This course explains how to service the Hadar-PJ1 series of high-power, high-contrast projectors.

To learn about this series, please study the user's guide and the field service manual in addition to this TTP.

Product Overview

No additional notes

◼ What Models are there in the Series?

- Hadar-PJ1cx (Y088, Y090): PJ X5580, PJ W1000
  - 6000 lumens, XGA resolution
- Hadar-PJ1cwu (Y089, Y091): PJ WU5570, PJ W2000
  - 5500 lumens, WUXGA resolution
- The models in red are for the China market.
- These are high power, high image quality projectors for medium to large auditoriums (up to 50 persons).
- These models can be used over a network.
  - Ethernet is a standard feature, and Wireless LAN will be available as an option in the future.

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No additional notes

■ Main Specifications

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	Hadar-PJ1 cx	Hadar-PJ1 cwu
Type	DLP	
Brightness	6000 lm	5500 lm
Lamp type	365W mercury lamp (292W in Eco mode)	
Resolution	XGA (1024 x 768)	WUXGA (1920 x 1200)
Contrast	9000 : 1 (when using high contrast mode)	
Projection distance	1.2m to 7.8m	
Projection screen size	30" to 300"	
Throw Ratio	1.24 - 2.22	1.2 - 2.16
Dimensions (W × D × H, mm)	424 x 352 x 145 (without feet) [x 155 with feet]	
Weight	About 6 kg	
Power Consumption	Bright mode: Typical 450W, Max 495W @110VAC Typical 425W, Max 470W @220VAC ECO mode: Typical 360W, Max 395W @110VAC Typical 350W, Max 385W @220VAC Standby mode: < 0.5W @110V/220VAC	
Keystone	+/ - 30 degrees Vertical and Horizontal	
Speaker	10W x 2	
Wireless LAN	Will be available as an option in the future	
Wired LAN	Yes	
USB	Service Use Only (Firmware Update)	

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See the specifications table in the service manual for more details.

Contrast: Compare with Sirius-PJ1 which has a contrast of 2000:1

What does '9000:1' mean?

It means that the white areas are 9000 times brighter than the black areas.

Service Features

- This product can be installed by users, except when mounted on a ceiling.
- This product is designed for user maintenance. Regular on-site maintenance is not needed.
- LEDs show the symptoms for troubleshooting (blinking/lit, number of times the LEDs blink, etc).
- A service mode is available.

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No additional notes

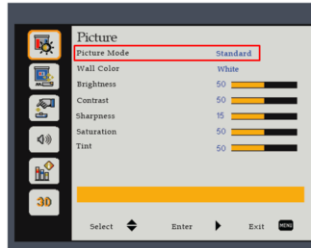## Major Selling Points

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- 1. Brightness
  - – 5,500lm WUXGA model added to the lineup
  - – Increased the brightness of the XGA model to 6,000lm
- 2. Flexible projection
  - – Vertical and horizontal lens shift, and vertical and horizontal keystone
    - Because of this, the device can project from a variety of angles regardless of where it is located.
  - – 1.8x zoom
- 3. High contrast (9,000:1 in high contrast mode)
  - – Allows projection of clear and vivid images
- 4. High Resolution
  - – Hadar-PJ1wu has a WUXGA display resolution.
- 5. Management Utilities
  - – Management and control with Crestron, AMX and PJ Link. @Remote is not supported.
- 6. Compatible with wireless option dongle
  - – April 2016: Miracast, Quick Projection, Smart Presenter and Quick Signage

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No additional notes

What is 'High Contrast Mode'?

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- To use High Contrast Mode, select the Picture menu in the OSD Menu.
- Then set Picture Mode to 'Bright'.

Picture
Picture Mode   Standard
Wall Color   White
Brightness   50
Contrast   50
Sharpness   15
Saturation   50
Tint   50

Select   Enter   Exit

No additional notes

Low Energy Consumption

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- 2,500 hour lamp life in normal mode and 3,000 hour in Eco mode
- Less than 0.5W power consumption in standby mode

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No additional notes

Consumables and Options

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- Replacement lamp type 22 (Y229)
  - 365W mercury lamp
  - Life: 2,500 hours (normal mode), 3,000 hours (Eco mode)
    - There may be a 50% decrease in brightness at the end of the lamp's life.
- 3D glasses type 2

No additional notes

Reliability Information

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- **Average monthly projection time: 58.3 hrs/month**
  - 2.65 hrs/day x 22 working days/month
- **Failure Rate**
  - 1st year: 0.0010 cases/unit/month
  - 2nd year: 0.0012 cases/unit/month
  - 3rd year: 0.0015 cases/unit/month
- **Lamp Life**
  - Normal Mode: 2,500 hrs
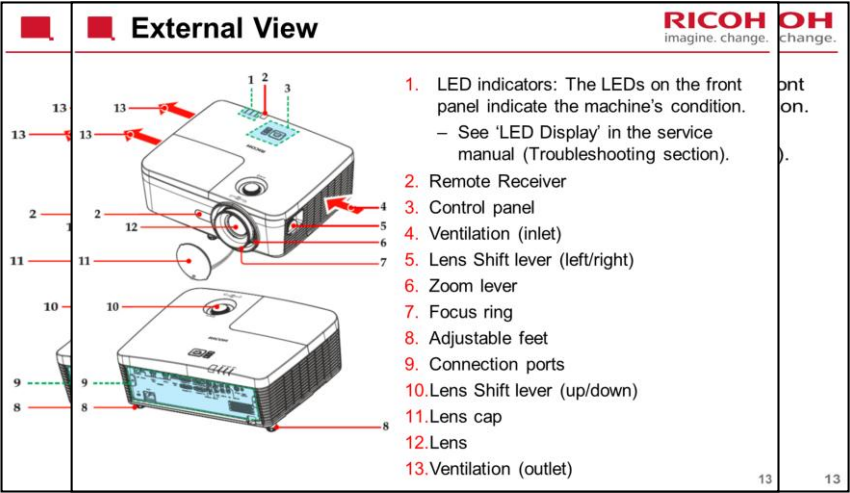 - Eco Mode: 3,000 hrs

No additional notes

- The lamp end alert occurs when the machine calculates that the life time has expired.
  - The end alert will appear 30 hours (in Normal mode) before suggested replacement of the lamp.
  - If the user switches between modes, the machine calculates when to display the alert based on how long the lamp was used in each mode.
- The customer replaces the lamp in most areas, except in China where it is replaced by the service provider.

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No additional notes

Disposal of Broken Lamps

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- Projector lamps normally contain mercury vapour.
- These lamps can rupture due to impact or being used longer than their life expectancy.
  - The time that the breakage will occur differs widely for each lamp and its circumstances of use.
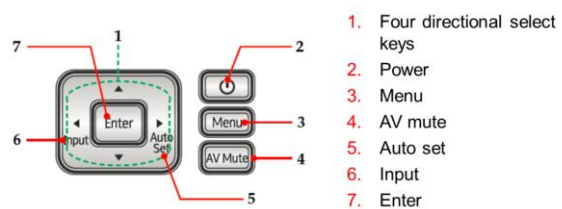- These lamps must be disposed of in accordance with local environmental regulations.
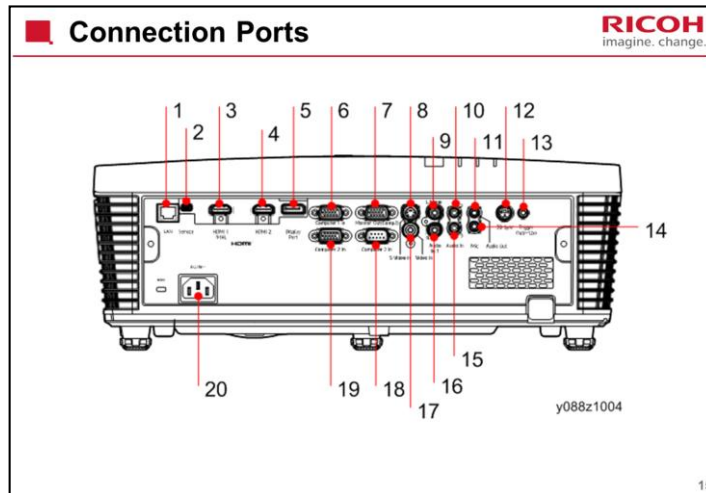
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No additional notes

External View — RICOH imagine. change.

1. LED indicators: The LEDs on the front panel indicate the machine's condition.
   – See 'LED Display' in the service manual (Troubleshooting section).
2. Remote Receiver
3. Control panel
4. Ventilation (inlet)
5. Lens Shift lever (left/right)
6. Zoom lever
7. Focus ring
8. Adjustable feet
9. Connection ports
10. Lens Shift lever (up/down)
11. Lens cap
12. Lens
13. Ventilation (outlet)

No additional notes

Operation Panel

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1. Four directional select keys
2. Power
3. Menu
4. AV mute
5. Auto set
6. Input
7. Enter

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No additional notes

Connection Ports — RICOH imagine. change.

1. LAN terminal
2. Service terminal
3. HDMI 1/MHL In terminal
4. HDMI 2 In terminal
5. DisplayPort terminal
6. Computer 1 In terminal
7. Monitor Out terminal
8. S-Video In terminal
9. Composite Audio Input (left) terminal
10. Audio 2 In terminal
11. Audio Out terminal
12. 3D Sync terminal
13. Trigger Out (+12v) terminal
14. Microphone jack
15. Audio 3 In terminal
16. Composite Audio Input (right) terminal
17. Video In terminal
18. PC Control terminal
19. Computer 2 In terminal
20. AC In socket

Basic Points about Service

No additional notes

Swap and Repair

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- This product is intended for 'swap-and-repair'.
- If the projector needs repairs, it is taken away from the customer site and a temporary replacement is provided to the customer.

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No additional notes

Antistatic Clothing

- To protect the components from damage, wear anti-static clothing when you disassemble the machine.
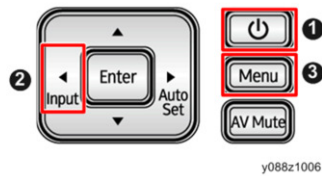
No additional notes

Parts Replacement Hierarchy

- This flow chart describes the order in which the parts need to be removed for replacements/ maintenance from the top.
- The higher the level, the lesser the parts, and vice versa.

No additional notes

No additional notes

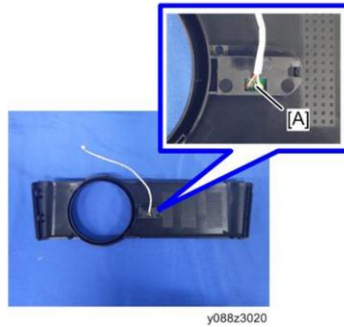## Parts Replacement

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- After replacing parts, some adjustments may be needed. See the table below.
  - This table and the procedures are in the following section of the service manual: Replacement and Adjustment - Required Action After Replacing Parts
  - <u>Whenever you replace a component, check this table to see if you have to do any of these procedures.</u> The text in the Replacement and Adjustments procedures does not always refer to this table.

Action after repair	Change parts					Software
	Main board assembly	Lamp module	Blower fan	Color wheel	LVPS	After firmware update
Firmware update	V					
Color wheel index	V			V		
OSD reset	V	V				V
Re-write lamp usage hours	V					
Fan calibration	V		V		V	V

OSD: On Screen Display

Front Cover — RICOH imagine. change.

- The IR sensor board [A] is built into the front cover. Make sure to connect this up when you replace the cover.

[A]

y088z3020

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No additional notes

- To replace the lamp, unplug the power cord and then wait for 60 minutes.

No additional notes

Replacing the Main Board

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- Be careful when reconnecting the connectors. They are not all different, so it is possible to connect some up to the wrong place on the main board.
- The main board contains a record of the lamp usage hours.
- If you have to change the main board, make a note of the lamp hours before you remove the board.
- Then use 'Rewrite Lamp Hours' after you install the new board, to store this number in the new board.

No additional notes

▪ Avoid touching the glass parts of the color wheel.

No additional notes

Color Wheel Index Adjustment

- Do this after replacing the color wheel.
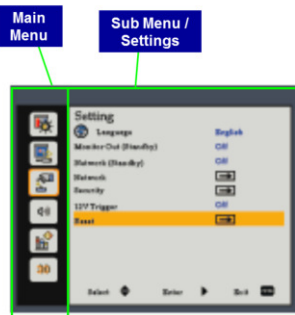- Also, do this adjustment if color appears abnormal after changing the main board.

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The adjustment is in service mode. Note that the adjustment appears in two different menus. These adjustments are the same.

Rod Adjustment

- Adjust if there are yellowish or bluish parts in the image.

No additional notes

No additional notes

Updating Firmware

This section explains the basic points about updating the firmware.

Updating the System Firmware - 1

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- Equipment needed
  - Software
    - DLP Composer Lite 11.2
    - Firmware (*.img)
    - HD26 FlashDeviceParameters
  - Hardware
    - Projector
    - Power cord
    - USB Cable mini USB to USB (A)
    - PC or Laptop

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The detailed procedure is in the System Maintenance - Firmware Update section of the service manual.

- Preparation
  - Install DLP Composer Lite
  - Enter the Firmware Update Mode
    - Hold the "Power" button and plug in the power cord.
    - After the Power LED lights pink and the Lamp/Temp LEDs light red, release the "Power" button.
  - Install a USB driver for the DLP device
  - Connect the Projector to the PC
    - Use a mini USB cable
- Update the firmware
  - Use DLP Composer Lite.
    - The procedure takes several minutes.
  - When "Download completed" appears on the screen:
    - Unplug the mini USB cable and power cord.
    - Plug in the power cord, then restart the projector and get into Service mode to check the system firmware version.

No additional notes

Updating the Network Firmware

- Equipment Needed
  - Software
    - Network firmware file (*.bin)
  - Hardware
    - LAN cable (Ethernet crossover cable)
    - PC or Laptop
- Procedure
  - Set up the projector and your computer using the procedures in the service manual.
    - Your browser must not be set up to use a proxy server.
  - Use a web browser on your computer to update the firmware.

The detailed procedure is in the System Maintenance – Network Firmware Update section of the service manual.

The End