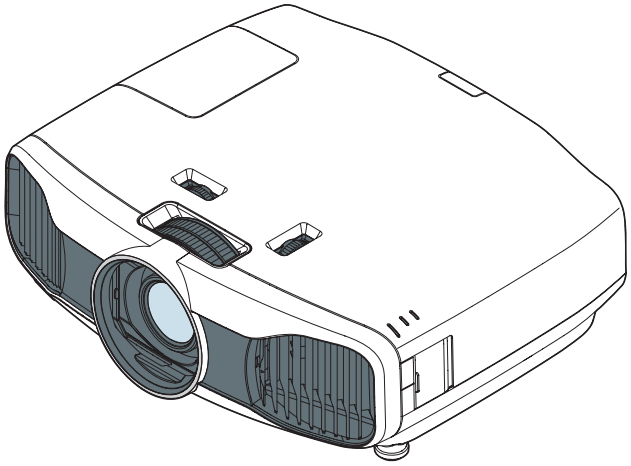
SERVICE MANUAL



Home Projector

EH-TW8000/TW9000/TW9000W

EPSON
EXCEED YOUR VISION

CONFIDENTIAL

NOTICE

About This Manual

This manual describes basic functions, theory of electrical and mechanical operations, maintenance and repair procedures of the product. The instructions and procedures included herein are intended for the experienced repair technicians, and attention should be given to the precautions on the preceding page.

Manual Configuration

CHAPTER 1. PRODUCT DESCRIPTIONS
Provides a general overview and specifications of the product.

CHAPTER 2. TROUBLESHOOTING
Describes the step-by-step procedures for the troubleshooting.

CHAPTER 3. DISASSEMBLY / ASSEMBLY
Describes the step-by-step procedures for disassembling and assembling the product.

CHAPTER4. APPENDIX
Provides preventive maintenance procedures for servicing the product.

IMPORTANT PRECAUTIONS IN SAFETY AND MAINTENANCE PERFORMANCE

Here describes the important points to keep in mind in repair and maintenance performance.

SYMBOLS

To prevent injury to the repair technicians and to protect the devices, the categorized safety instructions are provided in this manual with the symbols below. Be sure to read and understand their meanings before proceeding to the next section.

Category	Symbol	Meaning
Danger		Indicates an extremely hazardous operation which, if ignored or operated incorrectly, could result in serious or fatal personal injury.
Warning		Indicates a potentially hazardous operation which, if ignored or operated incorrectly, could result in serious or fatal personal injury.
Caution		Indicates a potentially hazardous operation which, if ignored or operated incorrectly, could result in minor injury or damage to equipment.
Prohibited Matter		Indicates a prohibited action or operation in repair and maintenance performance.
Instruction		Indicates a compulsory action or operation that must be carried out in repair and maintenance performance.

SAFETY INSTRUCTIONS

The precautionary measures itemized below should be fully understood when performing repair and maintenance procedures.

	WARNING
	When disassembling/assembling, be sure to turn off the power switch and pull out the power cable from the projector beforehand.
	Never touch the current-carrying part or high temperature section during a test operation, signal measurement or any other situations that is necessary to perform the repair/maintenance work with the power turned on and the cover removed. Do not wear the metal products such as wrist watch, cuff buttons, rings, tiepin etc. to avoid getting a electric shock.
	Do not touch the lamp assy. or the parts around it. They are extremely hot even after completed the cooling down operation, and may cause a burn injury. Therefore, leave the unit until it becomes cool enough before performing maintenance work.
	Never let the safety devices mounted in this product inactivated for any reason whatsoever.
	Never modify the safety devices or replace them with the ones that are not designated for any reason whatsoever. (Such actions may cause a fire or serious injury.)
	Never modify the product for any reason whatsoever. (Except for a case that is under the instructions to do so.)
	Never peer through the projection lens during repair/maintenance work when the power is on. (Such an action may cause a visual disability because of a very strong light emission.)
	Never use a deformed plug or a damaged power cable to this product. If any deformations or damages are found on the power cable or plug section, replace it with a new specified power cable.
	Never use the air blowers that contain flammable gas in repair/ maintenance work.

CAUTION	
	Never use or replace with any service parts that is not specified by EPSON.
	Be sure to perform the repair/maintenance work on the even and stable work bench to prevent the product from dropping down or mal-operation due to the improper setting of the product.
	Be sure to wear the gloves during the repair/maintenance work to avoid injuries by the parts with sharp edges such as metal plate or the like.
	To protect sensitive circuitry, follow the instructions below. ■ When disassembling or reassembling, be sure to wear static discharge equipment such as an anti-static wrist strap and a mat. ■ When replacing the circuit component such as a board or the optical engine, be sure to get in contact with the anti-static case containing the new one to the metal part of this product before taking it out.
	When performing the repair/maintenance work, be sure to use the specified tools and follow the instructions that are specified in the documents (service manual etc.) concerning to this product.
	When carrying out the test operation, do not block the intake and exhaust ducts. (Such an action raises the internal temperature and may cause a fire or a damages to the internal parts of this product.)
	Be careful not to drop a metal part such as a screw, a washer, or a clip into the inside of the product. If such cases should occur accidentally, never turn on the power supply until all the dropped parts are found and removed.
	After reassembling the product, check the followings before turning the power on. ■ All the parts and screws are installed and secured to the proper positions. ■ No cables are caught in the metal frames.

OTHER CAUTION

Since the lamp of this product contains mercury, be sure to dispose the used lamp pursuant to the government's law and regulations.

REVISION HISTORY

After first release of this manual, the parts and mechanism may be subject to change for improvement of their performance and the manual may be revised. Be sure to always keep this manual up to date.

Revision	Date	Page of change	Detail of change
A	2011.10.28	all	First Release

Contents

Chapter 4 Appendix

CHAPTER

1

PRODUCT DESCRIPTION

1.1 Features

The EH-TW8000/TW9000/TW9000W is a 3D function home projector with the following features:

- 3D function
  - Projects 3D images from such as a Blu-ray player and a 3D camera
  - Converts 2D images to 3D images

  * Use the supplied or optional 3D Glasses (ELPGS01) to view 3D images.
- Selecting Modes to Match what you are Watching

  This allows you to select a color mode such as Auto, Dynamic, Living Room according to the usage environment.

  * Selectable color mode differs depending on whether images are projected in 2D or 3D.
- Absolute Color Adjustment
  - Hue, saturation, and brightness adjustment
  - Gamma adjustment
  - RGB adjustment
  - Color temperature adjustment
  - Skin tones adjustment
- Conforms to Wireless Transmissions for the WirelessHD Standards (EH-TW9000W only)

  Use the included WirelessHD Transmitter, wirelessly receive image and sound data is available.
- Another functions
  - The remote control contains a backlight function (Using easy even in dark rooms)
  - Lens Shift (Adjusts the position of the projected images)
  - Frame interpolation (Reduces jarring movements such as frame skipping)
  - Super-resolution (Reduces blurring at the edges of the images)
  - Auto Iris

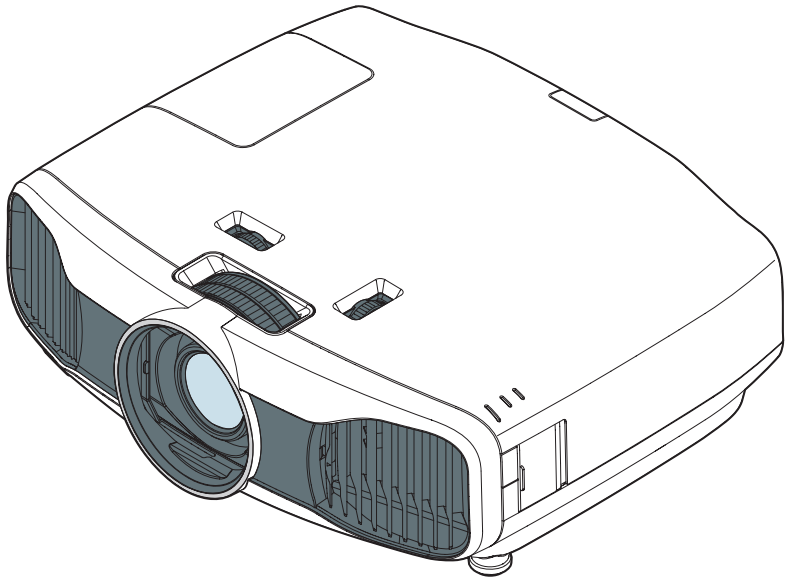


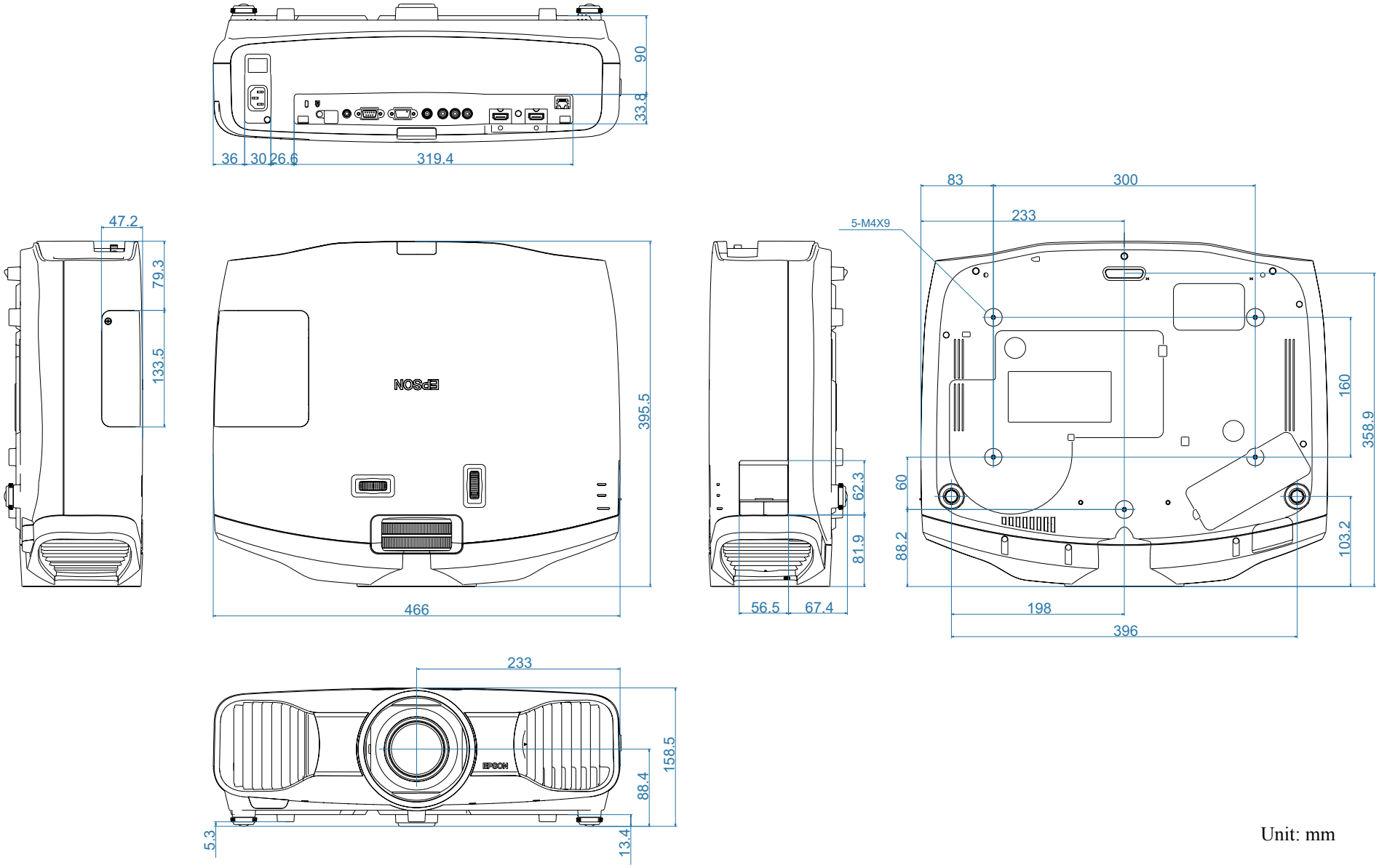
Figure 1-1. External View

1.2 Specifications

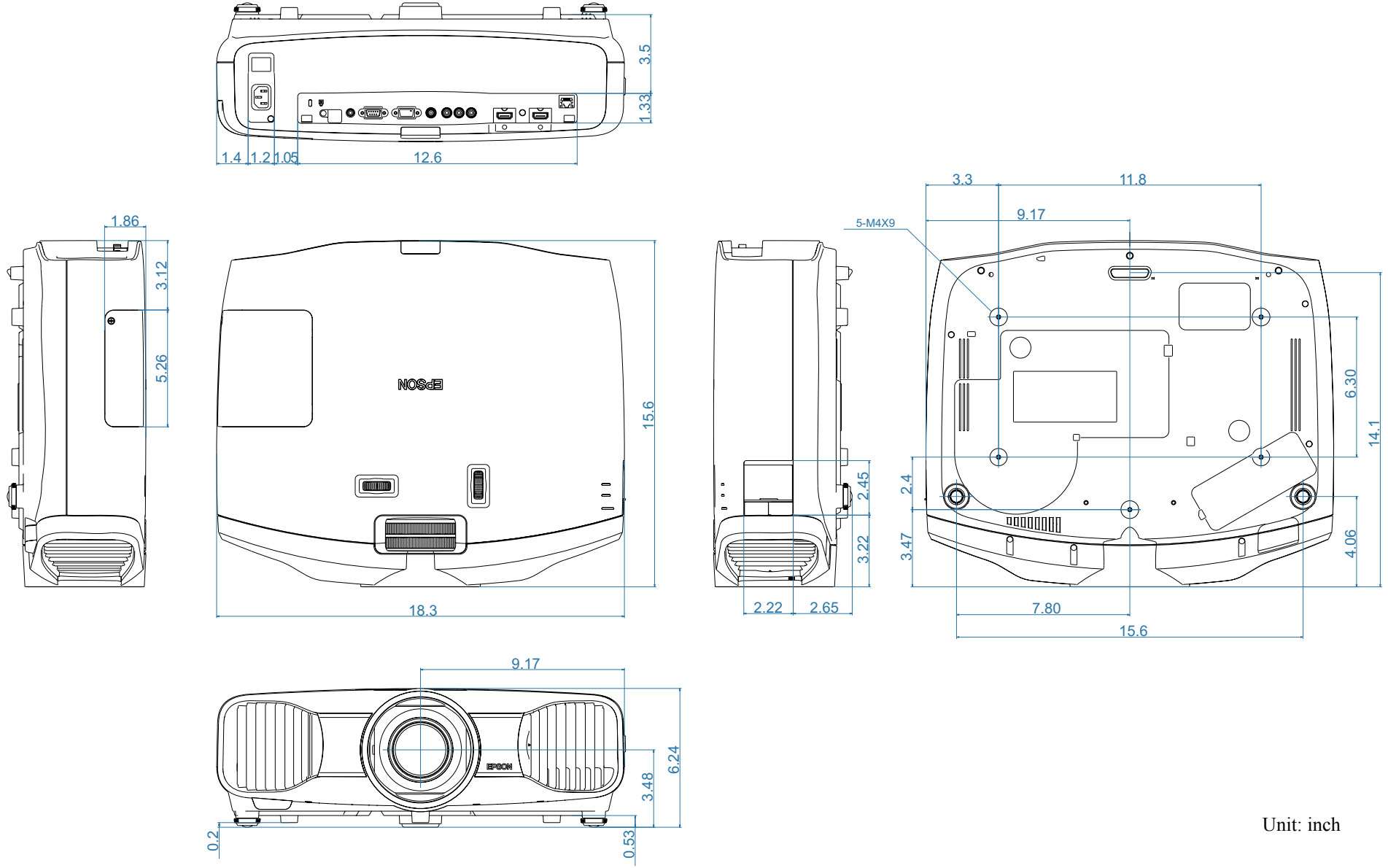
Model / Item					EH-TW8000	EH-TW9000	EH-TW9000W
Specification of main part		LCD	Size		0.74 inch wide panel (with MLA)		
			Pixel number		2,073,600 dots (1920 x 1080) x 3		
			Native resolution		1080 p		
			Aspect ratio		16:9		
		Projection Lens	Focus	Type	Manual focus		
			Zoom	Type	Manual optical zoom		
				Ratio	1.0 - 2.1		
		Lamp	Type		UHE (E-TORL)		
			Power consumption		230 W		
			Life	Normal	4000 H		
				Eco	5000 H		
Brightness	2D	Normal mode	Color mode: Dynamic Zoom: Wide Lens shift: V 5:5 / H Center		2400 lm		
		Eco mode	Color mode: Cinema Zoom: Wide Lens shift: V 5:5 / H Center		Reference value 540 lm (depend on color mixing)		
	3D		Color mode: 3D Dynamic Zoom: Wide Lens shift: V 5:5 / H Center		3D Dynamic: 7.1 fL 3D Cinema: 5.1 fL		
Sound output					N/A		
HDMI terminal					x 2		
Network Function			Wired LAN		N/A		
			Wireless LAN Unit		N/A		
USB terminal			USB I/O	Type A	N/A		
				Type B	N/A		
Operating Temperature			Temperature		5°C to 35°C [41°F to 95°F]		

Model / Item				EH-TW8000	EH-TW9000	EH-TW9000W
Operating Altitude				0 m to 2286 m <0 ft to 7500 ft>		
Start-up period				23 seconds		
Warm-up period				30 seconds		
Cool-down period				16 seconds		
Power supply voltage				100 - 240 V AC ± 10%, 50 / 60 Hz		
Power Consumption	100-120V Area (USA, etc.)	Lamp	ON (Normal)	364 W		
			ON (Eco)	274 W		
		Standby	HDMI link: On	0.27 W		5.6 W (Power-on link: Bidirectional / Device -> PJ)
			HDMI link: Off	0.27 W		
	220-240V Area (Europe, etc.)	Lamp	ON (Normal)	348 W		
			ON (Eco)	263 W		
		Standby	HDMI link: On	0.37 W		6.3 W (Power-on link: Bidirectional / Device -> PJ)
			HDMI link: Off	0.37 W		
	Rated Voltage & Current			100 - 240 V AC 50 / 60 Hz 3.7 - 1.6 A		
Size	Excluding feet		Unit: mm	395 (D) x 466 (W) x 140 (H)		
	Maximum Dimension			395 (D) x 466 (W) x 158 (H)		
Weight				Approx. 18.4 lbs / 8.3 kg		
Fan noise	Normal mode	Color mode: Dynamic		32 dB		
	Eco mode	Color mode: Cinema		22 dB		

1.3 Dimensions

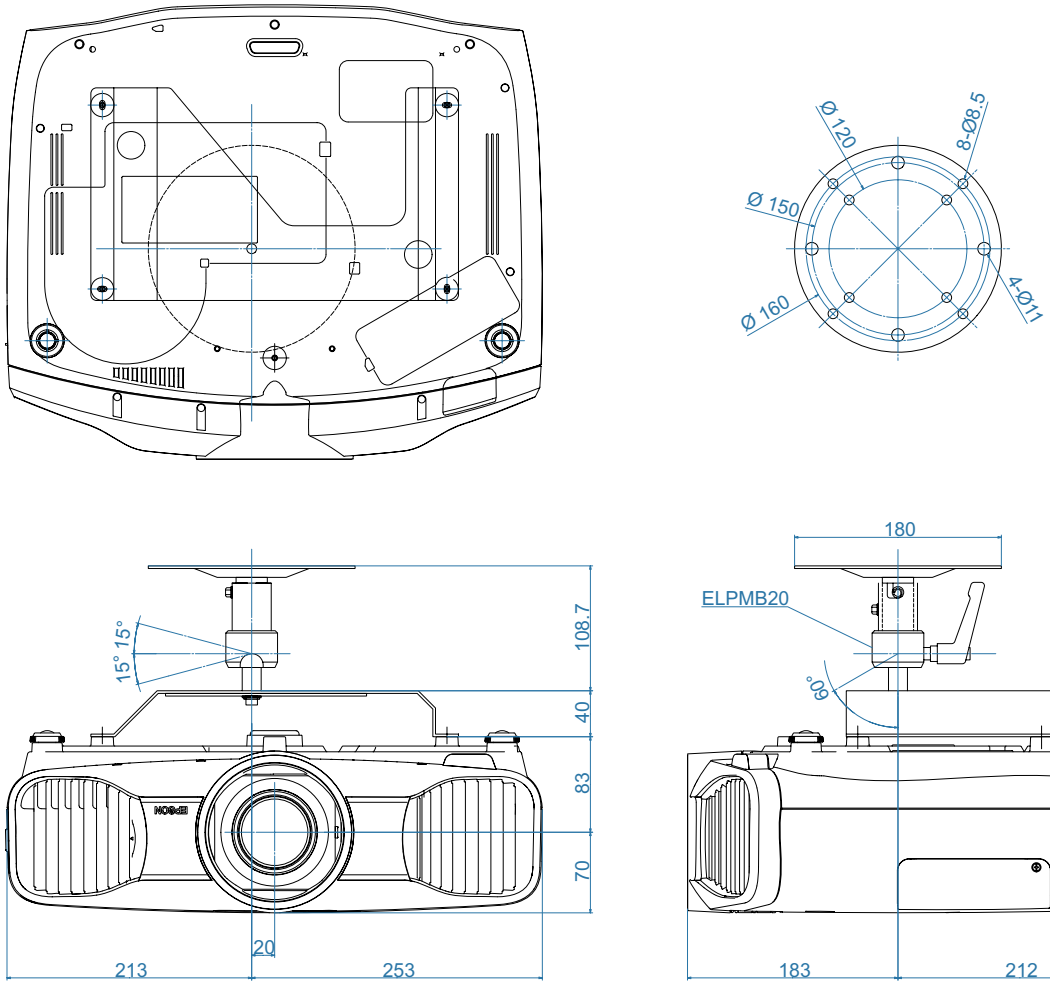


Unit: mm


3.5
1.33
1.4
1.2
1.05
12.6
1.86
3.12
5.26
15.6
18.3
2.45
3.22
2.22
2.65
3.3
11.8
9.17
5-M4X9
6.30
14.1
2.4
3.47
4.06
7.80
15.6
9.17
6.24
3.48
0.2
0.53

Unit: inch

1.4 Ceiling Mount



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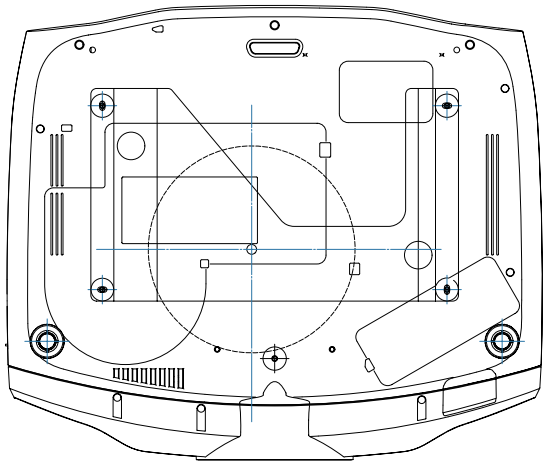

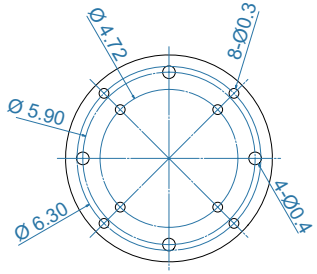
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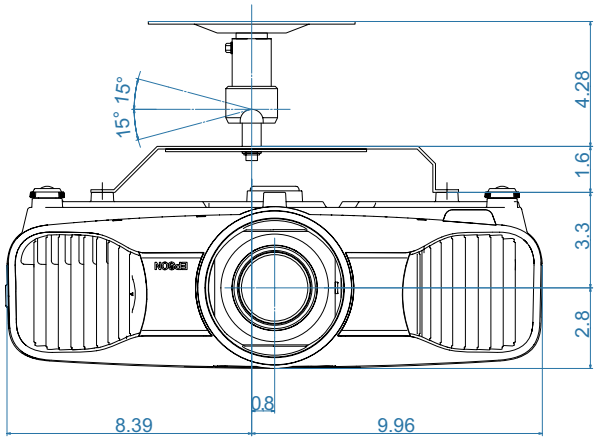
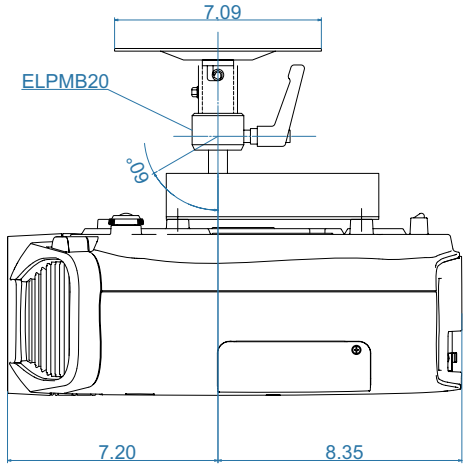
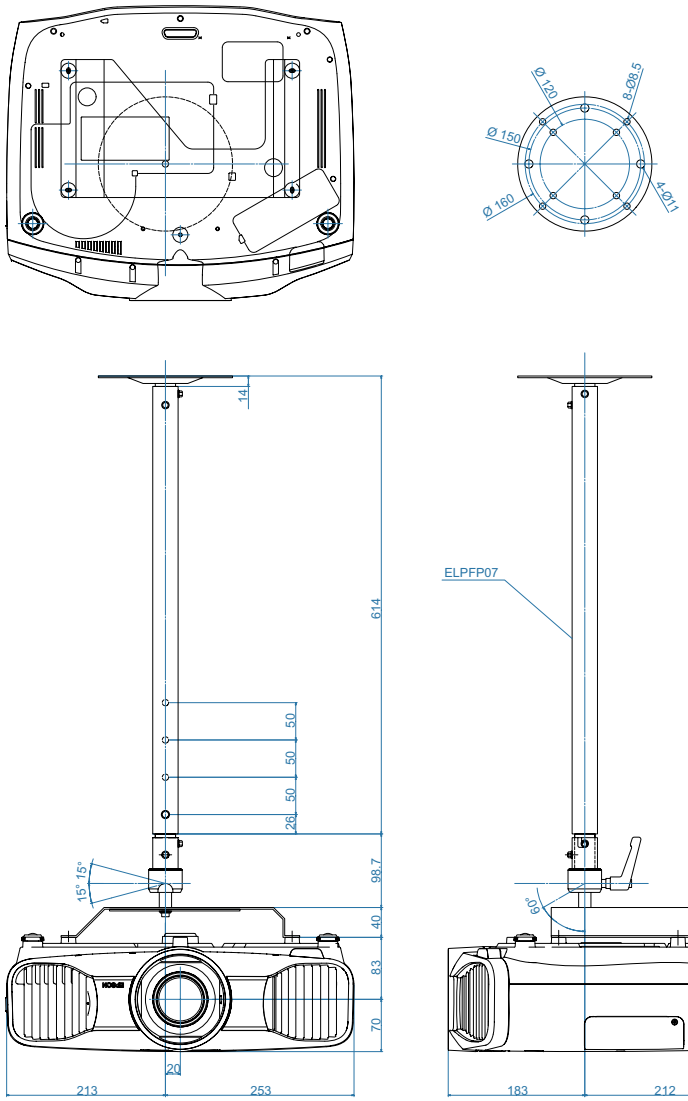
8-Ø0.3
Ø 5.90
4-Ø0.4
Ø 6.30

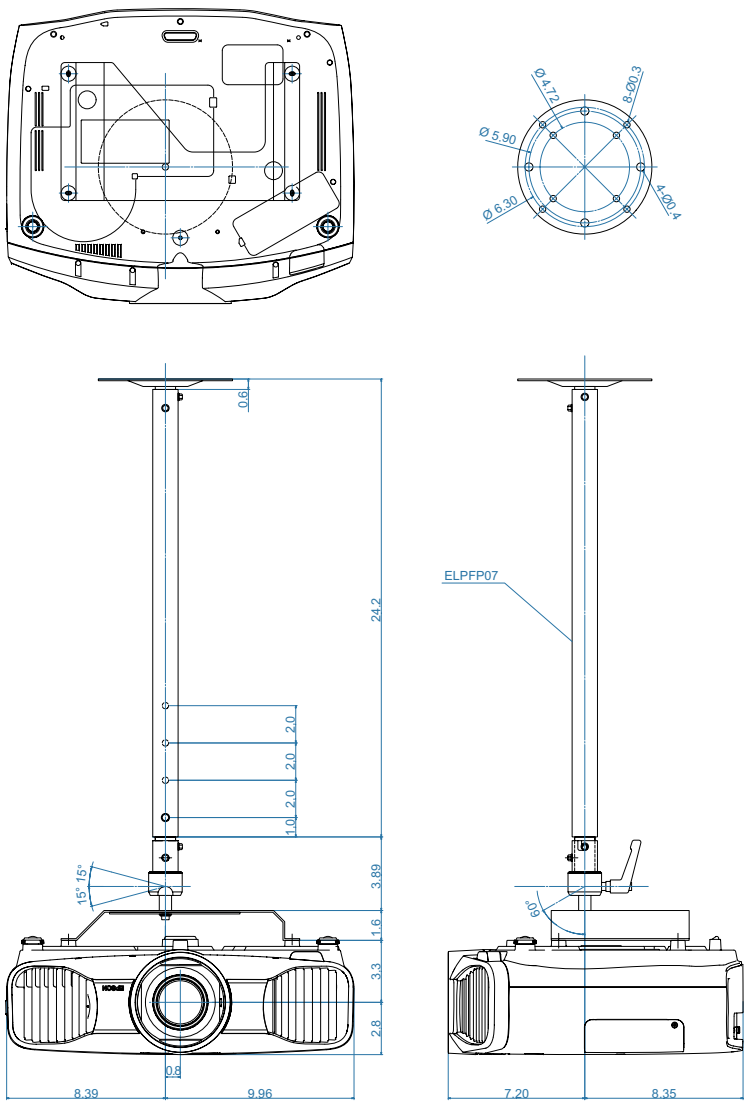

15° 15°
4.28
1.6
3.3
2.8
0.8
8.39
9.96


7.09
ELPMB20
60°
7.20
8.35

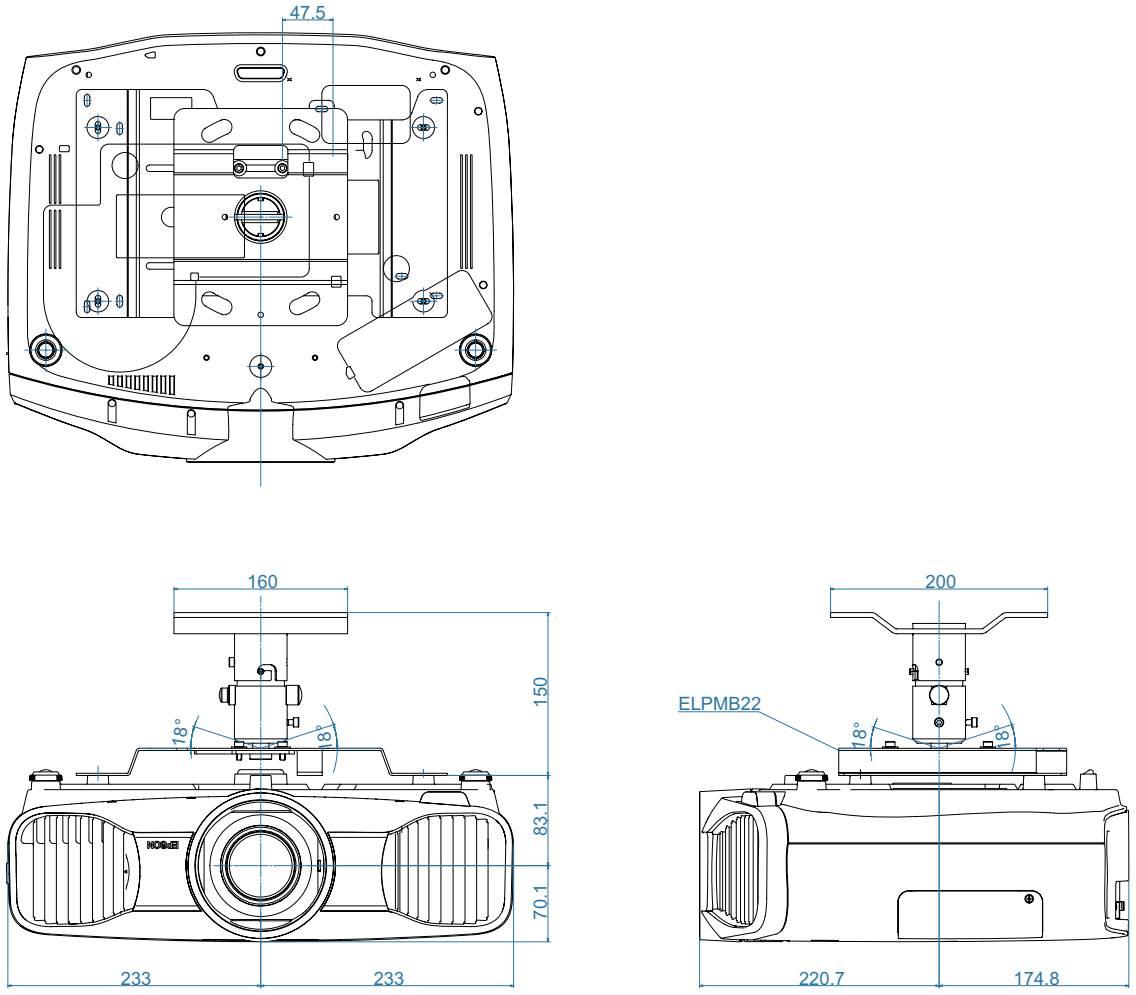
Unit: inch


Ø 120
8-Ø8.5
Ø 150
Ø 160
4-Ø11
14
614
50
50
50
26
98.7
15°
15°
40
83
70
20
213
253
ELPFP07
60°
183
212

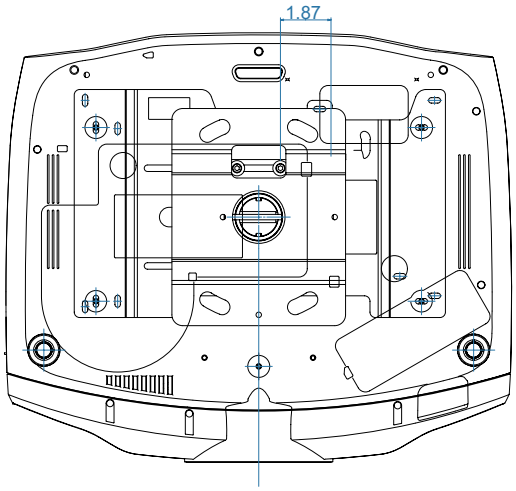
Unit: mm

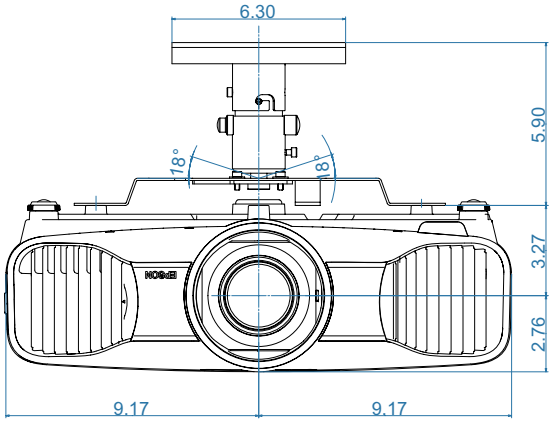

Ø 4.72
8-Ø0.3
Ø 5.90
Ø 6.30
4-Ø0.4
0.6
24.2
2.0
2.0
2.0
1.0
15° 15°
3.89
1.6
3.3
2.8
0.8
8.39
9.96
ELPFP07
0°
7.20
8.35

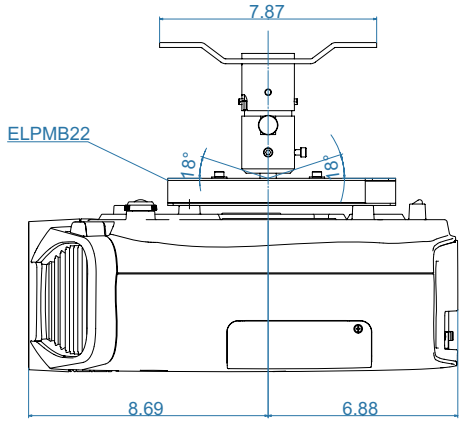
Unit: inch



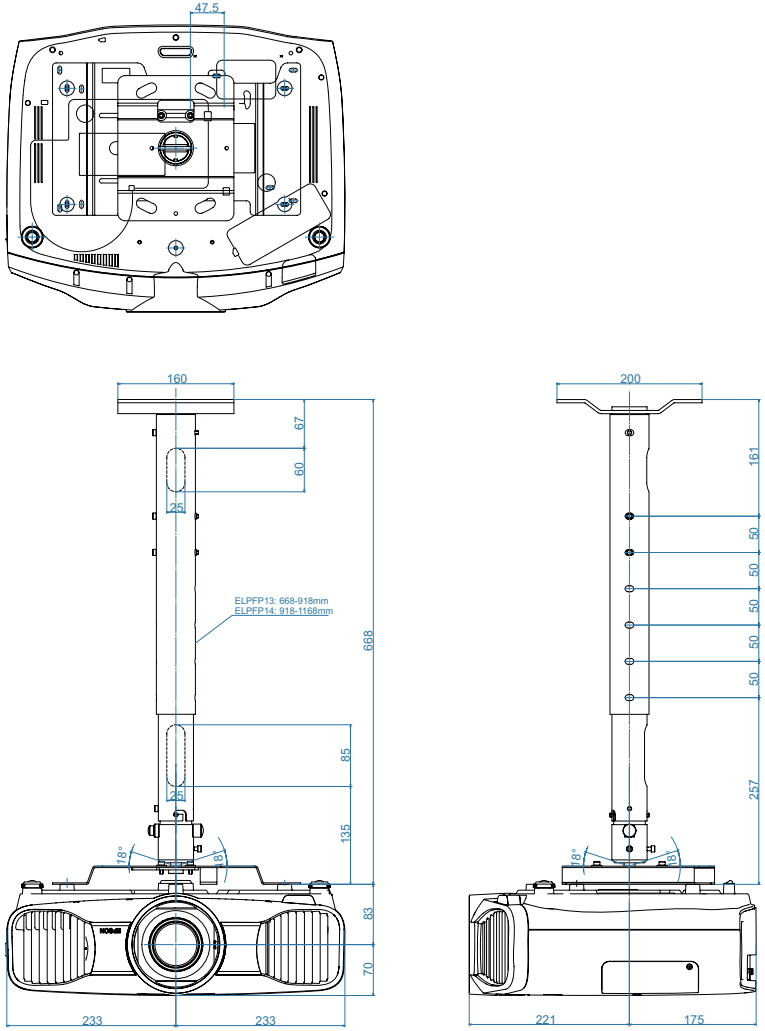
Unit: mm



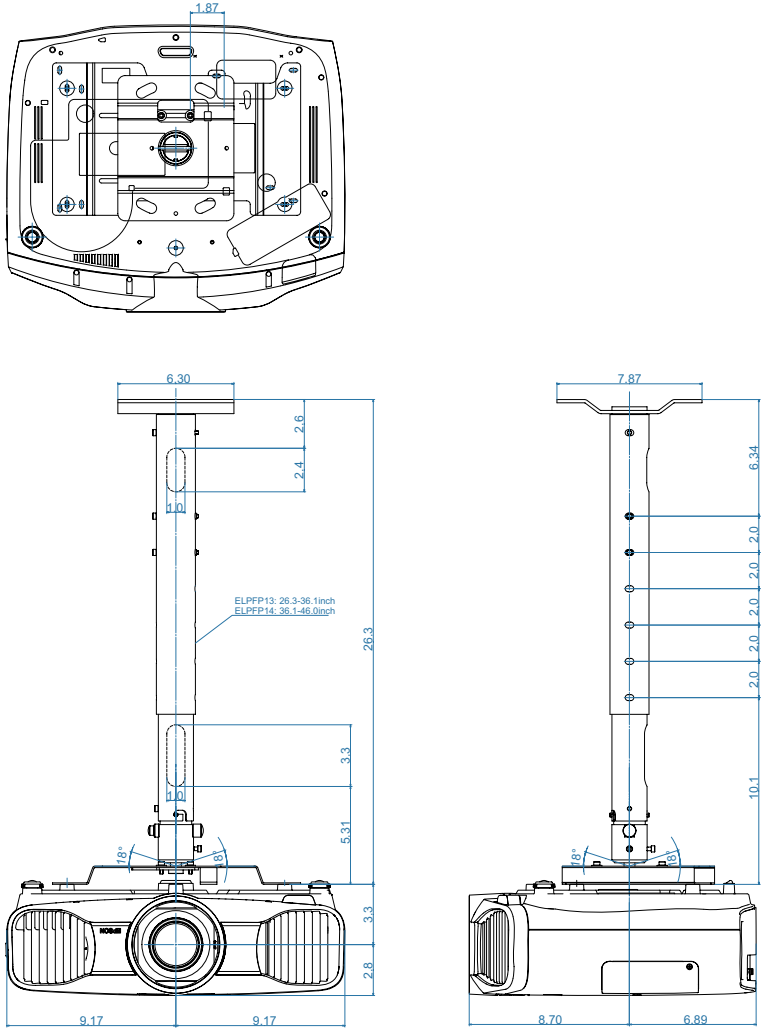




Unit: inch


47.5
160
67
60
25
ELPFP13: 668-919mm
ELPFP14: 918-1168mm
668
85
25
135
18°
18°
83
70
233
233
200
161
50
50
50
50
50
257
18°
18°
221
175

Unit: mm


1.87
6.30
2.6
2.4
1.0
ELPFP13: 26.3-36.1inch
ELPFP14: 36.1-46.0inch
26.3
3.3
1.0
5.31
18°
8°
3.3
2.8
9.17
9.17
7.87
6.34
2.0
2.0
2.0
2.0
2.0
10.1
18°
8°
8.70
6.89

Unit: inch

CHAPTER+

2

TROUBLESHOOTING

2.1 Required Tools

The following tools and equipment will be required in order to carry out troubleshooting, and so you should check that they are on hand.

Name	Qt.	Application/Other
Projection screen	1	To project image on
Host computer	1	To project computer image on *2
PC cable	1	
3D Video Player	1	To output 3D video *3
HDMI cable	1	HDMI cable supports 3D (HDMI ver.1.4 or later)
3D DVD/Blu-ray disc	1	3D video source
Video equipment	1	To output video data to the projector *2 (To check the HDMI, composite video, component video)
Video Cable	1 each	
Multi meter	1	To measure resistance values and voltages (AC/DC)
Double-sided tape	q.s. *1	To secure parts
General tools	1 set	Tools given in " 3.1.5 Tools (p59)"

Note *1: q.s.: Sufficient quantity

*2: When repairing this projector (16:9 wide panel model), prepare your video source and device considering the full screen display in 16:9 aspect ratio.

*3: When using the HDMI link function, a 3D Video Player must be compliant with the CEC standards.

2.2 Troubleshooting Procedure

This chapter describes troubleshooting procedure starting from error messages/status to diagnose problems. Refer to the descriptions and remedies below to specify the troubled part, and carry out the necessary repair or replacement.

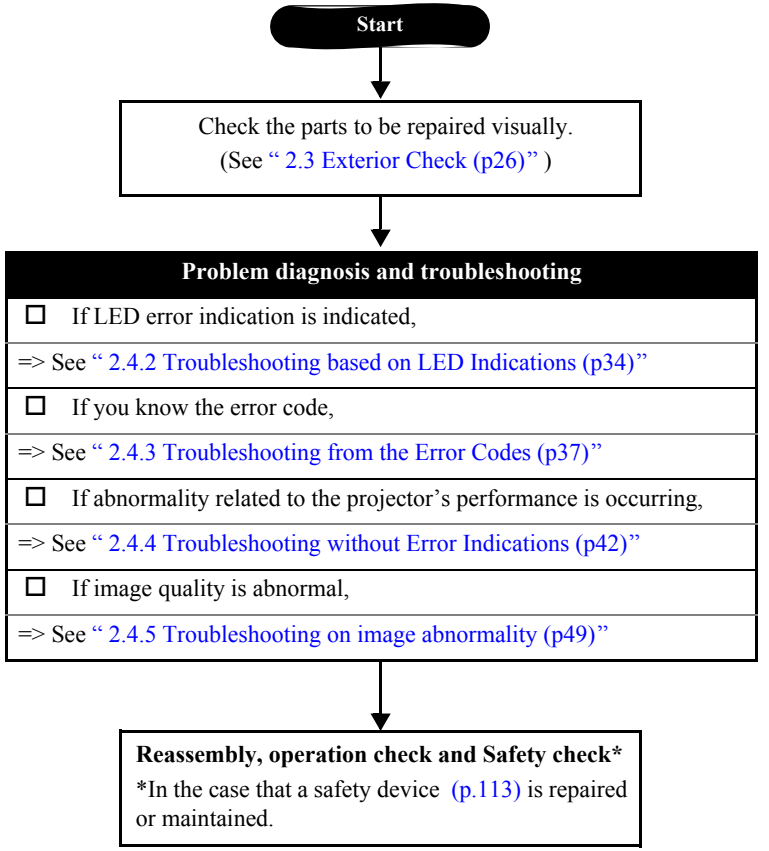


Figure 2-1. Troubleshooting Workflow

2.3 Exterior Check

When repairing this product, carry out exterior check of the target parts/units as necessary.

☐ Check Items

Target part	Check item
Upper Case	Any damage/deformation/cracking due to external forces?
	Any foreign object/dirt on IR receiver?
	Any foreign object/dirt on LED indicators?
	Is it fixed to Lower Case, Front Case and Rear Case correctly?
Front Case	Any damage/deformation/cracking due to external forces?
	Any foreign object/dirt on IR receiver?
	Any dirt/foreign materials?
	Is it fixed to Upper Case and Lower Case correctly?
Rear Case	Any damage/deformation/cracking due to external forces?
	Is it fixed to Upper Case and Lower Case correctly?
Control Panel (SW Board)	Is it fixed to Lower Case correctly?
	Any stuck buttons?
	Do buttons work smoothly?
Control Panel Cover	Any damage, deformation, or cracking?
	Is it fixed to Lower Case correctly?
	Is it open/close smoothly?
Lamp Cover	Is it fixed to Upper Case correctly?
	Any damage on the latch to operate the Interlock Switch? (Check for it with the cover removed.)
Projection Lens	Does Focus Ring work smoothly?
	Does Zoom Ring work smoothly?
	Any dirt/scratches on the projection lens?
Lower Case	Any damage/deformation/cracking due to external forces?
	Any foreign object/dirt on the filter cover or the vents?
Foot	Does Front Foot work smoothly to adjust height?
	Any Foot Rubber detached?
AC Inlet	Any deformation/discoloration on the connector/ terminals?
	Any damage on the socket?
Main Power Switch	Any damage, deformation, or cracking?
	Is Main Power Switch turned on/off?
Interfaces	Any deformation/discoloration on the connector/ terminals?
	Any foreign objects on the connectors/terminals?
Air Filter	Is it fixed to INT Duct correctly?
	Any dirt on the filter? (check for it with the filter removed.)
Air Filter Cover	Any damage/deformation/cracking due to external forces?
	Is it fixed to Front Case correctly?
	Any dirt/foreign materials?
Lens Shutter	Any damage, deformation, or cracking?
	Is it fixed to Lower Case correctly?
Lens Shift Unit	Any damage, deformation, or cracking?
	Does Lens Shift work smoothly?
Lamp	Any deformation/discoloration on the frame?
	Any deformation/discoloration on the connector?
	Are the screws that secure the Lamp tightened securely?
	Any dirt on the glass surface?

2.3.1 Parts Layout Diagrams

The following are the diagrams to confirm and locate the parts and/or components to be repaired. The parts name used here indicate the references linked to the page titles for their disassembling procedures.

OPTICAL PARTS

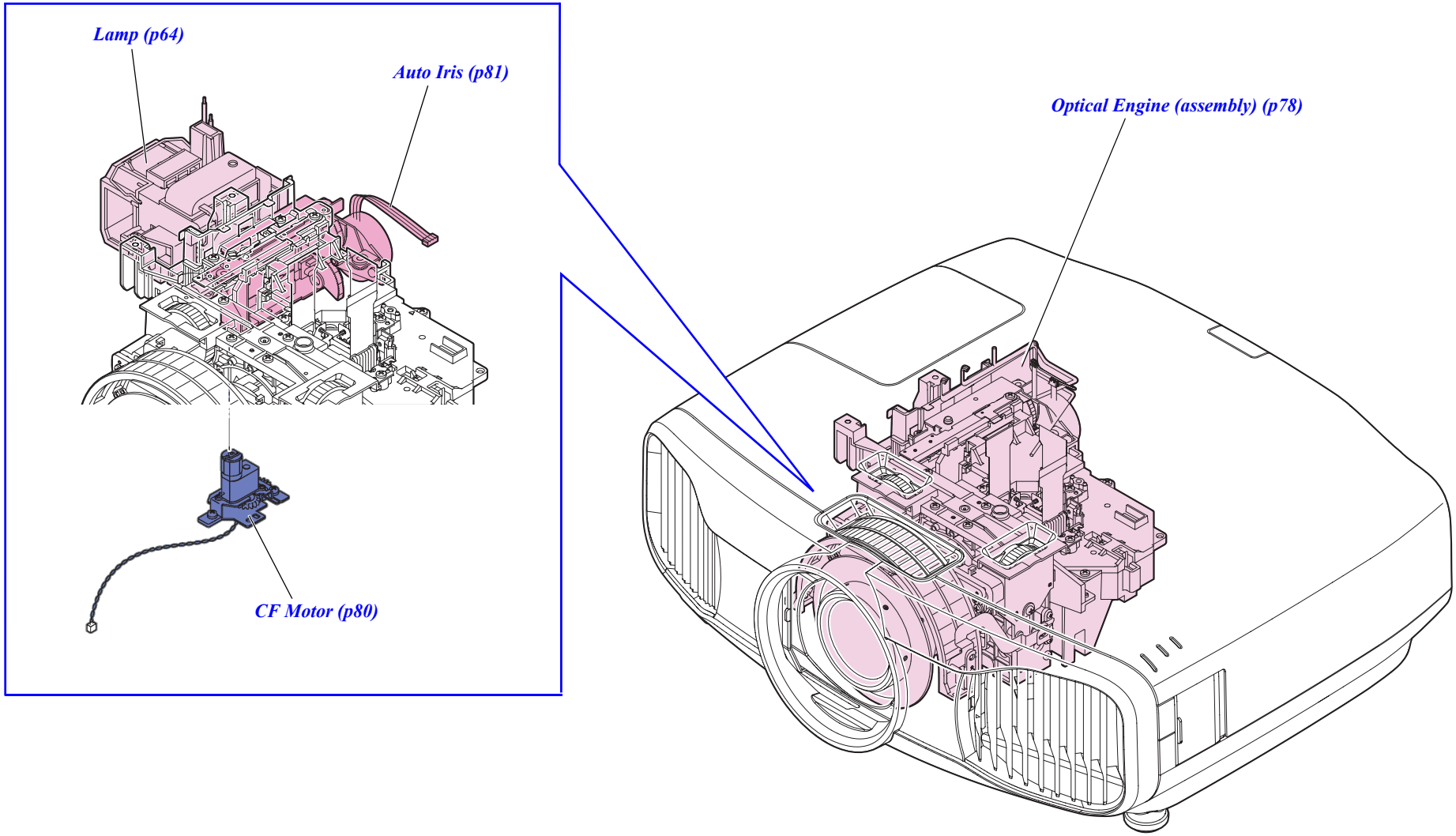


Figure 2-2.

POWER SUPPLY

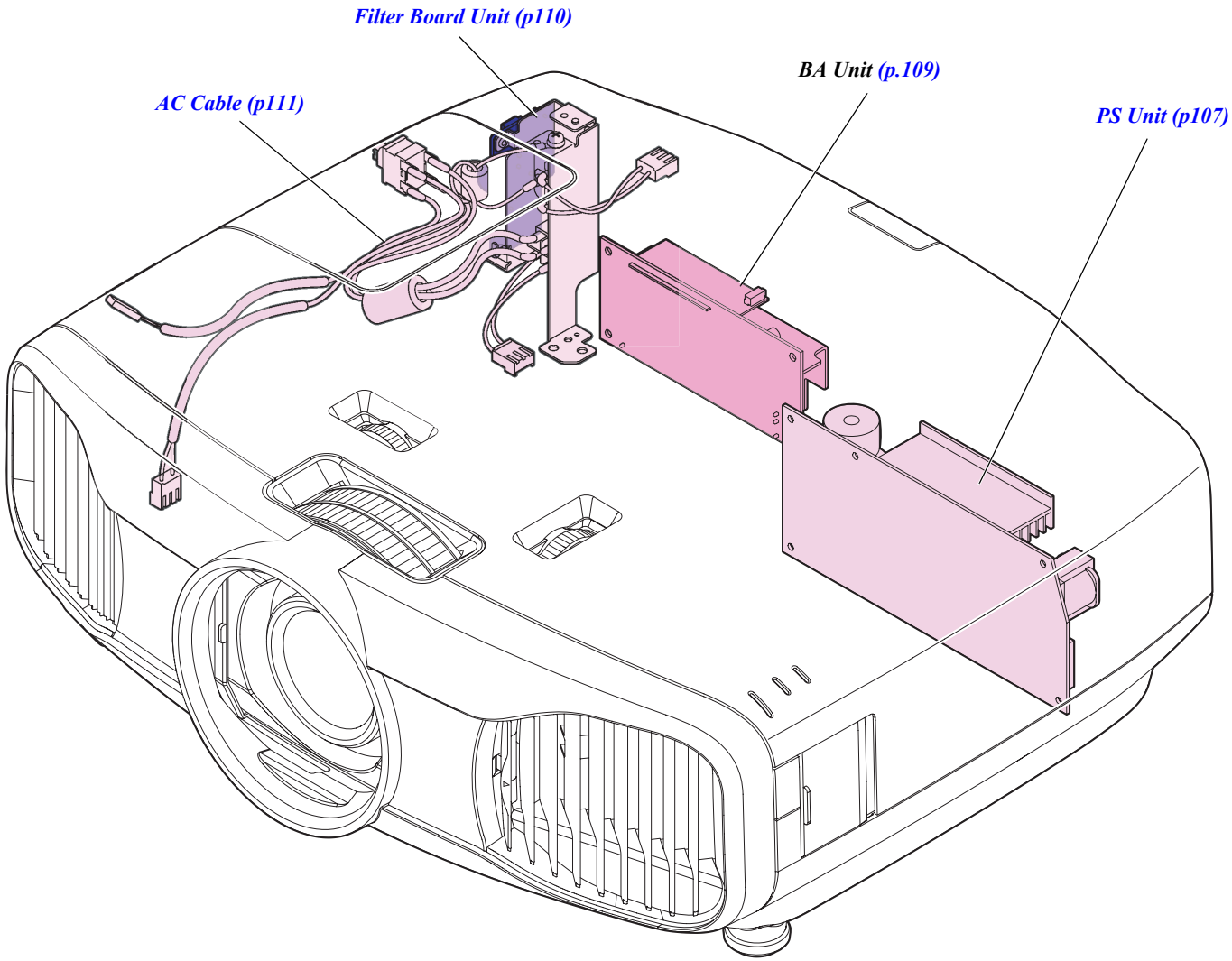


Figure 2-3.

COOLING SYSTEM COMPONENTS

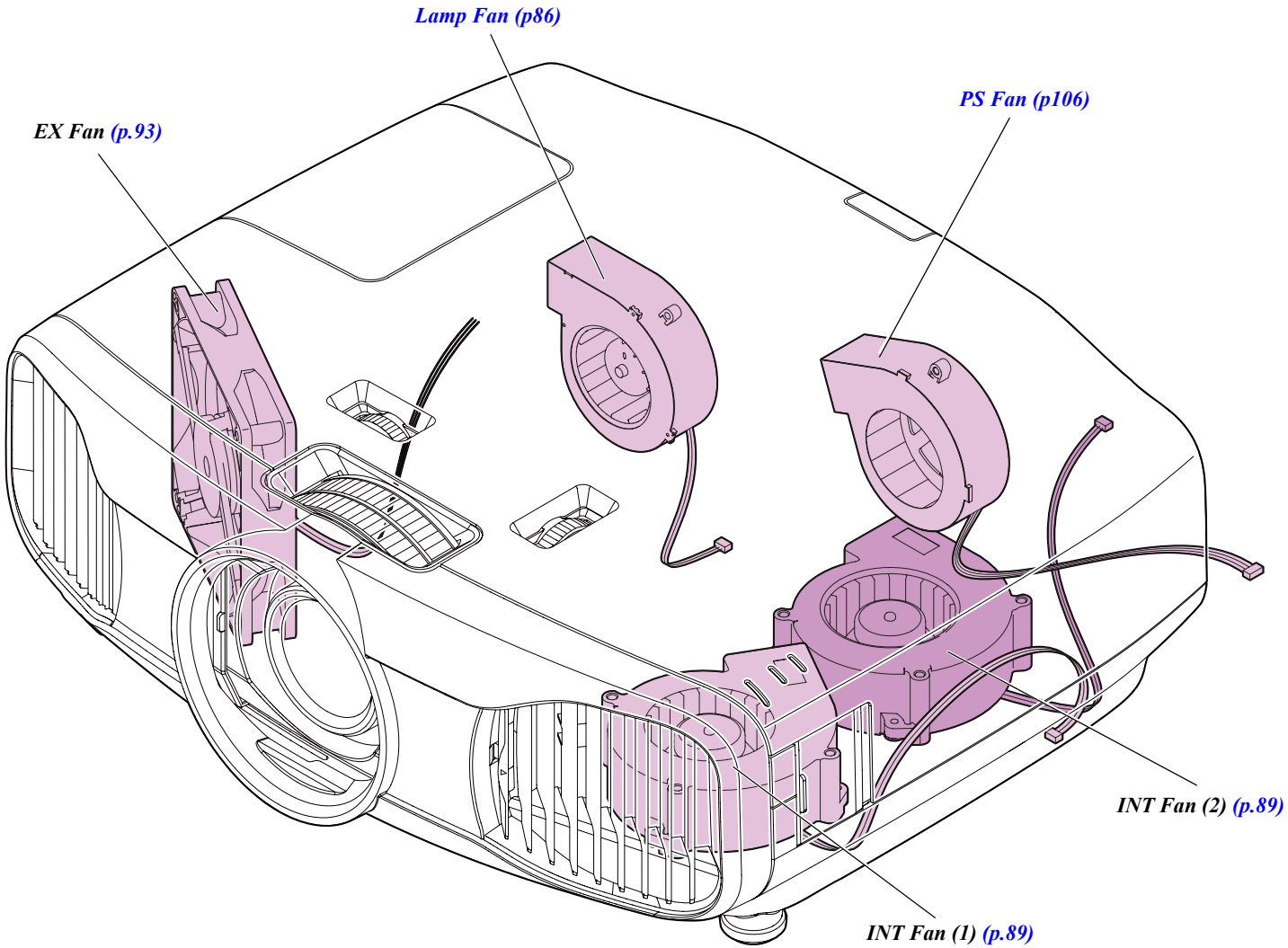


Figure 2-4.

SENSORS/SPEAKER

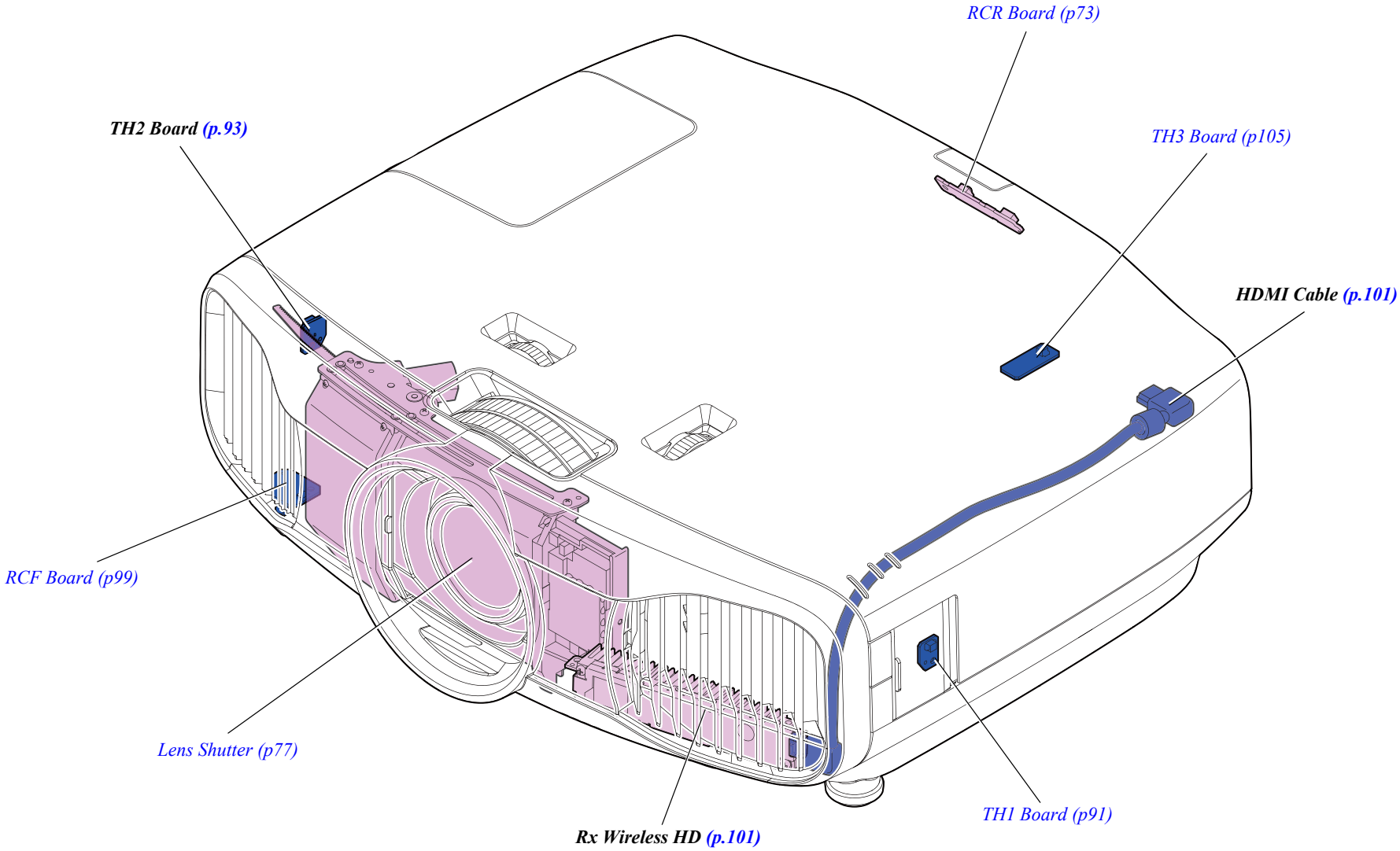


Figure 2-5.

CIRCUIT BOARDS

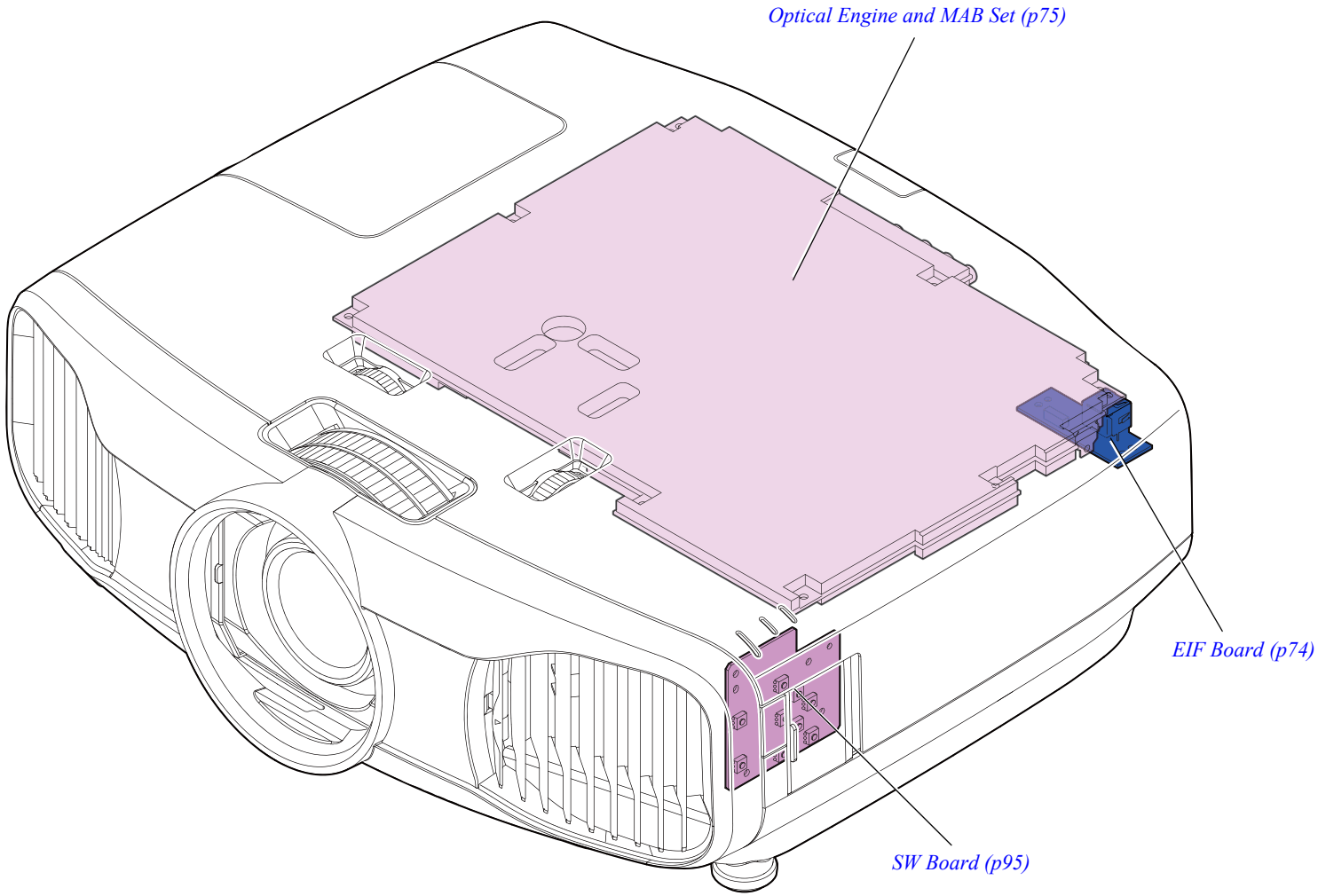


Figure 2-6.

2.4 Error Indication and Problem diagnosis

2.4.1 LED Indication

The control panel on the projector has four LEDs to indicate the projector's operation status. When an error occur, you can identify error status with those LED indications.

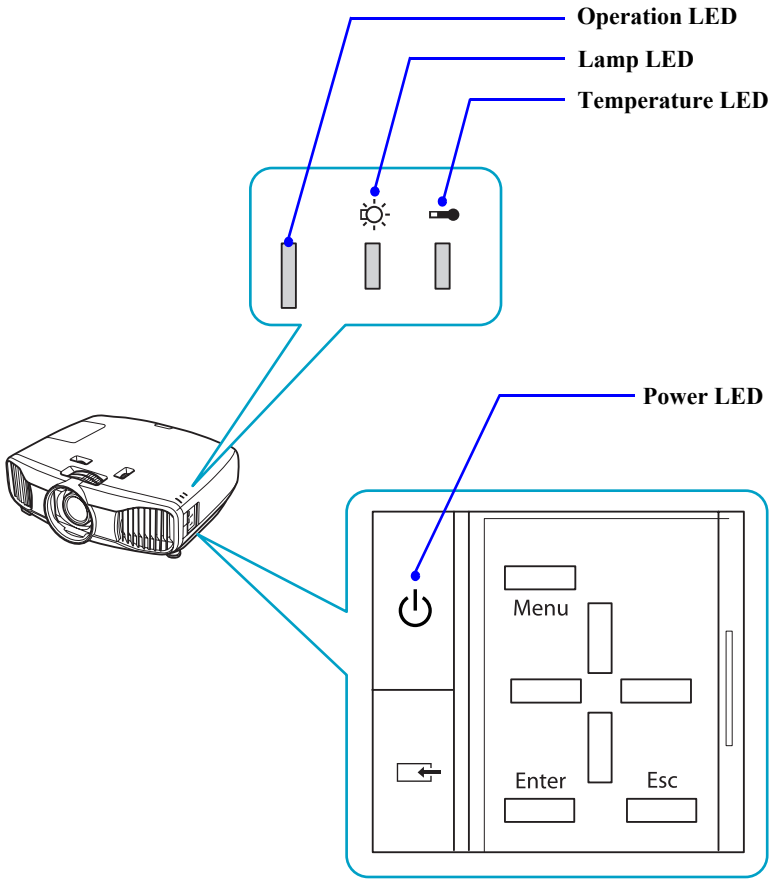
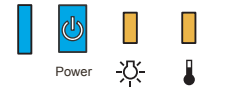
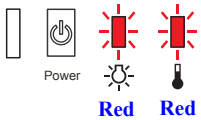
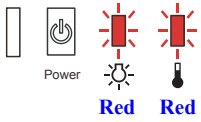


Figure 2-7. LED Indicators

□ Abnormal Status

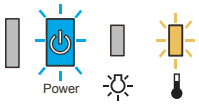
■ ON ✳ Blink □ OFF

LED Status	Error	Problem/Error Status
Power ■ Red ■ Red	Internal Error	Abnormality is detected from the elements on MA Board.
Power ■ Red ■ Red * Fast Blink	Internal Error (RAM)	
Power ■ Red	Fan Error Temperature Sensor Error	■ Abnormality is detected from a fan. ■ Abnormality is detected from a sensor.
Power ■ Red	High Temp Error (overheating)	[Phenomenon] The lamp turns off automatically, and the projection stops. Left the projector for 5 minutes untouched, it switches to the standby mode. [Status] The internal temperature rises over the specified level.
Power ■ Red	Lamp problem Lamp failure Lamp Cover Open Error	■ Abnormality has occurred to the lamp and the ignition/illumination processes fail. ■ Lamp Cover is not securely closed.

LED Status	Error	Problem/Error Status
	Sub-System Rom Error	Abnormality is detected from the elements on Board.
	Sub-System Communication Error	
	Cinema Filter Error Power Supply (Ballast) Error Power Supply (Wrong Ballast) Error Auto Iris Error	■ Abnormality is detected from a Ballast. ■ Abnormality is detected from an Auto Iris.

☐ Warning Status

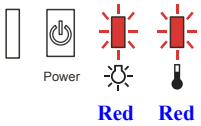
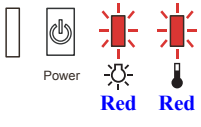
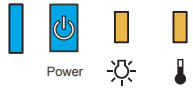
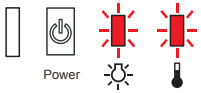
ON Blink OFF Varies according to the projector status

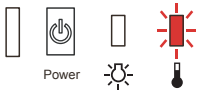
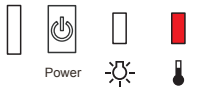
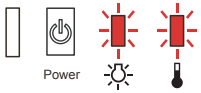
LED Status	Error	Status/Check point
	High Temp Warning	This is not an abnormality. However, if the temperature continues to rise higher afterwards, projection stops automatically. [Remedy] ■ Check that the air filter and the air exhaust vent are clear, and that the projector is not placed against a wall ■ If the air filter is clogged, clean or replace it.
	Warning to replace Lamp	Replace lamp with a new one.

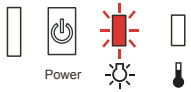
2.4.2 Troubleshooting based on LED Indications

This section describes the LED error indications and corresponding error codes and their remedies.

ON Blink OFF

LED Status	Corresponding error code and error name		Remedy	Reference
Internal Error (1)  	RO	ROM Error	1. Disconnect AC cable once, and reconnect it, then turn the power back on. 2. If the same error occurs, connect the PC to the projector and check the error code on the AS Menu, then carry out the remedy referring to the reference on the right column.	*" Troubleshooting from the Error Code on Electric Circuit Errors (p41)"*
	II	I2C Error		
	ID	DR Error		
	IV	Video sub-processor error		
Internal Error (2)  	RA	RAM Error		
Internal Error (3)  	RS	Sub-System Rom Error		
Internal Error (4)  	RP	Sub-System Communication Error		

LED Status	Corresponding error code and error name		Remedy	Reference
Fan Error Sensor Error  	FN	Fan Error	1. Check the connections between each fan/sensor and MA Board. If there is a connection failure, connect it correctly. 2. If the same error occurs after turning the power on, connect the PC to the projector and check the error code on the AS Menu, then carry out the remedy referring to the references on the right column.	1. *"3.3.6 MA Board (assembly) (p70)"* 2. *" Troubleshooting from the Error Code on Cooling System Errors (p39)"*
	SE	Sensor Error		
High Temp Error (overheating)  	TH	High Temp Error	1. Check Air Filter's condition (dirt accumulation, clogging). When clogging or the like is found, clean/replace the filter. 2. If the same error occurs after turning the power on, connect the PC to the projector and check the error code on the AS Menu, then carry out the remedy referring to the references on the right column.	1. *"3.3.1 Air Filter (p64)"* 2. *" Troubleshooting from the Error Code on Cooling System Errors (p39)"*
Power Supply Error  	AI	Auto Iris Error	1. Check the connections of each corresponding cable. If there is a connection failure, connect it correctly.	1. *"3.3.6 MA Board (assembly) (p70)"* 2. *" Troubleshooting from the Error Code on Electric Circuit Errors (p41)"*
	PB	Power Supply (Ballast) Error		

<table>
<tr><th>LED Status</th><th colspan="2">Corresponding error code and error name</th><th>Remedy</th><th>Reference</th></tr>
<tr><td rowspan="3">Lamp Error
 

Red</td><td>LE</td><td>Lamp burnt out</td><td rowspan="3">1. Check the following one by one. After checking and improving, turn on the power again and check if the same error occurs again.
■ Lamp Cover status
Secure it if it is loose/open.
■ Lamp attachment
Check the lamp and secure it if it is loose.
■ Lamp status (whether the lamp is broken/damaged.) Take out and check the lamp for damage.
• If the lamp is not cracked: Re-fit the lamp and turn on the power. If the error continues, replace the lamp with a new one.
• If the lamp is broken/damaged, replace it with a new one.
■ Air Filter's condition (dirt accumulation, clogging)
When clogging or the like is found, clean or replace the filter.
■ When using the projector at an altitude of 1500 m or more, set "High Altitude Mode" to "On".
2. If the same error occurs after turning the power on, connect the PC to the projector and check the error code on the AS Menu, then carry out the remedy referring to the reference No.2 on the right column.</td><td rowspan="3">1. "3.3.1 Air Filter (p64)"
"3.3.2 Lamp (p64)"
2. " Troubleshooting from the Error Code on Lamp Errors (p38)"</td></tr>
<tr><td>LF</td><td>Lamp failure</td></tr>
<tr><td>LC</td><td>Lamp Cover Open Error</td></tr>
</table>

2.4.3 Troubleshooting from the Error Codes

If the projection does not start for some reasons, connect your PC to the service terminal so as to display the AS menu and check the error code. To display the AS Menu, see the following:
"4.1 AS (After Service) Menu (p121)"

This section explains the troubleshooting from the error codes displayed on the AS (after service) Menu to carry out their necessary repair.

Display the AS Menu and switch it to the Error Log window to check the error code, and locate its remedy from the table below and carry it out.

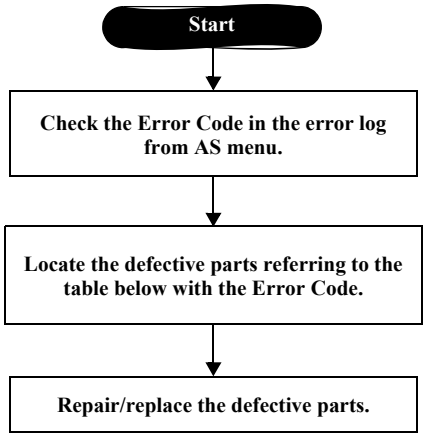


Figure 2-8. Flowchart of Troubleshooting

TROUBLESHOOTING FROM THE ERROR CODE ON LAMP ERRORS

Error code / Error name		Faulty part / Part name	Cause	Remedy	Reference
LE	Lamp Burnt Out Error	Lamp	Lamp is broken.	Replace Lamp.	3.3.2 Lamp (p64)
		BA Unit	BA Unit is broken.	Replace BA Unit.	3.3.18.1 BA Unit / SCI Cable (p109)
		Air Filter	Air Filter is clogging.	Clean Air Filter. Replace it if not improved.	3.3.1 Air Filter (p64)
		PS Unit	PS Unit is broken.	Replace PS Unit.	3.3.17.3 PS Unit (p107)
		Safety Switch (AC Cable)	Safety Switch (AC Cable) is broken.	Replace Safety Switch (AC Cable).	3.3.20 AC Cable (p111)
LF	Lamp Failure	Lamp	Abnormality of the bulb (arc tube) has occurred.	Replace Lamp.	3.3.2 Lamp (p64)
			Lamp is broken.		
		BA Unit	BA Unit is broken.	Replace BA Unit.	3.3.18.1 BA Unit / SCI Cable (p109)
			Instability of the BA Unit's drive waveform has occurred.		
		Filter Board (PS Unit)	PS Unit is broken.	Replace PS Unit.	3.3.17.3 PS Unit (p107)
LC	Lamp Cover Open Error	Lamp Cover	Lamp Cover is not installed properly.	Install Lamp Cover correctly.	3.3.2 Lamp (p64)

TROUBLESHOOTING FROM THE ERROR CODE ON COOLING SYSTEM ERRORS

Error code / Error name		Faulty part / Part name	Cause	Remedy	Reference
TH	Overheat Error	Air Filter	Air Filter is clogging.	Clean Air Filter. Replace it if not improved.	3.3.1 Air Filter (p64)
		TH1/TH2/TH3 Board	TH Board is broken.	Replace the broken TH Board.	• 2.4.6 Cable Connection and Projector's Status (p51) • 3.3.6 MA Board (assembly) (p70) • 3.3.10.2 TH1 Board (p91) • 3.3.11.1 TH2 Board / EX Fan (p93) • 3.3.17.1 TH3 Board (p105)
		■ Air TH Cable ■ Lamp TH Cable ■ PS TH Cable	TH Cable is not connected properly.	Connect TH Cable correctly to MA Board.	
			TH Cable is broken.	Replace the broken TH Cable.	
		Exterior Parts	Vent's status becomes worse. (dirt accumulation/clogging/deformation)	Clean the vent to remove the foreign material.	• 3.3.3 Rear Case (p66) • 3.3.4 Front Case (p67) • 3.3.5 Upper Case (p68) • 3.3.21 Lower Case (p112)
				Replace the parts with deformed vent.	
		MA Board	Elements for temperature control on MA Board are broken.	If the error continues after carrying out the remedies above, the related circuit on MA Board is broken, replace MA Board (Optical Engine and MAB Set).	3.3.6.3 Optical Engine and MAB Set (p75)
FN	Fan Error	■ EX Fan ■ INT Fan (1)/(2) ■ Lamp Fan ■ PS Fan	The fan cable is not connected properly.	Connect the fan cable correctly.	• *"3.3.11.1 TH2 Board / EX Fan (p93)"* • *"3.3.9.1 Lamp Fan (p86)"* • *"3.3.10.1 INT Fan (1)/(2) (p89)"* • *"3.3.17.2 PS Fan (p106)"*
			The fan cable is broken.	Replace the fan with a broken cable.	
			Blades are broken.	Replace the fan with broken blades.	
			Revolutions of the fan has become abnormal.	Replace the abnormal fan.	
			Accumulation of dust has occurred on the fan.	Clean the fan with foreign material to remove it.	
		MA Board	Elements for temperature control on MA Board are broken.	If the error continues after carrying out the remedies above, the related circuit on MA Board is broken, replace MA Board (Optical Engine and MAB Set).	*"3.3.6.3 Optical Engine and MAB Set (p75)"*

Error code / Error name		Faulty part / Part name	Cause	Remedy	Reference
SE	Sensor Error	TH1/TH2/TH3 Board	TH Board is broken.	Replace the broken TH Board.	• 2.4.6 Cable Connection and Projector's Status (p51) • *"3.3.6 MA Board (assembly) (p70)"* • 3.3.10.2 TH1 Board (p91) • 3.3.11.1 TH2 Board / EX Fan (p93) • 3.3.17.1 TH3 Board (p105)
		■ Air TH Cable ■ Lamp TH Cable ■ PS TH Cable	TH Cable is not connected properly.	Connect TH Cable correctly to MA Board.	
			TH Cable is broken.	Replace the broken TH Cable.	
		MA Board	Elements for temperature control on MA Board are broken.	If the error continues after carrying out the remedies above, the related circuit on MA Board is broken, replace MA Board (Optical Engine and MAB Set).	*"3.3.6.3 Optical Engine and MAB Set (p75)"*

TROUBLESHOOTING FROM THE ERROR CODE ON ELECTRIC CIRCUIT ERRORS

Error code / Error name		Faulty part / Part name	Cause	Remedy	Reference
RA	Internal error RAM	MA Board	RAM has become abnormal.	Replace MA Board (Optical Engine and MAB Set).	*"3.3.6.3 Optical Engine and MAB Set (p75)"*
RO	Internal error ROM		MA Board is broken.		
			Flash ROM has become deteriorated.		
II	Internal error I2C	Input AC power supply	Instability of the input AC Power Supply. (an external factor)	If not appropriate, request the customer to improve such instability.	
		Environment (Temperature of the customer's operating environment)	Access timing error (occurs in a low temperature environment (Y43series))	If not appropriate, request the customer to improve the usage environment.	
ID	Internal error DR	MA Board	MA Board is broken.	Replace MA Board (Optical Engine and MAB Set).	
IV	Video sub-processor error				
RS	Sub-System Rom Error	Sub-System (Electric circuit other than MA Board)	Sub-System has become abnormal.		
RP	Sub-System Communication Error				
AI	Auto Iris Error	Auto Iris	The cable is not connected properly.	Connect the cable correctly to MA Board.	• 2.4.6 Cable Connection and Projector's Status (p51) • *"3.3.6 MA Board (assembly) (p70)"*
			Auto Iris is broken.	Replace Auto Iris.	*"3.3.8.2 Auto Iris (p81)"*
		MA Board	MA Board is broken.	Replace MA Board (Optical Engine and MAB Set).	*"3.3.6 MA Board (assembly) (p70)"*
CF	Cinema Filter Error	CF Motor	CF Motor is broken.	Replace CF Motor.	*"3.3.8.1 CF Motor (p80)"*
PB	Power Supply (Ballast) Error	BA Unit	BA Unit is broken.	Replace BA Unit.	• 2.4.6 Cable Connection and Projector's Status (p51) • *"3.3.6 MA Board (assembly) (p70)"* • *"3.3.18.1 BA Unit / SCI Cable (p109)"*
		SCI Cable	The cable is not connected properly.	Connect the SCI cable to BA Unit and MA Board correctly.	
			SCI Cable is broken.	Replace the broken cable.	

2.4.4 Troubleshooting without Error Indications

This section provides troubleshooting procedures based on observed faults.

TROUBLESHOOTING AT POWER-ON

Error Status	Faulty part / Part name	Cause	Remedy	Reference
The projector does not operate at all. (Power indicator does not light up blue.)	SW Board	Cable is not connected properly.	Connect the cable correctly.	3.3.12.1 SW Board (p95)
		SW Board is broken.	Replace SW Board.	
	PS Unit	Cable is not connected properly.	Connect the cable to MA Board correctly.	• 2.4.6 Cable Connection and Projector's Status (p51) • *"3.3.6 MA Board (assembly) (p70)"*
		PS Unit is broken.	Replace PS Unit.	*"3.3.20 AC Cable (p111)"*
	Interlock Switch (AC Cable)	The Interlock Switch cable or target parts are broken.	Replace AC Cable.	
	MA Board	MA Board is broken.	Replace MA Board (Optical Engine and MAB Set).	3.3.6.3 Optical Engine and MAB Set (p75)

TROUBLESHOOTING ON IMAGE DISPLAY & QUALITY

Error Status	Faulty part / Part name	Cause	Remedy	Reference
No image is projected. (Lamp lights)	Input video signal	The selected input video cable is not connected correctly.	Connect the selected input video cable correctly.	---
	MA Board	Video Input terminal is broken.	Replace MA Board (Optical Engine and MAB Set).	3.3.6.3 Optical Engine and MAB Set (p75)
Focus cannot be adjusted.	Focus Ring	Focus Ring is broken.	Replace Focus Ring.	3.3.8.4 Focus Ring / Zoom Ring (p83)
	Projection Lens (Optical Engine)	Projection Lens is broken.	Replace Optical Engine.	3.3.8 Optical Engine (assembly) (p78)
Zoom cannot be adjusted.	Zoom Ring	Zoom Ring is broken.	Replace Zoom Ring.	3.3.8.4 Focus Ring / Zoom Ring (p83)
	Projection Lens (Optical Engine)	Projection Lens is broken.	Replace Optical Engine.	3.3.8 Optical Engine (assembly) (p78)

Error Status	Faulty part / Part name	Cause	Remedy	Reference
Projecting position cannot be adjusted with Lens Shift.	Optical Engine	Optical Engine is broken.	Replace Optical Engine (Optical Engine and MAB Set).	• 2.4.6 Cable Connection and Projector's Status (p51) • *"3.3.6 MA Board (assembly) (p70)"* • 3.3.8 Optical Engine (assembly) (p78)
		Cable is broken.		
		Cable is not connected properly.	Connect the cable correctly.	
	MA Board	MA Board is broken.	Replace MA Board (Optical Engine and MAB Set).	3.3.6.3 Optical Engine and MAB Set (p75)
Image is blueish.	Optical Engine	FPC for L/V (R) is not connected properly.	Connect FPC for L/V (R) to MA Board correctly.	• 2.4.6 Cable Connection and Projector's Status (p51) • *"3.3.6 MA Board (assembly) (p70)"* • 3.3.8 Optical Engine (assembly) (p78)
		FPC for L/V (R) is broken.	Replace Optical Engine.	
	MA Board	MA Board is broken.	Replace MA Board (Optical Engine and MAB Set).	
Image is reddish.	Optical Engine	FPC for L/V (G) is not connected properly.	Connect FPC for L/V (G) to MA Board correctly.	
		FPC for L/V (G) is broken.	Replace Optical Engine.	
	MA Board	MA Board is broken.	Replace MA Board (Optical Engine and MAB Set).	
Image is yellowish.	Optical Engine	FPC for L/V (B) is not connected properly.	Connect FPC for L/V (B) to MA Board correctly.	
		FPC for L/V (B) is broken.	Replace Optical Engine.	
	MA Board	MA Board is broken.	Replace MA Board (Optical Engine and MAB Set).	
Abnormality can be seen on the projected image.	Optical parts	Deterioration, mal-alignment, or contamination of the optical part(s).	Clean or replace the optical part(s).	2.4.5 Troubleshooting on image abnormality (p49)
			Replace Optical Engine.	3.3.8 Optical Engine (assembly) (p78)

TROUBLESHOOTING ON 3D IMAGE/ WIRELESSHD

Error Status	Faulty part / Part name	Cause	Remedy	Reference
Cannot project images properly in 3D.	Input video	Input video is not in 3D.	Input a 3D video.	---
	Projector	Setting for this projector or the remote controller has not been made.	Make the correct settings with the projector or the remote controller.	
	3D glasses	Out of range of the IR emitter.	Use them within the coverage area.	
		No battery is installed. The battery has no power or is not installed properly.	Set a battery which has enough power in the correct direction.	
		Foreign objects/dirt may be attached on IR receiver of the glasses or a protection film may still be attached in the front of glasses.	Clean them or peel the film off.	
		3D glasses are broken.	Replace 3D glasses.	
	Lens Shutter	Cable is not connected properly.	Connect the cable to Lens Shutter and MA Board correctly.	• 2.4.6 Cable Connection and Projector's Status (p51) • *"3.3.6 MA Board (assembly) (p70)"* • *"3.3.7 Lens Shutter (p77)"*
		Cable is broken.	Replace the broken cable.	
		Lens Shutter is broken.	Replace Lens Shutter.	
	MA Board	MA Board is broken.	Replace MA Board (Optical Engine and MAB Set).	3.3.6.3 Optical Engine and MAB Set (p75)
Cannot use the optional External 3D IR emitter.	Projector	Setting for this projector or the remote controller has not been made.	Make the correct settings with the projector or the remote controller.	---
	EIF Cable	Cable is not connected properly.	Connect the cable to EIF Board and MA Board correctly.	• 2.4.6 Cable Connection and Projector's Status (p51) • *"3.3.6 MA Board (assembly) (p70)"* • 3.3.6.2 EIF Board (p74)
		Cable is broken.	Replace the broken cable.	
	EIF Board	EIF Board is broken.	Replace EIF Board.	
	MA Board	MA Board is broken.	Replace MA Board (Optical Engine and MAB Set).	3.3.6.3 Optical Engine and MAB Set (p75)

Error Status	Faulty part / Part name	Cause	Remedy	Reference
Cannot project images via WirelessHD (EH-TW9000W only)	Projector	Setting for this projector or the remote controller has not been made.	Make the correct settings with the projector or the remote controller.	---
	Transmitter	Transmitter is broken.	Replace Transmitter with a new one.	
		Transmitter cannot establish wireless connection properly.	Use it in the coverage area.	
		Transmitter is off.	Switch on Transmitter.	
	HDMI Cable (connects AV device and transmitter)	Cable does not meet the HDMI standards.	Use a cable which meets the HDMI standards.	• 2.4.6 Cable Connection and Projector's Status (p51) • *"3.3.6 MA Board (assembly) (p70)"* • *"3.3.15 Rx Wireless HD / HDMI Cable (EH-TW9000W only) (p101)"*
		Cable is not connected properly.	Connect the cable to Transmitter correctly.	
	HDMI Cable	Cable is not connected properly.	Connect the cable to Rx Wireless HD and MA Board correctly.	
		Cable is broken.	Replace the broken cable.	
	WiHD Cable	Cable is not connected properly.	Connect the cable to Rx Wireless HD and MA Board correctly.	
		Cable is broken.	Replace the broken cable.	
	Rx Wireless HD	Rx Wireless HD is broken.	Replace Rx Wireless HD.	
	Lower Case	Dust collects on the exhaust vent of the Lower Case.	Clean the Lower Case to remove the dust.	*"3.3.21 Lower Case (p112)"*
	MA Board	MA Board is broken.	Replace MA Board (Optical Engine and MAB Set).	3.3.6.3 Optical Engine and MAB Set (p75)
Interference or distortion appears in WirelessHD images. (EH-TW9000W only)	Transmitter	Transmitter cannot establish wireless connection properly.	Use it in the coverage area.	---
		There are obstacles between Transmitter and this projector.	Make sure that no obstacles exist between Transmitter and the projector.	
	HDMI Cable	Cable is not connected properly.	Connect the cable to Rx Wireless HD and MA Board correctly.	• 2.4.6 Cable Connection and Projector's Status (p51) • *"3.3.6 MA Board (assembly) (p70)"* • *"3.3.15 Rx Wireless HD / HDMI Cable (EH-TW9000W only) (p101)"*
		Cable is broken.	Replace the broken cable.	
	WiHD Cable	Cable is not connected properly.	Connect the cable to Rx Wireless HD and MA Board correctly.	
		Cable is broken.	Replace the broken cable.	
	Rx Wireless HD	Rx Wireless HD is broken.	Replace Rx Wireless HD.	
	MA Board	MA Board is broken.	Replace MA Board (Optical Engine and MAB Set).	3.3.6.3 Optical Engine and MAB Set (p75)

TROUBLESHOOTING ON OPERATION ABNORMALITY

Error Status	Faulty part / Part name	Cause	Remedy	Reference
Operation using Remote Controller cannot be made.	Remote Controller	Batteries ran out.	Replace batteries with new ones.	---
		Remote Controller is broken.	Replace Remote Controller.	---
	■ RC Filter (Front Case) ■ RC Filter (Upper Case)	RC Filter at the front (Front Case) or the rear (Upper Case) is dirty.	Clean Front Case or Upper Case. Replace Front Case or Upper Case if not improved.	• *"3.3.4 Front Case (p67)"* • *"3.3.5 Upper Case (p68)"*
	RCF Board / RCR Board	RC Board is broken.	Replace the broken RC Board.	• 3.3.14 RCF Board (p99) • 3.3.6.1 RCR Board (p73)
	■ RC Front Cable ■ RC Rear Cable	Cable is not connected properly.	Connect the cable between RC Board and MA Board correctly.	• 2.4.6 Cable Connection and Projector's Status (p51)
		Cable is broken.	Replace the cable.	• *"3.3.6 MA Board (assembly) (p70)"* • 3.3.14 RCF Board (p99) • 3.3.6.1 RCR Board (p73)
	MA Board	Elements for remote control on MA Board are broken.	If the error continues after carrying out the remedies above, the related circuit on MA Board is broken, replace MA Board (Optical Engine and MAB Set).	3.3.6.3 Optical Engine and MAB Set (p75)
Operation using Control Panel cannot be made.	SW Board	SW Board is broken.	Replace SW Board.	• 2.4.6 Cable Connection and Projector's Status (p51) • *"3.3.6 MA Board (assembly) (p70)"* • *"3.3.12.1 SW Board (p95)"*
	SW Cable	Cable is not connected properly.	Connect the cable to SW Board and MA Board correctly.	
		Cable is broken.	Replace the cable.	
	MA Board	Elements for operation control on MA Board are broken.	If the error continues after carrying out the remedies above, the related circuit on MA Board is broken, replace MA Board (Optical Engine and MAB Set).	3.3.6.3 Optical Engine and MAB Set (p75)
LED does not light. (Power can turn on.)	SW Board	SW Board is broken.	Replace SW Board.	• 2.4.6 Cable Connection and Projector's Status (p51) • *"3.3.6 MA Board (assembly) (p70)"* • *"3.3.12.1 SW Board (p95)"*
	SW Cable	Cable is not connected properly.	Connect the cable to SW Board and MA Board correctly.	
		Cable is broken.	Replace the cable.	
	MA Board	Elements for LED display on MA Board are broken.	If the error continues after carrying out the remedies above, the related circuit on MA Board is broken, replace MA Board (Optical Engine and MAB Set).	3.3.6.3 Optical Engine and MAB Set (p75)

Error Status	Faulty part / Part name	Cause	Remedy	Reference
Lens Shutter does not open when turning on the projector.	Lens Shutter	Cable is not connected properly.	Connect the cable to MA Board correctly.	*"3.3.6 MA Board (assembly) (p70)"*
		Cable is broken.	Replace Lens Shutter.	*"3.3.7 Lens Shutter (p77)"*
		Lens Shutter is broken.		
HDMI Link does not function. (Other functions are available.)	Projector	Setting for this projector or a remote controller has not been made.	Execute the correct settings from this projector or a remote controller.	---
	HDMI cable	Cable does not meet the HDMI standards.	Use a cable meets the HDMI standards.	
	AV device	AV device does not meet the HDMI CEC standards.	Use an AV device meets the HDMI CEC standards.	

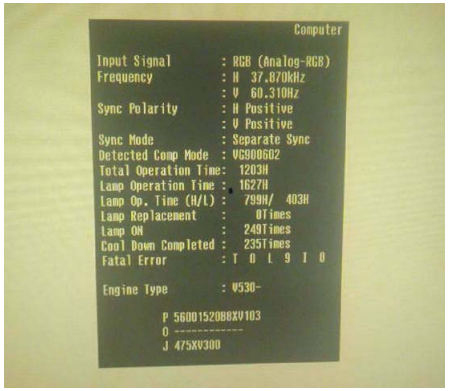
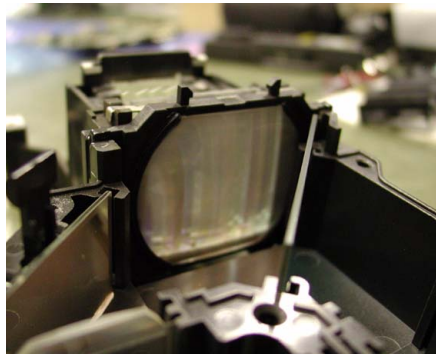
TROUBLESHOOTING ON OTHER ABNORMALITY

Error Status	Faulty part / Part name	Cause	Remedy	Reference
Smoke/Abnormal odor	Lamp	Burn on dust from heat.	Clean the area around Lamp to remove dust or the like.	3.3.2 Lamp (p64)
	Cable	Burn on cables from heat.	If burn on cables has occurred, replace them with new ones.	
	■ PS Unit ■ BA Unit	Burn on circuit board from heat.	Replace PS Unit or BA Unit.	• 3.3.17.3 PS Unit (p107) • 3.3.18.1 BA Unit / SCI Cable (p109)
Abnormal noises	PS Unit	Pulse transformer vibrates abnormally.	Replace PS Unit.	3.3.17.3 PS Unit (p107)
	BA Unit	BA Unit vibrates abnormally.	Replace BA Unit.	3.3.18.1 BA Unit / SCI Cable (p109)
	■ EX Fan ■ Lamp Fan ■ PS Fan ■ INT Fan (1)/(2)	Foreign material sticks on a fan.	Clean the fan to remove foreign material.	• 3.3.11.1 TH2 Board / EX Fan (p93) • 3.3.9.1 Lamp Fan (p86) • 3.3.17.2 PS Fan (p106) • 3.3.10.1 INT Fan (1)/(2) (p89)
		Fan is contacting other parts.	Check if a fan contacts other parts. In such a case, correct its installation.	
		Fan’s impeller is broken.	Replace the broken fan with a new one.	
	Operating parts	Screws are loose or fallen off.	Tighten the screws or reassemble the parts.	---

2.4.5 Troubleshooting on image abnormality

This section describes this projector's possible troubles in image quality, and provides identification and troubleshooting procedures based on the observed phenomena.

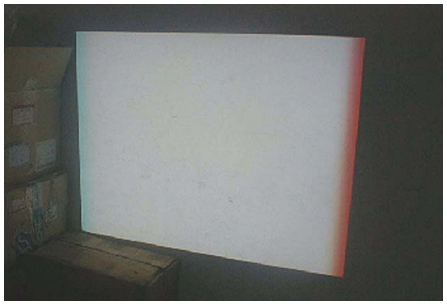
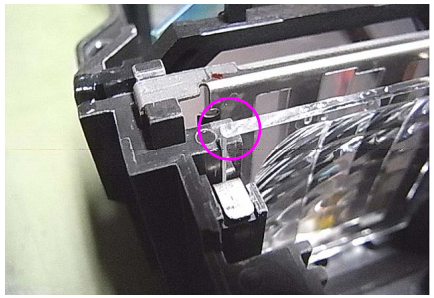
ILLUMINATION REDUCTION

Phenomenon	Defective part / Part name	Cause	Remedy	Reference
The projected image became darker. 	■ CONDENSER LENS ■ BDM ■ GDM ■ Mirror ■ MULTI LENS	Some optical parts might mist for some reasons. 	Replace Optical Engine.	*"3.3.8 Optical Engine (assembly) (p78)"*

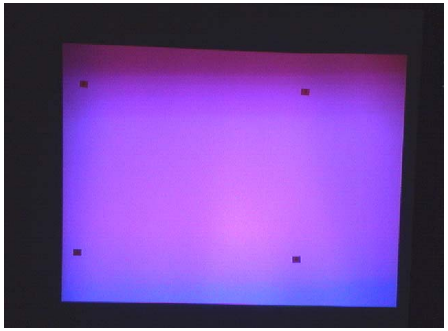
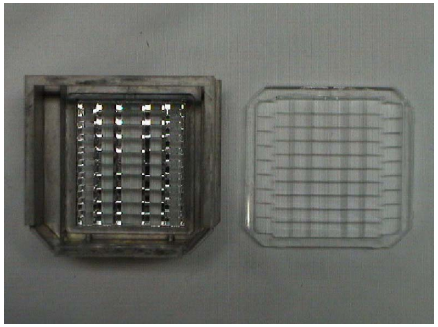
COLOR NON-UNIFORMITY

Phenomenon	Defective part / Part name	Cause	Remedy	Reference
Color non-uniformity can be seen partially in the projected image. 	■ N POLARIZER ■ PBS MASK	• Some optical parts may become deteriorated due to the prolonged usage. • Some optical parts may be broken. 	Replace Optical Engine	*"3.3.8 Optical Engine (assembly) (p78)"*

COLOR BANDING (SHADOW)

Phenomenon	Defective part / Part name	Cause	Remedy	Reference
There occur “shadows”* on the right and left side.  * “Shadow” is a vertical color banding appearing on the left or right side.	MULTI LENS	Some optical parts may be displaced due to some shock or the like. 	Replace Optical Engine.	*"3.3.8 Optical Engine (assembly) (p78)"*

ABNORMAL IMAGE

Phenomenon	Defective part / Part name	Cause	Remedy	Reference
Some abnormality can be seen in the projected image. 	■ MULTI LENS ■ PBS MASK	Some optical parts may be detached. 	Replace Optical Engine.	*"3.3.8 Optical Engine (assembly) (p78)"*

2.4.6 Cable Connection and Projector's Status

This section describes the projector's status when disconnection occurs somewhere between the parts/units and the MA Board. Refer to the following table and check the doubted connectors are securely connected. If there is a disconnection or a loose connection, connect it correctly.

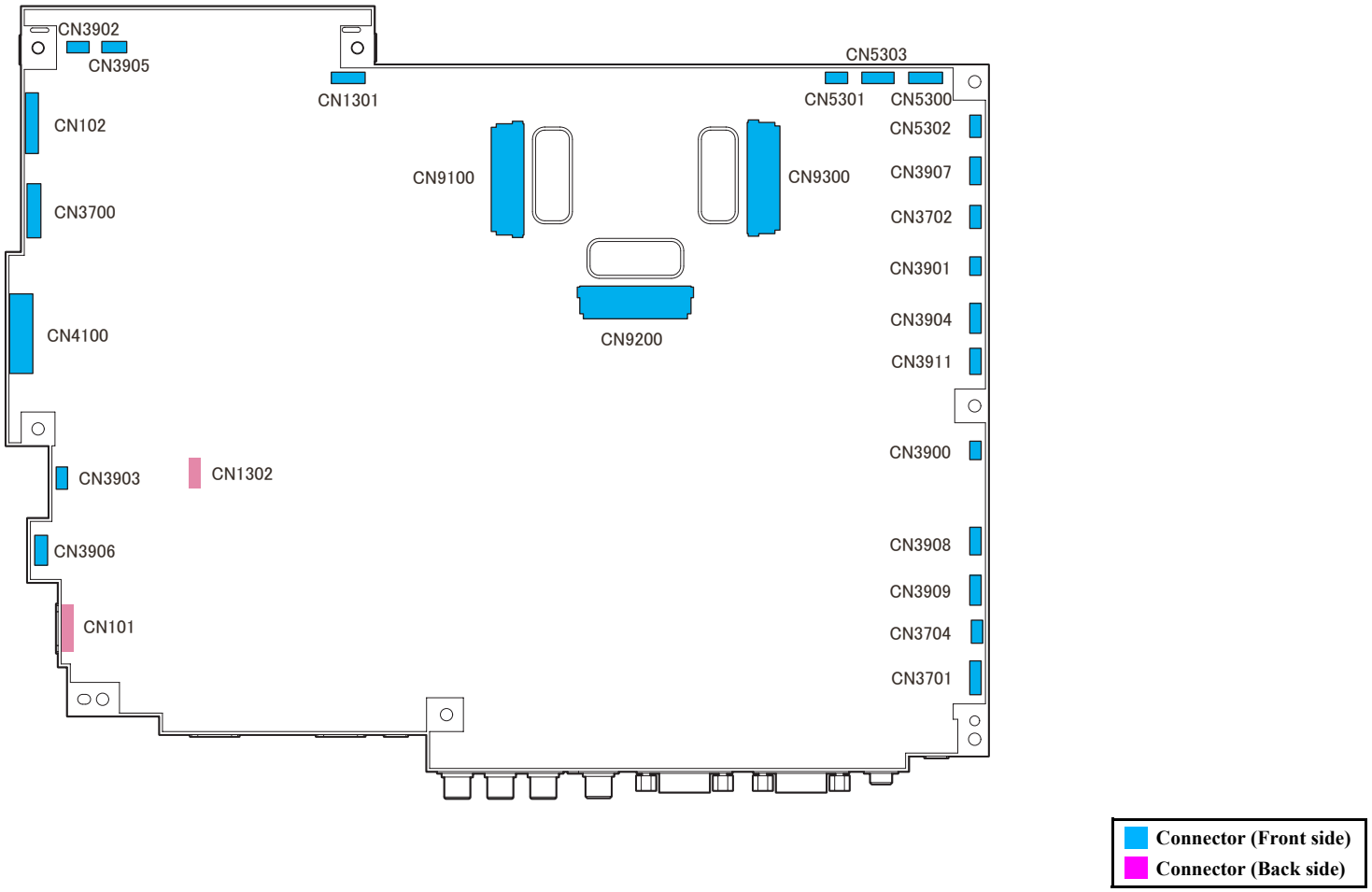


Figure 2-9. Connector layout of the MA Board

MAL-CONNECTION ON EACH CONNECTOR (MA Board)

Connector No.	Destination	Error Information		Status	Reference
		Code	Name		
CN9100	Optical Engine (L/V(R))	---	---	When pressing the power button, initialization starts normally, then the projection starts. But the projected image is bluish. (This phenomenon is not easily recognized on Logo screen or the menu screen; therefore try displaying red color image or the like to check for it.)	*" Troubleshooting on image Display & Quality (p42)"*
CN9200	Optical Engine (L/V(G))			When pressing the power button, initialization starts normally, then the projection starts. But the projected image is reddish.	
CN9300	Optical Engine (L/V(B))			When pressing the power button, initialization starts normally, then the projection starts. But the projected image is yellowish.	
CN3904/ CN3911	Auto Iris	AI	Auto Iris Error	The power can turn on and Power LED lights blue. When pressing the power button, the error message about Auto Iris is displayed on the screen, and advises the user to turn off the power and to contact the Epson Service. When pressing the power button, the LEDs indicate the warning and after a certain period of cooling the power turns off automatically with two beeps into error stand-by status. The LED Indicator's warning display continues until unplugging the AC cable.	*" Troubleshooting from the Error Code on Electric Circuit Errors (p41)"*
CN3701	BA Unit (SCI Cable)	PB	Power Supply (Ballast) Error	The power can turn on and Power LED lights blue. When pressing the power button, initialization starts but instantly the projector changes into the Power Supply (Ballast) Error status. After a certain period of cooling, the power turns off automatically with two beeps into error standby status. The LED Indicator's warning display continues until unplugging the AC cable.	*" Troubleshooting from the Error Code on Electric Circuit Errors (p41)"*
CN4100	PS Unit	---	---	When the AC cable is connected, the power LED does not light blue. The power button does not work or the power cannot turn on.	*" Troubleshooting at Power-ON (p42)"*
CN3702	RCF Board	---	---	When pressing the power button, initialization starts normally, then the projection starts. But the control from the front does not function. The control from the rear is still effective. When checking for this, send the signal to the front of the projector only. Otherwise, this error can be easily slipped over, so be careful.	*" Troubleshooting on Operation Abnormality (p46)"*
CN3704	RCR Board	---	---	When pressing the power button, initialization starts normally, then the projection starts. But the control from the rear does not function. The control from the front is still effective. When checking for this, send the signal to the rear of the projector only. Otherwise, this error can be easily slipped over, so be careful.	

Connector No.	Destination	Error Information		Status	Reference
		Code	Name		
CN1301	Lens Shutter	---	---	When pressing the power button, initialization starts normally, then the projection starts. But 3D glasses does not function. (Cannot view 3D images.)	*" Troubleshooting on 3D Image/ WirelessHD (p44)"*
CN5301				When pressing the power button, initialization starts normally, then the projection starts. But Lens Shutter does not open.	
CN5303				When pressing the power button, initialization starts normally, then the projection starts. But gear of Lens shutter does not stop for a few seconds.	
CN5300	CF Motor	---	---	Abnormal noises occur while initializing, and the projector changes to the Cinema Filter Error mode with the Lamp LED and the Temperature LED blinking red.	
CN5302	CF Motor			When pressing the power button, initialization starts normally, then the projection starts. But Lens Shutter does not open.	
CN1302 (Backside)	EIF Board	---	---	When pressing the power button, initialization starts normally, then the projection starts. But an external 3D IR emitter does not function.	
CN101 (Backside)	Rx Wireless HD (EH-TW9000W only)	---	---	When pressing the power button, initialization starts normally, then the projection starts. But connecting WirelessHD is failure.	*" Troubleshooting on 3D Image/ WirelessHD (p44)"*
CN102					
CN3700	SW Board	---	---	When the AC cable is connected, the power LED does not light blue. The power button does not work properly. But, turning on the projector from a remote controller can be made.	• *" Troubleshooting at Power-ON (p42)"* • *" Troubleshooting on Operation Abnormality (p46)"*
CN3900	LV Thermistor (Optical Engine)	SE	Sensor Error	Sensor error occurs while initializing, and LEDs indicate the error, then the projector turns into the abnormal stand-by status.	*" Troubleshooting from the Error Code on Cooling System Errors (p39)"*
CN3901	TH1 Board				
CN3902	TH2 Board				
CN3903	TH3 Board				
CN3905	INT Fan (1)	FN	Fan Error	Fan error occurs while initializing and LEDs indicate the error, then the projector turns into the abnormal stand-by status.	
CN3906	INT Fan (2)				
CN3907	EX Fan				
CN3908	Lamp Fan				
CN3909	PS Fan				

2.5 Operation and Safety Check after repair

INITIALIZATION CHECK

After repairing this product, carry out the following initialization check. When repairing a Safety Device, refer to " 3.4 Safety Check after Servicing (p113)" and carry out the necessary procedure for safety.

Procedure	Check item
1. Connect the power cable.	Does the [Power] LED light blue?
2. Press the [Power] button on the projector.	Does the [Power] LED flash blue, then light blue?
	Does the lamp light?

2.5.1 Each Operation Check

When repairing this product, carry out the check for each operation if necessary.

OPERATION CHECK FOR CONTROL PANEL (SW BOARD) / LENS SHIFT

After repairing Control Panel and Lens Shift, carry out the check below following the instructions. (See*" Troubleshooting on Operation Abnormality (p46)"*)

Procedure	Check item
1. Press [Power] button on the projector to turn it on. 2. Check all the buttons on Control Panel if they work properly. 3. Check the operation of Lens Shift.	Does the [Power] button switch on/off the projector?
	Does the [⏎] button switch the sources?
	Does the [Menu] button display/close the menu?
	Does the [Keystone] button correct keystone?
	Does the [Esc] button stop the current function?
	Does the [Enter] button select/change the function and setting value?
	Can the projecting position be adjusted with the Lens Shift?

OPERATION CHECK FOR REMOTE CONTROLLER

After repairing the remote controller, carry out the check below following the instructions. (See *" Troubleshooting on Operation Abnormality (p46)"*)

Procedure	Check item
1. Press [Power] button on the remote controller to turn the projector on.	Does the [Power] button on the controller switch on/off the projector?
2. Check all the buttons on the remote controller if they work properly.	Do all the buttons function correctly?
3. Check if the front and rear receivers work properly.	Can the remote controller work from the front/rear of the projector?

OPERATION CHECK FOR VIDEO INPUT/OUTPUT

After repairing the parts related with video input/output, carry out the check below following the instructions. (See *" Troubleshooting on image Display & Quality (p42)"*)

Procedure	Check item
1. Set the projector on an even workbench. 2. Press the [Power] button to turn the power ON. 3. Adjust the projection angle with Foot. 4. Adjust the focus with Focus Ring. 5. Adjust the image size with Zoom Ring. 6. Adjust keystone with the [Keystone] buttons or Slide Keystone Assy. 7. From the menu, select [Position] and adjust the image position.	■ Does the lamp light? ■ Is the image projected after the lamp lit? ■ Is "No Signal" message displayed on the screen? ■ Are focusing and zooming available? ■ Do the rings smoothly work?
8. Connect all the IF cables and display an image. 9. Press the [⇦] button, and select the corresponding source.	■ Is the image of the selected input source projected? ■ Is image vivid enough?
10. Check the [A/V Mute] function by pressing the [Black] button on Remote Controller.	Is the image turned on/off?

INTERNAL CABLE CONNECTION CHECK

WARNING

Be sure to turn off the power switch and pull out the power cable from the projector before checking.

When replacing/removing MA Board, make sure to check all the cables are connected correctly referring to " 2.4.6 Cable Connection and Projector's Status (p51)".

CHAPTER

3

DISASSEMBLY AND ASSEMBLY

3.1 Precautions

This section describes cautions before starting disassembling and assembling this product. Make sure to read the precautions below before starting.

3.1.1 General Cautions in operation

General cautions for disassembling and assembling this product are provided below. Cautions for each procedure are provided in its corresponding section. Make sure to refer to them before starting.

⚠ WARNING

- **Do not touch the lamp or the parts around it. They are extremely hot even after the cooling down operation completed. If any maintenance work inside the projector is necessary soon after the projector is in operation, leave the unit until it becomes cool enough before performing maintenance work.**
- **Never use the air blowers such as a lens cleaner, etc. that contain flammable gas in repair/maintenance work.**

⚠ CAUTION

- **Do not disassemble any components not as specified in this Service Manual.**
- **The Optical Engine, the circuit boards are very sensitive to static electricity; therefore, be sure to take appropriate measures to prevent static destruction such as to place them inside static-proof bags once they have been removed from the projector.**
- **The Optical Engine is very sensitive to vibration and shocks; therefore, make sure to handle it with care.**
- **The speaker unit contains a permanent magnet; therefore, make sure to keep it away from any storage media such as floppy disks or magnetic cards.**
- **Be careful not to drop a metal part such as a screw, a washer, or a clip into the inside of the product. If such cases should occur accidentally, never turn on the power supply until all the dropped parts are found and removed.**

⚠ CAUTION

- **When carrying out any of the following operations, check that there is no dust or dirt on any component or on any glass surface before installation. If any contamination is found, clean it off using isopropyl alcohol.**
  - **Optical Engine removal**
  - **Lamp removal**
- **When the projector is disassembled, the dust in and around parts (such as those on the fans or air filter) may get transferred to other parts such as the R, G and B light valves which are the central part of the display mechanism. This may have an adverse effect on the quality of projected images. Accordingly, be sure to check whether any of the parts are dusty or dirty, and use a vacuum cleaner to clean them first before carrying out disassembly/reassembly work.**
- **After reassembling the product, check the followings before turning the power on.**
  - **All the parts and screws are installed and secured to the proper positions.**
  - **No cables are caught in the metal frames.**

3.1.2 Precautions

The precautions given below must be always observed whenever disassembling/ reassembling the projector to ensure the safety of service personnel and maintain the quality.

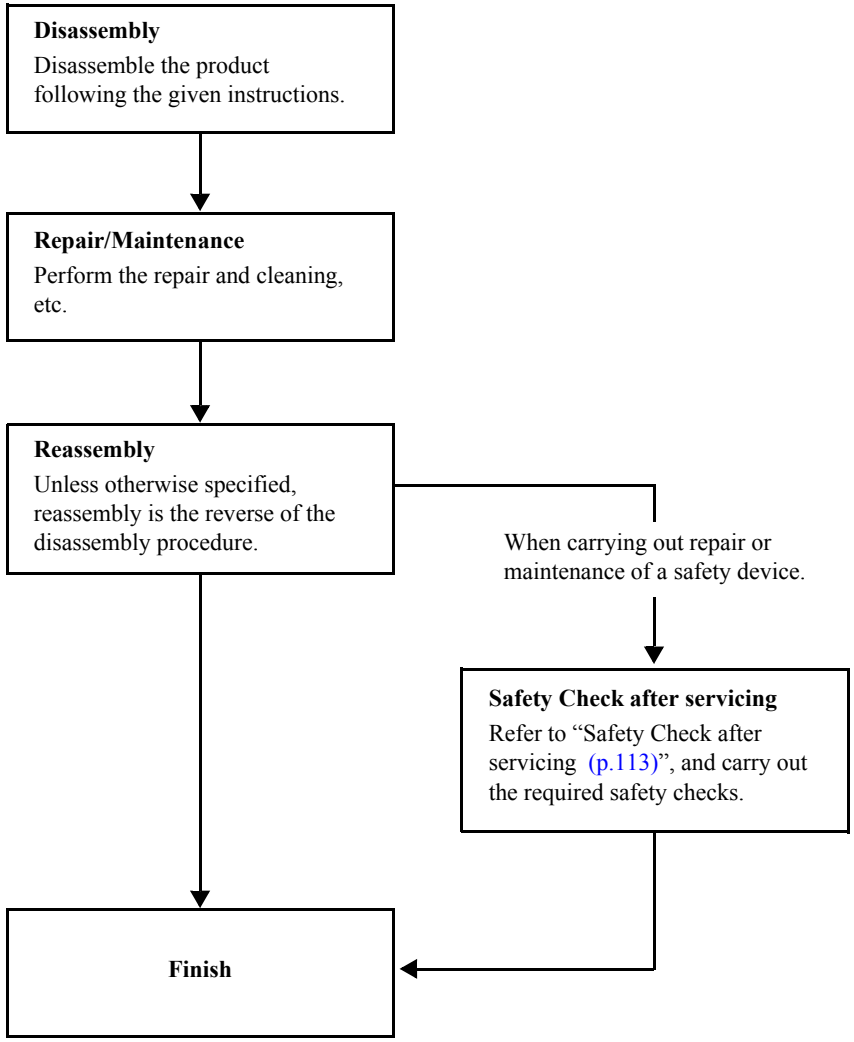
⚠WARNING

- **Do not wear the metal products such as a wrist watch, cuff buttons, rings, tie-pin etc. to avoid getting into an unsafe state due to touching the projector.**
- **When disassembling/assembling the projector, be sure to turn off the power switch and pull out the power cable from the projector beforehand.**

⚠CAUTION

- **When disassembling/assembling the projector, be sure to wear the gloves and static discharge equipment such as an anti-static wrist strap and a mat. When replacing the circuit component such as a board or the optical engine, be sure to contact the anti-static case containing the new one to the metal part of this product before taking it out.**
- **Disconnect all the interface cables from the projector.**
- **Before disassembling the projector, make sure to clean dust or dirt on the air filter, the interface section and outer cases using a vacuum cleaner or the like.**
- **When treating the non-after-service-parts as an assembly in this section, they are indicated as "Upper Case (assembly)".**

3.1.3 Workflow



3.1.4 Standard Operation Time

The standard operation time for each operation is provided at the beginning of each part. Use the time as a guideline for actual operation.

☐ Basis for the standard operation time

- A service employee would have sufficient knowledge for the target product's structure, and be able to disassemble/reassemble the product without any reference to guide books.
- Each operation time is the total time of disassembling/removing the target part following the given shortest procedure, and reassembling it.

☐ Guide to the standard operation time

Standard Operation Time:
The total time to disassemble/ reassemble the target part following the shortest procedure.

Shortest Procedure:
The shortest way to remove the target part.

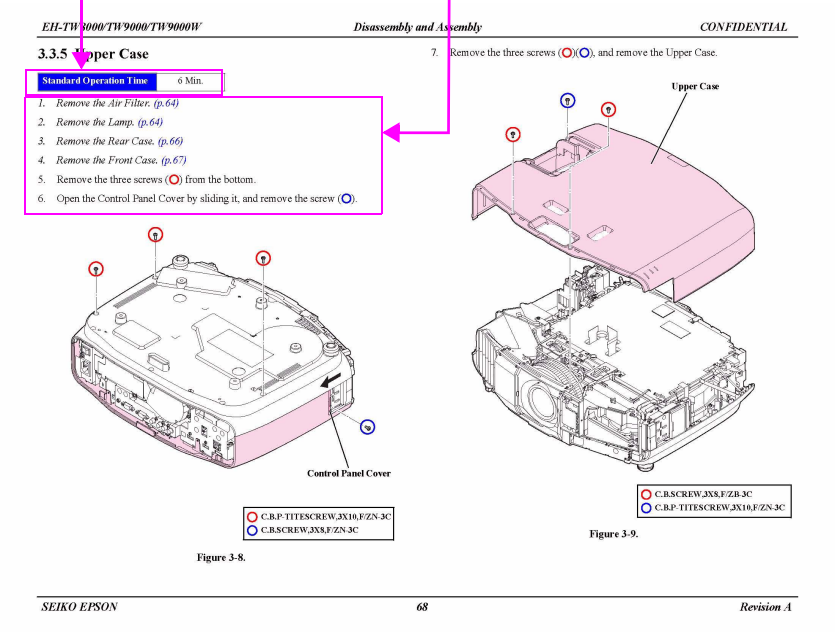


Figure 3-8.

Figure 3-9.

3.1.5 Tools

The following table indicates the tools recommended for use for disassembly, reassembly and adjustment.

Tool Name	Qt.	Application
Phillips screwdriver No. 00 (8 cm)	1	Disassembling the focus ring and the zoom ring
Phillips screwdriver No. 0 (8 cm)	1	Disassembling the outer cases and inner components
Phillips screwdriver No. 1 (10 cm)	1	Disassembling the outer cases and inner components
Phillips screwdriver No. 2 (10 cm)	1	Disassembling the outer cases and inner components
Needlenose pliers or nipper	1	Removing the Push Nut
Box Spanner	1	Removing the Push Nut
Hexagonal box screwdriver (5 mm)	1	Removing the computer interface
Hexagonal box spanner (2.5 mm)	1	Removing / Installing the Rx Wireless HD
Heat-resistant tape	q.s.*1	Securing cables. Use commercially available Polyimide tape generally called "KAPTON® TAPE".
Brush	1	Cleaning away dust
Vacuum cleaner	1	Cleaning away dust
Lens cleaner	q.s.*1	Cleaning the projection lens
Gloves	1 pair	---
Anti-static wrist band	1	---

Note : *1 q.s.: Sufficient quantity

3.1.6 Precautions for Optical Engine and MA Board

The Optical Engine and Main (MA) Board are paired together as a single service part. Neither is available separately. For servicing that requires the replacement either of the MA Board or the Optical Engine, both components must be replaced together. When sending the defected Optical Engine and MAB set to the designated engine repair center, make sure to send all the specified components together.

The component parts of the Optical Engine require mechanical installation positions to be adjusted in relation to each other. In addition, the control circuit also has its own unique characteristics, such as display signal output drivers, that differ from projector to projector. There are also unique differences in each optical system mechanism, such as in the light valves.

In order to obtain the optimum display, it is necessary to eliminate these differences in electrical and mechanical characteristics as well as to make mechanical adjustments. The various correction values are set at the time of shipment from the factory and are stored in ROM on the MA Board.

⚠ CAUTION

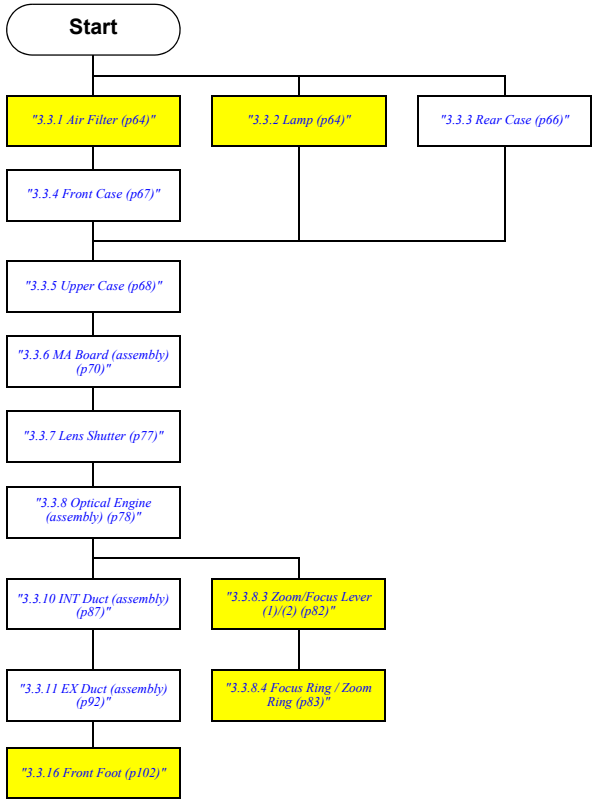
- **Do not replace either the Optical Engine or MA Board alone. (As stated before, you cannot replace any one of the Optical Engine and MA Board, or change the combination of them.)**
- **Do not disassemble the Optical Engine. Special jigs are required for reinstalling the optical components in the engine, such as POP Assy., condenser lens, mirrors. Reassembling the Optical Engine without using the jigs are strictly prohibited.**

3.2 Flowchart

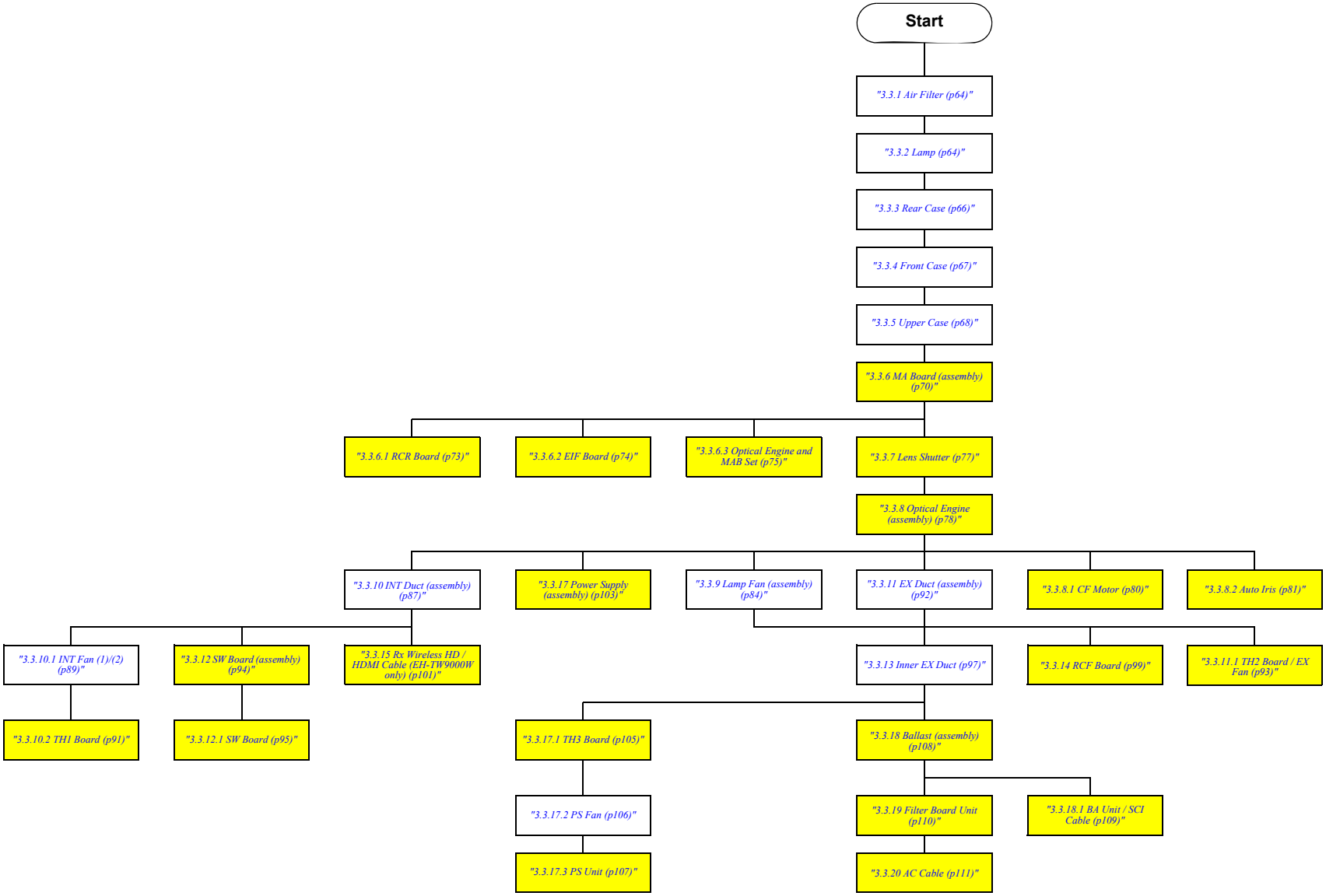
The general disassembly procedure for the EH-TW8000/TW9000/TW9000W projectors is illustrated in flowchart below. Unless otherwise specified, all reassembly should be carried out by following the disassembly procedures in reverse, therefore reassembling procedures are omitted.

- **The part names in this chapter are simplified. See the "Reference (Part Names given in the SPI) (p.117)" for the corresponding official names.**
- **The parts in yellow are target parts in their category. They are explained in details in the corresponding sections so as to reach the parts in the shortest way.**
- **The parts in white are those which are required to be removed to reach the parts in yellow.**

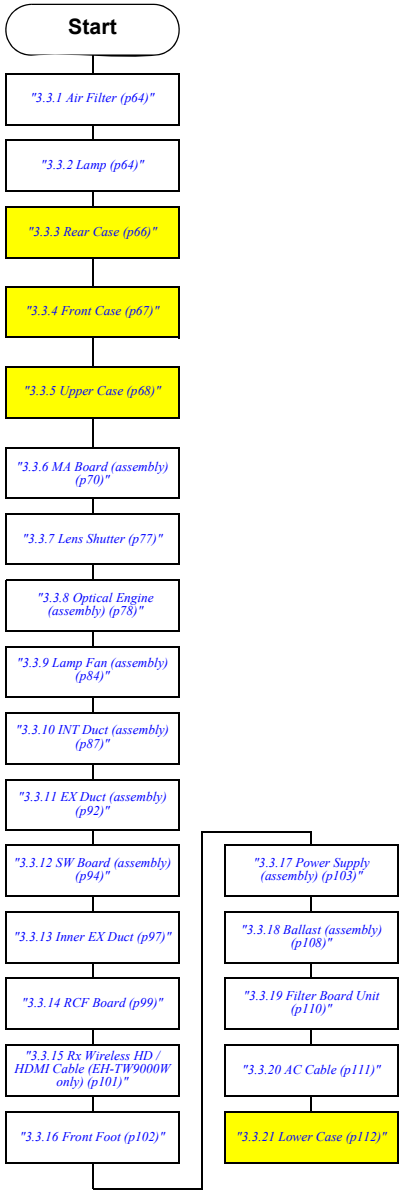
CONSUMABLES/OPTIONS



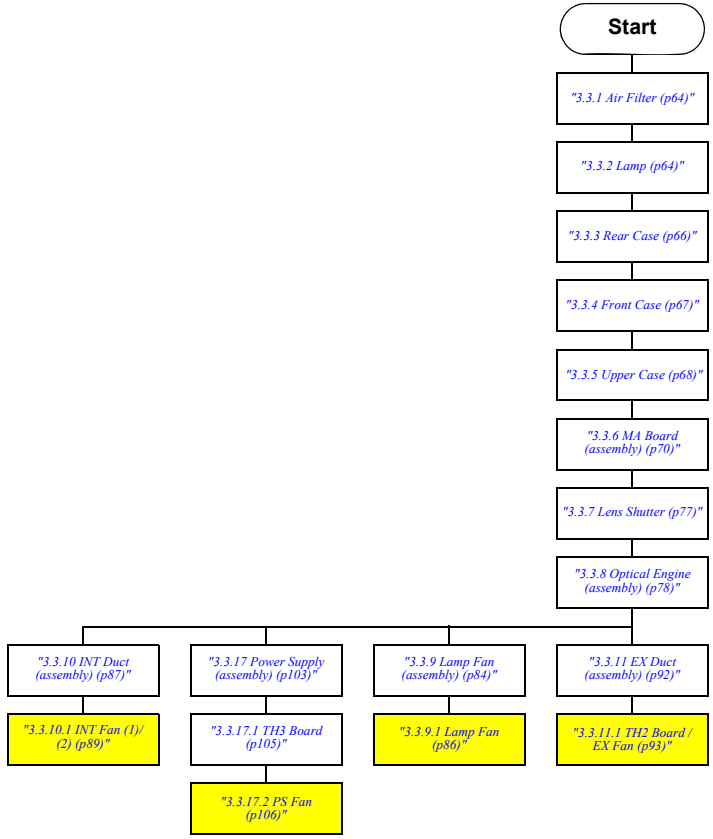
ELECTRIC CIRCUIT PARTS/OPTICAL PART



HOUSINGS



COOLING MECHANISM DEVICES



3.3 Disassembly

This section explains one of the shortest ways to reach the target part to repair. The parts to be removed in advance are indicated in italic with their reference pages, so remove those parts referring to their pages before starting.

3.3.1 Air Filter

Standard Operation Time	- Min.

1. Disengage the hooks of the Air Filter Cover (Front Case), and remove the Air Filter Cover.
2. Remove the Air Filter.

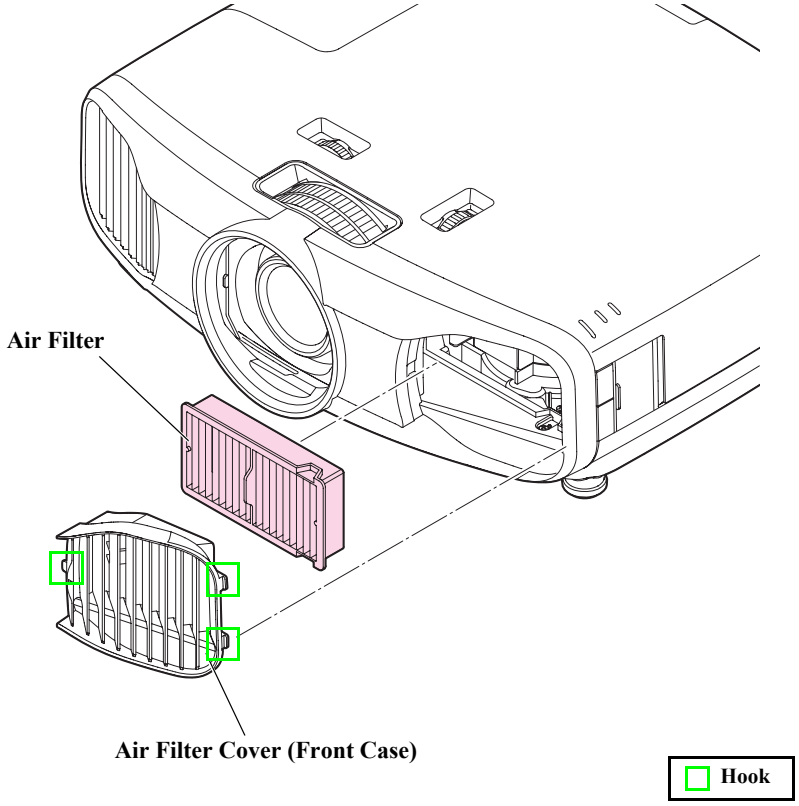


Figure 3-1.

3.3.2 Lamp

Standard Operation Time	- Min.

Safety device	**This part is designated as the Safety Device. When removing/ replacing the part for repair, be sure to refer to "3.4 Safety Check after Servicing (p.113)". According to the instructions in it, handle the part and perform the procedure after servicing.**

1. Loosen the screw, and remove the Lamp Cover.

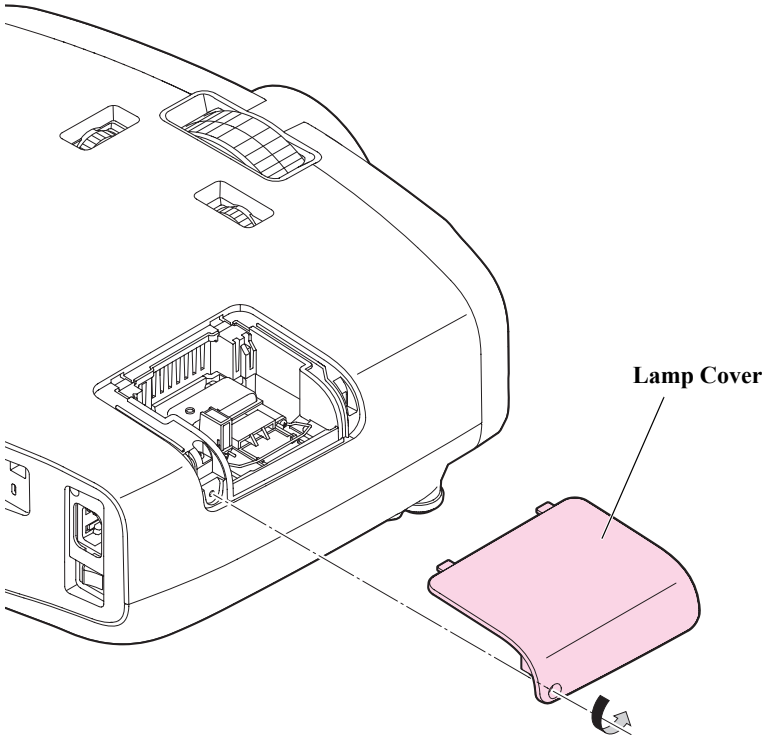


Figure 3-2.

2. Loosen the two screws, and remove the Lamp.

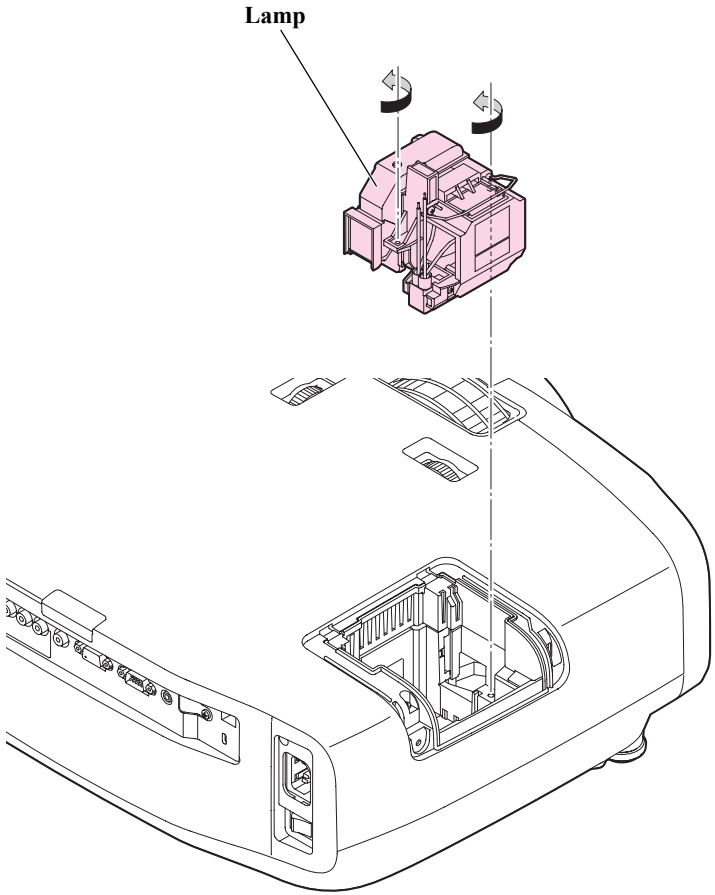


Figure 3-3.

3.3.3 Rear Case

Standard Operation Time	2 Min.

1. Remove the three screws (◯) from the bottom.
2. Remove the three screws (◯), and remove the IF Cover.

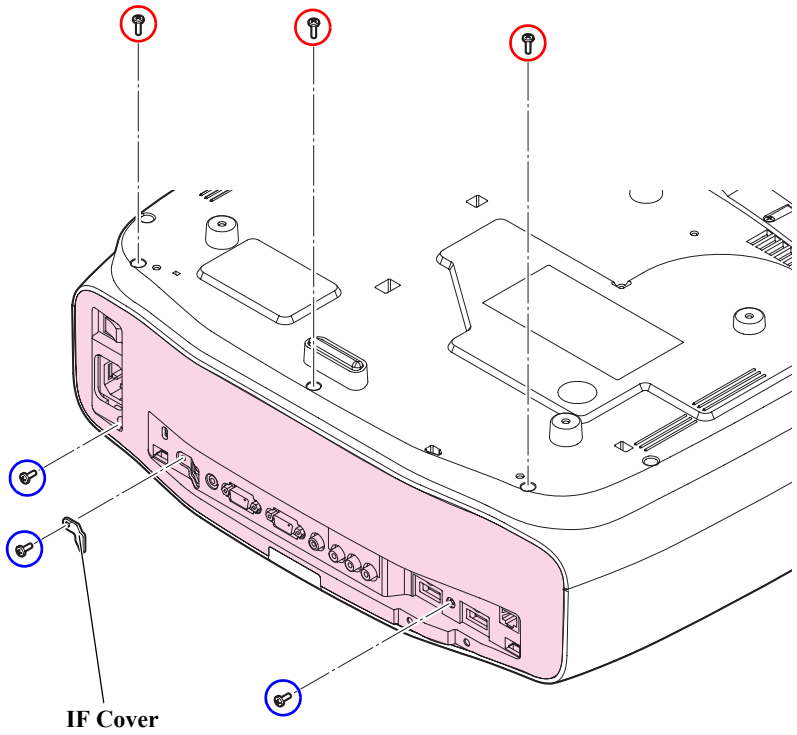


Figure 3-4.

3. Remove the Rear Case.
4. Remove the Rear Foot Rubber.

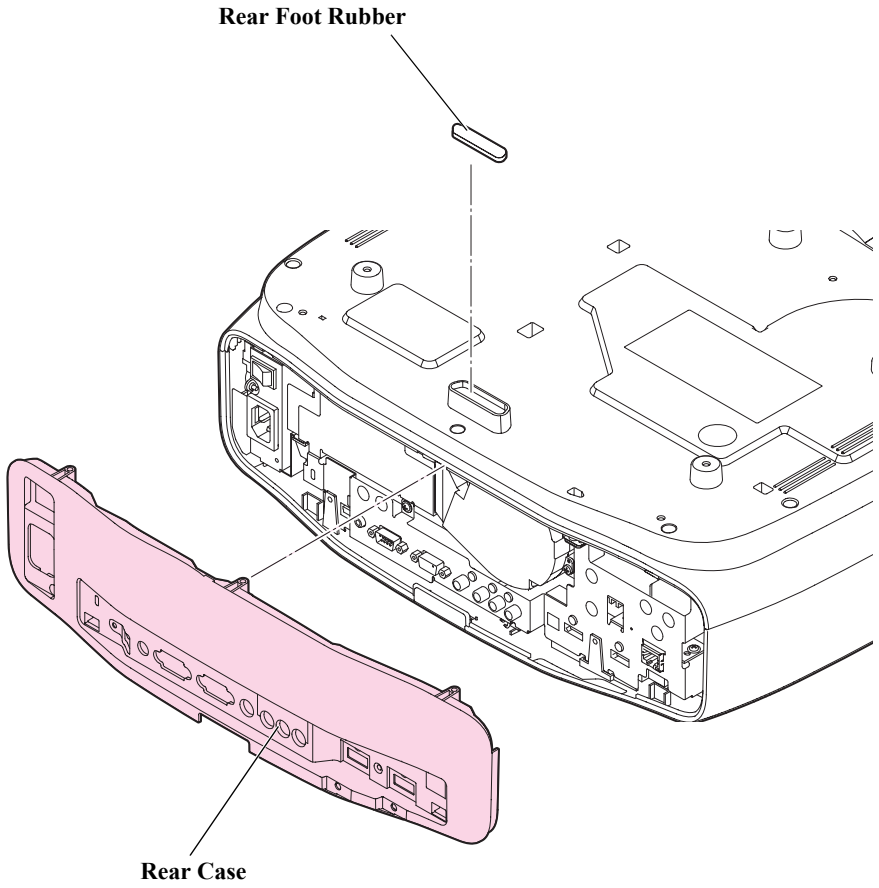
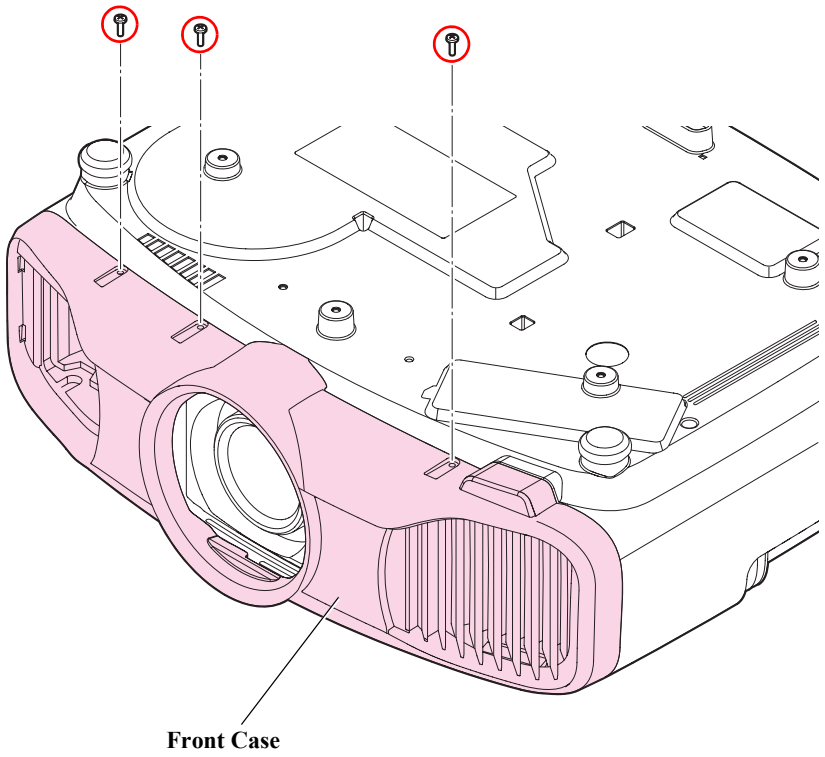


Figure 3-5.

3.3.4 Front Case

Standard Operation Time	2 Min.

1. *Remove the Air Filter.* *(p.64)*
2. Remove the three screws (◯) from the bottom.



◯ C.B.P-TITESCREW,3X10,F/ZN-3C

Figure 3-6.

3. Remove the Front Case.

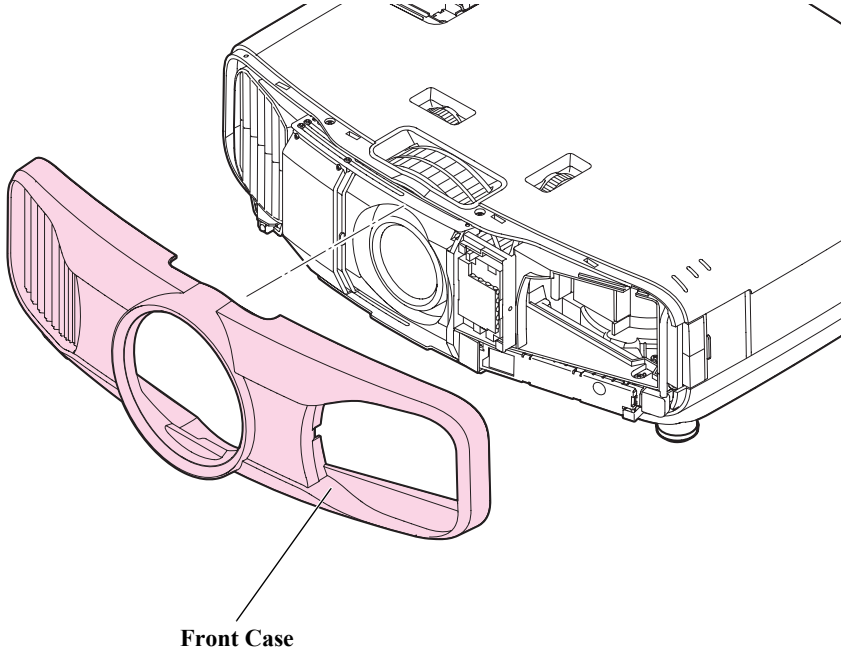


Figure 3-7.

3.3.5 Upper Case

Standard Operation Time	6 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. Remove the three screws (◯) from the bottom.
6. Open the Control Panel Cover by sliding it, and remove the screw (◯).

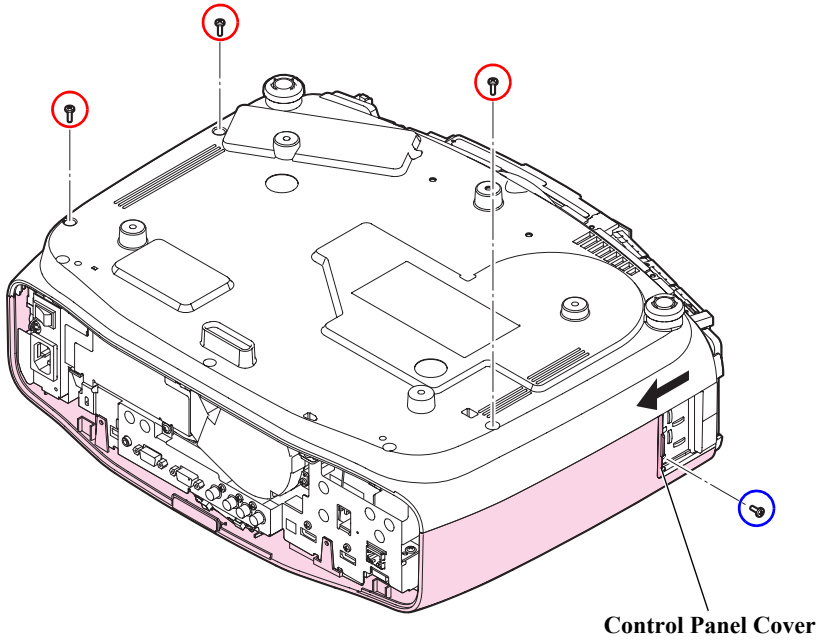


Figure 3-8.

7. Remove the three screws (◯)(◯), and remove the Upper Case.

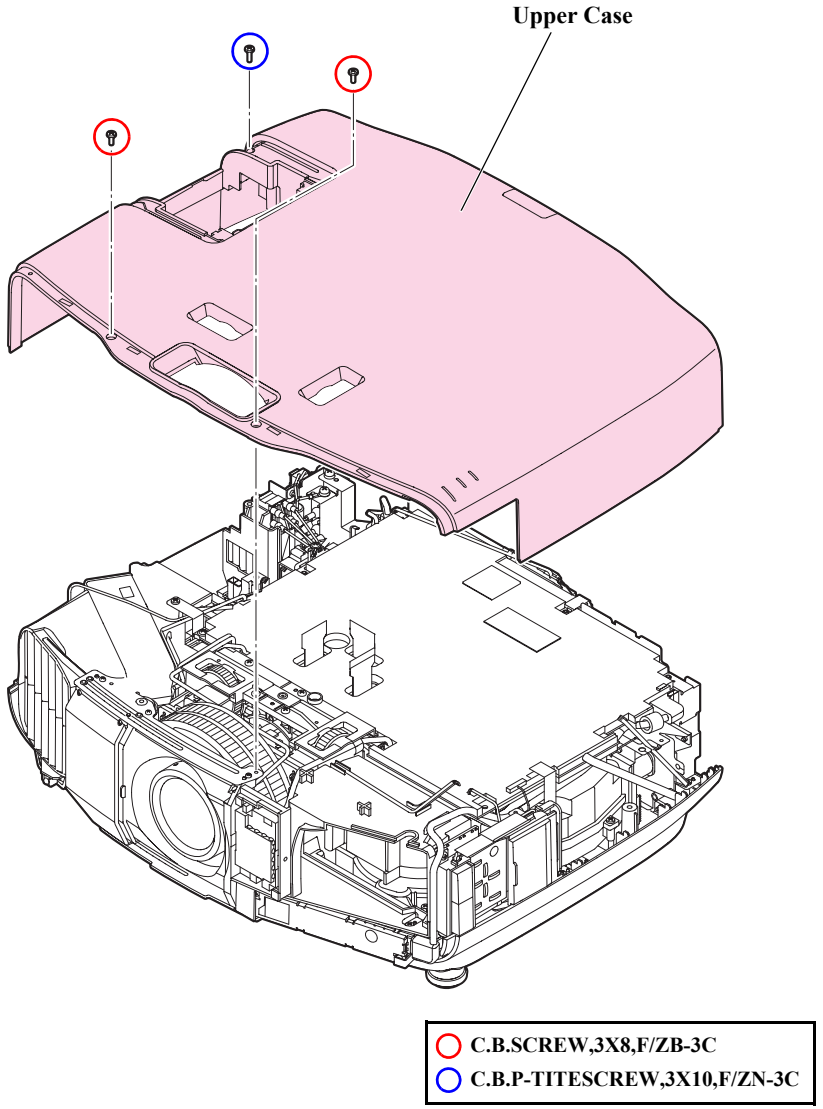


Figure 3-9.

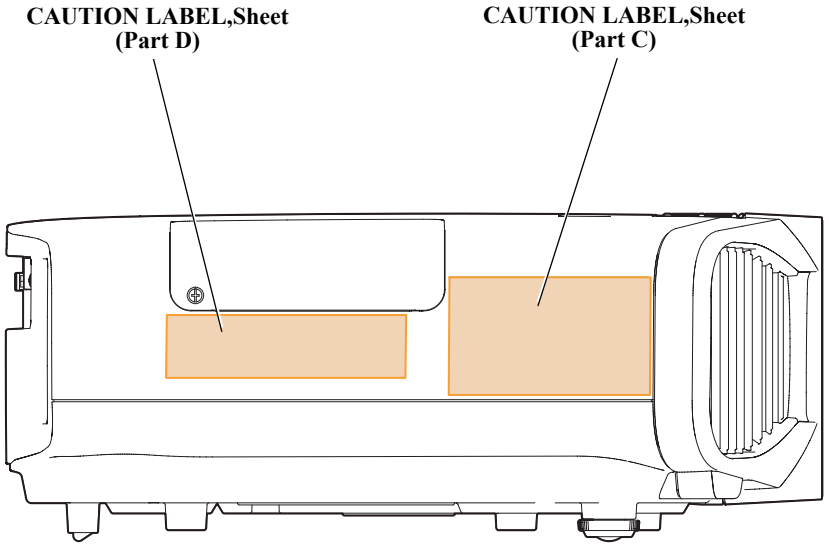
☐ Checking Caution Labels

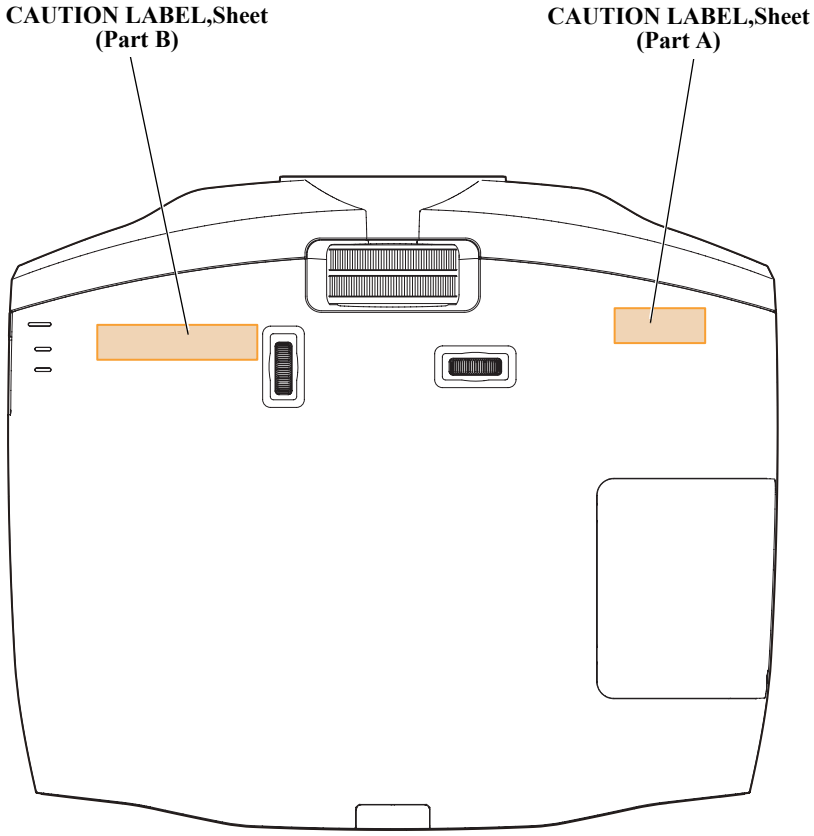
Safety device	**This part is designated as the Safety Device. When removing/ replacing the part for repair, be sure to refer to "3.4 Safety Check after Servicing (p.113)". According to the instructions in it, handle the part and perform the procedure after servicing.**

⚠ CAUTION

When replacing the Upper Case (with caution labels attached), make sure to transfer the labels to the new case.

Check if all the caution labels are attached on the locations shown below.





3.3.6 MA Board (assembly)

Standard Operation Time	13 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. Disconnect all the cables from the MA Board (assembly).

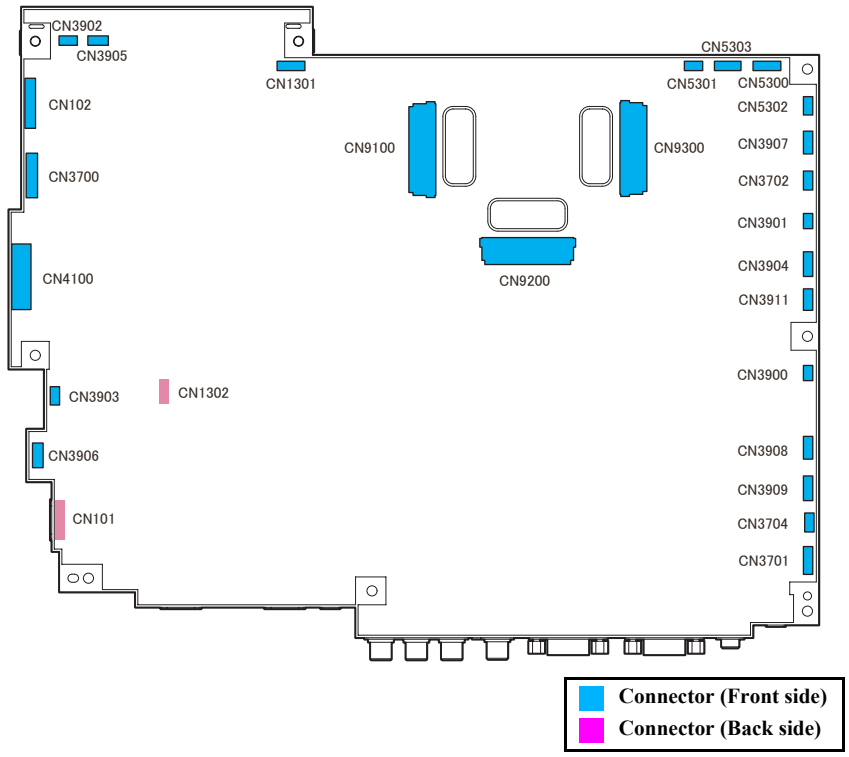


Figure 3-10.

CAUTION

Reference

CN No.	Destination	CN No.	Destination
CN101/ CN102	Rx Wireless HD (EH-TW9000W only)	CN3904/ CN3911	Auto Iris
CN1301/ CN5301/ CN5303	Lens Shutter	CN3905	INT Fan (1)
CN1302	EIF Board	CN3906	INT Fan (2)
CN3700	SW Board	CN3907	EXT Fan
CN3701	BA Unit (SCI)	CN3908	Lamp Fan
CN3702	RCF Board	CN3909	PS Fan
CN3704	RCR Board	CN4100	PS Unit
CN3900	LV Thermistor (Optical Engine)	CN5300/ CN5302	Optical Engine
CN3901	TH1 Board	CN9100	Optical Engine (L/V (R))
CN3902	TH2 Board	CN9200	Optical Engine (L/V (G))
CN3903	TH3 Board	CN9300	Optical Engine (L/V (B))

7. Remove the 10 screws (○)(○)(○), and remove the MA Board (assembly).

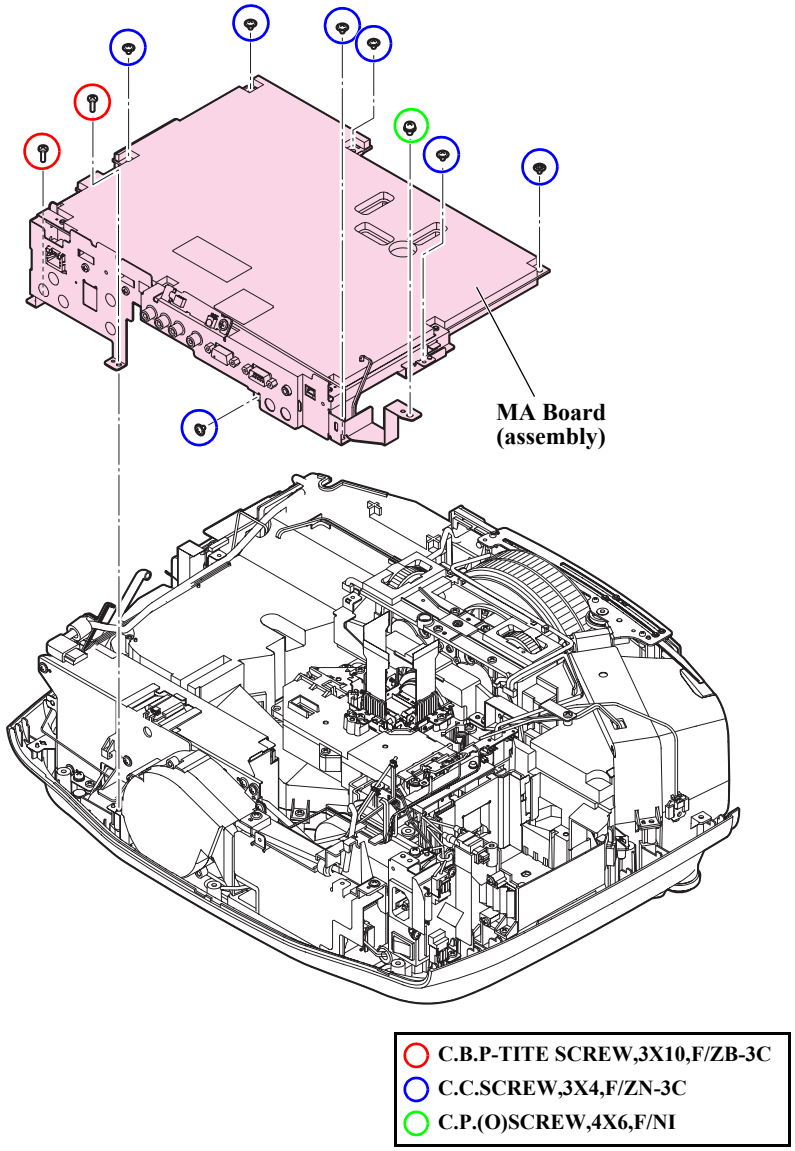


Figure 3-11.

8. Remove the five screws (○)(○), and remove the MA Fasten Plate C.

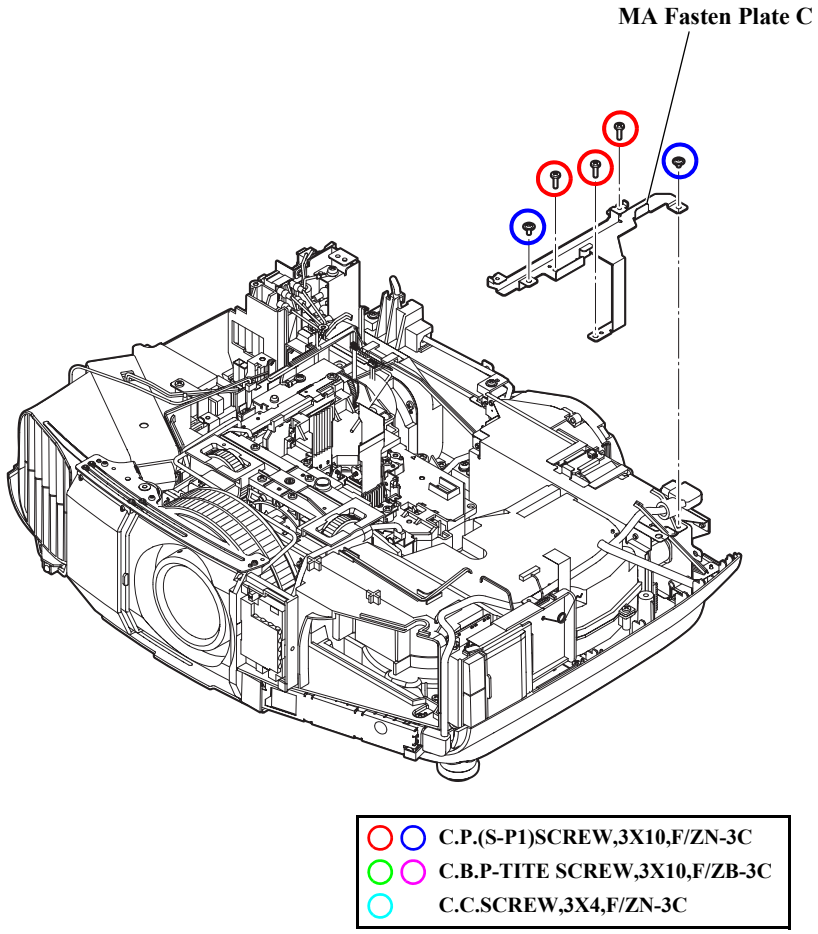
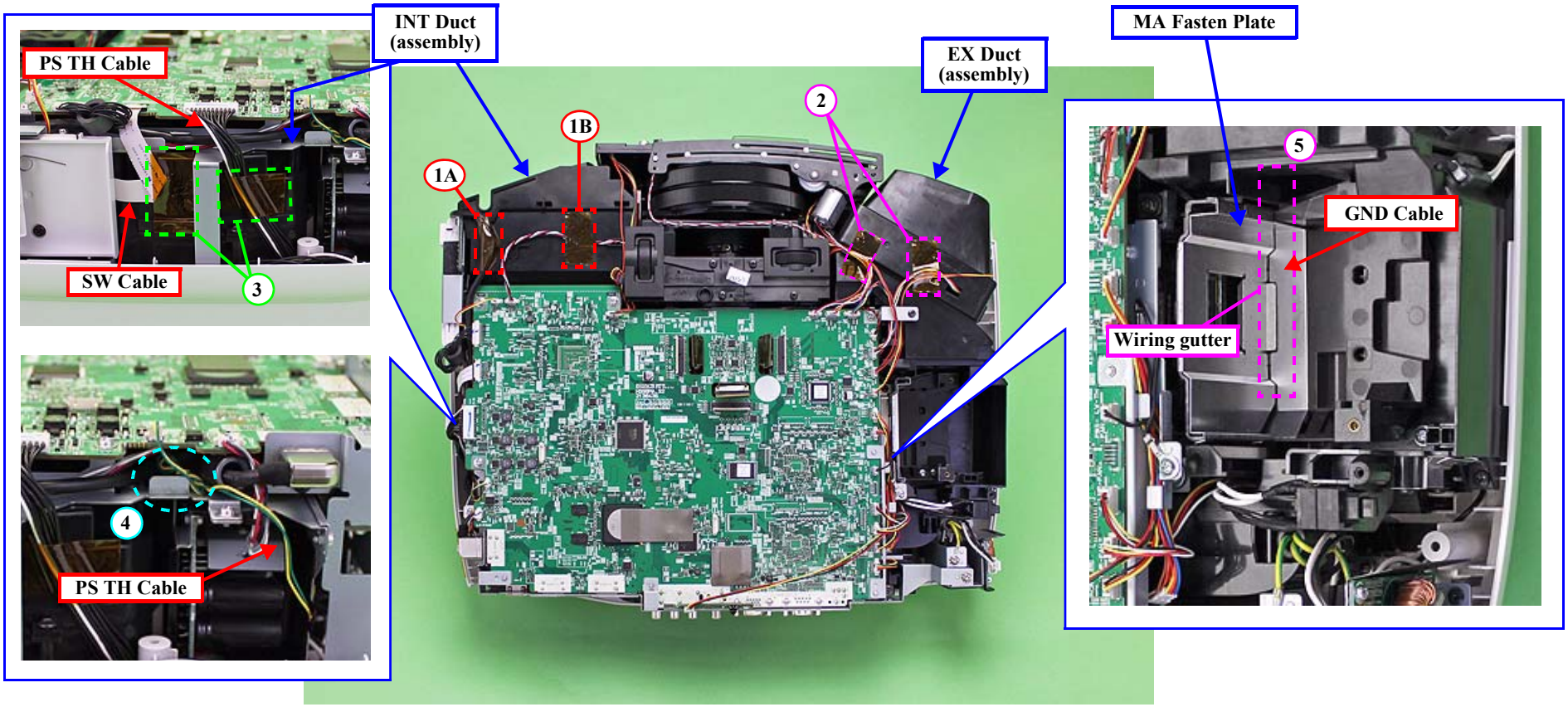


Figure 3-12.

⚠ CAUTION

Route the cables around the MA Board (assembly) and secure them with tape as given in the figure below.

1. **Secure the cables on the INT Duct (assembly) at two parts (1A/1B) with polyimide tape. (taping 1A is for EH-TW8000W/TW9000W only.)**
2. **Secure the cables on the EX Duct (assembly) at two parts (2) with polyimide tape.**
3. **Secure the SW Cable and PS Unit cable on the side of the INT Duct (assembly) at two parts with polyimide tape.**
4. **Tuck the excess portion of the PS TH Cable under the MA Board (assembly) (4).**
5. **Route the cables to the wiring gutter along the MA Fasten Plate (5).**
6. **Route the GND Cable to the wiring gutter along the MA Fasten Plate (5) also.**



3.3.6.1 RCR Board

Standard Operation Time	13 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. Remove the screw (○), and remove the RCR Board.
8. Remove the RC Rear Cable from the RCR Board.

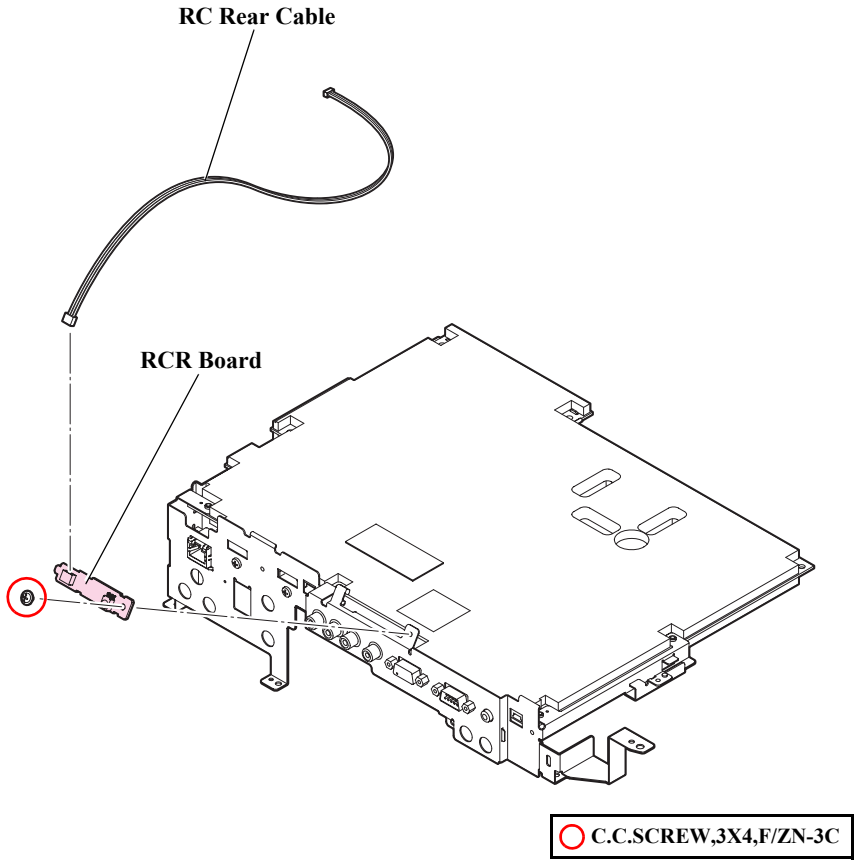


Figure 3-13.

3.3.6.2 EIF Board

Standard Operation Time	14 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. Remove the two screws (○), and remove the EIF Board.
8. Remove the EIF Cable from the EIF Board.
9. Remove the IF Shade Sheet A from the MA Board (assembly).

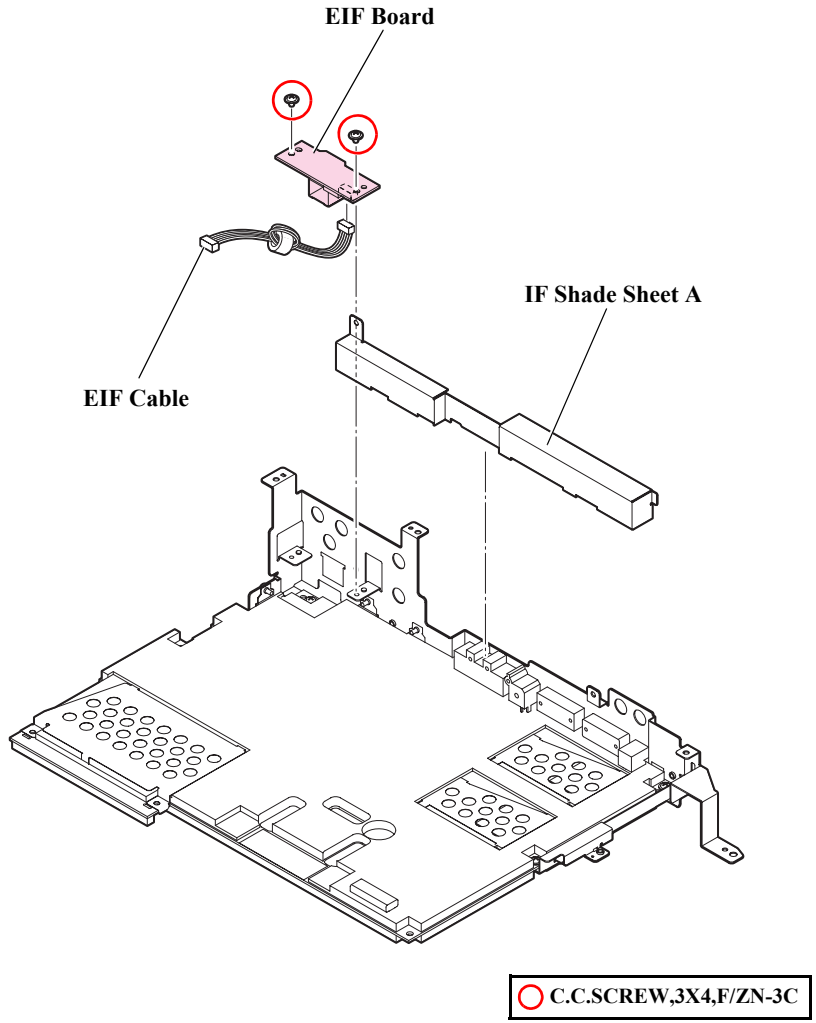


Figure 3-14.

3.3.6.3 Optical Engine and MAB Set

Standard Operation Time	21 Min.

Safety device

This part is designated as the Safety Device. When removing/ replacing the part for repair, be sure to refer to "3.4 Safety Check after Servicing (p.113)". According to the instructions in it, handle the part and perform the procedure after servicing.

1. *Remove the Air Filter. (p.64)*
2. *Remove the Lamp. (p.64)*
3. *Remove the Rear Case. (p.66)*
4. *Remove the Front Case. (p.67)*
5. *Remove the Upper Case. (p.68)*
6. *Remove the MA Board (assembly). (p.70)*
7. *Remove the RCR Board. (p.73)*
8. *Remove the EIF Board. (p.74)*
9. Remove the following parts from the Optical Engine and MAB Set.
   - Shield Plate 7140
   - MA Shield Plate O (x2)
   - EMI Sheet F (x3)
   - MA Insulation Sheet
   - EMI Sheet (x2)
   - Gasket 2-10-20
   - MA Shield Plate B
10. Remove the four screws (◯).

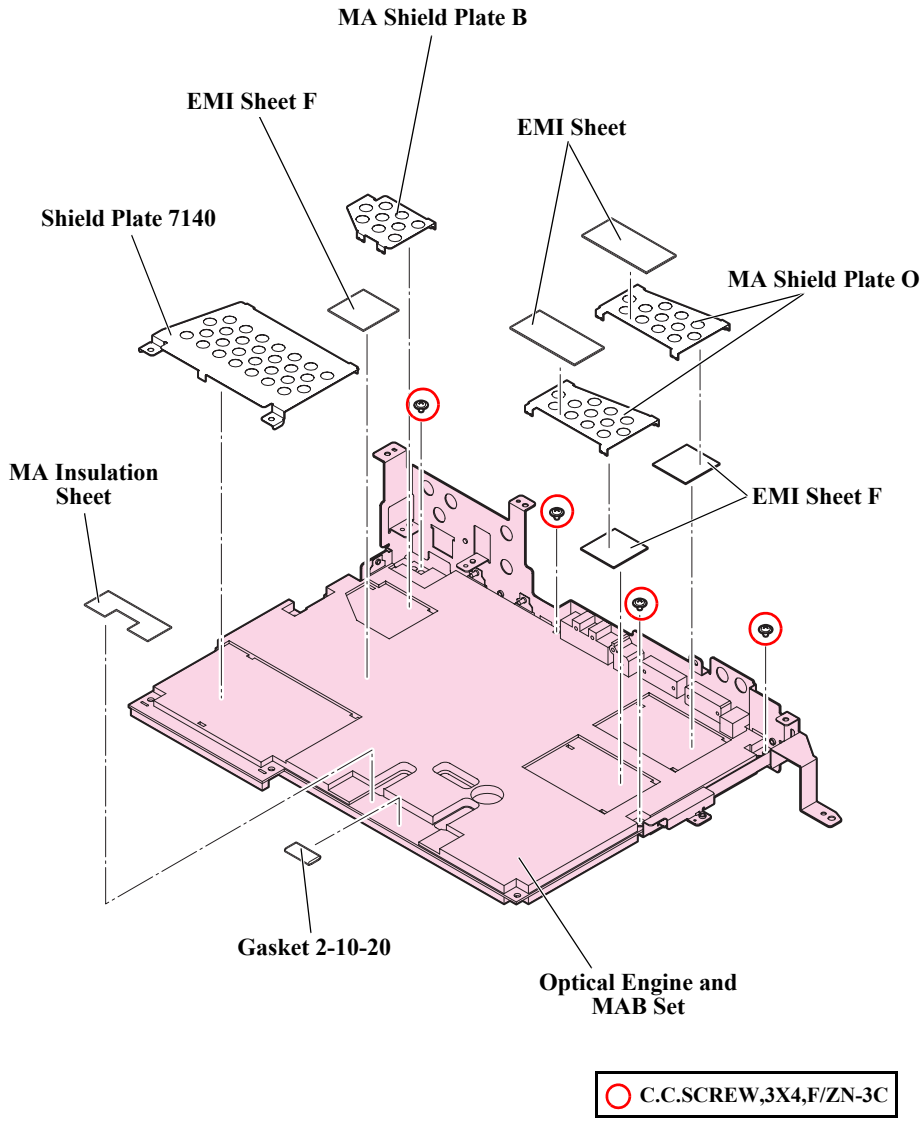


Figure 3-15.

11. Remove the EMI Sheet C (x2) and the EMI Sheet from the MA Shield Plate A.
12. Remove the two screws (◯), and remove the MA Shield Plate A.
13. Remove the screw (◯). (EH-TW9000W only)
14. Remove the nine screws (◯)(◯)(◯), and remove the MA Fasten Plate.
15. Remove the IF Shade Sheet B from the MA Fasten Plate.

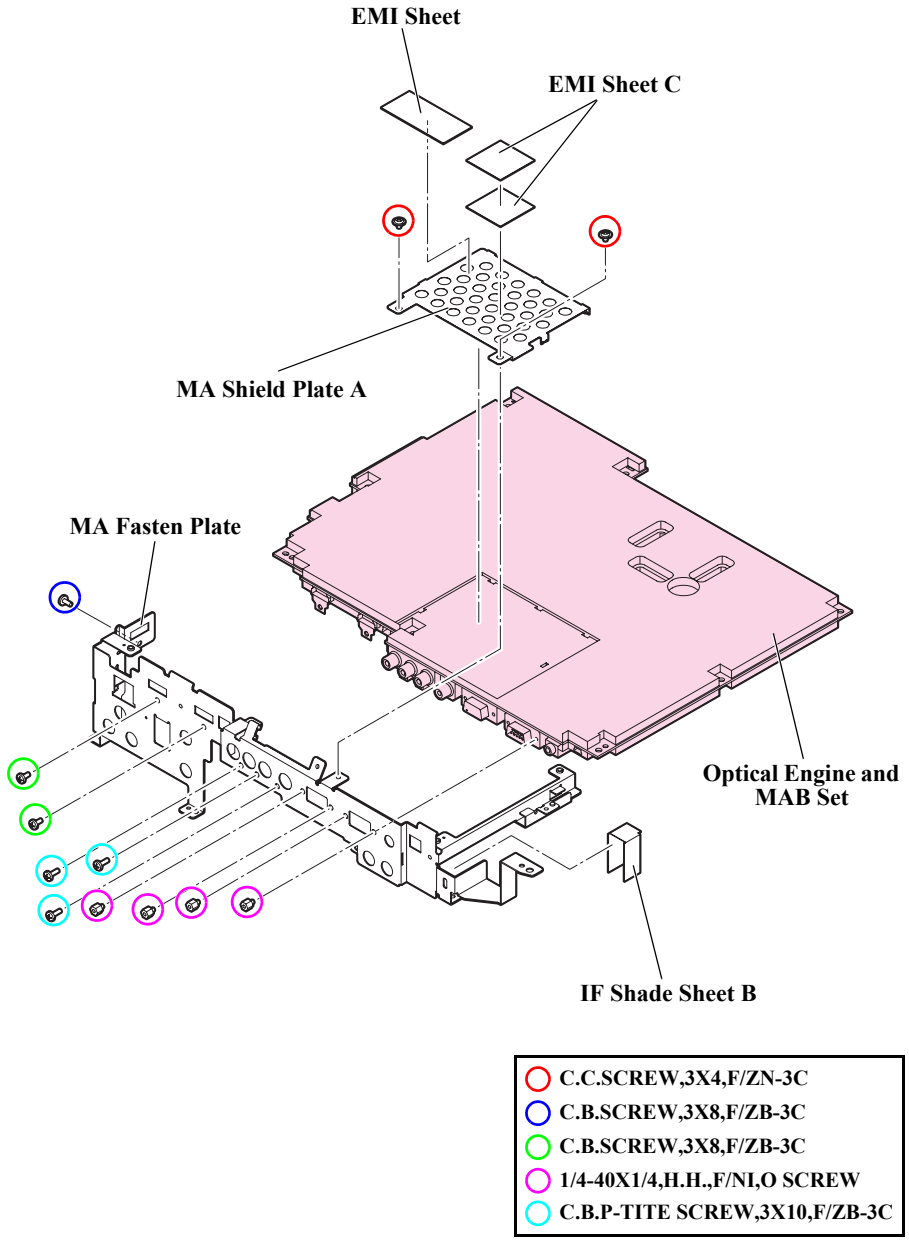


Figure 3-16.

3.3.7 Lens Shutter

Standard Operation Time	14 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. Remove the two screws (◯), and remove the Lens Shutter.

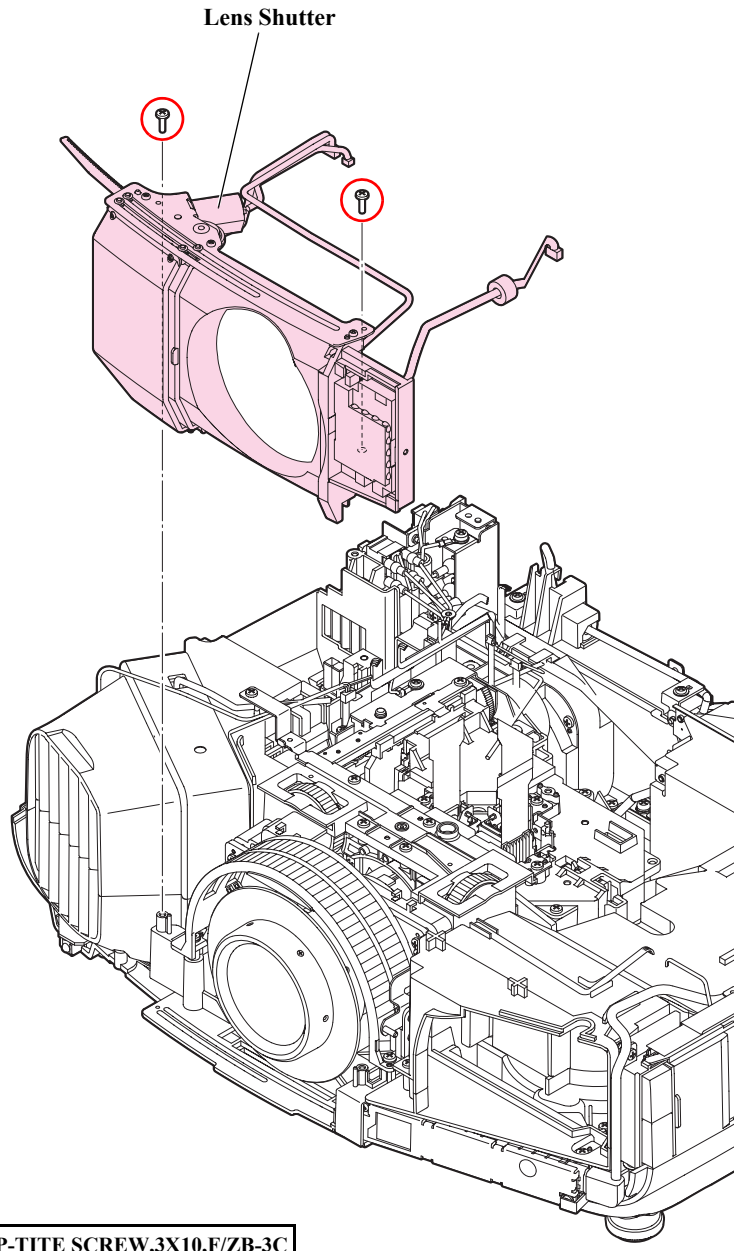


Figure 3-17.

3.3.8 Optical Engine (assembly)

Standard Operation Time	18 Min.

Safety device

This part is designated as the Safety Device. When removing/ replacing the part for repair, be sure to refer to "3.4 Safety Check after Servicing (p.113)". According to the instructions in it, handle the part and perform the procedure after servicing.

1. *Remove the Air Filter. (p.64)*
2. *Remove the Lamp. (p.64)*
3. *Remove the Rear Case. (p.66)*
4. *Remove the Front Case. (p.67)*
5. *Remove the Upper Case. (p.68)*
6. *Remove the MA Board (assembly). (p.70)*
7. *Remove the Lens Shutter. (p.77)*
8. Remove the six screws (◯)(◯), and remove the Optical Engine (assembly).
9. Remove the screw (◯), and remove the GND Cable from the Optical Engine (assembly).
10. Remove the LVTH Fasten Sheet and the LV Thermistor from the Optical Engine (assembly).

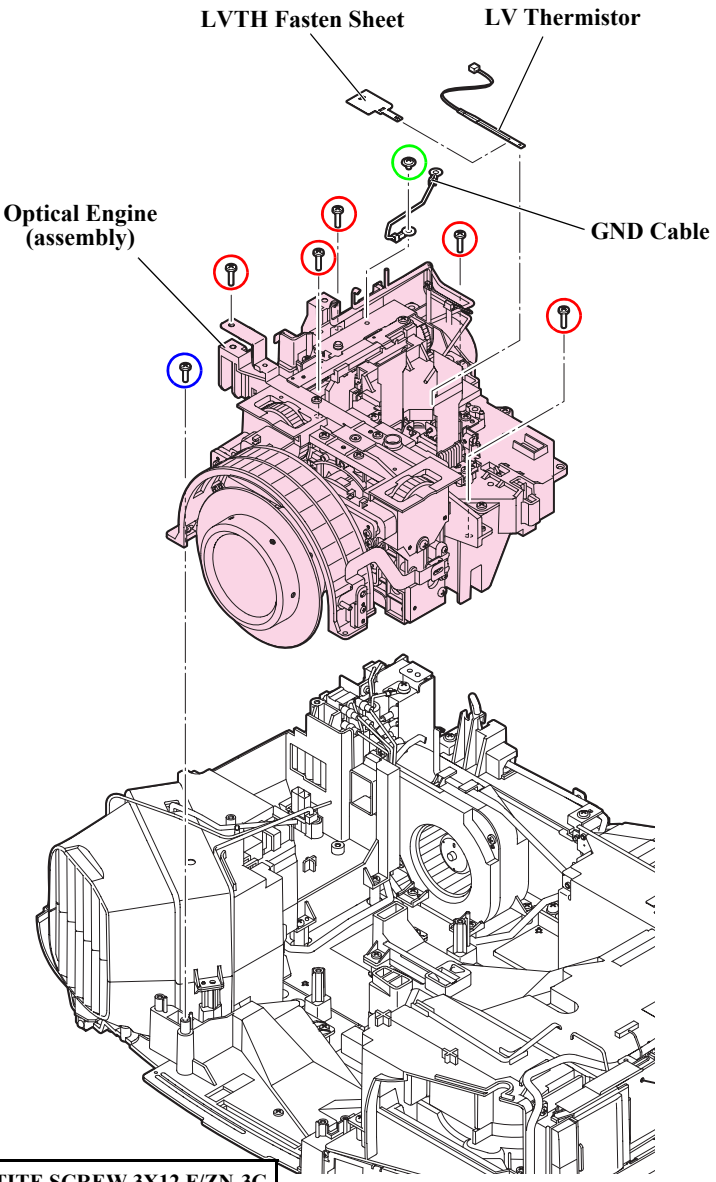
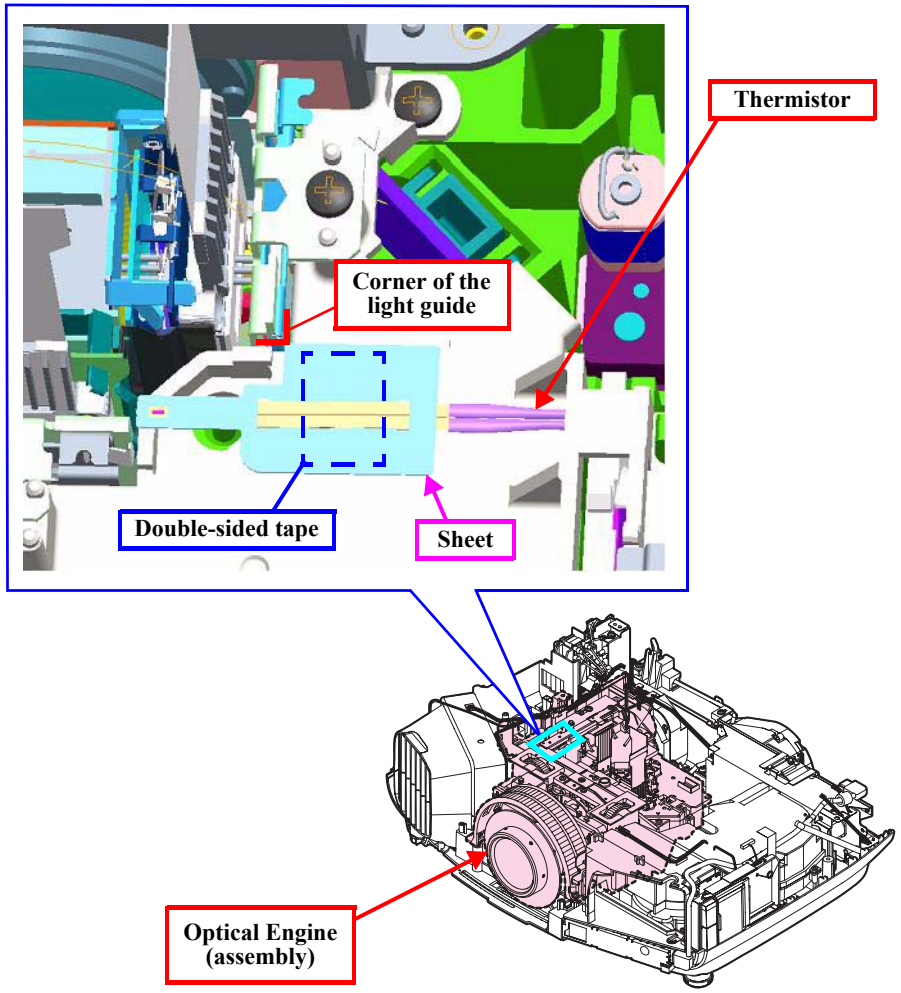


Figure 3-18.

⚠ CAUTION

On the Optical Engine, route the thermistor through the slit of the sheet as shown below, and align the sheet at the upper left corner with the corner of the light guide marked with a red line, then secure the sheet with the double-sided tape on the back.



3.3.8.1 CF Motor

Standard Operation Time	15 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. Remove the two screws (◯), and remove the CF Motor.

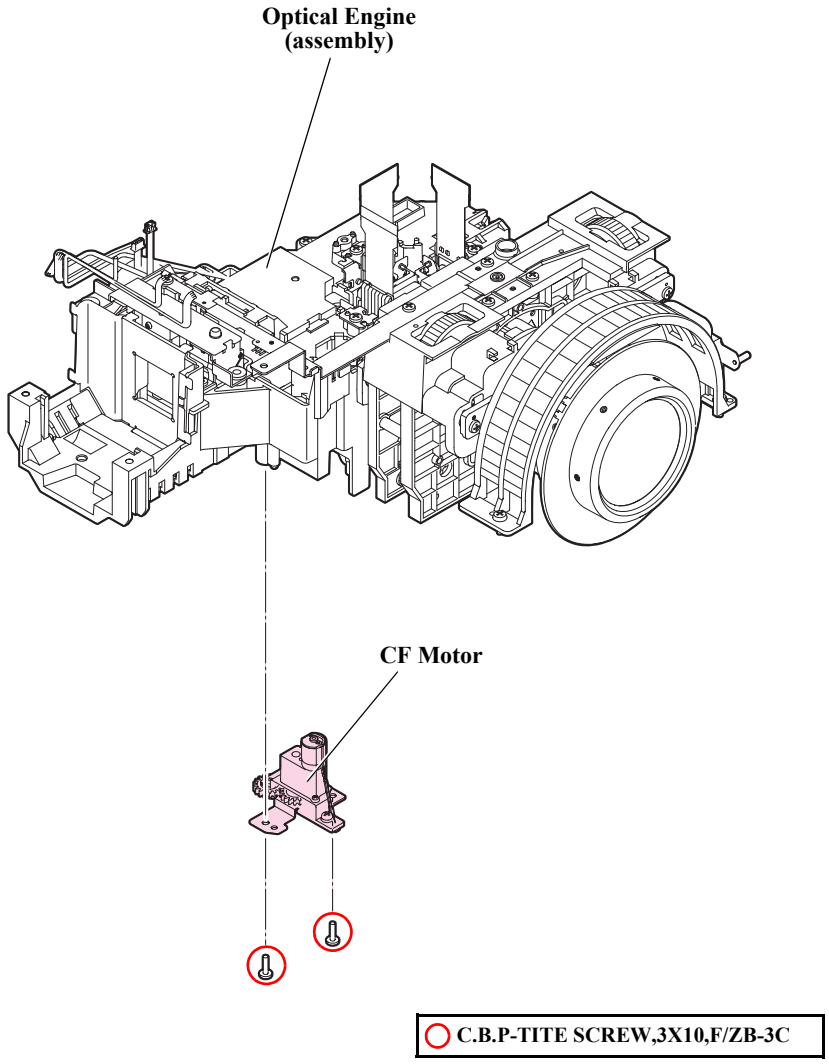


Figure 3-19.

3.3.8.2 Auto Iris

Standard Operation Time	19 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. Remove the three screws (○), and remove the Auto Iris.

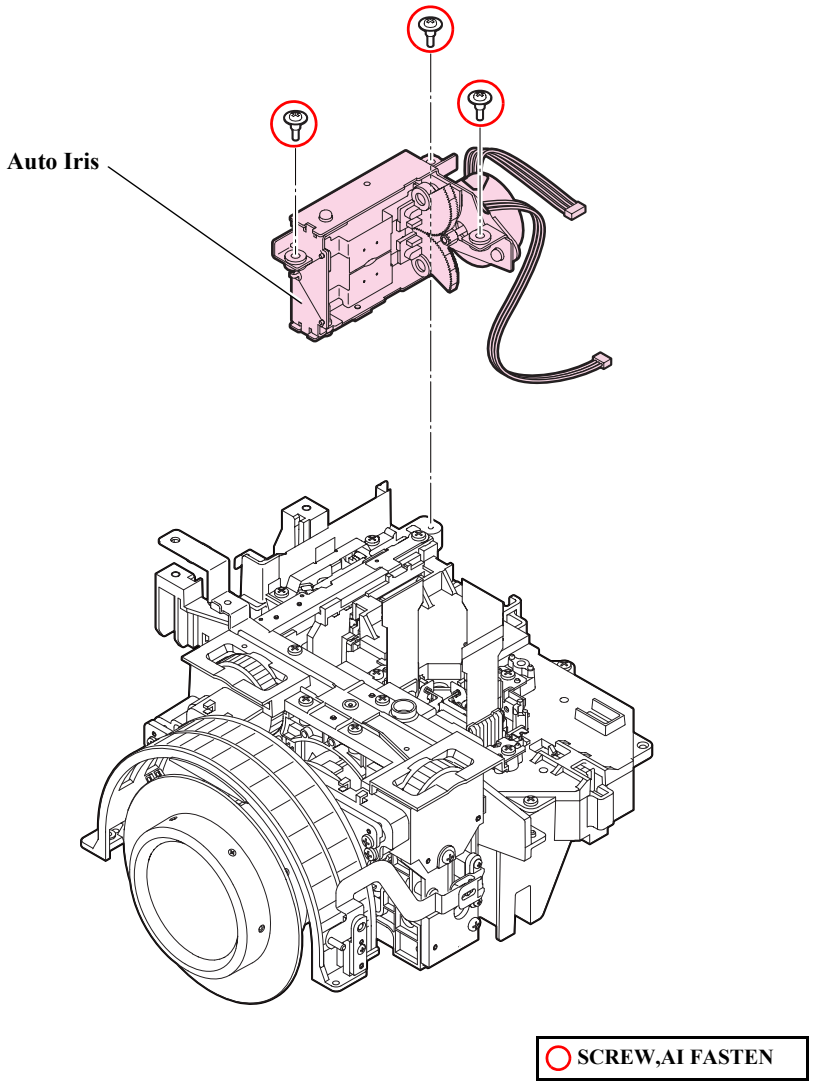


Figure 3-20.

3.3.8.3 Zoom/Focus Lever (1)/(2)

Standard Operation Time	21 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. Remove the screw (○), and remove the IRE Fasten Plate and the IRE Plate.
10. Remove the Zoom/Focus Lever (1) and (2) from the Optical Engine (assembly).
11. Remove the two screws (○), and remove the Lens Shift Case A.
12. Remove the two screws (○), and remove the Lens Shift Case B.

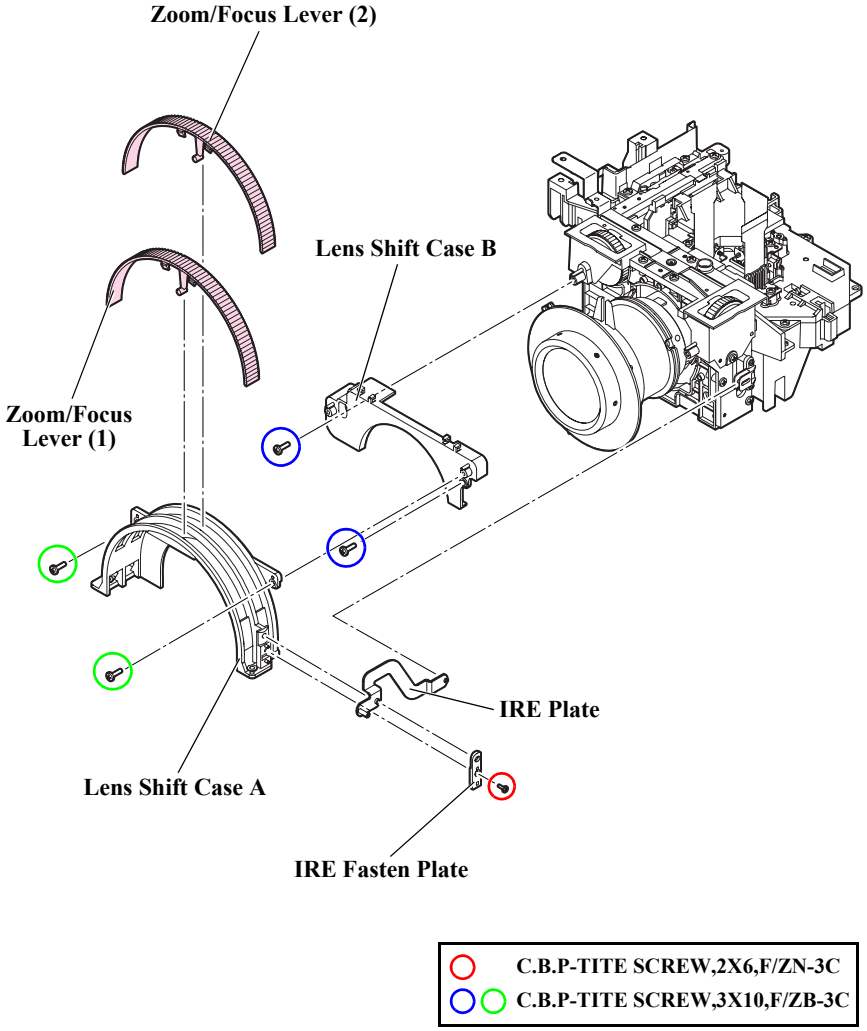


Figure 3-21.

3.3.8.4 Focus Ring / Zoom Ring

Standard Operation Time	22 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. Remove the three screws (○), and remove the Focus Ring.
10. Remove the three screws (○), and remove the Zoom Ring.
11. Remove the two screws (○), and remove the Focus Ring Fasten Sheet from the Focus Ring.
12. Remove the two screws (○), and remove the Focus Ring Fasten Sheet from the Zoom Ring.

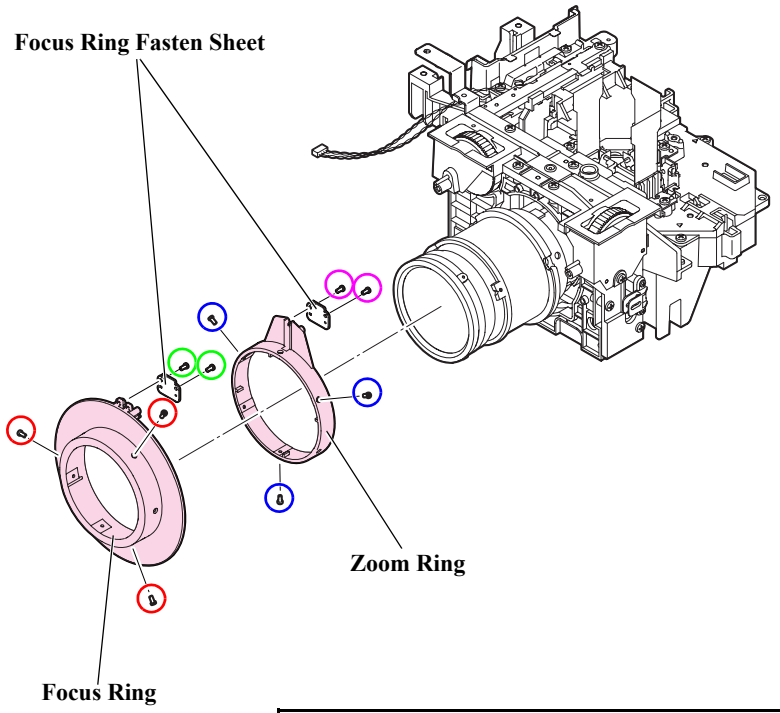


Figure 3-22.

3.3.9 Lamp Fan (assembly)

Standard Operation Time	19 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. Remove the three screws (○), and remove the Lamp Fan (assembly).

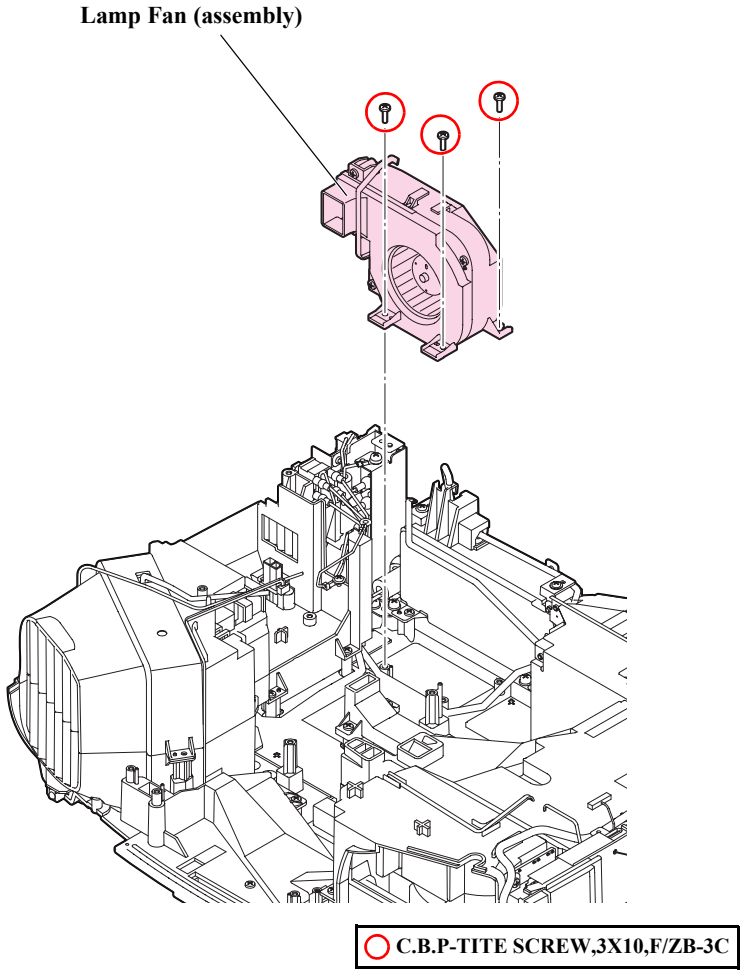
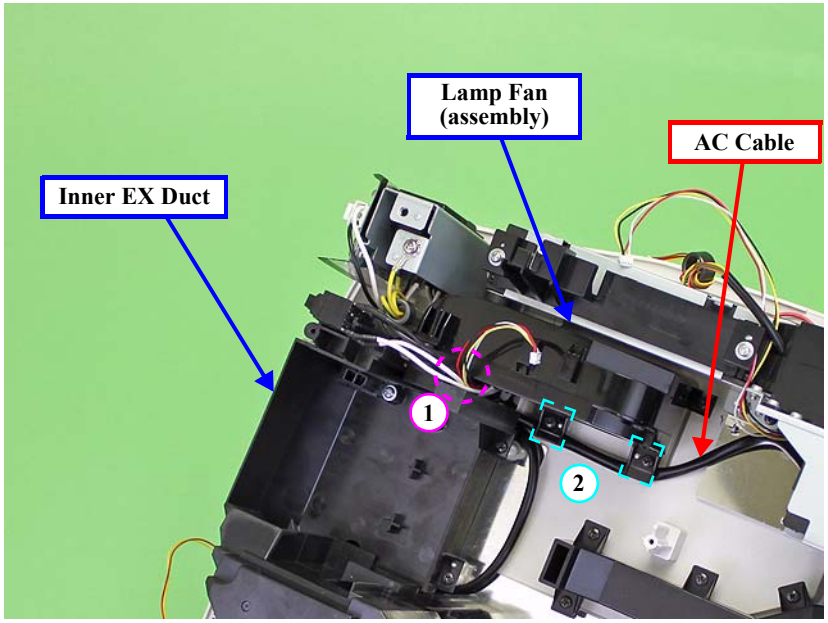


Figure 3-23.

⚠ CAUTION

Route the Lamp Fan cable as shown in the figure below.

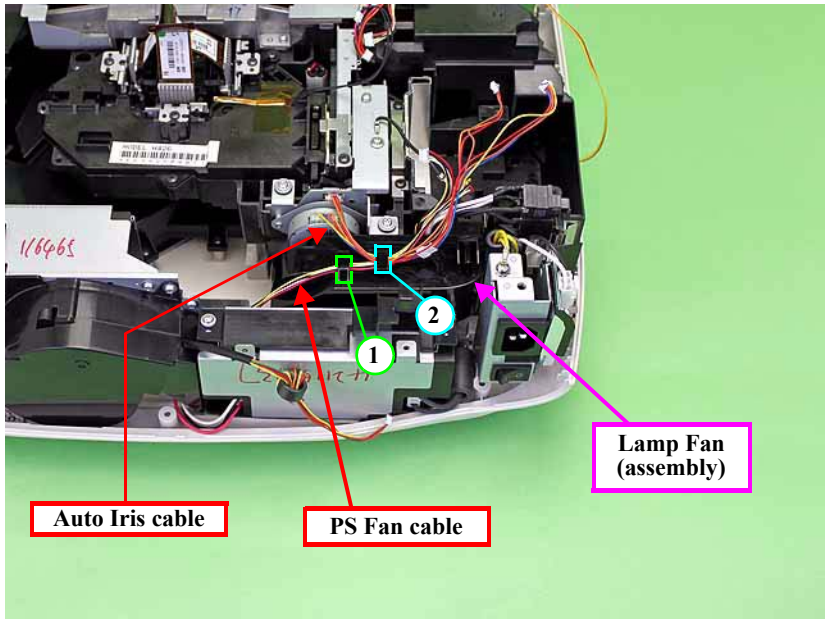
1. **Pull out the cable from between the Inner EX Duct and the Lamp Fan (assembly) (1).**
2. **Route the AC Cable as shown below and secure the cable with two feet (2) of the Lamp Fan (assembly).**



⚠ CAUTION

Route the PS Fan cable and Auto Iris cable as shown in the figure below.

1. **Route the PS Fan cable through the hook (1) on the Lamp Fan (assembly).**
2. **Route both PS Fan cable and Auto Iris cable through the hook (2) on the Lamp Fan (assembly).**



3.3.9.1 Lamp Fan

Standard Operation Time	20 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. *Remove the Lamp Fan (assembly).* *(p.84)*
10. Remove the four screws (◯), and remove the Lamp Fan Holder A and the Lamp Fan.
11. Remove the Lamp Duct Seal from the Lamp Fan Holder A.
12. Remove the Light Valve Cushion (x3) from the Lamp Fan Holder A.
13. Remove the Lamp Fan Holder Cushion from the Lamp Fan.
14. Remove the Floating Cushion (x2) from the Lamp Fan.
15. Remove the Light Valve Cushion (x3) from the Lamp Fan Holder B.

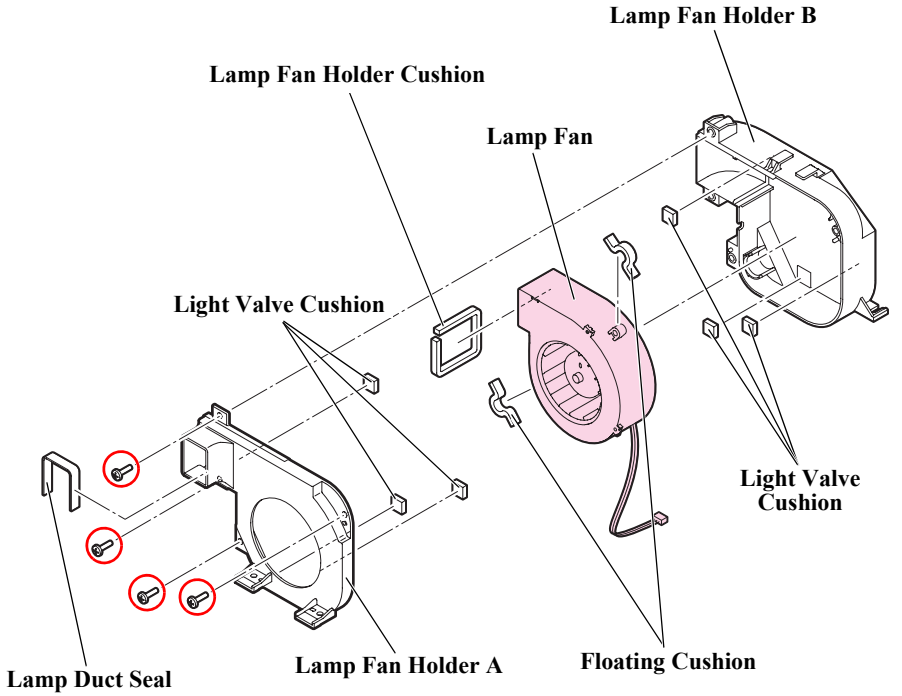
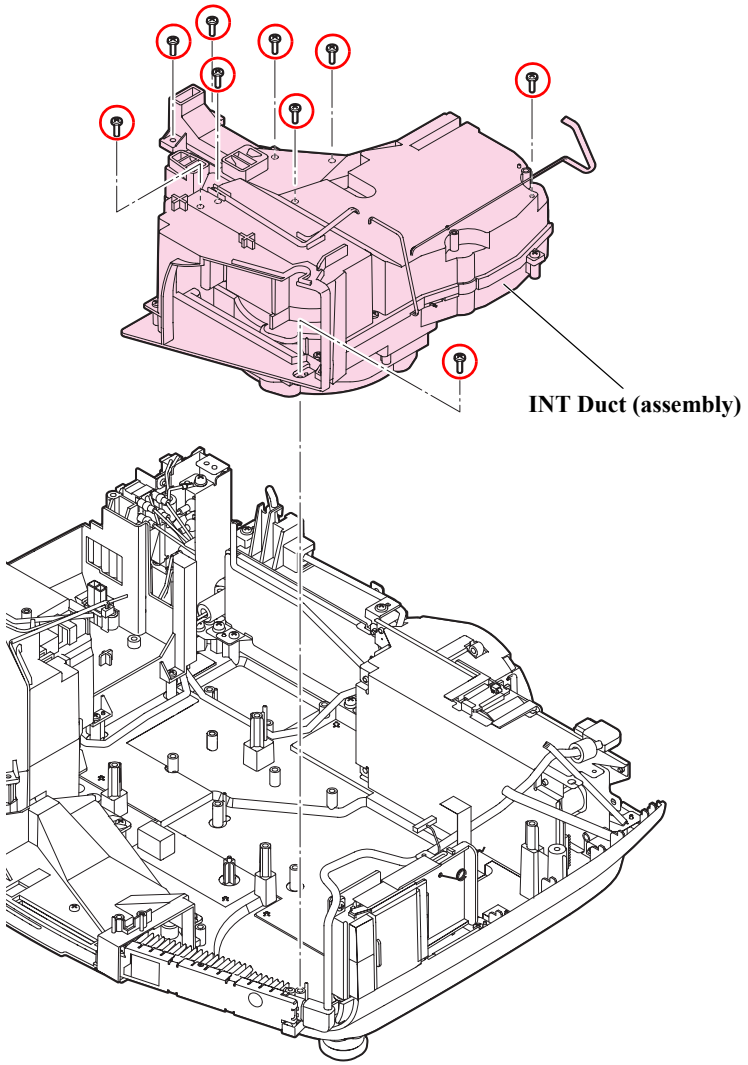


Figure 3-24.

3.3.10 INT Duct (assembly)

Standard Operation Time	20 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. Remove the nine screws (◯), and remove the INT Duct (assembly).

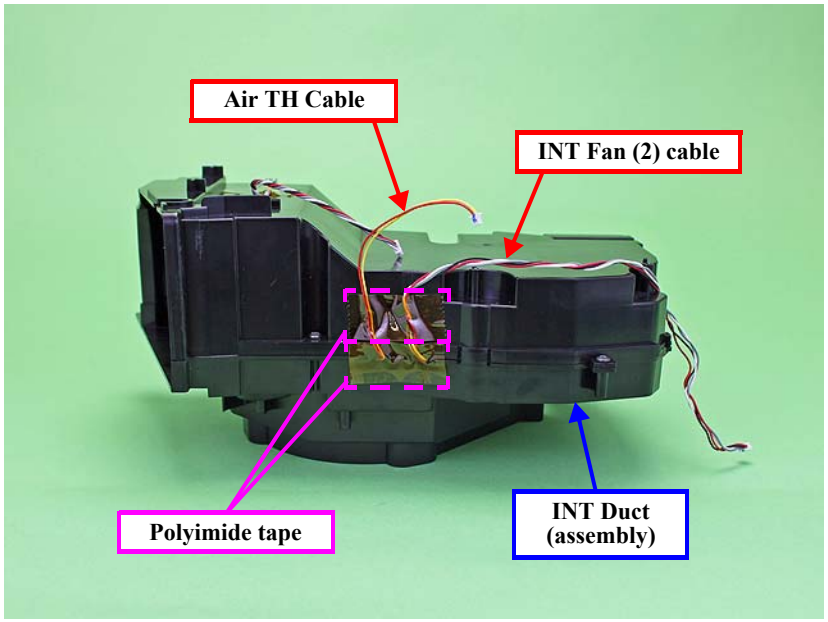


◯ C.B.P-TITE SCREW,3X10,F/ZB-3C

Figure 3-25.

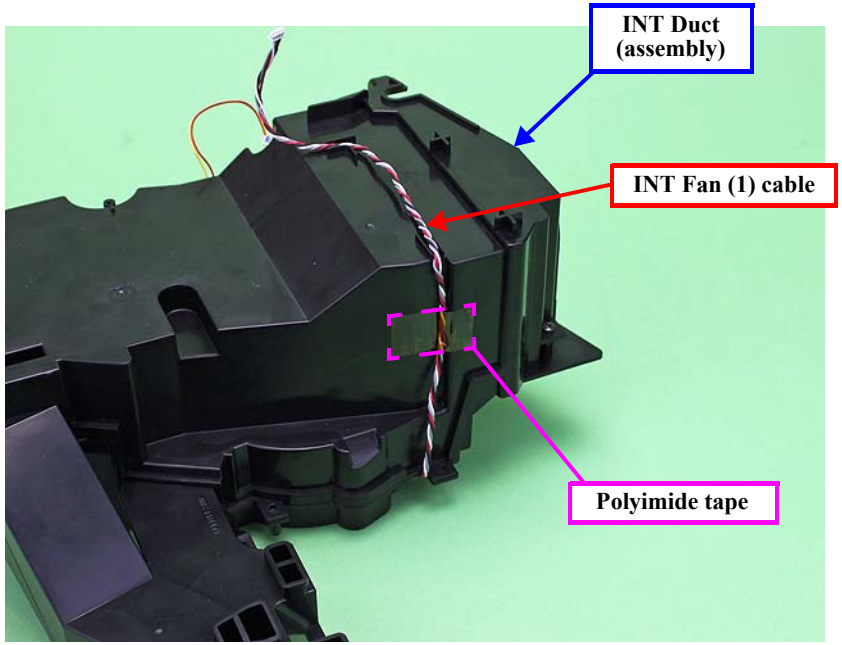
⚠ CAUTION

Secure the Air TH Cable and INT Fan (2) cable on the Upper INT Duct and LV Duct at two parts with polyimide tape (25(W) x 40(L)mm x 2 pieces).



⚠ CAUTION

Route the INT Fan (1) cable as shown below and secure it on the side of INT Duct (assembly) with polyimide tape.



3.3.10.1 INT Fan (1)/(2)

Standard Operation Time	22 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. *Remove the INT Duct (assembly).* *(p.87)*
10. Remove the four screws (◯), and remove the Upper INT Duct.
11. Remove the following parts from the Upper INT Duct.
    - INT Seal D (x2)
    - INT Seal A
12. Remove the INT Fan (2).
13. Remove the following parts from the INT Fan (2).
    - Light Valve Cushion (x3)
    - EX Fan Cushion (x3)
    - INT Seal A

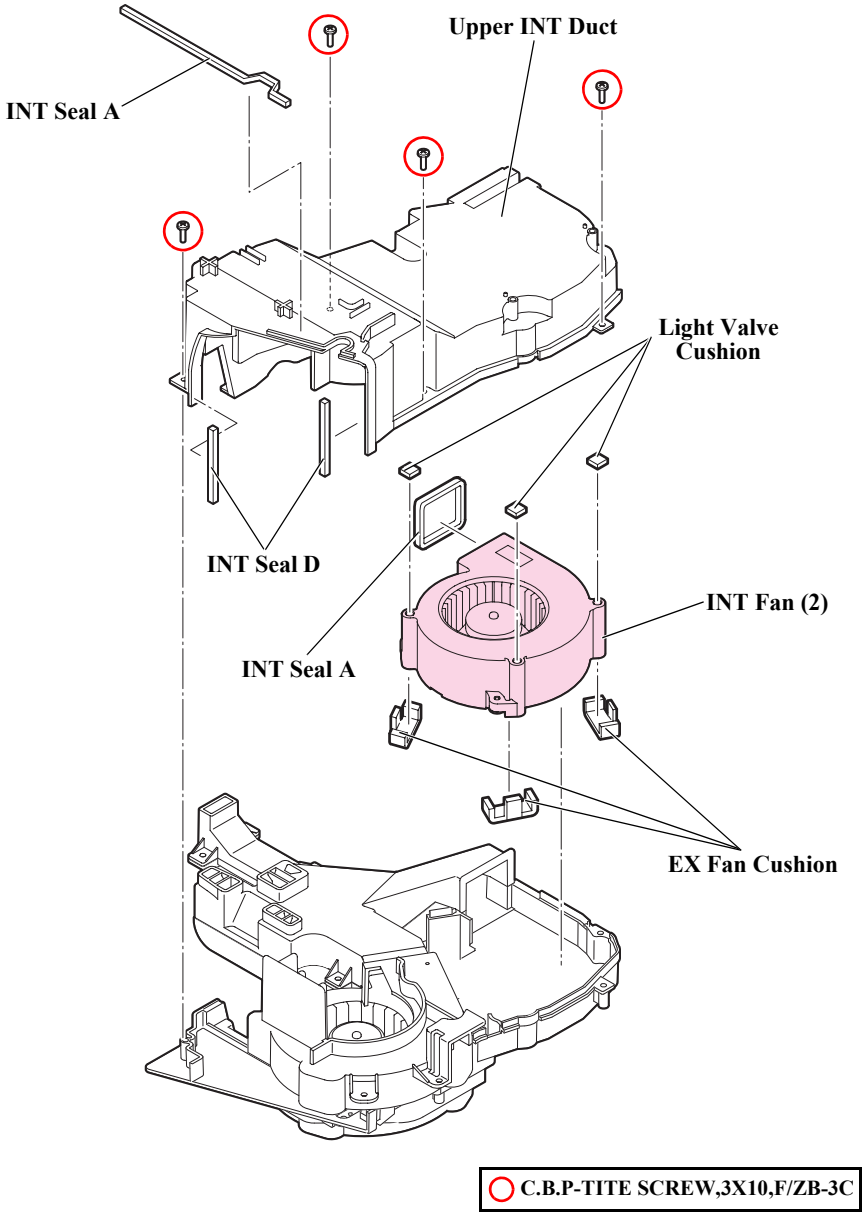


Figure 3-26.

14. Remove the two screws (◯), and remove the LV Duct.
15. Remove the LG Lower Seal Cushion from the LV Duct.
16. Remove the INT Seal D from the LV Duct.
17. Remove the INT Fan (1) from the Lower INT Duct.
18. Remove the following parts from the INT Fan (1).
    - Light Valve Cushion (x3)
    - EX Fan Cushion (x3)
    - INT Seal A

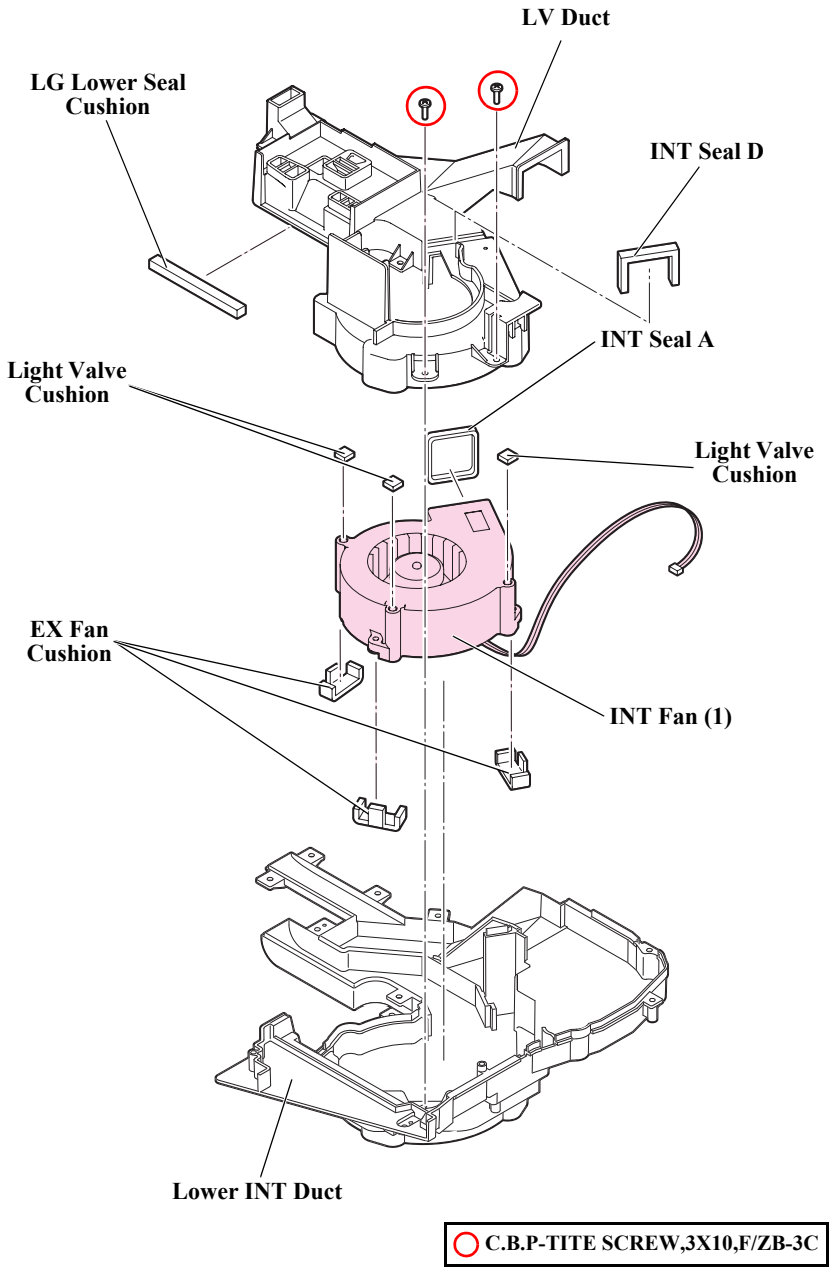


Figure 3-27.

3.3.10.2 TH1 Board

Standard Operation Time	22 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. *Remove the INT Duct (assembly).* *(p.87)*
10. *Remove the INT Fan (1)/(2).* *(p.89)*
11. Remove the TH1 Board.
12. Remove the Air TH Cable from the TH1 Board.
13. Remove the following parts from the Lower INT Duct.
    - INT Seal A
    - INT Seal E (x2)
    - INT Seal F
    - INT Seal G (x2)
    - INT Seal H

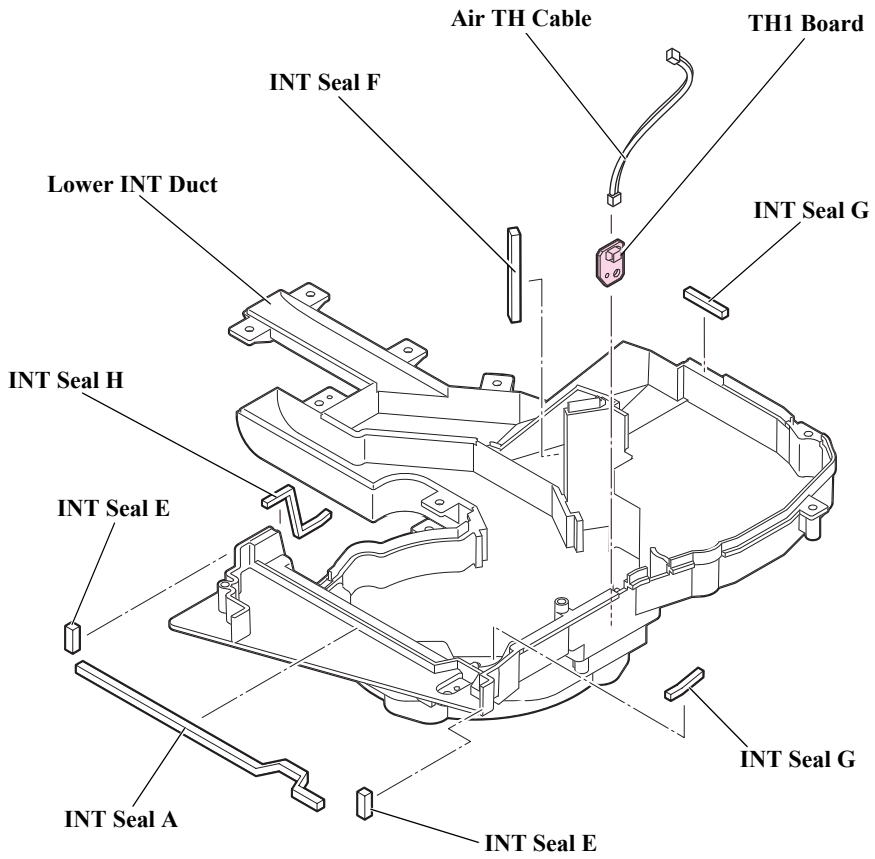


Figure 3-28.

3.3.11 EX Duct (assembly)

Standard Operation Time	19 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. Remove the three screws (○), and remove the EX Duct (assembly).

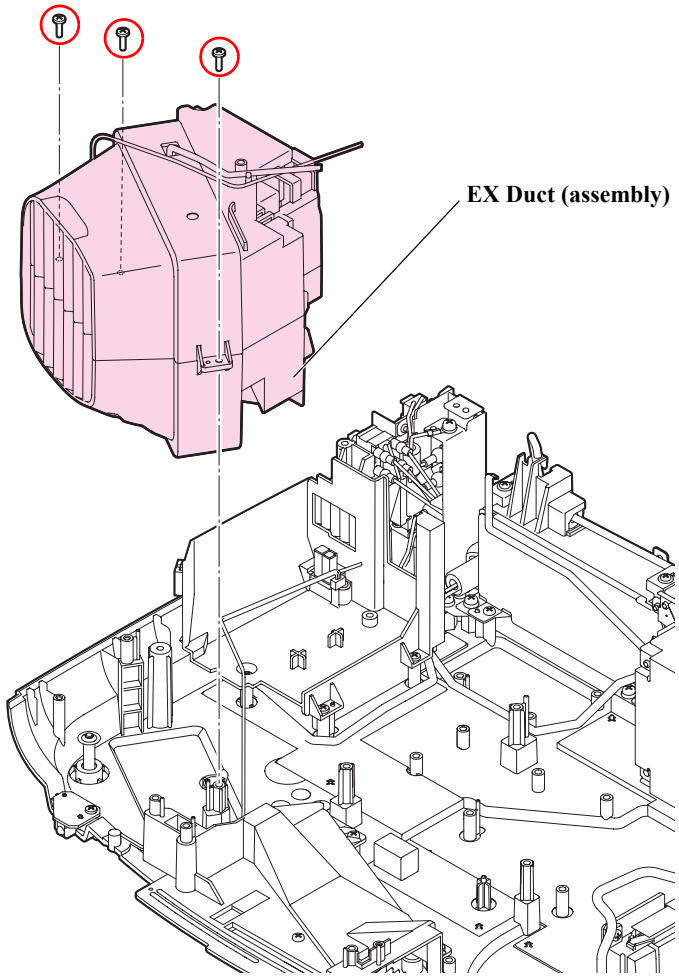


Figure 3-29.

3.3.11.1 TH2 Board / EX Fan

Standard Operation Time	20 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. *Remove the EX Duct (assembly).* *(p.92)*
10. Remove the two screws (◯), and remove the Upper EX Duct.
11. Remove the EX Fan.
12. Remove the EX Fan Cushion (x8) from the EX Fan.
13. Remove the TH2 Board from the Lower EX Duct.
14. Remove the Lamp TH Cable from the TH2 Board.

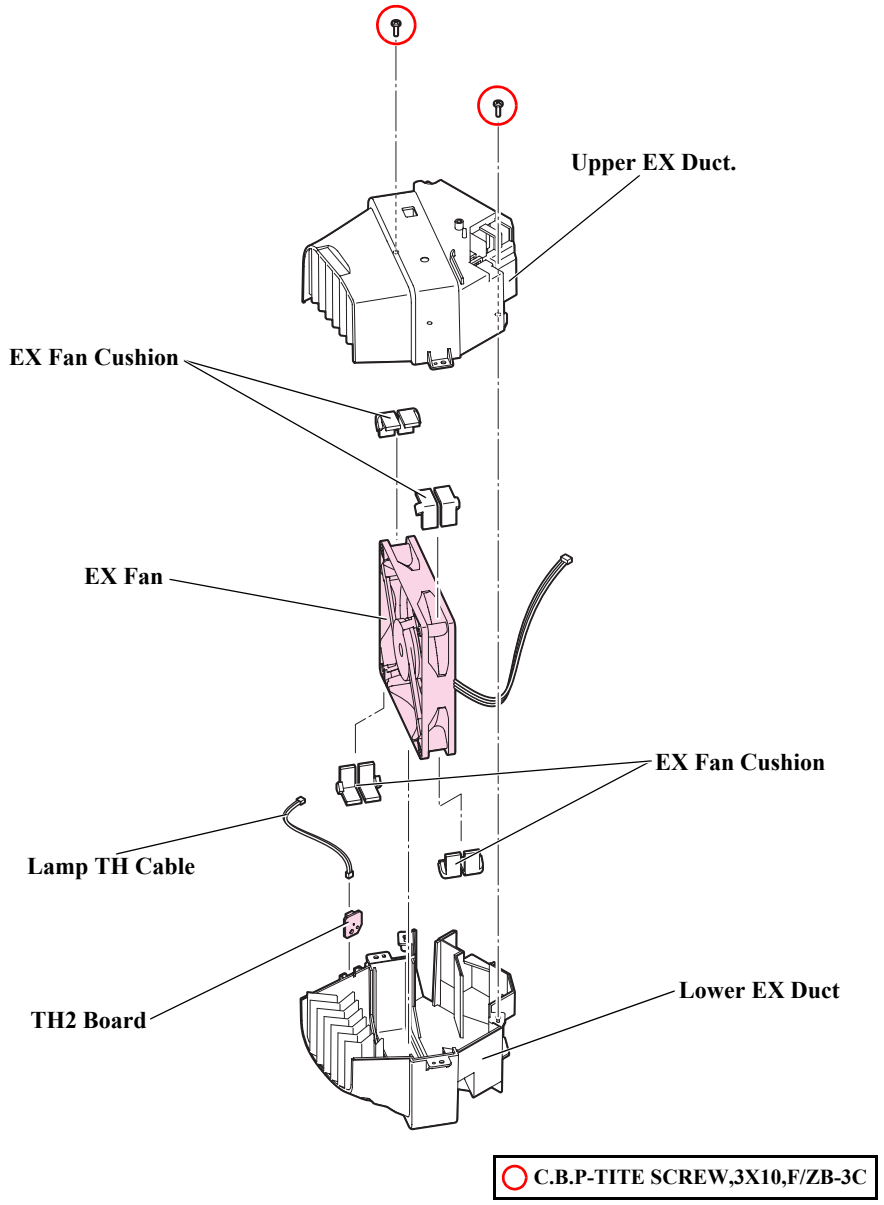
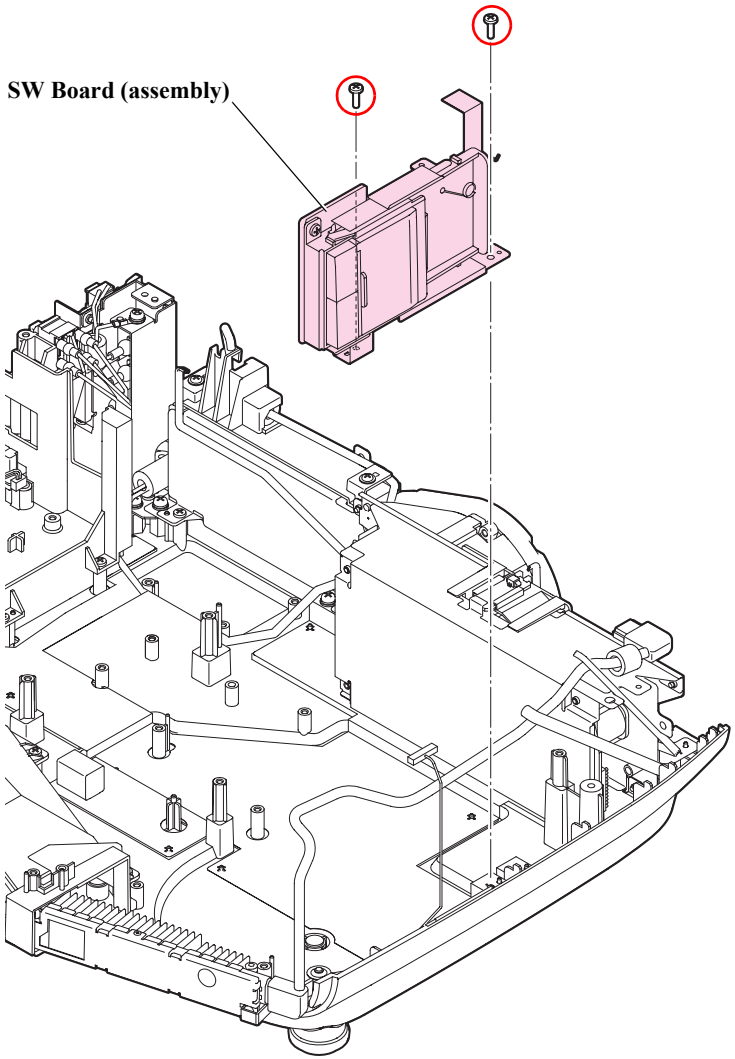


Figure 3-30.

3.3.12 SW Board (assembly)

Standard Operation Time	20 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. *Remove the INT Duct (assembly).* *(p.87)*
10. Remove the two screws (◯), and remove the SW Board (assembly).



◯ C.B.P-TITE SCREW,3X10,F/ZB-3C

Figure 3-31.

3.3.12.1 SW Board

Standard Operation Time	23 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. *Remove the INT Duct (assembly).* *(p.87)*
10. *Remove the SW Board (assembly).* *(p.94)*
11. Remove the two screws (◯), and remove the Control Panel Case.
12. Remove the following parts from the Control Panel Case.
    - Control Button A
    - Control Button B
    - Control Button C
    - Control Panel Cover
    - Control Panel Cover Spring
    - Button Cushion (x4)
13. Remove the SW Cable from the SW Board.
14. Remove the SW Board Shade Sheet from the SW Board.
15. Remove the two screws (◯), and remove the SW Board.
16. Remove the following parts from the Control Panel Frame.
    - Upper Control Sheet
    - Lower Control Sheet

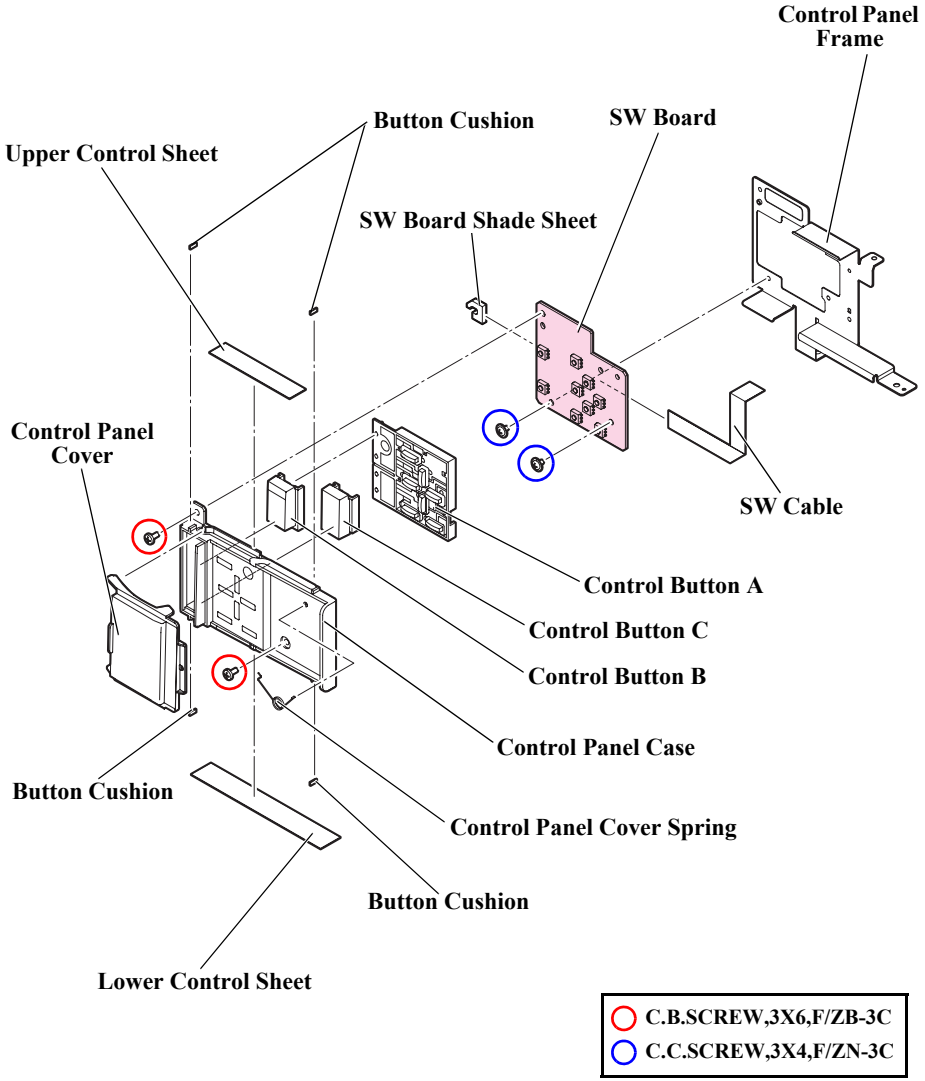
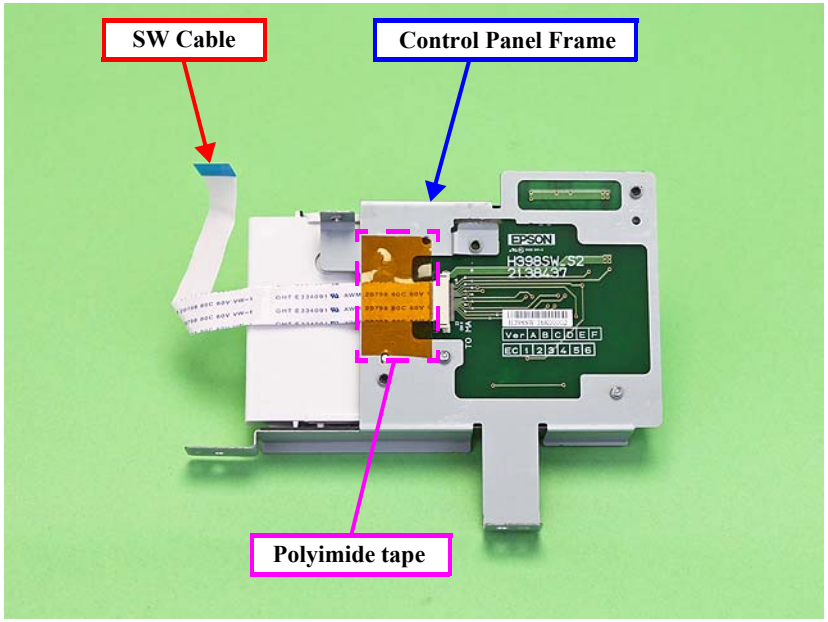


Figure 3-32.

⚠ CAUTION

Secure the SW Cable on the Control Panel Frame at the point shown in the figure with polyimide tape (25(W) x 40(L)mm).



3.3.13 Inner EX Duct

Standard Operation Time	22 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. *Remove the Lamp Fan (assembly).* *(p.84)*
10. *Remove the EX Duct (assembly).* *(p.92)*
11. Remove the five screws (○)(○), release the Lamp Connector, Safety Switch, and Interlock Switch, and then remove the Inner EX Duct.
12. Remove the two screws (○), and remove the Duct Shade Plate.

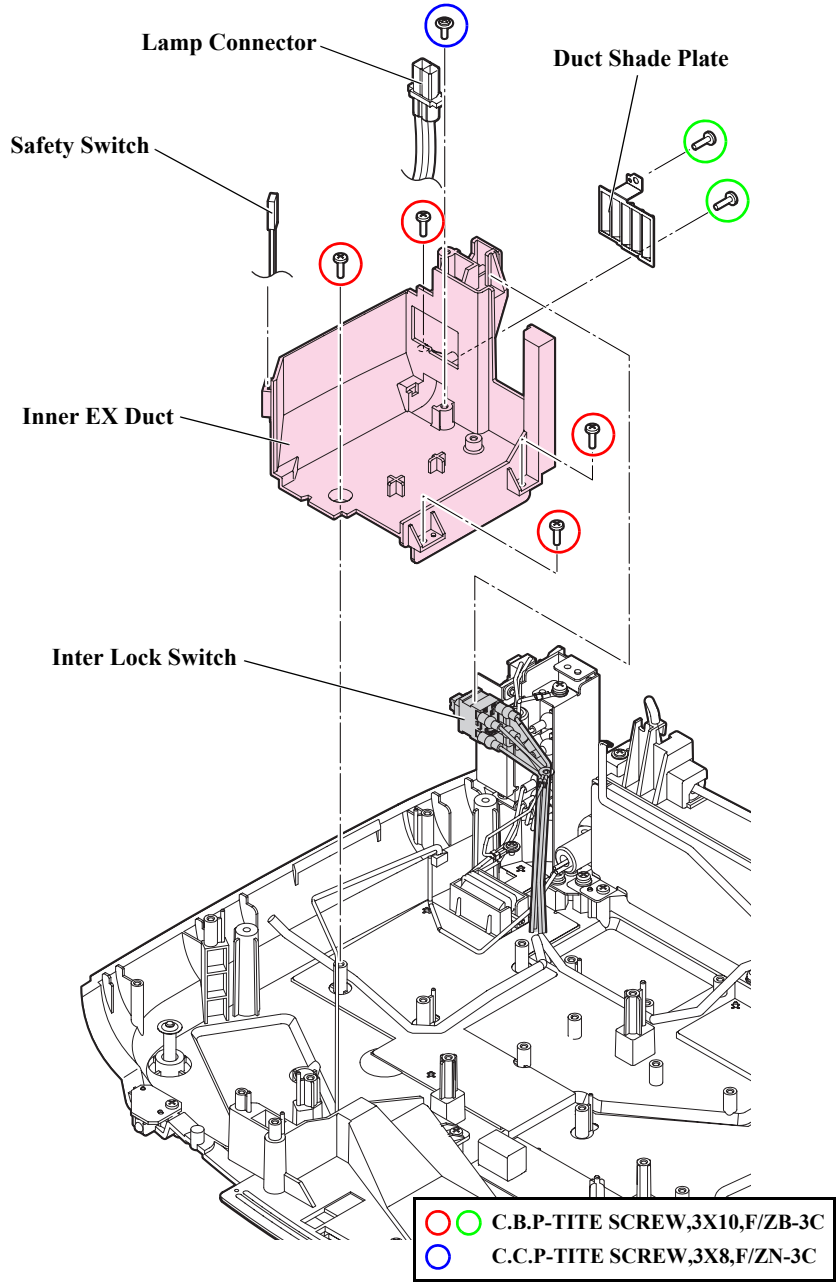
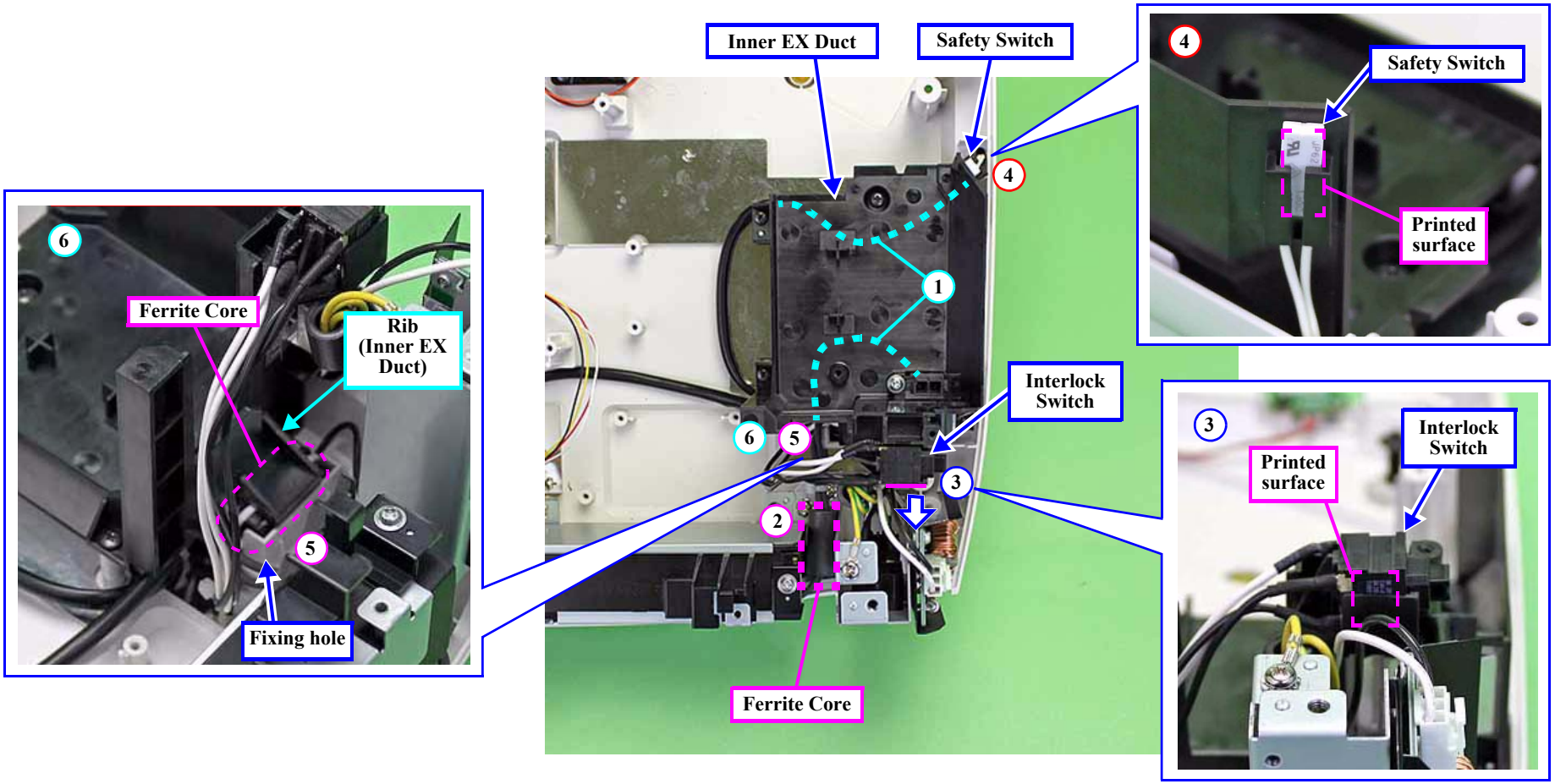


Figure 3-33.

⚠ CAUTION

Install the Safety Switch, Interlock SW and ferrite core and route the excess portion of the cables as shown below.

1. **Route the excess portion of the cables under the Inner EX Duct (1), and set the ferrite core in the position (2) shown below.**
2. **Set the Interlock Switch with the printed surface in the direction of the arrow (3).**
3. **Set the Safety Switch so you can see the printed surface as shown in the figure.(4)**
4. **Set the ferrite core into the fixing hole (5) shown below, and secure it with the rib of the Inner EX Duct.(6)**



3.3.14 RCF Board

Standard Operation Time	19 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. *Remove the EX Duct (assembly).* *(p.92)*
10. Remove the screw (◯), and remove the RCF Board.
11. Remove the RC Front Cable from the RCF Board.

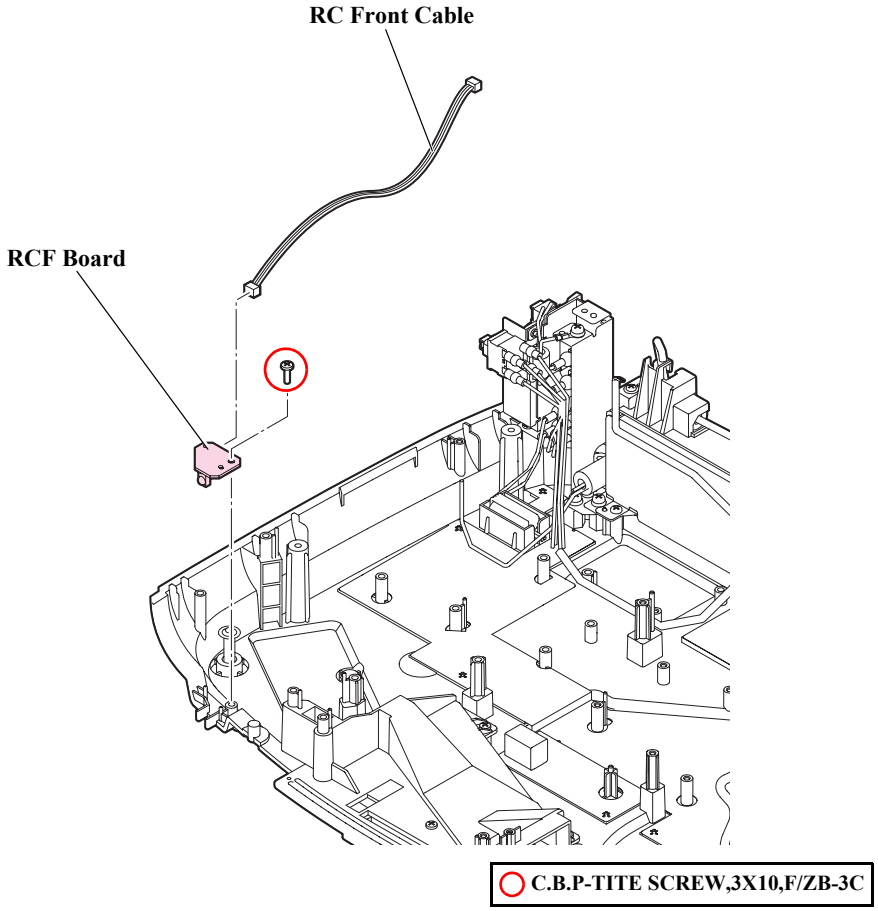
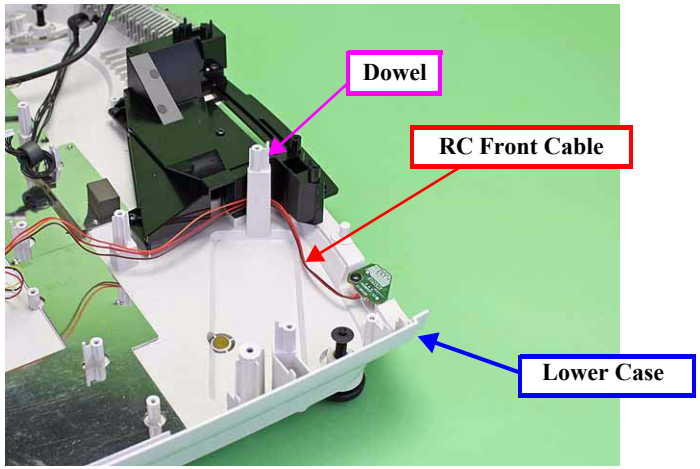


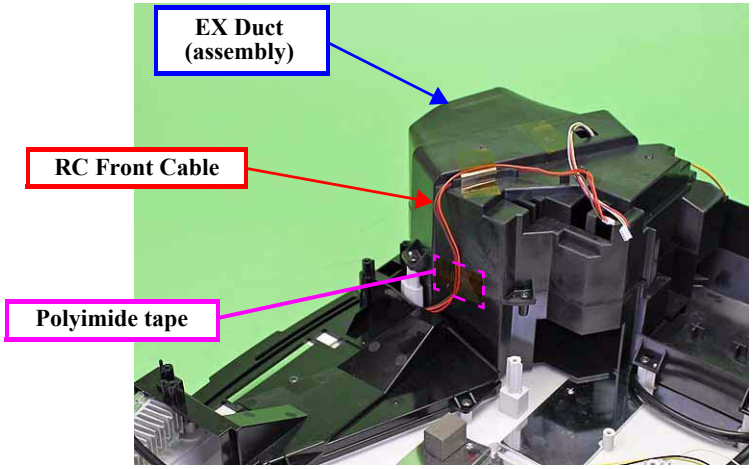
Figure 3-34.

⚠ CAUTION

Route the RC Front Cable as shown in the figure below.

1. **Route the cable outside the boss on the Lower Case.**
2. **After installing the EX Duct (assembly), secure the RC Front Cable on the EX Duct (assembly) at the point shown in the figure with polyimide tape.**





3.3.15 Rx Wireless HD / HDMI Cable (EH-TW9000W only)

Standard Operation Time	23 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. *Remove the INT Duct (assembly).* *(p.87)*
10. Remove the five screws (○), and remove the WiHD Duct.
11. Remove the three screws (○)(○), and remove the WiHD Plate and the Rx Wireless HD.
12. Remove the following parts from the Rx Wireless HD.
    - HDMI Cable
    - WiHD Cable
13. Remove the Gasket 10-10-20 from the WiHD Cable.

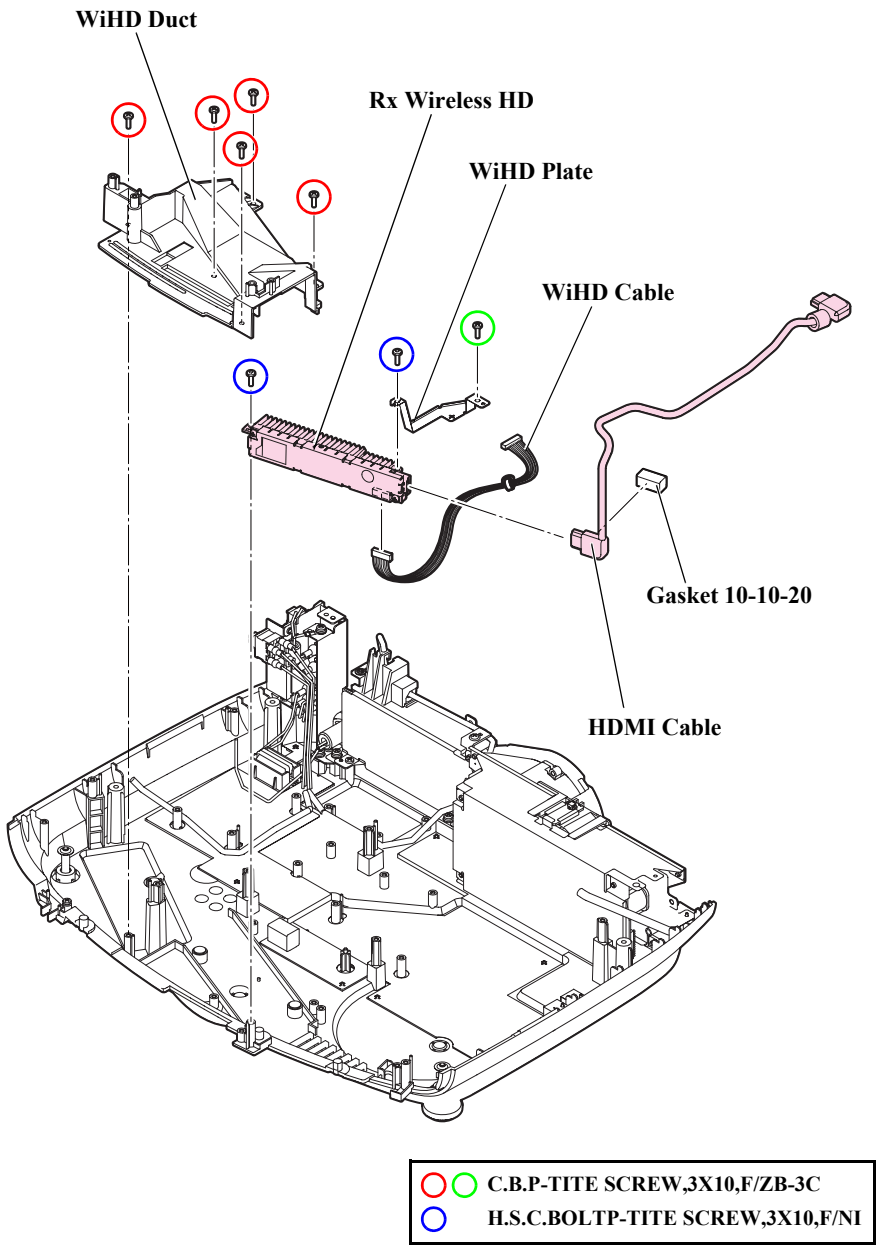


Figure 3-35.

3.3.16 Front Foot

Standard Operation Time	23 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. *Remove the INT Duct (assembly).* *(p.87)*
10. *Remove the EX Duct (assembly).* *(p.92)*

⚠WARNING

Make sure to use needlenose pliers or a nipper when removing the Push Nut in the following steps. Removing and attaching the Push Nut repeatedly may cause the deformation of the Push Nut.

11. Remove the Push Nut using needlenose pliers or a nipper.
12. Turn the Front Foot counterclockwise and remove it.
13. Remove the Foot Rubber from the Front Foot.

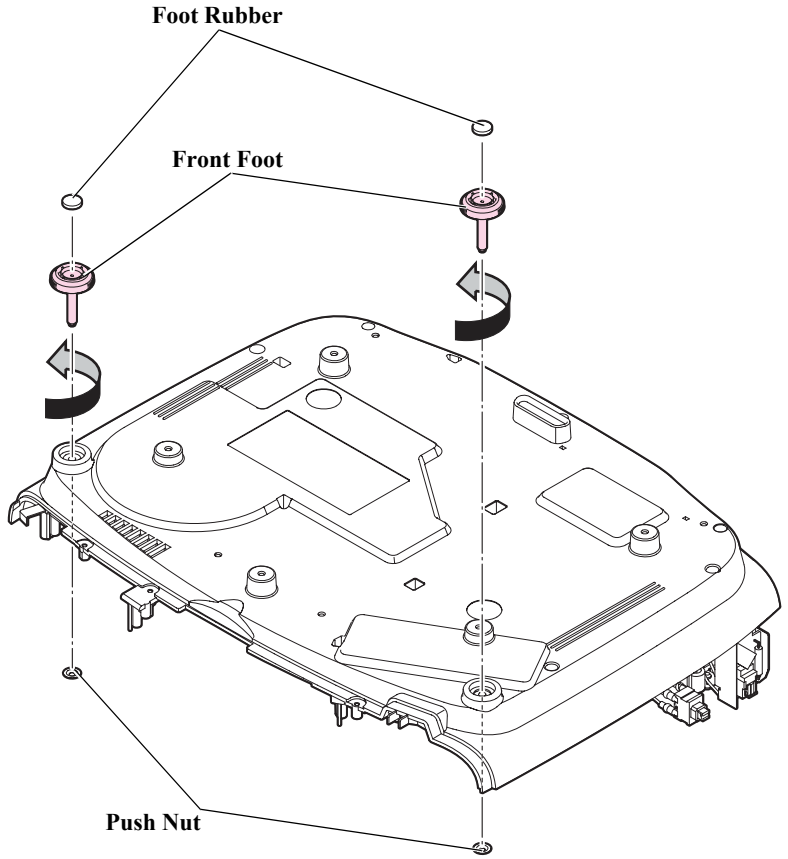


Figure 3-36.

3.3.17 Power Supply (assembly)

Standard Operation Time	20 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. Remove the five screws (◯)(◯)(◯).
10. Disconnect the BA Cable from the Ballast (assembly).
11. Disconnect the AC Cable from the Power Supply (assembly), and remove the Power Supply (assembly).

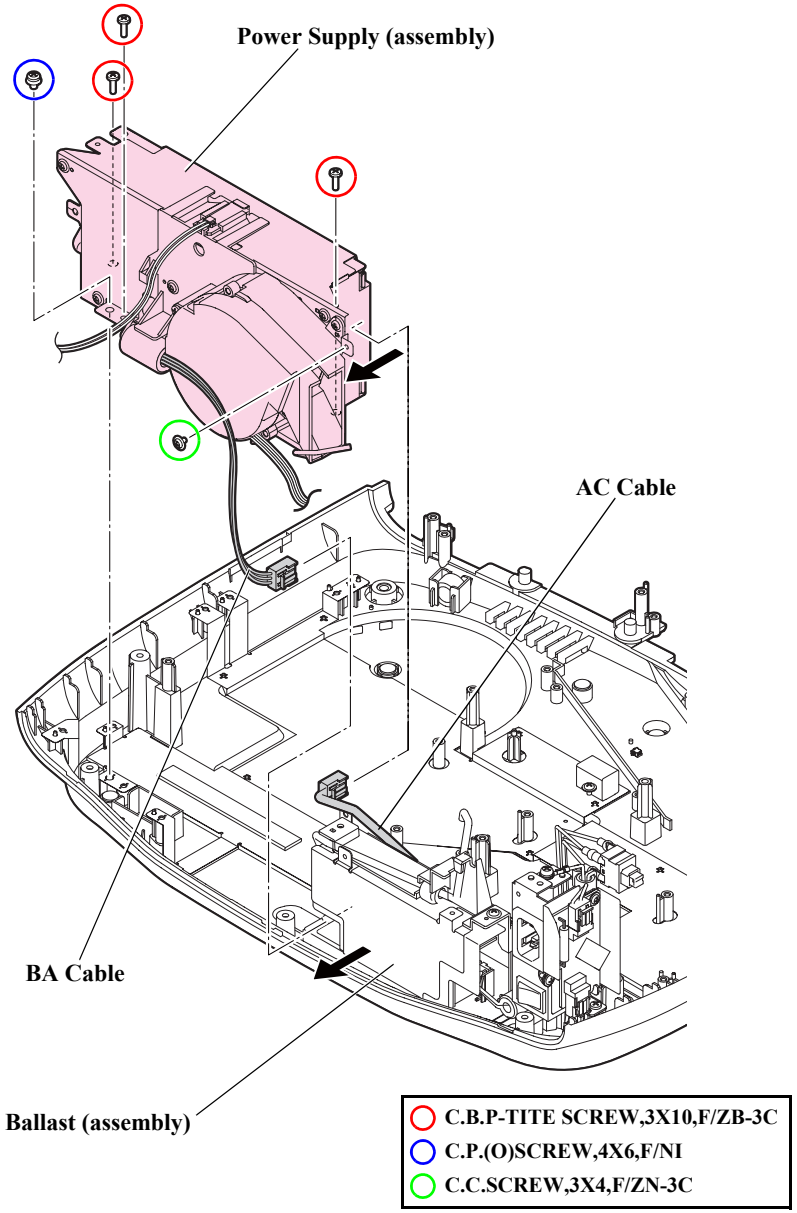
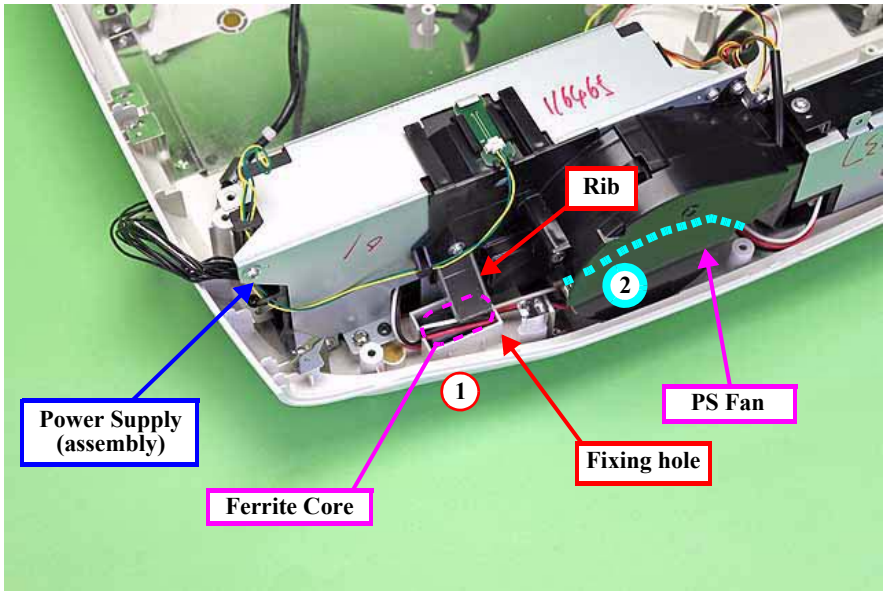


Figure 3-37.

⚠ CAUTION

Route the Power Supply (assembly) cable and secure the ferrite core as shown in the figure.

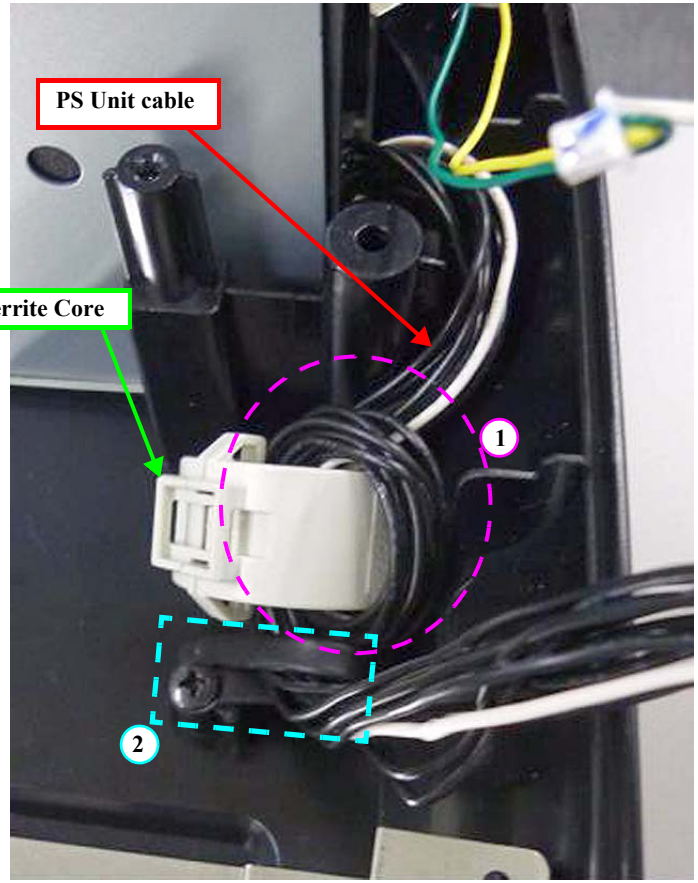
1. **Set the ferrite core into the fixing hole and secure it with the rib (1) of the Power Supply (assembly).**
2. **Route the Power Supply (assembly) cable under the fan of the Power Supply (assembly) (2).**



⚠ CAUTION

Route the PS Unit cable as follows.

1. **Route the cable through the ferrite core (1) two times.**
2. **Secure the cable with the Cable Clip.**



3.3.17.1 TH3 Board

Standard Operation Time	21 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. *Remove the Power Supply (assembly).* *(p.103)*
10. Remove the three screws (◯), and remove the BA Fan Case.
11. Remove the TH3 Board.
12. Remove the PS TH Cable from the TH3 Board.

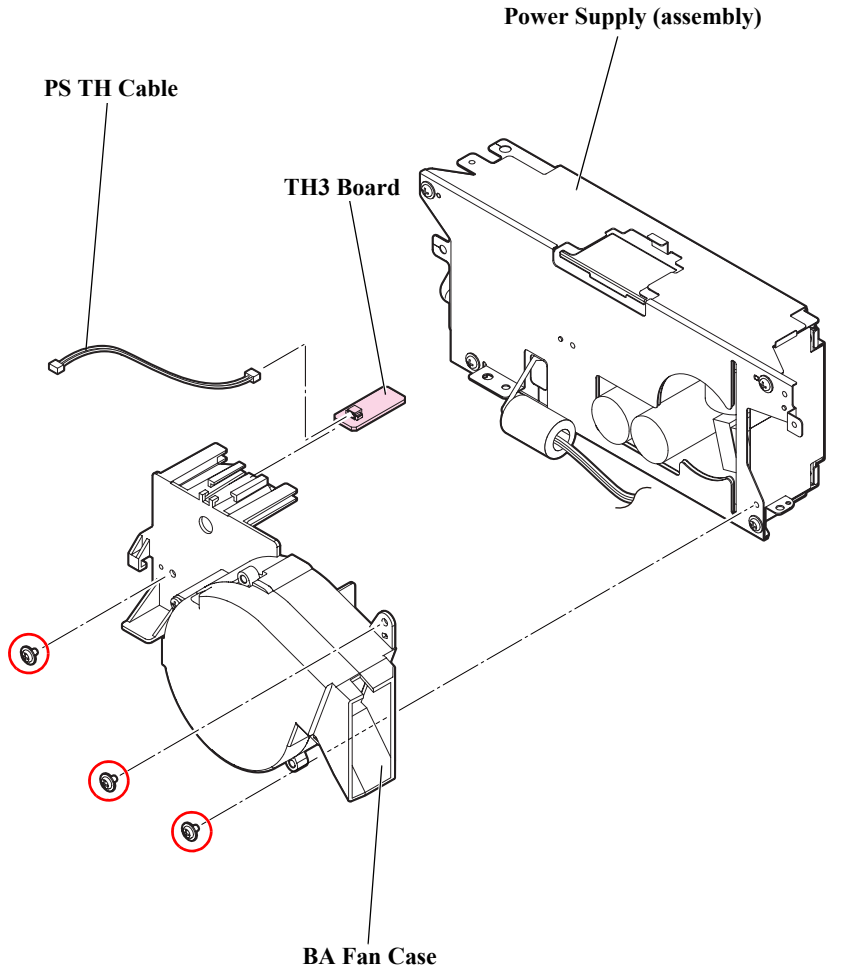


Figure 3-38.

3.3.17.2 PS Fan

Standard Operation Time	21 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. *Remove the Power Supply (assembly).* *(p.103)*
10. *Remove the TH3 Board.* *(p.105)*
11. Remove the two screws (○), and remove the BA Fan Cover from the BA Fan Case.
12. Remove the Light Valve Cushion (x2) from the BA Fan Cover.
13. Remove the PS Fan.
14. Remove the Light Valve Cushion (x7) from the BA Fan Case.

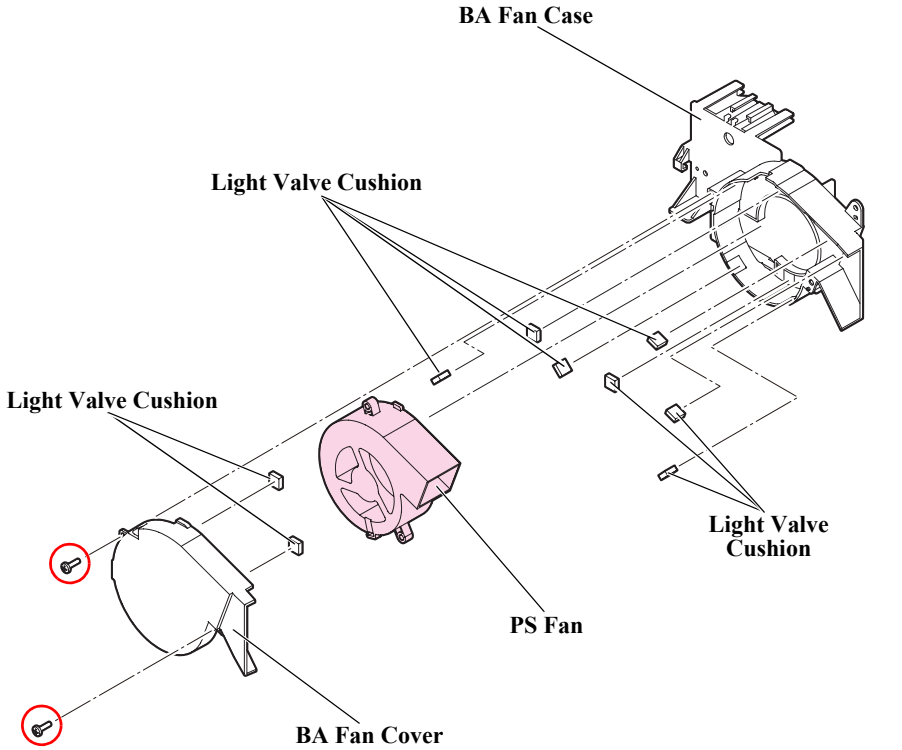


Figure 3-39.

3.3.17.3 PS Unit

Standard Operation Time	25 Min.

This part is designated as the Safety Device. When removing/ replacing the part for repair, be sure to refer to "3.4 Safety Check after Servicing (p.113)". According to the instructions in it, handle the part and perform the procedure after servicing.

1. *Remove the Air Filter. (p.64)*
2. *Remove the Lamp. (p.64)*
3. *Remove the Rear Case. (p.66)*
4. *Remove the Front Case. (p.67)*
5. *Remove the Upper Case. (p.68)*
6. *Remove the MA Board (assembly). (p.70)*
7. *Remove the Lens Shutter. (p.77)*
8. *Remove the Optical Engine (assembly). (p.78)*
9. *Remove the Power Supply (assembly). (p.103)*
10. *Remove the TH3 Board. (p.105)*
11. *Remove the PS Fan. (p.106)*
12. Remove the four screws (◯), and remove the PS Frame B.
13. Remove the four screws (◯).
14. Open the PS Insulation Sheet, and remove the PS Unit.
15. Remove the BA Cable from the PS Unit.
16. Remove the Ferrite Core from the PS Unit.
17. Remove the PS Insulation Sheet from the PS Frame A.

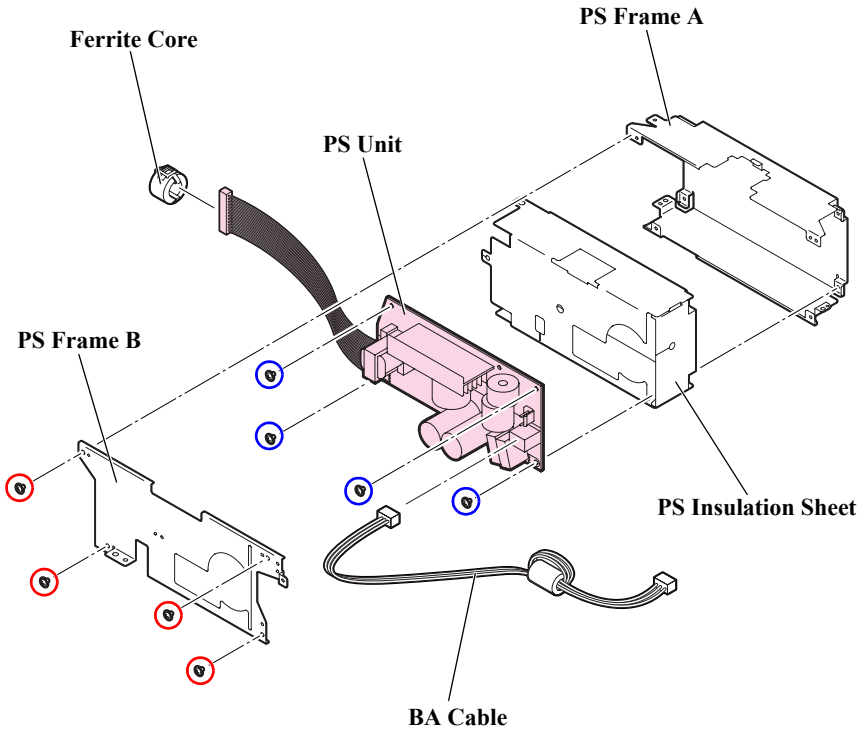


Figure 3-40.

3.3.18 Ballast (assembly)

Standard Operation Time	25 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. *Remove the Lamp Fan (assembly).* *(p.84)*
10. *Remove the EX Duct (assembly).* *(p.92)*
11. *Remove the Inner EX Duct.* *(p.97)*
12. *Remove the Power Supply (assembly).* *(p.103)*
13. Remove the four screws (◯)(◯), and remove the Ballast (assembly).

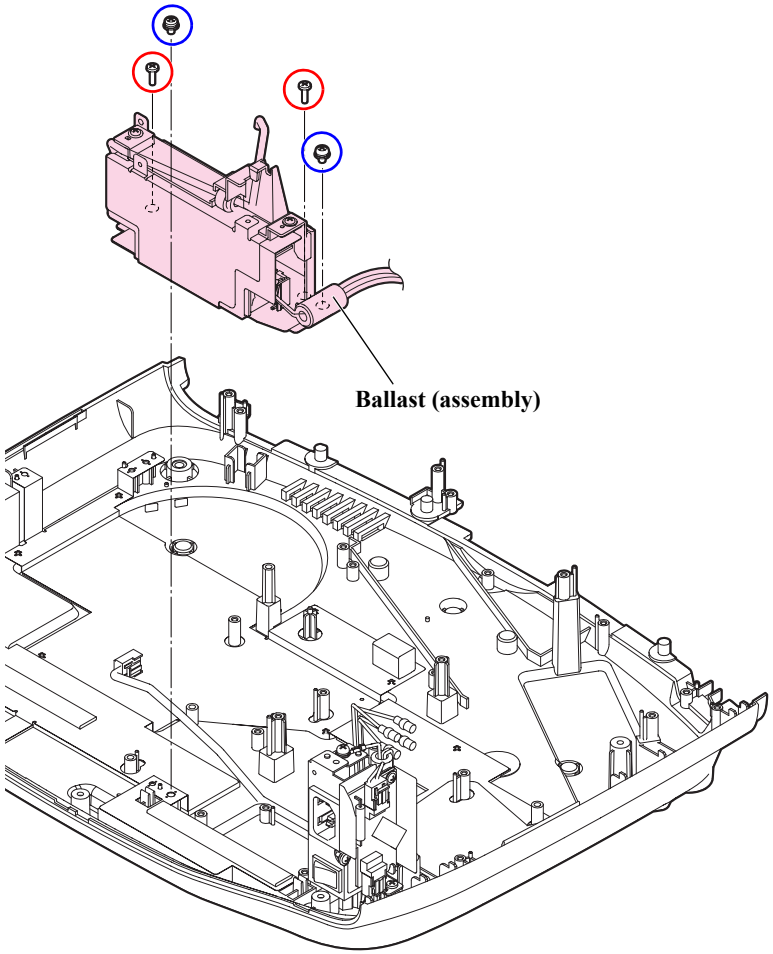


Figure 3-41.

3.3.18.1 BA Unit / SCI Cable

Standard Operation Time	26 Min.

Safety device

BA Unit is designated as the Safety Device. When removing/ replacing the part for repair, be sure to refer to "3.4 Safety Check after Servicing (p.113)". According to the instructions in it, handle the part and perform the procedure after servicing.

1. *Remove the Air Filter. (p.64)*
2. *Remove the Lamp. (p.64)*
3. *Remove the Rear Case. (p.66)*
4. *Remove the Front Case. (p.67)*
5. *Remove the Upper Case. (p.68)*
6. *Remove the MA Board (assembly). (p.70)*
7. *Remove the Lens Shutter. (p.77)*
8. *Remove the Optical Engine (assembly). (p.78)*
9. *Remove the Lamp Fan (assembly). (p.84)*
10. *Remove the EX Duct (assembly). (p.92)*
11. *Remove the Inner EX Duct. (p.97)*
12. *Remove the Power Supply (assembly). (p.103)*
13. *Remove the Ballast (assembly). (p.108)*
14. Remove the two screws (◯), and remove the BA Cover.
15. Remove the BA Frame.
16. Remove the BA Insulation Sheet.
17. Remove the following parts from the BA Unit.
    - SCI Cable
    - Lamp BA Cable

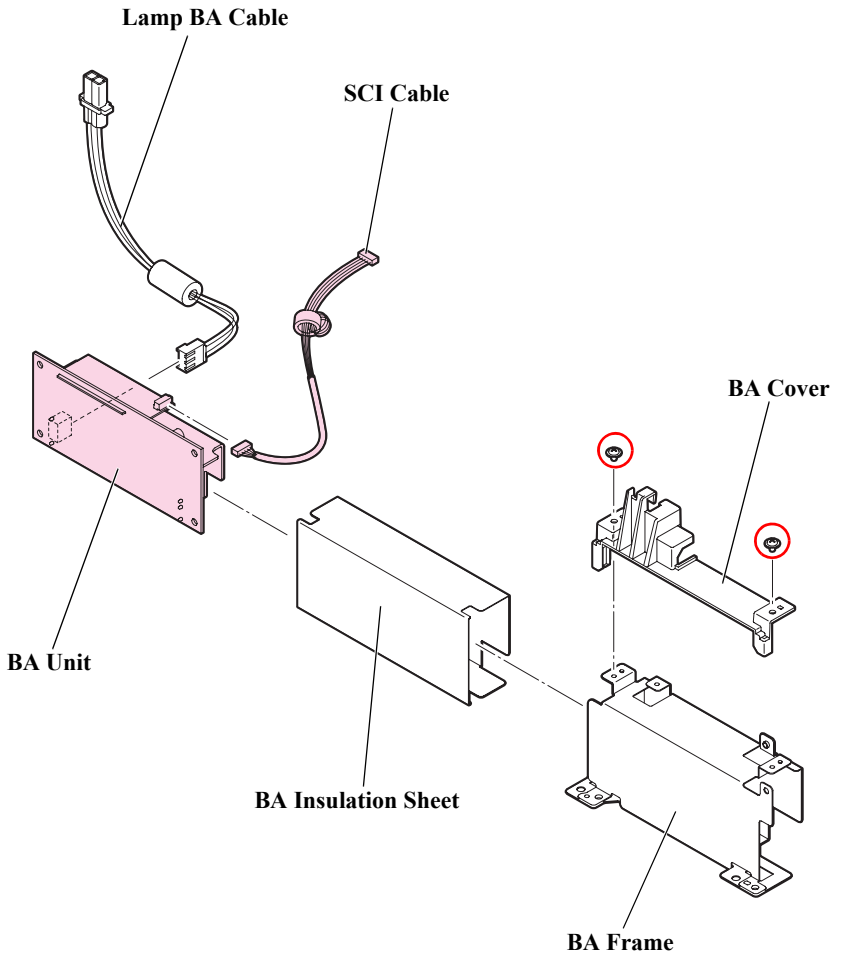


Figure 3-42.

3.3.19 Filter Board Unit

Standard Operation Time	26 Min.

Safety device

This part is designated as the Safety Device. When removing/ replacing the part for repair, be sure to refer to "3.4 Safety Check after Servicing (p.113)". According to the instructions in it, handle the part and perform the procedure after servicing.

1. *Remove the Air Filter. (p.64)*
2. *Remove the Lamp. (p.64)*
3. *Remove the Rear Case. (p.66)*
4. *Remove the Front Case. (p.67)*
5. *Remove the Upper Case. (p.68)*
6. *Remove the MA Board (assembly). (p.70)*
7. *Remove the Lens Shutter. (p.77)*
8. *Remove the Optical Engine (assembly). (p.78)*
9. *Remove the Lamp Fan (assembly). (p.84)*
10. *Remove the EX Duct (assembly). (p.92)*
11. *Remove the Inner EX Duct. (p.97)*
12. *Remove the Power Supply (assembly). (p.103)*
13. *Remove the Ballast (assembly). (p.108)*
14. Disconnect connector (1) and (2) of the AC Cable from the Filter Board Unit.
15. Remove the screw (○), and remove the Filter Board Unit.
16. Remove the screw (○), and remove the Filter Board Insulation Sheet.

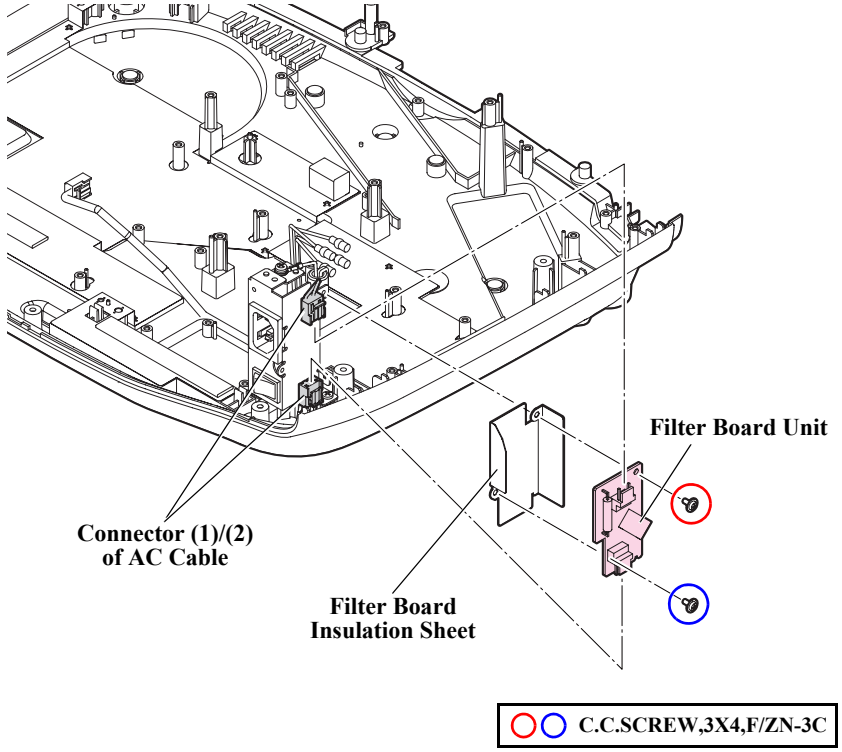


Figure 3-43.

3.3.20 AC Cable

Standard Operation Time	27 Min.

Safety device

This part is designated as the Safety Device. When removing/ replacing the part for repair, be sure to refer to "3.4 Safety Check after Servicing (p.113)". According to the instructions in it, handle the part and perform the procedure after servicing.

1. *Remove the Air Filter. (p.64)*
2. *Remove the Lamp. (p.64)*
3. *Remove the Rear Case. (p.66)*
4. *Remove the Front Case. (p.67)*
5. *Remove the Upper Case. (p.68)*
6. *Remove the MA Board (assembly). (p.70)*
7. *Remove the Lens Shutter. (p.77)*
8. *Remove the Optical Engine (assembly). (p.78)*
9. *Remove the Lamp Fan (assembly). (p.84)*
10. *Remove the EX Duct (assembly). (p.92)*
11. *Remove the Inner EX Duct. (p.97)*
12. *Remove the Power Supply (assembly). (p.103)*
13. *Remove the Ballast (assembly). (p.108)*
14. *Remove the Filter Board Unit. (p.110)*
15. Remove the four screws (◯)(◯), and remove the AC Cable.

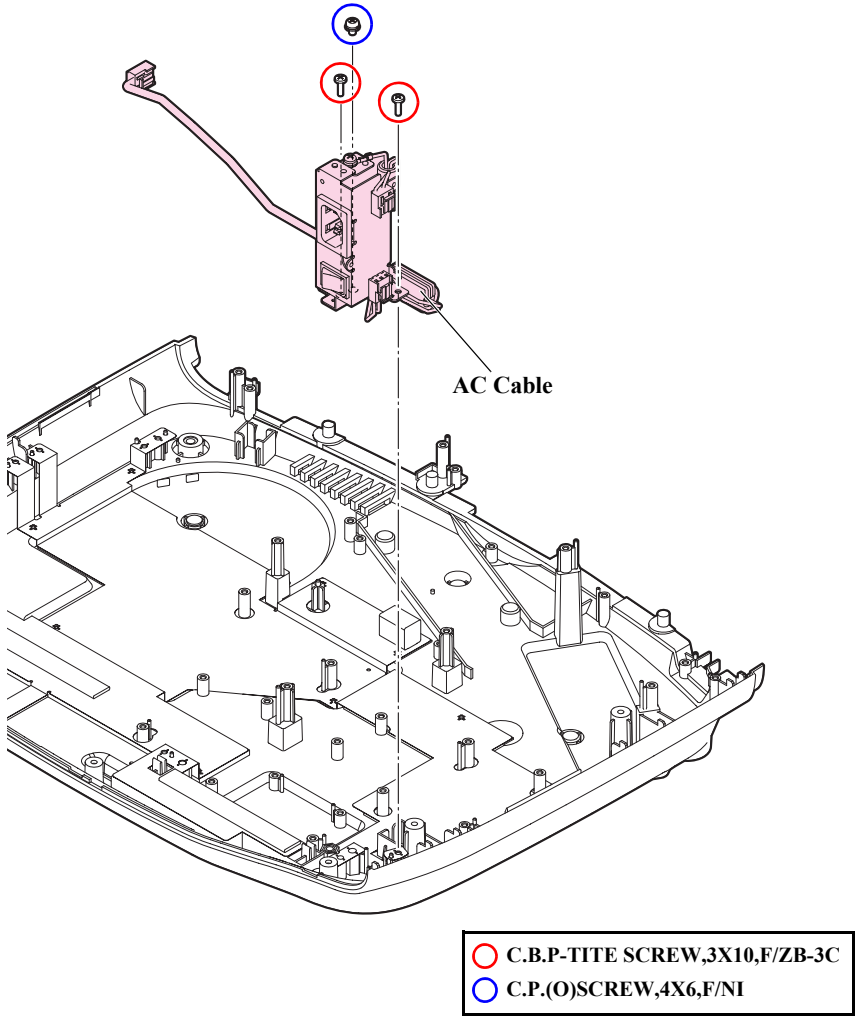


Figure 3-44.

3.3.21 Lower Case

Standard Operation Time	37 Min.

1. *Remove the Air Filter.* *(p.64)*
2. *Remove the Lamp.* *(p.64)*
3. *Remove the Rear Case.* *(p.66)*
4. *Remove the Front Case.* *(p.67)*
5. *Remove the Upper Case.* *(p.68)*
6. *Remove the MA Board (assembly).* *(p.70)*
7. *Remove the Lens Shutter.* *(p.77)*
8. *Remove the Optical Engine (assembly).* *(p.78)*
9. *Remove the Lamp Fan (assembly).* *(p.84)*
10. *Remove the INT Duct (assembly).* *(p.87)*
11. *Remove the EX Duct (assembly).* *(p.92)*
12. *Remove the SW Board (assembly).* *(p.94)*
13. *Remove the Inner EX Duct.* *(p.97)*
14. *Remove the RCF Board.* *(p.99)*
15. *Remove the Rx Wireless HD / HDMI Cable.* *(p.101)*
16. *Remove the Front Foot.* *(p.102)*
17. *Remove the Power Supply (assembly).* *(p.103)*
18. *Remove the Ballast (assembly).* *(p.108)*
19. *Remove the Filter Board Unit.* *(p.110)*
20. *Remove the AC Cable.* *(p.111)*
21. Remove the screw (◯), and remove the Cable Clip.
22. Remove the following parts from the Lower Case.
    - Lower Case Shield
    - Gasket 15-13-20
    - Gasket 2-13-100 (x3)
    - Hexagonal nut (x 4)

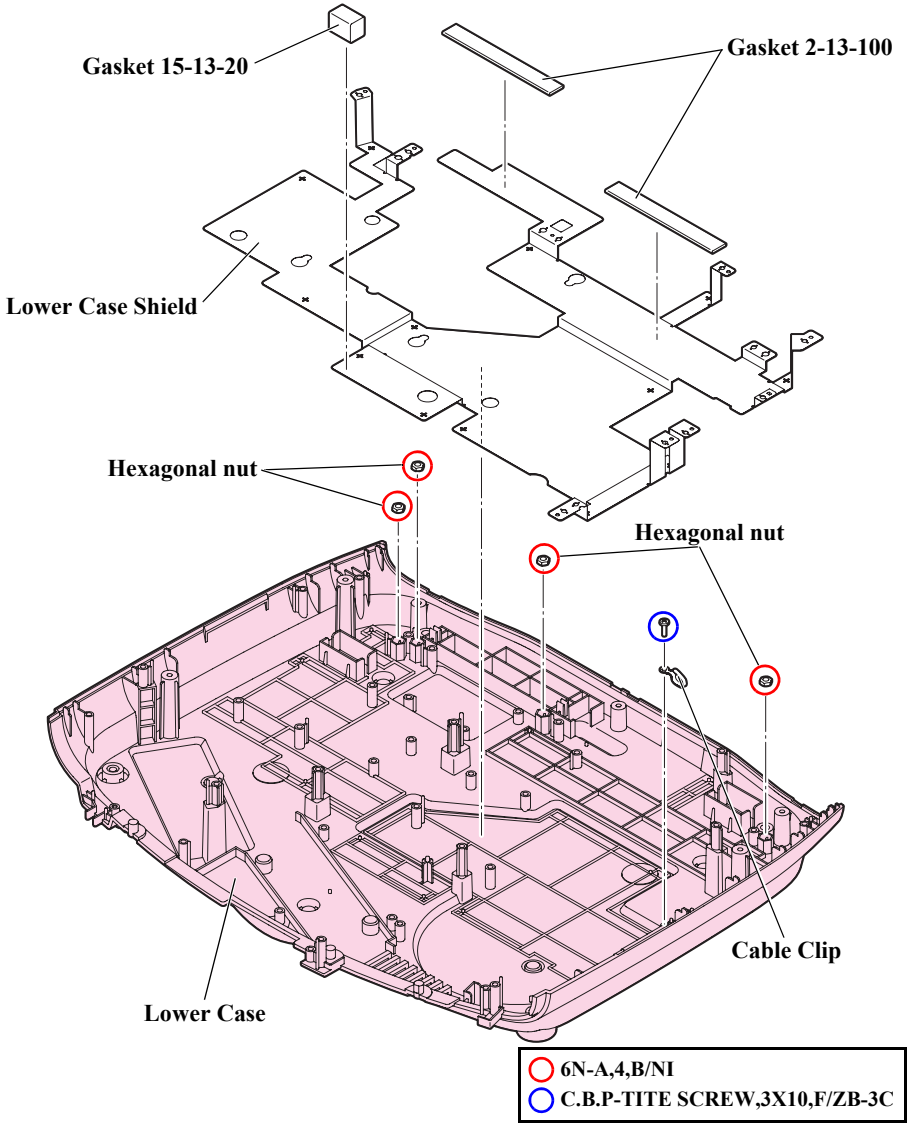


Figure 3-45.

3.4 Safety Check after Servicing

To Maintain the safeness of the product, make sure to carry out the safety check following the instruction in this section after repairing the safety device specified below.

☐ Definition of Safety Device/Functions

- ■ The parts that fall into an unsafe state* if their specifications or functions are nonconforming.
- ■ The parts that require attention to the safety precautions of the customer.
- ■ The parts that are designated by the public safety regulations or the like.

  * "Unsafe state" is the state of a part that may cause or contain the risk of the following:
  - Personal injuries
  - Damages to the property
  - Abnormal heat generation
  - Smoking
  - Fire
  - Explosion
  - Damage to the part to be installed
  - Disturbance to/from the peripheral device (EMC disturbance)
  - Chemical substances regulated by the law

☐ The Safety Control Points are:

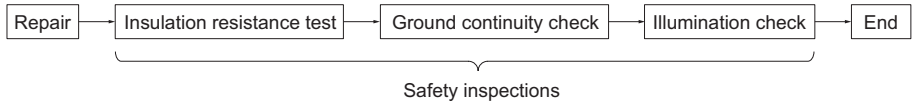
- ■ The processes that Safety Devices/Functions are manufactured, or checked.
- ■ The processes that require the management to maintain the workers' safety.

☐ Safety Devices/Functions of this product

- ■ Lamp *(p.64)*
- ■ CAUTION LABEL,Sheet (PartA/B/C/D) *(p.69)*
- ■ MA Board (assembly) *(p.70)*
- ■ Optical Engine (assembly) *(p.78)*
- ■ PS Unit *(p.107)*
- ■ BA Unit *(p.109)*
- ■ Filter Board Unit *(p.110)*
- ■ AC Cable *(p.111)*

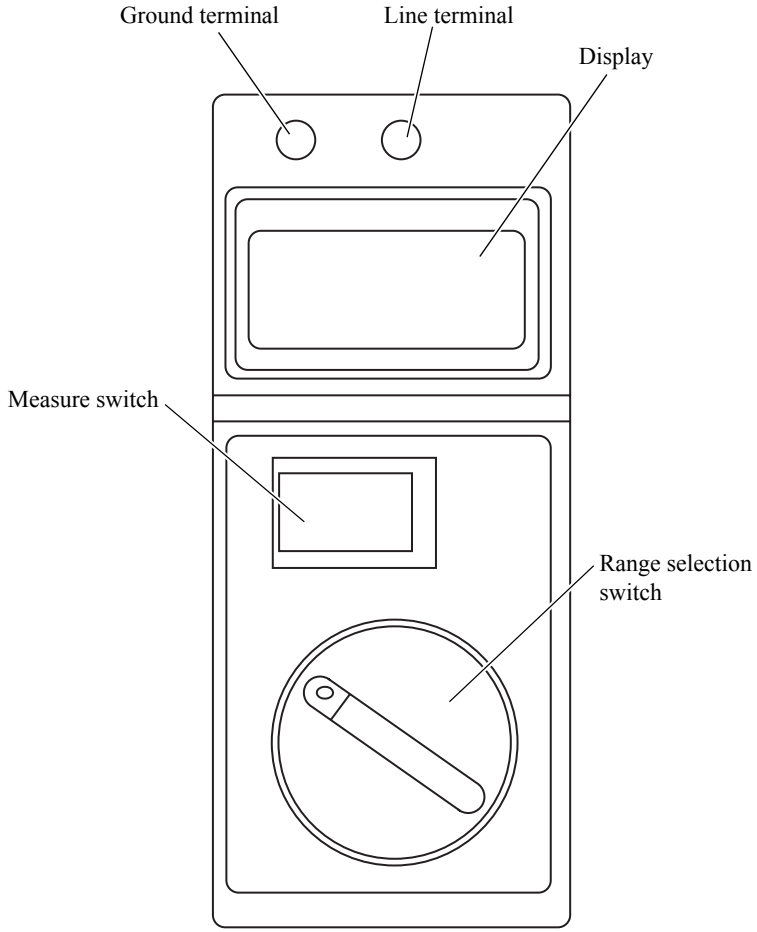
☐ Method to check the Safety Control Points

Carry out the Check in the order given below.



■ Testing apparatus

Insulation ohmmeter (Rating: 500 V/100 MΩ)



■ Standard

Insulation resistance should be 10 MΩ or more.

■ Testing procedure

1. Insulation resistance test

1.Set the range selection switch to 500 V.

2. Connect the black lead wire to the ground terminal.
3. Connect the red lead wire to the line terminal.

WARNING

Because high voltage (500 V) is present, do not touch the probe during testing.

4. Connect the crocodile clip of the black lead wire to “c” of the PC connector. **(See Figure3-46)**
5. Insert the probe of the red lead wire into “a”.
6. Set the measure switch to LOCK, and wait for one minute.
7. Measure the insulation resistance between “a” and “c” (1) after one minute.
8. Check that the insulation resistance after one minute is 10 MΩ or more between “a” and “c” (1).
9. Measure the insulation resistance between “b” and “c” (2) in the same way as for (1).
10. Check that the insulation resistance after one minute is 10 MΩ or more between “b” and “c” (2).

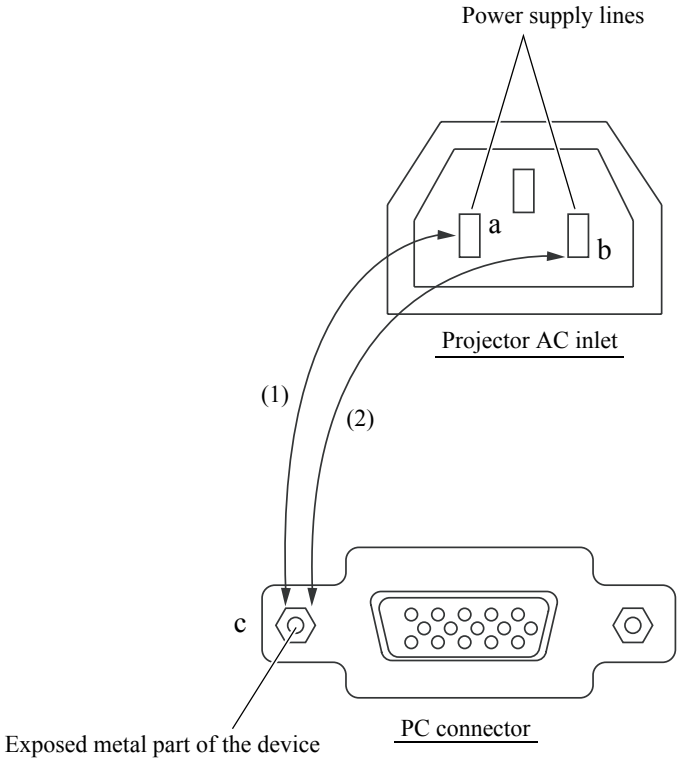
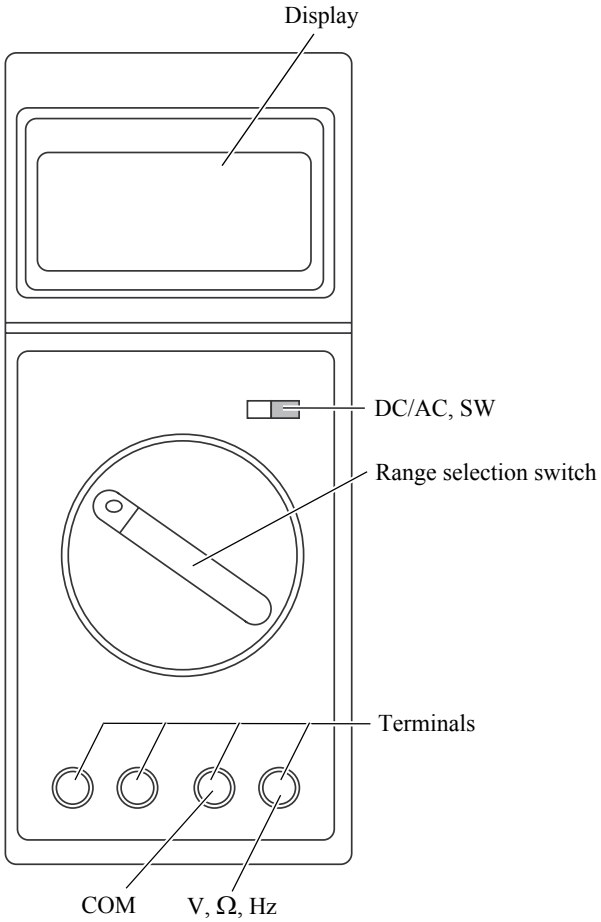


Figure 3-46.

2. Ground continuity check

■ Testing apparatus

Multimeter (with sensitivity down to 0.1 Ω)



■ Standard/Judgment level

Should be no resistance (0.5 Ω or less)

■ Testing procedure

1.Turn on the power switch.
2. Set the range selection switch to Ω.
3. Connect the black lead wire to the COM terminal.
4. Connect the red lead wire to the V/Ω/Hz terminal.
5. Check that the resistance at (1) in the diagram below is 0.5 Ω or less.

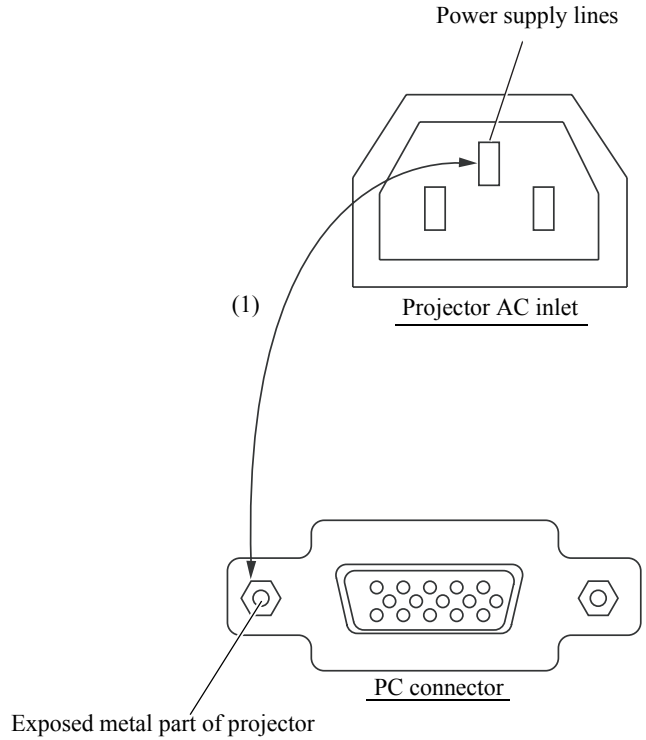


Figure 3-47.

3. Illumination check

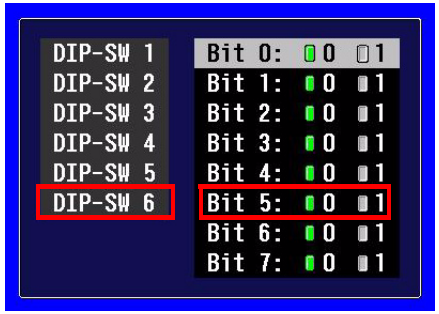
- Test conditions: Input a PC or video signal to the LCP and check the illumination for about 5 minutes.
- Judgment : Projector should operate normally with no smoke or fire.

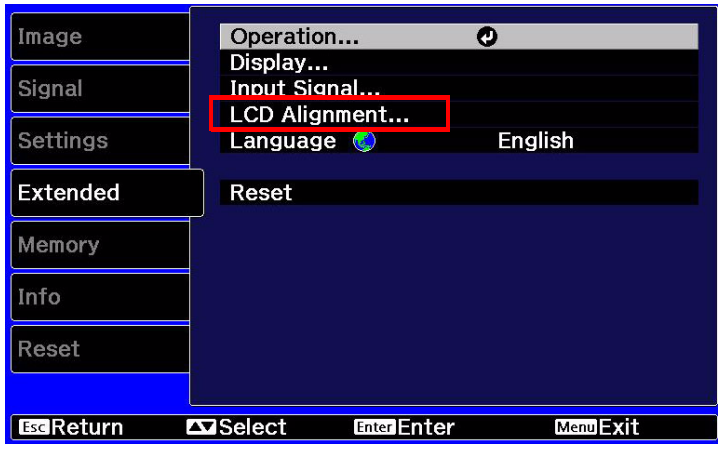
3.5 E-pixel Misalignment Correction

When a pixel misalignment of more than one pixel has been observed, it can be corrected using the E-pixel Misalignment Correction function.

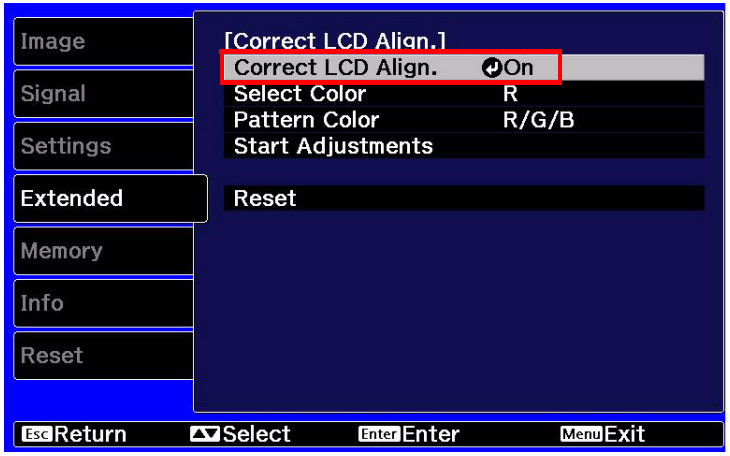
3.5.1 Setup Procedure

1. Switch the value of Bit 5 of DIPSW6 to 1 to enable "LCD Alignment..." on the Extended menu.

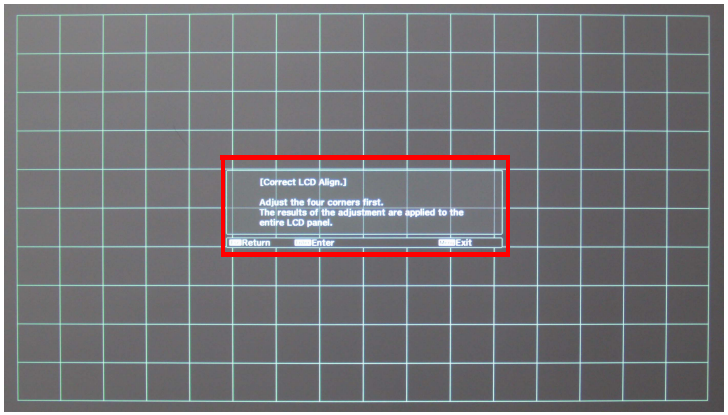




2. Display the menu, and turn on "Correct LCD Align."



3. Set the values of "Select Color" and "Pattern Color", and select "Start Adjustments".
4. When the adjustment screen appears, adjust "four corners" and "Intersection Alignment" as necessary following the displayed instruction.



5. After the adjustment, make sure to change the value of DIPSW6 back to 0 to disable the "LCD Alignment..." on the Extended menu.

3.6 Reference (Part Names given in the SPI)

Part names used in this chapter are rewritten so as to be read easily in sentences. The part names used in this manual and the corresponding official names given in SPI are listed below.

PART NAMES GIVEN IN THE SPI

Names used in this Chapter	Official Name given in SPI
AC Cable	CABLE,AC
AI Fasten Screw	SCREW,AI FASTEN
Air Filter	AIRFILTER
Air TH Cable	CABLE,TH;AIR
Auto Iris	AUTO IRIS ASSY;AS
BA Cable	CABLE,BALLAST
BA Cover	COVER,BALLAST
BA Fan Case	CASE,FAN,BALLAST
BA Fan Cover	COVER,FAN,BALLAST
BA Frame	FRAME,BALLAST
BA Insulation Sheet	SHEET,INSULATION,BALLAST
BA Unit	BALLAST UNIT;E3
Button Cushion	CUSHION,BUTTON
Cable Clip	CABLE CLIP
CF Motor	MOTOR CF ASSY.;AS
Control Button A	BUTTON,CONTROL;A
Control Button B	BUTTON,CONTROL;B;W
Control Button C	BUTTON,CONTROL;C;W
Control Panel Case	CASE,CONTROL,PANEL;W
Control Panel Cover	COVER,CONTROL,PANEL;W
Control Panel Cover Spring	SPRING,COVER,CONTROL,PANEL
Control Panel Frame	FRAME,CONTROL,PANEL
Duct Shade Plate	PLATE,DUCT SHADE
EIF Board	PCB ASSY;EIF_R*
EIF Cable	CABLE,EIF
EMI Sheet	EMI, SUPPRESSOR
EMI Sheet C	EMI,SUPPRESSOR;C
EMI Sheet F	EMI, SUPPRESSOR;F
EX Fan	FAN,EXHAUST
EX Fan Cushion	Cushion,Exhaust Fan
Ferrite Core	FERRITE CORE
Filter Board Insulation Sheet	SHEET,INSULATION,FILTER BOARD
Filter Board Unit	FILTER BOARD UNIT
Floating Cushion	Cushion,Floating;a
Focus Ring	FOCUS RING
Focus Ring Fasten Sheet	SHEET,FASTEN,FOCUS RING
Foot Rubber	RUBBER FOOT
Front Case	CASE,ASSY,FRONT;TW8000W;AS
Front Foot	FOOT_FRONT
Gasket 10-10-20	GASKET 10_10_20
Gasket 15-13-20	SHIELD,GASKET 15-13-20
Gasket 2-10-20	SHIELD,GASKET 2-10-20
Gasket 2-13-100	SHIELD,GASKET 2-13-100
Gasket 5-10-30	SHIELD,GASKET 5-10-30
GND Cable	CABLE, GND
HDMI Cable	CABLE,HDMI
IF Cover	COVER,IF
IF Shade Sheet A	SHEET,SHADE;IF
IF Shade Sheet B	SHEET,SHADE,IF;B
Inner EX Duct	DUCT,EXHAUST INNER
INT Fan (1)	FAN,INTAKE
INT Fan (2)	FAN,INTAKE
INT Seal A	SEAL,INTAKE;A
INT Seal D	SEAL,INTAKE;D

Names used in this Chapter	Official Name given in SPI
INT Seal E	SEAL,INTAKE;E
INT Seal F	SEAL,INTAKE;F
INT Seal G	SEAL,INTAKE;G
INT Seal H	SEAL,INTAKE;H
IRE Fasten Plate	FASTEN,PLATE,IRE
IRE Plate	PLATE,IRE
Lamp	LAMP ASSY.;AS
Lamp BA Cable	CABLE,BALLAST,LAMP
Lamp Cover	LID ASSY,LAMP;W;AS
Lamp Duct Seal	SEAL,DUCT,LAMP
Lamp Fan	FAN,LAMP
Lamp Fan Holder A	HOLDER LAMP,FAN;A
Lamp Fan Holder B	HOLDER LAMP,FAN;B
Lamp Fan Holder Cushion	CUSHION,HOLDER LAMP,FAN
Lamp TH Cable	CABLE,TH;LAMP
Lens Shift Case A	CASE,LENS SHIFT;A
Lens Shift Case B	CASE,LENS SHIFT;B
Lens Shutter	SHUTTER,LENS,ASSY;AS
LG Lower Seal Cushion	CUSHION,SEAL;LG LOWER
Light Valve Cushion	CUSHION,LIGHT VALVE
Lower Case	CASE,LOWER;W
Lower Case Shield	SHIELD,CASE LOWER
Lower Control Sheet	SHEET,CONTROL;LOWER
Lower EX Duct	DUCT,EXHAUST;LOWER
Lower INT Duct	DUCT,INTAKE;LOWER
LV Duct	DUCT,LV
LV Thermistor	THERMISTOR,LV
LVTH Fasten Sheet	SHEET,FASTEN,LV THERMISTOR
MA Fasten Plate	PLATE,FASTEN,MA
MA Fasten Plate A	PLATE,FASTEN,MA;A
MA Fasten Plate B	PLATE,FASTEN,MA;B
MA Fasten Plate C	PLATE,FASTEN,MA;C

Names used in this Chapter	Official Name given in SPI
MA Insulation Sheet	SHEET,INSULATION,MA
MA Shield Plate	SHIELD PLATE,MA
MA Shield Plate A	SHIELD PLATE,MA;A
MA Shield Plate B	SHIELD PLATE,MA;B
Optical Engine and MAB Set	OPTICAL ENGINE and MAB set
PS Fan	FAN,PS
PS Frame A	FRAME,PS;A
PS Frame B	FRAME,PS;B
PS Insulation Sheet	SHEET,INSULATION,PS
PS TH Cable	CABLE,TH;PS
PS Unit	POWER SUPPLY UNIT
Push Nut	Push Nut
RC Front Cable	CABLE,RC;FRONT
RC Rear Cable	CASBLE,RC;REAR
RCF Board	PCB ASSY;RCF_R*
RCR Board	PCB ASSY;RCR_R*
Rear Case	CASE,REAR
Rear Foot Rubber	RUBBER FOOT;REAR
Rx Wireless HD	WirelessHD,Rx
SCI Cable	CABLE,SCI
Shield Plate 7140	SHIELD PLATE,7140
SW Board	PCB ASSY;SW_R*
SW Board Shade Sheet	SHEET,SHADE,PCB ASSY;SW
SW Cable	CABLE,SW
TH1 Board	PCB ASSY;TH1_R*
TH2 Board	PCB ASSY;TH2_R*
TH3 Board	PCB ASSY;TH3_R*
Upper Case	CASE,ASSY,UPPER;W ;AS
Upper Control Sheet	SHEET,CONTROL;UPPER
Upper EX Duct	DUCT,EXHAUST;UPPER
Upper INT Duct	DUCT,INTAKE;UPPER
WiHD Cable	Cable,WiHD

Names used in this Chapter	Official Name given in SPI
WiHD Duct	DUCT,WIHD
WiHD Plate	PLATE,CONDUCTION,WIHD
Zoom Ring	ZOOM RING
Zoom/Focus Lever	LEVER,ZOOM,FOCUS

CHAPTER

4

APPENDIX

4.1 AS (After Service) Menu

CAUTION

The contents of this chapter are only for use of Epson Authorized Services. Do not disclose them to the end-users.

This menu provides information and settings that are not displayed on the standard menu.You can check detailed information on the projector with it.

4.1.1 How To Display the AS (After Service) Menu

1. Press the [Menu] button either on the remote controller or on the projector's control panel for at least 5 seconds.
2. Within 4 seconds after pressing the [Menu] button, press the buttons in order shown below to display the AS Menu.

   [Esc] => [Esc]

   (After the AS menu was displayed, all the key operations become invalid for 2 seconds.)

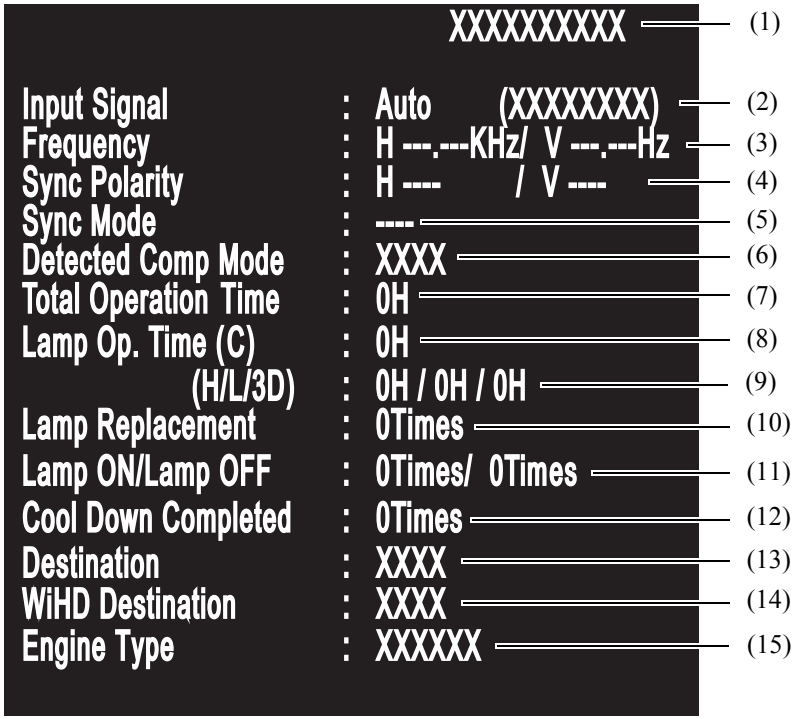
4.1.2 Displaying the Pages

The AS Menu consists of 4 pages. You can switch the pages with the [◀] and [▶] buttons either on the projector or the remote controller. The contents of each page are described next pages.

☐ 1st Page

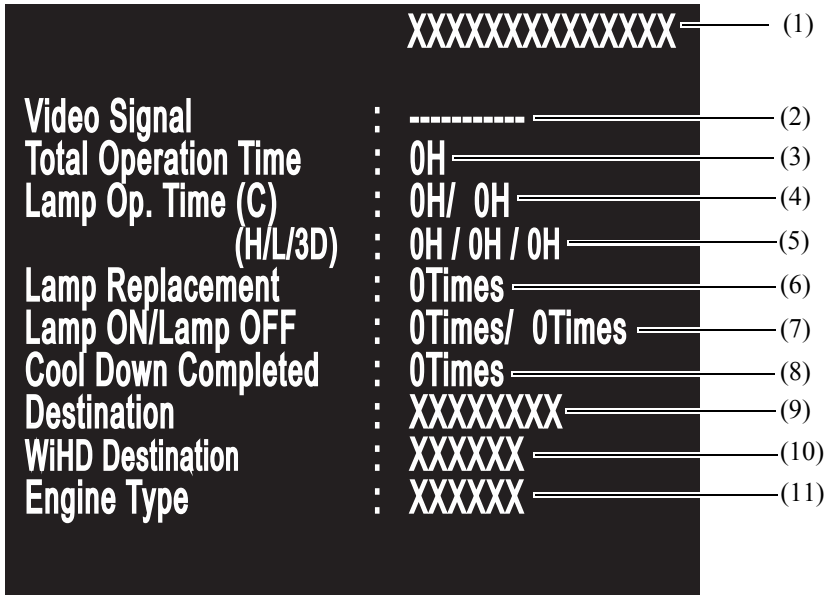
The general operational history of the projector is displayed. The contents displayed on the screen vary according to the input video sources.

PC, HDMI, USB input's case



No.	Item	No.	Item
1	Input source	9	High/Low/3D brightness
2	Input Selection Setting (Detected signal) (When "Auto" is selected)	10	Lamp replacement times
3	Current horizontal/vertical frequency	11	Lamp ON/OFF times
4	Horizontal/Vertical synchronization polarity	12	Times of Cool down completed successfully
5	Synchronization mode	13	Destination
6	Current detected computer mode	14	WirelessHD destination
7	Total operation time	15	Type of Optical Engine
8	Total lamp operation time (converted into low brightness operation)		

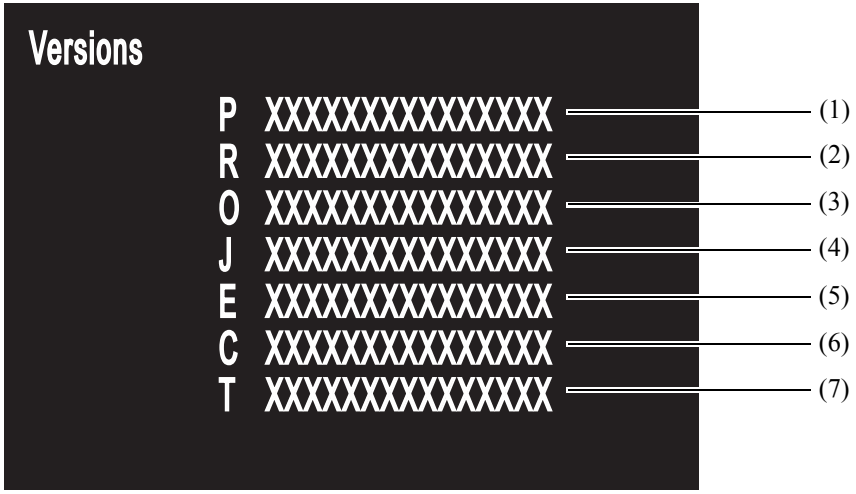
Video's case



No.	Item	No.	Item
1	Input source	7	Lamp ON/OFF times
2	Input Selection Setting (Detected signal)	8	Times of Cool down completed successfully
3	Total operation time	9	Destination
4	Total lamp operation time (converted into low brightness operation)	10	WirelessHD destination
5	High/Low/3D brightness	11	Type of Optical Engine
6	Lamp replacement times		

☐ 2nd page

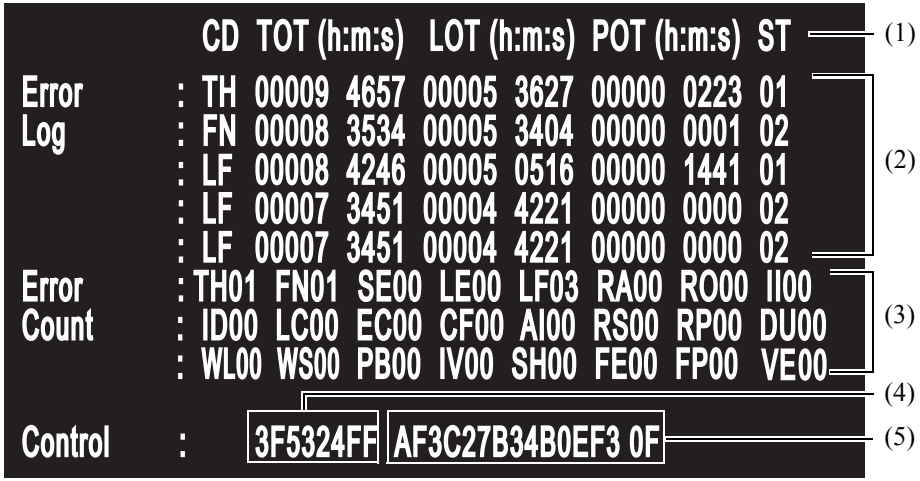
The version information such as firmware is displayed.



No.	Description
1	PW firmware version
2	Sub-processor version
3	IM firmware version
4	Subsystem firmware version
5	External vendor firmware 1 version
6	External vendor firmware 2 version
7	External vendor firmware 3 version

☐ 3rd page

The error log of the projector is displayed.



No.	Description
1	Error log items. see Table 4-1 “Error log items”
2	Last 5 error logs are displayed. #2 (top) is the latest.
3	Error count
4	Control Data 1
5	Control Data 2

Table 4-1. Error log items

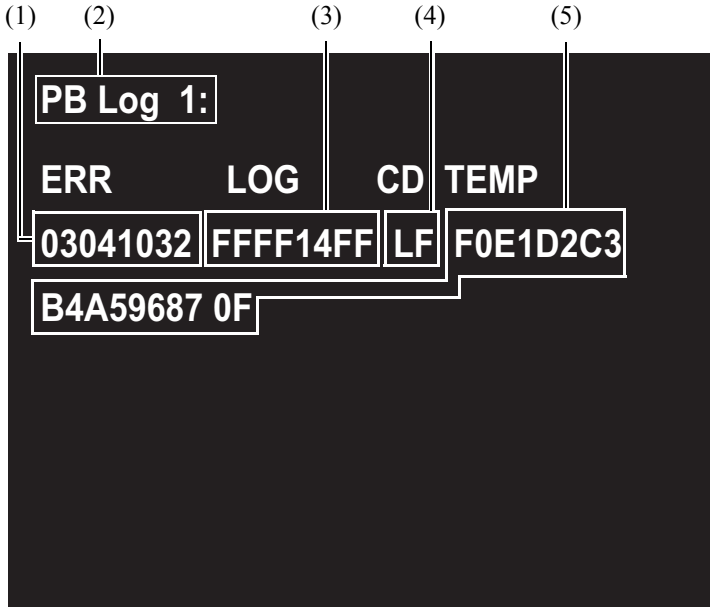
Item	Contents		Representation
Error Log	CD	Error Code	Two alphabets
	TOT	Total Operation Time	h: 5-digit number (00000-65535) Over 65535: “65535” (Not cleared to “0.”) m: 2-digit number (00-59) s: 2-digit number (00-59)
	LOT	Lamp Operation Time	
	POT	Time after Lamp is ON	
	ST	PJ (Projector)’s status	Acquired data of PWR? of the ESC/VP21 command

- The last 5 error logs are displayed (the latest on top). None is displayed if there’s no error.
- In the case of the display in the previous page, the latest error is “Internal Overheat”. When error occurred, Total Operation Time was 9 hours 46 minutes 57 seconds, Lamp Operation Time was 5 hours 36 minutes 27 seconds, the time after the lamp turned ON was 0 hours 2 minutes 23 seconds, the projector’s status was “Lamp ON”.
- The 2nd latest error is “Fan Error”. When error occurred, Total Operation Time was 8 hours 35 seconds 34 minutes, Lamp Operation Time was 5 hours 34 minutes 4 seconds, the time after the lamp turned ON was 0 hours 0 minutes 1 second, the projector’s status was “Warming up”.

Item	Contents		Representation
Error Count	TH	Internal overheat	2-digit number (00-99) Over 99: “99” (Not cleared to “0.”)
	FN	Fan error	
	SE	Thermistor error	
	LE	Lamp burnt out	
	LF	Lighting failure	
	RA	Internal error (RAM)	
	RO	Internal error (ROM)	
	II	Internal error (I2C)	
	ID	Internal error (DR)	
	LC	Lamp cover open	
	EC	Electric capacitor error	
	CF	Cinema filter error	
	AI	Auto iris error	
	RS	Sub system ROM error	
	RP	Sub system PW error	
	DU	DVD unit error	
	WL	Air filter wind lowered	
	WS	Wind sensor error	
	PB	Power error (Ballast)	
	IV	Internal error (ROM)	
	SH	Shutter error	
	FE	Cooling system error (peltier device)	
	FP	Cooling system error (pump)	
	VE	Exhaust shutter error	
Control	Control data 1	Thermal data of each thermistor	Acquired data of TEMP? of the ESC/VP21 command
	Control data 2	Voltage of each fan	

☐ 4th page or later

The error log of the ballast is displayed.The last 7 error logs are displayed (the latest on top). None is displayed if there’s no error.



No.	Item	No.	Item
1	Status of ballast error	4	Type of error
2	Page number of ballast error log	5	Acquired data of TEMP? command
3	Log on ballast error		

4.1.3 Initializing (Resetting) the AS Menu Values

The operational procedures and the values of initialization of the AS Menu are shown below.

Type	Clearing the Lamp Information	Clearing the AS Information	Clearing the Log Information
Operation / Item	Press [↵] and [Up] on the projector for 10 sec. during displaying the menu.	Press [↵] and [Down] on the projector for 10 sec. during displaying the menu.	Press [Right] either on the projector or the controller for more than 5 sec., then within 3 sec. press [Enter] for 2 sec. during displaying the menu.
Total Operation Time	N/A	Reset to 0	N/A
Lamp Operation Time (C/H//L/3D)	Reset to 0	Reset to 0	N/A
Lamp ON	Reset to 1	Reset to 1	N/A
Lamp OFF	Reset to 0	Reset to 0	N/A
Lamp Replacement	Add 1 to the current value	Reset to 0	N/A
Cool Down Completed	Reset to 0	Reset to 0	N/A
Error Log	N/A	N/A	Spacing (Initialized to the status of acquiring none)
Error Count	N/A	N/A	Reset to 0
Control	N/A	N/A	N/A