

TEC Thermal Printer

B-SX4T SERIES

Maintenance Manual

Document No. EO18-33012

Original Jan., 2003 (Revised)

PRINTED IN JAPAN

TOSHIBA TEC CORPORATION

WARNING!

Follow all manual instructions. Failure to do so could create safety hazards such as fire or electrocution.

- **NOTES:** 1. Manual instructions must be followed when installing option kits or adding cables to avoid system failures and to insure proper performance and operation.
 - 2. Failure to follow manual instructions or any unauthorized modification, substitution or change to this product will void the limited product warranty.

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CAUTION!

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

^{1.} This manual may not be copied in whole or in part without prior written permission of TOSHIBA TEC.

1. UNPACKING

1.1 PROCEDURE

- 1) Open the carton.
- 2) Unpack the accessories and the front pad from the carton.



3) Unpack the pads and the printer from the carton.



4) Remove the four pieces of tape and the rear pad from the printer.







Open the top cover and remove the five pieces of tape. And then, open the ribbon shaft holder 5) plate to remove the ribbon shaft pad from the printer.





Таре

1.2 CHECKS

- 1) Check for damage or scratches on the printer.
- 2) Confirm that none of the accessories are missing. The parts below are provided as accessories.



Power Cord

Fan Filter





QC Card (QQ model only)

2. SETTING

- 1) Place the printer on the level surface.
- 2) Keep the slit free or the printer will be overheated. Also keep enough space for replacing and maintenance works while the top cover is opened.







3. NOTE FOR OPTIONAL EQUIPMENT INSTALLATION/MAJOR UNIT REPLACEMENT /MAINTENANCE

3. NOTE FOR OPTIONAL EQUIPMENT INSTALLATION/MAJOR UNIT REPLACEMENT/MAINTENANCE

3. NOTE FOR OPTIONAL EQUIPMENT INSTALLATION /MAJOR UNIT REPLACEMENT/MAINTENANCE



1. Fix the harnesses and the cord bushes with the cable clamp. Failure to do this may cause the covers to catch them.



3. NOTE FOR OPTIONAL EQUIPMENT INSTALLATION/MAJOR UNIT REPLACEMENT /MAINTENANCE

- 3. NOTE FOR OPTIONAL EQUIPMENT INSTALLATION/MAJOR UNIT REPLACEMENT/MAINTENANCE
- 2. Do not remove the screws below. Doing so will require the printer block position adjustment with the jig.



3. Be careful not to damage the sensor window. If so, the sensor cannot detect the feed gap or the black mark correctly, causing improper printing.



Sensor Window

4. Be careful not to damage the print head element. Doing so will cause improper printing.

Print Head



3.1 OPENING/CLOSING THE TOP COVER

When opening the top cover, fully open the top cover to the open position. When closing, softly close it to the close position.



3.2 REMOVING THE SIDE PANEL (L)

- 1) Remove the four B-4x5 screws from the side panel (L).
- Open the top cover and remove the three SMW-4x8 screws that secure the side panel (L). 2)



B-4x5 Screw



SMW-4x8 Screw

- 3) Close the top cover.
- 4) Lift the side panel (L) and put it aside.
- Release the fan motor harness from the cable clamp, disconnect it from CN19 on the Main PC 5) board, and then separate the side panel (L). Main PC Board



Cable Clamp

3.3 OPENING/CLOSING THE PRINTER BLOCK

- 1) Open the top cover.
- 2) Turn the head lever counterclockwise to Free position.
- 3) Open the ribbon shaft holder plate.

Ribbon Shaft Holder Plate



4) Raise the print head block until it stops.



NOTE: DO NOT excessively push down the print head block to close it. Dosing so may cause a failure of the print head block or damage to the print head.

3.4 REMOVING THE OPERATION PANEL

3.4 REMOVING THE OPERATION PANEL

1) Open the top cover. (Refer to section 3.1.)

SMW-4x8 Screw

- 2) Remove the side panel (L) from the printer. (Refer to section 3.2.)
- 3) Remove the SMW-4x8 screw that secures the operation panel ass'y.



4) Half open the top cover, otherwise the operation panel ass'y cannot be removed from the printer.



5) Lift the operation panel ass'y to release the hook, and then remove the operation panel ass'y by moving it forward.



6) Disconnect the operation panel harness from the operation panel ass'y.

7) Reassemble in the reverse order of removal. Lead the operation panel harness through the bush so that the side panel (L) does not catch it.



4. INSTALLATION PROCEDURE FOR OPTIONAL EQUIPMENT

WARNING!

- 1. Make sure to unplug the power cord before installing the optional equipment.
- 2. Be careful not to pinch your fingers or hands with the covers.

The following optional equipments are provided for this printer.					
B-4205-QM:	Swing Cutter	B-9700-PCM-QM:	PCMCIA Interface Board		
B-8204-QM:	Rotary Cutter	B-9700-LAN-QM:	LAN Interface Board		
B-9904-H-QM:	Strip Module	B-9700-USB-QM:	USB Interface Board		
B-9904-R-QM:	Ribbon Saving Module	B-7704-IO-QM:	Expansion I/O Interface Board		

In this section, installation procedures for these optional equipments are described.

- NOTES: 1. The B-4205-QM, B-8204-QM, and B-9904-H-QM cannot be used together.
 - 2. The B-9700-LAN-QM and the B-9700-USB-QM cannot be used together.
 - 3. When using the B-9700-PCM-QM together with the B-9700-LAN-QM or the B-9700-USB-QM, attach the B-9700-PCM-QM onto the Main PC board.

4.1 SWING CUTTER (B-4205-QM)

WARNING!		
Be careful not to injure your fingers when installing the cutter unit.		

This optional device is used for cut print, which cannot be used together with either B-8204-QM or B-9904-H-QM.

All the following parts are supplied with the kit. Make sure you have all items shown below.

Cutter Unit (1 pc.)	Cutter Cover (1 pc.)	Cutter Harness (1 pc.)	Print Head Cleaner (1 pc.)
		J.	(P/No.: FMQB0051601)
Cutter Attachment Screw	Bush (1 pc.)	Installation manual (1	сору)
(2 pcs.)		• FL-4x6 Screw (1 pc.)	
87 87			

1) Remove the two black screws to detach the front plate.



Black Screws

NOTE: Retain the two black screws and front plate.

- 2) Open the top cover. (Refer to Section 3.1.)
- 3) Remove the side panel (L) from the printer. (Refer to section 3.2.)
- 4) Open the printer block. (Refer to Section 3.3.)
- 5) Attach the cutter unit to the front of the printer with the cutter attachment screws and the FL-4x6 screw.

Cutter Unit





- 6) Connect the cutter harness to CN1 on the cutter I/F PC board.
- 7) Fit the bush to the cutter harness in the orientation shown below.





Bush



Cutter Harness

Cutter Harness

8) Insert the cutter harness into the gap between the cutter unit and the printer, and then into the hole in the main frame. Fit the bush into the hole.



- 9) Close the print head block and the ribbon shaft holder plate.
 - **NOTE:** DO NOT excessively push down the print head block to close it. Doing so may cause a failure of the print head block or damage to the print head.
- 10) Fix the cutter harness with the clamp and connect it to CN15 on the Main PC Board.



11) Fit the cutter cover on the cutter attachment screws, and fix it to the cutter unit with the two cutter screws.

NOTE: Be careful not to pinch the cutter harness by the cutter cover.



Cutter Attachment Screw

12) Reassemble the side panel (L) and close the top cover. Finally check the cutter operation. *NOTE:* For cleaning the cutter, refer to section 8.

4.2 ROTARY CUTTER (B-8204-QM)

WARNING! Be careful not to injure your fingers when installing the cutter unit. Cutter Blade

This optional device is used for cut print, which cannot be used together with either B-4205-QM or B-4905-H-QM.

All the following parts are supplied with the kit. Make sure you have all items shown below.

Cutter Unit (1 pc.)	Cutter Cover (1 pc.)	Cutter Drive Unit (1 pc.)	Harness Ass'y
			(2-pin & 9-pin) (1 pc.)
Cord Bush (1 pc.)	Print Head Cleaner (1 pc.) (P/No.: FMQB0051601)	 Installation Manual (1 cop SM-4x8 Screw (6 pcs.) 	by)
-			

- 1) Remove the two black screws to detach the front plate. (Refer to section 4.1.)
- 2) Open the top cover. (Refer to Section 3.1.)
- 3) Remove the side panel (L) from the printer. (Refer to section 3.2.)
- 4) Fix the cutter drive unit to the printer with the three SM-4x8 screws.



5) Connect the 9-pin connector of the harness ass'y to CN7 and 2-pin connector to CN9 on the cutter driver unit, respectively.



6) Fit the bush to the harness ass'y in the orientation as shown below.



- Main Frame Harness Ass'y
- 7) Insert the harness ass'y into the hole in the main frame. Fit the bush into the hole.

- 8) Fix the harness ass'y with the clamp.
- 9) Connect the 9-pin connector of the harness ass'y to CN15, and 2-pin connector to CN18 on the Main PC board, respectively.



- 10) Open the printer block. (Refer to section 3.3.)
- 11) Connect the four harnesses of the cutter unit to CN8, CN10, CN11 and CN12 on the cutter drive unit.
 Print Head Block



12) Fit the two tabs of the cutter drive unit into the notches, and then fix the cutter unit with the three SM-4x8 screws.



13) Attach the cutter cover to the cutter unit with the two screws so that the tab of the cutter cover turns on the cutter cover open switch.

NOTES: 1. Be careful not to pinch the cutter harness by the cutter cover.

2. Make sure that the anti-static brush is protruding from the media outlet.



14) Close the print head block and ribbon shaft holder plate.

NOTE: DO NOT excessively push down the print head block to close it. Doing so may cause a failure of the print head block or damage to the print head.

15) Reassemble the side panel (L) and close the top cover. Finally check the cutter operation.

4.3 STRIP MODULE (B-9904-H-QM)

This optional device is used for strip print, which cannot be used together with either B-4205-QM or B-8204-H-QM.

All the following parts are supplied with the kit. Make sure you have all items shown below.

Rewinder Ass'y (1 pc.)	Rewinder Guide Plate (1 pc.)	Rewind Full Sensor (LED) (1 pc.)
		\$
Strip Sensor (TR) (1 pc.)	Strip Sensor (LED) (1 pc.)	Rewind Paper Guide (1 pc.)
Bush (1 pc.)	 Installation Manual (1 copy) SM-4x8B Screw (10 pcs.) SM-3x6B Screw (1 pc.) SM-4x8C Screw (1 pc.) 	

- 1) Remove the two black screws to detach the front plate. (Refer to section 4.1.)
- 2) Open the top cover. (Refer to Section 3.1.)
- 3) Remove the side panel (L) from the printer. (Refer to section 3.2.)
- 4) Remove the operation panel ass'y from the printer. (Refer to section 3.4.)
- 5) Attach the rewind paper guide to the base with the two M-4x8 screws.





6) Connect the harness of the rewind full sensor (LED) to the shorter harness of the rewind full sensor (Tr) of the rewinder ass'y.



- 7) Align the notch of the take-up holder with the screw hole of the rewinder ass'y, and attach them to the printer with the four SM-4x8B screws and the SM-4x8C screw.
- 8) Attach the rewind full sensor (LED) to the base with the SM-3x6B screw.

- Rewinder As'y SM-4x8B Screw Noth SM-4x8C Screw Noth SM-4x8C Screw Noth SM-4x8C Screw Noth SM-4x8C Screw Compared the Rewind Full Sensor (Tr) Rewinder Harness Bush Rewinder Harness Bush SM-4x8B Screw
- 9) Fit the bush to the longer harness of the rewind full sensor (Tr) and the rewinder harness in the orientation shown below.

10) Insert the longer harness of the rewind full sensor (Tr) into the hole in the printer frame. Fit the bush into the hole.



Longer Harness of the Rewind Full Sensor (Tr)

11) Connect the longer harness of the rewind full sensor (Tr) and the rewinder harness to CN4 and CN15 on the Main PC board, respectively.



Main PC Board



Longer Harness of the Rewind Full Sensor (Tr)

CN15



Rewinder Harness

NOTES:

1. You should change the selection switch setting depending on the issue mode. Improper setting may affect the print quality.

STANDARD/PEEL OFF (STRIP): Batch or strip mode REWINDER: Built-in rewinder mode

For the cut mode, the selection switch can be set to either position.

Selection Switch

2. The backing paper can be wound directly onto the Takeup Spool or a paper core.

When using the Take-up Spool, detach the Holder Stopper by removing the B-3x4 screw. Otherwise, it may be difficult to pull out the wound backing paper roll. When using a paper core, put the core on the Take-up Spool with the Holder Stopper on it, and Attach the top edge of the backing paper to the core with adhesive tape. The Take-up Clip is not necessary. This winding method is applicable to the Built-in Rewinder mode.





- 12) Open the printer block. (Refer to section 3.3.)
- 13) Fix the longer harness of the rewind full sensor and the rewinder harness under the Main PC board with the cable clamp.



Rewinder Harness

- 14) Secure the strip sensor (LED) and strip sensor (Tr) to the printer with the SM-4x8B screws.
- 15) Connect the shorter harness of the strip sensor (Tr) to the strip sensor harness (for LED).



16) Fix the connected strip sensor harness (for LED) to the base with the cable clamp. While passing the other strip sensor harness through the cut and the bush, reassemble the operation panel ass'y to the printer. Then pass the strip sensor harness over the tab on the back of the operation panel ass'y.
Bush Strip Sensor Harness



NOTE: Be careful not to pinch the strip sensor harnesses by the operation panel.

- 17) Fix the strip sensor harness with the three cable clamps and connect it to CN20 on the Main PC board.
 - Main PC Board



- 18) Reassemble the side panel (L) in the reverse order of removal.
- 19) Close the print head block and ribbon shaft holder plate.
 - **NOTE**: DO NOT excessively push down the print head block to close it. Doing so may cause a failure of the print head block or damage to the print head.
- 20) When using the printer in batch mode or strip mode, attach the front plate removed in step 1).
- 21) When using the printer in built-in rewinder mode, attach the rewinder guide plate to the front of the printer with the two SM-4x8B screws.





SM-4x8B Screw

SM-4x8B Screw

22) Make a test print to check for proper strip issue. **NOTE:** If the label skews, refer to section 8.

4.4 RIBBON SAVING MODULE (B-9904-R-QM)

All the following parts are supplied with the kit. Make sure you have all items shown below.

Solenoid (1 pc.)	RSV PC Board (1 pc.)	Solenoid Harness (1 pc.)
	CONTRACT OF	
Cable Clamp (1 pc.)	Locking Support (3 pcs.)	Installation Manual (1 copy)
TE	* * *	• SM-4x8 Screw (2 pcs.)

- 1) Remove the side panel (L) from the printer. (Refer to section 3.2.)
- 2) Remove the operation panel ass'y from the printer. (Refer to section 3.4.)
- 3) Fit the three locking supports into the RSV PC board.



4) Secure the RSV PC board to the printer with the locking support.



Holes for securing the RSV PC Board

RSV PC Board

Locking Support

NOTE: Do not push the center of the RSV PC board when attaching it to the printer. Doing so may break the PC board. Hold the locking supports and push them into the holes for securing the RSV PC board.

5) Insert folded tag paper (1.5-mm thick) between the print head and the platen, and then turn the head lever to **Lock** position. Insert the head up arm into the plunger of the solenoid. While holding down the head up arm slightly, lift the solenoid. Secure the solenoid to the frame with the two SM-4x8 screws keeping the solenoid in contact with the spacer.



6) Attach the cable clamp to the frame of the printer. Fix the solenoid cable with this cable clamp.



NOTE: Be careful not to snag the solenoid harness when running it.

- 7) Connect the solenoid harness to CN1 on the RSV PC board and CN11 on the Main PC board. Pass the solenoid harness through the cut.
- 8) Connect the solenoid cable to CN2 on the RSV PC board.



- 10) After attaching the solenoid, reassemble the operation panel ass'y and the side panel (L) in the reverse order of removal.
 - **NOTE:** Perform "<9> FOR FACTORY" of system mode to make sure the solenoid performs properly.

4.5 PCMCIA INTERFACE BOARD (B-9700-PCM-QM)

This optional interface board is provided with the two slots, which allows for the use of the two TYPE II PC cards. However, it is not applied to TYPE III PC cards.

CAUTION!

1. Loosen the two M-3x5 screws of the PCMCIA interface board before installing it. Failure to do this may cause damage to the connector.



- 2. When using the LAN interface board or USB interface board together, install the PCMCIA interface board first.
- **NOTE:** When both B-9700-PCM-QM and B-9700-LAN-QM are installed, inserting a LAN PC card into the slot of the B-9700-PCM-QM disables the B-9700-LAN-QM.

All the following parts are supplied with the kit. Make sure you have all items shown below.



- Installation Manual (1 copy)
- SM-3x6 Screw (3 pcs.)
- 1) Remove the side panel (L) from the printer. (Refer to section 3.2.)
- 2) Loosen the two M-3x5 screws of the PCMCIA interface board. (Refer to Caution above.)
- 3) Remove the two SM-3x6 screws to detach the blind plate A from the back.



Blind Plate A

NOTE: When the Expansion I/O board (B-7704-IO-QM) has been installed, remove it from the printer temporarily.

4) Firmly connect CN101 on the PCMCIA interface board directly to CN7 on the Main PC board.



5) Secure the PCMCIA interface board to the rear plate with the two SM-3x6 screws.



6) Secure the PCMCIA interface board to the PCB support plate with the SM-3x6 screw. Tighten the two M-3x5 screws that were loosened previously. (Refer to Caution)



SM-3x6 screw

- 7) Attach the blind plate A to the rear plate with the two SM-3x6 screws that were removed in step 6). If the LAN interface board or USB interface board is also installed, go to the next step.
 - **NOTE**: Keep the two SM-3x6 screws and blind plate A safe when the LAN interface board or USB interface board is installed.





Blind Plate A

- 8) Reassemble the side panel (L) in the reverse order of removal. If the Expansion I/O board was removed at the beginning, reassemble it.
- **NOTE**: For inserting, removing, and handling the PC card, refer to the Owner's Manual.

4.6 USB INTERFACE BOARD (B-9700-USB-QM)

This optional interface board is provided with the interface port, which allows for the installation of USB devices.

CAUTION!

1. Loosen the two M-3x5 screws of the USB interface board before installing it. Failure to do this may cause damage to the connector.



2. When using the PCMCIA interface board together, first install the PCMCIA PC board, and then USB interface board.

All the following parts are supplied with the kit. Make sure you have all items shown below.





- Installation Manual (1 copy)
- SM-3x6 Screw (4 pcs.)
- **NOTE:** When using the PCMCIA interface board (B-9700-PCM-QM) together, the PCB attachment plate will be used.
- 1) Turn the power off and disconnect the power cord.
- 2) Loosen the two M-3x5 screws of the USB interface board. (Refer to Caution above.)
- 3) Remove the side panel (L) from the printer. (Refer to section 3.2.)
- 4) Remove the two SM-3x6 screws to detach the blind plate A from the back.



SM-3x6 Screw <



Blind Plate A

5) If the PCMCIA interface board is used together with the USB interface board, attach the PCB attachment plate to the plate to which the PCMCIA interface board is secured with the SM-3x6 screw. If not, go to the next step.



PCMCIA Interface Board

PCB Attachment Plate SM-3x6 Screw



When connecting the PCMCIA Interface Board:

6) Firmly connect CN50 connector on the USB interface board directly to CN7 on the Main PC board or CN1 on the PCMCIA interface board.



When connecting to the Main PC Board:

7) Secure the USB interface board to the rear plate with the two SM-3x6 screws.



- 8) Tighten the two M-3x5 screws of the USB interface board that were loosened previously. (Refer to Caution)
- Secure the USB interface board to the PCB support plate (when connecting to the Main PC board) or PCB attachment plate (when connecting to the PCMCIA interface board) with the SM-3x6 screw.

When connecting to the Main PC Board:



When connecting to the PCMCIA Interface Board:



10) Attach the blind plate A to the rear plate. If the PCMCIA interface board has been installed, go to the next step.



NOTE: In case that the PCMCIA interface board has been installed, retain the blind plate A.

11) Reassemble the side panel (L) to the printer in the reverse order of removal.

4.7 LAN INTERFACE BOARD (B-9700-LAN-QM)

This optional interface board enables the printer to be used in a LAN network.

CAUTION!

1. Loosen the two M-3x5 screws of the LAN interface board before installing it. Failure to do this may cause damage to the connector.



2. When using the PCMCIA interface board together, first install the PCMCIA PC board, and then LAN interface board.

License Agreement

Please be sure to read the License Agreement before opening the sealed LAN Interface Board. If you do not agree with the License Agreement, please do not use this product. Your unpacking the product indicates your approval for the License Agreement.

NOTE: When both B-9700-LAN-QM and B-9700-PCM-QM are installed, inserting a LAN PC card into the slot of the B-9700-PCM-QM disables the B-9700-LAN-QM.

All the following parts are supplied with the kit. Make sure you have all items shown below.





- License Agreement (1 copy)
- SM-3x6 Screw (4 pcs.)
- **NOTE:** When using the PCMCIA interface board (B-9700-PCM-QM) together, the PCB attachment plate will be used.

Blind Plate A

- 1) Loosen the two M-3x5 screws of the USB interface board. (Refer to Caution above.)
- 2) Remove the side panel (L) from the printer. (Refer to section 3.2.)
- 3) Remove the two SM-3x6 screws to remove the blind plate A from the back.



- **NOTE**: Keep the blind plate A safe as this will be necessary when the machine is modified to the standard type.
- 4) If the PCMCIA interface board is also installed, attach the PCB attachment plate to the plate to which the PCMCIA interface board is secured with the SM-3x6 screw. If not, go to the next step.



PCMCIA Interface Board



- 4.7 LAN INTERFACE BOARD (B-9700-LAN-QM)
- 5) Firmly connect CN50 on the LAN interface board directly to CN7 on the Main PC board or CN1 on the PCMCIA interface board.



6) Secure the LAN interface board to the rear plate with the two SM-3x6 screws.



- 7) Tighten the two M-3x5 screws on the LAN interface board that were loosened previously. (Refer to Caution.)
- Secure the LAN interface board to the PCB support plate (when connecting to the Main PC board) or PCB attachment plate (when connecting to the PCMCIA interface board) with the SM-3x6 screw.

When connecting to the Main PC Board



When connecting to the PCMCIA Interface Board



9) Reassemble the side panel (L) in the reverse order of removal.

NOTE: Precaution for the LAN cable connection

When connecting a LAN cable with the hooded connectors to the LAN interface board, it may not be connected depending on the shape of the hood. In this case, move aside the hood, connect the cable, and return the hood to the former position.

4.8 EXPANSION I/O INTERFACE BOARD (B-7704-IO-QM)

This optional interface board is provided with an expansion I/O interface.

All the following parts are supplied with the kit. Make sure you have all items shown below.





Installation Manual (1 copy) Locking Support WLS-16-0 (1 pc.) **NOTE**: The locking support is not used on this printer.

- 1) Turn the power off and disconnect the power cord.
- 2) Remove the side panel (L) from the printer. (Refer to section 3.2.)
- 3) Remove the two M-3x6 screws and detach the blind plate B from the back.





Blind Plate B

4) Remove the two B-3x6 screws from the expansion I/O board.



5) Connect the expansion I/O cable to CN3 on the Main PC board.



- 6) Secure the expansion I/O board to the rear plate with the two B-3x6 screws removed in Step 4.
- 7) Connect the expansion I/O cable to CN1 on the expansion I/O board.



- 8) Reassemble the side panel (L) in the reverse order of removal.
- 9) Perform a loop back check to confirm that the expansion I/O board functions properly.