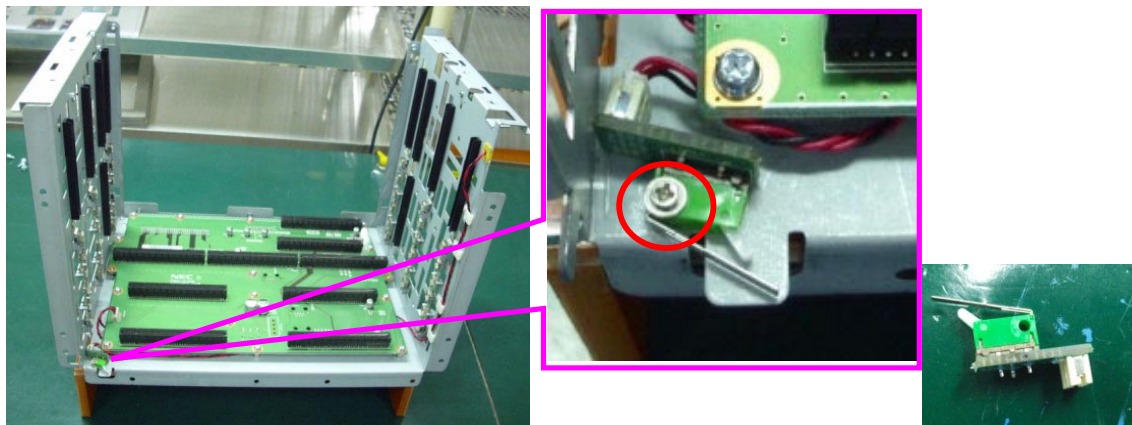
1-21 Control Module Plate & Security Switch



Loosen 12 screws on two sides of control module. Then, take off 12 screws from control module.
Torque: 5~6 kgf-cm



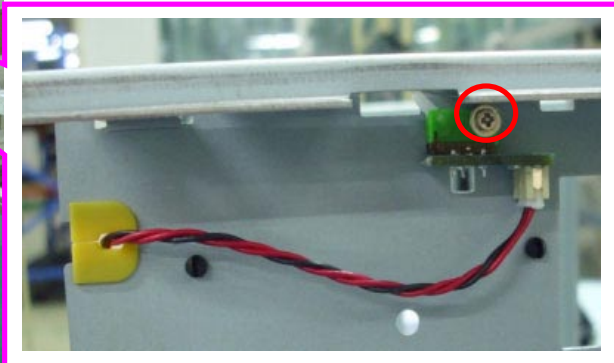
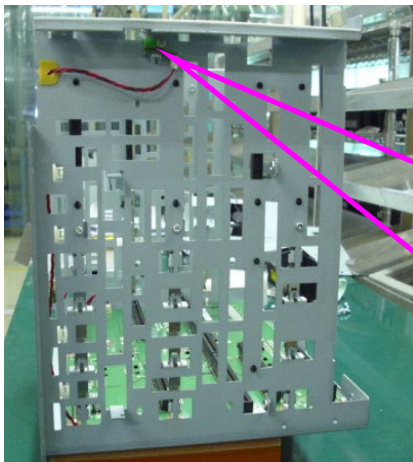
Take off two plates from control module.



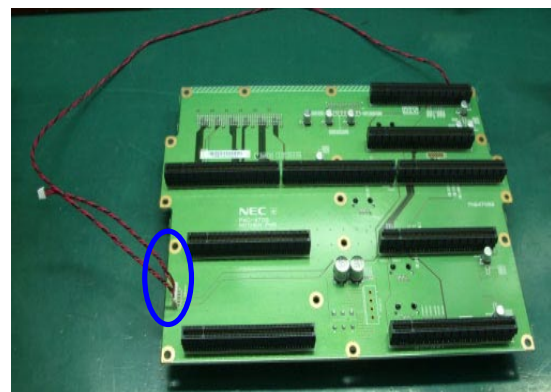
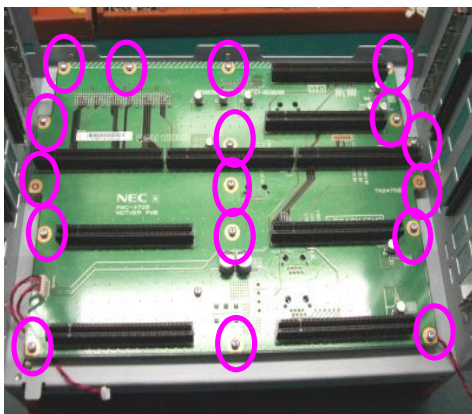
Loosen 1 screw on control module. Then, take off the security switch from control module.
Torque: 1.5~2 kgf-cm

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

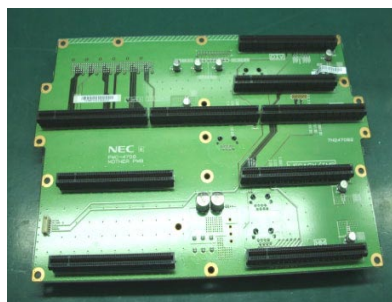
1-22 Security Switch & Mother Board



Loosen 1 screw on control module. Then, take off the security switch from control module.
Torque: 1.5~2 kgf-cm



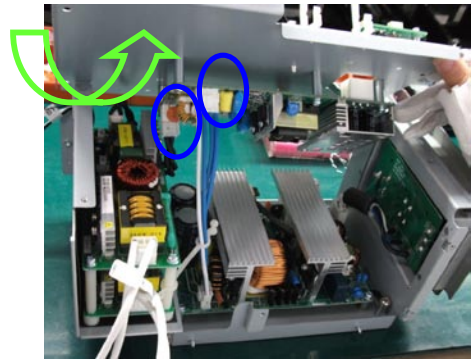
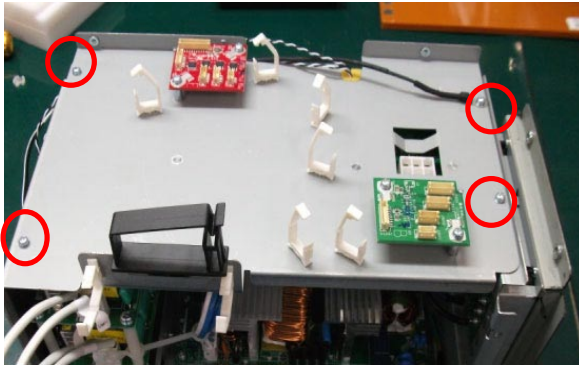
Loosen 16 screws on mother board. Then, take off the mother board from control module.
And, then unplug 1 pc connector from mother board. Torque: 5~6 kgf-cm



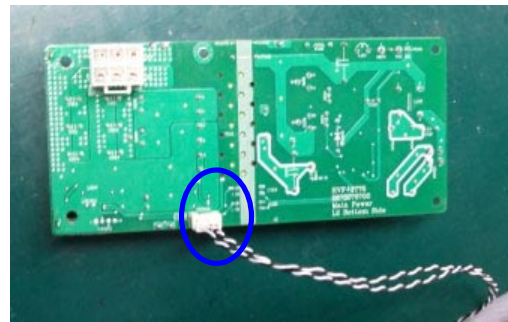
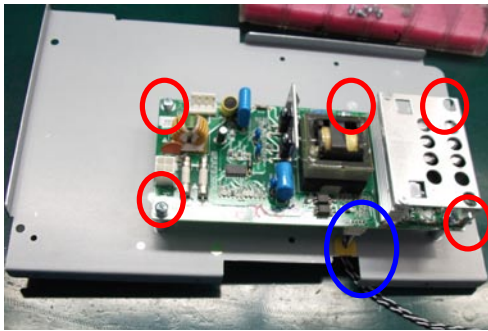
Then, take off mother board.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

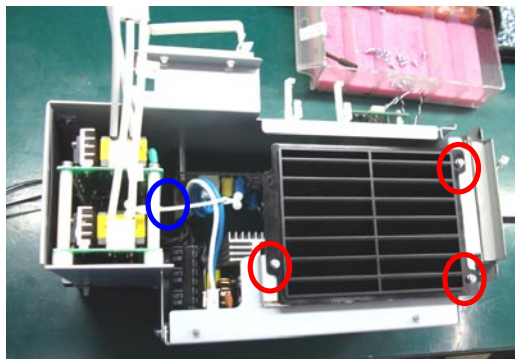
1-23 Main Power Board & Air Window



Loosen 4 screws on power module. Then, unplug 2 pcs connectors from main power board to take off the top cover of power module. Torque: 5~6 kgf-cm



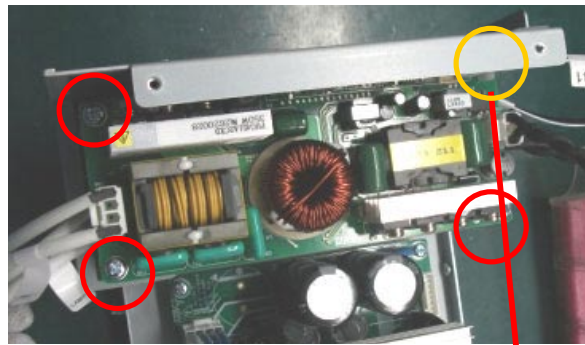
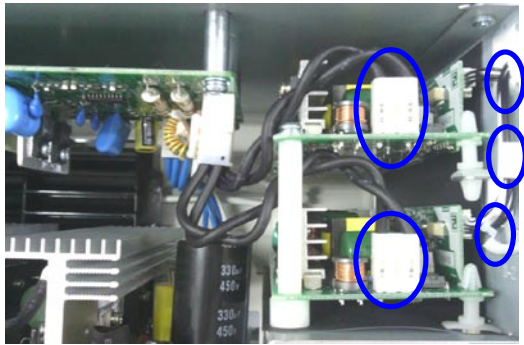
Loosen 5 screws on main power board. Then, take off the main power board. And, then unplug 1 pc connector from main power board. Torque: 5~6 kgf-cm.



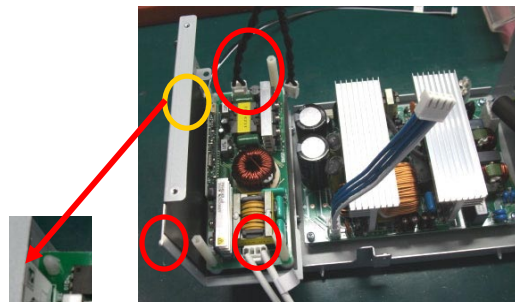
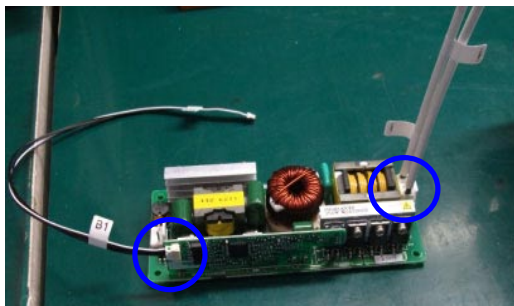
Loosen 3 screws on air window. And, open the 1 buckle. Then, take off air window. Torque: 5~6 kgf-cm.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

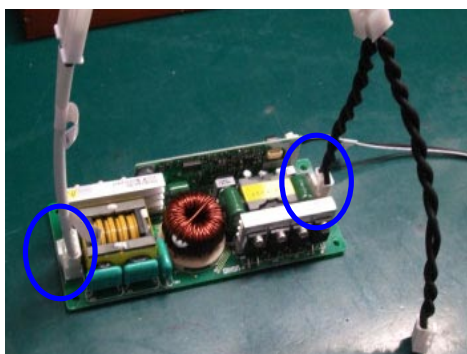
1-24 Ballast



Unplug 2 connectors and 3 fasteners from two ballasts. Then, Loosen 3 screws and 1 short pin on top ballast to take off it. Torque: 7~8 kgf-cm.



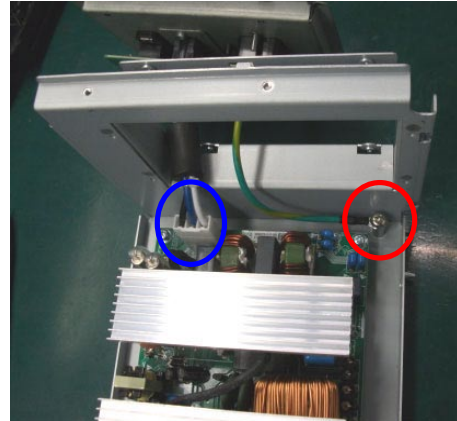
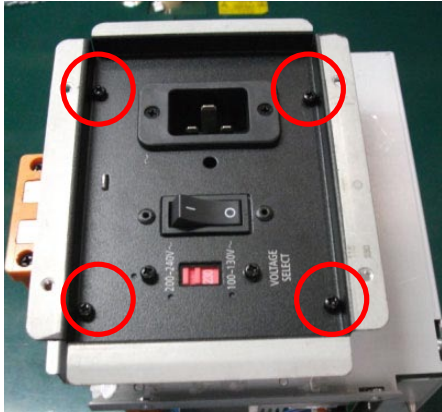
Unplug 2 pcs connectors from top ballast. And, loosen 3 tall plastic pins and 1 short plastic pin bottom ballast. Then, take off it. Torque: 3~4 kgf-cm.



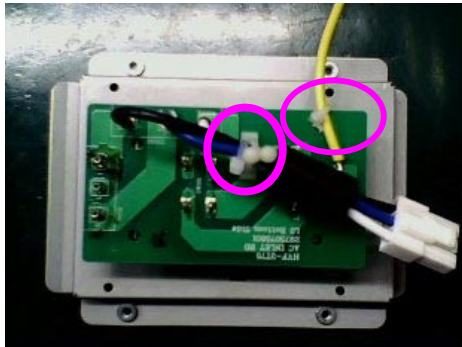
Unplug 2 pcs connectors from bottom ballast.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

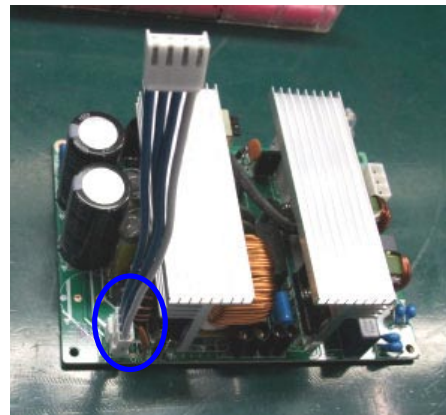
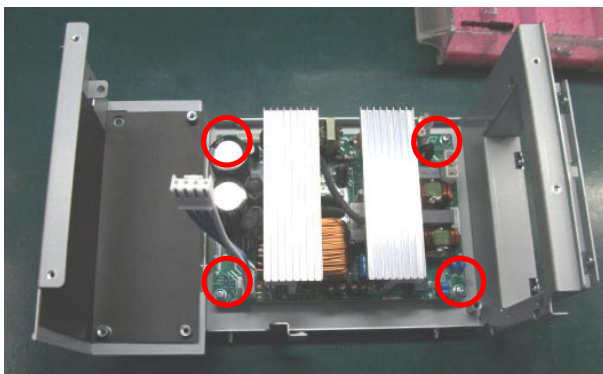
1-25 AC Inlet Board & Power Board



Loosen 4 screws on AC inlet board (Torque: 5~6 kgf-cm.). And, unplug 1 pc connector and loosen 1 screw from AC inlet board (Torque: 9~10 kgf-cm.). Then, take off the AC inlet board.



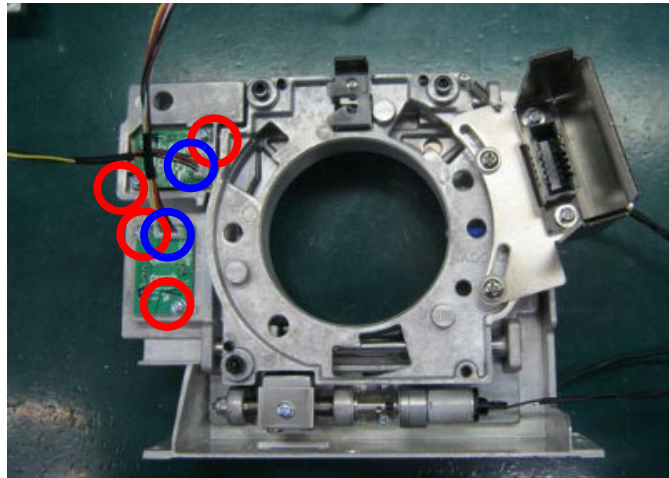
Take off the AC inlet board. Unplug 2 pcs fasteners from AC inlet board.



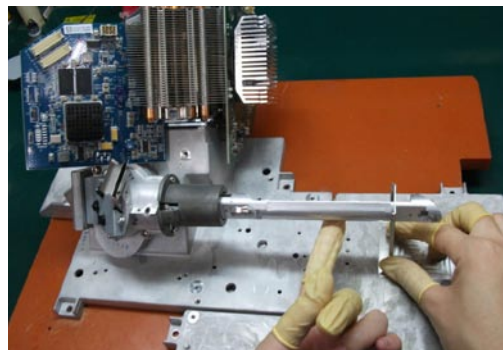
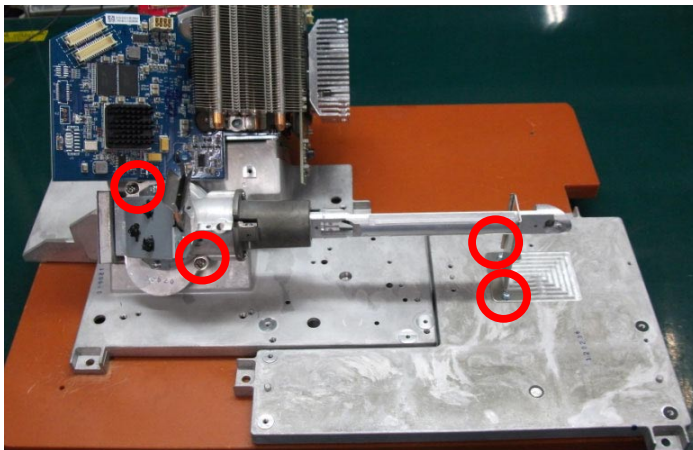
Loosen 4 screws on power board and unplug the connector. And, take power board off on the desk. Torque: 5~6 kgf-cm.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

1-26 Horizontal & Vertical Sensor Board & Lightpipe

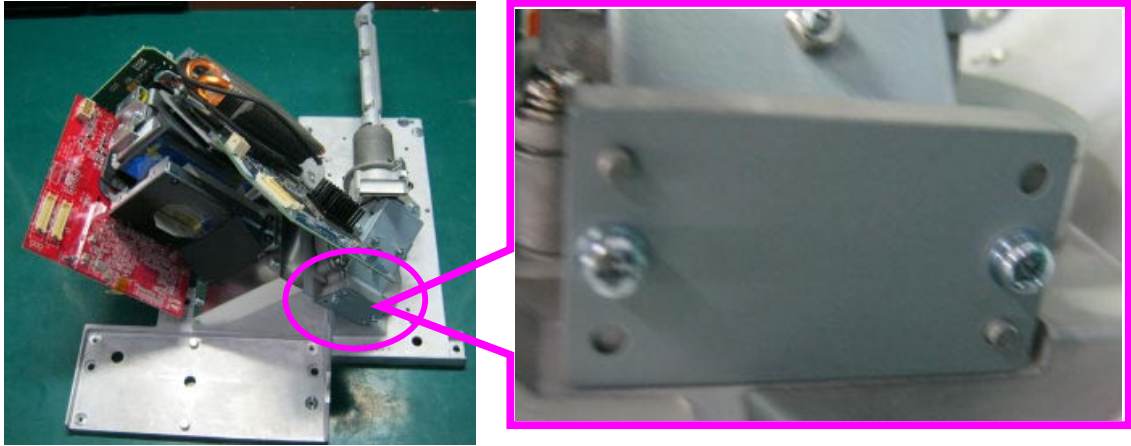


Loosen 4 screws on Horizontal & Vertical sensor board and unplug the 2 pcs connectors. And, take them off. Torque: 5~6 kgf-cm.

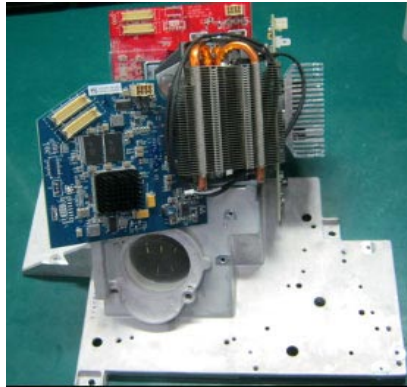


Loosen 2 screws on lightpipe (Torque: 7~8 kgf-cm.). And, loosen 2 screws on lightpipe bracket (Torque: 5~6 kgf-cm.).

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)



Loosen 2 screws on lightpipe (Torque: 5~6 kgf-cm.).



Take lightpipe off.

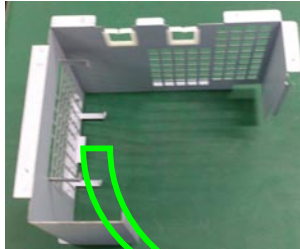
KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

1-27 Fan 1 & Fan 2

1



2



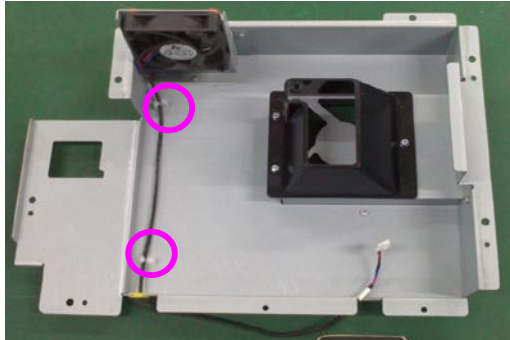
3



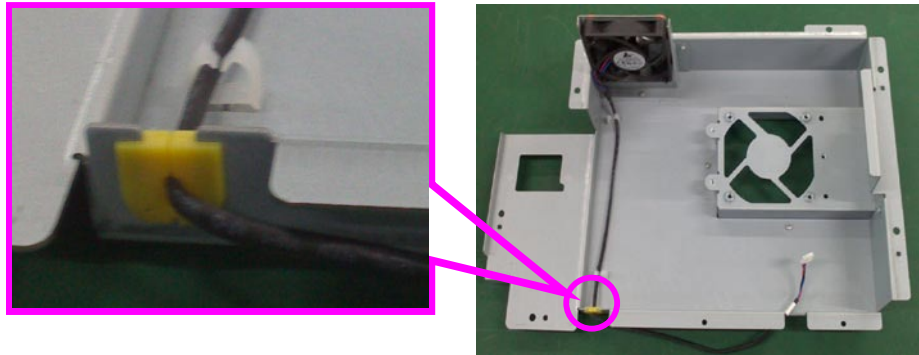
Release Fan1 module from FIP shield fence. Finally, take off the Fan1 from fence.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

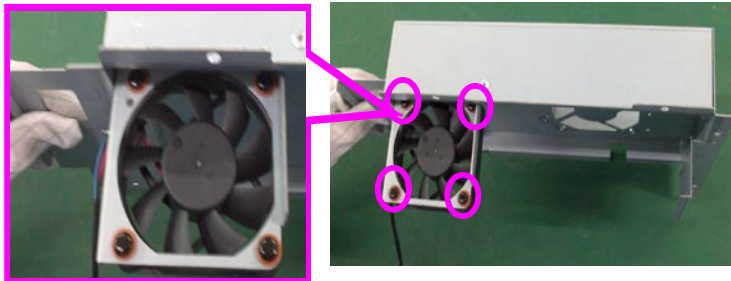
1



2



3



4

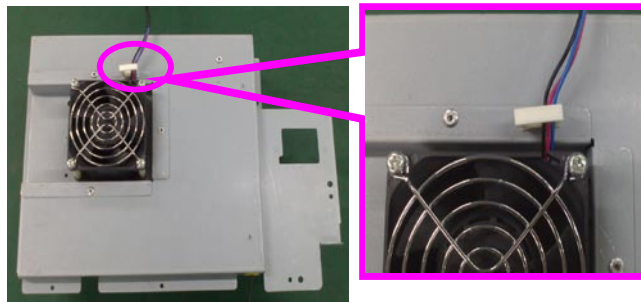


Unplug the 3 pcs fasteners and loosen 4 plastic screws in Fan 2 module, and take off it.

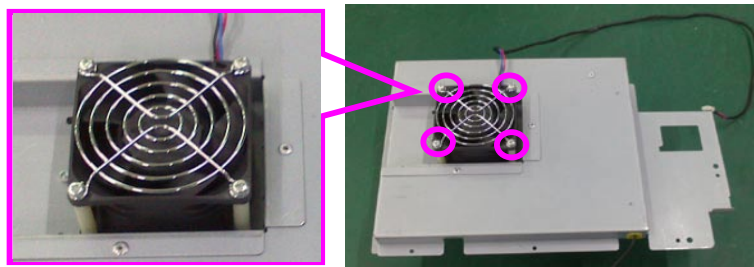
KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

1-28 Fan 3 & Fan 4 & Fan 5

1

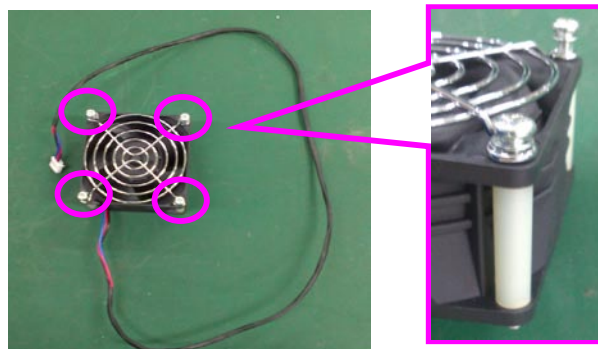


2



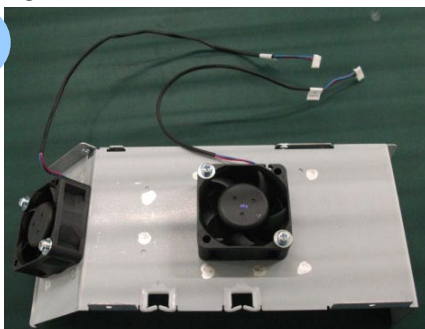
7-8 kgf-cm

3

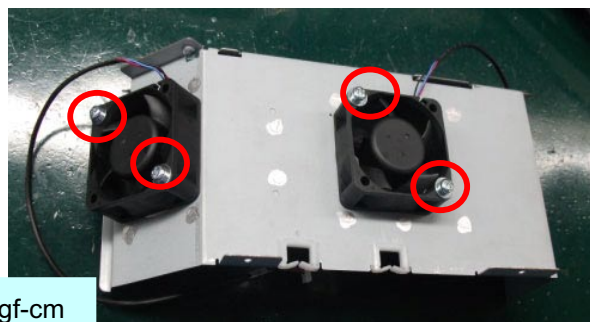


Unplug the fastener and loosen 4 screws in Fan 3 module, and take off it.

1



2



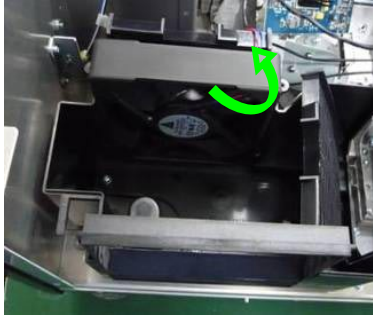
7-8 kgf-cm

Loosen the 4 pcs screws on the Fan 4 & 5 module, and then take Fan 4 & Fan 5 off.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

1-29 Fan 6 & Fan 7 & Fan 8

1



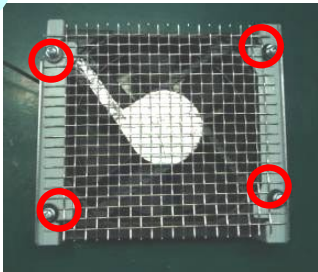
2



Pull the Fan 6 from air flow guide module. Finally, take off the Fan 6.

1

4-5 kgf-cm



2



3



Please loosen 4 screws in the Fan7 module, and then remove mesh. Finally, take the Fan7 off.

1



2



3



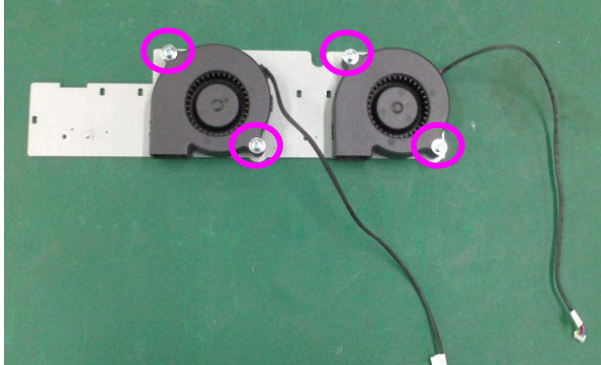
Pull the Fan 8 from air flow guide module. Finally, take off the Fan 8.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

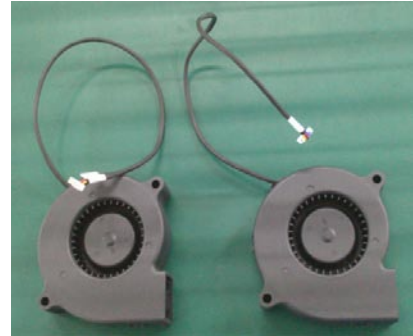
1-30 Fan9 & Fan 10 & Fan 11 & Fan 12 & Fan 13 & Fan 14 & Fan 15 & Fan 17

1

7-8 kgf-cm

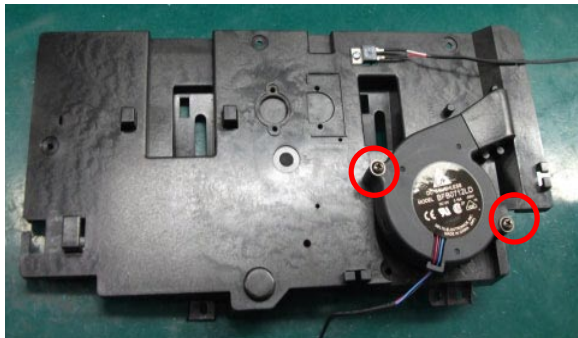


2



Please loosen 4 screws on the Fan 9 &10 module to remove Fan 9 &10.

1



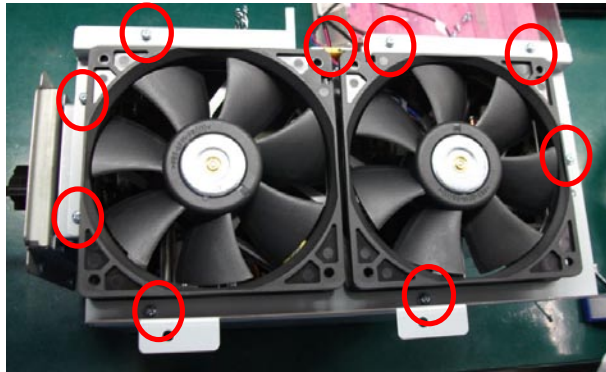
6-8 kgf-cm



Please loosen 2 screws on the Fan11 module to remove Fan11.

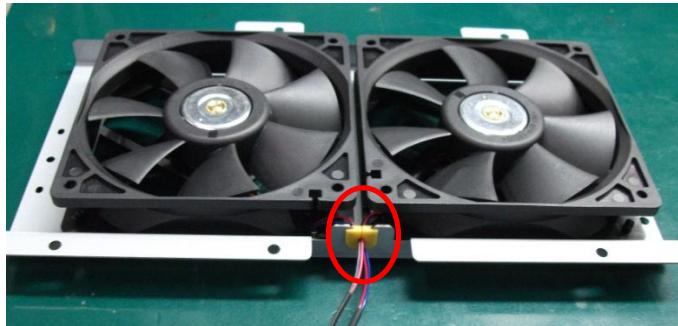
KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

1

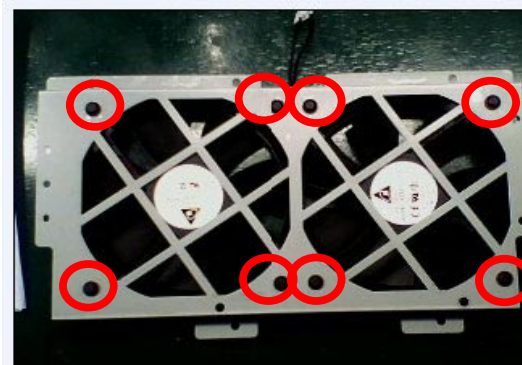


5-6 kgf-cm

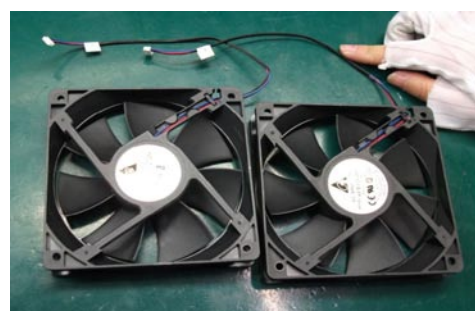
2



3



4



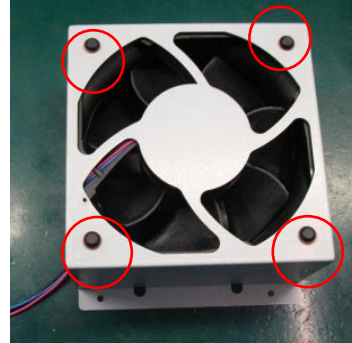
Loosen 8 pcs screws on the Fan 12 &13 module. And, release the wire and pull out 8 plastic screws on the Fan 12 &13 module to take off Fan 12 & 13.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

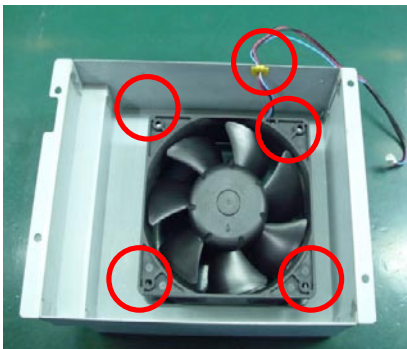
1



2



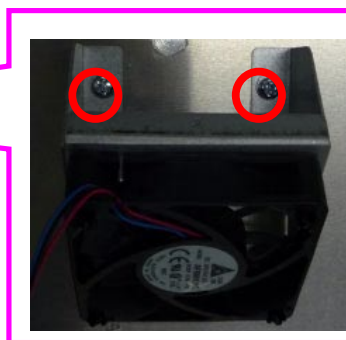
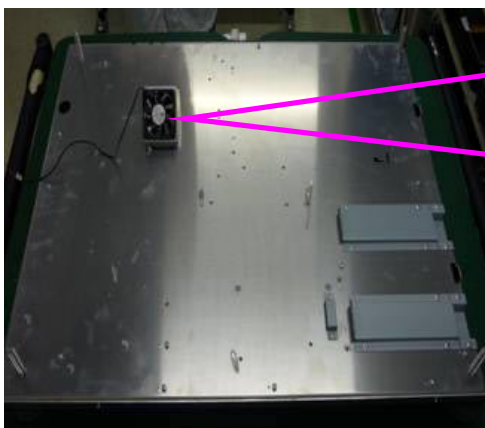
3



4



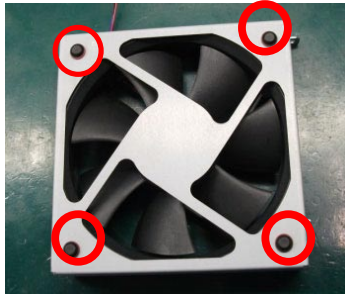
Please put Fan 14 module on the desk. And, loosen 4 plastic screws on the Fan14 module. Then, pull out 4 plastic screws and 1 pc wire to take off the Fan 14.



Loosen 2 screws on the Fan15 module. Then, take off the Fan 15 module. Loosen 4 plastic screws on Fan 15 module to take out the Fan 15.

KEY PART REPLACEMENT (Method of disassembly/Photo taken from life)

1



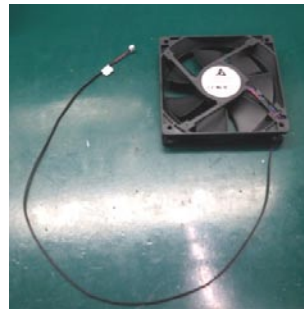
2



3



4



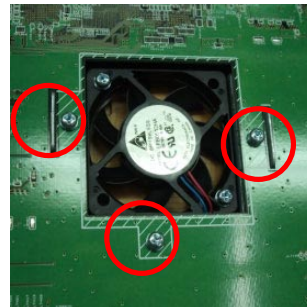
Loosen 4 pcs plastic screws on the Fan 16 module and then take off Fan16 from bracket.

1

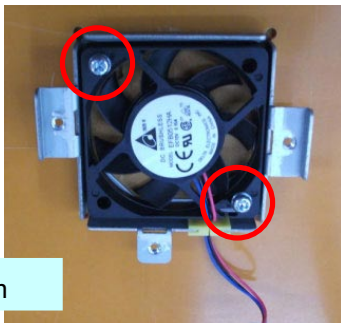


2

5-6 kgf-cm

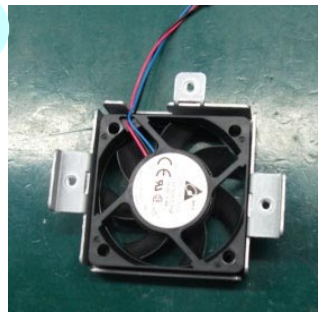


3



5-6 kgf-cm

4



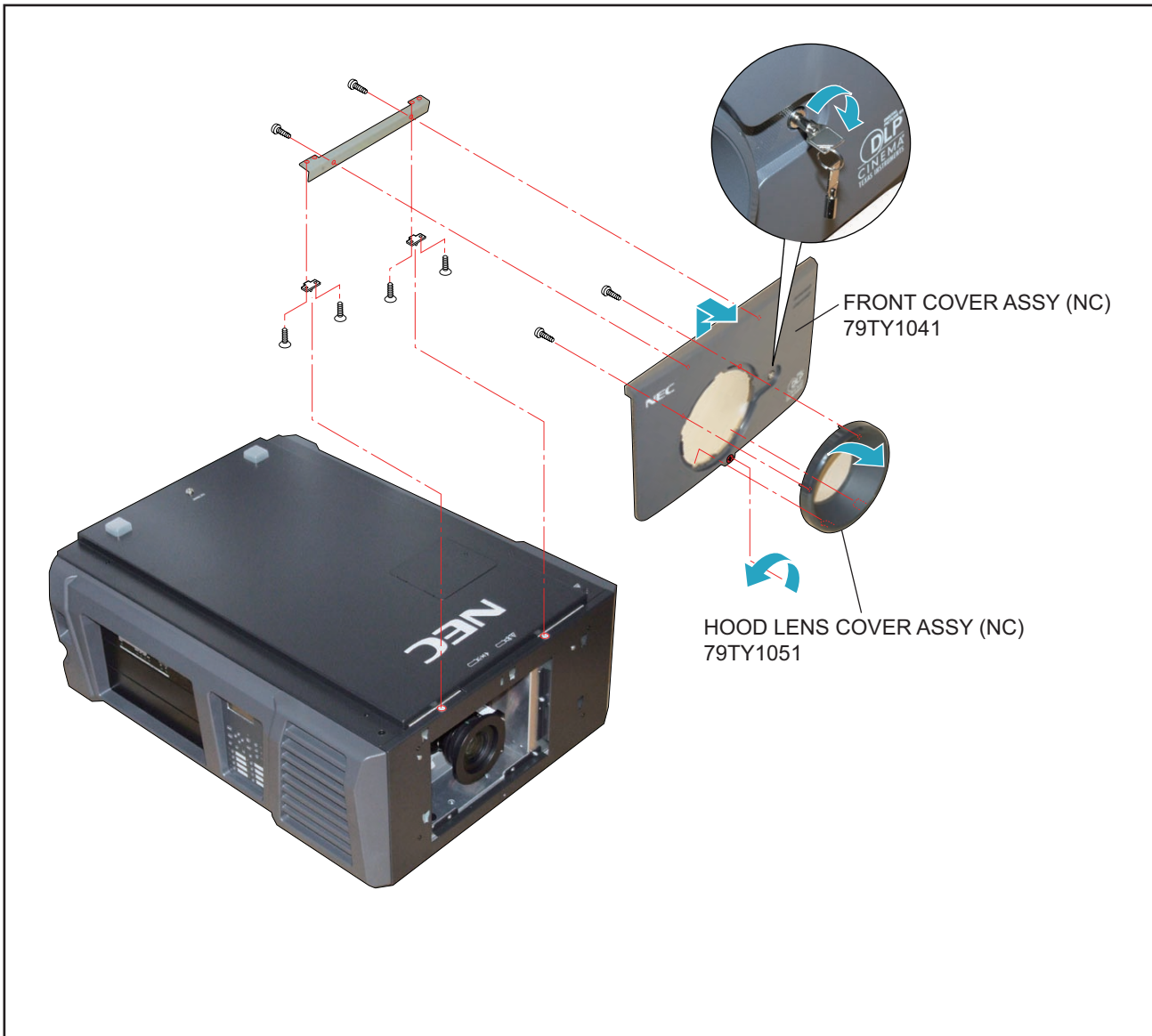
Please loosen 3 screws from CPU board to take off Fan17 module. Then, loosen 2 screws from Fan17 module to take off the Fan17.

1. Diagonal view of the main unit front



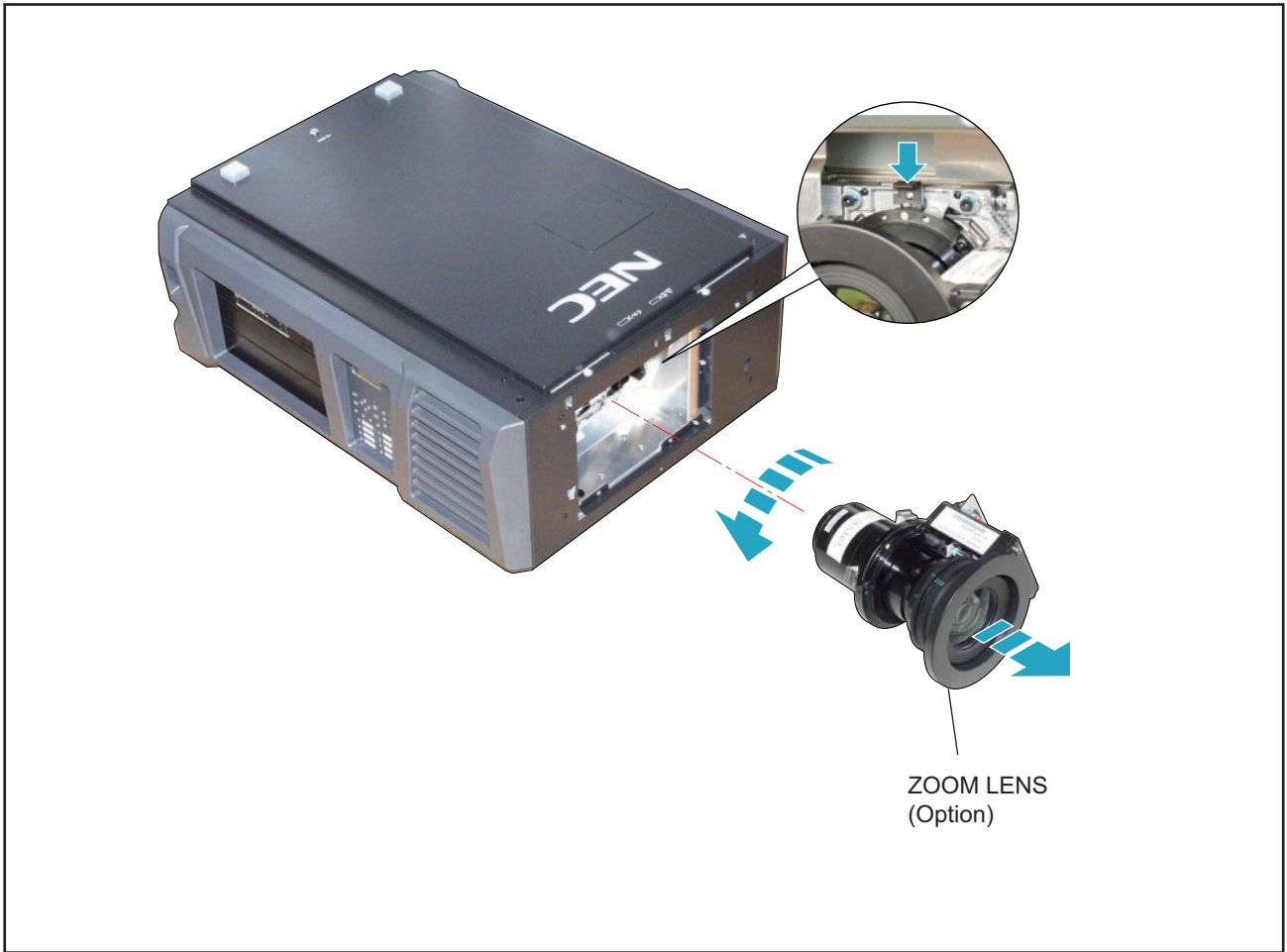
2. FRONT COVER ASSY/HOOD LENS COVER ASSY

- (1) Remove the FRONT COVER ASSY after releasing the key lock.
- (2) Rotate and remove the HOOD LENS COVER ASSY.



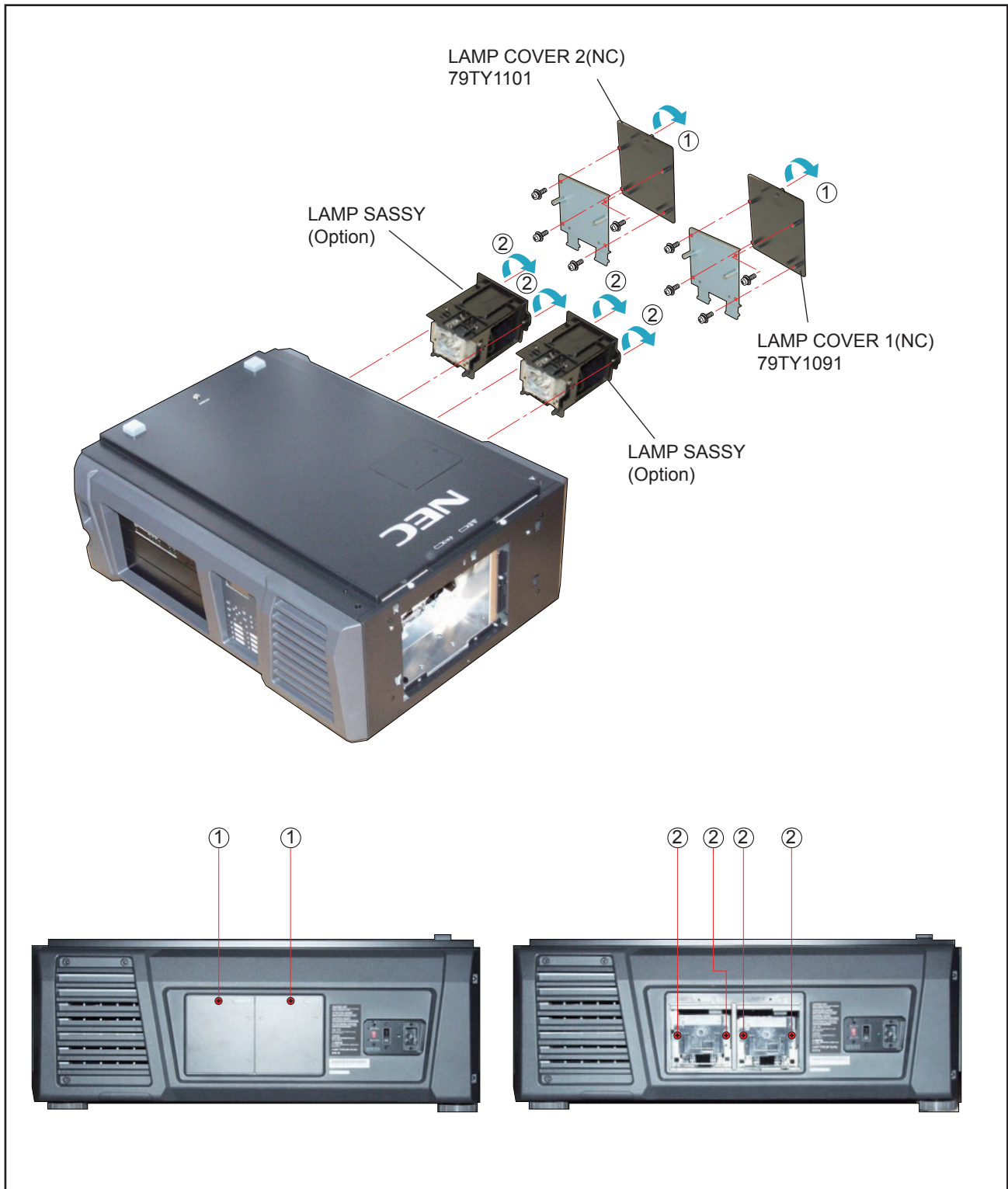
3. ZOOM LENS

(1) Press the button and remove the ZOOM LENS.



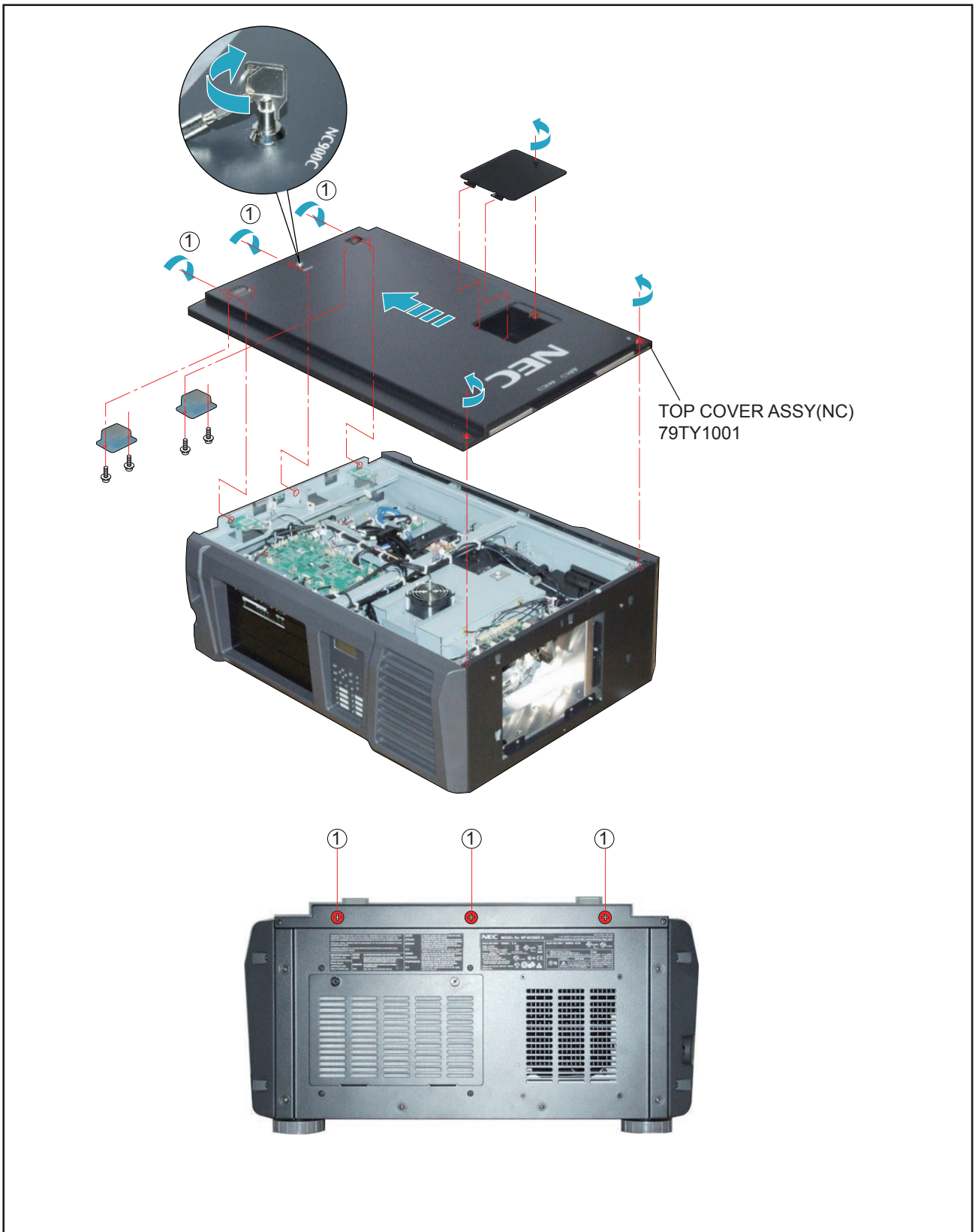
4. LAMP COVER/LAMP SASSY (OPTION)

- (1) Loosen 2 pcs. of screw ① of the LAMP COVER to take it out.
- (2) Loosen 4 pcs. of screw ② of the LAMP SASSY to take it out.



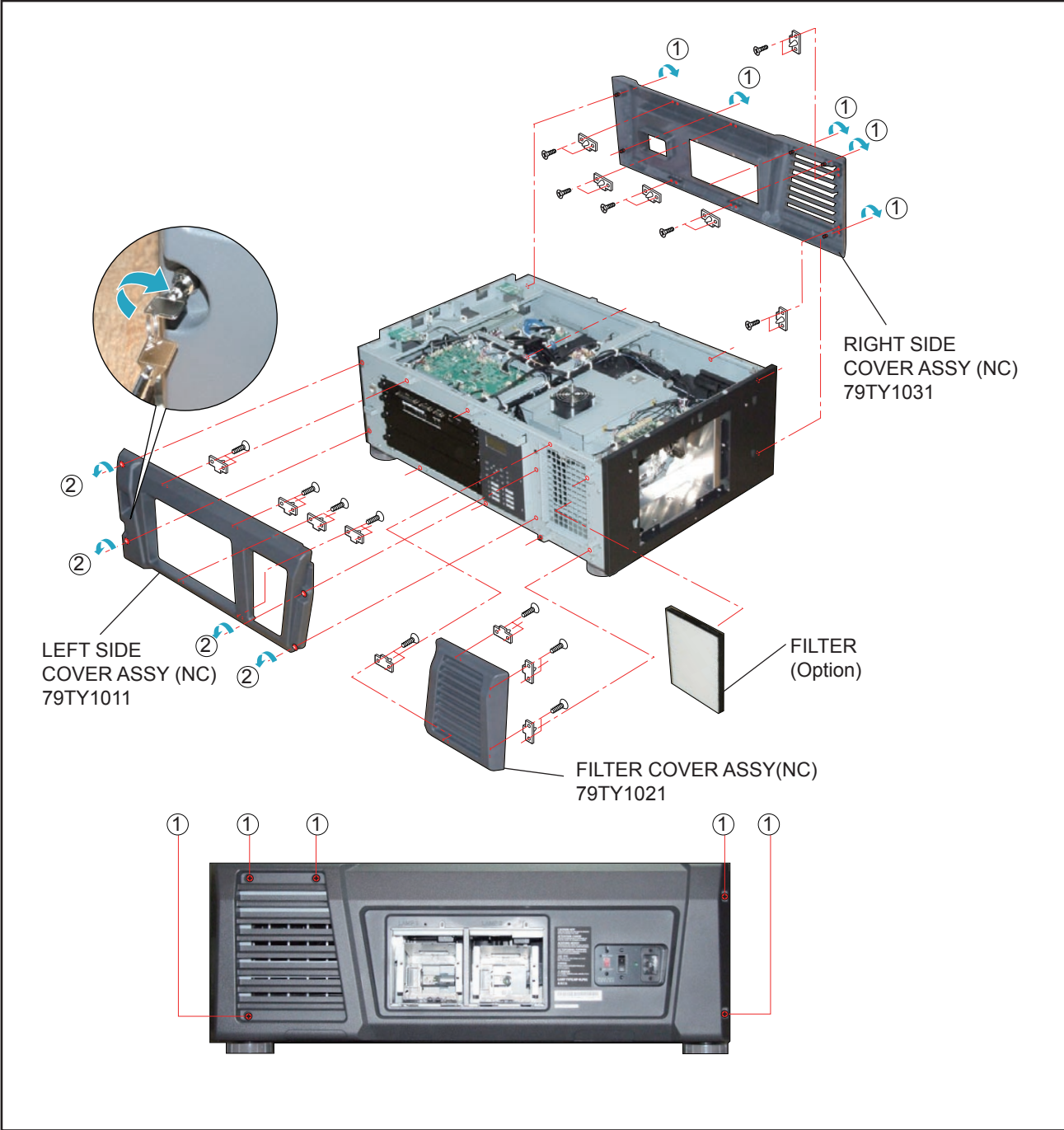
5. TOP COVER ASSY

(1) Remove 3 pcs. of screw ① and take out the TOP COVER ASSY.

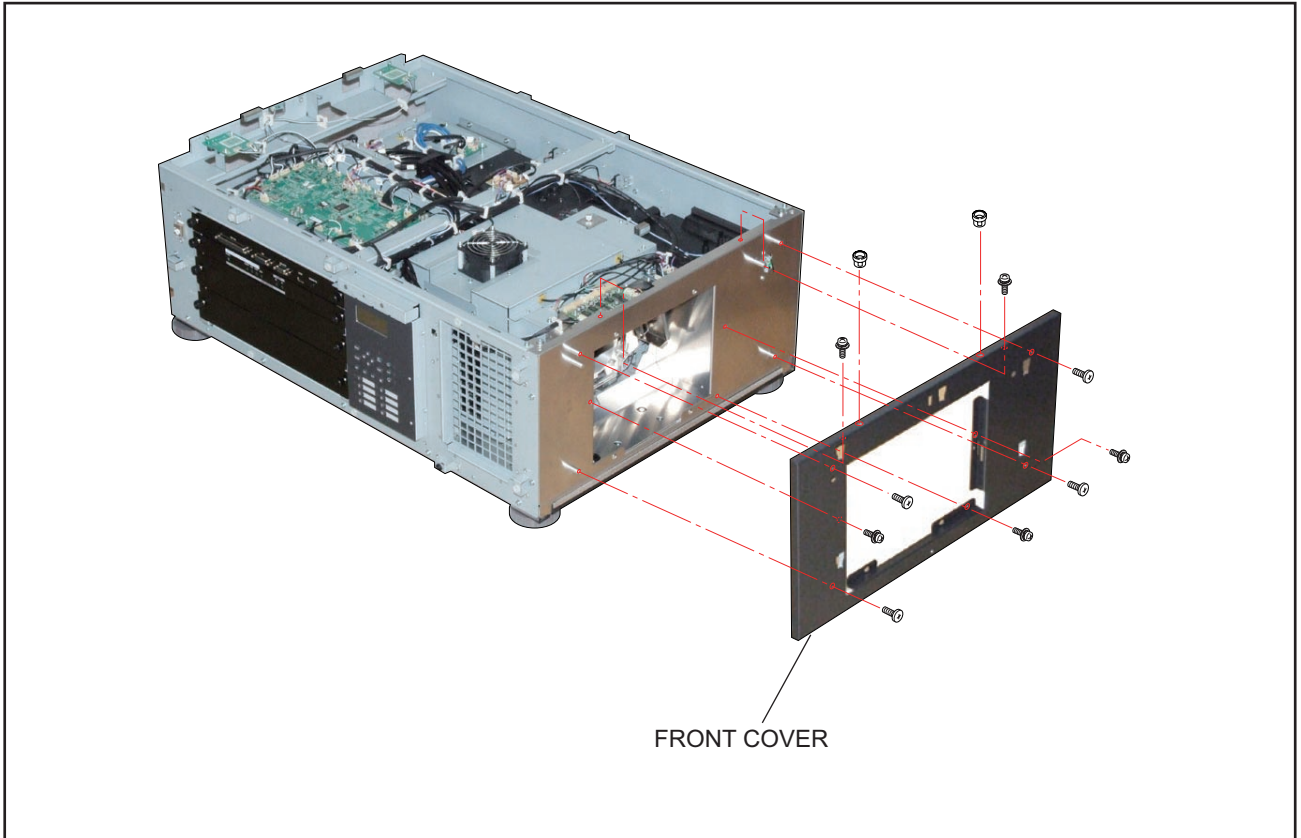


6. RIGHT SIDE COVER ASSY/LEFT SIDE COVER ASSY/FILTER COVER ASSY

- (1) Remove 5 pcs. of screw ① to take out the RIGHT SIDE COVER ASSY.
- (2) Remove the FILTER COVER ASSY.
- (3) Remove the LEFT SIDE COVER ASSY after releasing the key lock and removing 4 pcs. of screw ②.

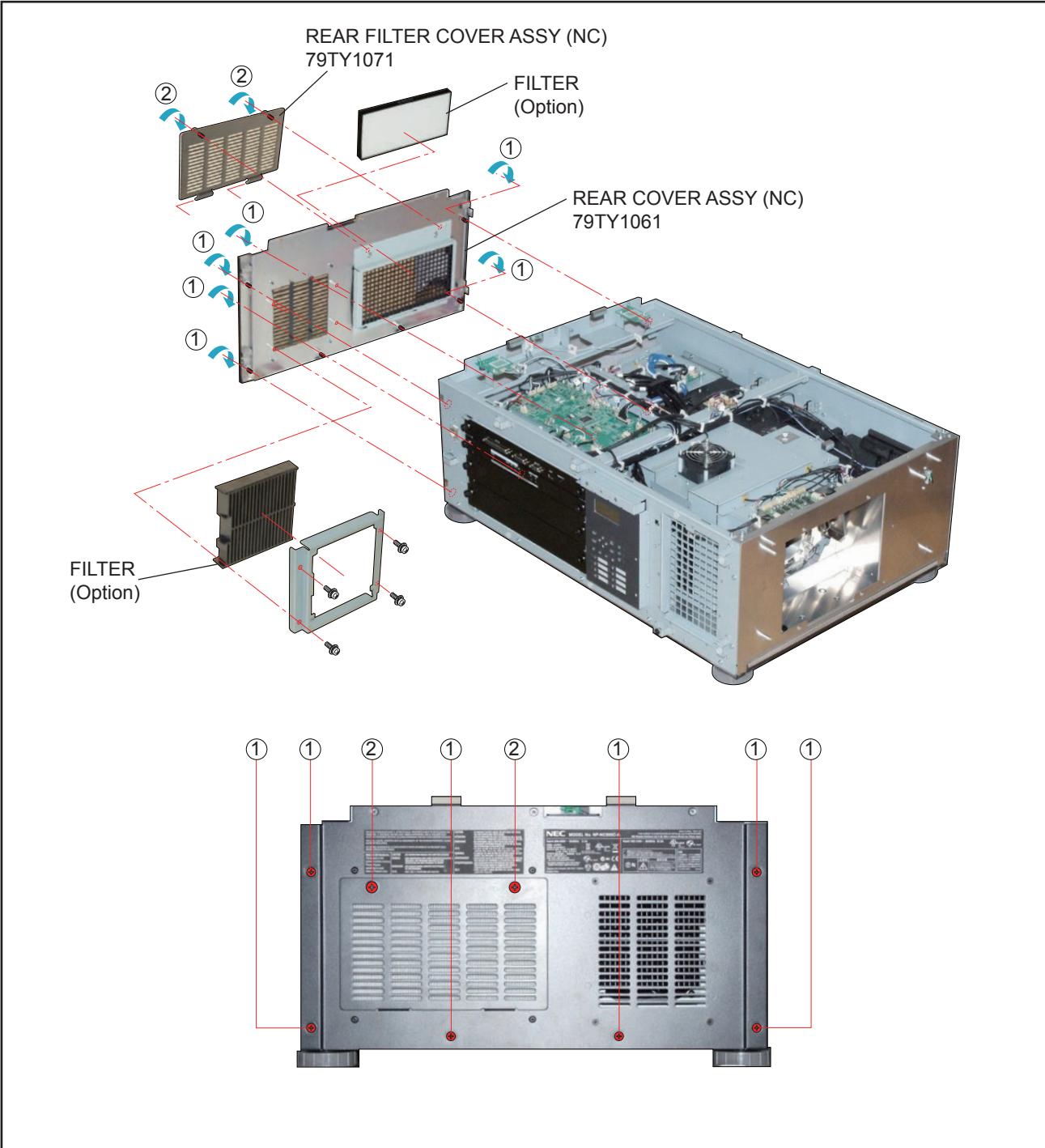


7. FRONT COVER



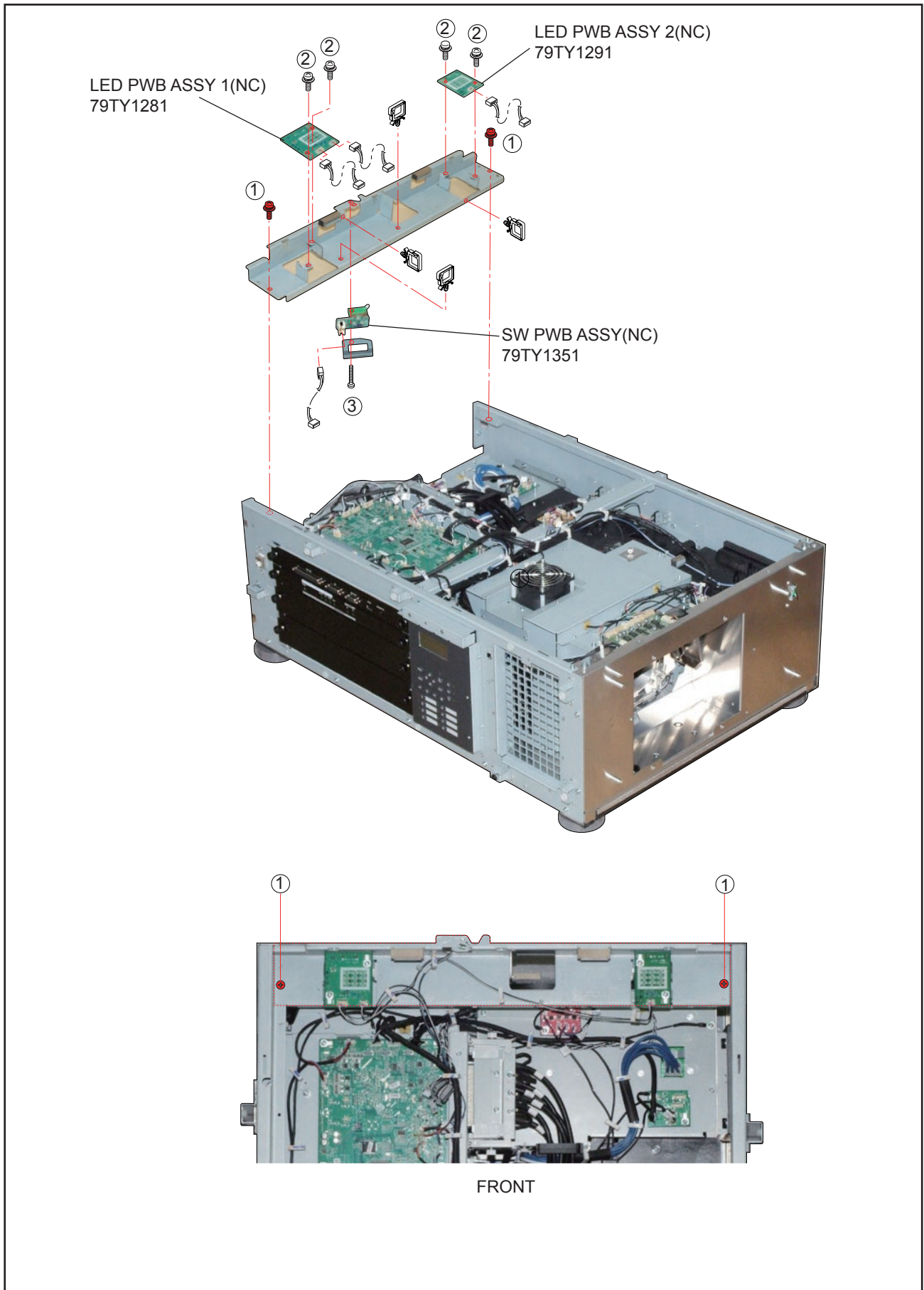
8. REAR COVER ASSY/REAR FILTER COVER ASSY

- (1) Remove 6 pcs. of screw ① and take out the REAR COVER ASSY.
- (2) Remove 2 pcs. of screw ② and take out the REAR COVER ASSY.



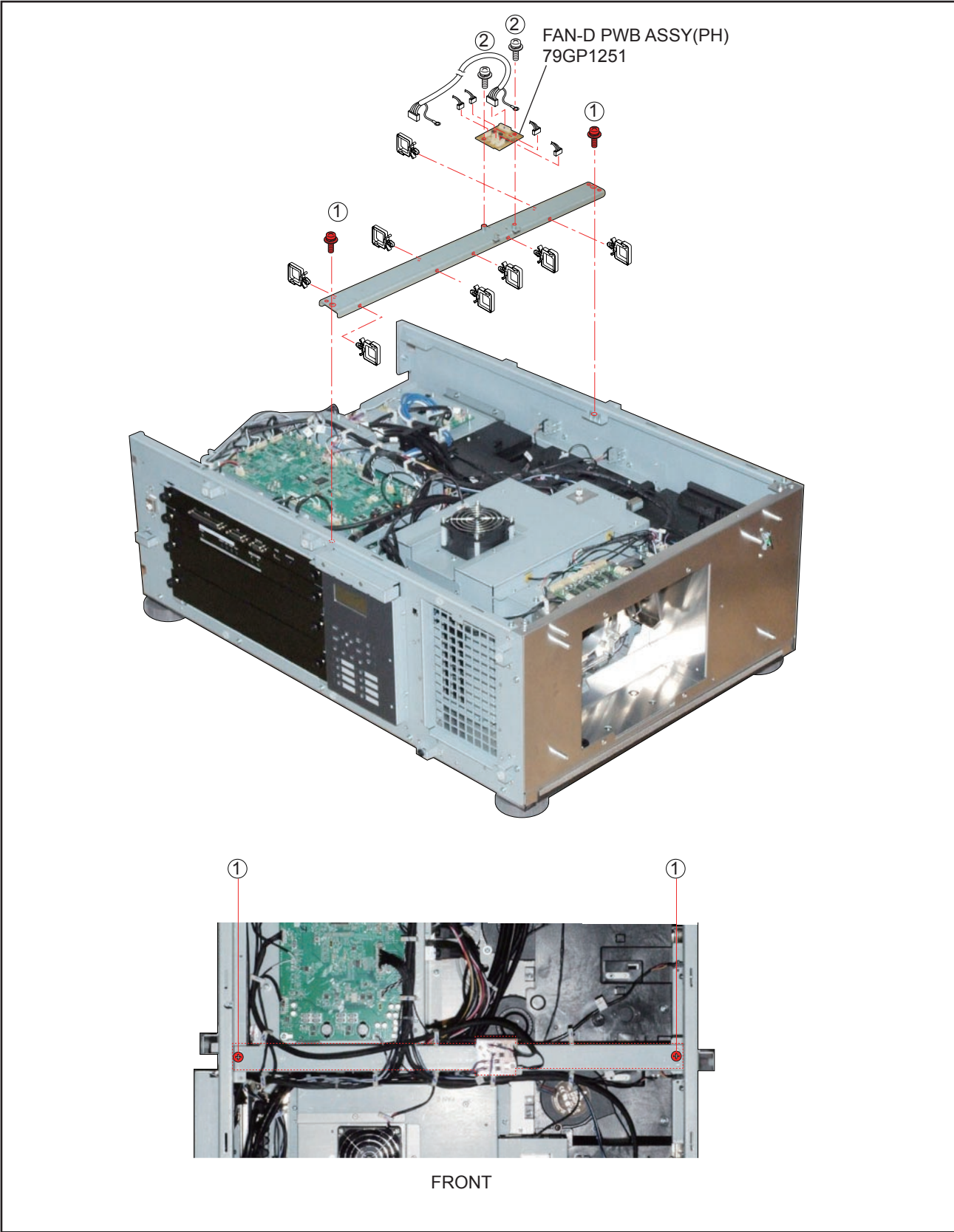
9. LED PWB ASSY 1/LED PWB ASSY 2/SW PWB ASSY

- (1) Remove 2 pcs. of screw ① and take out the assemblies.
- (2) Remove 4 pcs. of screw ② and take out the LED PWB ASSY 1/LED PWB ASSY 2.
- (3) Remove 1 pc. of screw ③ and take out the SW PWB ASSY.



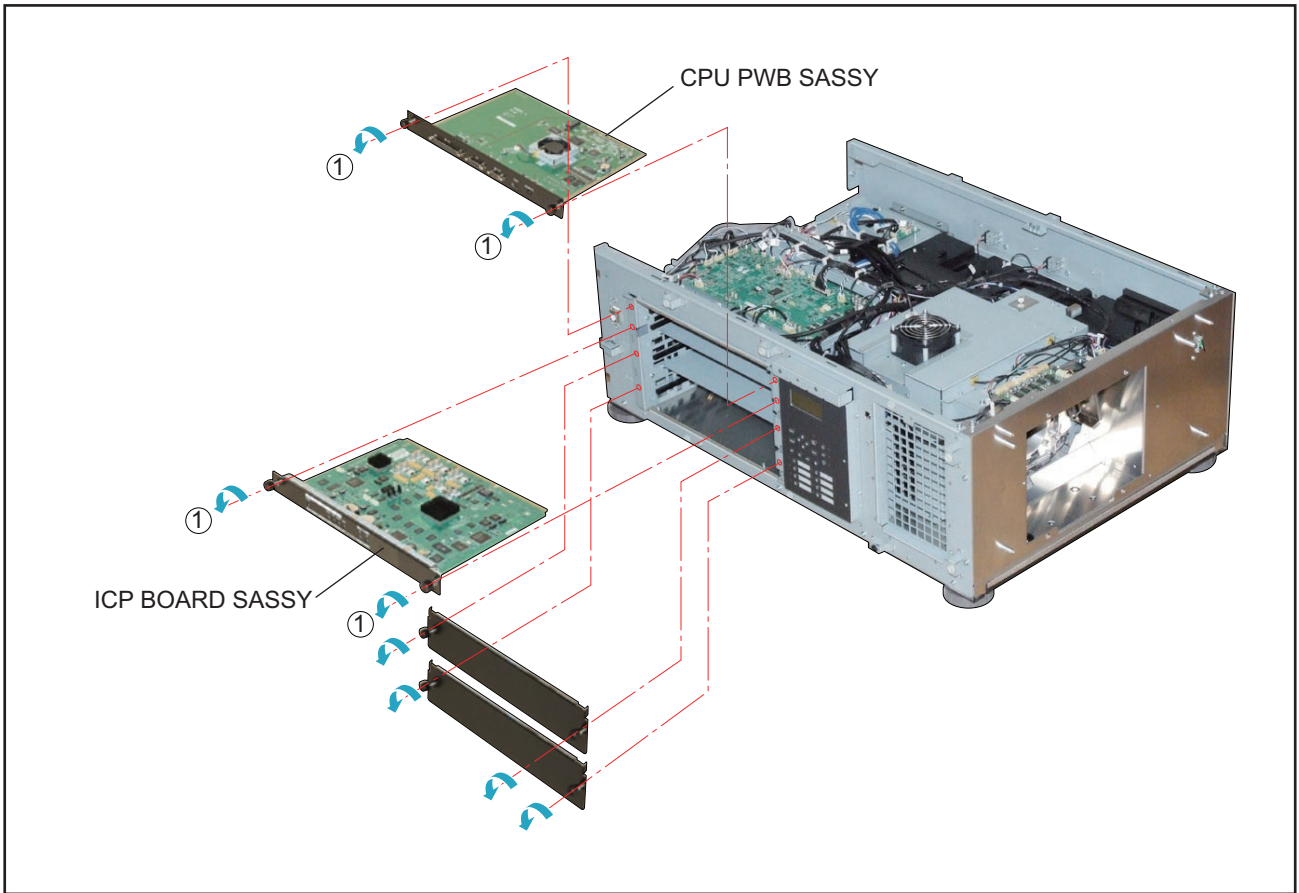
10. FAN-D PWB ASSY

(1) Remove 2 pcs. of screw ② and take out the FAN-D PWB ASSY.



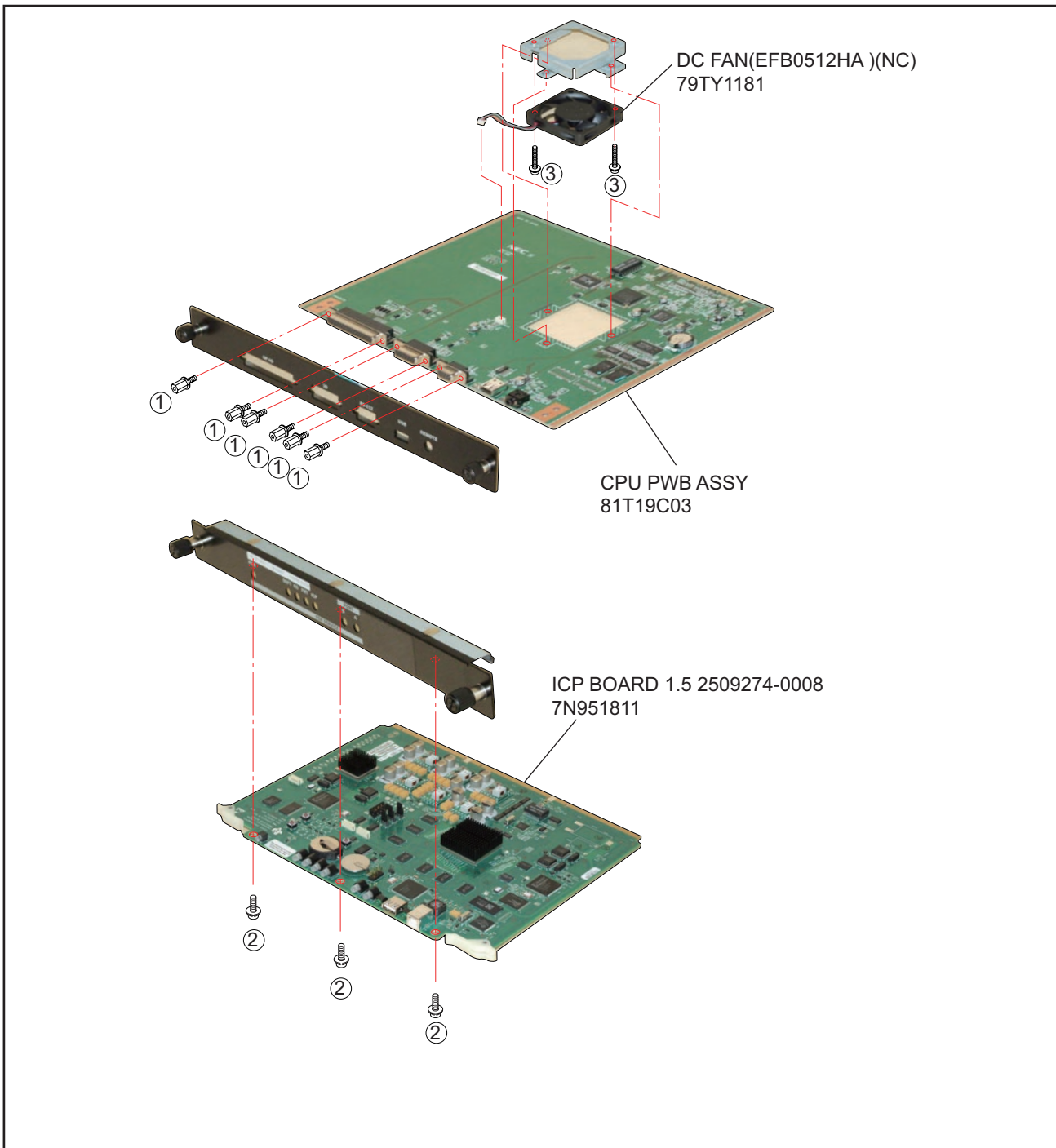
11. CPU PWB SASSY/ICP BOARD SASSY

(1) Remove 4 pcs. of screw ① and take out the CPU PWB SASSY/ICP BOARD SASSY.



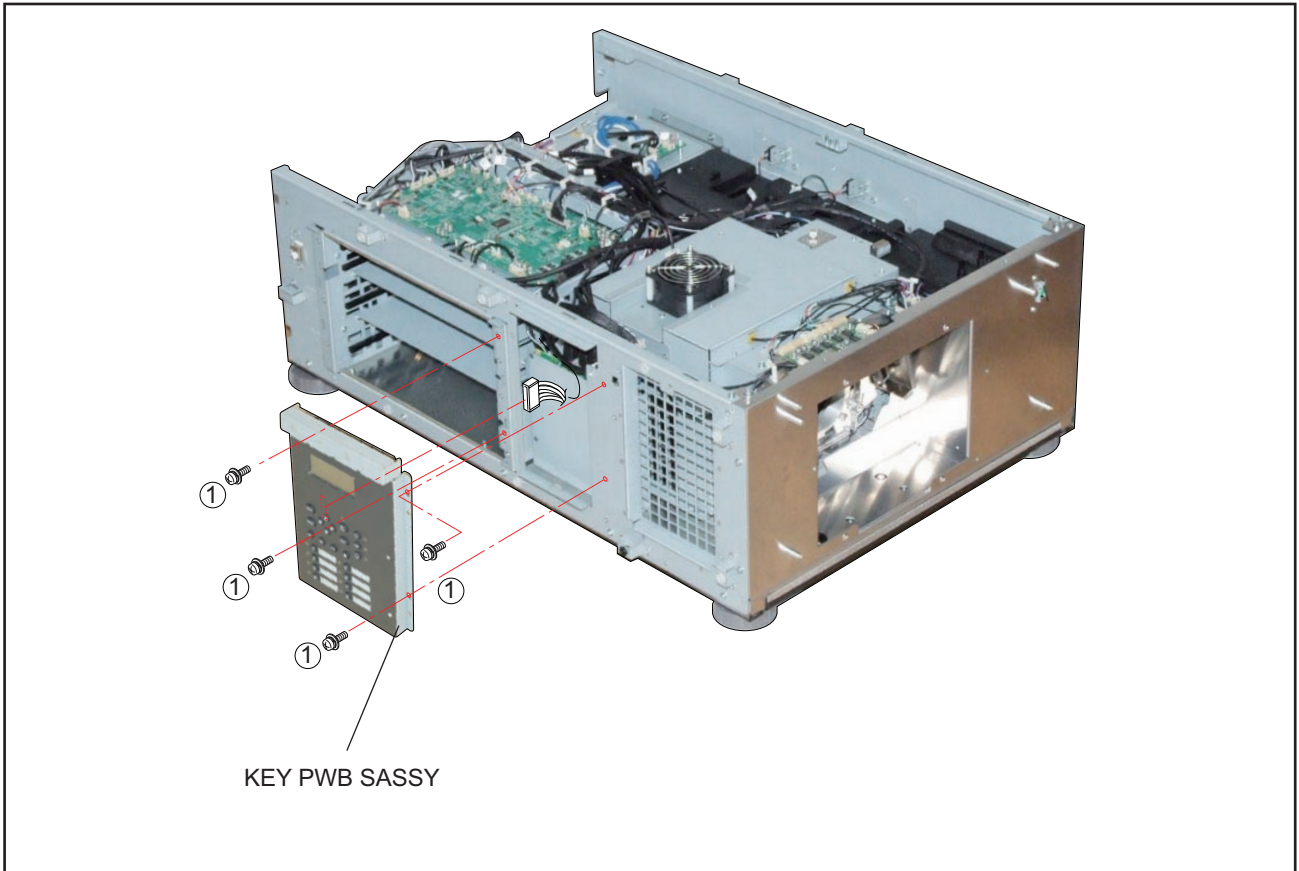
12. ICP BOARD/CPU PWB ASSY/DC FAN

- (1) Remove 6 pcs. of screw ① and take out the CPU PWB ASSY.
- (2) Remove 3 pcs. of screw ② and take out the ICP BOARD.
- (3) Remove 2 pcs. of screw ③ and take out the DC FAN.



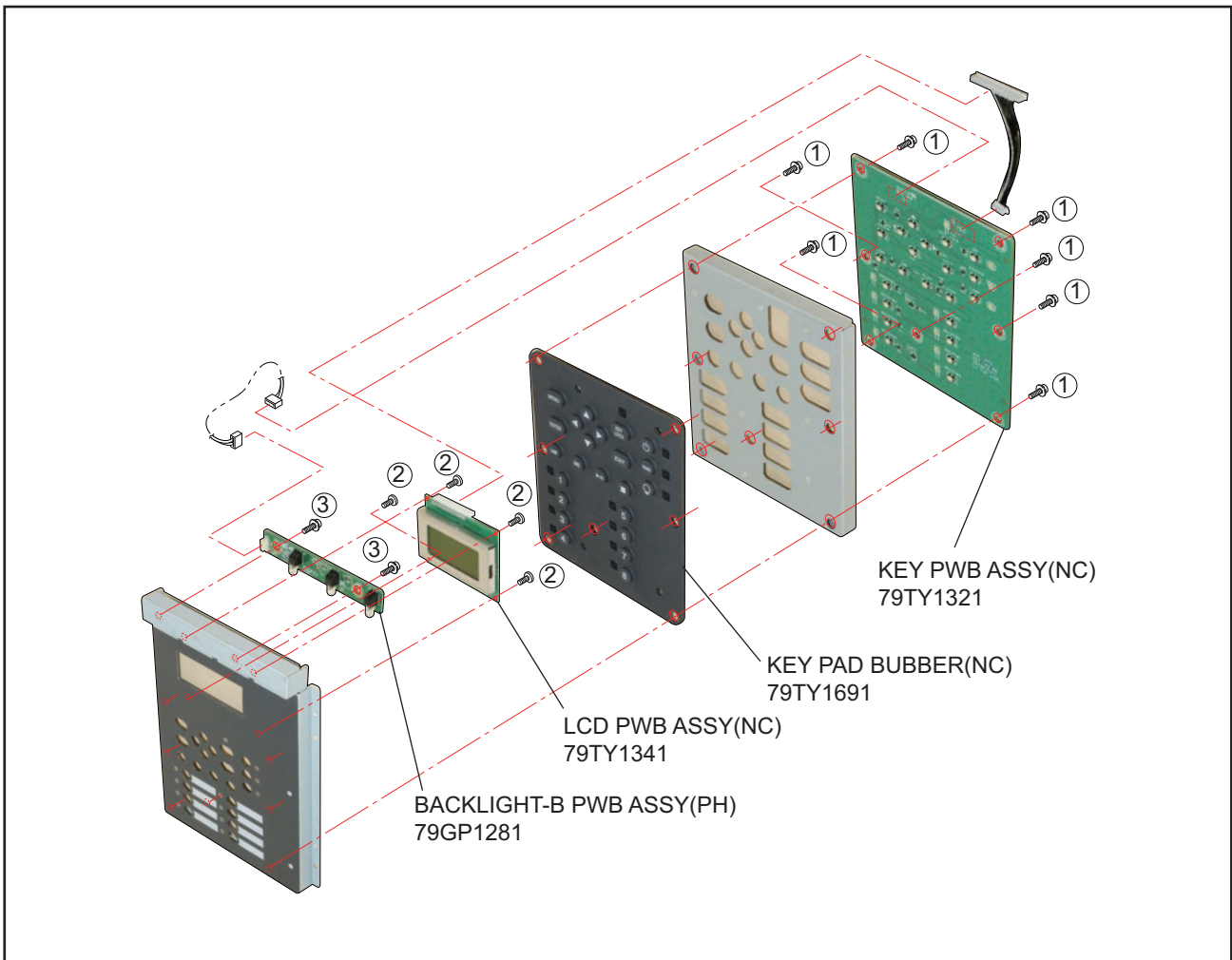
13. KEY PWB SASSY

(1) Remove 4 pcs. of screw ① and take out the KEY PWB SASSY.

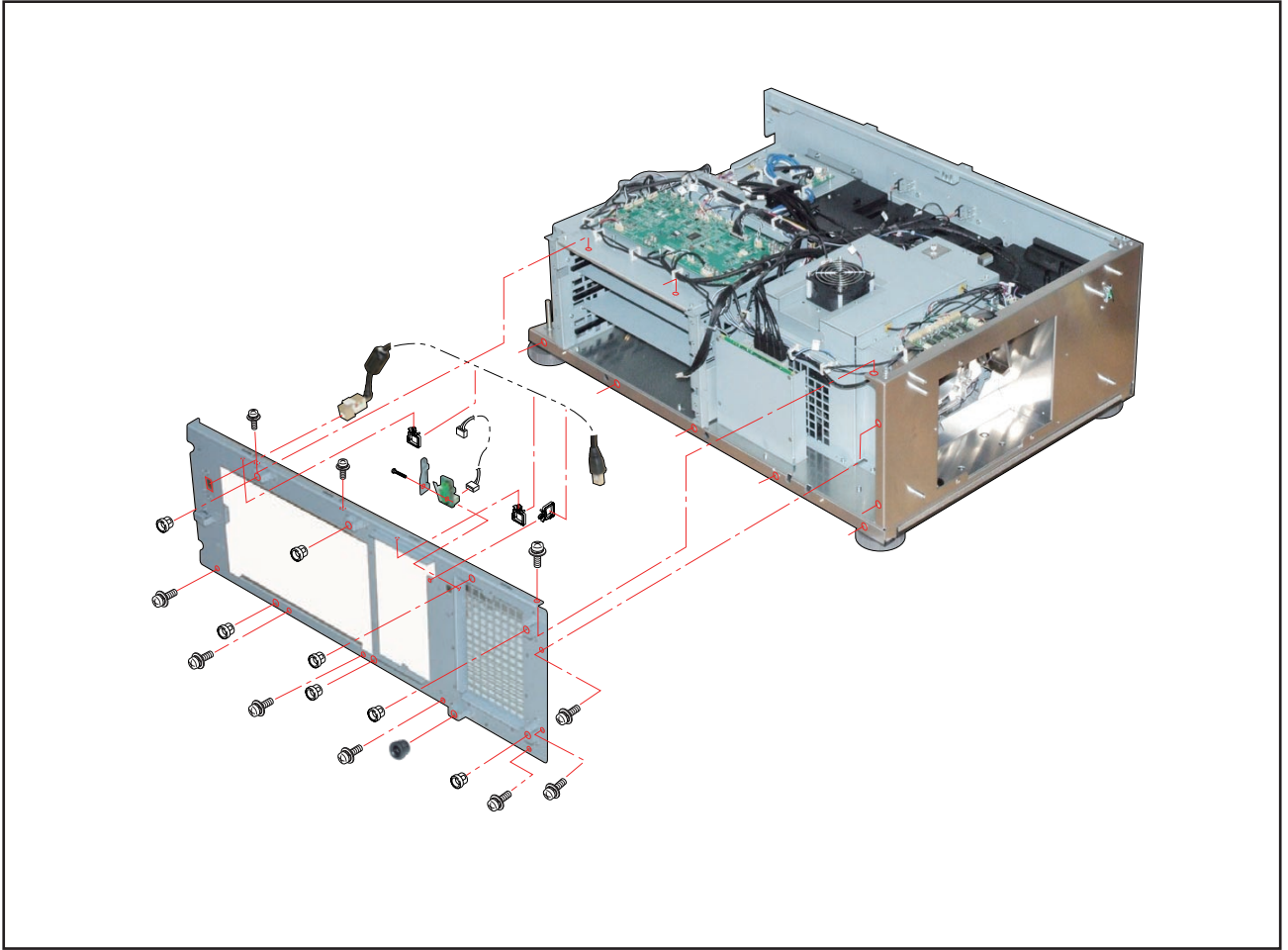


14. KEY PWB ASSY/KEY PAD BUBBER/LCD PWB ASSY/BACKLIGHT-B PWB ASSY

- (1) Remove 7 pcs. of screw ① and take out the KEY PWB ASSY/KEY PAD BUBBER.
- (2) Remove 4 pcs. of screw ② and take out the LCD PWB ASSY.
- (3) Remove 2 pcs. of screw ③ and take out the BACKLIGHT-B PWB ASSY.

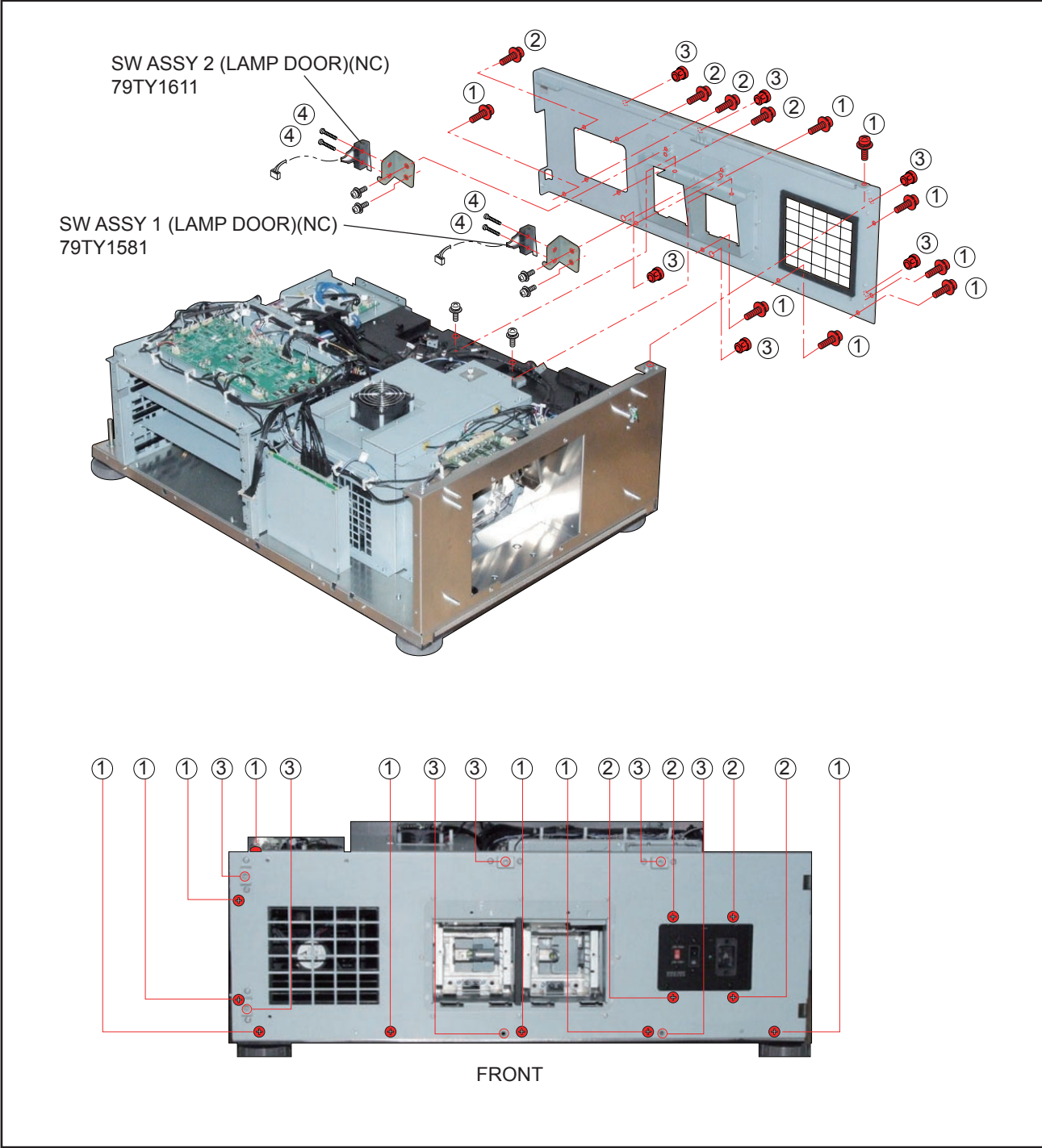


15.



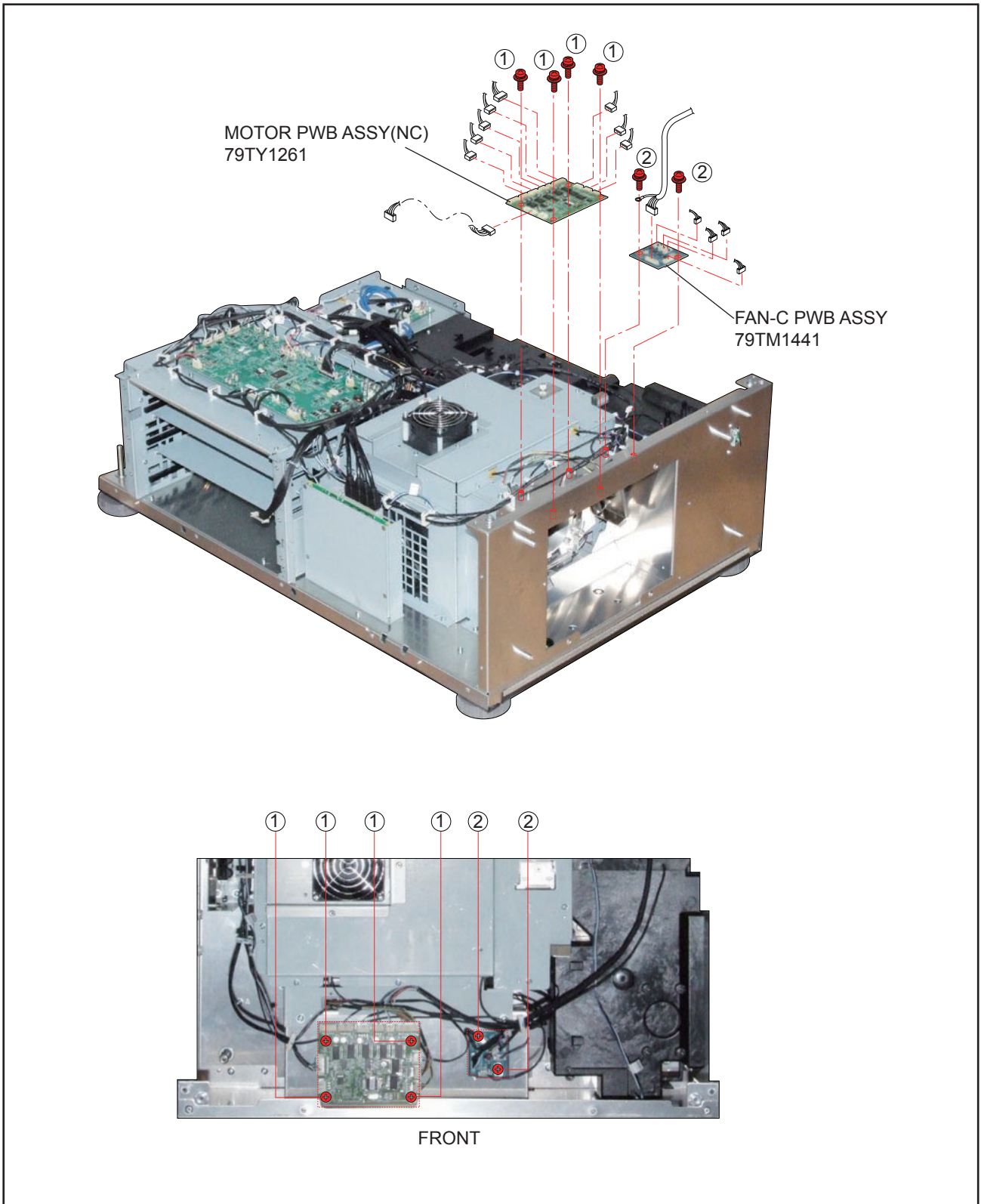
16. SW ASSY 1/SW ASSY 2

- (1) Remove 8 pcs. of screw ①, 4 pcs. of screw ②, and 6 pcs. of screw ③ to take out the assemblies.
- (2) Remove 4 pcs. of screw ④ and take out the SW ASSY 1/SW ASSY 2.



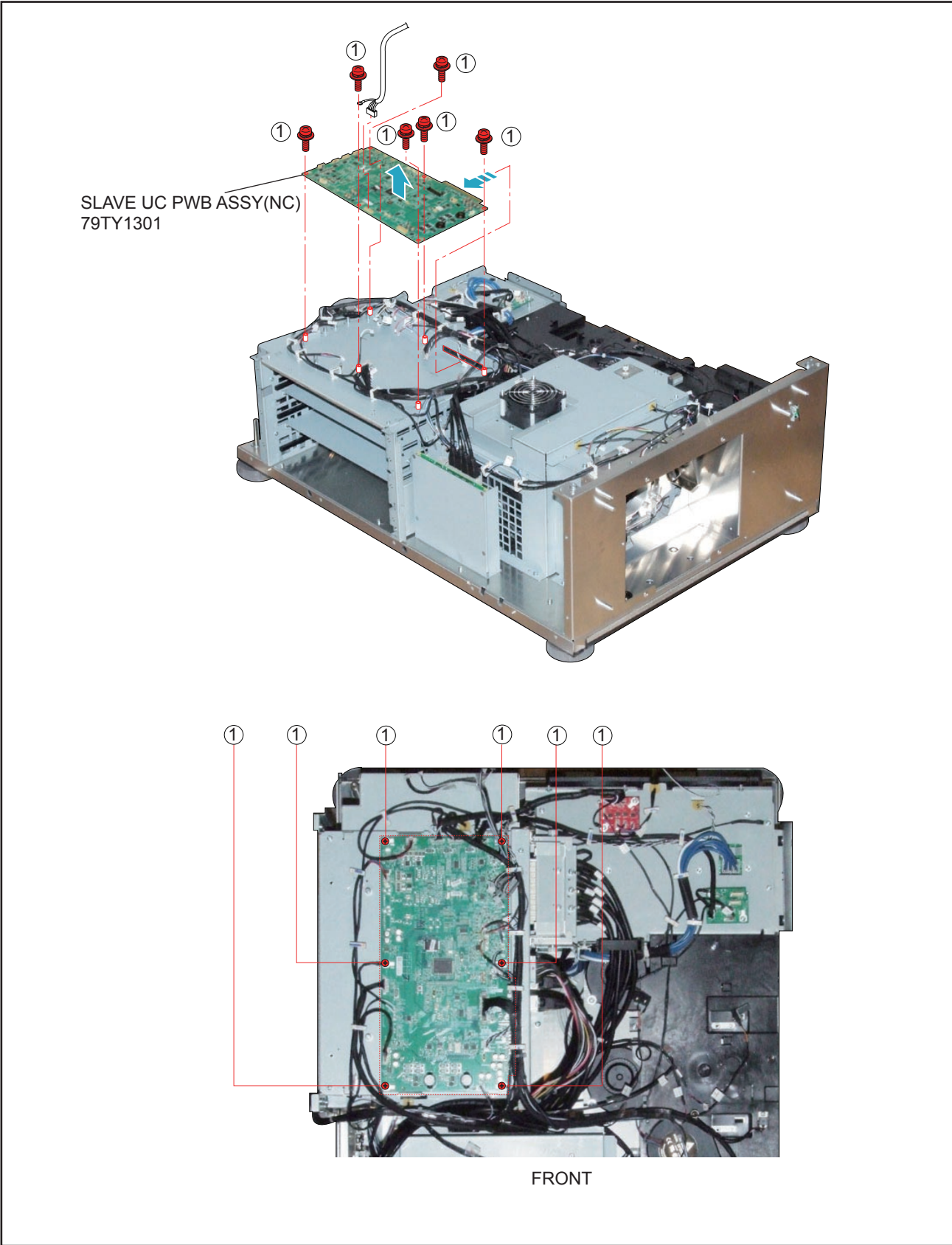
17. MOTOR PWB ASSY/FAN-C PWB ASSY

- (1) Remove 4 pcs. of screw ① and take out the MOTOR PWB ASSY.
- (2) Remove 2 pcs. of screw ② and take out the FAN-C PWB ASSY.



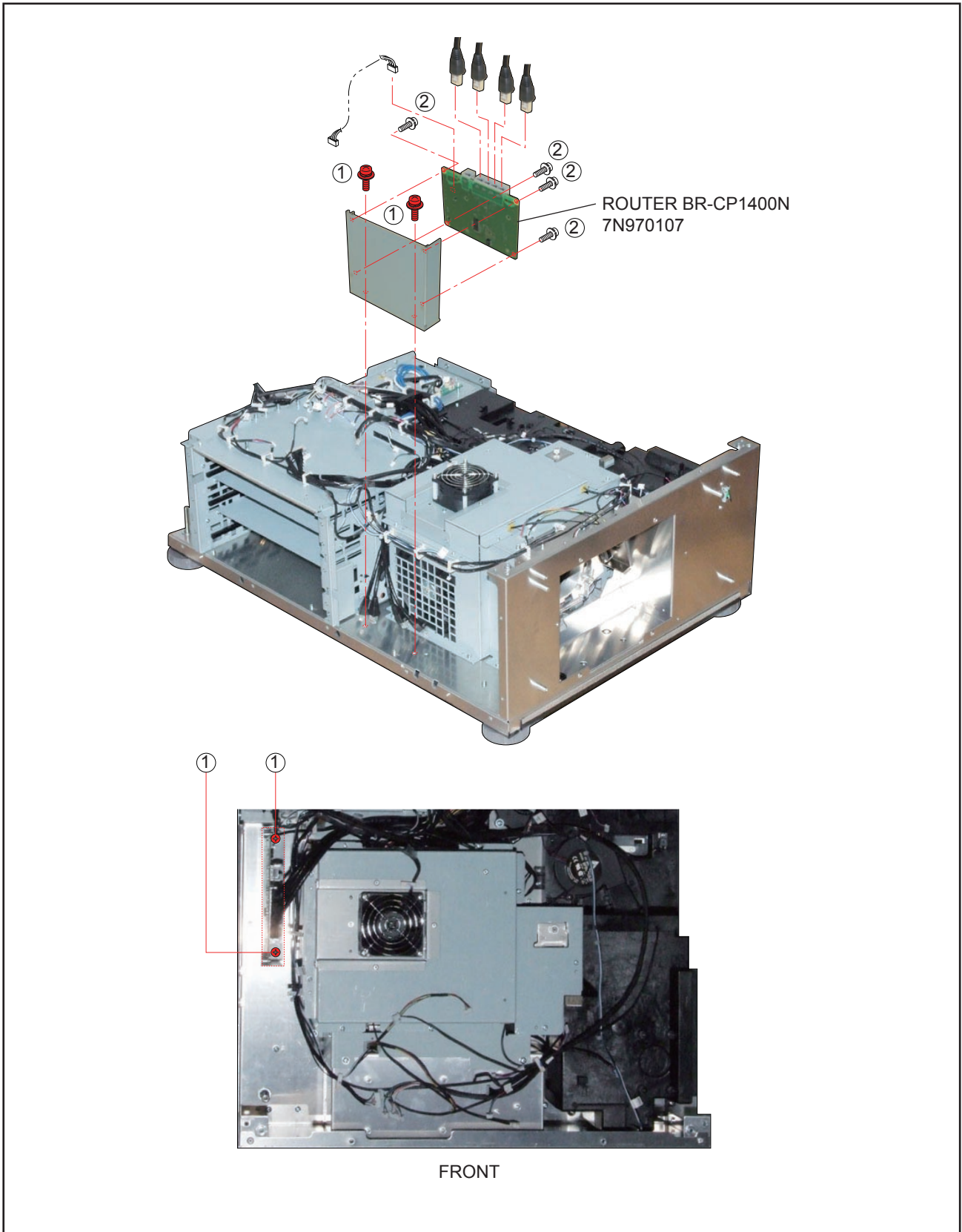
18. SLAVE UC PWB ASSY

(1) Remove 6 pcs. of screw ① and take out the SLAVE UC PWB ASSY.

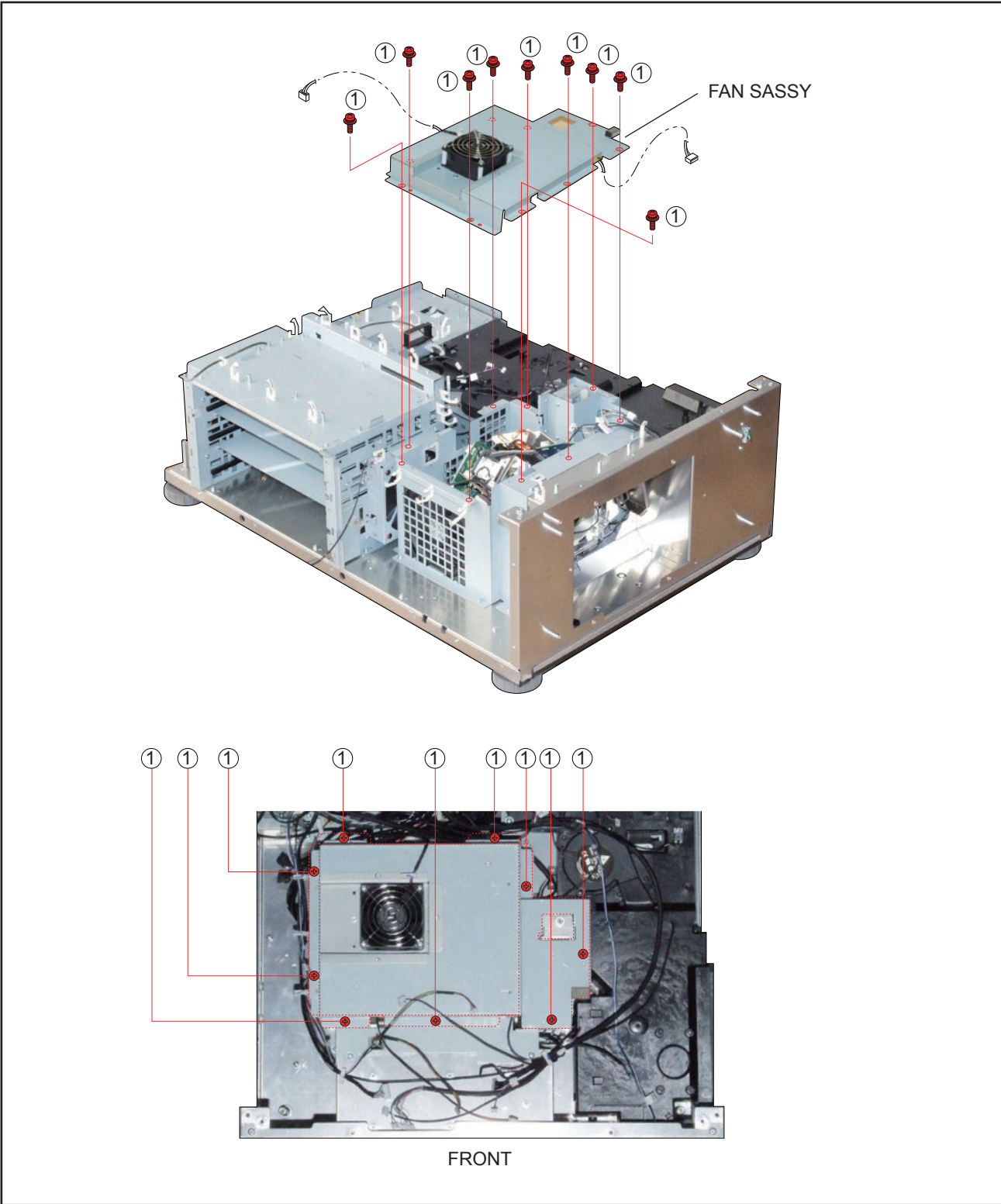


19. ROUTER BR-CP1400N

- (1) Remove 2 pcs. of screw ① and take out the assemblies.
- (2) Remove 4 pcs. of screw ② and take out the ROUTER BR-CP1400N.

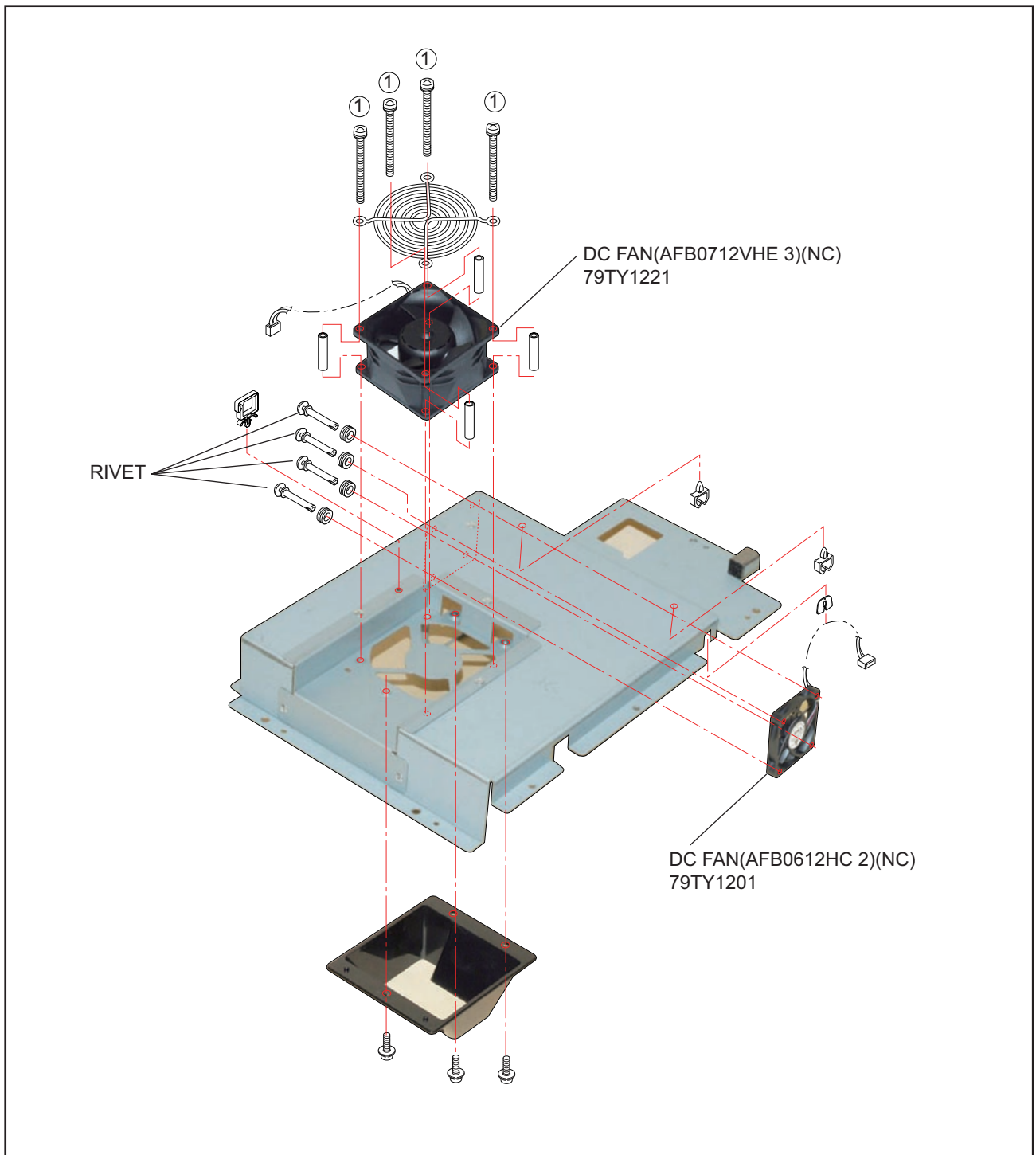


20. FAN SASSY



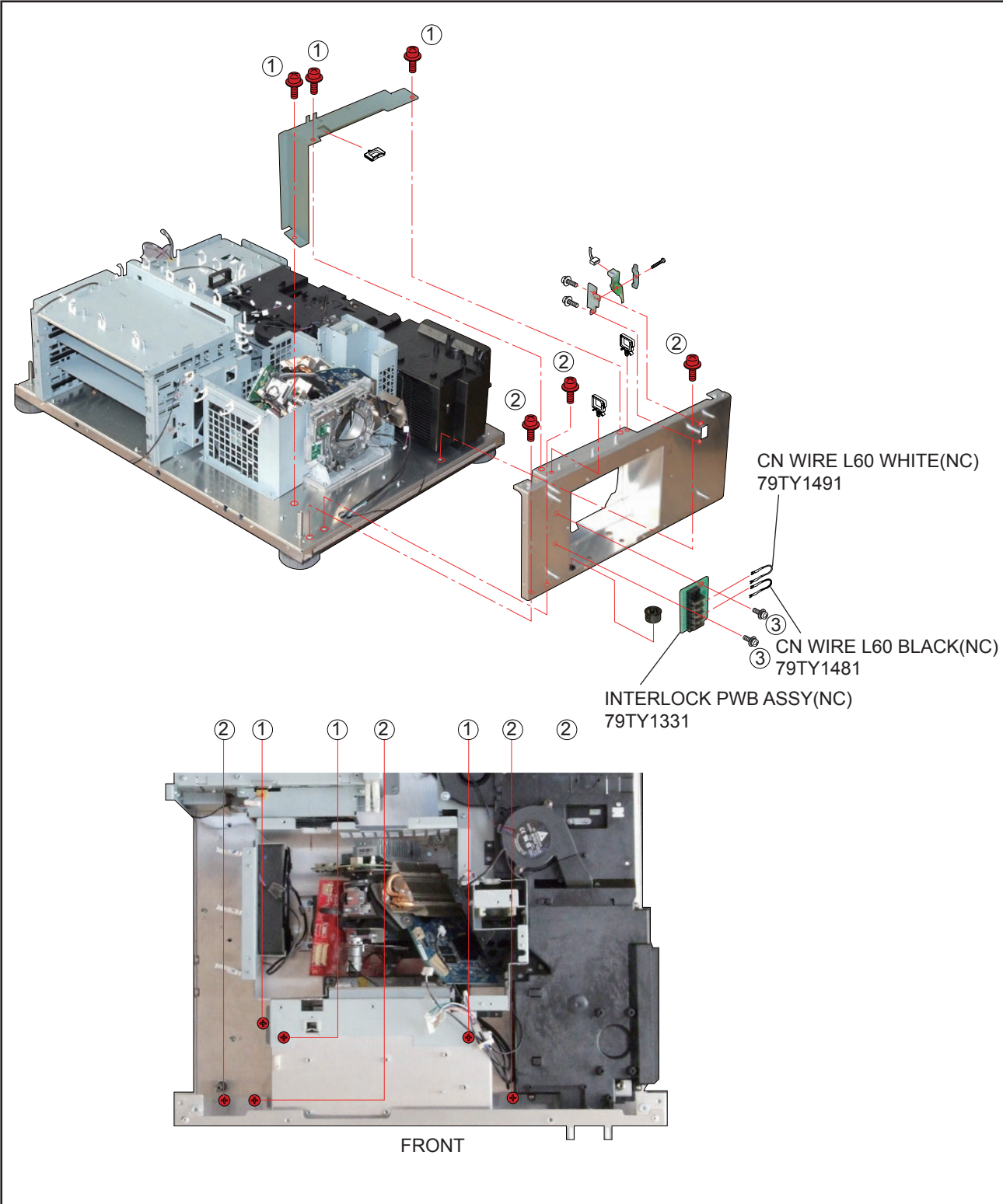
21. DC FAN(AFB0712VHE 3)/DC FAN(AFB0612HC 2)

- (1) Remove 4 pcs. of screw ① and take out the DC FAN(AFB0712VHE 3).
- (2) Remove 4 pcs. of Rivet and take out the DC FAN(AFB0612HC 2).



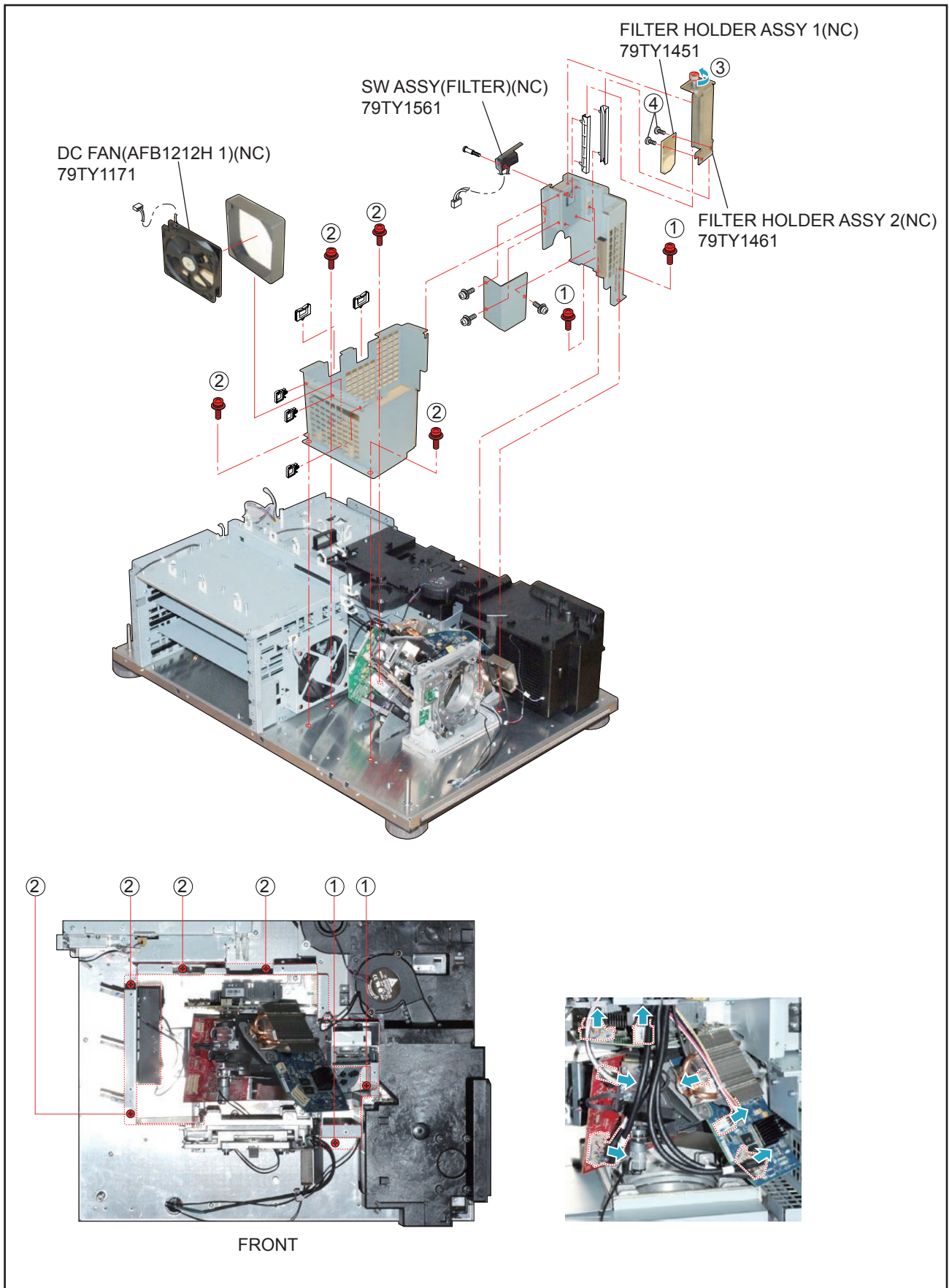
22. INTERLOCK PWB ASSY/CN WIRE L60 WHITE/CN WIRE L60 BLACK

- (1) Remove 3 pcs. of screw ① and 3 pcs. of screw ② to take out the assemblies.
- (2) Remove 2 pcs. of screw ③ and take out the INTERLOCK PWB ASSY.



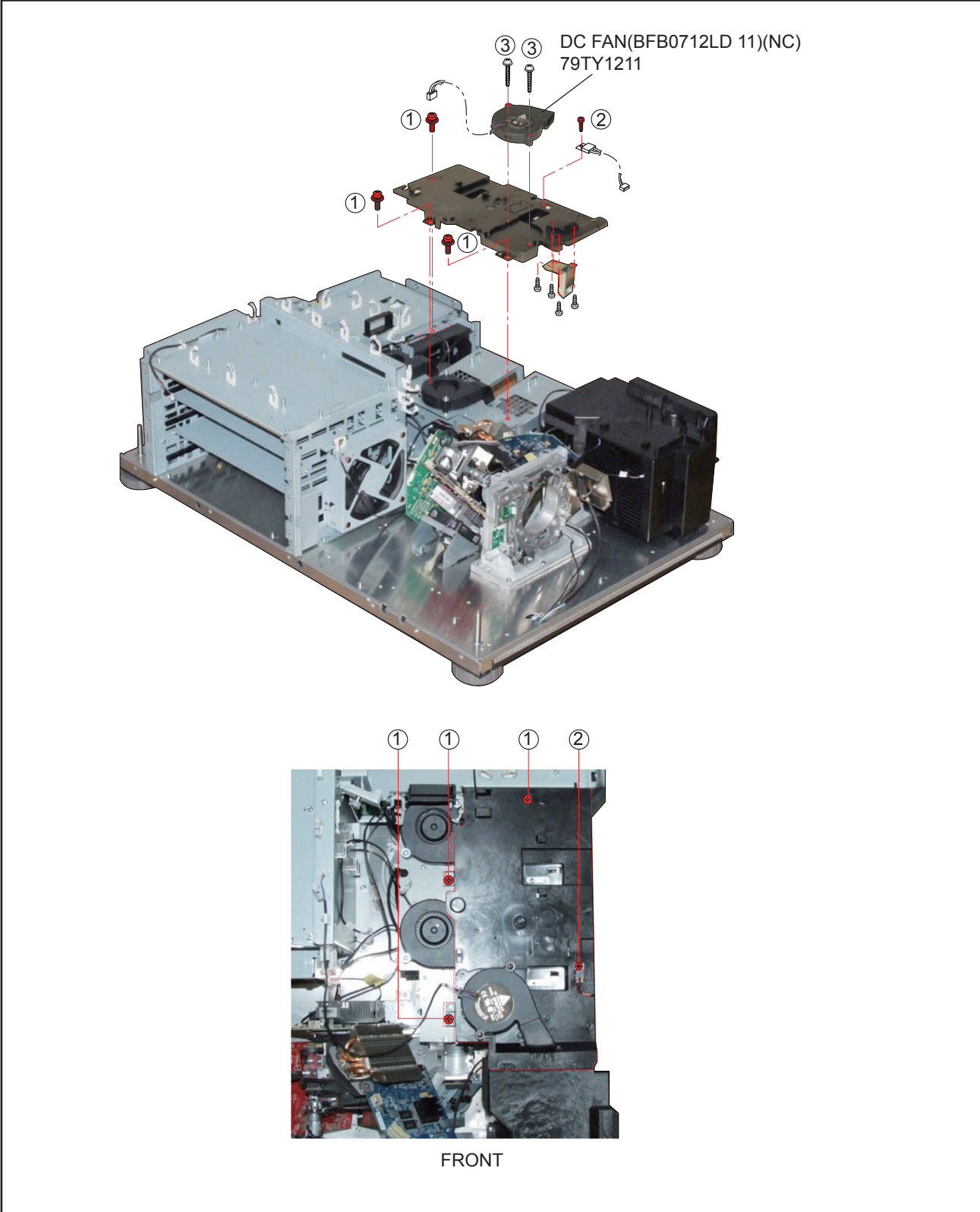
23. DC FAN(AFB1212H 1)/SW ASSY/FILTER HOLDER ASSY 1/FILTER HOLDER ASSY 2

- (1) Remove 2 pcs. of screw ① and 4 pcs. of screw ② to take out the DC FAN(AFB1212H 1).
- (2) Remove 1 pc. of screw ③ and take out the FILTER HOLDER ASSY 1.
- (3) Remove 2 pcs. of screw ④ and take out the FILTER HOLDER ASSY 2.



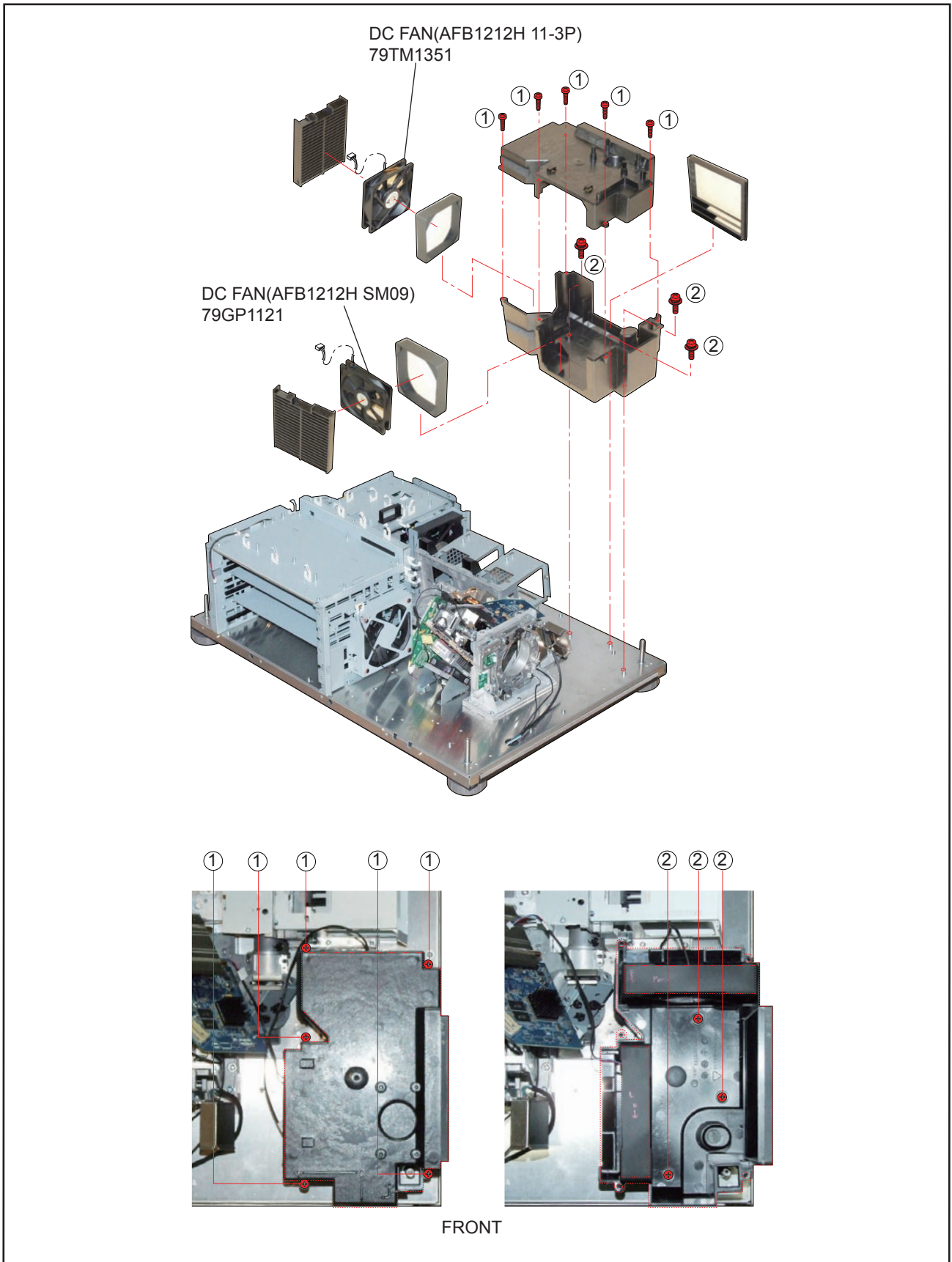
24. DC FAN(BFB0712LD 11)

- (1) Remove 3 pcs. of screw ① and take out the assemblies.
- (2) Remove 2 pcs. of screw ③ and take out the DC FAN(BFB0712LD 11).



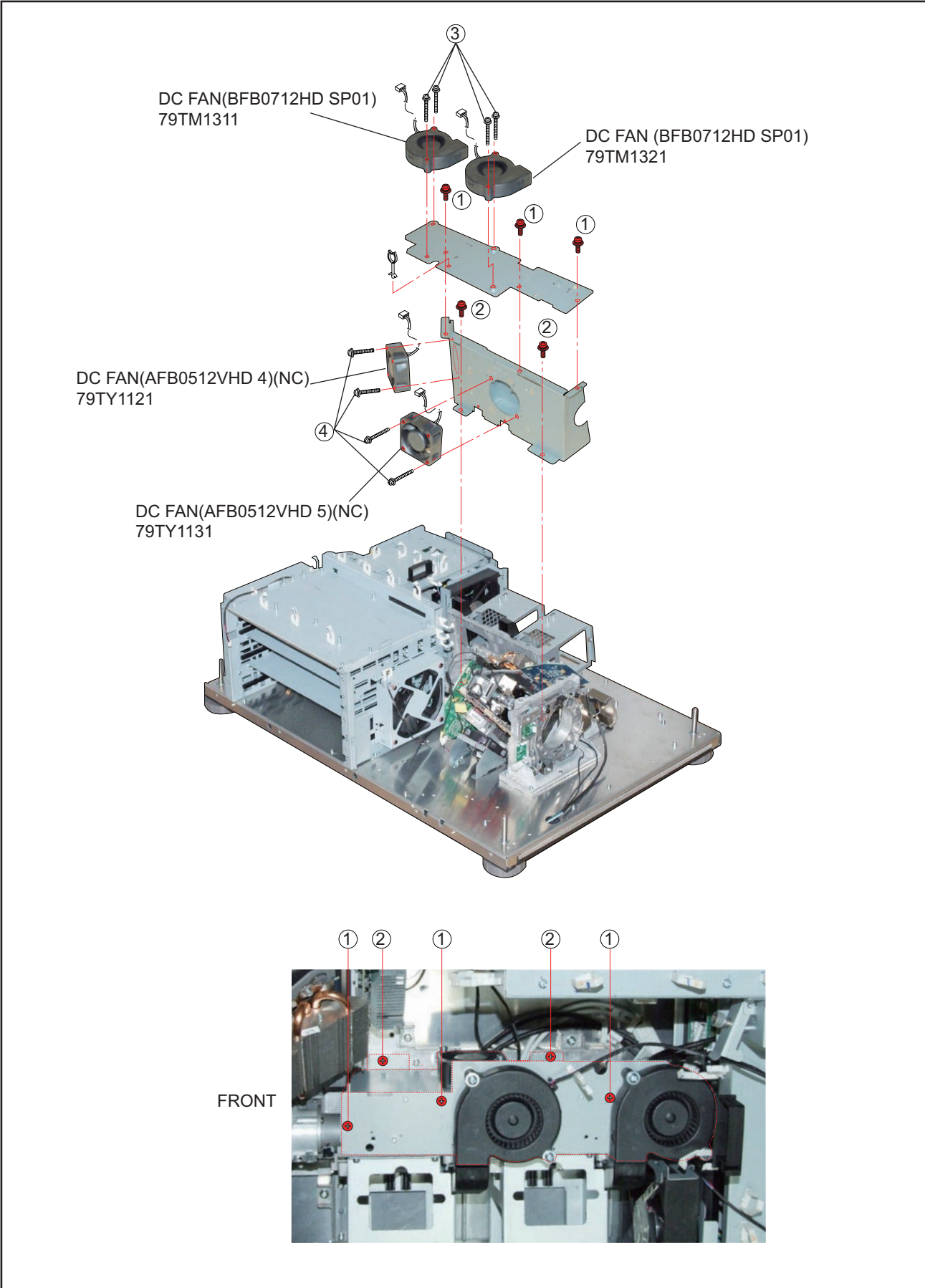
25. DC FAN(AFB1212H 11-3P)/DC FAN(AFB1212H SM09)

- (1) Remove 5 pcs. of screw ① and 3 pcs. of screw ② to take out the DC FAN(AFB1212H 11-3P)/DC FAN(AFB1212H SM09).

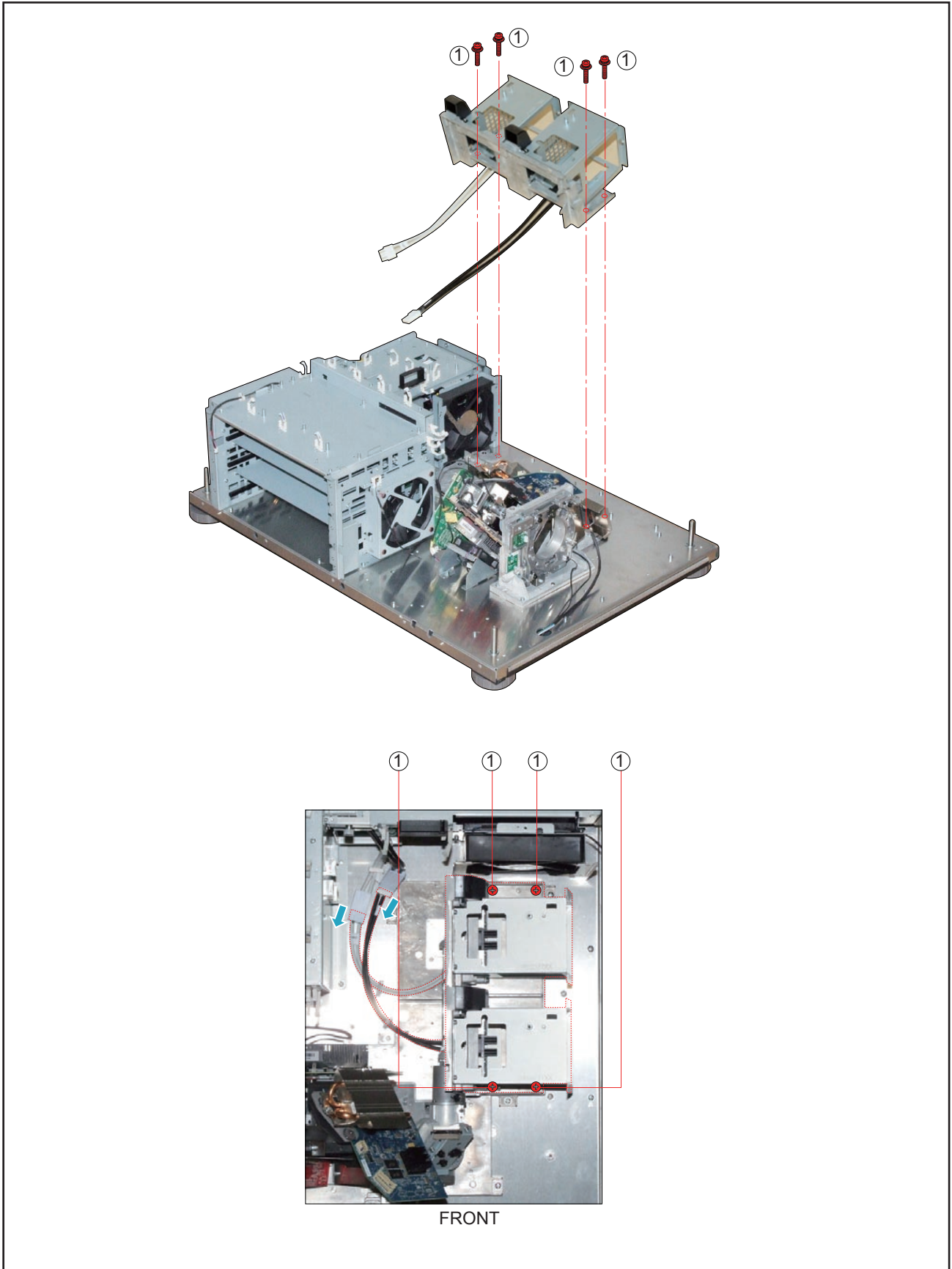


26. DC FAN(BFB0712HD SP01)/DC FAN (BFB0712HD SP01)

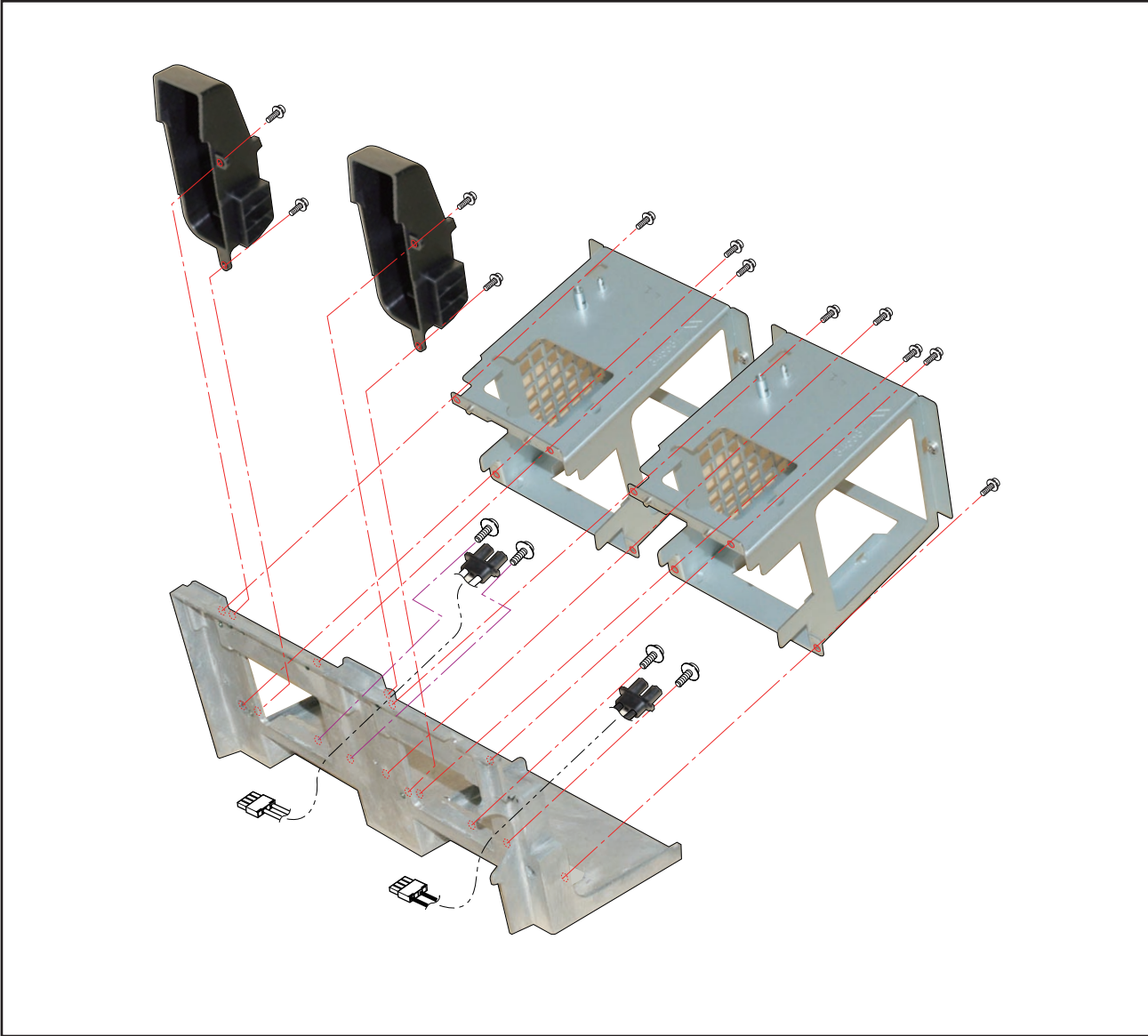
- (1) Remove 3 pcs. of screw ① and 2 pcs. of screw ② to take out the assemblies.
- (2) Remove 4 pcs. of screw ③ and take out the DC FAN(BFB0712HD SP01)/DC FAN (BFB0712HD SP01).
- (3) Remove 4 pcs. of screw ④ and take out the DC FAN(AFB0512VHD 4)(NC)/DC FAN(AFB0512VHD 5)



27.

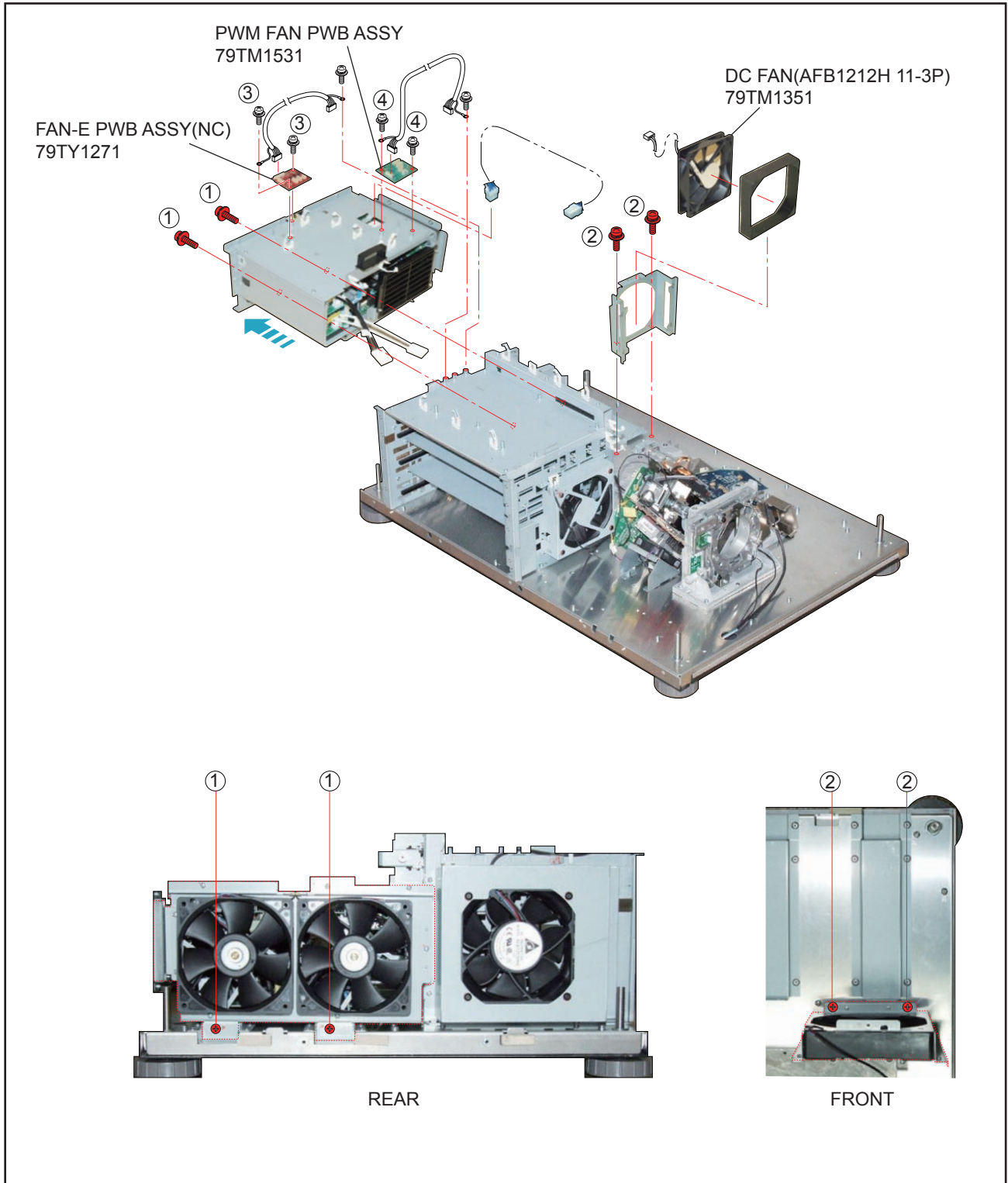


28.



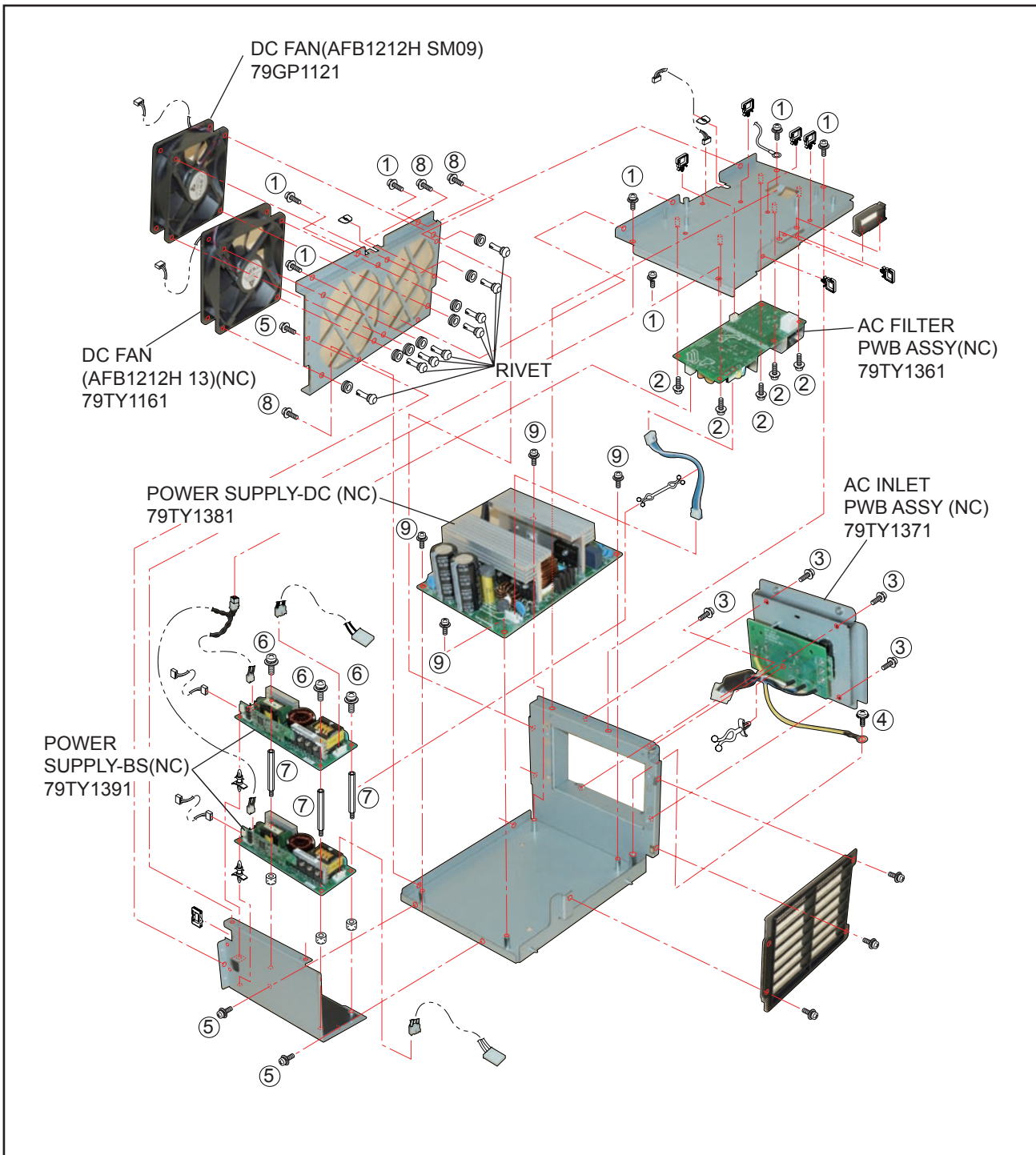
29. FAN-E PWB ASSY/PWM FAN PWB ASSY/DC FAN(AFB1212H 11-3P)

- (1) Remove 2 pcs. of screw ① and take out the assemblies.
- (2) Remove 2 pcs. of screw ② and take out the DC FAN(AFB1212H 11-3P).
- (3) Remove 2 pcs. of screw ③ and take out the FAN-E PWB ASSY.
- (4) Remove 2 pcs. of screw ④ and take out the PWM FAN PWB ASSY.



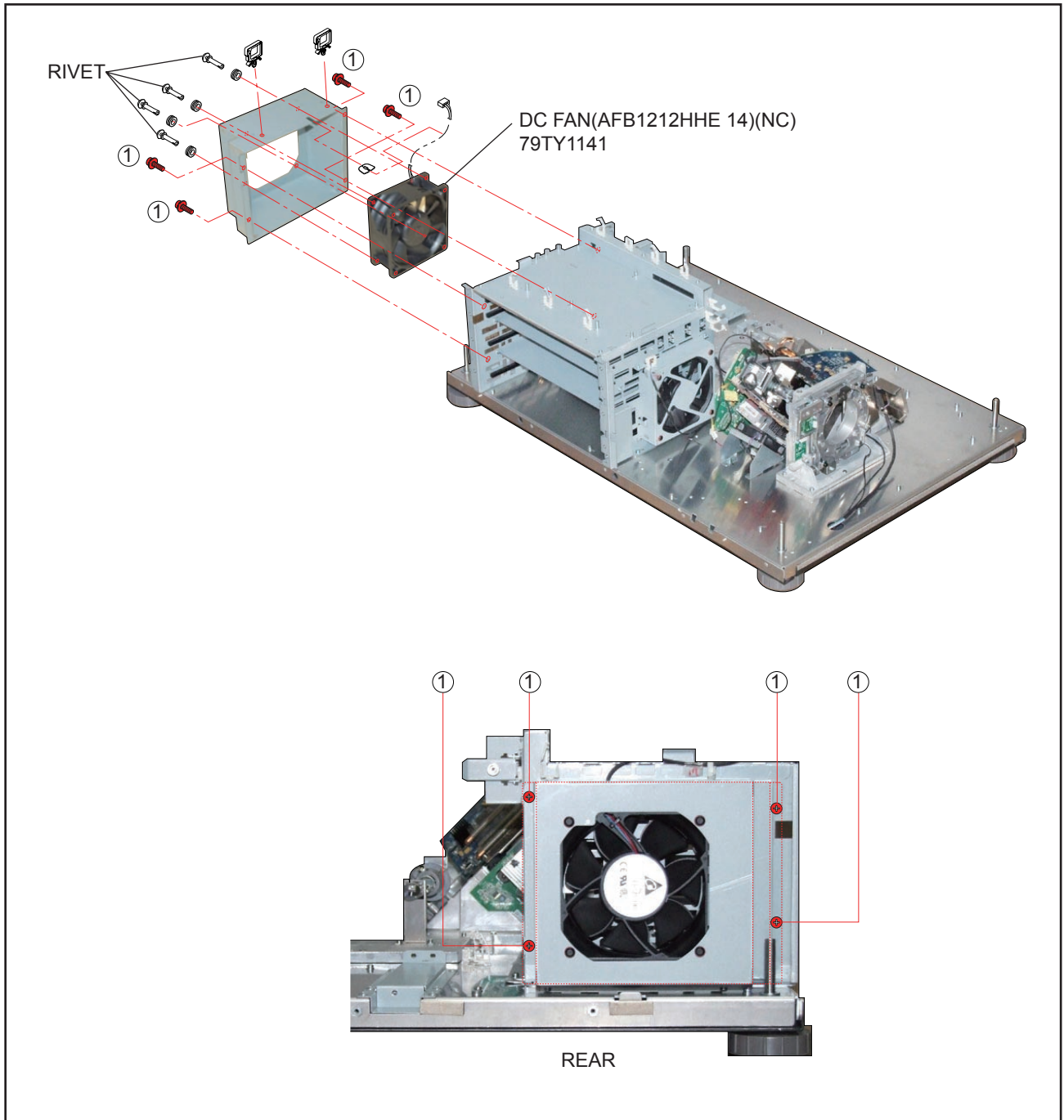
30. AC FILTER PWB ASSY/AC INLET PWB ASSY/POWER SUPPLY-BS/DC FAN(AFB1212H SM09)/DC FAN(AFB1212H 13)/POWER SUPPLY-DC

- (1) Remove 7 pcs. of screw ① and take out the assemblies.
- (2) Remove 5 pcs. of screw ② and take out the AC FILTER PWB ASSY.
- (3) Remove 4 pcs. of screw ③ and 1 pc. of screw ④ to take out the assemblies.
- (4) Remove 3 pcs. of screw ⑤ and take out the assemblies.
- (5) Remove 3 pcs. of screw ⑥ and 3 pcs. of screw ⑦ to take out the POWER SUPPLY-BS.
- (6) Remove 4 pcs. of screw ⑧ and take out the assemblies.
- (7) Remove 8 pcs. of Rivet and take out the DC FAN(AFB1212H SM09)/DC FAN(AFB1212H 13).
- (8) Remove 4 pcs. of screw ⑨ and take out the POWER SUPPLY-DC.



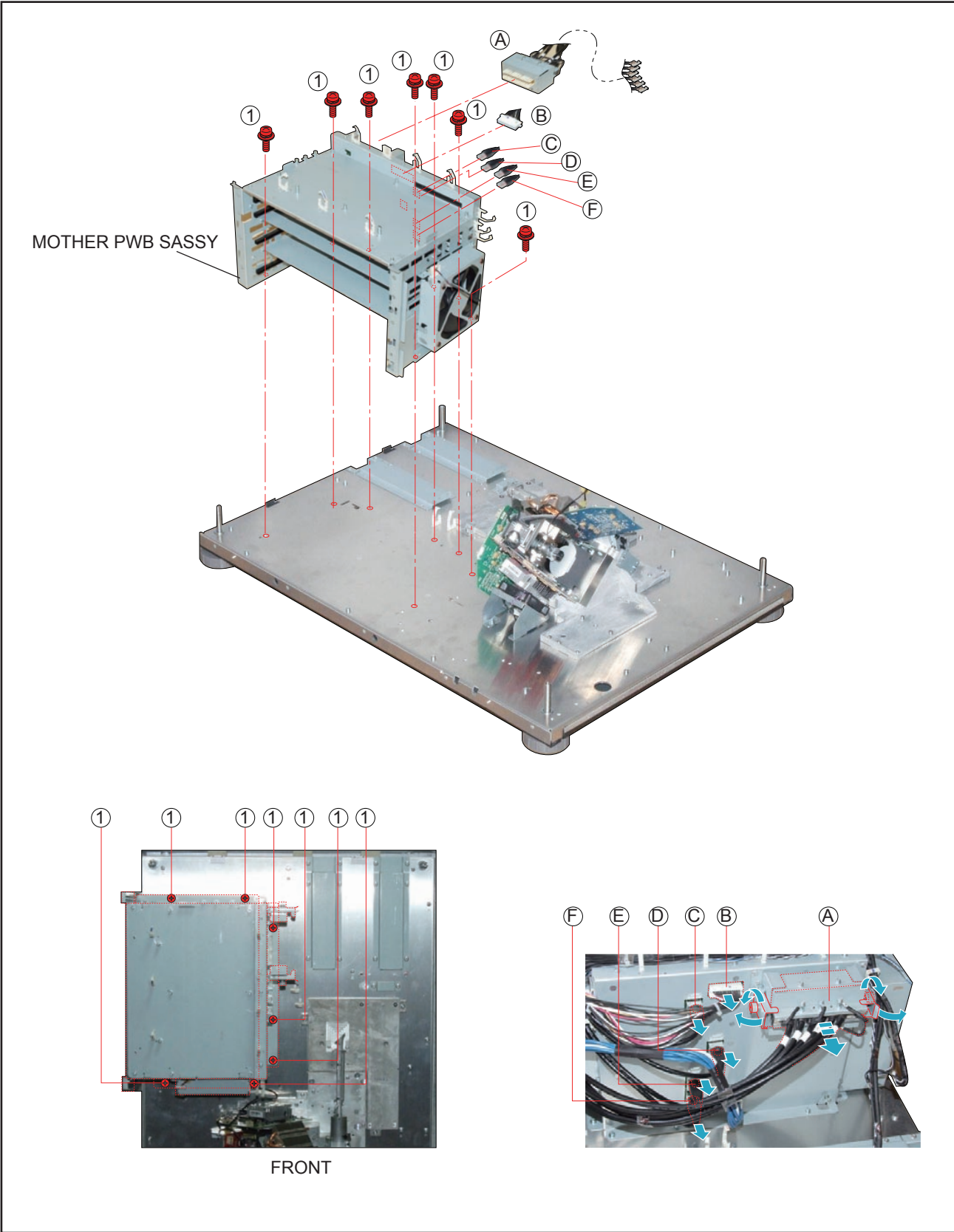
31. DC FAN(AFB1212HHE 14)

- (1) Remove 4 pcs. of screw ① and take out the assemblies.
- (2) Remove 4 pcs. of Rivet and take out the DC FAN(AFB1212HHE 14).



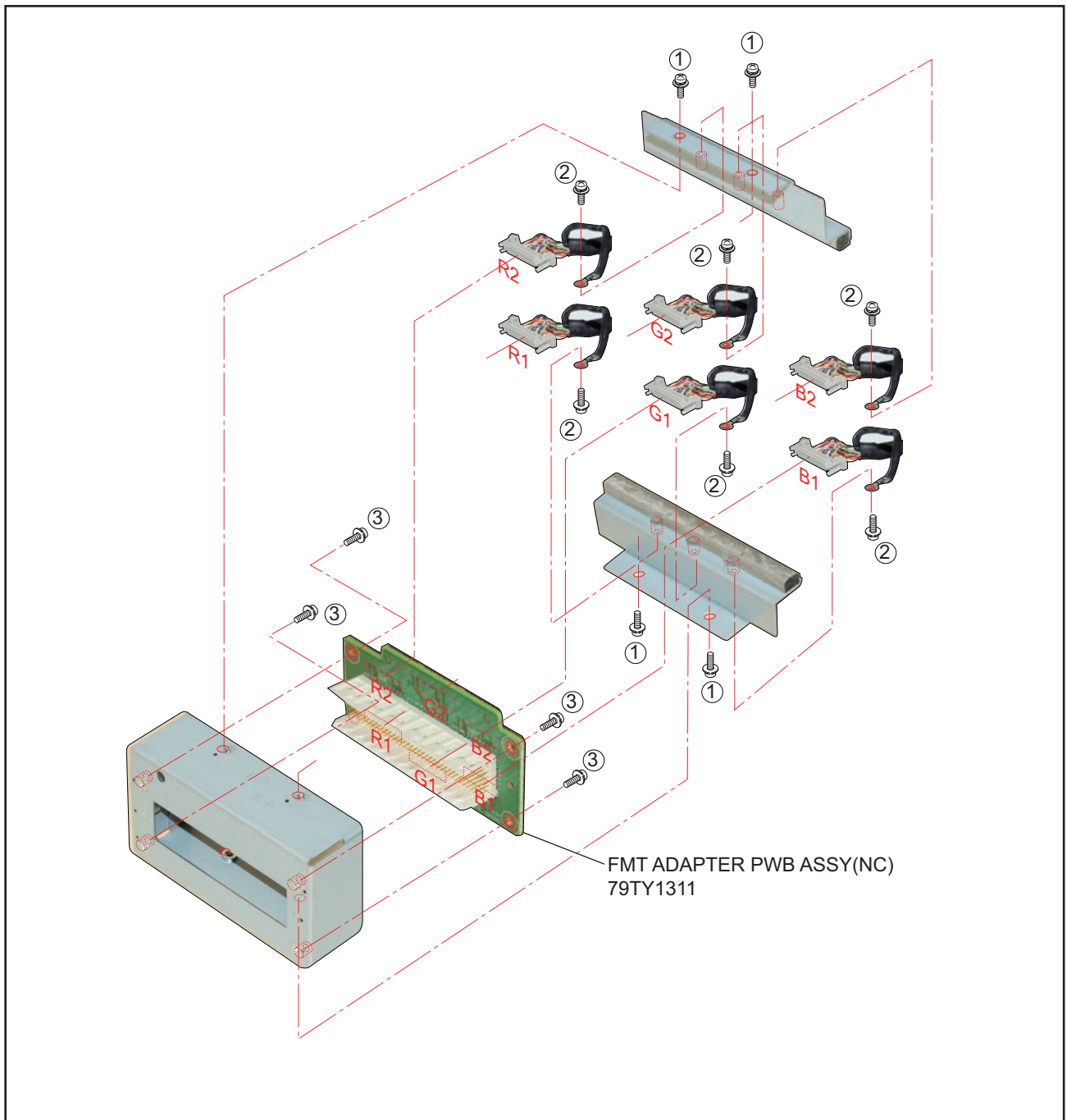
32. MOTHER PWB SASSY

(1) Remove 7 pcs. of screw ① and take out the MOTHER PWB SASSY.



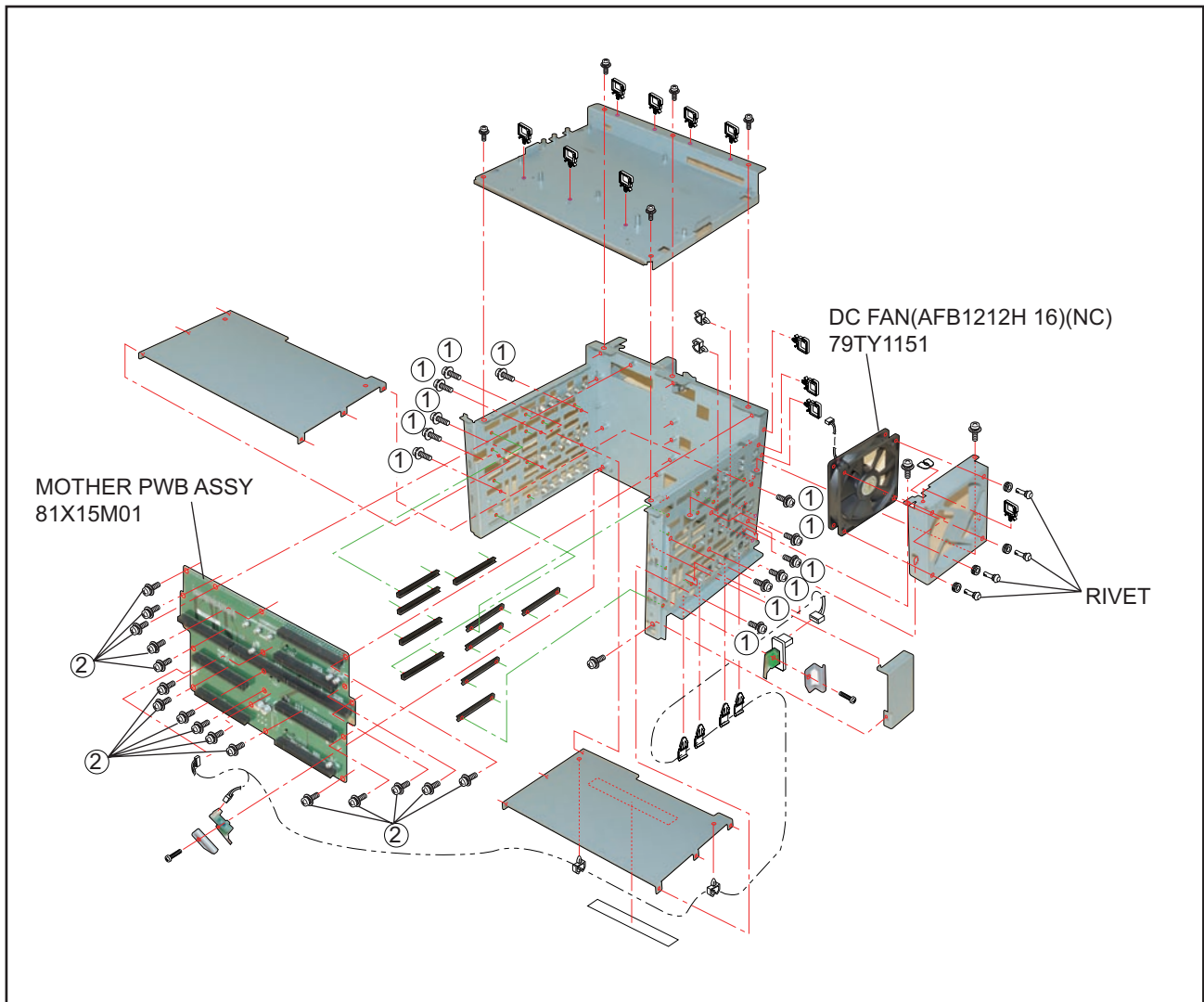
33. FMT ADAPTER PWB ASSY

- (1) Remove 4 pcs. of screw ① and 6 pcs. of screw ② to take out the Connectors.
- (2) Remove 4 pcs. of screw ③ and take out the FMT ADAPTER PWB ASSY.



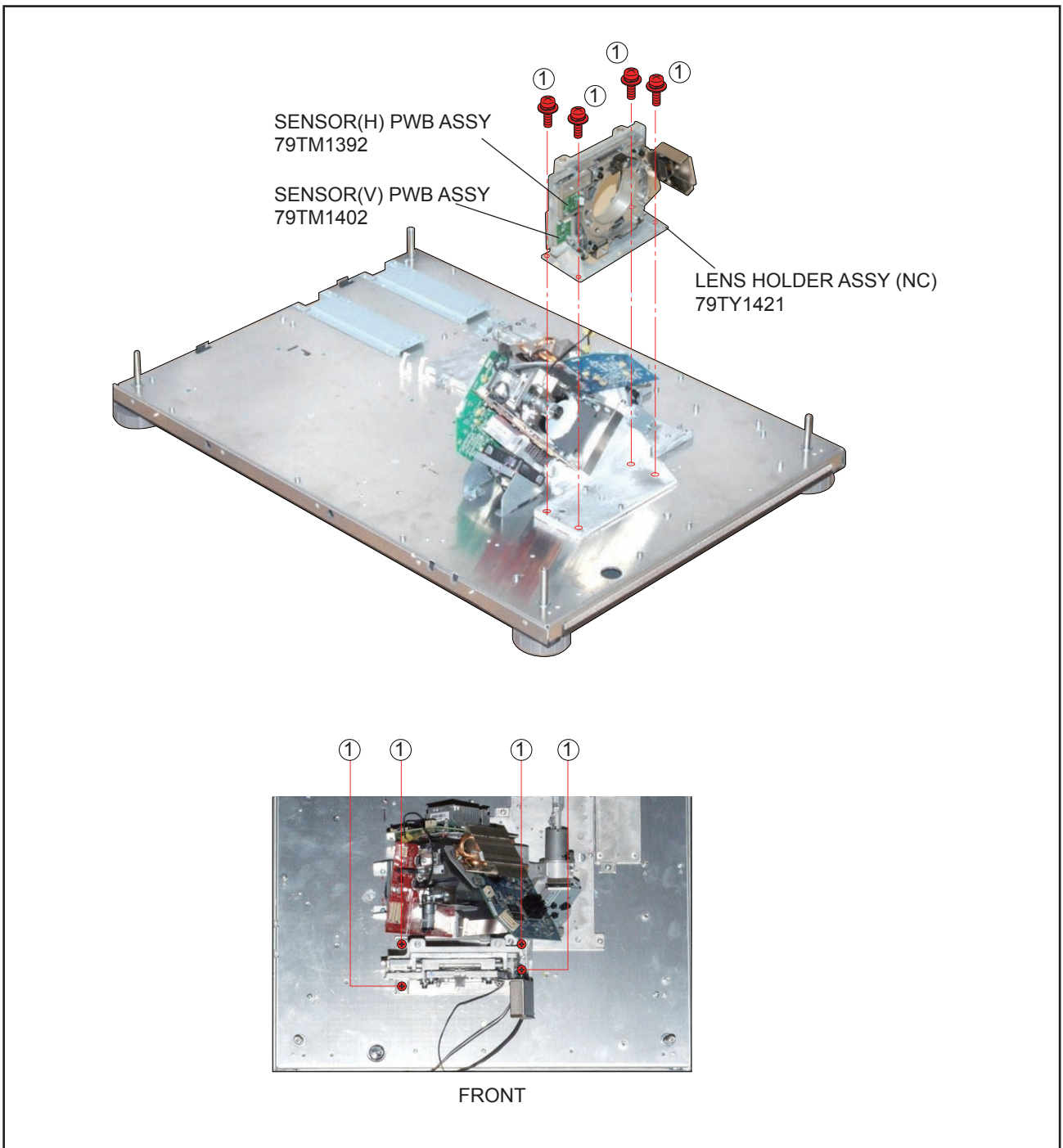
34. DC FAN(AFB1212H 16)/MOTHER PWB ASSY

- (1) Remove 4 pcs. of Rivet and take out the DC FAN(AFB1212H 16).
- (2) Remove 12 pcs. of screw ① and take out the Plates.
- (3) Remove 16 pcs. of screw ② and take out the MOTHER PWB ASSY.



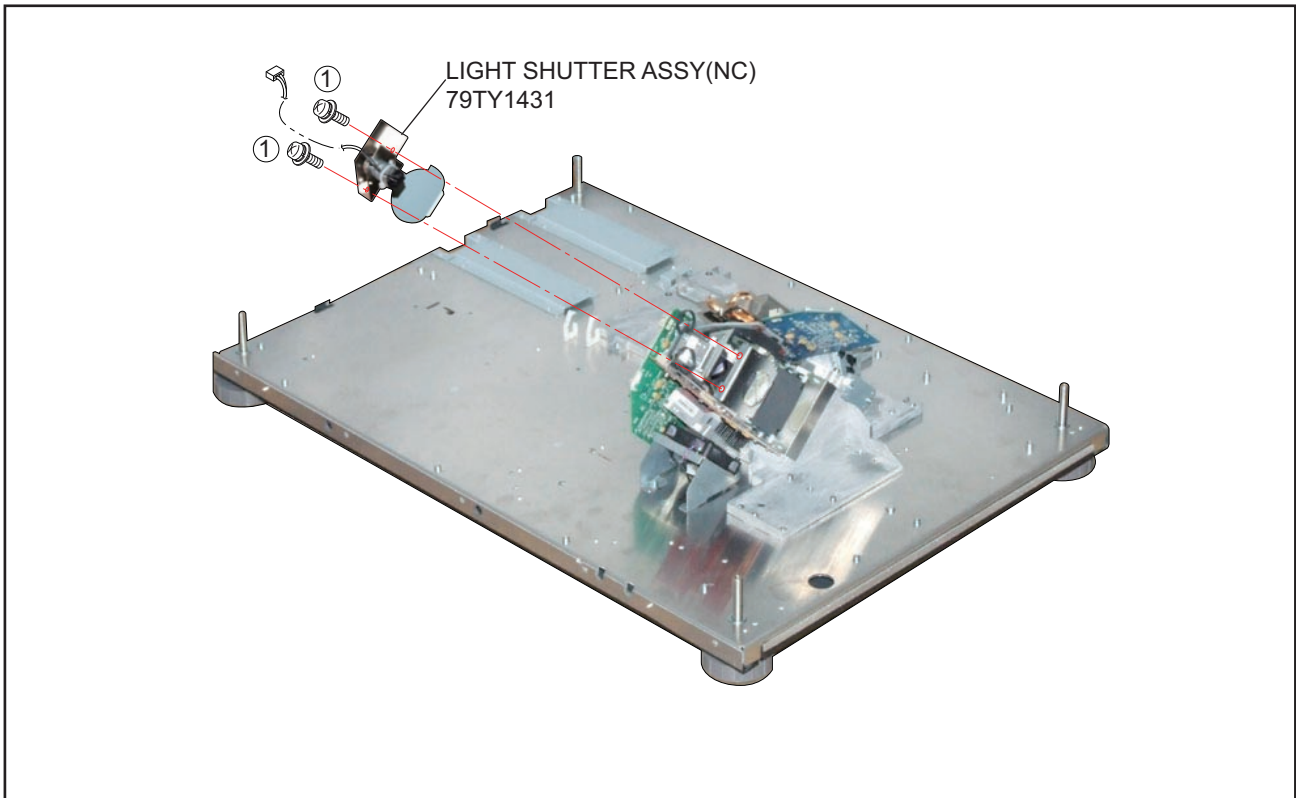
35. LENS HOLDER ASSY

(1) Remove 12 pcs. of screw ① and take out the LENS HOLDER ASSY.



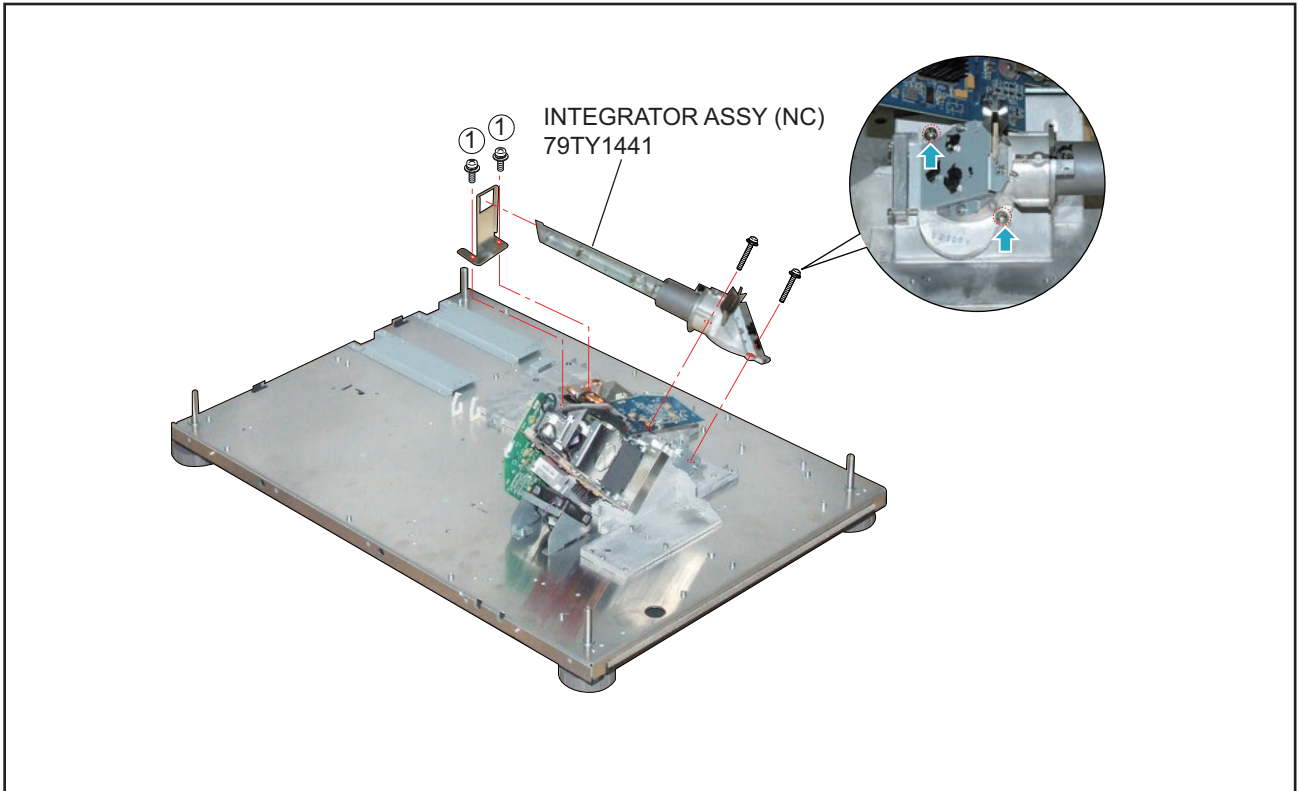
36. LIGHT SHUTTER ASSY

(1) Remove 2 pcs. of screw ① and take out the LIGHT SHUTTER ASSY.



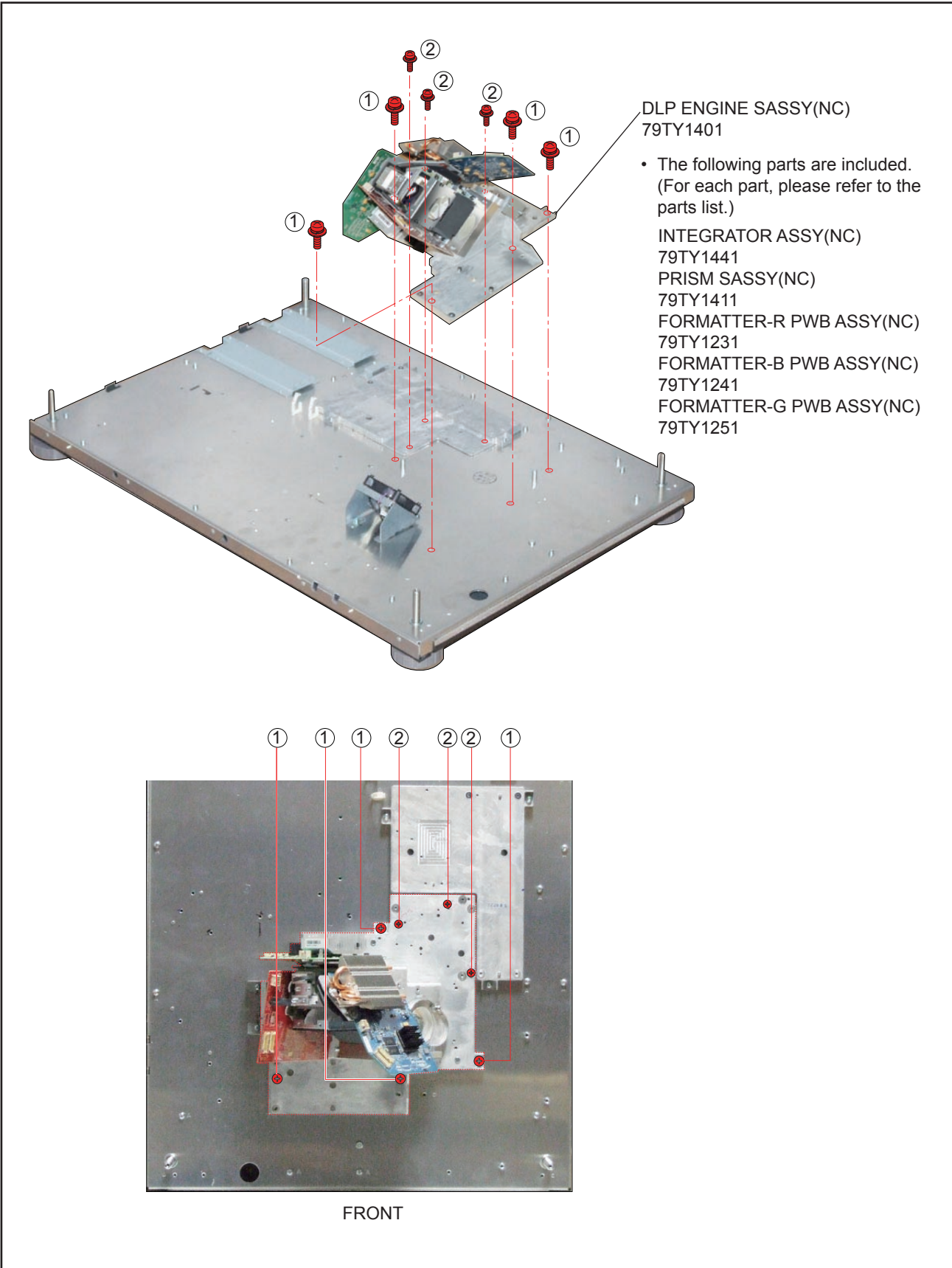
37. INTEGRATOR ASSY

(1) Remove 2 pcs. of screw ① and take out the INTEGRATOR ASSY.



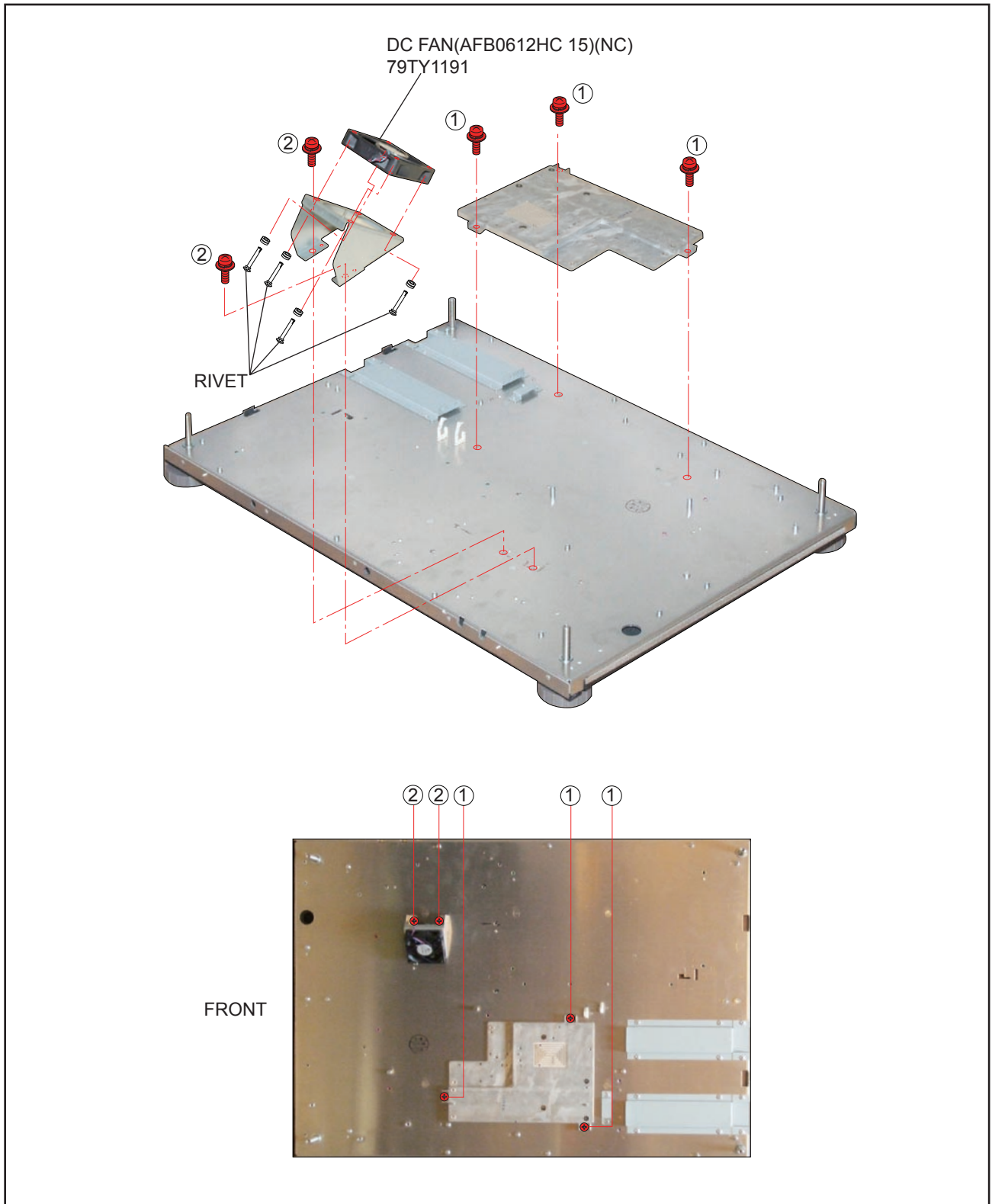
38. DLP ENGINE SASSY

(1) Remove 4 pcs. of screw ① and 3 pcs. of screw ② to take out the DLP ENGINE SASSY.



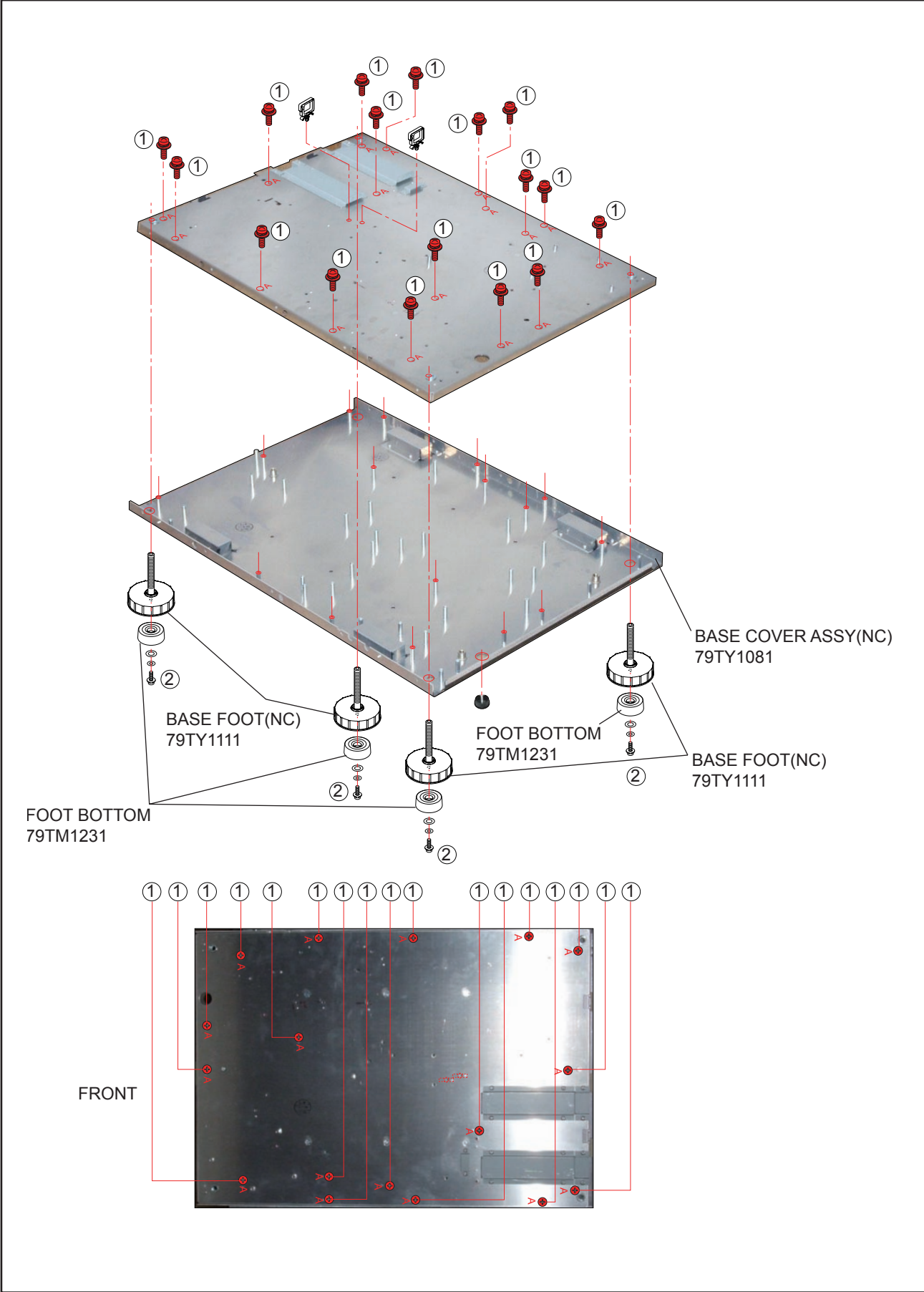
39. DC FAN(AFB0612HC 15)

- (1) Remove 2 pcs. of screw ① and take out the assemblies.
- (2) Remove 4 pcs. of Rivet and take out the DC FAN(AFB0612HC 15).

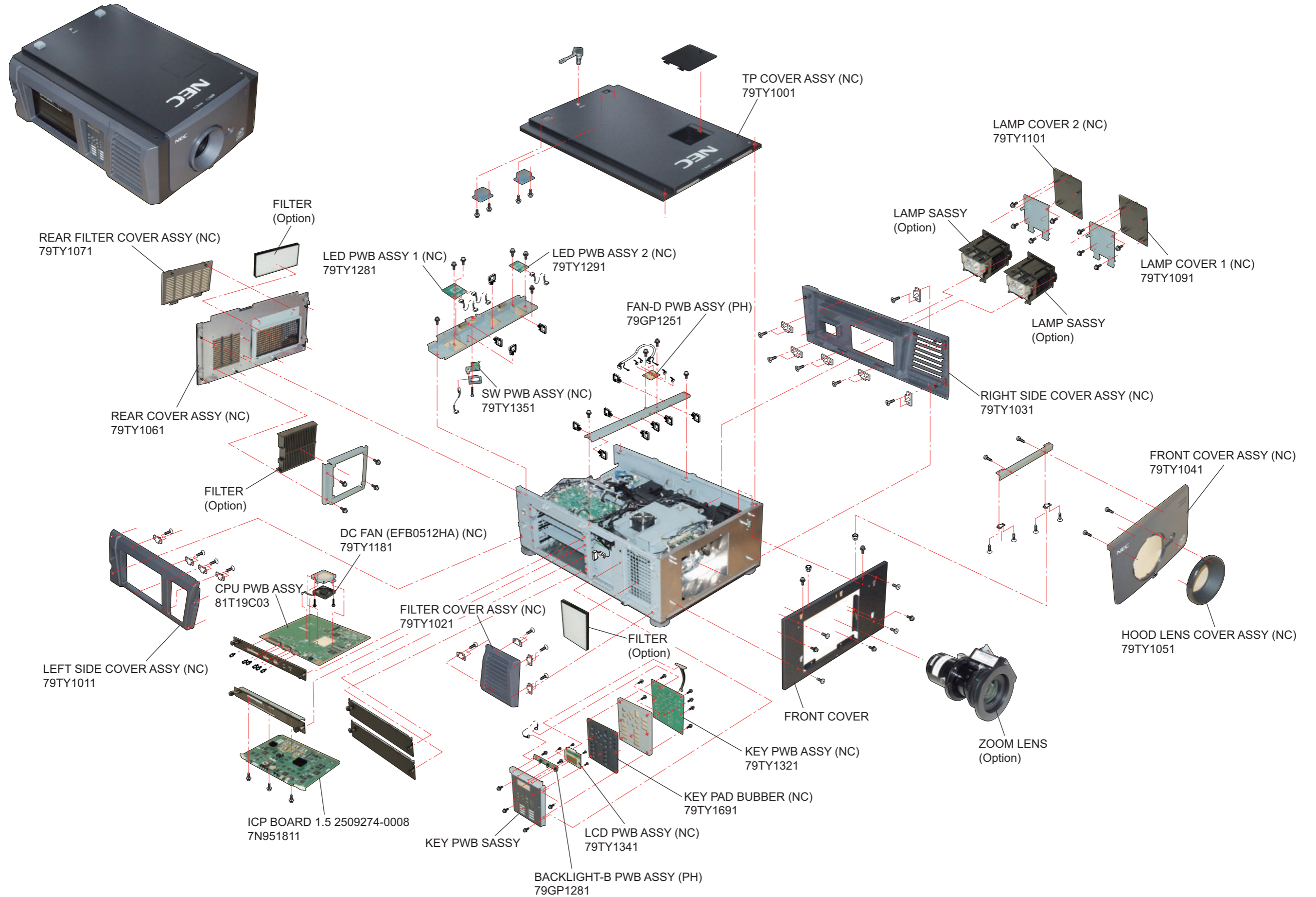


40. BASE COVER ASSY/BASE FOOT/FOOT BOTTOM

- (1) Remove 17 pcs. of screw ① and take out the BASE COVER ASSY.
- (2) Remove 4 pcs. of screw ② and take out the BASE FOOT/FOOT BOTTOM.

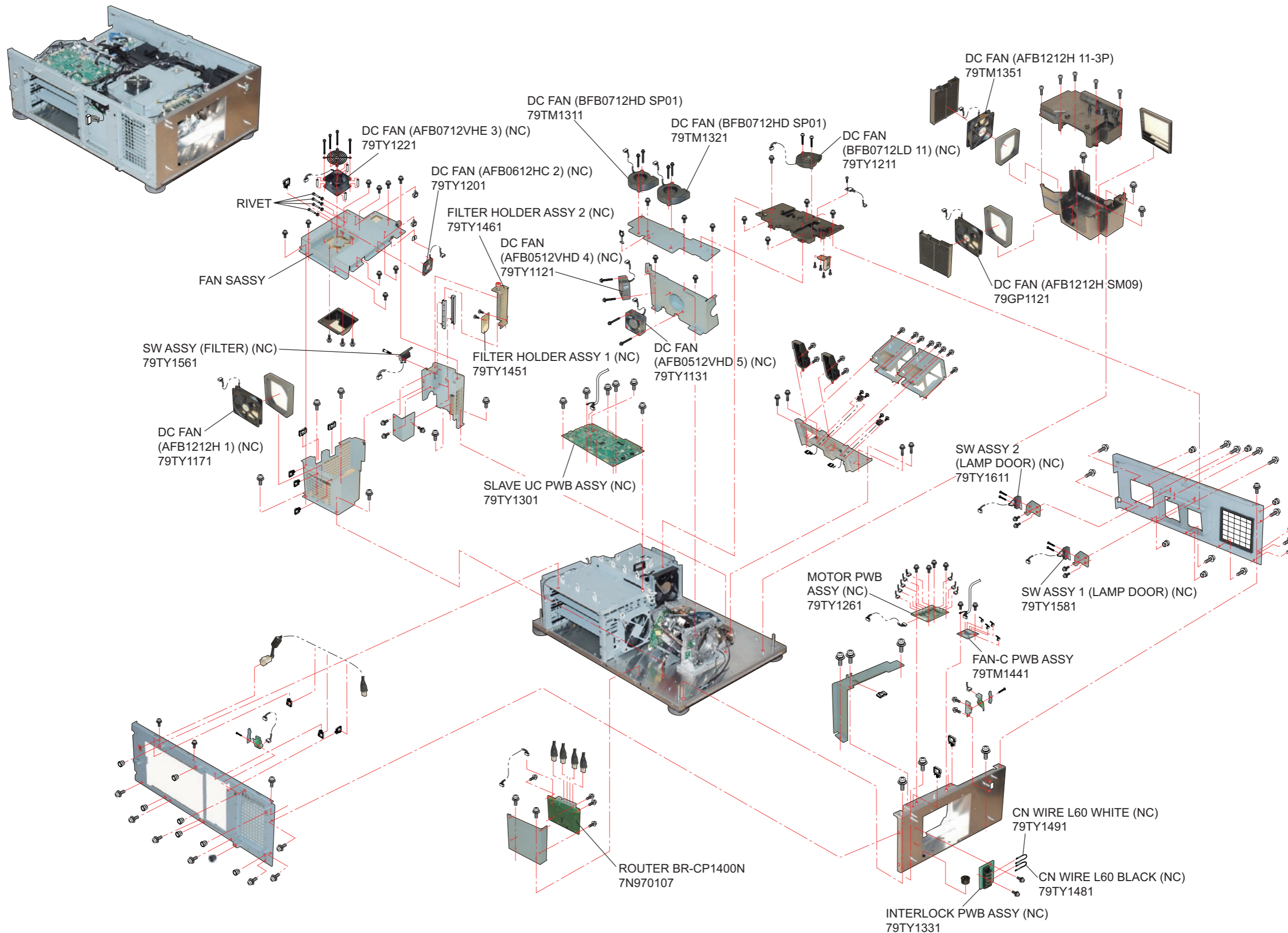


• Main body



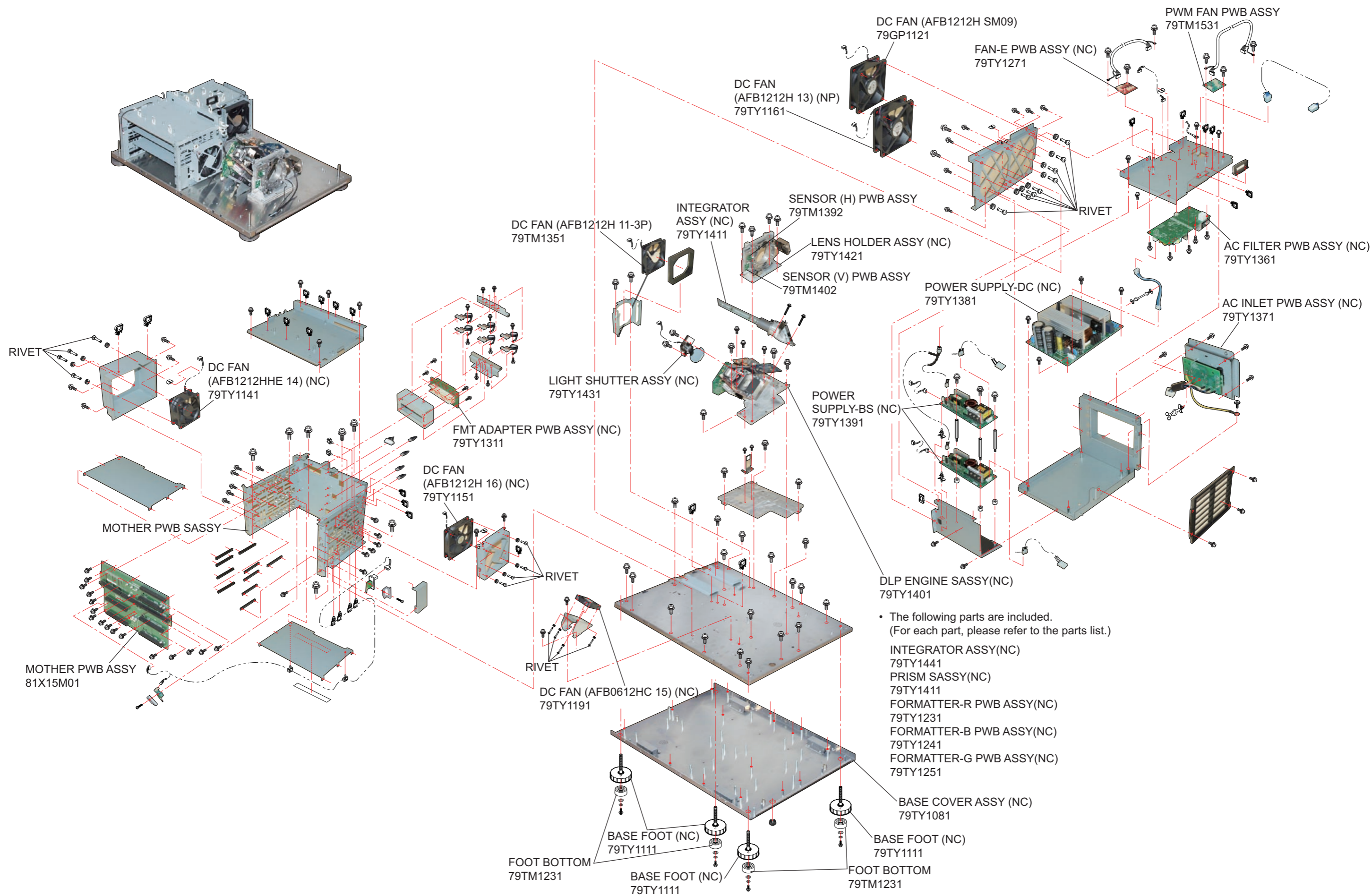
“Confidential, Do Not Duplicate without written authorization from NEC.”

• Main body



“Confidential, Do Not Duplicate without written authorization from NEC.”

• Engine sassy


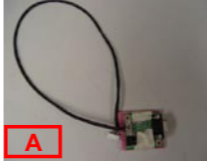
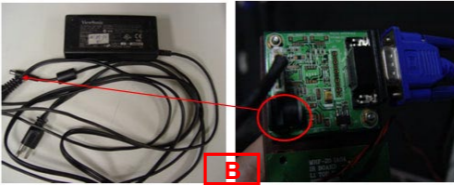

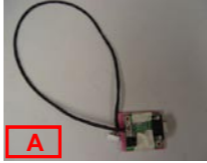
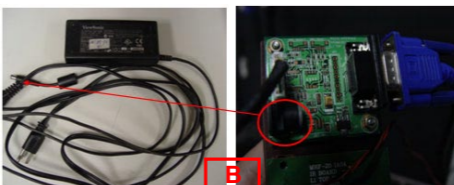



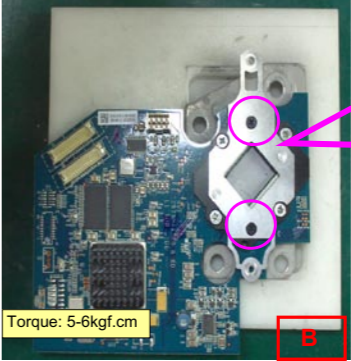
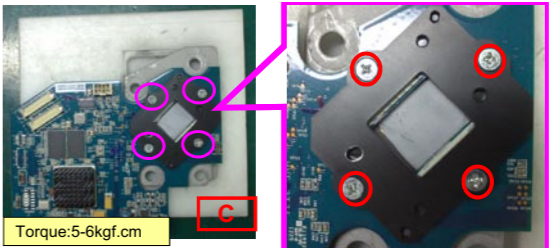



• The following parts are included.
(For each part, please refer to the parts list.)




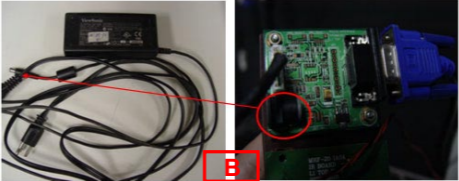






- INTEGRATOR ASSY (NC) 79TY1441
- PRISM SASSY (NC) 79TY1411
- FORMATTER-R PWB ASSY (NC) 79TY1231
- FORMATTER-B PWB ASSY (NC) 79TY1241
- FORMATTER-G PWB ASSY (NC) 79TY1251

ADJUSTMENT MATRIX

Adjust matrix

ITEM	Service parts			Adjustments after parts replacement Adjustments needed: Yes No adjustments needed: No	Pages of the service manual where the items and contents of the required adjustments are described.	Jigs and software required for adjustments.
	DESCRIPTION	P/N	PARTS PHOTO			
1	SENSOR (H) PWB ASSY	79TM1392		Yes	Please kindly check Service Manual P10-1 Motor Board Setting and Adjust	  <p>(1). Motor Board Jig as photo (A) (2). 12V / 1 A_AC Adapter Jig as photo (B)</p>
2	SENSOR (V) PWB ASSY	79TM1402		Yes	Please kindly check Service Manual P10-1 Motor Board Setting and Adjust	  <p>(1). Motor Board Jig as photo (A) (2). 12V / 1 A_AC Adapter Jig as photo (B)</p>
3	FORMATTER-B PWB ASSY(NC)	79TY1241		No	Non	    <p>(1). 5mm Cross Torque Screwdriver Jig (2). Loose 2 screws for Heat-Sink 5 kg-f -cm as photo (A) (3). Loose 2 screws for Heat-Sink bracket 5 ~ 6 kg-f-cm as photo (B) (4). Loose Screw 4 screws for DMD bracket 5 ~ 6 kg-f-cm as photo (C)</p>
4	FORMATTER-R PWB ASSY(NC)	79TY1231		No	Non	All Jigs and Torque are the same with B formatter board. Please kindly refer to B formatter board to disassembly and assembly.



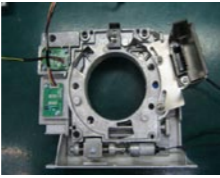
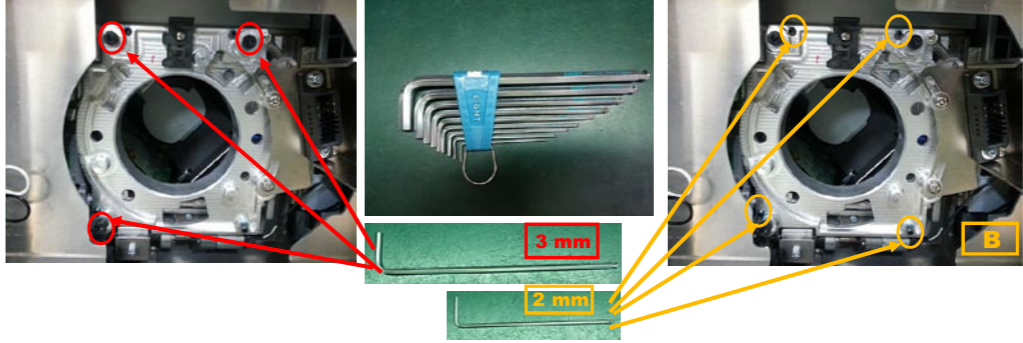





ADJUSTMENT MATRIX

ITEM	Service parts			Adjustments after parts replacement Adjustments needed: Yes No adjustments needed: No	Pages of the service manual where the items and contents of the required adjustments are described.	Jigs and software required for adjustments.
	DESCRIPTION	P/N	PARTS PHOTO			
5	FORMATTER-G PWB ASSY(NC)	79TY1251		No	Non	All Jigs and Torque are the same with B formatter board. Please kindly refer to B formatter board to disassembly and assembly.
6	MOTOR PWB ASSY(NC)	79TY1261		Yes	Please kindly check Service Manual P10-1 Motor Board Setting and Adjust	  <p>(1). Motor Board Jig as photo (A) (2). 12V / 1 A AC Adapter Jig as photo (B)</p>
7	PWM FAN PWB ASSY	79TM1531		No	Non	Non
8	FAN-C PWB ASSY	79TM1441		No	Non	Non
9	FAN-D PWB ASSY(PH)	79GP1251		No	Non	Non
10	FAN-E PWB ASSY(NC)	79TY1271		No	Non	Non
11	LED PWB ASSY 1 (NC)	79TY1281		No	Non	Non
12	LED PWB ASSY2 (NC)	79TY1291		No	Non	Non

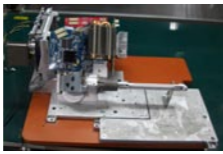

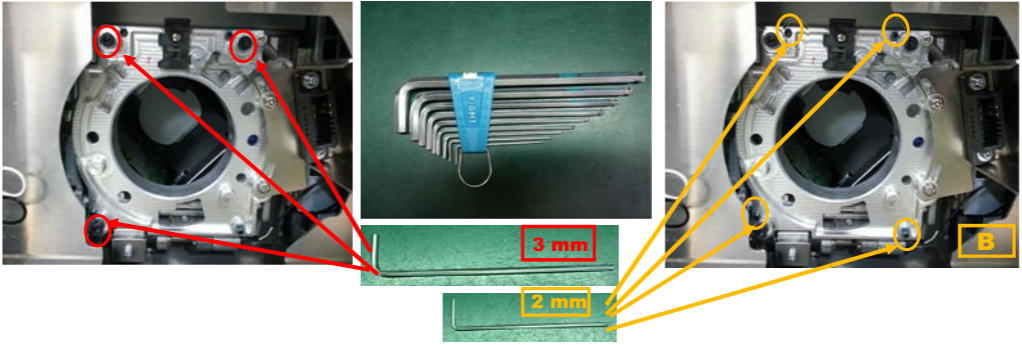
ADJUSTMENT MATRIX

ITEM	Service parts			Adjustments after parts replacement Adjustments needed: Yes No adjustments needed: No	Pages of the service manual where the items and contents of the required adjustments are described.	Jigs and software required for adjustments.
	DESCRIPTION	P/N	PARTS PHOTO			
13	SLAVE UC PWB ASSY(NC)	79TY1301		No	Non	Non
14	FMT ADAPTER PWB ASSY(NC)	79TY1311		No	Non	Non
15	KEY PWB ASSY (NC)	79TY1321		No	Non	Non
16	INTERLOCK PWB ASSY(NC)	79TY1331		No	Non	Non
17	LCD PWB ASSY (NC)	79TY1341		No	Non	Non
18	SW PWB ASSY (NC)	79TY1351		No	Non	Non
19	AC FILTER PWB ASSY(NC)	79TY1361		No	Non	Non
20	INLET PWB ASSY (NC)	79TY1371		No	Non	Non
21	POWER SUPPLY-DC(NC)	79TY1381		No	Non	Non

ADJUSTMENT MATRIX

ITEM	Service parts			Adjustments after parts replacement Adjustments needed: Yes No adjustments needed: No	Pages of the service manual where the items and contents of the required adjustments are described.	Jigs and software required for adjustments.
	DESCRIPTION	P/N	PARTS PHOTO			
22	BACKLIGHT-B PWB ASSY(PH)	79GP1281		No	Non	Non
23	POWER SUPPLY- BS(NC)	79TY1391		No	Non	Non
24	LENS HOLDER ASSY(NC)	79TY1421		Yes	Please kindly check Service Manual P10-14 Focus Adjust	 <p>(1) 3 mm Inner Hexagon Screwdriver Jig for adjusting Lens Mount as photo (A) (2) 2 mm Inner Hexagon Screwdriver Jig for locking and fixing Lens Mount as photo (B)</p>
25	LIGHT SHUTTER ASSY(NC)	79TY1431				
26	INTEGRATOR ASSY(NC)	79TY1441		Yes	Please kindly check Service Manual P10-8 Color Band Adjust	 <p>(1). 3.5 mm Cross Screwdriver Jig for adjusting Illumination as photo (A) (2). 5.5 mm Inner Hexagon Sleeve Screwdriver Jig for adjusting Illumination as photo (B)</p>
27	FILTER HOLDER ASSY 1(NC)	79TY1451		No	Non	Non
28	FILTER HOLDER ASSY 2(NC)	79TY1461		No	Non	Non

ADJUSTMENT MATRIX

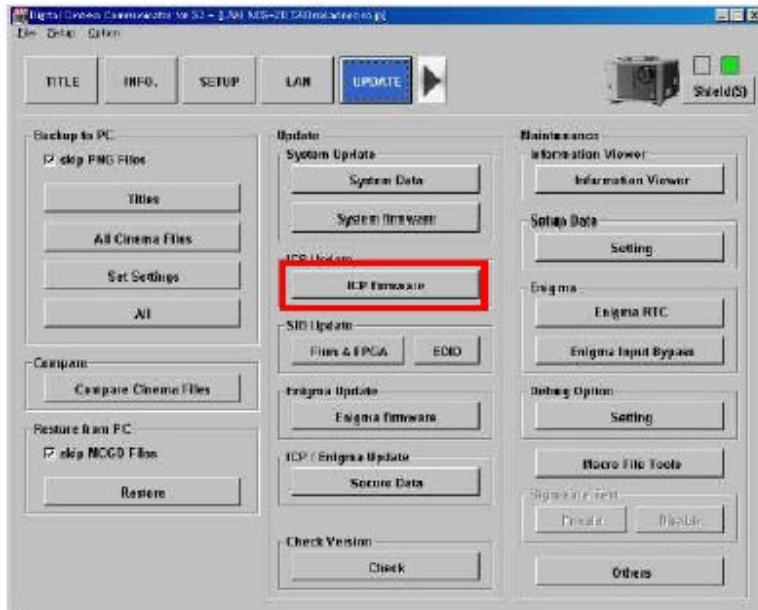
ITEM	Service parts			Adjustments after parts replacement Adjustments needed: Yes No adjustments needed: No	Pages of the service manual where the items and contents of the required adjustments are described.	Jigs and software required for adjustments.
	DESCRIPTION	P/N	PARTS PHOTO			
29	DLP ENGINE SASSY(NC)	79TY1401		No	Non	Non
30	PRISM SASSY (NC)	79TY1411		Yes	Please kindly check Service Manual P10-14 Focus Adjust	 <p>(1) 3 mm Inner Hexagon Screwdriver Jig for adjusting Lens Mount as photo (A) (2) 2 mm Inner Hexagon Screwdriver Jig for locking and fixing Lens Mount as photo (B)</p>

1. PROGRAM SETTING AND SOFTWARE DOWNLOAD

1-1. ICP Board Software Download

ICP BD Firmware Update

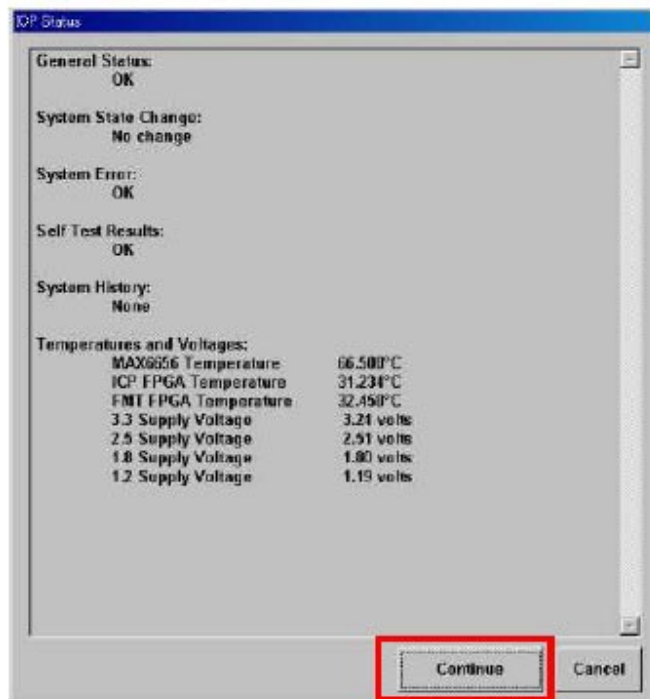
- 1) AC-ON projector.(in standby mode)
- 2) Connect DCC to the projector and enter service mode.
- 3) Go to DCC - [UPDATE] page, click on <ICP firmware>.



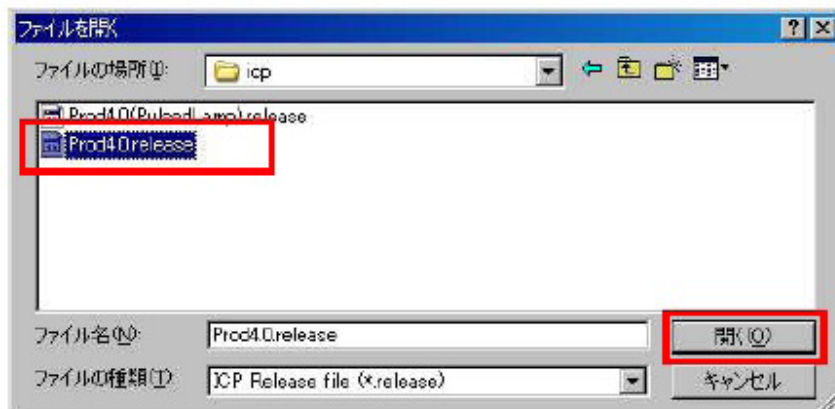
Caution) For Service Mode (Service Menu), refer to P61 ~ 63 in the Installation Manual.

PROGRAM SETTING AND SOFTWARE DOWNLOAD

4) If next dialog shows, click on <Continue>.

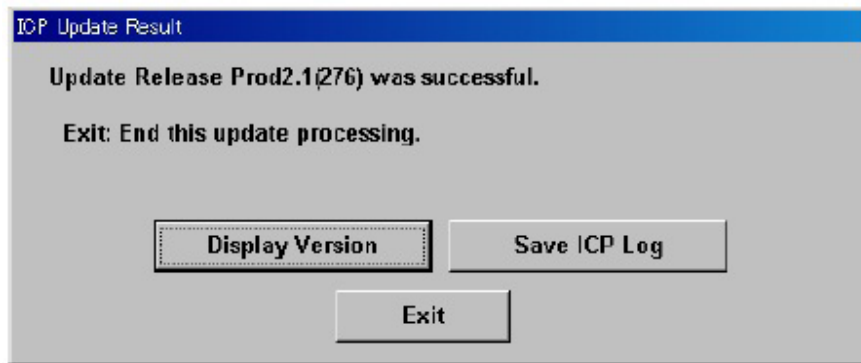


5) Find and select "NC_YS_RP0.106.09_Factory¥icp¥Prod4.0.release".

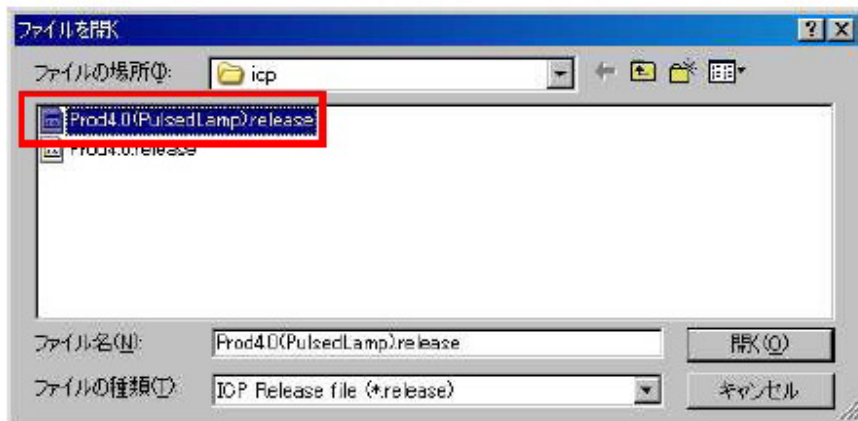


PROGRAM SETTING AND SOFTWARE DOWNLOAD

- 6) Projector will power up automatically and start to install ICP firmware.
- 7) The next message shows when download success.



- 8) Click on <Exit> and back to 3).
Then install "NC_YS_RP0.106.09_Factory¥icp¥Prod4.0(PulsedLamp).release".



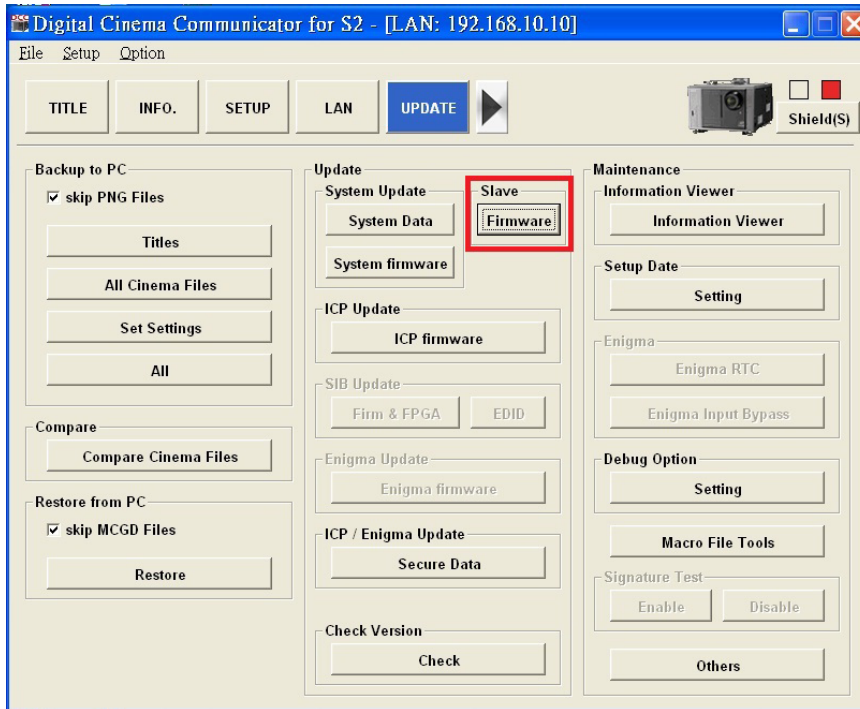
- 9) When completion of download, power off the projector from DCC – START page.

PROGRAM SETTING AND SOFTWARE DOWNLOAD

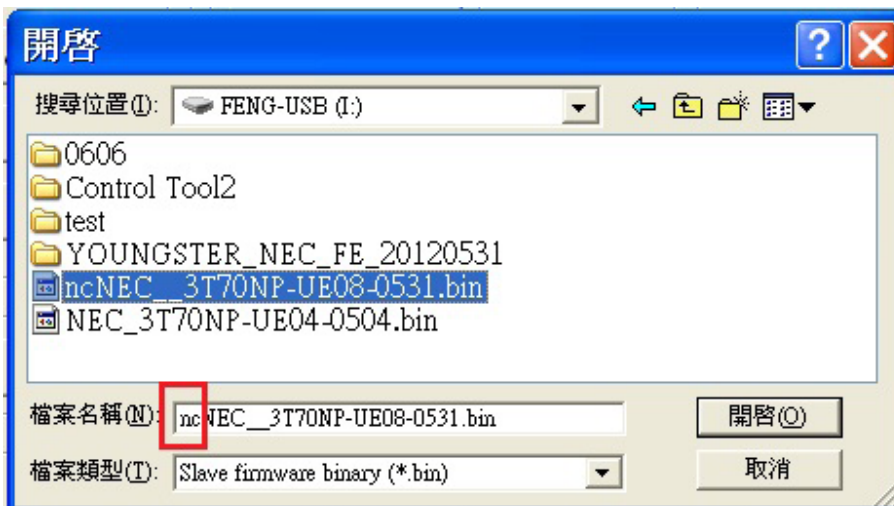
1-2. Slave MCU Board Software Download

Slave MCU BD Firmware Update

- 1) AC-ON projector.(in standby mode)
- 2) Connect DCC to the projector and enter service mode.
- 3) Go to DCC - [UPDATE] page, click on <Slave firmware>.



- 4) Find and select "ncNEC_3T70NP_UE-8-0531.bin".



PROGRAM SETTING AND SOFTWARE DOWNLOAD

5) Projector start to install Slave MCU firmware.



6) The next message shows when download success.

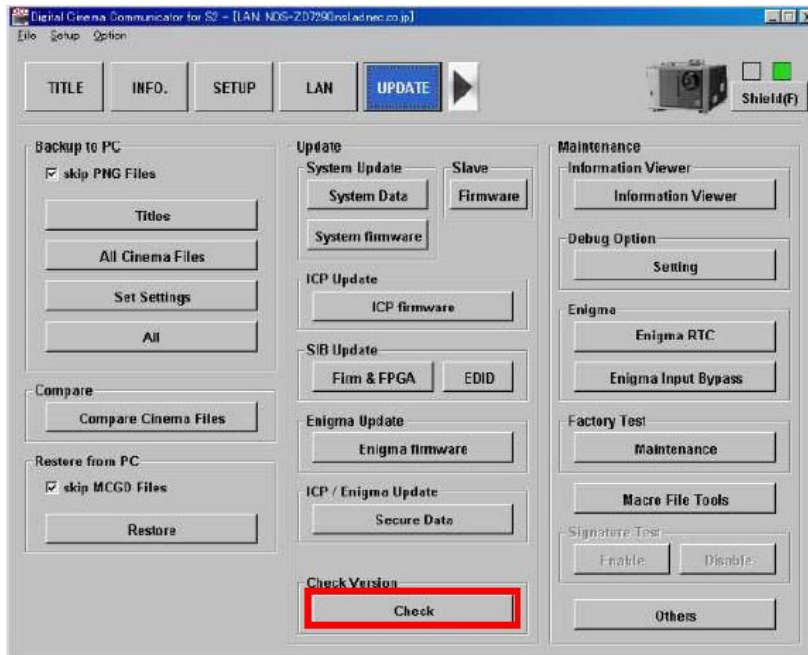


PROGRAM SETTING AND SOFTWARE DOWNLOAD

1-3. Full Auto Software Download

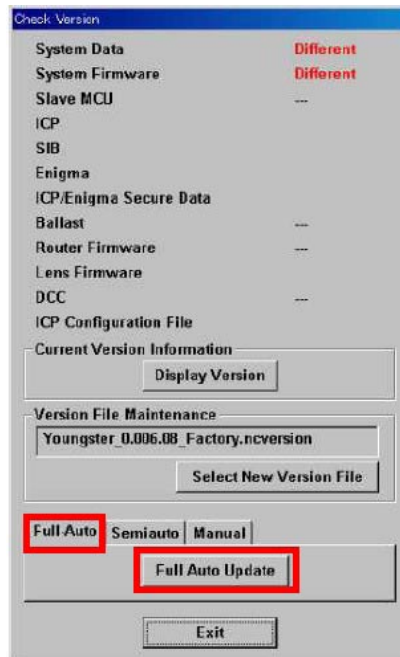
Full Auto Firmware Update

- 1) AC-ON projector.(in standby mode)
- 2) Connect DCC to the projector and enter service mode.
- 3) Click the “Check” button in “Check Version” in the DCC-UPDATE menu.



PROGRAM SETTING AND SOFTWARE DOWNLOAD

- 4) Click the “Full Auto Update” button in the “Full-Auto” tab.



- 5) Find and select the ncrelease file stored in the root folder of Release Package as below.

Release Package:

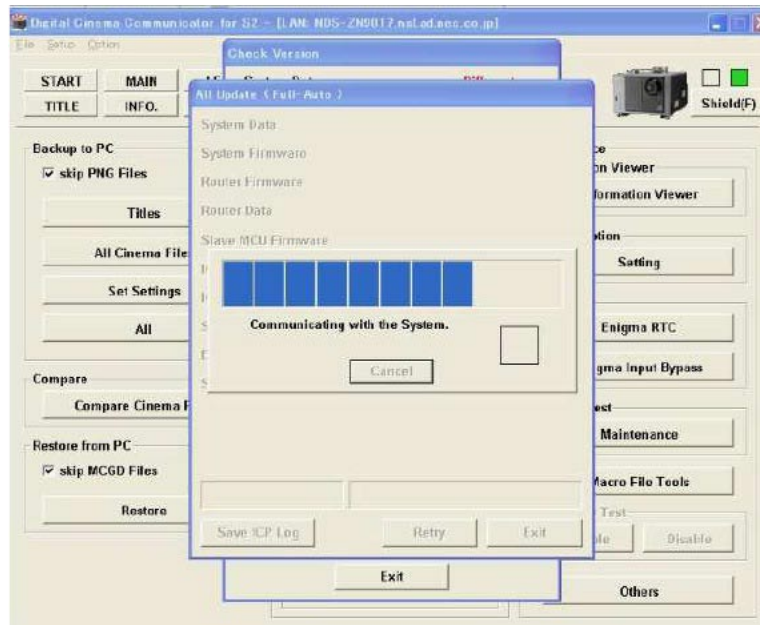
NC_S2_RP_*.***_Factory

└─ [Release*.***_Factory.ncrelease]

*.***: version

PROGRAM SETTING AND SOFTWARE DOWNLOAD

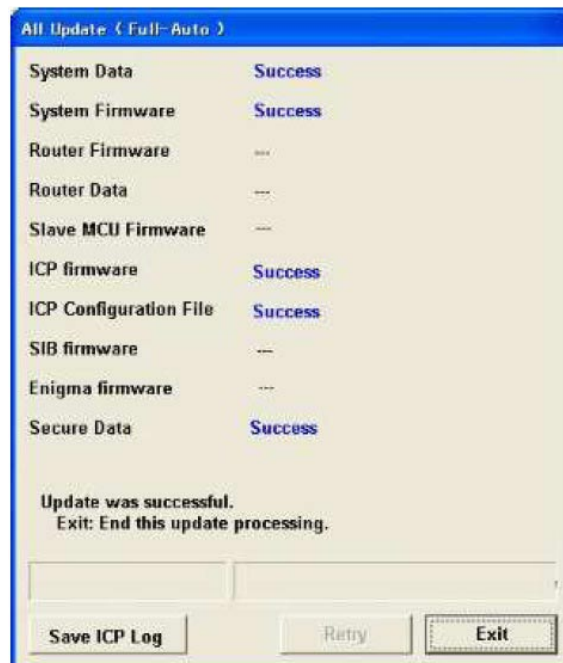
6) A progress bar is displayed and the update begins. The update proceeds automatically.



7) When the update has finished, the All Update screen is displayed.

8) Check the result of the update.

If "Error" is not displayed, the update has completed successfully.



Failure case 1) "Error" is displayed

If the ICP firmware update fails, the "Retry" button is enabled. Click the "Retry" button to execute the update again. If the update fails again, click the "Save ICP Log" button to save the log from when the update was executed.

PROGRAM SETTING AND SOFTWARE DOWNLOAD

After the log has been saved, click the “Exit” button to cancel the update.
Next, contact NECDS (and provide them with the log you saved).

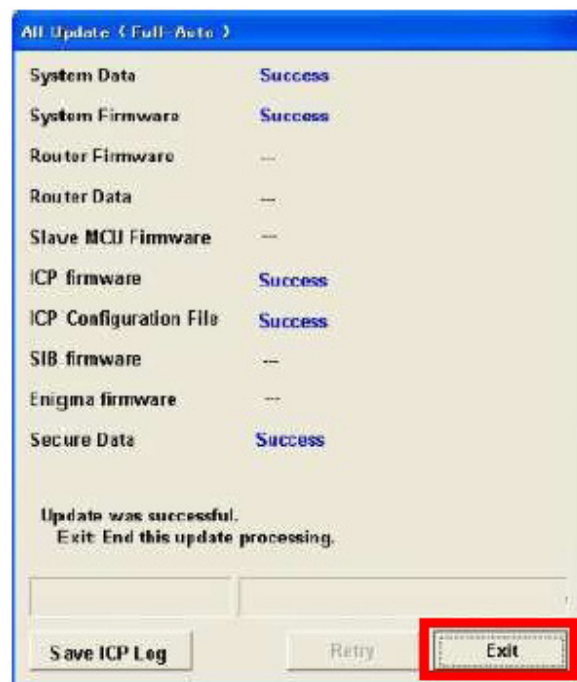


Failure case2) Next message is showing.



Click “OK” to close message, then click “Exit” button in All Update screen. AC-Off the projector when it goes to STBY and replaces ICP board.

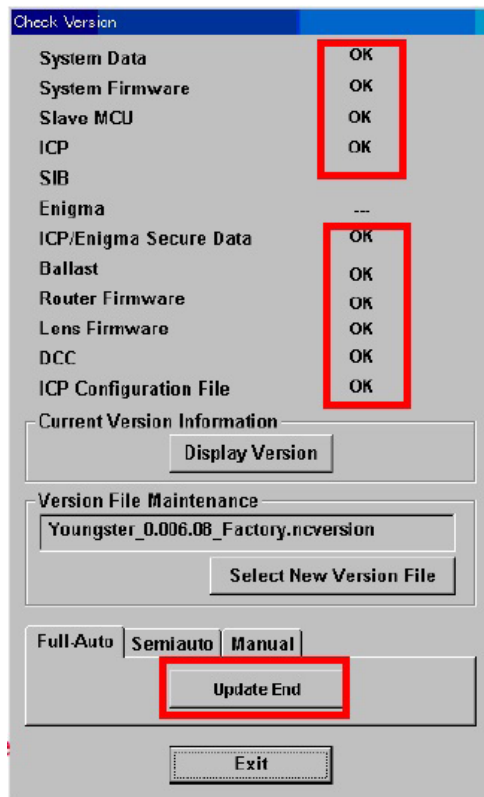
9) Click the “Exit” button in All Update screen to close.



PROGRAM SETTING AND SOFTWARE DOWNLOAD

10) Check that all of the Check Version results are “OK”, and then click the “Update End” button in the “Full-Auto” tab.

Once the projector enters standby mode, the update is complete.



If “Different” is displayed

Click the “Update End” button in the “Full-Auto” tab. When the projector enters standby mode, return to step 3) and execute the update again.

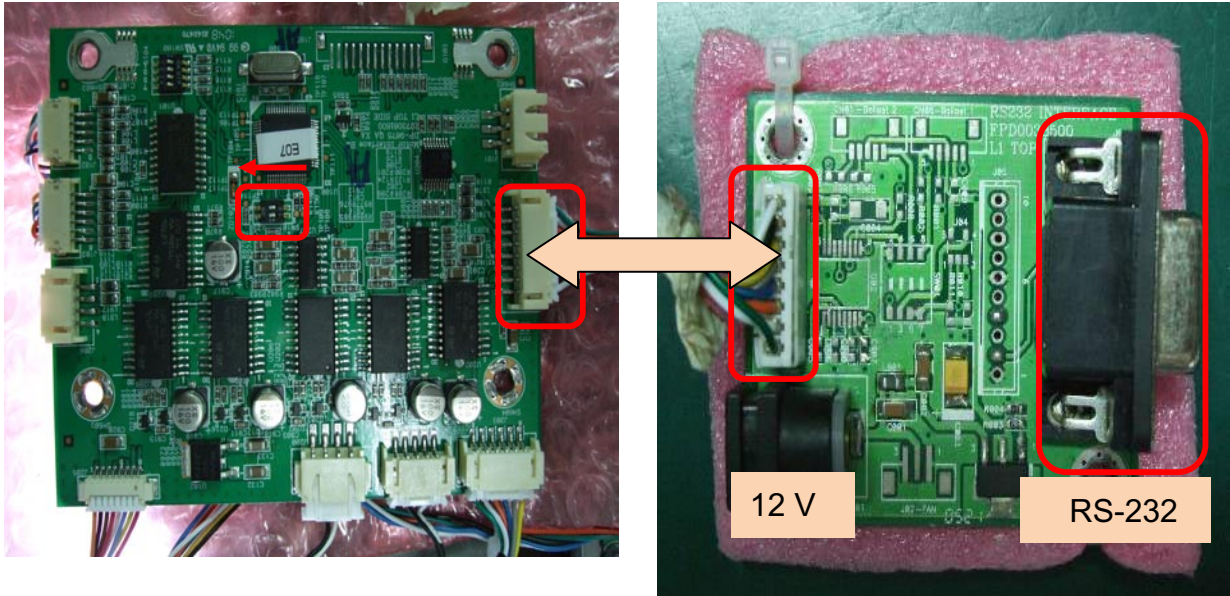
PROGRAM SETTING AND SOFTWARE DOWNLOAD

1-4. Motor Board Software Download

Motor BD Download

A. SW10 switch to on

B. Connect to Jig like follow image and power on projector.



C. Run "Flash Magic"

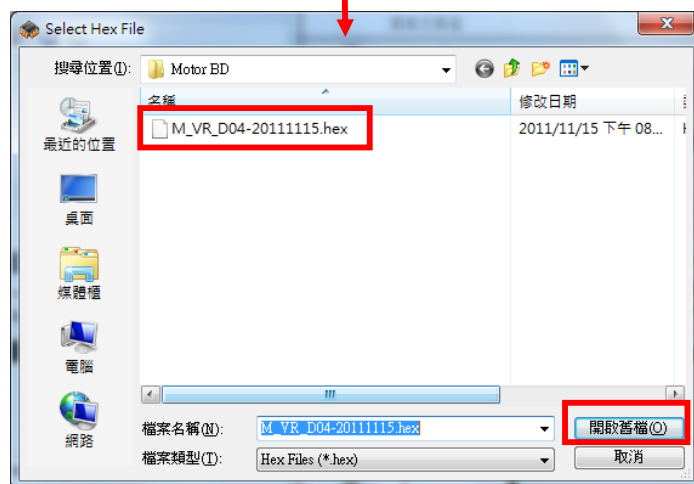
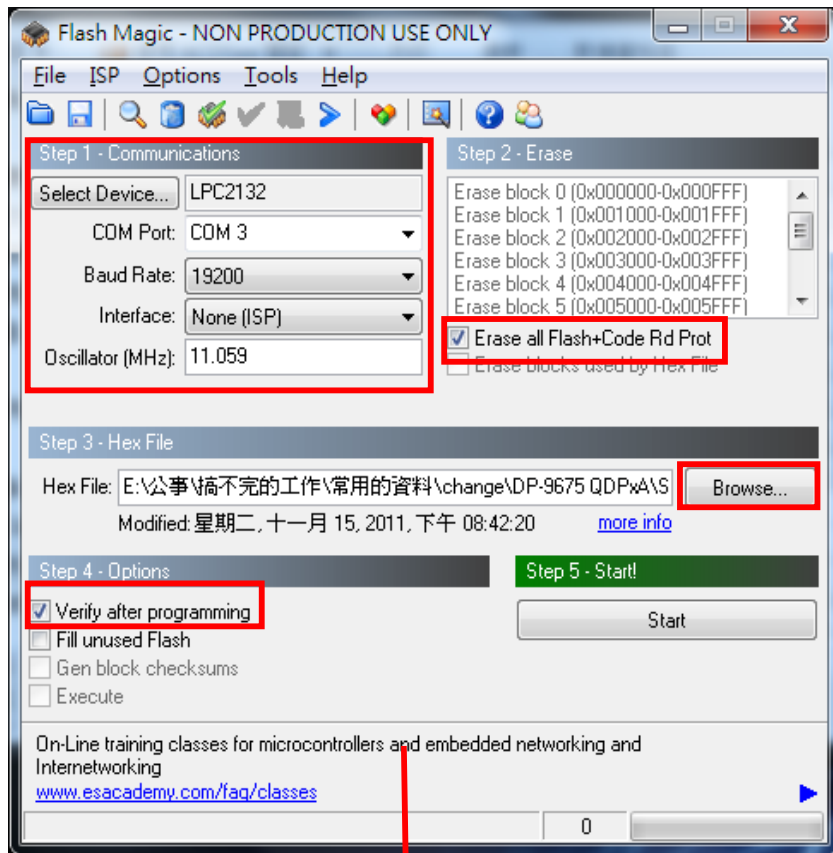
D. Set "Select Device" to LPC2132

E. Set Com port, Baud Rate, Oscillator.

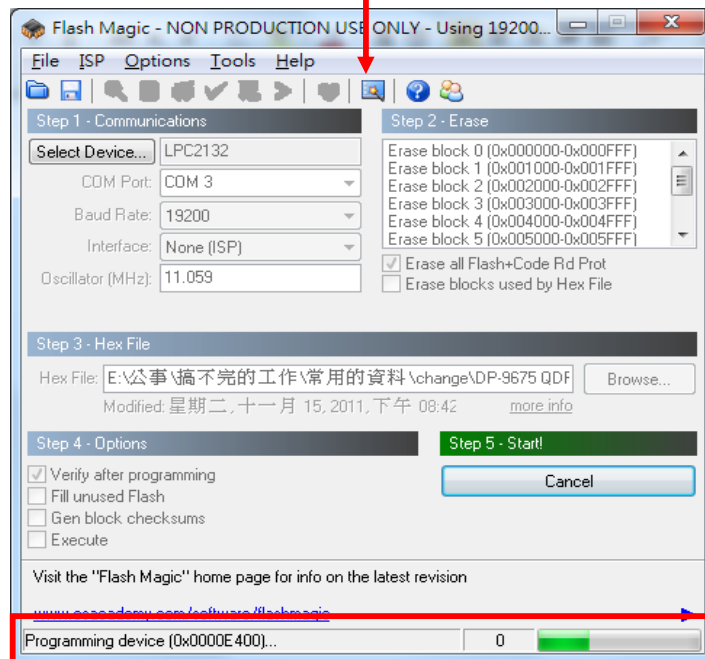
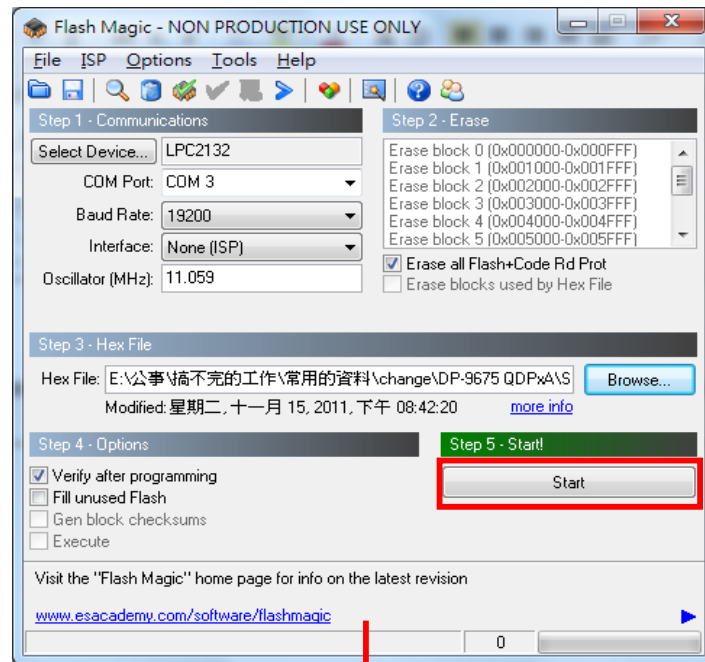
F. Click "Browse" to choose file.

G. Click "Start"

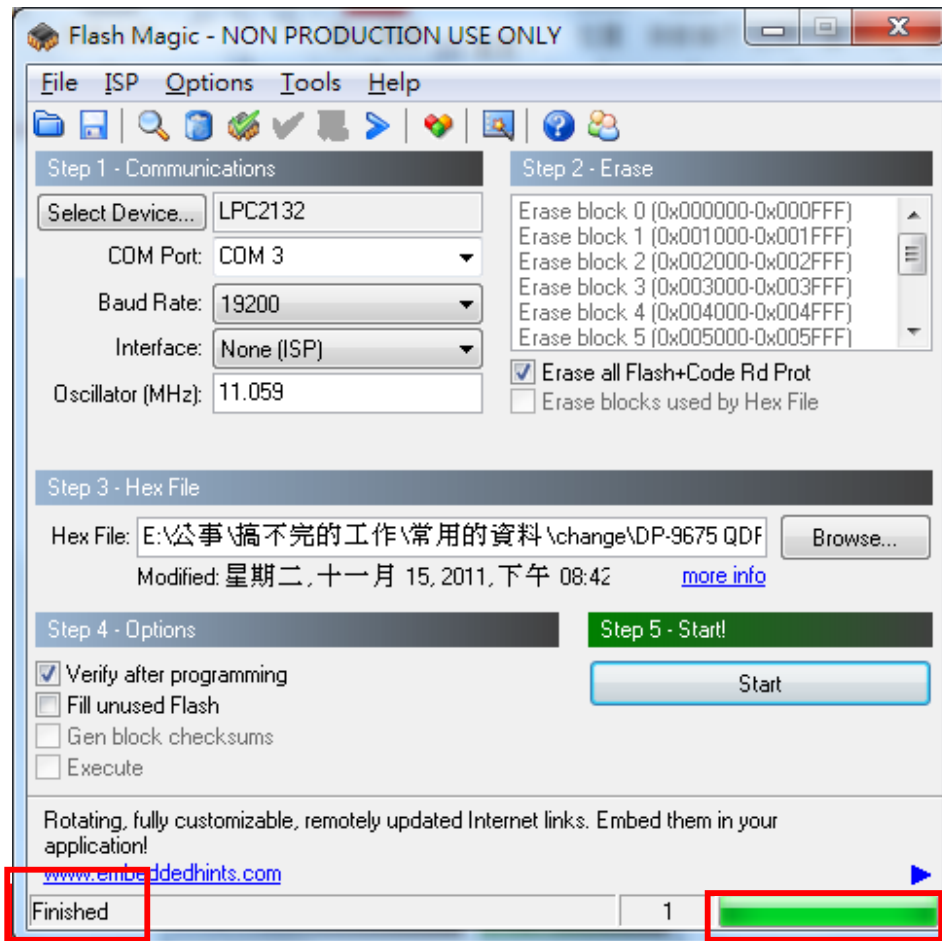
PROGRAM SETTING AND SOFTWARE DOWNLOAD



PROGRAM SETTING AND SOFTWARE DOWNLOAD



PROGRAM SETTING AND SOFTWARE DOWNLOAD



PROGRAM SETTING AND SOFTWARE DOWNLOAD

1-5. Ballast Software Download

Caution) Normally it is not required.

1. Preparing an application tool software

Download "MPLAB IDE v.8.**" from Microchip web site:

http://www.microchip.com/stellent/idcplg?IdcService=SS_GET_PAGE&nodeId=1406&dDocName=en023073

While install MPLAB DE. When the message "HI-Tech . . ." is displayed, the program in this message is not installed. (Need to install only MPLAB, need not HI-Tech)

2. Connecto device

(1) ICD3 setting Connect an USB cable and ICD3 and an ICD3 harness (Fig. 0)

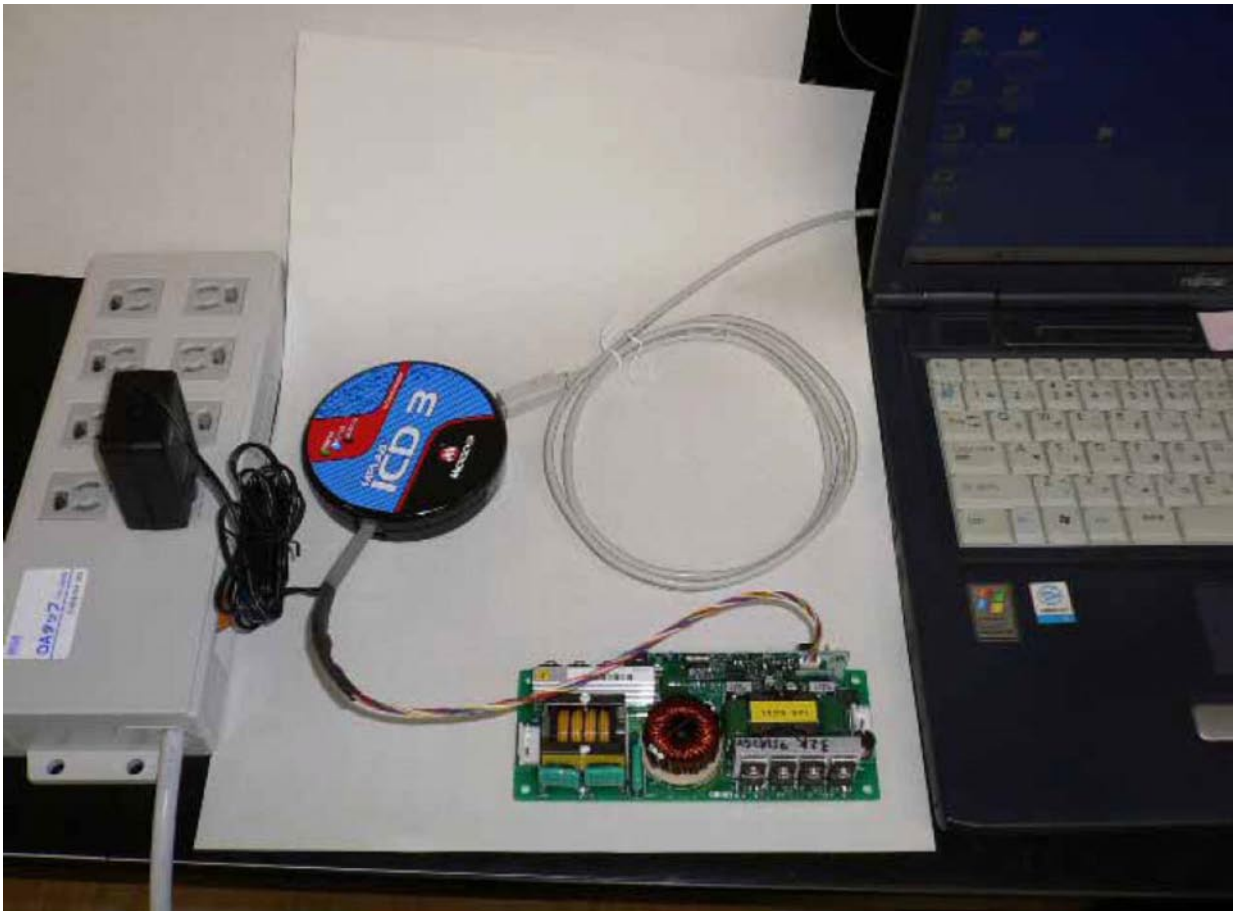


Fig. 0

PROGRAM SETTING AND SOFTWARE DOWNLOAD

- (2) Connect ICD3 USB cable to Personal computer. Do not connect to lamp driver
- (3) If downloading "new hardware" is requested, follow this instruction. (Fig. 1 in Japanese)

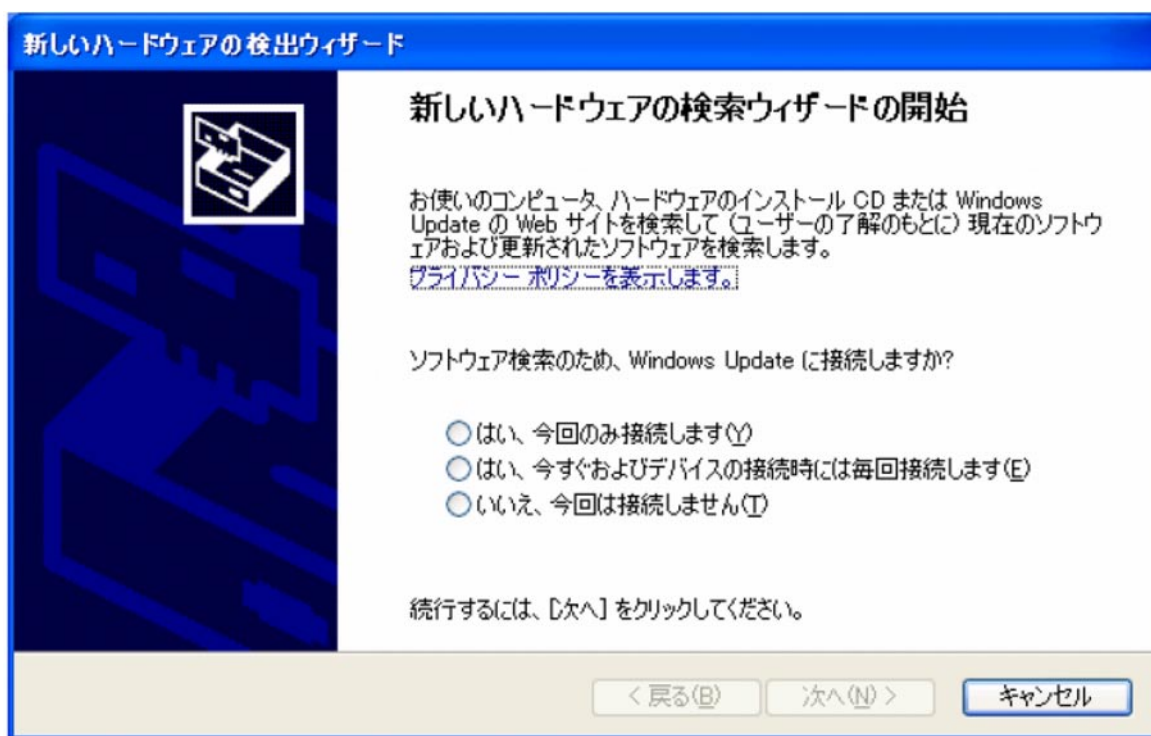


Fig. 1

PROGRAM SETTING AND SOFTWARE DOWNLOAD

(4) Connect ICD3 harness and lamp driver (Fig. 2).

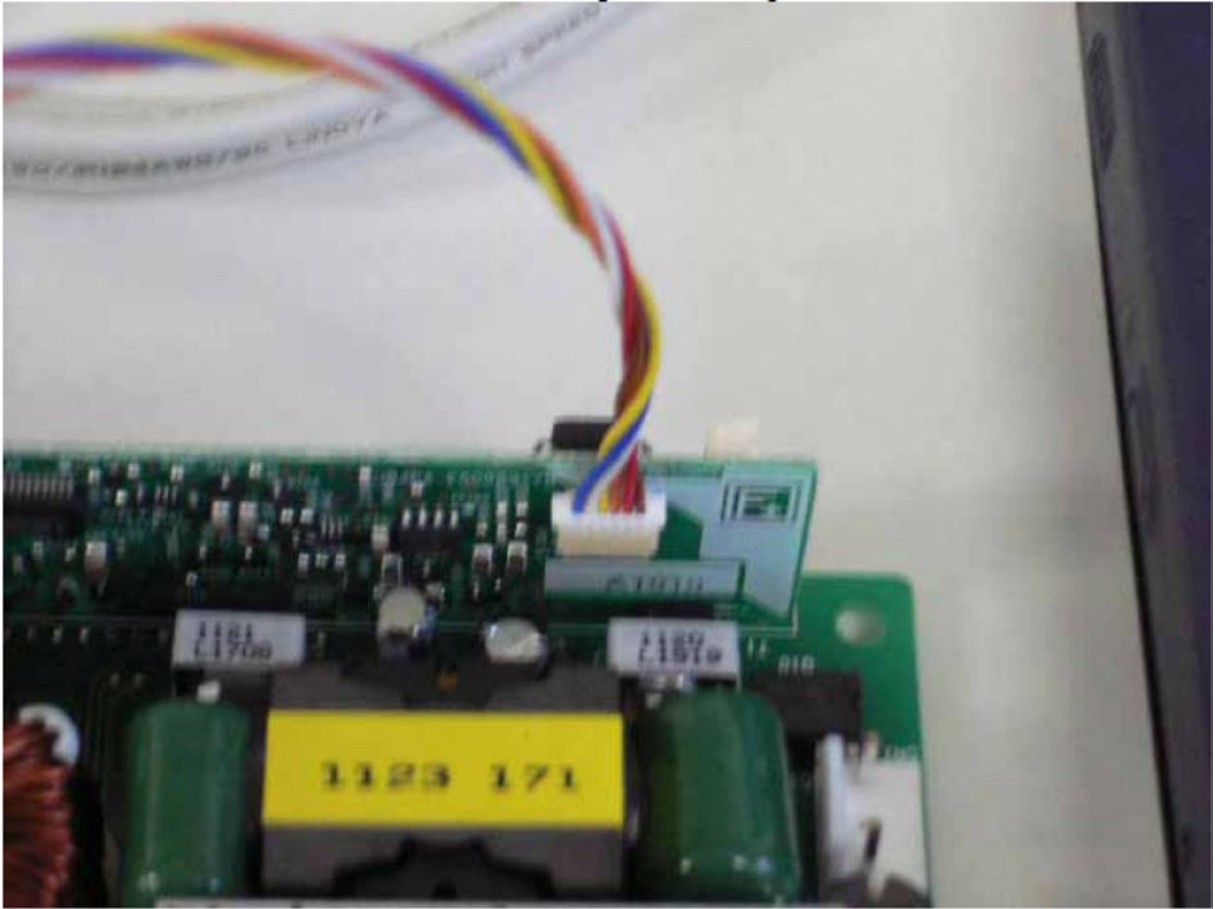


Fig. 2

PROGRAM SETTING AND SOFTWARE DOWNLOAD

3. How to program to lamp driver.
 - (1) Supply DC 15V to ICD3 from AC adapter.
 - (2) Start up "MPLAB IDE v.8.**.exe" (Fig. 3)

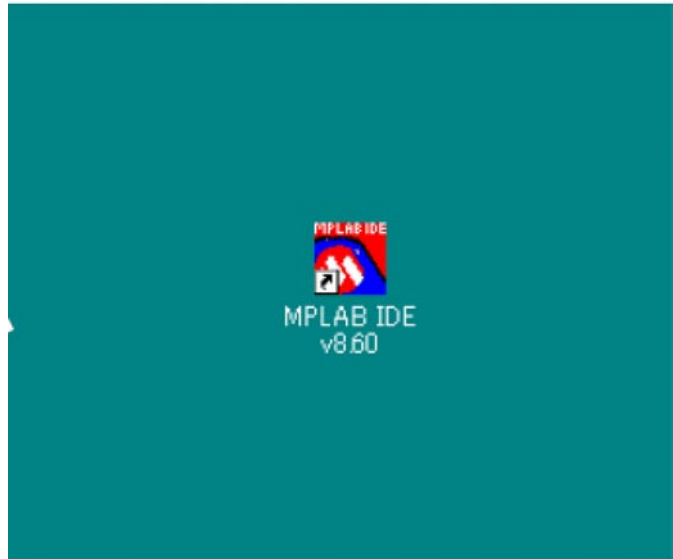


Fig. 3

PROGRAM SETTING AND SOFTWARE DOWNLOAD

(3) Select "Configure" - - - "Select Devices". dsPIC33FJ32GS606.

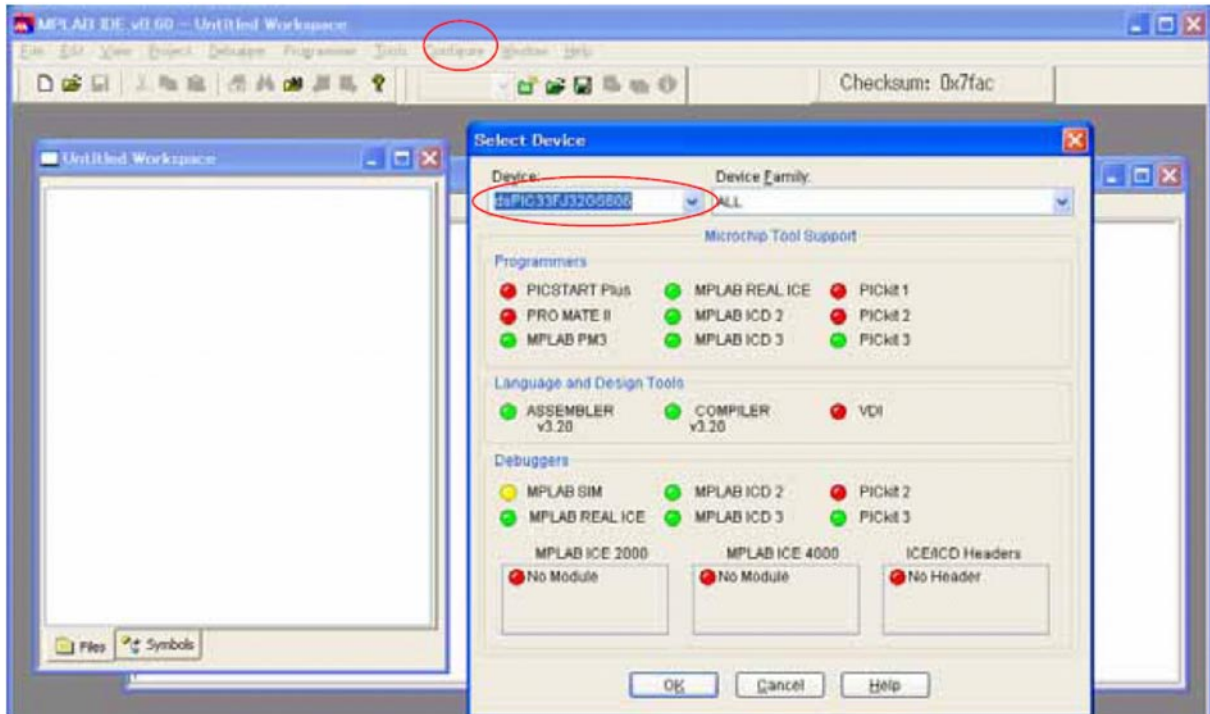


Fig. 4

PROGRAM SETTING AND SOFTWARE DOWNLOAD

(4) Select "Programmer" - - - "Select Programmer". 2 MPLAB ICD3.

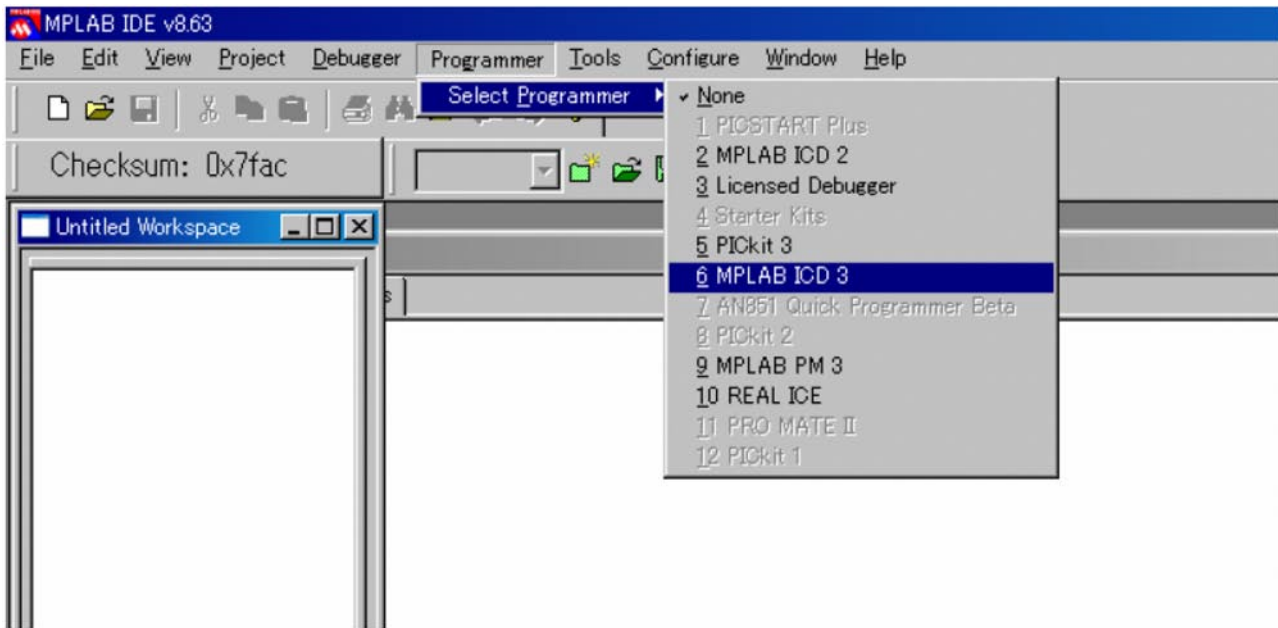


Fig. 5

PROGRAM SETTING AND SOFTWARE DOWNLOAD

- (5) Select "File" - - - "Import", and select a new driver program. This program is "hex file".

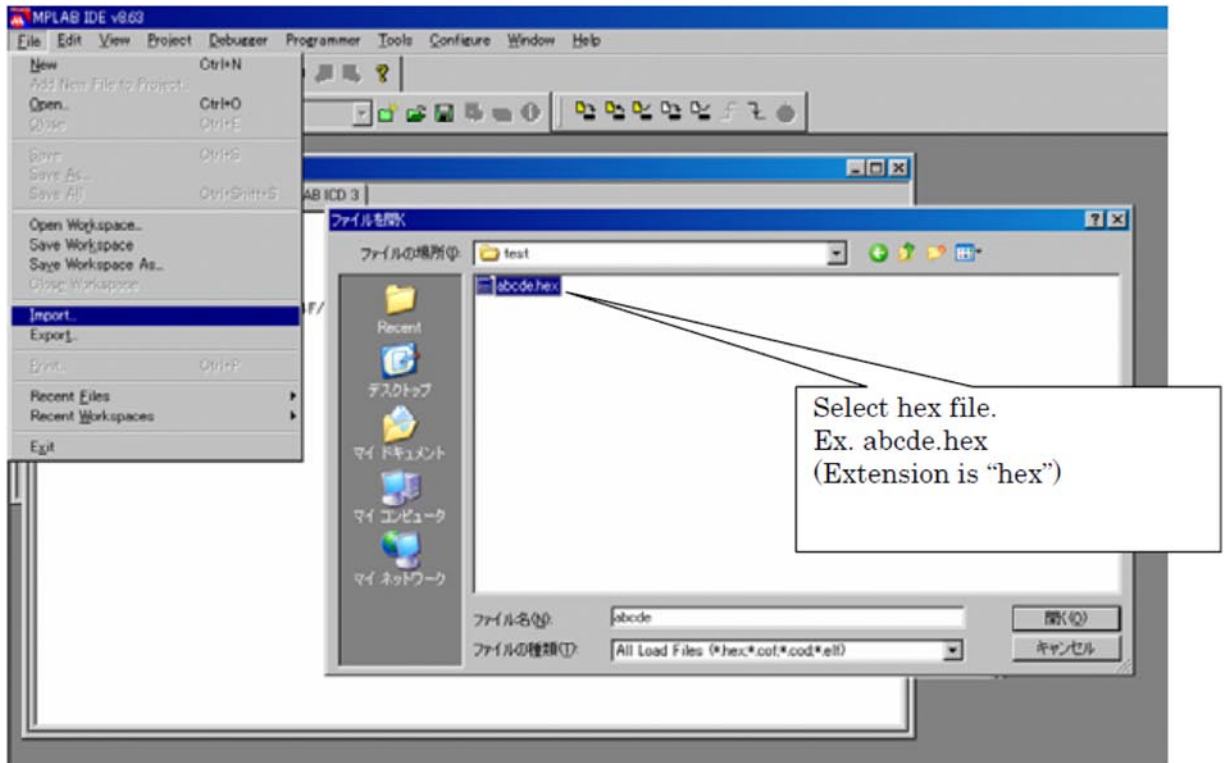


Fig. 6

PROGRAM SETTING AND SOFTWARE DOWNLOAD

(6) Select "Programmer" - - - "Program", and program a "new driver program" to lamp driver.

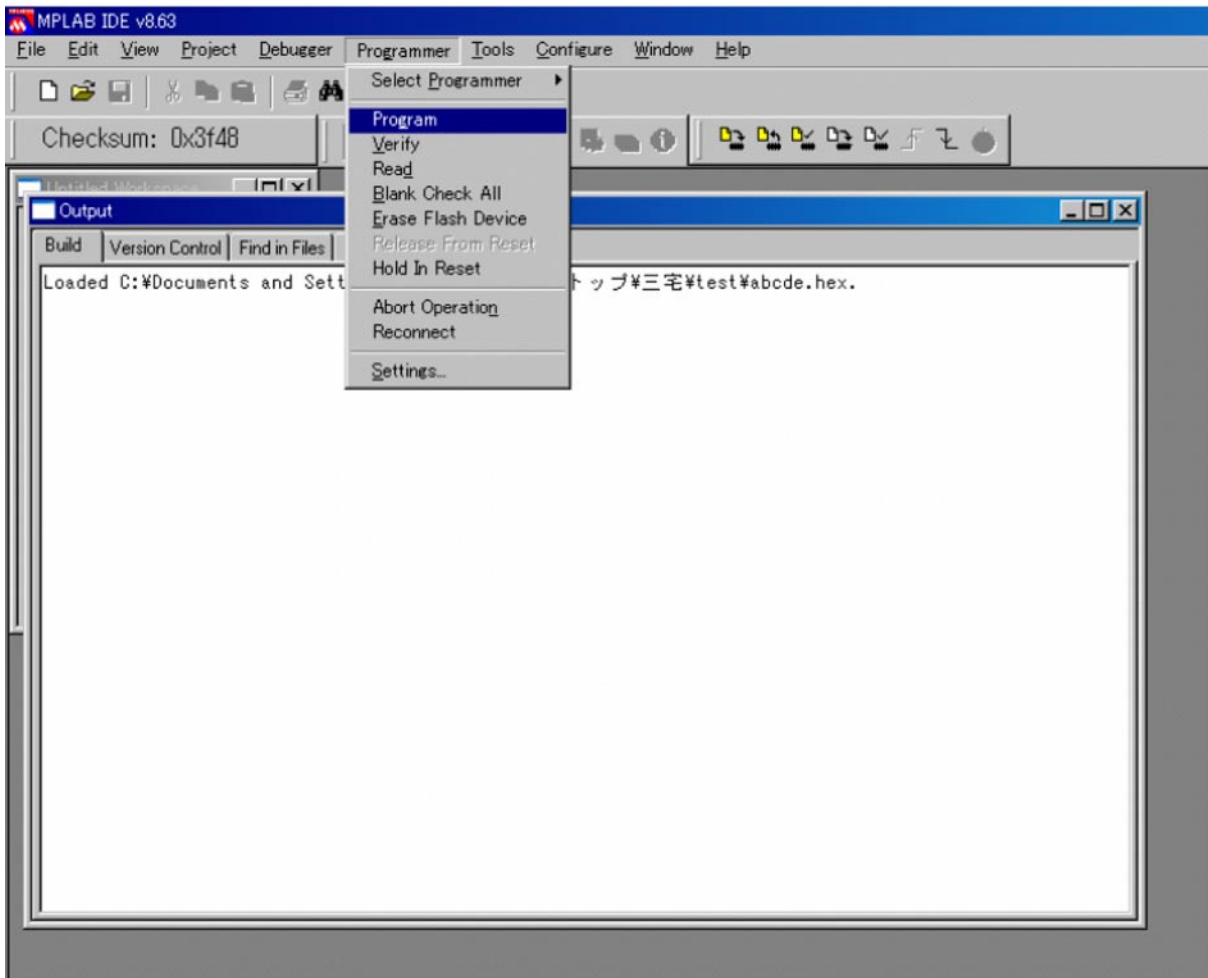
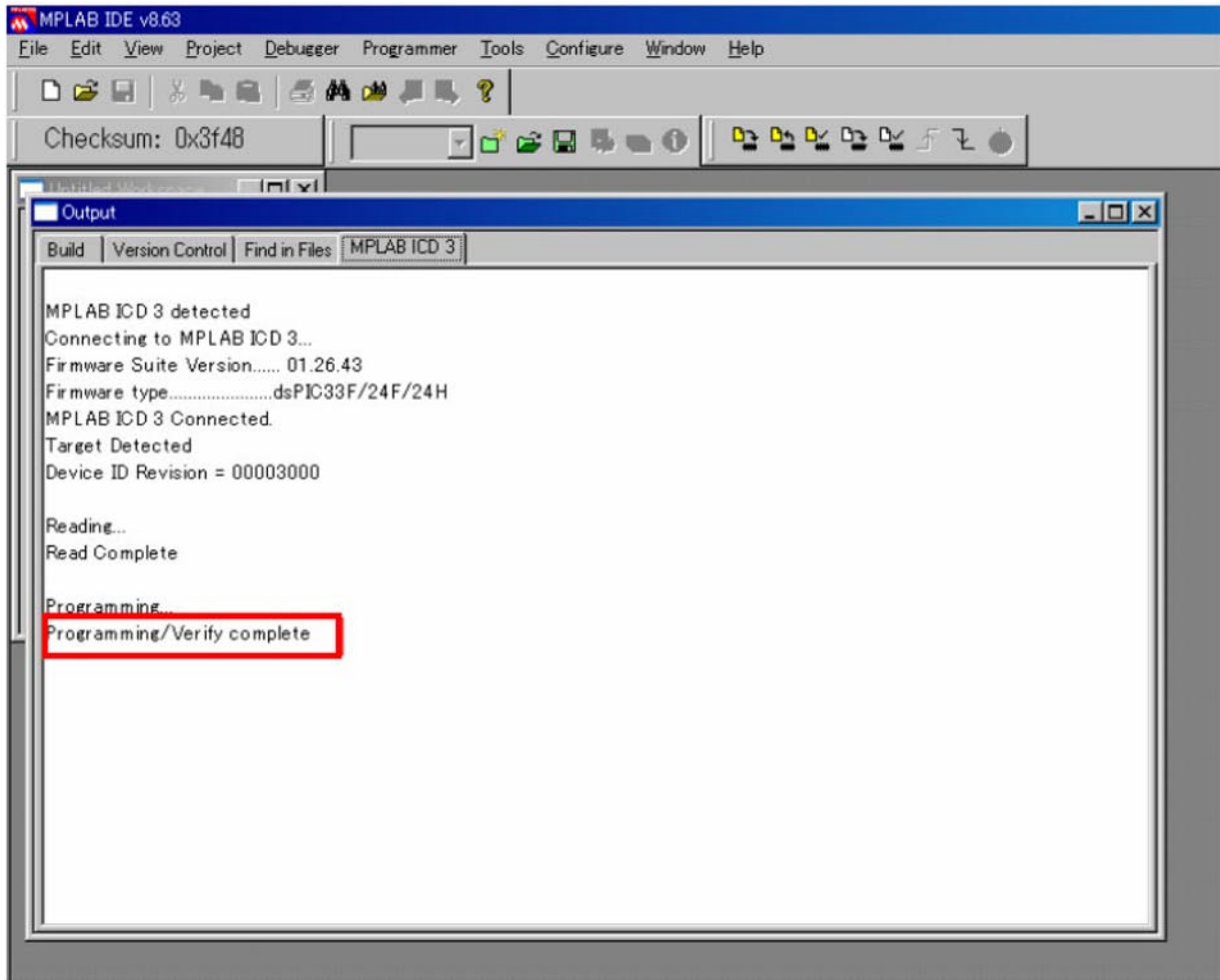


Fig. 7

PROGRAM SETTING AND SOFTWARE DOWNLOAD

- (7) After 3-(7). If the message "Programming/Verify complete" is displayed, programming a "new driver program" to lamp driver is completed.



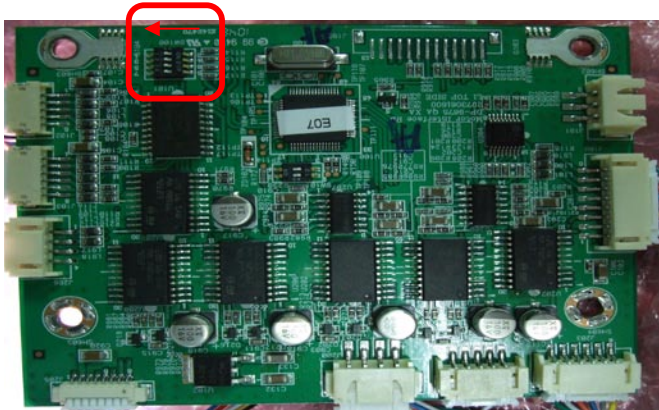
- (8) After the programming, disconnected ICD3 harness from lamp driver.

1. SETTING & ADJUSTMENT

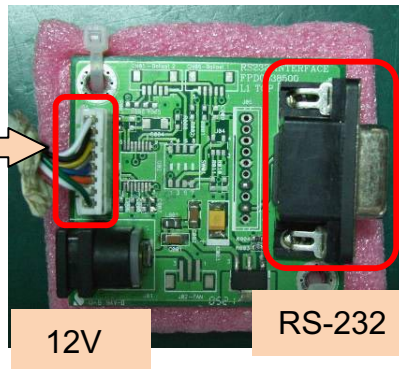
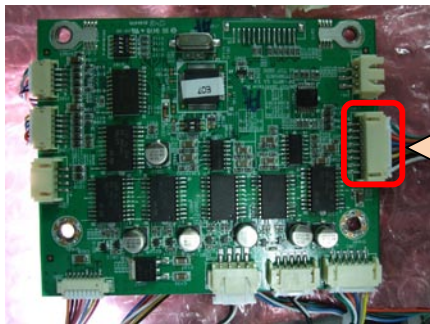
1-1. Motor Board Setting and Adjust

A. Base Setting

Check SW100 at off mode

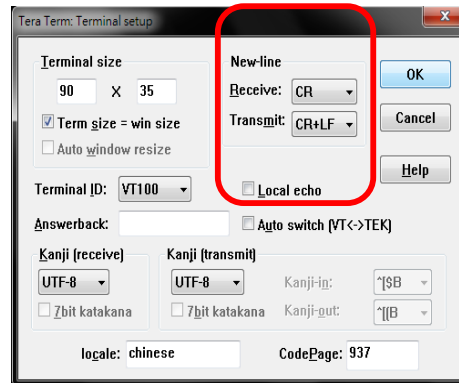
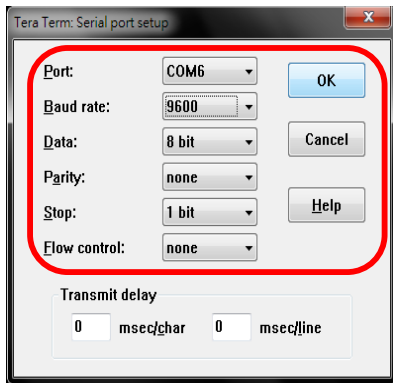


Check Jig assembly

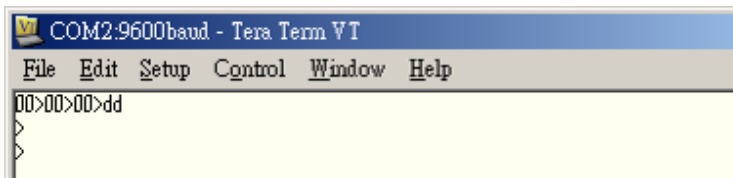


SETTING & ADJUSTMENT

Run TeraTerm. And, setting.

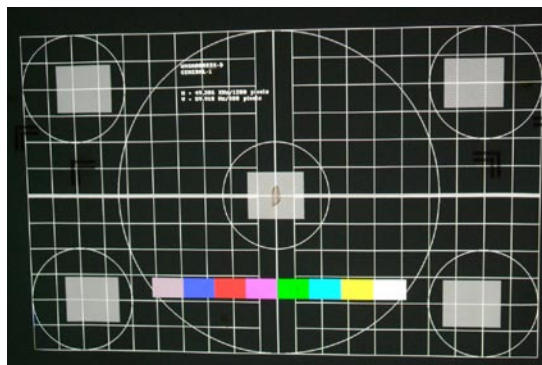


Use "dd" to enter Debug Mode



Use Zoom in & Out to find out Optic Center.(z+ is zoom out, z- is zoom in)

Optical center position wide position to tele position or tele position to wide position the center point need deviation <5pixel



SETTING & ADJUSTMENT

B. Lens Setting

When you find Optic Center, use follow command.

1. \$iee to reset EEPROM.
2. \$cc to set Center.
3. \$sw4+ to enable set corner limit.
4. ew+ to enable to write data to eeprom.
5. In order to make sure to save data, so run "cc" again.

```
COM2:9600baud - Tera Term VT
File Edit Setup Control Window Help
> p10
> p10
> z+
> pd3
> pud
> $iee
> $cc
> $sw4+
> ew+
EEPROM Write enabled.
> cc
POSITION = (5189,3332)
UPPER LEFT = (1000,8500)
CENTER = (5189,3332)
LOWER RIGHT = (8500,1000)
ZOOM = (7000,10000)
FOCUS = (7000,10000)
USER PRESET0 = (****,****,****,****)
USER PRESET1 = (****,****,****,****)
USER PRESET2 = (****,****,****,****)
USER PRESET3 = (****,****,****,****)
USER PRESET4 = (****,****,****,****)
USER PRESET5 = (****,****,****,****)
USER PRESET6 = (****,****,****,****)
USER PRESET7 = (****,****,****,****)
USER PRESET8 = (****,****,****,****)
USER PRESET9 = (****,****,****,****)
```

6. Then set lower-right corner. (Use "lr" to set lower-right corner limit)
7. Don't forget to check the limit.
8. Use "pc" to return back optic center.

```
COM2:9600baud - Tera Term VT
File Edit Setup Control Window Help
> lr
POSITION = (6094,3096)
UPPER LEFT = (1000,8500)
CENTER = (5189,3332)
LOWER RIGHT = (6094,3096)
ZOOM = (7000,10000)
FOCUS = (7000,10000)
USER PRESET0 = (****,****,****,****)
USER PRESET1 = (****,****,****,****)
USER PRESET2 = (****,****,****,****)
USER PRESET3 = (****,****,****,****)
USER PRESET4 = (****,****,****,****)
USER PRESET5 = (****,****,****,****)
USER PRESET6 = (****,****,****,****)
USER PRESET7 = (****,****,****,****)
USER PRESET8 = (****,****,****,****)
USER PRESET9 = (****,****,****,****)
```

SETTING & ADJUSTMENT

9. Then set up-left corner. (Use "ul" to set up-left corner limit)
10. Don't forget to check the limit.
11. Use "pc" to return back optic center.

```
COM2:9600baud - Tera Term VT
File Edit Setup Control Window Help
> ul
POSITION = (4255,5491)
UPPER LEFT = (4255,5491)
CENTER = (5189,3332)
LOWER RIGHT = (6094,3096)
ZOOM = (7000,10000)
FOCUS = (7000,10000)
USER PRESET0 = (****,****,****,****)
USER PRESET1 = (****,****,****,****)
USER PRESET2 = (****,****,****,****)
USER PRESET3 = (****,****,****,****)
USER PRESET4 = (****,****,****,****)
USER PRESET5 = (****,****,****,****)
USER PRESET6 = (****,****,****,****)
USER PRESET7 = (****,****,****,****)
USER PRESET8 = (****,****,****,****)
USER PRESET9 = (****,****,****,****)
> pc
Panning RIGHT and DOWN
PAN H DONE
PAN V DONE
POSITION = (6090,3100)
UPPER LEFT = (4255,5491)
CENTER = (5189,3332)
LOWER RIGHT = (6094,3096)
ZOOM = (7000,10000)
FOCUS = (7000,10000)
USER PRESET0 = (****,****,****,****)
USER PRESET1 = (****,****,****,****)
USER PRESET2 = (****,****,****,****)
USER PRESET3 = (****,****,****,****)
USER PRESET4 = (****,****,****,****)
USER PRESET5 = (****,****,****,****)
USER PRESET6 = (****,****,****,****)
USER PRESET7 = (****,****,****,****)
```

12. Return back optic center position deviation need < 10pixel
13. At last use \$su4- to disable set corner limit.
14. E0 to set Focus & Zoom setting.
15. ew to save all data to eeprom.

```
USER PRESET5 = (****,****,****,****)
USER PRESET6 = (****,****,****,****)
USER PRESET7 = (****,****,****,****)
USER PRESET8 = (****,****,****,****)
USER PRESET9 = (****,****,****,****)
>
> $su4-
> e0
> ew
```

16. After Setting, unplug 12V Adapter, and plug in again to check data is OK, or not.
17. Setting Limit As Follow:

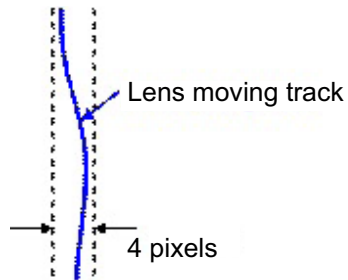
SETTING & ADJUSTMENT

Definition of optical offset: Vertical = (de-center / (H/2))*100%
 Horizontal = (de-center / (W/2))*100%
 De-center: distance from image center to DMD center
 H : DMD height
 W : DMD width

	UP	Down	Left	Right
2048X1080	122.6%	105.4%	27.2%	27.2%

Specification: Lens shift (UP) > = 110%
 Lens shift (Down) > = 100%
 Lens shift (Right) > = 22%
 Lens shift (Left) > = 22%

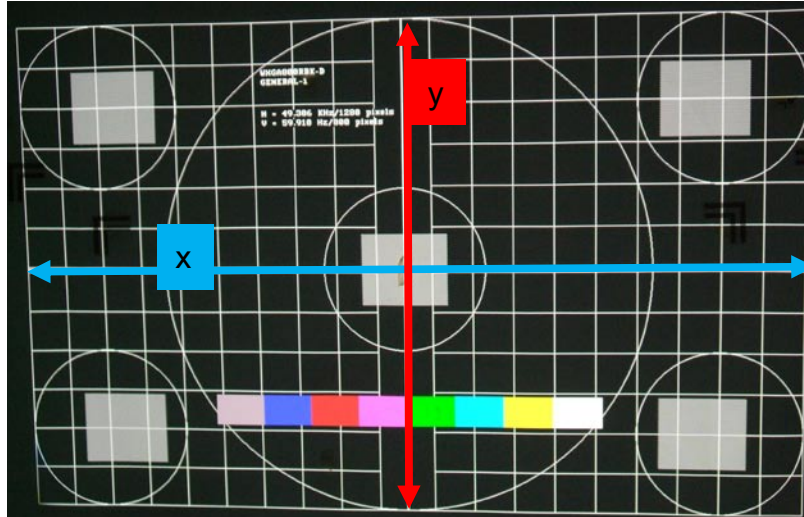
The total range of the unstable track of lens moving should be less than total 4 pixels range shown as below sketch.



SETTING & ADJUSTMENT

How To calculation / Setting Lens Shift per cent

- IF up limit ranger is “a”, then it shift range is $a/y > 122.6\%$ at WUXGA
- IF down limit ranger is “b”, then it shift range is $b/y > 105.4\%$ at WUXGA
- IF right limit ranger is “c”, then it shift range is $c/x > 27.2\%$ at WUXGA
- IF left limit ranger is “d”, then it shift range is $d/x > 27.2\%$ at WUXGA

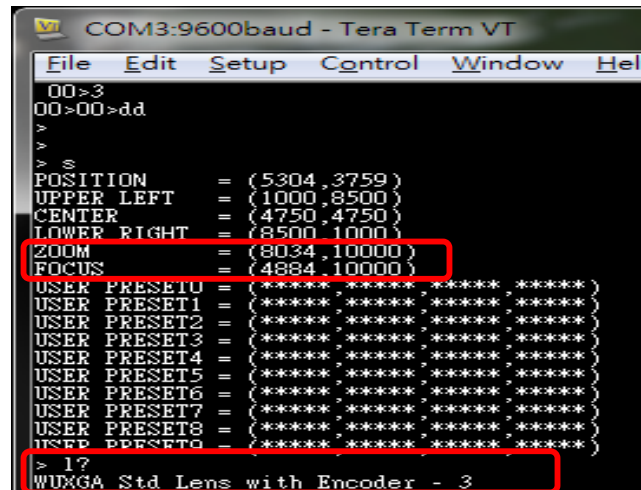


C. Zoom / Focus Calibration

You must setup lens before power in.

If you are first calibration
You will see zoom / focus limit is 10000

Then you must check lens type.
Use “!?” to check lens type.
If it is “1”, it means the lens not encoder.
So you can’t use the lens to calibration.



If check ok, use “zfc” to calibration.
If it is done, you’ll see the some value of zoom / focus.

SETTING & ADJUSTMENT

And you can “s” to check the value is not 10000.

```
> v
> $
POSITION = (5304,3760)
UPPER LEFT = (1000,8500)
CENTER = (4750,4750)
LOWER RIGHT = (8500,1000)
ZOOM = (8032,10000)
FOCUS = (4882,10000)
USER PRESET0 = (****,****,****,****)
USER PRESET1 = (****,****,****,****)
USER PRESET2 = (****,****,****,****)
USER PRESET3 = (****,****,****,****)
USER PRESET4 = (****,****,****,****)
USER PRESET5 = (****,****,****,****)
USER PRESET6 = (****,****,****,****)
USER PRESET7 = (****,****,****,****)
USER PRESET8 = (****,****,****,****)
USER PRESET9 = (****,****,****,****)
> l?
WUXGA Std Lens with Encoder - 3
> zfc
ZOOM = 8036
FOCUS = 48980K
```

```
USER PRESET9 = (****,****,****,****)
> l?
WUXGA Std Lens with Encoder - 3
> zfc
ZOOM = 8036
FOCUS = 48980K
> s
POSITION = (5304,3760)
UPPER LEFT = (1000,8500)
CENTER = (4750,4750)
LOWER RIGHT = (8500,1000)
ZOOM = (8036,8029)
FOCUS = (4898,8289)
USER PRESET0 = (****,****,****,****)
USER PRESET1 = (****,****,****,****)
USER PRESET2 = (****,****,****,****)
USER PRESET3 = (****,****,****,****)
USER PRESET4 = (****,****,****,****)
USER PRESET5 = (****,****,****,****)
USER PRESET6 = (****,****,****,****)
USER PRESET7 = (****,****,****,****)
USER PRESET8 = (****,****,****,****)
USER PRESET9 = (****,****,****,****)
>
```

Note:

If you ever run “\$iee”, but not power off.
Please power off. Then power on again.

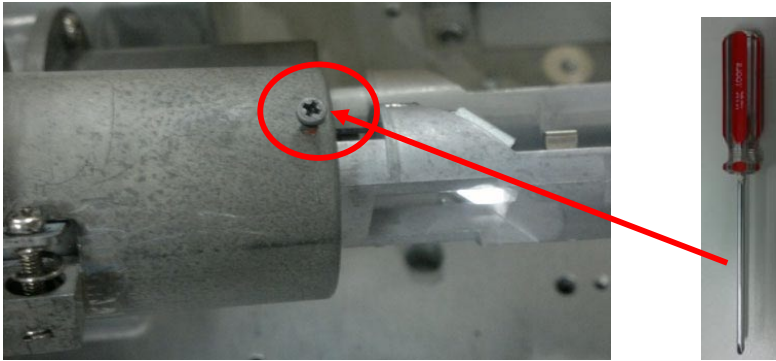
Because when you reset eeprom, myson will send default value to eeprom.
But the value is not correct.
So we need restart.

```
> $iee
> $
POSITION = (5304,3759)
UPPER LEFT = (1000,8500)
CENTER = (4750,4750)
LOWER RIGHT = (8500,1000)
ZOOM = (7000,10000)
FOCUS = (7000,10000)
USER PRESET0 = (****,****,****,****)
USER PRESET1 = (****,****,****,****)
USER PRESET2 = (****,****,****,****)
USER PRESET3 = (****,****,****,****)
```

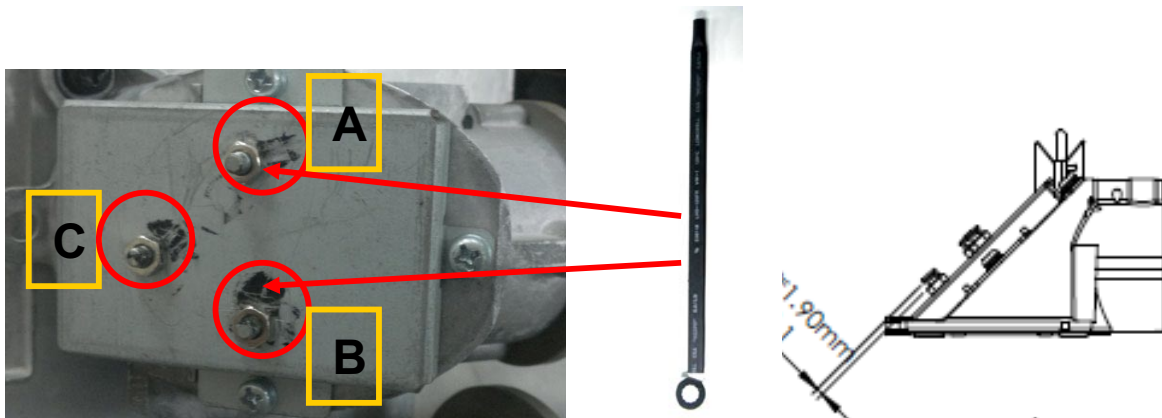
```
COM3:9600baud - Tera Term VT
File Edit Setup Control Window He
00>3
00>d80>00>00>00>dd
>
> $
POSITION = (5304,3760)
UPPER LEFT = (1000,8500)
CENTER = (4750,4750)
LOWER RIGHT = (8500,1000)
ZOOM = (8032,10000)
FOCUS = (4882,10000)
USER PRESET0 = (****,****,****,****)
USER PRESET1 = (****,****,****,****)
USER PRESET2 = (****,****,****,****)
USER PRESET3 = (****,****,****,****)
USER PRESET4 = (****,****,****,****)
USER PRESET5 = (****,****,****,****)
USER PRESET6 = (****,****,****,****)
USER PRESET7 = (****,****,****,****)
USER PRESET8 = (****,****,****,****)
USER PRESET9 = (****,****,****,****)
```


SETTING & ADJUSTMENT

1-2. Color Band Adjust



Step1. When starting adjusting color band, loosen this screw on the light-pipe with 3.5mm cross screwdriver Jig at first.

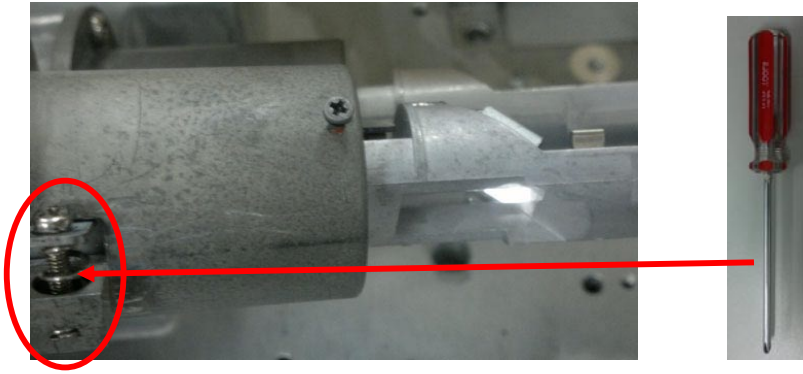


Step2-1. Screw nut C is default value (1.9 mm as above drawing). Please don't adjust and touch it.

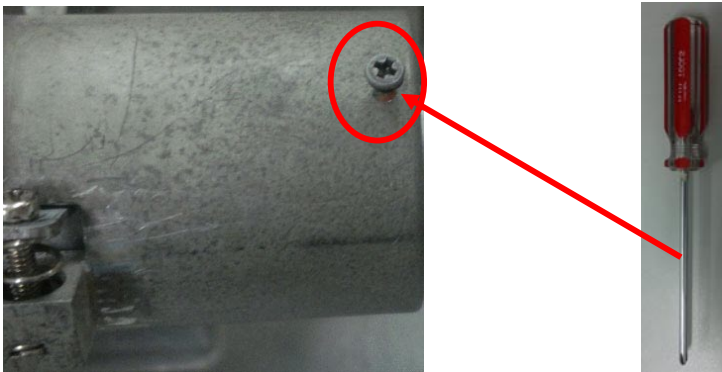
Step2-2. Adjust screw nut A to move the image left and right side on the light-pipe with 5.5mm Inner Hexagon Sleeve Screwdriver Jig.

Step2-3. Adjust screw nut B to move the image up and down side on the light-pipe with 5.5mm Inner Hexagon Sleeve Screwdriver Jig.

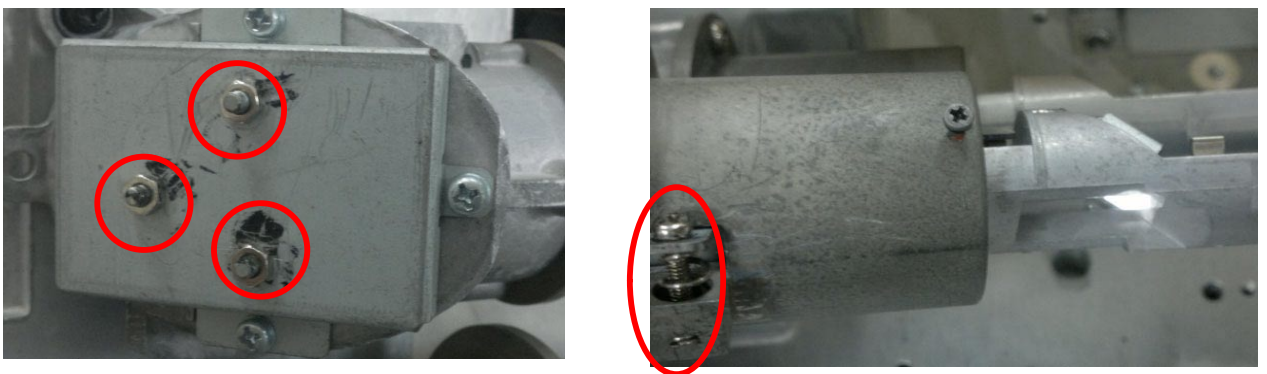
SETTING & ADJUSTMENT



Step2-4. When your image is oblique and tilted, please adjust this screw on the light-pipe to rotate the image with 3.5mm cross screwdriver Jig. If your image is straight, please don't adjust and touch it.



Step3. After checking the full-white image around 4 corners without any color band, and then screw up this screw to fix light-pipe by torque 2~2.25 kgf-cm.



Step4. Finally, put TB1401B glue on these four screws to fix it.

SETTING & ADJUSTMENT

1-3. Color Calibration Adjust

1. Color Adjustment

* This adjustment should be carried out after turning on lamp 5 minutes or more.

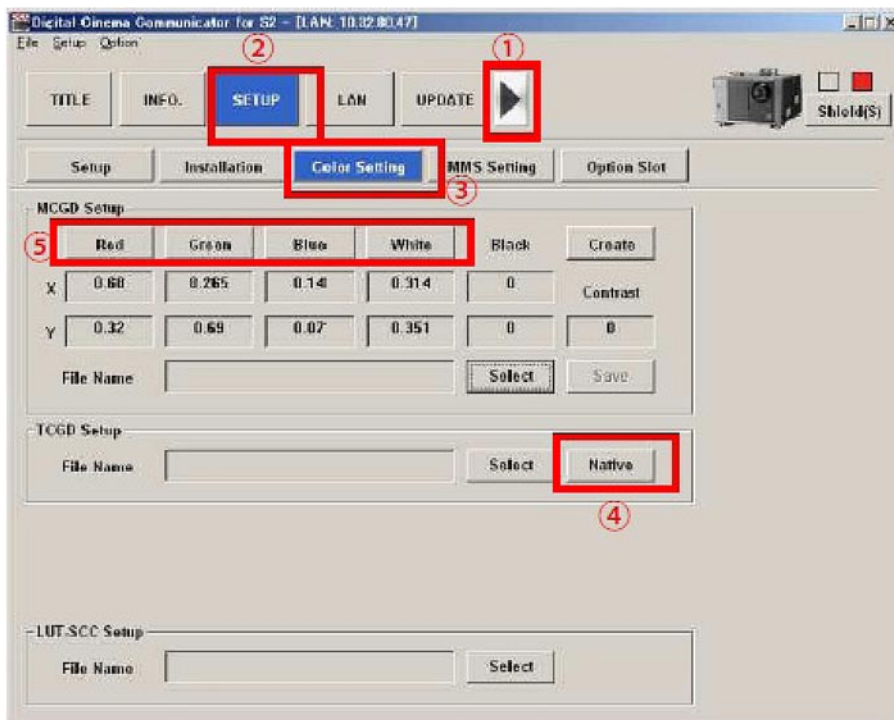
1) "Digital Cinema Communicator" is started.

2) Color Setting

① Press 

② Press **SETUP**

③ Press **Color Setting**



SETTING & ADJUSTMENT

3) Measurement of Native Color

- ④ Press **Native**
- ⑤ Press **Red** and measure x and y by color meter.
- ⑥ Measure **Green** **Blue** **White** as same way.

* Measurement point is screen center

4) The measurement data should be meet the Native color value.

Native color value

	Red	Green	Blue
x	≥ 0.670	≤ 0.265	≤ 0.160
y	≤ 0.330	≥ 0.690	≤ 0.080

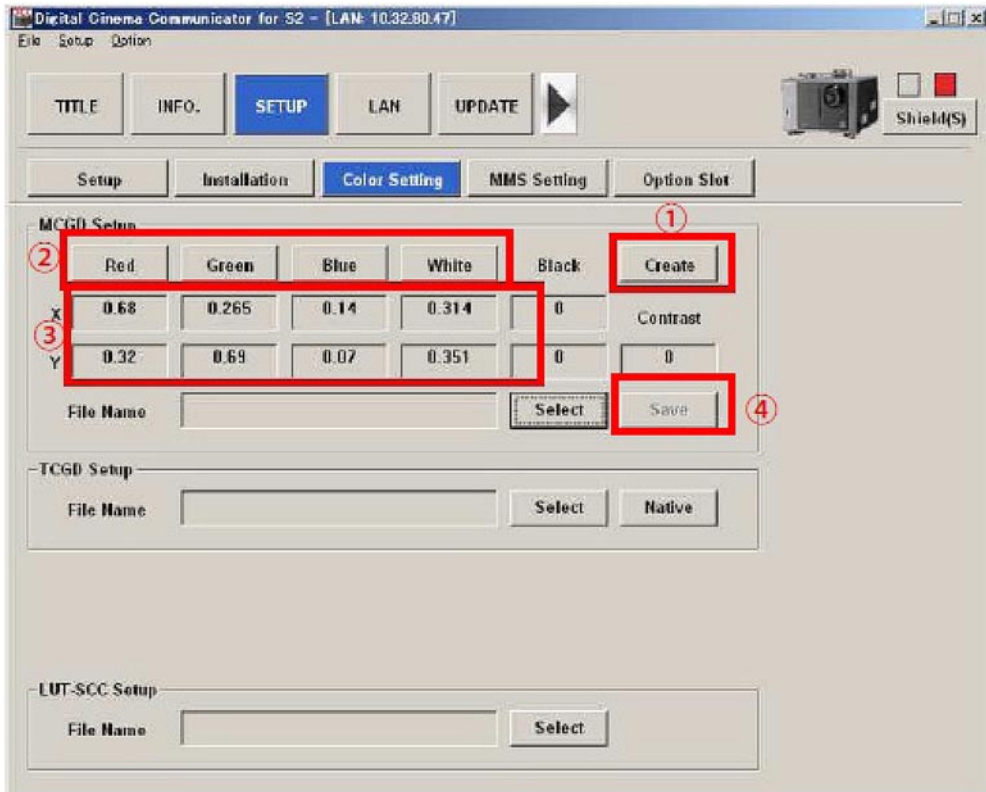
5) These data should be recorded.

SETTING & ADJUSTMENT

6) MCGD (Measured Color Gamut Data) data

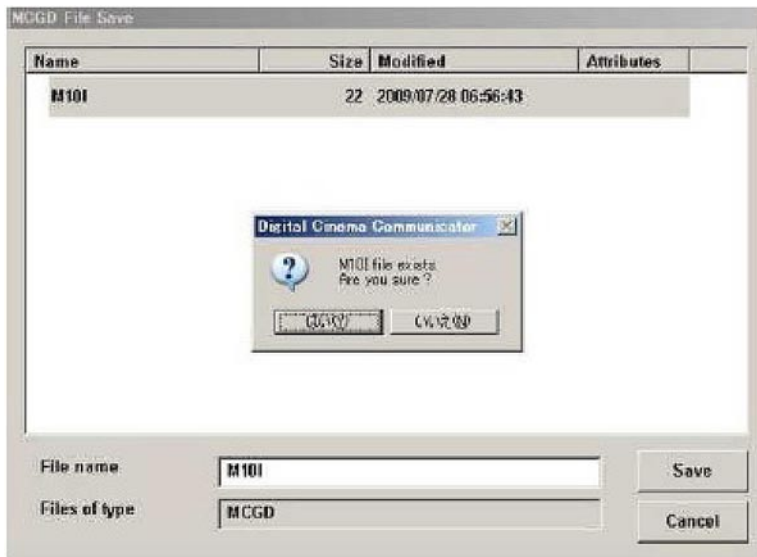
- ① Press **Create**
- ② Press **Red**
- ③ Input measurement data to Red (x, Y) window.

Input Green, Blue and White data same as Red data.



SETTING & ADJUSTMENT

- ④ After inputting all color data, Press **Save** to overwrite "M101" file.



* The measurement point screen center.

- ⑤ Press **Select** in the TCGD Setting Area and select "P7v2 telecine".

Brightness select "P7v2 telecine" file

Color coordinates select "color Verification" file

- ⑥ Press **Select** in the MCGD Setup area and select "M101".



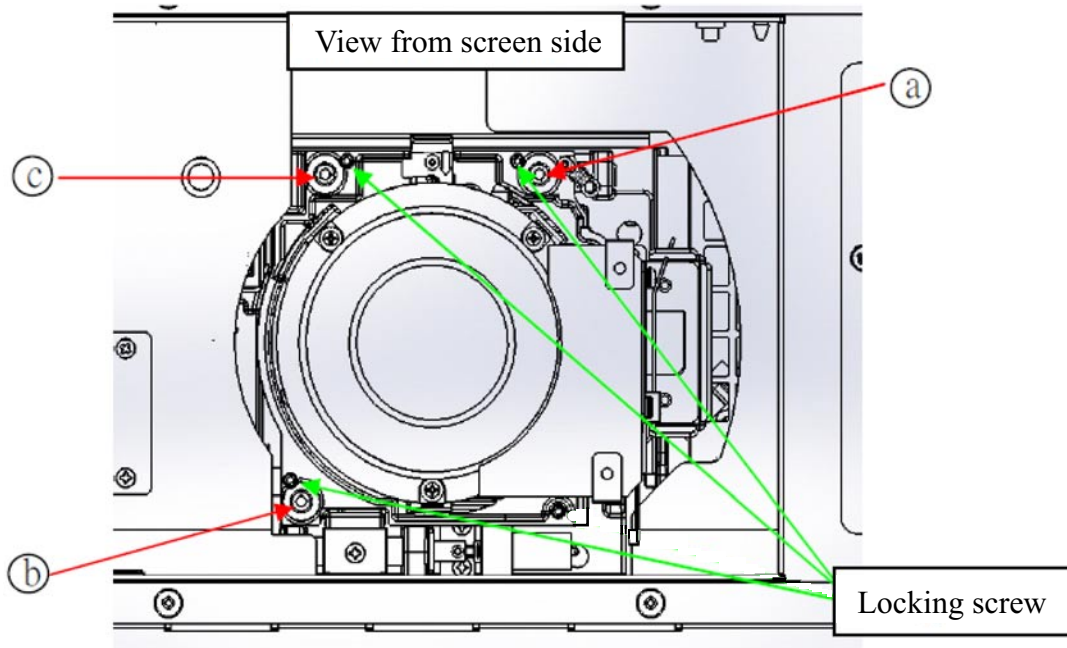
SETTING & ADJUSTMENT

1-4. Focus Adjust

■ Procedure for adjusting the focus balance

• Structure of lens mount

The three adjustment screws allow the lens to be tilted for uneven screen focus, and three corner screws lock down the adjustment.

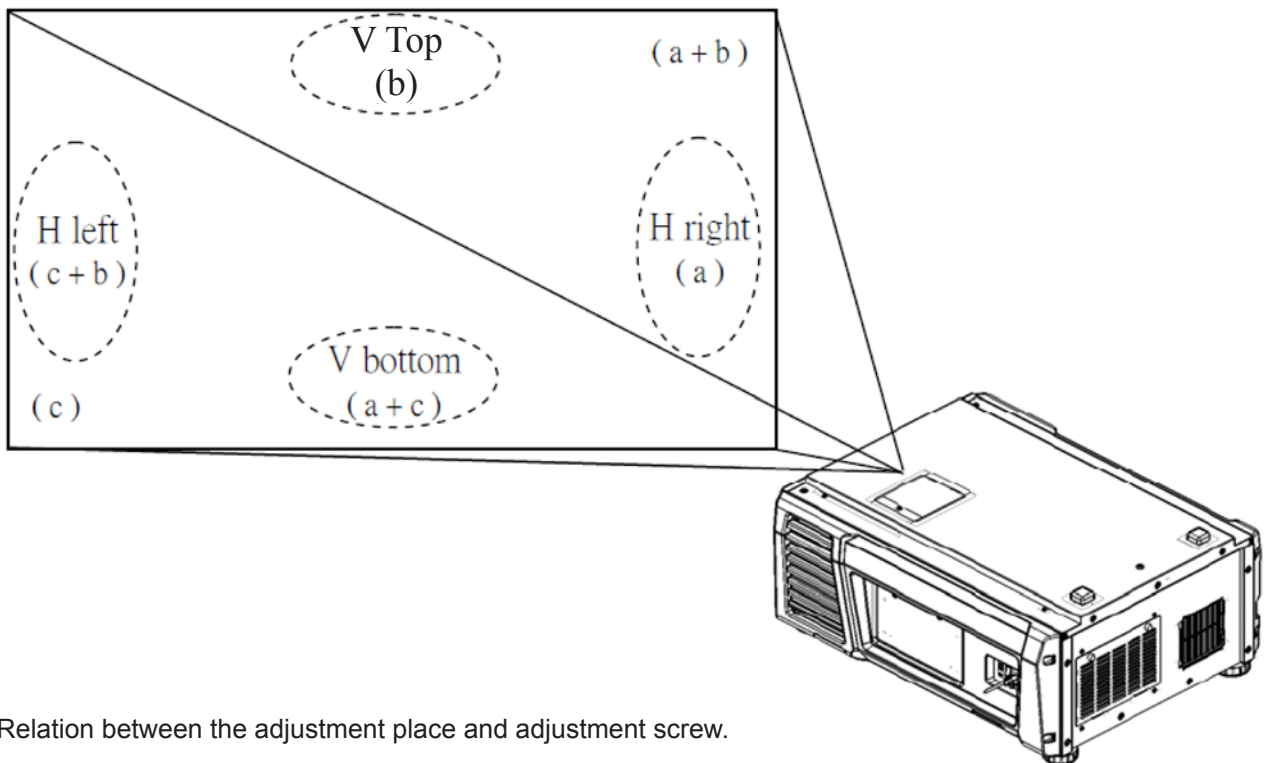


(Adjust the focus adjustment screws (a), (b) and (c) after installing the lens.)

SETTING & ADJUSTMENT

- **Adjustment procedure**

1. Moving the projector lens position to the optical center position.
2. Display the cross-hatch pattern for focus adjustment.
3. Adjust the lens focus till one or more sides of cross-hatch come into focus.
4. Loosen the locking screws (3pcs), following the indications in the example. The screws (a, b, c) to be adjusted correspond to the out-focus sides of the image.
5. Turn the adjustment screws CW or CCW slightly till the out-of-focus sides are in focus.
6. Readjust the lens shift position if needed. Refocus the image as in step 2 & 3 above.
Fine adjust the focus evenness as needed. as described in step 5.
7. When adjustment is complete, tighten the locking screws (3pcs).
8. Adjust the image focus.



Relation between the adjustment place and adjustment screw.

CIRCUIT DESCRIPTION

CPU PWB Circuit Operation

The CPU PWB (PWC-4707) is in charge of maintaining the projector functions and the control of major boards.

1. CPU

The S3C2440A-400 (IC7000) is an ARM9 core CPU.

It controls the Reset / Power sequence toward each board, data setting for each device, and the respective functions of the projector.

After the power is ON and the reset condition is canceled by BD4730G (IC7002), the CPU reads out BIOS from the flash memory (IC7008) to start itself up.

After that, the CPU reads the F/W info from the flash memory (IC7009) and starts its behavior based on the data in IC7008.

- Power

The CPU operates on the two types of power supplies specified below.

I/O : 3.3V

Core : 1.3V Stepped down from 3.3V (P3P3V) through the Series Regulator (PQ015YZ01 @IC7001).

- Clock

The SG8002 (X7000) is a 12MHz OSC that is used as a bus clock for the main clock in the CPU and other devices.

- Reset

The BD4730G (IC7002) is used to supervise the main power 3.3V generated in IC7300.

When the 3.3V (P3P3V) line lowers to 3.0V or below, the "low" output is generated and sent to the CPU for resetting.

LED (D7000) is synchronized with this reset status.

Off : CPU Reset

On : CPU Active

- Memory

- Flash memory

MX29LV640EBTI-70G (IC7008): BIOS, data storage

M29W320EB70N6E (IC7009): Firmware storage

- SDRAM

IS42S16160C-7TL(IC7007) is a cash memory.

Synchronized with the bus clock @133MHz.

- Control

External I/O : RS232 (M7002), USB (M7000), Remote control (M7003),

GPIO (M7001), 3D control (M7004)

Projector Ctl : Reset, POWER_GOOD, POWER_DOWN, Memory, I2C, UART, SPI

Lamp, LED(Light), MM, etc.

Functions of each I/F

- I2C: EEPROM IC7006 (BR24L32F)

Serial No., cumulative time of projector, lamp, etc., and other data are saved here.

Clock function

The 32.768KHz built-in real-time clock RTC-8564JE (IC7005) is in charge.

A back-up feature is given by the super-capacitor C7036.

- SPI: Light Sensor (via the A/D converter ADCS7476 of DIV)

CIRCUIT DESCRIPTION

2. ASSIST3

S1L53354 (IC7100) is an ASIC with the functions specified below.

- CPU I/F
- Ethernet Controller I/F
- Lens Mount / Motor Control
- Lamp Power Control
- Fan, Cooler Pump Control
- Control Key Control
- LCD Control
- I2C, UART

(Devices after Ethernet are controlled via the PJDIV PWB.)

Functions of each I/F

I2C : ① 5V I/F

Temperature Sensor (TSENS PWB)
EEPROM (DIV PWB)
EEPROM (KEY I/O PWB)
Control Panel LED Changeover
Motor Control (for Motor PWB / 3200)

② 3.3V I/F

Fan Control, Supervision
Buzzer
Anamo
Lens Mount Voltage Control
Light Sensor Reset
Lamp Door Supervision
Lamp Temp Supervision
GPSU Supervision (Fan, voltage)
Tamper Supervision
Cooler Pump Supervision

UART

- ① Lamp Power Supply Control (PEDE-A)
- ② Motor Control (Lens Mount)

CIRCUIT DESCRIPTION

3. LAN

The RTL8100CL (IC7101) is an Ethernet controller with the respective functions of Ethernet MAC, PHY, and Transceiver applicable to 10Mbps, 100Mbps operation.

External projector control and setup are carried out via the LAN.

The CPU functions as a host device and ASSIST3 provides a bridge of CPU bus and PCI bus, and transfers data to the RTL8100CL (IC7101).

The differential data modulated by the RTL8100CL pass through the transformer (T7100) and are sent from the RJ-45 connector (M6003) on the Mother PWB to the outside and other boards via the router.

- Power

The CPU operates on the two types of power supplies specified below.

I/O : 3.3V

Core : 2.5V Stepped down from 3.3V (P3P3V) through the Series Regulator (PQ070XZ01ZP @IC7102).

- PROM

BR93L46RF(IC7103) is a 64*16-bit EEPROM where the MAX address, ID parameter, etc., are saved.

4. External Interface Port

- GPIO M7001 (D-Sub 37pin)

Used for power sequence and signal changeover for the projector.

Input : #5 - #8, #24 - #27

The data level is converted at the photo coupler (IC7205 – 7208) and the input data are entered in the CPU via the buffer (IC7214).

#3, 4, 22, 23 are connected to ICP.

Output : #13 - #18, #32 - #35

The photo coupler (IC7201 – 7204) is driven from the CPU via the buffer (IC7214).

#9, 12, 28, 31 are connected to ICP.

- 3D M7005 (D-Sub 15pin)

3D Control

Level conversion is performed by the SW (IC7215, 7216) and the buffer (IC7213, 7217) under the control from the ICP and CPU.

- RS232 M7002 (D-Sub 9pin)

Used for projector control from external equipment.

Controlled by the CPU via the transceiver (AD3202 IC7218).

Otherwise, the 232C line of the 3D Ctl Port is connected to the CPU via another channel of the same device.

- USB M7000

Controlled by the CPU via the transformer T7101.

LM3525 (IC7110) is the Power SW (+5V) of the USB Port and controlled by the CPU.

This device has a protective circuit. It suspends the supply of power when the output current exceeds 1A.

- Remote control M7003 (Mini Jack)

This connector receives a +5Vp-p signal input from the remote controller through cables.

Waveforms are trimmed by the FET (Q7103, 7104) and the processed signal is fed to the ASSIST3 after level conversion (3.3Vp-p).

The ASSIST3 decodes this signal and the resultant remote control input is sent to the CPU.

IC7102 (PQ070XZ01) supplies the power for remote control drive.

The output from this device is maintained at approximately +4.0V so that +3.3V can be maintained on the remote control side in the case of 16m cable connections.

CIRCUIT DESCRIPTION

5. H/W Install

This board is connected to the PCIe connector on the Mother PWB via the card edge (PO1700).

6. POWER

The input power is fed at +5V DC and +12V DC.

Refer to the diagram below in regard to the power supply system for the respective devices.

① 12V

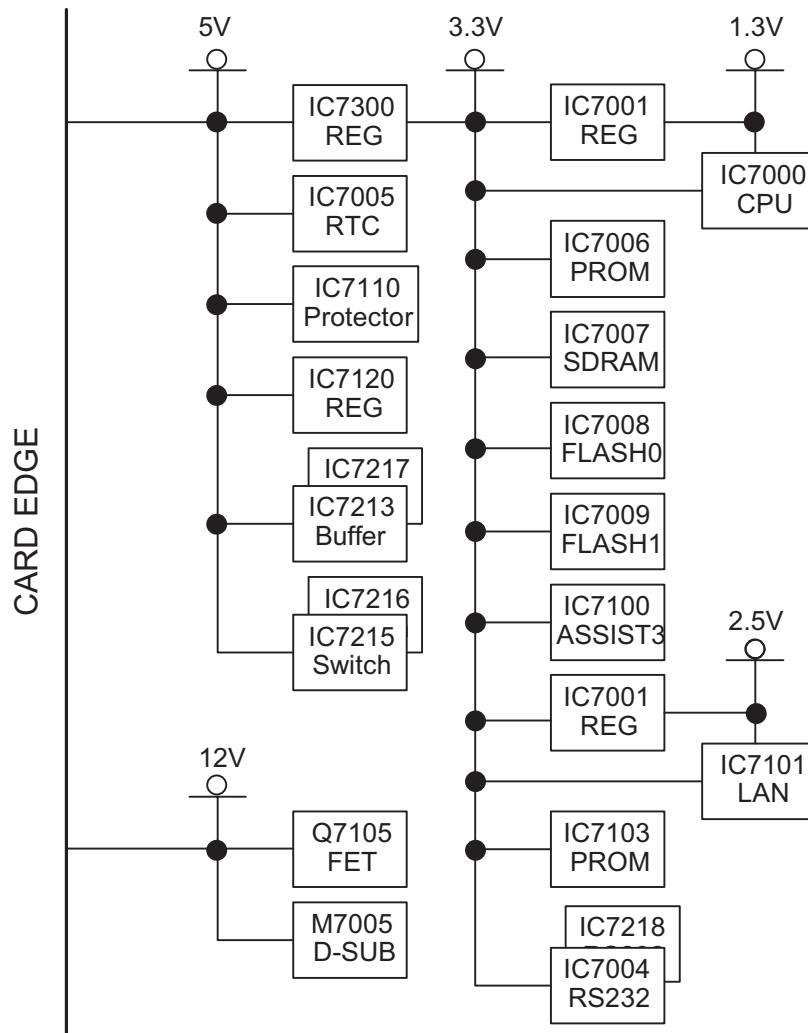
The power is fed from the GPSU via the Mother PWB.

② 5V

The power is fed from the DIV PWB via the Mother PWB.

The main power 3.3V is gained by step-down from 5V through the Series Regulator (PQ070XH02 @ IC7300).

The LED (D7300) is an indicator of this line being in live state.



CIRCUIT DESCRIPTION

MOTHER PWB Circuit Operation

The Mother PWB (PWC-4708) is a board intended to make major board connections and relaying for the establishment of the projector functions.

1. Board connections and relaying

Each board is installed in the slot specified below.

The slot is a general-purpose PCIe connector and its board side is of the card edge type.

Inter-board control is carried out through the LAN and each slot is provided with an independent RJ45 connector.

Circuit symbol	PWB	LAN I/F
A1J1/A1J2/A1J3	ICP	M6000
A2J1/A2J2	LEGACY INTERFACE or IMB	M6001
A3J1/A3J2	MMOUT or IMB	M6002
A4J1	CPU	M6003
A5J1	PJDIV	—

* When multiple circuit symbols are provided, the number of items used applies to a single board (for example: 3 slots occupied for a single piece of ICP).
A2J2 and A3J2 are the board-attributable slots. All lines OPEN.

2. FSB connections

The FSB is connected among all line ICPs.

① Video, control

The three connectors of M6001, 6002, 6003 are connected with the six twist-pair cables through the repeater board "INTERVENE PWB."

The INTERVENE PWB is a board intended for the speedy connection and disconnection of cables for maintenance servicing and others.

② Power supply

The 12V, 3.3V, and 2.5V power of the PO6000 is fed to each FSB through branch cables.

The 3.3V and 2.5V power is used for DC/DC converter output relaying on the ICP.

3. POWER

The input power supply of +12V DC is fed to the PO6010 where it is branched and distributed to the respective slots and boards.

4. Outlined bus lines

① Video system

Input A-ch: A3J1 (Mother Board lower-stage input slot) > Mother A1J1 > ICP

Input B-ch: A2J1 (Mother Board upper-stage input slot) > Mother A1J2, A1J1 > ICP

Output: A1J3 (ICP) > PO6001-6003 (FSB*3)

② Control

A4J1 (CPU) – A5J1 (PJDIV)

A4J1 (CPU) – A1J2 (ICP)

PART LIST



SPARE PARTS LIST NP-NC900C-A

ITEM	PART NO.	DESCRIPTION	PHOTO	REMARK
1	79TY1001	TOP COVER ASSY(NC)		
2	79TY1011	LEFT SIDE COVER ASSY(NC)		
3	79TY1021	FILTER COVER ASSY(NC)		
4	79TY1031	RIGHT SIDE COVER ASSY(NC)		
5	79TY1041	FRONT COVER ASSY(NC)		
6	79TY1051	HOOD LENS COVER ASSY(NC)		
7	79TY1061	REAR COVER ASSY(NC)		
8	79TY1071	REAR FILTER COVER ASSY(NC)		
9	79TY1081	BASE COVER ASSY(NC)		
10	79TY1091	LAMP COVER 1(NC)		

PART LIST

11	79TY1101	LAMP COVER 2(NC)		
12	79TM1231	FOOT BOTTOM		
13	79TY1111	BASE FOOT(NC)		
14	79TY1121	DC FAN(AFB0512VHD 4)(NC)		FAN 5
15	79TY1131	DC FAN(AFB0512VHD 5)(NC)		FAN 4
16	79TM1311	DC FAN(BFB0712HD SP01)		FAN 9
17	79TM1321	DC FAN(BFB0712HD SP01)		FAN 10
18	79TM1351	DC FAN(AFB1212H 11-3P)		FAN 7 FAN 8
19	79TY1141	DC FAN(AFB1212HHE 14)(NC)		FAN 14
20	79TY1151	DC FAN(AFB1212H 16)(NC)		FAN 16
21	79GP1121	DC FAN(AFB1212H SM09)		FAN 6 FAN 12
22	79TY1161	DC FAN(AFB1212H 13)(NC)		FAN 13
23	79TY1171	DC FAN(AFB1212H 1)(NC)		FAN 1

PART LIST

24	79TY1181	DC FAN(EFB0512HA)(NC)		ICP FAN
25	79TY1191	DC FAN(AFB0612HC 15)(NC)		FAN 15
26	79TY1201	DC FAN(AFB0612HC 2)(NC)		FAN 2
27	79TY1211	DC FAN(BFB0712LD 11)(NC)		FAN 11
28	79TY1221	DC FAN(AFB0712VHE 3)(NC)		FAN 3
29	79TM1392	SENSOR(H) PWB ASSY		
30	79TM1402	SENSOR(V) PWB ASSY		
31	79TY1231	FORMATTER-R PWB ASSY(NC)		
32	79TY1241	FORMATTER-B PWB ASSY(NC)		
33	79TY1251	FORMATTER-G PWB ASSY(NC)		
34	79TY1261	MOTOR PWB ASSY(NC)		
35	79TM1531	PWM FAN PWB ASSY		
36	79TM1441	FAN-C PWB ASSY		

PART LIST

37	79GP1251	FAN-D PWB ASSY(PH)		
38	79TY1271	FAN-E PWB ASSY(NC)		
39	79TY1281	LED PWB ASSY 1(NC)		
40	79TY1291	LED PWB ASSY 2(NC)		
41	79TY1301	SLAVE UC PWB ASSY(NC)		
42	79TY1311	FMT ADAPTER PWB ASSY(NC)		
43	79TY1321	KEY PWB ASSY(NC)		
44	79TY1331	INTERLOCK PWB ASSY(NC)		
45	79TY1341	LCD PWB ASSY(NC)		
46	79TY1351	SW PWB ASSY(NC)		
47	79TY1361	AC FILTER PWB ASSY(NC)		PFC_BD
48	79TY1371	AC INLET PWB ASSY(NC)		












PART LIST

49	79TY1381	POWER SUPPLY-DC(NC)		Power Main_BD
50	7N951811	ICP BOARD1.5 2509274-0008		
51	7N970107	ROUTER BR-CP1400N		
52	81T19C03	CPU PWB ASSY		
53	81X15M01	MOTHER PWB ASSY		
54	79GP1281	BACKLIGHT-B PWB ASSY(PH)		
55	79TY1391	POWER SUPPLY-BS(NC)		Ballast
56	79TY1401	DLP ENGINE SASSY(NC)		
57	79TY1411	PRISM SASSY(NC)		





PART LIST

58	79TY1421	LENS HOLDER ASSY(NC)		
59	79TY1431	LIGHT SHUTTER ASSY(NC)		
60	79TY1441	INTEGRATOR ASSY(NC)		
61	79TY1451	FILTER HOLDER ASSY 1(NC)		
62	79TY1461	FILTER HOLDER ASSY 2(NC)		
63	79TY1471	CN2P L400(NC)		
64	79TY1481	CN WIRE L60 BLACK(NC)		
65	79TY1491	CN WIRE L60 WHITE(NC)		
66	79TY1501	CN4P L110(NC)		
67	79TY1511	CN8P-24P L420(NC)		
68	79TY1521	CN5P L200(NC)		
69	79TY1531	CN4P L850(NC)		

PART LIST

70	79TY1541	CN2P L270(NC)		
71	79TY1551	CN4P L600(NC)		
72	79TY1561	SW ASSY(FILTER)(NC)		
73	79TY1571	THERMAL STATE ASSY(NC)		
74	79TY1581	SW ASSY 1 (LAMP DOOR)(NC)		
75	79TY1591	THERMAL STATE(AIR IN)(NC)		
76	79TY1601	THERMAL STATE(DMD)(NC)		
77	79TY1611	SW ASSY 2 (LAMP DOOR)(NC)		
78	79TY1621	SPACER(REAR TOP)(NC)		
79	79TY1631	SPACER(FRONT TOP)(NC)		
80	79TY1641	SPACER(BOTTOM)(NC)		

PART LIST

81	79TY1651	SHEET(2400*1000)(NC)		
82	79TY1661	PE BAG(1300*750)(NC)		
83	79TY1681	CARTON BOX(INSIDE)(NC)		
84	79TY1691	KEY PAD BUBBER(NC)		

PART LIST

SPARE PARTS LIST NP-NC900C-A+

ITEM	PART NO.	DESCRIPTION	PHOTO	REMARK
1	79TY1001	TOP COVER ASSY(NC)		
2	79TY1011	LEFT SIDE COVER ASSY(NC)		
3	79TY1021	FILTER COVER ASSY(NC)		
4	79TY1031	RIGHT SIDE COVER ASSY(NC)		
5	79TY1041	FRONT COVER ASSY(NC)		
6	79TY1051	HOOD LENS COVER ASSY(NC)		
7	79TY1061	REAR COVER ASSY(NC)		
8	79TY1071	REAR FILTER COVER ASSY(NC)		
9	79TY1081	BASE COVER ASSY(NC)		
10	79TY1091	LAMP COVER 1(NC)		

PART LIST

11	79TY1101	LAMP COVER 2(NC)		
12	79TM1231	FOOT BOTTOM		
13	79TY1111	BASE FOOT(NC)		
14	79TY1121	DC FAN(AFB0512VHD 4)(NC)		FAN 5
15	79TY1131	DC FAN(AFB0512VHD 5)(NC)		FAN 4
16	79TM1311	DC FAN(BFB0712HD SP01)		FAN 9
17	79TM1321	DC FAN(BFB0712HD SP01)		FAN 10
18	79TM1351	DC FAN(AFB1212H 11-3P)		FAN 7 FAN 8
19	79TY1141	DC FAN(AFB1212HHE 14)(NC)		FAN 14
20	79TY1151	DC FAN(AFB1212H 16)(NC)		FAN 16
21	79GP1121	DC FAN(AFB1212H SM09)		FAN 6 FAN 12
22	79TY1161	DC FAN(AFB1212H 13)(NC)		FAN 13
23	79TY1171	DC FAN(AFB1212H 1)(NC)		FAN 1

PART LIST

24	79TY1181	DC FAN(EFB0512HA)(NC)		ICP FAN
25	79TY1191	DC FAN(AFB0612HC 15)(NC)		FAN 15
26	79TY1201	DC FAN(AFB0612HC 2)(NC)		FAN 2
27	79TY1211	DC FAN(BFB0712LD 11)(NC)		FAN 11
28	79TY1221	DC FAN(AFB0712VHE 3)(NC)		FAN 3
29	79TM1392	SENSOR(H) PWB ASSY		
30	79TM1402	SENSOR(V) PWB ASSY		
31	79TY1231	FORMATTER-R PWB ASSY(NC)		
32	79TY1241	FORMATTER-B PWB ASSY(NC)		
33	79TY1251	FORMATTER-G PWB ASSY(NC)		
34	79TY1261	MOTOR PWB ASSY(NC)		
35	79TM1531	PWM FAN PWB ASSY		
36	79TM1441	FAN-C PWB ASSY		

PART LIST

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38	79TY1271	FAN-E PWB ASSY(NC)		
39	79TY1281	LED PWB ASSY 1(NC)		
40	79TY1291	LED PWB ASSY 2(NC)		
41	79TY1301	SLAVE UC PWB ASSY(NC)		
42	79TY1311	FMT ADAPTER PWB ASSY(NC)		
43	79TY1321	KEY PWB ASSY(NC)		
44	79TY1331	INTERLOCK PWB ASSY(NC)		
45	79TY1341	LCD PWB ASSY(NC)		
46	79TY1351	SW PWB ASSY(NC)		
47	79TY1361	AC FILTER PWB ASSY(NC)		PFC_BD
48	79TY1371	AC INLET PWB ASSY(NC)		












PART LIST

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51	7N970107	ROUTER BR-CP1400N		
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53	81X15M01	MOTHER PWB ASSY		
54	79GP1281	BACKLIGHT-B PWB ASSY(PH)		
55	79TY1391	POWER SUPPLY-BS(NC)		Ballast
56	79TY1401	DLP ENGINE SASSY(NC)		
57	79TY1411	PRISM SASSY(NC)		

PART LIST

58	79TY1421	LENS HOLDER ASSY(NC)		
59	79TY1431	LIGHT SHUTTER ASSY(NC)		
60	79TY1441	INTEGRATOR ASSY(NC)		
61	79TY1451	FILTER HOLDER ASSY 1(NC)		
62	79TY1461	FILTER HOLDER ASSY 2(NC)		
63	79TY1471	CN2P L400(NC)		
64	79TY1481	CN WIRE L60 BLACK(NC)		
65	79TY1491	CN WIRE L60 WHITE(NC)		
66	79TY1501	CN4P L110(NC)		
67	79TY1511	CN8P-24P L420(NC)		
68	79TY1521	CN5P L200(NC)		
69	79TY1531	CN4P L850(NC)		

PART LIST

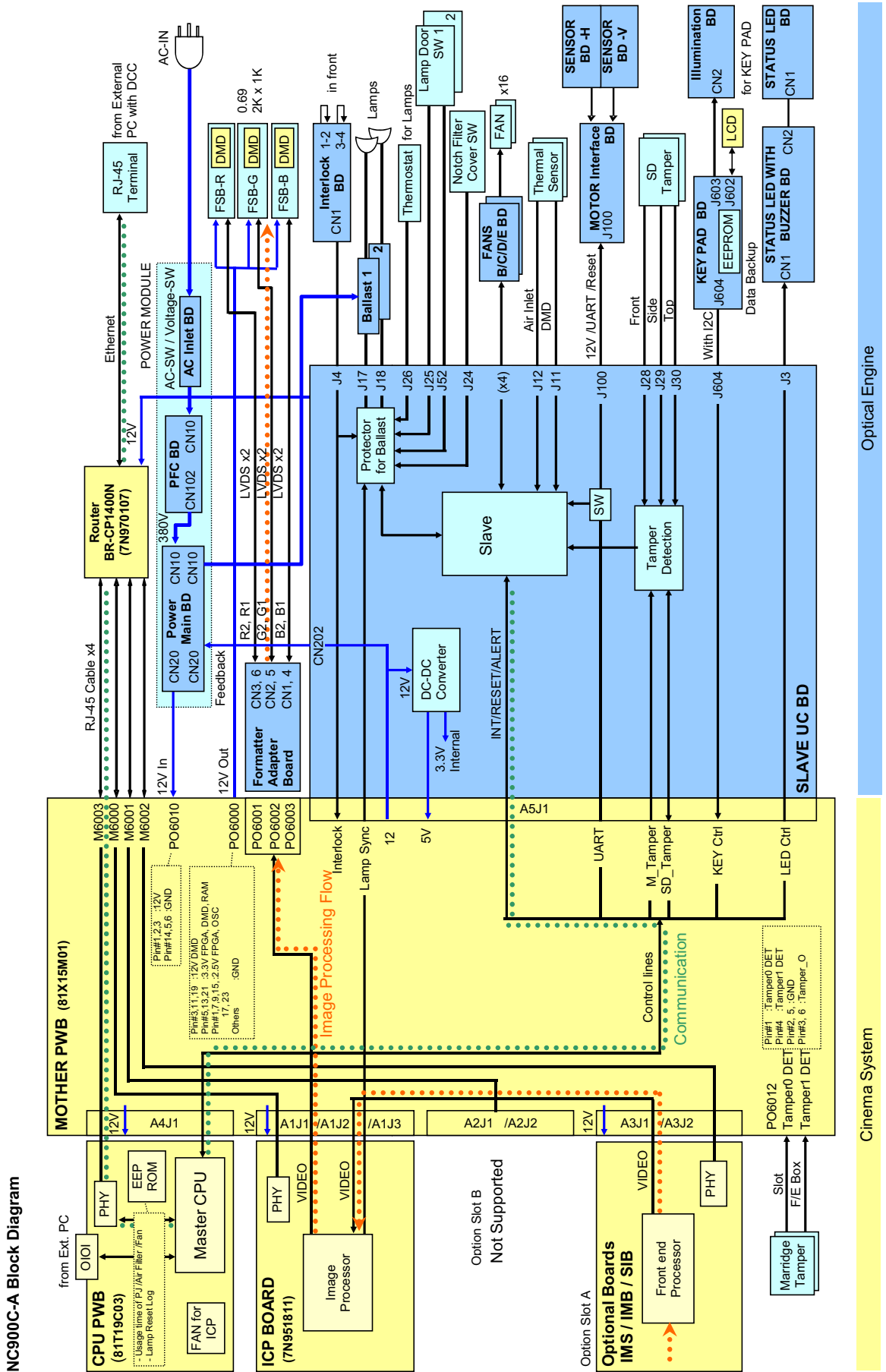
70	79TY1541	CN2P L270(NC)		
71	79TY1551	CN4P L600(NC)		
72	79TY1561	SW ASSY(FILTER)(NC)		
73	79TY1571	THERMAL STATE ASSY(NC)		
74	79TY1581	SW ASSY 1 (LAMP DOOR)(NC)		
75	79TY1591	THERMAL STATE(AIR IN)(NC)		
76	79TY1601	THERMAL STATE(DMD)(NC)		
77	79TY1611	SW ASSY 2 (LAMP DOOR)(NC)		
78	79TY1621	SPACER(REAR TOP)(NC)		
79	79TY1631	SPACER(FRONT TOP)(NC)		
80	79TY1641	SPACER(BOTTOM)(NC)		

PART LIST

81	79TY1651	SHEET(2400*1000)(NC)		
82	79TY1661	PE BAG(1300*750)(NC)		
83	79TY1681	CARTON BOX(INSIDE)(NC)		
84	79TY1671	CARTON BOX(OUTSIDE)(NC)		
85	79TM1111	POWER CORD STOPPER		
86	79TM1051	POWER CORD(C)		
87	79TY1691	KEY PAD BUBBER(NC)		

BLOCK DIAGRAM

1. Block Diagram



NEC