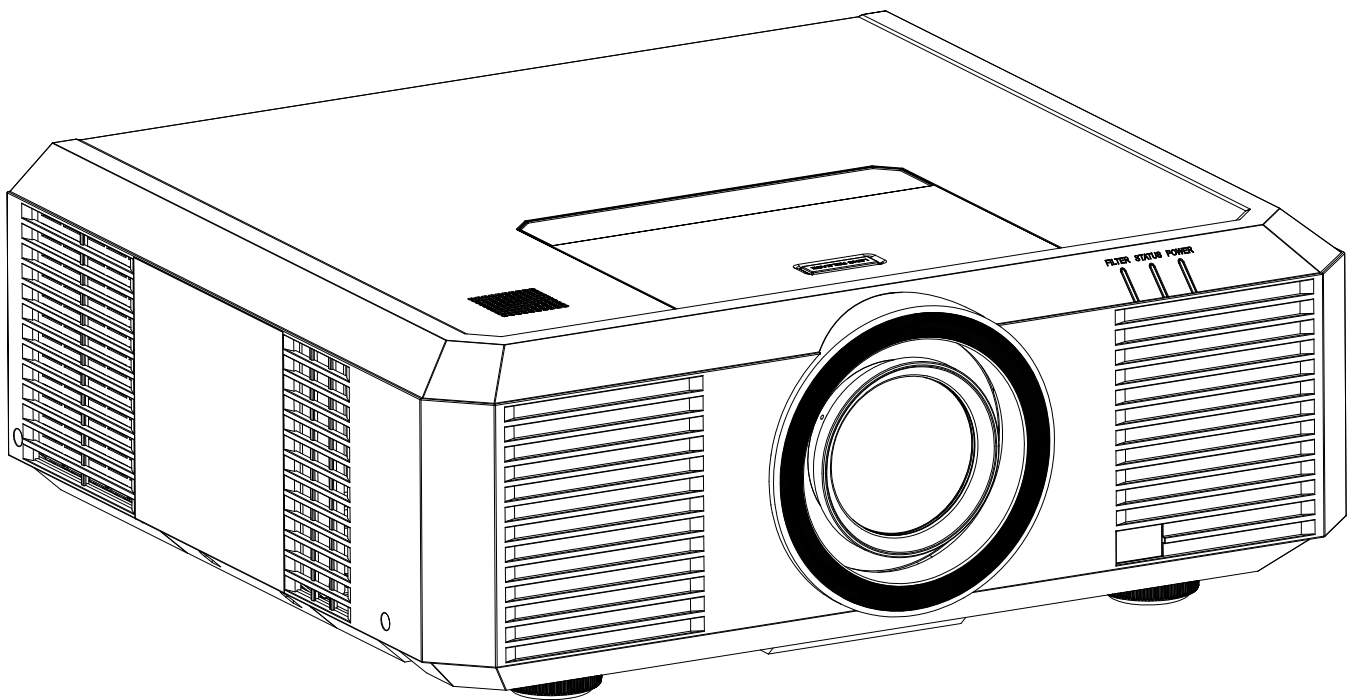


LCD Multi-media Projector

Service Manual



EIKI Model Name:
EK-501W/ EK-502X/EK-500U




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Safety operation guideline

Safety instructions

This document and your projector employ certain symbols to illustrate how to use your projector safely. They are described below: Please get yourself familiar with them before going through this document.

 Caution	Ignoring messages indicated by this symbol may lead to personal injuries or deaths due to human errors.
 Note	Ignoring messages indicated by this symbol may lead to personal injuries or property damage.
	High voltage inside with risks of electric shock.

Please read this manual carefully before installing and operating your projector.

Your projector comes with a lot of convenient features and functions. You may make the most of these features and keep your projector in good working conditions by using it correctly. Invalid operation of your projector may not only shorten its life cycle but also may lead to product failure, fire, or other incidents.

In case of any operation abnormality, refer to this manual to check your operation and connections and try solutions given in the “Troubleshooting” section at end of this manual. If the problem persists, call your dealer or our service center.

Your projector’s lamp is a consumable and will get dimmer after long-term use. It’s normal for an older lamp to be dimmer than a newer one. Please power on and off your projector by strictly following steps given in “Power on your projector” and “Power off your projector” section of this manual. Execute regular maintenance and cleaning according to instructions set forth in “Maintaining and cleaning your projector” section of this manual. Fail to do so may shorten life cycle of your projector and its lamps sharply or even damage your projector and its lamps before long.



Caution

**Danger of electric shock
DO NOT open this.**



High voltage inside with risks of electric shock.



Operation and maintenance tips about these components.

Note: DO NOT remove the casing (or back cover) as this may result in electric shock. Users shall not execute any maintenance work on components within your projector except replacing lamps. Call qualified maintenance personnel in case of any maintenance requirements.

Safety operation guideline

Notes



Caution

Safety precautions:

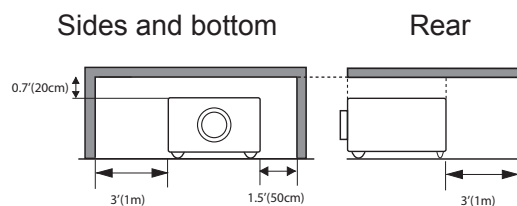
- GROUND your projector.
- Lens of your projector projects strong light. DO NOT look at the light beam directly. You may get your eyesight hurt. This is especially the case with children.
- Unplug the AC power plug if your projector will not be used for long time.
- DO NOT overload the socket of power cord as it may lead to fire or electric shock. DO NOT subject the power cord to any object. DO NOT place your projector in locations where its power cord may become damaged by treading by passersby.
- Disconnect the power plug before cleaning your projector. DO NOT apply liquid or sprays to your projector. DO NOT wipe your projector with wet cloth.
- Please follow warnings and instructions given in labels attached to your projector. Unplug your projector when your projector is exposed to thunderstorm weather, is unmanned, or not in use for long periods to prevent damage caused by lightning and power surges.
- DO NOT use accessories without recommendation by the manufacturer as it may result in potential risks.



Caution

Precautions on air outlet:

- Keep adequate clearance around your projector for its ventilation and cooling. See figure below for the least clearance requirements. The least clearance is a MUST when your projector is placed within a cabinet or other closed environment.



- DO NOT cover the air outlet of your projector. Poor ventilation not only shorten life cycle of your projector but also may lead to risks.
- Slots and openings at rear and bottom of your projector are designed for ventilation. Keep your projector from overheated to ensure its steady operation.
- DO NOT cover the air outlet with cloth or other objects. DO NOT place your projector on the surface of bed, sofa, carpets, or similar object as this may block the air outlets at its bottom.
- DO NOT place your projector in closed environment, e.g. a bookcase, unless it is well ventilated.
- Keep any matter from falling in your projector through the air outlets as they may touch high voltage parts and lead to fire or electric shock by short circuits. DO NOT splash liquid to your projector.

Safety operation guideline



Note

Precautions on location of your projector:

- Place your projector in a proper location or it may result in fire.
- DO NOT expose your projector in rain or high humidity environments or it may result in fire or electric shock. DO NOT place your projector near water or splashing water. DO NOT place any water container, e.g. flower vase, atop your projector.
- DO NOT place your projector in environments of soot, moisture or smoke, e.g. your kitchen, or it may lead to product failure or accidents. Your projector may be damaged by contact with oil or chemicals.
- DO NOT place your projector near exhaust pipe or air conditioning equipment.
- DO NOT place your projector near radiator or heating pipes.
- DO NOT place your projector atop unstable truck, rack, or table. It may fall off the surface and lead to personal injuries and property damages. Please use cart or rack recommended by the manufacturer or included with your product. Please follow steps given in installation guideline included with the wall and ceiling mount racks for installation. Use installation components approved by the manufacturer.
- Be careful when moving your projector with cart. Abrupt stops, pushing too hard and rugged surfaces may topple your projector and the cart together.

FOR EU USERS

The symbol mark and recycling systems described below apply to EU countries and do not apply to countries in other areas of the world.

Your product is designed and manufactured with high quality materials and components which can be recycled and/or reused.

The symbol mark means that electrical and electronic equipment, batteries and accumulators, at their end-of-life, should be disposed of separately from your household waste.

Note:

If a chemical symbol is printed beneath the symbol mark, this chemical symbol means that the battery or accumulator contains a heavy metal at a certain concentration.

This will be indicated as follows: Hg: mercury, Cd: cadmium, Pb: lead

In the European Union there are separate collection systems for used electrical and electronic equipment, batteries and accumulators.

Please, dispose of them correctly at your local community waste collection/recycling centre.

Please help us to conserve the environment we live in!



Contains mercury

For more information on safe handling procedures, the measures to be taken in case of accidental breakage and safe disposal options visit: ec.gc.ca/mercure-mercury/

Dispose of or recycle in accordance with applicable laws.

Safety operation guideline



Note:

Precautions on using your projector:

- DO NOT project the same image for long time as residual images may be left in the panel. This is a property of LCD panel.
- Use power as indicated in tags attached to your projector. If you have doubts over available power type, consult your dealer or local power company first.
- DO NOT open or remove the casing for maintenance as this may lead to electric shock or other damages. Call qualified maintenance personnel in case of any maintenance requirements.
 - In case of the following, unplug the power cord and call qualified maintenance personnel for service immediately:
 - a. Damaged or broken power cord or plug
 - b. Liquid splashed in your projector
 - c. Your projector exposed to rain or water
 - d. If your projector fails to work as expected by following operation instructions, adjust it according to given instructions. Other invalid operations may damage your projector, which requires the technician to spend more time before returning it back to normal.
 - e. The projector falls off to ground or its casing is damaged.
 - f. In case of any abnormal change in your projector during its use, then maintenance services would be required.
- In case components replacement is required, make sure the replacements have been approved by the manufacturer and features the same with the one being replaced. Use of unauthorized parts may lead to fire, electric shock or personal injury.
- After the completion of maintenance or repair work, get the maintenance personnel to run routine safety check to ensure your projector's safety operation status.

Information for users in the European Union

This is a device to project images onto a screen, etc., and is not intended for use as indoor lighting in a domestic environment.

Directive 2009/125/EC.

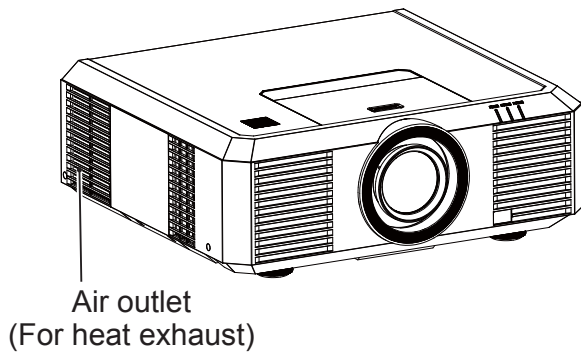
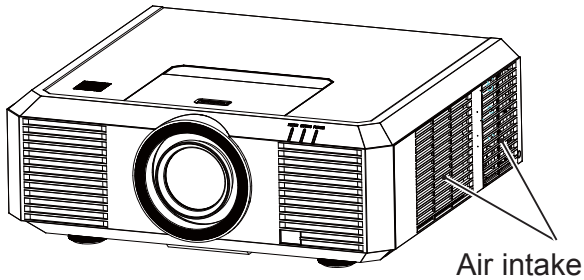
NOTE FOR CUSTOMERS IN THE US

 LAMP(S) INSIDE THIS PRODUCT CONTAIN MERCURY AND MUST BE RECYCLED OR DISPOSED OF ACCORDING TO LOCAL STATE OR FEDERAL LAWS.

Safety operation guideline

Air ventilation

Openings in the casing are designed for ventilation and overheating prevention. DO NOT block or cover these openings to keep your projector in normal operation and from overheating.



Note

Heat exhaust at the air outlet Keep the following in mind when using or installing your projector:

- DO NOT place flammable materials or sprayers near your projector.
- Keep the air outlet one meter away from other objects.
- DO NOT touch the area close to the air outlet especially the metal components, e.g. screws. This area and parts will get very hot once your projector starts operating.
- DO NOT place any object atop your projector. They may not only be damaged but also lead to fire after being overheated.

Cooling fans are designed for cooling your projector. Fan speed is auto adjusted subject to internal temperature of your projector.

Safety operation guideline

Place your projector correctly

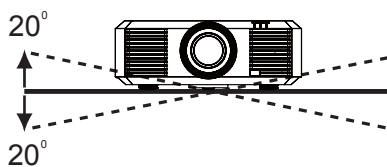
Use your projector at specified location in correct way. Invalid projector location may shorten life-cycle of lamps or even lead to severe incidents or fire. Your projector may project upward or downward at location perpendicular to the horizon. When installing your projector inclined downward, place it in a bottom up position.



Note:

- Enable the "Ceiling" function if flip over screen is required.

DO NOT install your projector in ways as illustrated below.



DO NOT tilt your projector more than 20 degrees.



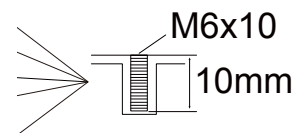
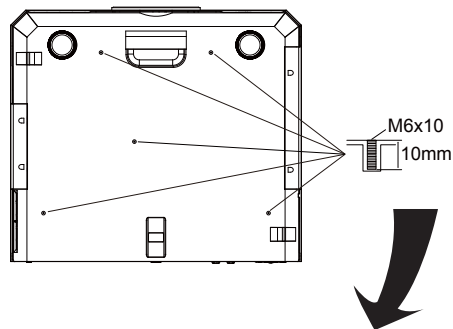
DO NOT place your projector as illustrated above.



Note:

Precautions on ceiling mount racket installation:

- Get qualified technician to install the ceiling mount racket.
- Warranty of your projector does not cover hazards and damage caused by using ceiling mount rackets provided by unauthorized dealers.
- Remove the ceiling mount racket when it is not in use.
- Apply torque driver instead of power driver or impact driver in your projector.



Safety operation guideline

Moving your projector:

When moving your projector close its adjustment legs as they may damage the lens and casing. Keep your projector in suitable box when it is not to be used for a long time.



Note:

Precautions on moving or shipping your projector:

- DO NOT drop or impact your projector as it may get damaged or failed in operation.
- Please employ proper container for movement.
- Prohibit express or other shipping service provider personnel from shipping your projector with improper boxes. Your projector may become damaged. Please consult your dealers for shipping your projector by express or other shipping service providers.
- Place your projector in box only after it has been fully cooled down.

Precautions on dealing with your projector:

DO NOT lift or move your projector by holding the lens or projecting decoration ring as it may damage the lens and your projector.

Be careful when handling your projector. DO NOT drop it, subject it to external forces, or place objects atop it.

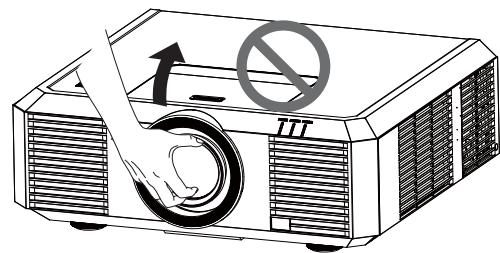
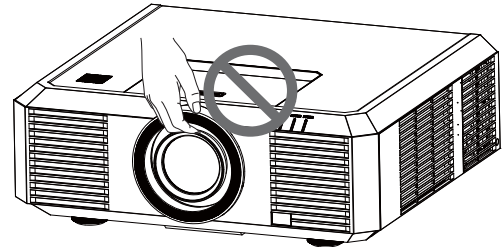


Note:

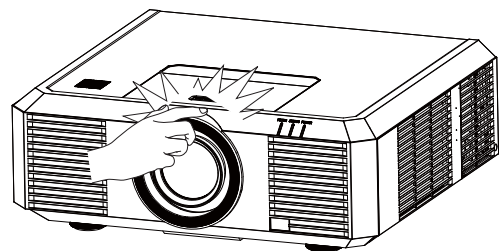
Lens or your projector is electric powered.

Precautions on using your projector:

- DO NOT touch the lens when it is turning as your fingers may get hurt.
- DO NOT let children touch the lens.







DO NOT hold the lens or area around it.



Safety Precautions

Safety

	<div>Caution</div> <div>ELECTRIC SHOCK DO NOT OPEN</div>	
<small>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE EXCEPT LAMP REPLACEMENT. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</small>		
	THIS SYMBOL INDICATES THAT DANGEROUS VOLTAGE CONSTITUTING A RISK OF ELECTRIC SHOCK IS PRESENT WITHIN THIS UNIT.	
	THIS SYMBOL INDICATES THAT THERE ARE IMPORTANT OPERATING AND MAINTENANCE INSTRUCTIONS IN THE MANUAL WITH THIS UNIT.	



Safety Precautions

- The projector must be grounded.
- Do not expose the projector to raindrops or high humidity to avoid a fire or electric shock

Caution

- This projector produces intense light from the projection lens. Avoid staring directly into the lens, otherwise eye damage could be caused. Be especially careful that children do not stare directly into the beam.
- Place the projector in a proper position. Otherwise it may result in fire hazard
- Leave an appropriate space from the top, sides, and back of the shell in order to ventilate and cool down the projector. The figures below indicate the minimum distance to be left. It must be satisfied if the projector is placed in sealed environment like a cabinet.
- Do not cover the vent of the projector. Poor radiation may shorten the service life or even cause dangers.
- Remove the AC power plug if the projector is not to be used for a long time.
- Do not project the same image for a long time; otherwise, a residual image may appear on the LCD panel due to its characteristic.

Caution in moving or transporting the projector

- Do not drop or bump the projector, otherwise damages or malfunctions may result.
- When carrying the projector, use a suitable carrying case.
- Do not transport the projector by courier or any other transport service in an unsuitable transport case. This may cause damage to the projector. For information about transporting the projector by courier or any other transport service, consult your dealer.
- Do not put the projector in a case before it is cooled enough.

Air Circulation

Vents in the cabinet are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered.



Caution

Hot air is exhausted from the exhaust vent. When using or installing the projector, the following precautions should be taken.

- Do not put any flammable objects, or spray can near the projector. Hot air is exhausted from the air vents.
- Keep the exhaust vent at least 1 m away from any objects.
- Do not touch a peripheral part of the exhaust vent, especially screws and metallic part. This area will become hot while the projector is being used.
- Do not put anything on the projector. Objects put on the cabinet will not only get damaged but also may cause fire hazard by heat

Cooling fans are provided to cool down the projector. The fan's running speed is changed according to the temperature inside the projector.



Caution

Do not set the projector in greasy, wet, or smoky conditions such as in a kitchen, to prevent a malfunction or accident. If the projector comes in contact with oil or chemicals, it may become deteriorated.

Read and keep this manual for future reference.

Regular maintenance

Status light indicator

The status light indicator shows status of projector protection function. Check status and POWER light indicator for good maintenance operation.



Note

Unplug the AC power cord in case of any abnormality as it may lead to fire or electric shock.

The projector turns off and the status light indicator flashes red.

Your projector powers off automatically to protect components within it when it is overheated. The POWER indicator flashes when your projector is cooling down. Press the STANDBY button to power your projector on again when it is cooled down to normal operation temperature.

FILTER STATUS POWER



The status indicator
flashing red

✓ Note:

The POWER indicator stops flashing when your projector's internal temperature cooled down to normal and it is powered on again.

Check the following:

- Is adequate clearance provided for your projector's ventilation? Check the installation status and any air outlet block.
- Is your projector installed at location close to outlet of air conditioning equipment? Keep your projector away from air outlet of air conditioning equipment.
- Is the filter in clean condition? Please clean the filter regularly.

Your projector powers off and the status light indicator turns red.

The STATUS indicator turns red and your projector powers off to protect its internal components whenever an abnormality is detected. Unplug the AC power cord and connect again. Restart your projector and run checkup routine. If the problem persists, unplug the AC power cord and call your service center for checkup and maintenance.

FILTER STATUS POWER



The status indicator
turns red

Regular maintenance

Clean your projector when it is contaminated by foreign matter or its display effects are getting worse.



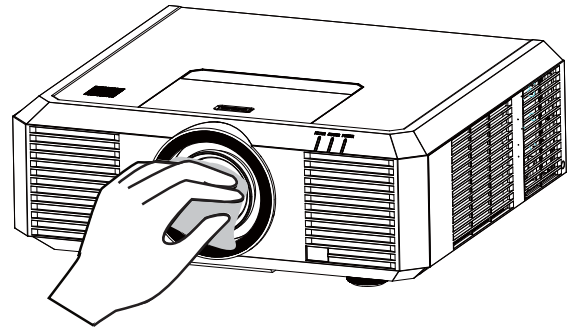
Note

Unplug the AC power cord before any cleaning operation.

Clean the lens

Wipe the lens with clean cloth dampened with non-abrasive camera lens cleaner or clean it with lens cleaning paper or air blower.

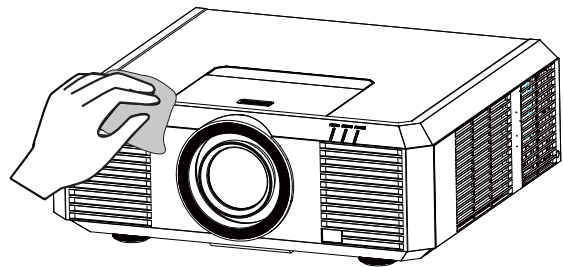
Do not over apply cleaner to the lens. Abrasive cleaner, solution, or other rough chemical may scratch the lens.



Clean casing of your projector

Wipe the casing surface with clean and soft cloth. Gently wipe the casing with clean and soft cloth dampened with small amount of neutral detergent to remove heavy dirt. Do not over apply cleaner to the casing. Abrasive cleaner, solution, or other rough chemical may scratch the casing surface.

Place your projector in proper container after use to protect it from dirt and dust and being scratched.

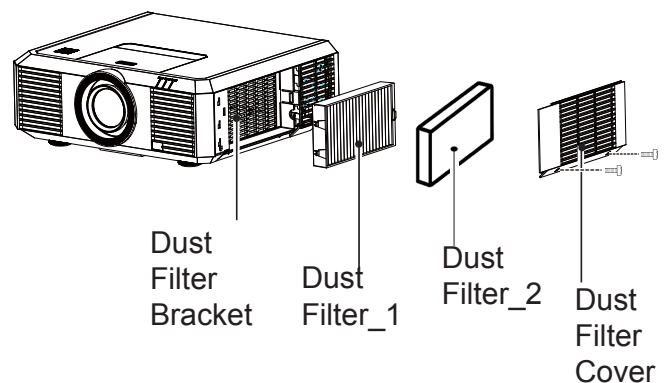


Clear the filter

The filter is designed to keep dust from entering in your projector, which may lead to dusts accumulated on surface of internal components. Clogged filter may reduce cooling fan effects, which, in turn, will overheat your projector and shorten its life cycle. Clean the filter immediately whenever the Filter Warning icon displays.

Please follow these steps to clean your filter:

- 1 Power off your projector and unplug from AC power source.
- 2 Remove the filter.
- 3 Gently clean it with a brush.
- 4 Replace the filter. Make sure it has been fully inserted.



Note:

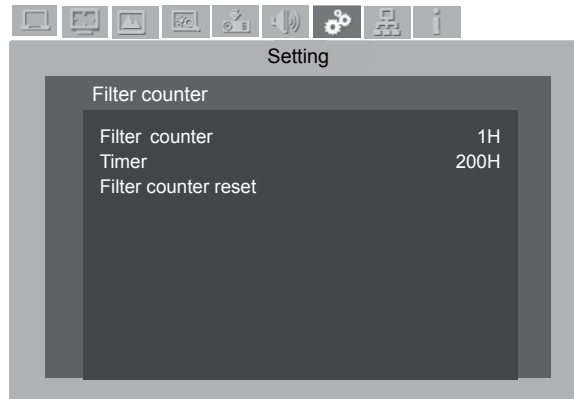
Do not operate your projector after its filter is removed. Dust may attach to the lens assembly and deteriorate image quality.

Do not insert any small object in the air outlet. It may fail your projector.

Regular maintenance

Reset the filter counter

- 1 Press MENU button and the OSD displays. Press ◀▶ button to select Setup menu, press ▶ button or OK.
- 2 Press ▲▼ button to select "Filter Counter", press ▶ button or OK. Press ▲▼ button to select "Reset the filter counter" and press OK. The "Reset filter counter?" message displays. Select Yes to proceed.
- 3 In another pop-up dialog box, select Yes to reset the filter counter.



Recommendations

Please do not use your projector at place of dust and smoke. This may affects image quality. Using your projector in place of dust and smoke may lead to piling dusts on lens, LCD panel, and lens components within it. In case like this, call your dealer or service center for correct cleaning.



Note:
Reset the filter counter after its cleaning or replacement.

Lamp replacement

The lamp replacement icon displays when its use life dues. Please replace it with a new one of the same model immediately.

The lamp replacement icon

Lamp replacement



Note

Do not replace the lamp after it went dark as it may be broken. Always assume the lamp of a ceiling mount your projector is broken when replacing it. Stand beside the lamp cover instead of below it. Remove the lamp cover gently. Small piece of glass debris may fall off when opening the lamp cover. Consult with a doctor immediately if there is any glass debris fell in your eyes or mouth.



Note

Let your projector cool for at least 45 minutes before opening the lamp cover, as temperature within your projector is high.



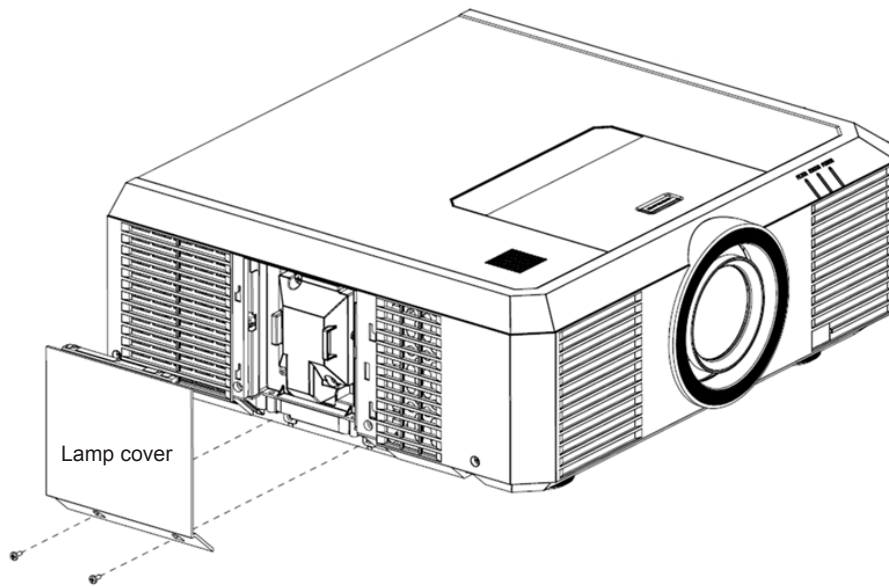
Note

Replace the lamp with a new one of the same model just in case. Do not drop or touch the lamp! It may break and lead to personal injuries.

Regular maintenance

Follow steps below to replace the lamp:

1. Power off your projector and unplug the AC power cord. Let it cool down for at least 45 minutes.
2. Open the lamp cover after removing screws holding the cover.
3. Loose all screws fixing the lamp. Remove the lamp by holding its handle.
4. Replace with a new lamp and tighten all screws. Make sure the lamp has been installed correctly. Close the lamp cover and tighten the screw.
5. Connect your projector to an AC power source and power it on.



Precautions on lamp operation

Your projector employs high voltage lamp, which requires careful and correct operation. Fail to do so may lead to accidents, personal injuries, or fire.

- Life cycle of lamp varies with environment it is in service. Life cycle of lamp varies. That is, some lamps may last longer than their counterparts.
- If your projector prompts you to replace lamp (by showing a lamp replacing icon) then replace it with a new one after powering it off and it is fully cooled down. (Please replace lamp by strictly following steps given in this manual.)
If you keep on using the lamp after being prompted to replace it then you are exposed to greater risks of lamp explosion.
- Lamp may explode due to external impact and shock. Risks of explosion vary with projector and use environment and status of the lamp.

In case of lamp explosion, take the following safety measures:

Disconnect your projector from power source immediately in case of lamp explosion. Call authorized service center to inspect your projector and replace lamp. Make a thorough inspection to ensure every piece of debris after explosion has been removed. Remove every piece of debris after explosion. No one else may inspect the internal of your projector except those authorized and well trained technician who also are familiar with its maintenance. Or we shall not be held liable for the consequences.

Lamp Replacement

Suggestion

If the filter is blocked by dust, the effect of cooling fan will be reduced, and heat accumulate in the projector, service life will be shortened. shorten the service life of the lamp. Cleaning filter is suggested after lamp replacement. Replacement Refer to "Clean the filter".

How to check Lamp Used Time

The LAMP REPLACE indicator will light yellow when the total lamp used time (Corresponding value) reaches 4,000 hours. This is to indicate that lamp replacement is required.

The total lamp used time is calculated by using the below expression, Total lamp used time (Corresponding value) = $T_{eco} + T_{normal} \times 1.33$


T_{eco} : used time in the Eco1 and Eco2 mode

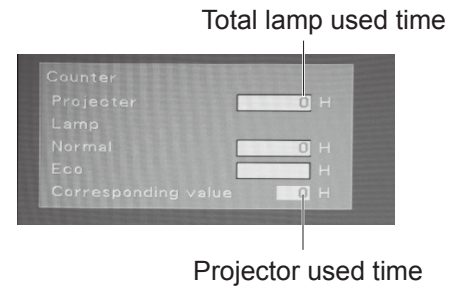
T_{normal} : used time in the Normal mode and Auto mode

You can check the lamp used time following to the below procedure.

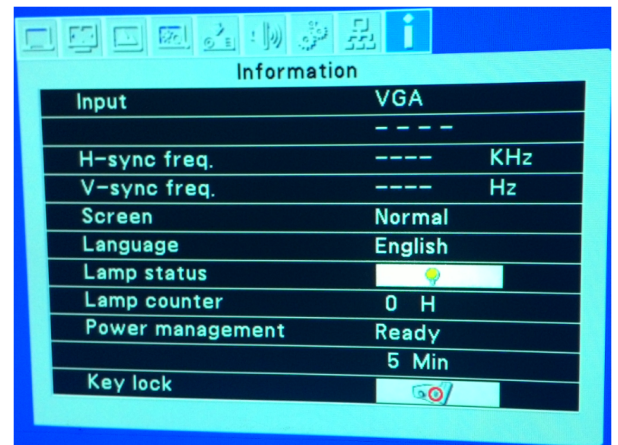
Press INFO. button on the remote control or press MENU button to select Info. to display the Info. menu and check "Lamp counter".

Reset lamp counter following to the procedure below:

- 1 Press and hold the  button on the projector for more than 20 seconds.
- 2 The projector used time and lamp used time will be displayed on the screen at least 5 seconds.
- 3 Press ENTER button for 5 second.



Information menu


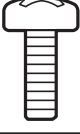


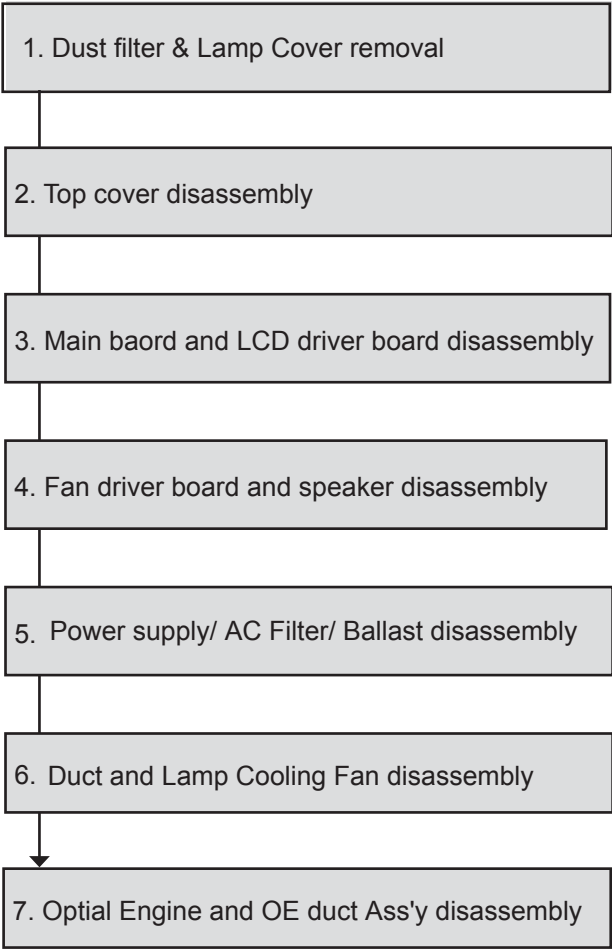
Mechanical Disassembly

Mechanical disassembly should be made following procedures in numerical order.
Following steps show the basic procedures, therefore unnecessary step may be ignored.

Caution

The parts and screws should be placed exactly the same position as the original otherwise it may cause loss of performance and product safety.

Screw specifications (Type Diameter x Length) mm	
T type	M type
	

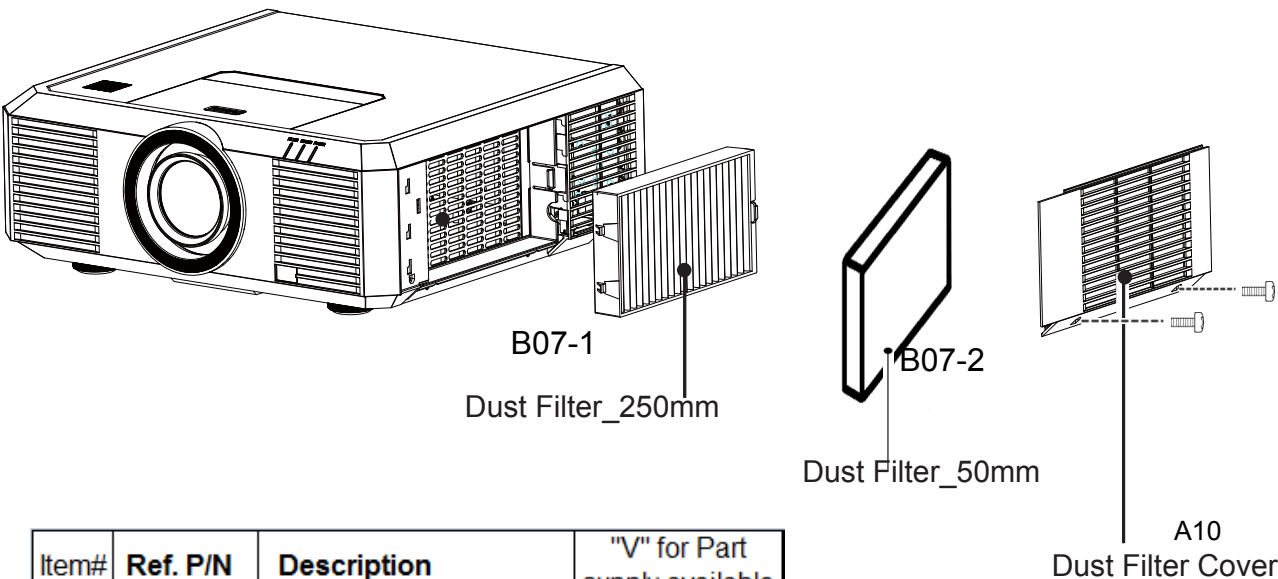


Mechanical Disassembly

1. Remove the filter and lamp cover.

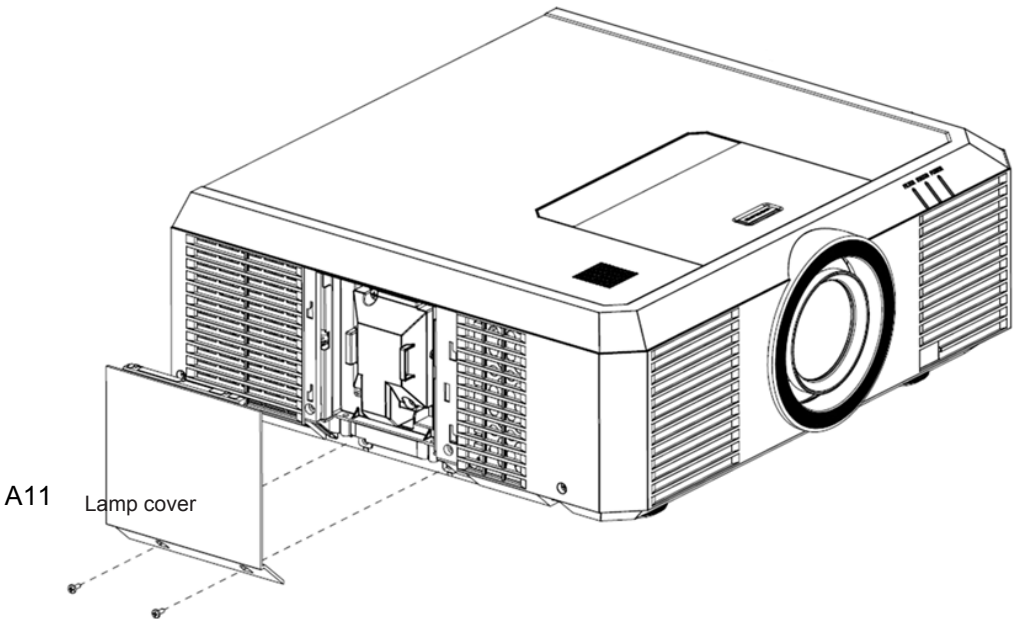
- 1-1 Loosen 2 screw A (M3X8) and remove Air filter cover
- 1-2 Loosen 2 screw A (M3X8) remove the Lamp cover.

The chapter is only designed to show exploded image of the projector. For updated part numbers, please refer to RSPL



Item#	Ref. P/N	Description	"V" for Part supply available
A10		Dust Filter Cover	
B07-1	63220080	Dust Filter 250mm	V
B07-2	63220081	Dust Filter 50mm	V
A11	63220082	Lamp cover	V

Please note: The reference P/N is for service purpose.
Any spare part request please refer to RSPL



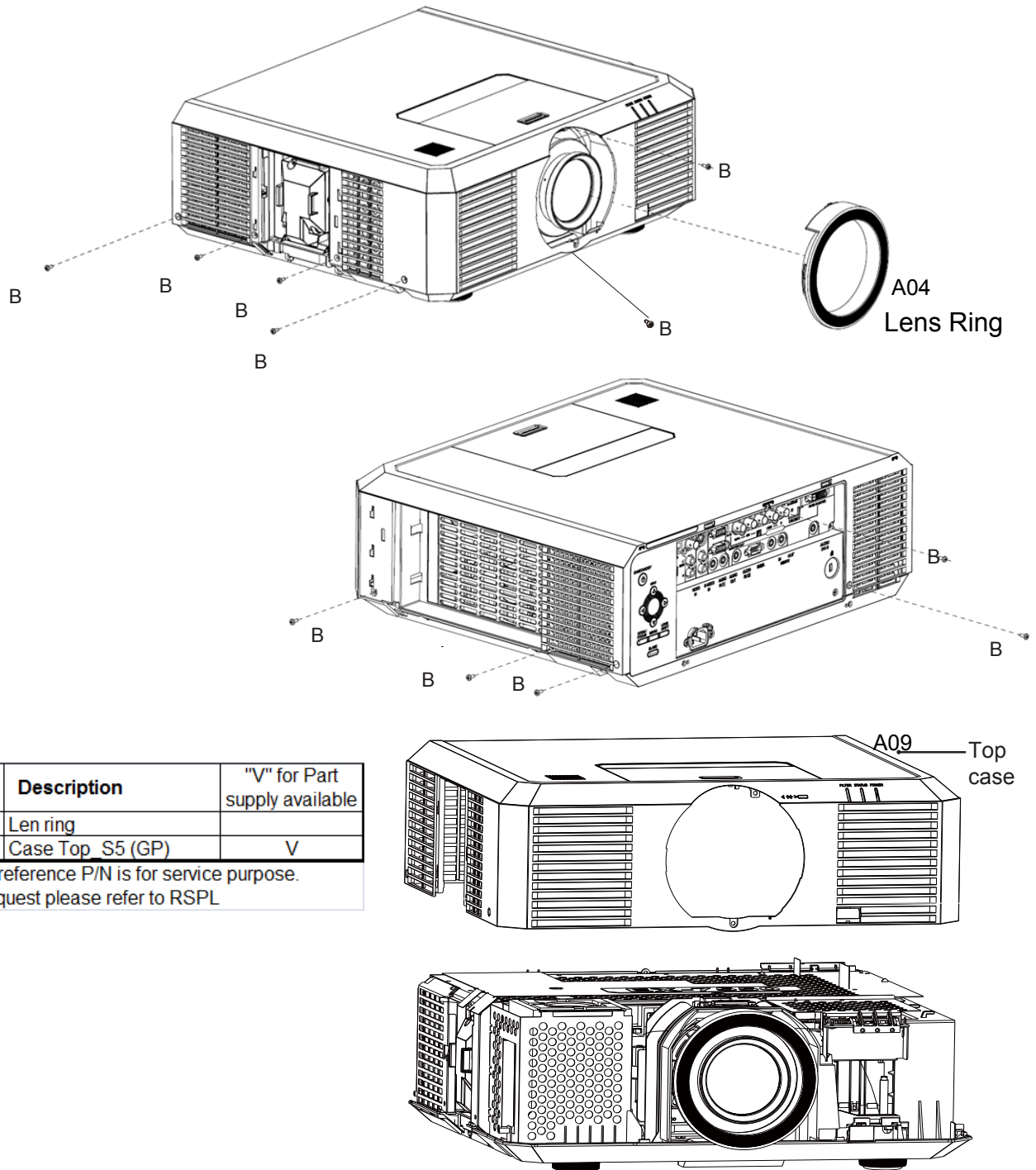
Mechanical Disassembly

2. Remove the Lens Ring and Top-Case cabinet.

2-1 Remove the Lens ring and Loosen 2 screw B(M3X8)

2-2 Loosen 4 screw B at the Lamp cover side. 2 screw B on rear-side, 3 screws B from Dust filter's side, and remove the top case cabinet.

The chapter is only designed to show exploded image of the projector. For updated part numbers, please refer to RSPL



Item#	Ref. P/N	Description	"V" for Part supply available
A04		Len ring	
A09	63220078	Case Top S5 (GP)	V

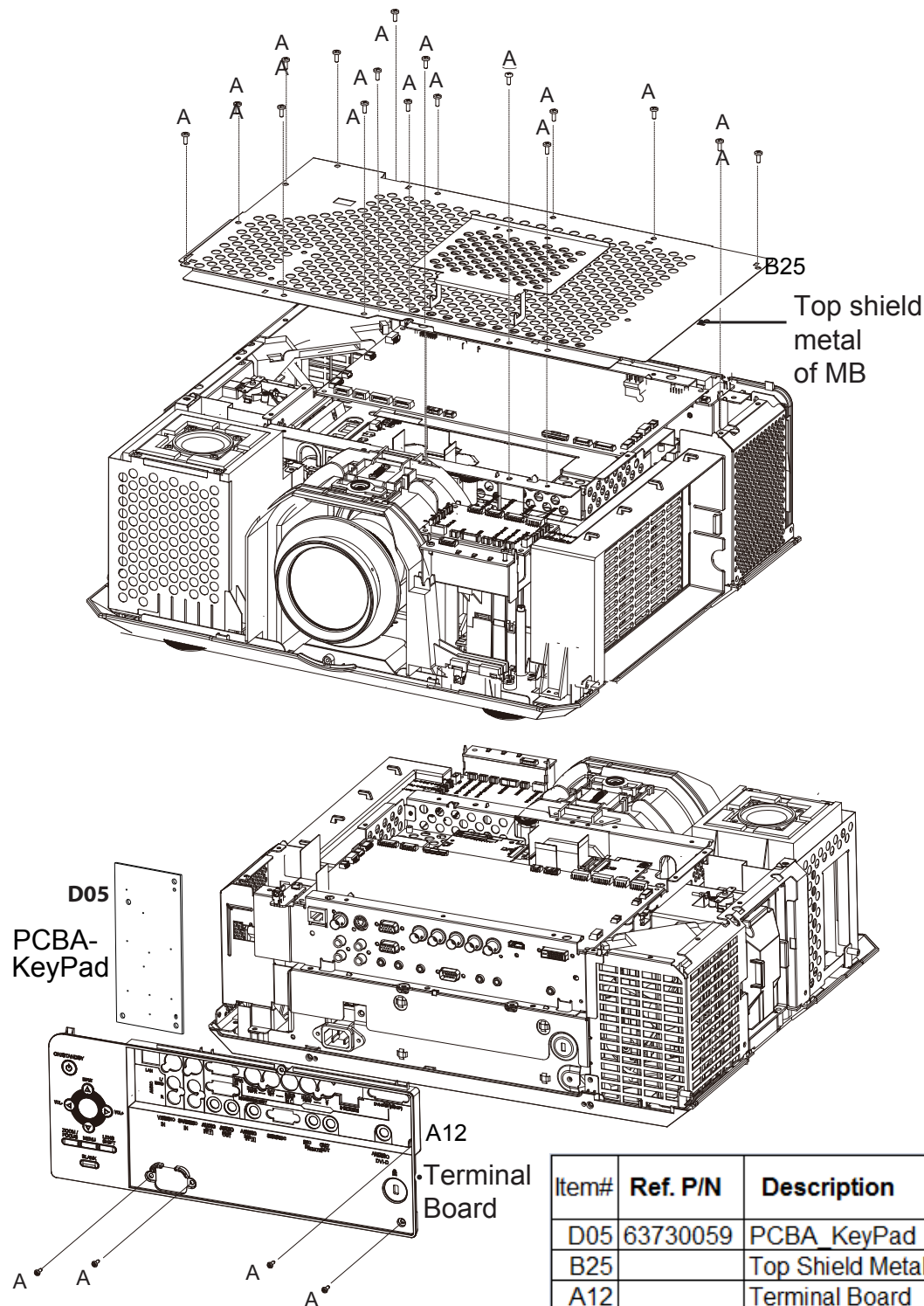
Please note: The reference P/N is for service purpose.
Any spare part request please refer to RSPL

Mechanical Disassembly

3. Remove the terminal sheet and Main board.

- 3-1. Loosen 17 screw A (M3X8) remove the Top shield metal of Main Board (MB)
- 3-2. Loosen 4 screw A (M3X8) remove the Terminal Board of Main Board (MB)

The chapter is only designed to show exploded image of the projector. For updated part numbers, please refer to RSPL



Item#	Ref. P/N	Description	"V" for Part supply available
D05	63730059	PCBA KeyPad	V
B25		Top Shield Metal of MB	
A12		Terminal Board	

Please note: The reference P/N is for service purpose.
Any spare part request please refer to RSPL

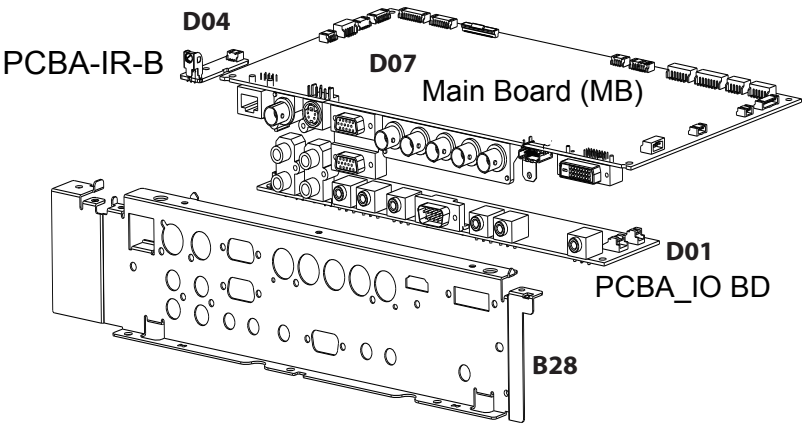
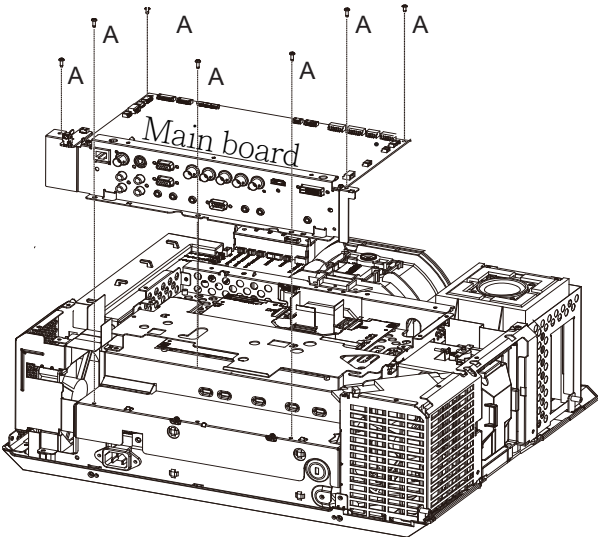
Mechanical Disassembly

3. Remove the terminal sheet and Main board.

3-3. Loosen 7 screw A (M3X8) remove the Main Board

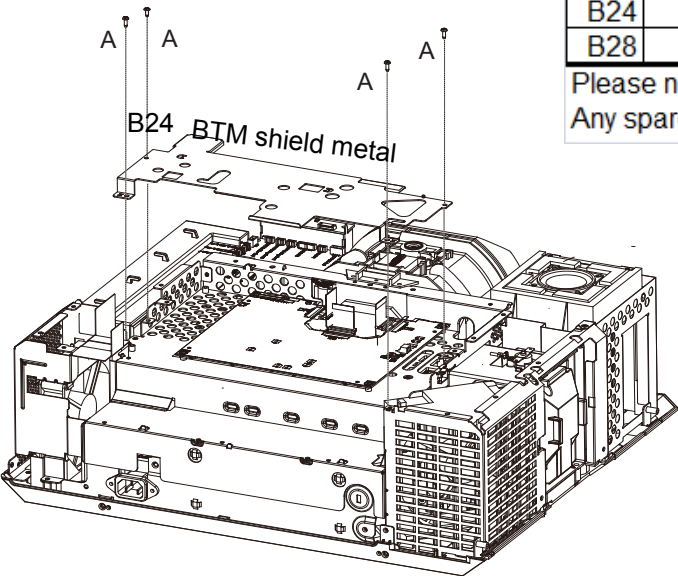
3-4. Loosen 4 screw A (M3X8) remove the BTM-shield metal of Main Board

The chapter is only designed to show exploded image of the projector. For updated part numbers, please refer to RSPL



Item#	Ref. P/N	Description	"V" for Part supply available
D01	63730077	PCBA_IO BD	V
D04	63730060	PCBA_IR-B	V
D07	63730064	MB for EK500U_S5U	V
	63730065	MB for EK501W_S5W	V
	63730066	MB for EK502X_S5X	V
B24		BTM Shield metal of MB	
B28		Shield metal of Terminal	

Please note: The reference P/N is for service purpose.
Any spare part request please refer to RSPL



Mechanical Disassembly

4. Remove the sheet metal and LCD Driver PCBA.

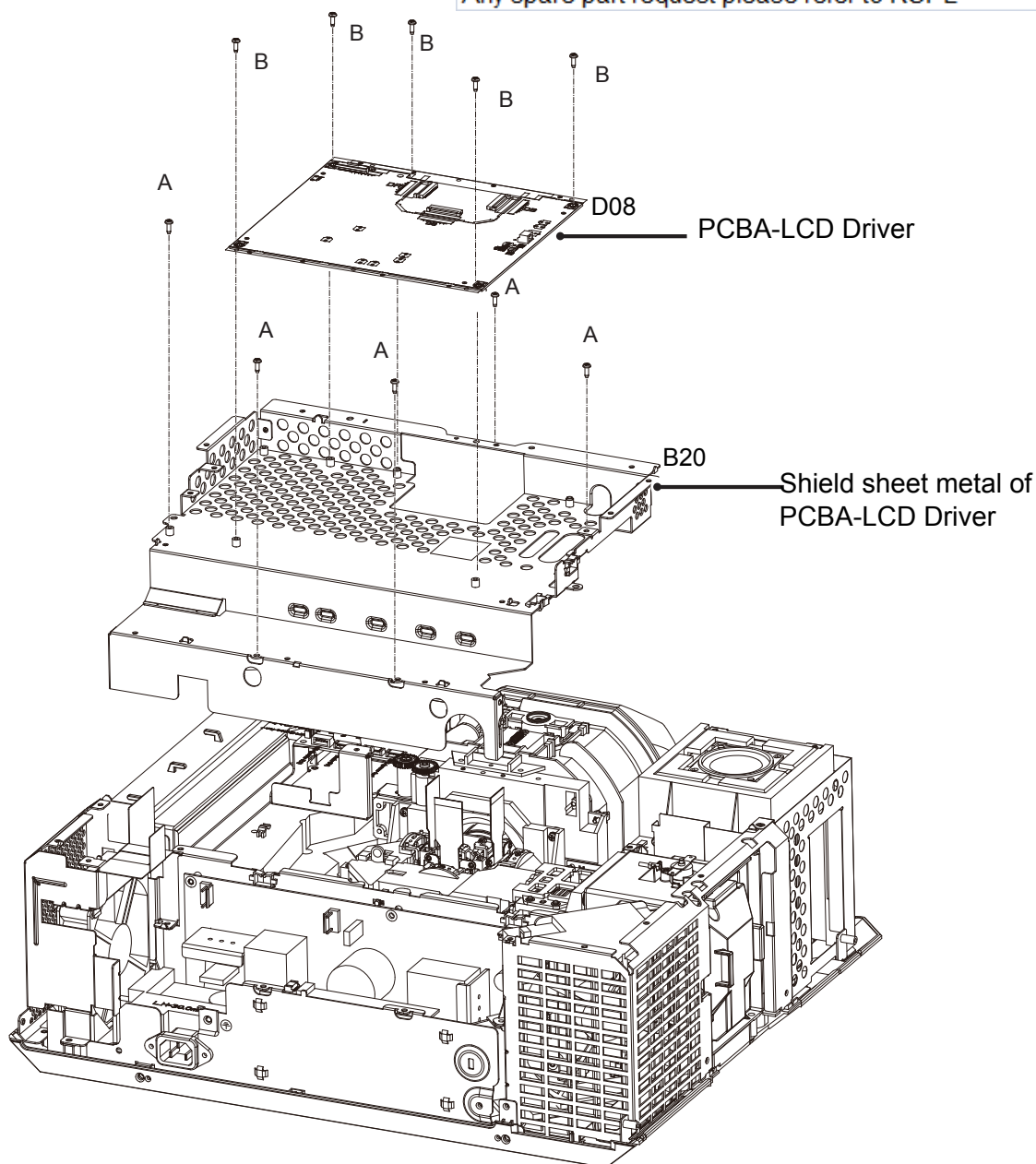
4-1.Loosen 5 screw B (M3X8) remove PCBA-LCD Driver

4-2.Loosen 5 screw A (M3X8) remove the BTM-shield metal of PCBA-LCD Driver

The chapter is only designed to show exploded image of the projector. For updated part numbers, please refer to RSPL

Item#	Ref. P/N	Description	"V" for Part supply available
D08	63730068	PCBA_LCD Driver	V
B20		Shield sheet metal of PCBA-LCD driver	

Please note: The reference P/N is for service purpose.
Any spare part request please refer to RSPL



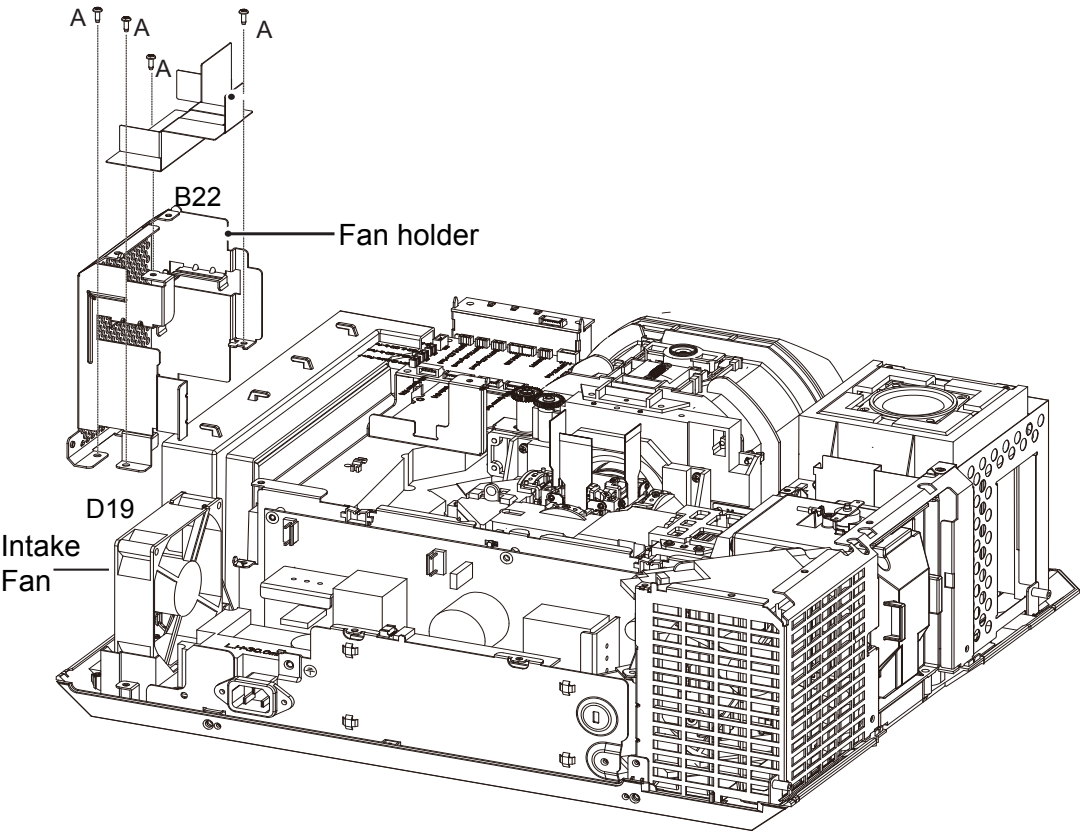
Mechanical Disassembly

5. Remove the Intake Fan and Fan Driver PCBA.

5-1.Loosen 4 screw A (M3X8) remove Fan holder and Intake Fan.

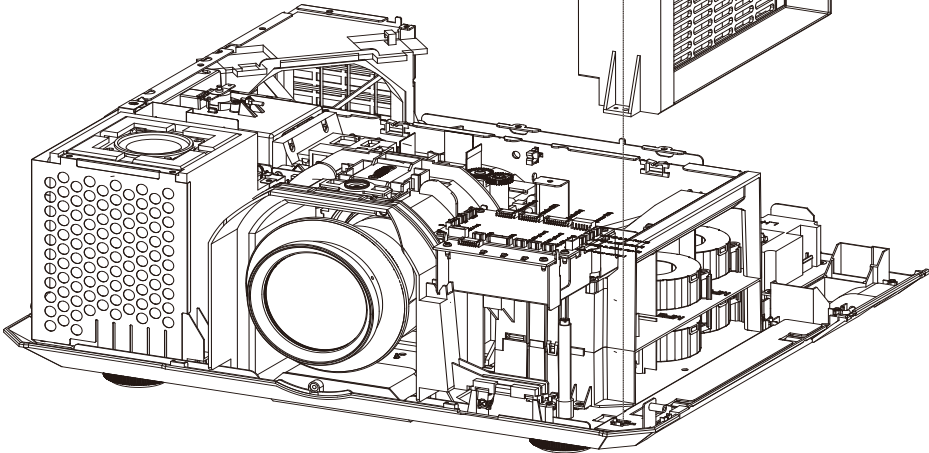
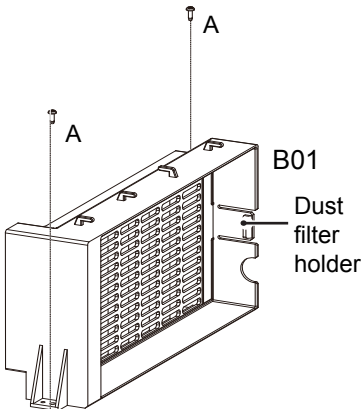
5-2.Loosen 2 screw A (M3X8) remove the Dust Filter holder

The chapter is only designed to show exploded image of the projector. For updated part numbers, please refer to RSPL



Item#	Ref. P/N	Description	"V" for Part supply available
B18		Fan holder	
D19	63260030	Intake Fan	V
B01		Dust filter holder	

Please note: The reference P/N is for service purpose.
Any spare part request please refer to RSPL



Mechanical Disassembly

5. Remove the Intake Fan and Fan Driver PCBA.

5-3.Loosen 2 screw A (M3X8) remove PCBA_IR

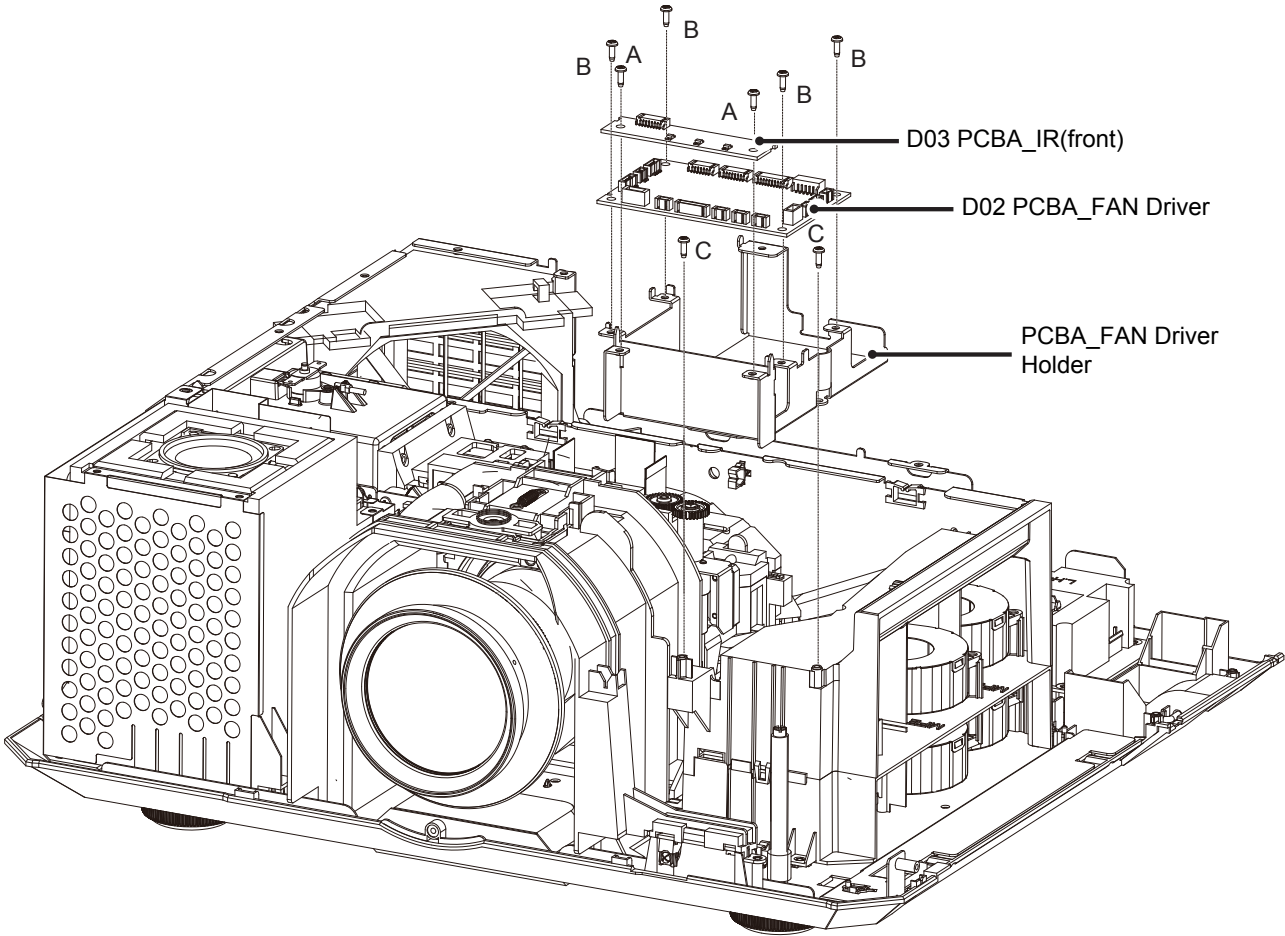
5-4.Loosen 4 screw B (M3X8) remove the PCBA_FAN Driver

5-5 Loosen 4 screw C (M3X8) remove the PCBA_FAN Driver Holder

The chapter is only designed to show exploded image of the projector. For updated part numbers, please refer to RSPL

Item#	Ref. P/N	Description	"V" for Part supply available
D03	63730078	PCBA_IR-F	V
D02	63730061	PCBA_FAN Driver	V
B26		PCBA_FAN Driver Holder	

Please note: The reference P/N is for service purpose.
Any spare part request please refer to RSPL



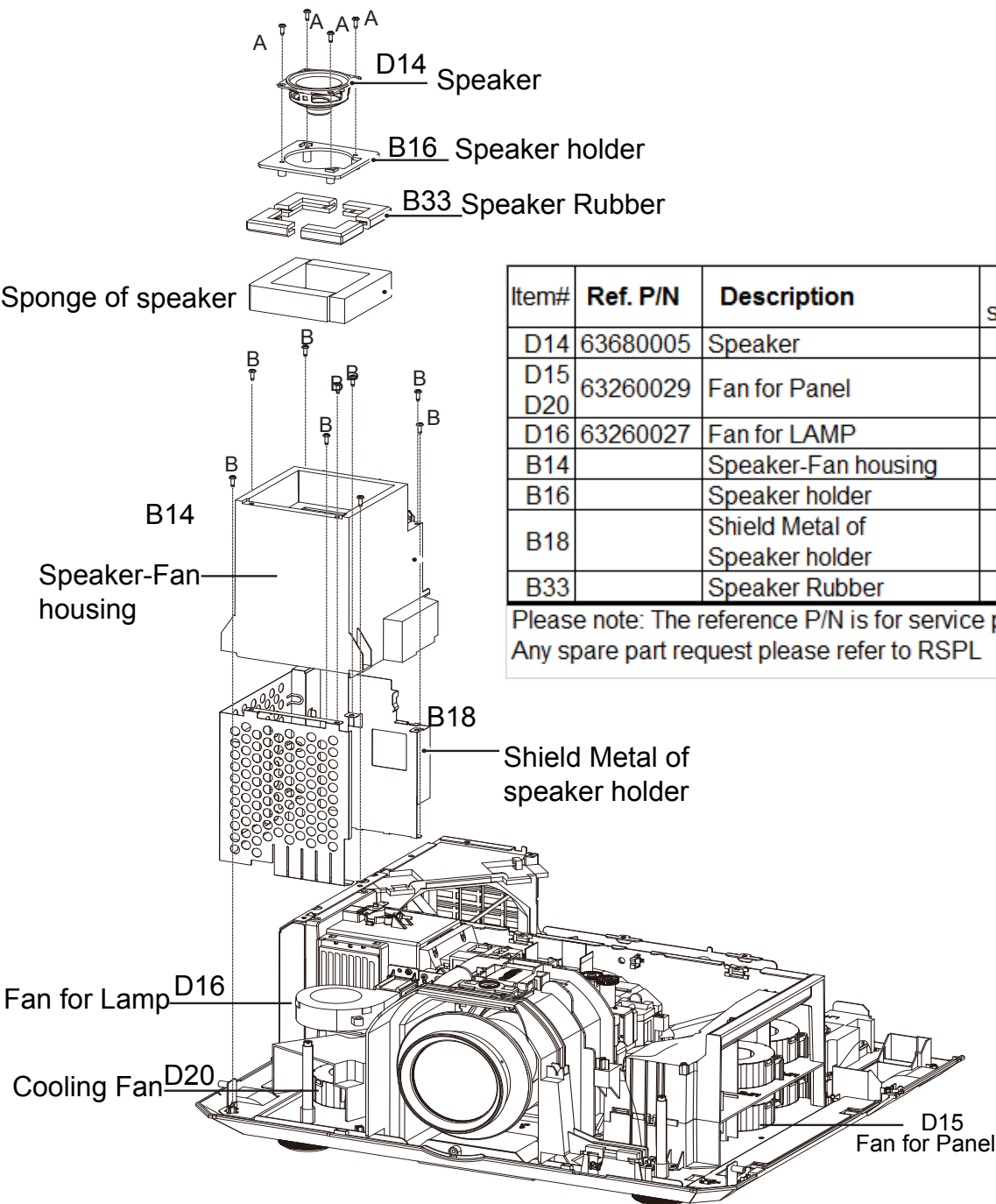
Mechanical Disassembly

6. Remove the Speaker Ass'y

6-1.Loosen 4 screw A (M3X8) remove Speaker Ass'y

6-2.Loosen 8 screw B (M3X8) remove the Speaker Holder Ass'y

The chapter is only designed to show exploded image of the projector. For updated part numbers, please refer to RSPL



Item#	Ref. P/N	Description	"V" for Part supply available
D14	63680005	Speaker	V
D15 D20	63260029	Fan for Panel	V
D16	63260027	Fan for LAMP	V
B14		Speaker-Fan housing	
B16		Speaker holder	
B18		Shield Metal of Speaker holder	
B33		Speaker Rubber	

Please note: The reference P/N is for service purpose.
Any spare part request please refer to RSPL

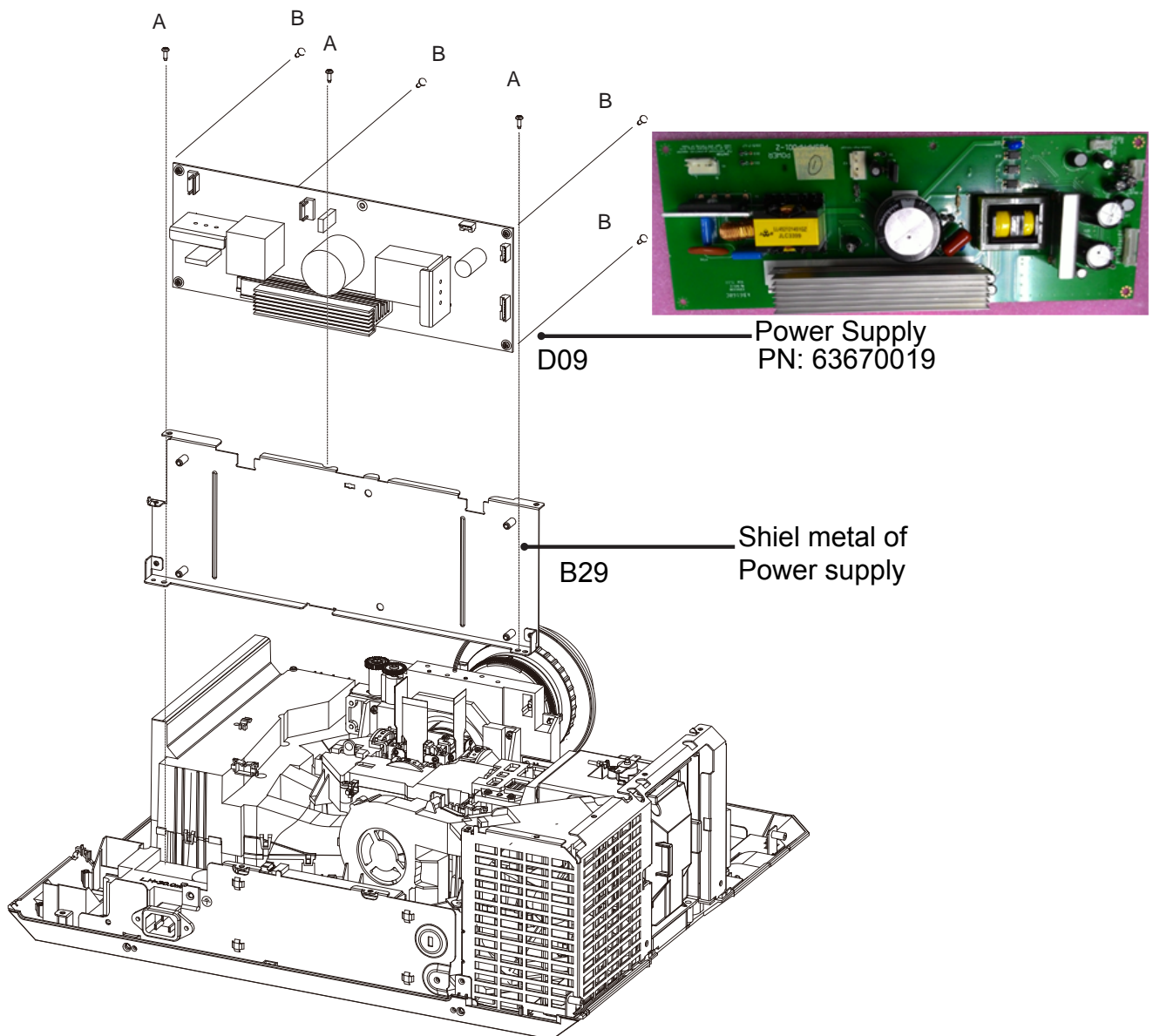
Mechanical Disassembly

7. Remove the Power supply and Ballast AC Filter Ass'y

7-1. Loosen 3 screw A (M3X8) remove Power supply Ass'y

7-2. Loosen 4 screw B (M3X8) remove the Power supply from shield metal of Power supply Ass'y

The chapter is only designed to show exploded image of the projector. For updated part numbers, please refer to RSPL



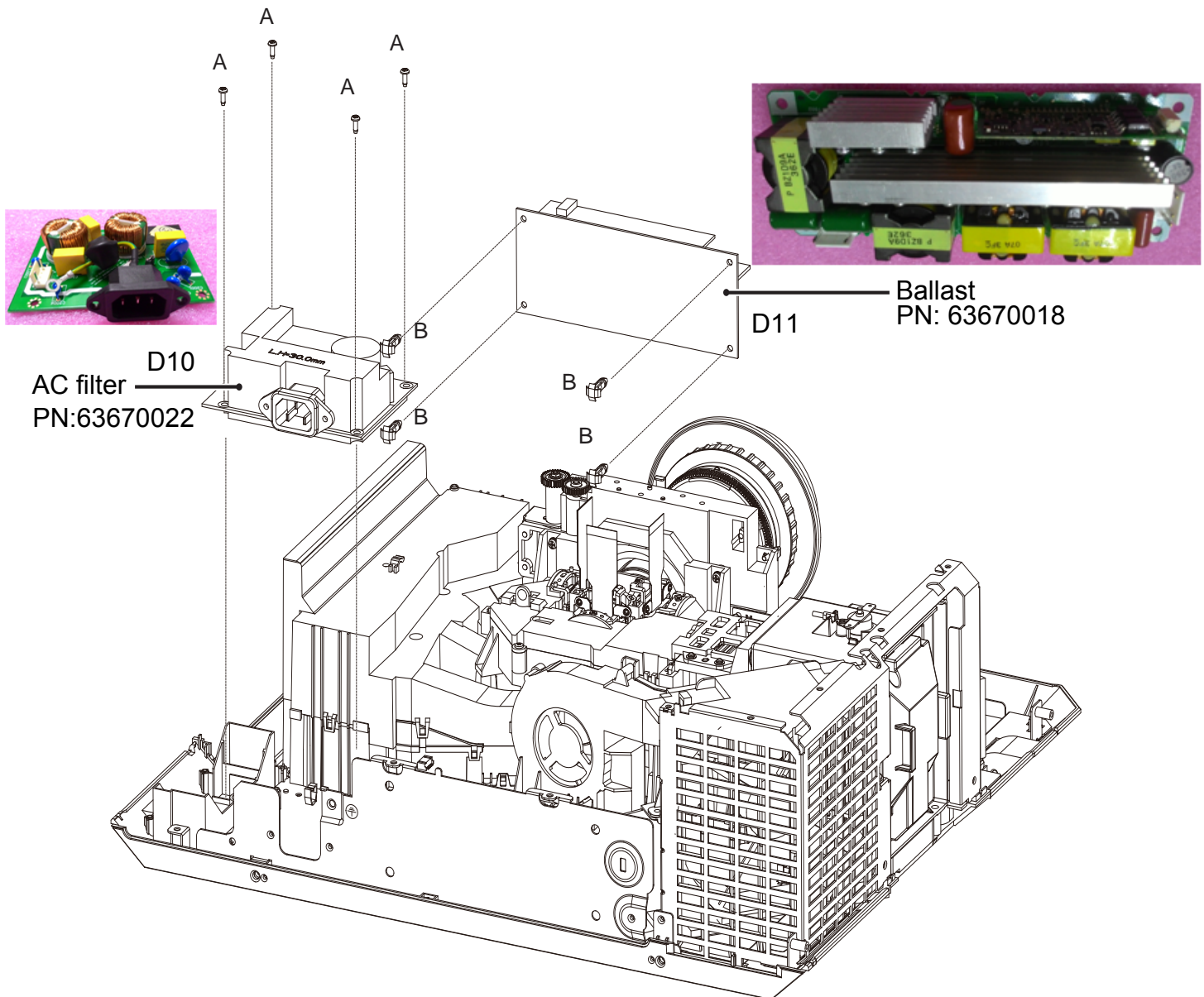
Mechanical Disassembly

7. Remove the Power supply and Ballast AC Filter Ass'y

7-3. Loosen 4 screw A (M3X8) remove AC Filter

7-4. Loosen 4 screw B (M3X8) remove the Ballast

The chapter is only designed to show exploded image of the projector. For updated part numbers, please refer to RSPL



Mechanical Disassembly

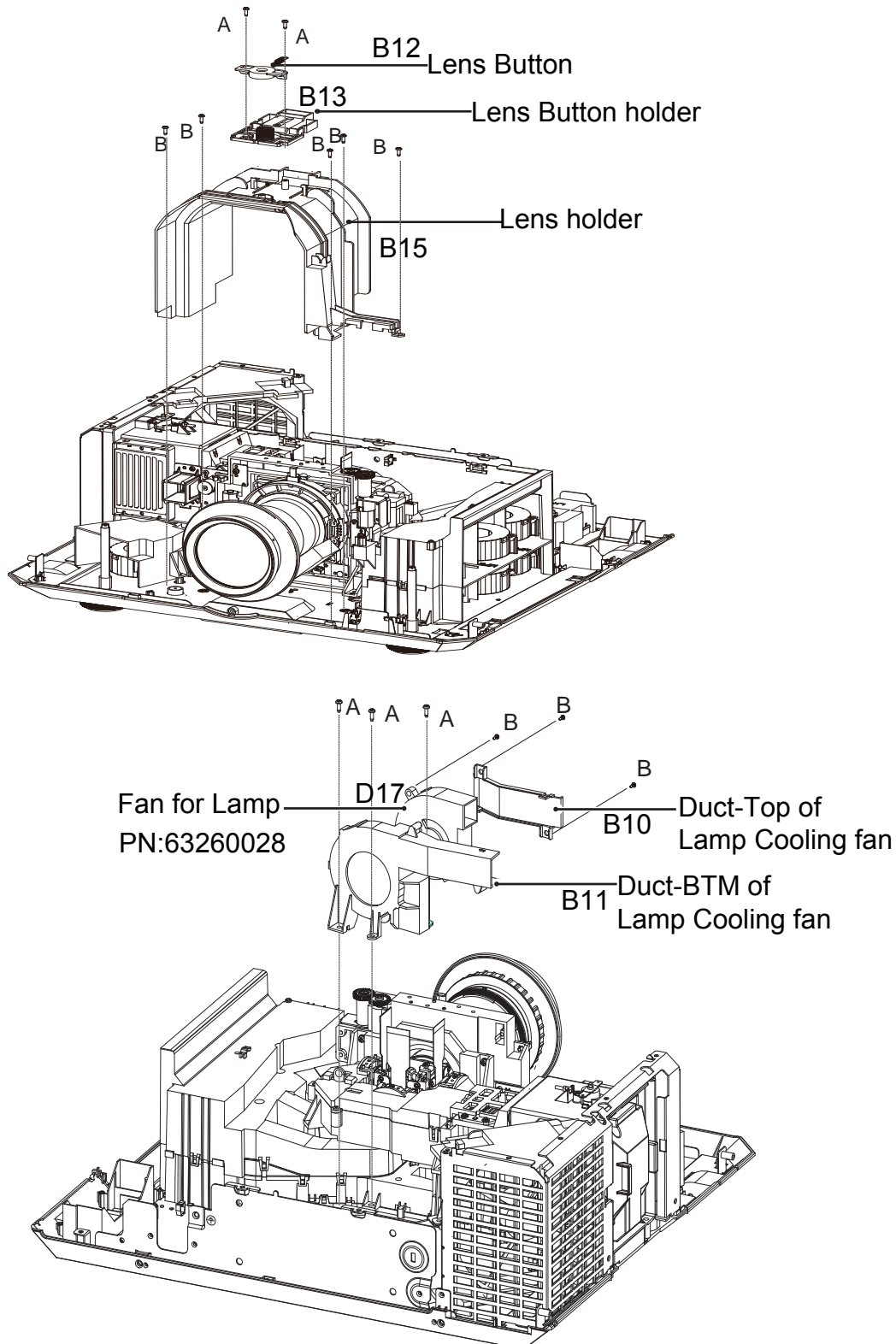
8. Remove the Optical engine and Lamp-fan & Optical engine duct Ass'y

8-1. Loosen 2 screw A (M3X8) remove Lens Button. Loosen 5 screw B (M3X8) remove the Lens holder.

8-2. Loosen 4 screw A (M3X8) remove Lamp Cooling fan Ass'y.

Loosen 3 screw B (M3X8) disassembly the lamp cooling fan duct and remove out Lamp Cooling Fan.

The chapter is only designed to show exploded image of the projector. For updated part numbers, please refer to RSPL



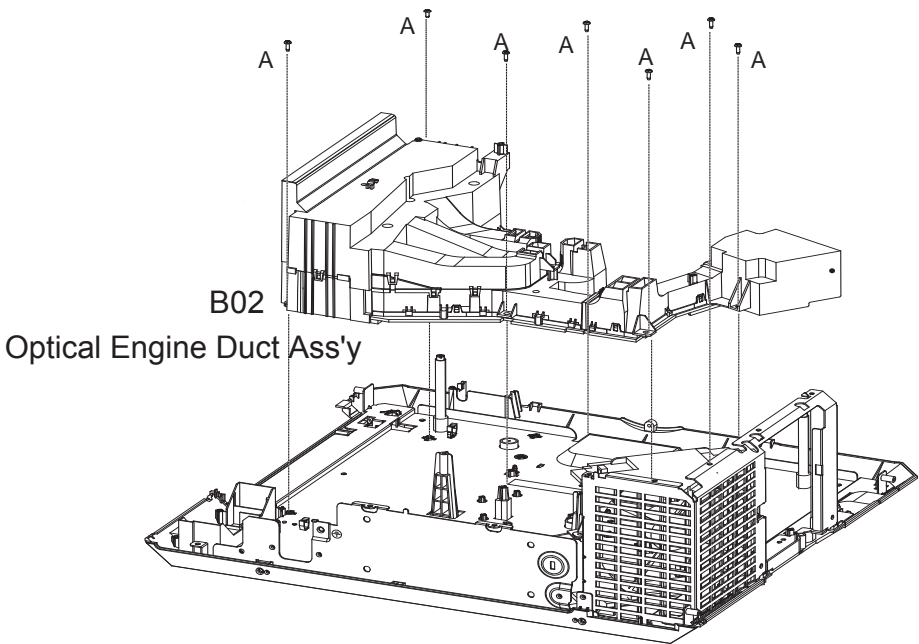
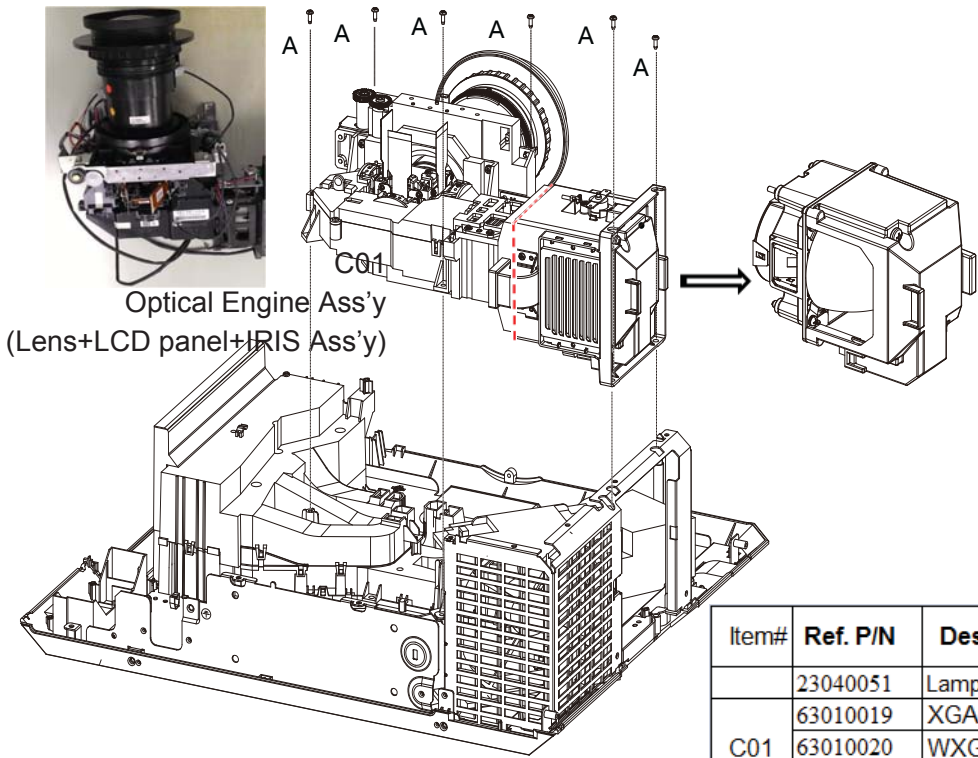
Mechanical Disassembly

8. Remove the Optical Engine and Lamp-Fan&Optical Engine Duct Ass'y

8-3.Loosen 6 screw A (M3X8) remove Optical Engine Ass'y

8-4.Loosen 4 screw A (M3X8) remove Optical Engine Duct Ass'y

The chapter is only designed to show exploded image of the projector. For updated part numbers, please refer to RSPL

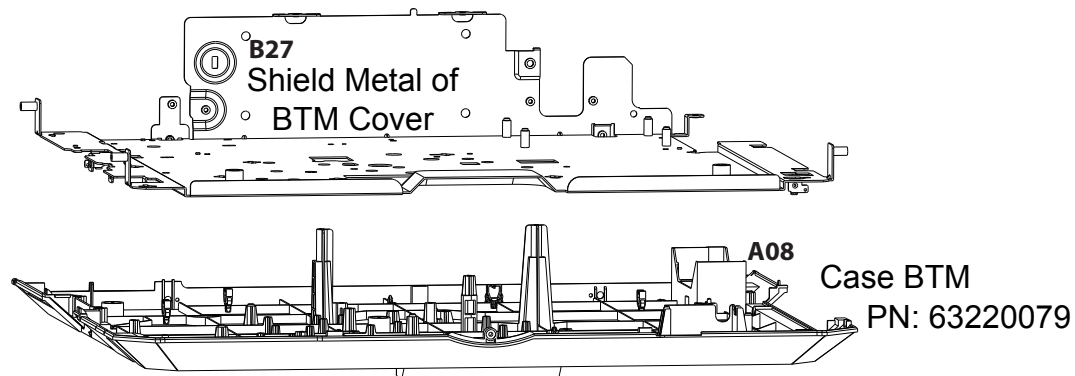
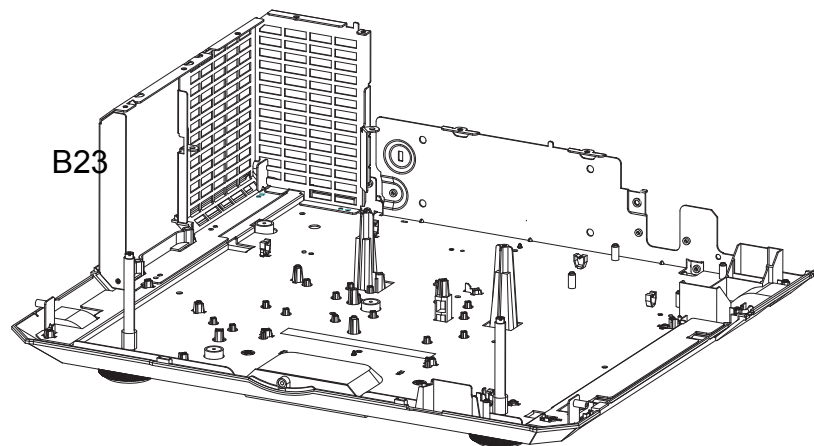
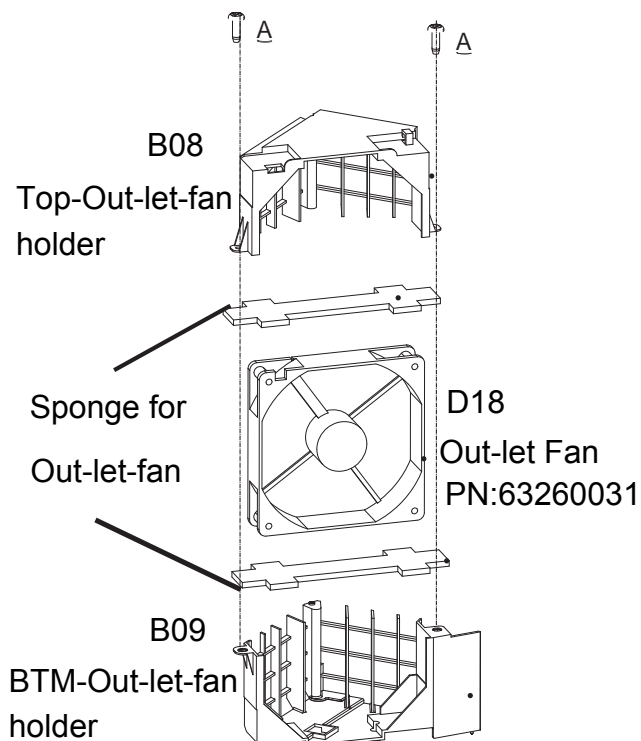


Mechanical Disassembly

9. Remove the Out-let fan Ass'y

9-1. Loosen 2 screw A (M3X8) remove Out-let fan Ass'y.

The chapter is only designed to show exploded image of the projector. For updated part numbers, please refer to RSPL

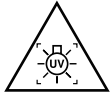


Adjustment

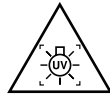
Service adjustment menu operation

CAUTION:

The each circuit has been made by the fine adjustment at factory. Do not attempt to adjust the following adjustments except requiring the readjustments in servicing otherwise it may cause loss of performance and product safety. Before taking these adjustments, turn the projector for more than 10 minutes to stabilize the operation.



WARNING:
USE UV RADIATION EYE AND SKIN
PROTECTION DURING SERVICING.



CAUTION:

To prevent suffer of UV radiation, those
adjustments must be completed within
25 minutes.

[Adjustment Condition]

● Input signal

Computer 0.7Vp-p/75Ω, 16 steps gray scale

Video 1.0Vp-p/75Ω, 16 steps gray scale (Video signal)

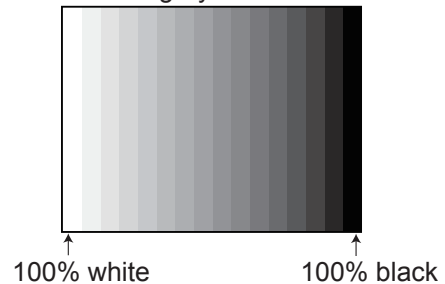
Component 1.0Vp-p/75Ω, 100% full colorbar (Component signal)

● Image mode "Normal" as default.

ADC auto-calibration [VGA1]

1. Input 100% colorbar signal to a VGA terminal.
2. Enter service mode.
3. ADC auto-calibration is enabled. Select group 260 item 1 and change its value from "0" to "1". After the ADC auto-calibration is completed, the value for group 260 item 0 is automatically changed to "0".

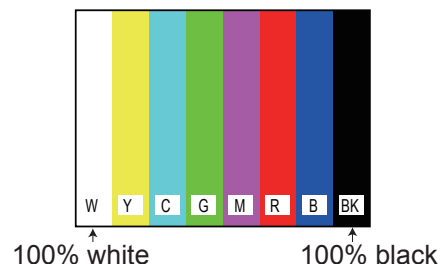
16 grey scale



ADC auto calibration [Video]

1. Input 16 steps gray scale signal to VIDEO terminal.
2. Enter service mode.
3. Select group 260, item 1, change the data from 0 to 1. After calibrating, the data of group 260, item 0 will change to 0 automatically.

100% Colorbar







































ADC auto-calibration [Component]

1. Connect the component signal port to 100% colorbar.
2. Enter service mode.
3. ADC auto-calibration is enabled. Select group 260 item 1 and change its value from "0" to "1". After the ADC auto-calibration is completed, the value for group 260 item 0 is automatically changed to "0".

Troubleshooting

Light indicator status

Check light indicator to learn status of your projector.

Light indicator			Status of your projector
POWER	STATUS	FILTER	
			The projector is in Off status (without AC power supply).
			The projector is in standby status. Press Standby button to turn it on.
			The projector is in normal operation status.
			It is ready for standby or the lamp is cooling. You may power on your projector only after the lamp is fully cooled and the POWER light indicator stops flashing.
			The projector is in Ready mode. Since "Ready mode, if press "POWER" key, the unit will be turn off. Please re-start again.
			Your projector detects abnormal situation and cannot power on. Unplug the AC power cord and connect it again before powering on your projector. If it powers off again, please unplug the cord and call your dealer or service center for maintenance or inspection. Do not let it continue operating as this may lead to electric shock or fire.
			The projector detects lamp abnormality and cools down.
			The projector detects lamp abnormality and switches into standby mode.
			The projector cannot power on, as its internal temperature may too high. You may power it on after it is fully cooled, temperature backs to normal, and the POWER light indicator turns red.
			The projector is cooling down and wait for temperature backs to normal.
			The lamp cover is not fully closed, the filter cover is not fully closed, and the lens is not correctly installed.
			The dust filter need to be cleaned



.....Green



.....Red



.....Turns on



.....Off



.....Flashing green



.....Flashing red



.....Flashing

Troubleshooting

Troubleshooting	Solution
Power on failure	<ul style="list-style-type: none">– Plug the power cord of your projector in an AC socket.– Make sure the POWER light indicator turns red.– Restart your projector until the POWER light indicator turns red. It indicates your projector is ready for power on again.– Check the lamp.– Do not lock the Key Lock function of your projector.
Logo screen display failure	<ul style="list-style-type: none">– Make sure the Off and Countdown Off is selected in the Display function.
The Logo screen differs from the standard settings.	<ul style="list-style-type: none">– Make sure you did not select User or Off in the Logo Screen.
Input signal switch (or do not switch) automatically.	<ul style="list-style-type: none">– Make sure you have correctly set up the Input Search function.
Press INPUT button during power on and a non-input mode icon displays.	<ul style="list-style-type: none">– This is a filter or lamp replacement alerts.
A non-input or lamp mode icon displays.	<ul style="list-style-type: none">– This is a filter replacement alerts.
Image looks fuzzy	<ul style="list-style-type: none">– Adjust focus of your projector.– Provide proper projection distance.– The projection lens requires cleaning.– Moving your projector from a colder environment to a hotter one may result in condensing on the lens. If this is the case, wait until the condensing water evaporated before powering on your projector.
Image mirror reflected Image turns upside down	<ul style="list-style-type: none">– Check the Ceiling and Rear settings.– Check the Ceiling settings.
Image looks dim	<ul style="list-style-type: none">– Check for contrast and brightness settings.– Check for correct image mode settings– Check for lamp brightness settings.– Check for lamp replacement alert. The lamp replacement alert suggests the lamp is reaching the end of its life cycle. Please replace it with a new one of the same model immediately.

Troubleshooting

No image displays	<ul style="list-style-type: none">– Check for the connection between your projector and computer or image equipment.– Check for correct input signal from computer. Connection with certain notebook computer may mandate changes to its display output settings. See the user manual included with the computer for details on settings.– It takes about 30 seconds for your projector to show the first image.– Check for mode of signal, color system, image system, or computer system.– Make sure the ambient temperature is within given range (41°F–95°F; 5°C–35°C).– Image does not display in BLANK mode. The BLANK button or other buttons on the remote controller.
Abnormal color	<ul style="list-style-type: none">– Check for mode of signal, color system, image system, or computer system.– Make sure Blackboard mode is not selected in Image Select.
Some operations are invisible	<ul style="list-style-type: none">– Check the display function.
Auto PC Adjusting function failure	<ul style="list-style-type: none">– Check input signal. Auto PC Adjusting function is unavailable in 480p, 576p, 720p, 480i, 576i, 1080i or 1080p mode.
Settings do not save after power off	<ul style="list-style-type: none">– Make sure you have selected Store after settings adjustment. Certain settings do not keep without selecting Store.
Power management failure	<ul style="list-style-type: none">– In case of Freeze or Blank operation, the power management function does not work.
Auto Setting does not work	<ul style="list-style-type: none">– Make sure it is not set to "Off" in each setup menu.– Make sure "On" is not set in Ceiling function.
Image distorted or disappeared	<ul style="list-style-type: none">– Check and revise the PC Adj. menu or Screen menu.
A password prompt displays after power on	<ul style="list-style-type: none">– You have set up the Logo PIN Code lock function
Remote controller does not work	<ul style="list-style-type: none">– Check the battery.– Make sure there is no obstacles stand in between your projector and the remote controller.– Make sure the remote controller is not too far away from your projector. The maximum operation range is 5m.– Make sure the remote controller and your projector are paired with the same remote control codes.– Release the key lock of the remote controller in the Setup menu.

Troubleshooting

Light indicator turns on or flashes	– Check status of your projector according to the light indicator status.
Exclamation mark displays	– Invalid operation, please operate your projector correctly.
Control panel does not function	– Disable the key lock on control panel function in the Safety option of the Setup menu.
Cannot remove the Logo Select password, Key Lock, and PIN Code lock	– Please call your dealer or service center.

- Make sure your projector is correctly connected to external equipment.
- Make sure all devices have plugged in an AC power source and have been powered on.
- If your projector fails to project image of the connected computer, restart the computer.

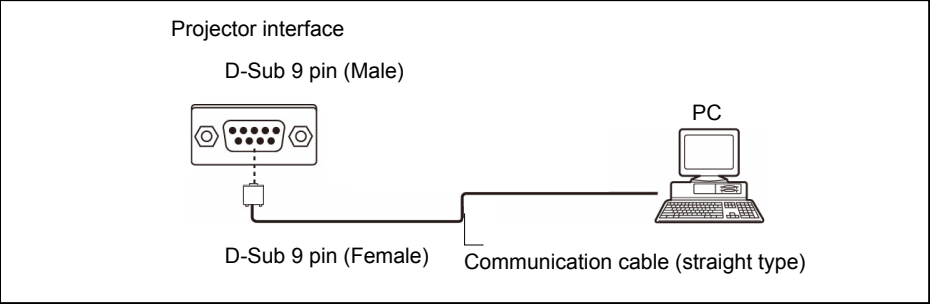
Appendix

Serial Control

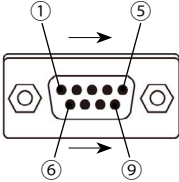
Serial interface

The <Serial Input> terminal of the projector is in accordance with RS-232C, so the projector can be connected to the computer and controlled by the computer.

Connection



The pin layout and signal

D-Sub 9 pin (Male) Appearance diagram 	Pin number	Signal name	Description
	①	—	NC
	②	RXD	Receive data
	③	TXD	Transmission data
	④	—	NC
	⑤	GND	Ground connection
	⑥	—	NC
	⑦	RTS	Internal connection
	⑧	CTS	
	⑨		NC

Communication condition

Signal level	Compatible with RS-232C
Synchronization mode	Asynchronous
Baud rate	19 200 bps
Parity check	NO

Character interval	8-bit
Stop bit	1-bit
X Parameters	NO
S Parameters	NO

Appendix

RS232 control mode

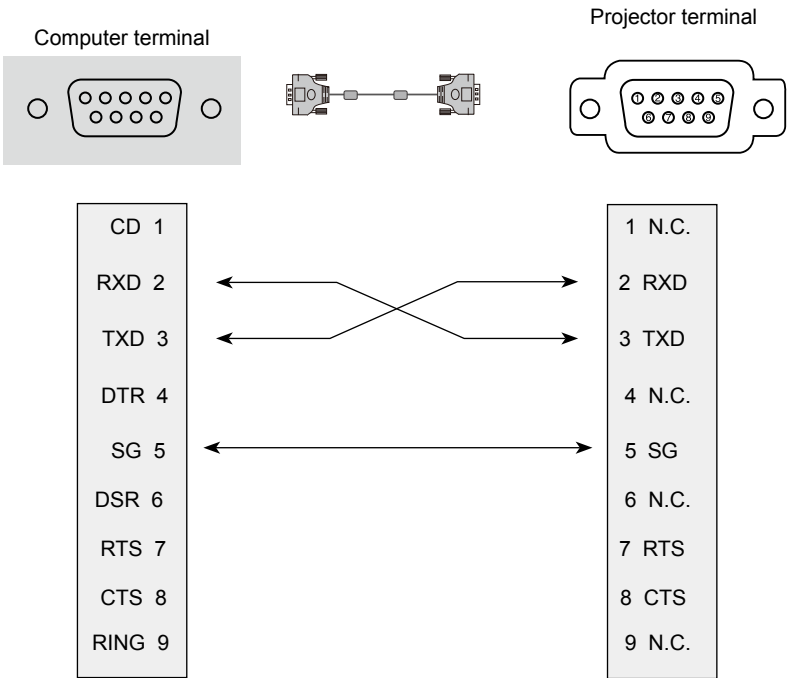
Serial connection

1.1 Port setting

Project	Setpoint
Communication method	Asynchronous communication
Communication rate	19200
Length	8-bit
Parity check	NO
Stop position	1
Flow control	NO

1.2 Connection mode

Can only use RS232 serial cross connect PC and projector.



Appendix

2. Basic commands

Distinguish the letter case, and enter Each command ends with [CR] (enter) .

Command	Option	Command	Option
C00	POWER ON	C06	Component
C01	POWER OFF (Shut down Immediately)	C07	DVI
C02	POWER OFF	C32	Video
C36	HDMI	C33	RGBHV
C05	VGA		

2.1 POWER ON command

Command	"C00" [CR] (Sixteen decimal value: 41 30 30 0d)		
Details	Power ON action Power on. Send this command to power on when you are in standby mode .		
Return Value	Receive Successfully	[ACK] [CR]	
	Receive Unsuccessfully	"? " [CR]	

2.2 POWER OFF command (Shut down Immediately)

Command	"C01" [CR] (Sixteen decimal value: 41 30 31 0d)		
Details	Power off. Send this command to shut down when you are in the power-on mode .		
Return Value	Receive Successfully	[ACK] [CR]	
	Receive Unsuccessfully	"? " [CR]	

2.3 POWER OFFcommand

Command	"C02" [CR] (Sixteen decimal value: 41 30 32 0d)		
Details	Power off. Send this command to pop up [POWER OFF] dialog box when you are in the power-on mode,then send this command once again to power on.		
Return Value	Receive Successfully	[ACK] [CR]	
	Receive Unsuccessfully	"? " [CR]	

2.4 VGA command

Command	"C05" [CR] (Sixteen decimal value: 41 30 35 0d)		
Details	Select VGA Input		
Return Value	Receive Successfully	[ACK] [CR]	
	Receive Unsuccessfully	"? " [CR]	

Appendix

2.5 COMPONENT command

Command	"C07" [CR] (Sixteen decimal value: 41 30 37 0d)	
Details	Select Component Input.	
Return Value	Receive Successfully	[ACK] [CR]
	Receive Unsuccessfully	"? " [CR]

2.6 DVI command

Command	"C32" [CR] (Sixteen decimal value: 41 33 32 0d)	
Details	Select DVI Input .	
Return Value	Receive Successfully	[ACK] [CR]
	Receive Unsuccessfully	"? " [CR]

2.7 Video command

Command	"C33" [CR] (Sixteen decimal value: 41 33 33 0d)	
Details	Select Video Input	
Return Value	Receive Successfully	[ACK] [CR]
	Receive Unsuccessfully	"? " [CR]

2.8 HDMI command

Command	"C36"[CR] (Sixteen decimal value: 41 33 36 0d)	
Details	Select HDMI 1 Input .	
Return Value	Receive Successfully	[ACK] [CR]
	Receive Unsuccessfully	"? " [CR]

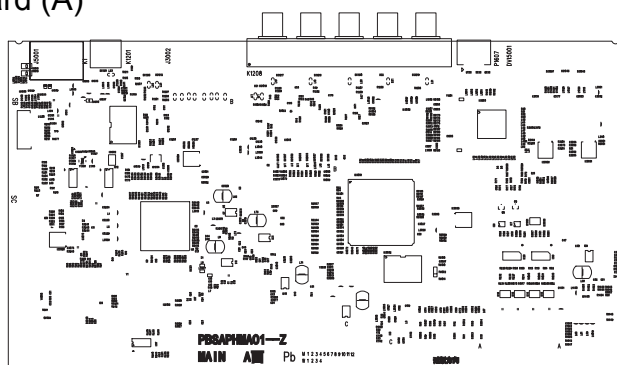
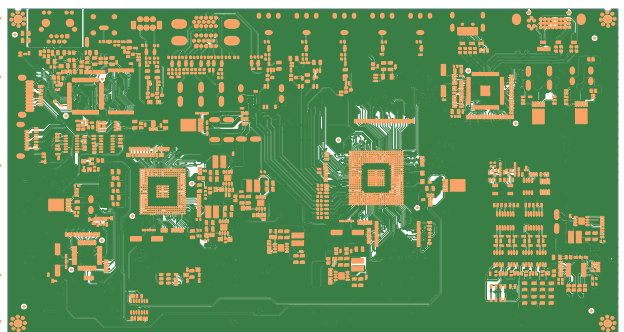
2.9 RGBHV command

Command	"C37"[CR] (Sixteen decimal value: 41 33 37 0d)	
Details	Select RGBHV Input	
Return Value	Receive Successfully	[ACK] [CR]
	Receive Unsuccessfully	"? " [CR]

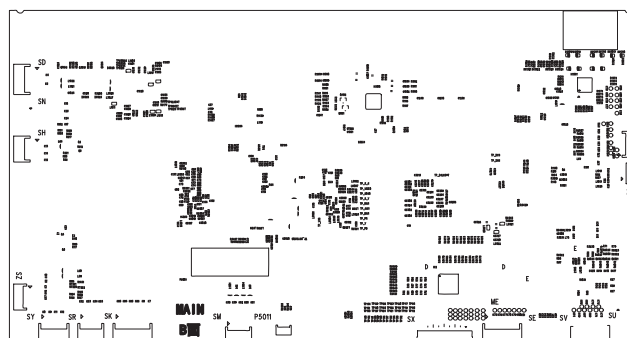
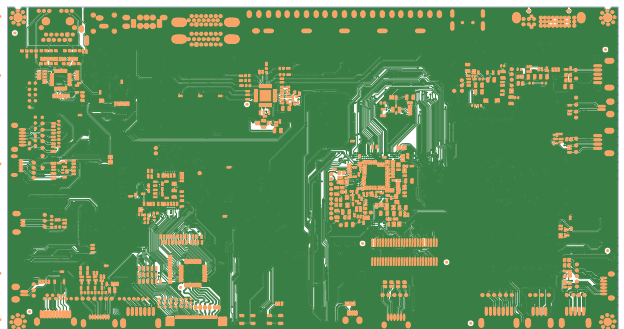
Note: [ACK] "CR" is the return value for receiving valid commands.

PCBA Diagrams

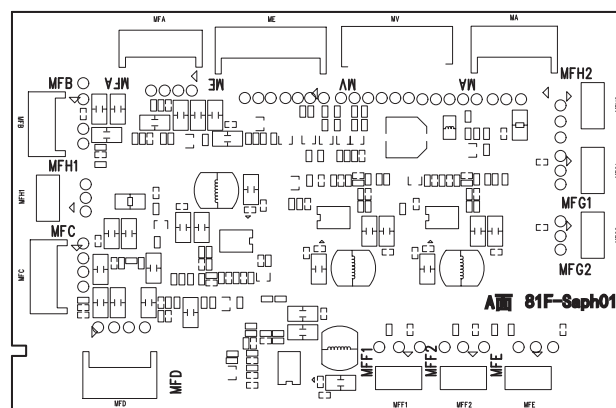
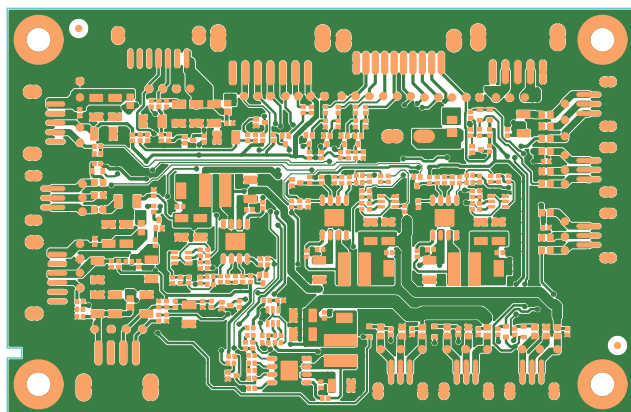
PCBA-Main board (A)



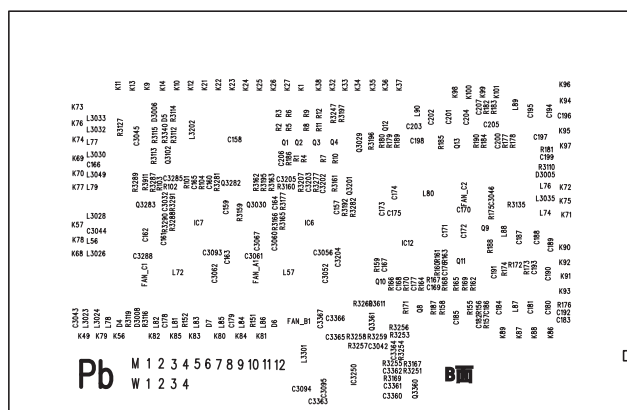
PCBA-Main board (B)

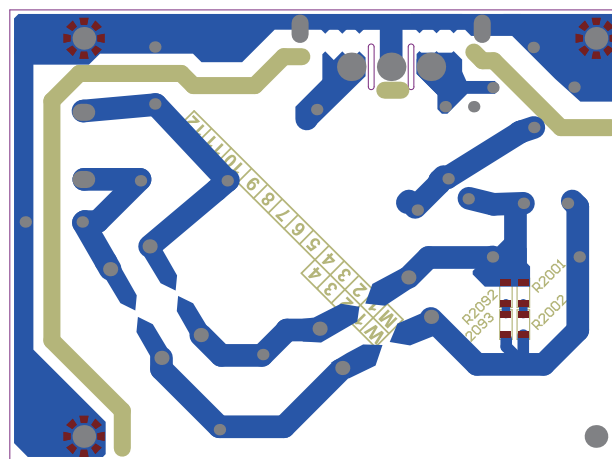
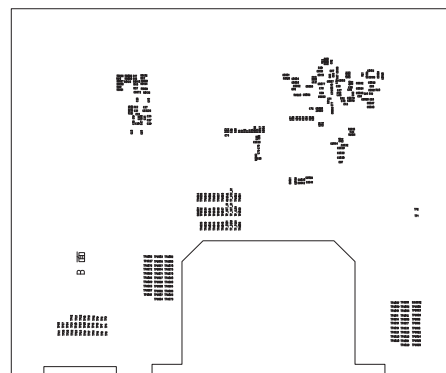

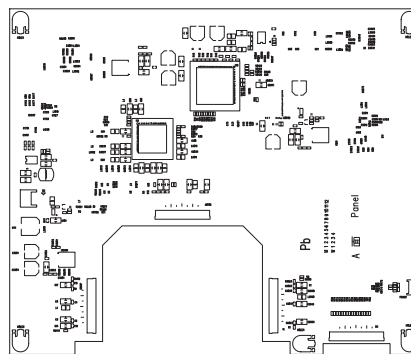


PCBA-Fan Driver (A)



PCBA-Fan Driver (B)





CT-600
Sapphire POWER
subcomponent 2
REV. 001

