# Rigel-PJ1

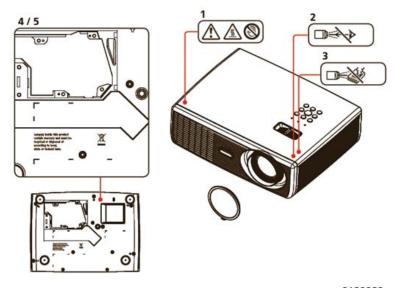
cx/cwH/cwL/cxL Machine Codes: Y017/Y018/Y019/Y023

**Field Service Manual** 

# **Regulation & Safety Notices**

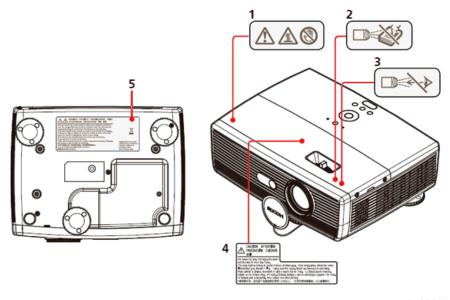
### Safety Labels of This Machine

• Model Y018/Y019/Y023l



y0180023

- Do not block the air intake or exhaust. Doing so could cause a fire due to internal overheating. Do
  not place your hands, face, or other objects near the air exhaust, the lamp cover or the bottom of
  the unit. Doing so could result in injury and/or damage to the object.
- 2. Do not look into the lens while the lamp is on. The strong light from the lamp may cause damage to your eyesight.
- 3. Do not place anything in front of the lens while the projector is operating. Things placed in front of the lens may overheat and burn or start a fire. If you want to temporarily stop the projected image, use the AV mute on the remote control or the keypad.
- 4. To replace the lamp, unplug the power cord and then wait for 60 minutes.
- 5. Do not remove any screws except the lamp cover screws. Do not block or cover the vents.
- Model Y017



y0180041

- Do not block the air intake or exhaust. Doing so could cause a fire due to internal overheating. Do
  not place your hands, face, or other objects near the air exhaust, the lamp cover or the bottom of
  the unit. Doing so could result in injury and/or damage the object.
- 2. Do not place anything in front of the lens while the projector is operating. Things placed in front of the lens may overheat and burn or start a fire. If you want to temporarily stop the projected image, use the AV mute on the remote control or the keypad.
- 3. Do not look into the lens while the lamp is on. The strong light from the lamp may cause damage to your eyesight.
- 4. To replace the lamp, first unplug the power cord then wait for more than 1 hour. The lamp might be broken. Be careful of pieces of broken glass.
- 5. Do not remove any screws except the lamp cover screws. Do not block or cover the vents.

#### Notice: Users in the United States of America

#### **FCC** notice

MODEL NAME: PJ WX5140 / PJ WX5150 / X5260

TRADE NAME: PROJECTOR

MODEL NAME: PJ WX5140 / PJ WX5150 / X5260



FOR HOME OR OFFICE USE

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1. This device may not cause harmful interference and
- 2. This device must accept any interference received, including interference that may cause undesired operation.

This device has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

### **MARNING**

 This product contains a chemical known to the state of California to cause cancer, birth defects or other reproductive harm.

However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the device and receiver.
- Connect the device into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

RESPONSIBLE PARTY: Ricoh Americas Corporation

5 Dedrick Place, West Caldwell, NJ 07006

Phone: 973-882-2000

#### Notice: Shielded cables

All connections to other computing devices must be made using shielded cables to maintain compliance with FCC regulations.

#### Caution

Changes or modifications not expressly approved by the manufacturer could void the user's authority, which is granted by the Federal Communications Commission, to operate this projector.

#### USA Only

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

### Notes: Canadian Users



• This Class B digital apparatus complies with Canadian ICES-003.

### Remarques a l'attention des utilisateurs canadiens de la norme NMB-003

Avertissement:

Cet appareil numerique de la classe B est conforme a la norme NMB-003 du Canada.

# **Declaration of Conformity for EU countries**

- EMC Directive 2004/108/EC (including amendments)
- Low Voltage Directive 2006/95/EC

## CE Marking Traceability Information (For EU Countries Only)

• Manufacturer:

Ricoh Co., Ltd.

3-6 Nakamagome 1-chome, Ohta-ku, Tokyo. 143-8555, Japan

• Authorized representative:

Ricoh Europe PLC

20 Triton Street, London. NW1 3BF, United Kingdom

#### Overseas Affiliates and Noise Emission Information

In accordance with TUV "GS Symbol" requirements, details of the EU office or representative company are given below.

Overseas Affiliates

Ricoh Europe PLC

20 Triton Street, London. NW1 3BF, United Kingdom

Noise Emission

Maschinenlärminformations-Verordnung 3. GPSGV: Der höchste Schalldruckpegel beträgt 70 dB(A) oder weniger gemäss EN ISO 7779

### User Information on Electrical and Electronic Equipment

Users in the countries where this symbol shown in this section has been specified in national law on collection and treatment of E-waste.

Our Products contain high quality components and are designed to facilitate recycling.

Our products or product packaging are marked with the symbol below.



This product contains substances which are harmful to humans and the environment.

• The lamp contains mercury.

Please dispose of this product or used lamps in accordance with local regulations.

- The symbol indicates that the product must not be treated as municipal waste. It must be disposed
  of separately via the appropriate return and collection systems available. By following these
  instructions you ensure that this product is treated correctly and help to reduce potential impacts on
  the environment and human health, which could otherwise result from inappropriate handling.
   Recycling of products helps to conserve natural resources and protect the environment.
- For more detailed information on collection and recycling systems for this product, please contact
  the shop where you purchased it, your local dealer or sales/service representatives.

#### All Other Users

If you wish to discard this product, please contact your local authorities, the shop where you bought this product, your local dealer or sales/service representatives.

### For Turkey only

EEE Yönetmeliğine Uygundur.

Bu sistem sarf malzemeleri ve yedek parçaları da dahil olmak üzere EEE Yönetmeliğine Uygundur.

#### **Remote Control Batteries**



#### **⚠ WARNING**

• Never throw batteries into a fire.

Using the batteries improperly may cause them to explode or leak and may result in serious injury. If battery-leaking fluid contacts skin, wash the fluid off immediately with clean water and consult a doctor. If the fluid spills on an instrument, avoid contact and wipe it off using tissue paper. Then dispose of the used tissue paper as flammable garbage after moistening the tissue with water.

#### Notes

- Be sure to use AAA (RO3) size batteries.
- Dispose of batteries in a designated disposal area.
- Attention should be drawn to the environmental aspects of battery disposal.
- Do not mix different battery types or combine used batteries with new ones.
- If the remote control does not operate correctly, or if the operating range becomes reduced, replace both batteries with new ones.
- If the batteries are dead or if you will not be using the remote control for a long time, remove the batteries to prevent battery acid from leaking into the battery compartment.

#### Following information is only for EU-member states:



[Disposal of batteries and/or accumulators]

The crossed out wheeled dust bin symbol indicates that batteries and/or accumulators must be collected and disposed of separately from household waste. If the battery or accumulator contains more than the specified values of lead (Pb), mercury (Hg), and/or cadmium (Cd) defined in the Battery Directive (2006/66/EC), then the chemical symbols for lead (Pb), mercury (Hg) and/or cadmium (Cd) will appear below the crossed out wheeled dust bin symbol. By participating in separate collection of batteries, you will help to assure the proper disposal of products and batteries and thus help to prevent potential negative consequences for the environment and human health.

For more detailed information about the collection and recycling programmes available in your country, please contact your local city office or the shop where you purchased the product.

#### Other Information

#### Copyrights to Images

When projecting images using the projector, be careful not to infringe the copyright of protected materials.

The following are examples that may infringe the copyright of protected materials.

- Broadcasting images or movies for commercial purposes
- Modifying images or movies using functions such as freeze, magnify, or zoom to broadcast images for commercial purposes or public viewing
- Varying the aspect ratio of images or movies using a function that changes the screen size to broadcast images for commercial purposes or public viewing

### Notes to Users Viewing 3D Images

Pay attention to the following points when viewing images using 3D glasses with the projector:

- How 3D images are viewed may vary according to the individual.
- Do not use 3D glasses for viewing any material other than 3D images.
- Before viewing 3D images, make sure to read the manuals provided with your 3D glasses and 3D compatible content.
- Avoid viewing 3D images for a long period of time. Take a break of 15 minutes or longer after every hour of viewing.
- If you feel sick while viewing 3D images, stop viewing them. If you continue to feel sick, consult a
  doctor.
- When viewing 3D images in a room where an LED lighting system or fluorescent lights are used, you may feel that the light in the room flickers. If this is the case, dim the lights until you do not notice any flickers, or turn off the lights.

•	If you or any member of your family has a history of light-sensitive seizures, consult a doctor before viewing 3D images.

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# 1. Product Information

# **Specifications**

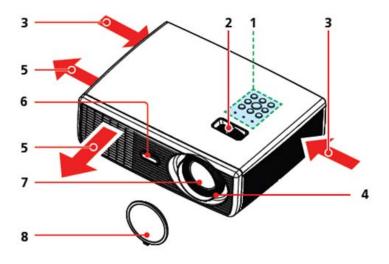
See "Appendices" for the following information:

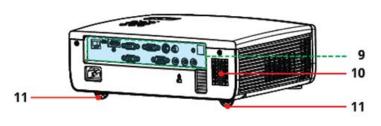
• General Specifications

# **Overview**

Overview Images

# Model Y018/Y019/Y023

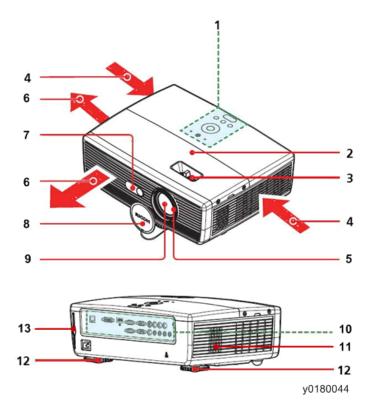




y0180021

- 1. Control panel
- 2. Zoom ring
- 3. Ventilation (inlet)
- 4. Focus ring
- 5. Ventilation (outlet)
- 6. Remote sensor
- 7. Lens
- 8. Lens cap
- 9. Connection ports
- 10. Speaker
- 11. Adjustable feet

### Model Y017

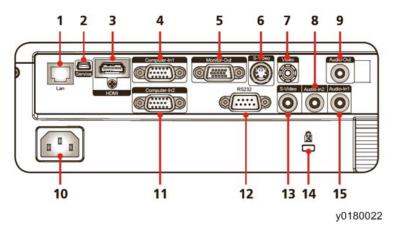


- 1. Control panel
- 2. Lamp cover
- 3. Zoom lever
- 4. Ventilation (inlet)
- 5. Focus ring
- 6. Ventilation (outlet)
- 7. Remote sensor
- 8. Lens cap
- 9. Lens
- 10. Connection ports
- 11. Speaker
- 12. Adjustable feet
- 13. Filter

Connection Ports Image

#### Model Y018/Y019/Y023

Names of the Terminals on the Rear Panel



#### 1. LAN terminal

Use this port for settings via the network.

#### 2. SERVICE Port

Use this port to update the firmware.

#### 3. HDMI terminal

Input for digital signals from a HDMI (High-Definition Multimedia Interface) compatible digital source.

#### 4. COMPUTER 1 IN terminal

Input for analog RGB signals from a computer or a component video signal (Y/PB/PR) from video equipment.

#### 5. MONITOR OUT terminal

Output for analog RGB signals or component video signal (Y/PB/PR) to another device.

#### 6. S-VIDEO IN terminal

Input for S video signals from video equipment.

#### 7. VIDEO IN terminal

Input for video signals from video equipment.

#### 8. AUDIO IN2 terminal (For COMPUTER 2IN)

Input for audio signals from a computer or video equipment.

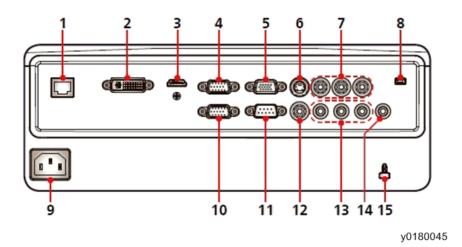
#### 9. AUDIO-OUT terminal

#### 10. AC IN socket

Connect the supplied power cord.

- 11. COMPUTER 2 IN terminal
- 12. PC CONTROL terminal (RS232 Compliant)
- 13. AUDIO IN terminal (For VIDEO and S-VIDEO)
- 14. Anti-theft lock hole (Kensington(TM) Lock)
- AUDIO IN1 terminal (For COMPUTER 1 IN)
   Input for audio signals from a computer or video equipment.

#### Model Y017



1. LAN terminal

Use this port for settings via the network.

- 2. DVI terminal
- 3. HDMI terminal

Input for digital signals from a HDMI (High-Definition Multimedia Interface) compatible digital source.

4. COMPUTER 1 IN terminal

Input for analog RGB signals from a computer or a component video signal (Y/PB/PR) from video equipment.

5. MONITOR OUT terminal

Output for analog RGB signals or component video signal (Y/PB/PR) to another device.

6. S-VIDEO IN terminal

Input for S video signals from video equipment.

7. Component IN terminal

Y/PB/PR terminals (from left to right)

#### 8. SERVICE Port

Use this port to update the firmware.

#### 9. AC IN socket

Connect the supplied power cord.

- 10. COMPUTER 2 IN terminal
- 11. PC CONTROL terminal (RS232 Compliant)

#### 12. VIDEO IN terminal

Input for video signals from video equipment.

13. AUDIO IN terminal (from left to right)

Input for audio signals from a computer or video equipment.

- (1) For S-VIDEO and VIDEO
- (2) For COMPUTER1, COMPUTER2, and DVI
- (3) For COMPONENT AUDIO-OUT terminal
- 14. AUDIO-OUT terminal
- 15. Anti-theft lock hole (Kensington(TM) Lock)

# 2. Installation

# **Precautions**

Follow all warnings, precautions and maintenance as recommended in this user's guide to maximize the life of your unit.

### **MARNING**

- This apparatus must be earthed.
- Do not look into the projector's lens when the lamp is on. The bright light may hurt your eyes.
- To reduce the risk of fire or electric shock, do not expose this projector to rain or moisture.
- Please do not open or disassemble the projector as this may cause electric shock.
- When replacing the lamp, please allow unit to cool down, and follow all replacement instructions.
- When the lamp reaches the end of its life, it will burn out and may make a loud popping sound. If
  this happens, the projector will not turn back on until the lamp module has been replaced. To
  replace the lamp, follow the procedures listed under "Replacing the Lamp".
- DO NOT REMOVE THE CABINET COVER, OR YOU MAY BE EXPOSED TO DANGEROUS VOLTAGE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY.
- This product should be operated only from the type of power source which does not exceed the
  voltage range specified on the rating label and the power cord. If you are not sure of the type of
  power supply to your home, consult your sales representative or local power company.
- Do not use the polarized plug with an extension cord, receptacle, or other outlet unless the blades can be inserted completely with three wire grounding type to prevent blade exposure. Failure to follow these instructions may result in fire or electric shock.

# **CAUTION**

- Never operate this unit on AC power during a thunderstorm. If you see lightning or hear thunder, never touch the unit, cables and/or peripherals. An electric surge caused by the storm, may result in an electrical shock or damage to the unit.
- Never push objects of any kind into this product through openings as they may touch dangerous
  voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any
  kind on the product.
- Do not place or keep the projector within the reach of the children. It may fall or tip over, possibly causing serious injury.
- Do not stack other equipment on this product and do not place this product on other equipment.
   The top and bottom surface of this product increase in temperature during normal use and may damage the other unit.

- Do not use attachments not recommended by the product manufacturer. Use of incompatible attachments could cause hazards or damage to the product.
- Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product.
- Unplug this product from the wall outlet and take the product to qualified service personnel if you
  encounter any of the following conditions:
  - 1. The power supply cord or plug is damaged.
  - 2. Liquid has been spilled, or objects have fallen into the product.
  - 3. The product has been exposed to rain or water.
  - The product does not operate normally when following the operating instructions. Adjust only those controls that are covered by the operating instructions.
  - 5. The product has been dropped or damaged in any way. (If the cabinet should break, please handle with care to avoid injury.)
- This product incorporates glass components, including a lens and a lamp. If these should break,
  please handle with care to avoid injury and contact your sales representative for repair service.
  Avoid any broken pieces of glass since they may cause injury. In the unlikely event that the lamp
  ruptures, thoroughly clean the area around the projector and discard any edible items placed in
  that area since they may be contaminated.
- Do not place anything in front of the lens while the projector is operating Things placed in front of the lens may overheat and burn or start a fire.
- Do not use lens cap when projector is powered on.
- Unauthorized substitutions may result in fire, electric shock, or other hazards. (Only the replacement of the lamp should be made by users.)
- Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to verify that the product is in proper operating condition.
- Do not leave thermal paper documents or easily deformed items on top of the unit or near the air exhaust for long periods of time.
- The heat from the unit could erase the information on the thermal paper, or cause deformation or warping.
- This projector will detect the life of the lamp itself. Please be sure to change the lamp when it shows warning messages.
- Do not use the product in a closed installation location. Do not place the product in a box or in any other closed installation location. Otherwise it may overheat, which could result in a risk of fire.

#### Do

- After unpacking this product, read the manual carefully, and follow all the operating and other instructions.
- Turn off the product before cleaning.
- Use a soft cloth moistened with mild detergent to clean the display housing.
- Disconnect the power plug from AC outlet if the product is not being used for a long period of time.

#### Do not

### Mportant !

- Contents of this manual are subject to change without prior notice. In no event will the company be
  liable for direct, indirect, special, incidental, or consequential damages as a result of handing or
  operating this product.
- Block the slots and openings on the unit provided for ventilation.
- Use abrasive cleaners, waxes or solvents to clean the unit.
- Use under the following conditions:
  - Extremely heat, cold or humidity.
  - In areas susceptible to excessive dust and dirt.
  - Near any appliance generating a strong magnetic field.
  - In direct sunlight.

# 3. Replacement and Adjustment

# **Equipment Needed & Product Overview**

- Screw driver (+): 105
- Screw driver (+): 107
- Screw driver (-): 107
- Hex Sleeves 5 mm
- Tweezers



Before you start: This process requires protection level II. Operators should wear antistatic clothing.



 If you need to replace the main board, you have to record the lamp usage hours before you remove the board.

# **Part Replacement**

### Parts List for Model Y018/Y019/Y023

- Lamp cover
- Lamp module
- Top cover
- Keypad board
- Zoom ring module
- Top shielding
- IO cover
- Speaker
- Main board
- Main board Shielding
- Front cover and IR sensor board
- · Optical engine
- Color wheel module
- Blower for rod (Model Y018 only)
- Blower for chip (Model Y018 only)
- LVPS
- Blower for lamp
- Fan and thermal switch
- Interlock switch
- Lamp driver
- Bottom cover

# Lamp Cover



y0181001

1. Loosen 2 screws (red circles) on the Lamp Cover.



y0181002

2. Remove the Lamp Cover.

# Lamp Module





y0181003

1. Loosen 3 screws (red circles) on the Lamp Module.



y0181004

2. Take off the Lamp Module.

#### J

# Top Cover

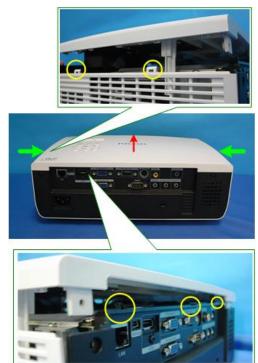


y0181005

1. Unscrew 7 screws (red circles) from the Bottom Cover.



y0181006

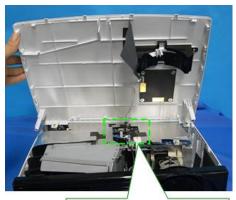


y0181007



y0181008

3. Pressing as shown, unhook the catches and remove the Top Cover.





y0181009

4. Unplug the connector (red square) of the Keypad Board.



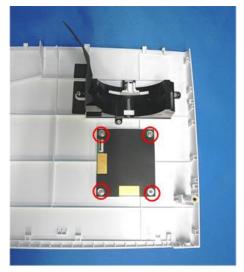
• When you reattach the top cover, turn the zoom ring of the lens to the end of the left side as shown below:





y0181049

# Keypad Board



y0181010

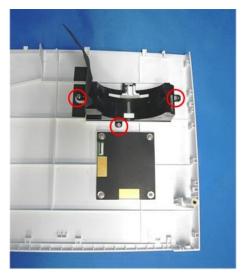
1. Unscrew 4 screws (red circles) from the Top Cover.



y0181012

2. Remove the Keypad Board.

# Zoom Ring Module



y0181011

1. Unscrew 3 screws (red circles) from the Top Cover.



y0181013

2. Remove the Zoom Ring Module.

# Top Shielding



y0181014

1. Unscrew 12screws (red circles).



y0181015

2. Remove the Top Shielding.

### IO Cover



y0181016

1. Unscrew 8 hex screws (red circles) and 1 screw (yellow circle).



y0181017

2. Unfasten 2 tenons (green squares), unscrew 4 screws and unplug 1 connector (red square), then open the IO Cover.



y0181018

3. Remove the IO cover.



• Take care of the tenons when you remove the unit.

# Speaker



y0181019

1. Unscrew 4 screws (red circles) to remove the Speaker.

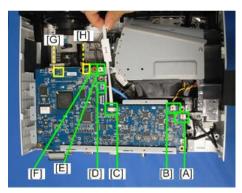
### Main Board

Before you remove the main board, make a note of the lamp usage hours.



y0181020

### 1. Unscrew 4 screws (red circles).



y0181058

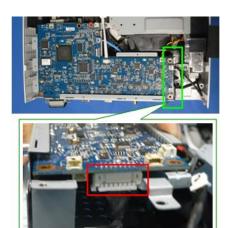
### 2. Unplug 6 connectors (green square).

Y018 model only: Unplug 2 connectors (yellow squares).

Please refer to the table below for details of each connector.

ltem	Male Connector on Main Board	Key feature	Figure
А	IR (J6)	Composed of White, Black and Red Wires, red connector (3 pins)	
В	Photo Sensor (J15)	Composed of Red, Black and White Wire, white connector (3 pins)	
С	Blower for Lamp (J16)	Composed of Red , White and Black Wires with blue tube(3 pins)	
D	Sys Fan (J17)	Composed of Yellow, Black, Red Wires (3 pins)	1
Е	Lamp Driver (J14)	Black wire tube with hook (5 pins)	To the second
F	Speaker (J18)	Composed of Black and Red wires (2 pins)	t ·

ltem	Male Connector on Main Board	Key feature	Figure
G	Blower for Chip (Y018 model only)	Composed of red ,yellow and black wires, green tube	
Н	Blower for Rod (Y018 model only)	Composed of red, black and white wires, gray tube	200



y0181021

3. Unplug the connector (red square).



y0181022

4. Remove the Main Board.

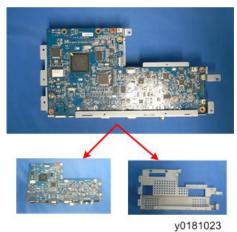


• Do not fold or make a crease in the FPC cable (red circle).



y0181051

## Main Board Shielding



y0101023

1. Remove the Main Board Shielding.

#### Front Cover and IR Sensor Board



y0181046

1. Unfasten 2 tenons (green squares).



y0181047

2. Remove the Front Cover.



• Take care of the tenons when you remove the unit.

## **Optical Engine**





y0181026



y0181027

2. Remove the Optical Engine.

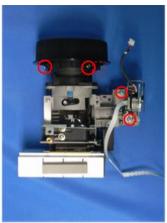


• When you reinstall the Optical Engine, route the cable (yellow line) through the hook (red circle) as shown below:



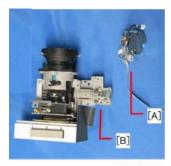
y0181048

#### Color Wheel Module



y0181028

1. Unscrew 4 screws (red circles) to remove the Color Wheel Module.



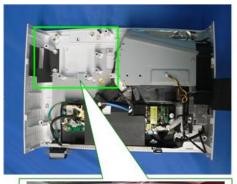
y0181029

- Color Wheel Module [A]
- Optical Engine [B]



• Avoid touching the glass parts of the color wheel.

## Blower for Rod (Y018 model only)

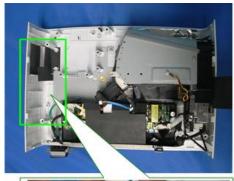




y0181044

1. Unscrew 3 screws (red circles) to remove the Blower for Rod.

## Blower for Chip (Y018 model only)

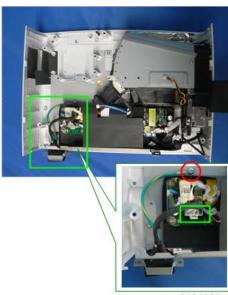




y0181045

1. Unscrew 2 screws (red circles) to remove the Blower for Chip.

### LVPS



y0181030



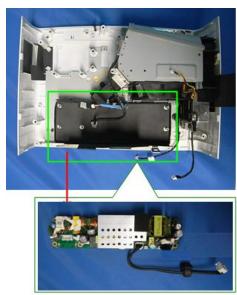
y0181031

2. Unscrew 4 screws (red circles).



y0181032

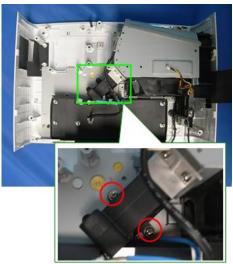
3. Unplug 3 connectors (green squares).



y0181033

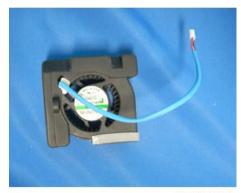
4. Take off the LVPS.

## Blower for Lamp



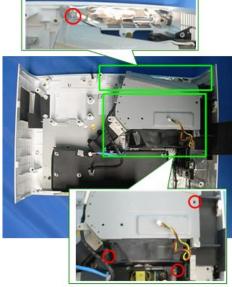
y0181034

1. Unscrew 2 screws (red circles) to remove the Blower.



y0181036

#### Fan and Thermal Switch



y0181035

1. Unscrew 4 screws (red circles).



y0181037

2. Take off the Fan.

#### Interlock Switch



y0181038

1. Unscrew 1 screw (red circle) to remove the Interlock Switch.

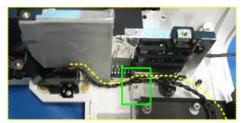


y0181039

Make sure the interlock switch cable can be wedged as shown.



• When you reinstall the Interlock Switch, route the cable (yellow line) along the lamp driver as shown below:



y0181050

#### **Lamp Driver**



y0181040

1. Unscrew 2 screws (red circle) to remove the Lamp Driver Module.



y0181041

2. Unscrew 4 screws (red circles) and unplug the 3 connectors (green squares).

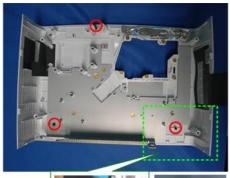


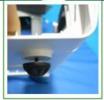


y0181042

3. Remove the connector, Lamp Driver and Lamp Driver holder.

#### **Bottom Cover**







y0181043

1. Unscrew 3 nuts (red circles) to remove the Adjustment Feet.

#### Parts List for Model Y017

- Filter
- Lamp cover
- Lamp module
- Zoom ring module
- Top cover
- Keypad board
- Top shielding
- Main board
- Front cover and IR sensor
- Main board shielding
- IO cover
- Lamp driver
- System fan and blower for lamp
- Optical engine
- Color wheel module

- Blower for rod
- Blower for chip
- Speaker
- Interlock switch
- LVPS
- Filter case

#### Filter

3



y0181133

1. Pull the Filter from the back side.



y0181136

2. Remove the Filter.

### Lamp Cover



1. Loosen 4 screws (red circles)



y0181137

2. Remove the Lamp Cover.

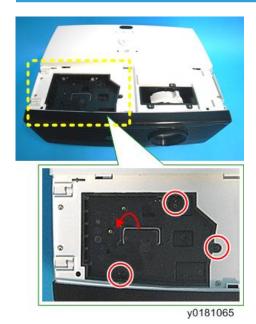


• Do not unscrew the screws completely to prevent the inner springs coming off.



y0181064

## Lamp Module



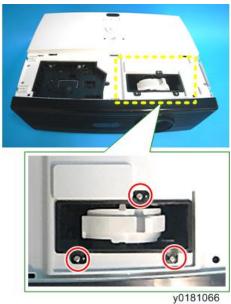
1. Loosen 3 screws (red circles) on the Lamp Module.



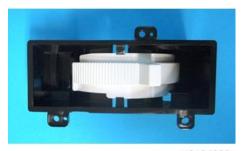
y0181067

2. Take off the Lamp Module.

#### **Zoom Ring Module**



1. Unscrew 3 screws (red circles).

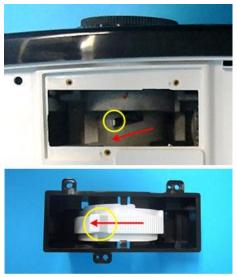


y0181068

2. Remove the Zoom Ring Module.



• When you reattach the zoom ring module, turn the tab of the lens and zoom ring module to the end of the left side as shown below:



y0181134

# Top Cover



1. Unscrew 4 screws (red circles) from the Bottom Cover.



y0181070

2. Unscrew 4 screws (red circles) from the Top Cover.



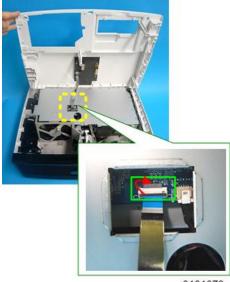
y0181071

3. Press both sides and unhook the 7 tenons (red circles).



y0181072





y0181073

5. Unplug the connector (green square) of the Keypad Board.

## Keypad Board



y0181074

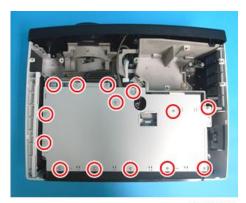
1. Unscrew 4 screws (red circles) from the Top Cover.



y0181075

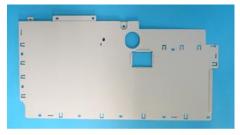
2. Remove the Keypad Board.

## **Top Shielding**



y0181076

1. Unscrew 14 screws (red circles).

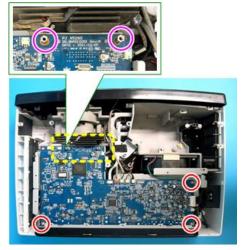


y0181077

2. Remove the Top Shielding.

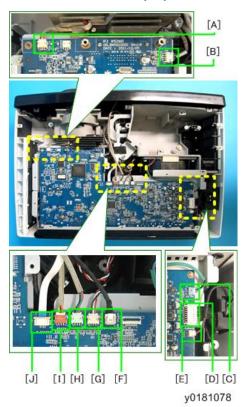
#### Main Board

Before you remove the main board, make a note of the lamp usage hours.



y0181079

1. Unscrew 2 hex screws (purple circles) and 3 screws (red circles).



#### 2. Unplug 10 connectors (green square).

Please refer to the table below for details of each connector.

ltem	Male Connector on Main Board	Key feature	Figure
А	Blower for Chip (J25)	Composed of yellow, black and red wires, gray tube (3 pins)	
В	IR Sensor (J6)	Composed of red, black and white wire, green connector end (3 pins)	6
С	Sys Fan (J23)	Composed of red, blue and black wires with green tube (3 pins)	
D	LVPS (J1)	Wide connector with hook (16 pins)	
Е	Speaker (J18)	Composed of black and red wires (2 pins)	
F	Lamp Driver (J14)	Black wire tube with hook (5 pins)	
G	Blower for Lamp (J17)	Composed of red, white and black wires (3 pins)	
Н	Blower for Rod (J16)	Composed of red, green and black wires, gray tube (3 pins)	
I	Photo Sensor (J15)	Composed of red, yellow and black wires, gray tube (3 pins)	
J	FPC cable to color Wheel (J22)	Flat cable, blue end	



y0181090

3. Unscrew 1 screw (red circle) and 10 hex screws (purple circles).



y0181091

4. Remove the Main Board.



- Do not fold or make a crease in the FPC cable.
- The FPC cable of this section must be kept loose; do not tighten.



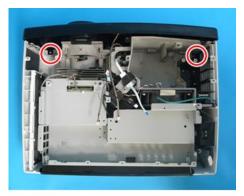
y0181140

• Pass the cable thorough the trench (red line) in the Optical Engine when you reconnect the Blower for Chip Connector (J25).



y0181135

#### Front Cover and IR Sensor Board



y0181098

1. Unscrew 2 screws (red circles).



y0181099

2. Unfasten 7 tenons (red circles) and remove the Front Cover.



y0181100



• Take care of the tenons when you remove the unit.



y0181102

1. Unscrew 2 screws (red circles).



y0181103

2. Remove the Main Board Shielding.

#### IO Cover



y0181104

1. Unfasten 2 tenons (red circles).



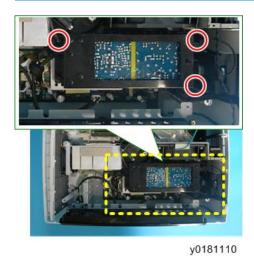
y0181105

2. Remove the IO cover.



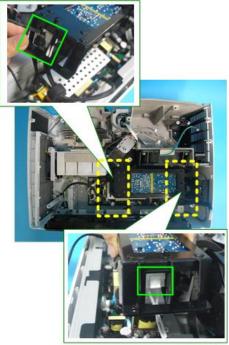
• Take care of the tenons when you remove the unit.

## Lamp Driver



61

#### 1. Unscrew 3 screws (red circle).



y0181112

2. Unplug 2 connectors (green squares) under the Lamp Driver and then remove it.

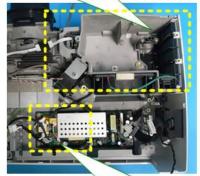


y0181113

3. Remove the Lamp Driver.

## System Fan and Blower for Lamp







y0181115

1. Unscrew 5 screws (red circles) and 1 connector (green square).

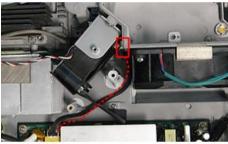


y0181116

2. Remove the Fan module.

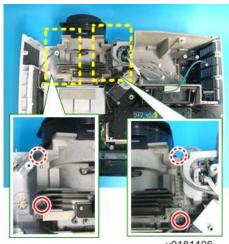


• The thermal switch cable must be fixed as shown below:



y0181141

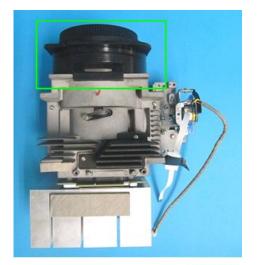
### **Optical Engine**



y0181106

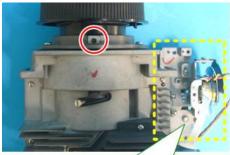
1. Unscrew 4 screws (red circles) and remove the Optical Engine.

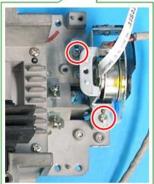
### Color Wheel Module



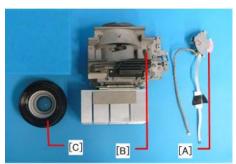
y0181107

#### 1. Remove the Focus Ring cover.





y0181108



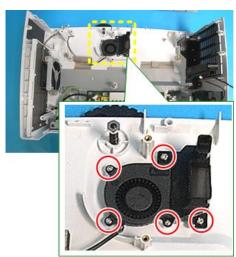
y0181109

- 3. Remove the Focus Ring and Color Wheel Module.
  - Color Wheel Module [A]
  - Optical Engine [B]
  - Focus Ring [C]



• Avoid touching the glass parts of the color wheel.

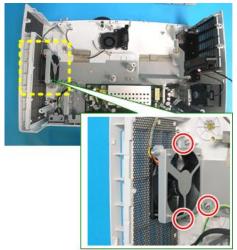
#### Blower for Rod



y0181122

1. Unscrew 5 screws (red circles), then remove the Blower for Rod.

## Blower for Chip



y0181124

1. Unscrew 3 screws (red circles).



y0181125

2. Remove the Blower for Chip.

## Speaker



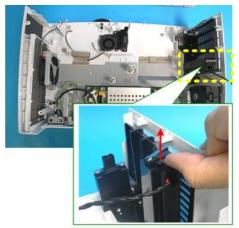
y0181127

### 1. Pick the Speaker up.



2. Remove the Speaker.

#### Interlock Switch



y0181129

1. Pick the Interlock Switch up.



y0181130

2. Remove the Interlock Switch.

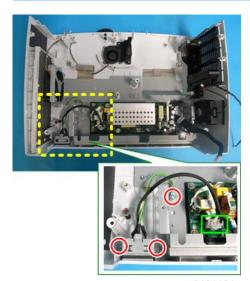


• Pass the cable through the hole (yellow circle) in the Fan Shielding when you reinstall the Interlock Switch.



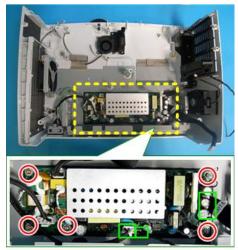
y0181138

### LVPS



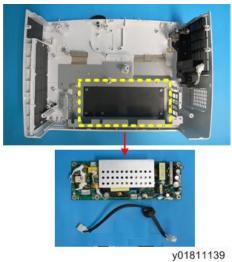
y0181131

1. Unscrew 3 screws (red circles) and unplug 1 connector to remove the power inlet.



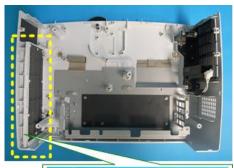
y0181132

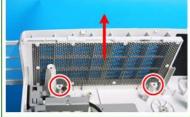
2. Unscrew 5 screws (red circles) and 3 connectors (green squares).



3. Remove the LVPS.

# Filter Case





y0181148

1. Unscrew 2 screws (red circles) and remove the Filter Case.

# **Electrical Adjustment**

# **Adjustment Points vs Part Replaced**

After replacing parts, please execute the related items shown in the table below.

	Parts						
Adjustment	Main Board	Firmwar e	Color Wheel	Lamp Module	Optical Engine	Lamp Driver	Blower (for lamp)
PC Calibration	٧	٧					
Video Calibration	٧	٧					
Re-write Lamp Hours	٧						
Reset Lamp Hours				٧			
Waveform Download						٧	
Fan RPM Calibration	٧	٧					٧
OSD Reset	٧						
Color Wheel Index	٧		٧				
Rod Adjustment					٧		



- If color appears abnormal after changing the main board, please do the Color Wheel Index adjustment.
- Models Y018 and Y017 have two blowers; fan RPM calibration is done just for the blower which is near the lamp.
- See "Service Mode" to get into Service Mode.

# Verifying the Operation after Parts Replacement

After parts replacement or repair, check that the projector works properly.

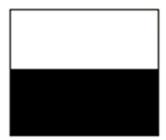
Project images on the screen and check that they are not faulty.

#### **PC Calibration**

After replacing the main board or upgrading firmware, "PC Calibration" should be done.

#### **Equipment Needed**

- Test signal: 800 × 600@60Hz (Model Y018/Y019/Y023), 1024 x 768@60Hz (Model Y017)
- Test Pattern: White/Black (Image color ratio: White:Black=50:50)



• The calibration pattern should be in full screen mode.

#### **Procedure**

- 1. Get into Service Mode.
- 2. Select "Analog Settings".
- 3. Execute "PC Calibration".

#### Inspection item

- Check if there are lines on the screen.
- Check if there is noise on the screen.
- Horizontal and vertical position of the video should be adjustable to the screen frame.

#### Criteria

- If there is noise on the screen, the product is considered as defective.
- The screen must appear normal, and there shouldn't be any abnormalities, such as lines.
- Check if the projected image is the same as displayed on the monitor.

### **Video Calibration**

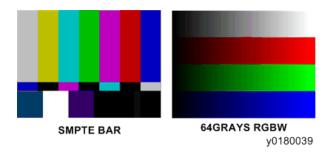
After replacing the main board or upgrading firmware, "Video Calibration" should be done.

#### **Equipment Needed**

• Calibration signal: 480i

Calibration Pattern: SMPTE BAR

Check Pattern: 64GRAYS RGBW



• The calibration pattern should be in full screen mode.

#### **Procedure**

- 1. Get into Service Mode.
- 2. Select "Analog Settings".
- 3. Using SMPTE BAR, execute Video Calibration.
- 4. Using 64GRAYS RGBW, check that the images are not faulty.

### Inspection item

- Check if Color is sufficient on the screen.
- Horizontal and vertical position of the video should be adjustable to the screen frame.

#### Criteria

- There should not be anything missing from SMPTE BAR. The colors should appear normal and sorted in the right order.
- Color levels should be sufficient and normal.
- Gray levels should not have abnormal color or heavy lines.

#### Re-write lamp hours

After replacing the main board, adjust the lamp hours.

Write down the lamp hours before the replacement and put back the same value after replacing the board.

- 1. Get into Service Mode.
- 2. Select "Other Settings".
- Select "Lamp Hours Adjust", and then use the "Left" or "Right" buttons to re-write the lamp hours (Stnd.) back to the value that you noted before you removed the old main board.
- 4. Select "Lamp Hours(Eco)", and then use the "Left" or "Right" buttons to re-write the lamp hours (Eco) back to the value that you noted before you removed the old main board.
- 5. Select "Return to Service Menu" to confirm the setting.

**U** Note

• By repeatedly pressing the "Enter" key, you can select the order of magnitude. Each press goes to the next order in the sequence "1" to "10" to "100" to "1000" and back to "1".

#### Reset lamp hours

After replacing the lamp module, reset the lamp hours.

- 1. Get into Service Mode.
- 2. Select "Other Settings".
- 3. Select "Lamp Hours Adjust", then use the "Left" or "Right" buttons to set the lamp hours (Stnd.) to "0".
- 4. Select "Lamp Hours(Eco)", then use the "Left" or "Right" buttons to set the lamp hours (Eco) to "O"
- 5. Select "Return to Service Menu" to confirm the setting.



• By repeatedly pressing the "Enter" key, you can select the order of magnitude. Each press steps to the next order in the sequence "1" to "10" to "100" to "1000" and back to "1".

#### Waveform download

After replacing the lamp driver, "waveform download" should be done.

#### Model Y018/Y019/Y023

- 1. While pressing the "Power" button, plug in the power cord.
- 2. When the Power LED flashes blue, release the "Power" button.
- 3. While the Power LED light alternates red and blue, press the "Power" button and then the projector will download the waveform automatically.
- 4. After 3 to 5 seconds, the projector will go to the standby mode.

#### Model Y017

- 1. Plug in the power cord.
- 2. Hold the "UP" button, then press the "Power" button.
- 3. After about 5 seconds, the Power LED lights blue, and the Lamp LED and the Temp LED light red.
- 4. Release the "UP" button.



• If the Power LED lights red, the waveform download is finished.

3

• If the Power LED light alternates red with blue, the download failed. Do it again.

#### Fan RPM calibration

After replacing the main board, blower (for lamp), or updating the firmware, "Fan RPM Calibration" should be done.

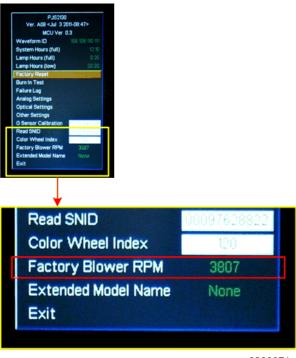
#### Model Y018/Y019/Y023

- 1. While pressing the "Power" button, plug in the power cord.
- 2. When the Power LED flashes red, release the "Power" button.
- 3. After 3 to 5 seconds, the projector will power on.



y0200070

- **4.** After the logo disappears, the message "Warning Factory Fan RPM Calculation now, please wait...." will be shown on the screen.
- 5. After 70 seconds, please get into Service Mode to check "Factory Blower RPM".



y0200071

6. The value of "Factory Blower RPM" should be from 2880 to 4320rpm.

## Model Y017

- 1. Plug in the power cord, hold the "Left" button and then press "Power" button.
- 2. When the Power LED lights purple, the Temp LED and the Lamp LED light red. Then release the "Power" button and "Left" button.
- 3. After 3 to 5 seconds, the projector will power up.



y0200070

- 4. After the logo disappears, the message "Warning Factory Fan RPM Calculation now, please wait...." will be shown on the screen.
- 5. After 70 seconds, the service mode menu will be displayed automatically.



6. Check the value of "Factory Blower RPM". It should be from 2880 to 4320 rpm.

### **OSD** reset

After replacing the main board, "OSD reset" should be done.

- 1. Press the "Menu" button to open the OSD menu.
- 2. Select "Advanced Settings".
- 3. Execute "Reset all".
- 4. Select "OK".

Returns the OSD adjustments and settings to the factory default values.

### Color wheel index

After replacing the main board or color wheel, "Color Wheel Index" should be done.

- 1. Get into Service Mode.
- 2. Select "Optical Settings".
- Select "Color Wheel Index", then use the "Left" or "Right" button to adjust the color balance of the projected image.



y0200105



• By pressing the "Enter" key, the test pattern can be projected.

# Rod adjustment

#### **Environment**

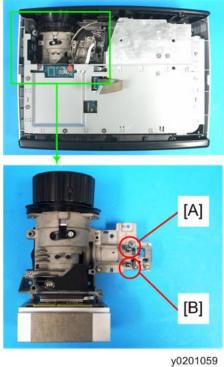
- The distance between the engine and the screen must be 2.6 M.
- This process should be done in a dark environment (under 2 lux).

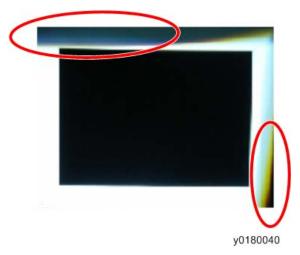
#### **Procedure**

• Model Y018/Y019/Y023

3

# 1. Display a "white" pattern.

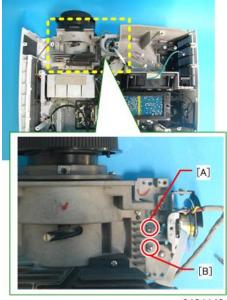




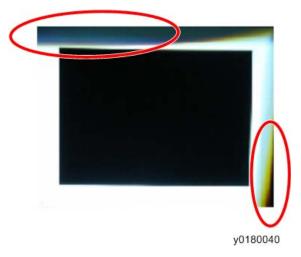
# Defective Image (red circles)

- 2. Adjust the screws to readjust the image. (Screw [A] should be adjusted first, and then screw [B]. Adjust until the yellowish or bluish parts disappear.)
- Model Y017

1. Display a "white" pattern.



y0181143



### Defective Image (red circles)

2. Adjust the screws to readjust the image. (Screw [B] should be adjusted first, and then screw [A]. Adjust until the yellowish or bluish parts disappear.)

### **Image inspection**

• There should be no abnormal color visible to the naked eye at the edges of the image.



- Avoid over-adjusting the rod.
- After the operation, please use glue to secure the screws.

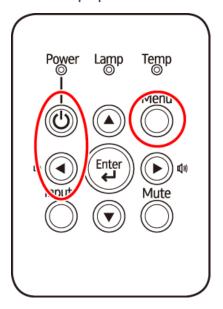
• Please use the correct type of screwdriver to adjust the Rod screws.

# 4. System Maintenance

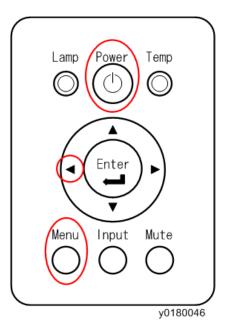
# Service Mode

# How to enter the Service Mode

1. Turn on the projector.



Model Y018/Y019/Y023



Model Y017

2. Press the "Power", "Left", "Left" and "Menu" buttons sequentially.



• You can use the remote controller to enter the service mode in the same way.

# Service Mode Settings



• Here is a summary of common terms.

Term	What It Means
DFU	Denotes "Design/Factory Use". Do not change this value.

### Main Menu

Setting Item	Description
Model name	Shows the name of the projector.
SYS FW version	Shows the present system firmware version of the projector.
MCU FW version	Shows the present MCU firmware version of the projector.

Setting Item	Description
Waveform ID	DFU
System hours (Stnd.)	Shows the operating hours of the projector.
Lamp Hours (Stnd.)	Shows the working hours of the projector in standard mode.
Lamp Hours (Eco)	Shows the working hours of the projector in eco mode.
Factory Reset	DFU
Burn in Test	DFU
Failure Log	Records the times of the failure of power on of the projector such as excessive temperature, lamp failure or fan lock.

# **Analog Settings**

Setting Item	Description
PC Calibration	Using the White/Black test pattern, adjust the RGB color balance for the input signal.
Video Calibration	Using the SMPTE BAR test pattern, adjust the RGB color balance. This allows you to make the correction more precisely than PC calibration.
PC Red Offset	DFU
PC Green Offset	DFU
PC Blue Offset	DFU
Red Gain	DFU
Green Gain	DFU
Blue Gain	DFU
Video Red Offset	DFU
Video Blue Offset	DFU
Reset Calibration Data	DFU

# **Optical Settings**

Setting Item	Description
Color Wheel Index	Use this to adjust the R/G/B value to improve the image when the color reproduction is not correct.
Spoke On	DFU
Test Pattern	DFU
Waveform Index	DFU
Sequence Group	DFU
Degamma	DFU
Lamp Power Gain	DFU

# Other Settings

Setting Item	Description
System Hours Adjust	Use this to change operating hours of the projector.
Lamp Hours Adjust	Use this to change the working hours of the projector in standard mode.
Lamp Hours(Eco)	Use this to change the working hours of the projector in eco mode.
Start LOGO	DFU
High Altitude	DFU
AC Plugin Auto Power On	DFU
VGA Out(Standby)	DFU
Closed Caption Select	DFU
SOG Slicer Threshold	DFU
Component Phase	DFU
Temperature Degree	DFU
System Fan Volt (1/10)	DFU (Model Y017 only)
Lamp Blower Fan Volt (1/10)	DFU (Model Y017 only)

Setting Item	Description
Current Blower RPM	DFU (Model Y017 only)
Default Blower RPM	DFU (Model Y017 only)
Fan Zeta Value (1/100)	DFU (Model Y017 only)
Current Lamp Voltage	DFU (Model Y017 only)
Dust Chamber Test	DFU
Color Wheel Index	Use this to adjust the R/G/B value to improve the image when the color reproduction is not correct.
Factory Blower RPM	DFU
Extended Model Name	DFU

# **Functional Tests**

# **Equipment Needed**

- PC with HDTV resolution
- DVD player with Multi-system, equipped with "Component", "Composite", "S-Video" and "HDMI".
- HDTV Source (720P, 1080P, 1080i)

# Video Performance

### **CVBS**

#### **Procedure**

• Test equipment: DVD player

• Test signal: CVBS



### Inspection item

• Video performance test

### **Inspection Distance**

• 1.8M - 2.8M

#### Criteria

• Check for abnormal color, line distortion, or noise on the screen.

### **HDTV/ Component**

#### **Procedure**

• Test equipment: DVD player

• Test signal: Ycbcr/YPbPr

#### 4

### Inspection item

• HDTV performance test

#### **Inspection Distance**

1.8M - 2.8M

#### Criteria

• Check for abnormal color, line distortion, or noise on the screen.

#### **Audio** test

#### **Procedure**

• Test equipment: DVD Player

• Test signal: CVBS

### Inspection item

• Audio performance test

#### **Inspection Distance**

• 1.8M - 2.8M

#### Criteria

- Check the sound from the speaker
- Plug the audio cable into the audio in port, and check whether "Volume" is normal.
- Adjust the volume from "0" "20" by using the remote controller.
- Check the sound from the speaker.
- Check whether the "mute" function is normal.

#### S-video

#### **Procedure**

• Test equipment: DVD player

• Test signal: S-Video

#### Inspection item

Video performance test

### **Inspection Distance**

• 1.8M - 2.8M

#### Criteria

- Check for abnormal color, line distortion, or noise on the screen.
- Check the sound from the speaker.

# Functional inspection

#### **Power Key**

The power key must operate smoothly.

#### **Remote Controller**

Check whether the remote controller can work normally, and that the "Menu", "Left" and "Right" buttons work smoothly.

#### General

All OSD functions must be checked for functionality. When the OSD menu is displayed, there shall be no visible peaking, ringing, streaking, or smearing artifacts on the screen.

#### **Display Size**

All preset modes shall expand to full screen size using OSD Horizontal and Vertical Size controls.

#### Display Data Channel (DDC)

The purpose of the DDC test is to verify the DDC1/DDC2B operation of the projector and to verify the Plug & Play function.

#### Acoustic

High-pitched sound from the cooling fan or color wheel is unacceptable.

## Check points for exterior and print pattern

Check item	Check point
Text & Pattern	Missing letters & pattern or blurry prints are unacceptable.
Exterior	Dirt, scrape, water ripples and uneven color are unacceptable.
Focus ring/ Zoom ring	Focus ring and Zoom ring should be able to move smoothly.
Logo	Missing logo, missing prints and blurry prints are unacceptable
Screw	All screws must be fixed and of the correct type.
Pedestal	Working properly
Lamp Cover	It should be locked in the correct place.
Plastic Parts	No plastic parts can be broken or damaged.
Safety or warning label	All safety and warning labels should be visible, including all contents.

Check item	Check point
Connector	All interface connectors should be complete and workable.
Adjustable foot	Should be able to adjust this smoothly.

# Firmware Update

# System Firmware Update

# **Equipment needed**

### **Software**

- DLP Composer Lite (Use DLP Composer Lite 10.3 for example)
- Firmware (\*.img)
- Library file

### Hardware

- USB Cable mini USB to USB (A)
- PC or Laptop

# **DLP Composer Lite setup procedure**



y0200025

4

1. Double-click "DLP Composer Lite V10.3 Setup".



y0200026

2. Click "Next".

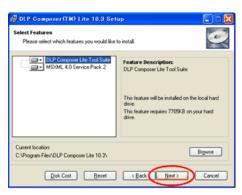


y0200027

- 3. Read "License Agreement".
- 4. Select "I accept and agree to be bound by all the terms and conditions of this License Agreement".
- 5. Click "Next".

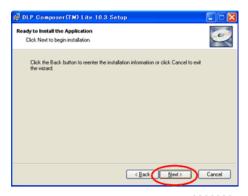


y0200028



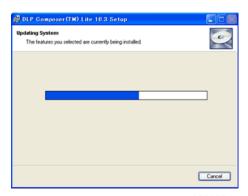
y0200029

7. Click "Next".



y0200030

8. Click "Next".



y0200031

The program is being installed.





y0200032

- 9. Click "Finish".
- 10. Click "Yes" to reboot the PC.

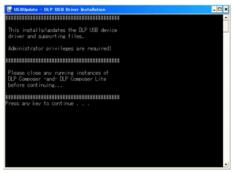
### Install DLP device USB driver procedure

- 1. Plug in the power cord.
- 2. Connect the Projector and PC with a mini USB cable.



y0200033

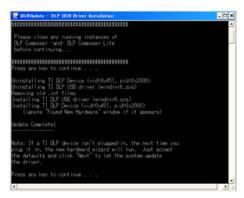
3. From the "Start" menu, point to "All Programs", point to "DLP Composer(TM) Lite", and then click "Install DLP Device USB Driver".



y0200034

4. Press any key to continue.

If the installation is successful, "Update complete!" appears.



y0200035

5. Press any key to continue.

The window closes.

### Enter the Firmware Update Mode

### Model Y018/Y019/Y023

- 1. Press the "Power" button, and plug in the power cord.
- The Power/Lamp/Temp LEDs will light red after around 10 seconds, then release the "Power" button.



y0201068

In the firmware update mode, all LEDs light up.



If you plug in the power cord while pressing the "Power" button, the Power LED
alternately flashes red and blue for a few seconds, then flashes blue for another few
seconds, then flashes red for another few seconds, and finally the Power, Lamp, and
Temp LEDs light continuously in red.

#### Model Y017

1. Hold on "Power" and "Menu" buttons and plug in the power cord.

2. Power/Lamp/Temp LEDs will light red after around 2 seconds, then release "Power" and "menu" buttons.



y0181144

In the firmware update mode, all LEDs light up.

## Connect the Projector to the PC

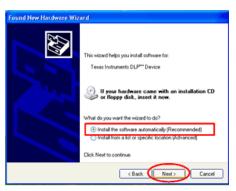
- 1. Get into firmware update mode.
- 2. Connect the Projector and PC with a mini USB cable.

The Found New Hardware Wizard appears.



y0200036

3. Select "No, not this time".



y0200037

- 5. Select "Install the software automatically (Recommended)".
- 6. Click "Next".



y0200038

7. Click "Finish".

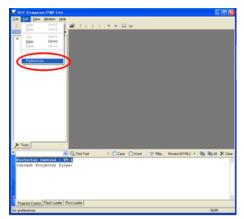
### Firmware Update procedure

1. Get into firmware update mode.



y0200039

2. Double-click "DLP ComposerTM Lite 10.3".



y0200040

3. Click "Edit", and then click "Preferences".

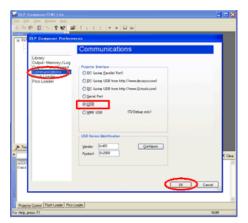


y0200041

4. Click "Library".

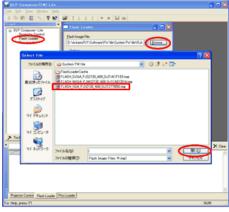
4

5. Click "Browse" and select the folder where you put the Library file.



y0200042

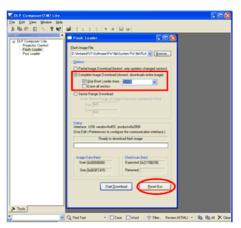
- 6. Click "Communications".
- 7. Select "USB" for USB update model.
- 8. Click "OK".



y0200043

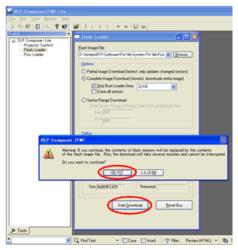
- 9. Click "Flash Loader".
- 10. Click "Browse" to search for the firmware file (\*.img).

11. Click "Open".



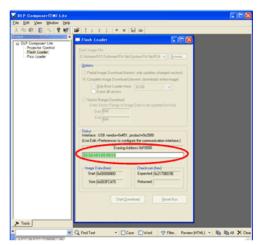
y0200044

- 12. Select "Complete Image Download".
- 13. Select "Skip Boot Loader Area" and then select "32 KB".
- 14. Click "Reset Bus" to erase the flash memory.



y0200045

15. If the firmware is ready, click "Start Download" to execute the firmware update.



y0200046

After several minutes, the firmware upgrade process is completed and "Download completed" appears on the screen.

- 17. Unplug the mini USB cable and power cord.
- 18. Plug in the power cord, then restart the projector and get into Service Mode to check the system firmware version.

# **Network Firmware Update**

# **Equipment needed**

#### Software

• Network firmware file (\*.bin)

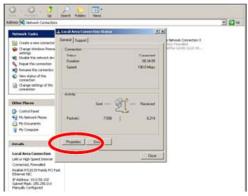
### Hardware

- LAN cable (Ethernet crossover cable)
- PC or Laptop

## **PC** setting

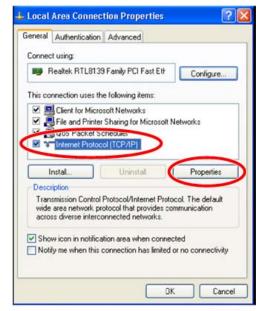






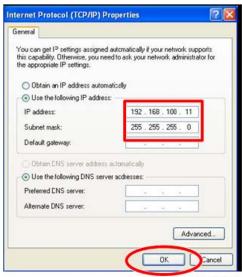
y0180024

1. Double click "Local area connection", then click "Properties".



y0180025

2. Select "Internet protocol (TCP/IP)", then click "Properties"

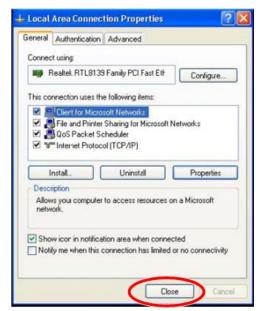


y0180026

3. Change the IP address of the PC to the same segment as the projector. Change the Subnet mask to 255.255.255.0.

Example: If the projector IP address is 192.168.0.100 (Default), change the PC IP address to 192.168.0.xxx. ("xxx" being numbers other than 100).

4. Click "OK".

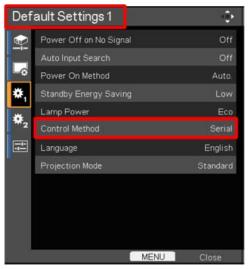


y0180027

5. Click "Close" to exit the setting screen.

# 4

# **Projector setting**

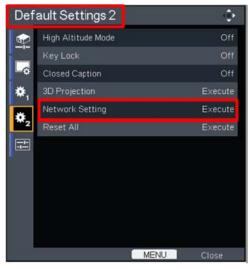


y0180028

1. Menu ---> Default Settings 1 ---> Control Method

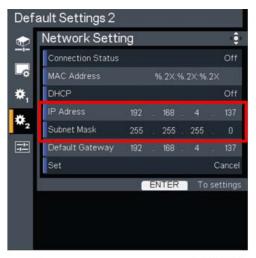


y0180029



y0180030

3. Menu ---> Default Settings 2 ---> Network Setting.



y0180031

4. Change the IP address of the projector to the same segment as the PC setting. Change Subnet mask to 255.255.255.0.

Default IP address is 192.168.0.100.

#### **Network FW Update Procedure**

1. Connect PC and the projector with LAN cable in a peer to peer connection.



y0180032

2. Open the web browser, and then enter "http://xxx.xxx.xxx/tgi/fu.tgi".

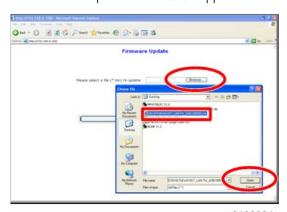
"xxx.xxx.xxx" is the projector's IP address you set in the previous section.



y0180033

3. Click "Continue".

The "Firmware Update" window will appear on the screen.



y0180034

4. Click the "Browse" button to select the Network file (\*.bin) which you saved.

#### 5. Click "Open".



y0180035

#### 6. Click "Update" to start updating.

It takes approximately 60 seconds to complete updating.



y0180036

#### 7. Click "Re Login".

Firmware update procedure is complete.



y0180037

#### 8. Check the Network FW Version.



- You have to configure your client browsers to not use a proxy server.
- See "Default Settings 2: Network setting" in the user manual.

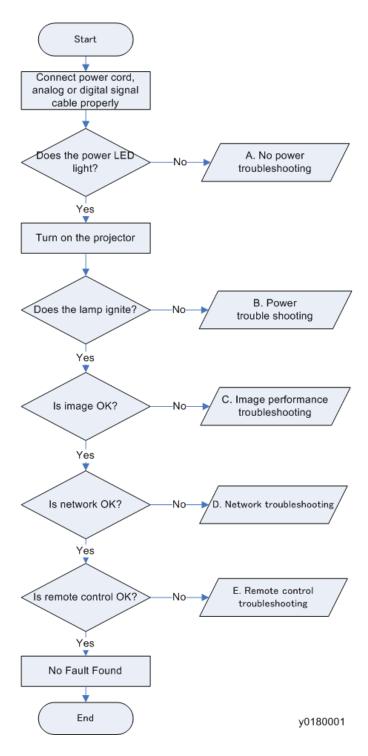
# 5. Troubleshooting

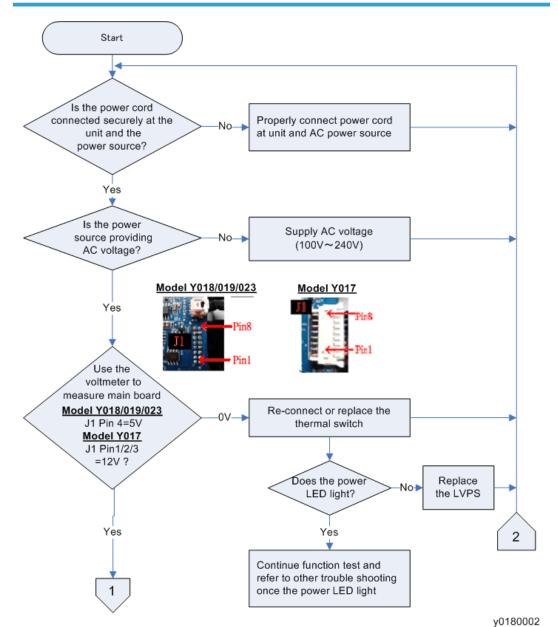
# **LED Display**

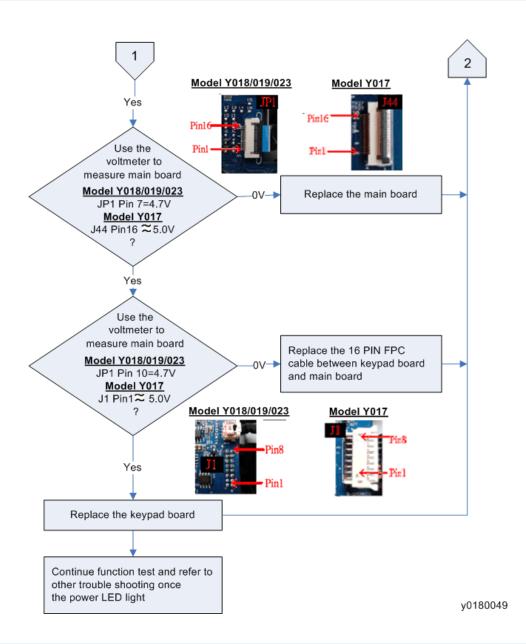
Message	Power LED	Lamp LED	Temp LED
Plug-in Power Cord	Flash Red (100ms)	Flash Red (100ms)	Flash Red (100ms)
Standby Mode	Red	-	-
Power Button ON	Blue	-	-
F/W Download Mode	Red	Red	Red
Lamp Ignited	Flash Blue 0.5 second H(On), 0.5 second L(Off)	-	-
Cooling Down	Flash Red 0.5 second H(On), 0.5 second L(Off)	-	-
Warning for Temperature High (On Event)	Blue	-	Red
Warning for Temperature High (On Standby)	Red	-	Red
Error for Lamp Fail(On Event)	Blue	Red	-
Error for Lamp Fail(On Standby)	Red	Red	-
Error for Fan Fail(On Event)	Blue	-	Flash Red 0.5 second H(On),0.5 second L(Off)

Message	Power LED	Lamp LED	Temp LED
Error for Fan Fail(On Standby)	Red	-	Flash Red 0.5 second H(On),0.5 second L(Off)
Error for Color Wheel Fail / Striking Lamp Fail(On Event)	Blue	Flash Red 0.5 second H(ON), 0.5 second L(OFF)	-
Error for Color Wheel Fail/ Striking Lamp Fail(On Standby)	Red	Flash Red 0.5 second H(ON),0.5 second L(OFF)	-
Burn In Lamp On	Flash Red 3 second H(On), 1 second L(Off)	-	-
Burn In Lamp Off	Flash Red 1 second H(On), 3 second L(Off)	-	-
Waveform download mode (Model Y017)	Blue	Red	Red
Fan RPM calibration (Model Y017)	Purple	Red	Red-

# **Main Procedures**





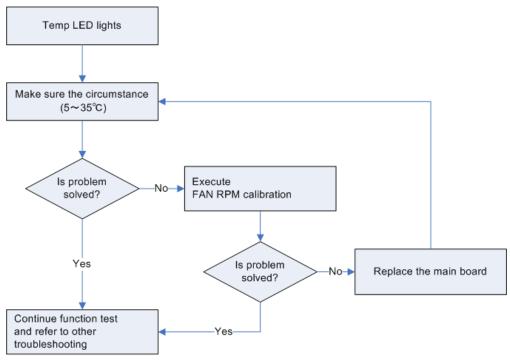


### B. Power Troubleshooting

Make sure all connectors are connected properly.

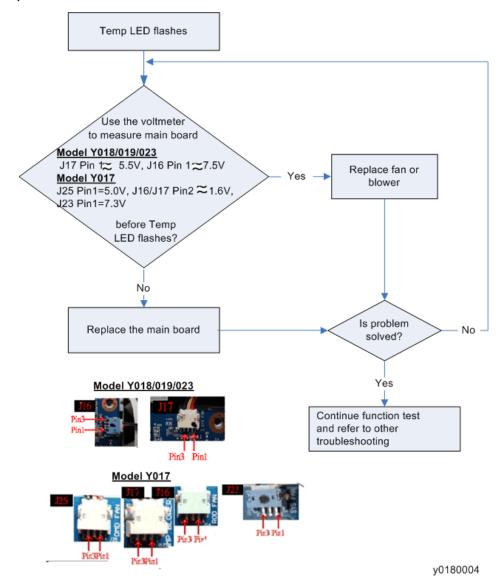
Check LED indicator.

## If temp LED lights



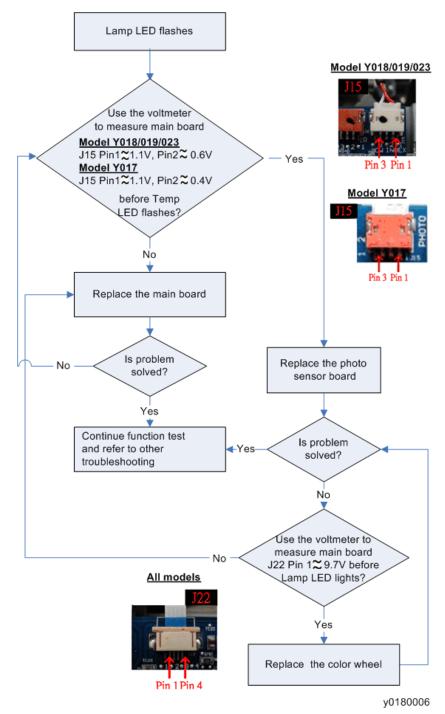
y0180003

#### If temp LED flashes

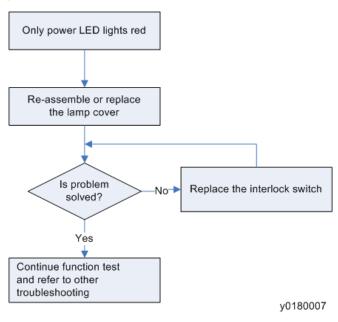


y0180005

#### If lamp LED flashes

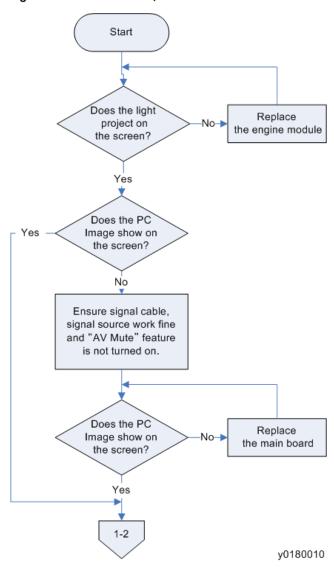


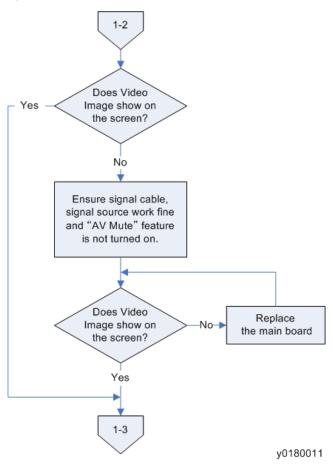
### Only power LED light red



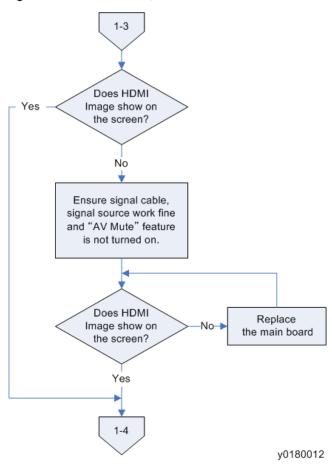
# C. Image Performance Troubleshooting

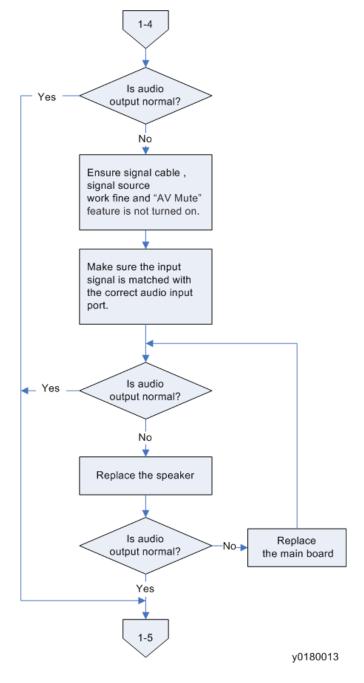
### 1-1 (Does the PC image show on the screen?)



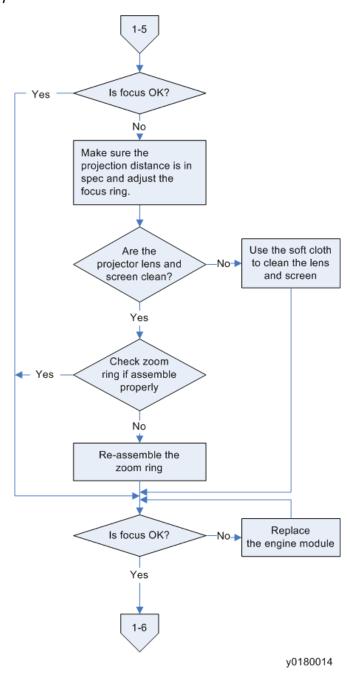


### 1-3 (Does HDMI image show on the screen?)

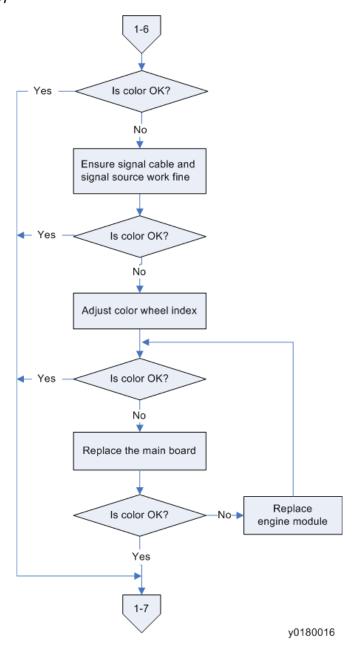




#### 1-5 (Is focus ok?)

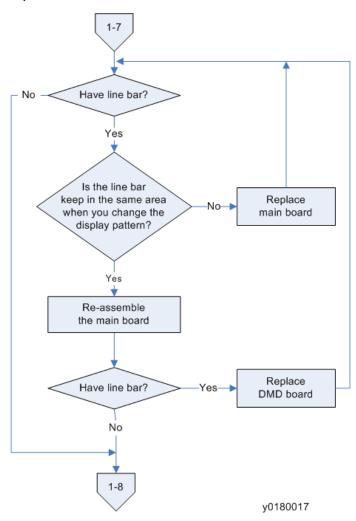


## 1-6 (Is color ok?)

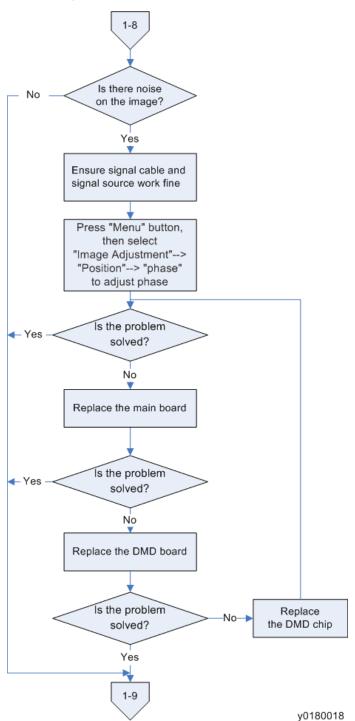


#### כ

### 1-7 (Have line bar?)

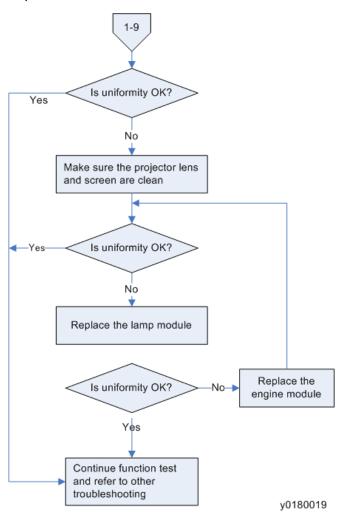


#### 1-8 (Is there noise in the image?)



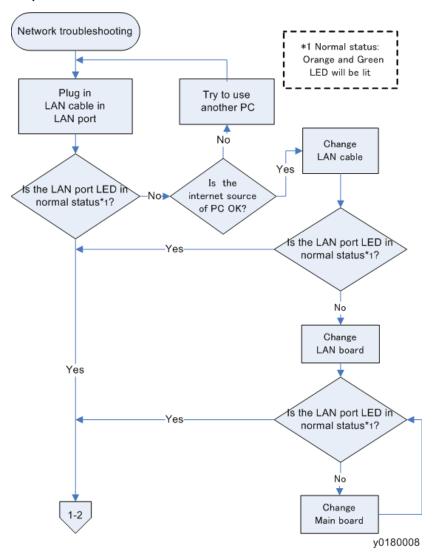
b

## 1-9 (Is uniformity ok?)

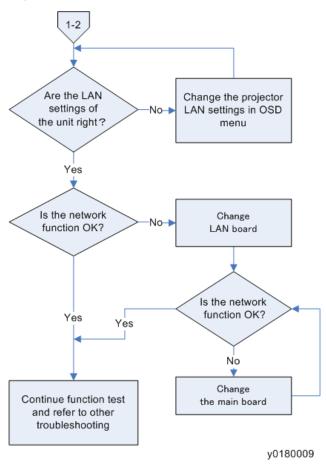


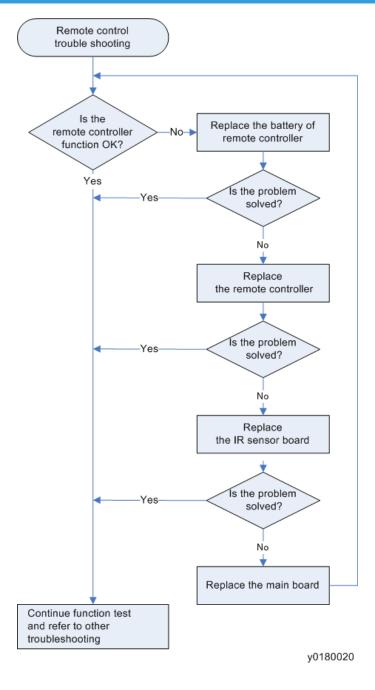
# D. Network Troubleshooting

### 1-1 Is the LAN port LED in normal status?



### 1-2 Are the LAN settings of the unit correct?





MEMO

MEMO



# Rigel-PJ1

cx/cwH/cwL/cxL Machine Codes: Y017/Y018/Y019/Y023

**Appendices** 

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G	eneral Specifications	(
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	List of Supported Signals	
	Configurations of Terminals	] 4

# 1. Appendix: Specifications

# **General Specifications**

# List of General Specifications

ltem		Specification				
Model		Y023	Y019	Y018	Y017	
Consumption	Full Mode	290W	290W	365W	375W	
Power	ECO Mode	245W	245W	295W	290W	
Weight		3kg (6.6 lbs)			7.6kg (16.75 lbs)	
Dimensions (WxHxD)		306 x 97 x 238 mm			398 x 129 x 303.5mm	
	Operational Temperatures	41° to 95°F (5° to 35°C)				
Environmental	Operational Humidity	20% to 80% (non-condensing)				
Considerations	Storage Temperatures	-4° to 140°F (-20° to 60°C)				
	Storage Humidity		20% to 80% (n	on-condensing)		
Projection System	m	Single DLP(R) 0.55"	Single DLP(R) 0.65"		Single DLP(R) 0.70"	
Resolution		800x600 pixel (XGA)	1200x800 pixel (WXGA)	1200x800 pixel (WXGA)	1024x768 pixel (XGA)	
Lens		F# 2.4 - 2.66, f=18.2 - 21.8 mm, 1.2X Zoom  1.93, f=28			F# 1.77 - 1.93, f=28.64 - 34.35 mm, 1.2X Zoom Lens	

lte	em	Specification			
Lamp Type			High Pressure	Mercury Lamp	
Replacement Lamp		Type 4	Type 4	Type 5	Type 8
Lamp Wattage		230W	230W	300W	300W
1 1:f-	Full Mode	2500H	2500H	2500H	2500H
Lamp Life	ECO Mode	4000H	4000H	3500H	3500H
Brightness		3,000 ANSI lm	3,000 ANSI lm	3,700 ANSI lm	4,500 ANSI Im
Projection scree	n size		30-3	300"	
Projection distar	nce		1.2-10.0 m (	Focus range)	
Speaker		5Wx1 (Mono) 8Wx1 (Mo			8Wx1 (Mono)
Noise	Full Mode	34dB	34dB	38dB	37dB
inoise	ECO Mode	31dB	31dB	35dB	33dB

ltem		Specification					
	COMPUTER IN terminal x2	Mini D	Mini D sub 15 pin RGB / Y/PB / PR (dual use)				
	COMPUTER OUT terminal	Mini D sub 15 pin MONITOR OUT					
S-VIDEO terminal		Mini Din 4 pin					
	HDMI terminal		HDMI type	A connector			
	VIDEO terminal	RCA Pin Jack, 1V(p-p), 75 ohm					
	LAN terminal	RJ-45 (10/100 BASE-T)					
Connection	CONTROL terminal		D sub 9 pin (RS-232C)				
terminal	USB terminal	Mini USB (for service purpose only)					
	AUDIO IN terminal x3	3.5 mm diameter mono mini-jack for COMPUTER IN/VIDEO/S- VIDEO (multiple use)					
	AUDIO OUT terminal		3.5 mm diam	eter mini-jack			
	DVI-D terminal	-	-	-	Digital/ Analog, 29 pin DVI-I, HDCP supported		
	Y/PB/PR terminal	-	-	-	RCA Pin Jack x 3 (Component)		



- This model complies with the above specifications.
- Designs and specifications are subject to change without notice.
- This model may not be compatible with features and/or specifications that may be added in the future.

# **Products Sold Separately**

• Replacement Lamp

Y023	Y019	Y018	Y01 <i>7</i>
Type 4 (230W)	Type 4 (230W)	Type 5 (300W)	Type 8 (300W)

• 3D Glasses

PJ 3D Glasses Type 1

# List of Supported Signals

• Model Y023/Y019/Y018

# VGA Analog

Modes	Resolution	Refresh rate (Hz)	H-frequency (kHz)	Clock (MHz)			
(1) VGA Analog - F	(1) VGA Analog - PC Signal						
	640 × 480	60	31.47	25.18			
	640 × 480	72	37.86	31.50			
VGA	640 × 480	75	37.50	31.50			
	640 × 480	85	43.27	36.00			
	640 × 480	119.51	61.61	-			
	800 × 600	56	35.20	36.00			
	800 × 600	60	37.88	40.00			
SVCA	800 × 600	72	48.08	50.00			
SVGA	800 × 600	75	46.88	49.50			
	800 × 600	85	53.67	56.25			
	800 × 600	119.85	77.20	-			

× 768 × 768 × 768 × 768 × 768 × 864 × 864 × 864 × 864	60 70 75 85 119.804 70 75	48.36 56.48 60.02 68.67 98.80 63.80 67.50	65.00 75.00 78.75 94.50			
× 768 × 768 × 768 × 864 × 864 × 864	75 85 119.804 70 75	60.02 68.67 98.80 63.80	78.75 94.50 - 94.50			
× 768 × 768 × 864 × 864 × 864	85 119.804 70 75	68.67 98.80 63.80	94.50			
× 768 × 864 × 864 × 864	70 75	98.80	94.50			
× 864 × 864 × 864	70 75	63.80	94.50			
× 864 × 864	75					
× 864		67.50				
	0.5		108.00			
1024	85	77.10	121.50			
	60	63.98	108.00			
1024	72	77.90	134.60			
1024	75	79.98	135.00			
1024	85	91.15	157.50			
x 960	60	60.00	108.00			
x 960	75	75.00	126.00			
1050	60	65.32	121.75			
1200	60	75.00	162.00			
480	60	31.50	25.17			
480	66.6(67)	35.00	30.24			
600	60	37.88	40.00			
x 768	60	48.36	65.00			
x 870	75	68.68	100.00			
x 960	75	75.20	126.00			
	x 768 x 870 x 960 x 768	x 768 60 x 768 60 x 870 75 x 960 75 x 768 75	x 768     60     37.88       x 768     60     48.36       x 870     75     68.68       x 960     75     75.20			

Modes	Resolution	Refresh rate (Hz)	H-frequency (kHz)	Clock (MHz)
	1280 x 768	60	47.78	79.50
	1280 x 768	75	60.29	102.25
	1280 x 768	85	68.63	117.50
	1280 x 720	60	44.80	74.25
WXGA	1280 x 800	60	49.60	83.50
WAGA	1440 x 900	60	55.90	106.50
	1680 x 1050	60	65.30	146.25
	1366 x 768	60	47.74	85.50
	1920 x 1080-RB	60	66.60	138.50
	1024 x 600	60	37.30	50.40
(3) VGA Analog - (	Component Signal			
480i	720 x 480	59.94 (29.97)	27.00	-
480p	720 x 480	59.94	31.47	-
576i	720 x 576	50 (25)	27.00	-
576p	720 x 576	50	31.25	-
720p	1280 x 720	60	45.00	-
720p	1280 x 720	50	37.50	-
1080i	1920 x 1080	60 (30)	33.75	-
1080i	1920 x 1080	50 (25)	33.75	-
1080i	1920 x 1080	60	67.50	-
1080i	1920 x 1080	50	56.25	-

# **HDMI** Digital

Modes	Resolution	Refresh rate (Hz)	H-frequency (kHz)	Clock (MHz)
(1) HDMI - PC Sign	al (Same as DVI)			
	640 x 480	60	31.47	25.18
	640 x 480	72	37.86	31.50
VGA	640 x 480	75	37.50	31.50
	640 x 480	85	43.27	36.00
	640 x 480	119.51	61.61	-
	800 x 600	56	35.20	36.00
	800 x 600	60	37.88	40.00
SVGA	800 x 600	72	48.08	50.00
SVGA	800 x 600	75	46.88	49.50
	800 x 600	85	53.67	56.25
	800 x 600	119.85	77.20	-
	1024 x 768	60	48.36	65.00
VCA	1024 x 768	70	56.48	75.00
XGA	1024 x 768	75	60.02	78.75
	1024 x 768	119.804	98.80	-
	1152 x 864	75	67.50	108.00
	1152 x 864	85	77.10	121.50
CVC 4	1280 x 1024	60	63.98	108.00
SXGA	1280 x 1024	72	77.90	134.60
	1280 x 1024	75	79.98	135.00
	1280 x 1024	85	91.15	157.50
Quad VGA	1280 x 960	75	75.00	126.00

Modes	Resolution	Refresh rate (Hz)	H-frequency (kHz)	Clock (MHz)
PowerBook G4	640 x 480	60	31.50	25.17
	640 x 480	66.6(67)	35.00	30.24
	800 x 600	60	37.88	40.00
	1024 x 768	60	48.36	65.00
	1152 x 870	75	68.68	100.00
	1280 x 960	75	75.20	126.00
i Mac (G3)	1024 x 768	75	60.30	80.00

## **HDMI** Digital

Modes	Resolution	Refresh rate (Hz)	H-frequency (kHz)	Clock (MHz)
(2) HDMI Analog -	Extended Wide			
	1280 x 768	60	47.78	79.50
	1280 x 768	75	60.29	102.25
	1280 x 768	85	68.63	117.50
WXGA	1280 x 720	60	44.80	74.25
	1280 x 800	60	49.60	83.50
	1440 x 900	60	55.90	106.50
	1680 x 1050	60	65.30	146.25
	1366 x 768	60	47.74	85.50
	1920 x 1080-RB	60	66.60	138.50
	1920 x 1080-EIA	60	66.60	148.50
	1024 x 600	60	37.30	50.40
(3) HDMI Analog - Video Signal				

Modes	Resolution	Refresh rate (Hz)	H-frequency (kHz)	Clock (MHz)
480i	720 x 480 (1440 x 480)	59.94 (29.97)	27.00	-
480p	720 x 480	59.94	31.47	-
576i	720 x 576 (1440 x 576)	50 (25)	27.00	-
576p	720 x 576	50	31.25	-
720p	1280 x 720	60	45.00	-
720p	1280 x 720	50	37.50	-
1080i	1920 x 1080	60 (30)	33.75	-
1080i	1920 x 1080	50 (25)	33.75	-
1080p	1920 x 1080	60	67.50	-
1080p	1920 x 1080	50	56.25	-
1080p	1920 x1080	24/23.98	27.00	-

### • Model Y017

# PC Signal / HDMI Signal

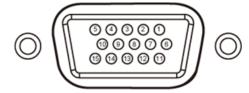
Modes	Resolution	V-frequency (Hz)	H-frequency (kHz)
	640 x 350	70	31.5
	640 x 480	60	31.5
	640 x 480	70	35.0
VGA	640 x 480	72	37.9
	640 x 480	75	37.5
	720 x 400	70	31.5
	720 x 576	60	35.91

Modes	Resolution	V-frequency (Hz)	H-frequency (kHz)
SVGA	800 x 600	56	35.2
	800 x 600	60	37.9
	800 x 600	72	48.1
	800 x 600	75	46.9
	800 x 600	85	53.7
	1024 x 768	60	48.4
XGA	1024 x 768	70	56.5
AGA	1024 x 768	72	57.67
	1024 x 768	75	60
	1280 x 768	60	47.4
	1280 x 768	75	60.3
	1280 x 720	60	45
WXGA	1280 x 720	70	52.5
WXGA	1280 x 720	72	54.07
	1280 x 720	75	56.46
	1280 x 800	60	49.702
	1280 x 800	75	62.8

Modes	Resolution	V-frequency (Hz)	H-frequency (kHz)
	1152 x 864	60	53.5
	1152 x 864	70	63.8
	1152 x 864	72	64.87
	1152 x 864	75	67.5
	1280 x 1024	60	63.98
SXGA	1280 x 1024	70	77.90
SAGA	1280 x 1024	72	79.98
	1280 x 1024	75	91.15
	1280 x 960	60	60.0
	1280 x 960	70	69.93
	1280 x 960	72	72.07
	1280 x 960	75	75.00
	1400 x 1050	60	63.98
SXGA+	1440 x 900	60	65.32
	1440 x 900	75	70.64
UXGA	1600 x 1200	60	75
MAC LC 13"	640 x 480	66.66	34.98
MAC 16"	832 x 624	74.55	49.725
MAC 19"	1024 x 768	75	60.24
MAC	1152 x 870	75.06	68.68
MAC G4	640 x 480	60	31.35
i Mac DV	1024 x 768	75	60
i Mac DV	1152 x 870	75	68.42
i Mac DV	1280 x 960	75	75

# **Configurations of Terminals**

Terminal: Analog RGB (Mini D-sub 15 pin)



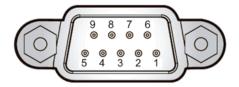
Mini D sub 15 Pin connector

Pin No.	Pin description
1	Red (R/Cr) Input/R Output
2	Green (G/Y) Input/G Output
3	Blue (B/Cb) Input/B Output
4	ICP download / NC*
5	Ground (Horiz.sync.)
6	Ground (Red)
7	Ground (Green)
8	Ground (Blue)
9	DDC 5V / NC*
10	Ground (Ver. sync.)
11	NC*
12	DDC Data / NC*
13	Horiz. sync. Input / Output (Composite H/V sync. Input)
14	Vert. sync. Input / Output
15	DDC CLK / NC*

<sup>\*</sup>Do not connect anything.

Terminal: PC control (D-sub 9 pin)

П



D sub 9 Pin connector

Pin No.	Pin description
1	NC*
2	TXD (Sending data)
3	RXD (Receiving data)
4	NC*
5	GND
6	NC*
7	NC*
8	NC*
9	NC*

<sup>\*</sup>Do not connect anything.

MEMO

