



# Troubleshooting

To better help our customers - this HP Color Laserjet 4600 series troubleshooting page is simply a guide / additional information for your convenience, as you search for assistance in repairing your machine. Although this information is provided for your convenience it is recommended, for the most part, that a technician inspects your office equipment.

It is recommended to consult with a professional when ordering your printer part(s).

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## Image defects

If specific defects occur repeatedly, print a Print Quality Troubleshooting page (see “Print quality troubleshooting pages” on page 247) and follow the instructions on the page. If you are unable to resolve the problem, use the information in this section to identify the root cause of the problem.

Image defects fall into the categories listed in Table 7-16. Possible causes and recommended solutions for each of these categories are listed in the tables that follow. In general, the items are listed in order from minor repairs to major repairs. Check the items in the order in which they appear.

**Table 7-16 Image defects**

<b>Image defect</b>	<b>Description</b>	<b>More information</b>
Light image	A very light image is printed.	See Table 7-17 on page 254.
Light color	One color is light in an image.	See Table 7-18 on page 254.
Dark image	A very dark image is printed.	See Table 7-19 on page 254.
Dark color	One color is dark in an image.	See Table 7-20 on page 255.
Completely blank	No image is printed.	See Table 7-21 on page 255.
All black/solid color	An all black or solid colored image is printed.	See Table 7-22 on page 255.
Dots in vertical lines	Vertical lines of white dots appear in the image.	See Table 7-23 on page 255.
Dirt on back of paper	The back (non-printed) side of the paper is dirty.	See Table 7-24 on page 256.
Dirt on front of paper	The front (printed) side of the paper is dirty.	See Table 7-25 on page 256.
Vertical lines	Vertical lines are printed.	See Table 7-26 on page 256.
White vertical lines	White vertical lines appear in the image.	See Table 7-27 on page 257.
Horizontal lines	Horizontal lines are printed.	See Table 7-28 on page 257.
White horizontal lines	White horizontal lines appear in the image.	See Table 7-29 on page 257.
Missing color	One of the four toner colors is not printed.	See Table 7-30 on page 257.
Blank spots	The image has blank spots.	See Table 7-31 on page 258.
Poor fusing	Toner is loose on the printed image.	See Table 7-32 on page 258.
Distortion or blurring	The image appears distorted, or colors seem out of alignment.	See Table 7-33 on page 258.
Smearing	The image is smeared or dirty.	See Table 7-34 on page 259.
Misplaced image	The image is placed incorrectly on the page.	See Table 7-35 on page 259.

## Light image

**Table 7-17 Causes for light images**

<b>Cause</b>	<b>Solution</b>
Image density is not adjusted correctly.	Increase the density for each color.
Poor contact in the attaching bias contacts between the ETB and the high-voltage PCB.	Clean the contacts. Replace them if they are still dirty or are damaged.
Attaching roller is worn or damaged.	Replace the ETB. Calibrate the printer after replacing the ETB. See "Calibrate Now" on page 294.
High-voltage PCB is defective.	Replace the high-voltage PCB.
DC controller PCB is defective.	Replace the DC controller PCB. Calibrate the printer after replacing the DC controller. See "Calibrate Now" on page 294.

## Light color

**Table 7-18 Causes for one color printing light**

<b>Cause</b>	<b>Solution</b>
Poor contact in the transfer bias contacts between the ETB and the printer.	Clean the contacts for the affected color. If the contacts are still dirty after cleaning or if they are damaged, replace the contacts or the ETB. Calibrate the printer after replacing the ETB. See "Calibrate Now" on page 294.
Transfer charging roller is worn or damaged.	Replace the ETB. Calibrate the printer after replacing the ETB. See "Calibrate Now" on page 294.
Photosensitive drum is worn.	Replace the print cartridge for the affected color.
High-voltage PCB is defective.	Replace the high-voltage PCB.
Laser/scanner unit is defective.	Replace the laser/scanner for the affected color. Calibrate the printer after replacing the laser/scanner. See "Calibrate Now" on page 294.
DC controller PCB is defective.	Replace the DC controller PCB. Calibrate the printer after replacing the DC controller. See "Calibrate Now" on page 294.

## Dark image

**Table 7-19 Causes for dark images**

<b>Cause</b>	<b>Solution</b>
Image density is not adjusted correctly.	Decrease the density for each color.
Color registration detection unit is dirty.	Clean the lens on the color registration detection unit.
Color registration detection unit is defective.	Replace the color registration detection unit.
DC controller PCB is defective.	Replace the DC controller PCB. Calibrate the printer after replacing the DC controller. See "Calibrate Now" on page 294.

## Dark color

**Table 7-20 Causes for one color printing dark**

Cause	Solution
Poor contact in the drum ground, primary charging bias, and developing bias contacts of the high-voltage PCB and the print cartridge.	Clean the contacts on the cartridge for the affected color. If they are still dirty after cleaning, or if they are damaged, replace the cartridge.
High-voltage PCB is defective.	Replace the high-voltage PCB.
DC controller PCB is defective.	Replace the DC controller PCB. Calibrate the printer after replacing the DC controller. See "Calibrate Now" on page 294.

## Completely blank image

**Table 7-21 Causes for a completely blank image**

Cause	Solution
High-voltage PCB is defective.	Replace the high-voltage PCB.
DC controller PCB is defective.	Replace the DC controller PCB. Calibrate the printer after replacing the DC controller. See "Calibrate Now" on page 294.

## All black or solid color

**Table 7-22 Causes for an all black or solid colored image**

Cause	Solution
Poor contact in the drum ground, primary charging bias, and developing bias contacts of the high-voltage PCB and the print cartridge.	Clean the contacts on the cartridge for the affected color. If they are still dirty after cleaning, or if they are damaged, replace the cartridge.
Primary charging roller is defective.	Replace the print cartridge for the affected color.
High-voltage PCB is defective.	Replace the high-voltage PCB.
DC controller PCB is defective.	Replace the DC controller PCB. Calibrate the printer after replacing the DC controller. See "Calibrate Now" on page 294.

## Dots in vertical lines

**Table 7-23 Causes for vertical lines of white dots**

Cause	Solution
Transfer charging roller is worn or damaged.	Replace the ETB. Calibrate the printer after replacing the ETB. See "Calibrate Now" on page 294.
High-voltage PCB is defective.	Replace the high-voltage PCB.
DC controller PCB is defective.	Replace the DC controller PCB. Calibrate the printer after replacing the DC controller. See "Calibrate Now" on page 294.

## Dirt on back of paper

**Table 7-24 Causes for dirt on the back of the paper**

Cause	Solution
Rollers are dirty.	See Table 7-36 on page 260 for information on identifying the roller(s) that might be dirty. Clean the indicated roller. If the roller is still dirty after cleaning, replace the appropriate roller, cartridge, or assembly.
Pickup roller is dirty.	Clean the roller. If the roller is still dirty after cleaning, replace the pickup roller assembly.
Poor contact in the attaching bias contacts between the ETB and the high-voltage PCB.	Clean the contacts. Replace them if they are still dirty or are damaged.
High-voltage PCB is defective.	Replace the high-voltage PCB.
DC controller PCB is defective.	Replace the DC controller PCB. Calibrate the printer after replacing the DC controller. See "Calibrate Now" on page 294.

## Dirt on front of paper

**Table 7-25 Causes for dirt on the front of the paper**

Cause	Solution
Rollers are dirty.	See Table 7-36 on page 260 for information on identifying the roller(s) that might be dirty. Clean the indicated roller. If the roller is still dirty after cleaning, replace the appropriate roller, cartridge, or assembly.
Pickup roller is dirty.	Clean the roller. If is still dirty after cleaning, replace the pickup roller assembly.
Poor contact in the attaching bias contacts between the ETB and the high-voltage PCB.	Clean the contacts. Replace them if they are still dirty or are damaged.
High-voltage PCB is defective.	Replace the high-voltage PCB.
DC controller PCB is defective.	Replace the DC controller PCB. Calibrate the printer after replacing the DC controller. See "Calibrate Now" on page 294.

## Vertical lines

**Table 7-26 Causes for vertical lines**

Cause	Solution
Photosensitive drum has grooves going around the circumference.	Replace the cartridge for the color of the vertical lines.
Fuser sleeve has grooves around the circumference.	Replace the fuser.

## White vertical lines

**Table 7-27 Causes for white vertical lines**

Cause	Solution
Developing cylinder has grooves going around the circumference.	Replace the print cartridge for the color in which the white lines appear.
Photosensitive drum has grooves going around the circumference.	Replace the print cartridge for the color in which the white lines appear.
Laser is blocked by a foreign substance.	Inspect the laser source for the affected color, and remove any debris that might be blocking it.
Mirror in the laser/scanner unit is dirty.	Replace the laser/scanner for the color in which the white lines appear. Calibrate the printer after replacing the laser/scanner. See "Calibrate Now" on page 294.
The fuser sleeve has vertical scars. (All colors are affected.)	Replace the fuser.

## Horizontal lines

**Table 7-28 Causes for horizontal lines**

Cause	Solution
Photosensitive drum has scars running from end to end.	Replace the print cartridge for the affected color.
The fuser sleeve has scars running from end to end.	Replace the fuser.

## White horizontal lines

**Table 7-29 Causes for white horizontal lines**

Cause	Solution
Photosensitive drum has scars running from end to end.	Replace the print cartridge for the affected color.
ETB belt has horizontal scars.	Replace the ETB. Calibrate the printer after replacing the ETB. See "Calibrate Now" on page 294.

## Missing color

**Table 7-30 Causes for a missing color**

Cause	Solution
Poor contact in the developing bias contacts of the high-voltage PCB and the print cartridge.	Clean the contacts. If they are still dirty after cleaning, or if they are damaged, replace the print cartridge or the high-voltage contacts. Replace the high-voltage PCB.
Primary charging roller is defective.	Replace the print cartridge for the missing color.
Laser/scanner unit is defective.	Replace the laser/scanner for the missing color. Calibrate the printer after replacing the laser/scanner. See "Calibrate Now" on page 294.
High-voltage PCB is defective.	Replace the high-voltage PCB.
DC controller PCB is defective.	Replace the DC controller PCB. Calibrate the printer after replacing the DC controller. See "Calibrate Now" on page 294.

## Blank spots

**Table 7-31 Causes for blank spots**

Cause	Solution
High-voltage PCB is defective.	Replace the high-voltage PCB.
DC controller PCB is defective.	Replace the DC controller PCB. Calibrate the printer after replacing the DC controller. See "Calibrate Now" on page 294.

## Poor fusing

**Table 7-32 Causes for poor fusing**

Cause	Solution
Media is not within specifications. For example, media that is too thick causes poor fusing.	Use media that meets specifications. See "Supported media weights and sizes" on page 29.
Fuser is not within nip width specifications.	Replace the fuser.
Fuser sleeve is scarred or damaged.	Replace the fuser.
Pressure roller is scarred or damaged.	Replace the fuser.
Thermistor is deteriorated.	Replace the fuser.
DC controller PCB is defective.	Replace the DC controller PCB. Calibrate the printer after replacing the DC controller. See "Calibrate Now" on page 294.

## Distortion or blurring

**Table 7-33 Causes for distortion or blurring**

Cause	Solution
Color plane registration is out of specification.	Calibrate the printer from the Print Quality menu. See "Calibrate Now" on page 294.
ETB is defective.	If the ETB belt does not rotate smoothly, replace the ETB. Calibrate the printer after replacing the ETB. See "Calibrate Now" on page 294.
ETB motor drive gear is worn or damaged.	Replace the ETB motor.
Drum motor drive gear is worn or damaged.	Replace the drum motor for the affected color.
Color registration detection unit is defective.	Replace the color registration detection unit.
Laser/scanner unit is defective.	Replace the laser/scanner for the affected color. Calibrate the printer after replacing the laser/scanner. See "Calibrate Now" on page 294.
DC controller PCB is defective.	Replace the DC controller PCB. Calibrate the printer after replacing the DC controller. See "Calibrate Now" on page 294.

## Smearing

**Table 7-34 Causes for smearing**

<b>Cause</b>	<b>Solution</b>
Poor contact in the printer ground and cartridge ground contacts.	Clean each printer cartridge ground contact and the printer ground contact. If they are still dirty after cleaning, or if they are damaged, replace the cartridge, or replace the printer ground contact.
Fuser inlet guide is dirty or has debris.	Clean the fuser inlet guide.
Cartridge shutters are not opening.	Make sure the cartridge shutter bar is operating properly.

## Misplaced image

**Table 7-35 Causes for a misplaced image**

<b>Cause</b>	<b>Solution</b>
Paper is skewed.	See Table 7-15 on page 245 to resolve the reason for the skew.
Oblique rollers are worn. (Applies to duplex printing only.)	Replace the oblique rollers.
DC controller PCB is defective.	Replace the DC controller PCB. Calibrate the printer after replacing the DC controller. See "Calibrate Now" on page 294.

## Repetitive defects troubleshooting

Defects on printer rollers can cause image defects to appear at regular intervals on the page. Use the repetitive defects ruler on the next page (Figure 7-3) to measure the distance between defects that recur on a page. Use Table 7-36 to determine which roller is causing the defect. To resolve the problem, try cleaning the roller first. If the roller is still dirty after cleaning or if it is damaged, replace the indicated part.

### Note

Letter codes before the roller names in Table 7-36 correspond to the letters at the top of the repetitive defects ruler in Figure 7-3. Not all rollers are shown in the ruler.

### CAUTION

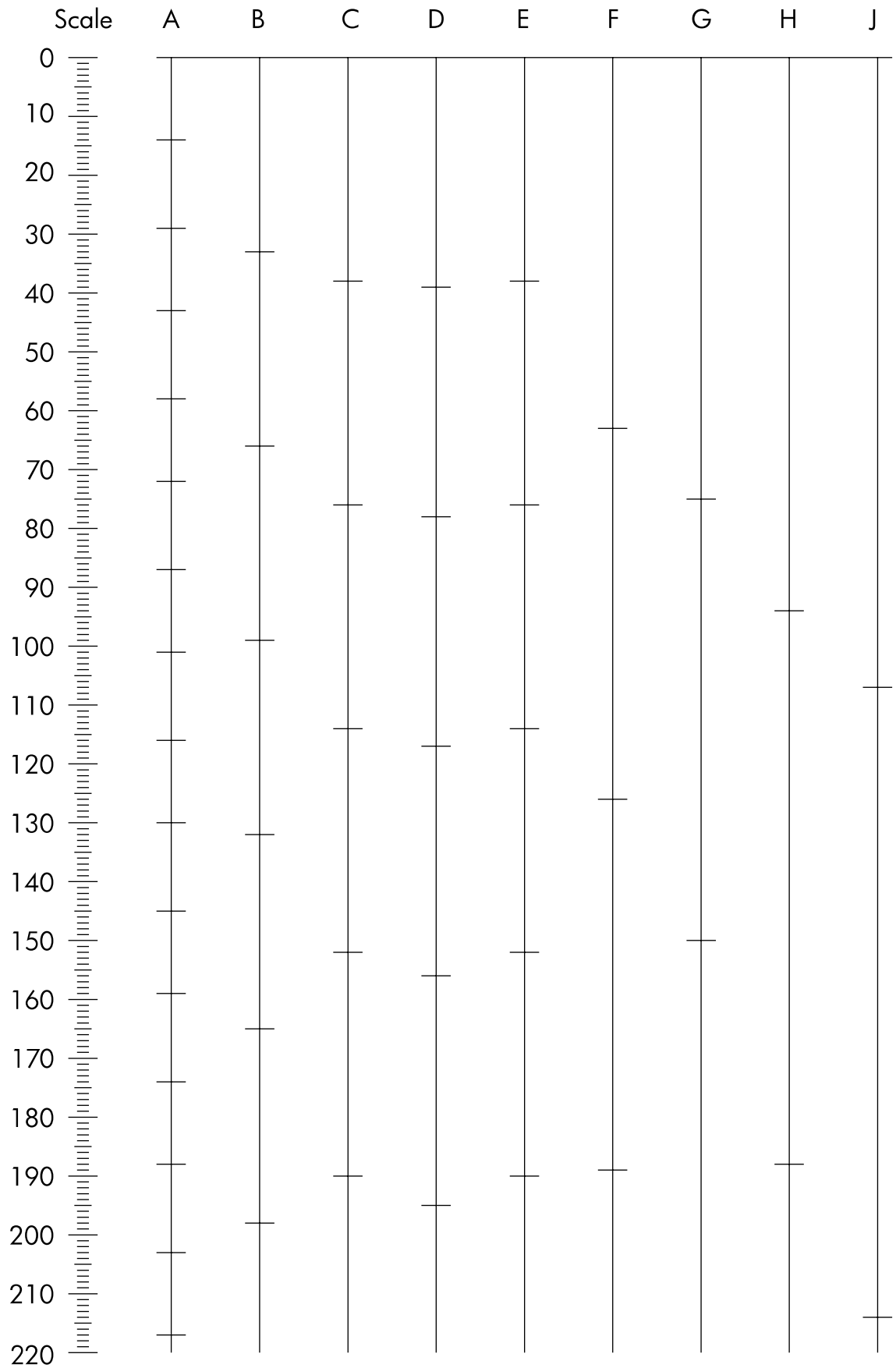
Do not use solvents or oils to clean rollers. Instead, rub the roller with lint-free paper. If dirt is difficult to remove, rub the roller with lint-free paper dampened with rubbing alcohol.

**Table 7-36 Repetitive defect spacing**

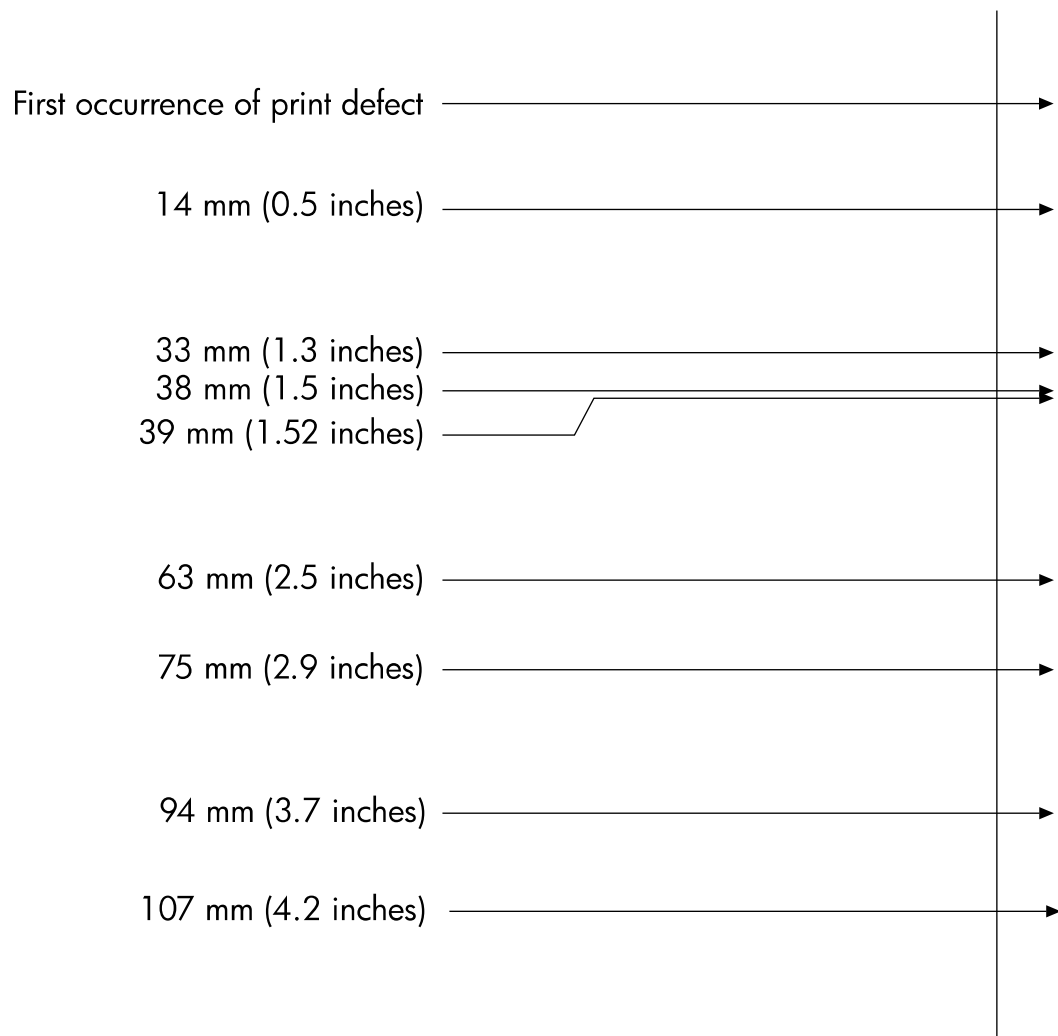
Roller	Distance	Type of defect	Replacement part
<b>A</b> toner charging roller	14 mm		print cartridge
<b>B</b> developing cylinder	33 mm	defect on front of paper	print cartridge
<b>C</b> primary charging roller	38 mm	blank spots	print cartridge
<b>D</b> toner feed roller	39 mm		print cartridge
<b>E</b> media attaching roller	38 mm	defect on front of paper	ETB
<b>F</b> fuser pressure roller	63 mm	poor fusing	fuser
<b>G</b> photosensitive drum or transfer rollers (center-to-center distance)	75 mm		Replace any print cartridges that have a damaged photosensitive drum. Replace the ETB.
<b>H</b> photosensitive drum	94 mm	defect on front of paper blank spots	print cartridge
<b>J</b> fuser sleeve	107 mm	poor fusing	fuser
cassette feed roller	54 mm	defect on front of paper	cassette
cassette feed sub roller	44 mm	defect on back of paper	cassette
registration roller	54 mm	defect on back of paper	paper pickup assembly
registration sub roller	57 mm	defect on front of paper	paper pickup assembly
fuser delivery roller	38 mm	defect on back of paper	fuser
face-down delivery roller	49 mm	defect on back of paper	fuser
cassette pickup roller	see note below	defect on front of paper	paper pickup rollers
multi-purpose tray pickup roller	see note below	defect on back of paper	MP tray pickup roller assembly

### Note

Defects on the cassette pickup roller or the multi-purpose tray pickup roller do not cause a repetitive defect. Defects on these rollers cause a defect to appear only on the leading edge of the image.



**Figure 7-3** Repetitive defects ruler (1 of 2)



**Figure 7-4** Repetitive defects ruler (2 of 2)