

Product Support Bulletin

Subject: 24 Pin Printer Error and Beep Codes

Date: 4/3/91
Page(s): 1 of 4

PSB No: P-0076
Originator JV

Epson printers issue beep tones when certain error conditions exist. Those beeps can assist you in locating and repairing customer's printers. The following error codes are listed by product name.

NOTE: Most of the beeps issued by the printers are of .1 second duration with a .1 second pause between beeps. Where the beeps or the pauses are longer, it has been noted in the text. The description "3 Beeps x 2" means two sets of three beeps.

LQ-200/AP-3000

1 beep:	BEL code
1 beep:	A Control Panel setting is accepted.
3 beeps:	Paper End detected
5 beeps:	Abnormal carriage movement
On-Line light is flashing:	Printhead is over heated. Carriage will stop until the printhead cools down.

LQ-500, LQ-510, LQ-1010, LQ-850, LQ-950, LQ-1050, L1000, AP-4000, AP-4500

1 beep:	BEL code (.5 sec beep)
1 beep:	A Control Panel setting is accepted
3 beeps:	Paper End detected
5 beeps:	Abnormal carriage movement

LQ-800, LQ-1000, L750

1 beep:	BEL code
1 beep:	A Control Panel setting is accepted
3 beeps:	Paper End detected
5 beeps:	Abnormal carriage movement (.5 sec. pause between beeps)
5 beeps:	+35V supply is abnormal

LQ-860

1 beep:	BEL code (.5 sec. beep)
1 beep:	A Control Panel setting is accepted
3 beeps:	Paper End detected
5 beeps:	Color select mechanism error (.5 sec. beep, .5 sec between beeps)
5 beeps:	Abnormal carriage movement (.5 sec. beep, .5 sec between beeps)
5 beeps:	CG ROM failure (.5 sec. beep, .5 sec between beeps)

LQ-1500

1 beep:	BEL code
5 beeps:	Paper End detected
5 beeps:	Abnormal carriage movement (.5 sec. pause between beeps)

LQ-2500

NOTE: Printers with LCD displays use error messages along with beeps to inform the user of problems. The following messages will help you to troubleshoot problems.

A blank LCD screen with the Power-on LED lit can be caused by a bent pin on one of the PROMs or jumper J1 may be set incorrectly.

- 1 beep: BEL code
- 5 beeps: Abnormal voltage-
- 5 beeps: Abnormal carriage movement
(.5 sec. pause between beeps)

LQ-2500 LCD Codes:

- 00 Invalid ID request to CGROM
 - 03 EEROM read/write error
 - 10 Abnormal carriage movement
-
-

LQ-2550

- 1 beep: BEL code
- 3 beeps: Paper End detected
- 5 beeps: Abnormal carriage movement (.5 sec. pause between beeps)
- 5 beeps: Platen Gap adjustment error (.5 sec. pause between beeps)
- 5 beeps: Case open

LQ-2550 LCD Codes:

- 00 (1) The font could not be found. The printer's internal program could not find the target font.
(2) Missing or damaged 7A ROM
- 02 Internal ROM check does not match. The versions may have been mixed.

LQ-2550 cont.

- 03 A 'Verify After Write' check to the SRAM has failed. The SRAM could be bad.
- 10 This is a motor control error. Four possible areas of failure are:
- a. CR home condition not detected at power up
 - b. Platen gap motor HP not detected correctly
 - c. Friction/Tractor feed switching error
 - d. Physical obstruction such as a jammed ribbon
- 11 Skewed paper detect error. Since the initial reading upon loading a single sheet paper, the paper has skewed. This is a printhead wire protection feature.
- 12 Illegal paper positioning.
- (1) If the paper is loaded using the knob instead of the LOAD/EJECT switch, this error condition will occur. This is a printhead wire protection feature.
 - (2) PE sensor may have failed or is not connected.
- 20 CPU error. An undefined op-code was detected.

NOTES: Error codes 11 and 12 are usually caused by new operators who are un-familiar with the machine. Both of these errors are corrected by turning the printer off, taking out the paper and turning the printer back on. Both features were added to ensure proper paper handling and prevent paper jams, which can result in printhead failures.

Incorrect jumper settings on the ROMA board may cause errors 10 or 20. The correct settings are documented in the Service Manual (page A-54, figure A-52) and on TIB LQ2550-005.

Errors 0,2, 3, 10, and 20 may require a repair, adjustment or replacement.

Product Support Bulletin

Subject: Power Specifications

Date: 2/7/90
Page: 1 of 2

PSB No: P-0060
Originator: RFB

The following information is a list of the power requirements for the Epson 9 and 24 pin printers and laser printers.

Product	Voltage	Max. Current Consumption	Power Consumption	BTU/HR
Apex80	120V	.7 Amp	84 VA maximum	286.69
DFX5000	120V	5.0 Amp	600 VA maximum	2047.80
DFX5000	220V	3.0 Amp	660 VA maximum	2252.58
EPL6000	120V	6.0 Amp	720 VA maximum	2457.36
EX800/1000	120V	1.0 Amp	120 VA maximum	409.56
FX850/1050	120V	1.5 Amp	180 VA maximum	614.34
FX86e/286e	120V	1.0 Amp	120 VA maximum	409.56
GQ3500	120V	6.0 Amp	720 VA maximum	2457.36
L1000	120V	1.8 Amp	216 VA maximum	737.20
LQ500	120V	1.8 Amp	216 VA maximum	737.20
LQ510	120V	1.8 Amp	216 VA maximum	737.20
LQ1010	120V	1.8 Amp	220 VA maximum	750.86
LQ850/1050	120V	2.0 Amp	240 VA maximum	819.12
LQ2550	120V	4.2 Amp	504 VA maximum	1720.15
LX800	120V	.7 Amp	84 VA maximum	286.69

Product	Voltage	Max. Current Consumption	Power Consumption	BTU/HR
LX810	120V	.7 Amp	84 VA maximum	286.69
T750	120V	1.0 Amp	120 VA maximum	409.56
T1000	120V	.7 Amp	84 VA maximum	286.69

If the power requirements of a particular Epson printer is not listed please refer to the appropriate User's Manual for the electrical specifications. In the event that the User's Manual is not available, locate the silver label on the back of the Epson printer. This is a reliable source for the electrical requirements. The following formula is used to calculate the electrical power requirements:

VOLTAMPS is equivalent to WATTS

VOLTAMPS = Volts * Amps

AMPS = Voltamps/Volts

BTU/HR = Watts * 3.413

Example:

120V * 1A = 120VA

120VA/120V = 1A

120VA is equivalent to 120W

120W * 3.413 = 409.56 BTU/HR

Heat output is rated in BTU/HR.

EPSON

EPSON AMERICA, INC.

INFORMATION

Product Support Bulletin

Subject: Tractor Pin Alignment

Date: 5/15/89
Page: 1 of 1

PSB No: P - 00044
Originator: RP 

The purpose of this bulletin is to insure the proper installation and alignment of the FX- 850/1050 and LQ- 850/1050 push tractor assemblies.

There are two possible ways to install the tractor frame on the push tractor assembly. If the frame is installed incorrectly, the tractor belt pins on the two tractors will not be aligned, and the resulting printout appears to be slanted on the page, or the perforated edge will be torn. This is caused by the marks on the tractor shaft holders being 180 degrees 'out of phase.'

When assembling a tractor, there are two grooves in the shaft, and two tabs on the tractor shaft holder. If the pins on both tractor belts are not aligned, it will be necessary to disassemble the tractor, and rotate one tractor shaft holder 180 degrees, to bring it back into alignment with the other shaft holder.

Alignment can be verified by examining the marks in the shaft holders, which will both be in the forward position when properly aligned, as shown in Figure 4- 51 below.

ASSEMBLY POINT

When mounting the tractor assemblies to the shafts, set them so that the marks on the right and left tractor frames are at the same position. Make sure that the pins on the right and left tractor belts are aligned in parallel.

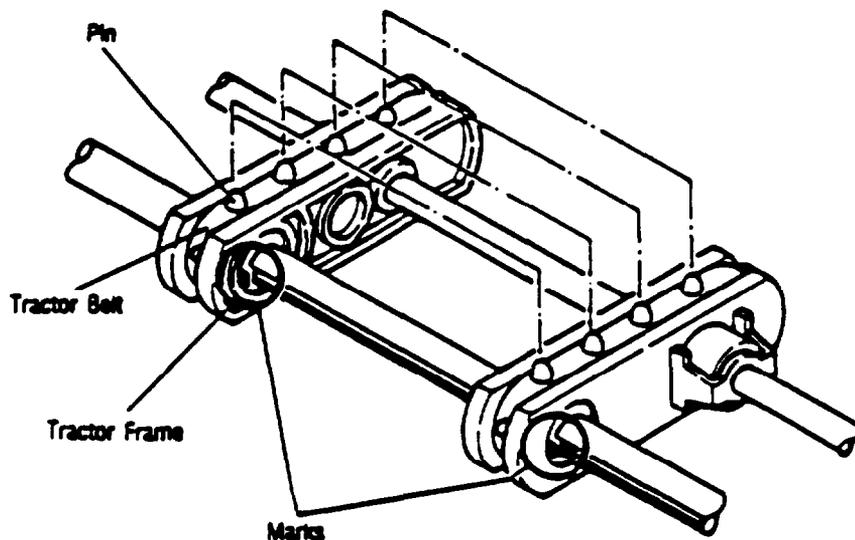


Figure 4-51. Tractor Assembly Phases

PSB NO.: P-0035

DATE: 11/29/88

PAGE: 1 of 3

SUBJECT: LQ-850/950/1050 PRINTER QUESTIONS

Q: How do I get the short tear off feature to work?

A: The first step is to turn the dip switch 2-7 to the "ON" position. Then there are two ways to activate the short tear off. The first way is to send a form feed at the end of each page. The second way is to send 66 lines of data to the printer. In both instances data transmission must stop for a minimum of 3 seconds before the feature is activated.

Q: When printing on single sheets, each page drops down several lines. Why?

A: The number of printable lines on single sheets are 61 or 62. Change the number of lines/page in your software package.

Q: Where are the P-ROM and Character Generator ROM located on the main board of the LQ-850/950/1050?

A: The P-ROM is in location 9A. The Character Generator ROM is in location 6A.

Q: What size buffer does the LQ-850/950/1050 have?

A: 6K bytes or OK bytes. This is selectable by dip switch 1-8.

Q: What are the printing speeds?

A: The printing speeds are:

<u>Pitch</u>	<u>Quality</u>	<u>Characters/Second</u>
10	Draft	220
10	LQ	73
12	Draft	264
12	LQ	88

Q: What ribbons does the LQ-850/950/1050 take?

<u>Printer</u>	<u>Standard Ribbon</u>	<u>Film Ribbon</u>
LQ-850	#7753	#7768
LQ-950	#7767	#7769
LQ-1050	#7754	#7770

Q: Does the LQ-850/950/1050 support color?

A: No.

Q: What fonts are built into the LQ-850/950/1050?

A: Draft
Roman(10cpi, 12cpi, 15cpi)
Roman Proportional
Sans Serif(10cpi, 12cpi, 15cpi)
Sans Serif Proportional

Q: Are there any optional fonts available?

A: Courier(10cpi, 12cpi, 15cpi) : Font Module #7400A
Prestige(10cpi, 12cpi, 15cpi) : Font Module #7401A
Script(10cpi, 12cpi, 15cpi) : Font Module #7402A
OCR(B)(10cpi) : Font Module #7403A
Orator(10cpi) : Only Available with #7407
Orator-S(10cpi) : Only Available with #7407
Multi-Font Module* : Font Module #7407

* Multi-Font Module contains all the above listed fonts.
It is available for the LQ-950 and LQ-850/1050 with the
upgrade (LQ850/1050U).

Q: What type of paper feeds do they support?

A: Friction
Built-in push feed tractor with paper tension unit.
Single bin or dual bin Cut Sheet Feeder (optional)
Pull Tractor (optional)

Q: What size envelopes can they print on?

A: Number 6 and number 10 envelopes.

Q: What are the paper thickness specifications for multi-part forms?

A: It will print on continuous multi-part carbonless forms, with one original and up to 3 copies. The maximum paper thickness should not exceed 0.0126 inches.

Q: If it comes with the built-in push feed tractor unit, why does it need an optional pull tractor?

A: When printing on multi-part forms, the optional pull tractor keeps the forms taut for more consistent paper feeding.

Q: How do I switch from parallel to serial in the printers?

A: The dip switches on the back of the printer determine which interface is being used.

Q: What if I want to install an optional serial interface board?

A: Install the optional interface as detailed in the User's Manual. Then set the dip switches on the printer to the parallel position and then set the dip switches on the optional interface board to enable it.

Q: Which optional serial interface boards will work?

A: The two current serial interface boards that work are the 8143 and the 8148.

Q: If I want to use the built-in serial interface on the printer, what cable do I use?

A: Epson markets two cables that allow direct connection to personal computers. When connecting the 6 pin DIN to an IBM PC/XT or compatible DB-25 serial port use cable #8297. When connecting to an IBM AT or compatible 9 pin serial port use cable #CA-070.

Q: Does the LQ-850/950/1050 support the legal character set?

A: The LQ-950 does have the legal character set built in. The LQ-850/1050 needs the upgrade kit (kit #LQ850/1050U) to support the legal characters.

Q: What is the upgrade kit for the LQ-850/1050?

A: The upgrade kit, #LQ850/1050U, upgrades the printer to allow the use of the new dual bin cut sheet feeder (product code for the LQ-850 = #7346 and for the LQ-1050 = #7348).

Q: What does the upgrade kit contain?

A: It has a new P-ROM, instruction sheet, an errata sheet and a new user's manual.

Q: Is the upgrade kit for the LQ-950 too?

A: No, the LQ-950 comes standard with the upgrade built in.

PSB NO.: P-0028

DATE: 8/1/88

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SUBJECT: PDOS FOR THE LQ-850/950/1050 PRINTERS

The following contains information on using the LQ-850/1050 PDOS diagnostics (#B765108801 for MS-DOS compatible, #B765108901 for QX-16 computers) to troubleshoot the LQ-850/950/1050 series printers,

USING PDOS:

To use PDOS on the LQ-850/950/1050 printers, a serial connection must be made to the host computer using a suitable cable (Epson part no. 8297 connects the LQ's 6-pin DIN connector to a standard DB-25 port). This cable must be connected to COM1:* on the host computer.

DIP switch positions 2-3 and 2-4 must be set to ON, and 2-5 and 2-6 to OFF. This sets the printer to 9600 baud, 8 data bits, and no parity. PDOS will automatically activate and configure the host computer's serial port.

PDOS is then started by booting off the supplied disk, and following the prompts given on screen (a detailed manual is available on the disk).

USAGE ON LQ-950:

The PDOS diagnostics for the LQ-850/1050 also operate on the LQ-950 when the following precautions are observed:

- 1) When the PDOS menus prompt for the selection of printer type, the LQ-850 should be chosen.
- 2) Jumper J7 on the MONMA board must be moved from the 136 to the 80 column position when performing the carriage motor test. The jumper should then be returned to its original position when testing is completed.

* Applies to MS-DOS compatible version of PDOS.

PSB NO.: P-0020

DATE: 5/6/88

PAGE: 1 of 2

SUBJECT: LQ-850/1050 PAPER THICKNESS LEVER

Reports from the field and from various repair locations show that a large percentage of print head failures could be caused by an incorrect paper thickness setting. The following table shows general guide lines for selecting the correct lever position to match your paper usage.

PAPER TYPE	LEVER POSITION
Single Sheet or Continuous	2
Thin paper	2 or 1
Multi-Part	
2 sheet	3
3 sheet	4
4 sheet	5
Labels	4
Envelopes	
Airmail	4 or 5
Plain	6
Bond (20 lb.)	6
Bond (24 lb.)	7

The higher the number, the thicker the paper. The lever adjusts the distance between the platen and the print head. If the lever is set beyond the recommended position, the dot wire will extend further from the face of the printhead, put stress on the wire, and increase the possibility of dot wire damage. Over adjusting to improve print darkness, using an old ribbon that needs replacing, can damage the printhead.

Using the recommended lever setting will provide the longest life to the print head and the best possible print quality.

Figure 1.1 shows the location of the lever on the LQ-850/1050 printer. Figure 1.2 shows a label that will be added to future LQ-850/1050 printers to further emphasize the correct lever setting.

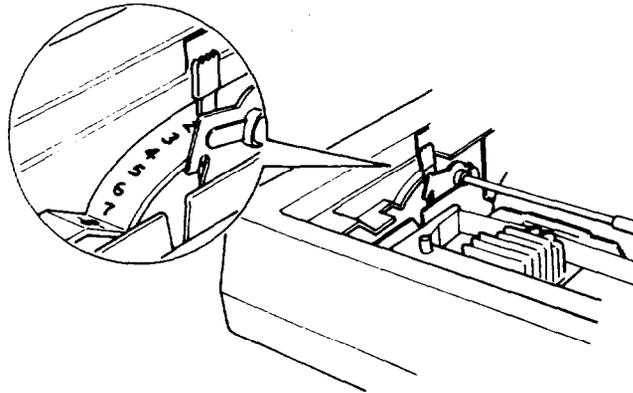


FIGURE 1.1
 Location of paper thickness lever and settings in the LQ-850/
 LQ 1050 printers.

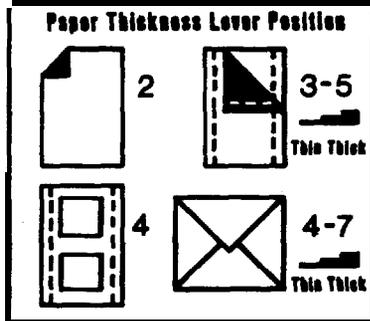


FIGURE 1.2
 New label to be included in LQ-850/1050 printers produced
 beginning in April 1988.

Product Support Bulletin

Subject: Epson Dot - Matrix Printer Options and Accessories

Date: 8/1/89
Page: 1 of 2

PSB No: P-0017B
Originator: RFA

9 - PIN DOT MATRIX OPTIONS

	<u>LX-810</u>	<u>FX-850</u>	<u>FX-1050</u>	<u>DFX-5000</u>
<u>TRACTOR UNITS</u>				
PULL TRACTOR	C800061	7311 -A	7312-A	8309-A
<u>CUT SHEET FEEDERS</u>				
SINGLE BIN	C806121	7339-A	7340-A	N/A
DOUBLE BIN	N/A	7348-A	7348-A	N/A
<u>RIBBONS</u>				
STANDARD (BLACK)	8750	8750	8755	8786
<u>INTERFACE BOARDS</u>				
SERIAL - OK BUFFER	8143	8143	8143	8143
SERIAL - 8K BUFFER	8148	8148	8148	8148
PARALLEL - 32K BUFFER	8172	8172	8172	8172
IEEE 488 - 8K BUFFER	8165	8165	8165	8165
<u>CABLES</u>				
STANDARD IBM PARALLEL	C1-9E-A	C1-9E-A	C1-9E-A	C1-9E-A
SERIAL DB-25 TO DB-9	C94-9	C94-9	C94-9	C94-9
SERIAL DB-25 TO DB-25	C20-9	C20-9	C20-9	C20-9
<u>MISC. PRINTER ACCESSORIES</u>				
PRINTER STAND	CPD-552	CPD-552	KP - STAND	8501-A

(CONT.)

24 - PIN MATRIX OPTIONS

	<u>LQ-510</u>	<u>LQ-850</u>	<u>LQ-950</u>	<u>LQ-1050</u>	<u>LQ-2550</u>
<u>TRACTOR UNITS</u>					
PULL TRACTOR	C800061	7311-A	7313-A	7312-A	7314-A
<u>CUT SHEET FEEDERS</u>					
SINGLE BIN	C806121	7339-A	7345-A	7340-A	N/A
DOUBLE BIN	N/A	7346-A	7347-A	7348-A	7343-A
<u>RIBBONS</u>					
STANDARD (BLACK)	7753	7753	7767	7754	7762
STANDARD (COLOR)	N/A	N/A	N/A	N/A	7763
FILM (BLACK)	7768	7768	7769	7770	7764
<u>INTERFACE BOARDS</u>					
SERIAL - 0K BUFFER	8143	8143	8143	8143	8143
SERIAL - 8K BUFFER	8148	8148	8148	8148	8148
PARALLEL - 32K BUFFER	8172	8172	8172	8172	8172
IEEE 488 - 8K BUFFER	8165	8165	8165	8165	8165
<u>CABLES</u>					
STANDARD IBM PARALLEL	C1-9E-A	C1-9E-A	C1-9E-A	C1-9E-A	C1-9E-A
SERIAL DB-25 TO DB-9	C94-9	C94-9	C94-9	C94-9	C94-9
SERIAL DB-25 TO DB-25	C20-9	C20-9	C20-9	C20-9	C20-9
SERIAL DIN-6 TO DB-9	N/A	CA070	CA070	CA070	N/A
SERIAL DIN-6 TO DB-25	N/A	8297	8297	8297	N/A
APPLE][e, DB-25 TO DIN-6	N/A	8293	8293	8293	N/A
APPLE][c, DIN-6 TO DIN-S	N/A	8239	8239	8239	N/A
<u>FONT MODULES</u>					
COURIER	7400A	7400A	7400A	7400A	7400A
PRESTIGE	7401A	7401A	7401A	7401A	7401A
SCRIPT	7402A	7402A	7402A	7402A	7402A
OCR - B	7403A	7403A	7403A	7403A	7403A
MULTI	7407-A	7407-A	7407-A	7407-A	7407-A
<u>MISC. PRINTER ACCESSORIES</u>					
WINDOWS DRIVER SOFTWARE	DCB-LQ2	DCB-LQ2	DCB-LQ2	DCB-LQ2	DCB-LQ2
APPLE MAC LQ SOFTWARE	C842001	C842001	C842001	C842001	C842001
LQ PATCH SOFTWARE	LQ1	LQ1	LQ1	LQ1	LQ1
PRINTER STAND	CPD-552	CPD-552	KP - STAND	KP - STAND	KP - STAND

Product Support Bulletin

Subject: Quick Reference for Printer Acoustic Noise Levels

Date: 6/5/91
Page(s): 1 of 2

PSB No: P-0016D
Originator: SLS

Sound intensity is measured in units called Bels (named after Alexander Graham Bell,) or more commonly in tenths of this fundamental unit: decibels. In making noise measurements a weighting network is applied in an attempt to match the frequency response of the instrument to that of the human ear. The most common is the A weighting network, with resulting measurements expressed in dB(A).

The following is a list of current product's noise levels tested in accordance with standards set by the International Standards Organization (ISO). The acoustic noise levels for the 9 pin printers are averages while printing in Near Letter Quality (NLQ) mode using continuous paper and are not guaranteed figures. The acoustic noise levels for the 24 pin printers are averages while printing in Letter Quality (LQ) mode using continuous paper and are not guaranteed figures. The acoustic noise levels for the laser printers are averages while using single sheet paper and are not guaranteed figures.

9 PIN PRINTERS

MODEL	NOISE LEVEL
LX-810	56 dB(A)
FX-850	56 dB(A)
FX-1050	56 dB(A)
DFX-5000	55 dB(A)
DFX-8000	55 dB(A)

24 PIN PRINTERS

MODEL	NOISE LEVEL
LQ-200	55 dB(A)
LQ-510	56 dB(A)
LQ-1010	56 dB(A)
LQ-850	56 dB(A)

MODEL	NOISE LEVEL
LQ-860	55 dB(A)
LQ-1050	55 dB(A)
LQ-2550	55 dB(A)

LASER PRINTERS

MODEL	NOISE LEVEL
EPL-7000	50 dB(A)
EPL-7500	50 dB(A)

EPSON

EPSON AMERICA, INC.

SERVICE

PRODUCT SUPPORT BULLETIN

Date: 3/1/88

Subject: Epson Printer/Ribbon Compatibility

Number: P-0013A

PURPOSE:

This list will assist in the correct matching of Epson ribbons to printers. The numbers listed below are the Epson part numbers and can be used to order ribbons. This list supercedes PSB-013.

EAI #	OEM #	USAGE
7751	N/A	ALL DX
7753	N/A	LQ-500, LQ-800, LQ-850
7754	N/A	LQ-1000, LQ-1050
7756	N/A	LQ-2500 (BLACK)
7757	N/A	LQ-2500 (COLOR)
8750	ERC-04	ALL 80-COLUMN MX, RX, FX, FX-86e, LX-800, JX-80*
8753	ERC-13	LQ-1500
8755	ERC-08	ALL 136-COLUMN MX, RX, FX, FX286e
8759	ERC-14	JX-80 (COLOR)
8760	ERC-16	P-80
8762	ERC-17	LX-80, LX-86, LX-90, HW-10
8763	N/A	EX-800/1000 (BLACK)
8764	N/A	EX-800/1000 (COLOR)

*Recommended for use when color is not required.