Adjust Printhead Pressure and Toggle Position

Print quality depends on the labels and ribbon used as well as the toggle pressure and position. Make sure that your labels and ribbon are acceptable for your application. If they are, check the toggle position and then the printhead pressure.

Toggle Position Adjustment

You may need to adjust the toggles if printing is too light on one side or if thick labels are used. If the toggle pressure is too light or uneven, the labels and ribbon may slip.

To position the toggles, complete these steps:

1. Print some labels at 2 in. (51 mm) per second by running the PAUSE Self Test (see *PAUSE Self Test* on page 150).

2. While printing labels, use the control panel to lower the darkness setting until the labels are printing gray instead of black (see *Print Darkness* on page 83).

3.

   Caution • The printhead may be hot and could cause severe burns. Allow the printhead to cool.
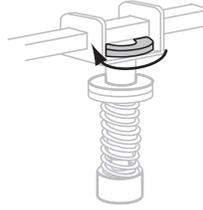
   Loosen the locking nut at the top of each toggle assembly.
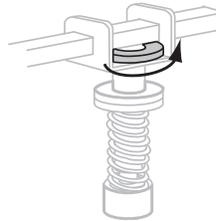
4. Position the toggles approximately 1/4 of the way in from each edge of the media. (For extremely narrow media, position one toggle over the center of the labels, and decrease the pressure on the unused toggle.)
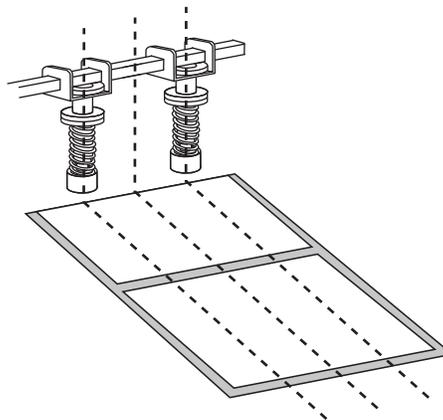
5. Tighten the locking nuts.

6. Print additional labels at 2 in. (51 mm) per second by again running the PAUSE Self Test. (Press and hold PAUSE while turning on (**I**) the printer.)

7. Do both sides of the label print at the same level of gray?

If…	Then…
Yes	The toggles are positioned correctly. Increase the darkness setting to the optimum level for the media being used.
No	**a.** Readjust the position of the toggle or toggles toward the side that printed lighter. **b.** Print additional labels at 2 in. (51 mm) per second by again running the PAUSE Self Test. (Press and hold PAUSE while turning on (**I**) the printer.) **c.** Repeat this step until both sides of the label print at the same level of gray. **d.** Increase the darkness setting to the optimum level for the media being used.

Printhead Pressure Adjustment

If positioning the toggles properly does not solve a print quality problem, try adjusting the printhead pressure. Maximize printhead life by using the lowest pressure that produces the desired print quality.

Caution • Observe proper electrostatic safety precautions when handling any static-sensitive components such as circuit boards and printheads.

To adjust printhead pressure, complete these steps:

Before adjusting the printhead pressure, check that the toggles are positioned correctly. See *Toggle Position Adjustment* on page 119.

Printhead life and drive system life (belts and bearings) can be maximized by using the lowest pressure that produces the desired print quality without allowing the ribbon or media to slip. You may need to adjust the printhead pressure in the following instances:

- if there is noticeable bleed or swelling in the printed image (too much pressure)
- if there are voids (too little pressure)
- if the darkness setting (burn duration) is set properly, but printing is too light (too little pressure)
- if the ribbon slips (too little pressure)

Caution • Observe proper electrostatic safety precautions when handling any static-sensitive components such as circuit boards and printheads.

To adjust printhead pressure, complete these steps:

1. As needed throughout this procedure, refer to the *PAUSE Self Test* on page 150 to print test labels.

2. Refer to *Print Darkness* on page 83 to set the darkness value (burn duration) appropriately for your media and ribbon.
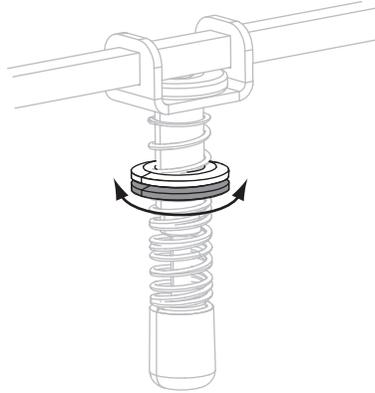
3. Loosen the locking nut on the toggle assemblies.
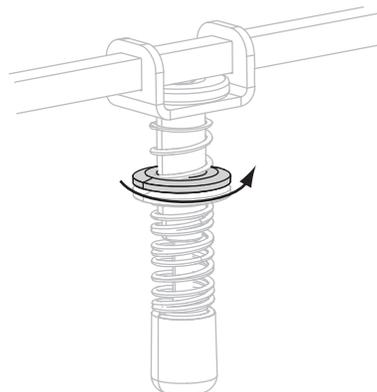
4.

> **Caution •** The printhead may be hot and could cause severe burns. Allow the printhead to cool.

Move the adjusting nut until the print quality is acceptable. Use the lowest pressure that provides the desired print quality.

- To increase printhead pressure, move the adjusting nut downward.

- To decrease printhead pressure, move the adjusting nut upward.

5. To lock the toggle pressure, tighten the locking nut against the adjusting nut.
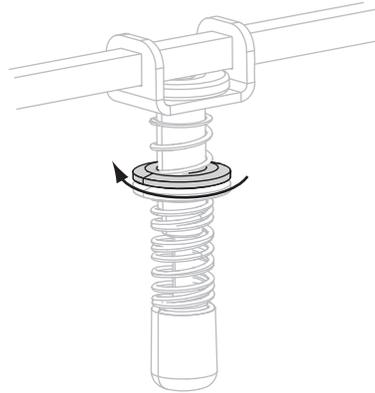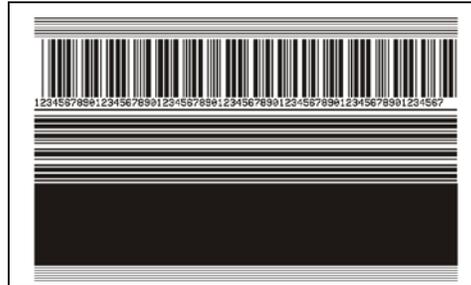
PAUSE Self Test

This self test can be used to provide the test labels required when making adjustments to the printer's mechanical assemblies or to determine if any printhead elements are not working. Figure 15 shows a sample printout.

To perform a PAUSE self test, complete these steps:

1. Turn off (**O**) the printer.

2. Press and hold **PAUSE** while turning on (**I**) the printer. Hold **PAUSE** until the first control panel light turns off.

   • The initial self test prints 15 labels at the printer's slowest speed, and then automatically pauses the printer. Each time **PAUSE** is pressed, an additional 15 labels print. Figure 15 shows a sample of the labels.

Figure 15 • PAUSE Test Label

   • While the printer is paused, pressing **CANCEL** alters the self test. Each time **PAUSE** is pressed, 15 labels print at 6 in. (152 mm) per second.

   • While the printer is paused, pressing **CANCEL** again alters the self test a second time. Each time **PAUSE** is pressed, 50 labels print at the printer's slowest speed

   • While the printer is paused, pressing **CANCEL** again alters the self test a third time. Each time **PAUSE** is pressed, 50 labels print at 6 in. (152 mm) per second.

   • While the printer is paused, pressing **CANCEL** again alters the self test a fourth time. Each time **PAUSE** is pressed, 15 labels print at the printer's maximum speed.

3. To exit this self test at any time, press and hold **CANCEL**.

Print Settings

Table 7 • Print Settings

<mark>Print Darkness</mark>	Set the darkness to the lowest setting that provides good print quality. If you set the darkness too high, the label image may print unclearly, bar codes may not scan correctly, the ribbon may burn through, or the printhead may wear prematurely.
	If desired, use the *FEED Self Test* on page 151 to determine the best darkness setting.
	Accepted values: 0.0 – 30.0
	Related ZPL command(s): `^MD, ~SD`
	SGD command used: `print.tone`
	Control panel menu item: DARKNESS on page 21
	Printer web page: View and Modify Printer Settings > General Setup > Darkness
Print Speed	Select the speed for printing a label (given in inches per second). Slower print speeds typically yield better print quality.
	Accepted values: • 203 dpi: 2–12 ips • 300 dpi: 2–9 ips
	Related ZPL command(s): `^PR`
	SGD command used: `media.speed`
	Control panel menu item: PRINT SPEED on page 21
	Printer web page: View and Modify Printer Settings > General Setup > Print Speed

Operating Parameters on the Control Panel

Items in this menu are shown in the order in which they appear when you press the **RIGHT ARROW**. For more information about these settings, see *Print Settings* on page 83.

Adjust the Print Darkness

Set the darkness to the lowest setting that provides good print quality. If you set the darkness too high, the label image may print unclearly, bar codes may not scan correctly, the ribbon may burn through, or the printhead may wear prematurely.

See *Print Darkness* on page 83 for more information.

Select the Print Speed

Select the speed for printing a label (given in inches per second). Slower print speeds typically yield better print quality.

See *Print Speed* on page 83 for more information.

Adjust the Tear-Off Position

If necessary, adjust the position of the media over the tear-off bar after printing.

See *Tear-Off Position* on page 84 for more information.

Select the Print Mode

Select a print mode that is compatible with your printer options.

See *Print Mode* on page 84 for more information.