

TEC Color Printer

CB-416/426-T3 SERIES

Maintenance Manual

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TOSHIBA TEC CORPORATION

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TABLE OF CONTENTS

			Paç	je
1.	UNP	PACKING	1-	1
	1.1	PROCEDURE	1-	1
	1.2	CHECKS	1-	2
2.	MAII	N UNIT REPLACEMENT	2-	1
	2.1	REPLACING THE CPU PC BOARD	2-	2
	2.2	REPLACING HCHK PC BOARD	2-	3
	2.3	REPLACING THE DRIVER PC BOARD	2-	4
	2.4	REPLACING HWC PC BOARD	2-	6
	2.5	REPLACING PDM PC BOARD	2-	7
	2.6	REPLACING THE PS UNIT	2-	8
	2.7	REPLACING THE PLATEN MOTOR AND FEED MOTOR	2-	9
	2.8	REPLACING THE RIBBON MOTOR ASS'Y	2-′	10
	2.9	REPLACING THE SOLENOID ASS'Y	2-′	11
	2.10	REPLACING THE PRINT HEAD	2-′	12
	2.11	REPLACING THE PLATEN AND MEDIA SENSOR	2-′	13
	2.12	REPLACING THE PINCH ROLLER ASS'Y	2-′	14
	2.13	DIP SWITCH SETTINGS	2-′	15
3.	INST	TALLATION PROCEDURE FOR OPTIONAL EQUIPMENT	3-	1
	3.1	CUTTER MODULE (CB-1204-QM)	3-	1
	3.2	RIBBON MODULE (CB-1004-QM)	3-	3
	3.3	PRINT HEAD FAN	3-	5
4.	TRO	OUBLESHOOTING	4-	1
5.	DIAC	G. TEST OPERATION	5-	1
	5.1	OUTLINE OF THE DIAG. TEST OPERATION	5-	1
	5.2	SELF TEST MODE	5-	2
	5.3	PARAMETER SETTING MODE	5-´	10
	5.4	TEST PRINT MODE	5-4	43
-	5.5	RAM CLEAR MODE	5-5	51
6.	PRO	OGRAM DOWNLOAD	6-	1
	6.1	FLOPPY DISK	6-	1
	6.2		6-	1
	6.3	OUTLINE OF THE PROGRAM DOWNLOAD PROCEDURE	6-	1
	6.4	DOWNLOAD PROCEDURE	6-	1

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- 2. The contents of this manual may be changed without notification.
- 3. Please refer to your local Authorized Service representative with regard to any queries you may have in this manual.

1. UNPACKING

1.1 PROCEDURE

- 1) Open the carton.
- 2) Unpack the accessories from the carton.
- 3) Unpack the printer and remove the side pads (L) and (R).
- 4) Place the printer on a level surface.



6) Remove the six pieces of tape to open the top cover and remove the rear pad.



- 7) Remove the 12 pieces of tape from the internal parts.
- 8) Turn all of the head levers to the OPEN position to open the pinch roller ass'y and remove the sheet of paper protecting the print heads.



- 9) Turn all of the head levers to the LOCK position to close the pinch roller ass'y, then lower the pinch roller lever to the ROLLER LOCK position.
- 10) Close the top cover.
- NOTES: 1. Regarding attachment of the accessories, refer to the Owner's Manual.
 - 2. The above illustration is for the CB-416-T3-QQ/QP model. Since the CB-426-T3-QQ/QP model is a two-color printer, the two print head blocks to the right hand are not installed. Please accept that all illustrations provided in this manual hereafter are for the CB-416-T3-QQ/QP.

1.2 CHECKS

- 1) Check for damage or scratches on the machine.
- 2) Confirm that none of the accessories are missing.
- **NOTES**: 1. Keep the cartons and pads for future transportation of the printer.
 - 2. If the printer is to stand unused for a long period of time or if it is to be transported, be sure to insert a sheet of paper under all the print heads and the pinch roller to protect the print heads.

WARNING!

Disconnect the power cord before replacing the main parts.

CAUTION:

Never remove the red screws. Doing so will change the adjustment.

- 1) Turn the power off.
- 2) Open the top cover and remove all of the ribbon module.
- 3) Remove the four B-3x6 screws and five B-4x6 screws securing the left side cover, detach the fan motor connectors (CN3 and CN4) then remove the left side cover.
- 4) Remove the two B-4x6 screws securing the operation panel and disconnect the CN40 and CN51 connectors from the driver PC board, then remove the operation panel.



NOTE: Instructions for opening the top cover and removing the left side cover and operation panel are omitted from each removal/installation procedure provided below.

LUBRICATION

CAUTION:

- 1. Lubrication: During parts replacement
- 2. Kinds of oil: FLOIL G-488: 1Kg can. (Part No. 19454906001)
- 3. Do not spray the inside of the printer with lubricants. Unsuitable oil can damage the mechanism.

All machines are generally delivered in their best condition. Efforts should be made to keep them that way. Lack of oil, or the presence of debris or dust, may cause an unexpected failure. To maintain in optimal operation condition, periodically clean the machine and apply the proper kinds of oil to each part in which lubrication is needed.

Although the frequency of lubrication varies according to how often the machine is used, as a minimum it is necessary to lubricate before any part becomes dry. It is also necessary to wipe off excessive oil or it will collect dirt.

Fig. 2-2

2.1 REPLACING THE CPU PC BOARD

- 1) Disconnect all connectors from the CPU PC board.
- 2) Remove the three SMW-3x6 screws (small washer type) and four SMW-3x6.
- 3) Remove the CPU PC board from the driver PC board.



4) Replace the CPU PC board with a new one, and then reassemble in the reverse order of removal. Refer to the following DIP SW function table and set the serial interface specifications.

DIP SW

This DIP switch is provided on the CPU PC board. Even after installing the CPU PC board, it is accessible from the rear of the printer by removing the DIP SW cover.

No.	ON/OFF		Function		
	1	2			
1	OFF OFF		2400 BPS		
	ON OFF		4800 BPS	Transmission speed	
2	OFF ON		9600 BPS		
	ON	ON	19200 BPS		
З	OF	F	1 bit	Stop hit length	
5	0	N	2 bits		
4	OF	FF	7 bits	Data length	
-	ON		8 bits	Data longin	
5	OFF		Without	Parity check	
Ŭ	ON		With		
6	OFF		EVEN	Parity check (effective when DIP	
	ON		ODD	SW #5 is set to ON.)	
	7	8			
7	OFF OFF		XON/XOFF (No XON is output at the power on time.) (No XOFF is output at the power off time.)		
	ON OFF		READY/BUSY (DTA) (No XON is output at the power on time.) (No XOFF is output at the power off time.)	Data protocol	
	OFF	ON	XON/XOFF+READY/BUSY (XON is output at the power on time.) (XOFF is output at the power off time.)		
8	ON ON		XON/XOFF (XON is output at the power on time.) (XOFF is output at the power off time.)		

NOTE: The shaded settings are the factory default settings. "OFF" means "OPEN".

2.2 REPLACING THE HCHK PC BOARD

- 1) Remove the SMW-3x6 screw from the HCHK PC board.
- 2) Release the HCHK PC board from the locking support.



3) Replace the HCHK PC board with a new one, and then reassemble in the reverse order of removal.

2.3 REPLACING THE DRIVER PC BOARD

WARNING!

Replace only with the same type and rated fuse for continued protection against risk of fire.

- 1) Remove the CPU PC board. (See Section 2.1.)
- 2) Disconnect all connectors from the driver PC board.
- 3) Remove the four SMW-4x8 screws to detach the driver PC board from the printer.



SMW-4x8 Screw

Fig. 2-4

4) After replacing the driver PC board with a new one, refer to the following [CHECK] and [ADJUSTMENT] and reassemble in the reverse order of removal.

CHECK

- 1. Set the DIP switches on the new driver PC board. (Refer to Section 2.13.)
- 2. Firmly connect the harnesses with the connectors by matching their colors on the driver PC board.

ADJUSTMENT

- 1. After replacing the driver PC board, be sure to adjust the media sensor voltage following the procedure described on the next page.
- 2. Refer to the Owner's Manual to readjust the media sensor sensitivity.

ADJUSTMENT

Adjusting the Media Sensor Voltage

After replacing the driver PC board, be sure to adjust the sensor voltage using the procedure below. When adjusting the black mark sensor, place IJ16 tag paper (OSAKA SEALING) so that the sensor can sense the print area of the tag paper. For the feed gap sensor adjustment, place IJKS labels (OSAKA SEALING).



- (1) Connect the printer to a PC and turn the power on for both.
- (2) Adjust the media sensor voltage.
 - Black Mark Sensor
 - ① Fully turn the feed gap sensor adjustment knob on the rear of the printer counterclockwise.
 - 2 Turn the black mark sensor adjustment knob so that the notch stops at a 180 degree angle.
 - ³ Turn the VR3 on the driver PC board in either direction until all the black mark sensor lamps are lit. If the lamps do not light, turn the black mark sensor adjustment knob within the angle range of 150 degree to 210 degree, and retry.



Feed Gap Sensor

- ① Fully turn the black mark sensor adjustment knob on the rear of the printer counterclockwise.
- 2 Turn the feed gap sensor adjustment knob so that the notch stops at a 90 degree angle.
- ³ Turn the VR4 on the driver PC board in either direction until the topmost feed gap sensor lamp lights. If the lamp does not light, turn the feed gap sensor adjustment knob within the angle range of 60 degree to 120 degree, and retry.





2.4 REPLACING THE HWC PC BOARD

- 1) Remove the CPU PC board. (See Section 2.1.)
- 2) Remove the driver PC board. (See Section 2.3.)
- 3) Disconnect all cables from the HWC PC board.
- 4) Remove the three SMW-3x6 screws (small washer type) and two SMW-3x6 screws to detach the HWC PC board from the driver PC board.



5) Replace the HWC PC board with a new one, and then reassemble in the reverse order of removal.

2.5 REPLACING THE PDM PC BOARD

- 1) Disconnect all cables from the PDM PC board.
- 2) Remove the four SMW-3x6 screws to detach the PDM PC board.



Fig. 2-9

3) Replace the PDM PC board with a new one, and then reassemble in the reverse order of removal.

2.6 REPLACING THE PS UNIT

WARNING!

Replace only with the same type and rated fuse for continued protection against risk of fire.

- 1) Disconnect the two cables from CN1 and CN2 on the PS unit.
- 2) Remove the five SMW-4x8 screws to detach the PS unit. Detach the PS cover by moving it in the arrow-indicating direction.
- 3) Remove the N-3 nut and D-3x6 screw to remove the thermistor from the PS unit.



4) Replace the PS unit with a new one, and then reassemble in the reverse order of removal.

Fig. 2-11

2.7 REPLACING THE PLATEN MOTOR AND FEED MOTOR

- 1) Remove the PS unit. (See Section 2.6.)
- 2) Disconnect the three cables from CN13, CN25 and CN27 on the driver PC board, and cut the cable band binding the feed motor cable.
- 3) Remove the eight SM-4x8 screws to detach the two platen motors.
- 4) Remove the four SM-4x10 screws securing the feed motor to detach the feed roller and the motor spacer.



5) After replacing the platen and feed motors with new ones, refer to the following **[LUBRICATION]** and **[CHECK]** and reassemble in the reverse order of removal.

LUBRICATION

Apply FLOIL G-488 to the surface of the gears.

CHECK

- 1. To allow sufficient backlash for the platen motor and feed motor, secure them while holding them up slightly.
- 2. Refer to Fig. 2-11 to connect the harnesses correctly. Be sure to secure the feed motor cable in position with a cable band.

2.8 REPLACING THE RIBBON MOTOR ASS'Y

- 1) Remove the driver PC board. (See Section 2.3.)
- 2) Cut the cable band binding the ribbon motor ass'y and remove the four SMW-4x8 screws to detach the ribbon motor ass'y.



3) After replacing the ribbon motor ass'y with a new one, refer to the following [CHECK] and [ADJUSTMENT] and reassemble in the reverse order of removal.

CHECK

Install a new ribbon motor ass'y so that the ribbon flange is centered with the hole on the main frame.

ADJUSTMENT

Be sure to allow sufficient space for backlash when reinstalling the individual motor.

2.9 REPLACING THE SOLENOID ASS'Y

- 1) Remove the PS unit. (See Section 2.6.)
- 2) Disconnect the solenoid ass'y cables from CN39 (yellow), CN31 (cyan), CN23 (magenta), and CN17 (black) on the driver PC board. Cut the cable band which binds the solenoid ass'y cable.
- 3) Remove the three SMW-3x6 screws to detach the solenoid ass'y.



Fig. 2-13

4) After replacing the solenoid ass'y with a new one, refer to the following **[CHECK]** and **[ADJUSTMENT]** and reassemble in the reverse order of removal.

CHECK

Be sure to fix the solenoid ass'y cable in position with a cable band.

ADJUSTMENT

Solenoid installation method

- 1) Install the ribbon modules with no ribbon loaded.
- ⁽²⁾ Stack 6 pieces of I-BEST S paper (about 1-mm thick in total), insert them between the platen and the print head and turn the head lock lever to the LOCK position.
- ③ Secure the solenoid ass'y so the solenoid pin softly touches the arm.

2.10 REPLACING THE PRINT HEAD

WARNING!

Be careful when handling the print head as it becomes very hot!.

CAUTION:

- 1. NEVER touch the element when handling the print head.
- 2. NEVER touch the connector pins. Touching them may cause a static electric discharge which will damage the print head.
- 3. NEVER remove the red screws. Doing so will change the adjustment.

NOTE: The print head can be replaced without removing the left side cover or the operation panel.

- 1) Turn the head lock lever to the LOCK position and lift the print head mechanism.
- 2) Lift the print head fixing plate to separate the print head from the print head mechanism.
- 3) Disconnect the two connectors and remove the print head from the printer.



4) After replacing the print head, refer to the following **[CHECK]** and **[ADJUSTMENT]** and reassemble in the reverse order of removal.

CHECK

- 1. After replacing the print head, turn the head lock lever to check that the print head is positioned correctly.
- 2. Be sure to perform RAM clear to reset the run distance of the former print head.

ADJUSTMENT

If a print position misalignment (color misalignment) occurs after replacing the print head, refer to Section 5.3.3 X/Y Direction Fine Adjustment Mode to adjust the print position.

2.11 REPLACING THE PLATEN AND MEDIA SENSOR

CAUTION:

NEVER remove the red screws. Doing so will change the adjustment.

- 1) Lift all the print head mechanism and turn the media sensor positioning knob so that the detection point of the media sensor is positioned at the center.
- 2) Remove the two B-4x6 screws to detach the front cover.
- 3) Turn the pinch roller lever to the RELEASE position to open the pinch roller unit.
- 4) Remove the SMW-3x20 screw to detach the pinch roller lever.
- 5) Remove the four guide plates.



- 6) Loosen the three SMW-3x10 screws securing the under guide plate, remove the eight SMW-3x10, nine SMW-4x8 and one SMW-3x6 screws to detach the under guide plate and the platen frame.
- 7) Remove the washer and two platen holders to detach the platen.
- 8) Disconnect the cable from CN10 on the driver PC board, cut the cable band binding the media sensor cable, remove the knob and detach the media sensor.



9) After replacing the platen or media sensor, refer to the following [CHECK] and [ADJUSTMENT] and reassemble in the reverse order of removal.

CHECK

- 1. The media sensor moves smoothly by turning the knob.
- 2. The pinch roller lever must lock and release the pinch roller unit smoothly.

ADJUSTMENT

- 1. Determine that there is a 0.15-mm to 0.5-mm clearance between the under guide plate and the platen using a clearance gauge.
- 2. Refer to Adjusting the Media Sensor Voltage on page 2-5 to readjust the voltage.
- **NOTE:** The guide plate which differs in shape from other guide plates is to be installed nearest to the front of the printer.

2.12 REPLACING THE PINCH ROLLER ASS'Y

- 1) Remove the platen frame. (See Section 2.11.)
- 2) Remove the SMW-3x6 screw to detach the pinch roller ass'y.



3) After replacing the pinch roller ass'y, refer to the following **[CHECK]** and reassemble in the reverse order of removal.

CHECK

Check that the pinch roller unit is opened/closed smoothly.

2.13DIP SWITCH SETTINGS

DIP SW 1

DIP switch 1 is positioned at the lower left of the driver PC board.

Be sure to set the all switches of DIP SW 1 to OFF. NOTES: 1.

"OFF" means "OPEN". 2.



Fig. 2-18

DIP SW 2

DIP switch 2 is located on the media sensor adjsuter.



Fig. 2-19

No.	ON/OFF				Function					
	OFF			Without	Ctooker Medule					
1	ON				With	Stacker Module				
	OFF			Without						
2	ON			With						
		0	FF		Must be set to OFF.					
3		0	N							
	4			5		Ribbon Near End				
	OFF		(OFF	No. detection of ribbon near end.					
					Pause when the ribbon near end is detected.					
4	ON		OFF		OFF		OFF		The ribbon near end status is sent to the PC.	
					Continues printing when the ribbon near end is					
_	OFF		ON		detected.					
5	011				The ribbon near end status is not sent to the PC.	-				
					Continues printing when the ribbon near end is					
				ON	detected.					
					The ribbon near end status is sent to the PC.					
	6	-	7	8						
	OFF	0	FF	OFF	English	Language to display				
6	ON	0	FF	OFF	German	LCD error message				
	OFF	С	N	OFF	French	1				
7	ON	С	N OFF		Dutch	1				
	OFF	0	FF ON		Spanish	1				
8	ON	0	FF	ON	Japanese]				
	OFF	С	N	ON	Not used]				
	ON	С	N	ON	Not used]				

NOTE: The shaded settings are the factory default settings. "OFF" means "OPEN".

3. INSTALLATION PROCEDURE FOR OPTIONAL EQUIPMENT

WARNING!

Be sure to unplug the power cord before installing any optional equipment.

3.1 CUTTER MODULE (CB-1204-QM)

Description	Q'ty/Unit
Cutter Unit	1
Cutter Cover	1
Screw (SMW-4x8)	3

- Open the top cover and remove the two B-4x6 screws to detach the front cover. (Refer to page 2-1.)
- 2) Connect the two connectors.
- 3) Install the cutter unit in front of the printer with the three SMW-4x8 screws.



- Cutter Cover
- 4) Attach the cutter cover to the cutter unit with the two screws.

Fig. 3-2

- 5) Closet the top cover.
- 6) Remove the VR blind cover from the rear of the printer and set the DIP switch 2-2 to ON.
- 7) When the cut position needs to be fine adjusted, refer to section 5.3.1.2.
- Adjust Cut Angle

When the cutter cuts media obliquely, follow the procedure below to adjust the cut angle.

- 1) Loosen the two SMW-4x8 screws.
- 2) Move the guide plate back or forth so that the cutter is perpendicular to the media. Tighten the same SMW-4x8 screws.



3) Put the ribbon onto the ribbon shaft so that the notch of the ribbon core aligns with the protrusion on the ribbon shaft.

3.2 RIBBON MODULE (CB-1004-QM)

Description	Q'ty/Unit
Ribbon Module	1
Ribbon Tension Sheet	1
Sheet Fixing Plate	1
D-3x5 Screw	3

- 1) Remove the ribbon stopper from the ribbon shaft.
- 2) When the CB-1904-RK-QM Super Premium Ribbon Kit is installed in the printer, attach the enclosed ribbon tension sheet and the sheet fixing plate using the following procedure.
- **NOTE:** Do not attach the ribbon tension sheet to the ribbon module when the CB-1904-RK-QM is not installed.
 - ① Remove the ribbon guide lever from the ribbon module.
 - ② Fit the bosses on the sheet fixing plate into the holes of the ribbon tension sheet and the aluminum frame. Secure them with the three D-3x5 screws.
 The double sided adhesive tape does not need to be used.

The double-sided adhesive tape does not need to be used.

NOTE: Do not reassemble the ribbon guide lever, ribbon guide lever shaft and D-3x6 screw because they are unused after the ribbon tension guide sheet has been installed.



3. INSTALLATION PROCEDURE FOR OPTIONAL EQUIPMENT

- 3) Insert the ribbon onto the ribbon shaft so that the notch of the ribbon core aligns with the protrusion on the ribbon shaft.
- 4) Attach the ribbon stopper to the ribbon shaft.
- 5) Unroll about 30 cm of the ribbon then place the ribbon module on the ribbon. Set the ribbon feed core first then the ribbon winding core on the ribbon module in place.



Fig. 3-6

NOTE: Care must be taken when handling the ribbon.

6) Take up any slack in the ribbon and insert the ribbon module into the print head mechanism.



- **NOTE:** The ribbon module should be positioned in order of yellow, cyan, magenta and black as viewed from the front of the printer.
- 7) Turn the head lever to the LOCK position then once again take up any ribbon slack.
- 8) Close the top cover.

3.3 PRINT HEAD FAN

When printing a high print rate pattern in batch mode, the print head will overheat, causing the print head protection circuit to be activated. This will stop printing with displaying the error message "EXCESS HEAD TEMP". (e.g. When the printer prints an entire black pattern at a speed of 6"/sec., it may stop printing after about a 6-minute operation.)

- 1) Unplug the power cord.
- 2) Remove the side panel (L) from the printer.
- 3) Attach the print head fan to the print head frame with the enclosed two SM-3x12 screws.
- 4) Connect the print head fan to the head fan harness and fix it with the cable clip.
- **NOTE:** The harnesses and cable clips should be installed so they do not obstruct removal and installation of the ribbon modules.



Fig. 3-8

5) Install the side panel (L) to the printer.

4. TROUBLESHOOTING

Problems	Cause	Solution
Power does not turn ON.	 Input voltage to the printer is not within the rated voltage. (Check by CN1 on the PS unit.) 	Replace the power cable or power inlet.
	 2. Output voltage from the printer is not within the rated voltage. (Check that the voltage between Pin 5 and Pin 8 (GND) of CN2 on the PS unit is 24V. And check that the voltage between Pin 1 and Pin 3 (GND) is 5V. 	Replace the PS unit.
	3. No voltage to the driver PC board. (Check that the voltage between Pin 5 and Pin 8 (GND) of CN44 on the CPU PC board is 24V. And check that the voltage between Pin 1 and Pin 8 (GND) is 5V.)	 Replace the power harness.
	4. Failure of the driver PC board.	Replace the driver PC board.
LED or LCD does not	1. Failure of the LED board/LCD	Replace the LED board/LCD.
light.	2. Failure of the LCD/LED harness	Replace the LCD/LED harness.
	3. Failure of the driver PC board	Replace the driver PC board.
Poor printing	1. The print paper is of poor quality.	Use the media approved by TOSHIBA TEC.
	2. Dirty print head	 Clean the print head.
	3. The head lever fastens the print head incompletely.	• Fasten the head lever completely.
	4. Failure of the driver PC board.	Replace the driver PC board.
Printer does not print.	1. Print head failure	 Replace the print head.
	2. Connection of the print head connector is incomplete, a bad contact, or broken wires.	Connect the harness completely, or replace the harness.
	3. Failure in rewinding/feeding of the ribbon.	 Replace the ribbon rewind motor, ribbon feed motor or driver PC board.
	4. Failure of the driver PC board	Replace the driver PC board.
	5. Failure of the CPU PC board.	Replace the CPU PC board.
	6. Failure of the software	Check the program.
	7. Failure of the printer cable	 Replace the printer cable.
Dot missing	1. Broken print head element	Replace the print head.
	2. Broken print head cable wires	Replace the print head harness.
	3. Failure of the driver PC board	 Replace the driver PC board.

4. TROUBLESHOOTING

Problems	Cause	Solution
Blurred print	1. Poor media quality.	Use only TOSHIBA TEC specified media.
	2. Dust is on the media.	Clean the print head and remove any dust from the media.
Ribbon wrinkle	1. Improper ribbon loading	Re-load the ribbon properly.
	2. Poor ribbon quality	Use only TOSHIBA TEC specified ribbon.
	3. Ribbon is not rewound or fed smoothly.	 Replace the ribbon rewind motor or ribbon feed motor.
Ribbon end error	Poor ribbon quality	Use only TOSHIBATEC specified ribbon.
Label feed failure	1. Paper is not set properly.	Set the paper properly.
	2. Paper of poor quality	Use paper approved by TOSHIBA TEC.
	3. Improper adjustment of the feed gap sensor or black mark sensor.	 Adjust the media sensor sensitivity and voltage.
	4. The proper media sensor is not selected.	
	5. Failure of the feed gap sensor or black mark sensor	 Replace the feed gap sensor or black mark sensor.
	6. Failure of the feed motor or platen motor.	 Replace the feed motor, platen motor or driver PC board.
	7. The cutter mechanism is not installed properly.	 Install the cutter mechanism properly.
Print position misalignment	Print position has not been adjusted.	Refer to Section 5.3.3 to adjust the print position.
Communication error	1. Failure of the printer cable	Replace the cable.
	2. Failure of the PC or application software	 Modify the program.
	3. Failure of the CPU PC board	• Replace the IC57, 42, 27, 1, 18, 38
	4. Driver PC board failure.	the CPU PC board.
		Replace the driver PC board.

TABLE OF CONTENTS

				Page
5.	DIA	G. TES	T OPERATION	5- 1
	5.1	OUTL	INE OF THE DIAG. TEST OPERATION	5-1
	5.2	SELF	TEST MODE	5-2
		5.2.1	Automatic Diagnostic Printing	5-2
		5.2.2	Maintenance Counter Printing	5-7
	5.3	PARA	METER SETTING MODE	5-10
		5.3.1	Position Adjustment Mode	5-12
			5.3.1.1 Print start position fine adjustment	5-12
			5.3.1.2 Cut position fine adjustment	5-13
			5.3.1.3 Reverse feed distance fine adjustment	5-14
			5.3.1.4 Print stop position fine adjustment	5-17
			5.3.1.5 X-coordinate fine adjustment	5-18
		5.3.2	Print tone Fine Adjustment Mode	5-20
		5.3.3	X and Y-directions Fine Adjustment Mode	5-21
			5.3.3.1 Setting conditions for adjustment value	
			confirmation print	5-21
			5.3.3.2 Status print before X/Y-directions adjustment	5-22
			5.3.3.3 X-direction fine adjustment	5-24
			5.3.3.4 Y-direction fine adjustment	5-27
			5.3.3.5 Adjustment value confirmation print	5-30
		5.3.4	Print Start Position Fine Adjustment Mode	5-32
		5.3.5	Printer Parameter Setting Mode	5-33
			5.3.5.1 Character code selection	5-33
			5.3.5.2 Font zero selection	5-34
			5.3.5.3 Control code selection	5-35
			5.3.5.4 Pulse motor speed selection	5-36
			5.3.5.5 Euro Font Code Selection	5-37
		5.3.6	Platen Speed Fine Adjustment Mode	5-38
		5.3.7	Color Designation Mode	5-39
		5.3.8	Ribbon Type Selection Mode	5-40
		5.3.9	Supply Holder's Paper End Sensor Selection	5-41
		5.3.10	Resolution Selection	5-42
	5.4	TEST	PRINT MODE	5-43
		5.4.1	Normal Test Print	5-43
		5.4.2	Process Test Print	5-49
	5.5	RAM		5-51
		5.5.1	Iviaintenance Counter Clear	5-53
		5.5.2	Parameter Clear	5-54
		5.5.3	Print Step Clear	5-55

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- 2. The contents of this manual may be changed without notification.
- 3. Please refer to your local Authorized Service representative with regard to any queries you may have in this manual.

5. DIAG. TEST OPERATION

5.1 OUTLINE OF THE DIAG. TEST OPERATION

In system mode the diag. test operation is used to diagnose the printer and to set the parameters by using the **[FEED]**, **[RESTART]** and **[PAUSE]** keys on the operation panel. Diag. test operation is started from the power off state. For further details, please refer to the corresponding pages.

NOTE: Every size in this manual is written in millimeter. To obtain the size in inch, divide by 25.4.

Type 1



- Self Test Mode (See page 5-2) Data from the maintenance counter and automatic diagnosis are printed on the media.
- Parameter Setting Mode (See page 5-10) Fine adjustment of the feed length, cut position, reverse feed distance, X-coordinate, print tone, print stop position, X and Y-directions alignment, print start position and selection of character font, font zero, control code, supply Holders paper end sensor, resolution and Euro Font Code are available in this mode.
- Test Print Mode (See page 5-42) Print condition and test print type (slant line, characters and bar code) are selectable.
- RAM Clear Mode (See page 5-51) Data from the maintenance counter is cleared and parameter setting is initialized in the RAM clear mode.

In system mode the [FEED], [RESTART] and [PAUSE] keys function as described below.

Key Function Table

Key Name	Function
[FEED] key	Used to start the system mode as a [PAUSE] key does. Used to selected the parameter mode or to fine adjust the parameters in the negative direction (-).
[RESTART] key	Used to select the parameter mode or to fine adjust the parameters in the positive direction ($+$).
[PAUSE] key	Used to start the system mode as a [FEED] key does and to select the parameter mode. Used as an enter key.

5.2 SELF TEST MODE

In self test mode the printer status is printed in two types of sample print.

5.2.1 Automatic Diagnostic Printing

The data from (1) to (9) on a sample print is printed.



- **NOTES:** 1. If the automatic diagnosis printing results in an error, the printer will display the error message and stop printing. The error status can be cleared by the [PAUSE] key, however, the display will return to the initial display "<1> DIAG. V1.0A". Printing is not automatically resumed.
 - 2. Both label and tag paper can be used for printing.



5-3

5. DIAG. TEST OPERATION



5. DIAG. TEST OPERATION

(8) Print head temperature check HEAD TEMPERATURE SENSOR : AD AF AF Β1 Temperature of black print head (A/D value) Temperature of magenta print head (A/D value) Temperature of cyan print head (A/D value) Temperature of yellow print head (A/D value) (9) Print head resistance rank HEAD RESISTANCE RANK : <u>0C 06</u> 0C 0D Resistance rank of black print head (A/D value) Resistance rank of magenta print head (A/D value) Resistance rank of cyan print head (A/D value) Resistance rank of yellow print head (A/D value) (10) Reflective sensor check **REFLECTIVE SENSOR** : 0 (0: WHITE, 1: BLACK MARK) Reflective sensor 0: Print area 1: Black mark (11) Transmissive sensor check TRANSMISSIVE SENSOR: 0 (0: LABEL, 1: GAP) Transmissive sensor 0: Print area 1: Inter-label gap (12) Strip sensor check PEEL OFF SENSOR : 0 (0: NOT EXIST, 1: EXIST) Strip sensor 0: No paper 1: Presence of paper



5.2.2 Maintenance Counter Printing

The data from (1) to (1) on a sample print is printed. This data is the printer status and the value set in the parameter setting mode.



- **NOTES:** 1. If the maintenance counter printing results in an error, the printer will display the error message and stop printing. The error status can be cleared by the **[PAUSE]** key, however, the display will return to the initial display "<1> DIAG. V1.0A". Printing is not automatically resumed after the error is cleared.
 - 2. Both label and tag paper can be used for printing.

5.2 SELF TEST MODE

Sample Print

[P	rint	Condition]
L.		

- Preset count :1
- Print speed : 6"/sec.
- Sensor : No sensor
- Printing method : Thermal transfer
- Supply length : 126 mm
- Issuing mode : Batch printing

(2) - (3) - (4) - (5)	FEED CUT 232C ERR PW FALL	:	0.0Km 0 0 0				00.400
r (6) — (7) — (8) —	PRINT HEAD U/D RIBBON	: : :	BLACK 0.0 Km 192 0h	MAGENTA 0.0Km 64 0h	HEAD T CYAN 0.0Km 96 0h	YELLOW 0.0Km 64 0h	—СВ-426 —СВ-416
(9) — (10) — (11) — (12) — (13) —	FEED CUT BACK STOP X ADJ.	[P(: : : : : :	C] +0.0mm +0.0mm +0.0mm +0.0MM C]		[KEY] -2.0mm +0.0mm +0.0MM +0.0MM +0.0mm HEAD 1	HEAD2	
(14)— (15)— (16)— (17)—	X DIRECTION Y DIRECTION TONE RIBBON VOLTAGE	:	BLACK +0.00mm +0.00mm +0step	MAGENTA +0.00mm +0.00mm +0step	CYAN +0.00mm +0.00mm +0step	YELLOW +0.00mm +0.00mm +0step	CB-416
	REWIND SUPPLY	: : [KE	+0step +0step Y]	+0step +0step	+0step +0step HEAD 1	+0step +0step HEAD2	CB-426
(14)— (15)— (16)—	X DIRECTION Y DIRECTION TONE	:	BLACK +0.00mm +0.00mm +0step	MAGENTA +0.00mm -0.08mm +0step	CYAN +0.00mm -0.42mm +0step	+0.00mm -0.50mm +0step	−СВ-416
(18)— (19)—	FONT CODE	:	[PC-850] [AUTO]	[0]			

0.0Km

:

TL FEED

(1)

: The CB-426-T3 does not print these data.

Fig. 5-2

1) Maintenance Counter

#	Item	Count Condition	Range
(1)	Total media distance	Counted when the feed motor drives to feed,	0.0 to 3200.0 km
	covered	print and issue the media. (Counted also	
(2)	Media distance	during ribbon save operation and back feed.)	0.0 to 200.0 km
	covered	[See NOTE 2.]	
(3)	Cut count	Counts every cut. [See NOTE 3.]	0.0 to 1000000
			times
(4)	RS-232C hardware	Counted when a parity, overrun or framing	0 to 255 times
	error count	error occurs. [See NOTE 5.]	
(5)	Momentary power	Counts the number of times the power restores	0 to 15 times
	failure count	while the CPU is busy after reset.	
(6)	Print distance	Counted while printing. (Feeding and issuing	0.0 to 200.0 km
		media, and ribbon saving operation are not	
		counted.) [See NOTE 2.]	
(7)	Head up and down	Counts every up and down of the print head	0 to 2000000 times
	count	using the solenoid for ribbon save operation.	
		(Up + Down = 2 count) [See NOTE 3.]	
(8)	Ribbon motor driving	Counts when the ribbon motor drives to feed,	0 to 2000 hours
	time	print and issue the media. (The driving time is	
		not count during ribbon saving operation, but is	
		during back feed.) [See NOTE 4.]	
NOTES: 1. Item from (2) through (16) are initialized to "0" after RAM clear.

- 2. If the distance is 5.5 m or less, it is rounded down and no data is added to the memory at power off.
- 3. If the count is 31 counts or less, it is rounded down and no data is added to the memory at power off.
- 4. If the driving time is 36 sec. or less, it is rounded down and no data is added to the memory at power off.
- 5. When a sent command results in an error, the same number as the data capacity of the command is counted by byte.

2) Parameters

#	Item		Description	Remarks
(9)	FEED [KEY]		Print start position fine adjustment	-30.0 mm ~ +13.0 mm
	FEED [PC]		Print start position fine adjustment	-30.0 mm ~ +10.0 mm
(10)	CUT [PC, KEY]		Cut position fine adjustment	-20.0 mm ~ +20.0 mm
(11)	BACK [KEY]		Reverse feed distance fine adjustment	-9.5 mm ~ +9.5 mm
	BACK [PC]		Reverse feed distance fine adjustment	-9.9 ~ +9.9 mm
(12)	STOP [PC, KEY]		Print stop position fine adjustment	-30.0 ~ +300.0 mm
(13)	X ADJ.		X-coordinate fine adjustment	-99.5 mm ~ +99.5 mm
(14)	X DIRECTION		X-direction fine adjustment	-2.00 mm ~ +2.00 mm
			CB-416: Black/Magenta/Cyan/Yellow	
			CB-426: HEAD1/HEAD2	
(15)	Y DIRECTION		Y-direction fine adjustment	-2.00 mm ~ +2.00 mm
			CB-416: Black/Magenta/Cyan/Yellow	
			CB-426: HEAD1/HEAD2	
(16)	TONE		Print tone fine adjustment	-50 ~ +50 step
			CB-416: Black/Magenta/Cyan/Yellow	
			CB-426: HEAD1/HEAD2	
	RIBBON VOLTAGE	REWIND	Ribbon take-up motor voltage fine adjustment	-50 ~ +50 setp
			CB-416: Black/Magenta/Cyan/Yellow	
(17)			CB-426: HEAD1/HEAD2	
		SUPPLY	Ribbon feed motor voltage fine adjustment	-50 ~ +50 setp
			CB-416: Black/Magenta/Cyan/Yellow	
			CB-426: HEAD1/HEAD2	
(18)	FONT		Character code selection	PC-850 : PC-850
				PC-8: PC-8
			Font zero selection	0: No slash used.
				0: Slash used.
(19)	CODE		Control code selection	AUTO:
				Automatic selection
				ESC LE NUL:
				{ } : { } mode

5.3 PARAMETER SETTING MODE

The following 12 items are set in the parameter setting mode. The values set in this mode are printed on the sample print of the maintenance counter. Setting procedure and functions are provided below.



Parameter Setting Mode Table

Mode Name	Function		
POSITION	<position adjustment="" mode=""> Fine adjustment of the print start position, cut position, reverse feed distance, print stop position, and X-coordinate</position>		
PRINT DENSITY	<print adjustment="" fine="" mode="" tone=""> Print tone fine adjustment of each print head</print>		
HEAD ADJUST	<x adjustment="" and="" fine="" mode="" y-directions=""> Fine adjustment of each color's alignment • PRINT CONDITION: print condition setting • ADJUST: Status print before X/Y-directions adjustment • X DIRECTION: X-direction alignment fine adjustment • Y DIRECTION: Y-direction alignment fine adjustment • CHECK: Adjustment value confirmation print</x>		
HEAD ADJUST3	<print adjustment="" fine="" mode="" position="" start=""> Print start position fine adjustment of each print head for page 1 to page 10</print>		
SUPPLY HOLDER	<supply end="" holder's="" paper="" selection="" sensor=""> Selection of the use of the supply holder's paper end sensor</supply>		
RESOLUTION	<resolution selection=""> Selection of the resolution</resolution>		
PRINTER PARA	<printer mode="" parameter="" setting=""> Selection of the character code, font zero, control code, Euro Code and pulse motor speed</printer>		
PM ADJUST	<platen adjustment="" fine="" mode="" speed=""> Fine adjustment of the platen speed</platen>		
HEAD SELECT	<color designation="" mode=""> Selection of used or unused print head</color>		
RIBBON	<ribbon selection="" type=""> Setting the ribbon type for each print head</ribbon>		

5.3.1 Position Adjustment Mode

5.3.1.1 Print Start Position Fine Adjustment



- **NOTES:** 1. Holding the **[FEED]** key or **[RESTART]** key down for more than 0.5 seconds enables a fast forward.
 - Max. fine adjustment +13.0 mm, -30.0 mm = Key fine adjustment value + PC fine adjustment value.
 When the value reaches the maximum, the value remains unchanged even if the subsequent fine adjustment is performed.
 - 3. A change feed value is stored in memory by pressing the **[PAUSE]** key.

5.3.1.2 Cut Position Fine Adjustment



Reverse Feed Distance Fine Adjustment.

- **NOTES:** 1. Holding the **[FEED]** key or **[RESTART]** key down for more than 0.5 seconds enables a fast forward.
 - 2. Max. fine adjustment ±20.0 mm = Key fine adjustment value + PC fine adjustment value.

When the value reaches the maximum, the value remains unchanged even if a subsequent fine adjustment is performed.

3. A changed cut/strip position value is stored in memory by pressing the **[PAUSE]** key.



5.3.1.3 Reverse Feed Distance Fine Adjustment

NOTES: 1. Holding the **[FEED]** key or **[RESTART]** key down for more than 0.5 seconds enables a fast forward.

2. Max. fine adjustment ±9.5 mm = Key fine adjustment value + PC fine adjustment value.

When the value reaches the maximum, the value remains unchanged even if the subsequent fine adjustment is performed.

3. A changed back feed value is stored in memory by pressing the [PAUSE] key.



Print start position fine adjustment example

Cut position fine adjustment example





5-16





- **NOTES:** 1. Holding the **[FEED]** key or **[RESTART]** key down for more than 0.5 seconds enables a fast forward.
 - Max. fine adjustment 30.0 mm, + 300.0 mm = Key fine adjustment value + PC fine adjustment value.
 When the value reaches the maximum, the value remains unchanged even if the subsequent fine adjustment is performed.
 - 3. A changed feed value is stored in memory by pressing the **[PAUSE]** key.

5.3.1.5 X-Coordinate Fine Adjustment



- **NOTES:** 1. Holding the **[FEED]** key or **[RESTART]** key down for more than 0.5 seconds enables a fast forward.
 - Max. fine adjustment ±99.5 mm = X-coordinate value When the value reaches the maximum, the value remains unchanged even if the subsequent fine adjustment is performed.
 - 3. A changed X-coordinate is stored in memory by pressing the [PAUSE] key.



X-coordinate Fine Adjustment Example

- **NOTES:** 4. The X-coordinate fine adjustment is performed to fine adjust the X-coordinate of the drawing in the left or right direction.
 - 5. Adjust the X-coordinate in the effective print range. (After the value reaches the coordinate "0", the value remains unchanged even if the subsequent fine adjustment is performed in the negative direction.)
 - 6. X-coordinate fine adjustment cannot be used in self test mode or test printing.



5.3.2 Print Tone Fine Adjustment Mode



- Max. fine adjustment ±50 steps = print tone fine adjustment value + PC fine adjustment value
 When the value reaches the maximum, the value remains unchanged even if the
- subsequent fine adjustment is performed.A changed print tone value is stored in memory by pressing the **[PAUSE]** key.



X and Y-Directions Fine Adjustment Mode 5.3.3

5-21

5.3.3.2 Status print before X/Y-directions adjustment

The following test patterns which show the status before X/Y-directions adjustment are printed.



5. DIAG. TEST OPERATION

CB-416



- **NOTES:** 1. When an error occurs during printing, the error message is displayed and printing is stopped. The error is cleared by pressing the **[PAUSE]** key and the display shows "<2> PARAMETER SET". Printing is not automatically resumed after the error is cleared.
 - 2. Extract the 3rd and 4th labels and use them for adjustment.

5.3.3.3 X-direction fine adjustment

Check the point where a line of each color aligns with a black line on the X-direction test pattern and enter the obtained adjustment value.





Adjustment example (CB-416)

X-direction fine adjustment method is explained using magenta.



- 1) Check where magenta belongs among rows E~H within the portion ①.
- In this example, magenta is printed on the row F. When magenta is printed on the row E or F, refer to the upper print sample.
 When row G or H, refer to the lower print sample.
- 3) Check where a magenta aligns with the black line (indicated by (2)) Read the scale of the position (indicated by (3)).
- 4) Enter the alpha-numerics obtained in steps 1) through 3) into the Head Adjust display. In this case, enter F7.
- 5) The values for cyan and yellow are obtained in the same way.

Adjustment example (CB-426)

X-direction fine adjustment method is explained using 2nd print head.



- 1) Check where 2nd print head belongs among rows E~H within the portion ①.
- In this example, 2nd print head is printed on the row F. When 2nd print head is printed on the row E or F, refer to the upper print sample.
 When row G or H, refer to the lower print sample.
- 3) Check where a 2nd print head aligns with the black line (indicated by 2). Read the scale of the position (indicated by 3).
- 4) Enter the alpha-numerics obtained in steps 1) through 3) into the Head Adjust display. In this case, enter F1.

5.3.3.4 Y-Direction Fine Adjustment

Check the point where a line of each color aligns with a black line on the YX-direction test pattern and enter the obtained adjustment value.





Adjustment example (CB-416)

Y-direction fine adjustment method is explained using magenta.



- 1) Check where magenta belongs among rows A~D within the Portion ④.
- 2) In this example, magenta is printed on the row C. When magenta is printed on the row A or B, refer to the left print sample.

When row C or D, refer to the right print sample.

- 3) Check where a magenta aligns with the black line (indicated by (5)). Read the scale of the position (indicated by (6)).
- 4) Enter the alpha-numerics obtained in steps 1) through 3) into the Head Adjust window. In this case, enter C3.
- 5) The values for cyan and yellow are obtained in the same way.
- 6) After completing the adjustment and print a sample pattern for confirmation in Section 5.3.3.5 Adjustment Value Confirmation Print. If it is still misaligned, retry the adjustment so that the four colors mostly align at the center of portions ① and ④

Adjustment example (CB-426)

Y-direction fine adjustment method is explained using 2nd print head.



- 1) Check where 2nd print head belongs among rows A~D within the Portion ④.
- 2) In this example, 2nd print head is printed on the row B. When 2nd print head is printed on the row A or B, refer to the left print sample.When row C or D, refer to the right print sample.
- 3) Check where a 2nd print head aligns with the black line (indicated by (5)). Read the scale of the position (indicated by (6)).
- 4) Enter the alpha-numerics obtained in steps 1) through 3) into the Head Adjust window. In this case, enter B27.
- 5) After completing the adjustment and print a sample pattern for confirmation in Section 5.3.3.5 Adjustment Value Confirmation Print. If it is still misaligned, retry the adjustment so that the four colors mostly align at the center of portions ① and ④.

5.3.3.5 Adjustment Value Confirmation Print

The test patterns which shows the status after X/Y-directions adjustment are printed.



CB-416



- **NOTES:** 1. When an error occurs during printing, the error message is displayed and printing is stopped. The error is cleared by pressing the **[PAUSE]** key and the display shows "<2> PARAMETER SET". Printing is not automatically resumed after the error is cleared.
 - 2. Extract the 3rd and 4th labels and use them for adjustment.

5.3.4 Print Start Position Fine Adjustment Mode

Using the following procedure, the print start position of each print head can be fine adjusted for page 1 to page 10.



- **NOTES:** 1. Holding the **[FEED]** key or **[RESTART]** key down for more than 0.5 seconds enables a fast forward.
 - 2. A changed font code is stored in memory by pressing the **[PAUSE]** key.
 - 3. Adjustment in positive (+) direction makes the print start position moves toward the feed direction. Negative (-) direction adjustment makes the print start position moves toward the back feed direction.

5.3.5 Printer Parameter Setting Mode

5.3.5.1 Character Code Selection



- **NOTES:** 1. Holding the **[FEED]** key or **[RESTART]** key down for more than 0.5 seconds enables a fast forward.
 - 2. A changed font code is stored in memory by pressing the **[PAUSE]** key.

5.3.5.2 Font Zero Selection



- **NOTES:** 1. Holding the **[FEED]** key or **[RESTART]** key down for more than 0.5 seconds enables a fast forward.
 - 2. A changed zero font is stored in memory by pressing the [PAUSE] key.

5.3.5.3 Control Code Selection



- **NOTES:** 1. Holding the **[FEED]** key or **[RESTART]** key down for more than 0.5 seconds enables a fast forward.
 - 2. A changed control code is stored in memory by pressing the [PAUSE] key.
 - 3. When "AUTO", "ESC", FL, "NUL", or "{, , , }" is selected, be sure to select the Nontransmissive ribbon in the ribbon type selection operation.

5.3.5.4 Pulse Motor Speed Selection

If a color misalignment occurs when using the ribbon saving function frequently, increase the pulse motor speed by 4% to prevent the color misalignment.



- **NOTES:** 1. Usually select "AUTO" for the pulse motor speed. A color misalignment may occur, however, according to the print patterns even when "AUTO" is selected. In this case, fine adjust the platen speed in Section 5.3.6 Platen Speed Fine Adjustment Mode. If the paper becomes slack between the platens with "AUTO" pulse motor speed, increase the platen speed by pressing the **[FEED]** key.
 - 2. Select "104" for the pulse motor speed if a misalignment occurs even after the platen speed fine adjustment, or the printer prints such print patterns that the all print heads frequently up and down in ribbon saving mode.
 - 3. Holding the **[FEED]** key or **[RESTART]** key down for more than 0.5 seconds enables a fast forward.
 - 4. A changed threshold fine adjustment value is stored in memory by pressing the **[PAUSE]** key.
 - 5. The default setting is Auto.

5.3.5.5 Euro Font Code Selection



- **NOTES:** 1. Holding the **[FEED]** key or **[RESTART]** key down for more than 0.5 seconds enables a fast forward.
 - 2. A changed threshold fine adjustment value is stored in memory by pressing the **[PAUSE]** key.

5.3.6 Platen Speed Fine Adjustment Mode

If a color misalignment occurs due to paper thickness, elasticity, slack, etc., change the platen speed to prevent the color misalignment.





- 2. If a color misalignment occurs even after the platen speed fine adjustment, select "104" for the pulse motor speed in Section 5.3.5.4 Pulse Motor Speed Selection.
- 3. Holding the **[FEED]** key or **[RESTART]** key down for more than 0.5 seconds enables a fast forward.
- 4. Max. fine adjustment –60 steps = Platen speed fine adjustment value.
- 5. A changed motor voltage value is stored in memory by pressing the **[PAUSE]** key.

5.3.7 Color Designation Mode

Select use or non use of each print head using the following procedure.



NOTE: Changed settings are stored in the memory by pressing the [PAUSE] key.

5.3.8 Ribbon Type Selection Mode





- 2. Ribbon types can be mixed.
- 3. Ribbon type can be selected by the ribbon type selection command from the PC.

5.3.9 Supply Holder's Paper End Sensor Selection

Using the following procedure, use or non use of the supply holder's paper end sensor is used can be selected.



- **NOTES:** 1. Holding the **[FEED]** key or **[RESTART]** key down for more than 0.5 seconds enables a fast forward.
 - 2. A changed setting is stored in memory by pressing the [PAUSE] key.

5.3.10 Resolution Selection

Using the following procedure, the resolution can be selected between Normal Mode and Fine Mode.



- **NOTES:** 1. Holding the **[FEED]** key or **[RESTART]** key down for more than 0.5 seconds enables a fast forward.
 - 2. A changed setting is stored in memory by pressing the [PAUSE] key.
 - 3. If the Fine Mode is selected without using the printer driver exclusively for the fine mode, print could be shrunk in the vertical direction.

5.4 TEST PRINT MODE

Test print mode contains normal test print and process test print.

5.4.1 **Normal Test Print**

Eight kinds of test prints are provided in the test print mode. When performing the test print, 8 parameters should be set. The default parameter at power on is as below:

- **ISSUE COUNT**
- PRINT SPEED : 6"/sec.
- SENSOR : Transmissive sensor (Feed gap sensor)
- Reverse feed : with reverse feed
- Quality High (without ribbon save)

: 1

- TYPE Batch (without cut) • : 102 mm
- LABEL LENGTH
- Feed PAPER FEED •

Operating procedure for the test mode is provided below.



EO18-33002A

5.4 TEST PRINT MODE








- **NOTES:** 1. When there is no change to the print condition, select one of the test print options to issue the test print.
 - 2. Holding the **[FEED]** key or **[RESTART]** key down for more than 0.5 seconds enables a fast forward.
 - 3. A selected print condition is activated when the [PAUSE] key is pressed.
 - 4. When the feed gap sensor is selected, the gap between labels becomes 2mm long.
 - 5. A label size greater than the image buffer length cannot be designated. The image buffer length differs according to memory size. If designated, the printer prints in the image buffer, or the printer stops because of an error.
 - 6. Pressing the **[FEED]** key changes the label length -1 mm, pressing the **[RESTART]** key changes +1 mm.

- 7. When an error occurs during a test print, the error message is displayed and printing is stopped. The error is cleared by pressing the **[PAUSE]** key and the display shows "<3> TEST PRINT". Printing is not automatically resumed after the error is cleared.
- 8. When "AUTO PRINT" is selected, 3 pcs. of the slant line labels, color bar print labels and character labels are printed respectively after one label is fed.
- 9. Changed parameter settings are effective by pressing the **[PAUSE]** key until the power is turned off.
- 10. Fine adjustment values are effective to test print.

Test Print Sample



• Color bar print (CB-416)



Color bar print (CB-426)



Charactor



•

5.4.2 **Process Test Print**

In the process test print, the test print is automatically performed under the following conditions.

- OPERATION
- One label feed. Slant line print (4 colors), character print, color 2 bar print
- **ISSUE COUNT**
- 3 labels each
- PRINT SPEED
- SENSOR
- 6 inches/sec.

102 mm

- Transmissive sensor (feed gap sensor) or reflective sensor
- TYPE •
- (black mark sensor) Batch (without cut)
- **REVERSE FEED**
 - Yes **ISSUE MODE** High quality print
- LABEL LENGTH 1

Operating procedure for the test mode is provided below.

:

:





5.5 RAM CLEAR MODE

In RAM clear mode, various data written on the EEP-ROM can be initialized. There are three clear functions; Maintenance counter clear, parameter clear and print step clear in the parameter setting mode. After referring to the following table specify and clear or initialize the data.

■ RAM Clear Mode Table

Mode Name	Function			
NO RAM CLEAR	If you enter the RAM clear mode by mistake, specify this mode to eacape from the RAM clear mode without excuting RAM clear.			
MAINTE. CNT CLEAR	After replacing the print head, cutter module, ribbo solenoid and CPU PC Board, clear the maintanand The following data will be cleared to zero. Confirm through the maintenance counter procedure in self NOTE 1)	n feed/rewind motor, ce counter. nation can be made f test mode. (See		
	ITEM	Initial value		
	Total feed length	0 Km		
	Print distance (CB-416:black, CB-426:1st)			
	Print distance (CB-416:magenta, CB-426:2nd)			
	Print distance (CB-416:cyan)	0 Km		
	Cut count			
	Head up/down (CB-416:black_CB-426:1st) 0 time			
	Head up/down (CB-416:magenta CB-426:2nd) 0 time			
	Head up/down (CB-416:cvan)	0 time		
	Head up/down (CB-416;vellow)	0 time		
	Ribbon motor driving hours (CB-416:black, CB-426:1st)	0 hours		
	Ribbon motor driving hours (CB-416:magenta, CB-426:2nd)	0 hours		
	Ribbon motor driving hours (CB-416:cyan)	0 hours		
	Ribbon motor driving hours (CB-416:yellow) 0 hours			
	RS-232C hardware error count 0 times			
	Instantaneous power failure count 0 times			
PRINT STEP CLEAR	ITEM	Initial value		
	Print head run distance (CB-416:black, CB-426:1st)	0.0 Km		
	Print head run distance (CB-416:magenta, CB-426:2nd)	0.0 Km		
	Print head run distance (CB-416:cyan)	0.0 Km		
	Print head run distance (CB-416:yellow)	0.0 Km		

	Mode Name	Function			
PA	RAMETER CLEAR	This clear should be employed when initializing the following parameter to the settings before shipment. Confirmation can be made through the outematic diagnostic procedure in colf text made. (See NOTE 1)			
		automatic diagnostic procedure in self test mode. (Se	e NOTE 1)		
		Print position fine adjustment (PC)			
		Cut position fine adjustment (PC)	0.0 mm		
		Reverse feed distance adjustment (PC)	0.0 mm		
		Print stop position fine adjustment (PC)	0.0 mm		
		X-direction fine adjustment (CB-416:black, CB-426:1st) (PC)	0.00 mm		
		X-direction fine adjustment (CB-416:magenta, CB-426:2nd) (PC)	0.00 mm		
		X-direction fine adjustment (CB-416:cyan) (PC)	0.00 mm		
		X-direction fine adjustment (CB-416:yellow) (PC)	0.00 mm		
		V-direction fine adjustment (CB-416-magenta, CB-426-2nd) (PC)	0.00 mm		
		Y-direction fine adjustment (CB-416:cvan) (PC)	0.00 mm		
		Y-direction fine adjustment (CB-416:yellow) (PC)	0.00 mm		
		Print tone fine adjustment (CB-416:black, CB-426:1st) (PC)	0 step		
		Print tone fine adjustment (CB-416:magenta, CB-426:2nd) (PC)	0 step		
		Print tone fine adjustment (CB-416:cyan) (PC)	0 step		
		Print tone fine adjustment (CB-416:yellow) (PC)	0 step		
		Ribbon take-up motor voltage fine adjustment (CB-416:black, CB-426:1st) (PC)	0 step		
		Ribbon take-up motor voltage fine adjustment (CB-416:magenta, CB-426:2nd) (PC)	0 step		
		Ribbon take-up motor voltage fine adjustment (CB-416.vellow) (PC)	0 step		
		Ribbon feed motor voltage fine adjustment (CB-416:black, CB-426:1st) (PC)	0 step		
		Ribbon feed motor voltage fine adjustment (CB-416:magenta, CB-426:2nd) (PC)	0 step		
		Ribbon feed motor voltage fine adjustment (CB-416:cyan) (PC)	0 step		
		Ribbon feed motor voltage fine adjustment (CB-416:yellow) (PC)	0 step		
		Print start position fine adjustment (KEY)	0.0 mm		
		Reverse feed distance fine adjustment (KEY)	0.0 mm		
		Print stop position fine adjustment (KEY)	0.0 mm		
		Print tone fine adjustment (CB-416:black, CB-426:1st) (KEY)	0 step		
		Print tone fine adjustment (CB-416:magenta, CB-426:2nd) (KEY)	0 step		
		Print tone fine adjustment (CB-416:cyan) (KEY)	0 step		
		Print tone fine adjustment (CB-416:yellow) (KEY)	0 step		
		X-coordinate fine adjustment	0.0 mm		
		Character code selection	PC-850		
		Control code selection			
		Label pitch	102.0 mm		
		Sensor type	Transmissive		
		Feed speed	6 inch/sec		
		Cutter	No		
		Status response	Yes		
		Ribbon saving function	NO Dottom first		
		Reverse feed	No		
		Ribbon type	CR-30xxx-F1		
			(Standard)		
		Color designation	All		
		Platen speed	AUTO (no		
		Fure fort and	adjustment)		
		EUTO TOTIL COOR	BØH		
		Print Start Position Fine Adjustment (Page 1 ~ Page 10) (Black)	0.00 mm		
		Print Start Position Fine Adjustment (Page 1 ~ Page 10) (Wagefila)	0.00 mm		
		Print Start Position Fine Adjustment (Page 1 ~ Page 10) (Yellow)	0.00 mm		
		Supply Holder's Paper End Sensor Selection	WITH PAPER END		
		Printer Resolution Selection	NORMAL END		

NOTES: 1. Total media distance covered (TL FEED) and the adjustment value for the sensors cannot be cleared.

^{2.} For data to be cleared in the RAM clear mode, refer to the RAM clear mode table.



5.5.1 Maintenance Counter Clear







NOTE: Confirm that "COMPLETE" is displayed, then turn the power off.

5.5.3 Print Step clear



NOTE: Confirm that "COMPLETE" is displayed prior to the power off.

6. PROGRAM DOWNLOAD

The main program for the printer has been written onto the flash ROM. If the main program is upgraded, due to the addition/change of the specification, download the main program from the PC to the printer with the download floppy disks and RS-232C or Centronics interface.

6.1 FLOPPY DISK

- (1) Media: 3.5 inch (2DD)
- (2) Disk: Program Loader Setup Disks 1 and 2 Program Data Disk

6.2 SETUP



6.3 OUTLINE OF THE PROGRAM DOWNLOAD PROCEDURE

- (1) Install the Program Loader (Program Loader Setup Disk 1 and 2) in the PC.
- (2) Copy the prog.bin file in the Program Data Disk to the directory created in step (1).
- (3) Set the DIP SW3 on the VR PC board to ON and turn the printer power ON. The printer LCD display shows "PROGRAM LOAD."
- (4) Run the Program Loader.
- (5) Start the download.
- (6) After the download is completed, turn the printer power OFF and restore the DIP SW3 to the former position.

6.4 DOWNLOAD PROCEDURE

1) Install the program loader (Setup Disks 1 and 2) in the PC as indicated on the display.

NOTE: The PC should operate Windows 95.

Program	Loader	<u>FDK</u>
(Sample)		

CB-416-T3-QQ/QP
Program Loader
SETUP DISK 1
25th November 1998
FMRM0049901
V001.000

CB-416-T3-QQ/QP Program Loader SETUP DISK 2 25th November 1998 FMRM005001 V001.000 2) Run the Setup.exe in the Program Loader FDK.

	Run					? ×	l
	2	Type the resource	e name of a proj e, and Windows	gram, folder, d will open it fo	ocume r you.	ent, or Internet	
	<u>O</u> pen:	A:\Setu	ip.exe		_	•	
			OK	Cancel		<u>B</u> rowse	
뎶 Program L	oader S	etup					×
Begin the ins	stallation b	oy clicking t	he button belov	۷.			
		lick this but irectory.	ton to install Pro	ogram Loader	softwa	are to the specifie	d destination
Directory:					г		
C:\Program F	Files\Prog	jram Loade	4			<u>C</u> hange Di	irectory
			E <u>x</u> it S	Setup			

3) When the Program Loader has been installed, the following message will appear.



NOTE: Once the Program Loader has been installed, it is not required to be installed on the same PC each time the new program is downloaded.

4) Copy the prog.bin file in the Program Data FDK to the directory of Program Loader.

Program	Data	FDK
(Sample)		

CB-418-T3 CB-416-T3-QQ/QP Program Data DISK #V1.0 28th August 1998 FMRM0048401:9200,D300 V001.000

The directory is created in the Program Files as a default.



- 5) Set the DIP SW3 on the VR PC board to ON, and then turn the printer power on. The printer enters the download mode and the LCD display shows "PROGRAM LOAD".
- 6) Run the download program on the PC. Select the Program Loader from the start menu to start the download program.



 Select the output device from COM1, COM2, or LPT1. (COM1 and COM2: RS232C, LPT1: Centronics)
Select Program for the Target. Usually, Boot program is not downloaded.

File	prog.b	in II	998/12/08 13:51	:51
Date	1998/1	1/20 15:18:	40	
Size	98304	0 Byte		
Target © Pr	ogram	C Bost	Device COM1	•
			Star	
			Star	<u>.</u>

8) Click on the [Start] button to start the program download.

	5	998/12/08 15:06:4
File prog	.bin	
Date 199	W11/20 15:18:	40
Size 983	40 Byte	
Target @ Program	C Bost	Device UPT1
1415 Dyte		
		Start
Cancel	1	

While the program is being downloaded, the printer LCD shows "PROGRAM LOAD". Also, the following message will appear on the PC screen.



9) When the communication between the PC and the printer is completed, the following message will appear on the PC screen. However, in case of Centronics interface, the program write onto the flash ROM has not been completed yet.

NOTE: DO NOT turn the printer power off until "COMPLETE" is displayed on the LCD.

Program Loader 🛛 🔀
COMPLETE
OK

10) When the printer LCD turns to "COMPLETE", the downloading is completed.

Downloading will take about the following time.

- Centronics I/F: 10 minutes
- RS232C I/F: 20 minutes