Z4Mplus™ and Z6Mplus™
Maintenance Manual

Proprietary Statement

This manual contains proprietary information of Zebra Technologies Corporation and its subsidiaries (“Zebra Technologies”). It is intended solely for the information and use of parties operating and maintaining the equipment described herein. Such proprietary information may not be used, reproduced, or disclosed to any other parties for any other purpose without the expressed written permission of Zebra Technologies.

Product Improvements

Continuous improvement of products is a policy of Zebra Technologies. All specifications and designs are subject to change without notice.

FCC Compliance Statement

This equipment has been tested and found to comply with the limits for Class B Digital Devices, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the product manuals, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception the user is encouraged to do one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The user is cautioned that any changes or modifications not expressly approved by Zebra Technologies could void the user’s authority to operate the equipment. In order to ensure compliance, this printer must be used with Shielded Communication Cables.

Canadian DOC Compliance Statement

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Liability Disclaimer

Zebra Technologies takes steps to assure that its published Engineering specifications and manuals are correct; however, errors do occur. Zebra Technologies reserves the right to correct any such errors and disclaims liability resulting therefrom.

Limitation of Liability

In no event shall Zebra Technologies or anyone else involved in the creation, production or delivery of the accompanying product (including hardware and software) be liable for any damages whatsoever (including, without limitation, consequential damages including loss of business profits, business interruption or loss of business information) arising out of the use of or the results of use of or inability to use such product, even if Zebra Technologies has been advised of the possibility of such damages. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

Copyrights

The copyrights in this manual and the label printer described therein are owned by Zebra Technologies. Unauthorized reproduction of this manual or the software in the label printer may result in imprisonment of up to one year and fines of up to $10,000 (17 U.S.C.506). Copyright violators may be subject to civil liability.

Zebra®, Barcode Anything®, Bar-One®, Element Energy Equalizer®, Integration w/o Modification®, Orion®, Stretch®, Stripe®, The World's #1 Name in Bar Code®, Track-One®, Ultracode®, When It’s on the Line®, Z-Band®, Zebra-Mate®, *Z*-Series™, Z-Ultimate®, ZebraNet®, ZPL II®, and ZPL® are registered trademarks of Zebra Technologies.

105S™, 105*Se*™, 105*SL*™, 110*PAX*™, 140*Xi*II™, 160*S*™, 170*PAX*™, *A*100™, *A*300™, BAR-ONE® Platinum™, BAR-ONE® ProPlus™, Direct 2000™, Direct Tag 2060™, *PA*400™, Performance Line ™, PolyPro 2000™, *S*-300™, *S*400™, *S*-500™, *S*600™, *T*300™, Trans Matte 2000™, Trans Matte 3000™, Trans Tag 1070™, Trans Tag 2070™, Value-Line™, Value Pack™, *Xi* (90*Xi*™ and 170*Xi*™), Xi Series™, *Xi*II (90*Xi*II™, 140*Xi*II™, 170*Xi*II™, 220*Xi*II™) ,*Xi*III (90*Xi*III™, 96*Xi*III™, 140*Xi*III™, 170*Xi*III™,220*Xi*III™), *Xi*III*Plus* (90*Xi*III*Plus*™, 96*Xi*III*Plus*™, 96*Xi*III*Plus*™, 140*Xi*III*Plus*™, 170*Xi*III*Plus*™, 220*Xi*III*Plus*™), *Z*4000™, *Z*6000™, *Z*4M™, *Z*6M™, ZIP Support™, and *Z*BI™ are trademarks of Zebra Technologies.

Centronis is a registered trademark of Genicom Corporation.

MCL-Designer is a registered trademark of Zetes Technologies.

Jetform is a registered trademark of Jetform Corporation.

Adobe, Acrobat and Adobe Reader are trademarks of Adobe Systems.

Microsoft, DOS, Windows 3.1 Windows 95 and Windows NT are registered trademarks of Microsoft Corporation.

IBM, OS/2 and AS/400 are registered trademarks of IBM.

Novell and NetWare are registered trademarks of Novell Corporation.

CG Triumvirate, CG Palacio, CG Times, Century Schoolbook are trademarks of AgfaDivision, Mike Inc.

Univers is a trademark of Linotype AG

CG Futura is a trademark of Fundicion Tipografica Neufville, SA.

TrueType is a trademark of Apple Computer, Inc.

Tyvek is a registered trademark of E.I. DuPont Corporation.

PMS is a registered trademark of Pantone, Inc.

Sartech is a registered trademark and FormatLibrary is a trademark of Sartech.

Tag-it is a trademark of Texas Instruments.

Warranty Information

All new Zebra products are warranted by the manufacturer to be free from defect in material and workmanship. Please refer to the User Guide for warranty information specific to each product.

Here is some general information:

Printers and Related Hardware Products:

Proof of purchase or shipment date is required to validate the warranty period. The warranty becomes void if the equipment is modified, improperly installed or used, damaged by accident or neglect, or if any parts are improperly installed or replaced by the user.

NOTE: Products returned must be packaged in the original or comparable packing and shipping container. In the event equipment is not so packaged, or if shipping damage is evident, it will not be accepted for service under warranty. Surface transportation charges for return to customers in the continental United States is paid by Zebra. Otherwise, Zebra pays CPT (carriage paid to) nearest airport; customer pays customs, duties, taxes, and freight from airport to destination. If Zebra determines that the product returned for warranty service or replacement is not defective as herein defined, the customer will pay all handling and transportation costs.

Printers: All printers (excluding printheads) are warranted against defect in material or workmanship for twelve (12) months from the purchase date.

Printheads: Since printhead wear is part of normal operation, the original printhead is covered by a limited warranty as indicated below. Warranty period begins on purchase date.

Printhead	Warranty Period
Barcode label and receipt printer printhead	6 months
Plastic card printer printheads	12 months

To qualify for this warranty, the printhead must be returned to the factory or to an authorized service center. Customers are not required to purchase Genuine Zebra Supplies (media and/or ribbons) for warranty qualification. However, if it is determined that the use of inappropriate or inferior supplies has caused any defect in the printhead for which a warranty claim is made, the user is responsible for Zebra's labor and material charges required to repair the defect. The warranty becomes void if the printhead is physically worn or damaged; also if it is determined that failure to follow the preventive maintenance schedule listed in the User's Guide has caused defect in the thermal printhead for which a warranty claim is made.

Related Hardware Items: Products are warranted to be free of defects in material and workmanship from the date of purchase according to this chart:

Product	Warranty Period
Accessories	1 month
Batteries	3 months
Cables	1 month
Chargers/Power Supplies	1 year
Hardware Keys	1 year
Keyboard Display Units	6 months
Parts	3 months
Pocket Eye®	1 year
Software	1 month
ZebraNet®Print Servers	3 years

Defective product must be returned to Zebra for evaluation. In the event of notification of defect within the warranty period, Zebra will replace the defective item provided there had not been damage resulting from user abuse, modification, improper installation or use, or damage in shipping or by accident or neglect.

Effective December 30, 2002

Supplies Products:

Supplies are warranted to be free from defect in material and workmanship for a period of six (6) months for media and twelve (12) months for ribbon from the date of shipment by Zebra. This is provided the user has complied with storage guidelines, handling, and usage of the supplies in Zebra printers.

Zebra's sole obligation under these warranties is to furnish parts and labor for the repair or possible replacement of products found to be defective in material or workmanship during the warranty period. Zebra may in its discretion issue a credit for any such defective products in such amount as it deems reasonable.

Repair Services:

Zebra repairs are warranted against defects in material and workmanship for 90 days from the date of repair by Zebra. This excludes printheads, which are warranted separately. This warranty does not cover normal wear and tear. This warranty becomes void if the item is modified, improperly installed or used, or damaged by accident, neglect, or abuse.

Warranty Exclusions & Conditions Statement

The warranties given above are the only warranties given to you. No other warranties, express or implied, are given. Zebra does not make any *implied warranty of merchant ability or fitness for a particular purpose* in connection with its sale of products or services. While Zebra's desire is to be responsive to your specific needs and questions, Zebra does not assume responsibility for any specific application to which any Products are applied, including, but not limited to, compatibility with other equipment. All statements, technical information, or recommendations relating to Zebra Products are based upon tests believed to be reliable, but do not constitute a guaranty or warranty. Zebra's maximum liability for warranty claims is limited to the invoice price of the Product claimed defective. Zebra does not assume responsibility for delays in replacement or repair of products. Zebra shall not under any circumstances whatsoever be liable to you or any other party for loss or profits, lost data, diminution of good will, or any other special or consequential damages whatsoever with respect to any warranty claim made by you. Specifically for software, Zebra is not liable for any incidental or consequential damages caused by abuse or misapplication of the software or by its use in violation of the U.S. copyright law or international treaty. No salesperson, representative, or agent of Zebra is authorized to make any guaranty, warranty, or representation that contradicts the foregoing. Any waiver, alteration, addition, or modification to the foregoing warranties must be in writing and signed by an executive officer of Zebra to be valid.

Table of Contents

Section 1 System Description

Section 2 Operations Overview

Table of Contents

Section 3 Troubleshooting

Section 4 Preventive and Corrective Maintenance

Table of Contents


Zebra

List of Tables

Section 1 System Description

Section 3 Troubleshooting

Section 4 Preventive and Corrective Maintenance

Section 5 Maintenance and Assembly Drawings


Zebra

List of Figures

Section 1 System Description

Section 2 Operations Overview

Section 4 Preventive and Corrective Maintenance

List of Figures

List of Figures

Section 5 Maintenance and Assembly Drawings


Zebra

Section 1
System Description

This manual contains information about the service and maintenance of Zebra's Z4Mplus and Z6Mplus printers. These thermal demand printers print high quality labels containing bar codes, alphanumeric characters and graphics. Capable of printing in either thermal direct or thermal transfer mode and configured with a wide range of field installable options, the printers have the flexibility to perform in a variety of applications. As with other printer models within the Zebra family, they use Zebra Programming Language II (ZPL II).

Scope

This manual contains the information necessary for the proper maintenance of the Z4Mplus and Z6Mplus printers.

Section 1, System Description, provides an overview of the printer. Included are specifications of the printer and a brief explanation of each component and its function.

Section 2, Operations Overview, assists the technician with "out of the box" installation, initial setup, and printer operation.

Section 3, Troubleshooting, contains troubleshooting tables showing symptom, diagnosis, and action columns. Working with these tables, the technician will be able to diagnose printer faults and determine the needed repair.

Section 4, Preventive and Corrective Maintenance, provides various levels of printer maintenance required for optimum performance. This section also provides information on cleaning and general maintenance, replacement of major assemblies and modules, and mechanical adjustments.

Section 5, Maintenance and Assembly Drawings, contains mechanical assembly drawings and parts lists. Parts and assemblies common to the Z4Mplus and Z6Mplus are illustrated along with their maintenance part numbers.

Related Manuals

A further description of the printer models may be found in the *Z4Mplus and Z6Mplus User Guide* (Zebra part number 11363L). More information on ZPL II programming language can be found in the *ZPL II Programming Guide Volume 1: Command Reference* (Zebra Part Number 45541L), *ZPL II Programming Guide Volume 2: The X.10 Environment* (Zebra Part Number 45542L), and *ZebraNet Networking: Print Server II Operations Guide* (Zebra Part Number 45537L).

This section of the manual is intended to supplement the User Guide by providing additional information for troubleshooting and maintaining the printer.

Printer Specifications

A general description of the printer and the options available follows.

Options

- Cutter
- Cutter tray
- Memory cards
- Bar-One® Windows™-based WYSIWYG on-screen label design and print application software
- RS-485 interface
- Printer drivers for Windows operating systems
- Peel
- Peel Liner Take-up (Only available on Z4Mplus with Peel)
- Value Peel Rewind
- ZebraNet PrintServer II, including internal Ethernet interface (10Base-T), WebView graphical setup and printer control, and Alert unsolicited error notification
- Font cards
- Downloadable Fonts

Zebra Programming Language II (ZPL II)

- Downloadable graphics, scalable and bitmap fonts, and label formats
- Object copying between memory areas (RAM, memory card, and internal FLASH)
- Code Page 850 character set
- Adjustable print cache
- Data compression
- Automatic virtual input buffer management
- Automatic memory allocation
- Format inversion
- Mirror image printing
- Four-position field rotation (0º, 90º, 180º, and 270º)
- Controlled via mainframe, mini-computer, PC, portable data terminal
- Programmable quantity with print, pause, and cut control
- Serialized fields
- Error-checking protocol
- User-programmable password
- Slew command
- Communicates in printable ASCII characters
- In-spec OCR-A and OCR-B
- UPC/EAN
- Status message to host upon request

Bar Codes

- Bar code ratios – 2:1, 7:3, 5:2, and 3:1
- Codabar (supports ratios of 2:1 up to 3:1)
- CODABLOCK
- Code 11
- Code 39 (supports ratios of 2:1 up to 3:1)
- Code 49 (2-dimensional bar code)
- Code 93
- Code 128 (with subsets A, B, and C and UCC case C codes)
- Data Matrix
- EAN-8, EAN-13, EAN extensions
- Interleaved 2 of 5 (supports ratios of 2:1 up to 3:1, Modulus 10 Check Digit)
- Planet Code B5
- ISBT-128
- LOGMARS
- MaxiCode
- Micro PDF
- MSI
- PDF-417 (2-dimensional bar code)
- Plessey
- POSTNET
- QR-Code
- Standard 2 of 5
- UPC-A, UPC-E, UPC extensions
- Check digit calculation where applicable
- Industrial 2 of 5
- RSS

Standard Printer Fonts

Fonts A, B, C, D, E, F, G, H, and GS are expandable up to 10 times, height and width independently. However, fonts E and H (OCR-A and OCR-B) are not considered “in-spec” when expanded.

The scalable smooth font 0 (CG Triumvirate™ Bold Condensed) is expandable on a dot-by-dot basis, height and width independent, while maintaining smooth edges. Maximum character size depends on available memory.

IBM Code Page 850 international character sets are available in the fonts A, B, C, D, E, F, G, P, Q, R, S, T, U, V, and 0 through software control.

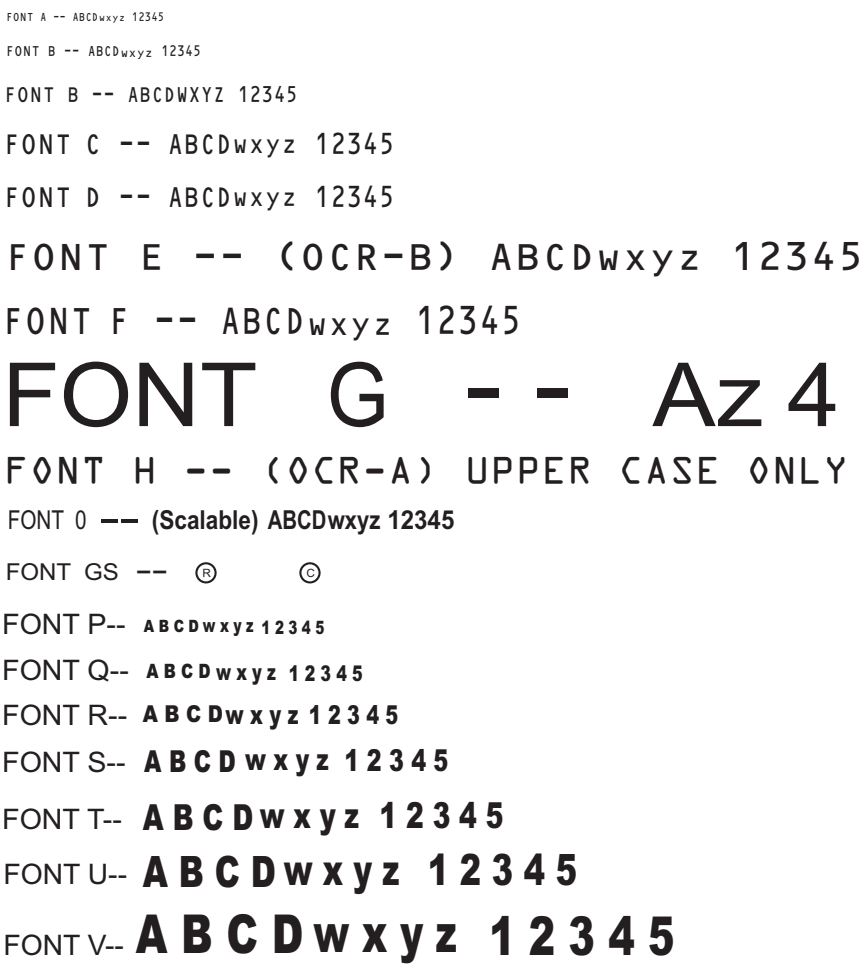
Table 1-1. Font Matrix for 8 dot/mm (203 dpi) Printheads

Font	Matrix					Type*	Character Size					
							Inches			Millimeters		
	Height	Width	Baseline Dots	Inter-Character Gap	Cell Width	Font Matrix	Height	Width	Char/ Inch	Height	Width	Char/ mm
A	9	5	7	1	6	U-L-D	0.044	0.030	33.87	1.13	0.75	1.33
B	11	7	11	2	9	U	0.054	0.044	22.58	1.38	1.13	0.89
C,D	18	10	14	2	12	U-L-D	0.089	0.059	16.93	2.25	1.50	0.67
E	28	15	23	5	20	OCR-B	0.138	0.098	10.16	3.50	2.50	0.40
F	26	13	21	3	16	U-L-D	0.128	0.079	12.70	3.25	2.00	0.50
G	60	40	48	8	48	U-L-D	0.295	0.236	4.23	7.50	6.00	0.17
H	21	13	21	6	19	OCR-A	0.103	0.094	10.69	2.63	2.38	0.42
GS	24	24	24	2	26	SYMBOL	0.118	0.128	7.82	3.00	3.25	0.31
P	20	18	N/A	N/A	N/A	U-L-D	0.098	0.089	N/A	2.50	2.25	N/A
Q	28	24	N/A	N/A	N/A	U-L-D	0.138	0.118	N/A	3.50	3.00	N/A
R	35	31	N/A	N/A	N/A	U-L-D	0.172	0.153	N/A	4.38	3.88	N/A
S	40	35	N/A	N/A	N/A	U-L-D	0.197	0.172	N/A	5.00	4.38	N/A
T	48	42	N/A	N/A	N/A	U-L-D	0.236	0.207	N/A	6.00	5.25	N/A
U	59	53	N/A	N/A	N/A	U-L-D	0.290	0.261	N/A	7.38	6.63	N/A
V	80	71	N/A	N/A	N/A	U-L-D	0.394	0.349	N/A	10.00	8.88	N/A
0	Default: 15 x 12					U-L-D	Scalable					
*U = Uppercase, L = Lowercase, D = Descenders												

Table 1-2. Font Matrix for 12 dot/mm (300 dpi) Printheads

Font	Matrix					Type*	Character Size					
							Inches			Millimeters		
	Height	Width	Baseline Dots	Inter-Character Gap	Cell Width	Font Matrix	Height	Width	Char/ Inch	Height	Width	Char/ mm
A	9	5	7	1	6	U-L-D	0.030	0.020	50.00	0.76	0.51	1.97
B	11	7	11	2	9	U	0.037	0.030	33.33	0.93	0.76	1.31
C,D	18	10	14	2	12	U-L-D	0.060	0.040	25.00	1.52	1.02	0.98
E	41	20	32	6	26	OCR-B	0.137	0.087	11.54	3.47	2.20	0.45
F	26	13	21	3	16	U-L-D	0.087	0.053	18.75	2.20	1.35	0.74
G	60	40	48	8	48	U-L-D	0.200	0.160	6.25	5.08	4.06	0.25
H	30	19	30	9	28	OCR-A	0.100	0.093	10.71	2.54	2.37	0.42
GS	24	24	24	2	26	SYMBOL	0.080	0.087	11.54	2.03	2.20	0.45
P	20	18	N/A	N/A	N/A	U-L-D	0.067	0.060	N/A	1.69	1.52	N/A
Q	28	24	N/A	N/A	N/A	U-L-D	0.093	0.080	N/A	2.37	2.03	N/A
R	35	31	N/A	N/A	N/A	U-L-D	0.117	0.103	N/A	2.96	2.62	N/A
S	40	35	N/A	N/A	N/A	U-L-D	0.133	0.117	N/A	3.39	2.96	N/A
T	48	42	N/A	N/A	N/A	U-L-D	0.160	0.140	N/A	4.06	3.56	N/A
U	59	53	N/A	N/A	N/A	U-L-D	0.197	0.177	N/A	5.00	4.49	N/A
V	80	71	N/A	N/A	N/A	U-L-D	0.267	0.237	N/A	6.77	6.01	N/A
0	Default: 15 x 12					U-L-D	Scalable					
*U = Uppercase, L = Lowercase, D = Descenders												

Figure 1-1. Default Fonts Examples



Media Specifications

Media Specifications			Z4Mplus	Z6Mplus
Minimum label length		Tear-off	0.5 in. (13 mm)	0.5 in. (13 mm)
		Peel-off	1 in. (25.4 mm)	1 in. (25.4 mm)
		Cutter	1 in. (25.4 mm)	1 in. (25.4 mm)
		Rewind	0.5 in. (13 mm)	0.5 in. (13 mm)
Maximum			39 in. (991 mm)	39 in. (991 mm) (203 dpi)
				2 in. (737 mm) (300 dpi)
Total media width (Includes liner, if any)	Minimum		1 in. (25.4 mm)	2 in. (51 mm)
	Maximum	Tear/Cutter	4.5 in. (114 mm)	7 in. (178 mm)
		Peel/Rewind	4.25 in. (108 mm)	6.75 in. (171 mm)
Total thickness (includes liner, if any)		Minimum	0.0023 in. (0.058 mm)	0.0023 in. (0.058 mm)
		Maximum	0.010 in. (0.25 mm)	0.010 in. (0.25 mm)
Cutter maximum full-width media thickness			0.010 in. (0.25 mm)	0.010 in. (0.25 mm)
Roll media core inside diameter			3 in. (76 mm)	3 in. (76 mm)
Maximum roll diameter			8 in. (203 mm)	8 in. (203 mm)
Maximum fan-fold pack size L × W × H			8 in. × 4.5 in. × 6.2 in. (203.2 mm × 114.3 mm × 157.5 mm)	8 in. × 7 in. × 6.2 in. (203.2 mm × 177.8 mm × 157.5 mm)
Inter-label gap		Minimum	0.079 in. (2 mm)	0.079 in. (2 mm)
		Preferred	0.118 in. (3 mm)	0.118 in. (3 mm)
		Maximum	0.157 in. (4 mm)	0.157 in. (4 mm)
Ticket/tag sensing notch W × L			0.25 in. × 0.12 in. (6 mm × 3 mm)	0.25 in. × 0.12 in. (6 mm × 3 mm)
Ticket/tag sensing hole diameter			0.125 in. (3mm)	0.125 in. (3mm)
Additional specs. for black mark sensing	Mark length (measuring parallel to label/tag edge)	Minimum	0.098 in. (2.5 mm)	0.098 in. (2.5 mm)
		Maximum	0.453 in. (11.5 mm)	0.453 in. (11.5 mm)
	Mark width (measuring perpendicular to label/tag edge)		≥ 0.37 in. (≥ 9.5 mm)	≥ 0.37 in. (≥ 9.5 mm)
	Mark location		Within 0.040 in. (1 mm) of inside media edge	Within 0.040 in. (1 mm) of inside media edge
	Mark density		> 1.0 Optical Density Units (ODU)	> 1.0 Optical Density Units (ODU)
	Maximum density of the back of the media on which the black mark is printed		0.5 ODU	0.5 ODU

* Media registration and minimum label length are affected by media type and width, ribbon type, print speed, and printer mode of operation. Performance improves as these factors are optimized. Zebra recommends always qualifying any application with thorough testing.

Ribbon Specifications

Ribbon Specifications		Z4Mplus	Z6Mplus
Ribbon Width To protect the printhead from wear, Zebra recommends using ribbon at least as wide as the media you are using.	Minimum	2 in. (51 mm)	2 in. (51 mm)
	Maximum	4.3 in. (109 mm)	6.85 in. (174 mm)
Standard lengths	2:1 media to ribbon roll ratio	984 ft. (300 m)	984 ft. (300 m)
	3:1 media to ribbon roll ratio	1476 ft. (450 m)	1476 ft. (450 m)
Maximum ribbon roll size (outer diameter)		3.2 in. (81.3 mm)	3.2 in. (81.3 mm)
Inner diameter of core		1 in. (25.4 mm)	1 in. (25.4 mm)
Ribbon must be wound with the coated side out.			

Printer Specifications

Printing Specifications		Z4Mplus		Z6Mplus	
Resolution		203 dots/in. (8 dots/mm)	300 dots/in. (12 dots/mm)	203 dots/in. (8 dots/mm)	300 dots/in. (12 dots/mm)
Dot size (square)		0.0049 in. × 0.0049 in. (0.125 × 0.125 mm)	0.0033 in. × 0.0039 in. (0.084 × 0.99 mm)	0.0049 in. × 0.0049 in. (0.125 × 0.125 mm)	0.0033 in. × 0.0039 in. (0.084 × 0.99 mm)
First dot location		0.10 in. ± 0.035 in. (2.5 mm ±.89 mm)	0.12 in. ± 0.035 in. (3 mm ±.89 mm)	0.10 in. ± 0.035 in. (2.5 mm ±.89 mm)	0.12 in. ± 0.035 in. (3 mm ±.89 mm)
Max print width		4.09 in. (104 mm)	4.1 in. (106 mm)	6.6 in.	(168 mm)
Minimum print length		1 dot row			
Print length (max)	203 dpi	105 in.	(2667 mm)	65 in.	(1651 mm)
	300 dpi	49 in.	(1245 mm)	29 in.	(737 mm)
Bar code modulus (“X”) dimension	203 dpi Picket Fence and Ladder	4.9 mil to 49 mil			
	300 dpi Picket Fence	3.3 mil to 33 mil			
	300 dpi Ladder	3.9 mil to 39 mil			
Programmable constant print speeds	203 and 300 dpi	Per second: 2 in., 3 in., 4 in., 5 in., 6 in.		Per second: 51 mm, 76 mm, 102 mm, 127 mm, 152 mm	
	Add'l. 203 dpi	Per second: 7 in., 8 in., 9 in., 10 in.		Per second: 178 mm, 203 mm, 229 mm, 254 mm	
Thin film printhead with Element Energy Equalizer					

General Specifications

Physical Characteristics	Z4Mplus	Z6Mplus
Height	13.32 in. (338 mm)	13.32 in. (338 mm)
Width	10.93 in. (278 mm)	13.43 in. (341 mm)
Depth	18.69 in. (475 mm)	18.69 in. (475 mm)
Weight (without options)	32.4 lbs. (15 kg)	34.7 lbs. (16 kg)

Electrical Requirements

- Autoselect 90 to 264 VAC; 48 to 62 Hz
- 5 Amps for entire AC voltage range
- 25 Watts standby power consumption
- 200/300/350/450 Watts maximum power consumption (printing full-width, 100% black at 6 ips)
- Agency approvals: IEC60950, EN55022 Class B, EN55024, EN61000-3-2, EN61000-3-3.
- Product markings: cULus, CE Marking, FCC-B, ICES-003, VCCI, C-Tick, NOM, IRAM, CCC, GOST-R, BSMI.

Environmental Operating Ranges

Temperature	Operating Thermal Transfer: +40°F to +104°F (+5°C to +40°C) Direct Thermal: +32°F to +104°F (0°C to +40°C)	
	Storage	–40°F to +140°F (–40°C to +60°C)
Non-condensing relative humidity	Operating	20% to 85%
	Storage	5% to 85%

Communication Specifications

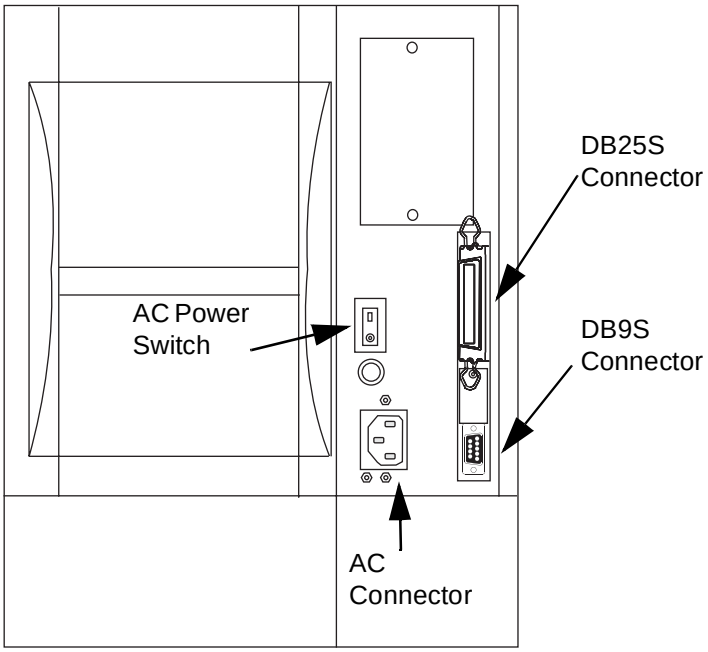
Serial Data Communication Interface Overview

A single data terminal equipment (DTE) port supports RS-232, RS-422 and RS-485 serial data communications. Baud rate, parity, data length, stop bits, and XON/XOFF or DTR control protocols are front panel selectable.

Refer to Figure 1-2. A 9-pin DB9S connector at the rear of the printer provides the data and control leads necessary to communicate through all three signaling protocols. The method used is specific to the application of the printer.

For all RS-232 data and control input and output signals, Zebra follows both the Electronic Industries Association's (EIA) RS-232 and the Consultative Committee for International Telegraph and Telephone (CCITT) V.24 specifications.

Figure 1-2. Interface Connections Z4Mplus and Z6Mplus



Communication Buffer

The printers have a communication buffer that stores the incoming data until that information can be acted upon (imaged). Communication handshaking (DTR/DSR control signals or XON/XOFF control codes) controls when the host can send data to the printer.

The size of the buffer is 5000 characters. As the printer receives data, the processor monitors the number of characters in the buffer. If the buffer is filled beyond 4744 characters, the printer will turn DTR; off (negative voltage) or transmit an XOFF (DC-3) control character to the host. When the buffer empties below 4250 characters, the printer will turn DTR; on (positive voltage) or transmit an XON (DC-1) control character to the host.

Standard Serial Communication Connector

The connection for this standard interface is made through the female DB-9 connector on the rear panel of the printer. A DB-9 to DB-25 interface module is required for all RS-232 connections through a DB-25 cable (see page 13 for details).

For all RS-232 input and output signals, the printer follows both the Electronics Industries Association's (EIA) RS-232 specifications and the Consultative Committee for International Telegraph and Telephone (CCITT) V.24 standard signal level specifications.

Table B-1 shows the pin configuration and function of the rear panel serial data connector on the printer.

Table 1-3. Serial Port Pin Configuration

Pin No.	Name	Description
1	—	Not connected
2	RXD	Receive data—data input to printer
3	TXD	Transmit data—data output from printer
4	DTR	Data terminal ready—output from printer
5	SG	Signal ground
6	DSR	Data set ready—input to printer
7	RTS	Request to send—output from printer
8	CTS	Clear to send—input to printer
9	+5 V DC	+5 VDC signal output

Note • This pin is also available as a +5 VDC power source at 750 mA. To enable this capability, a jumper on the computer's main logic board needs to be installed on JP1, pins 2 and 3.

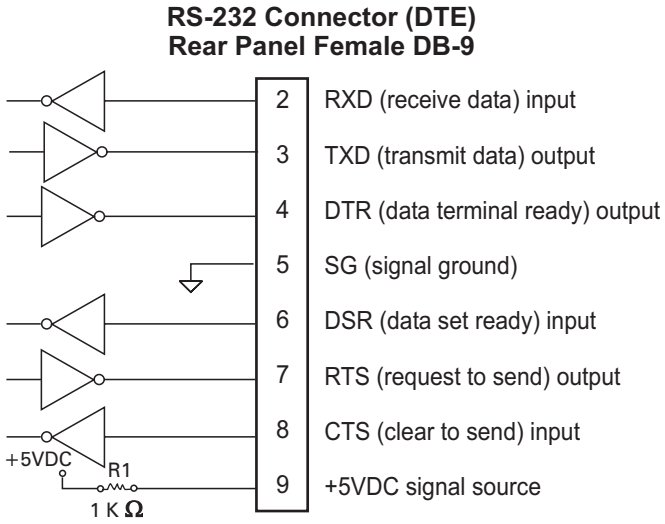
Note • An interface module is required for RS-422/RS-485 interface support (see page 14).

RS-232 Interface Connections

The printer is configured as Data Terminal Equipment (DTE).

Figure 1-3 illustrates the internal connections of the printer's RS-232 connector.

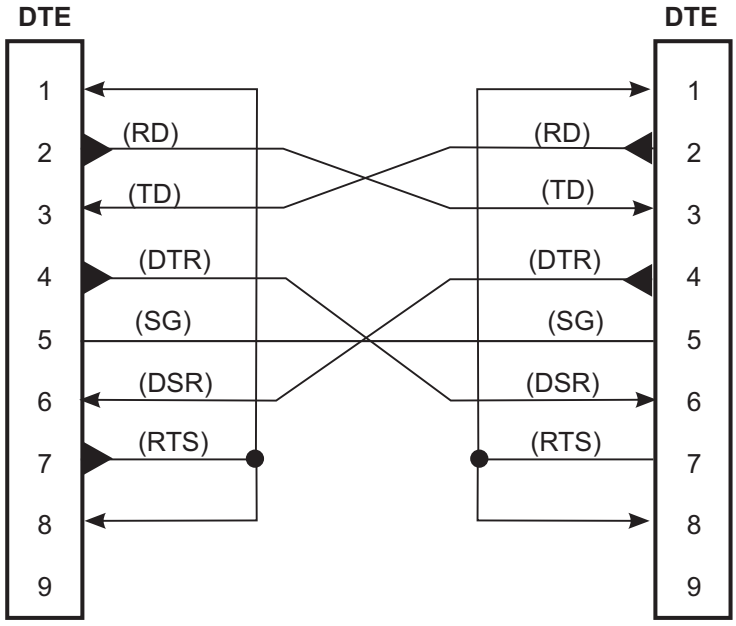
Figure 1-3. RS-232 Connections



Note • Pin 1 is unused and unterminated.

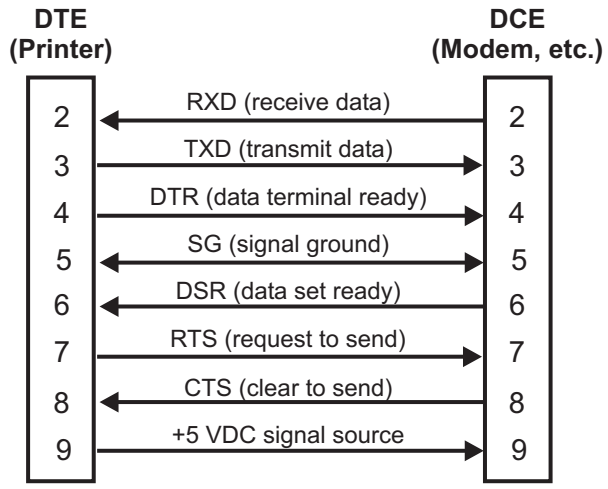
Note • The cable used to connect the printer to a computer must be a null modem (crossover) cable. If you want to connect the printer to any other DTE devices, a null modem cable must also be used.

Figure 1-4. DTE to DTE Interconnection



When the printer is connected via its RS-232 interface to Data Communication Equipment (DCE) such as a modem, use a standard RS-232 (straight-through) interface cable. Figure 1-5 illustrates the connections required for this cable.

Figure 1-5. RS-232 Cable Connections



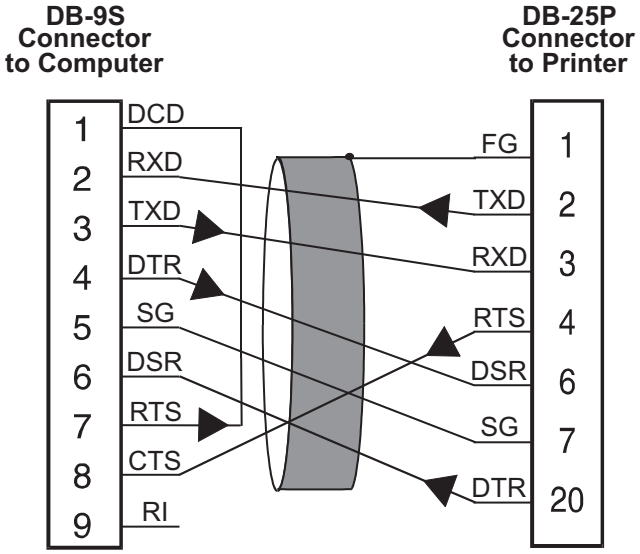
NOTE • Pin 1 is unused and unterminated at the printer.

RS-232 Interconnections Using a DB-25 Cable

To connect the printer's RS-232 DB-9 interface to a DB-25 connector, an interface adapter is required (Zebra Part Number 33138). A generic DB-25 adapter may also be used, however, the +5 VDC signal source would not be passed through.Figure 1-6 illustrates the connections required for the DB-9 to DB-25 interface.

Note • The cable used to connect the printer to a computer must be a null modem (crossover) cable. If you want to connect the printer to any other DTE devices, you must also use a null modem cable.

Figure 1-6. DB-9 to DB-25 Connections

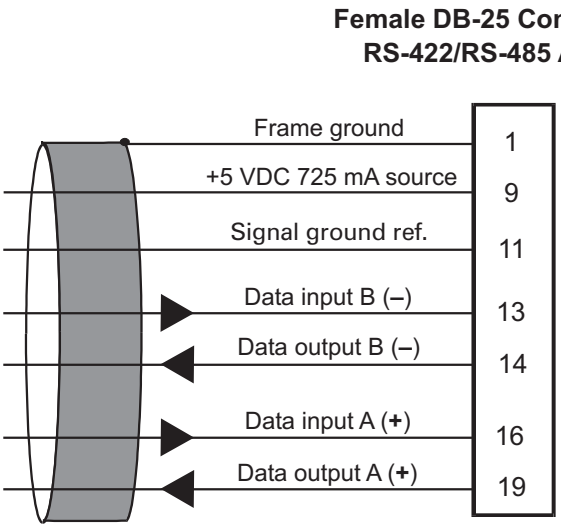


RS-422/RS-485 Interconnections

Note • A jumper on the computer's main logic board needs to be installed on JP1, Pins 2 and 3, for the RS-422/RS-485 interface adapter to function properly.

To connect the printer's RS-232 DB-9 interface to a host computer through an RS-422 or an RS-485 interface, an interface adapter is required (part number 33130). Figure 1-7 illustrates the required cable wiring for interconnecting to the interface adapter's DB-25 female connector.

Figure 1-7. RS-422/RS-485 Interconnecting Cable



NOTE • Pins 2 to 8, 10, 12, 15, 17, 18, and 20 to 25 are unused and unterminated.

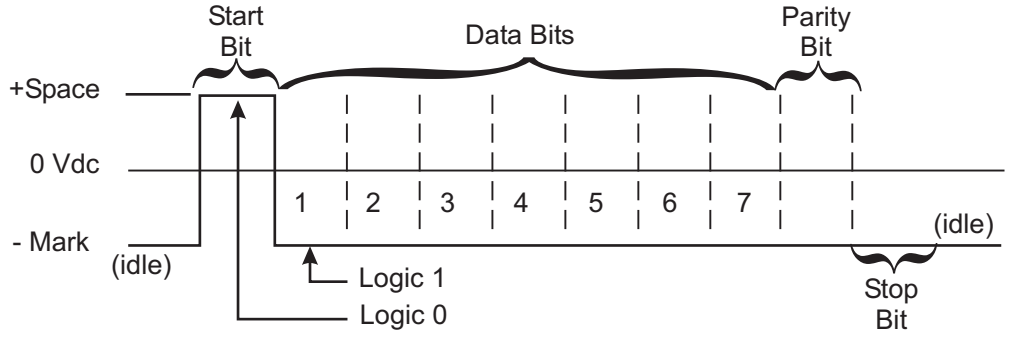
Serial Communication Signal Levels

Refer to Figure 1-8. RS-232 data signals are defined as either Mark or Space, while control signals are ON (Active-Positive Voltage) or OFF (Inactive-Negative Voltage). Although the permitted voltage levels can range from ±3 VDC to ±25 VDC, the levels are as follows:

Table 1-4. RS-232 Transmit and Receive Data

Data Signal	Control Signal	Voltage Level
Mark	Off	–7 to –10 VDC
Space	On	+7 to +10 VDC

Figure 1-8. RS-232 Signaling

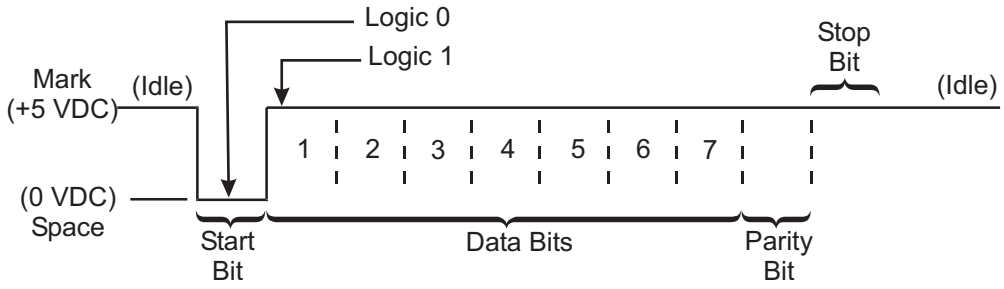


Refer to Figure 1-9. RS-422 and RS-485 data signals are also either Mark or Space. The voltage levels are +5 VDC and 0 VDC when monitored from a specified reference point. The levels when referenced to signal ground are:

Table 1-5. RS-422 and RS-485 Transmit and Receive Data

Data Signal	Control Signal	Output/Input A **Voltage Level**	Output/Input B **Voltage Level**
Mark	Off	+5V	0V
Space	On	0V	+5V

Figure 1-9. RS-422/RS-485 Signaling



Communication Code

The printer sends and receives ASCII (American Standard Code for Information Interchange) characters in one of two formats; Serial Data or Parallel Data.

Note • Baud rate, number of data, stop bits per character, and parity are selectable when using the serial data format. Parity only applies to data transmitted by the printer. Parity bit is ignored for received data.

Parallel Data Communications Interface Overview

A standard 36-pin parallel connector is available at the rear of the printer for connection to the data source. Data sent from the printer to the host, in response to a Printer Status Request command, is sent through the RS-232 serial port. If the host has a properly configured IEEE-1284 parallel port recognized by the printer, status information will be returned through the parallel port. Port selection for status information is determined each time the printer is turned on.

Parallel Port Connector

The table below shows pin configuration and function for a standard PC-to-printer Centronics Parallel cable.

Note • For Optional Ethernet Networking Communications via ZebraNet PrintServer II, refer to the *ZebraNet Networking: PrintServer II User and Reference Guide* (Zebra part number 45537L).

Table 1-6. Pin Configuration and Functions

36-pin Connector	Description
1	nStrobe/HostClk
2–9	Data Bits 1–8
10	nACK/PtrClk
11	Busy/PtrBusy
12	PError/ACKDataReq
13	Select/Xflag
14	nAutoFd/HostBusy
15	Not Used
16 & 17	Ground
18	+5V @ 1A
19–30	Ground
31	ninit
32	nFault/NDataAvail
33 & 34	Not Used
35	+5V through a 4.7 KW Resistor
36	NSelectIn/1284 active

Data Status Indicator

On — indicates data processing or printing is taking place, but no data is being received.

Off — indicates no data is being received or processed.

Flashing — indicates data is being received. Flashing slows when the printer is unable to accept any more data due to the data input buffer being full. Flashing returns to normal rate when the data input buffer is no longer full and data is again being received.


Zebra

Section 2
Operations Overview

Installation

Following is a detailed description of the installation procedures for the printer.

Unpack Printer

Save the carton and all packing materials in case shipping is required. Inspect the printer for possible damage incurred during shipment.

- Check all exterior surfaces for damage.
- Raise the media access door and inspect the media compartment for damage to components.

If you discover shipping damage:

- Immediately notify the shipping company of the damage.
- Retain the carton and all packaging material for shipping company inspection.
- File a damage report with the shipping company and notify your local Zebra distributor of the damage.

Zebra Technologies is not responsible for any damage incurred during shipment of the printer and will not cover the repair of this damage under its warranty policy. Any damage claim should be filed with the shipping company.

Storage and Reship

If you are not placing the printer into operation immediately, repackage it using the original packing materials. The printer may be stored under the following conditions:

- Temperature: –40º to 140º F (–40º TO 60º C)
- Relative humidity: 5% to 85% non-condensing.

To ship the printer, remove all ribbon and media from the supply and take-up spindles to prevent damage to the printer. Carefully pack the printer in a suitable container to avoid damage during transit. Whenever possible, use the original container from the factory. If the original one is lost or destroyed, a shipping container can be purchased from Zebra Technologies.

If you use a different container, package the printer carefully to avoid damage.

Caution • When packaging the printer in a rigid container, use shock mounts or shock-absorbing packing material.

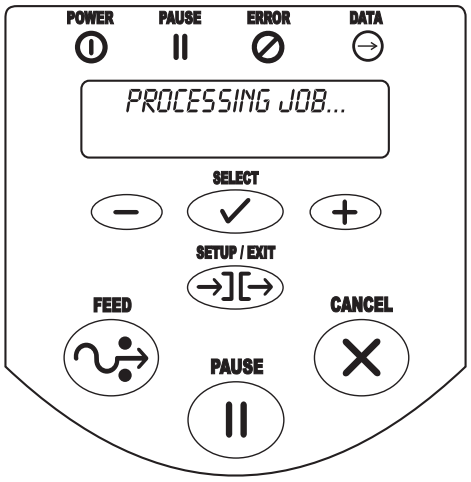
Operator Controls

This section discusses the functions of the various controls and indicators on the printer. The operator should become familiar with each of these functions.

Front Panel Display

The front panel display communicates and programming modes and parameters.

Figure 2-1. Location of Control Panel Keys



Front Panel Keys

Key	Function
FEED 	Forces the printer to feed one blank label each time it is pressed. • Printer not printing: one blank label immediately feeds. • Printing: blank label feeds after current batch of labels is complete.
	**Note** • Equivalent to the Slew to Home Position (`~PH`, `^PH`) ZPL II instruction.
PAUSE 	Stops and starts printing process. • Printer not printing: no printing can occur. • Printing: printing stops when current label is complete. Press to remove error messages.
	**Note** • Pause Mode can also be activated via ZPL II (`~PP`, `^PP`).
CANCEL 	In Pause Mode, cancels print job. • Printer not printing: next stored label format canceled. • Printing: current label format canceled. Press and hold several seconds to cancel all print jobs in memory.
SETUP / EXIT 	Enters and exits the configuration mode.
SELECT 	Toggles increment (+) and decrement (–) between scroll and change. Press once to increment (+) and decrement (–) value of the selection. Press again to increment (+) and decrement (–) to scroll through the menu items.
 Scroll Mode	Scrolls to next selection.
 Change Mode	Increases value. Answers yes. Prints a label (when applicable).
 Scroll Mode	Scrolls to previous selection.
 Change Mode	Decreases value. Selects the digit you wish to change. Answers no.

Front Panel Lights

Light	Status	Indication
POWER	Off	No power applied or printer turned off.
	On	Power applied and turned on.
PAUSE	Off	Normal printer operation.
	On	Printer stopped all printing operations.
	Flashing	Peel-Off Mode; flashes when the label is available for removal. In all modes, flashes when initializing FLASH or PCMCIA memory.
ERROR	Off	Normal printer operation (no errors).
	Slow flashing	**RIBBON IN** warning, **HEAD UNDER TEMP** warning, and **HEAD OVER TEMP** error.
	Fast flashing	**HEAD OPEN** error.
	On	**PAPER OUT**, **RIBBON OUT**, and **CUTTER JAM** errors.
DATA	Off	Normal printer operation (no data being received or processed).
	One flash	**CANCEL** pressed and format was successfully canceled.
	Slow flashing	Printer unable to accept more data.
	Fast flashing	Printer receiving data.
	On	A complete format has been received and no subsequent data activity.

Load Media and Ribbon

Load Ribbon

Note • The ribbon supply spindle is a dual tension spindle. Most applications require the spindle to be in the normal position. The low tension position is recommended when a wide ribbon or synthetic media is used and normal tension hampers the ribbon movement only.

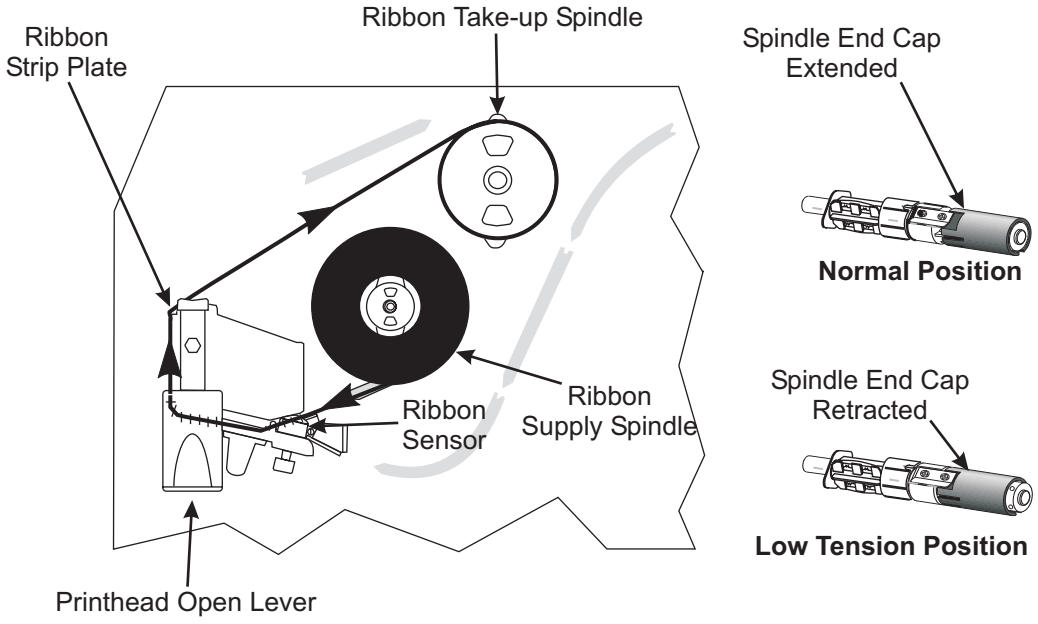
To place the spindle in the normal position, firmly pull out on the end segment (plastic part only) until it clicks in place as shown in Figure 2-2.

To place the spindle in the low tension position, firmly push in the end segment until it clicks.

Refer to Figure 2-2.

1. Press the printhead open lever. The printhead assembly springs up.
2. Slide the ribbon roll completely onto the ribbon supply spindle.
3. Pull the end of the ribbon over the ribbon sensor, under the printhead assembly, and out the front of the printer.
4. Keep the ribbon snug, free of wrinkles, and in line with the guide mark near the left edge of the ribbon strip plate and close the printhead.
5. Wind the ribbon clockwise onto the ribbon take-up spindle.

Figure 2-2. Ribbon Loading



Remove Ribbon

1. Break the ribbon between the ribbon strip plate and the ribbon take-up spindle.
2. While turning the ribbon take-up spindle release knob counterclockwise, squeeze the ribbon against the ribbon take-up spindle tension blades.
3. When the tension blades collapse, hold the release knob and rotate the used ribbon toward the rear of the printer. Slide off the ribbon.

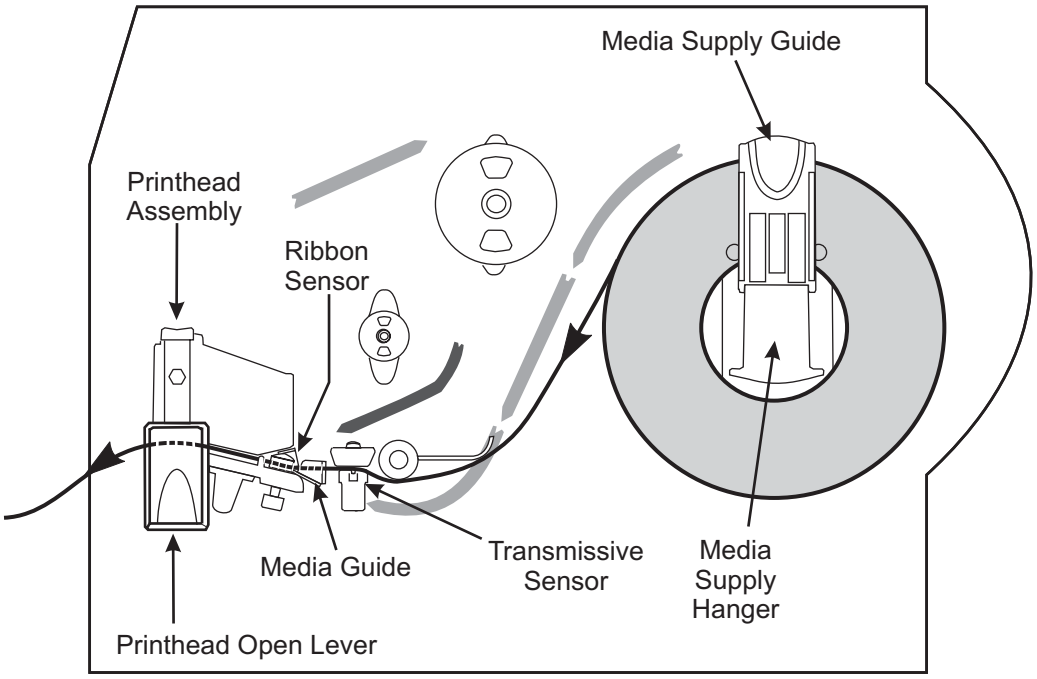
Load Media

Tear-Off Mode

Refer to Figure 2-3

1. Press the printhead open lever. The printhead assembly springs up.
2. Flip down the media supply guide.
3. Slide the media guide out as far from the printer frame as possible.
4. Place the roll of media on the media supply hanger.
5. Flip up the media supply guide. Slide the media supply guide in until it just touches, but does not restrict, the edge of the roll.
6. Feed the media under the dancer, through the slot in the transmissive sensor, under the ribbon sensor, and out the front of the printer.
7. Ensure that the media is against the back of the transmissive sensor. Slide in the media guide until it just touches, but does not restrict, the edge of the media.
8. Close the printhead assembly.

Figure 2-3. Media Loading Tear-Off Mode



Cutter Mode

(Cutter option required.)

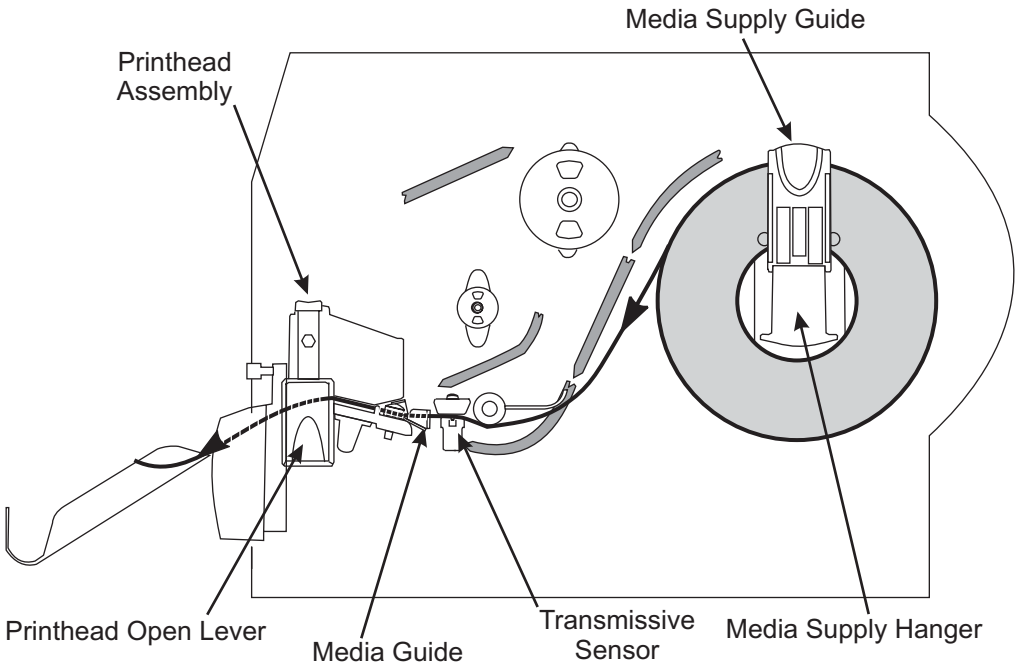
Refer to Figure 2-4.

1. Press the printhead open lever. The printhead assembly springs up.
2. Flip down the media supply guide.
3. Slide the media guide out as far from the printer frame as possible.
4. Place the roll of media on the media supply hanger.
5. Flip up the media supply guide. Slide the media supply guide in until it just touches, but does not restrict, the edge of the roll.
6. Feed the media under the dancer, through the slot in the transmissive sensor, under the ribbon sensor, and through the cutter module.

Caution • The cutter blade is sharp. Do not touch or rub the blade with your fingers.

7. Ensure the media is against the back of the transmissive sensor. Slide in the media guide until it just touches, but does not restrict, the edge of the media.
8. Close the printhead assembly.

Figure 2-4. Media Loading Cutter Mode



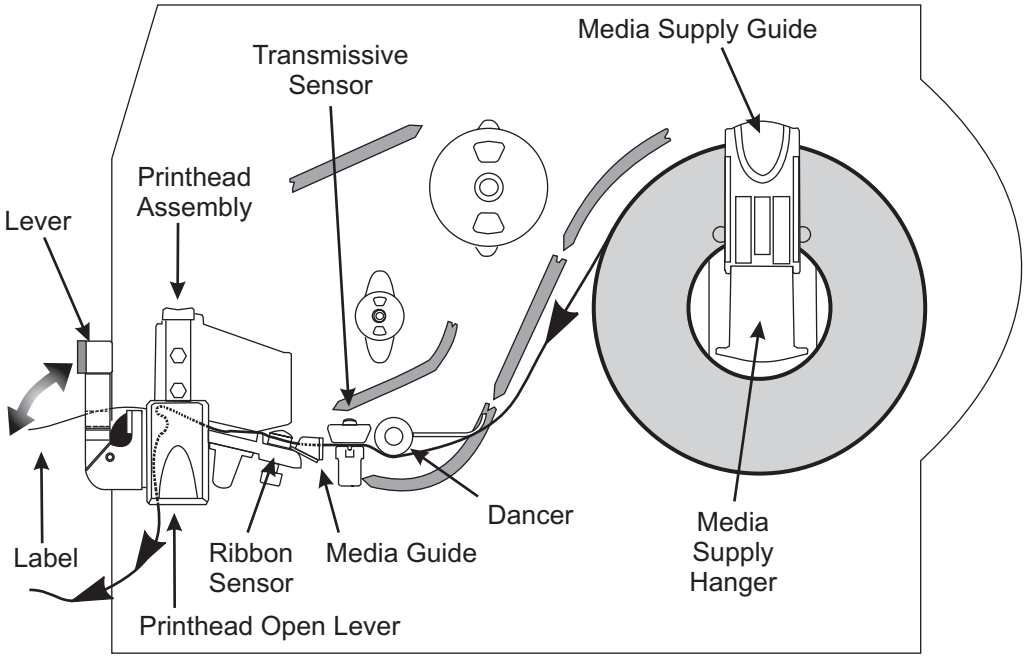
Peel-Off Mode

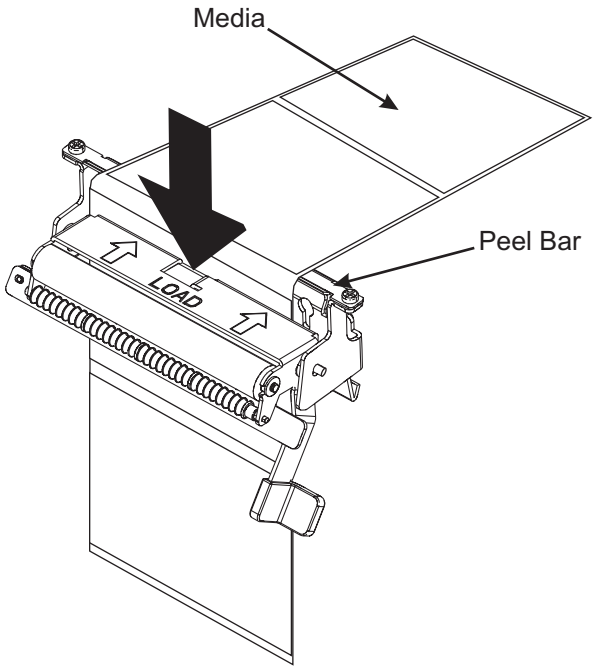
(Peel Option **required**.)

Refer to Figure 2-5.

1. Press the printhead open lever. The printhead assembly springs up.
2. Flip down the media supply guide.
3. Slide the media guide out as far from the printer frame as possible.
4. Place the roll of media on the media supply hanger.
5. Flip up the media supply guide. Slide the media supply guide in until it just touches, but does not restrict, the edge of the roll.
6. Feed the media under the dancer, through the slot in the transmissive sensor, and under the ribbon sensor.
7. Pull approximately 6 in. (305 mm) of media through the front of the printer.
8. Ensure that the media is against the transmissive sensor. Slide in the media guide until it just touches, but does not restrict, the edge of the roll.
9. Pull lever to open the pivot bracket assembly.
10. Feed the media through the slot in the peel assembly.
11. Close the printhead assembly.
12. Close the pivot bracket assembly.
13. Peeling will automatically start. Press **FEED** to test.

Figure 2-5. Media Loading Peel





Peel-Off Mode with Liner Take-up

Note • Liner Take-up available only on the Z4Mplus.

Refer to Figure 2-7

1. Press the printhead open lever. The printhead assembly springs up.
2. Flip down the media supply guide.
3. Slide the media guide out as far from the printer frame as possible.
4. Place the roll of media on the media supply hanger.
5. Flip up the media supply guide. Slide the media supply guide in until it just touches, but does not restrict, the edge of the roll.
6. Feed the media under the dancer, through the slot in the transmissive sensor, and under the ribbon sensor.
7. Pull approximately 18 in. (500 mm) of media through the front of the printer.
8. Remove the labels from the 18 in. (500 mm) of media so only the liner remains.
9. Ensure that the media is against the back of the transmissive sensor. Slide in the media guide until it just touches, but does not restrict, the edge of the media.
10. Pull lever to open the pivot bracket assembly.
11. Feed the media over the tear-off/peel-off bar and behind the pivot bracket assembly.
12. Close the printhead assembly.
13. Close the pivot bracket assembly.
14. Refer to Figure 2-6. Slide the liner into the slot in the liner rewind spindle. Ensure the liner is resting against the back plate of the spindle assembly.
15. Turn the spindle assembly counter-clockwise a few times to snug the liner.
16. Peeling will automatically start. Press **FEED** to test.

Figure 2-6. Locate Slot

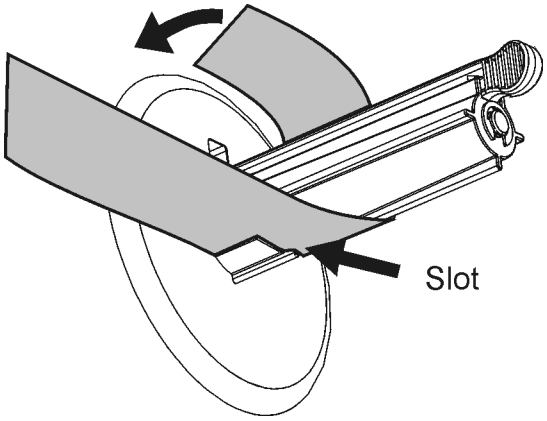
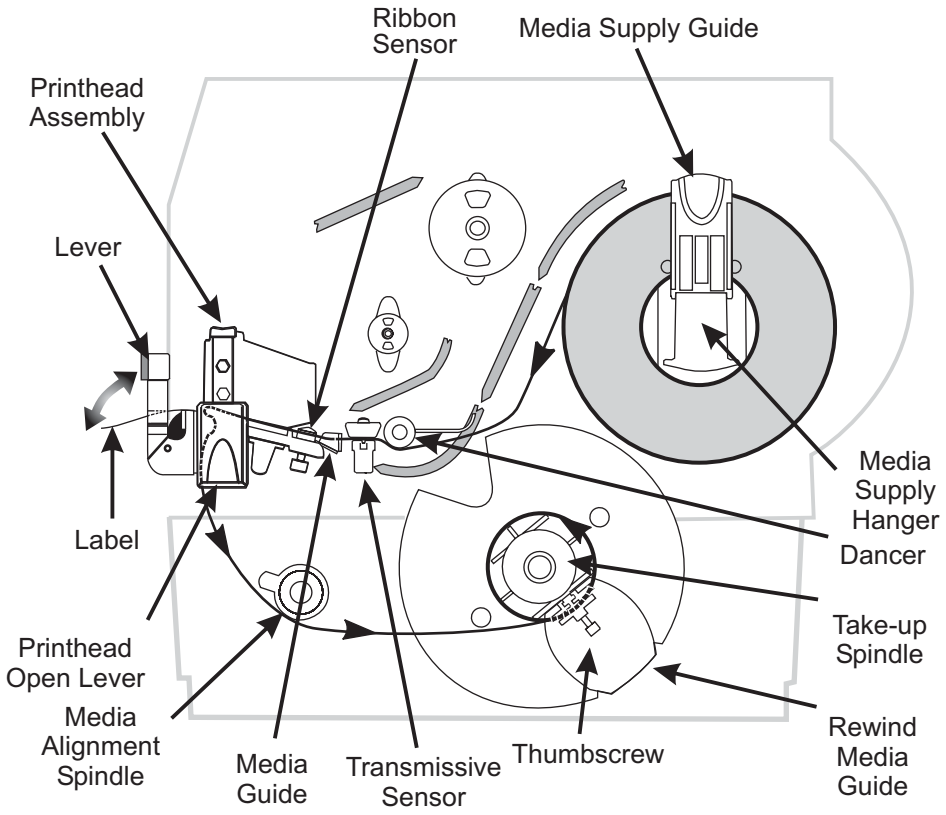


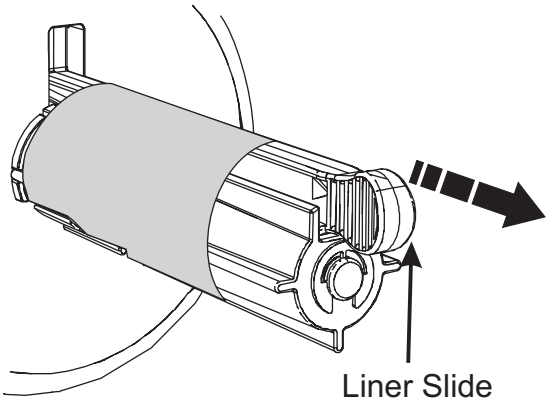
Figure 2-7. Media Loading Peel with Liner Take-up



Remove Liner

Figure 2-8. Remove Liner

1. Refer to Figure 2-8. Using the liner slide tab, pull the liner slide towards you until it stops (about a third of the way down the liner take-up spindle).
2. Slide the liner from the take-up spindle.



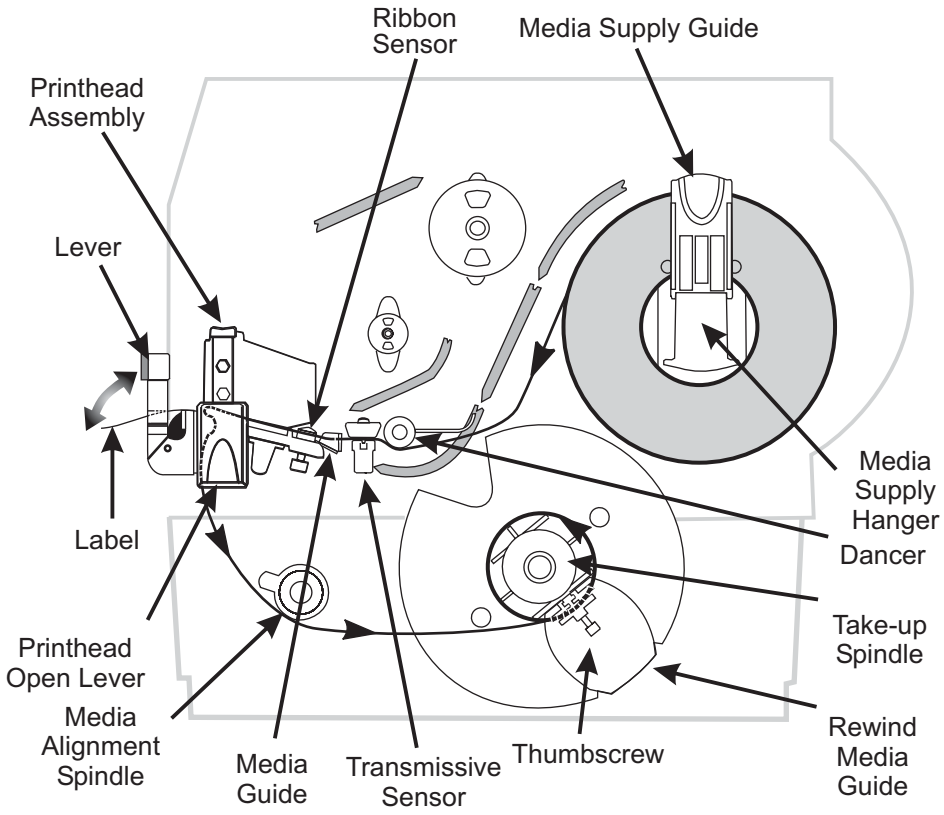
Note • The liner slide should move smoothly back into place once the liner has been removed.

Peel Rewind (Peel-Off Mode)

Refer to Figure 2-9.

1. Press the printhead open lever. The printhead assembly springs up.
2. Flip down the media supply guide.
3. Slide the media guide out as far from the printer frame as possible.
4. Place the roll of media on the media supply hanger.
5. Flip up the media supply guide. Slide the media supply guide in until it just touches, but does not restrict, the edge of the roll.
6. Feed the media under the dancer, through the slot in the transmissive sensor, and under the ribbon sensor.
7. Pull approximately 36 in. (1 m) of media through the front of the printer
8. Remove the labels from about 18 in. (500 mm) of media so only the liner remains.
9. Ensure the media is against the back of the transmissive sensor. Slide in the media guide until it just touches, but does not restrict, the edge of the media.
10. Pull the lever to open the pivot bracket assembly.
11. Feed the media over the tear-off/peel-off bar and behind the pivot bracket assembly.
12. Close the printhead assembly.
13. Close the pivot bracket assembly.
14. Loosen the thumbscrew and slide out the rewind media guide to the end of the take-up spindle.
15. Wrap the liner around a core placed on the take-up spindle. Turn the take-up spindle counterclockwise to wind up the excess liner.
16. Slide the rewind media guide against the liner and tighten the thumbscrew to lock it into position.
17. Peeling will automatically start. Press **FEED** to test.

Figure 2-9. Peel Rewind (Peel-Off Mode)

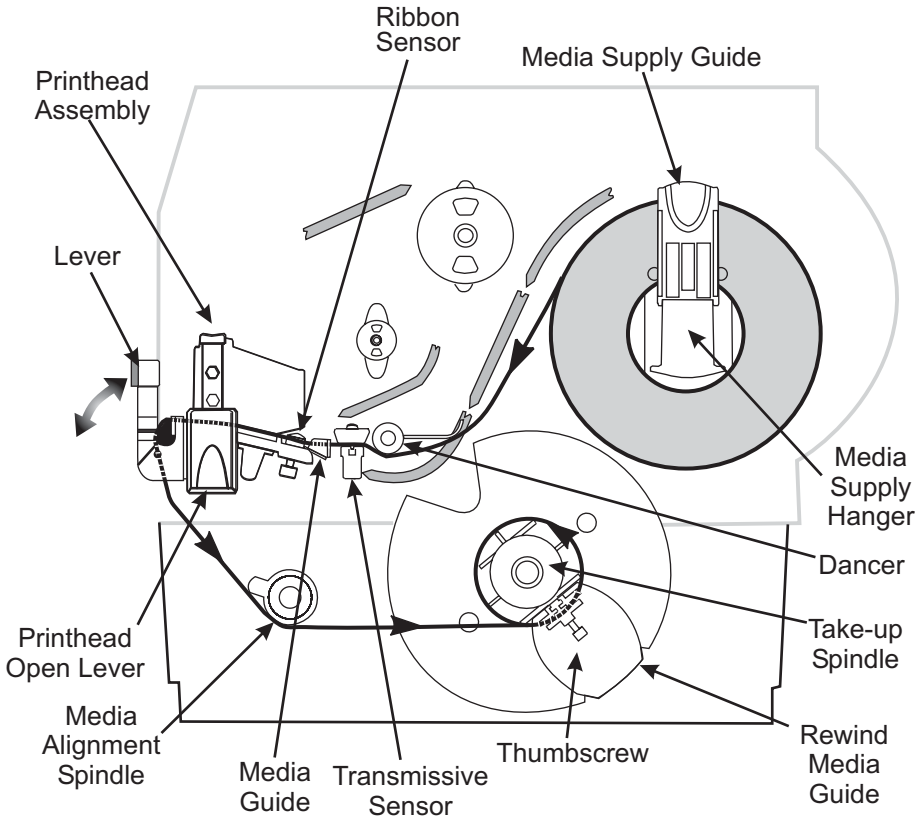


Peel Rewind (Rewind Mode)

Refer to Figure 2-10.

1. Press the printhead open lever. The printhead assembly springs up.
2. Flip down the media supply guide.
3. Slide the media guide out as far from the printer frame as possible.
4. Place the roll of media on the media supply hanger.
5. Flip up the media supply guide. Slide the media supply guide in until it just touches, but does not restrict, the edge of the roll.
6. Feed the media under the dancer, through the slot in the transmissive sensor, and under the ribbon sensor.
7. Pull approximately 36 in. (1 m) of media through the front of the printer
8. Remove the labels from about 18 in. (500 mm) of media so only the liner remains.
9. Ensure that the media is against the back of the transmissive sensor. Slide in the media guide until it just touches, but does not restrict, the edge of the media.
10. Feed the media over the peel assembly, through the rewind base
11. Loosen the thumbscrew and slide out the rewind media guide to the end of the take-up spindle.
12. Wrap the media around a core placed on the take-up spindle. Turn the take-up spindle counterclockwise to wind up the excess material.
13. Slide the rewind media guide against the media and tighten the thumbscrew to lock it into position.
14. Close the printhead assembly.

Figure 2-10. Peel Rewind (Rewind Mode)



Peel Rewind Media Alignment

Note • The media/liner should be installed flush against the back plate of the take-up spindle to prevent the media/liner from winding too loosely.

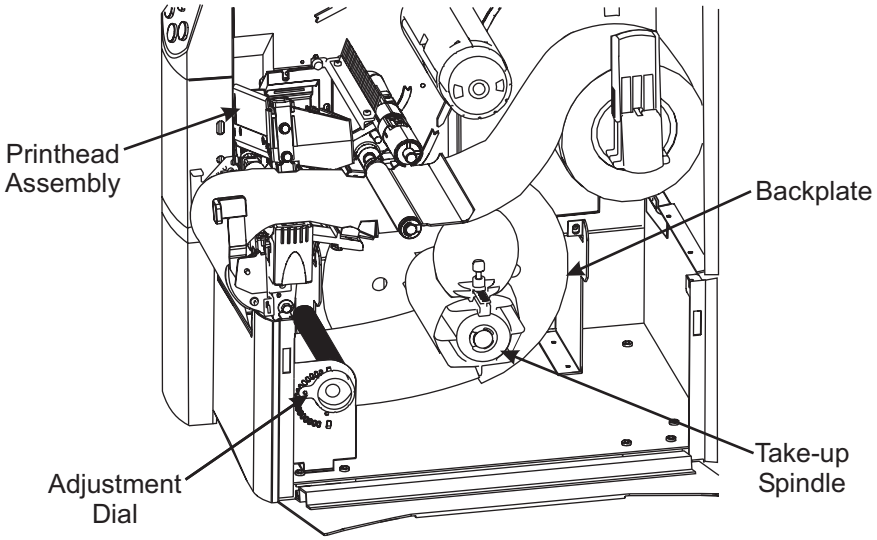
Perform the following adjustment if the media does not track properly onto the take-up spindle.

1. Refer to Figure 2-11. Turn the adjustment dial clockwise to align the media/liner material toward the inboard (main frame or electronics) side. This is the most likely adjustment.

or

2. Turn the dial counterclockwise to align the media/liner material toward the outboard side (away from the main frame or electronics side).

Figure 2-11. Peel Rewind Media Adjustment



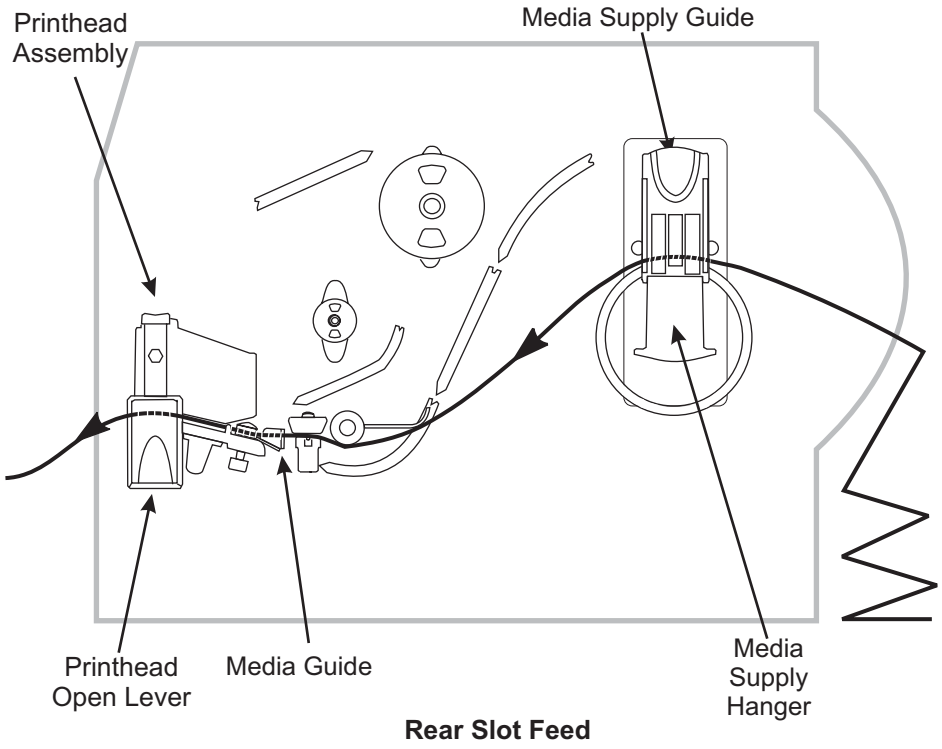
Fanfold Media Loading

Fanfold media feeds through either the bottom or rear access slot. The lower rear cover guide surface can be used as a reference to align media in printer.

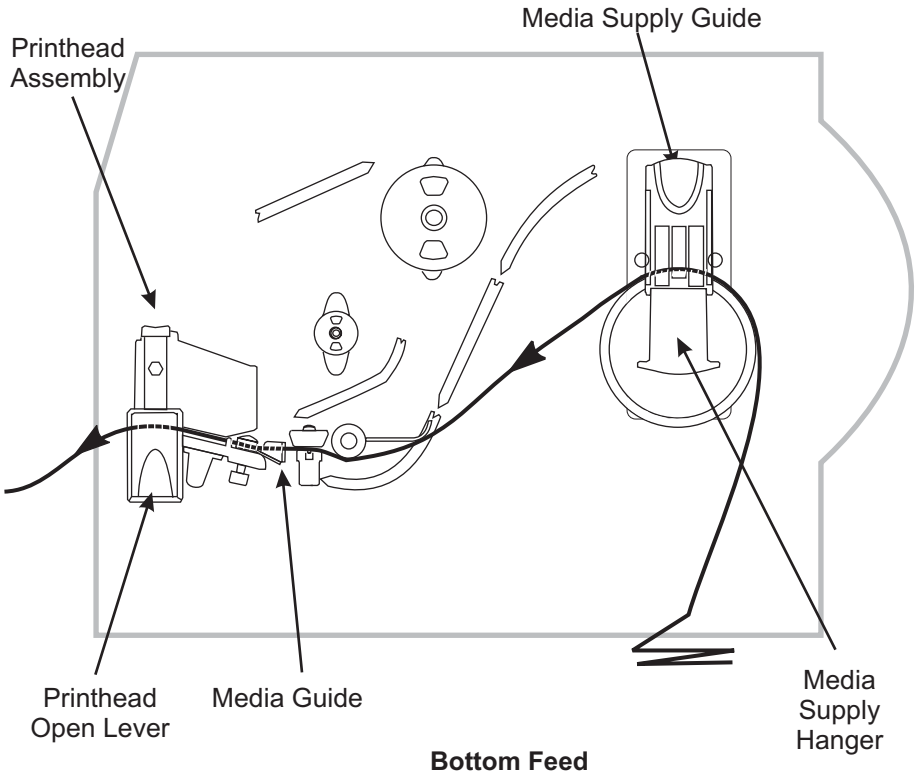
Refer to Figure 2-12

1. Press the printhead open lever. The printhead assembly springs up.
2. Flip down the media supply guide.
3. Slide out the media guide as far from the printer frame as possible.
4. Pass the fanfold media over the media supply hanger.
5. Flip up the media supply guide. Slide the media supply guide in until it just touches, but does not restrict, the edge of the roll.
6. Feed the media under the dancer, through the slot in the transmissive sensor, under the ribbon sensor, and out the front of the printer.
7. Ensure that the media is against the back of the transmissive sensor. Slide in the media guide until it just touches, but does not restrict, the edge of the media.
8. Close the printhead assembly.

Figure 2-12. Media Loading Fanfold



Rear Slot Feed



Bottom Feed

Note • Place an empty 3 in. core on the hanger to assist media movement.

Sensors

Align Transmissive Sensor

There is no positioning of the fixed transmissive sensor. All media is to be loaded through the transmissive sensor as described in the media and ribbon loading chapters.

Note • The transmissive sensor should not be used when the sensor type is set to Mark. If the transmissive sensor is the active sensor when the sensor type is changed from Web to Mark, an auto-calibration is initiated to make the reflective sensor active.
The transmissive sensor should not be used when the media type is set to Continuous. If the transmissive sensor is the active sensor when the media type is changed from Noncontinuous to Continuous, an auto-calibration is initiated to activate the reflective sensor.

Optional Transmissive Sensor

The optional transmissive sensor may be purchased as an option. The optional transmissive sensor is significantly longer than the standard transmissive sensor and is adjustable.

Adjusting the Optional Transmissive Sensor

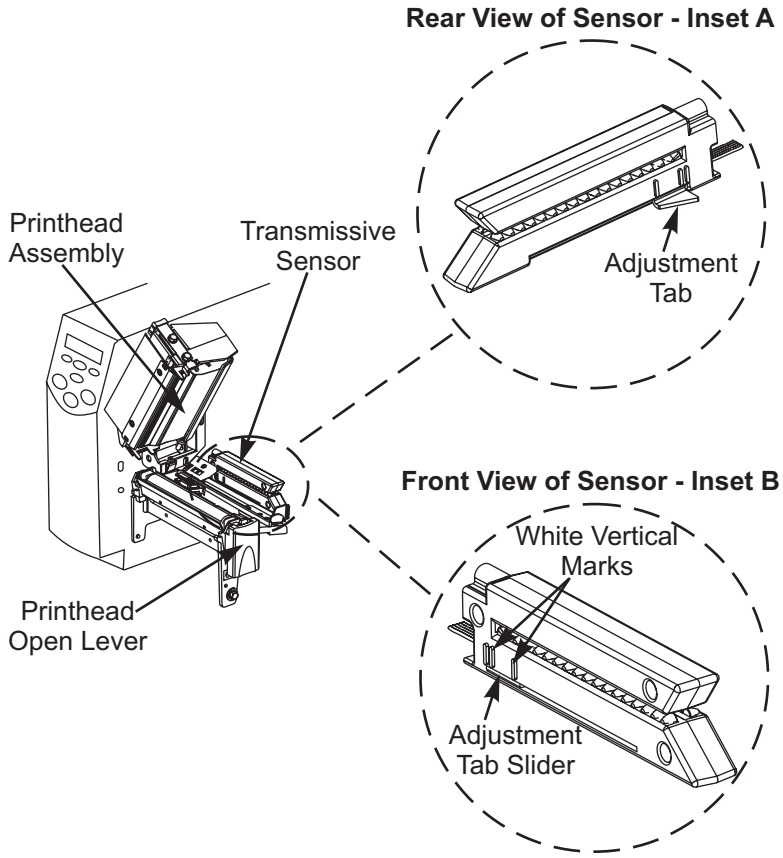
Refer to Figure 2-13.

1. Open the printhead assembly by pressing the printhead open lever and lock the printhead assembly in the full open position.
2. Locate the white adjustment tab on the lower back of the adjustable transmissive sensor (see Figure 2-13, inset A).
3. While holding the adjustment tab, locate the adjustment tab slider on the lower front of the adjustable transmissive sensor (see Figure 2-13, inset B).
4. Slowly push the adjustment tab toward the mainframe wall until the inner most edge of the adjustment tab slider lines up with the appropriate white vertical mark on the lower front of the adjustable transmissive sensor.

Note • The appropriate white vertical mark is determined by the location of the slots in the media being used.

5. Load the media.
6. Close the printhead assembly.
7. Calibrate the media.

Figure 2-13. Adjusting the Optional Transmissive Sensor



Select Media Sensor

The Z4Mplus/Z6Mplus printers can be configured to select either of the sensors. By default the printer is set to Auto Select during auto-calibration.

Note • Changing the Sensor Select setting via the front panel or ZPL II will initiate an auto-calibration.

The Sensor Select setting can be changed from the LCD menu (see the *User Guide*), or via ZPL II. The format for the ^JS instruction is as follows:

^JSx

Where

^JS=Sensor Select

x=Type of sensor

A=Auto Select

R=Reflective Sensor

T=Transmissive Sensor

The sensor can be selected from the .

Media and Media Sensor Considerations

It is important that the appropriate media sensor is selected for the type media being used. If the Transmissive Sensor is set to Auto Select mode and an auto-calibration condition occurs (see Auto-Calibrate on page 39), the appropriate media sensor will be selected. If Sensor Select is set for Reflective Sensor or Transmissive Sensor, the auto-calibration will calibrate the selected Media Sensor and ignore the other.

The trade-off between using Auto Select instead of the Reflective Sensor or Transmissive Sensor is an increased time to print the first label. If the Transmissive Sensor is set to Auto Select, the auto-calibration will take longer to complete because it is determining which media sensor to activate.

- Reflective sensor type media – Noncontinuous (labels, notched tags) media

This type of media has some type of physical characteristic (such as a notch, black mark, or gap between die-cut labels, etc.) which indicates the start-of-label position. The reflective sensor must be properly positioned to sense these indicators.

- Transmissive sensor type media – Pre-printer liners, thick and opaque liners or dark adhesive sided media

This type of media requires the use of the transmissive sensor. The reflective sensor will not properly calibrate with this type of media.

Auto-Calibrate

The auto-calibration occurs at power-on and each time the printer recovers from error conditions such as media errors, ribbon errors, and printhead open errors. When clearing an error, open and close the printhead and take the printer out of pause. The printer will begin the auto-calibration process if all errors have been cleared.

During auto-calibration, the printer automatically determines the label length, media, and ribbon sensor settings. When non-continuous media is sensed, the calibration process is followed by the label length calculation. Once the label length is determined, the media feeds to the rest position and stops.

The results of this calibration are stored in the printer's memory and retained even if printer power is removed. These parameters remain in effect until the next calibration is performed.

Calibrate Control

The auto-calibration process will not take place if the ZPL command or the front panel setting for **Media Power Up or Head Close** is set to no motion. If set to feed, the printer will feed until the first sensed gap, notch, or mark passes the tear off bar. In these cases, the printer assumes the media is correctly positioned and starts printing without calibrating.

As long as the printhead is closed, calibration may be performed. Calibration may clear error conditions that prevent media movement. Unless an out-of-ribbon or out-of-media condition exists, ribbon and media error conditions are cleared by calibration.

Printer Self Tests

The printer is designed to work with most Zebra media and ribbon combinations. However, in some applications, changes to the printer's configuration and mechanical settings may be required. For these situations, printer self test labels can be used to check print quality and ensure proper operation.

These self tests produce sample printouts and provide specific information that determines the operating conditions for the printer.

Each self test can be enabled from the LCD menu. Hold **MINUS** (–) and turn On (**I**) the printer to access the menu.

Note • When performing self tests, disconnect all data interface cables from the printer. When canceling a self-test before it's actual completion, always turn Off (**O**) the printer and then it On (**I**) to reset the printer.
When performing these self tests while in the peel mode, you must remove the labels as they become available.
For self test, Zebra recommends using full-width media. Ensure your print width is set correctly for the media you are using before you run any self tests; otherwise the test may print out on the platen.

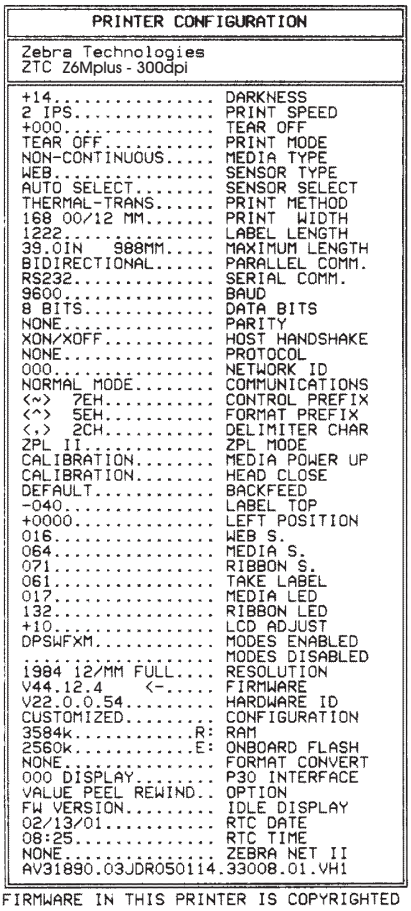
Cancel Key Self Test

Press and hold **CANCEL** while turning On (**I**) the printer. Release the key anytime after the first front panel LED turns off. The Cancel Key Self Test prints a configuration label showing:

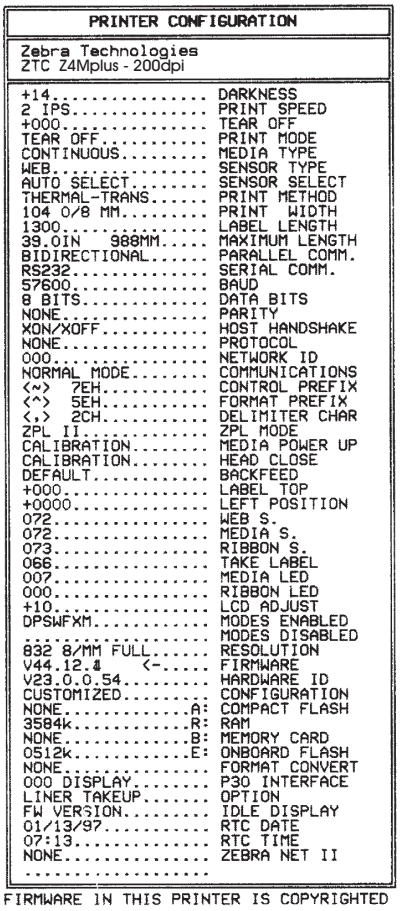
- Printer Configuration.
- Installed Options.
- Software Version.
- Copyright Notice.

Figure 2-14 shows an example of the printer configuration label. The configuration information will print over several labels if a label is not long enough to display all of the configuration information at one time.

Figure 2-14. Cancel Key Self Test Label (Configuration Label)



```
PRINTER CONFIGURATION

Zebra Technologies
ZTC Z6Mplus - 300dpi

+14.................. DARKNESS
2 IPS................ PRINT SPEED
+000................. TEAR OFF
TEAR OFF............. PRINT MODE
NON-CONTINUOUS..... MEDIA TYPE
WEB.................. SENSOR TYPE
AUTO SELECT........ SENSOR SELECT
THERMAL-TRANS...... PRINT METHOD
168 00/12 MM....... PRINT  WIDTH
1222................. LABEL LENGTH
39.0IN   988MM..... MAXIMUM LENGTH
BIDIRECTIONAL...... PARALLEL COMM.
RS232................ SERIAL COMM.
9600................. BAUD
8 BITS............... DATA BITS
NONE................. PARITY
XON/XOFF............. HOST HANDSHAKE
NONE................. PROTOCOL
000.................. NETWORK ID
NORMAL MODE........ COMMUNICATIONS
<~>  7EH............ CONTROL PREFIX
<^>  5EH............ FORMAT PREFIX
<,>  2CH............ DELIMITER CHAR
ZPL II............... ZPL MODE
CALIBRATION........ MEDIA POWER UP
CALIBRATION........ HEAD CLOSE
DEFAULT.............. BACKFEED
-040................. LABEL TOP
+0000................ LEFT POSITION
016.................. WEB S.
064.................. MEDIA S.
071.................. RIBBON S.
061.................. TAKE LABEL
017.................. MEDIA LED
132.................. RIBBON LED
+10.................. LCD ADJUST
DPSWFXM.............. MODES ENABLED
..................... MODES DISABLED
1984 12/MM FULL..... RESOLUTION
V44.12.4    <-...... FIRMWARE
V22.0.0.54........... HARDWARE ID
CUSTOMIZED.......... CONFIGURATION
3584k.............R: RAM
2560k.............E: ONBOARD FLASH
NONE................. FORMAT CONVERT
000 DISPLAY......... P30 INTERFACE
VALUE PEEL REWIND.. OPTION
FW VERSION.......... IDLE DISPLAY
02/13/01............. RTC DATE
08:25................ RTC TIME
NONE................. ZEBRA NET II
AV31890.03JDR050114.33008.01.VH1

FIRMWARE IN THIS PRINTER IS COPYRIGHTED
```



```
PRINTER CONFIGURATION

Zebra Technologies
ZTC Z4Mplus - 200dpi

+14.................. DARKNESS
2 IPS................ PRINT SPEED
+000................. TEAR OFF
TEAR OFF............. PRINT MODE
CONTINUOUS......... MEDIA TYPE
WEB.................. SENSOR TYPE
AUTO SELECT........ SENSOR SELECT
THERMAL-TRANS...... PRINT METHOD
104 0/8 MM......... PRINT  WIDTH
1300................. LABEL LENGTH
39.0IN   988MM..... MAXIMUM LENGTH
BIDIRECTIONAL...... PARALLEL COMM.
RS232................ SERIAL COMM.
57600................ BAUD
8 BITS............... DATA BITS
NONE................. PARITY
XON/XOFF............. HOST HANDSHAKE
NONE................. PROTOCOL
000.................. NETWORK ID
NORMAL MODE........ COMMUNICATIONS
<~>  7EH............ CONTROL PREFIX
<^>  5EH............ FORMAT PREFIX
<,>  2CH............ DELIMITER CHAR
ZPL II............... ZPL MODE
CALIBRATION........ MEDIA POWER UP
CALIBRATION........ HEAD CLOSE
DEFAULT.............. BACKFEED
+000................. LABEL TOP
+0000................ LEFT POSITION
072.................. WEB S.
072.................. MEDIA S.
073.................. RIBBON S.
066.................. TAKE LABEL
007.................. MEDIA LED
000.................. RIBBON LED
+10.................. LCD ADJUST
DPSWFXM.............. MODES ENABLED
..................... MODES DISABLED
832 8/MM FULL....... RESOLUTION
V44.12.4    <-...... FIRMWARE
V23.0.0.54........... HARDWARE ID
CUSTOMIZED.......... CONFIGURATION
NONE.............A: COMPACT FLASH
3584k.............R: RAM
NONE.............B: MEMORY CARD
0512k............E: ONBOARD FLASH
NONE................. FORMAT CONVERT
000 DISPLAY......... P30 INTERFACE
LINER TAKEUP........ OPTION
FW VERSION.......... IDLE DISPLAY
01/13/97............. RTC DATE
07:13................ RTC TIME
NONE................. ZEBRA NET II
.....................

FIRMWARE IN THIS PRINTER IS COPYRIGHTED
```

Pause Key Self Test

Press and hold **PAUSE** while turning On (**I**) the printer. Release the key anytime after the first front panel LED turns off. The Pause Key Self Test prints a series of labels which can be used when making print quality adjustments.

9999 labels at two inches per second, pausing every 15 labels.

9999 labels at six inches per second, pausing every 15 labels.

9999 labels at two inches per second, pausing every 50 labels.

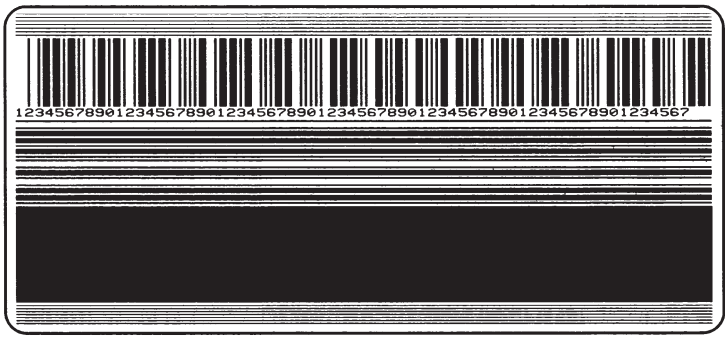
9999 labels at six inches per second, pausing every 50 labels.

9999 labels at ten inches per second, pausing every 50 labels (200 dpi printers only).

When the printer pauses, press **PAUSE** to restart printing at the same speed. Pressing **CANCEL** switches to the next set of labels.

Figure 2-15 provides an example of the Pause Key Self Test label.

Figure 2-15. PAUSE Key Self Test Label



Feed Key Self Test

Press and hold **FEED** while turning On (**I**) the printer. Release the key anytime after the first front panel LED turns off.

The quantity of labels printed during this print quality test depends on the dot density of the printhead.

300 dpi printers: 7 labels are printed at the 2 ips and 6 ips print speeds.

200 dpi printers: 7 labels are printed at the 2 ips, 6 ips and 10 ips print speeds.

Each label is printed at a different darkness setting, starting at three settings below the current configured value and continuing to increase until it is three settings darker than the configured value. The relative darkness and speed are printed on each label. The bar codes on these labels can be ANSI-graded to check print quality.

Figure 2-16 provides an example of the Feed Key Self Test label.

Figure 2-16. Feed Key Self Test Label

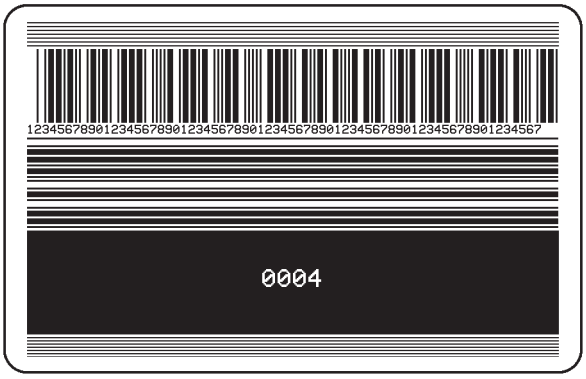
Pause and Cancel Key Self Test

Press and hold both **PAUSE** and **CANCEL** while turning On (**I**) the printer. Release both keys anytime after the first front panel LED turns off.

The Pause and Cancel Key Self Test prints a series of 500 labels which can be used when making print quality adjustments.

Refer to Figure 2-17. The printed label will look like the Pause Key Self Test label and will be sequentially numbered.

Figure 2-17. Pause and Cancel Key Self Test Label



Pause and Feed Key Self Test - Reset Defaults

Press and hold both **PAUSE** and **FEED** while turning On (**I**) the printer. Release both keys anytime after the first front panel LED turns off.

PAUSE and **FEED** together reset the printer to the default settings. These values are not saved in EEPROM, but may be saved by sending the ZPL command `^JUS` or saving through the LCD on the front panel. After entering factory defaults, the printer will remain in the paused state to let the operator know that the defaults have been loaded.

Communications Diagnostic Self-Test

The communications diagnostic mode is a troubleshooting tool for checking the interconnection between the printer and the host data device. When Diagnostics is selected, all data sent to the printer will be printed as straight ASCII hex characters. The printer prints all received characters including control codes like CR (Carriage Return).

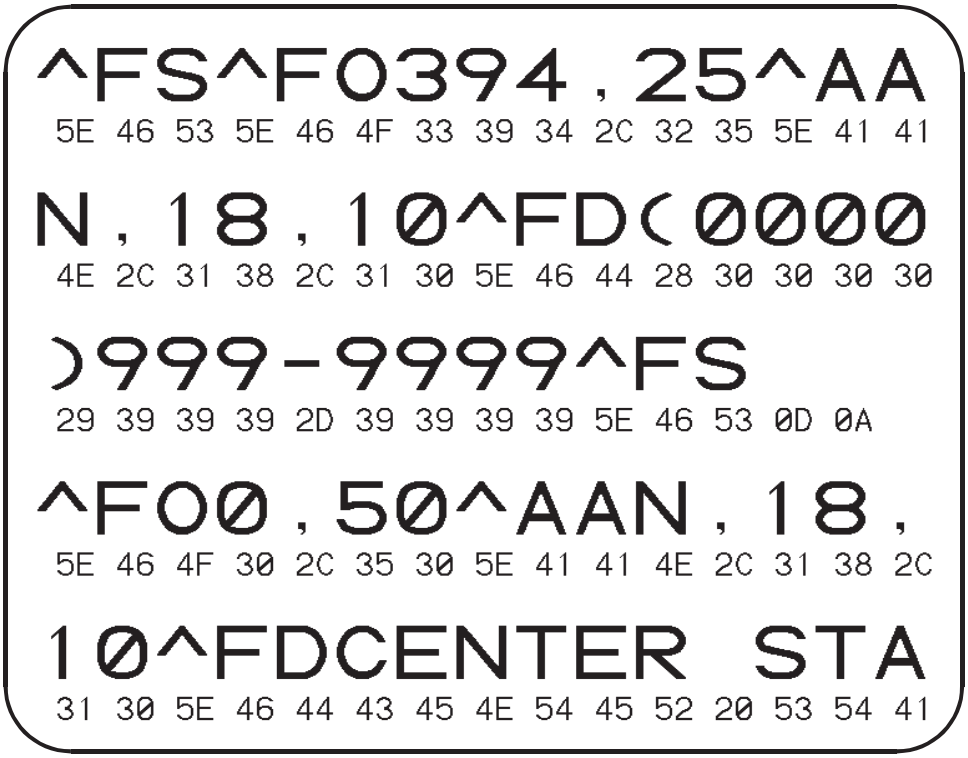
To enter the communications diagnostics mode press and hold **PLUS** (+) while turning On (**I**) the printer. Release the key anytime after the first front panel LED turns off. You can also enter the diagnostics mode by pressing **SETUP/EXIT** and then **PLUS** (+) until you get to communications. Press **SELECT** then enter the password, press **PLUS** (+) to change number and **MINUS** (–) to move cursor.

Send a label format from the host data device to the printer and observe the printout on the label stock. Figure 2-18 provides an example of the diagnostic mode printout.

Note • An FE indicates a framing error.
An OE indicates an overrun error.
An PE indicates a parity error.
An NE indicates noise.

If errors are indicated, verify your communication parameters are correct.

Figure 2-18. Communications Diagnostics Self Test




Zebra

Section 3
Troubleshooting

General

Consult the following troubleshooting tables if you encounter problems.

If you encounter any problems that cannot be corrected with the aid of this manual, contact Zebra's Technical Support immediately to minimize or avoid printer downtime. Technical Support can also assist in determining if the printer should be returned for repair (See Table 3-1 for Technical Support numbers).

Technical Support via the Internet (ZIP Support http://support.zebra.com), is also available 24 hours a day, 365 days a year.

Table 3-1. Technical Support Contact Information

Zebra Technologies 333 Corporate Woods Parkway Vernon Hills, Illinois 60061-3109 Phone: (847) 913-2259 Fax: (847) 913-2578	Zebra Technologies Europe Limited, UK Zebra House, Unit 14, The Valley Centre, Gordon Road High Wycombe, Buckinghamshire, HP13 6EQ, UK Phone: +44 (0) 1494 472872 Fax: +44 (0) 1494 450103

Zebra's Zip Support: http://support.zebra.com

Troubleshooting Charts

Symptom	Diagnosis	Action
No LEDs light.	No AC power applied to the printer.	Ensure the AC power cable is connected to a working voltage source.
	Faulty AC power fuse.	Replace fuse
	No voltage available from the internal power supply.	Replace the power supply PC board(s).
Printer locks up when running the Power On Self Test with some or all LEDs ON.	Printer not configured properly.	Refer to Pause and Cancel Key Self Test on page 44 and reload factory defaults; then reconfigure the printer for the application.
Printer stops, PAUSE LED flashes.	Printer in peel mode and no peel option installed.	Change printer operating mode to fit application.
Printer stops, PAUSE LED ON and ERROR LED flashing slow.	Printhead element is overheated.	Printer resumes printing when the printhead element cools.
Dots missing in printed area of label.	Printhead element bad. Print quality problems.	Clean or replace the printhead. Refer to Printhead and Platen Roller on page 60.
Loss of printing registration on labels.	Possible media sensor problem.	Adjust media sensor position. If problem persists, replace media sensor. Refer to Replace Reflective Media Sensor on page 117.
	Printer set for continuous media, but non-continuous media loaded.	Set printer for correct media.
	Improperly adjusted media guides.	Reposition media guides.
	Incorrect printhead pressure.	Increase printhead pressure.
Excessive vertical drift in top-of-form registration.	Incorrect media loaded or media sensor adjustments.	Reload media and check media sensor position.
Light vertical lines running through all labels.	Dirty printhead.	Clean printhead. Refer to Printhead and Platen Roller on page 60.
	Defective printhead elements.	Replace the printhead. Refer to Replace Printhead on page 65.
Light printing or no printing on the left or right side of the label.	Too little printhead pressure on the side that is too light.	Adjust printhead pressure. Refer to Adjust Print Mechanism on page 75.
Short printed lines at 45° to label edge on left or right side of label.	Too much printhead pressure.	Adjust printhead pressure. Refer to Adjust Print Mechanism on page 75.
Fine gray lines on blank labels at angles.	Wrinkled ribbon.	Refer to the wrinkled ribbon symptom in this table.
Long tracks of missing print on several labels.	Wrinkled ribbon.	See wrinkled ribbon symptom in this table.
	Print element damaged.	Clean or change printhead.
In Peel-off Mode, skewed or stuck labels.	Glue material from back of labels causing media movement problems.	Perform maintenance. Refer to Table 4-1 on page 59.
	Media and liner not properly aligned in printer.	Check media guide position.

Symptom	Diagnosis	Action
Wrinkled ribbon.	Ribbon fed through printer incorrectly.	Re-install ribbon.
	Incorrect darkness setting.	Set darkness setting to the lowest value needed, from the control panel, for good print quality.
	Incorrect printhead pressure.	Readjust printhead pressure. Refer to Adjust Print Mechanism on page 75.
	Media not feeding properly; it is walking from side to side.	Readjust media guides.
Misregistration and misprint of 1 to 3 labels.	Media was pulled when motor was not moving.	Open and close the printhead so it calibrates to find the label length.
	Incorrect media sensor position.	Reposition movable reflective media sensor or transmissive sensor.
	Media or ribbon improperly loaded.	Reload media and ribbon.
Changes in parameter settings did not take effect.	Parameters are set or saved incorrectly.	Reload the factory defaults, reconfigure the printer, save settings permanently, and cycle the power Off (**O**) and On (**I**).
ZPL was sent to printer, but not recognized. The DATA LED remains on.	Communications parameters incorrect. Prefix and delimiter characters set in printer configuration do not match the ones sent in the ZPL label formats.	Check and reset communication parameters if needed. Set the characters in the printer to match ZPL format. Check configuration label for correct characters. If problem continues, check the ZPL format for changed prefix characters. Set and save permanently via the front panel.
ZPL II was sent to printer, but not recognized. Data LED off.	Cable is not correct.	Verify correct cable is used. (If serial port is used, use a null modem cable). If parallel port is used, an IEEE 1284 cable is used.


Zebra

Section 4
Table of Contents


Zebra

Section 4
Preventive and Corrective Maintenance

Preventive Maintenance

Preventive maintenance consists of:

- Visual inspection
- Regular cleaning of the printhead and platen roller
- General cleaning of the printer's interior and exterior

An operator or technician may perform preventive maintenance (see Table 4-1 on page 59) for the preventive maintenance chart).

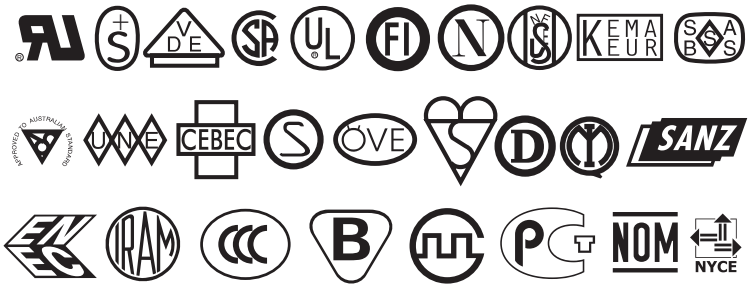
Tools Required for Preventive Maintenance

- Isopropyl alcohol (Use Zebra's Preventive Maintenance Kit, part number 47362 or a solution of 90% isopropyl alcohol and 10% deionized water.)
- Cotton swabs
- Lint free cloth
- Citrus Cleaner (GooGone®)

Equipment Safety Tips

After reviewing each procedure, place a check in the box.

❑ The AC power plug and IEC 320 connectors on all Zebra printers must bear the certification mark of at least one of the international safety organizations listed below.



❑ Unless indicated otherwise, turn Off (**O**) the printer before performing any maintenance procedures to the printer.

❑ Zebra printers comply with international regulations governing radiated emissions when using fully shielded data cables. Data cables must be fully shielded and fitted with metal or metallized connector shells. Required shielded data cables and connectors prevent radiation and reception of electrical noise. Use of non-shielded data cables may increase radiated emissions above the regulated limits.

❑ Permanent damage to the flash memory will result if you power up the printer with flash memory chips installed in the wrong direction.

❑ To ensure optimum printhead life, proper electrostatic safety precautions (such as ESD wrist straps) when removing, handling, and replacing the printhead.

Equipment Safety Tips (Continued)

- ❏ Zebra recommends using a solution containing 90% isopropyl alcohol, 10% de-ionized water for cleaning of:
  - Printheads
  - Platen Rollers
  - Peel-Off Roller
  - Media Path
  - Peel/Tear Bar
  - Spindles

  For cleaning tougher adhesives use a citrus cleaner such as GooGone.

- ❏ Ribbons used in the printers must be as wide as or wider than the media. If the ribbon is narrower than the media, areas of the printhead will be unprotected and subject to premature wear.

- ❏ Install Zebra printers on a solid, level surface of sufficient size and strength to accommodate the physical dimensions and weight of the unit. The area enclosure in which the printer will operate must meet the environmental conditions specified in the *Maintenance Manual* or *User Guide*. Electrical power must be available and in close proximity to the printer.

Personal Safety Tips

❑ Do not wear any jewelry (rings, watches, etc.) or loose clothing when servicing the printers.

❑ Beware of “Pinch Points” on the printers. Be especially careful of:

- Opening and closing of covers
- Printhead
- Rewind Spindle
- Platen Roller

❑ Wear protective eye wear when removing E-rings, C-clips, snaprings, and springs. These are under tension and could fly off while removing.

❑ For personnel and equipment safety, always use an approved three-conductor power cord specific to the region our country intended for installation. This cord must use an IEC-320 female connector, and the appropriate region-specific three-conductor grounded plug configuration.

Cleaning

Exterior

The exterior surfaces of the printer may be cleaned with a lint-free cloth. Do not use harsh or abrasive cleaning agents or solvents. If necessary, a mild detergent or desktop cleaner may be used sparingly.

Interior

Remove any accumulated dirt and lint from the interior of the printer using a soft bristle brush and/or vacuum cleaner.

Refer to Table 4-1 for the correct interval for cleaning the printhead and platen roller. Poor print quality as represented by uneven print darkness, blank areas in bar codes or graphics, or illegible numbers and letters, may indicate a dirty printhead and/or platen roller.

Recommended Preventive Maintenance Schedule

Table 4-1. Preventive Maintenance Schedule

<table>
<tr><th colspan="2">Area</th><th>Method</th><th>Interval</th></tr>
<tr><td colspan="2">Printhead</td><td>Solvent*</td><td rowspan="8">After every roll of media or 500 feet of fanfold media when printing in the direct thermal mode.

After every roll of ribbon when printing in the thermal transfer mode.

These intervals are intended as guidelines only. You may have to clean more often, depending upon your application and media.</td></tr>
<tr><td colspan="2">Platen Roller</td><td>Solvent*</td></tr>
<tr><td colspan="2">Media Sensor</td><td>Air blow</td></tr>
<tr><td colspan="2">Ribbon Sensor</td><td>Air blow</td></tr>
<tr><td colspan="2">Media Path (Dancer Assembly)</td><td>Solvent* + cloth</td></tr>
<tr><td colspan="2">Ribbon Path</td><td>Solvent*</td></tr>
<tr><td rowspan="2">Cutter Assembly</td><td>If cutting continuous, pressure-sensitive media</td><td>Citrus-based cleaner (GooGone)</td><td>After every roll of media (or more often, depending upon your application and media).</td></tr>
<tr><td>If cutting tag stock or label liner material</td><td>Solvent* and air blow</td><td>After every two or three rolls of media.</td></tr>
<tr><td colspan="2">Tear-Off/Peel-Off Bar</td><td>Solvent*</td><td>Once per roll of media.</td></tr>
<tr><td colspan="2">Media Take Up Spindle (Optional)</td><td colspan="2">Formal preventive maintenance is not required on these spindles.</td></tr>
<tr><td colspan="2">Ribbon Take-Up Assembly</td><td colspan="2">Ribbon supply and ribbon take-up assembly – once per year or after 200 rolls of ribbon.
This spindle should only be disassembled and cleaned with Zebra solvent* for it to operate smoothly.</td></tr>
<tr><td colspan="2">Take label sensor</td><td>Air blow</td><td>Once every six months.</td></tr>
<tr><td colspan="2">Peel</td><td>Solvent*</td><td>Every ribbon roll or sooner if needed.</td></tr>
</table>

*Use Zebra's Preventive Maintenance Kit, Part Number 47362 or a solution of 90% isopropyl alcohol and 10% deionized water.

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

Caution • The printhead is hot and can cause severe burns. Allow the printhead to cool.

Printhead and Platen Roller

Poor print quality as represented by uneven print darkness, blank areas in bar codes or graphics, or illegible numbers and letters, may indicate a dirty printhead and/or platen roller.

Note • The printer can remain on while you are cleaning the printhead. In this way all label formats, images, and all temporary parameter settings stored in the printer's internal memory are saved.

To clean the printhead and platen roller, refer to Figure 4-1 and follow these steps:

1. Open the printhead assembly.

Caution • Be sure the printhead is fully open and latched in the open position.

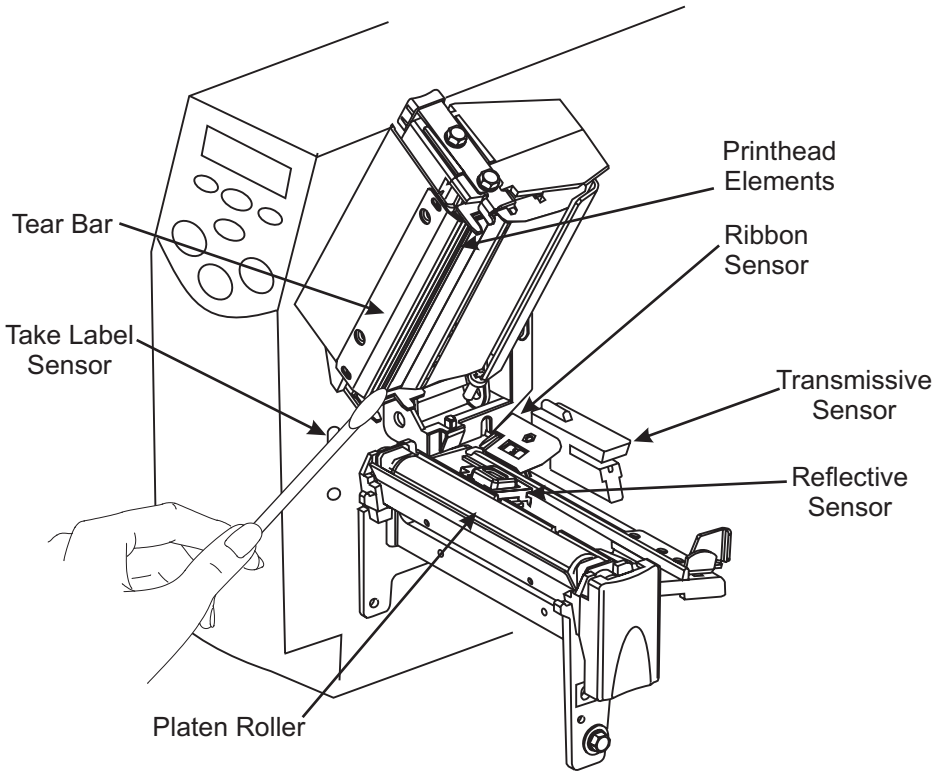
Caution • Do not use sharp objects to clean the printhead or platen roller.

2. Remove the media and ribbon.
3. Using a swab soaked in the Zebra-recommended solvent[1], wipe along the print elements from end to end. The print elements are on the brown strip just behind the chrome strip on the printhead. Allow sufficient time for the solvent to evaporate.
4. Manually rotate the platen roller and clean thoroughly with solvent and a swab.
5. Brush or vacuum any accumulated paper lint and dust away from the media and ribbon paths.
6. Reload media and/or ribbon, and close the printhead assembly.

Note • If print quality has not improved after performing this procedure, try cleaning the printhead with Save-a-Printhead cleaning film. This specially coated material removes contamination buildup without damaging the printhead. Call your authorized Zebra reseller for more information.

1. Use Zebra's Preventive Maintenance Kit, Part Number 47362 or a solution of 90% isopropyl alcohol and 10% deionized water.

Figure 4-1. Printhead, Platen Roller and Sensor Cleaning



Sensors

Refer to Figure 4-1. Brush or vacuum any accumulated paper lint and dust away from the printer sensors. The reflective sensor, transmissive sensor, and ribbon sensor should be cleaned on a regular basis to ensure proper operation of the printer. For printers with the peel and power peel option installed, clean the take label sensor and reflective surface on power peel.

Peel Module

(Peel option required)

Refer to Figure 4-2. Perform the following procedure if adhesive buildup begins to affect peel-off performance.

1. Open the printhead assembly.

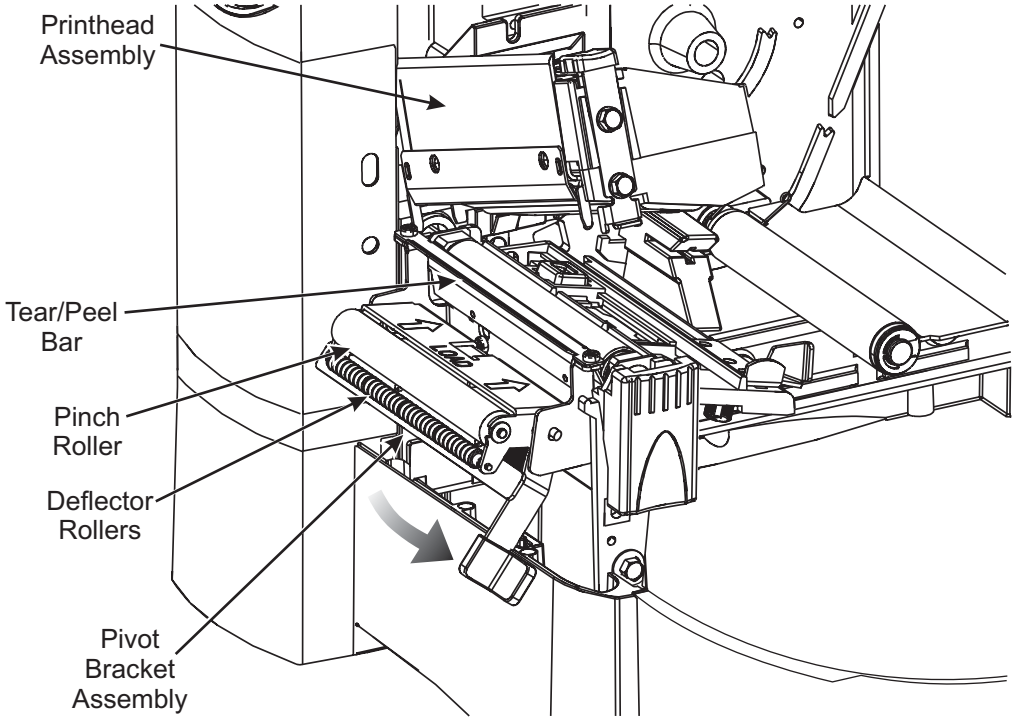
Caution • Be sure the printhead is fully open and latched in the open position.

2. Open the pivot bracket assembly by pivoting the module toward you.

Note • Do not push down in the middle of the tear/peel bar; it may bend.

3. Use a swab soaked with the Zebra-recommended solvent[1] to remove adhesive from the tear/peel bar.
4. Manually rotate the pinch and deflector rollers, and clean thoroughly with solvent and a swab.
5. Close the pivot bracket assembly.
6. Close the printhead assembly.

Figure 4-2. Cleaning the Peel-Off Module



1.Use Zebra's Preventive Maintenance Kit, Part Number 47362 or a solution of 90% isopropyl alcohol and 10% deionized water.

Cutter Module

(Cutter option required)

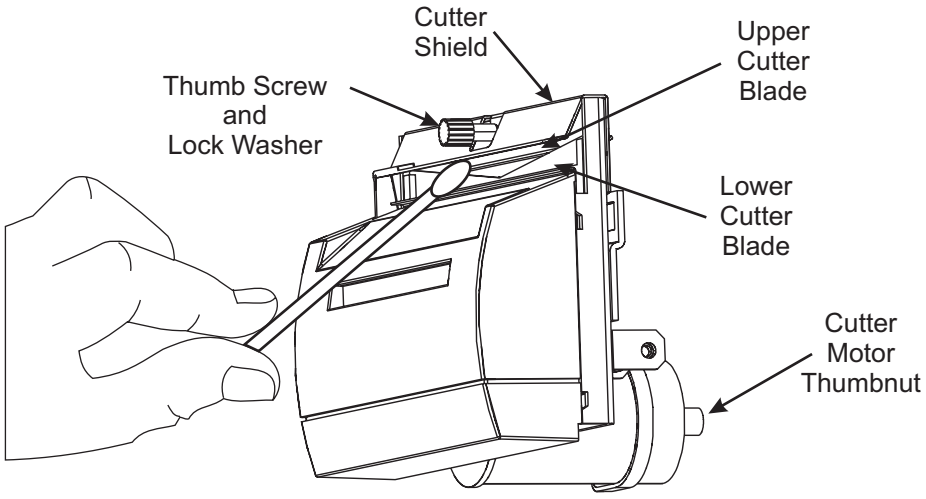
Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

Caution • The cutter blade is sharp. Do not touch or rub the blade with your fingers.

Refer to Figure 4-3. Use the following procedure to clean adhesive off of the upper and lower cutter blades:

1. Remove the cutter shield by removing the thumb screw and lock washer.
2. Use a swab moistened with the Zebra-recommended solvent to wipe along the upper cutter blade. For cleaning tougher adhesives use a citrus cleaner such as GooGone.
3. To expose the lower cutter blade, turn the cutter motor thumb nut counterclockwise until you see the "V"-shaped lower cutter blade.
4. Use a swab with the Zebra-recommended solvent and wipe along the lower blade.
5. Replace the cutter shield.
6. When you have finished cleaning the cutter module, plug in and turn On (**I**) the printer. The lower cutter blade returns to its correct operating positions.
7. If the cutter continues to perform unsatisfactorily, contact an authorized service technician.

Figure 4-3. Cutter Module Cleaning



Lubrication

Important No lubricating agents of any kind should be used on this printer. Some commercially available lubricants will damage the finish and the mechanical parts.

Corrective Maintenance

Corrective maintenance consists of the following:

- Troubleshooting printer faults to a modular level.
- Replacing or adjusting faulty or inoperable components.
- Returning the printer to proper operating condition.

Tools Required

- Standard screwdriver set
- Phillips screwdriver set
- Metric hex key (allen wrench) set
- Standard hex key (allen wrench) set
- Metric nut driver set
- Standard nut driver set
- Long needle nose pliers
- Four Inch (100 mm) Adjustable (Crescent) Wrench
- Antistatic wrist strap and mat
- Isopropyl Alcohol; Zebra's Preventive Maintenance Kit, part number 47362 or a solution of 90% alcohol/10% de-ionized water
- Cotton swabs and lint free cloths
- 0.060 inch feeler gauge or shim
- Punch set

Replace Printhead

Use the following procedure to replace the printhead.

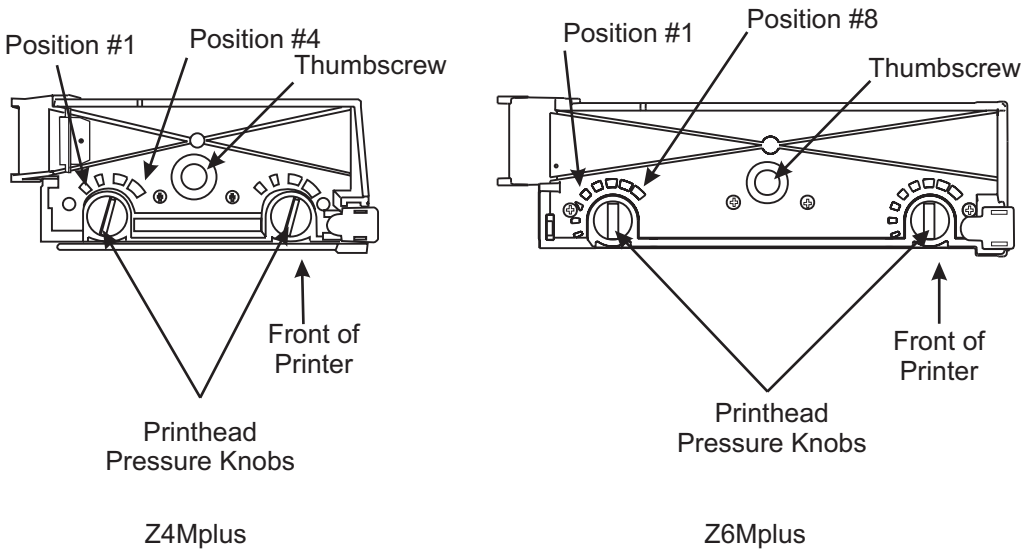
Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

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

Remove Printhead

1. Turn Off (**O**) the printer and disconnect the AC power cord and data cables.
2. Open the media door and remove the media and ribbon.
3. Refer to Figure 4-4. Rotate the two printhead pressure dials to position #1.

Figure 4-4. Top View of Print Mechanism



Note • Printers with peel or cutter options may need to have them removed for ease of removal and installation of printhead.

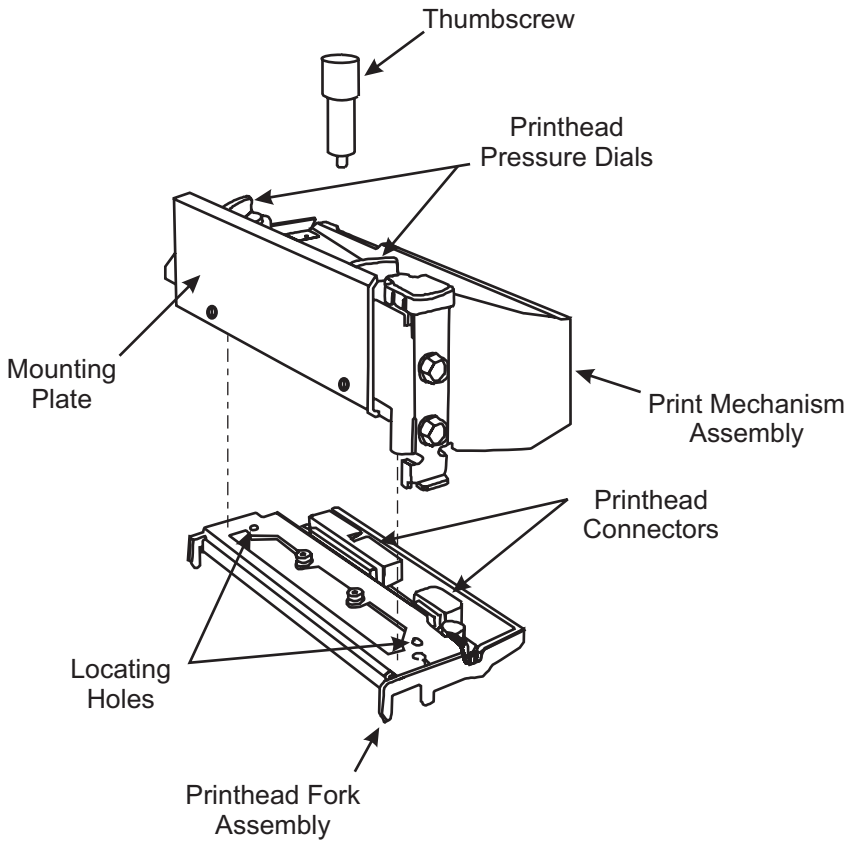
Caution • The printhead is hot and can cause severe burns. Allow the printhead to cool.

4. Refer to Figure 4-5. Remove the printhead thumbscrew.

Caution • Be sure the printhead is fully open and latched in the open position.

5. Unlatch the print mechanism, lift and latch it in the open position.
6. Slide the printhead fork assembly out of the print mechanism.
7. With the cable connectors exposed, carefully disconnect the two printhead cables from the printhead assembly.

Figure 4-5. Printhead Removal/Install



Install Printhead

See Figures 4-4 and 4-5.

1. Connect the printhead cables to the printhead fork assembly and carefully slide the assembly into the print mechanism.

Caution • Both the printhead data cable and the power cable must be fully seated to avoid potential printhead failure and/or injury. Failure to seat both cables properly may result in false `head cold` warnings and cause injury if the printhead is touched.

Note • When mounting the printhead fork assembly onto the print mechanism, visually inspect and ensure the cables are in their channels at the back of their carrier assembly, power cable under data cable, and are not binding on the print mechanism.

2. Ensure the two locating protrusions on the print mechanism mounting plate snap into the locating holes on the printhead fork assembly. Move the assembly back and forth to be sure that it is engaged. There should be little movement.
3. Close the print mechanism and secure the printhead to the mechanism with the previously removed thumbscrew.
4. Rotate the two printhead pressure dials to the desired position for your daily printing.
5. Clean the printhead and platen roller.

Caution • Do not use sharp objects to clean the printhead or platen roller.

6. Reinstall ribbon and media, reconnect the AC power cord, reconnect the data cables and turn On (**I**) the printer.

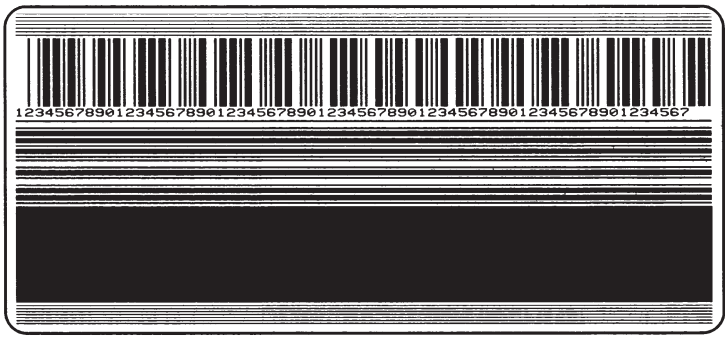
7. Refer to Figure 4-6. After completing a Power-On Self Test (POST), print a configuration label by performing a Cancel Key Self Test to verify print quality.
8. Press and hold **CANCEL** while turning On (**I**) the printer; a configuration label will print.

Figure 4-6. Configuration Label

```
PRINTER CONFIGURATION

Zebra Technologies
ZTC Z4Mplus-200dpi

+10.................. DARKNESS
+000................. TEAR OFF
TEAR OFF............. PRINT MODE
NON-CONTINUOUS..... MEDIA TYPE
WEB.................. SENSOR TYPE
AUTO SELECT........ SENSOR SELECT
THERMAL-TRANS...... PRINT METHOD
104 0/8 MM......... PRINT  WIDTH
1233................. LABEL LENGTH
PARALLEL............. PARALLEL COMM.
RS232................ SERIAL COMM.
19200................ BAUD
8 BITS............... DATA BITS
NONE................. PARITY
DSR/DTR.............. HOST HANDSHAKE
NONE................. PROTOCOL
000.................. NETWORK ID
NORMAL MODE......... COMMUNICATIONS
<~>  7EH............ CONTROL PREFIX
<^>  5EH............ FORMAT PREFIX
<,>  2CH............ DELIMITER CHAR
ZPL II............... ZPL MODE
CALIBRATION......... MEDIA POWER UP
CALIBRATION......... HEAD CLOSE
DEFAULT.............. BACKFEED
+000................. LABEL TOP
-0030................ LEFT POSITION
023.................. WEB S.
066.................. MEDIA S.
073.................. RIBBON S.
167.................. MEDIA LED
000.................. RIBBON LED
+10.................. LCD ADJUST
DPSWFXM.............. MODES ENABLED
....................  MODES DISABLED
832 8/MM FULL....... RESOLUTION
V 44.12.4      <-.... FIRMWARE
VX.X.X.X............. HARDWARE ID
CUSTOMIZED.......... CONFIGURATION
3072.............R: RAM
8192.............B: MEMORY CARD
2048.............E: ONBOARD FLASH
NONE................. FORMAT CONVERT
NONE................. OPTION
NONE................. ZEBRA NET II

FIRMWARE IN THIS PRINTER IS COPYRIGHTED
```

9. Refer to Figure 4-7. Perform a Pause Test also to verify print quality.
10. Press and hold **PAUSE** while turning On (**I**) the printer; a Pause Test label will print.

Figure 4-7. Pause Test Label



Changeover Printhead

A field installable option for Z4Mplus permits changing the printhead density and drive system from 203 dpi to 300 dpi.

Caution • This installation must be performed by a qualified service technician.

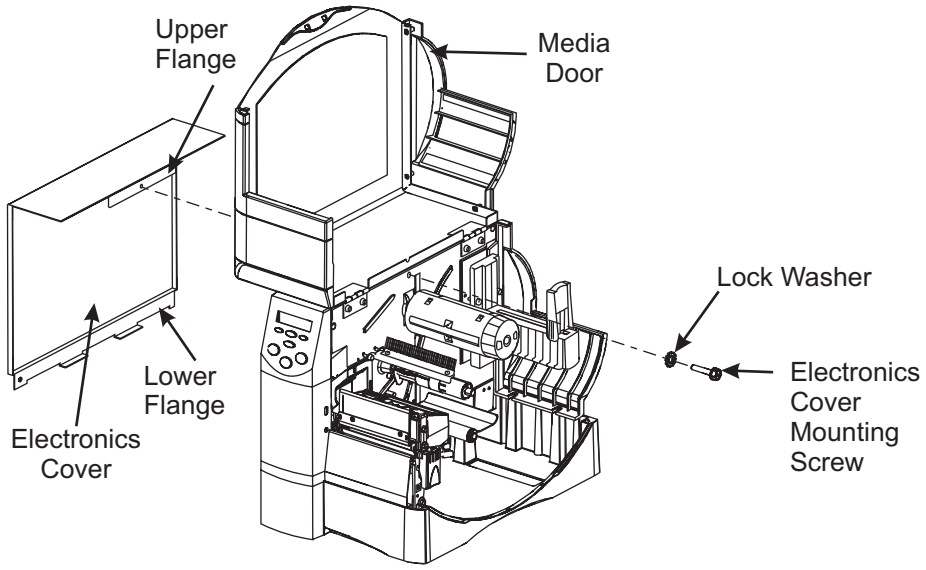
Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

1. Refer to Replace Printhead on page 65. Remove the 203 or 300 dpi printhead and install the 203 or 300 dpi printhead supplied in the kit.

Note • After completing step 5 of Install Printhead on page 67, continue to step 2 below.

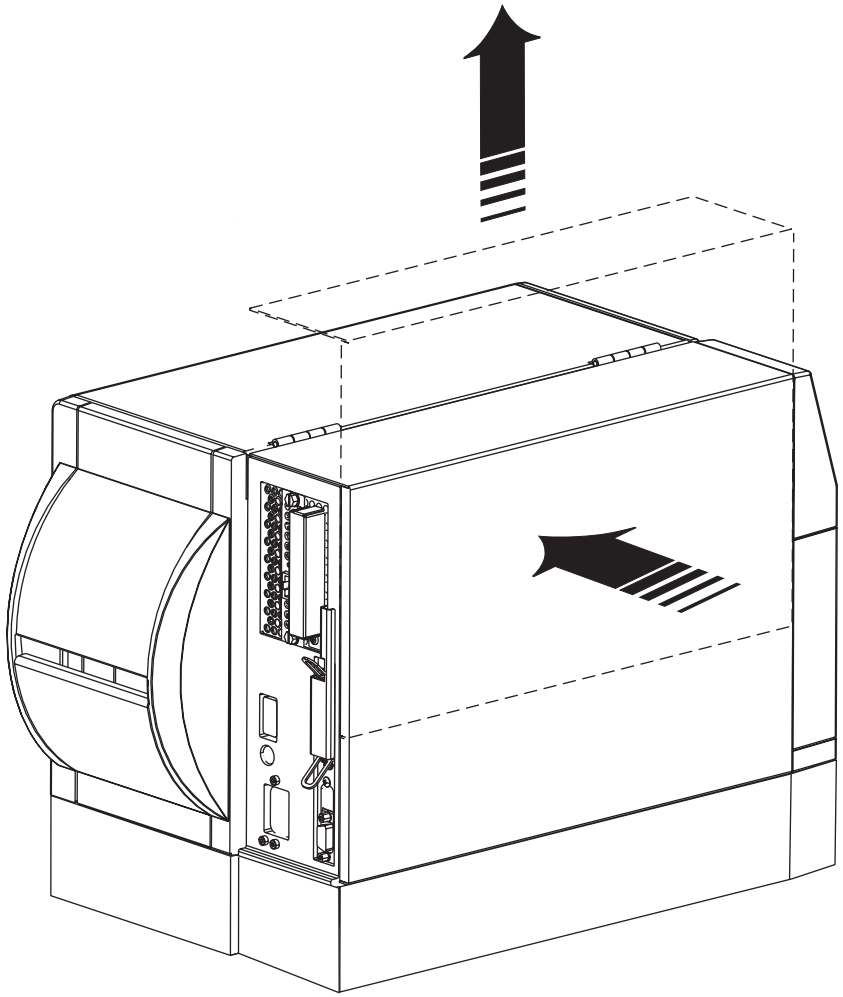
2. Ensure the printer is turned Off (**O**) and that the AC power cord and data cables are removed.
3. Refer to Figure 4-8. Open the media door, remove the electronics cover mounting screw and lock washer.
4. Close the media door.

Figure 4-8. Locate Electronics Cover Mounting Screw



5. Refer to Figure 4-9. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.

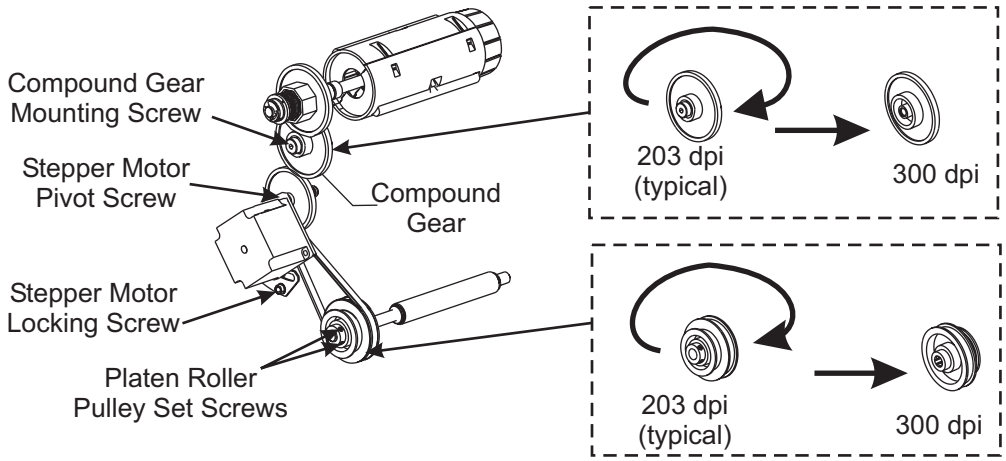
Figure 4-9. Remove the Electronics Cover



6. Refer to Figure 4-10. Remove the compound gear mounting screw. Turn the gear around.
7. Slide the gear back onto the printer, ensuring the gears mesh properly.
8. Secure the gear to the printer using the screw previously removed.
9. Loosen the stepper motor locking screw and the pivot screw. Swing the stepper motor up to remove tension from the belt and then tighten the locking screw in this position. Remove the belt from the stepper motor drive gear.
10. Remove and retain the two set screws on the platen roller pulley. Remove the pulley and belt. Turn the pulley around so that the large pulley faces away from the printer.
11. Slide the compound pulley onto the platen roller shaft. Ensure a 0.020 in. (0.5 mm) clearance is between the platen roller pulley and the main frame. Install the set screws in the outboard compound pulley.
12. Refer to Figure 4-10. Rotate the compound pulley to align the set screws with the flat spots on the platen roller shaft. Tighten the two set screws to secure the pulley to the platen roller shaft.

Note • Ensure there is approximately a 0.020 in. (0.5 mm) gap between the pulley and the printer frame.

Figure 4-10. Change the Compound Gear and Platen Roller Pulley



13. Loosen the stepper motor locking screw. While lifting up on the stepper motor, place the belt onto the stepper motor drive gear and platen roller pulley.

Note • Belt deflection should be no more than 0.25 in. (6 mm).

14. Adjust the position of the stepper motor to achieve the correct belt deflection.
15. Tighten the locking screw to secure the motor. Tighten the pivot screw.
16. Refer to Figure 4-9. Reinstall the electronics cover by aligning it and sliding down, ensuring the lower flange is inside the base and the upper flange is between the main frame and the media door.
17. Reopen the media door and reinstall the mounting screw and lock washer to secure the electronics cover.
18. Reinstall the media and ribbon.
19. Reconnect the AC Power cord and data cables.
20. Turn On (**I**) the printer.
21. Return to step 7 on page 70 and complete the printhead installation.

Replace Latch Kit

Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

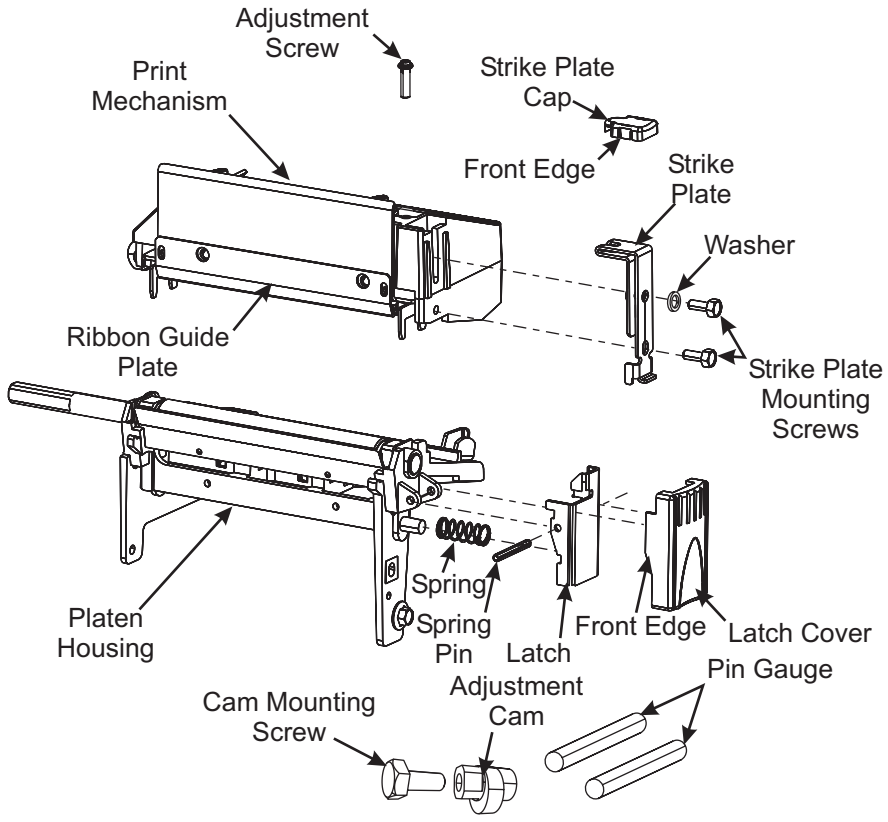
Remove Latch

1. Turn Off (**O**) the printer and disconnect the AC power cord and data cables.
2. Open the media door and remove the ribbon and media.

Caution • Wear protective eyewear when removing E-rings, C-clips, snaprings, and springs. These are under tension and could fly off while removing.

3. Refer to Figure 4-11. Remove the strike plate cap by prying up on the front edge with a small screwdriver.
4. Remove the latch cover by prying out on the front edge with a small screwdriver.
5. Remove the two screws securing the strike plate to the side of the print mechanism.
6. Pull out on the bottom of the strike plate while removing the adjustment screw from the print mechanism.

Figure 4-11. Latch Kit Parts



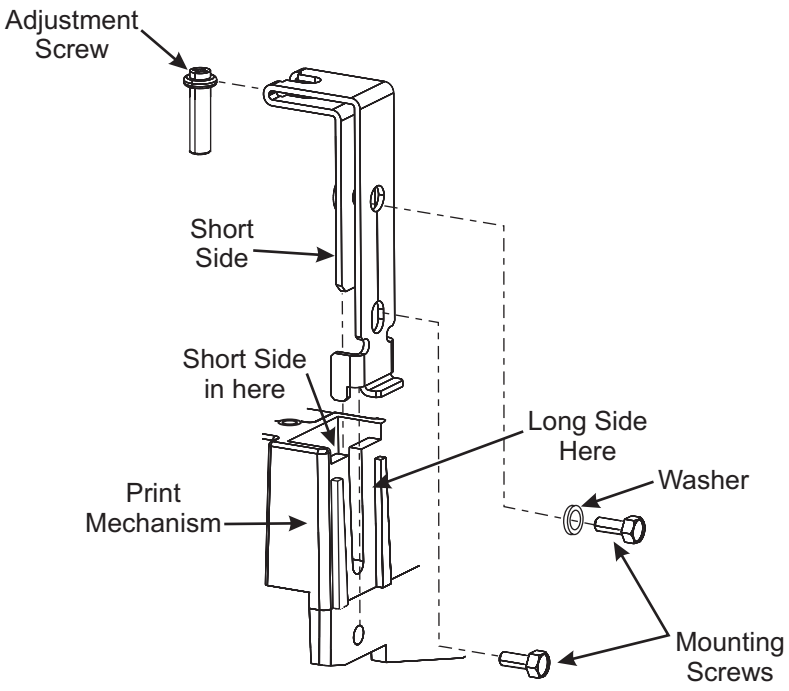
Note • The spring pin must be tapped out from the rear and removed from the front of the platen housing. Trying to remove the pin in the other direction will damage the platen housing.

7. Using a small punch, very lightly tap the spring pin from the rear of the platen housing until it is free from the latch and can be removed.
8. Remove the latch and compression spring.

Install Latch

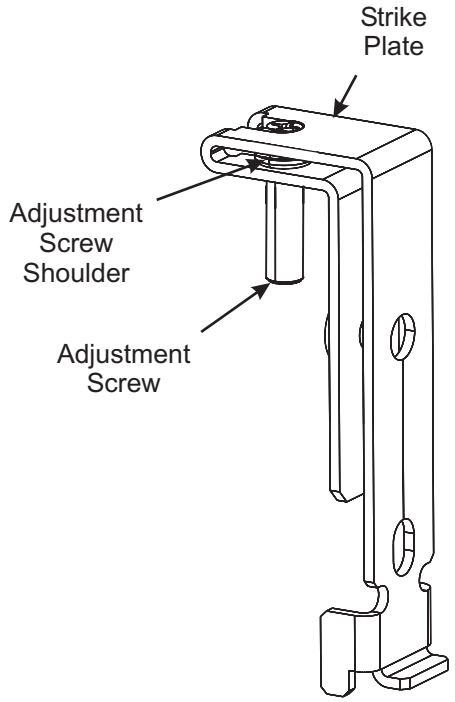
1. Refer to Figure 4-11. Install the compression spring on platen housing post.
2. Align latch with spring pin holes. Insert the spring pin through the front hole of the latch and though the platen housing. The rear hole in the latch is the only small one and you will need to tap on the spring pin. Lightly tap the spring pin into the rear hole. Leave equal amounts of spring pin sticking out on each side of latch.
3. Install the strike plate partially into print mechanism by sliding the short side to the inside of print mechanism as seen in Figure 4-12.

Figure 4-12. Strike Plate Installation



4. Install the adjustment screw into the strike plate by sliding it in the opening as seen in Figure 4-13.

Figure 4-13. Adjustment Screw Location



5. Refer to Figure 4-14. Tighten the adjustment screw until the top of the strike plate is just below the top of the ribbon guide plate.
6. Refer to Figure 4-12. Insert the two mounting screws and washer through the strike plate and into the print mechanism. Do not tighten at this time; leave them approximately ½ turn loose.
7. Latch the print mechanism.

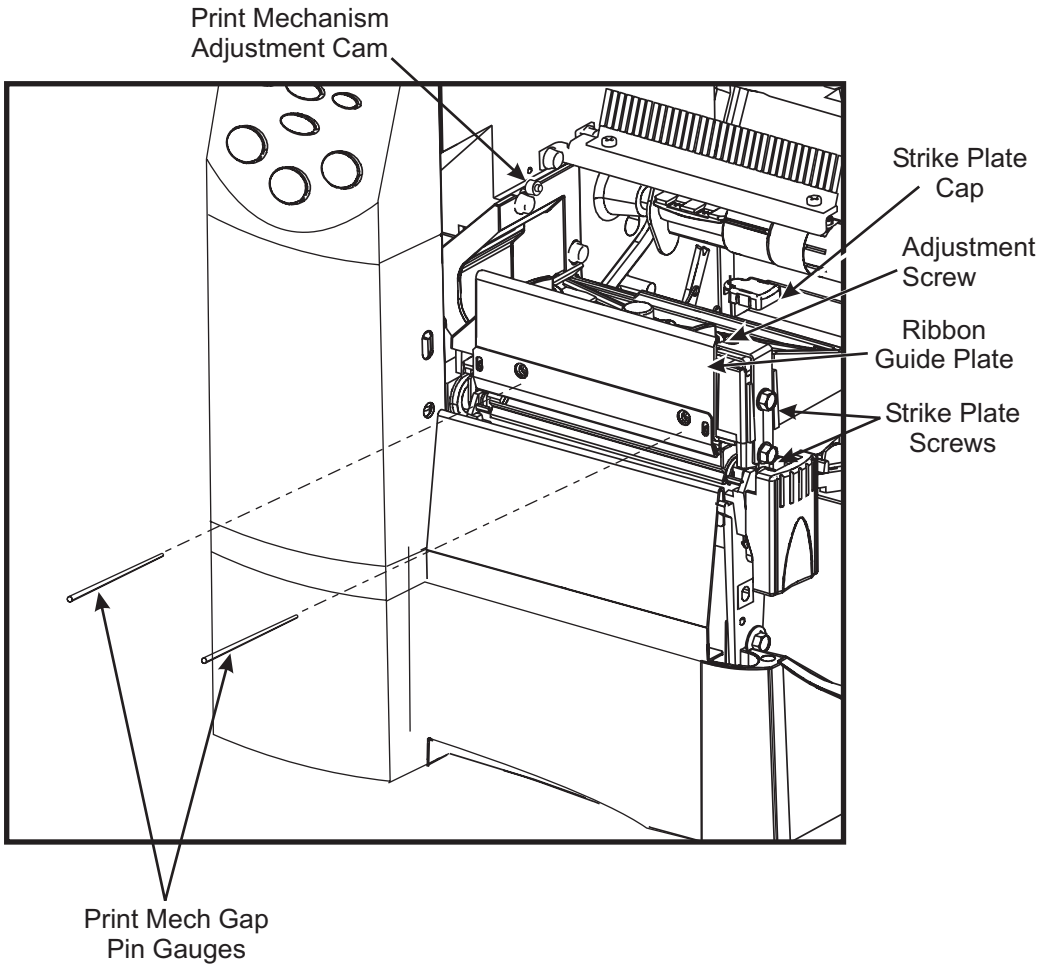
Adjust Print Mechanism

1. Refer to Figure 4-14. Insert the print mechanism gap pin gauges through the holes provided in the front of the ribbon guide plate.

Note • Gap pin gauges and the adjusting cam are supplied in the print mechanism latch maintenance kit.

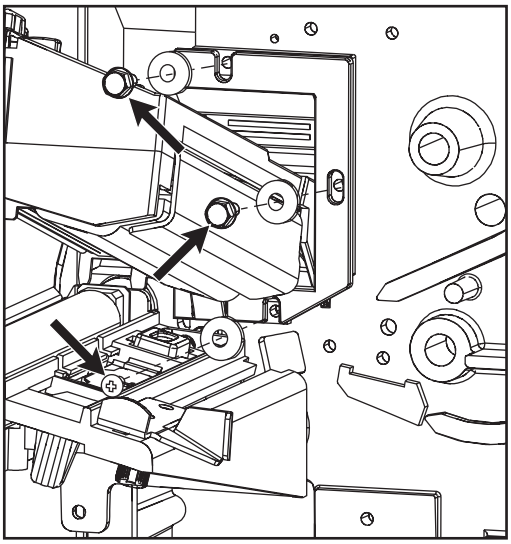
2. Turn the adjustment screw until a small amount of friction is felt on the outside gap pin gauge.
3. Snug the two strike plate mounting screws.
4. Verify, with gauge pin, that the inside print mechanism adjustment is correct. A slight friction should be felt when sliding the inside pin in and out of the inside hole. If adjustment is fine, go to step 9. If not, continue with next step.
5. Install the print mechanism adjustment cam and screw. Turn the cam until it is against the edge of the print mechanism.

Figure 4-14. Print Mechanism Adjustments



6. Refer to Figure 4-15. Slightly loosen the three mounting screws securing the print mechanism assembly to the main frame.
7. Place a small crescent wrench on the print mechanism adjustment cam. Turn the cam counterclockwise and push in and pull out the inside gap pin gauge. Adjust the cam until a small amount of friction can be felt. Snug the two top screws.
8. After aligning the inside pin gauge, verify that the outside adjustment is correct. Check both pin gauges for equal amount of friction. Repeat this procedure until equal pressure is obtained. Tighten the latch plate strike screws.
9. Refer to Figure 4-15. Tighten the three screws securing the print mechanism.
10. Remove the adjustment cam and screw and save for future use.

Figure 4-15. Print Mechanism Mounting Screws



11. Reinstall the strike plate cap.
12. Reinstall the latch cover.
13. Reinstall the media and ribbon.
14. Reconnect the AC Power cord and data cables.
15. Turn On (**I**) the printer.

Replace Platen Roller

If the platen roller is cut or cracked, it needs to be replaced. A damaged platen roller contributes dramatically to poor print quality.

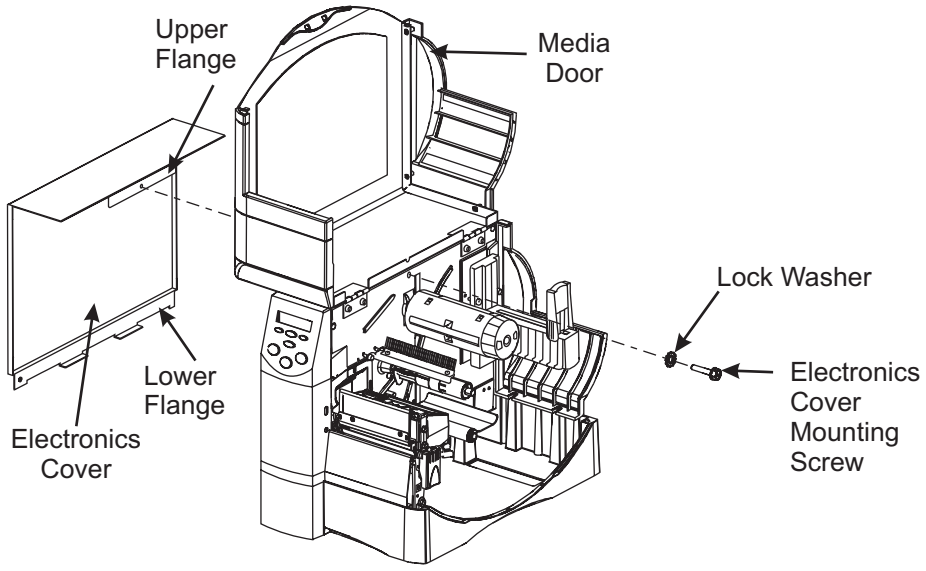
Caution • This installation must be performed by a qualified service technician.

Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

Remove Platen Roller

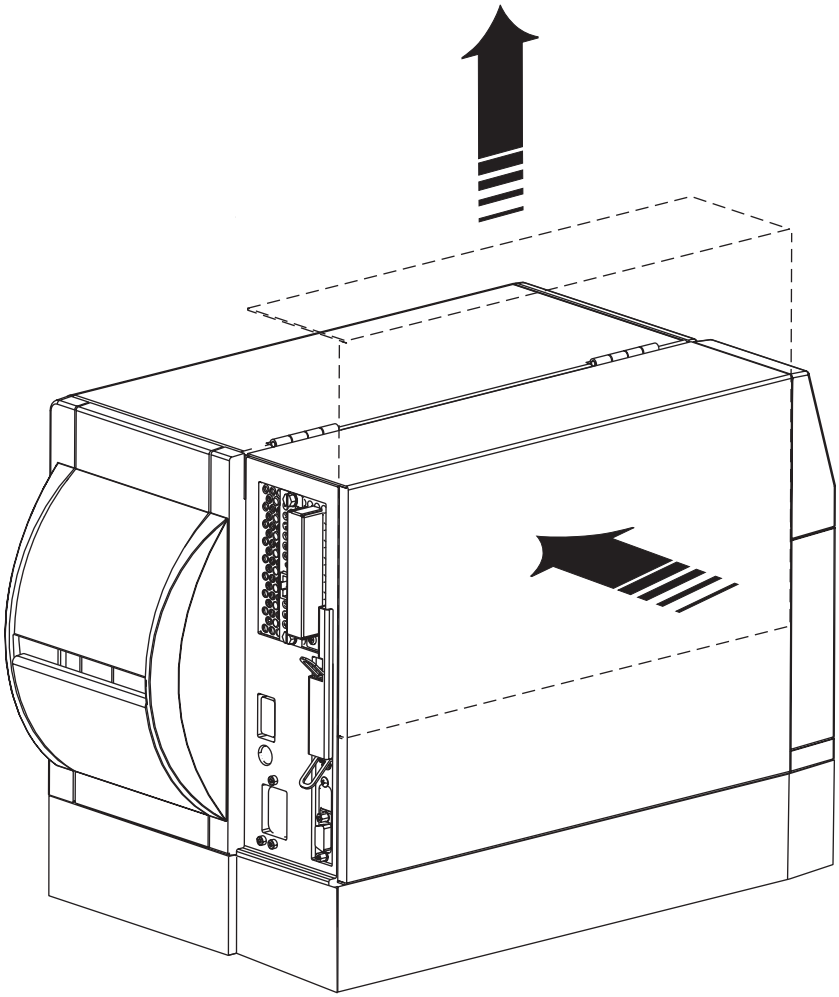
1. Turn Off (**O**) the printer and remove the AC power cord and data cables.
2. Refer to Figure 4-16. Open the media door, remove the electronics cover mounting screw and lock washer.
3. Remove the media and ribbon.
4. Close the media door.

Figure 4-16. Locate Electronics Cover Mounting Screw



5. Refer to Figure 4-17. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.

Figure 4-17. Remove the Electronics Cover

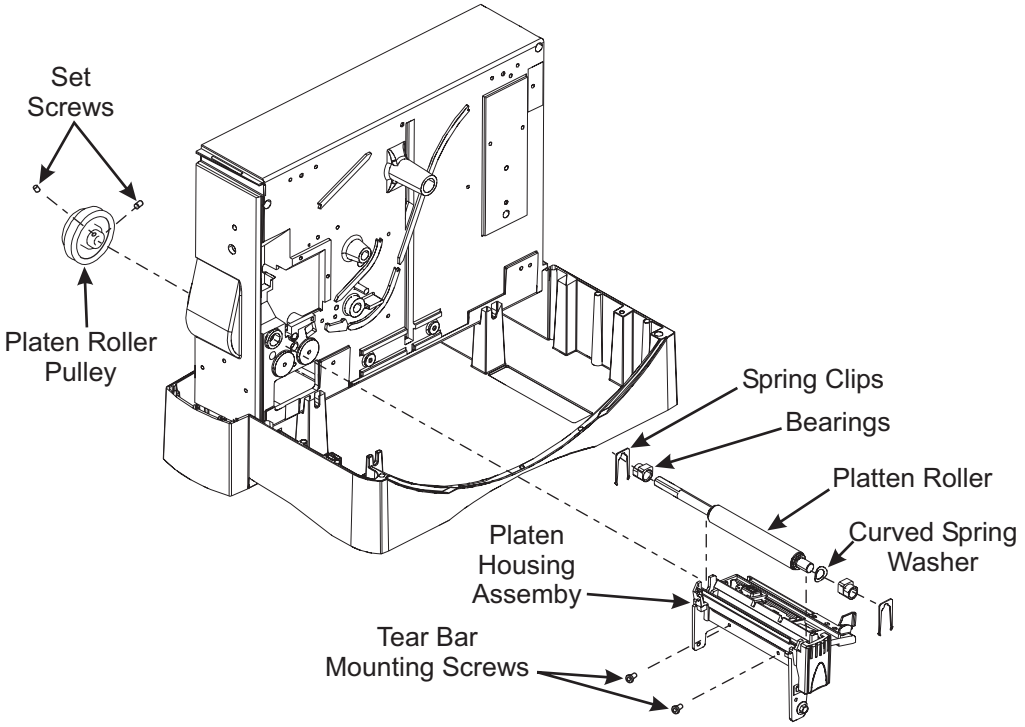


6. Refer to Figure 4-10 on page 71. Loosen the stepper motor locking screw and loosen the pivot screw. Pivot up the stepper motor and remove the drive belt.

Note • Make a note of the orientation of the pulley and around which pulley the belt is installed.

7. Refer to Figure 4-18. Loosen the two set screws on the platen roller pulley. Remove the pulley and belt from the platen roller shaft.

Figure 4-18. Platen Roller Assembly (Z4Mplus Shown)



8. Remove the two tear bar mounting screws and tear bar.

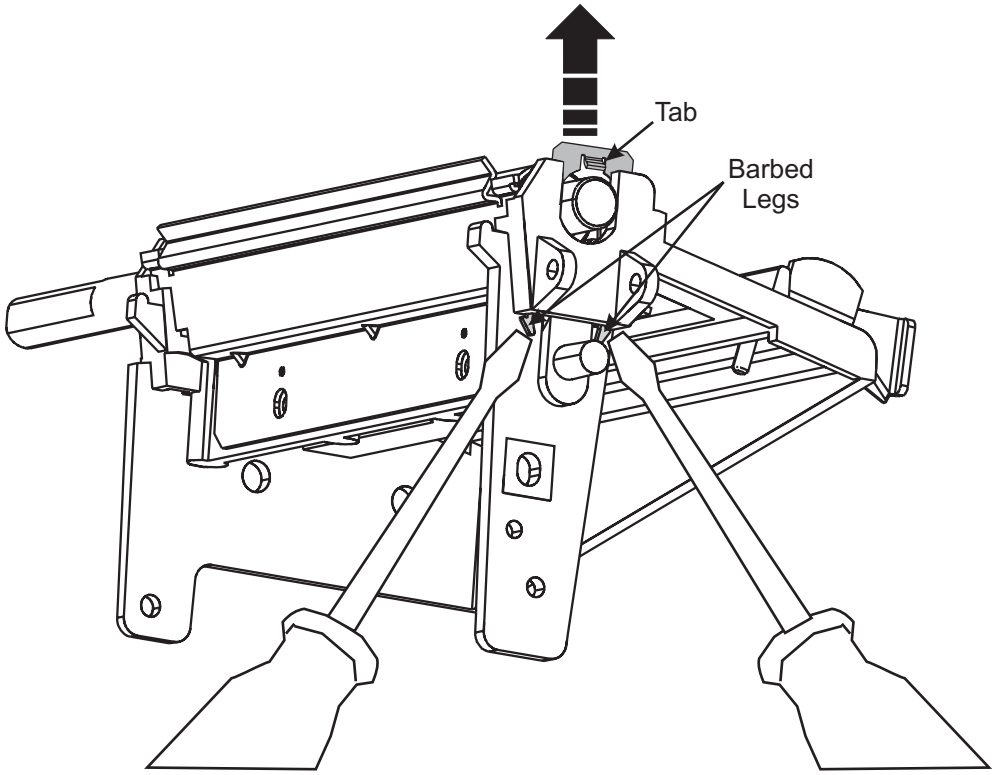
Caution • Wear protective eyewear when removing E-rings. C-clips, snaprings, and springs. These are under tension and could fly off while removing.

Note • The inner spring clip does not have to be removed to remove the platen roller and bearings.

9. Refer to Figure 4-19. Using two standard screwdrivers or needle nose pliers, squeeze and push up on the barbed legs of outer spring clip to disengage it from the platen housing.
10. Locate the circular cut-out on the top of the outer spring clip, insert a screwdriver, gently pry up and remove the clip.

Note • If needed, loosen the inboard clip using the same procedure.

Figure 4-19. Platen Roller Disassembly



11. Remove and discard the platen roller and bearings.

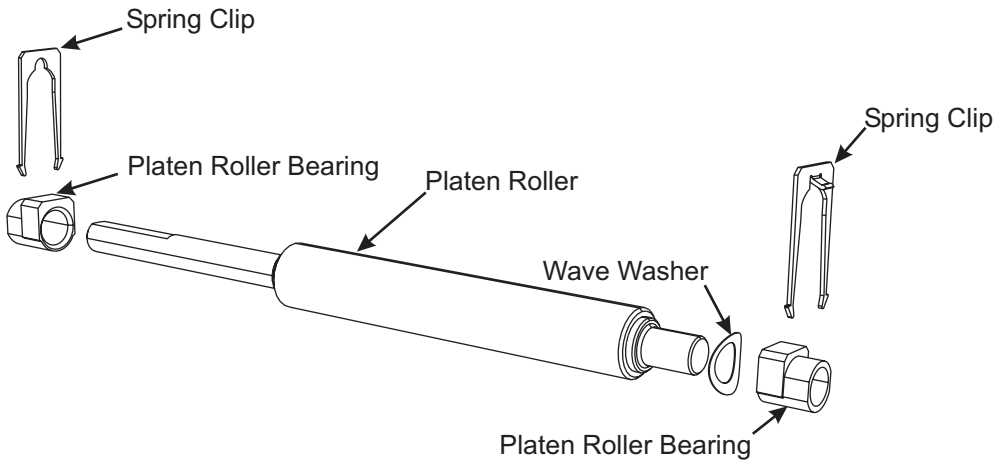
Install Platen Roller

1. If you removed the old inboard spring clip, insert a new spring clip part way into the inboard platen housing.

Note • The flat side of the bearing must face up.

2. Refer to Figure 4-20. Install the inboard bearing on to the inboard shaft of the platen roller as shown.
3. Insert the platen roller shaft through the inboard clip. Start the new inboard bearing into the clip. Work the inboard bearing back and forth until the bearing is up against the clip. The round side of the bearing goes down into the housing.

Figure 4-20. Platen Roller Kit



4. Once the inboard bearing is fully against the clip, angle up the outboard end of the platen just enough to slide on the wave washer and outboard bearing. Seat the platen roller and bearings in the platen housing.
5. Verify that the bearings are seated in the housing with the flat side up. Position the outer clip straight over the circular part of the outboard bearing. Press or tap on the spring clips until they completely seat (snap) into the housing.
6. Refer to Figure 4-18. Reinstall the tear bar and tighten the mounting screws.

Note • The large diameter pulley is used for 203 dpi printing and the small diameter pulley is used for 300 dpi printing.

7. Refer to step 7 on page 79. Orient the compound pulley as noted in step 7 and reinstall the belt around the pulley it was removed from.
8. Refer to Figure 4-10. Rotate the compound pulley aligning the two set screws with the flat spots on the platen roller shaft. Tighten the two set screws to secure the pulley to the platen roller shaft.

Note • Belt deflection should be no more than 0.25 in. (6 mm).

9. While lifting up on the stepper motor, place the belt onto the stepper motor drive gear.
10. Adjust the position of the stepper motor to achieve the correct belt deflection and tighten the locking screw to secure the motor. Tighten the pivot screw.
11. Refer to Figure 4-17. Reinstall the electronics cover by aligning it and sliding down, ensuring the lower flange is inside the base and the upper flange is between the main frame and the media door.
12. Refer to Figure 4-16. Reopen the media door and reinstall the mounting screw and lock washer to secure the electronics cover.
13. Reinstall the media and ribbon.
14. Reconnect the AC Power cord and data cables.
15. Turn On (**I**) the printer.

Replace Main Logic Board

Caution • This installation must be performed by a qualified service technician.

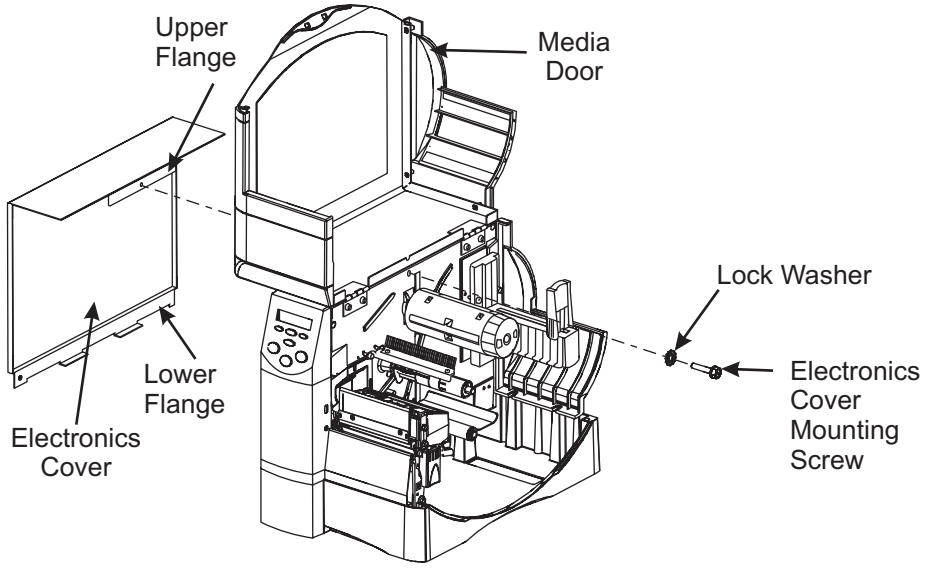
Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

Remove Main Logic Board

Note • If the printer is operating it is advisable to print a configuration label.

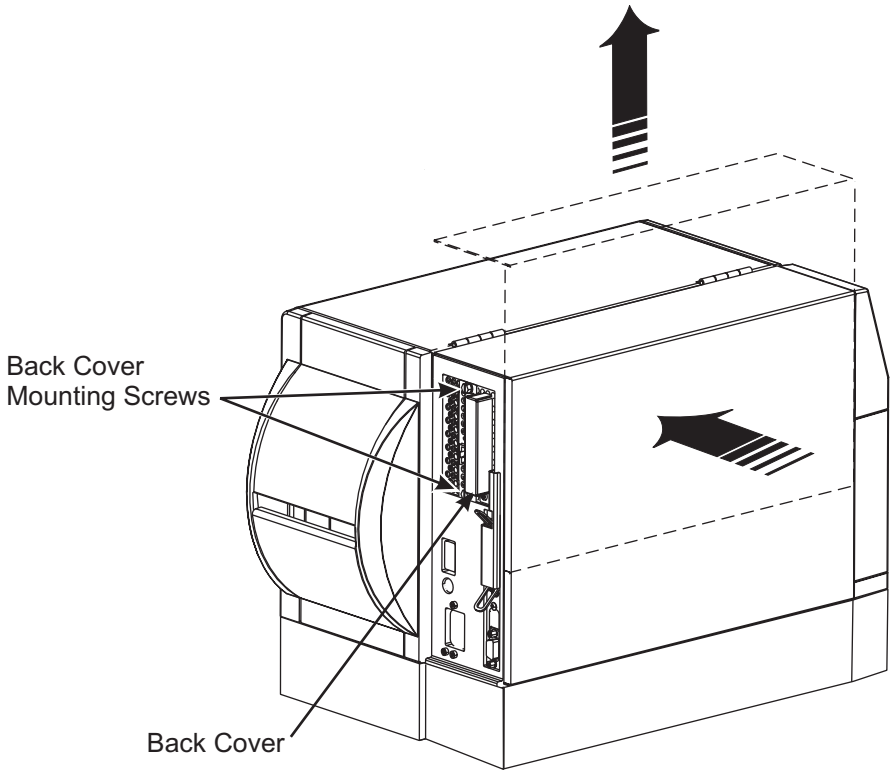
1. Print a configuration label by pressing and holding **CANCEL** while turning On (**I**) the printer. Set the label aside for future use.
2. Turn Off (**O**) the printer and remove the AC power cord and data cables.
3. Refer to Figure 4-21. Open the media door, remove the electronics cover mounting screw and lock washer.
4. Remove the media and ribbon.
5. Close the media door.

Figure 4-21. Locate Electronics Cover Mounting Screw



6. Refer to Figure 4-22. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.

Figure 4-22. Remove the Electronics Cover



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

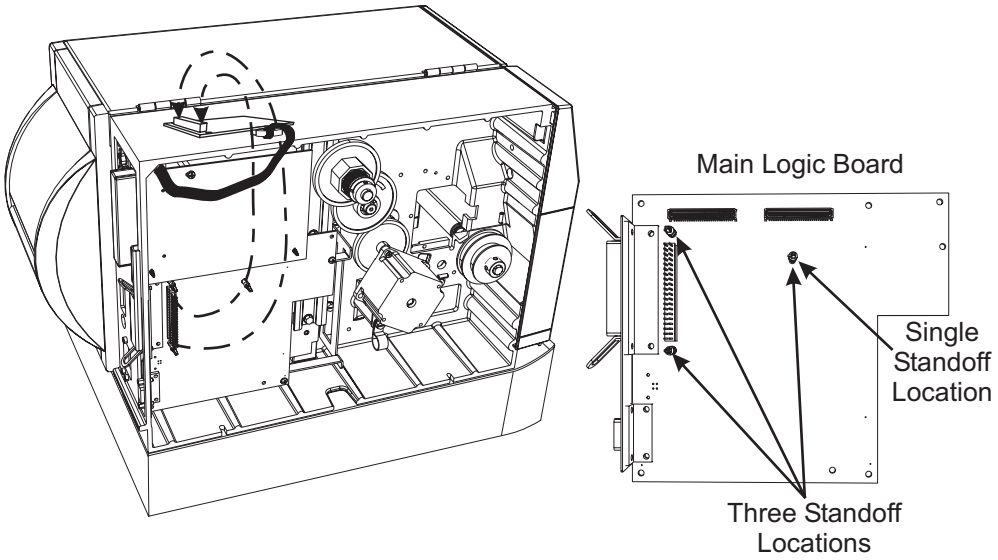
7. If the internal PrintServer II (PSII) is installed, continue to the next step. If not go to step 9.

Note • Do not remove the cable connection on the PSII board.

Note • Refer to Figure 4-23. There may be one or three standoffs securing the PSII board to the main logic board.

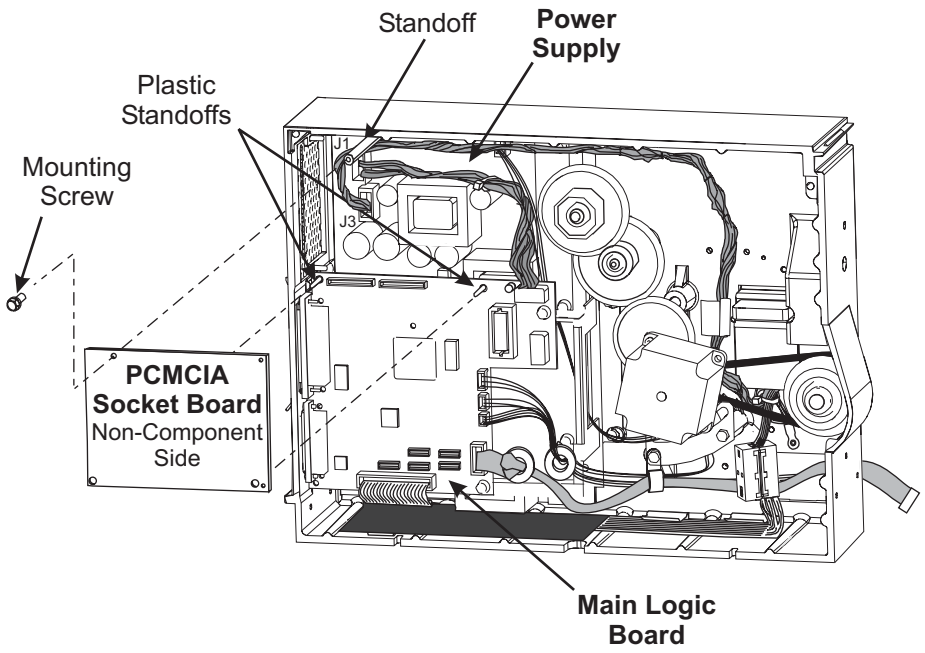
8. Refer to Figure 4-23. Remove the PSII board and cable assembly from the main logic board (MLB) by releasing it from the plastic standoffs in the upper right of the PSII board and pulling straight off the MLB and laying it on top of the printer.

Figure 4-23. Set the PSII on the Printer Top



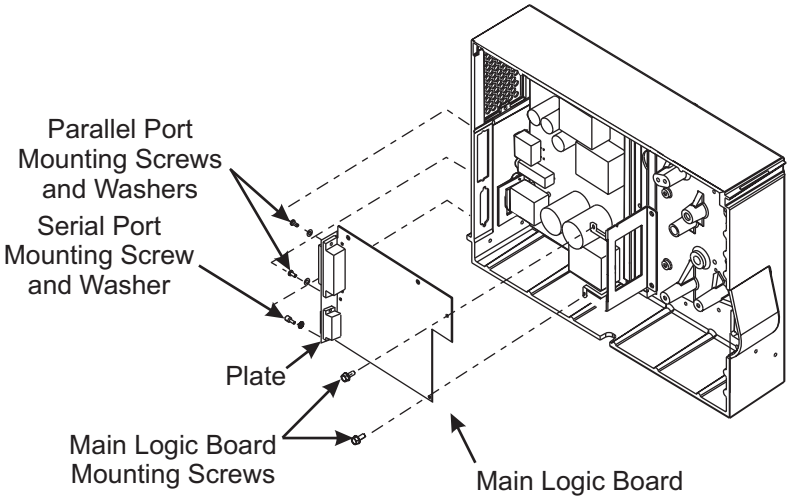
9. If the PCMCIA option is installed, continue to next step. If not, go to step 12.
10. Remove the screw from the upper left corner of the PCMCIA socket board.

Figure 4-24. Remove and Install PCMCIA and PSII Boards



11. Press in on the locking tab of the two plastic standoffs and remove the PCMCIA socket board by pulling straight out on the board.
12. Refer to Figure 4-25. Only remove and retain the lower mounting screw and washer securing the serial port connector.
13. Remove and retain the two screws and washers securing the parallel port connector.

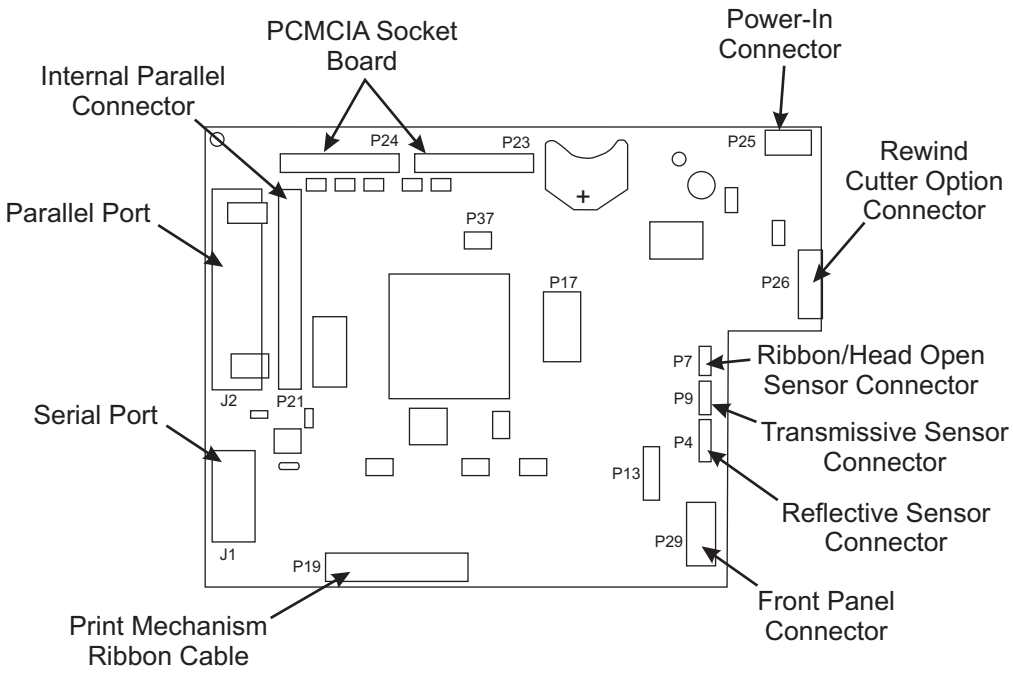
Figure 4-25. Removal and Replacement of the Main Logic Board



Note • Make a note of the orientation and location of all connectors.

14. Refer to Figure 4-26. Disconnect all connectors from the main logic board.
15. Refer to Figure 4-25. Remove and retain the two screws securing the main logic board to the mounting bracket. Remove the main logic board.

Figure 4-26. Main Logic Board Assembly Connection Locations



Install Main Logic Board

1. If you removed a PCMCIA socket board, remove the two plastic standoffs at the top of the old MLB and install them in the same location and direction on the new MLB.

Note • Refer to Figure 4-23. There may be one or three standoffs securing the PSII board to the main logic board.

2. If you removed a PSII board, remove the standoffs securing the PSII board to the MLB and install them in the same location and direction on the new MLB.
3. Refer to Figure 4-25. Insert and align the main logic board with the rear panel.

Note • Ensure you have positioned the cable connecting to P19 for ease of reconnecting.

4. Reinstall, but do not tighten, the screw and washer securing the serial port connector.
5. Reinstall, but do not tighten, the two screws and washers securing the parallel port connector.
6. Reinstall the two mounting screws securing the main logic board to the mounting bracket.
7. Tighten the two screws securing the parallel port first then tighten the other screws.
8. Refer to Figure 4-26. Reinstall all connectors on the main logic board, ensuring they are in their proper locations.
9. Refer to Figure 4-24. Reinstall the PCMCIA socket board.
10. Refer to Figure 4-23. Reinstall the PSII board and cable assembly.

Note • Ensure the PSII Cable is firmly connected to the PSII I/O board.

11. Refer to Figure 4-22. Reinstall the electronics cover by aligning the bottom flange inside the base and the top flange between the main frame and media door.
12. Refer to Figure 4-21. Reopen the media door and reinstall the mounting screw and lock washer to secure the electronics cover.
13. Reinstall the media and ribbon.
14. Reinstall the AC power cord and data cables.
15. Turn On (**I**) the printer. Allow the printer to go through the power-on selftest (POST).

Note • If the printer does not go through the POST, turn the printer off, disconnect the AC power cord and remove the electronics cover. Verify that all connections are in the proper position and fully seated in their connectors. Reinstall the electronics cover, reconnect the AC power cord and Turn On (**I**) the printer. When the printer displays READY, continue to step 16.

16. Press **SETUP/EXIT** two times.
17. Press  or  until LOAD DEFAULTS is displayed, then press **SETUP/EXIT**. This resets all settings to the factory default.
18. Turn Off (**O**) the printer.
19. Press and hold **CANCEL** while turning On (**I**) the printer. A configuration label prints.
20. Compare the configuration label with the label you printed previously.
21. Reconfigure the printer using the *User Guide*.

Replace Power Supply Board

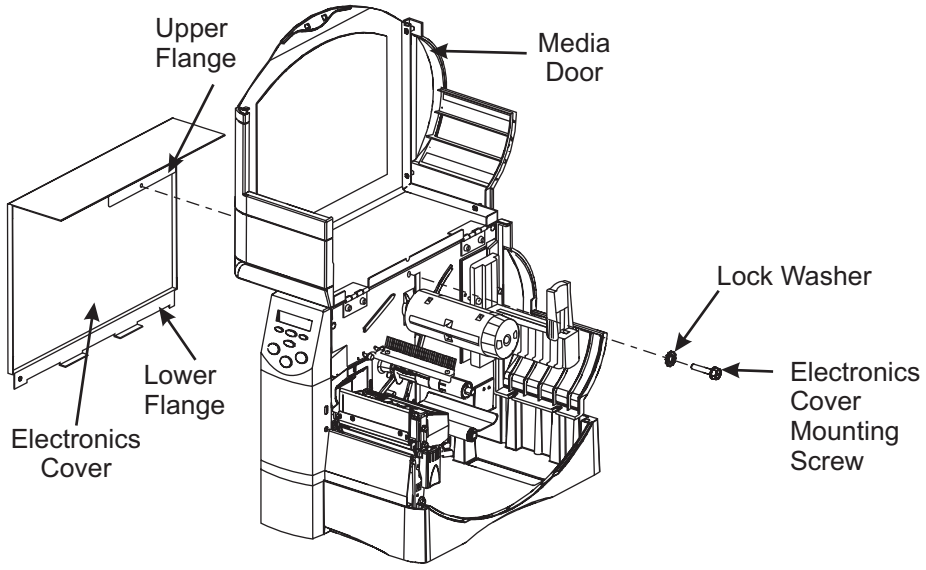
Caution • This installation must be performed by a qualified service technician.

Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

Remove the Power Supply Board

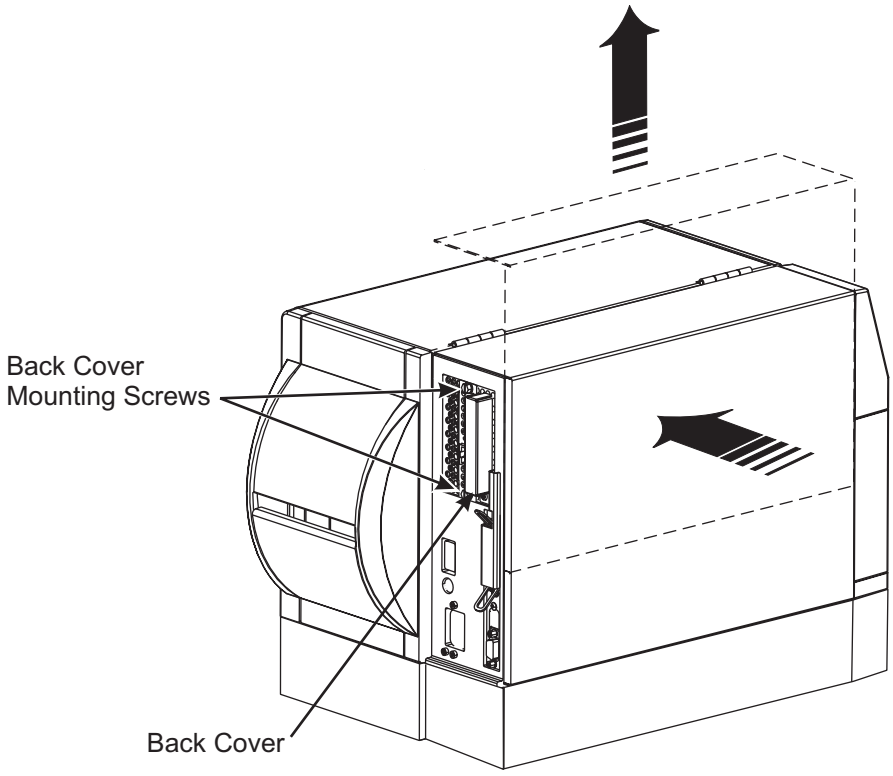
1. Turn Off (**O**) the printer and remove the AC power cord and data cables.
2. Refer to Figure 4-27. Open the media door, remove the electronics cover mounting screw and lock washer.
3. Remove the media and ribbon.
4. Close the media door.

Figure 4-27. Locate Electronics Cover Mounting Screw



5. Refer to Figure 4-28. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.

Figure 4-28. Remove the Electronics Cover



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

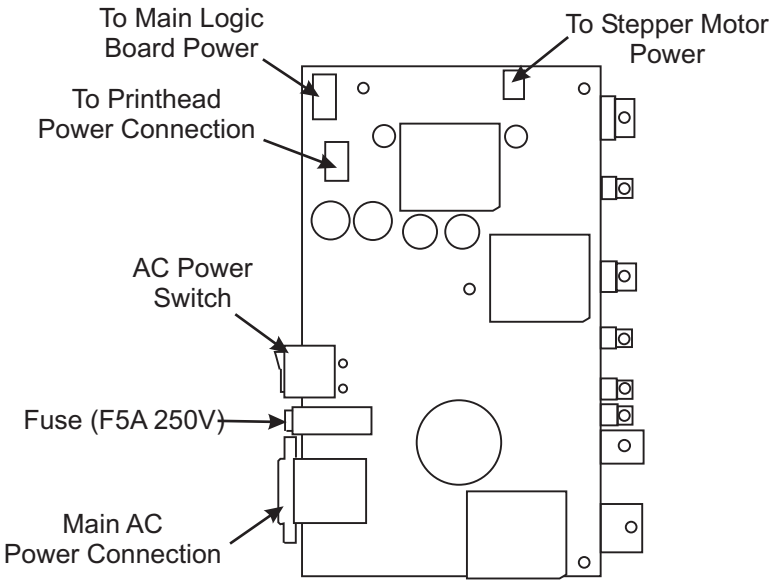
6. Refer to Remove Main Logic Board on page 83 and remove the main logic board.

Note • Place a soft cloth on your work surface.

7. Place the printer on its side, media door side down.
8. Refer to Figure 4-29. Disconnect all connectors from the power supply board.

Note • Make note of the orientation and location of all the connectors.

Figure 4-29. Power Supply Board Assembly Connection Locations

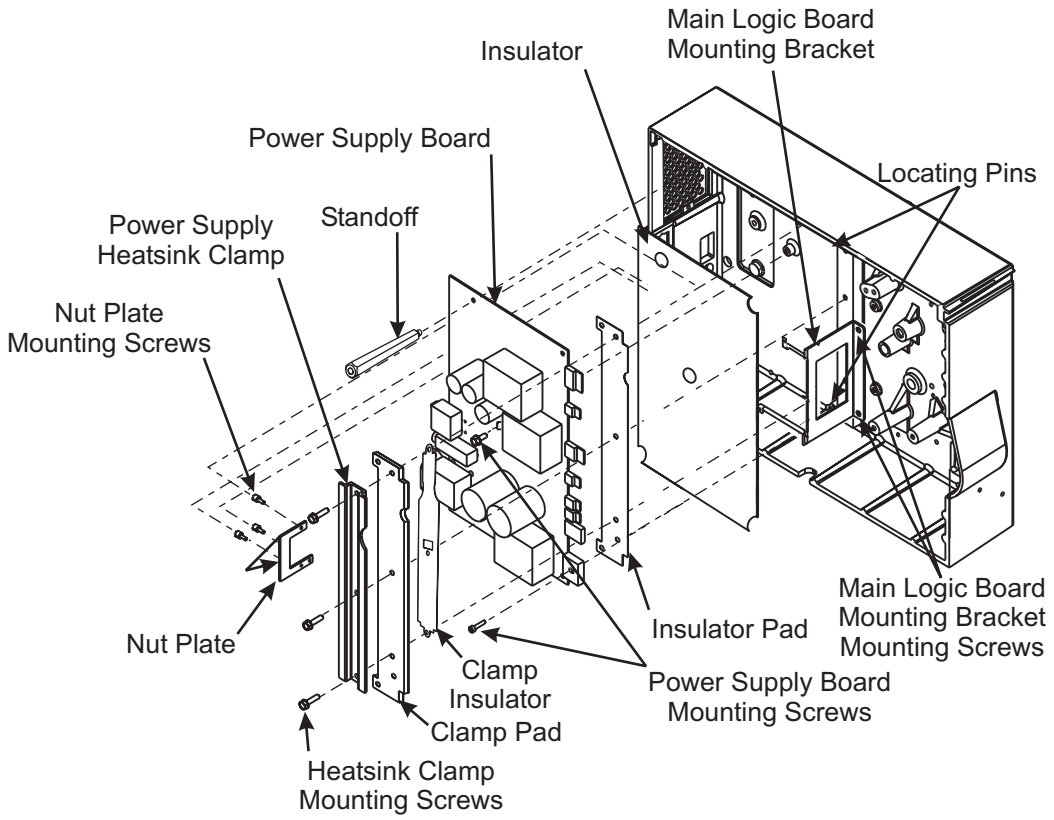


9. Refer to Figure 4-30. Remove the three screws and nut plate securing the main AC power connection to the main frame.
10. Remove the two screws securing the main logic board mounting bracket and remove the mounting bracket.
11. Refer to Remove Ribbon Take-Up Assembly on page 122. Remove the ribbon take-up spindle drive gear.
12. Refer to Figure 4-30. Remove the three screws securing the power supply heatsink clamp and remove the clamp, clamp pad, and insulator.

Caution • Verify that all cables and wires are clear before removing the power supply.

13. Remove the two screws and standoff securing the power supply board. Remove the power supply board along with the insulator pad.
14. Remove the power supply.

Figure 4-30. Remove the Power Supply Board

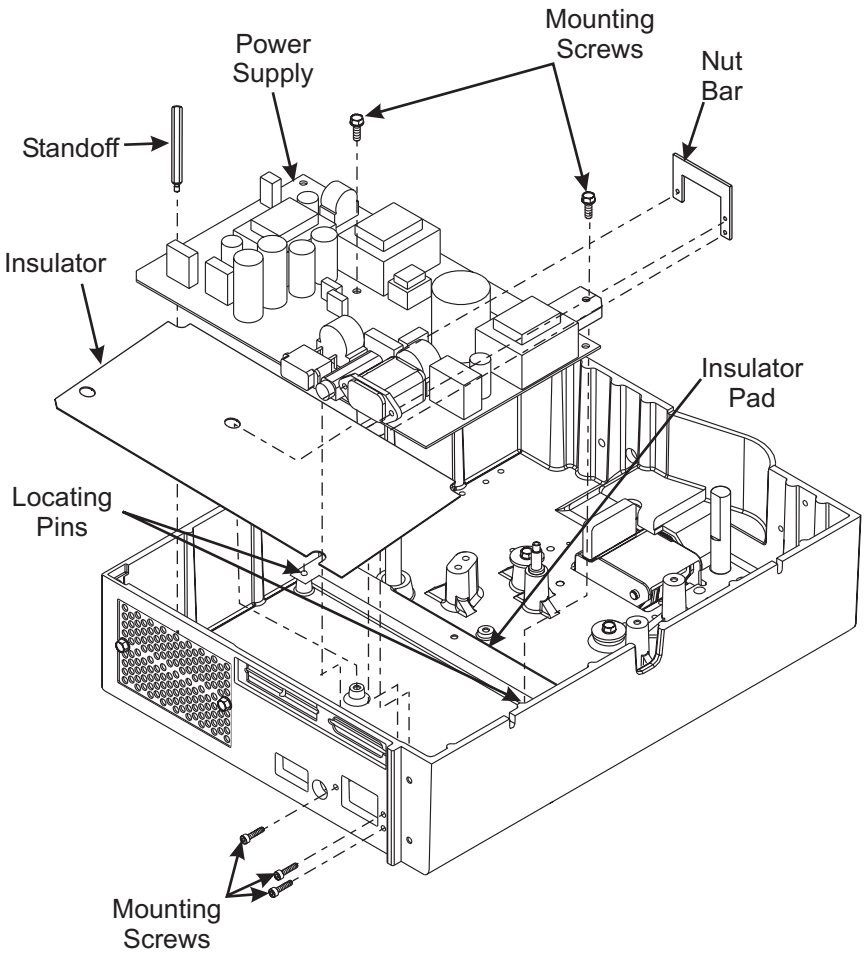


Install the Power Supply Board

1. Refer to Figure 4-31. Place the insulator pad over the locating pins on the printer. Verify that all holes align with holes in the main frame.

Caution • Improper alignment or installation of this insulator pad can cause injury.

Figure 4-31. Install the Insulator and Insulating Pad



Note • On new power supplies shipped from the factory, carefully break away any excess scored pieces of PCB material left to protect the components during shipping. **Caution** must be used to prevent damage to components.

2. Place the insulator onto the locator pins. Verify that all holes align with holes in the main frame
3. Carefully slide the power supply board's AC power switch into the opening provided, then place the power supply board onto the insulator, insulator pad, and locating pins.

4. Install, but do not tighten, the standoff and two screws securing the power supply to the main frame.
5. Place the nut bar over the main AC input and install, but do not tighten, the three mounting screws.
6. Refer to Figure 4-32. Remove the old clamp pad and clamp insulator from the heatsink.

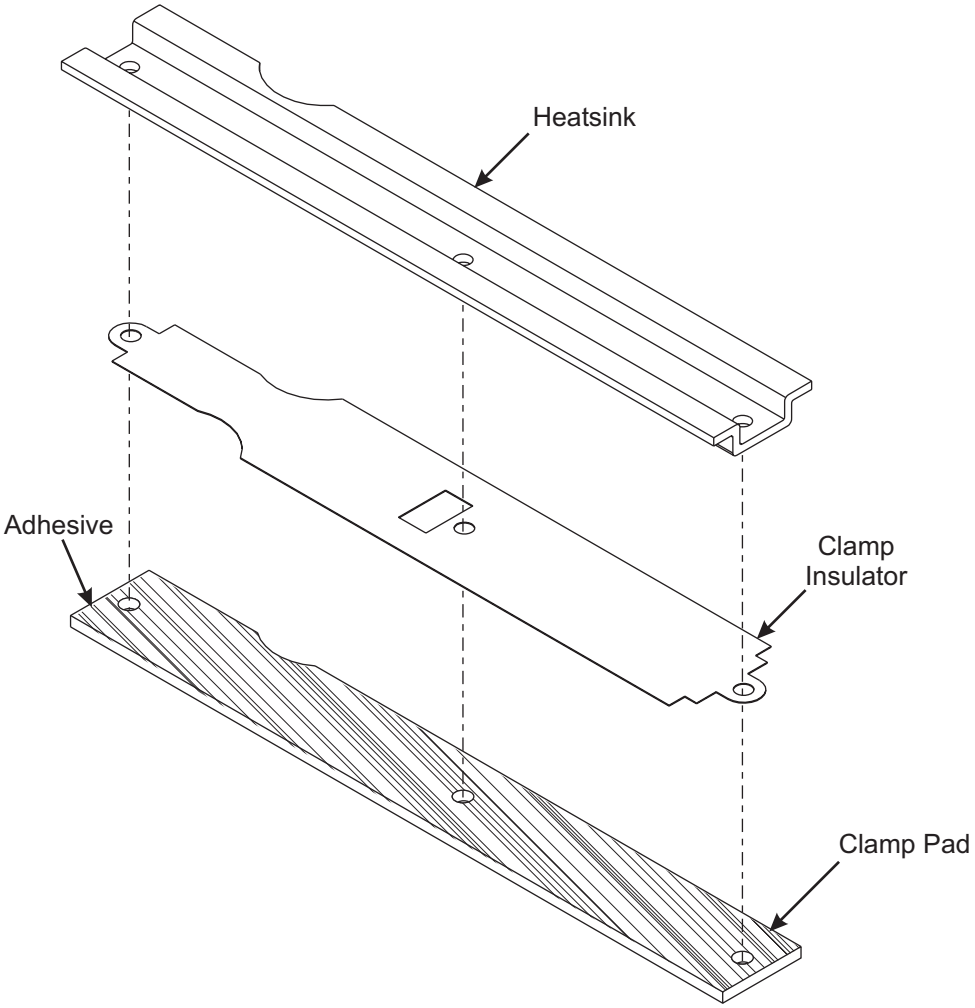
Note • Clamp pad and clamp insulator must be replaced on the heatsink.

7. Assemble the new heatsink, insulator and foam pad.

Caution • Improper alignment or installation of this insulator pad can cause injury.

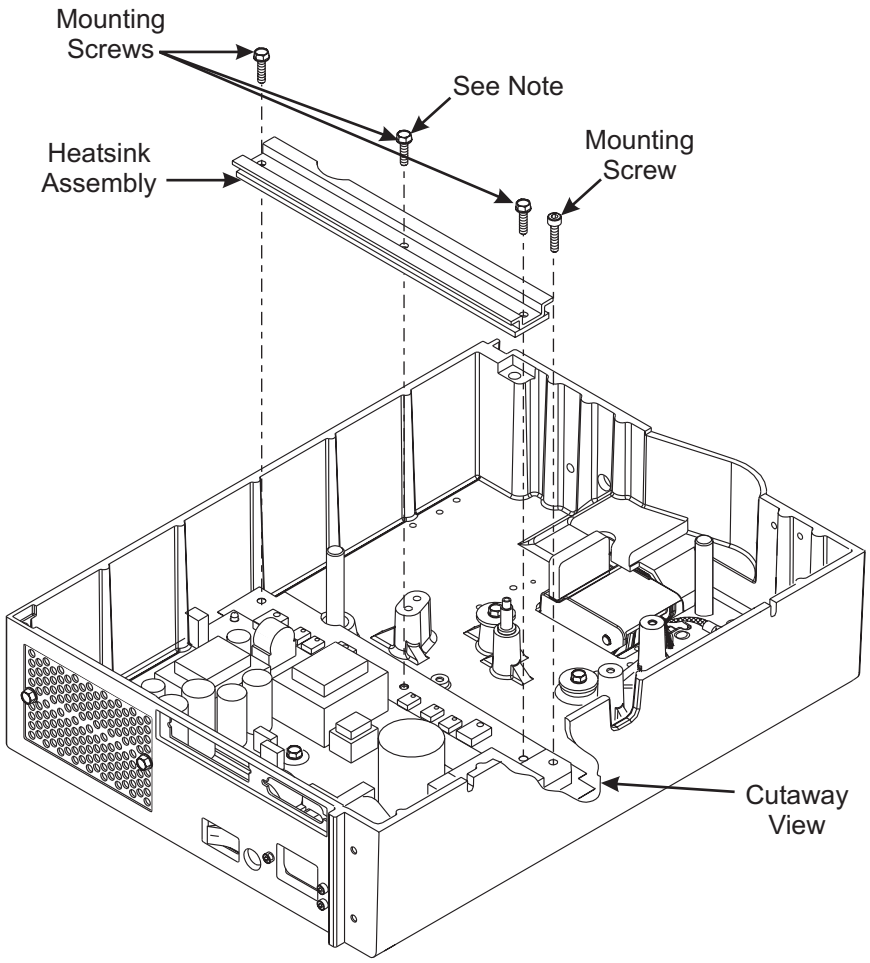
8. Peel the protective covering off the foam pad then with the adhesive side up, set it on a flat surface.
9. Align the clamp insulator holes with the holes in the pad and set the insulator on top.
10. Align the holes and cutout of the heatsink with the pad and insulator and then attach it to the pad.

Figure 4-32. Heatsink Assembly



11. Refer to Figure 4-33. Place the power supply heatsink clamp over the power supply board. Install, but do not tighten, the three screws securing the power supply heatsink clamp to the printer.
12. Evenly snug the three screws securing the heatsink clamp.
13. Tighten all other mounting screws and the standoff.

Figure 4-33. Install Heatsink

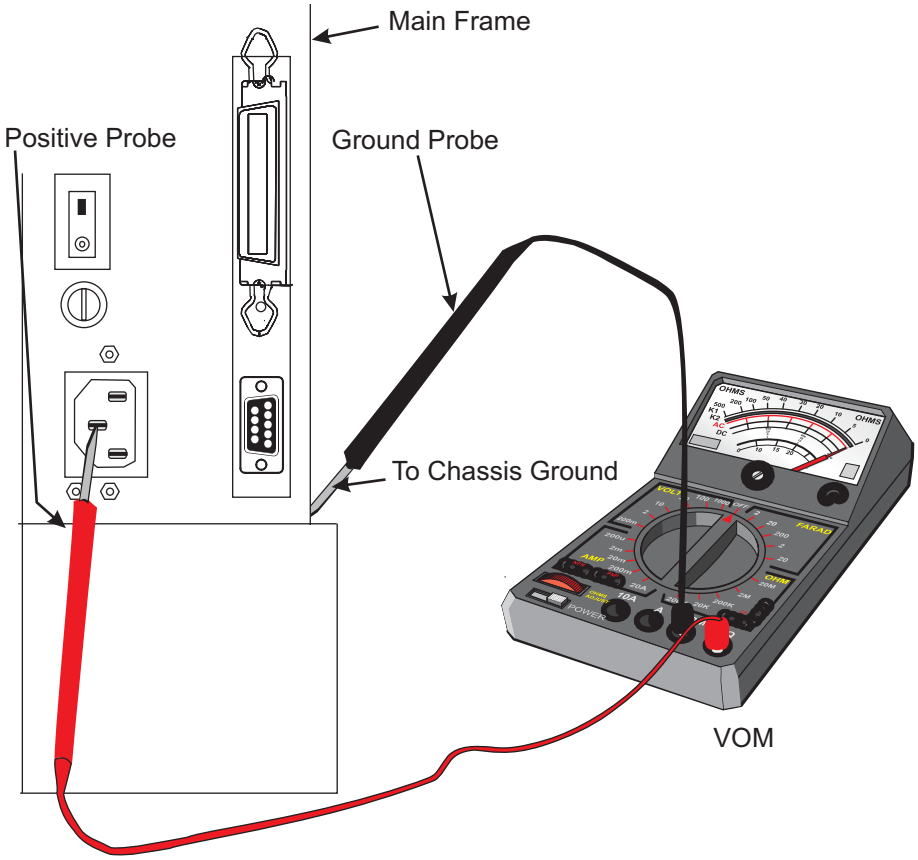


Note • Tighten This Screw First

14. Refer to Figure 4-29. Reinstall the connectors removed from the power supply board. Ensure the connectors are in their proper location.
15. Refer to Install Ribbon Take-Up Assembly on page 124 and reinstall the ribbon take-up gear.
16. Reinstall the main logic board mounting bracket.
17. Refer to Install Main Logic Board on page 87 and reinstall the main logic, PCMCIA, and PSII boards.
18. Verify that the power switch is in the Off (**O**) position.

19. Set your VOM (voltage ohm meter) to the lowest ohm range and connect the meter between the main frame and the main AC input ground. The reading must be less than one ohm.

Figure 4-34. Test the Power Supply



20. Leave the AC power cord disconnected and turn the power switch On (**I**).
21. Set the VOM to the highest ohm range and measure between ground and both the return and hot terminals in the AC power module. Both readings must be in the Mega ohm to infinite range.

Caution • Stop. If the VOM readings are not as indicated**,** do not apply power to the printer until the source of the problem has been corrected.

---

22. Place the printer in the upright position and open the media door.
23. Refer to Figure 4-28 on page 90. Reinstall the electronics cover by aligning the bottom flange inside the base and the top flange between the main frame and media door.
24. Refer to Figure 4-27 on page 89. Open the media door and reinstall the mounting screw and lock washer
25. Reinstall the media and ribbon, and close the media door.
26. Reinstall the AC power cord and data cables.
27. Turn On (**I**) the printer.

Replace Drive Belt

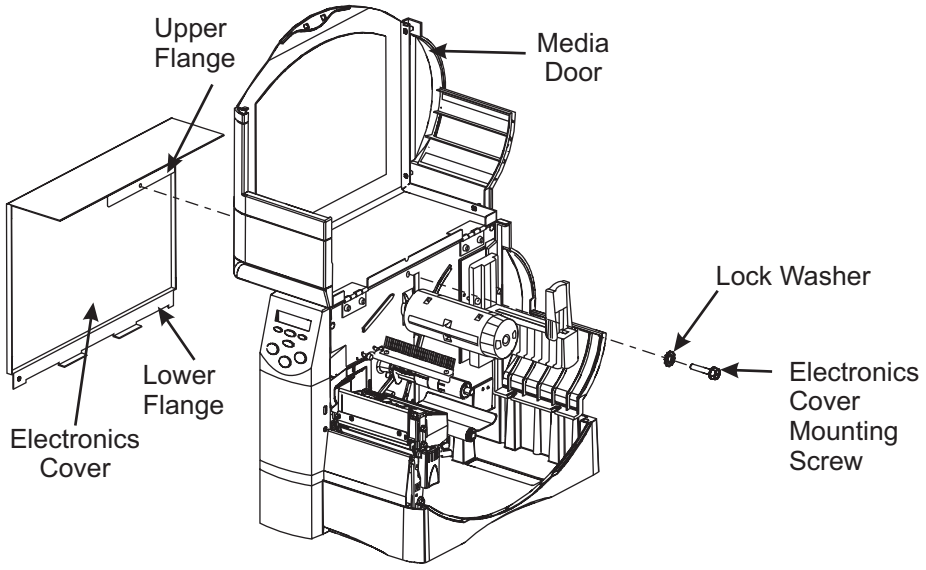
Caution • This installation must be performed by a qualified service technician.

Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

Remove Drive Belt

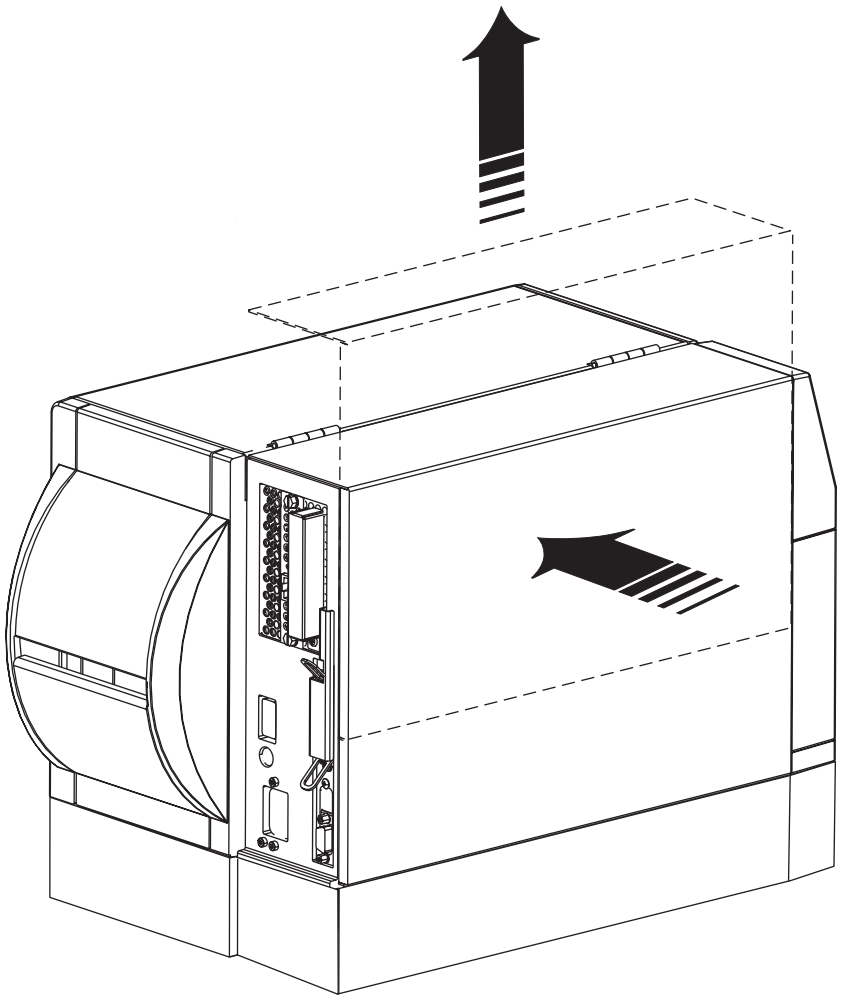
1. Turn Off (**O**) the printer and remove the AC power cord and data cables.
2. Refer to Figure 4-35. Open the media door, remove the electronics cover mounting screw and lock washer.
3. Remove the media and ribbon.
4. Close the media door.

Figure 4-35. Locate Electronics Cover Mounting Screw



5. Refer to Figure 4-36. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.

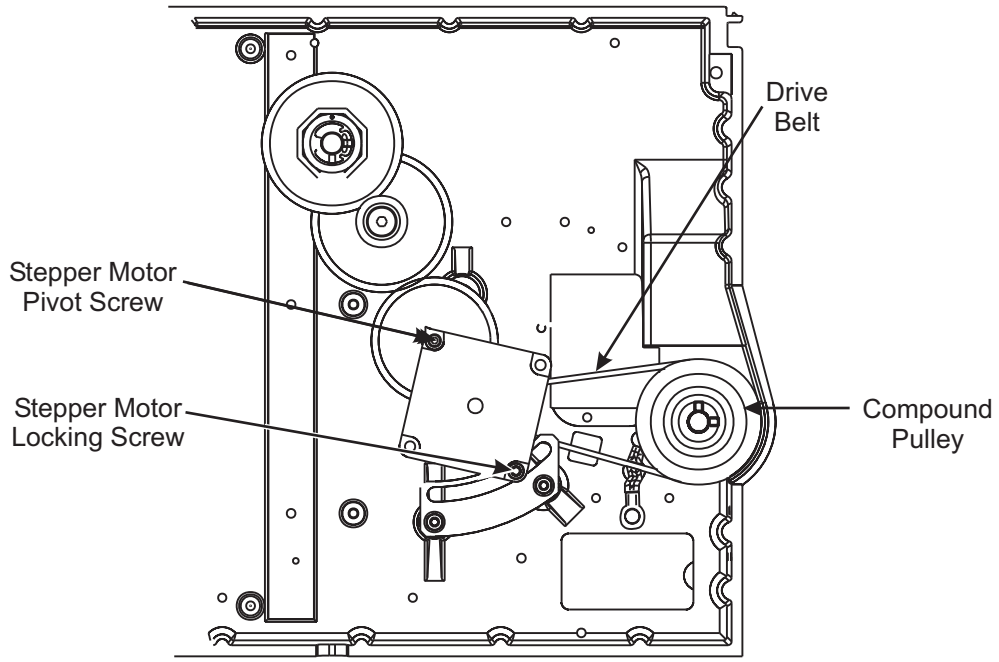
Figure 4-36. Remove the Electronics Cover



Note • Take note on which pulley of the compound pulley the belt is installed.

6. Refer to Figure 4-37. Loosen the stepper motor locking screw and pivot screw. Remove the drive belt from the stepper motor.

Figure 4-37. Removal of the Drive Belt



Install Drive Belt

1. Install the belt on the correct pulley of the compound pulley.
2. Lift up on the stepper motor, place the belt onto the stepper motor drive gear.

Note • Belt deflection should be no more than 0.25 in. (6 mm).

3. Adjust the position of the stepper motor to achieve the correct belt deflection and tighten the locking screw to secure the motor. Tighten the pivot screw.
4. Refer to Figure 4-36 on page 99. Reinstall the electronics cover by aligning the bottom flange inside the base and the top flange between the main frame and media door.
5. Refer to Figure 4-35 on page 98. Open the media door and reinstall the mounting screw and lock washer
6. Reinstall the media and ribbon, and close the media door.
7. Reinstall the AC power cord and data cables.
8. Turn On (**I**) the printer.

Replace Front Panel

Caution • This installation must be performed by a qualified service technician.

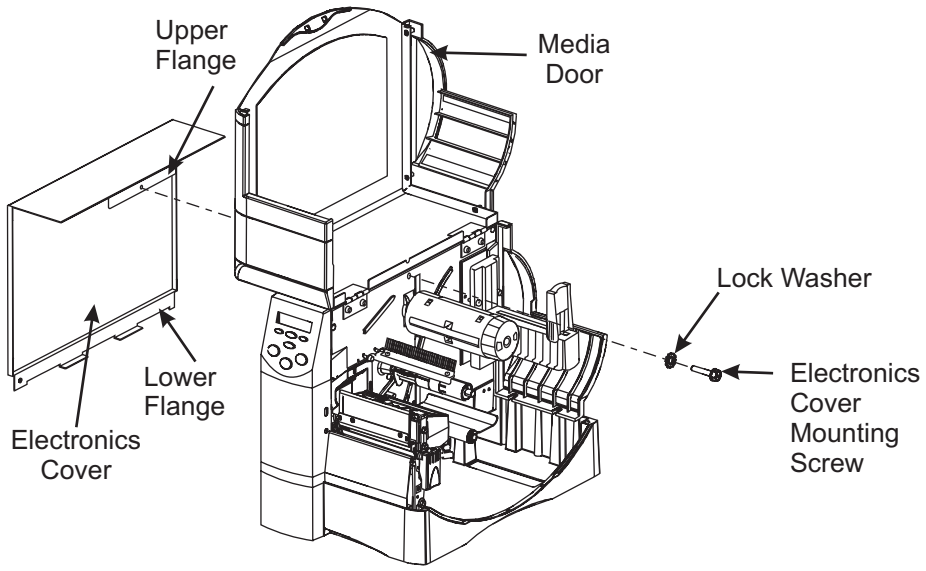
Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

Remove Front Panel

Note • Print a configuration label, using the Cancel Key Self Test, to ensure that you can configure the new front panel to your current configuration.

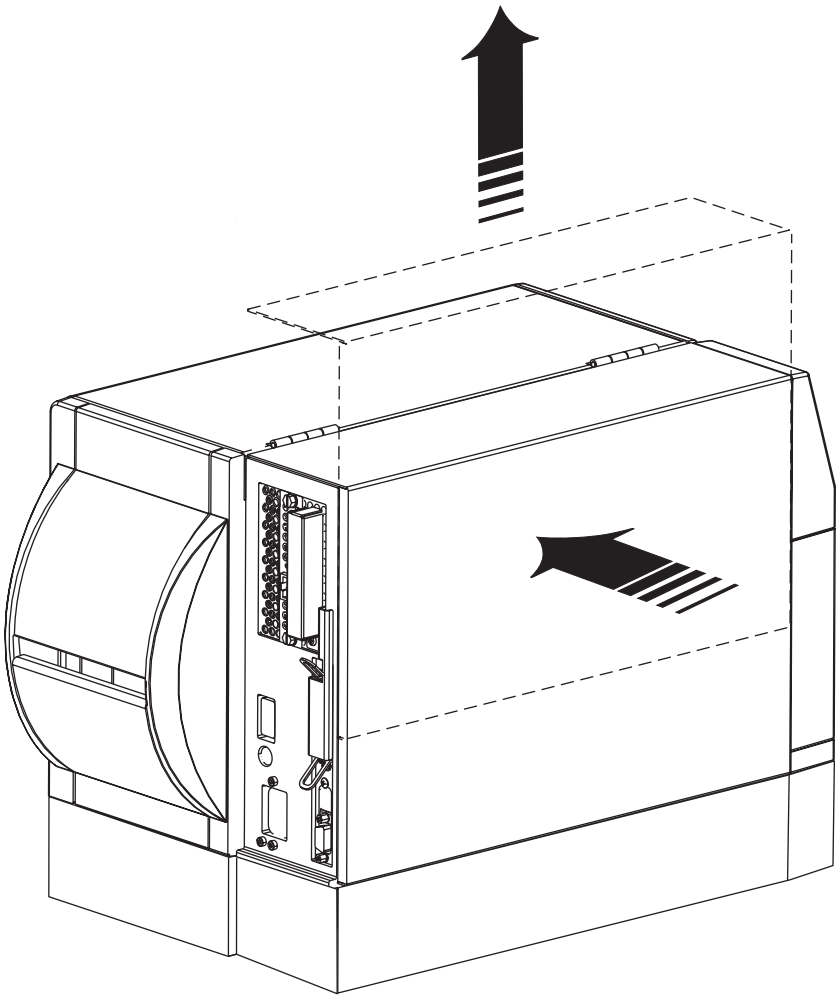
1. Turn Off (**O**) the printer and remove the AC power cord and data cables.
2. Refer to Figure 4-38. Open the media door, remove the electronics cover mounting screw and lock washer.
3. Remove the media and ribbon.
4. Close the media door.

Figure 4-38. Locate Electronics Cover Mounting Screw



5. Refer to Figure 4-39. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.

Figure 4-39. Remove the Electronics Cover



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

6. Refer to Figure 4-40. Disconnect the front panel data cable from P29 on the main logic board. Note the cable routing.

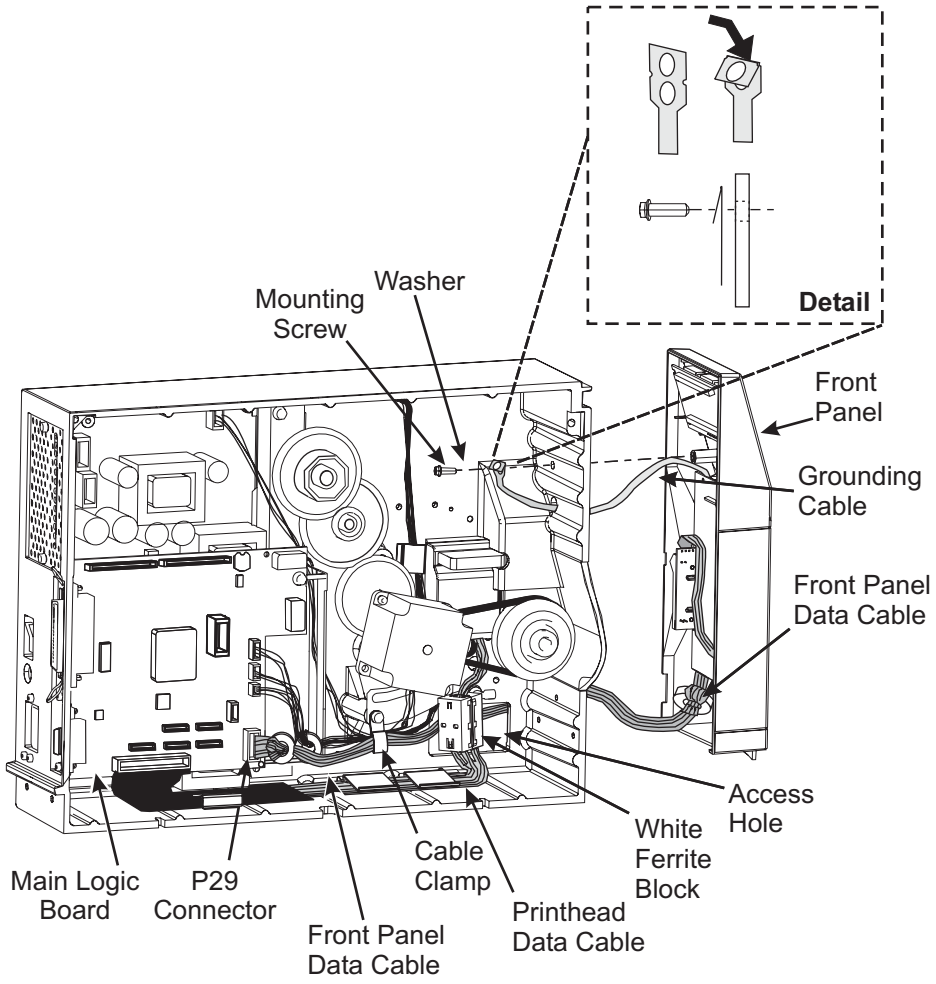
Note • Caution must be used to not damage the ground cable with the mounting screw.

7. Locate the plastic grounding cable near the top of the inside surface of the main frame**.** Remove the screw and washer that secure the front panel to the printer.

Note • Be sure to note the routing of the cable inside the electronics opening. The new cable must be routed exactly as the replaced one.

8. Remove the screw securing the cable clamp to the stepper motor bracket.
9. Remove the front panel cable from the clamp.

Figure 4-40. Front Panel Installation and Connector Location



Install Front Panel

Note • Be sure to route the front panel ribbon cable through the notch and away from any obstruction when replacing front panel.

1. Refer to Figure 4-40. Route the front panel cable through the access hole and behind the white ferrite block.
2. Reinstall the front panel cable into the cable clamp and resecure the clamp.
3. Cable tie the new ferrite ring and cable to the main logic board mounting bracket.
4. Refer to the detail in Figure 4-40 and route the new front panel ground cable through the hole and into the printer.
5. Refer to Figure 4-40 and fold the flat end on the new ground cable shiny side to shiny side.

Note • Use caution when securing the front panel that the ground cable does not rotate more than 1/8 turn.

6. Reinstall the screw through the washer and ground strap. Tighten the screw to snug in the new front panel.
7. Refer to Figure 4-39. Reinstall the electronics cover by aligning the bottom flange inside the base and the top flange between the main frame and media door.
8. Refer to Figure 4-38. Open the media door and reinstall the mounting screw and lock washer
9. Reinstall the media and ribbon, and close the media door.
10. Reinstall the AC power cord and data cables.
11. Turn On (**I**) the printer.
12. Set up the front panel according to the previously printed configuration label. Print a configuration label using the Cancel Key Self Test. Compare results and adjust as necessary.
13. If a configuration label could not be printed before removing the old front panel, perform the label quality procedure in your User Guide.

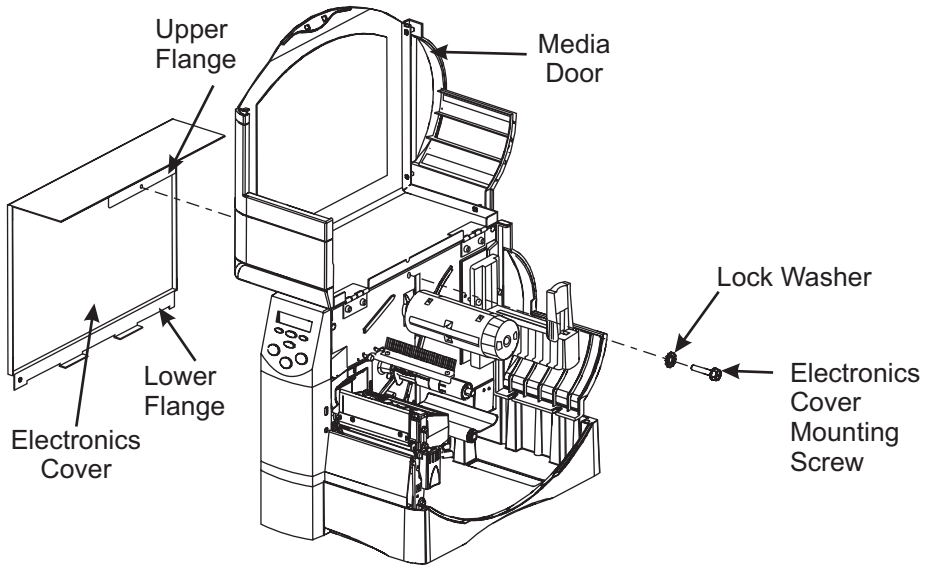
Replace the Dancer Assembly

Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

Remove the Dancer Assembly

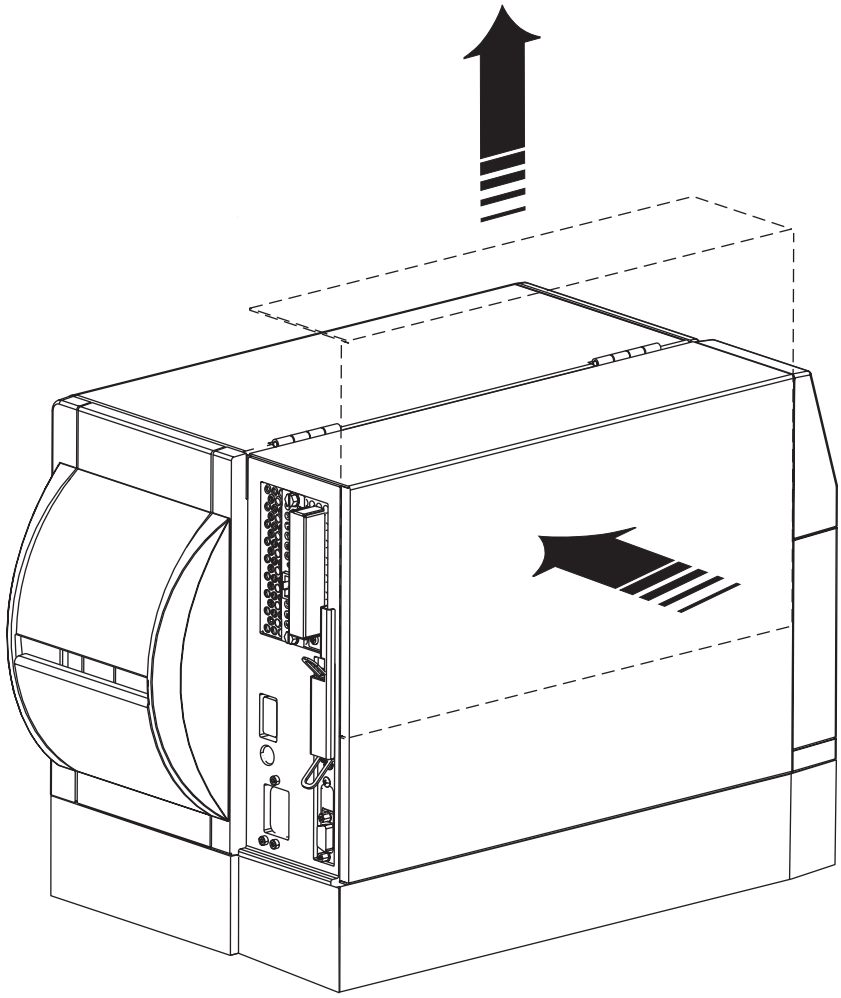
1. Turn Off (**O**) the printer and remove the AC power cord and data cables.
2. Refer to Figure 4-41. Open the media door, remove the electronics cover mounting screw and lock washer.
3. Remove the media and ribbon.
4. Close the media door.

Figure 4-41. Locate Electronics Cover Mounting Screw



5. Refer to Figure 4-42. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.

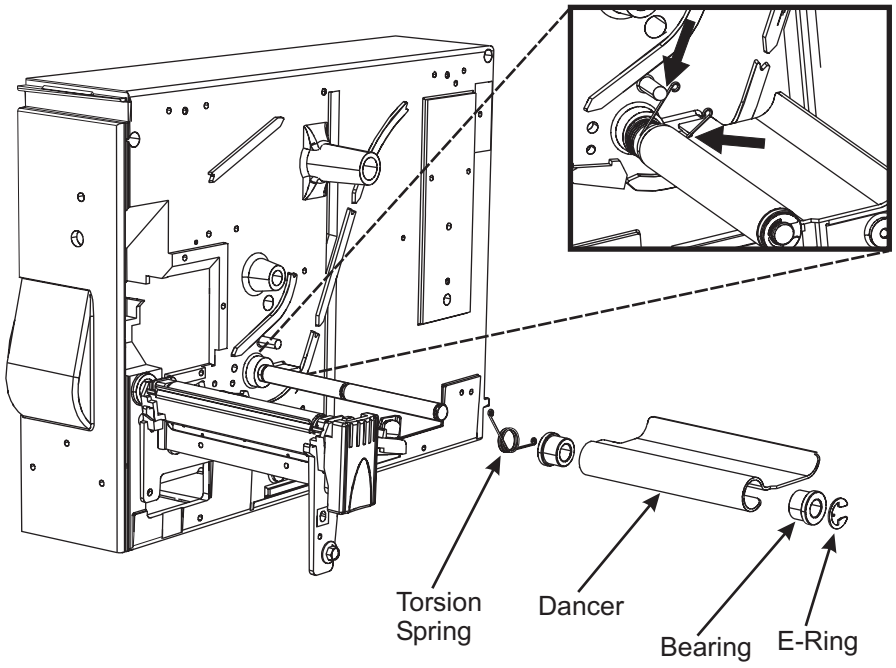
Figure 4-42. Remove the Electronics Cover



Caution • Wear protective eyewear when removing E-rings, C-clips, snaprings, and springs. These are under tension and could fly off while removing.

6. Refer to Figure 4-43. Relieve the spring tension from the dancer assembly by using a long nose pliers and moving the torsion spring leg off the printer post.

Figure 4-43. Dancer Assembly



7. Remove the E-ring, then slide off the bearings, the dancer, and the torsion spring.

Install Dancer Assembly

1. Install the new torsion spring, the first bearing, the dancer, the second bearing, and then the E-ring.
2. Place the dancer assembly torsion spring back to its operating position against the printer post and dancer tab. Ensure there is tension on the dancer assembly.
3. Reinstall the media and ribbon.
4. Close the media door.
5. Reinstall the AC power cord and data cables.
6. Turn On (**I**) the printer.

Replace Ribbon/Head Open Sensor

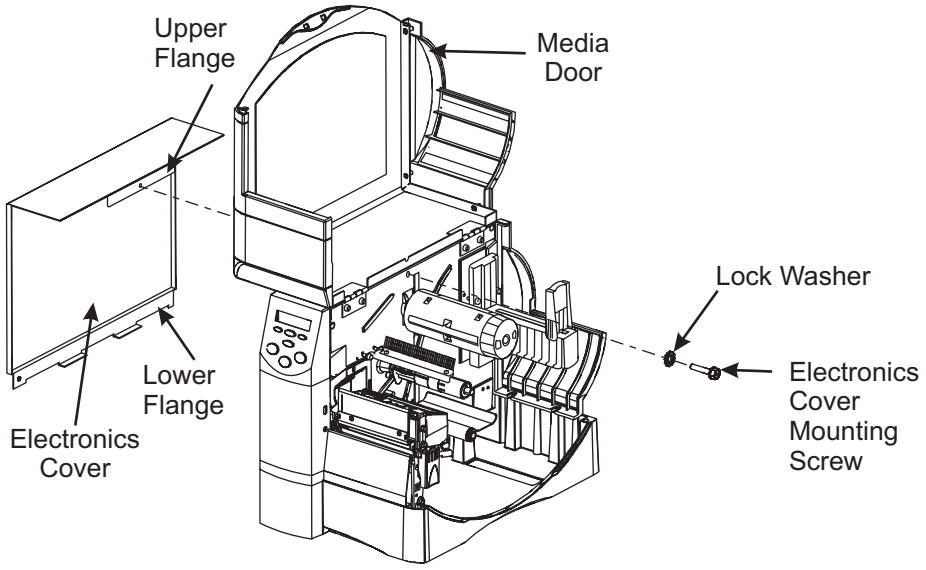
Caution • This installation must be performed by a qualified service technician.

Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

Remove Ribbon /Head Open Sensor Assembly

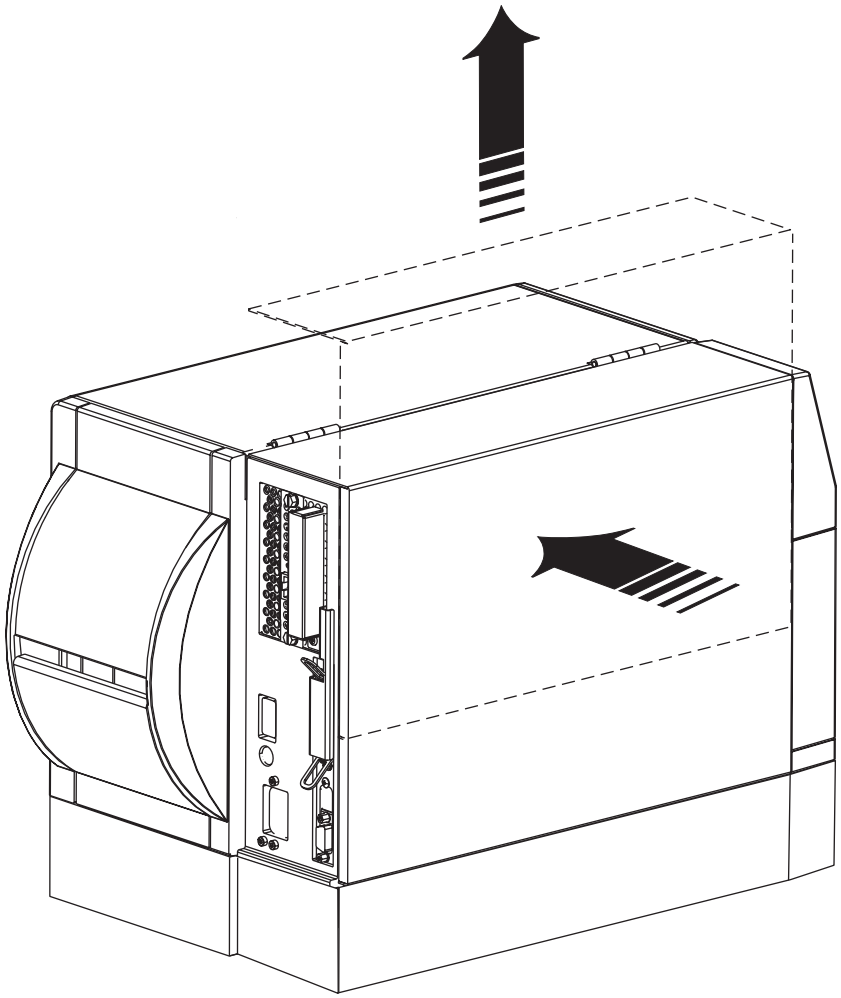
1. Turn Off (**O**) the printer and remove the AC power cord and data cables.
2. Refer to Figure 4-44. Open the media door, remove the electronics cover mounting screw and lock washer.
3. Remove the media and ribbon.
4. Close the media door.

Figure 4-44. Locate Electronics Cover Mounting Screw



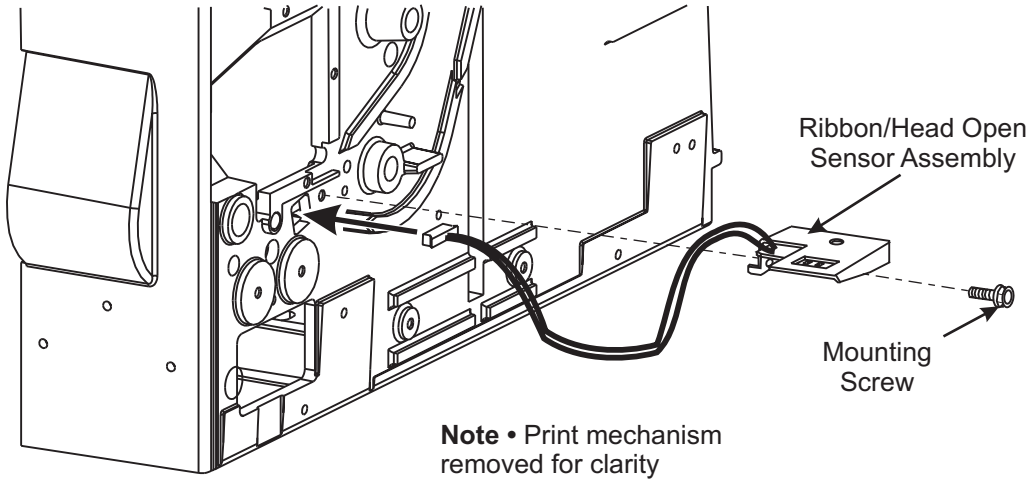
5. Refer to Figure 4-45. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.

Figure 4-45. Remove the Electronics Cover



6. Refer to Figure 4-46. Remove the screw securing the ribbon/head open sensor assembly.
7. Refer to Figure 4-47. Remove the screw securing the cable clamp to the stepper motor mounting bracket and remove the ribbon/head open sensor wires.

Figure 4-46. Ribbon/Head Open Sensor Assemble and Disassemble



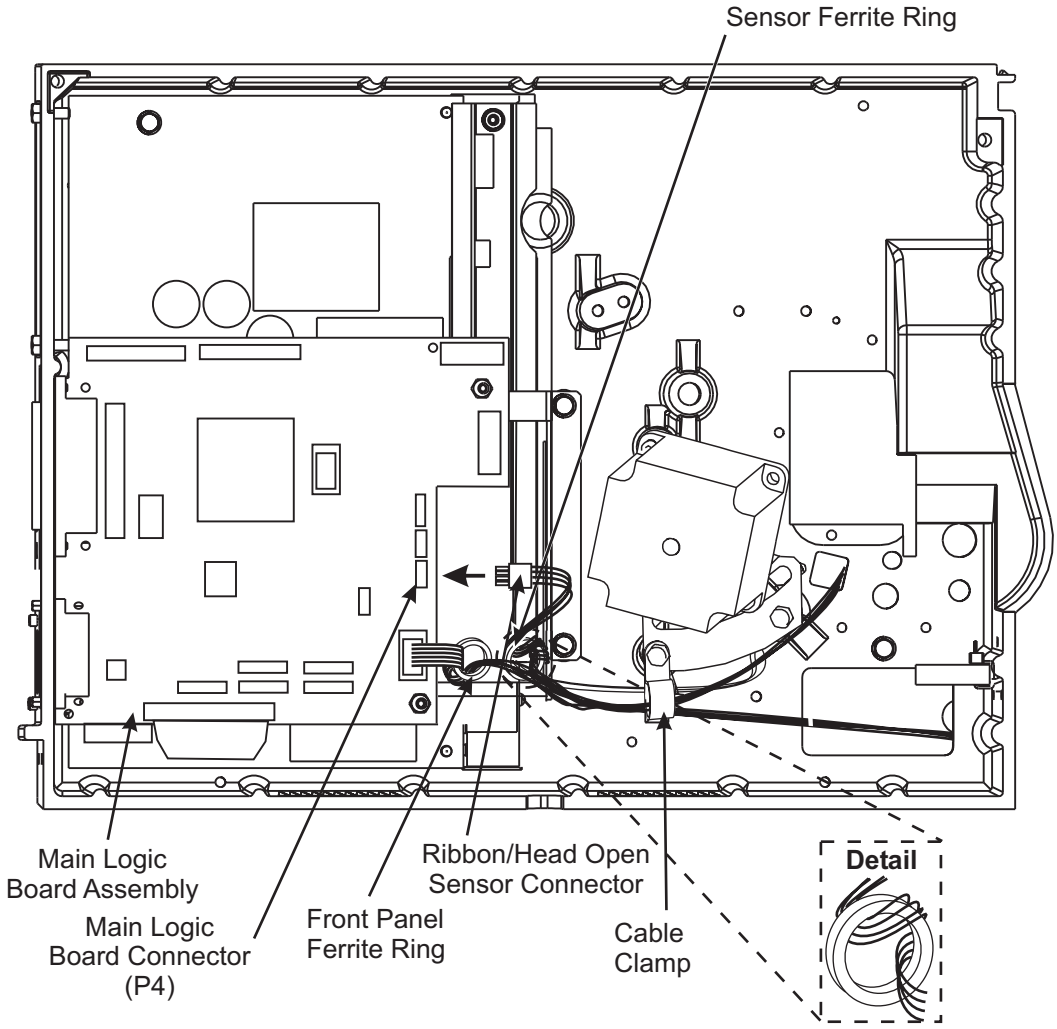
Caution • Observe proper electrostatic safety precautions when handling any static-sensitive components such as circuit boards and printheads.

8. Refer to Figure 4-47. Disconnect the ribbon/head open sensor assembly connector from the main logic board and unwind the wires from the ferrite ring.

Note • Take note of how the wires are wound through the ferrite ring.

9. Pull the wire through the access hole in the main frame.

Figure 4-47. Ribbon/Head Open Connection to Main Logic Board



Install Ribbon/Head Open Sensor Assembly

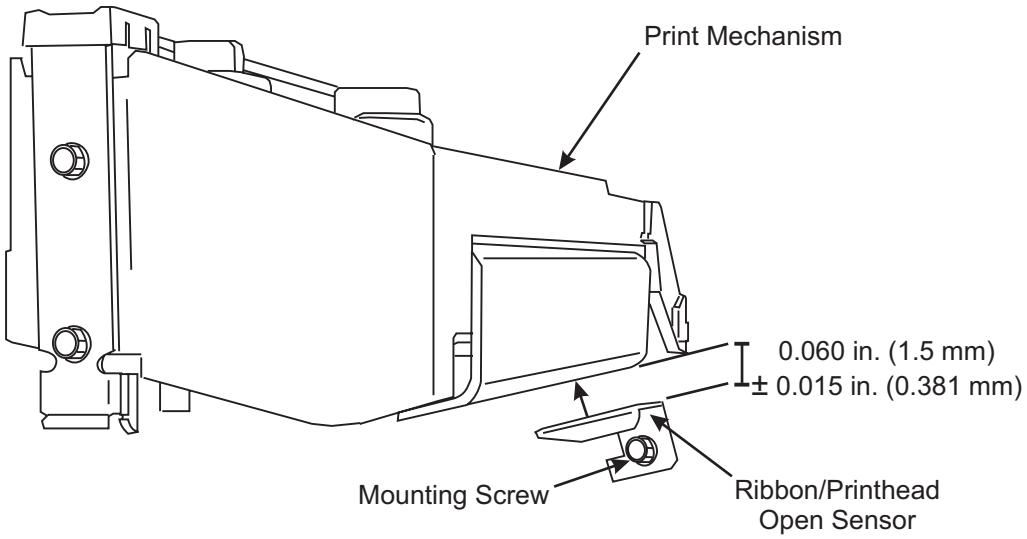
1. Refer to Figure 4-46. Feed the sensor cable through the access hole. Attach the sensor to the main frame with the screw previously removed.

Note • Do not tighten the mounting screw until the sensor gap is established.

2. Refer to Figure 4-47. Install the sensor wires in the cable clamp and reinstall the mounting screw.
3. Thread the sensor wires through the ferrite twice as shown in Figure 4-47 Detail.
4. Refer to Figure 4-47. Reconnect the ribbon/head open sensor connector to the main logic board (P4).

5. Refer to Figure 4-48. Using a 0.060 in. (1.5 mm) feeler gauge, check the distance between the ribbon/head open sensor assembly and the print mechanism assembly when closed. Once this distance is achieved, tighten the mounting screw.
6. Refer to Figure 4-45. Close the media door and reinstall the electronics cover by aligning it and sliding down, ensuring the lower flange is inside the base and the upper flange is between the main frame and the media door.
7. Refer to Figure 4-44. Reopen the media door and reinstall the mounting screw and lock washer to secure the electronics cover.
8. Reinstall the media and ribbon.
9. Reconnect the AC Power cord and data cables.
10. Turn On (**I**) the printer and unlatch the print mechanism. Look at the front panel to ensure the error LED flashes. Close and latch the print mechanism.
11. Turn Off (**O**) the printer. Press and hold **CANCEL** while turning On (**I**) the printer.
12. A configuration label will print. Verify the sensor and printer work properly.

Figure 4-48. Ribbon/Printhead Sensor Gap



Replace Transmissive Sensor

Caution • This installation must be performed by a qualified service technician.

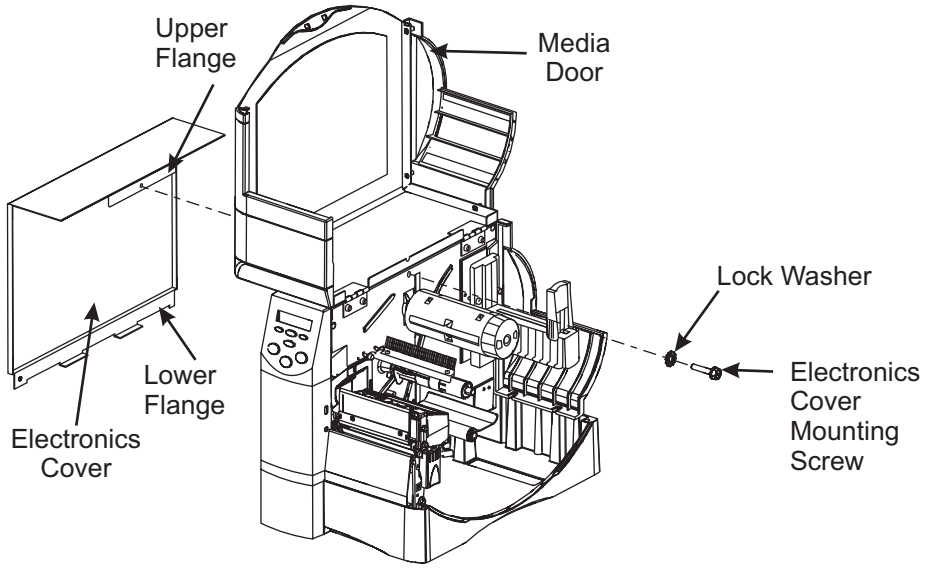
Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

Remove Transmissive Sensor

Note • The standard transmissive sensor is shown. The procedure is the same for the adjustable sensor.

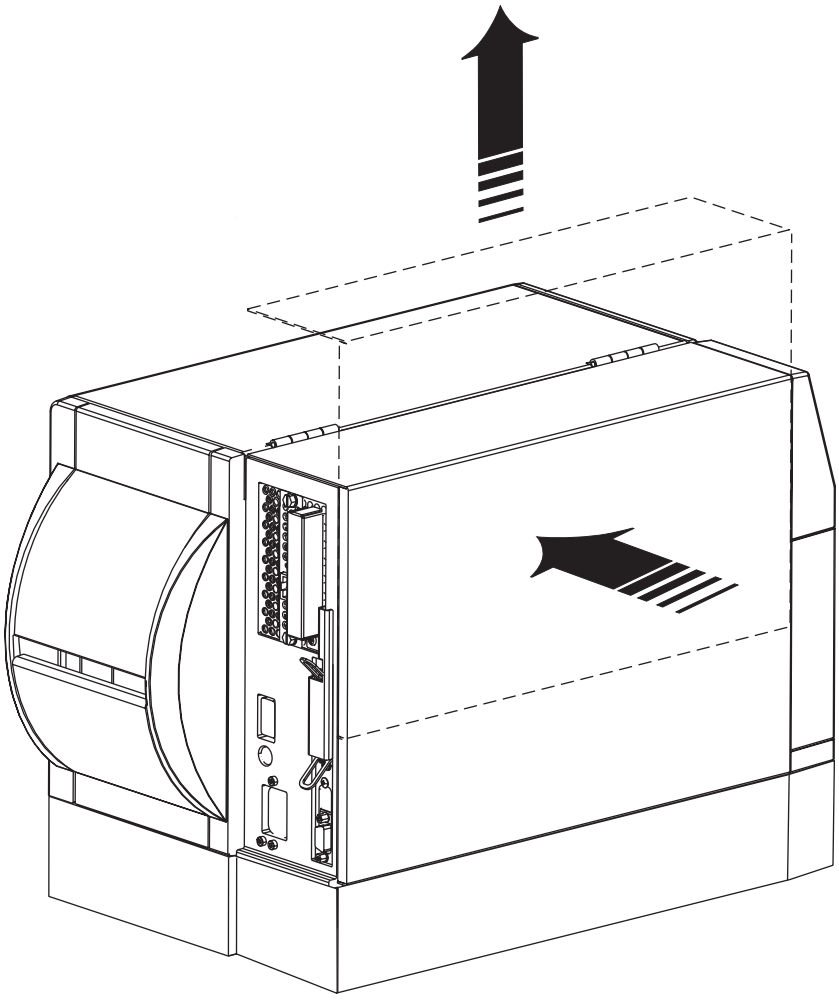
1. Turn Off (**O**) the printer and remove the AC power cord and data cables.
2. Refer to Figure 4-49. Open the media door, remove the electronics cover mounting screw and lock washer.
3. Remove the media and ribbon.
4. Close the media door.

Figure 4-49. Locate Electronics Cover Mounting Screw



5. Refer to Figure 4-50. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.

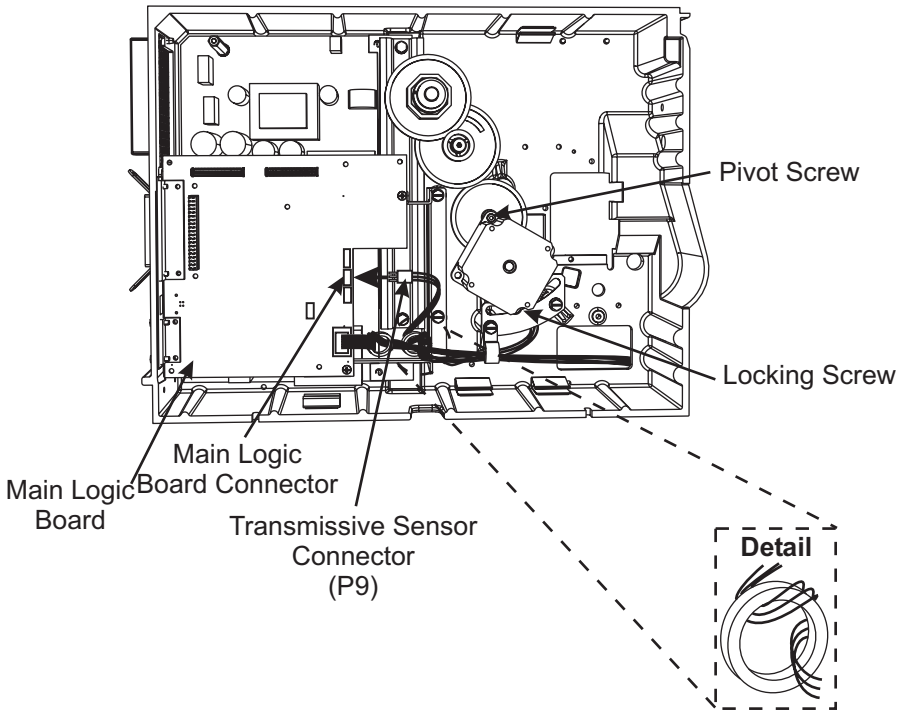
Figure 4-50. Remove the Electronics Cover



Note • It may not be necessary to remove the stepper motor.

6. Refer to Figure 4-51. Loosen the stepper motor mounting screw. Take note of where the drive belt is positioned on the platen pulley. Swing the stepper motor up and remove the drive belt.
7. Remove the stepper motor locking screw and nut.
8. Remove the stepper motor pivot screw to remove the stepper motor.
9. Remove the screw securing the cable clamp and remove the transmissive sensor wires.

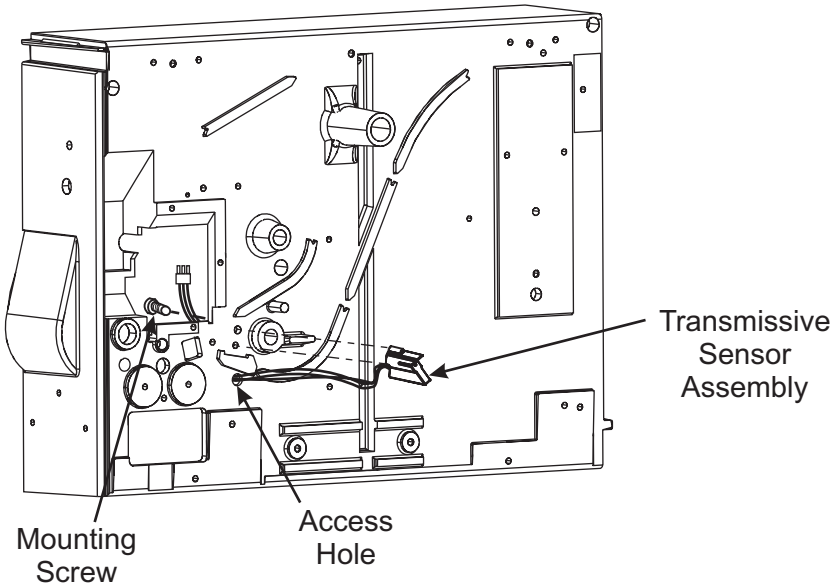
Figure 4-51. Transmissive Sensor Assembly Connection



10. Refer to Figure 4-52. Remove the transmissive sensor mounting screw and sensor.
11. Remove the transmissive sensor connection on the main logic board.
12. Remove the sensor wires from the ferrite.

Note • Take note of how the wires are wrapped around the ferrite.

Figure 4-52. Installing the Transmissive Sensor Assembly



Install Transmissive Sensor

1. Feed the sensor wires through the access hole under the stepper motor as shown in Figure 4-52.
2. Refer to Figure 4-52. Install the sensor, ensure the guide pin of the sensor body seats in the lower hole for proper positioning then tighten the sensor.

Caution • Do not overtighten the mounting screw. Damage to the transmissive assembly housing can occur by overtightening the mounting screw.

3. Thread the sensor wires through and around the ferrite twice as shown in Figure 4-51.
4. Refer to Figure 4-51. Locate (P9) on the main logic board and connect the transmissive sensor assembly.
5. Loosely reinstall the stepper motor using the pivot screw, locking screw, and adjustment nut.
6. While lifting up on the stepper motor, reinstall the drive belt. Release the stepper motor to provide tension on the belt.

Note • Belt should have some deflection but no more than 0.25 in. (6 mm).

7. Ensure belt tension is correct and tighten the locking screw. Tighten the pivot screw.
8. Insert the sensor wires into the cable clamp and reinstall the mounting screw.
9. Refer to Figure 4-50. Reinstall the electronics cover by aligning it and sliding down, ensuring the lower flange is inside the base and the upper flange is between the main frame and the media door.
10. Refer to Figure 4-49. Reopen the media door and reinstall the mounting screw and lock washer to secure the electronics cover.
11. Reinstall the media and ribbon.
12. Reconnect the AC Power cord and data cables.
13. Turn On (**I**) the printer and follow *Selecting the Media Sensor* instructions in the User Guide.

Replace Reflective Media Sensor

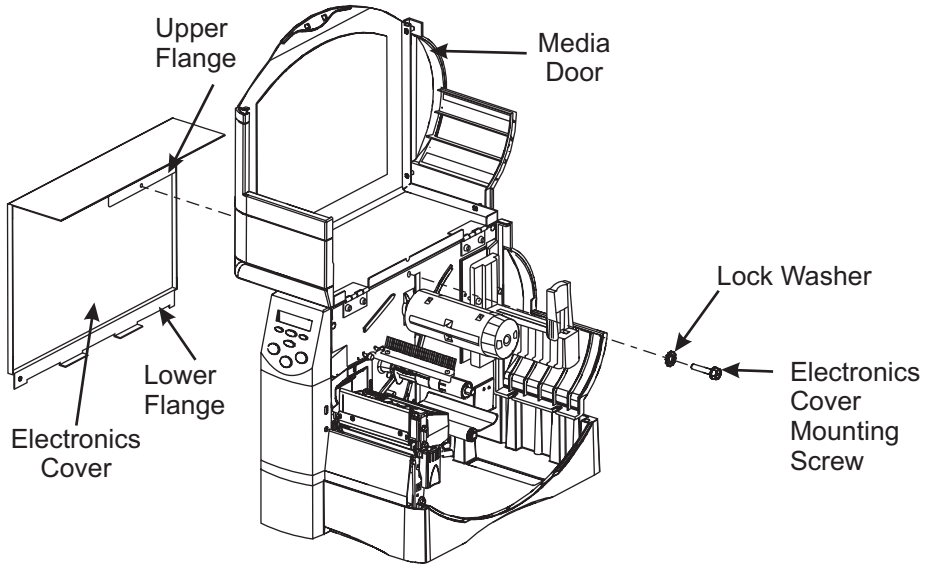
Caution • This installation must be performed by a qualified service technician.

Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

Remove Reflective Media Sensor Assembly

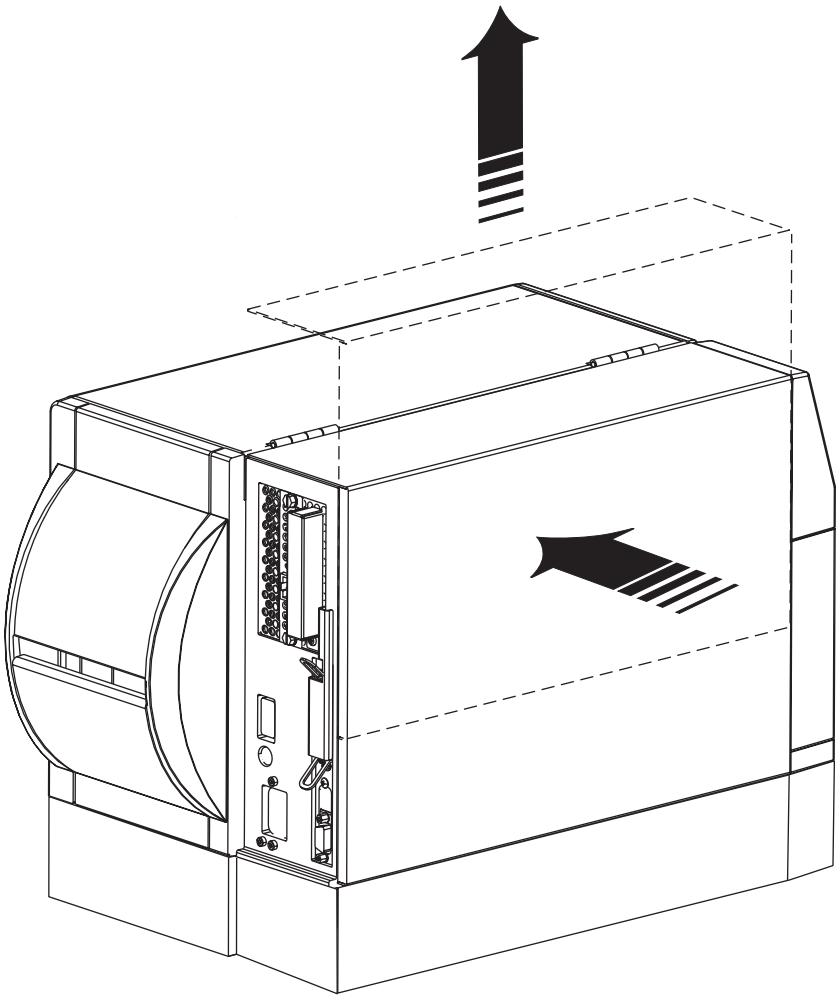
1. Turn Off (**O**) the printer and remove the AC power cord and data cables.
2. Refer to Figure 4-53. Open the media door, remove the electronics cover mounting screw and lock washer.
3. Remove the media and ribbon.
4. Close the media door.

Figure 4-53. Locate Electronics Cover Mounting Screw



5. Refer to Figure 4-54. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.

Figure 4-54. Remove the Electronics Cover



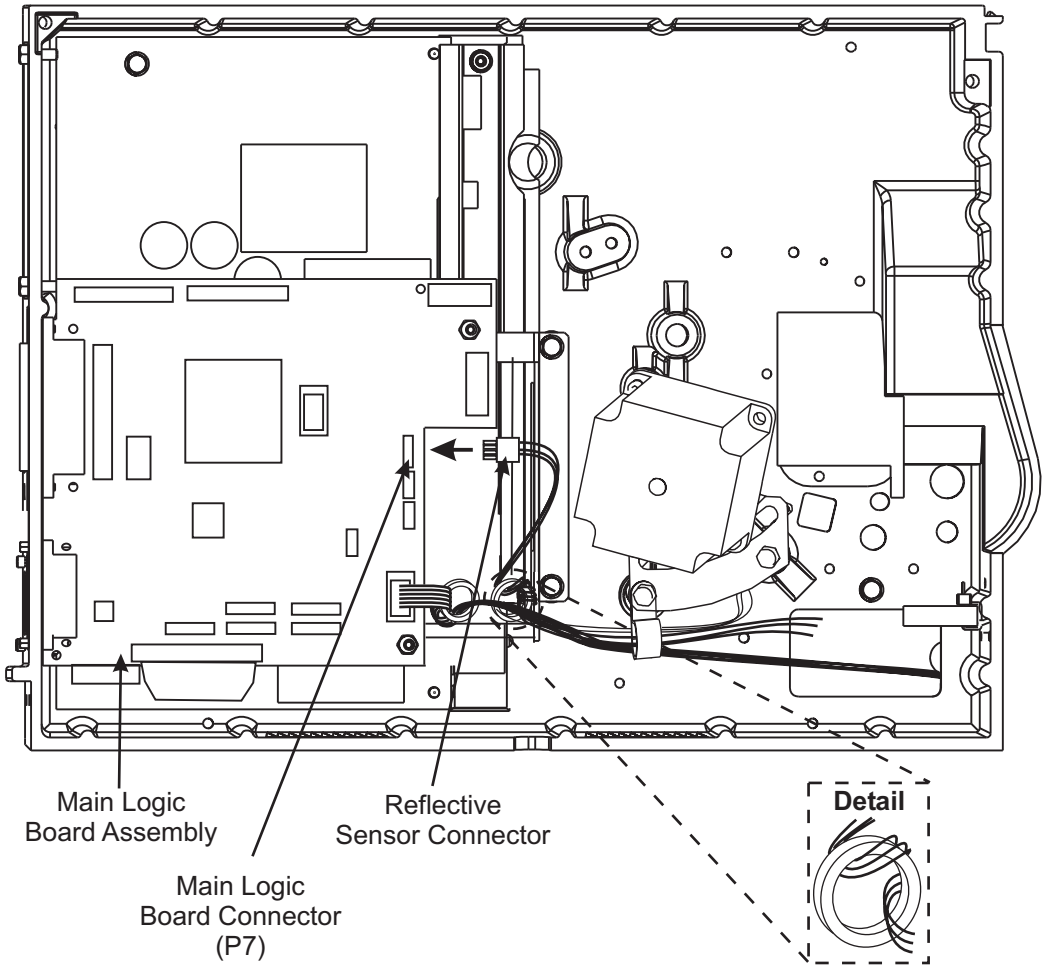
Caution • Observe proper electrostatic safety precautions when handling any static-sensitive components such as circuit boards and printheads.

6. Refer to Figure 4-55 and remove the screw securing the cable clamp and remove the reflective sensor wires.
7. Remove the sensor wires from the ferrite ring.

Note • Take note of how the wires are wrapped around the ferrite ring.

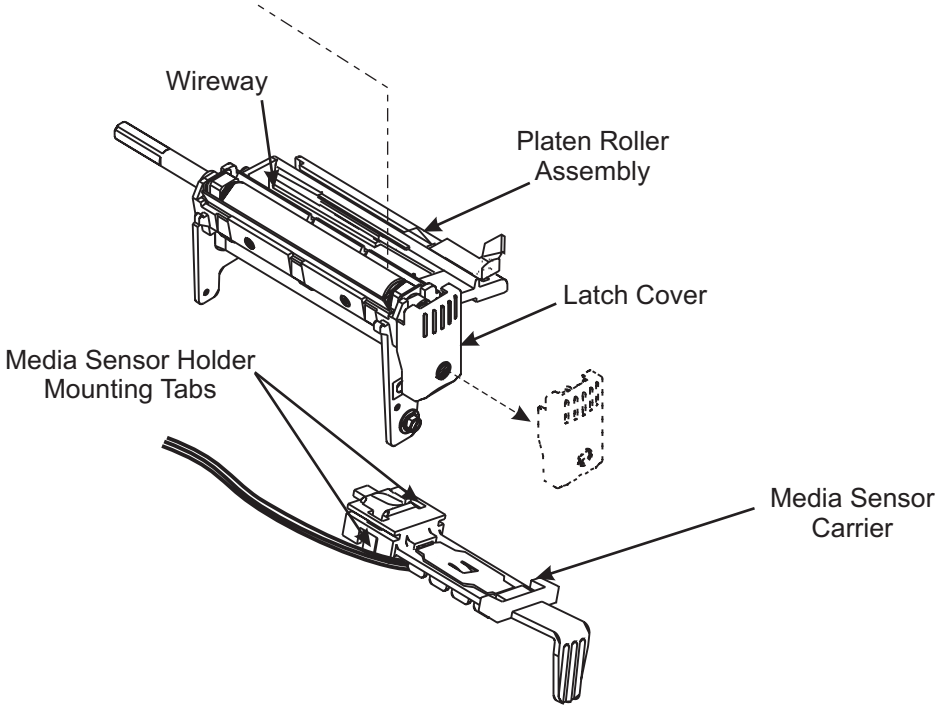
8. Disconnect the reflective sensor from the main logic board (P7).

Figure 4-55. (Reflective) Media Sensor Connection to Main Logic Board



9. Refer to Figure 4-56. Cut the cable tie securing the sensor wires inside the wireway of the platen roller assembly. Remove the platen assembly latch cover.
10. Slide the media sensor carrier all the way out until it stops, gently press down on the carrier, and slide the carrier out until it drops off the platen casting.
11. Carefully feed the wires through the access hole in the main frame and remove the carrier and sensor.

Figure 4-56. Media Sensor Removal



Install the Reflective Media Sensor Assembly

1. Refer to Figure 4-56. Route the media sensor wires through the wireway in the platen roller assembly and through the access hole in the printer frame. Replace the cable ties previously cut in the wireway.

Note • Ensure the wire harness inside the platen roller assembly wireway has no twists and that it freely travels its entire route.

2. Align the media sensor carrier slots with the slides provided on the platen roller assembly and slide the carrier part way in. Gently press down on the media sensor carrier and push the carrier past the stop.
3. Release the carrier and push it back and forth to verify traveling its entire route on the platen housing tracks. Reinstall the platen assembly latch cover.
4. Refer to Figure 4-55. Route the wires behind the ground strap from the printhead and behind the large white rectangular ferrite on the printhead data cable.
5. Insert the sensor wires in the cable clamp and reinstall the screw securing it to the stepper motor mounting bracket.

6. Thread and wrap the sensor wires through and around the ferrite the same as the wires you removed. See detail in Figure 4-55.
7. Connect the media sensor connector to the main logic board at P7.
8. Refer to Figure 4-54. Reinstall the electronics cover by aligning it and sliding down, ensuring the lower flange is inside the base and the upper flange is between the main frame and the media door.
9. Refer to Figure 4-53. Reopen the media door and reinstall the mounting screw and lock washer to secure the electronics cover.
10. Reinstall the media and ribbon.
11. Reconnect the AC Power cord and data cables.
12. Turn On (**I**) the printer.

Replace Ribbon Take-Up Assembly

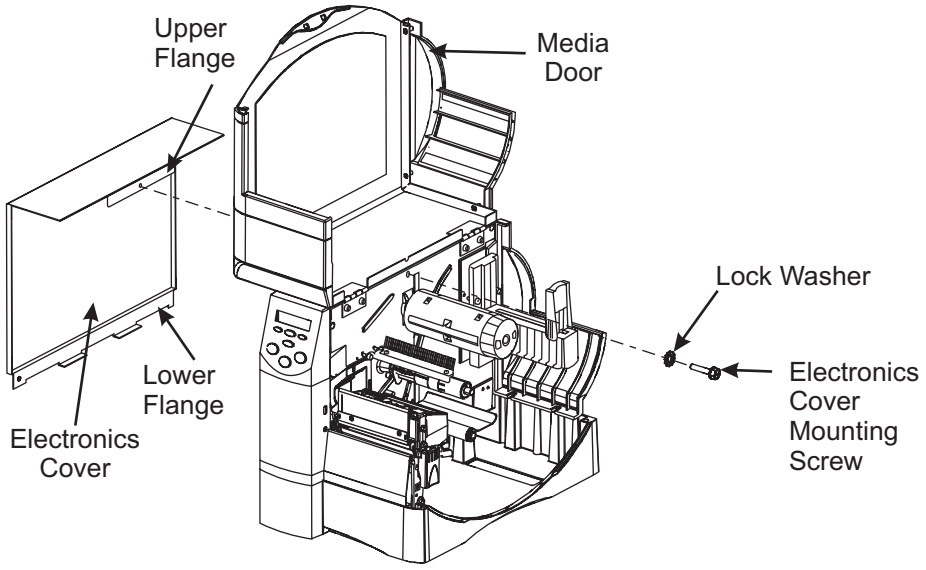
Caution • This installation must be performed by a qualified service technician.

Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

Remove Ribbon Take-Up Assembly

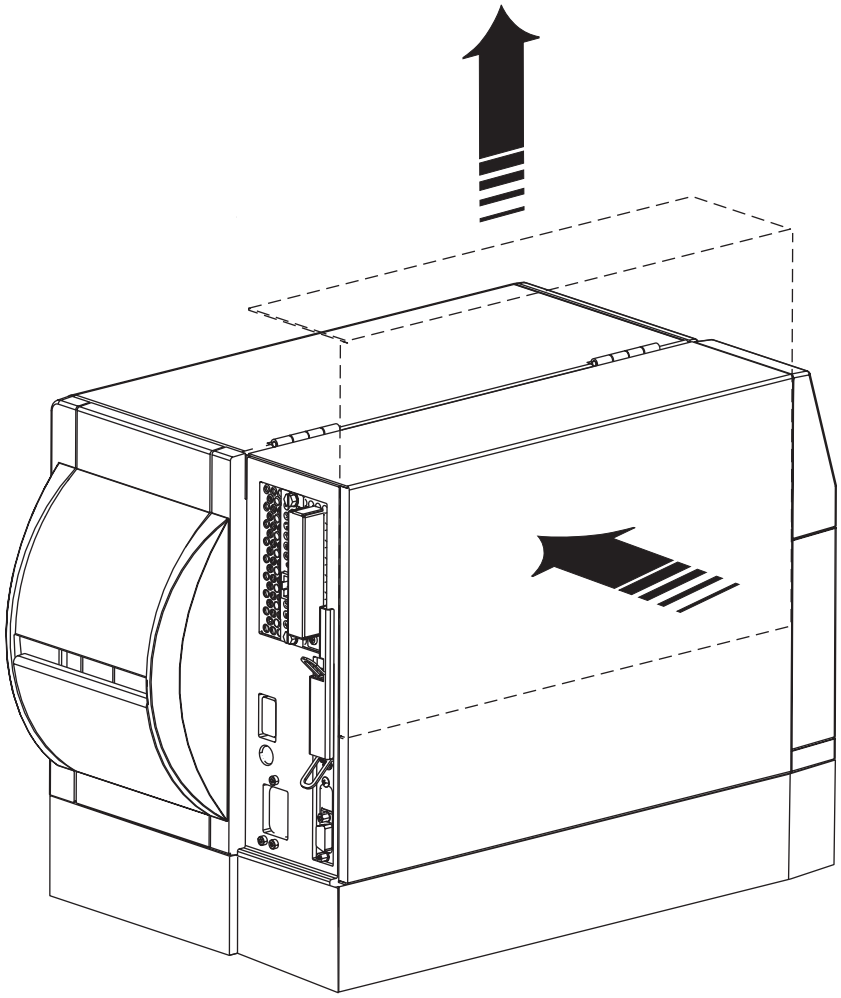
1. Turn Off (**O**) the printer and remove the AC power cord and data cables.
2. Refer to Figure 4-57. Open the media door, remove the electronics cover mounting screw and lock washer.
3. Remove the media and ribbon.
4. Close the media door.

Figure 4-57. Locate Electronics Cover Mounting Screw



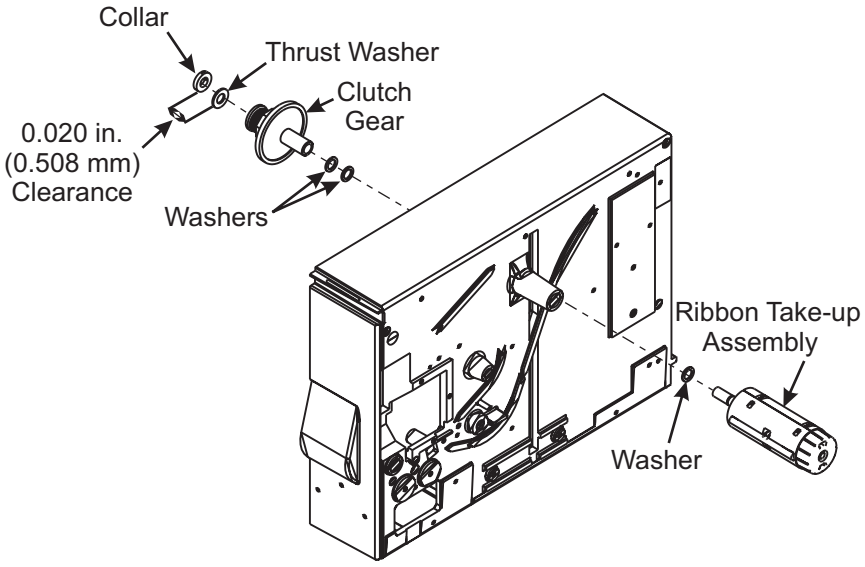
5. Refer to Figure 4-58. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.

Figure 4-58. Remove the Electronics Cover



6. Refer to Figure 4-59. Loosen the two set screws on the ribbon take-up collar securing it to the shaft. Slide the collar, plastic thrust washer, gear clutch assembly, and washers off the shaft.
7. From the media side, remove the ribbon take-up assembly and washer.

Figure 4-59. Ribbon Take-Up Assembly/Disassembly



Install Ribbon Take-Up Assembly

1. From the media side, slide the ribbon take-up assembly and washer through the main frame.
2. On the electronics side place the washers, gear clutch assembly, plastic thrust washer, and collar onto the end of the ribbon take-up assembly shaft. Ensure the gear clutch assembly meshes with the compound gear.
3. Place a 0.020 in. (0.508 mm) feeler gauge between the thrust washer and the collar. From the media side push in on the ribbon take-up assembly. Tighten the two set screws in the collar and ensure the ribbon take-up assembly turns freely.
4. Refer to Figure 4-58. Reinstall the electronics cover by aligning it and sliding down, ensuring the lower flange is inside the base and the upper flange is between the main frame and the media door.
5. Refer to Figure 4-57. Reopen the media door and reinstall the mounting screw and lock washer to secure the electronics cover.
6. Reinstall the media and ribbon.
7. Reconnect the AC Power cord and data cables.
8. Turn On (**I**) the printer.

Replace Ribbon Supply Assembly

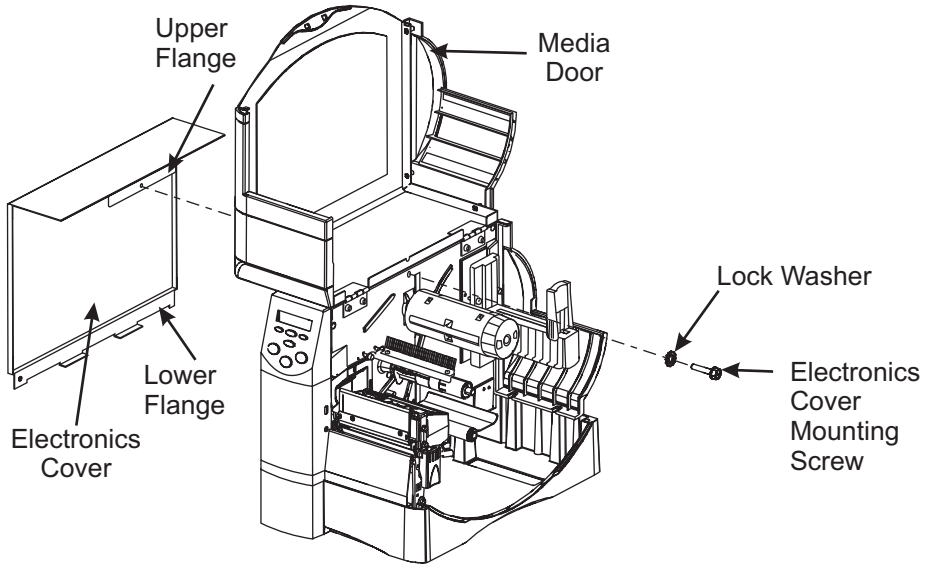
Caution • This installation must be performed by a qualified service technician.

Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

Remove Ribbon Supply Assembly

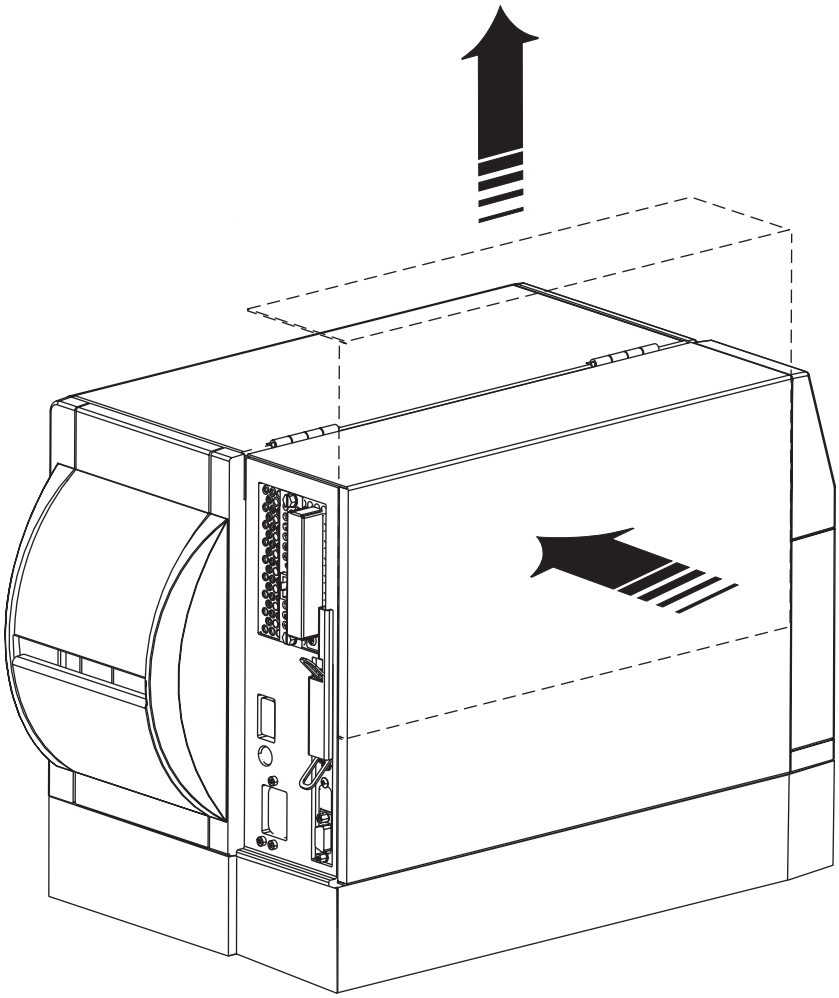
1. Turn Off (**O**) the printer and remove the AC power cord and data cables.
2. Refer to Figure 4-60. Open the media door, remove the electronics cover mounting screw and lock washer.
3. Remove the media and ribbon.
4. Close the media door.

Figure 4-60. Locate Electronics Cover Mounting Screw



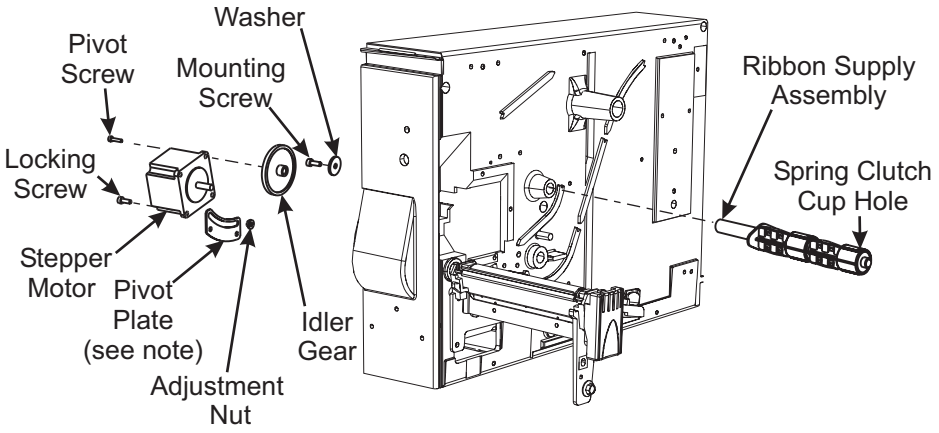
5. Refer to Figure 4-61. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.

Figure 4-61. Remove the Electronics Cover



6. Refer to Figure 4-62. Remove the stepper motor locking screw and nut.
7. Remove the stepper motor pivot screw.
8. Remove the stepper motor, belt, and idler gear.
9. Remove the ribbon supply assembly mounting screw and washer.

Figure 4-62. Ribbon Supply Assembly/Disassembly

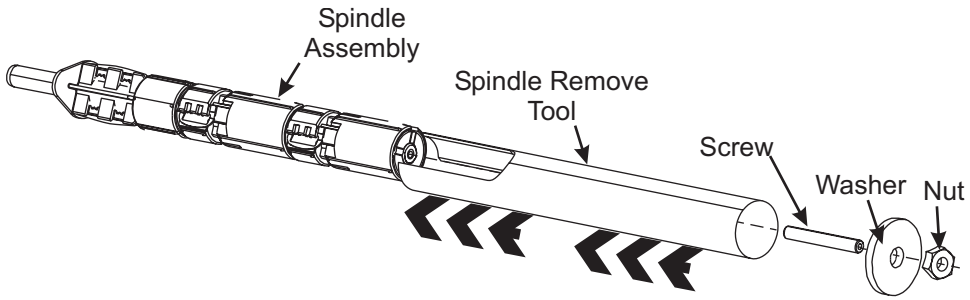


Note • Pivot bracket does not get removed. Shown removed for parts identification.

Note • For the Z6Mplus, continue to next step. For the Z4Mplus, push the spindle out of the main frame, then go to Install Ribbon Supply Assembly on page 128.

10. Slide the spindle remove tool over the ribbon supply spindle on the printer.
11. Install the screw into the end of the spindle assembly until it bottoms out.
12. Slide the washer over the end of the screw until it is against the remove tool.
13. Install the nut until it rests against the washer.

Figure 4-63. Use Remove Tool



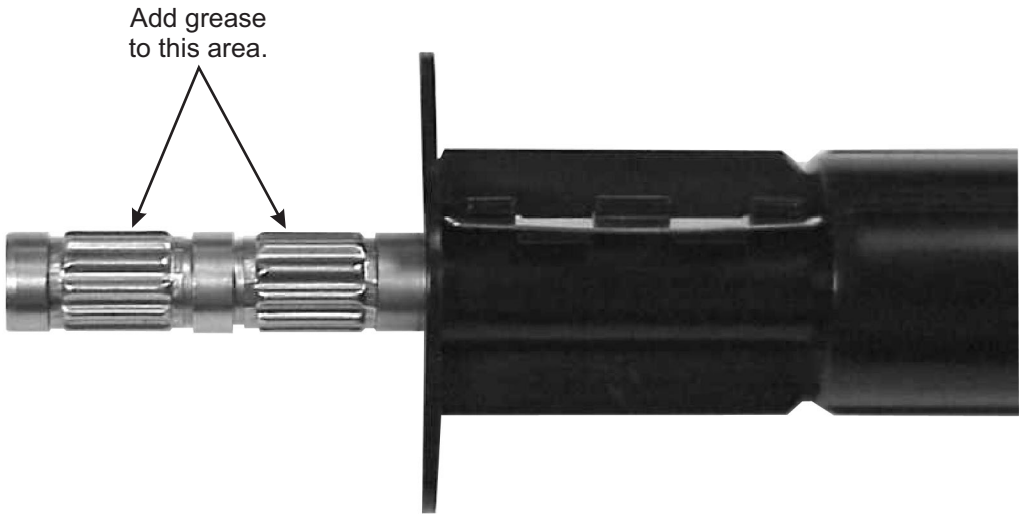
14. While holding the remove tool and using the nut driver, turn the nut clockwise to remove the ribbon supply spindle from the printer.
15. After the spindle is out of the main frame, remove the nut, washer, and screw from the spindle.
16. Slide the remove tool from the spindle.

Install Ribbon Supply Assembly

Refer to Figure 4-64

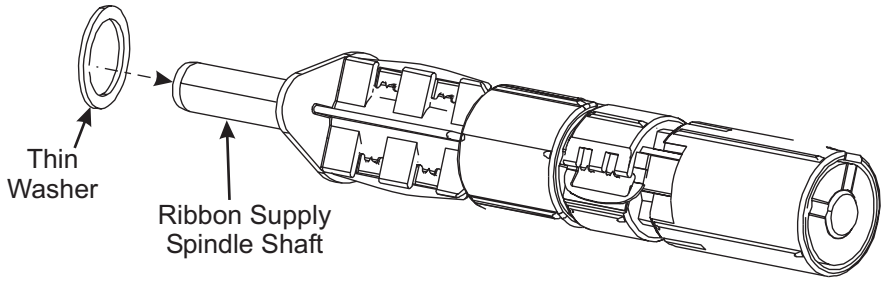
1. Place a small amount of grease on the tolerance rings of the ribbon supply spindle shaft.

Figure 4-64. Lubrication



2. Refer to Figure 4-65. Install the thin washer onto the spindle shaft.

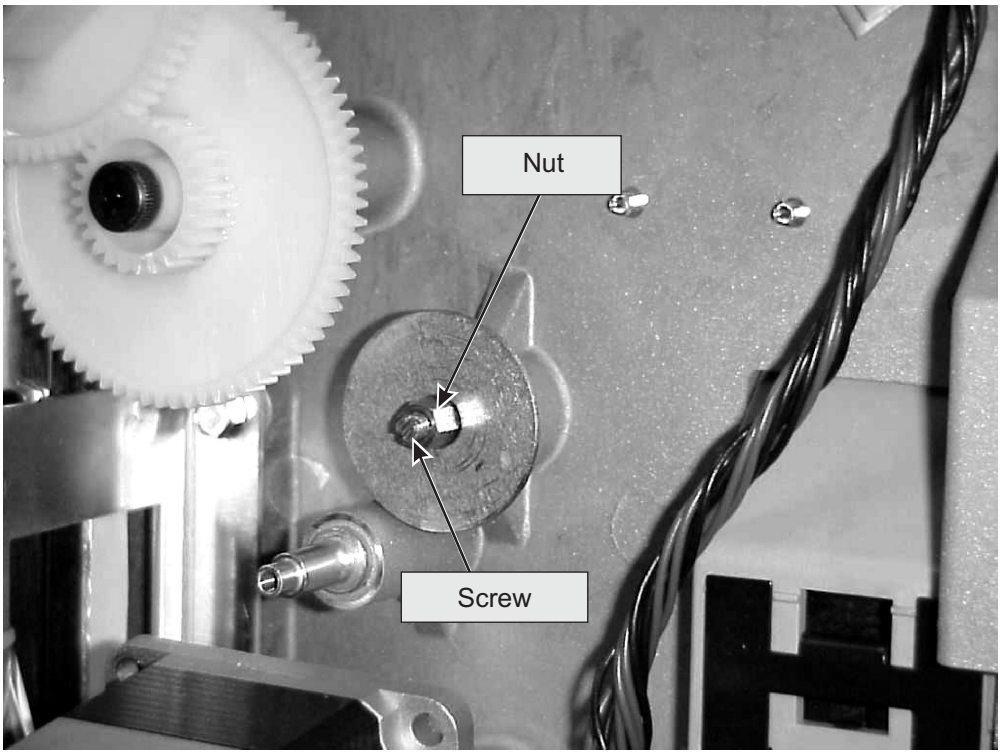
Figure 4-65. Install Washer



3. For the Z6Mplus, continue to next step. For the Z4Mplus, carefully push the new spindle into the main frame, then install the washer and screw previously removed.
4. Refer to Figure 4-63. Slide the remove tool onto the new spindle assembly, then gently push the ribbon supply spindle assembly into the main frame.

5. Refer to Figure 4-66. From the electronics side, install the screw into the spindle shaft until it bottoms out.
6. Slide the washer over the end of the screw until it is against the main frame.
7. Install the nut until it rests against the washer.

Figure 4-66. Spindle installation



8. While holding the removal tool, turn the nut clockwise to draw the ribbon supply spindle into the printer. Once the spindle is in the printer, turn the spindle nut a half turn counterclockwise and remove the screw, nut, and washer.
9. Slide the ribbon supply assembly into the printer. Reinstall the washer and mounting screw and check the spindle assembly for no end play.
10. Reinstall the idler gear, ensuring the gears mesh properly.
11. Loosely reinstall the stepper motor using the pivot screw, locking screw, and adjustment nut.

Note • Belt deflection should be no more than 0.25 in. (6 mm).

12. While lifting up on the stepper motor, reinstall the drive belt. Release the stepper motor to provide tension on the belt.
13. Adjust the position of the stepper motor to achieve the correct belt deflection and tighten the locking screw. Tighten the pivot screw.

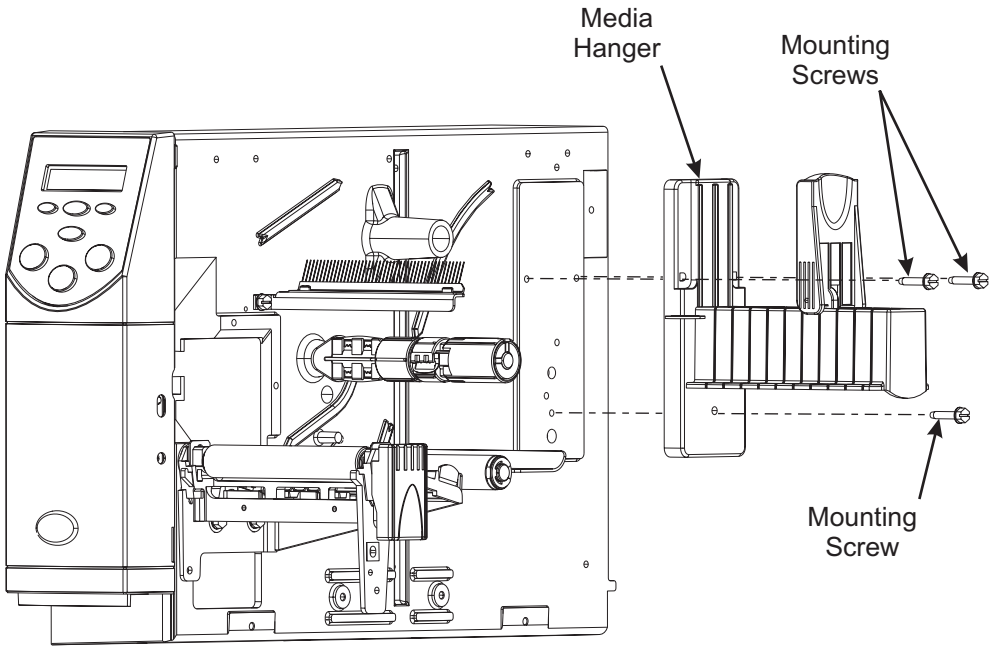
14. Refer to Figure 4-61. Reinstall the electronics cover by aligning it and sliding down, ensuring the lower flange is inside the base and the upper flange is between the main frame and the media door.
15. Refer to Figure 4-60. Reopen the media door and reinstall the mounting screw and lock washer to secure the electronics cover.
16. Reinstall the media and ribbon.
17. Reconnect the AC Power cord and data cables.
18. Turn On (**I**) the printer.

Replace Media Hanger

Remove Media Hanger

1. Turn Off (**O**) the printer and remove the AC power cord and data cables.
2. Remove the media.
3. Refer to Figure 4-67. Remove the three mounting screws securing the media hanger and remove the hanger.

Figure 4-67. Remove and Install Hanger



Install Media Hanger

1. Align the media hanger with the mounting holes on the main frame and install the three mounting screws.
2. Reinstall the media and ribbon.
3. Reconnect the AC Power cord and data cables.
4. Turn On (**I**) the printer.

Options

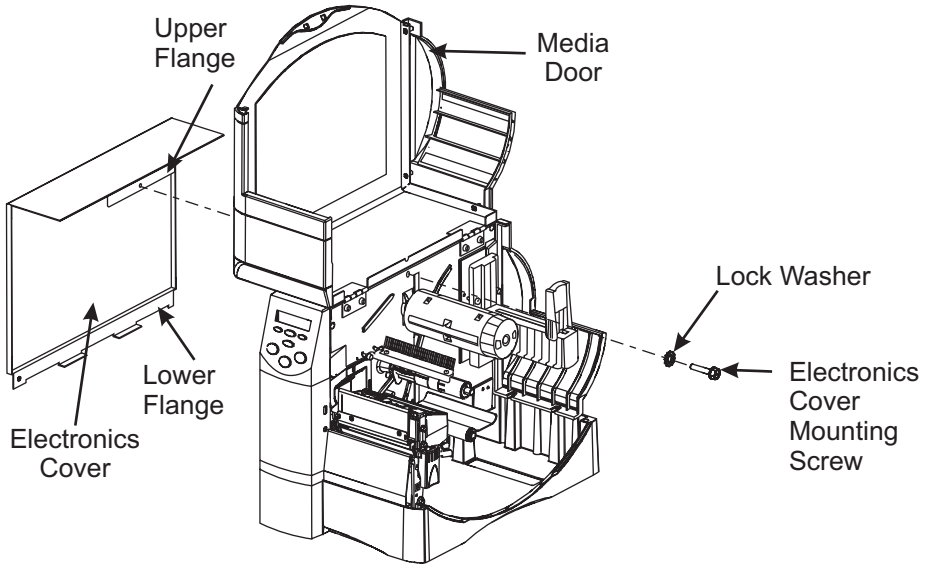
Install PCMCIA Socket Board

Caution • This installation must be performed by a qualified service technician.

Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

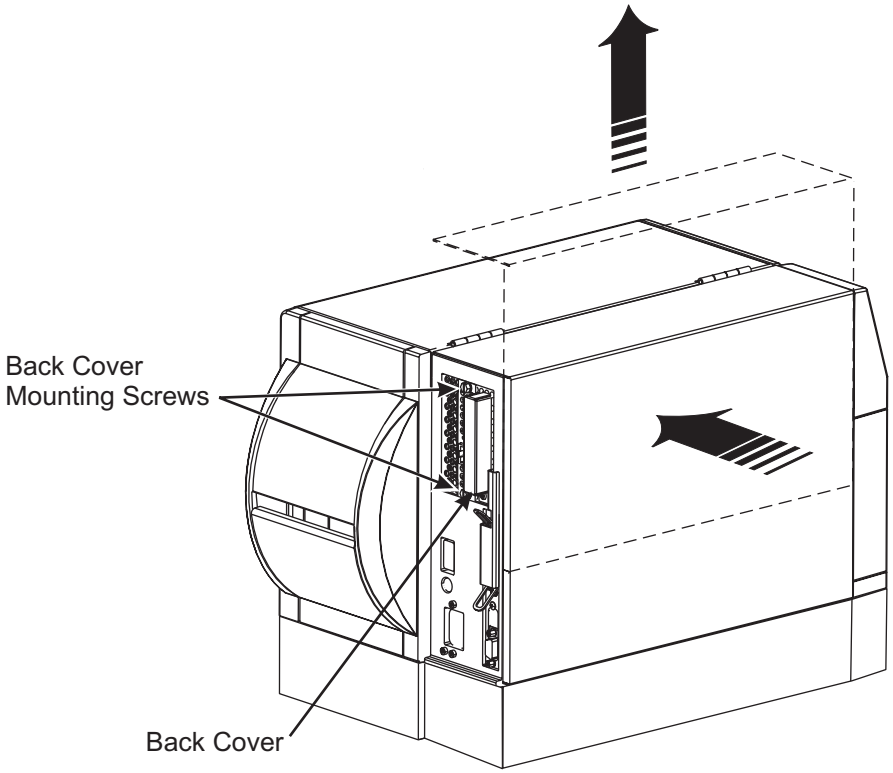
1. Turn Off (**O**) the printer and remove the AC power cord and data cables.
2. Refer to Figure 4-68. Open the media door, remove the electronics cover mounting screw and lock washer.
3. Remove the media and ribbon.
4. Close the media door.

Figure 4-68. Locate Electronics Cover Mounting Screw



5. Refer to Figure 4-69. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.

Figure 4-69. Remove the Electronics Cover



6. If there is no PSII installed continue to the next step. If a PSII is installed, refer to page 84 and remove the PSII board from the MLB and set it on top of the printer.

Note • Do not remove the cable from the PSII board.

Note • If a PSII is installed, the back will not have to be removed.

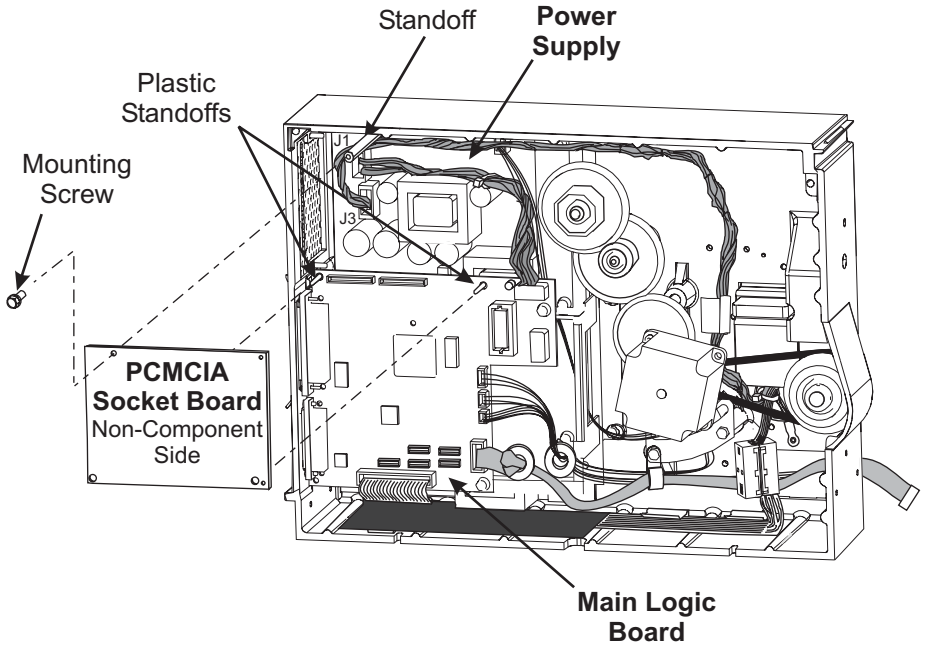
7. Refer to Figure 4-69. Remove and retain the two screws securing the back cover. Remove the cover.

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

8. Refer to Figure 4-70. Insert the short end of the standoff into the holes on the main logic board.
9. With the component side of the socket board facing the printer align the two long sides of the standoffs with the two holes near the lower edge of the socket board. While aligning P23 and P24 of the socket board with P23 and P24 on the main logic board, carefully press the two boards together.

10. Using the screw supplied, secure the top of the socket board to the long metal standoff.

Figure 4-70. Standoff Mounting Location



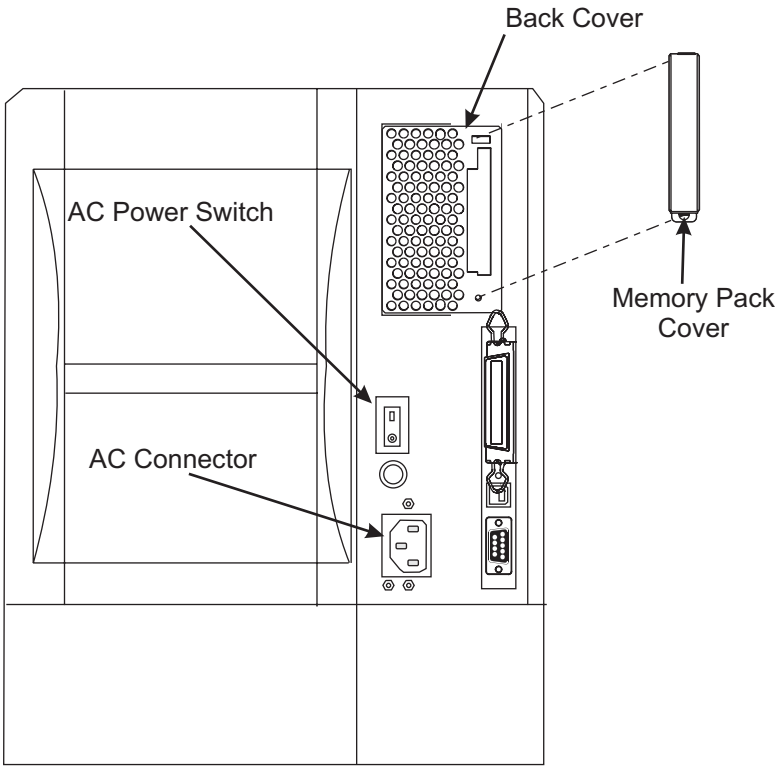
11.

- If no PSII is installed, continue to next step 12.
- If a PSII is installed, align the parallel connector of the PSII with the parallel port plug on the MLB and the standoff(s). Press the PSII in until the standoff(s) lock the board in place.

12. Refer to Figure 4-71. Install the back cover supplied in the kit.

Note • If a PSII is installed, the back will not have to be installed.

Figure 4-71. Back Cover Installation

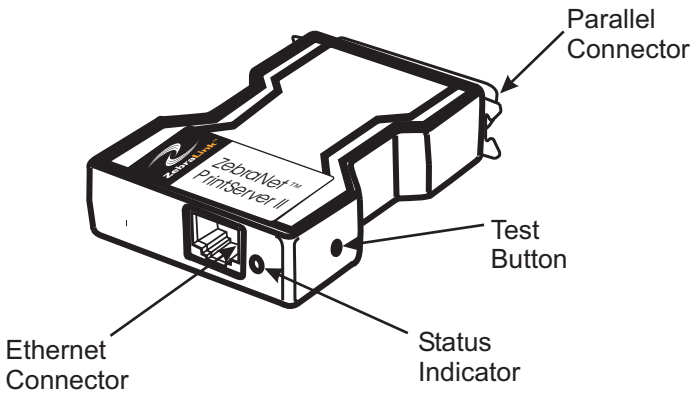


13. If you have a PCMCIA card, insert it into the slot to ensure the card fits into the PCMCIA socket board with no obstruction and install the memory pack cover.
14. Refer to Figure 4-69. Reinstall the electronics cover by aligning it and sliding down, ensuring the lower flange is inside the base and the upper flange is between the main frame and the media door.
15. Refer to Figure 4-68. Reopen the media door and reinstall the mounting screw and lock washer to secure the electronics cover.
16. Reinstall the media and ribbon.
17. Reconnect the AC Power cord and data cables.
18. Press and hold **CANCEL** while turning On (**I**) the printer.
19. A configuration label will be printed. Verify the PCMCIA option is recognized.
20. If the configuration label does not show **"Installed……B: Memory"**, turn Off (**O**) the printer, disconnect the AC power cord, and remove the electronics cover. Realign and seat the connectors.
21. Reinstall the electronics cover and tighten the screw and lock washer securing it.
22. Reconnect the AC power cord.
23. Run another Cancel Key Self Test to ensure proper connection.

External PSII

This section provides you with an illustration of the external PSII and the steps required for its installation.

Figure 4-72. External PrintServer II

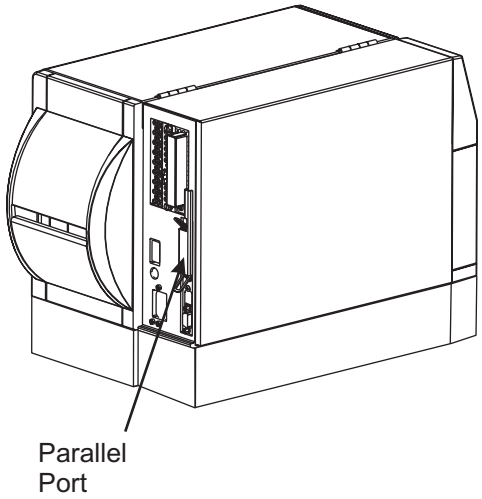


Install the external PS II

Note • When necessary, refer back to this illustration during the installation steps.

1. Turn Off (**O**) the printer.
2. Refer to Figure 4-73. On the back of the printer, insert the PSII device into the parallel port.

Figure 4-73. Locate Parallel Port



3. Secure the wire locks.
4. Refer to Figure 4-72. Insert a live 10BASE-T cable into the Ethernet connector of the external PSII.
5. Turn On (**I**) the printer.

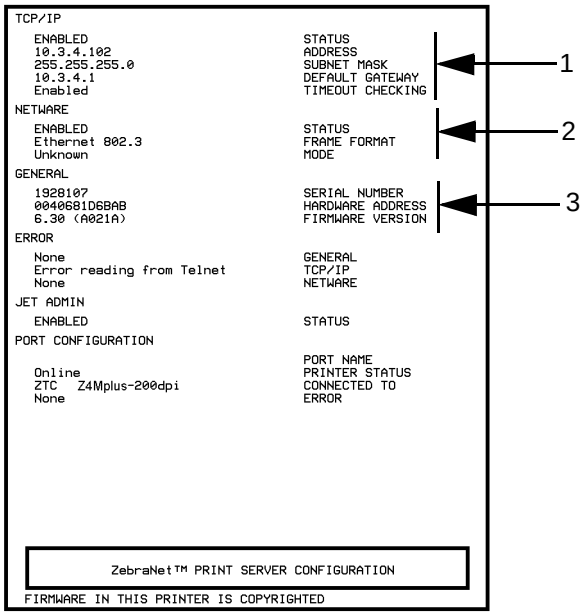
6. Press the Test button located on the side of the external PSII. This prints out a PSII configuration label.

A red status indicator blinks during the Power On Self Test (POST) and changes to green when the initialization is finished.

The Test button is a small hole on the PSII device. To press it, you need to insert something small into the hole, like a paperclip.

Figure 4-74 is an example of a PSII configuration label, identifying the settings you need to know.

Figure 4-74. Sample Label



Item	Description
1	This shows the IP address, subnet mask, and default gateway of the PSII device. If the IP address is set at 0.0.0.0, you need the serial number (item 3) to set the IP address.
2	This shows all the Novell settings.
3	This shows the serial number, hardware address (MAC address), and firmware version of the PSII device.

Internal PSII

Caution • This installation must be performed by a qualified service technician.

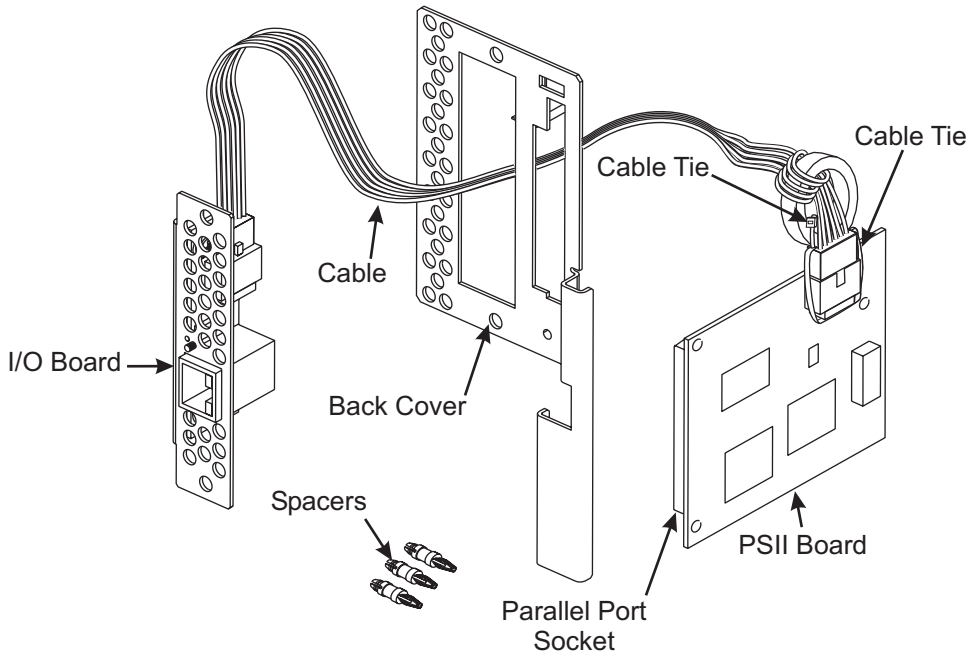
Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

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

Power Down and Disconnect Cables

Figure 4-75 shows you the internal PSII that can be installed into Z4Mplus and Z6Mplus printers.

Figure 4-75. PSII Parts

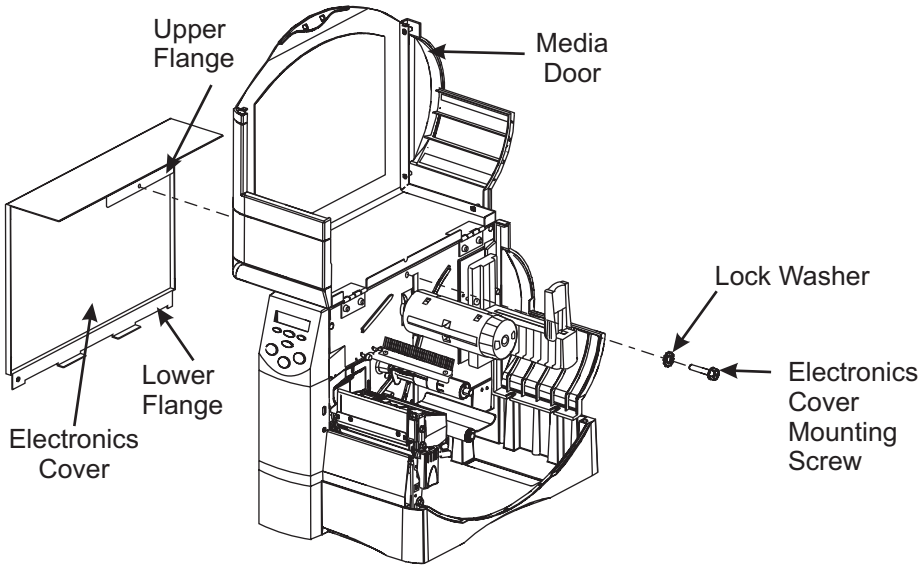


Note • Do not remove the cable from the PSII board.

1. Turn Off (**O**) the printer and remove the AC power cord and data cables.
2. Refer to Figure 4-76. Open the media door, remove the electronics cover mounting screw and lock washer.

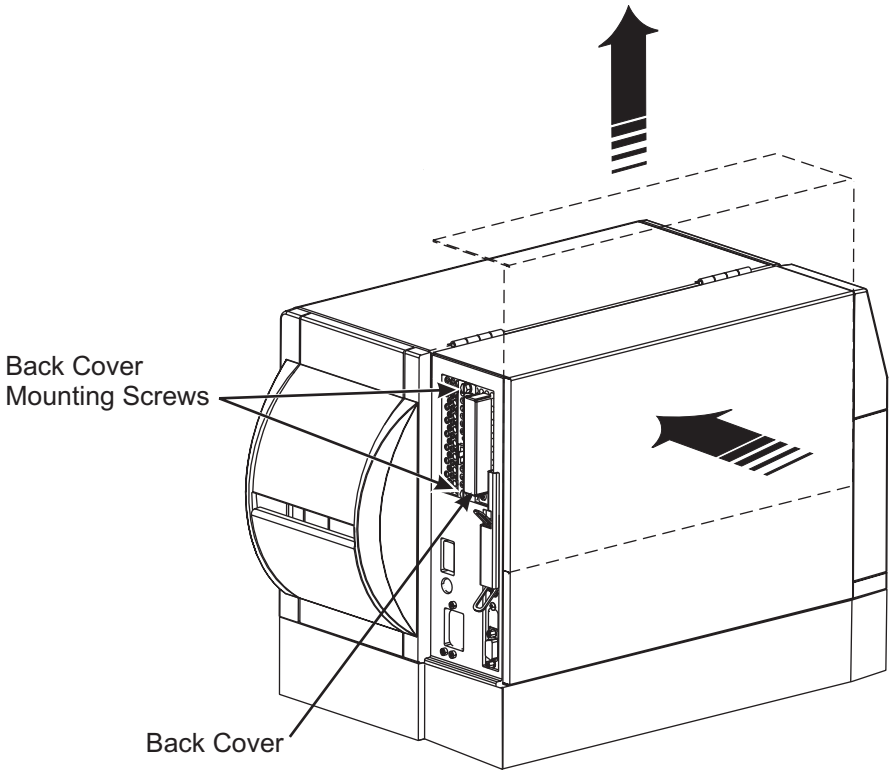
3. Remove the media and ribbon.
4. Close the media door.

Figure 4-76. Locate Electronics Cover Mounting Screw



5. Refer to Figure 4-77. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.

Figure 4-77. Remove the Electronics Cover

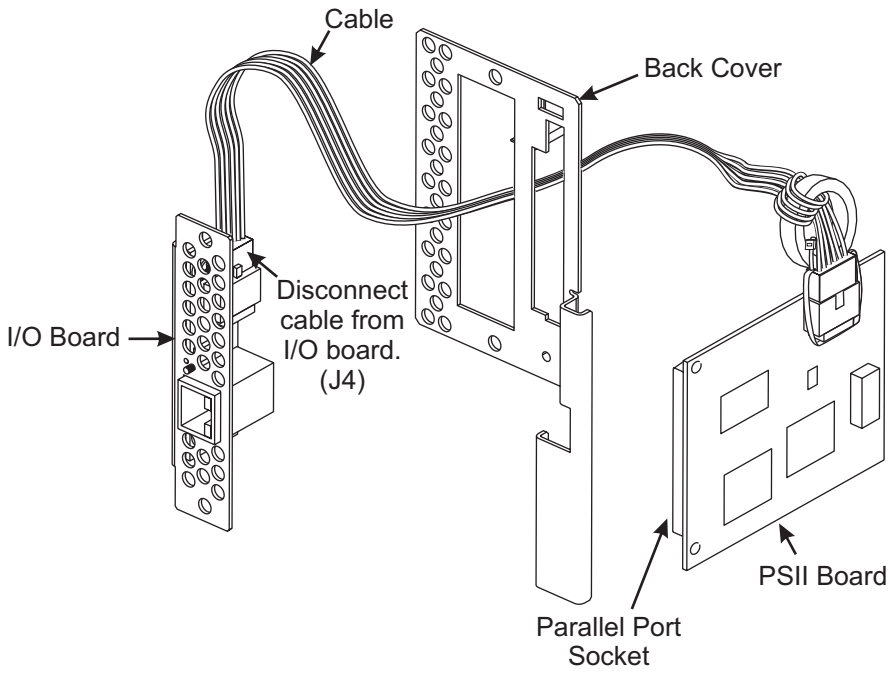


Installing the PSII Board

1. Refer to Figure 4-77. Remove the two screws and back cover.
2. Refer to Figure 4-78. Disconnect the cable from the I/O board at J4.

Note • Do **not** remove the cable from the PSII board.

Figure 4-78. Locate I/O Board Cable Connector

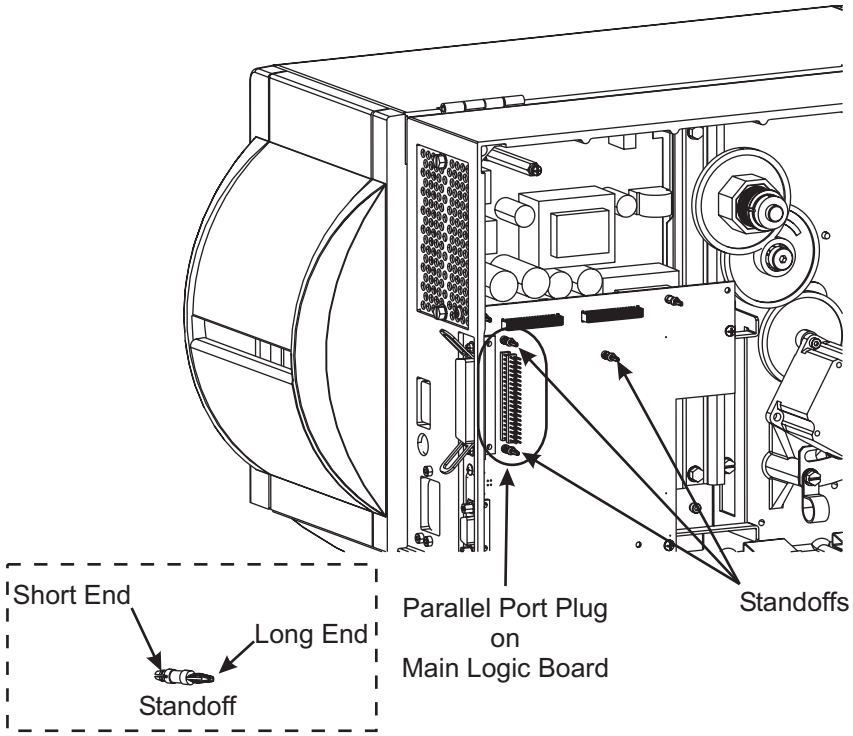


Note • Follow the directions in the next step carefully. It is possible to install the standoffs incorrectly.

3. Refer to Figure 4-79. Insert the short ends of the three included standoffs into the holes on the main logic board until they click. Insert JP1 on the PSII board into P21 on the main logic board and snap the PSII board onto the long ends of the standoffs.

Note • Figure 4-79 shows the standoffs already inserted in the main logic board.

Figure 4-79. Install PSII Board

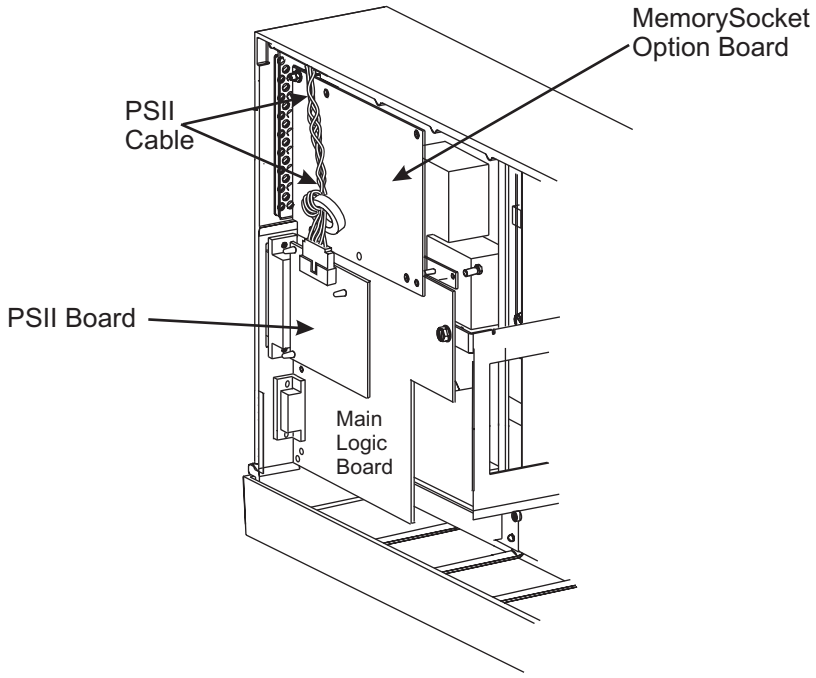


Note • Ensure the PSII board is in securely.

Note • If your printer has a PCMCIA card installed, you need to work around it for the next step. Step 4 requires you to feed the connector over the PCMCIA socket board.

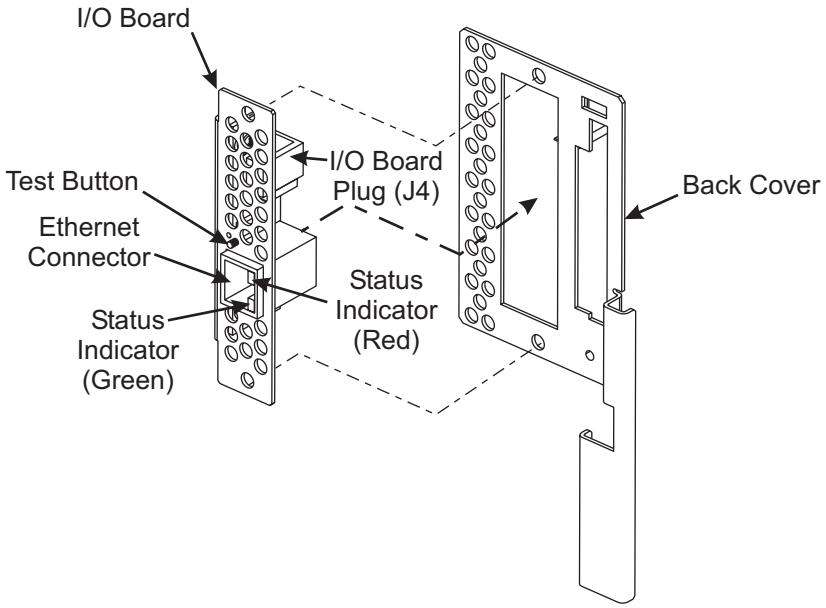
4. With the PSII board connected to the main logic board, route the connector up and through the mounting slot on the back of the printer. Refer to Figure 4-80 to determine the proper routing of the PSII cable if the Memory Socket Option card is installed.

Figure 4-80. Cable Routing with PSII Installed



5. Refer to Figure 4-81. Put the I/O board and back cover together.

Figure 4-81. Install I/O Board

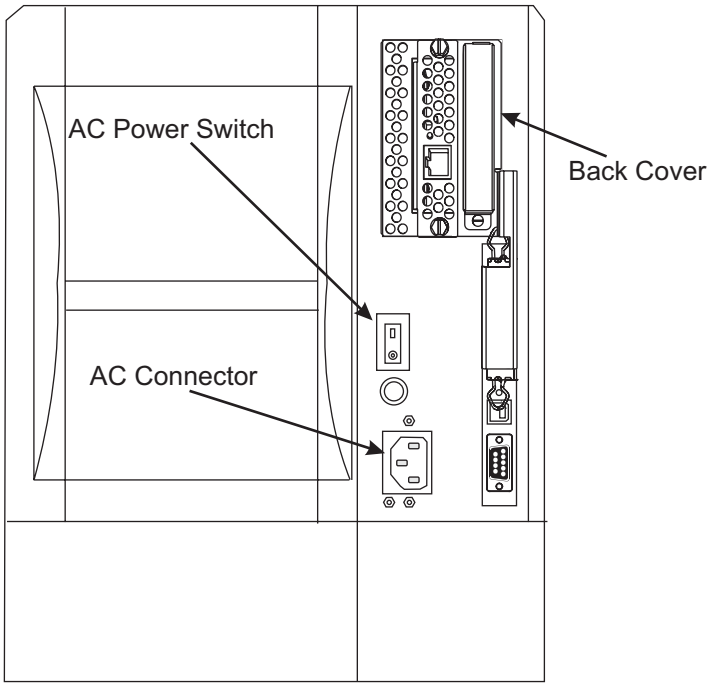


6. Connect the PSII cable to (J4) on the I/O Board.

Note • The parallel port on the back of the printer is not operational when the internal PSII is installed. The back cover provided covers the parallel port.

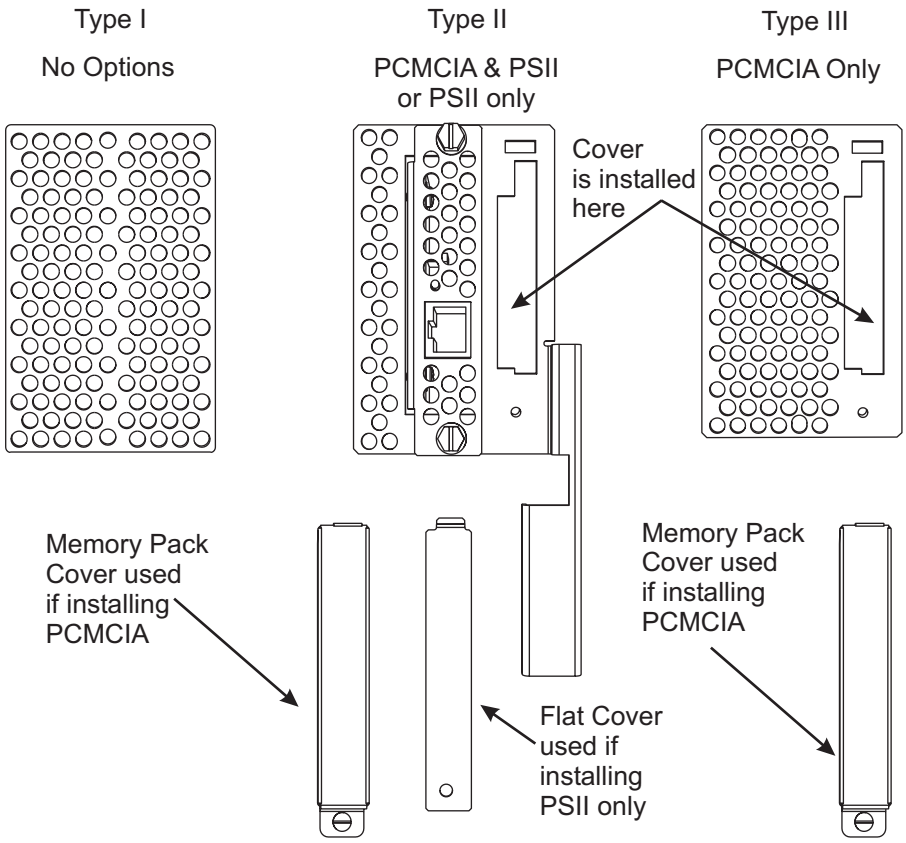
7. Install the back cover appropriate for your printer using the two screws previously removed in step 1 of the section Installing the PSII Board on page 140.

Figure 4-82. Back Cover Installation



Note • If you are installing multiple option kits, refer to Figure 4-83 to indentify the appropriate back cover and options.

Figure 4-83. Back Cover Options



Note • The parallel port on the back of the printer is not operational when the internal PSII is installed. The back cover provided covers the parallel port.

Restore Printer Operations

1. Refer to Figure 4-77. Reinstall the electronics cover by aligning it and sliding down, ensuring the lower flange is inside the base and the upper flange is between the main frame and the media door.
2. Refer to Figure 4-76. Reopen the media door and reinstall the mounting screw and lock washer to secure the electronics cover.
3. Reinstall the media and ribbon and close the media door.
4. Reconnect the AC power cord and data cables.
5. Turn On (**I**) the printer.

Note • A red status indicator blinks during the Power On Self Test (POST) and changes to green (solid or flashing) when the initialization is finished.

Important • Consult your System Administrator before configuring the PSII for your network! To establish the network connection, refer to the section applicable to your network type.

6. Press the Test button located just above the Ethernet connector on the I/O board. This prints out a PSII configuration label.

A red status indicator blinks during the Power On Self Test (POST) and the green status blinks afrter initialization is finished.

Figure 4-74 is an example of a PSII configuration label, identifying the settings you need to know.

Refer to your *User Guide* for more information.

Status Indicators

Status Indicators display the operational status of the PSII. Table 4-2 explains the indicators, the operational status, and actions required.

Table 4-2. PSII Status Indicators, Status, and Action

Indicator	Operational Status	Action
Solid green LED (for more than 30 seconds)	**Normal operation.** This indicates all the hardware is functioning properly and it has detected the presence of the network. It does not mean the PSII has an IP address or is attached to a printer queue.	**No action required.**
Rapidly flashing green LED (9 times/second)	The PSII has not detected the presence of a network cable.	Turn the printer power off. Remove the network cable from the PSII. Plug the network cable back in until you hear a positive click. Check the other end of the cable in the same manner. Turn the printer power on. If the PSII still does not detect a cable, continue. Cables with a rating higher than CAT-5 have **not** been tested. Verify that the network cable is 10BASE-T and has an RJ-45 connector. Connect the PSII to a network drop that is a known good network connection. If the PSII is still unable to detect the network cable, contact Technical Support for assistance.
Slowly flashing green LED (1 time/second)	The PSII is trying to print a job. If the job does not print, perform the action in the next column.	Verify that the printer has media and ribbon (if in thermal transfer mode). If the printer is showing any errors, it is unlikely that the PSII can send data to the printer. The LED continues to blink until the printer malfunction is resolved or until the printer is turned off. Flashing red indicates the Power On Self Test (POST) is in progress.

Table 4-2. PSII Status Indicators, Status, and Action

Indicator	Operational Status	Action
Solid red LED (for more than 30 seconds)	The PSII has failed the Power On Self Test (POST). If the failure is not severe, the PSII attempts to print a configuration label on the printer.	The printer attached to the PSII device is malfunctioning. Turn the printer power off, wait 10 seconds, then turn the printer back on. If the PSII still fails the POST, continue below. The PSII has a hardware problem that can be fixed only by replacing or returning the unit. Contact Technical Support for repair or replacement information.
Alternately flashing red and green LED (for longer than 2 minutes)	If the LED is alternately flashing red and green for longer than 2 minutes, the PSII is in firmware-download mode. This means it is waiting for new firmware data to be sent before it continues normal functioning. Perform the action in the next column.	If the PSII was purposely put into firmware-download mode, finish the download with the proper update utility. Contact the Zebra Web site at http://www.zebra.com to download this utility. Contact Technical Support for help recovering this unit.

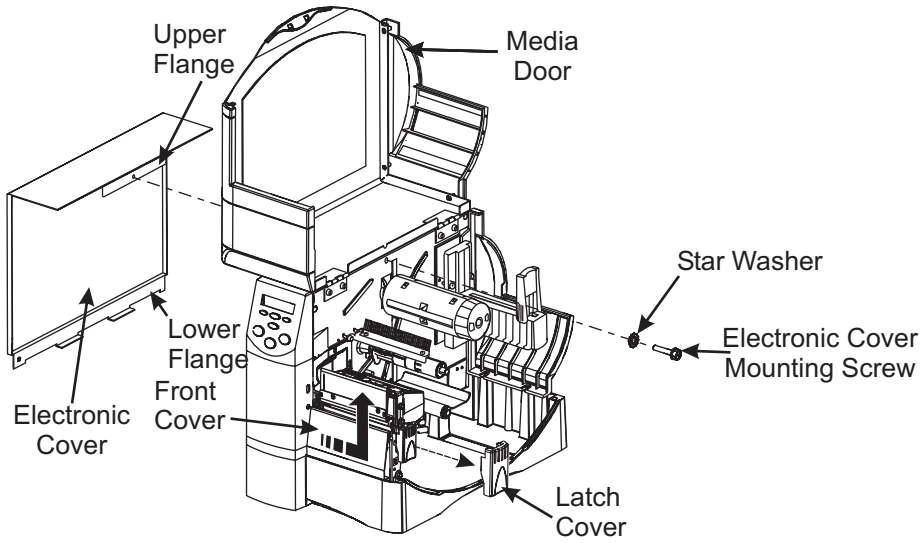
Install Cutter Option

Caution • This installation must be performed by a qualified service technician.

Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

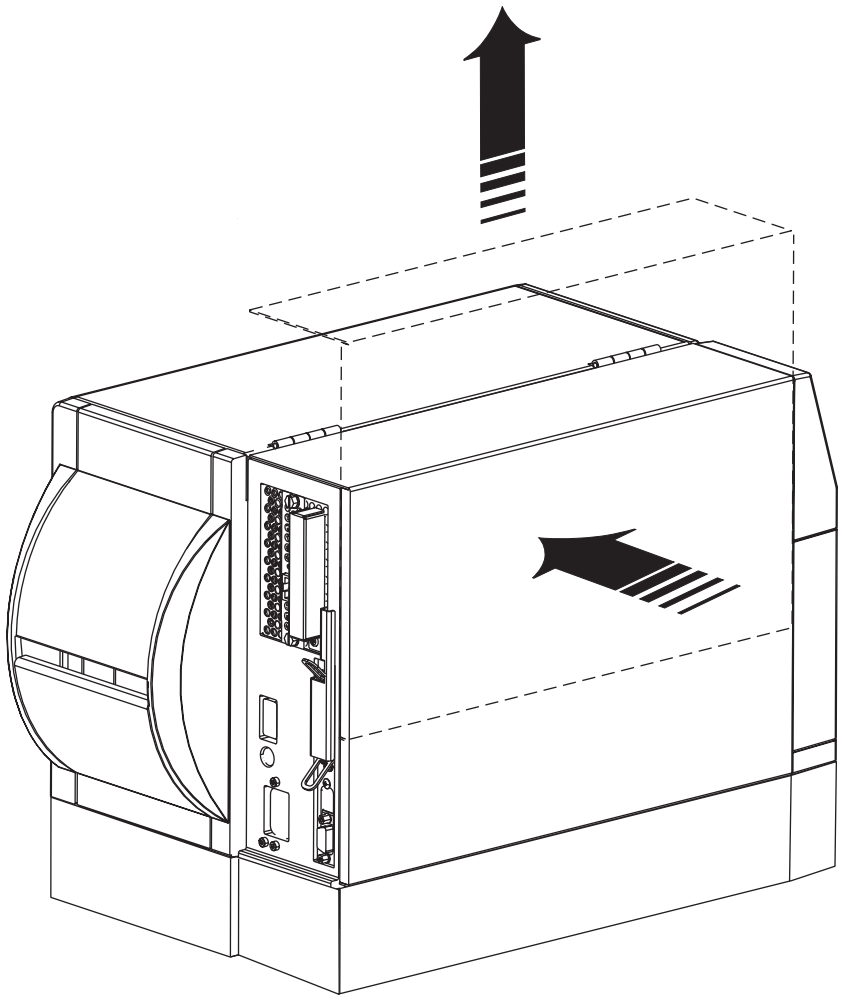
1. Turn Off (**O**) the printer and remove the AC power cord and data cables.
2. Refer to Figure 4-84. Open the media door, remove the electronics cover mounting screw and lock washer.
3. Remove the media and ribbon.
4. Close the media door.
5. Remove the latch cover by prying out on the front edge with a small screwdriver.
6. Slide the front cover to the right, then lift to remove.
7. Reinstall the latch cover.

Figure 4-84. Locate Electronics Cover Mounting Screw



8. Refer to Figure 4-85. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.

Figure 4-85. Remove the Electronics Cover



Caution • The cutter blade is sharp. Do not touch or rub the blade with your fingers.

9. Refer to Figure 4-86. Locate the cutter assembly in the kit. Verify that the mounting bracket is installed properly, with the “M” in the correct position. If not, loosen the center screw and rotate the bracket until the “M” is in the proper position.

Figure 4-86. Mounting Bracket Location and Position

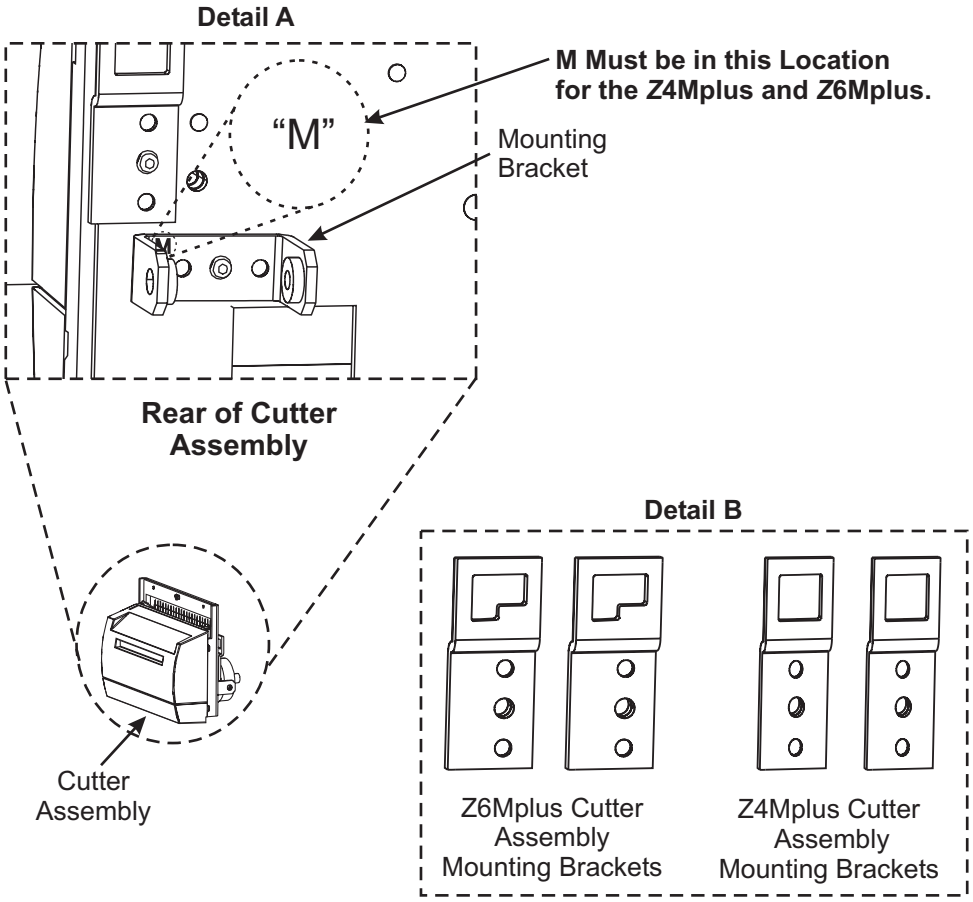
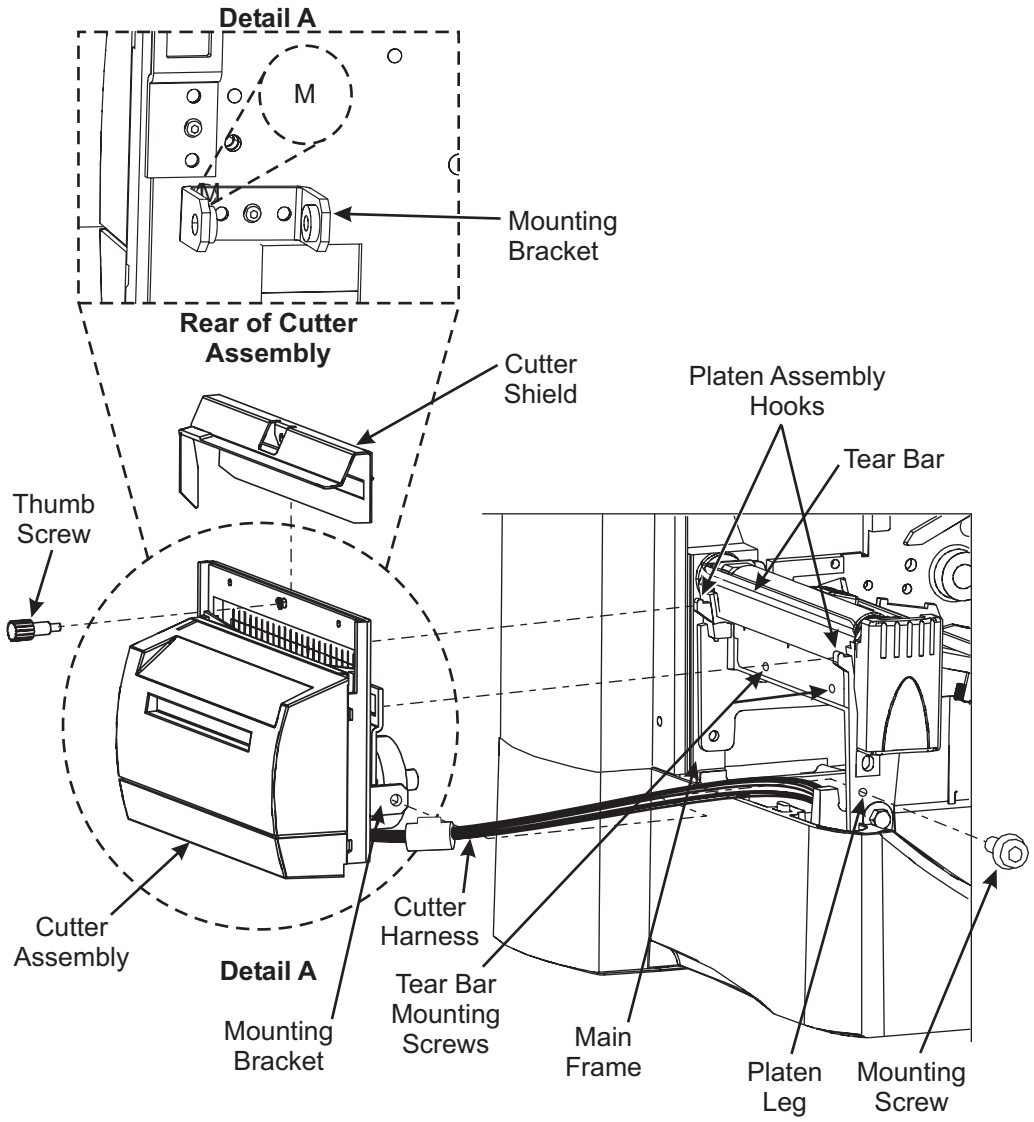


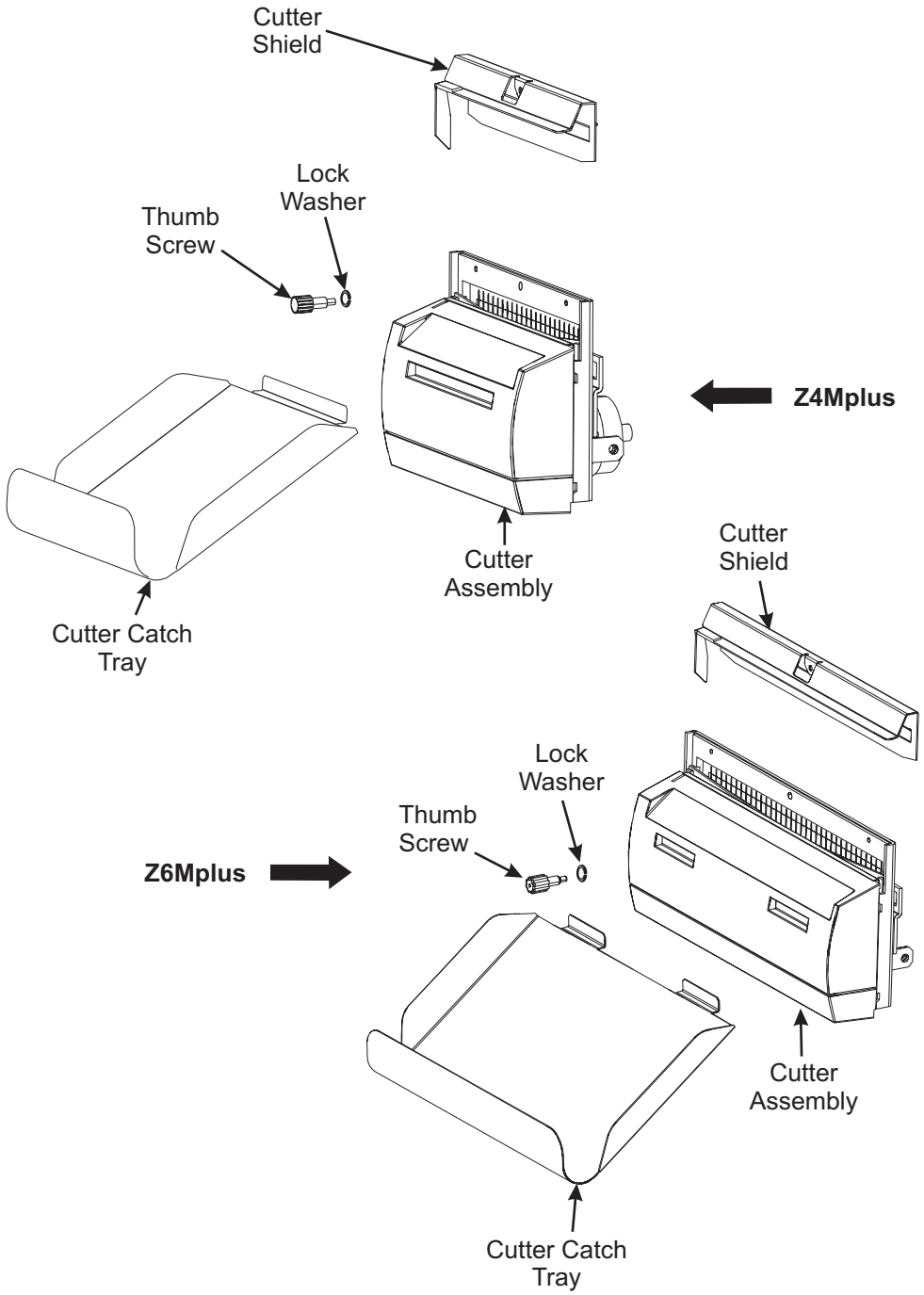
Figure 4-87. Install the Cutter Assembly (Z4Mplus Shown)



10. Refer to Figure 4-87. While holding the cutter assembly, route the cutter assembly wire harness through the opening under the platen assembly then under the main frame.
11. Install the cutter assembly on the hooks of the platen housing. The Z6Mplus brackets have step slots. Hold the cutter assembly as far to the left as possible, align the larger part of the slot with the hooks on the platen housing. Slide the cutter assembly onto the hooks then push down and slide the assembly to the right.
12. Secure the cutter assembly onto the platen assembly. The mounting bracket tab on the cutter fits behind and attaches to the platen assembly leg, using the screw provided to secure it to the platen housing assembly.

13. Refer to Figure 4-88. Place the cutter shield over the cutter assembly and secure in place using the thumb screw and lock washer provided.
14. Place catch tray in slot or slots in front cover of cutter assembly.

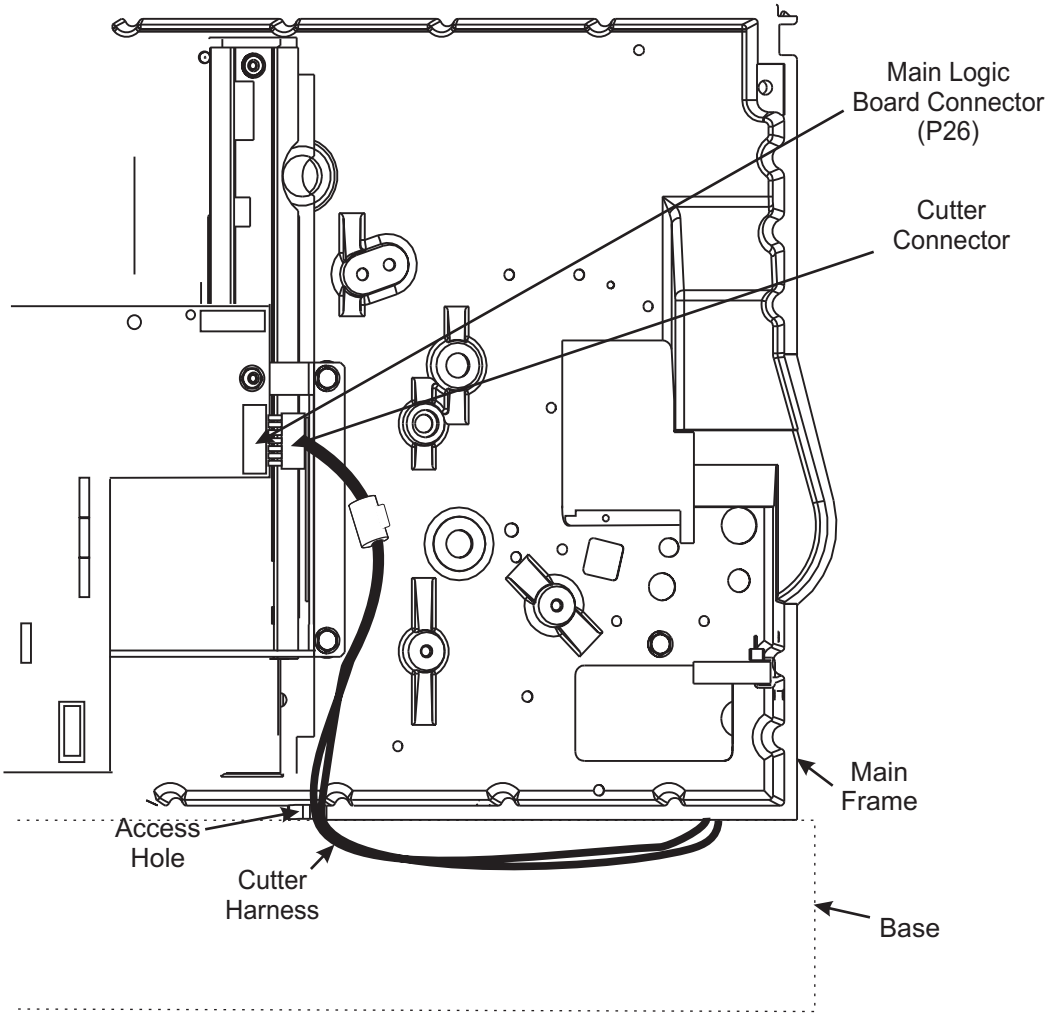
Figure 4-88. Cutter Shield and Catch Tray



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

15. Refer to Figure 4-89. Feed the cutter harness under the main frame and up through the access hole in the center of the floor of the main frame on the electronics side.
16. Locate P26 on the main logic board and plug in the cutter assembly connector. Route the cable as shown taking care to route it away from the drive belt and gears.

Figure 4-89. Cutter Option Connector Location on Main Logic Board



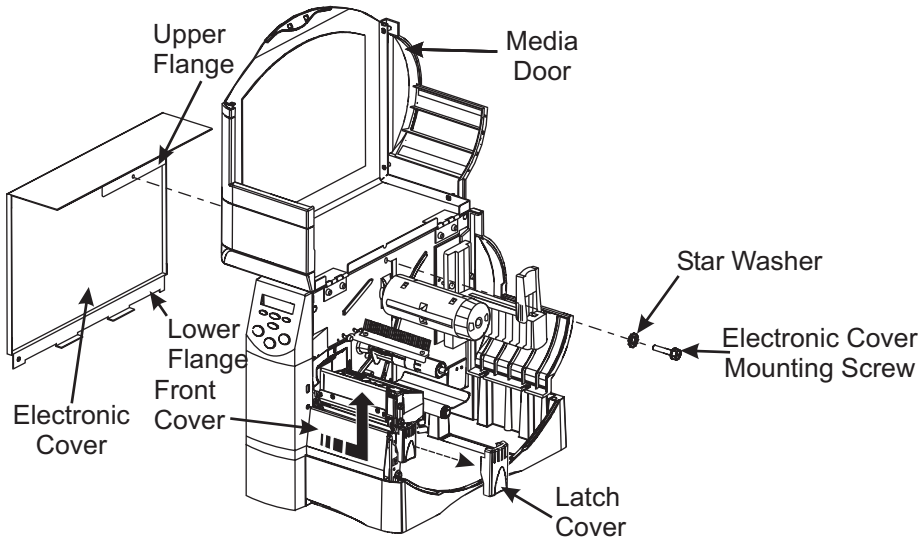
17. Refer to Figure 4-85. Reinstall the electronics cover by aligning it and sliding down, ensuring the lower flange is inside the base and the upper flange is between the main frame and the media door.
18. Refer to Figure 4-84. Reopen the media door and reinstall the mounting screw and lock washer to secure the electronics cover.
19. Reinstall the media and ribbon.
20. Reconnect the AC Power cord and data cables.
21. Turn On (**I**) the printer.

Install Peel Option

Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

1. Turn Off (**O**) the printer and remove the AC power cord and data cables.
2. Open the media door and remove the media and ribbon.

Figure 4-90. Remove Front Cover

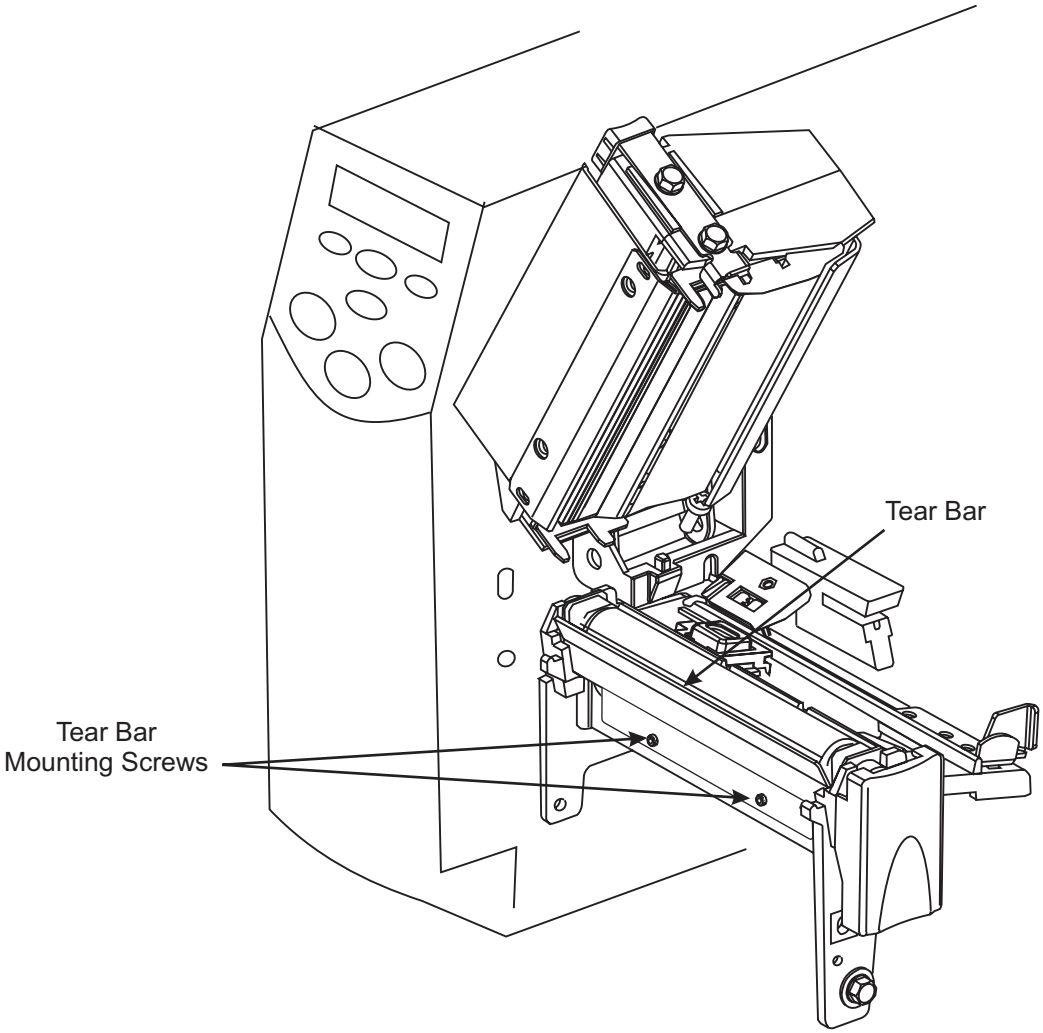


3. Refer to Figure 4-90. Carefully remove the plastic latch cover.
4. Slide the front cover to the right, then lift to remove.

Note • If there is an existing peel assembly, it must be removed. If a peel assembly is not currently installed the tear bar must be removed.

5. Refer to Figure 4-91. Remove the tear bar and discard the mounting screws.
6. Refer to Figure 4-93. Remove existing peel assembly.
7. Refer to Figure 4-87. Remove existing cutter assembly.

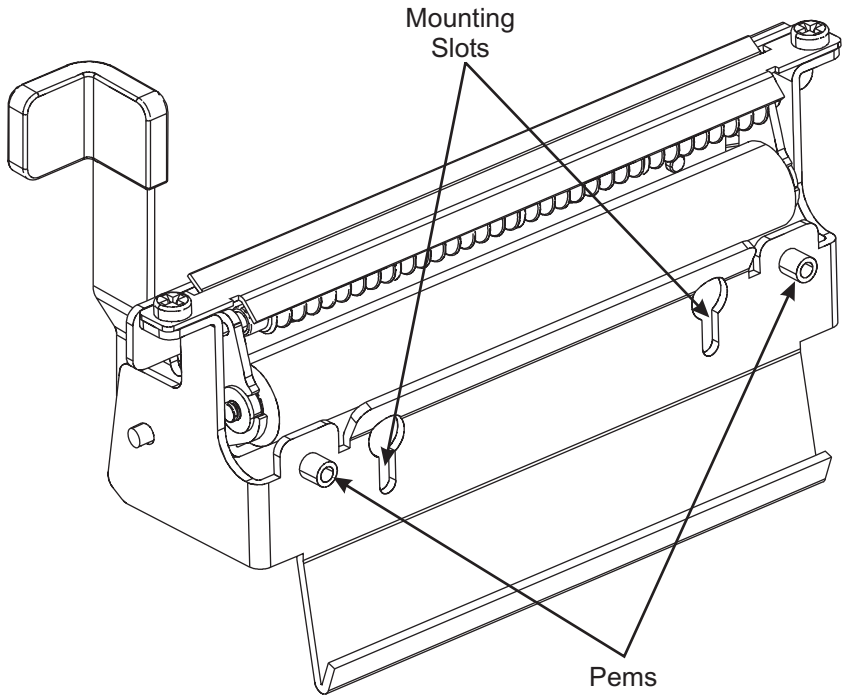
Figure 4-91. Tear Bar Removal



8. Using a hex key (allen wrench), install the two flanged mounting screws from the kit into the tear bar mounting screw holes. Tighten them to within 1/8 in. (3.175 mm) of the platen housing.
9. Refer to Figure 4-92. Take note of the pems and the mounting slots on the rear of the peel assembly.

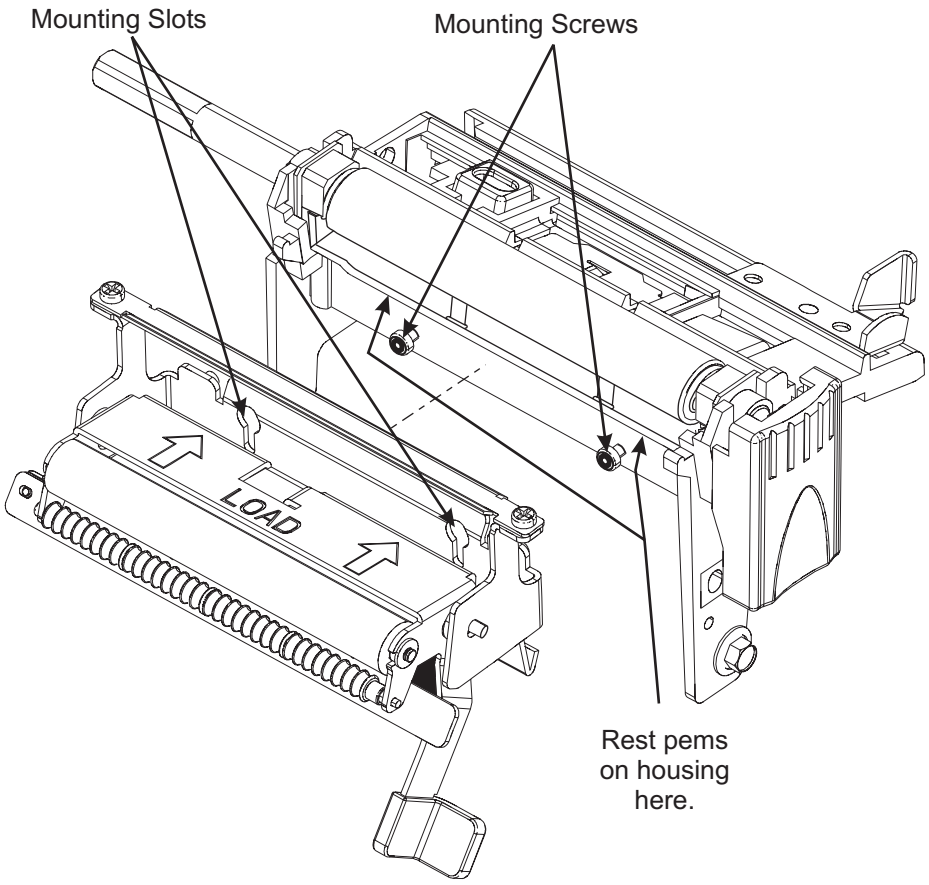
Figure 4-92. Rear of Peel Assembly

Peel Assembly



10. Refer to Figure 4-93. Install the peel assembly with the pems to the rear and the opening in the mounting slot to the top. Insert the mounting slot opening over the two screws and lift up on the assembly. Now push the assembly back against the vertical surface of the platen assembly then down so that pems are resting on the horizontal surface of the platen housing.
11. Keep a slight pressure downward on the peel assembly, to keep pems on horizontal surface, and tighten the mounting screws.

Figure 4-93. Installing and Removing Peel Assembly



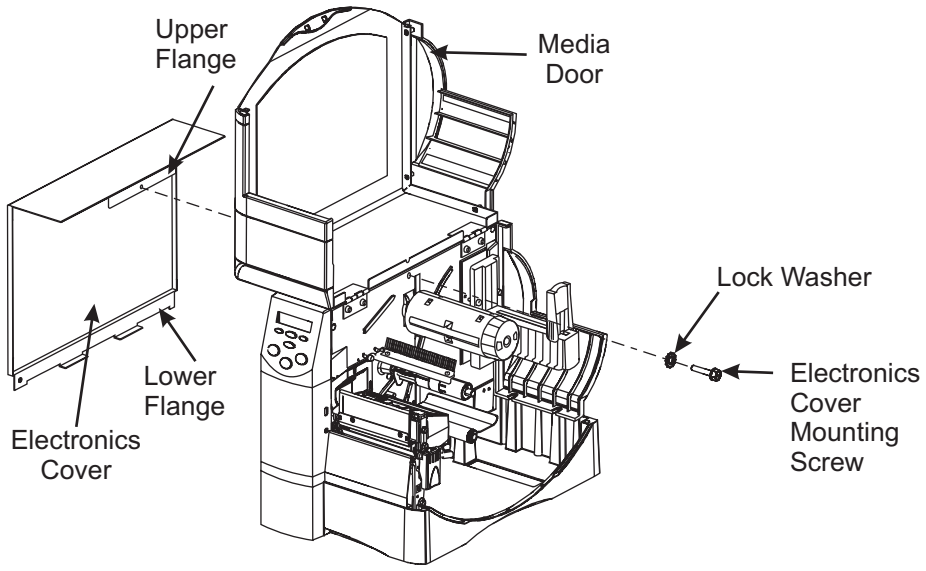
Install Liner Take-up Option

Caution • This installation must be performed by a qualified service technician.

Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

1. Turn Off (**O**) the printer and disconnect the AC power cord.
2. Refer to Figure 4-94. Open the media door and remove the electronics cover mounting screw.

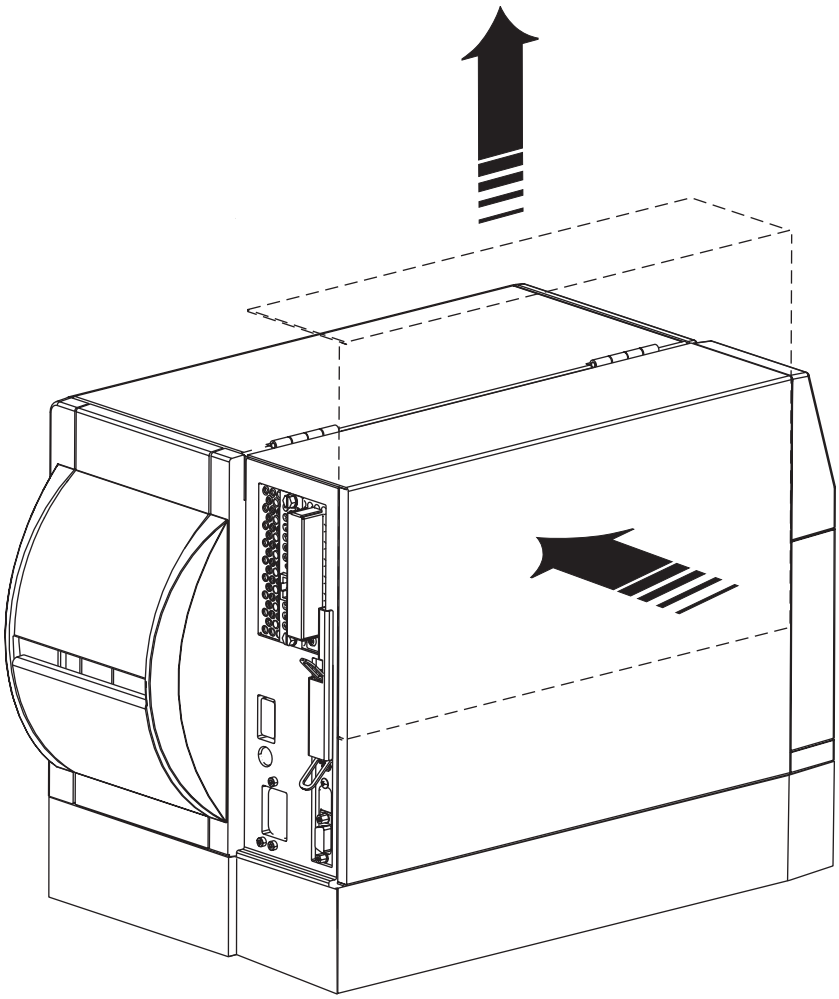
Figure 4-94. Locate Electronics Cover Mounting Screw



3. Close the media door.

4. Refer to Figure 4-95. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.
5. Remove the two screws and back cover.

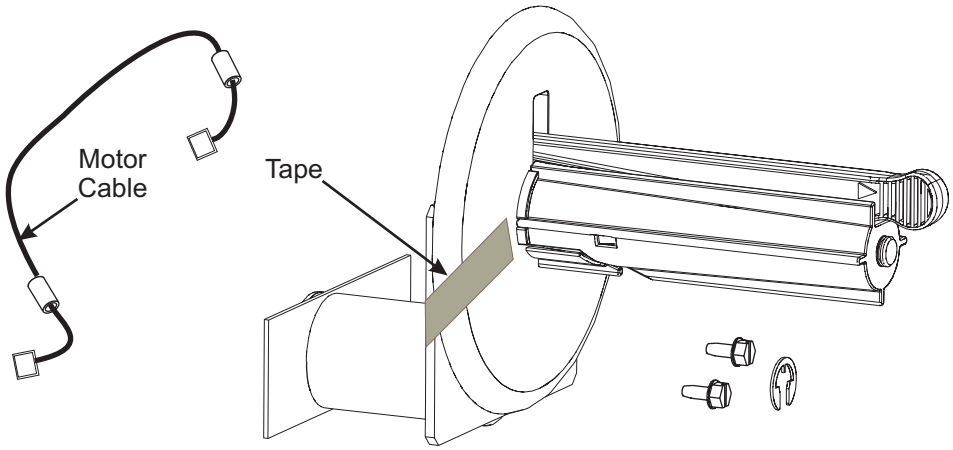
Figure 4-95. Remove the Electronics Cover



6. Refer to Figure 4-96. Remove the tape securing the spindle, then remove it from the shaft of the liner rewind assembly.

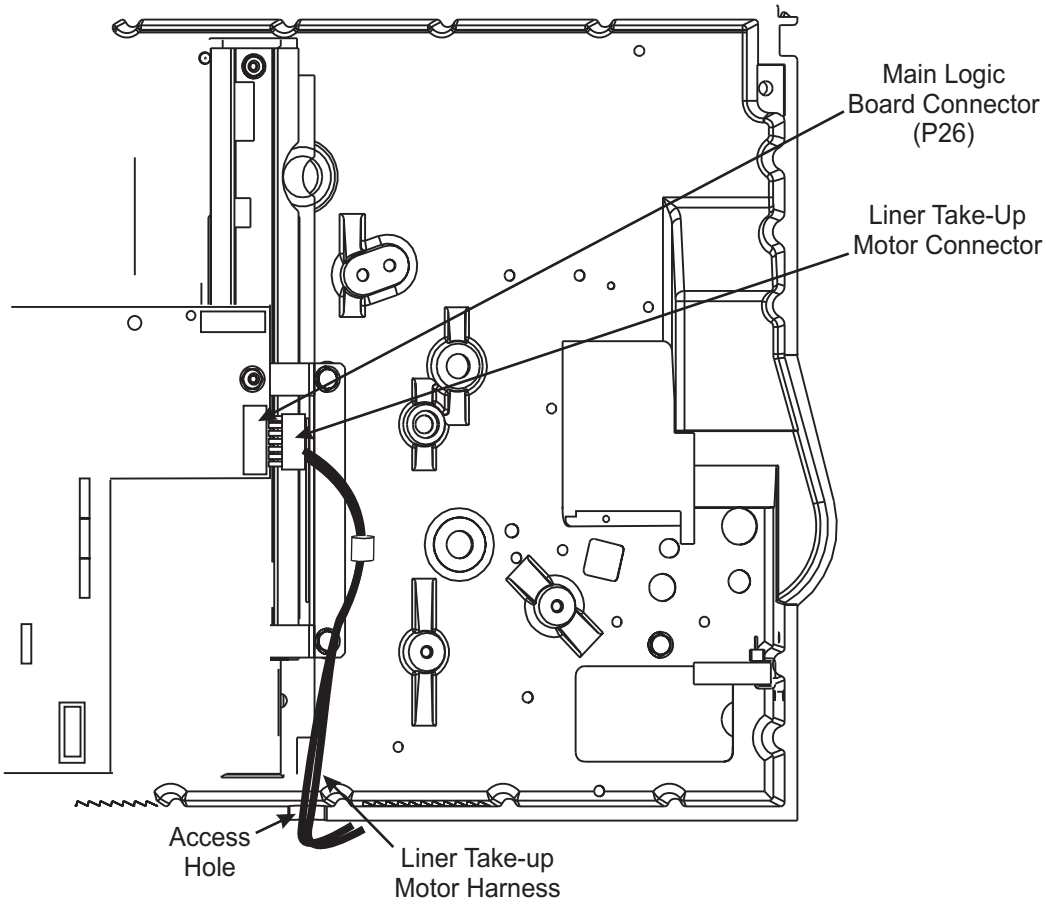
Caution • Observe proper electrostatic safety precautions when handling any static-sensitive components such as circuit boards and printheads.

Figure 4-96. Install Spindle



7. Refer to Figure 4-97. Connect one end of the supplied cable assembly to P26 on the main logic board.

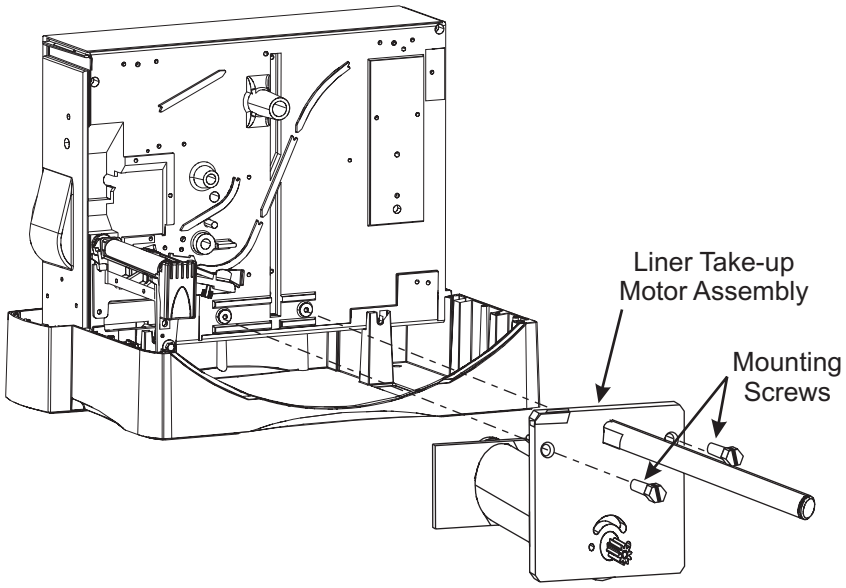
Figure 4-97. Liner Take-up Motor Harness Installation



8. Feed the other end of the cable assembly through the access hole in the base of the main frame.
9. Attach the other end of the liner take-up motor cable to the liner take-up motor assembly.

10. Refer to Figure 4-98. Align the holes in the motor assembly mounting plate with the holes in the main frame. Secure the motor assembly with two screws.

Figure 4-98. Liner Take-up Motor Assembly Installation



Caution • Wear protective eyewear when removing E-rings, C-clips, snaprings, and springs. These are under tension and could fly off while removing.

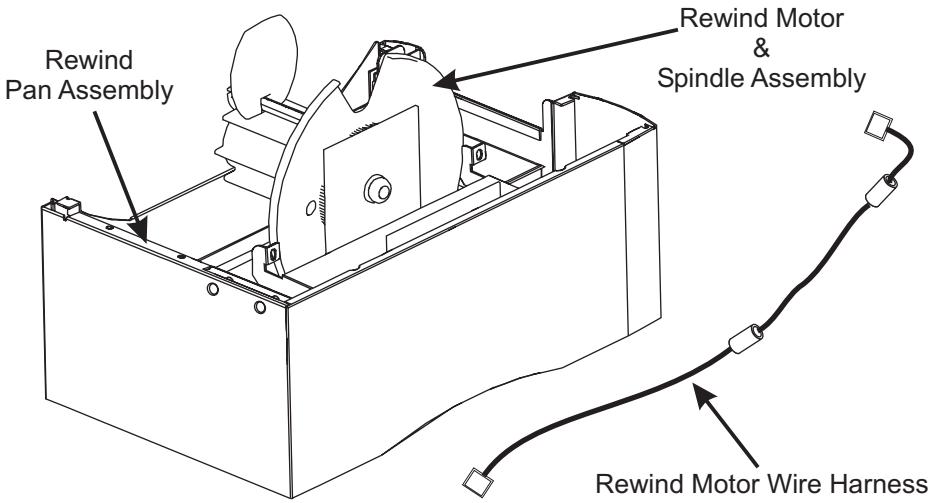
11. Refer to Figure 4-96. Slide the spindle on the shaft, and install the E-ring provided.
12. Refer to Figure 4-95. Reinstall the electronics cover by aligning it and sliding down, ensuring the lower flange is inside the base and the upper flange is between the main frame and the media door.
13. Refer to Figure 4-94. Reopen the media door and reinstall the mounting screw and lock washer to secure the electronics cover.
14. Reinstall the media and ribbon.
15. Reconnect the AC Power cord and data cables.
16. Turn On (**I**) the printer.

Install Rewind Option

Caution • This installation must be performed by a qualified service technician.

Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

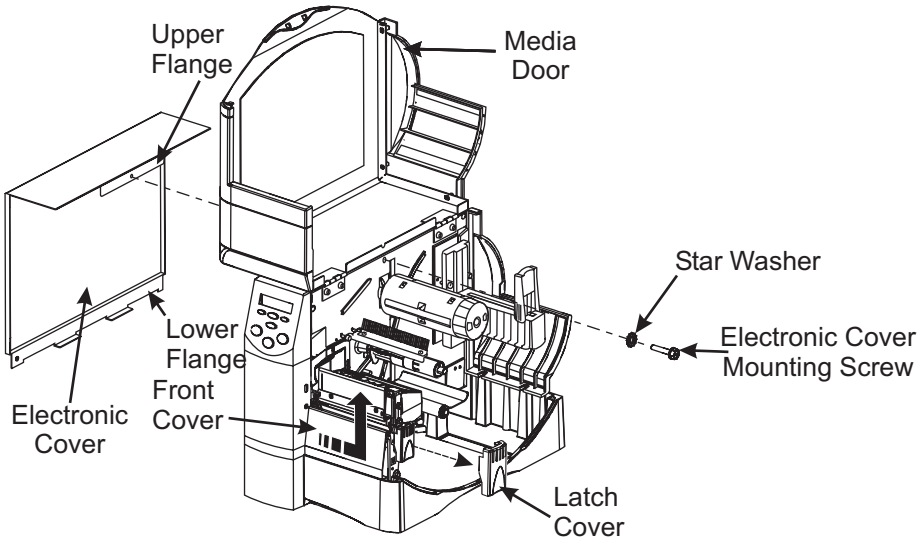
Figure 4-99. Peel Rewind Kit Contents



Remove Base

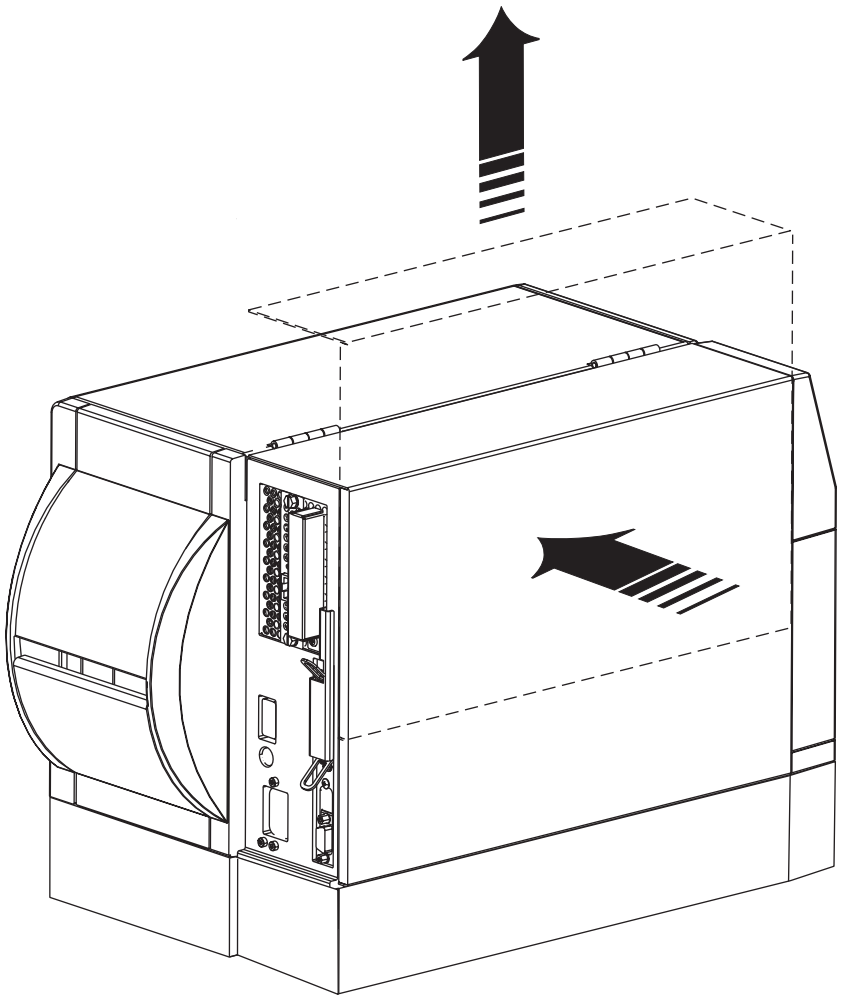
1. Turn Off (**O**) the printer and disconnect the AC power cord.
2. Refer to Figure 4-100. Open the media door and remove the electronics cover mounting screw.

Figure 4-100. Locate Electronics Cover Mounting Screw



3. Close the media door.
4. Refer to Figure 4-101. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.
5. Remove the two screws and back cover.

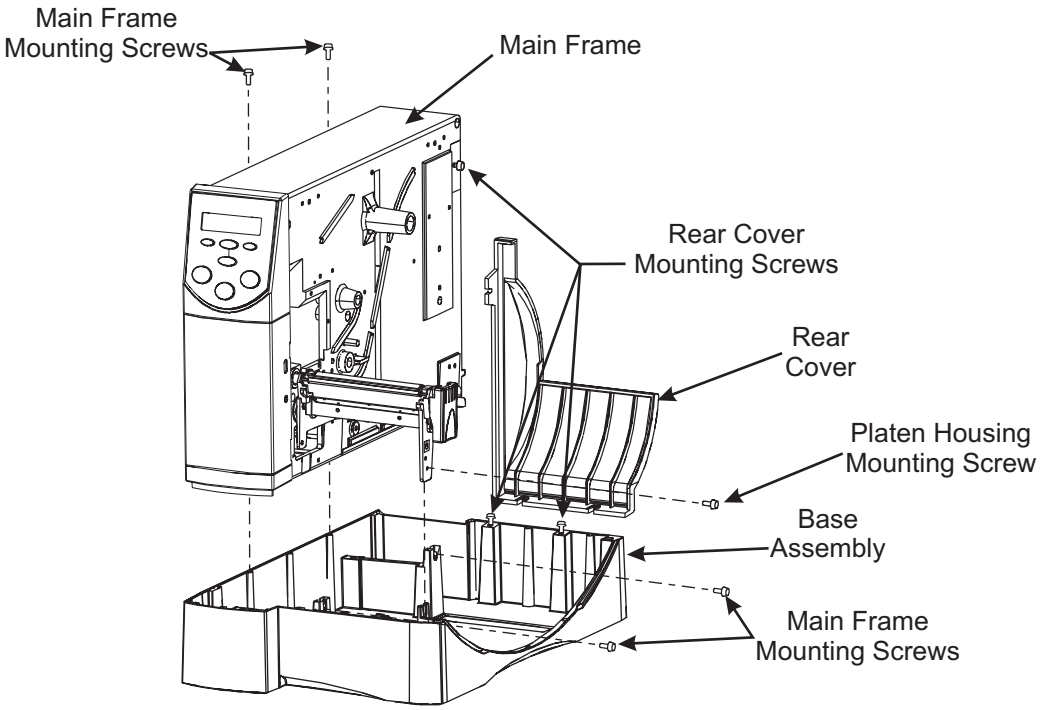
Figure 4-101. Remove the Electronics Cover



6. Refer to Figure 4-100. Remove the latch cover by prying out on the front edge with a small screwdriver.
7. Slide the front cover to the right, then lift to remove.
8. Reinstall the plastic latch cover.

9. Refer to Figure 4-102. Loosen, but do not remove the three screws securing the rear cover to the main frame and base.

Figure 4-102. Base Removal



Note • Do not remove the screws attaching the platen housing to the main frame.

10. Remove the screw securing the platen housing to the base. If there is a plastic washer present, discard it.
11. Remove the four screws securing the main frame to the base.
12. Lift the main frame off the base assembly.

Install Rewind Pan

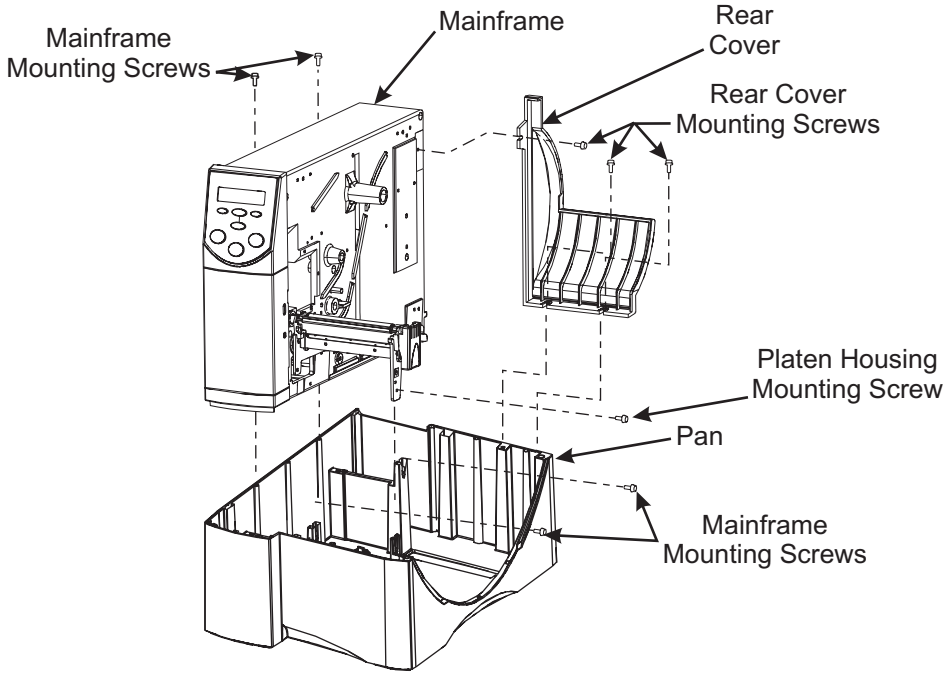
Note • Alignment is very important. The platen housing leg must be inside the mounting tab of the rewind pan.

1. Refer to Figure 4-103. Place the main frame onto the rewind pan assembly. Ensure the rear ledge of the main frame rests completely on the rear support in the pan.

Note • The oversize mounting hole in the pan allows for adjustment of the front of the pan to align it with the door.

2. Install, but do not tighten, the main frame mounting screws provided in the kit. After starting the screws, recheck the alignment. Tighten the two screws on the rear of the main frame first then tighten the other two.
3. Reinstall the rear cover by sliding it under the screw loosened previously on the main frame. Leave the screw loose.
4. Using the two screws supplied in the kit attach the rear cover to the rewind pan. Tighten the two screws and the one screw on the main frame.

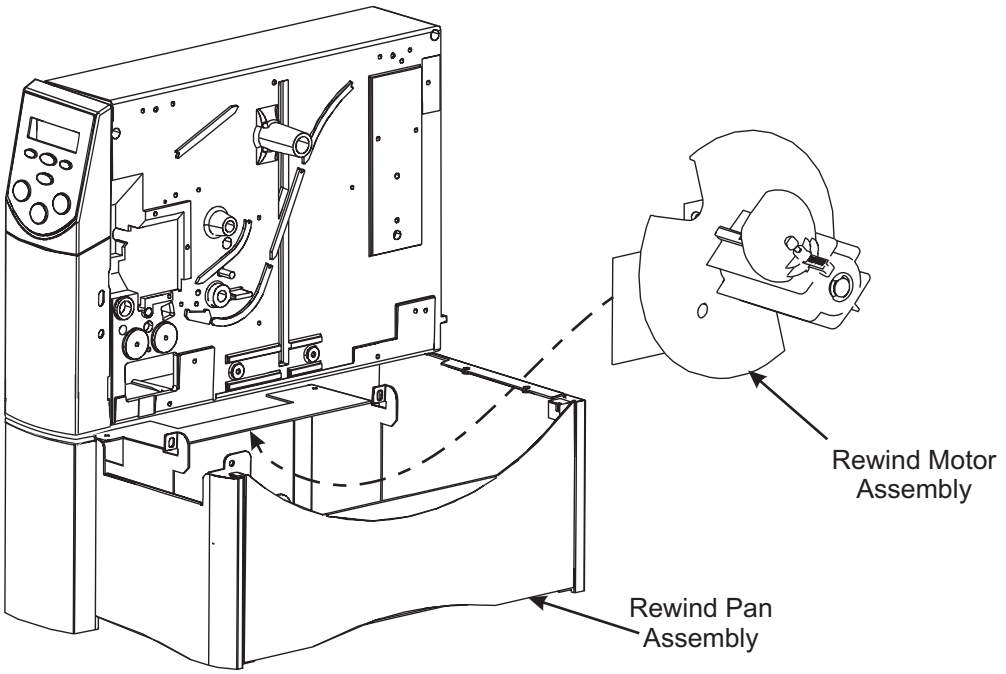
Figure 4-103. Rewind Pan Installation



Note • Ensure the two holes on rewind support bracket face up and are aligned with the mounting holes in the main frame.

5. Refer to Figure 4-104. Place the rewind motor and spindle assembly inside the rewind pan assembly.

Figure 4-104. Rewind Motor Location

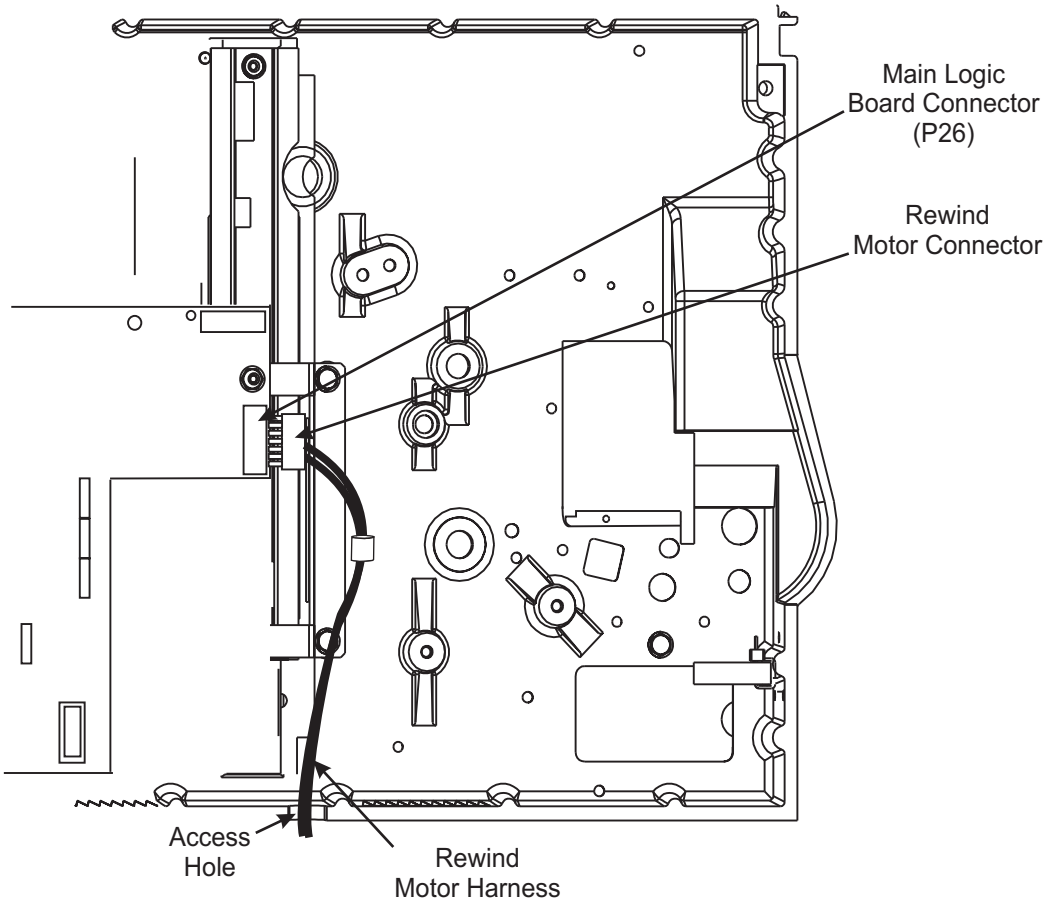


6. Feed the rewind motor cable up through the hole in the bottom of the main frame.

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

7. Refer to Figure 4-105. Connect the rewind motor cable connector to the main logic board assembly connector P26.

Figure 4-105. Main Logic Board Connector

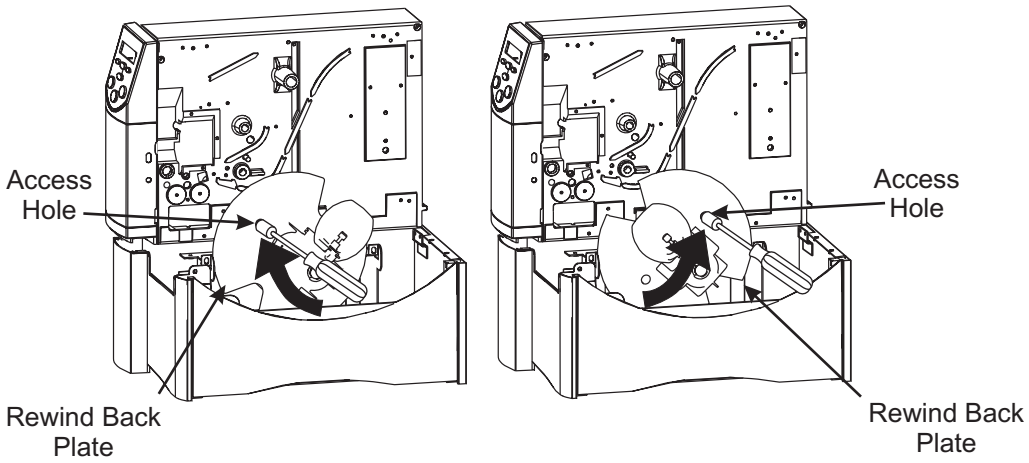


8. Refer to Figure 4-106. Align one of the two access holes on the rewind back plate to one of the mounting holes on the rewind support.

Note • For ease of alignment do not tighten the first screw until the second screw is installed.

9. Mount the rewind motor and spindle assembly to the printer main frame using one of the two screws removed previously.
10. Align the other access hole of the rewind back plate to the other mounting hole on the rewind support. Install the mounting screw and tighten.
11. Tighten the screw previously installed.

Figure 4-106. Rewind Motor Assembly Mounting



12. Refer to Figure 4-101. Reinstall the electronics cover by aligning it and sliding down, ensuring the lower flange is inside the base and the upper flange is between the main frame and the media door.
13. Refer to Figure 4-100. Reopen the media door and reinstall the mounting screw and lock washer to secure the electronics cover.
14. Reinstall the media and ribbon.
15. Reconnect the AC Power cord and data cables.
16. Turn On (**I**) the printer.

Maintenance Kits

Install Rewind PCB Motor Assembly

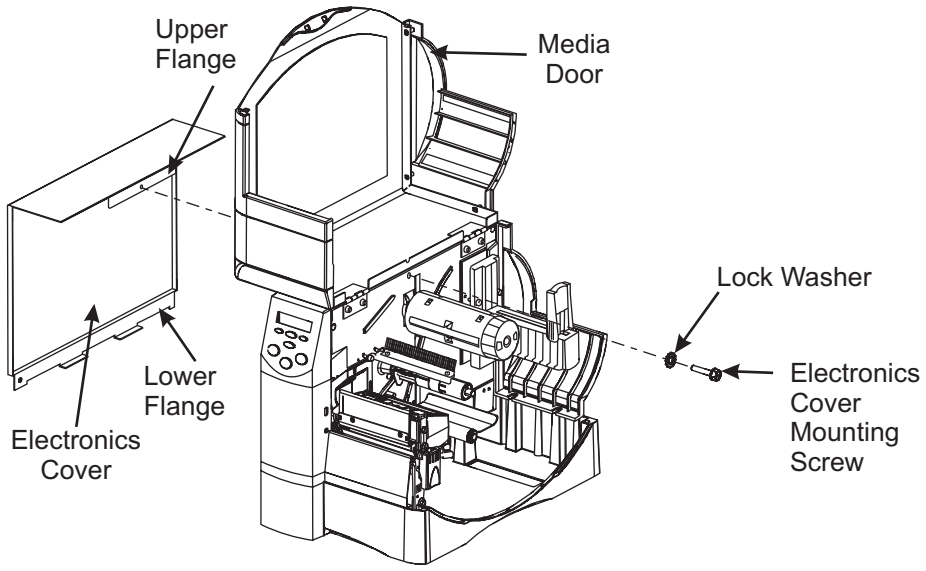
Caution • This installation must be performed by a qualified service technician.

Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

Remove Rewind PCB Motor Assembly

1. Turn Off (**O**) the printer and disconnect the AC power cord.
2. Refer to Figure 4-107. Open the media door and remove the electronics cover mounting screw.

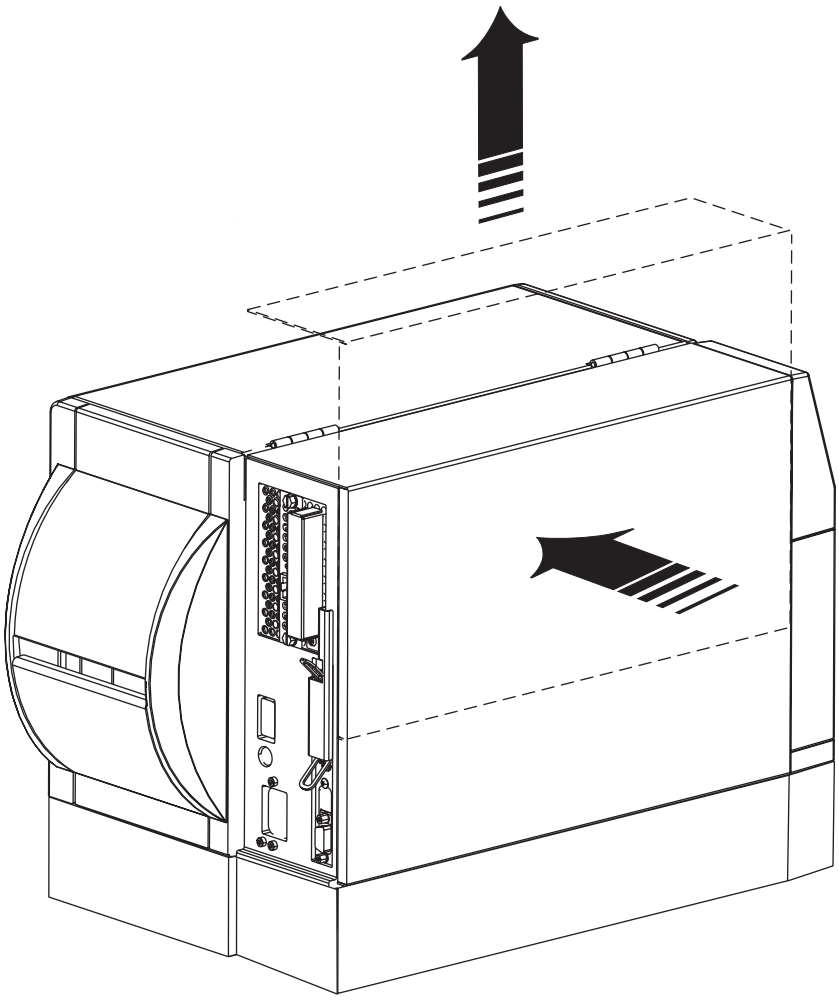
Figure 4-107. Locate Electronics Cover Mounting Screw



3. Close the media door.

4. Refer to Figure 4-108. Press in on the electronics cover with palm of hand, then lift up on the cover to remove it.
5. Remove the two screws and back cover.

Figure 4-108. Remove the Electronics Cover

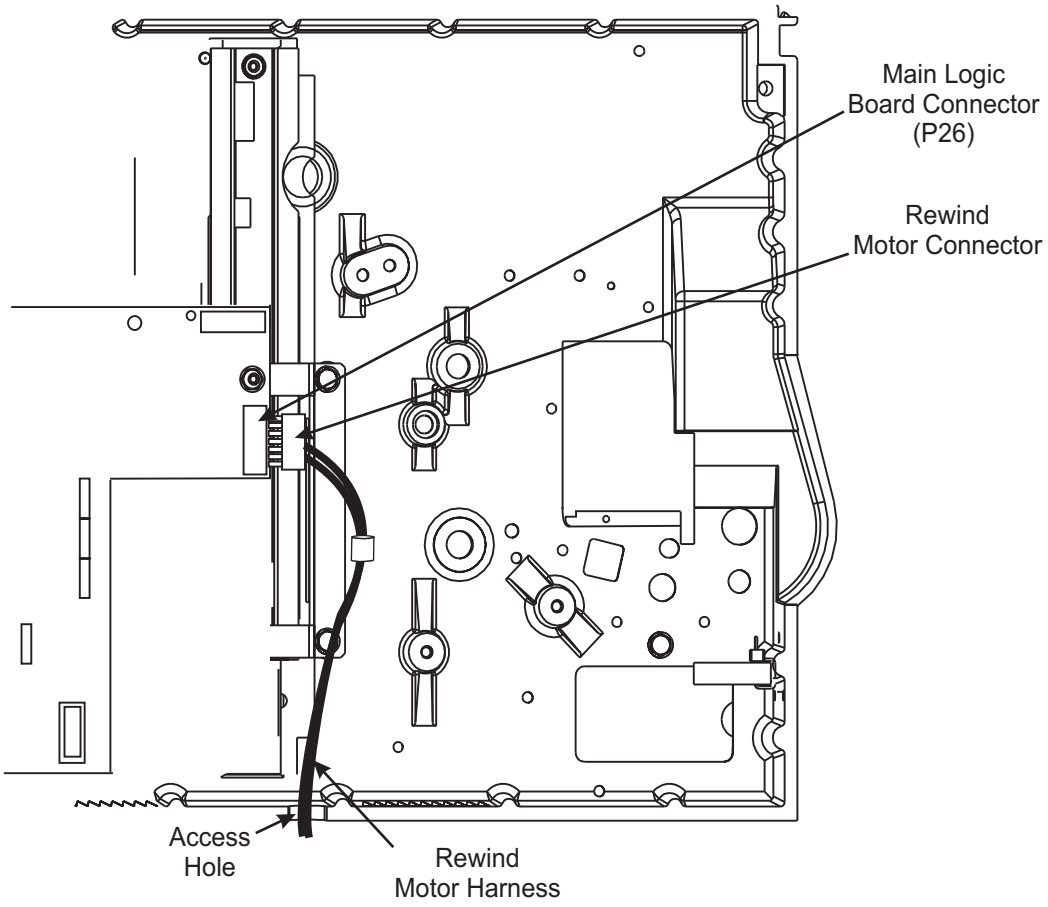


6. Open the rewind pan door and remove any labels/liner from the rewind spindle.
7. Remove the electronics cover.

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

8. Refer to Figure 4-109. Disconnect the media rewind cable connector from P26 on the main logic board.

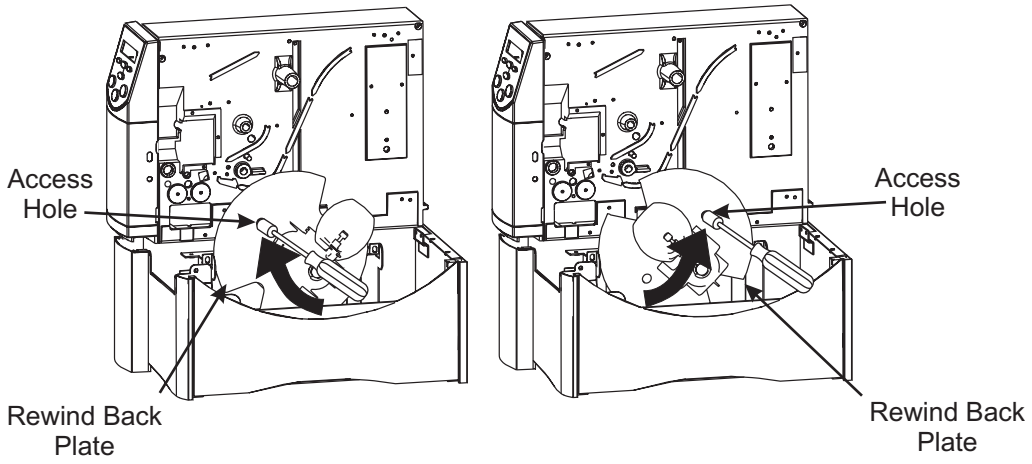
Figure 4-109. Rewind Motor Cable Location



9. Refer to Figure 4-110. Rotate the spindle until one of the two access holes on the rewind back plate align with one of the mounting screws on the rewind support. Remove the screw.

10. Align the other access hole of the rewind back plate to the other mounting screw and remove the screw.

Figure 4-110. Motor & Spindle Removal and Installation

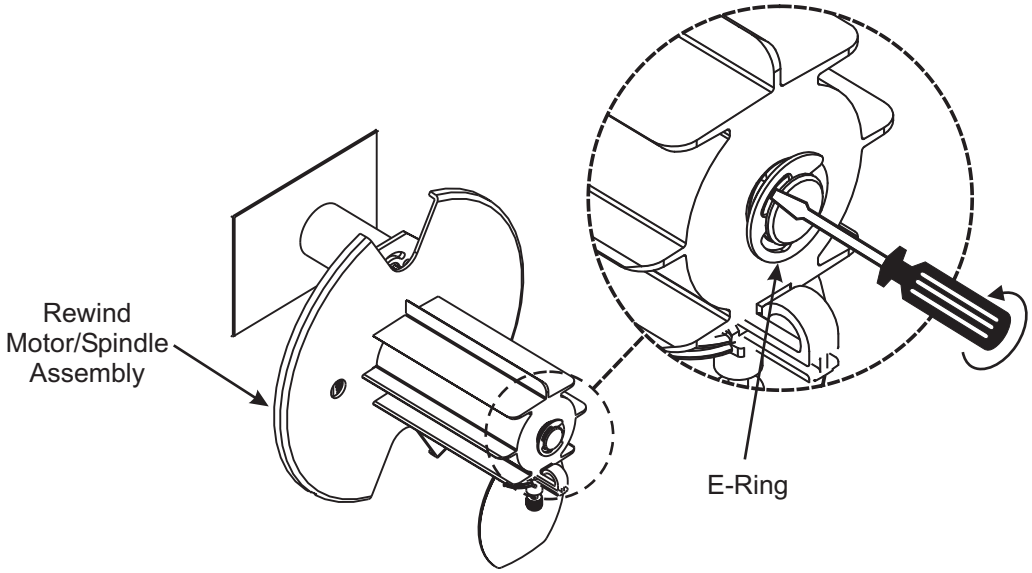


11. Carefully slide the rewind motor and spindle assembly out of the rewind pan while guiding the media rewind cable through the hole in the bottom of the main frame.

Caution • Wear protective eyewear when removing E-rings, C-clips, snaprings, and springs. These are under tension and could fly off while removing.

12. Refer to Figure 4-111. Remove the E-ring from the rewind shaft.
13. Remove the flat washers and wave washer from the shaft.
14. Remove the rewind spindle from the rewind shaft.

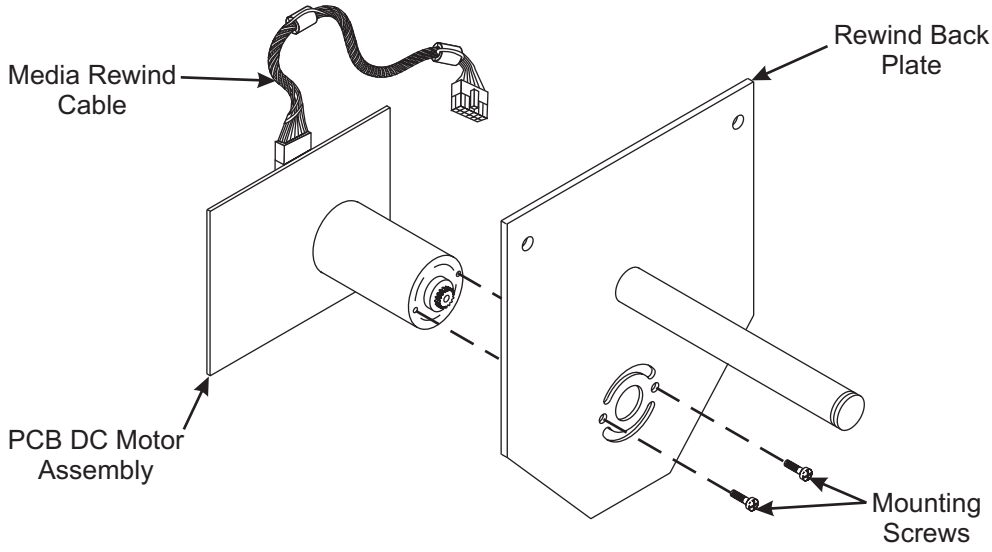
Figure 4-111. E-Ring Removal and Installation



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

15. Refer to Figure 4-112. Remove and retain the two mounting screws that secure the rewind PCB assembly to the rewind support.
16. Cut the cable tie securing the media rewind cable to the PCB assembly.
17. Disconnect the media rewind cable from the connector on the PCB.

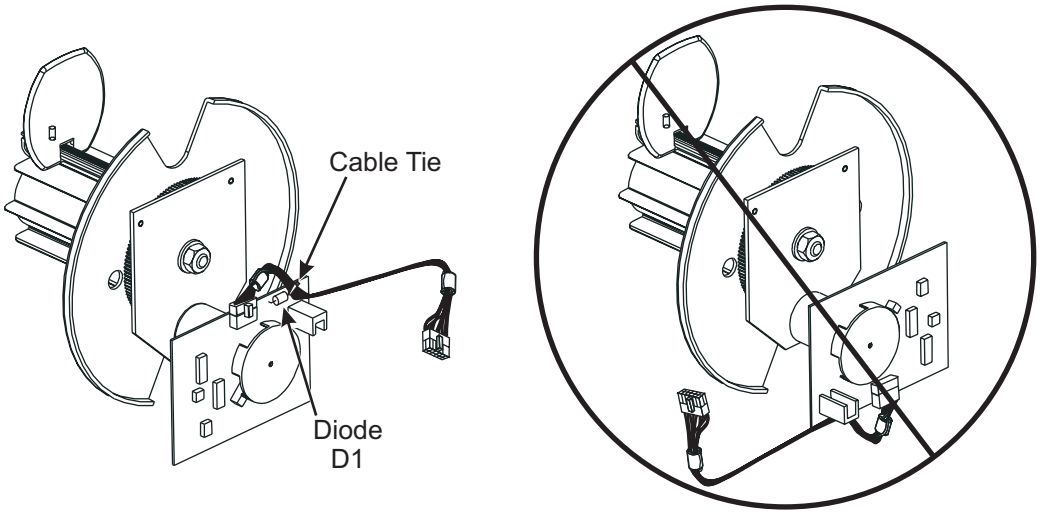
Figure 4-112. PC Board Assembly Removal and Installation



Install PCB Motor Assembly

1. Refer to Figure 4-113. Orient the new PCB motor assembly with the connector facing up. Using the two mounting screws previously removed, mount the PCB motor assembly to the rewind support.

Figure 4-113. PCB Motor Assembly Orientation



2. Connect the media rewind cable to the PCB motor assembly.
3. Cable tie the media rewind cable to the outside leg of diode D1 on the PCB motor assembly as shown in Figure 4-113

Caution • Wear protective eyewear when removing E-rings, C-clips, snaprings, and springs. These are under tension and could fly off while removing.

4. Refer to Figure 4-111. Reinstall the rewind spindle using the E-ring previously removed.
5. Refer to Figure 4-109. Carefully guide the media rewind cable through the access hole in the bottom of the main frame while sliding the rewind motor and spindle assembly into the rewind pan.
6. Refer to Figure 4-110. Align one of the two access holes on the rewind back plate to one of the mounting holes on the rewind support.

Note • For ease of alignment, do not tighten the first screw until the second screw is installed.

7. Mount the rewind motor and spindle assembly to the printer main frame using one of the two screws removed previously.
8. Align the other access hole of the rewind back plate to the other mounting hole on the rewind support. Install the mounting screw and tighten.
9. Tighten the screw previously installed.

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

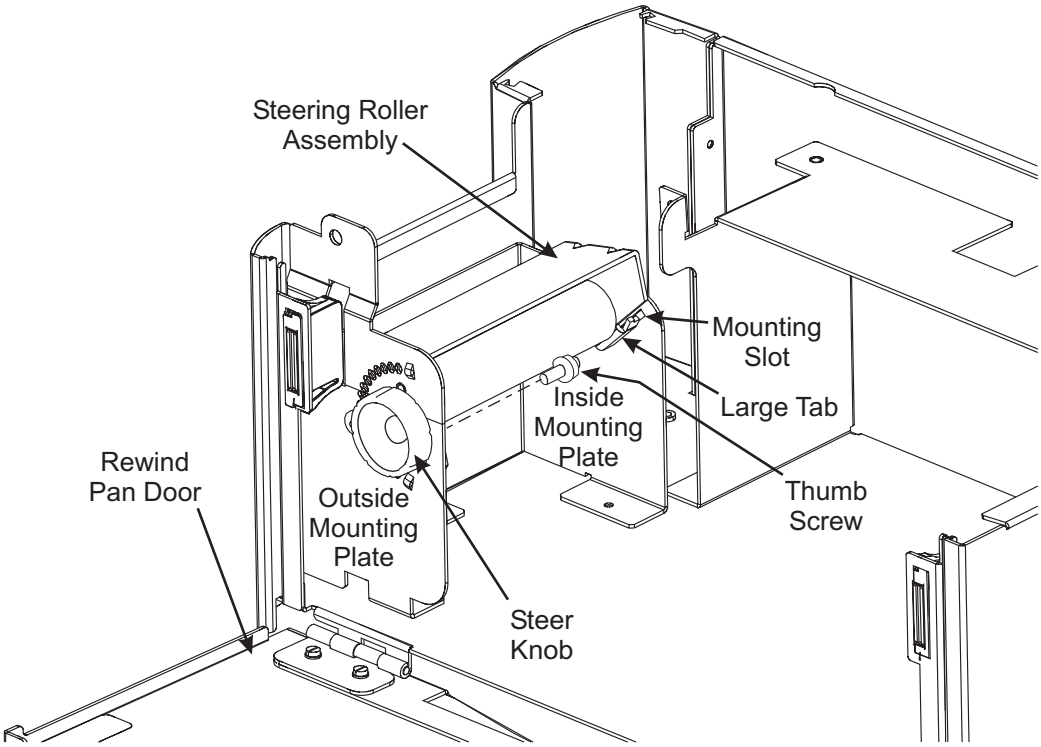
10. Refer to Figure 4-109. Reconnect the media rewind cable connector to P26 on the main logic board assembly.
11. Refer to Figure 4-108. Reinstall the electronics cover by aligning it and sliding down, ensuring the lower flange is inside the base and the upper flange is between the main frame and the media door.
12. Refer to Figure 4-107. Reopen the media door and reinstall the mounting screw and lock washer to secure the electronics cover.
13. Reinstall the media and ribbon.
14. Reconnect the AC Power cord and data cables.
15. Turn On (**I**) the printer.
16. Place the printer in rewind mode. See the *User Guide* for proper setup and media loading instructions.

Steering Roller

Remove Steering Roller

1. Turn Off (**O**) the printer and disconnect the AC power cord and data cables.
2. Open the media door and remove all media and ribbon from the printer.
3. Refer to Figure 4-114. Gain access to the rewind pan by opening the pan door.

Figure 4-114. Steering Roller Removal and Installation.

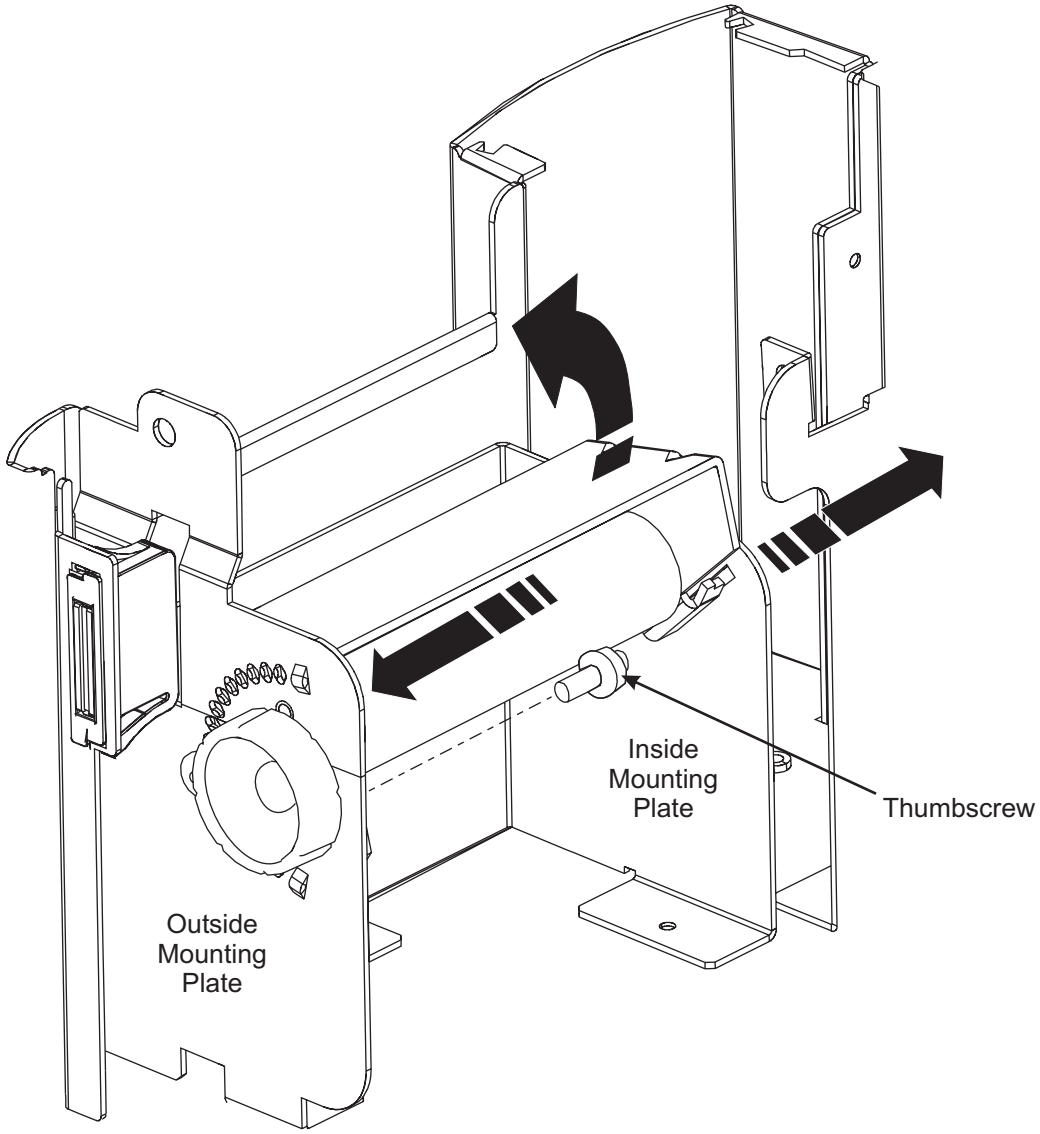


4. Remove the thumb screw.
5. Refer to Figure 4-115. Slide the steering roller assembly toward the outside of the rewind pan, a slight amount of pressure will be needed.

Note • Care must be taken not to bend the mounting plates.

6. With your other hand, push lightly away from you on the inside mounting plate until the large tab is out of the mounting slot.
7. Swing the inside end of the steering roller assembly in an upward direction, after it clears the mounting plate, pull it out toward the inside of the rewind pan.

Figure 4-115. Steering Roller Removal

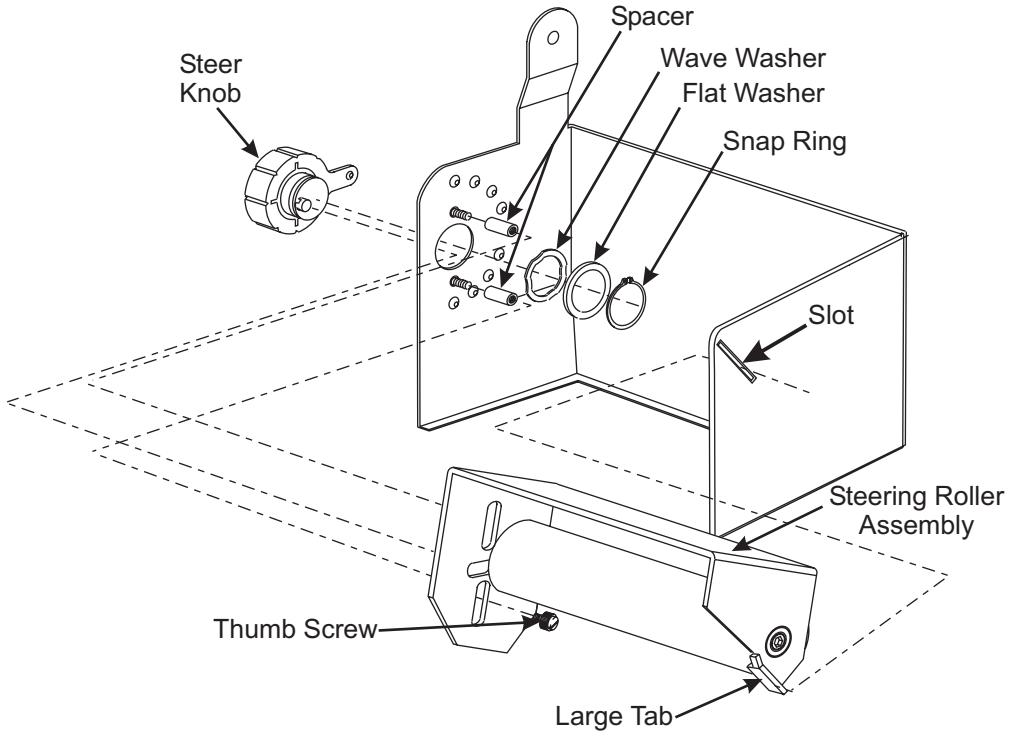


8. Remove the steering assembly from the printer.

Caution • Wear protective eyewear when removing E-rings, C-clips, and springs. These are under tension and could fly off while removing.

9. Refer to Figure 4-116. Remove the steer knob by removing the snap ring.

Figure 4-116. Steer Knob Removal and Installation



10. Remove and discard flat washer, wave washer and spacers.

Install Steer Knob and Steering Roller

1. Refer to Figure 4-116. Install the spacers onto the studs on the inside of the outside plate.
2. Install the steer knob in the outside mounting plate.
3. While holding the steer knob, slide the wave washer and flat washer onto the knob and install the snap ring.
4. Refer to Figure 4-115. Install the steering roller assembly by inserting the knob side first. Align the two vertical oblong holes with the two spacers and turn the knob such that it inserts into the horizontal hole. Swing the large tab side into position, a slight pressure to the outside and the inside mounting plates will be needed.

Note • Care must be taken not to bend the mounting plates.

5. Install the thumb screw.
6. Reinstall the ribbon and media.
7. Close the rewind pan door.
8. Close the Media door.
9. Reconnect the AC power cord and data cables.
10. Turn On (**I**) the printer.

Pinch Roller Kit

Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

Remove Pinch Roller

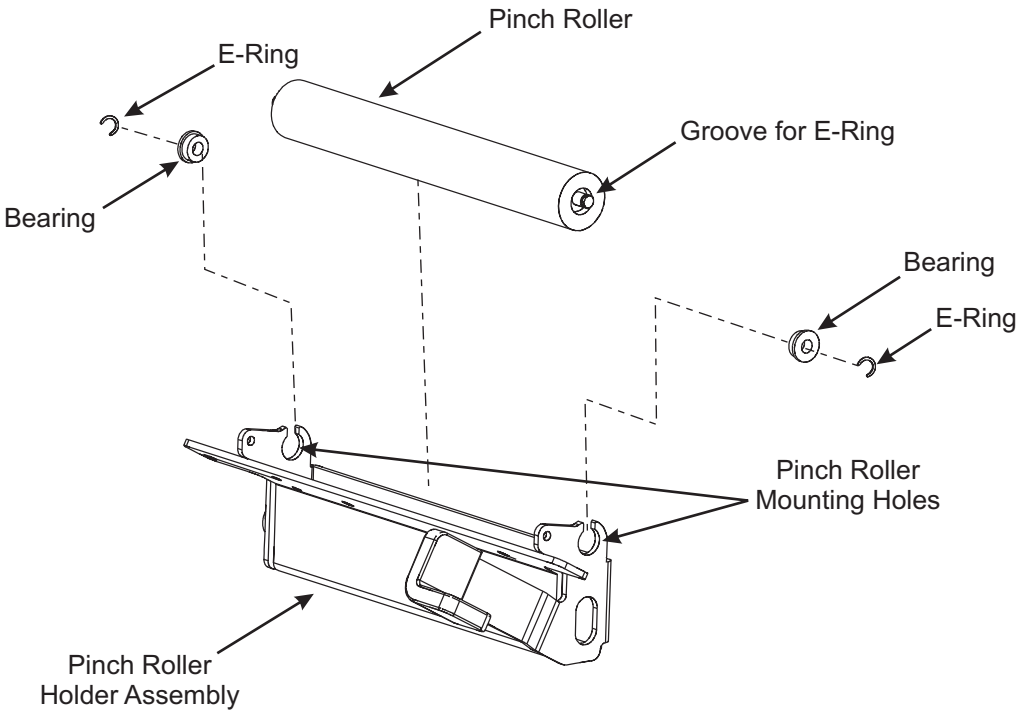
1. Turn Off (O) the printer.
2. Lower pinch roller holder assembly to open position.

Caution • Wear protective eyewear when removing E-rings, C-clips, snaprings and springs. These are under tension and could fly off while removing.

Note • If the E-rings are not accessible, loosen the peel assembly mounting screws and remove it.

3. Refer to Figure 4-117. Remove the E-rings using a small flat blade screwdriver. Remove the bearings and roller.

Figure 4-117. Removing and Installing E-Rings and Bearings



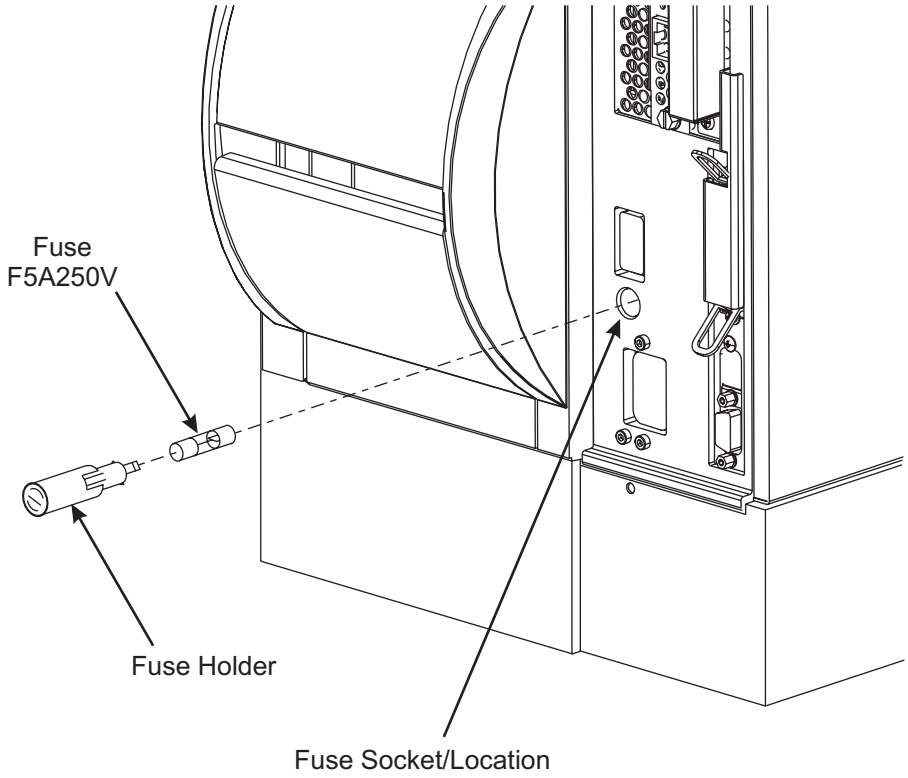
Install Pinch Roller

1. Install the pinch roller in the mounting holes in the pinch roller holder assembly.
2. Install the bearings onto the shaft of the pinch roller, flange facing out as shown.
3. Install E-ring retainers in grooves of roller shaft.
4. If you had to remove the peel assembly, refer to steps 8 – 11 of Install Peel Option on page 153, and reinstall the assembly.
5. Turn On (**I**) the printer.

Replace the Fuse

Caution • Turn Off (**O**) the printer and disconnect the printer from the power source before performing the following maintenance.

Figure 4-118. Removing the Fuse



From the back cover (see Figure 4-118):

1. Turn the screw to remove the fuse holder.
2. Extract the fuse holder and remove the old fuse.

Caution • Replace fuse a with 5 × 20 mm fuse rated at F5A@250V.

3. Place a new fuse in the fuse holder.
4. Align the fuse holder in the fuse socket.
5. Insert and re-fasten the screw.


Zebra

Section 5
Maintenance and Assembly Drawings

General Information

Use the mechanical assembly drawings when troubleshooting or replacing components and use the associated parts list when ordering replacement parts. Item parts that do not have associated part numbers are not available and need to be ordered using the next highest assembly number.

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

List of Tables

List of Figures

Table 5-1. Main Printer Assemblies

Item	Part Number	Description	Qty
1	**79040M**	Electronics Cover	1
2	**79032M**	Front Panel Assembly Maintenance Kit	1
3	**77302M**	Static Brush Assembly Kit (Z4Mplus) (Refer to Figure 5-7 on page 196)	1
3	**77302-6M**	Static Brush Maintenance Kit (Z6Mplus) (Refer to Figure 5-7 on page 196)	1
4	**77629**	Rear Cover (Z4Mplus)	1
4	**77704**	Rear Cover (Z6Mplus)	1
5	**77100M**	Ribbon Take-Up Maintenance Kit (Z4Mplus)	1
5	**77117M**	Ribbon Take-Up Maintenance Kit Z6Mplus)	1
6	**77380M**	Hanger Maintenance Kit (Z4Mplus)	1
6	**77381M**	Hanger Maintenance Kit (Z6Mplus)	1
7	**77085M**	Ribbon Supply Maintenance Kit (Z4Mplus)	1
7	**77082M**	Ribbon Supply Maintenance Kit (Z6Mplus)	1
8	**77238M**	Dancer Maintenance Kit (Z4Mplus) (Refer to Figure 5-8 on page 197)	1
8	**77331M**	Dancer Maintenance Kit (Z6Mplus) (Refer to Figure 5-8 on page 197)	1
9	*N/A*	Print Mechanism (Refer to Figure 5-6 on page 195)	1
10	**77752M**	Optical (Transmissive) Media Sensor Maintenance Kit	1
10	**77890M**	Adjustable Optical (Tranamissive) Sensor Upgrade Kit (Z4Mplus only)	1
11	**77765M**	Ribbon/Head Open Sensor Maintenance Kit	1
12	**79053M**	Media Door Maintenance Kit (Z4Mplus)	1
12	**77054M**	Media Door Maintenance Kit (Z6Mplus)	1
13	**77023M**	Platen Roller Maintenance Kit (Z4Mplus) (Refer to Figure 5-5 on page 193.)	1
13	**77022M**	Platen Roller Maintenance Kit (Z6Mplus) (Refer to Figure 5-5 on page 193.)	1
14	**77049-104**	Ribbon Strip Plate, 104 mm (Z4Mplus)	1
14	**77049-168**	Ribbon Strip Plate, 168 mm (Z6Mplus)	1
15	**77660**	Magnetic Latch	1
16	**44014**	Rubber Bumper	4
17	*N/A*	Base	1
18	*N/A*	Main Frame	1
19	**77665**	Front Cover (Z4Mplus)	1
19	**77702**	Front Cover (Z6Mplus)	1
20	*11250L*	ZebraLink Logo	1
N/S	**77112M**	Print Mechanism Latch Kit (Refer to Figure 5-10 on page 201)	1
N/S	**77971**	Cutter Option Kit (Z4Mplus) (Refer to Figure 5-12 on page 205)	1
N/S	**77972**	Cutter Option Kit (Z6Mplus) (Refer to Figure 5-12 on page 205)	1
N/S	**33037M**	PCMCIA Socket Board Maintenance Kit (Refer to Figure 5-2 on page 188)	1

N/S: Not Shown
N/A: Not Available Separately

Bold = Part available for purchase
Light italic = Part not available for purchase, listed and shown for reference only

Figure 5-1. Main Printer Assemblies

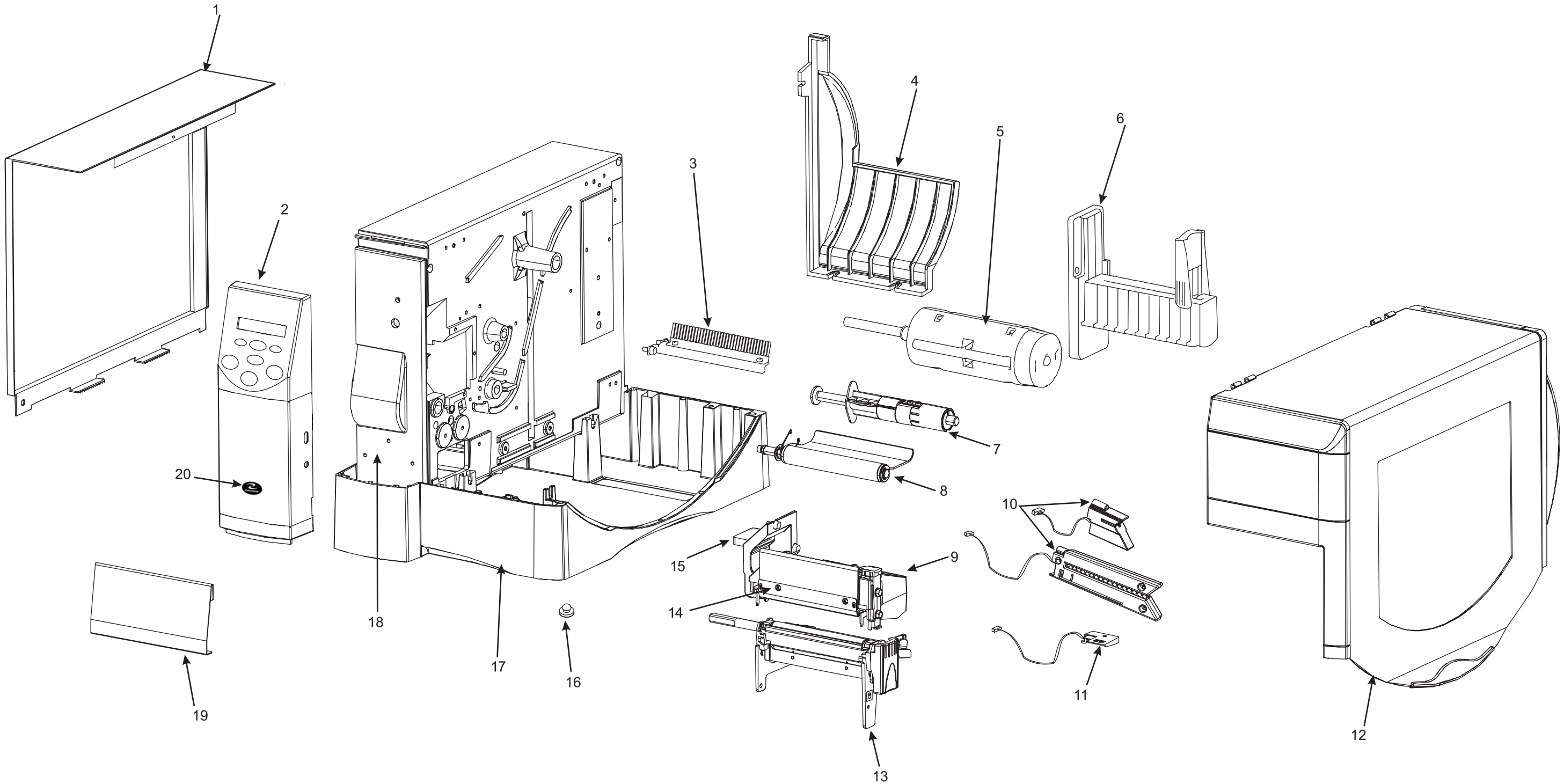


Table 5-2. Electronics Maintenance Kits

Item	Part Number	Description	Quantity
1	**77185**	Back Cover, w/o PCMCIA Port	1
1	*33186*	Back Cover, w/PCMCIA Port	1
1	*79013*	Back Cover, w/PSII	1
2	**HW 77237**	Screw, M4 X 10 mm (only available in quantities of 5)	5
3	*33312*	Standoff	1
4	**77715M**	Power Supply Board Maintenance Kit	1
5	**77550**	Insulator Pad	1
6	**77282**	Clamp Pad	1
7	*77571*	Insulator, Electric Barrier	1
8	**77016**	Heatsink Power Supply Clamp	1
9	**HW49185**	Screw, M3 × 14 mm (only available in quantities of 10)	1
10	*77283*	Screw, M4 × 0.700 × 16 mm	3
11	*33187*	CPU Support Bracket	1
12	**79000M**	Main Logic Board Maintenance Kit	1
13	**79039**	PCB Spacer Plate	1
14	**07696**	Pan Head Screw, 4-40 × 0.310	2
15	**HW22416**	Standoff, 4-40 (Only available in quantities of 25)	2
16	**HW01153**	Flat Washer 0.250 × 0.125 × 0.028 (only available in quantities of 100)	4
17	*44485*	Screw, M3 × 8 mm	2
18	**07808**	Flat Cable Clamp	6
19	**33037**	PCMCIA Socket Board Option Kit	1
20	**HW10403**	Screw, M3 × 0.500 × 6 mm (only available in quantities of 50)	3
21	**33037M**	PCMCIA Socket Board Maintenance Kit	1
22	*46646*	Plastic Standoff	2
23	**77384**	Screw, M3 × 0.500 × 3 mm	1
24	**33112**	Memory Pack Cover Type III	1
25	**78206**	PSII Option Kit	1
26	*79015*	PrintServer PCB Bracket	1
27	*34100*	I/O PCB, PrintServer	1
28	*79021*	Cover Plate, PSII w/o Memory	1
29	**34109**	PSII Cable w/ferrite ring	1
30	*N/A*	Ferrite Ring	1
31	**40620**	Plastic Standoff, Locking, 0.500	3
32	*34101*	PrintServer PCB	1

Bold = Part available for purchase
Light italic = Part not available for purchase, listed and shown for reference only

Figure 5-2. Electronics Maintenance Kits

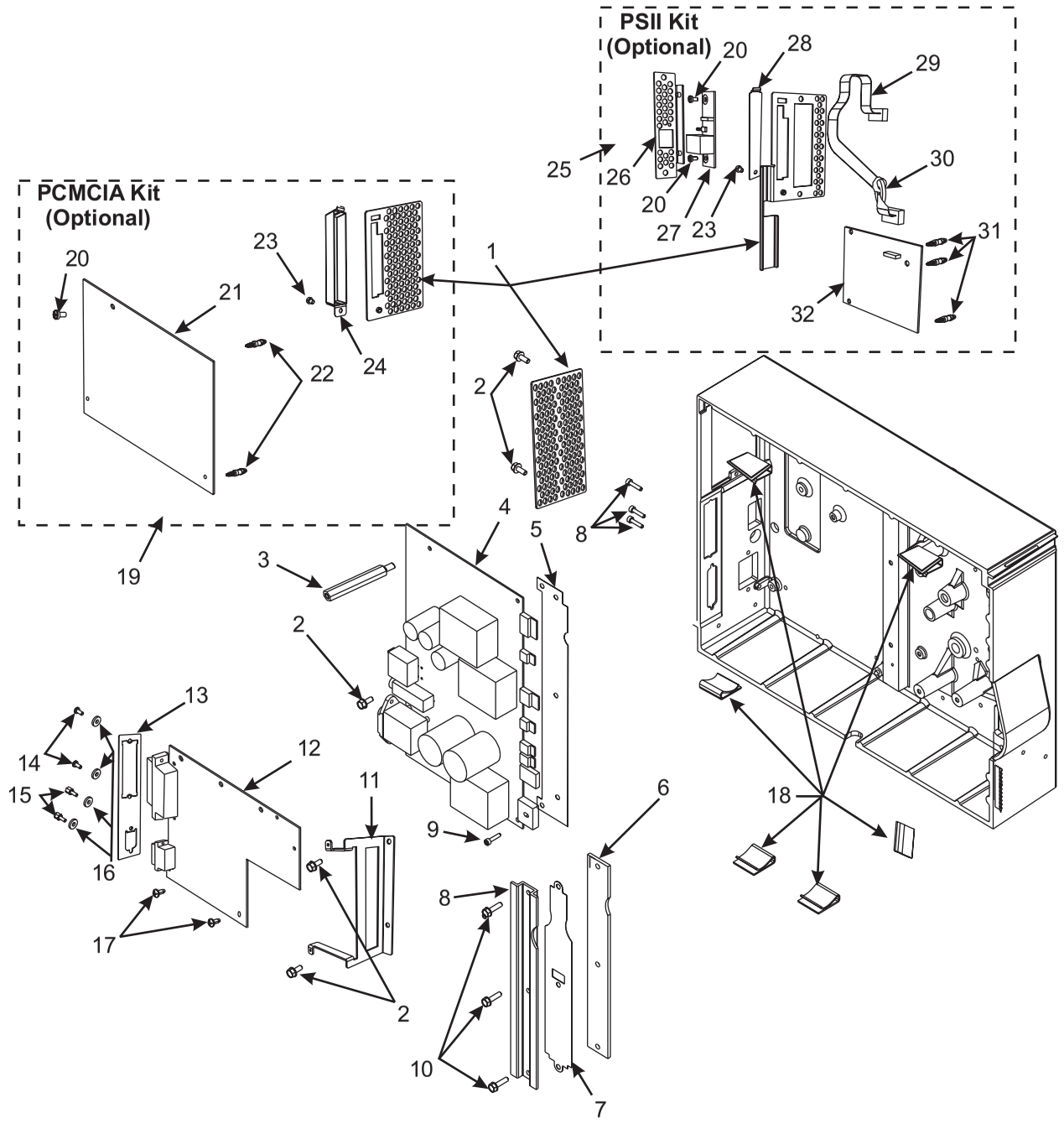


Table 5-3. (Reflective) Media Sensor Assembly Maintenance Kit

ITEM	PART NUMBER	DESCRIPTION	QTY
REF	**77807M**	Reflective Media Sensor Assembly Maintenance Kit (Z4Mplus)	1
REF	**77808M**	Reflective Media Sensor Assembly Maintenance Kit (Z6Mplus)	1
1	*NA*	Media Sensor Assembly	1
2	**Q06020**	Cable Tie, 0.090 × 3.630	3
N/A: Not Available Separately			

Bold = Part available for purchase
Light italic = Part not available for purchase, listed and shown for reference only

Figure 5-3. (Reflective) Media Sensor Assembly Maintenance Kit

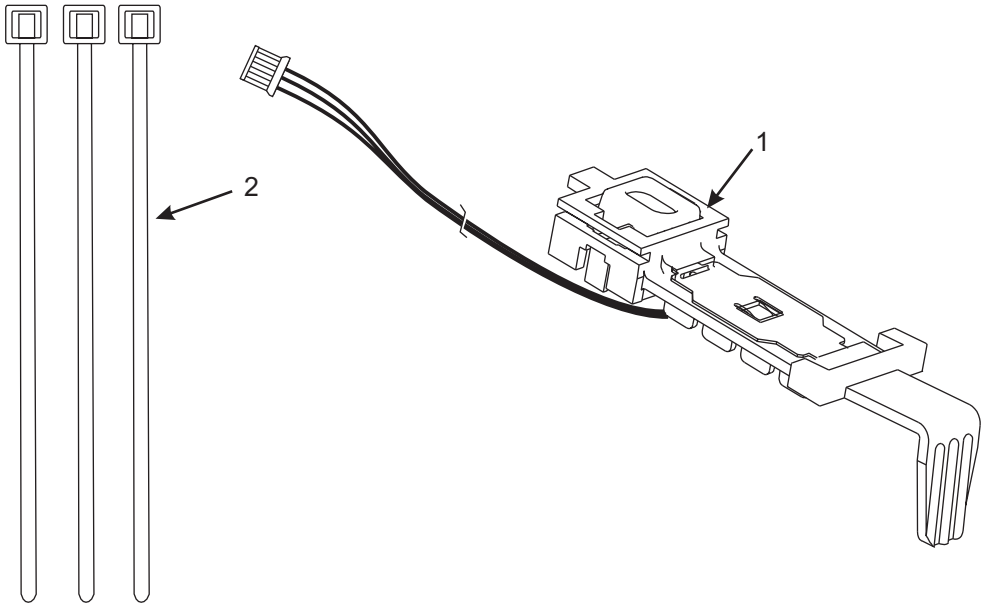


Table 5-4. Platen Assembly

Item	Part Number	Description	Qty
1	**77752M**	Optical (Transmissive) Media Sensor Maintenance Kit	1
1	**77890M**	Adjustable Optical (Transmissive) Media Sensor Kit (Optional Z4Mplus only)	1
2	**HW44216**	Screw, M4.2 × 1.410 × 13 mm (only available in quantities of 25)	1
3	**77935M**	Media Edge Guide Maintenance Kit (use with non-adjustable transmissive sensor)	1
4	**HW46128**	Nylon Washer (only available in quantities of 25)	1
5	*77937*	Compression Spring, 0.190 × 0.240 × 0.310	1
6	*77936*	Front Media Guide Nut	1
7	**77807M**	Reflective Media Sensor Assembly Maintenance Kit (Z4Mplus) (Refer to Figure 5-3 on page 189)	1
7	**77808M**	Reflective Media Sensor Assembly Maintenance Kit (Z6Mplus) (Refer to Figure 5-3 on page 189)	1
8	**77023M**	Platen Roller Maintenance Kit (Z4Mplus) (Refer to Figure 5-5 on page 193)	1
8	**77022M**	Platen Roller Maintenance Kit (Z6Mplus) (Refer to Figure 5-5 on page 193)	1
9	**77765M**	Ribbon/Head Open Sensor Maintenance Kit	1
10	**HW77237**	Screw, M4 × 0.700 × 10 mm (only available in quantities of 5)	1
11	**77078**	Flat Washer, 0.500 × 0.195 × 0.090	3
12	**77283**	Screw, M4 × 0.700 × 16 mm	2
13	**77625M**	Z4Mplus Peel Tear Bar	1
13	**77799M**	Z6Mplus Peal Tear Bar	1
14	**77231**	Screw, M3 × 8 mm	2
15	**77887**	Media Edge Guide (use with adjustable transmissive sensor only)	1
16	*77673*	Nylon Washer, 0.200 × 0.625 × 0.020	1
17	*77637*	Screw, M4 × 0.700 × 12 mm	1
18	**77112M**	Print Mechanism Latch Kit (Refer to Figure 5-10 on page 201)	1

N/A: Not Available Separately

Bold = Part available for purchase
Light italic = Part not available for purchase, listed and shown for reference only

Figure 5-4. Platen Assembly

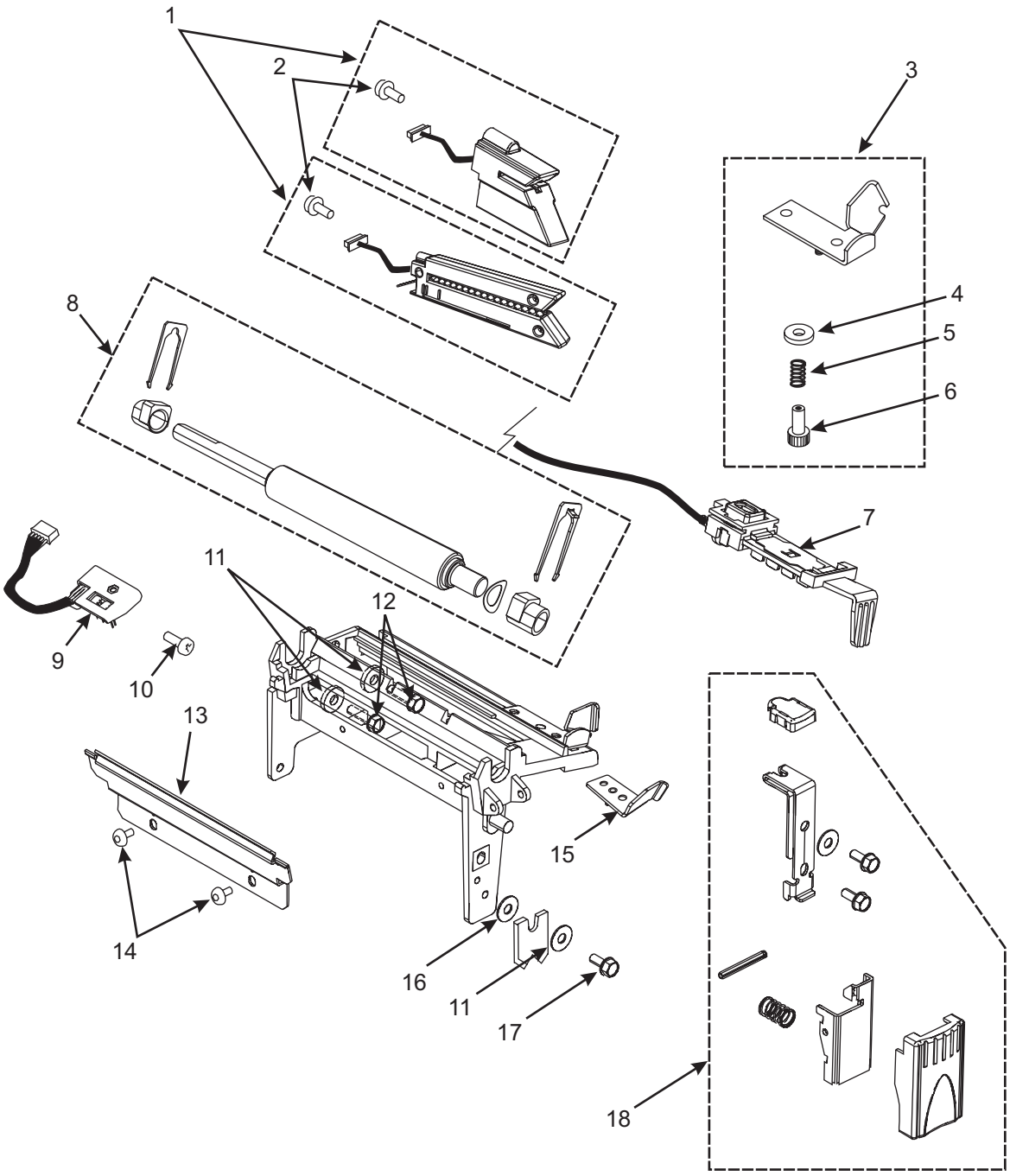


Table 5-5. Platen Roller Shaft Maintenance Kit

Item	Part Number	Description	Qty
REF	**77023M**	Platen Roller Maintenance Kit (Z4Mplus)	1
REF	**77022M**	Platen Roller Maintenance Kit (Z6Mplus)	1
1	*77022*	Platen Shaft Roller (Z6Mplus)	1
1	*77023*	Platen Shaft Roller (Z4Mplus)	1
2	*77423*	Inner Spring Clip	1
3	*78184*	Outer Spring Clip	1
4	*77426*	Platen Bearing	2
5	*77298*	Spring Washer, 0.612 × 0.40 × 0.009	1

Bold = Part available for purchase
Light italic = Part not available for purchase, listed and shown for reference only

Figure 5-5. Platen Roller Shaft Maintenance Kit

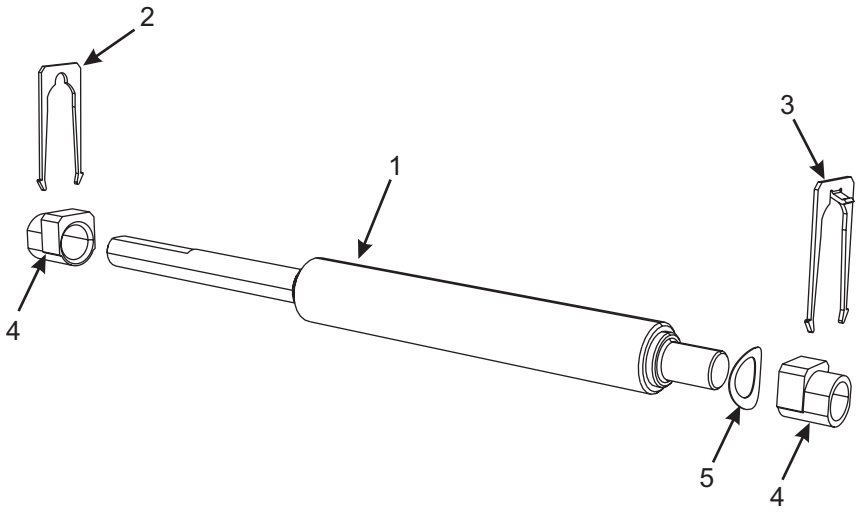


Table 5-6. Printhead Housing Maintenance Kit

Item	Part Number	Description	Qty
1	**Ref**	Print Mechanism	1
2	**77804M**	Cable Printhead 4 inch Maintenance Kit	1
2	**77831M**	Cable Printhead 6 inch Maintenance Kit	1
3	**79057M**	Printhead 300 dpi Maintenance Kit (Z4Mplus)	1
3	**79056M**	Printhead 203 dpi Maintenance Kit (Z4Mplus)	1
3	**79058M**	Printhead 203 dpi Maintenance Kit (Z6Mplus)	1
3	**79059M**	Printhead 300 dpi Maintenance Kit (Z6Mplus)	1
3	**79082**	300 dpi Upgrade Kit (Z4Mplus)	1
3	**79083**	203 dpi Upgrade Kit (Z4Mplus)	1
3	**79084**	300 dpi Upgrade Kit (Z6Mplus)	1
3	**79085**	203 dpi Upgrade Kit (Z6Mplus)	1
4	**HW77047**	Printhead Mounting Screw (only available in quantities of 5)	1
5	**Q06020**	Cable Tie, 0.090 × 3.630	1
N/S	**77049-104**	Ribbon Strip Plate, 104 mm (Z4Mplus)	1
N/S	**77049-168**	Ribbon Strip Plate, 168 mm (Z6Mplus)	1
N/S	**77802M**	Printhead Hardware 4 inch Maintenance Kit	1
N/S	*77687*	4 inch Braid Cable	1
N/S	*77662*	Compression Spring, 0.300 × .038 × 1.500 (Z4Mplus)	1
N/S	*77147*	Compression Spring, 0.210 × .030 × 1.500 (Z6Mplus)	1

N/S: Not Shown
N/A: Not Available Separately

Bold = Part available for purchase
Light italic = Part not available for purchase, listed and shown for reference only

Figure 5-6. Printhead Housing Maintenance Kit

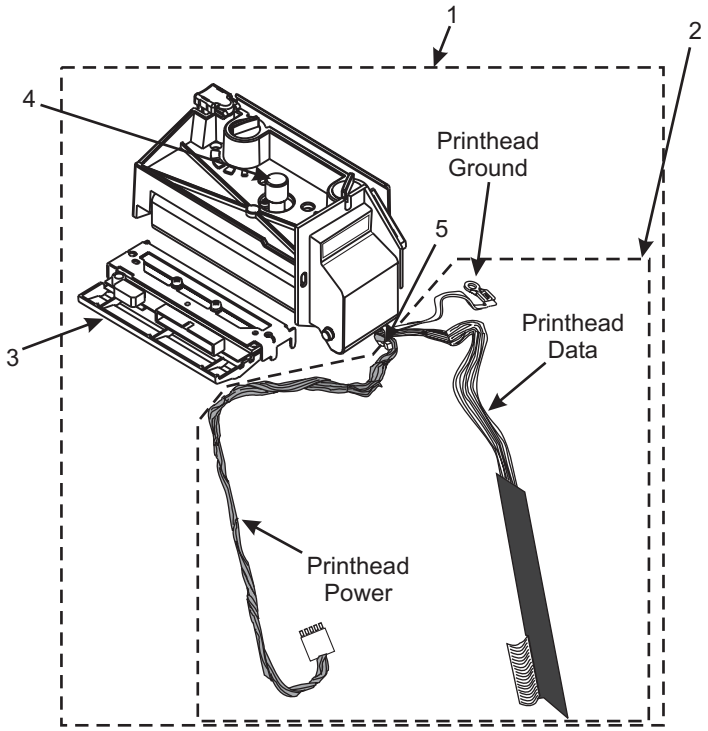


Table 5-7. Static Brush Assembly Maintenance Kit

Item	Part Number	Description	Qty
REF	**77302M**	Static Brush Assembly Maintenance Kit (Z4Mplus)	1
REF	**77303M**	Static Brush Assembly Maintenance Kit (Z6Mplus)	1
1	**HW10401**	Screw, M3 × 0.500 (only available in quantities of 50)	2
2	**77318**	Ribbon Static Brush (Z4Mplus)	1
2	**77319**	Ribbon Static Brush (Z6Mplus)	1
3	*77316*	Ribbon Static Brush Bracket (Z4Mplus)	1
3	*77317*	Ribbon Static Brush Bracket (Z6Mplus)	1
4	**HW77237**	Screw, M4 × 0.700 × 10 mm (only available in quantities of 5)	2
N/A: Not Available Separately			

Bold = Part available for purchase
Light italic = Part not available for purchase, listed and shown for reference only

Figure 5-7. Static Brush Assembly Maintenance Kit

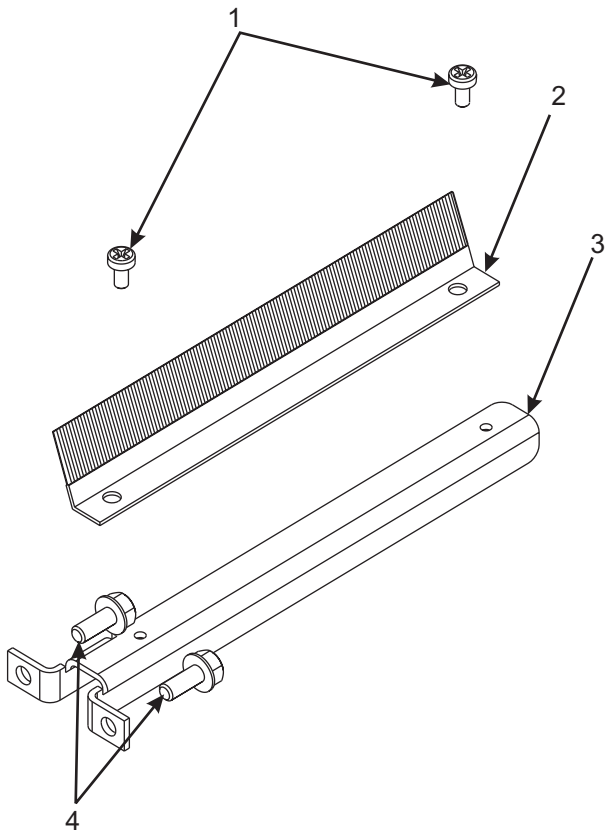


Table 5-8. Dancer Assembly Maintenance Kit

Item	Part Number	Description	Qty
1	**77331M***	Dancer Assembly Maintenance Kit (Z6Mplus)	1
2	**77238M**	Dancer Assembly Maintenance Kit (Z4Mplus)	1
3	*77909*	Bearing, 0.380 × 0.630× 0.500	2
4	*77256*	Torsion Spring	1
5	*77928*	Dancer (Z4Mplus)	1
6	**HW30224**	External Crescent Ring, 0.375 (only available in quantities of 50)	2
7	*77929*	Dancer Shaft (Z4Mplus)	1
7	*77290*	Dancer Shaft (Z6Mplus)	1
8	*77285*	Tolerance Ring, 0.375 × 0.500	1
9	**HW44356**	Washer, 0.198 × 0.750 × 0.085 (only available in quantities of 25)	1
10	**HW10432**	Screw, M4 × 0.700 × 12 mm (only available in quantities of 25)	1
N/A: Not Available Separately			

***** Available only as a complete assembly for the Z6Mplus.

Bold = Part available for purchase
Light italic = Part not available for purchase, listed and shown for reference only

Figure 5-8. Dancer Assembly Maintenance Kit

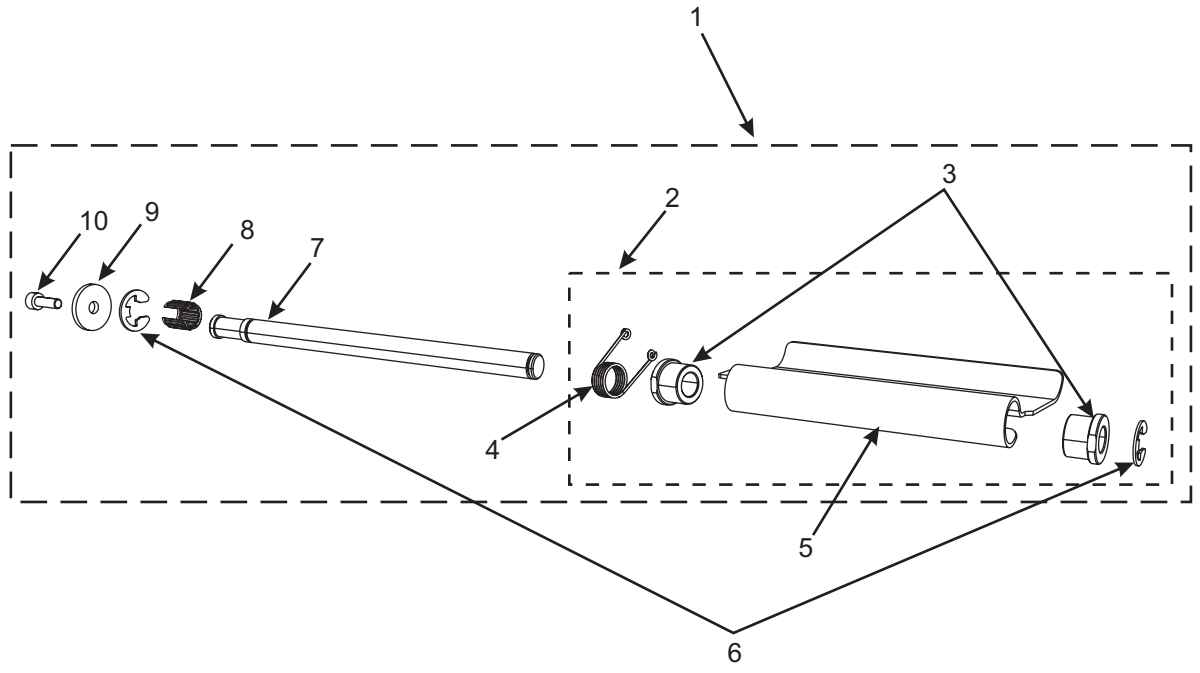


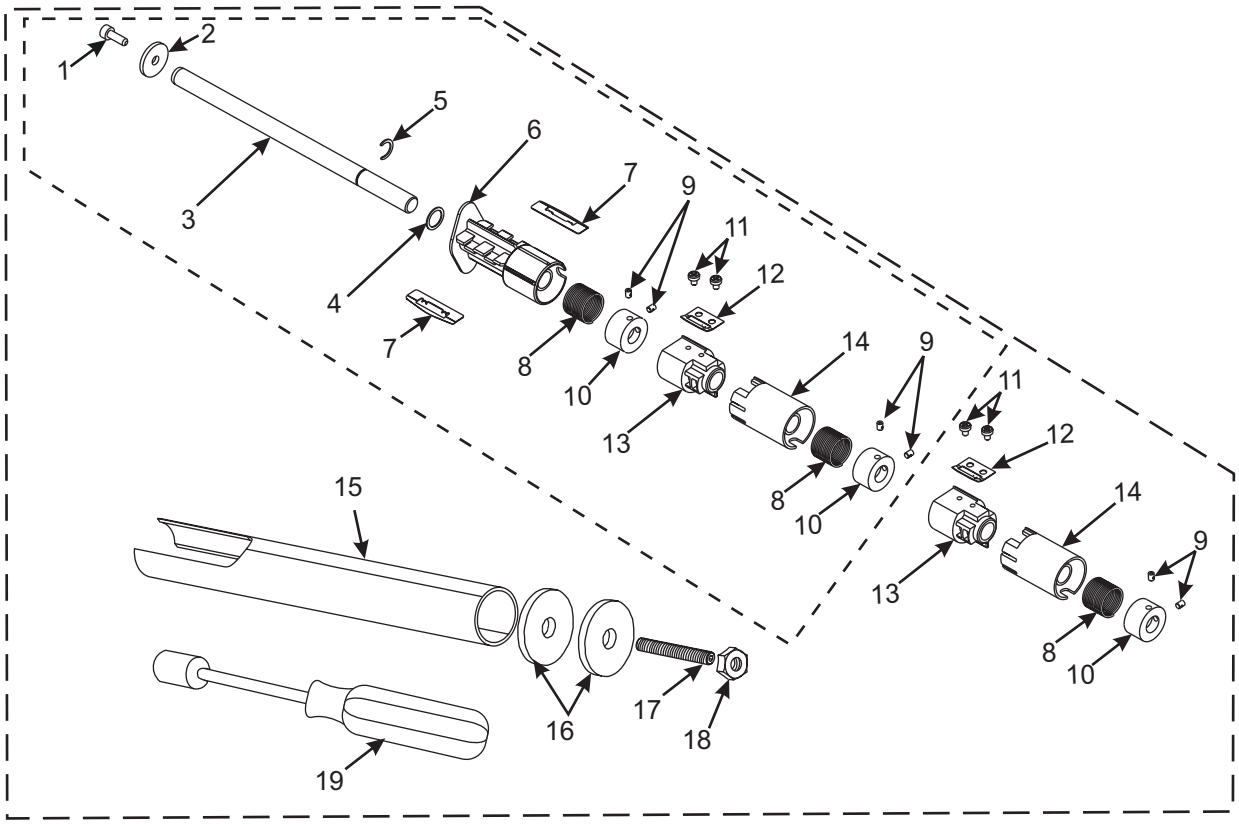
Table 5-9. Ribbon Supply Assembly Maintenance Kit

Item	Part Number	Description	Qty	
			Z4M	Z6M
REF	**77085M**	Ribbon Supply Maintenance Kit (Z4Mplus)	1	1
REF	**77082M**	Ribbon Supply Maintenance Kit (Z6Mplus)	1	1
1	**HW10432**	Screw, M4 × 0.700 × 12 mm (only available in quantities of 25)	1	1
2	**HW44356**	Washer, 0.198 × 0.750 × 0.085 (only available in quantities of 25)	1	1
3	*77098*	Ribbon Supply Shaft (Z4Mplus)	1	1
3	*77397*	Ribbon Supply Shaft (Z6Mplus)	1	1
4	**44390**	Washer, 0.500 × 0.377 × 0.020	1	1
5	**HW30224**	External Crescent Ring, 0.375 (only available in quantities of 50)	1	1
6	*77090*	Inner Spindle	1	1
7	*77089*	Spindle Blade	2	2
8	*77217*	Tension Spring	2	3
9	**HW44147**	Set Screw, M3 × 0.500 × 4 mm (only available in quantities of 25)	4	6
10	*77377*	Spring Clutch Cup	2	3
11	**HW10401**	Screw, M3 × 0.500 × 4 mm (only available in quantities of 50)	2	4
12	*77288*	Blade	1	2
13	*77327*	Inner Spindle	1	2
14	*77321*	Outer Spindle	1	2
15	*77593*	Remove Tool	0	1
16	*77620*	Washer	0	2
17	*77594*	Screw, M4 × 0.700 × 60 mm	0	1
18	*77598*	Nut	0	1
19	*77621*	Nut Driver, 7 mm	0	1

N/A: Not Available Separately

Bold = Part available for purchase
Light italic = Part not available for purchase, listed and shown for reference only

Figure 5-9. Ribbon Supply AssemblyMaintenance Kit



Z4Mplus Parts - - - - - - - - - -

Z6Mplus Parts — — — — —

Table 5-10. Print Mechanism Latch Kit

Item	Part Number	Description	Qty
1	**77112M**	Print Mechanism Latch Kit	REF
2	*77659*	Latch Strike Plate	1
3	**77048**	Adjustment Screw, M4 × 0.700	1
4	**77276**	Strike Plate Cap	1
5	**10473**	Flat Washer, M4	1
6	**Q10011**	Screw, M4 × 0.700 × 10 mm	3
7	**77236**	Latch Plate Cover	1
8	*77226*	Latch	1
9	*77195*	Compression Spring, 0.875 × 0.360 × 0.029	1
10	*77194*	Slot Spring Pin	1
11	*77921*	Cam	1
12	*77919*	Print Mechanism Gap Pin Gauge, 0.094 in. (2.388 mm)	2
13	*77043*	Screw, M3 × 0.5 × 6 mm	2
14	**77049-104**	Ribbon Strip Plate, 104 mm (Z4Mplus)	1
14	**77049-168**	Ribbon Strip Plate, 168 mm (Z6Mplus)	1
15	*79041*	Flat Washer, 0.250 × 0.125 × 0.230	2
N/A: Not Available Separately			

Bold = Part available for purchase
Light italic = Part not available for purchase, listed and shown for reference only

Figure 5-10. Print Mechanism Latch Kit

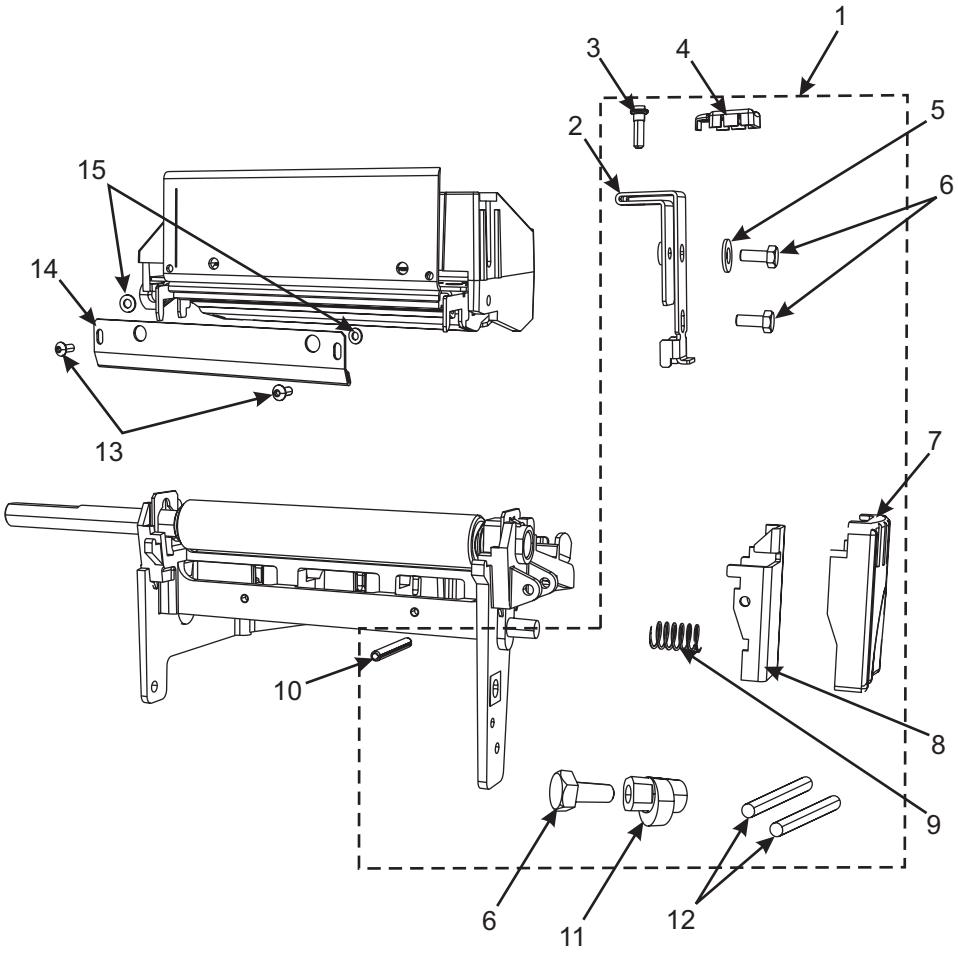
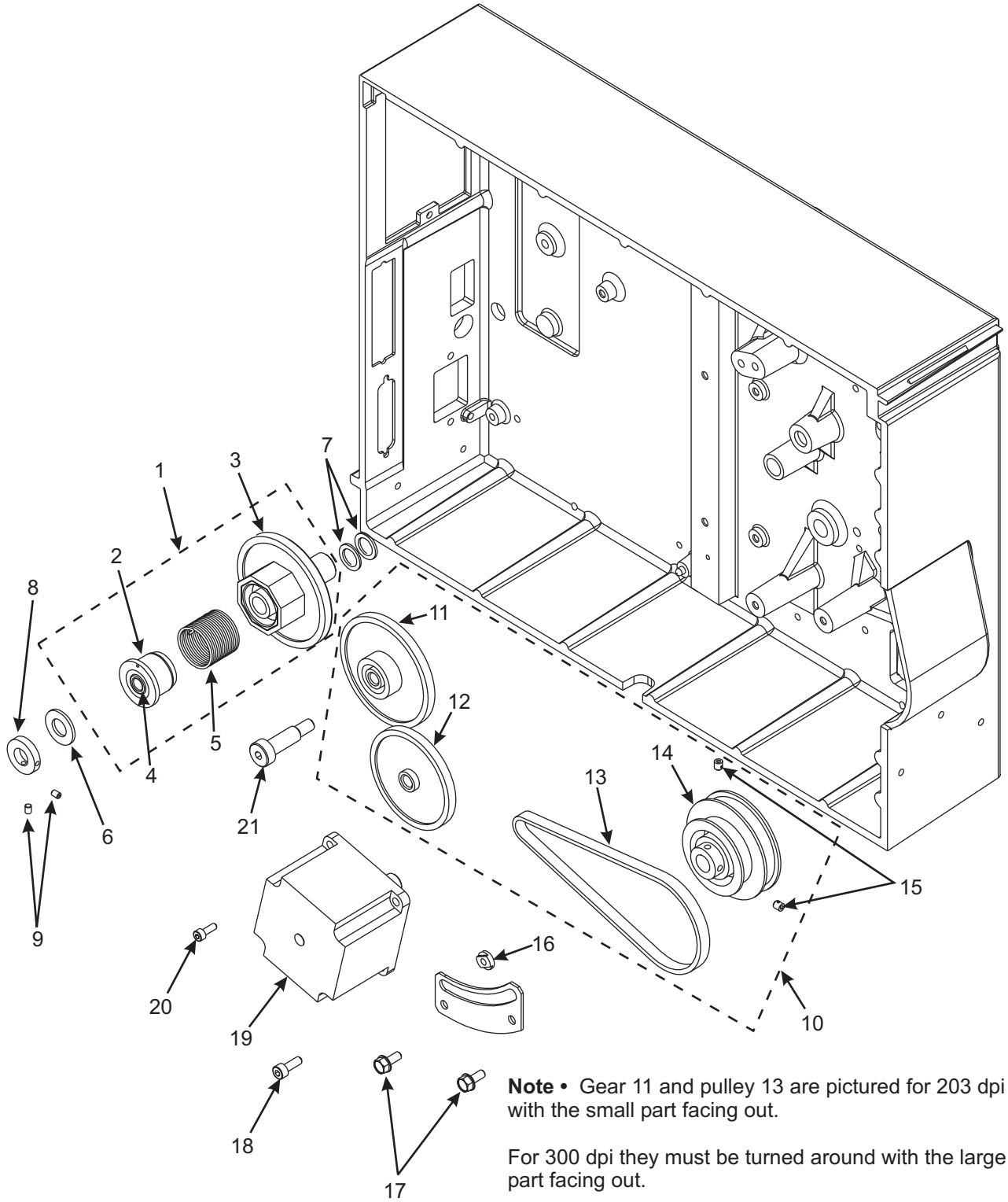


Table 5-11. Drive System – Belts/Pulleys

Item	Part Number	Description	Qty
1	**77814M**	Clutch Ribbon Take-Up Maintenance Kit	1
2	**44165**	Clutch Hub	1
3	*77183*	Clutch Gear	1
4	*N/A*	Clutch Bearing	1
5	*77115*	Return Spring	1
6	*77126*	Nylon Flat Washer, 0.375 × 0.750 × 0.062	1
7	*77123*	Flat Washer, 0.379 × 0.530 × 0.056	2
8	**78118**	Shaft Collar, 0.377 × 0.750	1
9	**HW44147**	Set Screw, M3 × 0.500 × 4 mm (only available in quantities of 25)	2
10	**77803M**	Drive System Maintenance Kit	1
11	*77182*	Compound Gear	1
12	*77430-1*	Intermediate Gear	1
13	**77396**	Drive Belt	1
14	*77227*	Compound Pulley	1
15	**HW10856**	Set Screw, M4 × 0.700 × 10 mm (only available in quantities of 25)	2
16	*77239*	Adjusting Nut	1
17	**HW77237**	Screw, M4 × 0.700 × 10 mm (only available in quantities of 25)	2
18	**HW10432**	Screw, Cap, M4 × 0.700 × 12 mm (only available in quantities of 25)	1
19	**77813M**	Stepper Motor Maintenance Kit	1
20	**HW44924**	Screw, M3 × 0.500 × 8 mm (only available in quantities of 25)	1
21	*77225*	Screw, M6 × 20 mm	1
N/A: Not Available Separately			

Bold = Part available for purchase
Light italic = Part not available for purchase, listed and shown for reference only

Figure 5-11. Drive System – Belts/Pulleys



Note • Gear 11 and pulley 13 are pictured for 203 dpi with the small part facing out.

For 300 dpi they must be turned around with the large part facing out.

Table 5-12. Cutter Option Kit

Item	Part Number	Description	Qty
1	**77971**	Cutter Option Kit (Z4Mplus)	1
1	**77972**	Cutter Option Kit (Z6Mplus)	1
2	**77041**	Catch Tray (Z4Mplus)	1
2	**77997**	Catch Tray (Z6Mplus)	1
3	**77973M**	Cutter Cover and PC Board Assembly (Z4Mplus)	1
3	**77697**	Cutter Cover (Z4Mplus)	1
3	**77974M**	Cutter Cover and PC Board Assembly (Z6Mplus)	1
3	**77698**	Cutter Cover (Z6Mplus)	1
4	**77990M**	Cutter Module Kit (Z4Mplus)	1
4	**77401M**	Cutter Module Kit (Z6Mplus)	1
5	*N/A*	Thumbscrew	1
6	*N/A*	Cutter Shield	1
7	**77427**	Screw, M4 × 10 mm	1
8	**77408**	Cutter Static Brush (Z4Mplus)	1
8	**77409**	Cutter Static Brush (Z6Mplus)	1
9	**77630**	Cutter Cable	1
10	*77429*	Screw, M3 × 18 mm	2

N/A: Not Available Separately

Bold = Part available for purchase
Light italic = Part not available for purchase, listed and shown for reference only

Figure 5-12. Cutter Option Kit

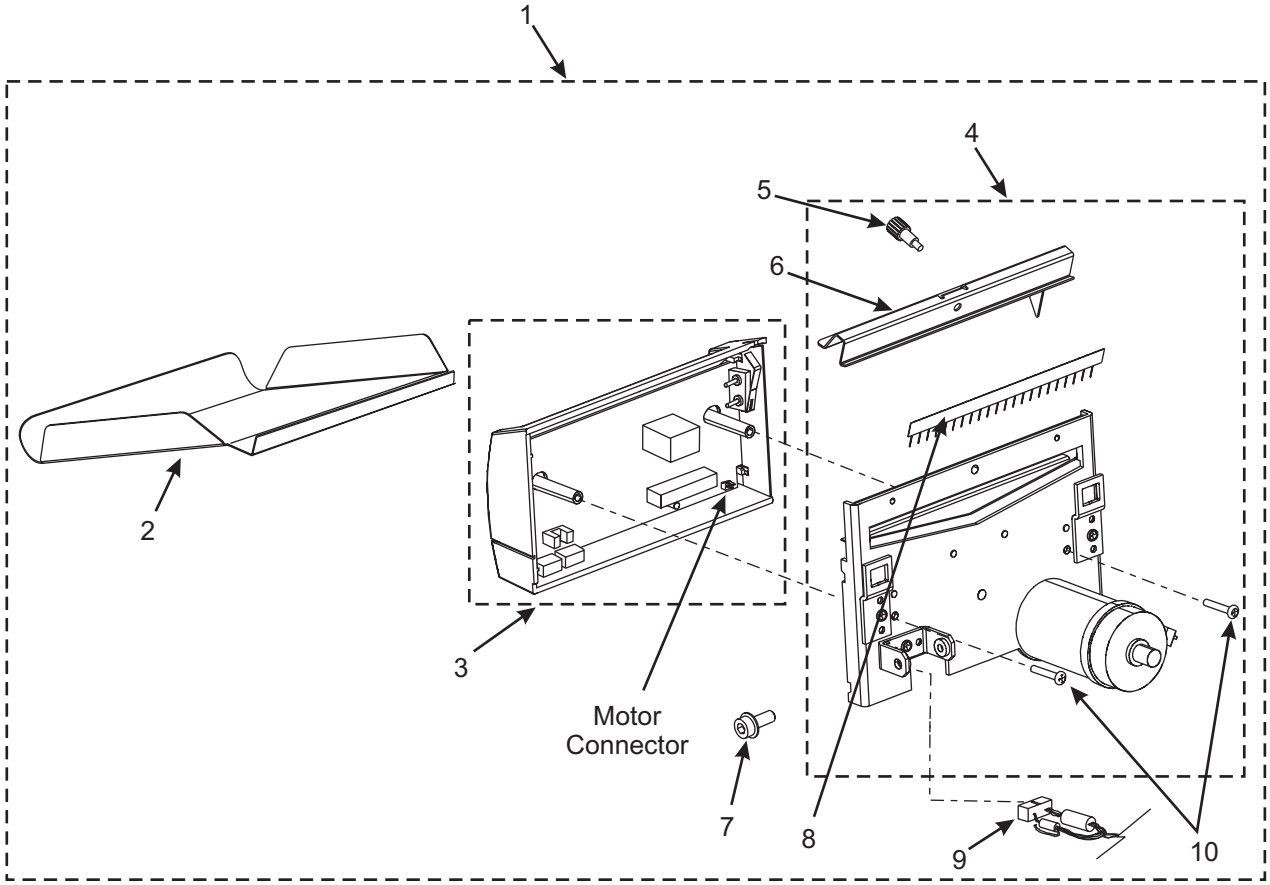


Table 5-13. Peel Option Assembly

Item	Part Number	Description	Qty
1	**78002M**	Peel Maintenance Kit (Z4Mplus)	1
1	**78012M**	Peel Maintenance Kit (Z6Mplus)	1
2	**77231**	Screw, M3 × 8 mm	2
3	*78009*	Push-On Fastener, 0.125 shaft	1
4	**77197M**	Peel Pinch Roller Maintenance Kit (Z4Mplus)	1
4	**77727M**	Peel Pinch Roller Maintenance Kit (Z6Mplus)	1
5	**10094**	E-Ring, 3 mm	2
6	*49203*	Bearing	2
7	*77197*	Pinch Roller	1
7	*77727*	Pinch Roller	1
N/S	**78000**	Peel Static Brush (Z4Mplus)	1
N/S	*78001*	Peel Static Brush (Z6Mplus)	1
N/S: Not Shown			

Bold = Part available for purchase
Light italic = Part not available for purchase, listed and shown for reference only

Figure 5-13. Peel Option Assembly

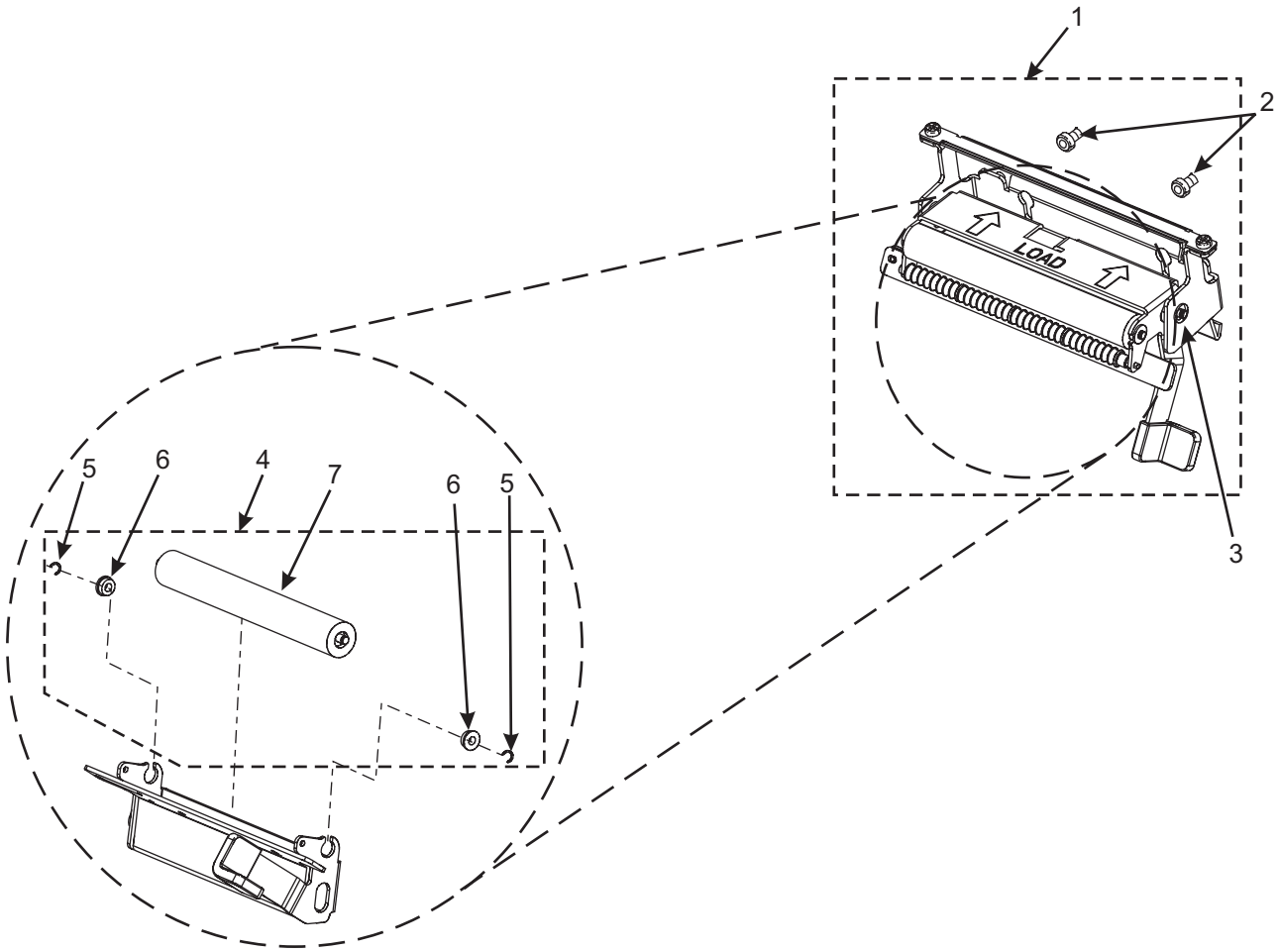


Table 5-14. Liner Take-up Assembly (Z4Mplus Only)

Item	Part Number	Description	Qty
1	**79027M**	Z4Mplus Liner Take-up	1
2	*77338*	Mounting Bracket	1
3	*77334*	Shaft	1
4	*N/A*	Spindle Assembly	1
5	**06313**	E-ring, 0.375	1
6	*77637*	Screw, M4 × 0.700 × 12 mm	2
7	**77648M**	Motor Cable	1
8	**HW10419**	Screw, M3 × 0.500 × 6 mm (only available in quantities of 25)	2
9	*77311*	Pushon Fastener, 0.069/0.197 grip 0.216	2
10	*77379*	Shield	1
11	**34112M**	Motor and Board Assembly Kit	1

N/A: Not Available Separately

Bold = Part available for purchase
Light italic = Part not available for purchase, listed and shown for reference only

Note • The Liner Take-up is Only available for the Z4Mplus.

Figure 5-14. Liner Take-up Assembly (Z4Mplus Only)

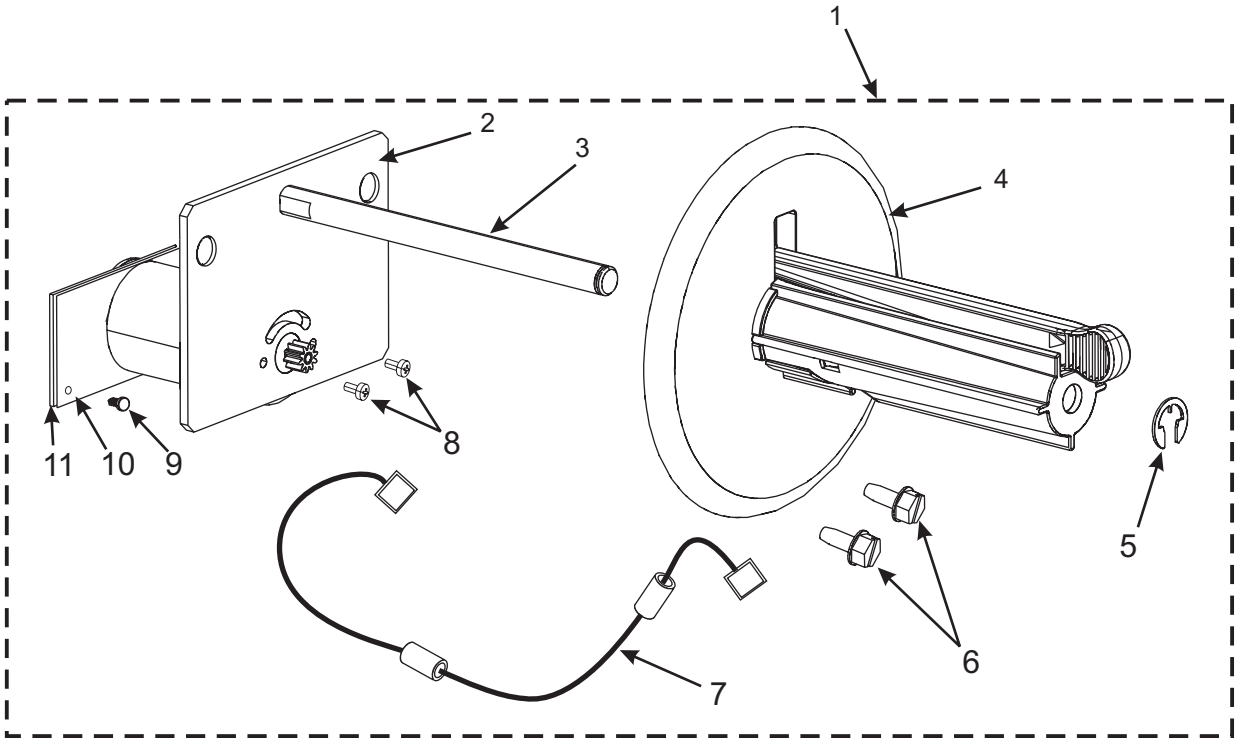


Table 5-15. Rewind Option Kit

Item	Part Number	Descriptions	QTY
1	**78205**	Peel/Rewind Combo Option Kit (Z4Mplus)	1
1	**78205-6**	Peel/Rewind Combo Option Kit (Z6Mplus)	1
2	**79026M**	Spindle and Motor Maintenance Kit (Z4Mplus	1
2	**79026-6M**	Spindle and Motor Maintenance Kit (Z6Mplus)	1
3	**34110M**	Rewind PCB Maintenance Kit (Z4Mplus))	1
3	**34111M**	Rewind PCB Maintenance Kit (Z6Mplus)	1
4	**77648M**	Media Rewind Cable	1
5	**Q06020**	Cable Tie, 0.090 × 3.630	1
6	**HW77237**	Screw, M4 × 0.700 × 10 mm (only available in quantities of 5)	8
7	*N/A*	Pan	1
8	**77167M**	Steering Roller Maintenance Kit (Z4Mplus)	1
8	**77168M**	Steering Roller Maintenance Kit (Z6Mplus)	1
9	**77459M**	Rewind Outer Guard Manitenance Kit	1
10	**77455**	Nylon Screw, M4 × 0.700 × 16 mm	1
11	*77459*	Outer Rewind Guard	1

N/A: Not Available Separately

Bold = Part available for purchase
Light italic = Part not available for purchase, listed and shown for reference only

Figure 5-15. Rewind Option Kit

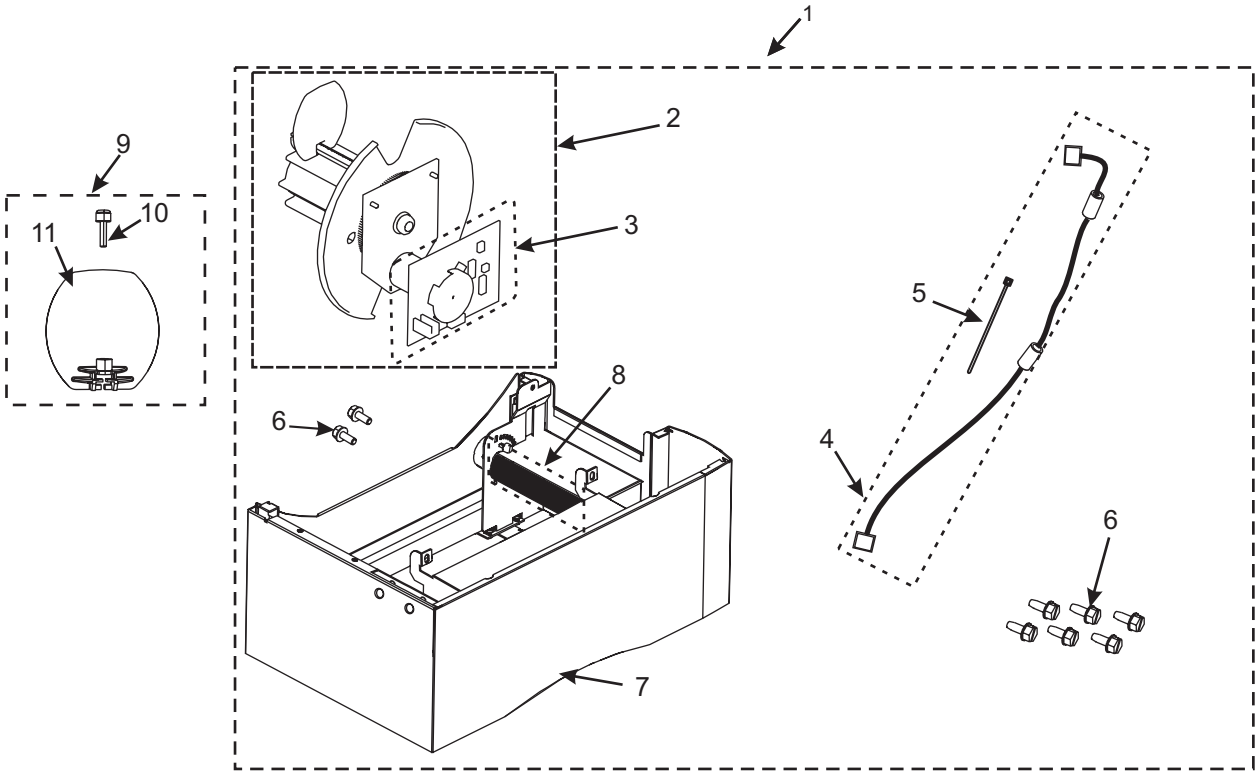


Table 5-16. Communication and Miscellaneous Options

Item	Part Number	Description	Qty
1	**46692**	ZebraNet II External Upgrade Kit	1
2	**78206**	ZebraNet II Internal Upgrade Kit	1
3	**34109**	PSII Cable w/ferrite ring	1
4	**40620**	Spacer, Locking, 0.500	3
5	*79021*	Cover Plate, PSII w/o Memory	1
6	**77384**	Screw, M3 × 0.500 × 3 mm	1
7	**46999-0008**	Linear Memory Card (8 MB), Socket Board Option required	1
7	**46999-0032**	Linear Memory Card (32 MB), Socket Board Option required	1
N/S	**33193-032**	Compact Flash Memory (32 MB), Socket Board Option required	1
N/S	**33193-064**	Compact Flash Memory (64 MB), Socket Board Option required	1
N/S	**33193-128**	Compact Flash Memory (128 MB), Socket Board Option required	1
N/S	**33193-256**	Compact Flash Memory (256 MB), Socket Board Option required	1
N/S	**33130**	Serial Port Converter RS232 to RS485/422	1
N/S	**33138**	Serial Port Converter DB-9 to DB-25	1

N/S: Not Shown

Bold = Part available for purchase
Light italic = Part not available for purchase, listed and shown for reference only

Figure 5-16. Communication and Miscellaneous Options

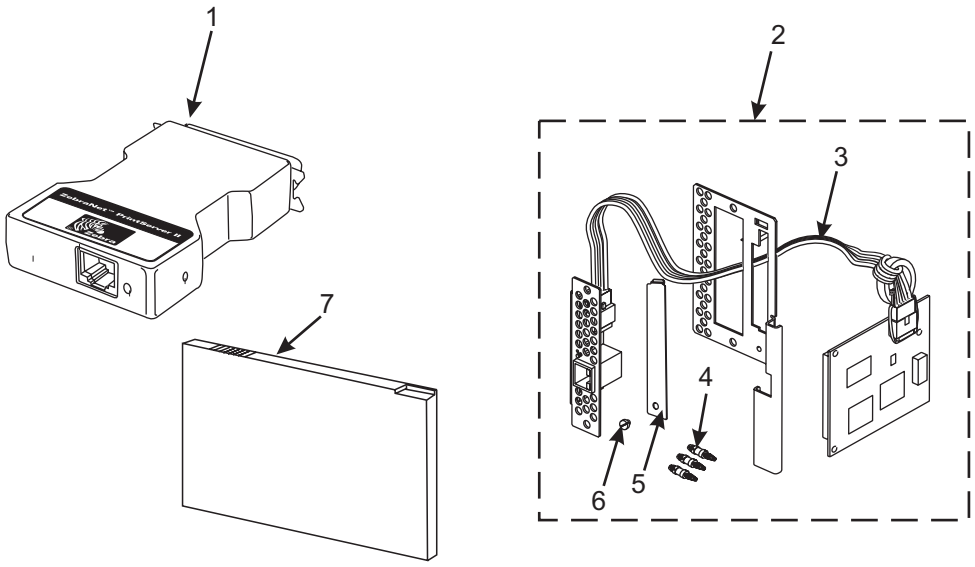
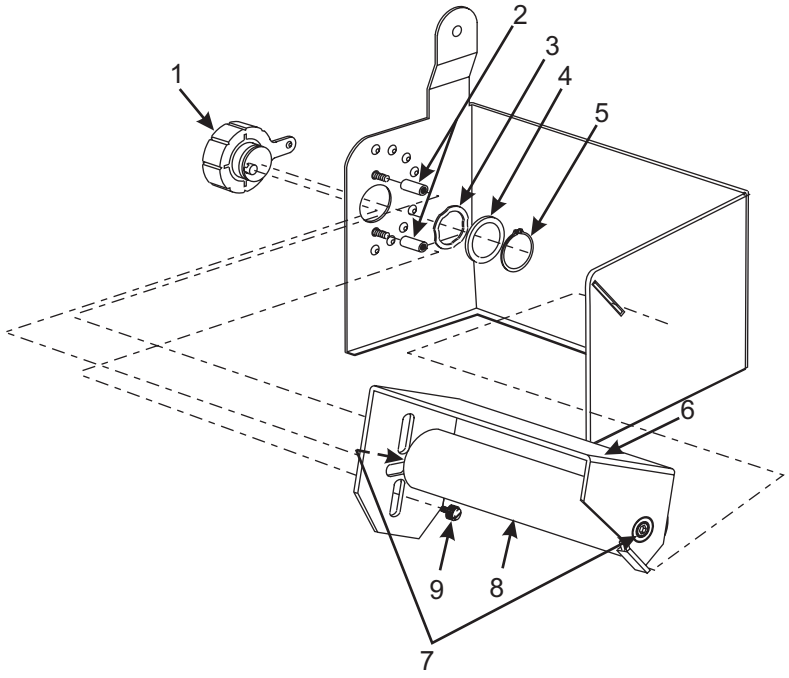


Table 5-17. Steering Roller Assembly

Item	Part Number	Description	Qty
Ref	**77167M**	Steering Roller Assembly Maintenance Kit (Z4Mplus)	1
Ref	**77168M**	Steering Roller Assembly Maintenance Kit (Z6Mplus)	1
1	*77482*	Steering Knob	1
2	*77490*	Threaded Spacer, M3.5	2
3	*77496*	Wave Washer, 0.855 × 0.650 × 0.100	1
4	*77449*	Flat Washer, 0.87 × 0.625 × 0.048	1
5	**HW30136**	Snap Ring External, 0.625 (only available in quantities of 25)	1
6	*77622*	Steering Roller Bracket (Z4Mplus)	1
6	*77623*	Steering Roller Bracket (Z6Mplus)	1
7	**HW30105**	Nylon Bearing, 0.312 × 0.251 × 0.078 (only available in quantities of 25)	2
8	*77626*	Steering Roller (Z4Mplus)	1
8	*77627*	Steering Roller (Z6Mplus)	1
9	**44067**	Nylon Thumb Screw, M3.5 × 6 × 5	1

Bold = Part available for purchase
Light italic = Part not available for purchase, listed and shown for reference only

Figure 5-17. Steering Roller Assembly




Zebra