

Dot-Matrix Printer DMP 240

Getting Started



TANDY®

For your own protection, we urge you to record the serial number of this unit in the space provided. You will find the serial number on the bottom of the unit.

Serial Number _____

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It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Relocate the computer with respect to the receiver
- Move the computer away from the receiver
- Plug the computer into a different outlet so that computer and receiver are on different branch circuits.

Warning

This equipment has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC Rules. Only peripherals (computer input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to a Class B certified computer. Operation of non-certified peripherals with a Class B certified computer is likely to result in interference to radio and TV reception.

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Notice: You must use a shielded cable when connecting this device.

Dot-Matrix Printer DMP 240 Getting Started:

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About the Printer

The Tandy Dot-Matrix Printer DMP 240 is a high-density dot-matrix printer that is capable of performing a variety of different printing operations:

- Proportionally-spaced characters
- Monospaced characters (standard, condensed, and compressed)
- Letter-quality characters
- Italic characters
- Superscript/subscript
- Graphics – standard and high-resolution
- Printing in seven colors with an optional color ribbon (Radio Shack Cat. No. 26-2826)

Epson or IBM emulation is determined by either the options you choose in the setup menu (see “Using the Setup Menu”) or the *macro* you select (see “Using Macros”).

You can use two types of paper with the printer:

- Tractor-fed 4- to 10-inch computer fanfold forms with guide holes
- Friction-fed, single-sheet typewriter paper

Other features include:

- Underline capability
- Automatic paper loading
- Margin-set function
- Top-panel control of various printer features

Unpacking the Printer

Carefully unpack the printer. Be sure to locate the items illustrated below:

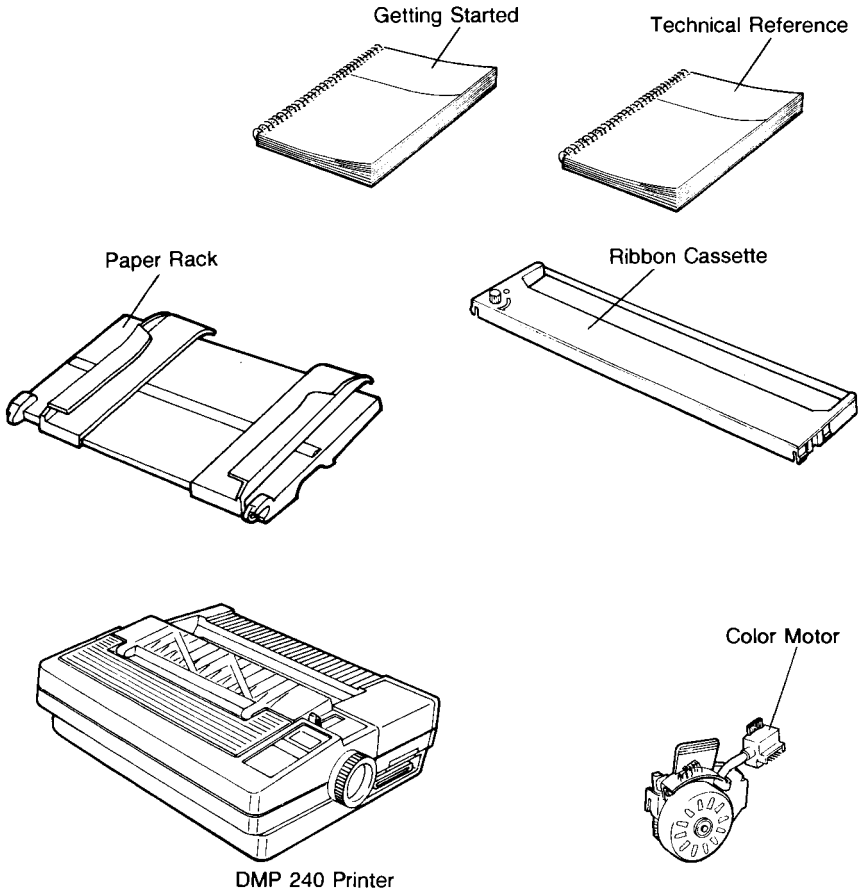


Figure 1. Unpacking the Printer.

Optional Items

Color Ribbon

Your DMP 240 can print in seven colors with an optional color ribbon (Cat. No. 26-2826).

Additional RAM

The expansion RAM chip (Cat. No. 26-2853) expands the printer's temporary memory to 40K bytes (internal 8K plus an additional 32K). When you print a lot of long jobs, the additional memory lets your computer move onto other tasks while the DMP 240 continues to work. You can order this RAM chip through your local Radio Shack Computer Center or store. Take your printer to a Radio Shack Service Center to have the chip installed.

Printer Components

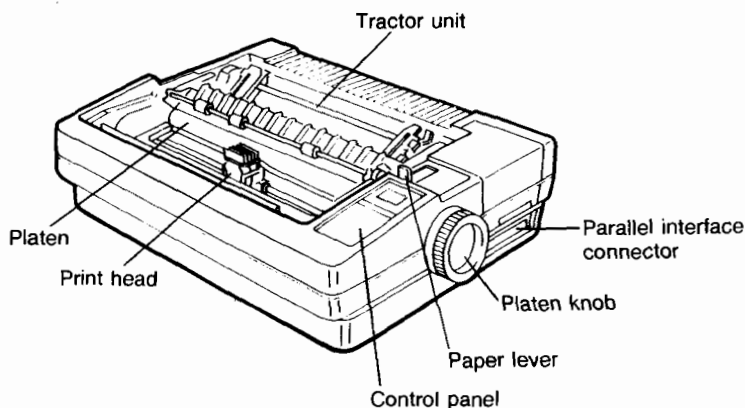


Figure 2. Main Components of the DMP 240 Printer.

Basic Controls

The control panel is located near the right edge of the printer's top cover. It consists of a liquid crystal display (LCD), three indicators, and six soft-touch switches.

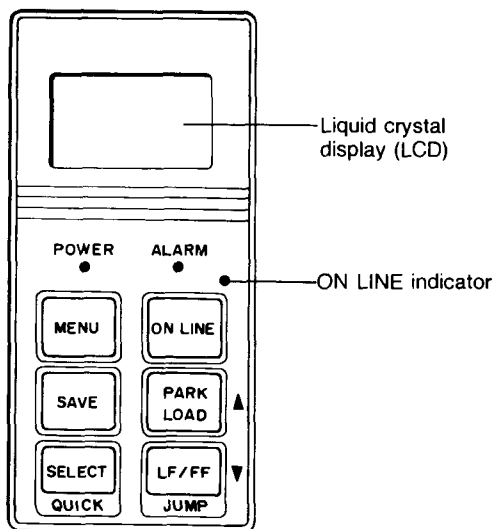


Figure 3. Control Panel Layout.

The controls required to begin operating your printer are:

Liquid crystal display (LCD) – shows information such as printer status and menu items. When you tell the DMP 240 to print data, the data is stored in the printer's buffer. The LCD immediately displays the percentage of the buffer that contains data not yet printed. The data display counts down in 10-percent increments as printing progresses; when printing is completed, the display shows "DATA 0 %."

POWER indicator – this green light is on when the printer is turned on.

ON LINE indicator – this green light is on when the printer is on line; it goes off when the printer is off line or an alarm is detected.

ALARM indicator – amber light turns on or flashes during an alarm condition.

ON LINE button – press to toggle between off line and on line. The ON LINE indicator shows the current mode. See “Selecting the On-Line, Off-Line, and Setup Modes” in the “Ready to Print” section for more on the printer operation modes.

LF/FF button – press once in the off-line mode to advance the paper one line. Press and hold this switch to activate the form-feed function. Turn the platen knob to advance continuous-form paper so that the first perforation is positioned immediately under the tear edge of the top cover. When you press the LF/FF button or print data is received, the paper automatically retracts to the first print position.

The other buttons on the control panel are described later in this manual.

Choosing a Location

When you choose a permanent location for your printer, be sure to consider the following:

- The work surface. Place the printer on a sturdy surface.
- The length of the printer cable. This determines the distance from the computer that you can place the printer.
- Space for paper. Be sure to leave enough room for smooth flow of tractor-feed paper.
- Noise generation. Do not place the printer near noise generators such as refrigerators or industrial equipment.

Connecting the Printer

Connecting the Printer to the Computer

Before making any connections between the printer and your computer, turn off all units.

Be sure that you have the correct cable for connecting the computer to your printer. Table 1 lists the printer cables that Radio Shack carries. See your computer owner's manual for connection locations on the computer.

Table 1. Computer-to-Printer Cables

Computer	Cable Cat. No.
Tandy 1000 Series	26-289
Tandy 1200/3000 Series	26-288
Tandy 4000 Series/5000MC/WP-2	26-288
Tandy MS-DOS Laptop Computers	26-288

1. Attach the molded male end of the cable to the connector on the right side of the printer. Do not force the plug. If it does not fit one way, turn it over and try again.
2. Lock the parallel interface connector to the printer by snapping the cable latches inward.
3. Connect the other end of the cable to your computer's printer port. See your computer owner's manual for specific instructions.

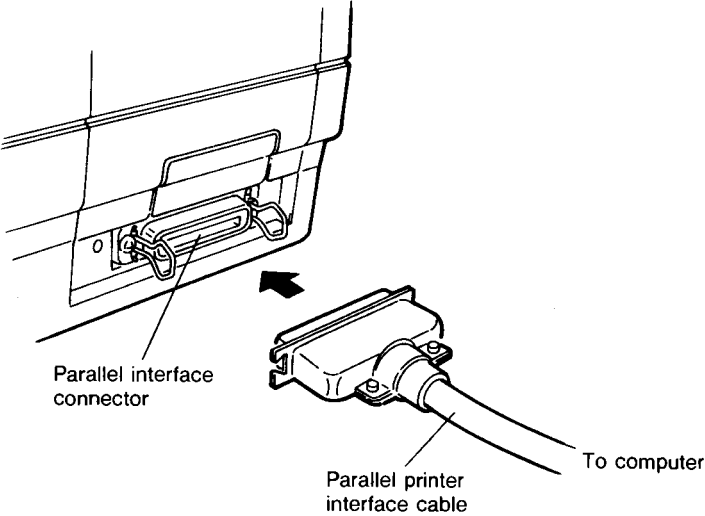


Figure 4. Connecting the DMP 240 to Your Computer.

Connecting the Printer to a Power Source

Before plugging the power cord into an AC outlet, be sure that the printer is turned off.

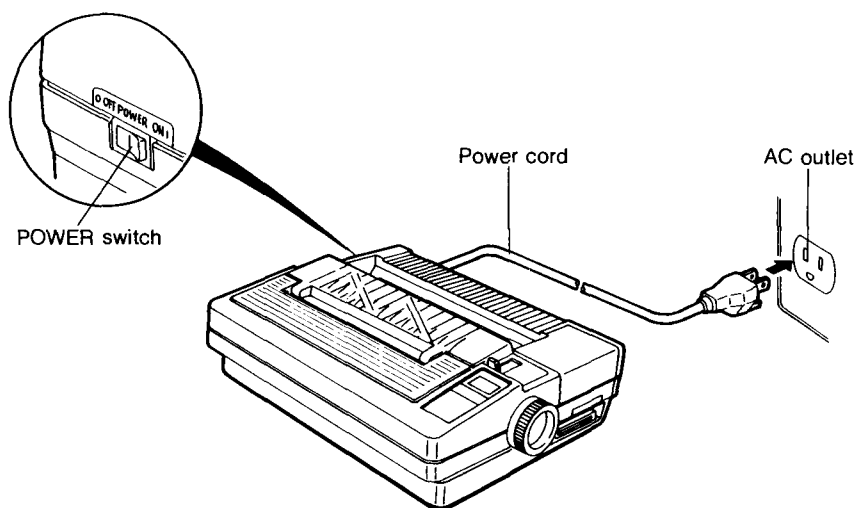


Figure 5. Plugging in the Power Cord.

Connect the AC power plug to a 120-volt, 60Hz, grounded AC outlet or an approved power strip, such as Radio Shack's plug-in power strip (Cat. No. 26-1396) or the power switching system (Cat. No. 26-203).

Set the power switch to ON to turn on the printer. Press the other side of the switch to turn off the printer. Note that turning the printer off and on during operation might cause the loss of print data.

Installing the Paper Rack

The paper rack keeps both fanfold and single-sheet paper feeding smoothly into the printer. Mount this rack on the printer before operation.

To install the paper rack for use with fanfold paper:

1. While facing the front of the printer, engage the guide slots on both ends of the rack with the upper guide pins only.
2. Lean the paper rack toward the back of the printer as you pull it toward you slightly. The paper rack should now be securely positioned, with the slotted ends resting on top of the lower guide pins.
3. Move both paper guides on the paper rack to the center to prevent paper jams.
4. Pull the paper lever toward you to enable the tractor feed mechanism.

When printing on fanfold paper, the paper rack serves as a paper separator. The 15-degree incline of the rack prevents printed paper from feeding back into the printer.

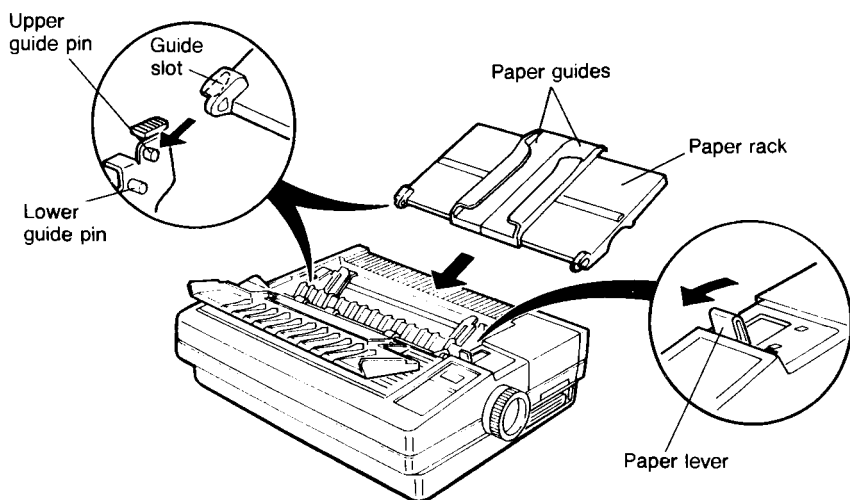


Figure 6. Installing the Paper Rack for Fanfold Paper.

To install the paper rack for use with single sheet paper:

1. While facing the front of the printer, engage the guide slots on both ends of the rack with the upper guide pins.
2. Gently push down on the paper rack so that the guide slots engage securely with the lower guide pins, as well.

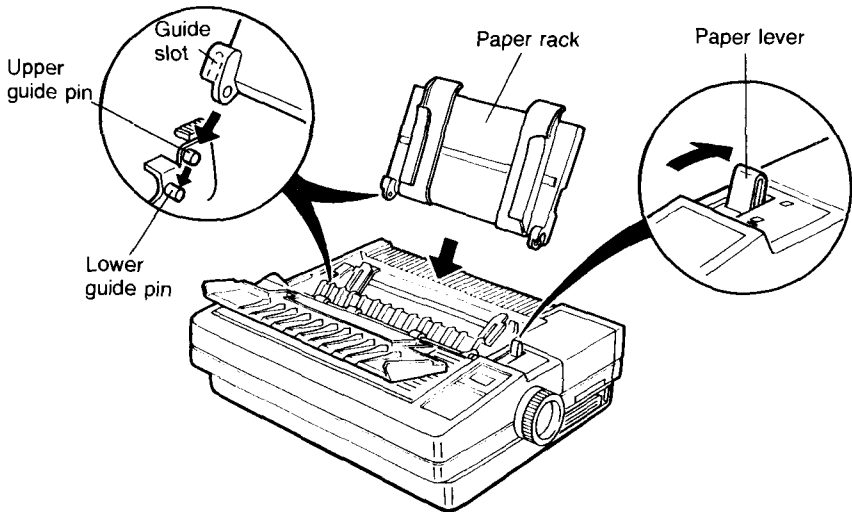


Figure 7. Installing the Paper Rack for Single Sheet Paper.

3. Slide the left paper guide to the desired position. There are two marks on the paper rack to indicate the left paper guide positions for two common paper sizes – L for letter size (8 1/2 by 11 inches) and A4 for A4 size (297 by 210 mm).

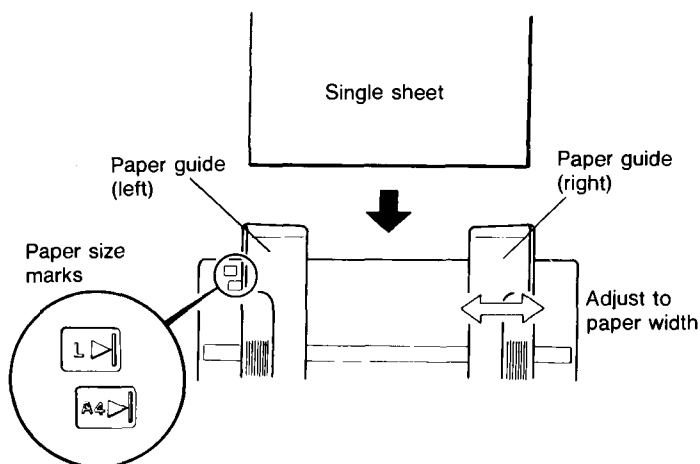


Figure 8. Adjusting the Paper Guides.

When using narrow paper, center it on the paper rack with the left edge against the left paper guide. After inserting a single sheet of paper, slide the right paper guide against the right edge of paper. This ensures proper operation of the paper empty switch and also reduces the possibility of a paper jam.

Ribbon Cassette

If the ribbon is already installed, simply check to see that it is properly threaded between the ribbon mask and the print head. To install the optional color ribbon, see chapter 5, "Enhancing Your DMP 240."

If the standard ribbon cassette is not installed, or if you need to replace it due to excessive wear or faint printing, follow this procedure:

1. Turn off the power switch.

Note: When you turn off the power, any information stored in the printer's buffer is automatically lost.

2. While facing the front of the printer, lift up the back edge of the top cover and tilt it toward you. Open the front half of the top cover by lifting it toward you. Then, lift the top cover straight up to remove it.

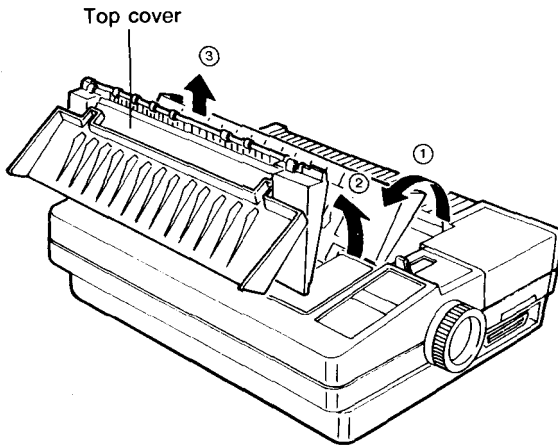


Figure 9. Removing the Top Cover.

3. Move the print head to the middle of the exposed ribbon.

Warning: The print head gets very hot during extended periods of printing. Be sure to let the print head cool off before you touch it.

4. Remove the old ribbon cassette by gently pulling it upward.
5. Unwrap the new cassette. Before inserting the new cassette, tighten the ribbon by turning the ribbon feed knob in the direction indicated by the arrow in Figure 10.
6. Hold the ribbon cassette with the ribbon feed knob facing up.
7. Place the flat end into the ribbon plate until it snaps into place. Then, thread the ribbon between the ribbon mask (thin steel plate) and the print head. Be careful not to get the ribbon between the ribbon mask and the paper guide (black plate).

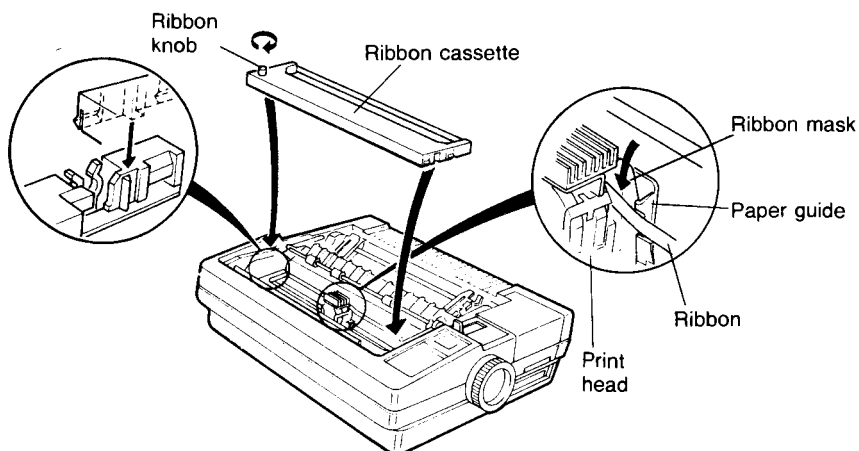


Figure 10. Installing the Ribbon Cassette.

8. Turn the ribbon feed knob in the direction indicated by the arrow to take up the slack in the ribbon.
9. Replace the top cover. Insert the two tabs into the notches on top of the printer. Gently lower the front half and then the back half of the top cover.

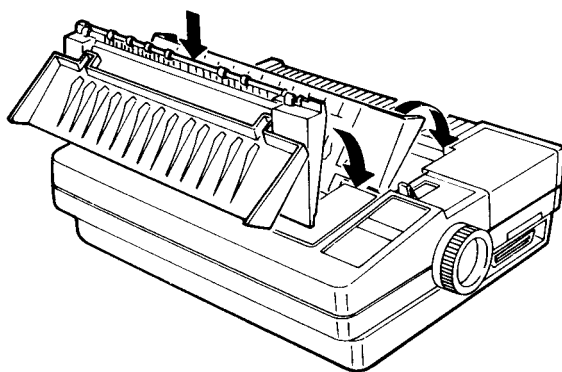


Figure 11. Replacing the Top Cover.

Caution: Printing without paper or ribbon can damage the print head or platen.

Fanfold Paper

You can use either push tractor mode or pull tractor mode for fanfold paper feeding. The printer comes supplied with the tractor unit in push tractor mode. Normally you would use this setting.

When you need to print on thicker paper (four-part copies or labels), use the pull tractor mode with bottom feed (paper feeding through the slot on the bottom of the printer). This feeds paper almost straight through the printer without “curling” it around the platen. Note, however, that you cannot perform the top-of-form setting, a perforation tear off, or the paper parking function when you use the pull tractor mode. We recommend that you use a printer stand to feed paper from the bottom of the printer.

The printer accepts standard fanfold paper from 4 inches to 10 inches wide.

Push Tractor Mode

1. Turn off the printer. Temporarily remove the paper rack to expose the tractor.
2. Set the paper lever toward the front of the printer (to the fanfold paper symbol).
3. Open the pin-feed paper clamps.
4. If necessary, pull the tractor lock levers to release the pin-feed paper clamps, and adjust the pin-feed paper clamp positions for the width of the paper.

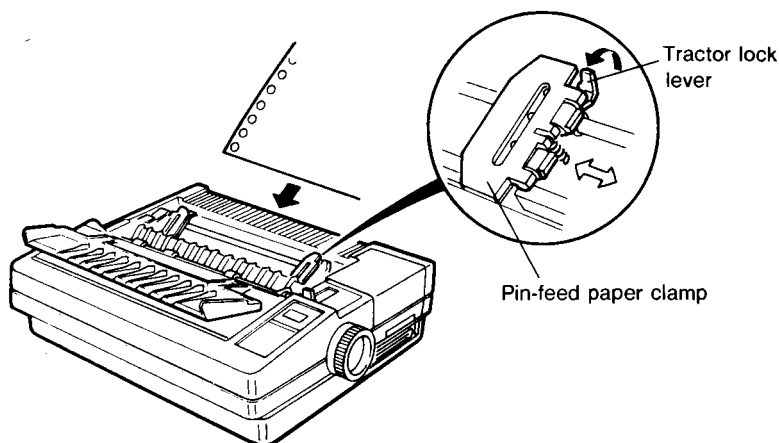


Figure 12. Unlocking the Tractors.

5. Align the first two sprocket holes in the paper with the pin-feed sprockets.
6. Close the pin-feed clamps and adjust the position of the paper.

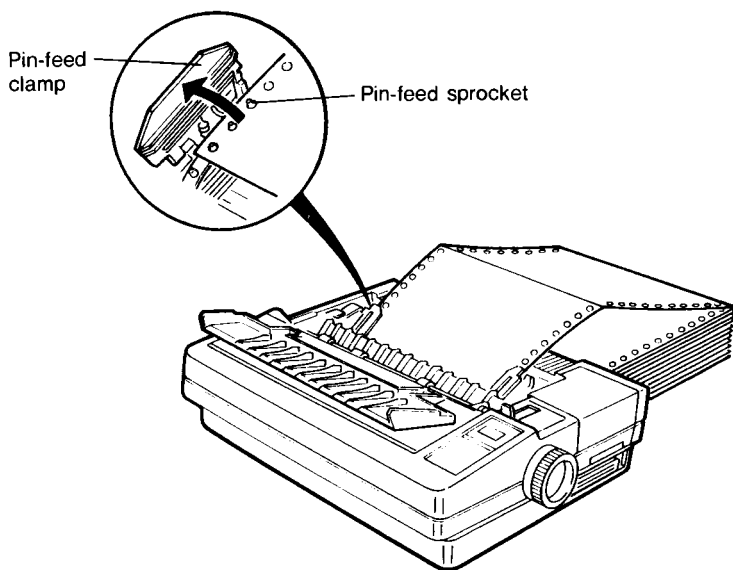


Figure 13. Setting Fanfold Paper in the Tractors.

7. Reinstall the paper rack onto the printer.
8. Turn on the printer. When the LCD displays OFF LINE/P.OUT, press **PARK LOAD**. The printer advances the paper to the first printing position. P.OUT on the LCD disappears.
9. Press the ON LINE button to place the printer on line.

Hints and Tips on Fanfold Paper Loading

- Be sure the paper is positioned so that it can travel through the printer without binding.
- Do not let printed paper pile on top of unprinted paper. This can cause the printed paper to be pulled back into the printer. This could jam the paper feed or damage the printer.
- When using fanfold paper, try to place the paper at the same level as the printer.
- To adjust the top-of-form (TOF) position, see “Top of Form (TOF) Fine Adjustment” later in this section.

Pull Tractor Mode

You must change the tractor unit position before you can use the pull tractor mode.

1. Open the top cover.
2. Press the grey mounting levers on each side of the tractor unit with your thumbs, and push the tractor unit toward the back of the printer.

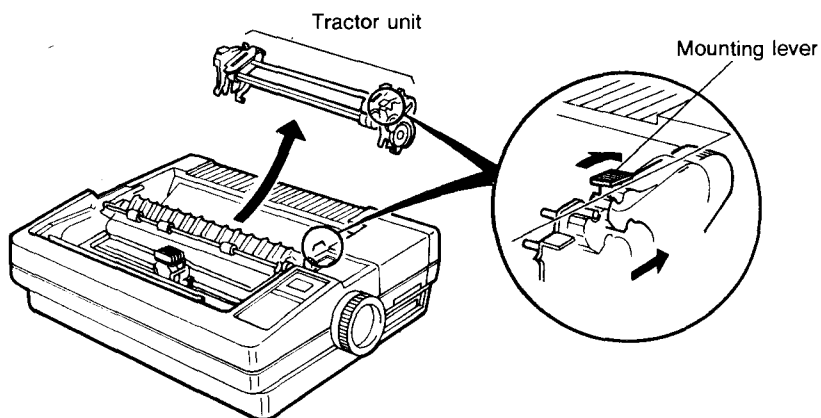


Figure 14. Removing the Tractor Unit.

3. Hook the black round pins on the bottom of the spring arms on each end of the tractor unit into the notches in the printer.
4. Pull the tractor top ends slightly forward until the bottom notches on each end engage with the front triangle-marked pins in the printer.

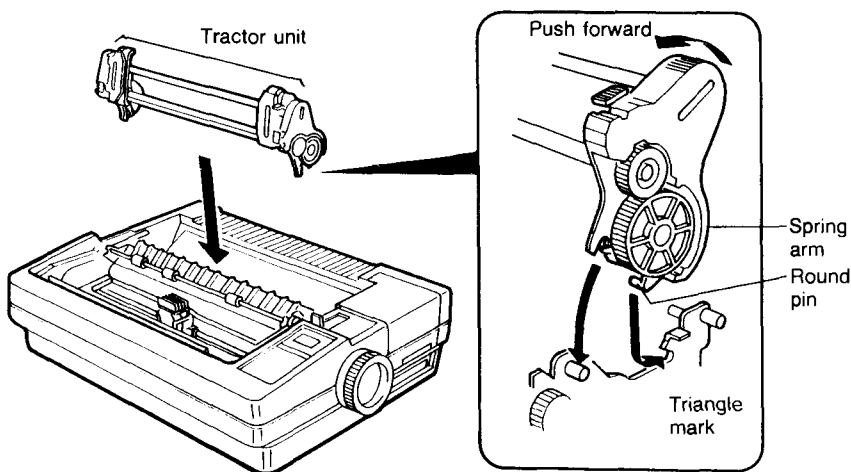


Figure 15. Installing the Tractor Unit in the Pull Tractor Position.

Loading Paper

1. Turn off the printer. Remove the paper rack to expose the tractor.
2. Set the paper lever toward the front of the printer (to the fanfold paper symbol).
3. Open the top cover and move the print head to the middle of the exposed ribbon. The plastic paper guide on the print head guides the paper when you advance the paper.
4. Insert the paper into the slit on the bottom of the printer. You might find this easier to do if you set the printer upright as shown in Figure 16.

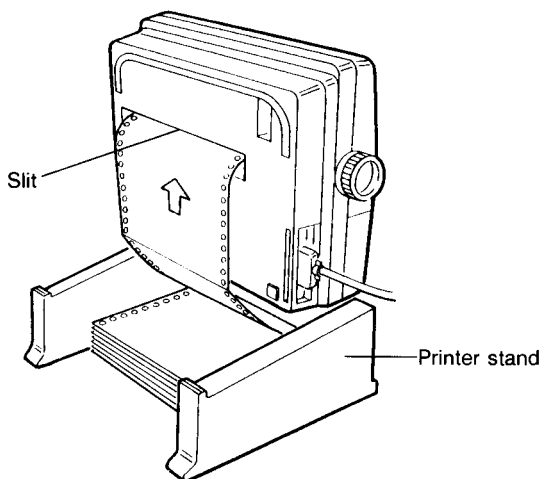


Figure 16. Inserting Paper into the Slit on the Bottom of the Printer.

5. When the top edge of the paper comes out between the platen and the print head, pull the paper up to the tractors.
6. If necessary, pull the tractor lock levers to release the pin-feed paper clamps, and adjust the pin-feed paper clamp positions for the width of the paper.

Getting Started

7. Open the pin-feed paper clamps. Align the first two sprocket holes in the paper with the pin-feed sprockets.
8. Close the pin-feed clamps and adjust the position of the paper.
9. Turn the platen knob to advance the paper to the first printing position.
10. Replace the top cover. Reinstall the paper rack onto the printer.
11. Turn the printer on.

Restoring the Tractor Unit to the Push Tractor Position

To restore the tractor unit to its original position:

1. Open the rear half of the top cover. Remove the paper rack.
2. Using both hands, grasp both ends of the tractor unit, keeping your thumbs on the grey release tabs.
3. Press and hold the mounting levers on both ends and lift up the tractor unit.
4. Slide the tractor unit down into the printer from the rear. Press and hold the mounting levers again while you pull the tractor unit forward. Both ends lift up slightly as they snap into place.
5. Close the rear half of the top cover. Reinstall the paper rack.

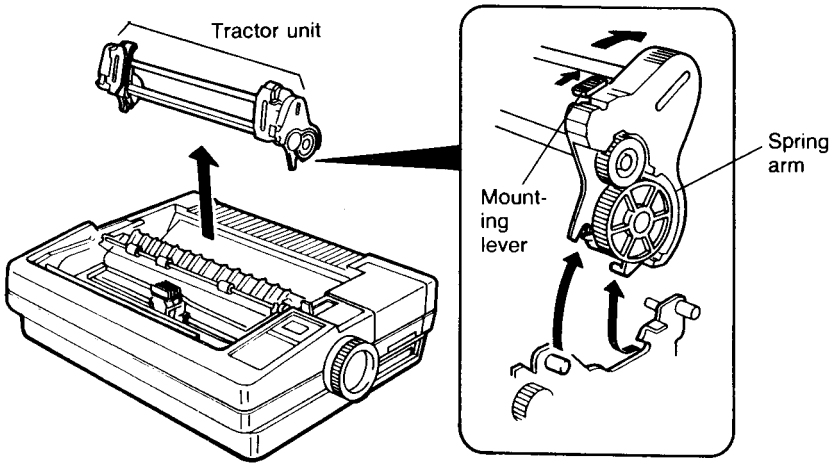


Figure 17. Removing the Tractor Unit from the Pull Tractor Position.

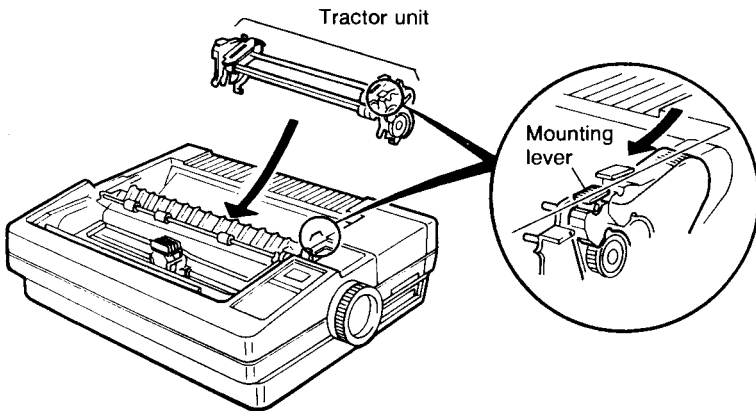


Figure 18. Installing the Tractor Unit in the Push Tractor Position.

Single-Sheet Paper

1. Turn on the printer.

Getting Started

2. If you have fanfold paper in the printer, press **ON LINE** to set the printer to off-line mode. Then, press **PARK LOAD** to move the paper out of the paper path. You might have to press **PARK LOAD** several times before the paper fully retracts to the parking position. It is not necessary to remove the paper from the tractors because it does not affect single-sheet paper feeding.
3. Push the paper lever toward the rear side of the printer (to the single sheet symbol).
4. Align the left guide of the paper rack to **L** (letter size) or **A4** (A4 size), according to the size of the paper. Slide the right paper guide against the right edge of the paper.

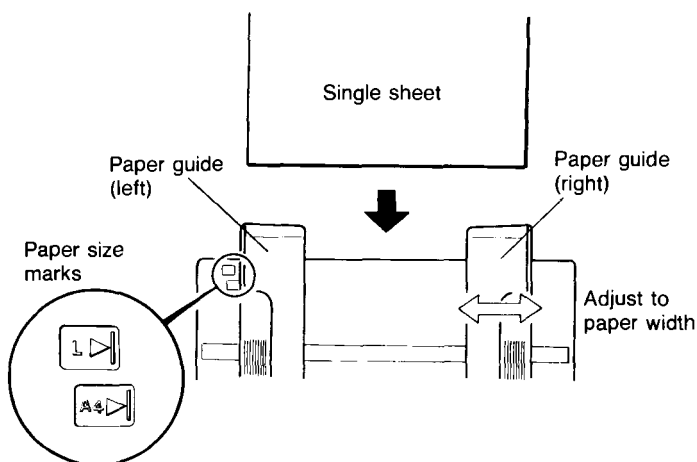


Figure 19. Adjusting the Paper Guides.

5. Set a sheet of paper in the paper rack. The printer automatically advances the paper around the platen to the first printing position. If necessary, adjust the paper position using the platen knob.
6. Press the **ON LINE** button to place the printer on line and ready for operation.

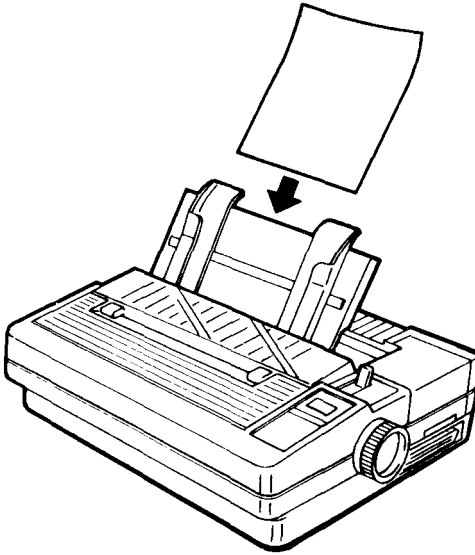


Figure 20. Inserting a Single Sheet.

Test Printing

You can check how the printer operates, how the print looks, or what data is received from the computer. To activate a given function, turn on the printer while holding down the indicated keys:

LF/FF/JUMP – Self test

ON LINE and LF/FF/JUMP – Printing alignment test (H pattern)

SELECT/QUICK – Hex dump

Press ON LINE to stop test printing. Press ON LINE again to start test printing again. Turn off the printer to exit the test mode.

Self test

You can check the print quality and general printer operation before you begin using the printer. If the color motor and color ribbon are installed and the appropriate settings are selected, you can also check color printing.

Getting Started

Before running the self test, be sure to load the printer with paper that is at least eight inches wide. This prevents printing on the platen because the test prints lines that cover a width of eight inches.

Caution: Printing on the platen can shorten the life of the platen and the print head.

The printer prints one full page of the ASCII 96 characters in the various fonts programmed into the printer (until it detects a paper out condition).

The display shows TEST/SLIDE during printing.

Printing alignment test

You can check the printing alignment by printing repetitions of the character H. The display shows TEST/MAINTe during printing.

Hex dump

When the printer enters the hex dump mode, the display shows TEST/HEX DUMP. If data is received from the computer in this mode, the printer dumps the data in hexadecimal. This feature is useful in program debugging.

Setting the Print Head Adjustment Lever

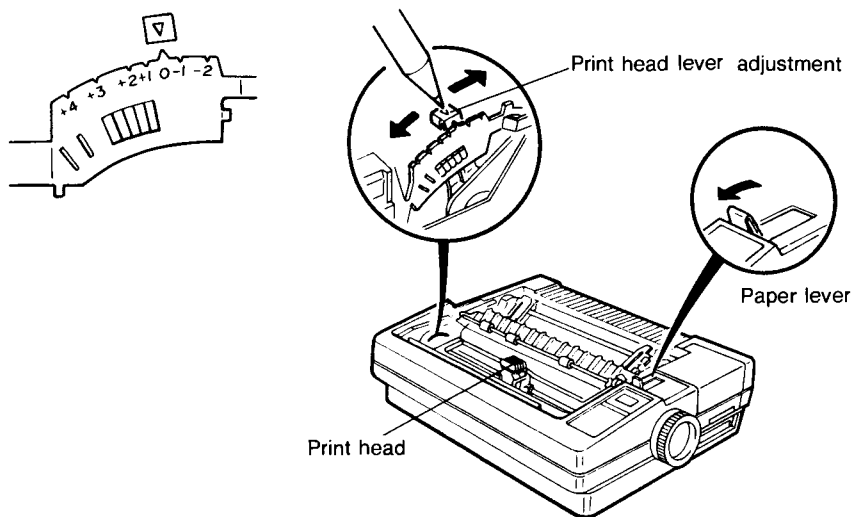
You need to adjust the print head position according to the thickness of paper you use. Adjust the position by moving the print head adjustment lever with a sharp object, such as the tip of a ball-point pen.

Paper thickness should not be more than 0.2 mm (0.008 inch).

Print head adjustment lever	Number of copies (including original)
-2	Not used
-1	Not used
0	1
+1	2
+2	3, 4*
+3	Not used
+4	Not used

Setting the Print Head Adjustment Lever

- * To print on four-part paper, feed the paper from the bottom of the printer and set the CPY MODE menu to ON (see “Using the Setup Menu”).



(The numbers in this figure are shown for explanation; the actual printer has notches only.)

Figure 21. Adjusting the Print Head Position.

If the gap is too narrow, this can cause:

- Print head damage
- Paper damage at the left or right margin
- Inaccurate line feed
- The ribbon to loosen or come off its guide during printing

If the gap is too wide, this can cause:

- Print head damage
- Light printing
- Missing characters

If smudging occurs, set the print head adjustment lever to a higher setting by moving the lever toward the front of the printer.

Top of Form (TOF) Fine Adjustment

The printer memorizes where to print the first line on each sheet. This is called the top-of-form (TOF) position. The default top-of-form position is approximately one inch, as measured from the top edge of the paper to the bottom of a character in the first line.

You can tailor the top-of-form position to suit your applications, adjusting it to within a range of 26/60 inch above the current position to two inches below the current position, in 1/60-inch increments.

1. Be sure that the printer's display shows **ON LINE** with two dashes under it and that paper is in a TOF or tear-off position (see "Perforation Tear off").
2. Press either **PARK LOAD** or **LF/FF** for more than 1.5 seconds if you want to enter the TOF setting mode. The printer retracts paper to the current TOF position if the paper is in the tear-off position. The display changes to **OFF LINE/VTOP 0**.

'VTOP 0' indicates that the Variable TOP of form is set to zero, the default value set at the factory.

3. Press the **▲** (**PARK LOAD**) or **▼** (**LF/FF/JUMP**) to move the paper up or down to the desired position. The number after VTOP on the display changes to show the current TOF setting in 1/60-inch increments. For example, 'VTOP 15' indicates that the paper has moved 15/60 inch up.
4. If you want to store the new TOF position into the printer's memory so that the printer always positions the paper there when it is turned on, press the **SAVE** button twice. The printer memorizes the setting, displaying **SAVED/VTOP 15** on the LCD for two seconds. For temporary setting only, press **ON LINE**.

Note: You can set one VTOP for single sheets and another VTOP for fanfold paper and save both settings in one macro. The DMP 240 senses which VTOP to use by the position of the paper lever. This convenience eliminates the need to change the top of form each time you switch between fanfold paper and single sheets.

In addition, since there are four macros and each one stores two VTOP settings, you can save up to eight different starting print positions. When you save a VTOP setting, it is saved to the currently-loaded macro. For more information on macros, refer to "Using Macros."

The configuration printout shows the VTOP settings under PG LAYOUT/VTOP C ("C" means continuous fanfold paper) and PG LAYOUT/VTOP S ("S" means single sheet).

Perforation Tear Off

In the push tractor mode, the perforation tear-off feature facilitates tearing off a printed sheet along the perforation at the end of printing.

An applications program usually sends an FF (form feed) code at the end of a page. If the FF code is followed by no data, the printer advances the paper perforation to a position directly under the tear edge of the top cover (tear off position) so that you can easily tear off the printed sheet. See Figure 22.

If printing ends in the middle of a page because no FF code is received from the computer, press ON LINE to set the printer off line. Then, press LF/FF for more than two seconds. The paper advances to the tear-off position.

When the printer receives data after a page has been torn, it retracts the paper to the TOF position automatically, without wasting paper.

Note: If you are using non-standard paper, the tear-off position might not be exact. In this case, change the form length setting in the printer. To set the form length, see "Using the Setup Menu."

Note: Occasionally, you might not want the paper to automatically advance to the paper tear-off position. You can turn off this feature by changing **TEAR OFF** to “OFF” in the setup menu.

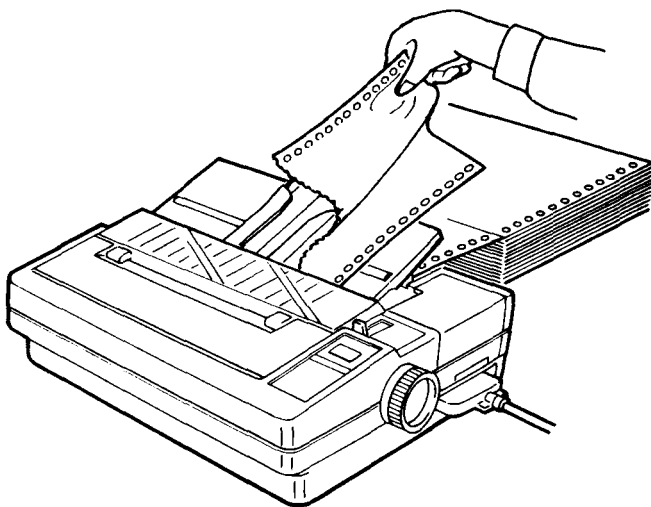


Figure 22. Tear-Off Position.

Paper Parking

Paper parking is a convenient feature which allows you to switch quickly between fanfold paper and single sheets. To use it, your fanfold paper must be fed with the push tractor (from the rear side of the printer).

It works by backing the fanfold paper out of the printer to a position where it is no longer touching the platen. However, the paper remains in the tractor feeders, ready to feed into the printer.

To “park” your fanfold paper:

1. Be sure that the printer is off line.
2. Press **PARK LOAD**. The paper retracts to the parking position.

The paper might not reach the parking position if it had previously been advanced too far. In this case, press **PARK LOAD** as many times as necessary to move the paper into the parking position.

You can easily change from the push tractor mode to the single-sheet mode without removing the tractor unit or the paper if you push the paper lever toward the rear side of the printer.

The function of **PARK LOAD** varies depending on the current paper position.

- With paper in the tear-off position, press **PARK LOAD** to move the paper to the park position.
- With paper in the park position, press **PARK LOAD** to move the paper to the TOF position (load the paper).
- With paper in the TOF position, press **PARK LOAD** to move the paper to the tear-off position.

Ready to Print 2

Your printer is now ready to print. Be sure that paper is loaded and the printer is on. (The DMP 240 must be turned on before you turn on your computer.)

Your DMP 240 can print with many selectable options – changes in type, size, graphics, etc. Using the printer as noted above, it prints according to the factory settings for IBM emulation mode.

For other printing modes (or if you want to change or experiment with the options), the next several sections explain all of this in detail.

Printing Applications

In most instances, your applications program selects all required printing applications. However, if you are interested in writing your own programs, please refer to the *Dot-Matrix Printer DMP 240 Technical Reference* manual.

Selecting the Printer Driver in Your Software

When you install most applications software, you are prompted to enter the type of printer that you are using. Usually you select the appropriate file, known as a “printer driver,” from a list of choices that appears on the screen. The printer driver provides important data about your printer so that it operates correctly with the software.

For best results, choose one of the following printer drivers, if they are available in your software.

- Tandy DMP 240
- IBM Proprinter X24
- Epson LQ-850
- Epson LQ-500
- Epson LQ-2500, for color printing

Ready to Print

If your software does not offer these choices, or if the printer does not seem to print correctly using one of these drivers, try one of the printer drivers listed below.

- IBM Proprinter XL
- IBM Proprinter

Note: Be sure to set the menu to select the appropriate mode (IBM or Epson) according to the printer driver you select in your software.

Refer to the chart below.

Printer Driver	Set Menu To
Tandy DMP 240	IBM emulation or Epson emulation, as called for by printer driver
IBM Proprinter X24	IBM emulation
IBM Proprinter XL	IBM emulation
IBM Proprinter	IBM emulation
Epson LQ-850	Epson emulation
Epson LQ-500	Epson emulation
Epson LQ-2500	Epson emulation

If you do not get proper results when you print, be sure you have installed your software correctly. If you still have problems, contact your software supplier for further instructions.

Selecting the On-Line, Off-Line, and Setup Modes

Your printer operates in three modes: on line, off line, and setup.

In the on-line mode, your printer communicates with a computer. In the off-line mode, the printer does not accept controls and data from the computer, and allows you to manually move the paper. Press ON LINE to toggle between these two modes.

The setup mode enables you to set the various printing characteristics. Press MENU in the off-line mode to enter the setup mode; press ON LINE to exit this mode. To learn more about the setup mode, see "Using the Setup Menu."

Printing Help Information

You can print out help information by using the control panel buttons.

1. Load paper that is at least eight inches wide.
2. Turn on the printer. Wait until the display shows ON LINE and --.
3. Press ON LINE to set the printer off line. The display changes to OFF LINE.
4. Press MENU twice. The display changes to PRNT OUT/HELP.
5. Press SAVE. The printer prints the help information.

Quick Menu Setting

You can change the following print characteristics by entering the 'quick' mode directly from the on-line mode.

Printing color – black, red, blue, violet, yellow, orange, or green (with optional color ribbon)

Character pitch – 10 cpi (characters per inch), HS 12 cpi, HD 12 cpi, 15 cpi, 17 cpi, 20 cpi, or proportional printing

Font type – draft, LQ times roman, LQ sans serif, LQ courier 10, or LQ prestige elite

Load macro (macros 1-4: a macro is a set of user-changeable printer settings)

While the printer is on line, press SELECT/QUICK to enter the quick mode. The display successively shows quick help messages as follows:

TO SET/A COLOR → PRESS:/COLOR → TO SET/A PITCH →
PRESS:/PITCH → TO SET/A FONT → PRESS:/FONT →
TO LOAD/A MACRO → PRESS:/LOAD MAC → TO EXIT/QUICK →
PRESS:/ON LINE → QUICK/MODE

The function of each button in the quick mode is:

MENU/PITCH: Select pitch.

SAVE/LOAD MACRO: Load macro.

PARK LOAD/FONT: Select font.

LF/FF/COLOR: Select color.

ON LINE: Exit the quick mode.

Notes:

- If data remains in the receive buffer, the display shows **DATA/IN BUFFER** error message when you select **LOAD MACRO**.
- The printer does not accept any signals from the computer in the quick setting mode.
- The quick menu settings are lost when you turn the printer off; the default options are in effect when you turn the printer on again.

Quick Menu Setting

In this example, set the pitch to HS 12 cpi.

1. Be sure that the printer is on line.
2. Press **SELECT/QUICK**. The printer is now in the quick mode. The display shows **QUICK MODE**.
3. Press the desired function button. For this example, press **MENU/PITCH**. The default setting appears on the display (10 CPI).
4. Press **SELECT** as many times as necessary to display the desired setting (HS 12 CPI).
5. Press **SAVE** when the desired option appears on the display. The first character of the option is underlined to show the current selection. In this example, "H" of "HS 12 CPI" is underlined.
6. Press **ON LINE** to return to the on-line mode.

Print Out Samples

Here are the print-out samples in various combinations of font type and character pitch options.

Letter Quality Roman at 10 CPI.

Letter Quality Roman at HS 12 CPI.

Letter Quality Roman at HD 12 CPI.

Letter Quality Roman at 15 CPI.

Letter Quality Roman at 17 CPI.

Letter Quality Roman at 20 CPI.

Letter Quality Sans Serif at 10 CPI.

Letter Quality Sans Serif at HS 12 CPI.

Letter Quality Sans Serif at HD 12 CPI.

Letter Quality Sans Serif at 15 CPI.

Letter Quality Sans Serif at 17 CPI.

Letter Quality Sans Serif at 20 CPI.

Letter Quality Courier at 10 CPI.

Letter Quality Courier at HS 12 CPI.

Letter Quality Courier at HD 12 CPI.

Letter Quality Courier at 15 CPI.

Letter Quality Courier at 17 CPI.

Letter Quality Courier at 20 CPI.

Letter Quality Prestige at 10 CPI.

Letter Quality Prestige at HS 12 CPI.

Letter Quality Prestige at HD 12 CPI.

Letter quality Prestige at 15 CPI.

Letter Quality Prestige at 17 CPI.

Letter Quality Prestige at 20 CPI.

Draft Quality at 10 CPI.

Draft Quality at HS 12 CPI.

Draft Quality at HD 12 CPI.

Draft Quality at 15 CPI.

Draft Quality at 17 CPI.

Draft Quality at 20 CPI.

Using the Setup Menu 3

Applications programs usually control the printing characteristics of your printer, such as printing style and format. If you want to tailor these characteristics for your specific needs, you can do so through the control panel or by sending special control commands from the computer.

This chapter describes how to control the printing characteristics through the control panel. For the control commands to change the printing characteristics, refer to the *Dot-Matrix Printer DMP 240 Technical Reference* manual.

The last control remains in effect, whether it was selected through the control panel or by a control command from the computer. However, the printing style settings on the control panel can be “locked in” so that control commands from the computer do not affect them. See “Printing Mode” for details.

The Setup Mode and Setup Menu

This printer has no DIP switches; instead, it has an electrically erasable and programmable read-only memory (EEPROM). Whether the printer is turned on or off, it remembers various printer settings.

To check or change the settings currently in memory, the printer must be in the setup mode. Setup mode allows you to select options that change the printing style, page format, and other settings.

To enter the setup mode, press MENU while in the off-line mode. The printer displays the setup menu on the LCD, each item appearing in the order shown in Table 2.

The setup menu has three levels:

Group: General categorization of functions/features

Item : Direct names of functions/features

Set : Options for the items

Table 2. Setup Menu.

Group	Item	Set
PRNT OUT	DEMO HELP CONFIG	CURRENT, DEFAULT
MAC CTRL	LOAD MAC	MACRO 1, MACRO 2, MACRO 3, MACRO 4

Using the Setup Menu

Group	Item	Set
	DEFN MAC	MACRO 1, MACRO 2, MACRO 3, MACRO 4
EMLATION	EMLATION	IBM, EPSON
PRN STYL	FONT	DRAFT, LQ ROMAN, LQ SANS, LQ COUR, LQ PREST
	PITCH (I)	10 CPI, HS 12 CPI, HD 12 CPI, 17 CPI, PROPORT
	PITCH (E)	10 CPI, HS 12 CPI, HD 12 CPI, 15 CPI, 17 CPI, 20 CPI, PROPORT
	CONDENSE	OFF, ON
	ZERO (I)	NO SLASH, SLASH
	ITALICS (E)	OFF, ON
	COLOR	BLACK, RED, BLUE, VIOLET, YELLOW, ORANGE, GREEN
PRN MODE	AGM MODE (I)	OFF, ON
	CPY MODE	OFF, ON
	TEXT DIR	BI DIR, UNI DIR
	GRPH DIR	BI DIR, UNI DIR
PG LYOUT	SW LOCK	OFF, FONTS, ALL STYL
	LINE SP.	6 LPI, 8 LPI, HOST DEF
	FRM LNTH	6 INCH, 8 INCH, 11 INCH, 11.6INCH, 12 INCH, 14 INCH, 15 INCH, HOST DEF
	PG SKIP(E)	OFF, ON
	RT MARGN	3 to 80 CLMN (Default value = 80)
INSTALL	LT MARGN	0 to 75 CLMN (Default value = 0)
	RIBBON	NORMAL, COLOR
	AUTO CR (I)	OFF, ON
	AUTO LF	OFF, ON
	SLCT IN(E)	IGNORE, ACTIVE
	UNIQ ESC	ON, OFF
	REV LF	OFF, ON
	PG CNTR	1-60 (Default value=40)
	PAPR OUT	ENABLE, DISABLE
CHR TABL	TEAR OFF	ON, OFF
	COUNTRY(E)	U.S.A., FRANCE, GERMANY, U.K., DENMRK 1, SWEDEN, ITALY, SPAIN 1, JAPAN, NORWAY, DENMRK 2, SPAIN 2, LTN.AMER, LEGAL
	CHR SET(E)	ITALICS, GRAPHICS
	CODE PG(I)	U.S.A., MULTI, PORTUGAL, CANADA, NORWAY, SCANDNVA
SPECIAL	CHR SET(I)	SET 1, SET 2
	OPTN RAM	BUFFER, DOWNLOAD

Notes:

- The underline on the first character indicates the default setting.
- Items with (E) appear only when EPSON is selected in EMLATION; items with (I) appear only when IBM is selected in EMLATION.
- The SPECIAL menu appears only when you have installed the optional RAM and you are defining macros. Press SELECT when the SPECIAL/SET? message appears after the CHR TABL menu group.

Switch Functions in the Menu Mode

In the setup mode, you use the switches on the control panel to go through the menus, to select desired options, and to memorize the selected options in the printer memory. Following are the functions of the switches in the setup mode.

MENU: advances to the next item.

PARK LOAD + MENU: goes back to the previous item.

JUMP: jumps to the next group, first item.

PARK LOAD + JUMP: jumps to the previous group first item.

SELECT: advances to the next option in the set.

PARK LOAD + SELECT: goes back to the previous option in the set.

SAVE: stores the selected option in the printer memory.

ON LINE: exits the menu mode and returns to the off-line mode.

Notes:

- The + mark signifies that you need to press both buttons. While holding down PARK LOAD, press MENU, JUMP, or SELECT to go back to the previous item/group/set.
- You can reset all the menu settings to the default values; press ON LINE and PARK LOAD while holding down SELECT for over 5 seconds in the off-line mode.

Setting Up the Menu

Press **MENU** in the off-line mode to enter the setup mode. The first menu in the setup menu sequence appears.

**PRNT OUT
DEMO**

In the setup mode, the display shows the menu group on the first row, and the item on the next row. When you press **SELECT**, the display changes to show the item on the first row, and the set on the next row.

Example: **PRN STYL → PITCH**
 PITCH 10 CPI

Selecting a Menu

Press **MENU** to advance to the next item. While holding down **PARK LOAD**, press **MENU** to go back to the previous item.

Press **JUMP** to jump to the next group, first item. While holding down **PARK LOAD**, press **JUMP** to jump to the previous group, first item.

When you have reached the desired item, press **SELECT** to enter the option select mode.

Press **SELECT** repeatedly (or **PARK LOAD + SELECT** for reverse search) to display the desired option in the set.

Press **SAVE** to store the selected option into memory.

Notes:

- For the first two items, there are no sets; therefore you do not need to press **SELECT**. Simply press **SAVE** to print out the information you require.
- When you reach the last item of a group, pressing **MENU** advances to the first item of the next group. When you are at the first item of a group, pressing **PARK LOAD + MENU** goes back to the last item of the previous group.
- When you reach the last option of an item, pressing **SELECT** advances to the first option of the next item. When you are at the first option of an item, pressing **PARK LOAD + SELECT** goes back to the last option of the previous item.

Returning to the Off-line Mode

Press ON LINE any time in the setup mode to exit the setup mode.

Menu Options ✓

Print-out (PRNT OUT) Group

The print-out menu group contains special menus for printing out information related to the printer itself. The DEMO and HELP menus do not have options; press SAVE after selecting the menu to print the information.

If data remains in the receive buffer when you press SAVE, the display shows the DATA/IN BUFFER error message for two seconds. See "Error Messages."

Demo pattern print-out (DEMO)

Prints one page of demo pattern and return to the off-line mode. Press the ON LINE switch to stop printing, and press it again to continue.

Help print-out (HELP)

Prints the control panel help information and returns to the off-line mode. Press the ON LINE switch to stop printing, and press it again to continue.

✗ Configuration print-out (CONFIG) *new until*

You might want to know the default or current printer setup condition. Press SELECT to select the current or default settings, and then press SAVE to let the printer print it. The DMP 240 returns to off-line mode after printing the configuration report.

Macro Control (MAC CTRL) Group

The macro control (MAC CTRL) group contains two items: load macro (LOAD MAC) and define macro (DEFN MAC). Macro is a set of user-changeable printer settings that can include typeface, pitch, page layout, and so on. Once defined, you only need to load the macro to set the various characteristics at once.

Use the LOAD MAC menu to choose a macro for the current printer operation, and the DEFN MAC menu to change the settings of a macro. See "Using Macros" for more detail about macros.

Using the Setup Menu

Load macro (LOAD MAC)

Loads a macro to replace the current macro. If data remains in the receive buffer, the DATA/IN BUFFER error message appears when you press SAVE. See “Error Messages.”

Define macro (DEFN MAC)

Defines the settings of a macro and stores it in the non-volatile memory of the printer.

Emulation (EMLATION) Group

Selects the emulation mode of the printer – either Epson or IBM. If data remains in the receive buffer, the DATA/IN BUFFER error message appears when you press SAVE. See “Error Message.”

Note that some menu items are displayed or suppressed according to the emulation mode you select. When you select Epson emulation, the following menus appear in the setup menu sequence:

PRN STYL/ITALICS, PG LYOUT/PG SKIP, INSTALL/SLCT IN, CHR TABL/COUNTRY, and CHR TABL/CHR SET.

In IBM mode, the following menus appear in the setup menu sequence:

PRN STYL/ZERO, PRN STYL/AGM MODE, INSTALL/AUTO CR, CHR TABL/CODE PG, and CHR TABL/CHR SET.

Printing Style (PRN STYL) Group

The printing style (PRN STYL) group contains:

Font type (FONT)

Character pitch (PITCH)

Condensed printing (CONDENSE)

Slashed zero (ZERO) (IBM emulation mode only)

Italics (ITALICS) (Epson emulation mode only)

Printing color (COLOR)

Alternate graphics mode (AGM MODE) (IBM emulation mode only)

Font type (FONT)

Selects a font type.

You can also make this selection directly in the on-line mode by quick setting.

For controlling the font type from your computer, refer to the *Dot-Matrix Printer DMP 240 Technical Reference* manual. However, commands from the computer are rejected if you select FONTS or ALL STYL in the PRN MODE/SW LOCK menu.

Character pitch (PITCH)

Determines the character pitch in characters per inch. If PROPORT is selected, each character is given space proportional to its width – the letter i takes up less space than the letter w. You can also make this selection in the on-line mode by quick setting.

See the *Dot-Matrix Printer DMP 240 Technical Reference* manual for the relevant control commands. However, these commands are rejected if you select ALL STYL in the PRN MODE/SW LOCK menu.

Condensed printing (CONDENSE)

Selects either normal or condensed printing. In condensed printing, the character width is compressed to 60% of the normal width (as selected in the PRN STYL/PITCH menu). You cannot condense a character with a pitch of 15 CPI or higher.

See the *Dot-Matrix Printer DMP 240 Technical Reference* manual for control commands from the computer. However, the codes are rejected if you select ALL STYL in the PRN MODE/SW LOCK menu.

Slashed zero (ZERO)

Selects either unslashed or slashed zero.

Italics (ITALICS)

Enables or disables the use of italic characters in the Epson mode.

See the *Dot-Matrix Printer DMP 240 Technical Reference* manual for control commands from the computer. However, this command is rejected if you select ALL STYL in the PRN MODE/SW LOCK menu.

Printing color (COLOR)

When you install the optional color ribbon, you can select any of seven colors, including black, with this menu. The setting in this menu is effective only when you install the color ribbon.

You can make this selection directly in the on-line mode by quick setting.

Alternate Graphics Mode (AGM MODE)

Selects or cancels the alternate graphics mode (AGM) in IBM mode. The AGM mode has some special control codes that are similar to the Epson LQ-800/1000 printers.

Printing Mode (PRN MODE) Group

The printing mode group contains:

Copy mode (CPY MODE)

Text printing direction (TEXT DIR)

Graphics printing direction (GRPH DIR)

Software command lock (SW LOCK)

Copy mode (CPY MODE)

Selects either normal or copy mode. In copy mode, the print head uses stronger strokes so that it can make four copies, including the original.

Text printing direction (TEXT DIR)

Selects either bidirectional or unidirectional text printing. The printing speed is higher in bidirectional printing. In unidirectional printing, the vertical alignment is exact.

For control commands from the computer, see the *Dot-Matrix Printer DMP 240 Technical Reference* manual.

Graphics printing direction (GRPH DIR)

Selects either unidirectional or bidirectional graphics printing. The vertical alignment is exact in unidirectional printing, while the printing speed is higher in bidirectional printing.

See the *Dot-Matrix Printer DMP 240 Technical Reference* manual for software control.

Software command lock (SW LOCK)

Protects the printing style settings by prohibiting override by control commands sent from the computer.

Select OFF to enable computer controls to override the control panel settings. Select FONTS to protect only the font settings in the PRN STYL/FONT menus against control codes from the computer. Select ALL STYL to protect all the menu printing style settings against control codes from the computer.

Page Layout (PG LYOUT) Group

The page layout (PG LYOUT) group contains:

Line spacing (LINE SP.)

Form length (FRM LNTH)

Page skip (PG SKIP) (Epson emulation mode only)

Right margin (RT MARGN)

Left margin (LT MARGN)

Line spacing (LINE SP.)

Changes the line spacing. If the printer receives a control command to select a line spacing value other than 6 or 8, the display shows HOST DEF. Also, refer to the *Dot-Matrix Printer DMP 240 Technical Reference* manual for software control.

Form length (FRM LNTH)

Selects a page length. The selection must meet the actual form length for tear-off positioning. See "Perforation Tear Off."

If the printer receives a control command to select a form length value other than those selectable in this menu, the menu display shows HOST DEF. See the *Dot-Matrix Printer DMP 240 Technical Reference* manual for software control.

Page skip (PG SKIP)

Enables or disables a one-inch skip between the last line printed on a page and the first line printed on the next page to avoid printing on a perforation. This menu is effective only in Epson mode.

Note: Most applications programs handle the bottom and top margins. Do not set this menu to ON when you are using such a program.

See the *Dot-Matrix Printer DMP 240 Technical Reference* manual for software control.

Right margin (RT MARGN)

Determines the right margin in 10 CPI pitch. The value can range from 3 to 80. The default value of 80 is set at the factory. Even though the LCD can display 1 or 2, the DMP 240 does not accept any number below 3 for a right margin setting.

See the *Dot-Matrix Printer DMP 240 Technical Reference* manual for software control.

Left margin (LT MARGN)

Determines the left margin in 10 CPI pitch. The value can range from 0 to 75. The default value of 0 is set at the factory.

Installation (INSTALL) Group

The installation (INSTALL) group contains:

Ribbon (RIBBON)

Automatic CR (AUTO CR) (IBM emulation mode only)

Automatic LF (AUTO LF)

Select In signal (SLCT IN) (Epson emulation mode only)

Unique ESC commands (UNIQ ESC)

Reverse line feed (REV LF)

Page centering adjustment (PG CNTR)

Paper out detection (PAPR OUT)

Perforation tear off (TEAR OFF)

Ribbon (RIBBON)

Changes the setting to meet the ribbon installed. When you select NORMAL, the PRN STYL/COLOR menu is fixed to BLACK.

Automatic CR (AUTO CR)

Enables/disables automatic carriage return (CR) each time the printer receives a line feed (LF), vertical tab (VT), or ESC J command. This menu is effective only in IBM mode.

Some computers send a CR code each time they send an LF code; other computers do not. If your print-out is double-spaced, set this menu to OFF. If the printer prints a line over the previous line, set this menu to ON.

Automatic LF (AUTO LF)

Enables/disables an automatic line feed each time the printer receives a carriage return (CR).

See the *Dot-Matrix Printer DMP 240 Technical Reference* manual for software control.

Select In signal (SLCT IN)

Instructs the printer to ignore or accept the Select In signal from the computer. This menu is effective only in EPSON mode.

On most computers the Select In signal should be ignored. If your computer uses this signal, set it to ACTIVE.

Unique ESC commands (UNIQ ESC)

Effects (ON) or ignores (OFF) the unique ESC commands – ESC ~ 0, ESC ~ 1, ESC ~ 2, ESC ~ 3, ESC ~ 4, ESC ~ 5, and ESC ~ B.

See the *Dot-Matrix Printer DMP 240 Technical Reference* manual for details of these commands.

Reverse line feed (REV LF)

Disables or enables the reverse line feed operation in the pull tractor mode. When disabled, the printer sounds an alarm and stops printing if you send the reverse line feed command. See “Error Messages.”

Paper centering adjustment (PG CNTR)

Changes the print head centering position when feeding paper. The default value is the 40th column at 10 CPI. You might need to reset this menu when you use narrow paper.

Using the Setup Menu

Paper out detection (PAPR OUT)

Enables or disables the paper out alarm indicator. See “Error Messages” for details on the paper out alarm.

Perforation tear off (TEAR OFF)

Enables or disables the perforation tear off feature. When enabled, the printer automatically advances the perforation to the tear off position after receiving a FF code.

Character Table (CHR TABL) Group

The character table (CHR TABL) group consists of:

Country code (COUNTRY) (Epson emulation mode only)

Epson character set (CHR SET) (Epson emulation mode only)

Code page character set (CODE PG) (IBM emulation mode only)

IBM character set (CHR SET) (IBM emulation mode only)

Country code (COUNTRY)

The printer can print special characters of various languages (see Appendix B of the *Dot-Matrix Printer DMP 240 Technical Reference* manual). With this menu you select which language's special characters will be used. This menu is effective only in Epson mode.

See the *Dot-Matrix Printer DMP 240 Technical Reference* manual for software control.

Epson character set (CHR SET)

Selects either italic or graphics characters for ASCII 128-255 in the Epson character set in Epson mode. See Appendix B of the *Dot-Matrix Printer DMP 240 Technical Reference* manual for the Epson character set.

Also refer to the *Dot-Matrix Printer DMP 240 Technical Reference* manual for software control.

Code page character set (CODE PG)

In IBM mode, you need to select the matching code page character set with this menu, if you are using something other than the USA code page, since this printer does not accept the download function of the code page command (MS-DOS 3.3 or higher). For example, if you select multilingual code page (850) on your computer, but you do not set your printer to MULTilingual, you will see = on the computer display for ASCII code 242, but the printer prints > for the same code.

IBM character set (CHR SET)

Selects IBM character set 1 or 2 in IBM mode. See Appendix B of the *Dot-Matrix Printer DMP 240 Technical Reference* manual for the IBM character sets.

Also, refer to the *Dot-Matrix Printer DMP 240 Technical Reference* manual for software control. You cannot select the All Characters Chart in the setup menu. Use the ESC \ or ESC ÷ command for the All Characters Chart.

Optional RAM (OPTN RAM) Group

The optional RAM (OPTN RAM) group appears only when you define macros with the optional RAM chip installed, and it has only one menu, optional RAM (OPTN RAM). The settings in this menu are common to all four macros.

Optional RAM (OPTN RAM) menu

Specifies the use of the optional 32K-byte RAM area as an additional receive buffer or an IBM download area. If you select download in the Epson mode, the optional RAM area is disabled.

To enter a special set group, start defining a macro first as described in chapter 4, and then press SELECT when SPECIAL/SET ? appears to enter the OPTN RAM menu setting mode.

Press SAVE until SAVED / MACRO # appears after selecting a set of OPTN RAM.

Note: To make the setting effective, turn the printer off, then turn it on again.

A macro, in general, is a set of instructions defined to activate with a single or with a few key strokes. With your printer, a macro means a defined set of print settings such as print style and format. Your printer has four macros, numbered 1-4, so you can set up your printer for a maximum of four different applications systems simply by selecting one of the macros.

The four macros are stored in the printer's electrically erasable and programmable read-only memory (EEPROM) so that the contents are retained, even when the printer is turned off.

When you turn on the printer, the printer automatically loads one of the macros from the EEPROM into a temporary memory. The loaded macro resides in a working memory area. The printer refers to the macro in the working area and assumes the printing characteristics defined in the macro.

Macro 1 is defined at the factory as the default macro. When the printer is turned on, this macro is loaded to the working area. (This is why you see MACRO 1 on the display when you turn on the printer.)

Loading a Macro

You can load any macro from the EEPROM to the working area. You can do this by selecting a macro option in the setup menu or, for temporary use, from the quick menu.

1. Be sure the printer is off line. Press MENU four times so the load macro menu is on the display.
2. Press SELECT. The default macro (macro 1) appears.
3. Press SELECT repeatedly until the desired macro appears.
4. When the desired macro appears, press SAVE to load the macro. If you select macro 4, for example, LOADED/MACRO 4 appears for 3 seconds, then it is replaced with LOAD MAC/MACRO 4.
5. Press ON LINE to return to off line.

Note: The newly loaded macro becomes the default macro to be loaded when the printer is turned off and then on again.

You can change the default settings in a macro by selecting the desired options in the setup menu through the control panel, as outlined in the previous section. Note, however, that the new settings are only temporary and will be lost when the printer is turned off. When the printer is turned on again, the default macro is loaded with its default settings.

If you want to keep particular macro settings, you have to define them in the EEPROM. See “Defining a Macro.”

Defining a Macro

You can rewrite the default macro settings in the EEPROM so that the new settings are retained, even though the printer is turned off.

Your printer has a *macro definition area* in the temporary memory. When you instruct the printer to define a macro, the printer loads the specified macro from the EEPROM to the macro definition area. After you change the settings, the printer saves the new settings to the macro definition area. You need to instruct the printer to write the new settings into the EEPROM.

1. Be sure that the printer is off line. Press MENU five times so that the define macro menu is on the display.
2. Press SELECT until the desired macro number appears on the display (for example MACRO 2).
3. Press SAVE to instruct the printer to load the selected macro to the macro definition area. The first character of the selected macro is underlined.
4. Choose the desired options as described earlier. The selected options are now in the macro definition area.
5. Press SAVE twice; the display shows SAVE?/MACRO 2.

6. Press either:

- **SAVE** to write the new macro settings into the EEPROM and return to the off-line mode. **SAVED/MACRO 2** appears for two seconds, then **OFF LINE** appears.
- **ON LINE** to return to the off-line mode without writing the new macro settings. **NOT SAVE/MACRO 2** appears for three seconds, then **OFF LINE** appears.

Note that the defined macro does not influence the printer operation since the printer adopts the printing characteristics in the *working area*. To make the defined macro effective, you have to load the macro into the working area.

Enhancing Your DMP 240 5

Your DMP 240 printer can print in color if the enclosed color motor and the optional color ribbon (Cat. No. 26-2826) are installed and color printing is specified in the setup menu.

Optional Color Ribbon

Installing the Color motor

The color motor is enclosed into the printer box. Follow this procedure for installation.

1. Remove the top cover.
2. Remove the standard ribbon cassette by snapping it out.
3. Hold the color motor by the flat handle on top. Hold it so that the gear side of the motor is facing the left side of the printer. Fit the two notches on the front and rear bottom of the motor into the two slots on the top of the printer's steel frame.

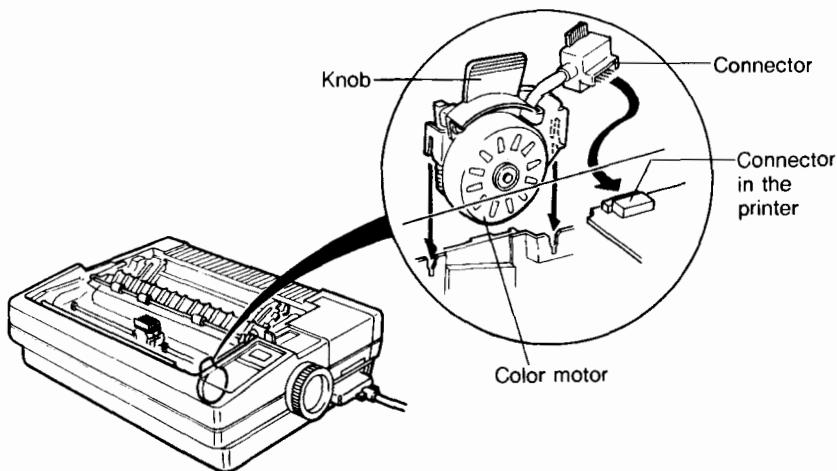


Figure 23. Installing the Color Motor.

4. Insert the connector of the motor into the connector in the printer.

Installing the color ribbon

1. Slide the print head to the center of the platen.

2. Slide the ribbon roller guide of the color ribbon cassette to the center of the exposed ribbon. Position the color ribbon cassette as shown, and fit the ribbon roller guide over the print head.

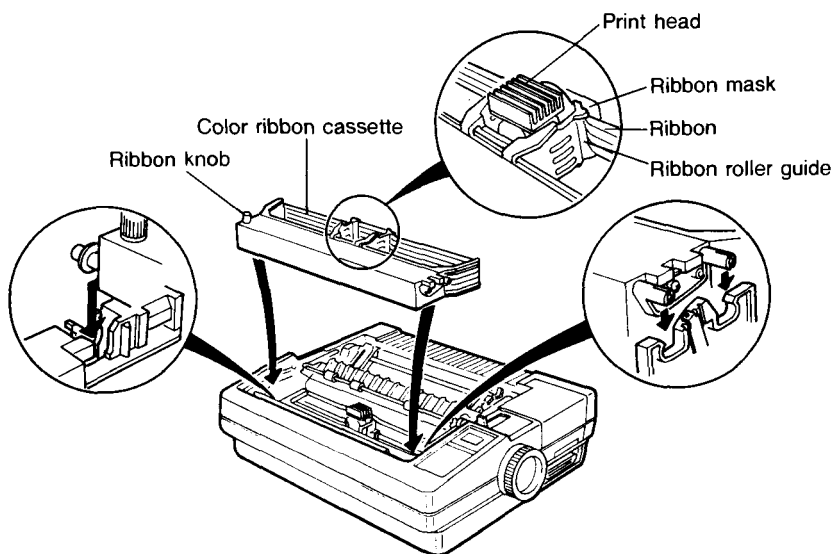


Figure 24. Installing the Color Ribbon Cassette.

3. Lower the cassette into the printer. Be sure that the ribbon slides between the print head and the ribbon mask.
4. Fit the two pins on the right end and one pin on the left end of the cassette into the corresponding notches in the printer. Push the cassette down until it clicks into place. Check to be sure that the ribbon can move up and down by slightly tilting the cassette.
5. Move the print head to the left and right to verify that the ribbon knob turns counterclockwise, feeding the ribbon.
6. Replace the top cover.

Note: You do not have to remove the color motor when replacing the color ribbon cassette with a standard ribbon cassette.

Specifying Color Printing in the Setup Menu

After installing the color motor and ribbon, specify color printing in a macro so that the printer recognizes that it should handle colors when it operates under that macro.

Defining a macro for color printing

1. Set the printer to off line.
2. Press MENU five times so that MAC CTRL/DEFN MAC appears on the display.
3. Press SELECT. DEFN MAC/MACRO 1 is displayed.
4. Press SAVE. M in MACRO 1 is underlined.
5. Press JUMP five times. INSTALL/RIBBON appears on the display.
6. Press SELECT. The option NORMAL appears.
7. Press SELECT again. The option changes to COLOR.
8. Press SAVE. C in COLOR is underlined.
9. Press SAVE twice. The display changes to SAVED/MACRO 1. Now macro 1 is defined for color printing. The printer returns to off line.

Note: The above macro setting does not affect the current printer operation. To activate this macro setting, you must load the defined macro by following the procedure below.

Loading the macro defined for color printing

1. Be sure that the printer is off line.
2. Press MENU four times. MAC CTRL/LOAD MAC appears on the display.
3. Press SELECT. MACRO 1 appears unless you loaded another macro.
4. Press SAVE. Macro 1 with the newly-defined setting is loaded.
5. Press ON LINE to return the printer to the off-line mode.

Specifying a Color in the Setup Menu

Once you have installed the motor and ribbon color and specified color printing, you can use any one of seven colors by selecting the color in the setup menu.

1. Set the printer to off line.
2. Press MENU to enter the menu setting mode.
3. Press JUMP four times so that PRN MODE/CPY MODE appears on the display.
4. Press MENU while holding down PARK LOAD until the display shows PRN STYLE/COLOR.
5. Press SELECT. The color option appears. Press SELECT repeatedly until the color you want appears.
6. Press SAVE to activate the selected color. The first letter of the color is underlined.
7. Press ON LINE to return to the off-line mode.

Note: The above color selection is cleared when the printer is turned off. If you want to retain the color designation, store it in one of the macros. See “Defining a macro for color printing” to find out how to define and store a macro.

Correcting color mixing

The printer chooses the proper color band automatically. If colors mix, you can fine-tune the color band selection by moving the color lever on the top of the color motor, as shown.

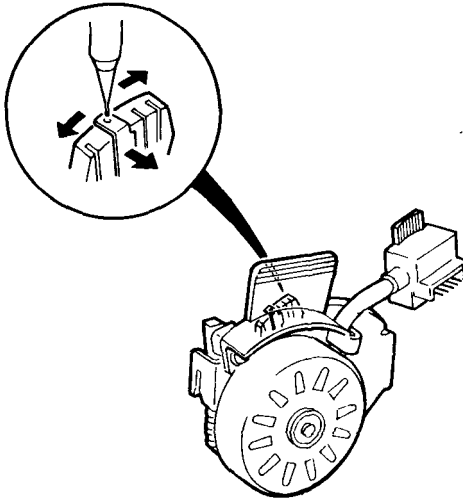


Figure 25. Correcting Color Mixing

Optional RAM

The expansion RAM chip (Cat. No. 26-2853) expands the printer's temporary memory to 40K bytes (internal 8K plus an additional 32K). When you print a lot of long jobs, the additional memory lets your computer move onto other tasks while the DMP 240 continues to work. You can order this RAM chip through your local Radio Shack Computer Center or store. Take your printer to a Radio Shack Service Center to have the chip installed.

Dusting the Printer

After a long period of printer operation, paper lint and dust can accumulate inside and outside the printer. Occasional dusting of the printer prevents unexpected trouble and extends the life of the printer.

1. Be sure that the printer is turned off.
2. Wipe the printer surface with a damp cloth.
3. Remove the top cover.
4. Snap out the ribbon cassette.
5. With a soft brush, whisk paper lint and dust away from the platen, print head, and carriage shaft. Be careful not to damage any of the cables and pulleys.
6. Reinstall the ribbon cassette.
7. Reinstall the top cover.

Cleaning the Ribbon Mask and Platen

If the paper is stained with ink during printing, it might be due to a dirty ribbon mask or platen. Follow these steps to clean the ribbon mask and platen:

1. Be sure that the printer is turned off.
2. Remove the top cover.
3. Remove the ribbon cassette by snapping it out.
4. Gently raise the left side of the print head cable clamp (a black bar) with a pointed object, such as a mechanical pencil. Do not lift up the right side.

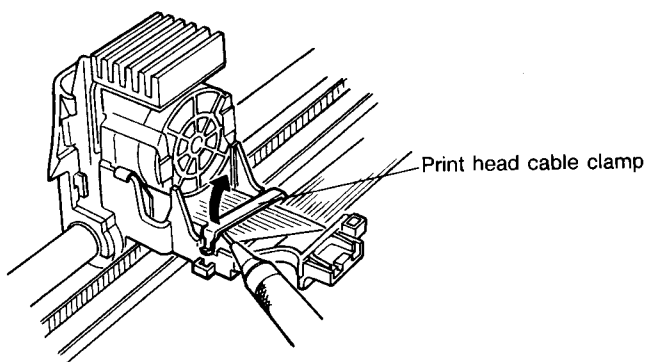


Figure 26. Release the Print Head Cable Clamp.

5. Remove the print head by pulling it up while squeezing together a pair of small black levers on the rear side of the print head.

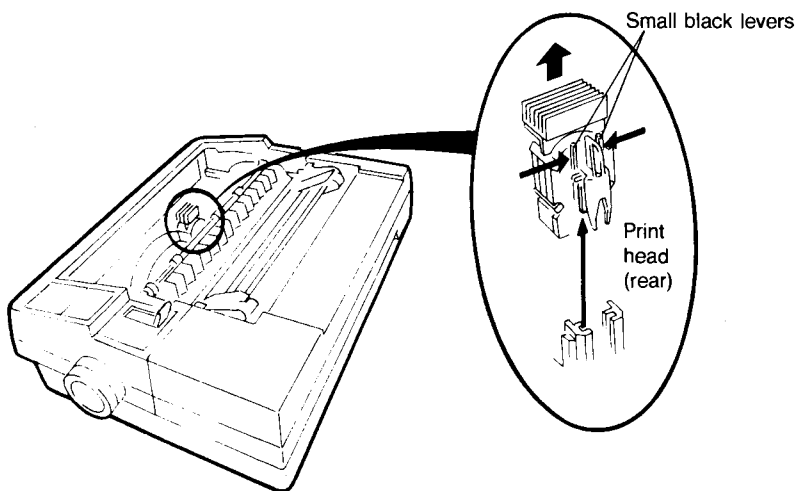


Figure 27. Removing the Print Head.

6. Detach the ribbon mask from the paper guide by pulling the tabs on both sides of the ribbon mask out of the notches on the paper guide. Be careful not to bend the ribbon mask.

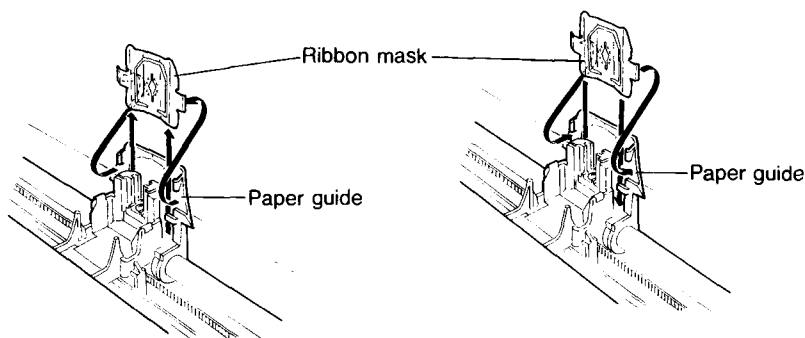


Figure 28. Removing and Reinstalling the Ribbon Mask.

7. Using a soft cloth dampened with alcohol, thoroughly clean the ribbon mask, especially the side that faces the platen.
8. Wipe the platen surface with a soft cloth dampened with alcohol. Turn the platen knob and wipe the platen again. Repeat this procedure until the entire platen surface is clean.
9. Attach the ribbon mask to the paper guide by pushing the tabs on both sides of the ribbon mask into the corresponding notches on the paper guide.
10. Locate the two prongs below the small black levers on the rear side of the print head. Reinstall the print head by sliding these prongs into the guide slots on the print head base. Push down on the print head until it snaps into place.

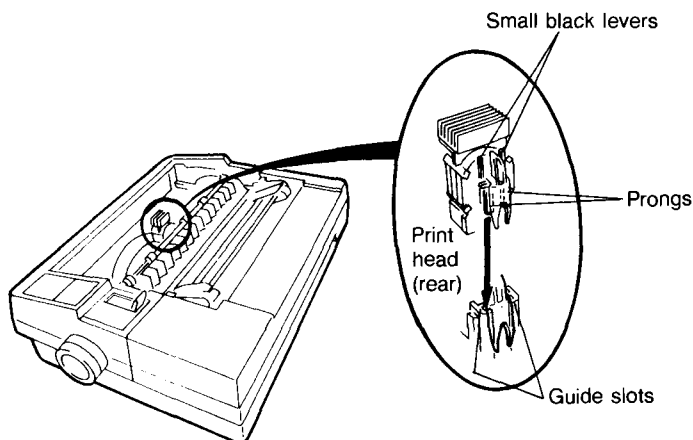


Figure 29. Reinstalling the Print Head.

- 11.** Click the leg of the clamp into the square hole of the carriage assembly while holding the print head cables.

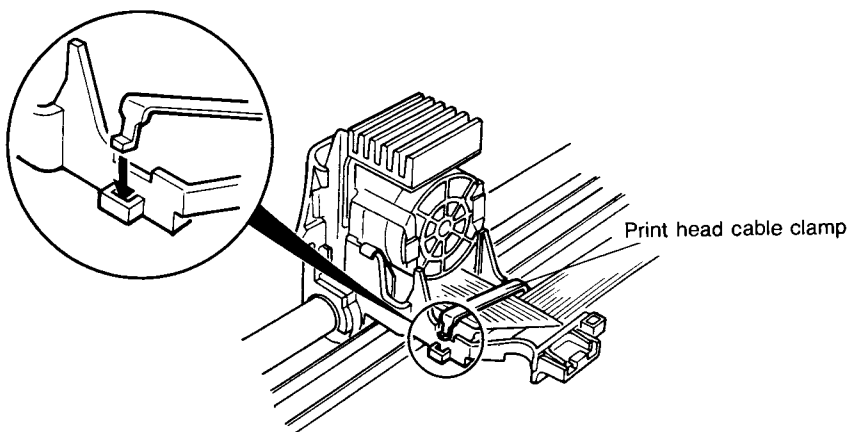


Figure 30. Secure the Print Head Cable Clamp.

- 12.** Reinstall the ribbon cassette.
- 13.** Reinstall the top cover.

Lubrication

If the print head does not move smoothly, lubricate it according to the following procedure:

1. Be sure that the printer is turned off.
2. Remove the top cover.
3. Snap out the ribbon cassette.
4. Lubricate the two points in the printer with a high-grade oil (such as Launa 40 or a high-grade sewing machine oil), as shown in Figure 31.

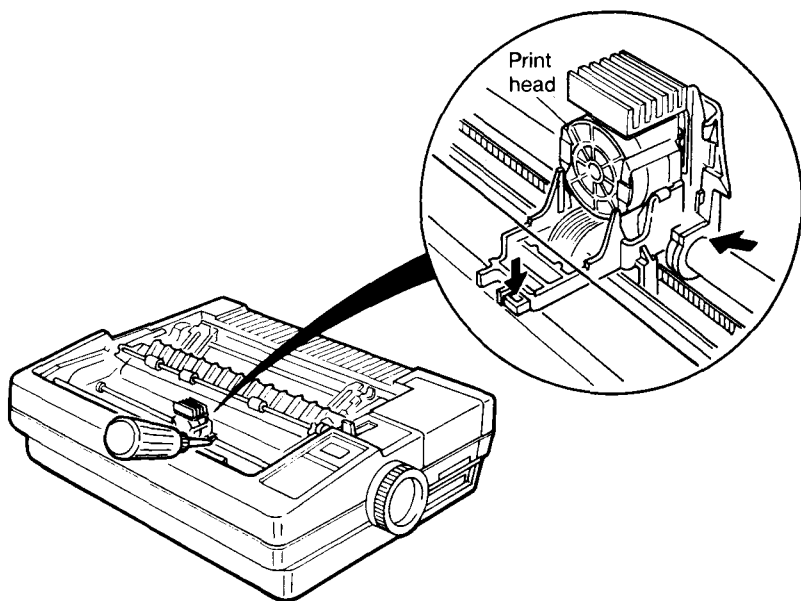


Figure 31. Lubricating the Print Head.

5. Slide the print head to the left and right to confirm that the print head moves smoothly.
6. Reinstall the ribbon cassette.
7. Reinstall the top cover.

Error Messages

If the DMP 240 printer detects any trouble during operation, it lights or flashes the ALARM indicator and displays an error message. Respond to these messages as described below.

**OFF LINE
P.OUT**

The printer is out of paper. The ALARM indicator lights and the printer goes off line. Load more paper.

**PAPER
JAM**

A paper jam has occurred. The ALARM indicator lights and the printer goes off line. Remove the jammed paper, then press ON LINE.

**DATA
IN BUFFER**

Data exists in the receive buffer when you:

- Load a macro (either in menu mode or quick mode).
- Change the emulation mode.

The ALARM indicator lights and printing stops. After two seconds, the printer returns to the condition it was in before the error message appeared. To discard data in the buffer, set the printer off line, press and hold SAVE, and press ON LINE.

**PAPERSEN
ERROR**

Paper is loaded from both the bottom and the rear side of the printer. The ALARM indicator lights and the printer goes off line. Load the paper correctly.

HEAD HOT

The print head is too hot. The ALARM indicator flashes and the printer stops printing. You do not need to do anything. When the print head cools down, the ALARM light goes off, the display changes to ON LINE, and printing resumes.

PULL TRACTOR

The printer has received a reverse line feed operation in the pull tractor mode. The printer does not perform reverse line feeds. The **ALARM** indicator flashes and the printer stops printing. After two seconds, the printer goes off line. Press **ON LINE** to return to the on-line mode.

Note: This error message appears when the **REV LF** (reverse line feed) menu has been set to **OFF** (disabled). If you set this menu to **ON** (enabled), the printer performs the reverse line feed, even in the pull tractor mode.

HOME ERROR

The print head was not positioned properly. The **ALARM** indicator lights and the printer goes off line. Check to be sure that there is no foreign matter in the printer. Remove the foreign matter, if you find any. Turn off the printer, then turn it on again.

RAM ERROR EEPROM ERROR PIN ERROR

The **ALARM** indicator lights and the printer goes off line. If any one of these messages appears, turn off the printer, then turn it on again. If the message appears again, contact your local Radio Shack Computer Center or store.

Troubleshooting

Trouble with power

POWER switch is on but POWER light is off

Check to see if the power cord is plugged securely into the AC outlet.

Trouble with paper feed

Fanfold paper jams

- Check to see if the tractors are locked.
- Check to see if the paper lever is set toward the front of the printer (pin feed symbol).
- If you are using multipart or thick paper, adjust the paper thickness lever accordingly.
- Check to see if the top cover is closed or set properly.
- Check to see if the paper stack is straight.

Single sheet jams at insertion

If you try to load a narrow sheet of paper, the print head might not come to the center of the sheet width to guide the sheet properly at insertion. Adjust the print head centering in the PG CNTR menu.

Paper does not feed

- For fanfold paper, check to see if the paper is set in the tractors correctly.
- Check to see if the paper lever is set correctly, according to the paper type (toward the front of the printer for fanfold paper, toward the back of the printer for single sheets).

Paper parking does not operate

- Check to see if the paper lever is toward the front of the printer.
- If the tractor unit is installed in the pull tractor position, change it to the push tractor position. Paper does not park in the pull tractor mode.
- Be sure that the printer is off line. Paper parks only in the off-line mode.
- Be sure that the PAPER OUT menu is set to ENABLE.

Perforation tear off does not operate

See "Paper parking does not operate."

Perforation does not line up with the tear edge

Check to see if the FRM LNTH menu setting conforms to the actual form length.

Trouble with printing

Print head does not move

- Check to see if the ribbon knob is locked. If it is locked, replace the ribbon cassette.
- There might be foreign matter in the print head. Follow the procedure in the section "Cleaning the Ribbon Mask and Platen" to remove the print head and check it.
- The carriage shaft might be smudged or out of oil. Clean or lubricate the carriage shaft. See "Lubrication."

Trouble with printing results

Printer does not print at all

- The print head adjustment lever might be set for thicker paper (toward the front of the printer). Move the lever toward the back of the printer.
- Check to see if the ribbon is correctly positioned between the print head and the ribbon mask (thin steel plate).
- Check to see if the two cables on the bottom of the print head are properly connected. If disconnected, remove the print head and connect the cables correctly by referring to "Changing the Print Head" in the *Dot-Matrix Printer DMP 240 Technical Reference* manual.

Cleaning and Lubrication

Printing is faint

- The print head adjustment lever might be set for thicker paper (toward the front of the printer). Move the lever toward the back of the printer.
- Check and replace the ribbon if necessary.
- Check to see if the ribbon feeds properly. Remove the ribbon cassette and turn the ribbon knob. If the ribbon knob is locked, replace the ribbon cassette.

Printing is faint on the fourth part of multi-part paper.

- If you have loaded the paper from the rear side of the printer, load it from the bottom. Multipart paper should be loaded from the bottom.
- Check to see if the CPY MODE menu is set to ON.

Paper smudges

- The print head adjustment lever might be set for thinner paper (toward the back of the printer). Move the lever toward the front of the printer.
- The ribbon mask or platen might have ink on them. Clean the ribbon mask and platen by referring to the instructions in "Cleaning the Ribbon Mask and Platen."

Trouble with color printing

Printer does not print in color

- Check to see if the color ribbon cassette is installed properly.
- Check to see if the color motor is installed correctly.
- Confirm that the RIBBON menu is set to COLOR.

Colors mix

- Check to see if the color ribbon cassette is installed properly.
- The ribbon height might be incorrect. Adjust the ribbon height with the color lever. See "Correcting color mixing."

Trouble with printing characteristics

Applications software does not obtain expected printing characteristics

The printer driver in the applications software does not match the emulation mode of the printer. If you have selected EPSON in the EMLATION menu, select EPSON LQ-850, LQ-500, or LQ series in the installation menu of the applications software. If you have selected IBM in the EMLATION menu, select IBM Proprinter X24 in the applications software.

Setup menu settings are lost at power off

Before selecting menu options, select a macro in the DEFN MACRO menu and save it. Then you can store the subsequent settings in that macro so that they are retained, even when the printer is turned off.

Defined menu settings are not activated

The defined menu settings are not activated automatically. Return to the off-line mode and select the defined macro in the LOAD MAC menu.

Appendices

Summary of Switches on the Control Panel **A**

The control panel has only six switches, but these switches perform a variety of functions, depending on the mode to which your printer is set – on-line, off-line, or setup mode. This appendix summarizes the functions of the switches in the three operation modes.

On-line Mode

Your printer can communicate with a computer only in the on-line mode.

Table 3. Switch Functions in the On-line Mode.

ON LINE	Sets printer off line
PARK LOAD	Sets printer to TOF setting mode
LF/FF/JUMP	Sets printer to TOF setting mode
SELECT/QUICK + PARK LOAD	Font type quick setting
SELECT/QUICK + LF/FF/JUMP	Printing color quick setting
SELECT/QUICK + SAVE	Load macro quick setting
SELECT/QUICK + MENU	Character pitch quick setting

Off-line Mode

Your printer performs various paper-loading functions in the off-line mode.

Table 4. Switch Functions in the Off-line Mode.

MENU	Sets printer to setup mode
ON LINE	Sets printer on line
PARK LOAD	Feeds paper to TOF, tear off, or parking position.
LF/FF/JUMP	Advances paper one line. If pressed for more than 2 seconds, it advances paper to tear-off position.

Setup Mode

In the setup mode, you can change the printing characteristics through the control panel.

To enter the setup mode during an on-line operation, you need to set the printer to off-line first, then enter the setup mode. For some printing characteristics that change frequently, the printer can be set quickly in the on-line mode. The switches for quick setting are shown in Table 3.

Table 5. Switch Functions in the Setup Mode.

MENU	Advances to next item
PARK LOAD + MENU	Goes back one item
LF/FF/JUMP	Jumps to next group, first item
PARK LOAD + LF/FF/JUMP	Jumps to previous group, first item
SELECT/QUICK	Advances to next option
PARK LOAD + SELECT/QUICK	Goes back to previous option
SAVE	Stores the settings in memory
ON LINE	Exits setup mode

Alternate graphics mode (AGM): Makes your printer compatible with Epson graphics commands while IBM emulation is selected.

Applications program: Refers to the software package you are using on your computer. Each program has its own method of communicating with printers. Many of them use printer drivers, which eliminate the need for you to learn about printer commands. Others, however, require more work on the user's part.

ASCII: Is an acronym for "American Standard Code for Information Interchange." It is a set of 256 codes (numbered 0 to 255) used to communicate information between the computer and the printer. Each symbol is represented by a single 8-bit binary number which can be expressed in decimal, hexadecimal, or binary values.

Automatic carriage return (AUTO CR): Returns the print head to the left margin after each line feed, vertical tab or ESC J command. This feature is available only when IBM emulation is selected. The default setting for AUTO CR is "OFF."

Automatic line feed (AUTO LF): Advances the paper one line each time the printer receives a carriage return command. The default setting for AUTO LF is "OFF."

Bidirectional printing: Allows the print head to print in both directions as it travels left and right. This is faster than unidirectional printing, which prints only as the print head moves from left to right.

Code page: Is a table used by DOS in IBM (and compatible) computers that assigns a character to each numeric value, providing compatibility between keyboards, displayed characters, printed characters, and stored files. Code pages are used primarily to support foreign language characters. You can find more information in your computer's DOS manual.

Condensed: Produces characters which are 60% of the normal width of the print style and pitch currently selected.

Configuration: Refers to the way your printer is set up. One meaning of configuration is a description of what kind of printer you are using with which computer and which software program(s). A second meaning of configuration refers to the specific settings you have chosen for the printer with the Utility program or the setup menu.

Control codes: Are commands from the computer to the printer which do not print characters. Instead, they manipulate certain printer functions. The control codes are ASCII codes 0 through 31.

Copy mode: Allows you to vary the impression force of the print head. "Normal" printing allows you to print up to three copies (one original and two copies). "Copy mode" makes it possible for you to print four copies (one original and three copies). The default setting is "OFF." Using a sans serif font produces the best results on the fourth copy of four-part forms.

Default: Has two meanings: one refers to the settings which are built into your DMP 240 printer at the factory (referred to as the "factory defaults"), and the other identifies those settings which you have chosen to be active when you turn on the printer.

Download: Describes the process by which fonts are sent to the printer from your software program.

Draft: Refers to one level of print quality. Draft printing is the fastest way to print (160 characters per second at 10 characters per inch), but it also has the lowest resolution (printing the fewest dots per inch).

EEPROM: Is an acronym for "Electrically Erasable and Programmable Read-Only Memory." Factory default settings and the four defined macros are all stored in EEPROM. The macros can be changed and new settings stored in the EEPROM at any time.

Emulation: Means "acting like" another printer. Since your DMP 240 can emulate both the Epson LQ-series and the IBM Proprinter X24, it has the capabilities of both those printer lines.

Escape (ESC): Is a control code (ASCII 27) that begins many printer commands. It is used as a signal to the printer that the following characters should be interpreted as a command, rather than characters to print.

Font: Is a collection of characters, all of the same style and size. For example, one of the DMP 240 resident fonts (ones that are built into the printer) is "Letter Quality Roman."

- Help:** Is always available when you can't remember all the functions of the control panel buttons. You can print the "help printout" and post it near your printer as a handy reminder. See chapter 3, "Using the Setup Menu," for instructions on producing this printout.
- Interface:** Is the point at which or the process by which two separate systems, such as the computer and the printer, communicate.
- Italic:** Refers to type which is printed at an angle, instead of straight up-and-down. This is italic print. Only the Epson emulation allows you to print with italic characters.
- Letter quality (LQ):** Refers to one level of print quality. Letter Quality printing creates higher-resolution images on the page (more dots per inch) than draft printing, and consequently prints more slowly (approximately 53 characters per second at 10 characters per inch).
- Macro:** Is a pre-defined set of printing characteristics, such as print style and format, for using your applications software. You can change the default settings in a macro by using the setup menu.
- Macro definition area:** One of the areas in the temporary memory. This area exists to change the contents of a macro stored into the EEPROM. First, a macro is loaded into the macro definition area from the EEPROM. Next, some contents of the macro are changed on the macro definition area. Finally, the changed macro is saved back to the EEPROM from the macro definition area.
- Menu:** Is a list of choices from which you may select a specific setting for your printer. The DMP 240 offers a series of menus in Quick Mode and Setup Mode.
- Menu group:** Identifies function in the setup menu which can be reached by pressing the JUMP button on the control panel.
- Off-line:** The printer is off-line when the ON LINE light is off. The printer cannot receive data from your computer while it is off-line.
- On-line:** "ON LINE" in the control panel window indicates the printer is ready to receive data from your computer and start printing.

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Paper out sensor: Triggers an error condition in the printer and sends this message to the display window: "OFF LINE/P. OUT." It means that there is no paper against the platen.

Paper parking: Allows you to back your fanfold paper out of the printer so that you can run a sheet (or more) of single-sheet paper without completely unloading the fanfold paper. When you are ready to print on fanfold paper again, simply use the PARK LOAD button to "unpark" your paper and start printing; no re-loading is necessary.

Perforation tear-off: Refers to the location of the tear-bar on the top cover. Rear-fed fanfold paper moves automatically to the paper tear-off position so that the paper can be easily removed after printing.

Pitch: Identifies the number of characters which will print in one inch. For example, "10 pitch" prints 10 characters per inch. Pitch can also be proportional (see "Proportional pacing" in this Glossary).

Print quality: Defines the overall appearance of the printed image. "Letter Quality" has a higher resolution than "Draft Quality." Consequently, you will probably want to select one of the four Letter-Quality fonts for a professional look in your reports and correspondence.

Print style: Comprises a variety of settings you can make to control the appearance of your documents. Included are such options as font, pitch, condensed print, italics, and color.

Proportional spacing: Assigns each character a specific width, rather than printing them all at the same width. As a result, a "w" takes up more space on a line than the letter "i."

Quick menu: Is a special feature of the DMP 240 printer which allows you to easily change certain print settings. Three items can be changed with the Quick menu: character pitch, font, and color. You can also use this feature to load a macro.

Quick mode: Describes the condition of the printer when the quick menu is active. The printer is on line and the QUICK button has been pressed.

RAM: Is an acronym for “Random Access Memory.” This part of your computer (or printer) permits information to be written into it as well as read from it, so you can add or delete data in the RAM. Your printer uses its RAM as a buffer for incoming data and storage area for download characters.

Setup menu: Contains the list of choices from which you can select to determine how your printer works. There are many options from which to choose. The setup menu allows you great versatility and convenience in varying your printing styles.

Setup mode: Describes the condition of the printer when the setup menu is active. The printer is off-line and the MENU button has been pressed.

Skip over perforation: Is a command which tells the printer to stop printing close to the bottom of the page and resume printing at the top of the next page so that data is not printed on the perforation.

Slashed zero: Is a popular way of printing zeros so that they are easily differentiated from the letter “O.” A slashed zero looks like this: Ø. The default setting is “OFF.”

Software command lock: Protects the print style settings you have made with the DMP 240 control panel from possibly being overridden by commands from your computer.

Tear-off: See “Perforation tear-off” in this Glossary.

Temporary memory: Is the part of the printer which holds current settings which are not also saved in a macro. You will lose all settings in the temporary memory when you turn off the printer.

Top-of-form (TOF): Identifies where the first line of print will appear on the page.

Unidirectional printing: Means the print head applies images to the paper in one direction only. This gives greater accuracy but slower printing speed.

Working area: One of the areas in the temporary memory. The contents of the working area defines the printing characteristics.

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