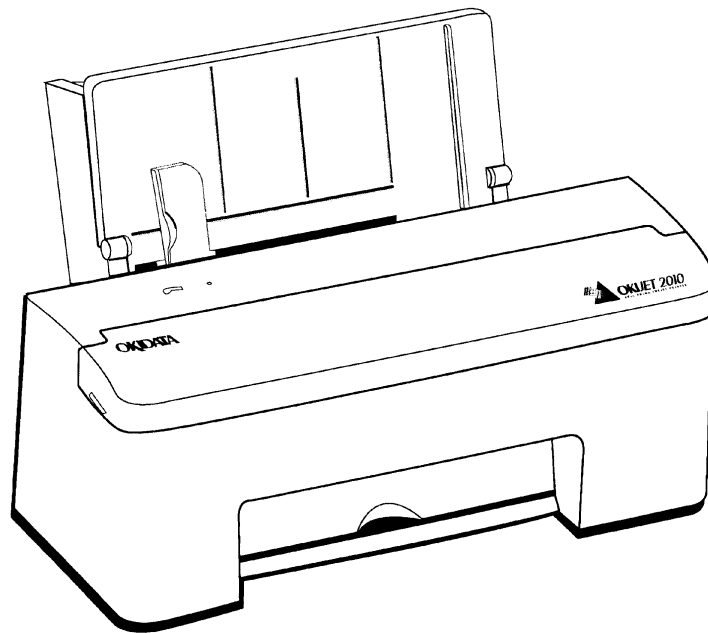


OKIDATA
an OKI AMERICA company

OkiJet 2010

Service Handbook



OKI

P/N 59269702

OkiJet 2010

Service Handbook

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COURSE ADMINISTRATION

OVERVIEW

General Information

This Okidata training course provides the information needed to install and maintain the OkiJet 2010.

When you successfully complete this training course, you will be able to:

- install and operate the product,
- locate the major assemblies of the product,
- identify fault indications,
- and perform corrective and preventive maintenance.

Purpose of Program

Okidata's Service Training Program builds a knowledgeable and efficient service and support group for Okidata products.

Obtaining a training kit for the appropriate product allows the Dealership to have reference materials available during service jobs. Having, and using, these reference materials will minimize the time and money spent on repairs.

This training course is one step in becoming an Authorized Okidata Service Center.

Technicians complete Certification Tests as part of Okidata's Authorization process. Testing familiarizes the technician with the product and reference materials.

Service Authorization for a specific product *must* be obtained before a Dealer can submit warranty claims.

Component Level Service

This training course provides *assembly level* repair information to the field technician.

Component level servicing is *ONLY* provided at Okidata Service Repair Depots!

No attempt is made to provide basic training in being a technician. This kit strives to train a technician to service the product. Okidata views service technicians as representatives of Okidata. Through this course, Okidata seeks to provide the means and the motivation that will make good service a reality.

Remember

Component level servicing is only provided at Okidata Service Repair Depots!

MISSING ITEMS OR MISSING PAGES

When you receive the training kit, you *MUST* verify that the kit contains the items listed on the Read Me First sheet.

If any items or pages are missing, please contact Okidata's Order Processing Center. Information on accessing Okidata's Order Processing Center is provided in the Okidata Contact Information section of this section.

You must provide the information listed below.

Okidata Authorization Number (Dealer Number) *if assigned*

Okidata Customer Number

Order Acknowledgment Number (on the invoice)

Part Number of kit

Name of missing document or document with missing pages

Part Number of document with missing pages (if applicable)

Page numbers of missing pages

Be sure to specify the section number or appendix letter of the missing pages.

Your facsimile number (with area code)

INFORMATION UPDATES

General Information

Every effort has been made to ensure the accuracy of the information contained in this training course. Okidata is not responsible for errors beyond its control.

Okidata distributes technical information updates in five ways.

Okilink II

Faxable Facts

Technical Service Bulletins

Dealer Technical Support

Okidata Service Repair Depots

Okilink II

What It Is

Okilink II is Okidata's Bulletin Board Service.

This service is available to all Okidata Certified Service Technicians.

What It Does

Okilink II provides the information listed below.

Current Part Numbers

Current Prices

Downloadable Files

Message Board for Okidata Technical Support

Printer Drivers

Product Specifications

Recommended Spare Parts Lists

Round Table Discussions about Okidata products and services

Service Information

Technical Service Bulletins

Troubleshooting Information

Service Training Information

Additions and corrections to the training materials are available in the Training Section of Okilink II. Please access and check this section before beginning this course.

How to Access

Connection to Okilink II requires the items listed below.

Asynchronous Modem (up to 28.8 Kbps)

Asynchronous Communications Software

Settings

1200 to 28.8 Kbps

8 data bits

No parity

1 Stop Bit

The telephone number for Okilink II is provided in the Okidata Contact Information section of this section.

Refer to the Service Center Reference Guide for more information on accessing Okilink II.

Faxable Facts

Okidata's Faxable Facts is an automated fax document retrieval system. It is maintained by Okidata's Customer Support Center. Answers to common questions about Okidata products are available through Faxable Facts.

Access and use of Faxable Facts requires a touch-tone telephone and a facsimile machine.

Use a touch-tone telephone to access the Faxable Facts system.

The telephone / facsimile number for Faxable Facts is provided in the Okidata Contact Information section of this section.

The system will direct you through a series of prompts. During your connection, you will enter your facsimile machine number. This will enable Faxable Facts to "fax-back" the requested documents.

Refer to the Service Center Reference Guide for more information on accessing Faxable Facts.

Technical Service Bulletins

Okidata's Technical Service Bulletins (TSBs) contain technical information developed after product release. Firmware updates, part number changes, and procedural changes are some of the subjects covered by these bulletins. The TSBs are distributed through Okilink II.

The Technical Service Bulletins are the primary source for technical information updates. The Technical Service Bulletins are also referred to as TSBs or Okidata's Monthly Technical Mail. The TSBs are distributed via Okidata's Bulletin Board, Okilink II.

Refer to this section or the Service Center Reference Guide for more information on accessing Okilink II.

Dealer Technical Support

Okidata's Dealer Technical Support provides telephone support to authorized Okidata Service Dealers.

The telephone and facsimile numbers for Dealer Technical Support are provided in the Okidata Contact Information section of this section.

Refer to the Service Center Reference Guide for more information on accessing Dealer Technical Support.

NOTE:

These support lines are reserved for the use of Okidata Authorized Service Dealers.

DO NOT refer end users to these support groups!

Okidata maintains separate support lines for end users.

Service Repair Depots

Okidata's Service Repair Depots provide regional support to Authorized Okidata Sales and Service Dealers.

The regions are listed below

Canada

Central

East

West

To determine your region, refer to the Depot Regions by State, District, Territory, or Country sections of this section.

The contact information for the Service Repair Depots is provided in the Okidata Contact Information section of this section.

Refer to the Service Center Reference Guide for more information.

Depot Regions by State

State	Region	State	Region
Alabama	East	Nebraska	Central
Alaska	West	Nevada	West
Arizona	West	New Hampshire	East
Arkansas	Central	New Jersey	East
California	West	New Mexico	West
Colorado	West	New York	East
Connecticut	East	North Carolina	East
Delaware	East	North Dakota	Central
Florida	East	Ohio	Central
Georgia	East	Oklahoma	Central
Hawaii	West	Oregon	West
Idaho	West	Pennsylvania	East
Illinois	Central	Rhode Island	East
Indiana	Central	South Carolina	East
Iowa	Central	South Dakota	Central
Kansas	Central	Tennessee	East
Kentucky	Central	Texas	Central
Louisiana	Central	Utah	West
Maine	East	Vermont	East
Maryland	East	Virginia	East
Massachusetts	East	Washington	West
Michigan	Central	West Virginia	East
Minnesota	Central	Wisconsin	Central
Mississippi	East	Wyoming	West
Missouri	Central		
Montana	West		

Depot Regions by District

District of Columbia Eastern Region

Depot Regions by Territory

Puerto Rico Eastern Region

Depot Regions by Country

Canada Canadian Region

Caribbean Countries Eastern Region

Latin America Countries Eastern Region

Mexico Eastern Region

Okidata Contact Information

Group	Telephone	Facsimile	Other
Accounts Payable	609-235-2600	609-727-1157	
Accounts Receivable	609-235-2600	609-439-1755	
Credit Terms	609-235-2600	609-439-1755	
Dealer Service (United States)	609-235-2600 ext. 7565	609-439-1466	
Dealer Service (Canada)	905-602-6400	905-602-4755	
Dealer Technical Support Printers	1-800-634-0089	609-273-2779	
Dealer Technical Support Facsimiles	1-800-654-1000	609-273-8630	
Dealer Technical Support Doc-It	1-800-654-0018	609-273-8630	
End User Information (All Products)	1-800-OKIDATA (1-800-654-3282)	609-273-2779	
End User Technical Support Printers, Facsimile	609-273-0300	609-273-2779	
End User Technical Support Doc-It	609-231-1375	609-273-8630	
Faxable Facts			800-654-6651 FAX Back System
Marketing Services and Support	N/A	609-778-4184	
Okilink II			800-283-5474 Bulletin Board Service
Order Processing Center (Spare Parts Orders)	1-800-727-8654	609-424-7423	
Sales Dealer Authorization	609-235-2600 ext. 7426	609-778-4184	
Sales and Product Training		609-235-2600 ext. 7034	Okilink Login Name: Technical Training
Service Repair Depot (Canada) 2735 Matheson Boulevard Unit 1 Mississauga, Ontario L4W 4M8 Canada	905-602-6400	905-602-4755	
Service Repair Depot (Central) 851 Feehanville Drive Mt. Prospect, IL 60056	708-390-8610	708-390-9060	
Service Repair Depot (East) 57 Carnegie Plaza Cherry Hill, NJ 08003	609-235-2600 ext. 8273	609-424-5396	
Service Repair Depot (West) Dixon Landing Business Park 1101 Cadillac Court Milpitas, CA 95035	408-945-6600	408-945-9955	
Warranty Question Faxline		609-424-5396	

SERVICE TRAINING

General Information

This section directs you through your training. Each section covers a different part of the training. Tasks within each section direct you to the portions of the training materials that cover the subject you are studying.

When you have completed one section, move on to the next.

You must correctly answer at least sixteen of the twenty Certification Test questions to successfully complete this course.

Learn from the course and good luck!

Course Objectives

The objectives of this training package are listed below.

1. You will be able to setup and install the printer within thirty (30) minutes or less.
2. You will be able to troubleshoot problems and take corrective measures by using the provided reference materials.
3. You will be able to perform a parts replacement procedure (to a major sub-assembly level) within twenty (20) minutes or less.
4. You will be able to identify and access Okidata's five distribution methods for technical updates.

The five distribution methods are listed below.

Okilink II

Faxable Facts

Technical Service Bulletins

Dealer Technical Support

Okidata Service Repair Depots

Prerequisites

Before beginning this course, you should know the following concepts.

Basic electronics

Inkjet printing principles

Proper procedures for handling circuit boards, Read Only Memory (ROM), and Random Access Memory (RAM)

Basic tool usage

Digital multimeter (DMM) usage

Equipment

The following equipment is recommended for the successful completion of this training course.

OkiJet 2010 (optional)

Tools (optional - refer to Section Three of the Service Handbook)

Personal Computer, Modem, and Communications Software (for accessing Okilink II)

Telephone and Facsimile Machine (for Faxable Facts)

Documentation

You should have access to the documentation listed under the Kit Contents section of the Read Me First Sheet.

The Service Handbook is the primary reference manual for this course.

You cannot successfully complete this course by *only* referring to the Service Handbook.

Take the time to familiarize yourself with all of the documentation in the training kit. This additional information will greatly simplify working with the product.

Course Outline

Service Training is divided into the sections listed below.

User's Documentation

General Description

Installation

Principles of Operation

Failure Analysis

Maintenance

User's Documentation

The user's documentation manual provided in this service training kit is the same manual shipped with the new product.

Familiarize yourself with this document.

Important installation and operation information is provided in this document.

Assigned Tasks

- Look through the user's documentation.

General Description

This section describes the features and specifications of the printers.

Assigned Tasks

- Read Section 1 of the Service Handbook.

Installation

In this section, you will install the unit. You will also perform various tests.

Assigned Tasks

- Look through the installation sections of the user's documentation.

Principles of Operation

This section describes the function of the major assemblies from an electrical and mechanical perspective.

Assigned Tasks

- Read Section 2 of the Service Handbook.

Failure Analysis

This section covers the methods used to identify and correct problems with the unit. Board diagrams, resistance checkpoints, and an illustrated parts list assist you in troubleshooting.

Section Four of the Service Handbook is used to isolate problems to the assembly level. Application problems and detection of faulty components on the printed circuit boards are NOT addressed. Section Four contains the information listed below.

Section 4.3 lists where to check for troubleshooting information updates.

Section 4.4 contains tips on preventing problems and lists common problems.

Section 4.5 shows samples of abnormal outputs.

Section 4.6 provides tables of error messages.

Section 4.7 contains the Repair Analysis Procedures (RAPs).

Section 4.8 provides the procedures for various printer tests.

Section 4.9 lists the resistance check points.

Section 4.2 lists methods for reporting problems.

Appendix A of the Service Handbook contains information about the printed circuit boards (PCBs). This appendix includes reference charts which present data regarding function, firmware, fuses, jumpers, sensors, switches, and test points. An illustration of each board is also included.

Appendix B of the Service Handbook is an illustrated parts listing of the product. This listing is cross-referenced to Section 3 of the Service Handbook.

Assigned Tasks

- Check Okilink II for additional troubleshooting information. Refer to this section or the Service Center Reference Guide for information on accessing Okilink II.
- Read Section 4 of the Service Handbook.
- Look through Appendix A of the Service Handbook.
- Look through Appendix B of the Service Handbook.

CAUTION:

Okidata does not recommend performing the disassembly / assembly procedures on a product which is operating normally. Therefore, you are not required to perform the disassembly / assembly procedures to complete this training.

Maintenance

This section of your training covers the procedures you will normally perform when servicing and maintaining the printer.

Section 3.2 contains the disassembly and assembly procedures for the printer.

Section 3.3 explains the adjustments performed after parts replacement.

Section 3.4 covers the cleaning procedures for the printer. Cleaning procedures are also covered in the user's documentation.

Section 3.5 goes over the lubrication procedures for the printer.

Section 3.6 provides the shipping instructions for the printer. Shipping instructions are printed on the boxes/cartons for the product. Please refer to this information when packing the unit for shipment.

Section 3.7 has the procedures for maintaining the consumables.

Assigned Tasks

- Read Section 3.2 (Disassembly / Assembly) of the Service Handbook.
- Read Section 3.3 (Adjustments and Service Checks) of the Service Handbook.
- Read Section 3.4 (Cleaning) of the Service Handbook.
- Read Section 3.5 (Lubrication) of the Service Handbook.
- Read Section 3.6 (Shipping Instructions) of the Service Handbook.
- Read Section 3.7 (Print Cartridge Maintenance) of the Service Handbook.
- Read the shipping instructions printed on the boxes/cartons for the product (if available).

SERVICE AUTHORIZATION / TECHNICIAN CERTIFICATION

What You Must Do

1. Read through ALL instructions for completing the testing process before you begin.
2. Complete and return an Answer Sheet and Course Critique to Okidata Dealer Service within thirty business days after the kit is received by your Dealership. If multiple technicians are training at your Dealership, only one technician must complete the testing during the thirty day period.
3. Make photocopies of the Answer Sheet, Certification Test, and Course Critique for each technician completing this training package.

Extra copies of the certification materials may be obtained through Faxable Facts. Refer to the Extra Copies of Certification Materials (in this section) for further information.

4. Use the photocopies to complete the testing process.
5. Make your responses on the forms complete and legible.

The information provided on the Answer Sheet and Course Critique is used to update your Dealership's Okidata Service Warranty Profile and to process your Certificate of Training. The critique information is used to respond to your questions regarding this training package.

6. Complete the Answer Sheet for this course. Reference the training material as you answer the test questions.

Every attempt has been made to test your knowledge of the product and your ability to use the reference materials in this kit. No attempt has been made to write "trick questions".

You may have comments about the test questions. Please use Okilink II to bring your comments to the attention of Okidata Sales and Product Training.

7. Complete the course critique for this training course. Okidata welcomes your evaluation of this training program. Your comments are used to improve the quality of future training courses.
8. Photocopy your completed Answer Sheet and Course Critique for your records before returning your completed testing materials to Okidata Dealer Service.
9. Fax your completed testing materials to Okidata Dealer Service. Record the date you returned the items.

What Okidata Does

1. Dealer Service receives the completed Answer Sheet and Course Critique.
2. The Answer Sheet is processed within two days of receipt.
3. At least sixteen of the twenty Certification Test questions must be correctly answered.

This is a successful completion of the training.

If the training is NOT successfully completed, you will be contacted by Okidata.

The following steps occur ONLY if the training has been successfully completed.

4. Service Authorization occurs within two business days of processing the Answer Sheet.

Your Dealership's Okidata Service Warranty Profile is updated.

The Dealership you work for becomes an Authorized Service Center for the products covered in this training package.

5. The Certificate of Training is completed and mailed to you within fifteen business days of processing the Answer Sheet.

You will receive a Certificate of Training.

6. If the above steps do not occur, contact Okidata Dealer Service.

Where To Send Certification Materials

Return completed certification materials to Okidata Dealer Service.

Please fax the materials.

Use the appropriate number listed in the Okidata Contact Information section of this section.

You must provide the following information.

Okidata Authorization Number (Dealer Number) *if assigned*

Company Name

Contact Name / Attention to Person

Company Address (Street, City, State / Province, Country, ZIP / Postal Code)

Company Telephone Number

Company Facsimile Number (with area code)

Okidata Dealer Service

Okidata Dealer Service is responsible for the Okidata Service Dealer Program.

Service Dealer Authorization and Service Technician Certification are administered by Okidata Dealer Service.

All Service Dealer programs and policies are coordinated through Dealer Service.

The Service Center Reference Guide is maintained by Dealer Service.

If you have any questions about service authorization, technician certification, or any of Okidata's service programs, please contact Dealer Service.

Refer to this section or the Service Center Reference Guide for information on contacting Okidata Dealer Service.

Service Center Reference Guide

What It Is

The Okidata Service Center Reference Guide documents Okidata's Dealer Service Program.

What It Does

The Service Center Reference Guide contains the policies and procedures followed by Okidata Service Dealers.

Please *read, understand, and follow* these procedures.

The Okidata Service Center Reference Guide provides information about the following items.

- Contacting Okidata (telephone, fax, mail, Okilink)
- Okidata's Customer Support Center
- Okidata Service Centers (Authorized Service Dealers)
- Okidata Service Repair Depots
- Parts Ordering
- Service Training
- Service Authorization
- Technician Certification
- Third Party Service
- Warranty Repairs And Claims

How to Obtain It

The Service Center Reference Guide is available from Okidata Dealer Service. It is also available through Okilink II.

Okidata Dealer Service sends an information package to the Dealer after a technician successfully completes a Service Training Course for a product and the Dealer becomes Service Authorized. One item in this information package is the Okidata Service Center Reference Guide. Other items in the package are the Okidata Service Contract materials.

Direct questions regarding the Service Center Reference Guide to Okidata Dealer Service.

Refer to this section or the Service Center Reference Guide for information on contacting Okidata Dealer Service.

For instructions on accessing Okilink II, refer to this section or the Service Center Reference Guide.

Extra Copies of Certification Materials

You may obtain extra copies of certification materials (tests, answer sheets, and critiques) through Okidata's "fax-back" system, Faxable Facts.

Order document number 8000 for the current listing of certification materials. This listing will be updated as needed.

Document number 8000 provides the document numbers for the various certification materials packages. You will use the listed numbers to order the certification materials you need.

Use a touch-tone phone to access Faxable Facts. You will also need a fax number.

The automated attendant prompts you through the steps in using Faxable Facts.

The telephone / facsimile number for Faxable Facts is provided in the Okidata Contact Information section of this section.

Answer Sheet: OkiJet 2010

Section 1

Dealer Code: _____ Today's Date: _____

Technician's Name: _____

Company: _____

Company's Address: _____

City: _____

State/Province: _____

Zip/Postal Code: _____

Country: _____

Phone #: _____ Fax #: _____

If your Dealership uses Okilink II, please provide your Dealership's Login Name.

First: _____ Last: _____

Section 2

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>		<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	18.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	19.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Course Critique: OkiJet 2010

Dealer Code: _____ Today's Date: _____

Technician's Name: _____

Company: _____

Company's Address: _____

City: _____

State/Province: _____

Zip/Postal Code: _____

Country: _____

Phone #: _____ Fax #: _____

If your Dealership uses Okilink II, please provide your Dealership's Login Name.

First: _____ Last: _____

1. Have you completed other Okidata Service Training Kits?

Yes _____ No _____

2. Please rate this course.

Excellent	Good	Bad	Poor

3. Does your Dealership use computer-based (on-line) service documentation?

Yes _____ No _____

If yes, which format does your Dealership use?

DOS _____ Windows _____

Certification Test: OkiJet 2010

1. The printer output has characters with white lines. Using the Service Handbook, place the steps listed below in the correct order.
 1. Check the ink level.
 2. Remove and reinstall the print cartridge.
 3. Clean the print cartridge nozzles.
 4. Try changing the fill pattern in the application software (if printing on transparencies).

- A. 1, 2, 3, 4
- B. 1, 3, 2, 4
- C. 2, 4, 3, 1
- D. 2, 4, 1, 3

2. Place the steps listed below in the correct POST sequence.

1. The paper feed gears turn.
2. All motors stop and the power light stays on.
3. The power light comes on.
4. The carrier moves over the maintenance station and seals the printheads.

- A. 1, 2, 3, 4
- B. 2, 3, 4, 1
- C. 3, 4, 1, 2
- D. 4, 1, 2, 3

3. When should the printhead alignment be performed?

1. When printer output shows poor print quality.
2. When printer output is misaligned.
3. When a print cartridge is replaced.
4. When the system board is replaced.

- A. 1
- B. 1 and 2
- C. 1, 2, and 3
- D. 1, 2, 3, and 4

4. The power ON light is flashing four times.

The voltage check between pins 2 and 3 of the motor cable is correct.

According to the Service Handbook, what is your next step?

- A. Check for motor pins shorted to the motor housing.
- B. Replace the system board.
- C. Check for a loose motor pulley.
- D. Clean the carrier guide rod.

5. Which of the following are distribution methods for Okidata technical information updates?

1. Okilink II (an electronic bulletin board service)
2. Faxable Facts (a fax-back document retrieval system)
3. Technical Service Bulletins
4. Dealer Technical Support
5. Service Repair Depots

- A. 1, 2, 3, 4, and 5
- B. 1, 2, 3, and 4
- C. 1, 2, and 3
- D. 1 and 2

6. According to the Service Handbook, when removing the large feed roller, you must break the four prongs of the small compound gear to remove it.

- A. True
- B. False

7. You are analyzing the Test Page from an OkiJet 2010.

Which of the following are true?

1. The test page contains the code level and code level date.
 2. The test page cleans (purges) the nozzles.
 3. Breaks in the diagonal line indicate that one or more nozzles are malfunctioning.
 4. This test is used to align the black printhead to the color printhead.
 5. Perform this test whenever a print cartridge is replaced.
-
- A. 1, 2, 3, 4
 - B. 1, 2, 4, 5
 - C. 1, 3, 4, 5
 - D. 1, 2, 3, 4, and 5

8. The unit fails to complete POST.

The carrier slams into the side frame.

No problems are found with either the transport motor or the system board.

What should you do next?

- A. Replace the transport motor cable.
- B. Lubricate the carrier guide rod.
- C. Clean the carrier guide rod.
- D. Replace the printhead cable.

9. You are loading paper into the OkiJet 2010.

Which of the following are true?

1. Paper is installed face up.
 2. The leading edge (top of form) faces down into the printer.
 3. The aligned edge of the paper is to the right side of the printer (when the operator is facing the front of the unit).
 4. Depending on thickness, up to 150 sheets of paper or 15 envelopes can be loaded in the automatic sheet feeder.
-
- A. 1
 - B. 1 and 2
 - C. 1, 2, and 3
 - D. 1, 2, 3, and 4

10. Clicking on New Cartridge Installed during the Print Cartridge Replacement procedure resets the ink counter.

The error log is set to zero (initialized) during the Initialize Error Log Test.

- A. True
- B. False

11. The print resolution for the OkiJet 2010 is _____ dots per inch.

- A. 300 by 300
- B. 400 by 300
- C. 500 by 300
- D. 600 by 300

12. You are troubleshooting an OkiJet 2010.

The customer says, "Printed documents don't look like they used to. The letters look different. Old documents print with different fonts."

According to the Service Handbook, what is the *most likely* cause of the problem?

- A. The printheads are not aligned.
- B. When printing a document that has been formatted for a different printer, Windows may substitute different fonts. Line breaks and page breaks may change also. Check the document and make any necessary changes. Then, save the changes for the next time the document is printed.
- C. Printer settings in an application sometimes override settings in the Printer Dialog Boxes.
- D. The customer may be printing a DOS application with the wrong printer driver selected. If the customer doesn't know if they are printing from a DOS or Windows-based application, ask them to press ALT + ENTER.

13. If the power ON light flashes during the parallel port test, the test has failed.

- A. True
- B. False

14. Which of the following are true statements about the Nozzle Test?

1. It may be performed by the end user.
2. Perform this test to clean any clogged nozzles in the print cartridges.
3. Keep running this test until the nozzles clear. The nozzles cannot be cleaned any other way.
4. Breaks in the diagonal line of the test show that all nozzles are correctly functioning.

- A. 1
- B. 1 and 2
- C. 1, 2, and 3
- D. 1, 2, 3, and 4

15. You are performing the Encoder Sensor Test.

The power ON light does not flash.

+ 5 vdc is present at pins 1, 2, and 3 of the encoder card connector.

You pass a piece of paper through the sensor.

The voltage at pin 3 of the encoder card connector goes from + 5 vdc to 0 vdc on the first pass.

According to the Service Handbook, what is your next step?

- A. Replace the encoder card.
- B. Power OFF the printer.
- C. Power ON the printer.
- D. Replace the printhead cable.

16. When working with transparencies, it is important to remember which of the following?

1. Use transparencies specifically designed for inkjet printers.
 2. It can take a long time for the ink to dry on a transparency.
 3. Do not touch the printed surface of a transparency when removing the page from the printer.
 4. When printing multiple sheet jobs, remove each printed sheet from the output tray before the next sheet enters.
 5. It may be necessary to limit the amount of heavy graphic fill areas used in transparency printing. Sometimes heavy fill areas cause the printed image to contract as it dries. The contraction causes poor print quality.
 6. Okidata DOES NOT recommend multi-sheet transparencies.
-
- A. 1, 2, and 3
 - B. 1, 2, 3, and 4
 - C. 1, 2, 3, 4, and 5
 - D. 1, 2, 3, 4, 5, and 6

17. What are the two functions of the maintenance station?

1. Clean the printhead nozzles during the print operation.
 2. Drive the encoder card along the print cartridge.
 3. Seal the printhead when it is not being used. This prevents the nozzles from drying.
 4. House the paper feed mechanism.
-
- A. 1 and 2
 - B. 1 and 3
 - C. 2 and 4
 - D. 2 and 3

18. Which of the following statements are true?

1. Envelopes are ONLY printed in landscape mode.
 2. Envelopes are ONLY printed in landscape left (90 degree clockwise rotation).
 3. Envelopes feed lengthwise.
 4. Envelopes feed face-up.
 5. Close envelope flaps before feeding.
 6. When using the manual tray, line up the envelope with its right edge to the edge location symbol.
-
- A. 1, 3, 5, 6
 - B. 2, 4, 5, 6
 - C. 1, 2, 3, 5, 6,
 - D. 1, 2, 3, 4, 5, 6

19. When replacing a system board, be sure to remove the EPROM.

Install the EPROM on the "new" board.

Replacement boards are shipped WITHOUT the EPROM.

A. True

B. False

20. Which of the following retrieves the last error from NVRAM?

A. Test Page

B. Initialize Error Log

C. Parallel Port Test

D. Printer Error Log Recovery

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**SECTION ONE
SPECIFICATIONS**

1.1 OVERVIEW

1.1.01 General Information

The OkiJet 2010 is the first thermal inkjet product to wear the Okidata name badge.

The unit is a fully featured Windows-based, inkjet printer.

This product is a Graphics Device Interface (GDI) printer. Data leaving the computer is "pre-formatted" for the printer. Very little printer circuitry is required for data handling. The received data is already formatted for the GDI printer. RAM in the printer is minimized.

There is no operator panel. The unit is controlled via software in the computer.

The unit's print resolution is 600 by 300 dots per inch. Dual printhead design allows the unit to print color and true black without changing printheads.

The unit utilizes an edge smoothing technique called Print Quality Enhancement Technique (PQET). This technique reduces the "jaggies" seen in slanted (italics) character set printouts.

The OkiJet 2010 printer is a "Windows Based Host Printer". The printer can print from a DOS based program running in a Windows "DOS-based session", but it is not the best possible configuration. DOS is a very non-graphical based operating system. The OkiJet 2010 is a GDI printer.

A parallel interface cable IS NOT shipped with the unit. The end user must purchase the interface cable separately. It must be capable of supporting bi-directional communications to connect the printer to the computer. The cable should be IEEE 1284 compliant. For best results, Okidata recommends using a six (6) foot [or shorter] cable.

1.2 PHYSICAL SPECIFICATIONS

1.2.01 Dimensions

Width: 17.2 inches (43.6 centimeters)

Depth: 23.3 inches (59.1 centimeters)

Height: 13.5 inches (34.3 centimeters)

1.2.02 Printer Weight

9.4 pounds (4.3 kilograms) with no ink cartridges installed

9.75 pounds (4.42 kilograms) with two ink cartridges installed

UPS Shippable

1.3 POWER REQUIREMENTS

1.3.01 Input Power

90 to 259 volts, AC

1.3.02 Power Consumption

Voltage Range: 120 / 220 / 240

The numbers listed below are estimates.

less than 2 W	Power OFF
7.5 W	Idle Mode
12 W	Printing Mode Average
25 W	Printing Mode Peak

1.3.03 Power Frequency

50/60 Hz

1.3.04 Energy Star Rating

The product qualifies for the Environmental Protection Agency (EPA) Energy Star Program, a cooperative effort between the EPA and computer and peripheral manufacturers to promote energy-efficient equipment and to reduce air pollution caused by power generation.

The Energy Star emblem does not represent EPA endorsement of any product or service.



1-3-04.pcx

1.4 ENVIRONMENTAL CONDITIONS

1.4.01 Acoustic Rating

Printing

47 dBA

Idle

not measurable

1.4.02 Altitude

10,000 feet (3,048 meters)

1.4.03 Ambient Temperature and Relative Humidity (RH)

Operation

Temperature: 65 to 80 degrees Fahrenheit (18 to 26.7 degrees Celsius)

Relative Humidity: 30% to 60%

Storage

Temperature: 50 to 110 degrees Fahrenheit (10 to 43 degrees Celsius)

Relative Humidity: 8% to 80%

1.5 AGENCY APPROVALS

1.5.01 Listings

Canadian ICES Class B

CE

CSA No: CSA Standard C22.2 (220)

DEMCO

FCC: FCC Class B, Part 15

FEI

GS

SEMCO

UL No: UL Standard No. 478

VCCI

1.6 OPERATIONAL SPECIFICATIONS

1.6.01 Emulations

Graphics Device Interface (GDI) for Windows

HP PCL3 for DOS via Windows MS-DOS prompt

1.6.02 Graphics Resolution

300 (horizontal) x 600 (vertical) dots per inch (DPI) in Black and Color Modes

1.6.03 Interface

Bi-Directional Centronics Parallel

Okidata recommended cable IEEE 1284 compliant

No more than six (6) feet long.

Purchased separately

1.6.04 Paper Feed Methods

Auto

Holds up to 150 sheets (depending on thickness) in the Automatic Sheet Feeder

Holds up to 15 envelopes (depending on thickness) in the standard feeder

Manual

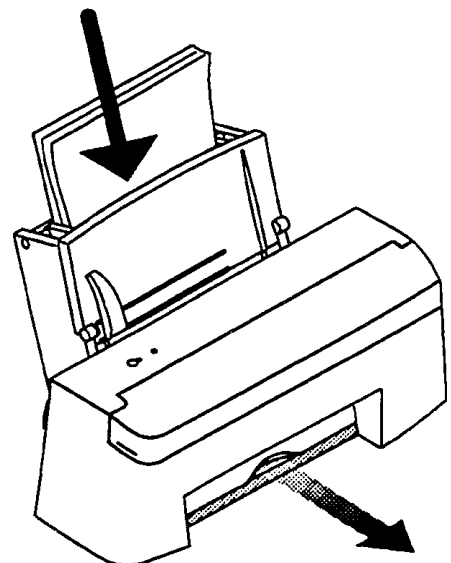
1.6.05 Paper Feed Path

Lazy "L"

Auto

Manual

The paper bends approximately 75 degrees. The gentle bend allows the OkiJet 2010 to have fewer paper jams. The unit also handles a wide variety of size and weight print media.



1-6-05.pcx

1.6.06 Paper Loading

Paper is installed face up.

The leading edge (top of form) faces down into the printer.

The aligned edge of the paper is to the right side of the printer (when the operator is facing the front of the unit).

Also refer to the User's Guide for information on paper loading.

Auto Feed

Step Number

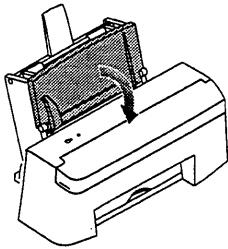
1. Fold down the automatic sheet feeder access cover.
2. Adjust the paper guides to the width of the paper.
3. Once the paper guides are adjusted, slide the paper into the automatic sheet feeder.

IMPORTANT:

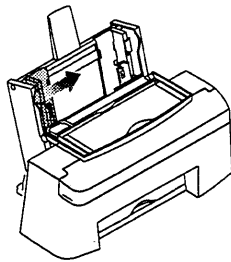
The side of the paper to be printed on **MUST** face the front of the printer.

The leading edge (top of form) of the sheet faces **DOWN** into the printer.

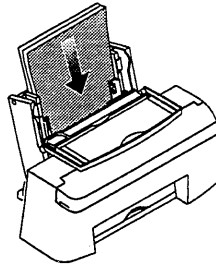
4. Fold the access cover up and the printer is ready to print.



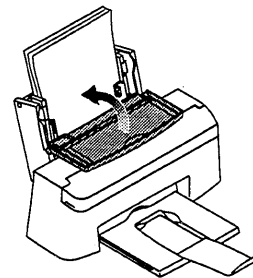
Step One



Step Two



Step Three



Step Four

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Manual Feed

Step Number

1. Paper to be loaded into the manual slot is placed against the Automatic Sheet Feed Access cover, shown in gray.
2. Slide the manual feed support lever to the right, to the approximate width of the page / envelope being inserted.

The RIGHT SIDE of the document is aligned against the static feed support.

The LEFT SIDE of the document is aligned against the movable feed support.

3. Insert the page / envelope.

IMPORTANT:

The side of the paper to be printed on **MUST** face the front of the printer.

The leading edge (top of form) of the sheet faces **DOWN** into the printer.

Envelopes

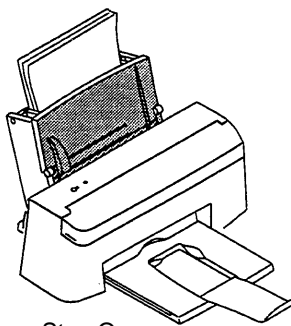
Orientation is landscape left (90 degree clockwise rotation).

Envelopes feed lengthwise.

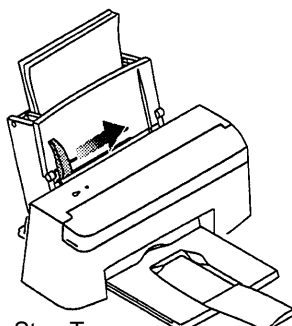
Envelopes feed face-up.

Close envelope flaps before feeding

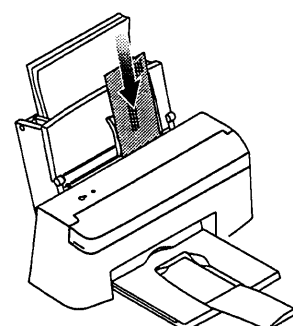
4. Make the final width adjustments.



Step One



Step Two



Step Three

1-6-06b.pcx

1.6.07 Print Method

Thermal InkJet

InkJet printers work by spraying liquid ink onto the print media.

The inkjet printhead-to-media gap is very small.

A crease or sharp edge on the paper may damage the inkjet head.

Paper dust or other contaminants can clog the inkjet nozzles on the printhead.

Perform the nozzle test to clean the inkjet nozzles. Refer to Section 3.3 for further information.

Inkjet printheads are delicate and easily damaged.

NOTE:

The printhead is part of the print cartridge.

The printhead is replaced when the print cartridge is replaced.

Black Print Cartridge: Average Life (Ink Saver OFF): 1000 pages at 5% coverage

Color Print Cartridge: Average Life (Ink Saver OFF): 200 pages at 15% coverage of seven color graphics.

CAUTION:

Using a non-Okidata ink cartridge may damage the unit and void any warranties.

Always perform the printhead alignment procedure when a print cartridge is replaced. Refer to the User's Guide or Section 3.3 for further information.

WARNING:

NEVER refill or use refilled print cartridges.

Refilling empty print cartridges with unapproved ink will invalidate the warranty.

Incompatible inks can cause damage to the printhead or printer.

1.6.08 Print Modes

Black Draft

Black Letter Quality

Full Color

1.6.09 Print Resolution

300 (horizontal) x 600 (vertical) dots per inch (DPI) in Black and Color Modes

1.6.10 Print Speed

3 pages per minute in Black Draft Mode.

2 pages per minute in Black Letter Quality Mode.

2 to 4 pages per minute in Full Color Mode.

Graphics Device Interface (GDI)

When working with a GDI printer, data leaves the computer "pre-formatted" for the printer. Very little printer circuitry is required for data handling. The received data is already formatted for the printer. RAM in the printer is minimized. Because the printer is controlled via software in the computer, the operator panel is minimized.

Printer Speed versus System Speed

As a general rule, the faster the computer, the faster the printout from a GDI printer.

Example:

Two identical GDI printers are connected to two different systems.

One system is a 25 MHz. 80386 based computer with 4 MB of RAM.

One system is a 66 MHz. 80486 based computer with 8 MB of RAM.

Question

If both systems being printing the same file at the exact same time, which system will finish first?

Answer

The 66 MHz. 80486 based computer with 8 MB of RAM.

Reason

All of the pre-print data processing is being done in a system with greater "system resources" (more RAM, high level processor at a higher speed). Data is sent to the printer faster.

Windows Printing versus DOS Based Printing

The OkiJet 2010 printer is a "Windows Based Host Printer". The printer can print from a DOS based program running in a Windows "DOS-based session". However, this is not the best configuration. DOS is a very non-graphical based operating system. The OkiJet 2010 is a "Graphics Device Interface" printer. It is better to print with the OkiJet 2010 from Windows applications.

Improving Performance

A GDI printer is the only type of printer that improves (up to the printer's maximum rated performance) with the host computer's improvement.

In the example, a 25 MHz. 80386 system was compared to a 66 MHz 80486 system.

Performance gains come from improving the computer, not by adding extras to the printer.

Upgrades will improve the customer's computer system and the performance of the OkiJet 2010. Upgrading to Pentium will allow software speeds and print speeds to increase (up to the maximum rated performance).

1.7 PRINT MEDIA (PAPER) SPECIFICATIONS

CAUTION:

For best results when printing with color, use coated paper.

Paper types that work well with the color print cartridge may not work well with the black print cartridge.

Since the quality of plain paper varies widely, test the print quality before buying large quantities of paper.

1.7.01 Length

NOTE:

The recommended length is specific to paper type.

Auto

Minimum 5 inches (127 millimeters)

Maximum 14.33 inches (364 millimeters)

Manual

Minimum 5 inches (127 millimeters)

Maximum 14.33 inches (364 millimeters)

1.7.02 Number of Copies

Original (One)

1.7.03 Thickness

Paper

Manual 0.0028 to 0.0075 inches (0.071 to 0.191 millimeters)

Auto 0.0028 to 0.0075 inches (0.071 to 0.191 millimeters)

Envelopes

Manual 0.0028 to 0.024 inches (0.071 to 0.60 millimeters)

Auto 0.0028 to 0.020 inches (0.071 to 0.50 millimeters)

1.7.04 Weight

NOTE:

The recommended weight is specific to paper type and paper feed path.

Auto

16 to 24 lb. (60 to 90 g/m²)

Manual

16 to 32 lb. (60 to 120 g/m²)

Recommended

20 lb. (75 g/m²)

1.7.05 Width

NOTE:

The recommended width is specific to paper type and paper feed path.

Auto

Normal

3.5 to 8.5 (88.9 to 215.9 millimeters)

Heavy weight / stiff

3 to 8 inches (76.2 to 215.9 millimeters)

Manual

3 to 9 inches (76.2 to 228.6 millimeters)

1.7.06 Types

Card Stock (Index Cards)

Weight:	16 to 24 lbs. (60 to 90 g/m ²)
Width:	3 to 8 inches (76.2 to 215.9 millimeters)
Length:	5 to 14.33 inches (127 to 364 millimeters)
Thickness:	.0028 to 0.020 inches (0.071 to 0.50 millimeters)
Paper Feed Path:	Auto Manual

Up to 15 cards (depending on thickness) may be loaded into the sheet feeder

Cut Sheet

Weight:	16 to 32 lbs. (60 to 120 g/m ²)
Width:	3 to 9 inches (76.2 to 228.6 millimeters)
Length:	5 to 14.33 inches (127 to 364 millimeters)
Thickness:	0.0028 to .0075 inches (0.071 to 0.191 millimeters)
Paper Feed Path:	Manual

Envelopes

NOTES:

Envelopes are ONLY printed in landscape mode

Envelopes are ONLY printed in landscape left (90 degree clockwise rotation).

Auto Feed

Weight: 20 to 24 lbs. (75 to 90 g/m²)

Width: 3 to 8 inches (76.2 to 215.9 millimeters)

Length: 7.5 to 14.33 inches (190.5 to 364 millimeters)

Size:

Paper Type	Physical Size	
	Inches	Millimeters
7 3/4	3.88 x 7.50	98.4 x 190.5
9	3.88 x 8.88	98.4 x 225.4
10	4.13 x 9.5	104.8 x 241.3
DL	4.33 x 8.66	110.0 x 220.0
C5	6.38 x 9.02	162.0 x 229.0
B5	6.93 x 9.84	176.0 x 250.0

Thickness: .003 to .024 inches (0.071 to 0.60 millimeters)

Paper Feed Path: Auto

Manual Feed

Weight: 20 to 28 lbs. (75 to 105 g/m²)
Width: 3 to 9 inches (76.2 to 228.6 millimeters)
Length: 7.5 to 14.33 inches (190.5 to 364 millimeters)
Size:

Paper Type	Physical Size	
	Inches	Millimeters
7 3/4	3.88 x 7.50	98.4 x 190.5
9	3.88 x 8.88	98.4 x 225.4
10	4.13 x 9.5	104.8 x 241.3
DL	4.33 x 8.66	110.0 x 220.0
C5	6.38 x 9.02	162.0 x 229.0
B5	6.93 x 9.84	176.0 x 250.0

Thickness: .003 to .024 inches (0.071 to 0.60 millimeters)

Paper Feed Path: Manual

Orientation

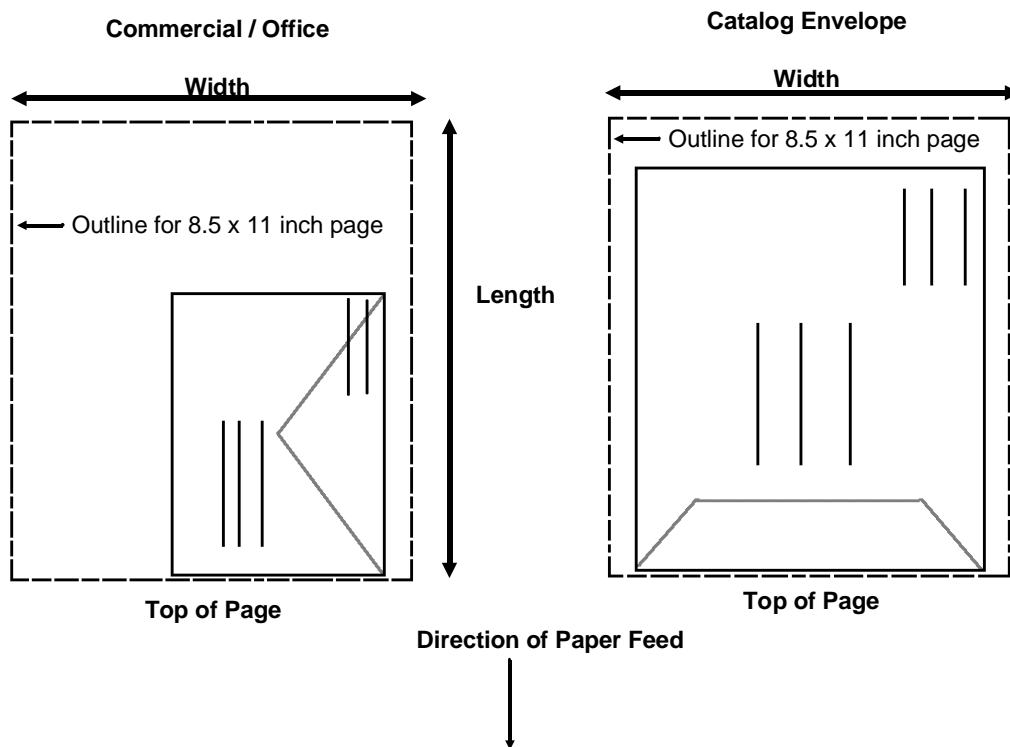
Orientation is landscape left (90 degree clockwise rotation)

Envelopes feed lengthwise.

Envelopes feed face-up.

Close envelope flaps before feeding

When using the manual tray, line up the envelope with its right edge to the edge location symbol.



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Labels

NOTES:

The page size for labels is limited to letter and A4.

For best results, DO NOT use labels with a slick backing material.

For best results, DO NOT print within 0.04 inches (1 millimeter) of the die cut.

Acrylic-based labels are preferred.

Adhesive MUST NOT extend to within 0.04 inches (1 millimeter) of the edge of the label, come between the die cuts of the labels, or come in contact with any part of the printer. Labels that do not meet these guidelines may damage the printer.

Use full label sheets. Partial sheets (with areas exposed by missing labels) may allow labels to peel off during printing, causing a paper jam.

The label sheet and adhesive must not melt, release hazardous gases, or allow the cover sheet to come off when the label sheet is exposed to the internal operating temperature or the ink of the unit.

If the unit is powered OFF or disconnected while labels are being printed, remove the labels manually, using the paper release lever, before the unit is powered ON. This will prevent labels from peeling off of the carrier (backing) and sticking to the inside of the unit.

Determine the suitability of labels before ordering or printing large quantities.

Item	Feed Method	Type	Specifications
Letter Size	Auto		8.5 x 11 inches (216 x 279 millimeters)
	Manual		8.5 x 11 inches (216 x 279 millimeters)
A4 Size	Auto		8.3 x 11.7 inches (210 x 297 millimeters)
	Manual		8.3 x 11.7 inches (210 x 297 millimeters)
Basic Weight (Substance)	Auto	Paper	32 to 40 lb. (120 to 150 g/m ²)
		Polyester	59 lb. (220 g/m ²)
		Vinyl	53 lb. (200 g/m ²)
	Manual	Paper	32 to 49 lb. (120 to 185 g/m ²)
		Polyester	59 lb. (220 g/m ²)
		Vinyl	80 lb. (300 g/m ²)

Transparency

NOTES:

In general, only specially coated transparencies are recommended for use in inkjet printers. Select transparencies specifically designed for inkjet printers.

The time required for the ink to dry on a transparency may be very long. Special precautions may be required. The printed surface of the transparency should not be touched when removing the page from the printer.

Multi-sheet transparencies ARE NOT recommended.

When printing multiple sheet jobs, remove each printed sheet from the output tray before the next sheet enters.

It may be necessary to limit the amount of graphic heavy fill areas used in transparency printing. Sometimes heavy fill areas cause the printed image to contract as it dries. The contraction causes poor print quality.

Determine the suitability of transparencies before ordering or printing large quantities.

Size:	Letter 8.5 x 11 inches (216 x 279 millimeters)
	A4 8.3 x 11.7 inches (210 x 297 millimeters)
Weight:	36.8 to 39 lbs. (138 to 146 g/m ²)
Width:	8.3 to 8.5 inches (210 to 216 millimeters)
Length:	11 to 11.7 inches (279 to 297 millimeters)
Thickness:	0.0039 to 0.0043 inches (0.100 to 0.110 millimeters)
Paper Feed Path:	Auto
	Manual

1.8 MEMORY SPECIFICATIONS

1.8.01 General Information

The unit uses the resources of the personal computer (PC) for most functions.

Okidata recommends the configuration listed below.

386 or faster IBM PC

Windows 3.1 (or higher)

Windows Applications Software

Four Megabytes Random Access Memory (RAM)

Five Megabytes Hard Disk Space

1.9 CONSUMABLES

1.9.01 Black Print Cartridge

56 Nozzles

Black ink

Average Life (Ink Saver OFF): 1000 pages at 5% coverage

1.9.02 Color Print Cartridge

48 Nozzles

16 each Cyan, Magenta, and Yellow

Color Ink

Average Life (Ink Saver OFF): 200 pages at 15% coverage of seven colors

NOTE:

The printhead is part of the print cartridge. It is replaced when the print cartridge is replaced.

CAUTION:

Using a non-Okidata ink cartridge may damage the unit and void any warranties.

Always perform the printhead alignment procedure when a print cartridge is replaced. Refer to the User's Guide or Section 3.3 for further information.

WARNING:

NEVER refill or use refilled print cartridges.

Refilling empty print cartridges with unapproved ink will invalidate the warranty.

Incompatible inks can cause damage to the printhead or printer.

1.10 OPTIONS

1.10.01 General Information

At this time, no options are available for the unit.

1.11 RELIABILITY

1.11.01 Mean Time Before Failure (MTBF)

Approximately 25,000 hours

Approximate maximum usage: 1,000 pages / month

1.11.02 Mean Time To Repair (MTTR)

Approximately 36 minutes to major sub-assembly level

1.11.03 Print Cartridge Life

Black Print Cartridge

Average Life (Ink Saver OFF): 1000 pages at 5% coverage

Color Print Cartridge

Average Life (Ink Saver OFF): 200 pages at 15% coverage of seven colors

1.11.04 Printhead Life

The printhead is part of the print cartridge. It is replaced when the print cartridge is replaced.

1.11.05 Warranty (Limited)

Two years, parts and labor

Overnight exchange

1.11.06 Service

Authorized Okidata Service Centers

SECTION TWO
PRINCIPLES OF OPERATION

2.1 ELECTRICAL OPERATION

2.1.01 General Information

The OkiJet 2010 is a fully featured Windows-based, inkjet printer.

This product is a Graphics Device Interface (GDI) printer. Data leaving the computer is "pre-formatted" for the printer. Very little printer circuitry is required for data handling. The received data is already formatted for the GDI printer. RAM in the printer is minimized.

The OkiJet 2010 printer is a "Windows Based Host Printer". The printer can print from a DOS based program running in a Windows "DOS-based session", but it is not the best possible configuration. DOS is a very non-graphical based operating system. The OkiJet 2010 is a GDI printer.

2.1.02 Emulations

The unit is capable of the emulations listed below.

Graphics Device Interface (GDI) for Windows

HP PCL3 for DOS via Windows MS-DOS prompt

2.1.03 Interface

Bi-Directional Centronics Parallel

IEEE 1284

2.1.04 Memory

The unit uses the resources of the personal computer (PC) for most functions.

Okidata recommends the configuration listed below.

386 or faster IBM PC

Windows 3.1 (or higher)

Windows Applications Software

Four Megabytes Random Access Memory (RAM)

Five Megabytes Hard Disk Space

2.1.05 Operator Panel

There is no operator panel. There is a Power button. The unit is controlled via software in the computer.

2.1.06 Parallel Port

The parallel port may be checked by running the Parallel Port Test. Refer to Section 3.3 of this Service Handbook for further information.

2.1.07 Power On Self Test (POST) Sequence

When the printer is powered ON, the Power On Self Test (POST) Sequence occurs.

Correct POST

The correct POST sequence is listed below.

1. The power light comes on.
2. The carrier moves over the maintenance station and seals the printheads.
3. The paper feed gears turn.
4. All motors stop and the power light stays on.

If the unit DOES NOT complete POST, refer to the POST Symptom Table in Section Four of this Service Handbook and perform the indicated action

If you are troubleshooting, and the unit completes the POST with no errors, refer to the Symptom Tables, Section Four of this Service Handbook.

2.1.08 Power Supply

The power supply board is a universal switching power supply. Incoming ac voltage is converted to dc voltage, which is then supplied to the system board.

2.1.09 System Board

The system board controls all printer functions not controlled by the computer.

U56 on the system board is the code module (EPROM). When replacing the system board, be sure to remove the EPROM. Replacement boards are shipped without the EPROM.

Removing the system board resets the head to head and bidirectional printing alignments to factory defaults. The end user performs these alignments through the User Software Utility. Refer to the User's Guide for details.

Power to the system board is supplied by the power supply unit. The power to the other electrical parts is distributed via the connectors on the system board.

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2.2 MECHANICAL OPERATION

2.2.01 Paper Feed

Paper feeding is performed by the large and small feed roll assemblies, which are driven by the paper feed motor assembly and the pick roll assembly.

At the beginning of the paper feed operation, the paper feed motor reverses momentarily to allow the feed arm pawl to drop off the home position notch in the left side frame.

If the pawl fails to drop off the notch, check the feed arm assembly for binds, worn parts, and or broken parts.

After the paper exits from the feed rollers, the paper feed motor reverses.

This causes the paper ejectors to move the last sheet of paper into the exit tray.

If the ejectors do not move or restore, check them for worn, loose, or broken parts.

Be sure that the ejectors are connected to the large feed roller shaft.

The pick roll assembly performs the manual feed process.

The large and small feed roll assemblies perform the auto feed process.

2.2.02 Paper Feed Methods

The unit can feed the print media two ways: auto and manual.

Auto

Holds up to 150 sheets (depending on thickness) in the Automatic Sheet Feeder

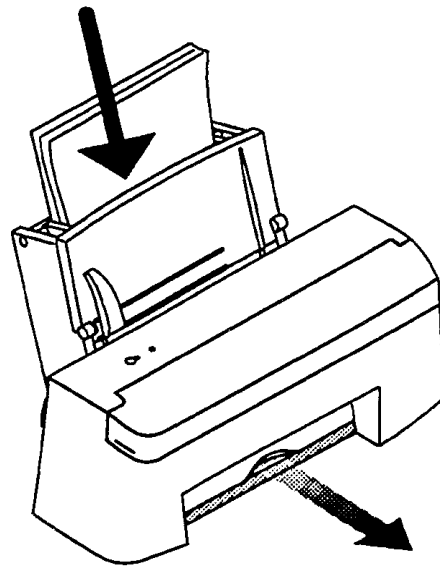
Holds up to 15 envelopes (depending on thickness) in the standard feeder

Manual

2.2.03 Paper Feed Path

The unit feeds the printer media (paper) in a Lazy "L" path. The paper bends approximately 75 degrees. The gentle bend allows the OkiJet 2010 to have fewer paper jams. The unit also handles a wide variety of size and weight print media.

The path is the same for both the auto and manual feed.



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2.2.04 Paper Loading

Paper is installed face up.

The leading edge (top of form) faces down into the printer.

The aligned edge of the paper is to the right side of the printer (when the operator is facing the front of the unit).

Also refer to the User's Guide for information on paper loading

Envelope Orientation

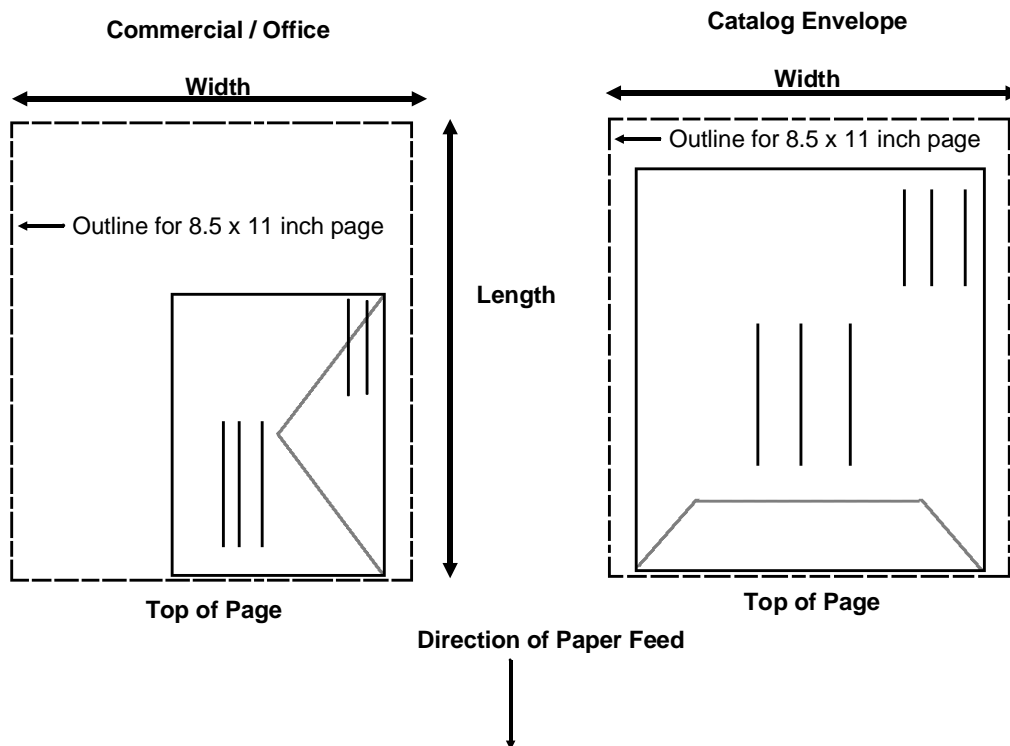
Orientation is landscape left (90 degree clockwise rotation).

Envelopes feed lengthwise.

Envelopes feed face-up.

Close envelope flaps before feeding.

When using the manual tray, line up the envelope with its right edge to the edge location symbol.



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Auto Feed

Step Number

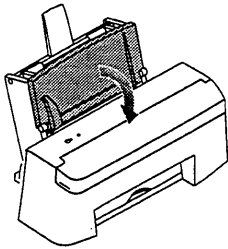
1. Fold down the automatic sheet feeder access cover.
2. Adjust the paper guides to the width of the paper.
3. Once the paper guides are adjusted, slide the paper into the automatic sheet feeder.

IMPORTANT:

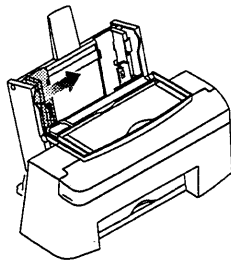
The side of the paper to be printed on **MUST** face the front of the printer.

The leading edge (top of form) of the sheet faces **DOWN** into the printer.

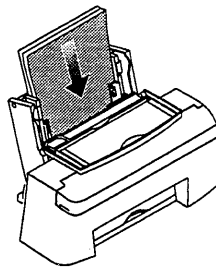
4. Fold the access cover up and the printer is ready to print.



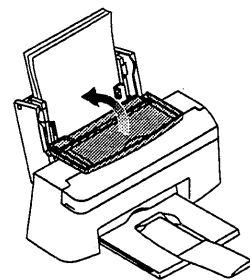
Step One



Step Two



Step Three



Step Four

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Manual Feed

Step Number

1. Paper to be loaded into the manual slot is placed against the Automatic Sheet Feed Access cover, shown in gray.
2. Slide the manual feed support lever to the right, to the approximate width of the page / envelope being inserted.

The RIGHT SIDE of the document is aligned against the static feed support.

The LEFT SIDE of the document is aligned against the movable feed support.

3. Insert the page / envelope.

IMPORTANT:

The side of the paper to be printed on **MUST** face the front of the printer.

The leading edge (top of form) of the sheet faces **DOWN** into the printer.

Envelopes

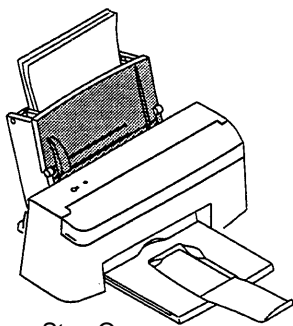
Orientation is landscape left (90 degree clockwise rotation).

Envelopes feed lengthwise.

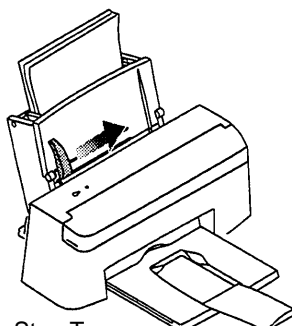
Envelopes feed face-up.

Close envelope flaps before feeding.

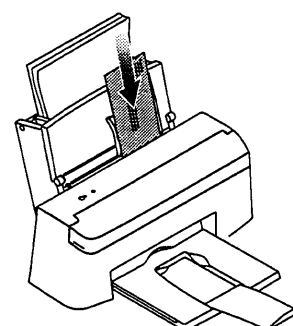
4. Make the final width adjustments.



Step One



Step Two



Step Three

2-2-04c.pcx

2.2.05 Printhead Mechanism

The printhead is part of the print cartridge. It is replaced when the print cartridge is replaced.

The OkiJet 2010 is a thermal inkjet printer. It sprays liquid ink onto the print media.

The inkjet printhead-to-media gap is very small. A crease or sharp edge on the paper may damage the inkjet head. Paper dust or other contaminants can clog the inkjet nozzles on the printhead.

Perform the nozzle test to clean the inkjet nozzles. Refer to Section 3.3 for further information.

Inkjet printheads are delicate and easily damaged.

NOTES:

Refer to Section One of this Service Handbook for the print media (paper) specifications.

The printhead is part of the print cartridge.

The printhead is replaced when the print cartridge is replaced.

Black Print Cartridge

56 Nozzles

Black ink

Average Life (Ink Saver OFF): 1000 pages at 5% coverage

Color Print Cartridge

48 Nozzles

16 each Cyan, Magenta, and Yellow

Color Ink

Average Life (Ink Saver OFF): 200 pages at 15% coverage of seven colors

CAUTION:

Using a non-Okidata ink cartridge may damage the unit and void any warranties.

*Always perform the printhead alignment procedure when a print cartridge is replaced.
Refer to the User's Guide or Section 3.3 for further information.*

WARNING:

NEVER refill or use refilled print cartridges.

Refilling empty print cartridges with unapproved ink will invalidate the warranty.

Incompatible inks can cause damage to the printhead or printer.

2.2.06 Print Modes

The unit is capable of the print modes listed below.

Black Draft

Black Letter Quality

Full Color

2.2.07 Print Resolution

The unit's print resolution is 600 by 300 dots per inch. Dual printhead design allows the unit to print color and true black without changing printheads.

2.2.08 Print Speed

The unit is capable of the print speeds listed below.

3 pages per minute in Black Draft Mode.

2 pages per minute in Black Letter Quality Mode.

2 to 4 pages per minute in Full Color Mode.

Graphics Device Interface (GDI)

When working with a GDI printer, data leaves the computer "pre-formatted" for the printer. Very little printer circuitry is required for data handling. The received data is already formatted for the printer. RAM in the printer is minimized. Because the printer is controlled via software in the computer, the operator panel is minimized.

Printer Speed versus System Speed

As a general rule, the faster the computer, the faster the printout from a GDI printer.

Example:

Two identical GDI printers are connected to two different systems.

One system is a 25 MHz. 80386 based computer with 4 MB of RAM.

One system is a 66 MHz. 80486 based computer with 8 MB of RAM.

Question

If both systems being printing the same file at the exact same time, which system will finish first?

Answer

The 66 MHz. 80486 based computer with 8 MB of RAM.

Reason

All of the pre-print data processing is being done in a system with greater "system resources" (more RAM, high level processor at a higher speed).
Data is sent to the printer faster.

Windows Printing versus DOS Based Printing

The OkiJet 2010 printer is a "Windows Based Host Printer". The printer can print from a DOS based program running in a Windows "DOS-based session". However, this is not the best configuration. DOS is a very non-graphical based operating system. The OkiJet 2010 is a "Graphics Device Interface" printer. It is better to run the OkiJet 2010 with a Windows system.

Improving Performance

A GDI printer is the only type of printer that improves (up to the printer's maximum rated performance) with the host computer's improvement.

In the example, a 25 MHz. 80386 system was compared to a 66 MHz 80486 system.

Performance gains come from improving the computer, not by adding extras to the printer.

Upgrades will improve the customer's computer system and the performance of the OkiJet 2010. Upgrading to Pentium will allow software speeds and print speeds to increase (up to the maximum rated performance).

2.2.09 Print Quality Enhancement Technique (PQET) [Edge Smoothing]

The unit utilizes an edge smoothing technique called Print Quality Enhancement Technique (PQET). This technique reduces the "jaggies" seen in slanted (italics) character set printouts.

2.2.10 Spacing

Spacing is performed when the encoder card drives the print cartridge along the carrier guide rod, parallel to the print media.

2.2.11 Maintenance Station

The maintenance station has two functions.

1. It cleans the printhead nozzles during the print operation.
2. It seals the printhead when it is not being used. This prevents the nozzles from drying.

Maintenance Station Assembly

The carrier moves to the right over the maintenance station

A slot on the bottom of the carrier engages a tab on the sled of the maintenance station.

This causes the maintenance station caps to rise and seal the printhead.

Carrier movement to the left uncaps the printheads.

The wipers clean the printhead nozzles as the carrier leaves the maintenance station.

The wipers clean the printheads only when the carrier is moving to the left.

No wiping action (of the printhead nozzles) should occur when the carrier is moving to the right.

After the cleaning operation is complete, a tab on the maintenance station engages a slot on the carrier.

This lowers the wipers.

Wiper

A worn wiper causes degraded print quality just after a maintenance cleaning.

Cap

A worn cap causes the printhead nozzles to dry and clog.

SECTION THREE
MAINTENANCE

3.1 OVERVIEW

3.1.01 General Information

This section lists the parts replacement, adjustment, cleaning, lubrication, and shipping procedures.

Disassembly should not be performed unless absolutely necessary. **NEVER** perform disassembly on a malfunctioning unit until you have followed the failure analysis procedures in Section Four of this Service Handbook.

Follow the procedures listed in *Adjustments and Service Settings*. Adjustments may be required when either consumables or parts are replaced. Failure to perform these procedures could result in unnecessary service calls.

Cleaning procedures must be performed correctly if high print quality is to be achieved.

3.1.02 Maintenance Items

The following items are required to service the unit.

Disassembly / Adjustments

#1 Phillips Screwdriver (with magnetic tip)

Straight-slot Screwdriver

Needle Nose Pliers (4 inch)

Digital Multimeter

Cleaning / Lubrication

Water

Cloth (soft and lint-free)

All-Purpose Cleaner

Contact Kleen (Okidata P/N 51802301)

Nye Nyogel 744 (lubricant)

3.1.03 Maintenance Precautions

1. Do not disassemble the unit if it is operating normally.
2. Before starting disassembly and assembly, always power OFF the unit and detach the AC power cord.
3. Detach the interface cable, if installed.
4. Do not remove parts unnecessarily. Try to keep disassembly to a minimum.
5. Use the recommended maintenance tools.
6. When disassembling, follow the listed sequence. Failure to follow the correct sequence may result in damaged parts.
7. Since screws, collars and other small parts are easily lost, they should be temporarily attached to the original positions.
8. Use extreme care when handling circuit boards. Integrated circuits (microprocessors, ROM, and RAM) can be destroyed by static electricity.
9. Do not place printed circuit boards directly on conductive surfaces.
10. Follow the recommended procedures when replacing assemblies and units.
11. When replacing the system board, be sure to remove the socketed EPROM.
Replacement printed circuit boards are shipped WITHOUT this item.

When removing the EPROM, you MUST follow standard Electrostatic Sensitive Device (ESD) safety precautions or you may damage the components.
12. When replacing the system board, be sure to perform the printhead alignment. Refer to Section 3.3 of this Service Handbook of the User's Guide for details.

13. Perform the printhead alignment when any of the following occur.

Poor Print Quality

Misaligned Print Quality

Parts are replaced

Print Cartridge (3.7)

System Board (3.2.33)

14. Perform the Nozzle Test when any of the following occur.

Refer to Section 3.3 of this Service Handbook.

The nozzles appear to be clogged.

Characters are not printing properly.

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3.2 DISASSEMBLY/ASSEMBLY PROCEDURES

General Information

This section contains the printer disassembly procedures. Only the removal procedures are explained here. Reverse the procedure for the installation.

At the bottom of each procedure is a listing of the parts covered in that procedure. The Okidata part number, item description, comment (RSPL, Option, Consumable) and cross-reference to Appendix B is provided for each part. Items included in the Recommended Spare Parts List are indicated by the acronym RSPL. N/A will appear where a part number is not available.

<input type="checkbox"/> Part Number	Item Description	Comment	Appendix B Reference
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This Service Handbook lists the disassembly procedures for major components of the unit. Okidata DOES NOT recommend disassembling a unit which is operating normally. If you decide to perform disassembly during this training, Okidata recommends that you perform *only* the disassembly procedures for RSPL items. All other procedures are provided to assist you in identifying parts. It is not likely that you will perform these procedures while servicing the unit.

Be sure to read all notes, cautions, and warnings, as they contain important information regarding disassembly / assembly.

Here are the definitions of the notices.

NOTE:

This notice refers to supplemental information.

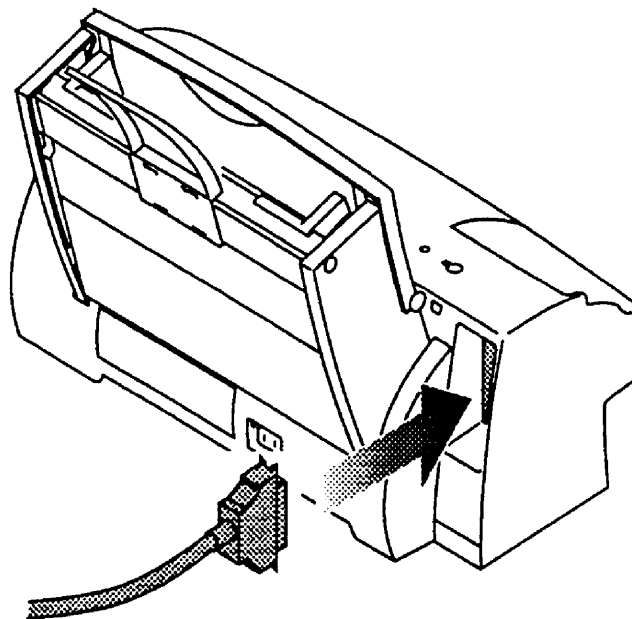
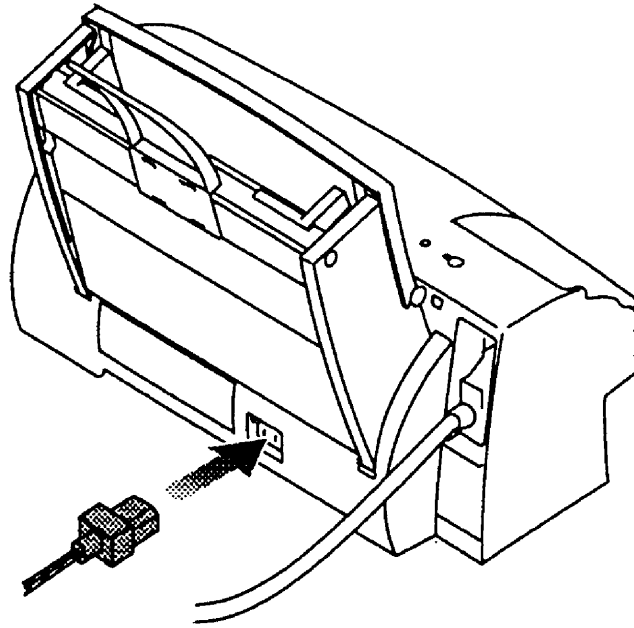
CAUTION:

Deviation from the listed procedures may result in damage to the product.

WARNING:

Deviation from the listed procedures may result in personal injury.

3.2.01 Preliminary Items



3-2-01.pcx

1. Power OFF the unit.
2. Remove any paper.
3. Detach the AC power cord, if installed.
4. Detach the parallel interface cable, if installed.

NOTE:

The parallel interface cable IS NOT supplied with the printer. It must be purchased separately.

The parallel interface cable MUST BE capable of supporting bi-directional communications to connect the printer to the computer.

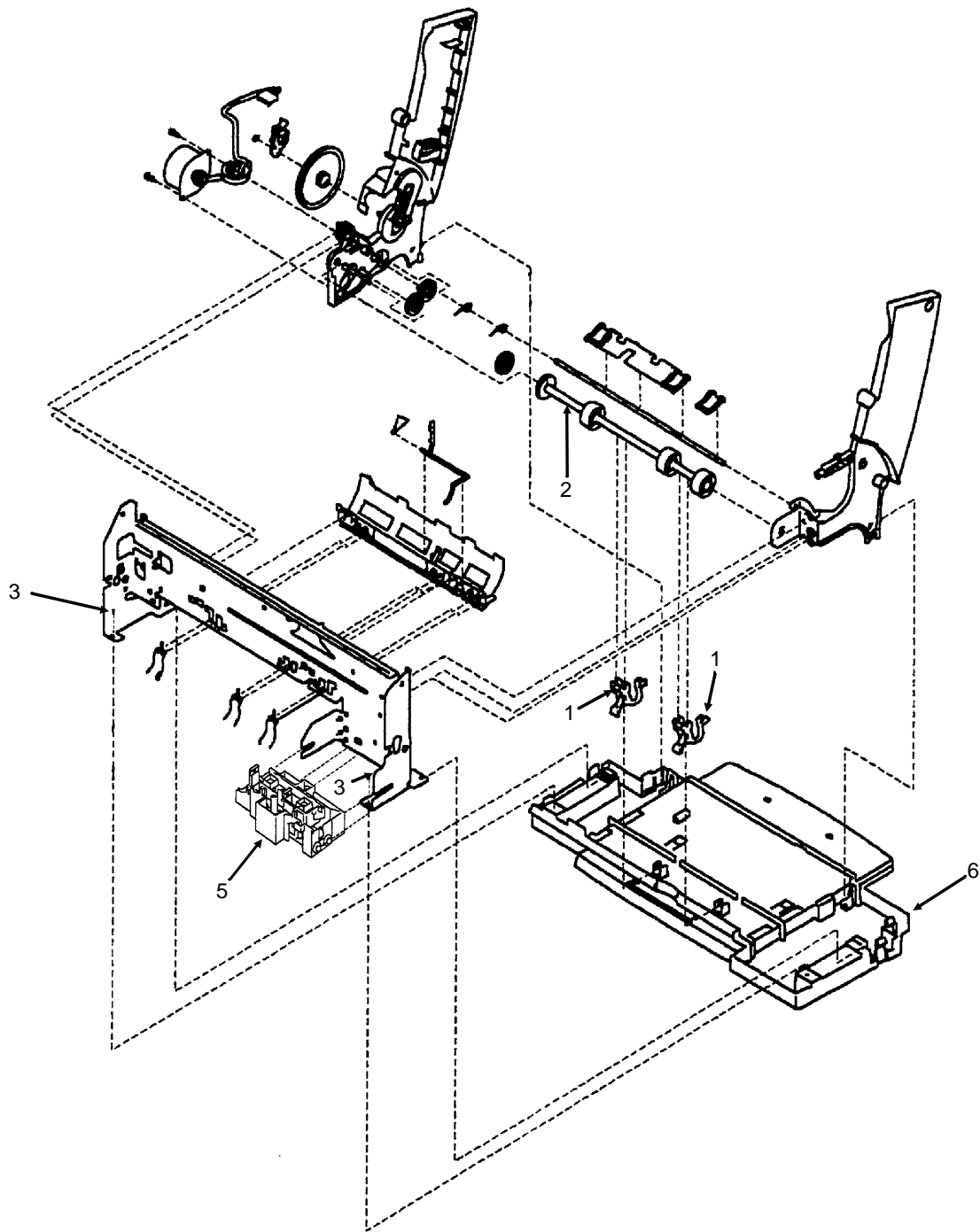
This cable CANNOT BE more than six (6) feet long.

P/N 56612101 Cord: Power

RSPL

B.2.05

3.2.02 Base Assembly



3-2-08.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Disconnect the power supply connector at the system board. *Not shown*
5. Unlatch the two ejectors (1) from the large feed roll shaft (2) by pushing down on the ejectors where they grip the large feed roll shaft.
6. Remove the two screws (3) securing the carrier frame (4) to the base cover.
7. Remove the ground straps from the carrier frame. *Not shown*
8. Slide the maintenance assembly (5) out of the carrier frame.
9. Slide the machine off the base assembly (6).

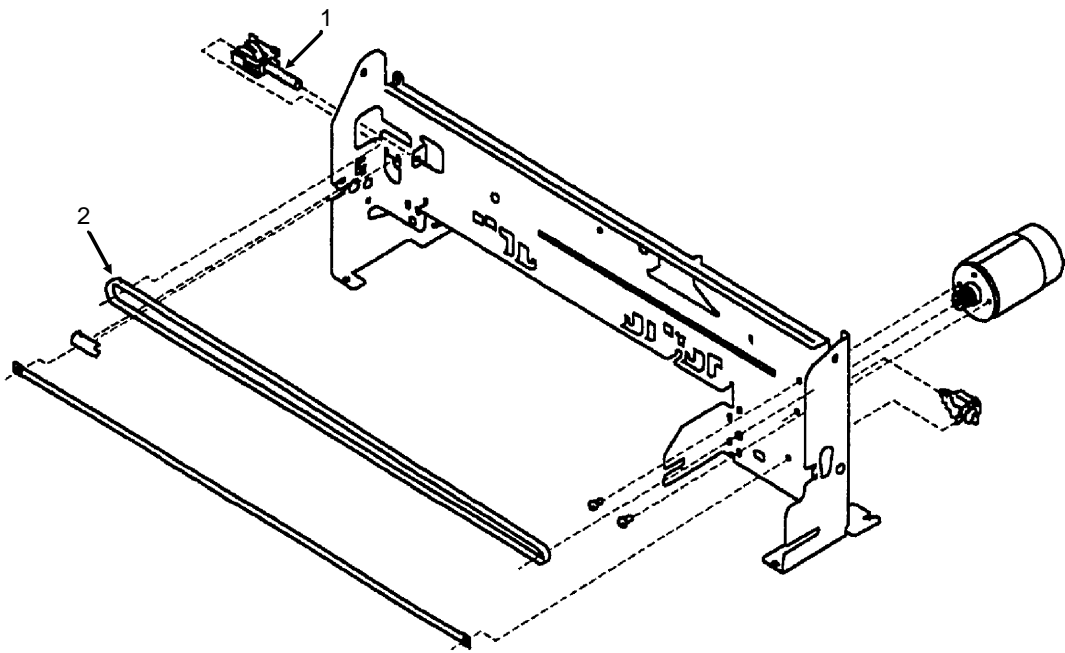
NOTE:

Installation

When installing the machine on the base assembly, be sure to connect the ejectors to the large feed roll shaft.

<input type="checkbox"/>	P/N 50220101	Assembly: Base	RSPL	B.2.02
	Includes the parts listed below.			
	P/N N/A	Exit Tray		B.2.02
	P/N N/A	Feet		B.2.02
	P/N 50516901	Gutter Pad: Base Assembly	RSPL	B.2.02

3.2.03 Carrier Belt

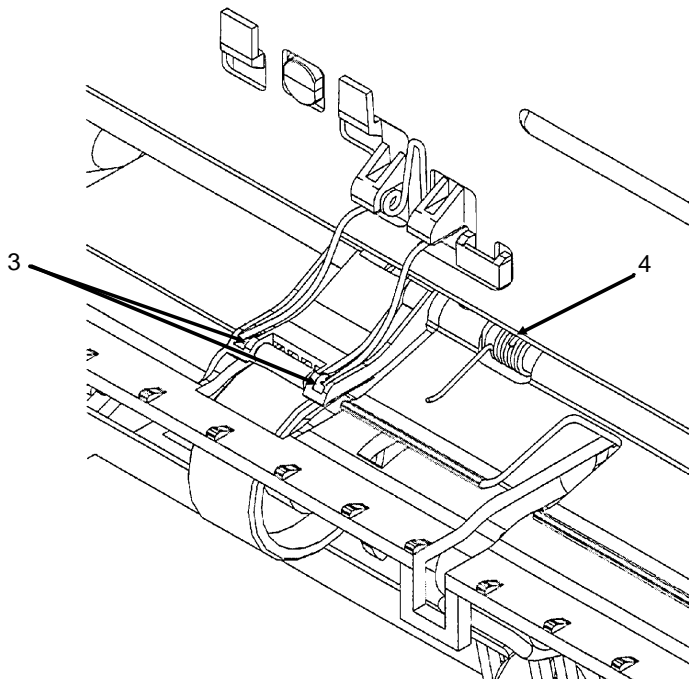
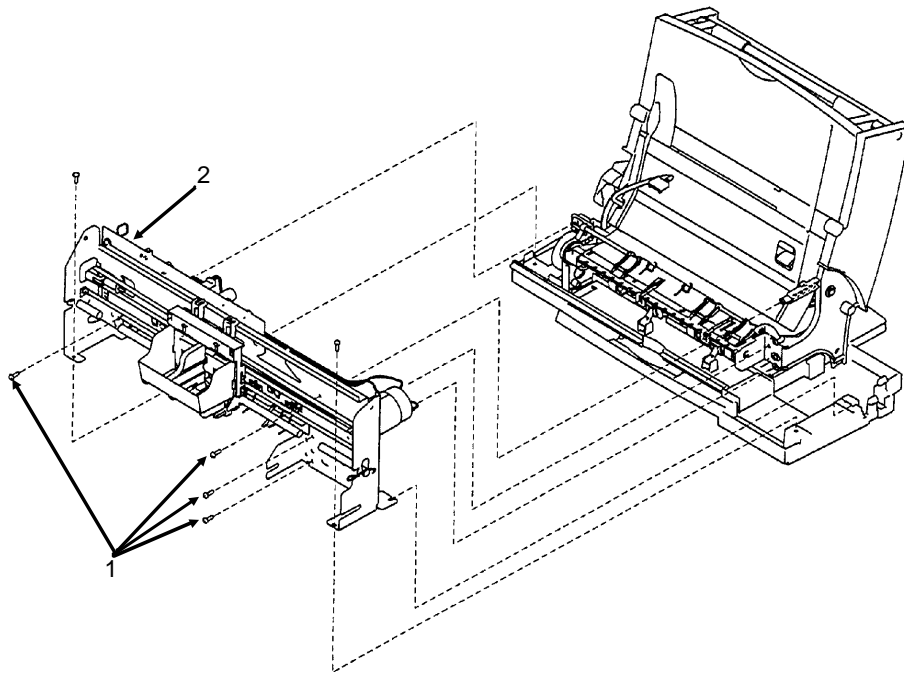


3-2-03.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the carrier frame assembly. (3.2.04)
4. To release the tension on the belt, push the idler pulley tension assembly (1) to the right.
5. Remove the belt (2).

<input type="checkbox"/>	P/N 51305001	Belt: Carrier	RSPL	B.2.07
<input type="checkbox"/>	P/N 51236101	Assembly: Idler Pulley Tension	RSPL	B.2.07

3.2.04 Carrier Frame Assembly



3-2-04.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Remove the base assembly. (3.2.02)
5. Disconnect the paper feed motor connector from the system board. *Not shown*
6. Remove the four screws (1). The screws secure the carrier frame assembly (2) to the left and right side frames.
7. Remove the carrier frame assembly.

NOTE:

Installation

Be sure that the small feed roll spring extensions (3) are in the grooves of the small feed roll arms.

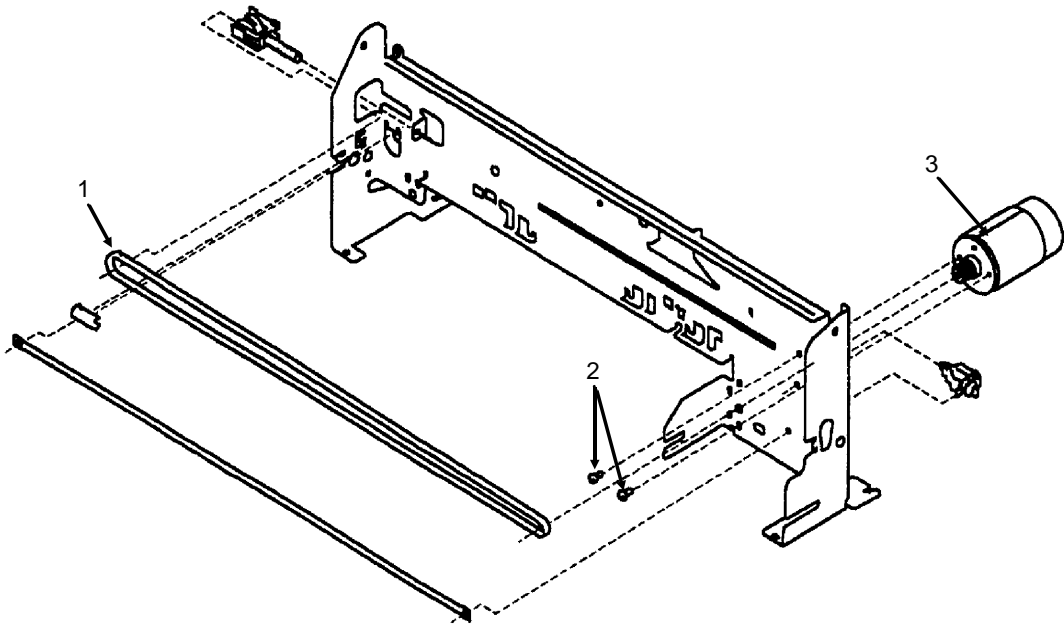
Be sure that the short extensions of the two paper flap springs are caught under the carrier frame (4).

<input type="checkbox"/>	P/N 53347601	Frame: Carrier	RSPL	B.2.03
<input type="checkbox"/>	P/N 58237001	Packet: Accessory Parts	RSPL	B.2.03

Includes the part listed below.

P/N N/A	Screw: Frame Mounting (PP)	B.2.03
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3.2.05 Carrier Transport Motor



3-2-05.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Disconnect the transport motor connector from the system board. *Not shown*
4. Remove the belt (1) from the transport motor pulley.
5. Remove the two screws (2) securing the transport motor (3) to the carrier frame.

NOTE:

Note the routing of the motor cable before performing the next step.

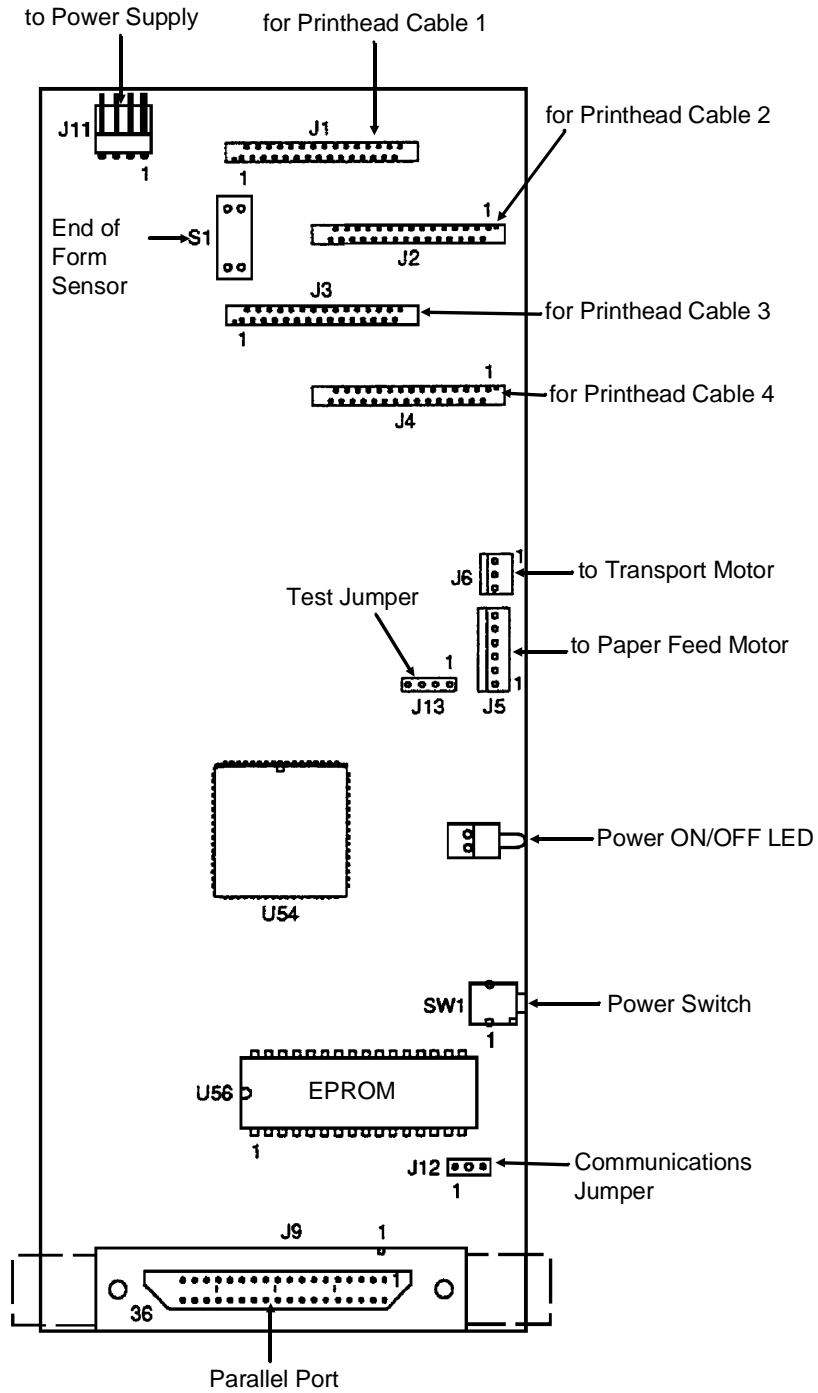
6. Remove the motor.

<input type="checkbox"/>	P/N 56512501	Assembly: Carrier Transport Motor	RSPL	B.2.07
<input type="checkbox"/>	P/N 58237001	Packet: Accessory Parts	RSPL	B.2.07

Includes the part listed below.

P/N N/A	Screw: Carrier Transport Motor Mounting	B.2.07
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3.2.06 Code Module / EPROM



3-2-06.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Gently pry the code module (EPROM) from the system board.

NOTES:

Note the position of the notch in the module.

The notch is down.

Removing the system board resets the head to head and bidirectional printing alignments to factory defaults. The end user performs these alignments through the User Software Utility. Refer to the User's Guide for details.

When replacing the system board, be sure to remove the EPROM at U56. Replacement boards are shipped WITHOUT the EPROM.

Check Okilink II for information updates on the EPROM.

CAUTION:

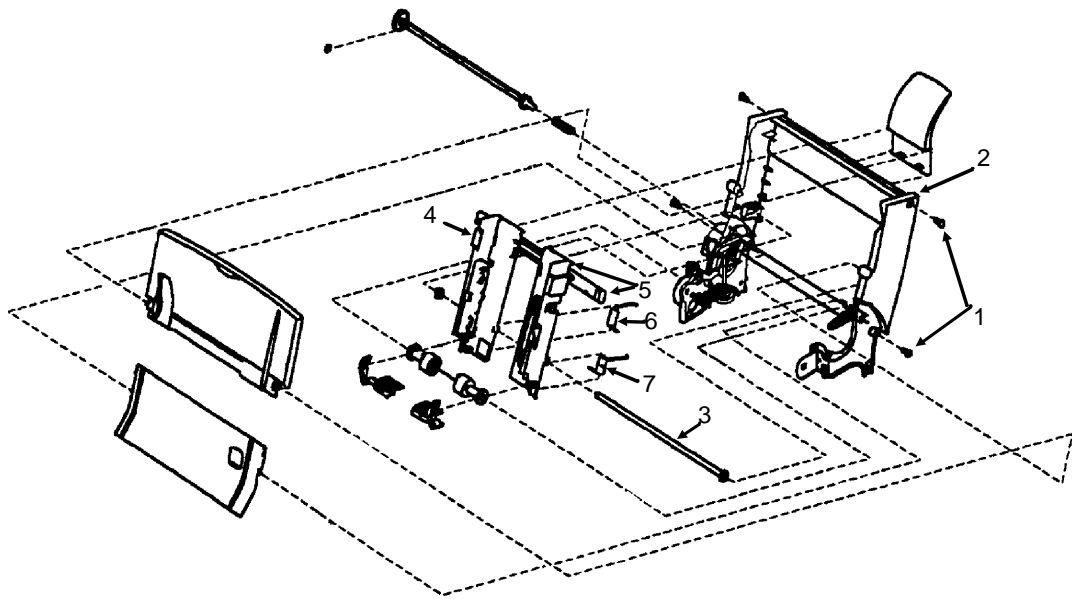
When removing the EPROM, you must follow standard electrostatic sensitive device (ESD) procedures or you may damage the components.

P/N N/A

EPROM

B.2.05

3.2.07 Edge Guide Assemblies and Paper Load Shaft



3-2-07.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Remove the paper load door. (3.2.24)
5. Remove the manual insert tray. (3.2.20)
6. Remove the pick roll hub, shaft, and envelope bucklers. (3.2.25)
7. Remove the two screws (1) from the right side frame (2).
8. Work the paper load shaft (3) out of the side frames.
9. Pull up the bottom of both the left (4) and right (5) edge guides to separate them from the top of the back plate and remove the assembly from the frames.

NOTE:

Installation

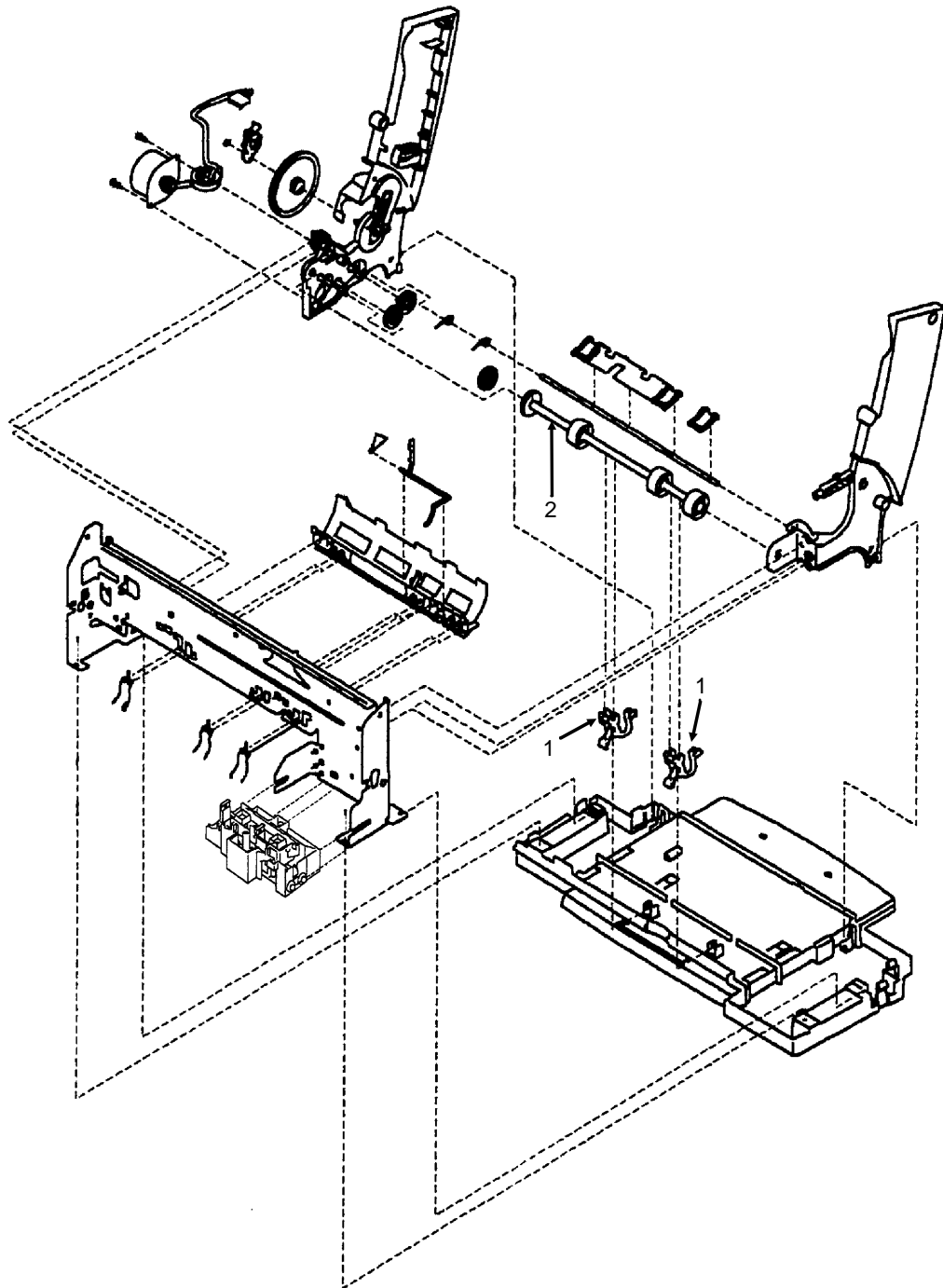
Be sure that the left (6) and right (7) edge guide springs are turned to the INSIDE to maintain spring tension on the guides.

<input type="checkbox"/>	P/N 51018001	Assembly: Left Edge Guide	RSPL	B.2.08
<input type="checkbox"/>	P/N 51018201	Guide: Right Edge & Width Strip	RSPL	B.2.08
<input type="checkbox"/>	P/N N/A	Gear: Paper Load (Gears B/M)		B.2.08
<input type="checkbox"/>	P/N 58237001	Packet: Accessory Parts	RSPL	B.2.08

Includes

Spring: Left Paper Load (PP)	B.2.08
Spring: Right Paper Load (PP)	B.2.08

3.2.08 Ejectors



3-2-08.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Unlatch the ejectors (1) from the large feed roll shaft (2) by pushing down on the ejectors where they grip the large feed roll shaft.
4. Pry the ejectors forward to unlatch them.
5. Remove the ejectors.

P/N 50929601 Arm: Ejector

RSPL

B.2.04

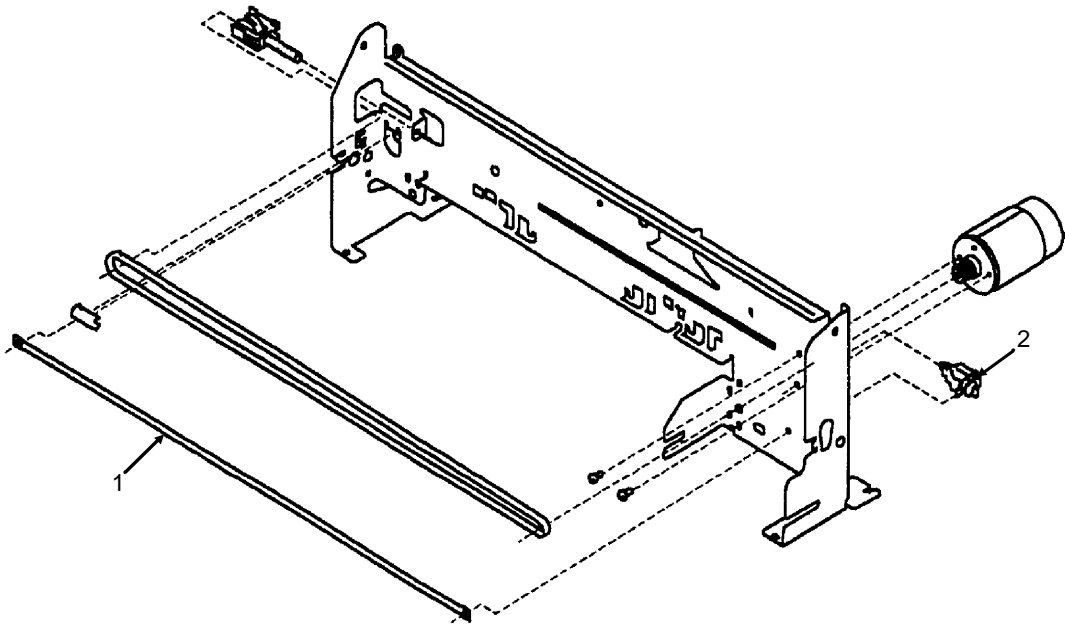
1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the printhead carrier assembly. (3.2.28)
4. Disconnect the printhead cable (1) from the encoder card (2).
5. Remove the screw (3) from the encoder card.
6. Remove the encoder card.

<input type="checkbox"/>	P/N 50220201	Assembly: Encoder Card	RSPL	B.2.06
<input type="checkbox"/>	P/N 58237001	Packet: Accessory Parts	RSPL	B.2.06

Includes

P/N N/A	Screw: Encoder Card Mounting (PP)	B.2.06
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3.2.10 Encoder Strip



3-2-03.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the printhead carrier assembly. (3.2.28)
4. Gently release the tension on the encoder strip (1) by flexing the encoder strip tensioner (2) and remove the encoder strip.

NOTE:

Installation

Make sure that the ends of the strip are centered in the mounting notches.

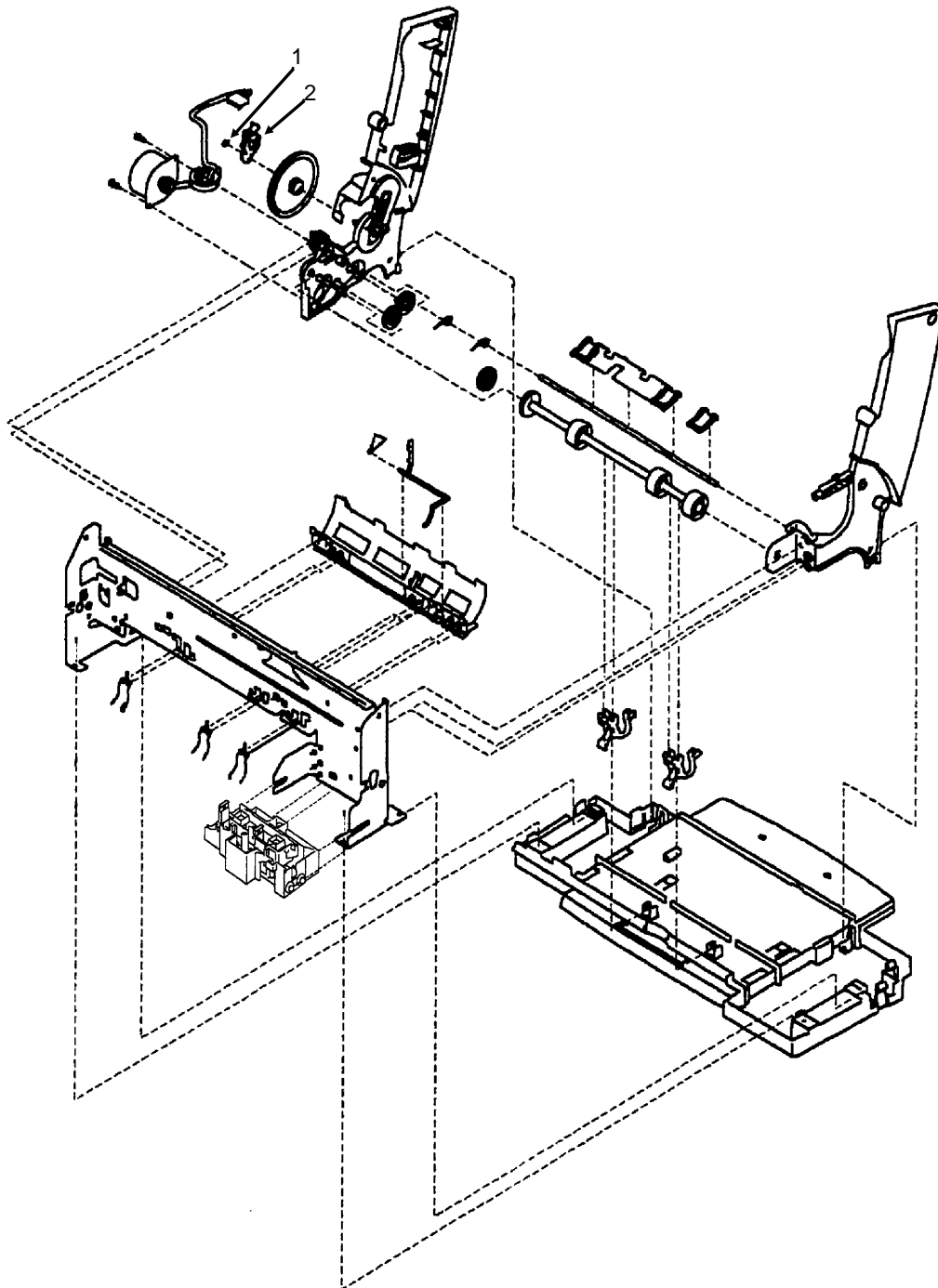
Make sure that the strip does not bind in the encoder card on the carrier.

- | | | | | |
|--------------------------|--------------|-------------------------|------|--------|
| <input type="checkbox"/> | P/N 51017901 | Strip: Encoder | RSPL | B.2.07 |
| <input type="checkbox"/> | P/N 58237001 | Packet: Accessory Parts | RSPL | B.2.07 |

Includes

- | | | |
|---------|-------------------------------|--------|
| P/N N/A | Tensioner: Encoder Strip (PP) | B.2.07 |
| P/N N/A | Cuff: Tensioner (PP) | B.2.07 |

3.2.11 Feed Arm Assembly



3-2-08.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Remove the C-clip (1) from the feed arm (2).
5. Remove the assembly.

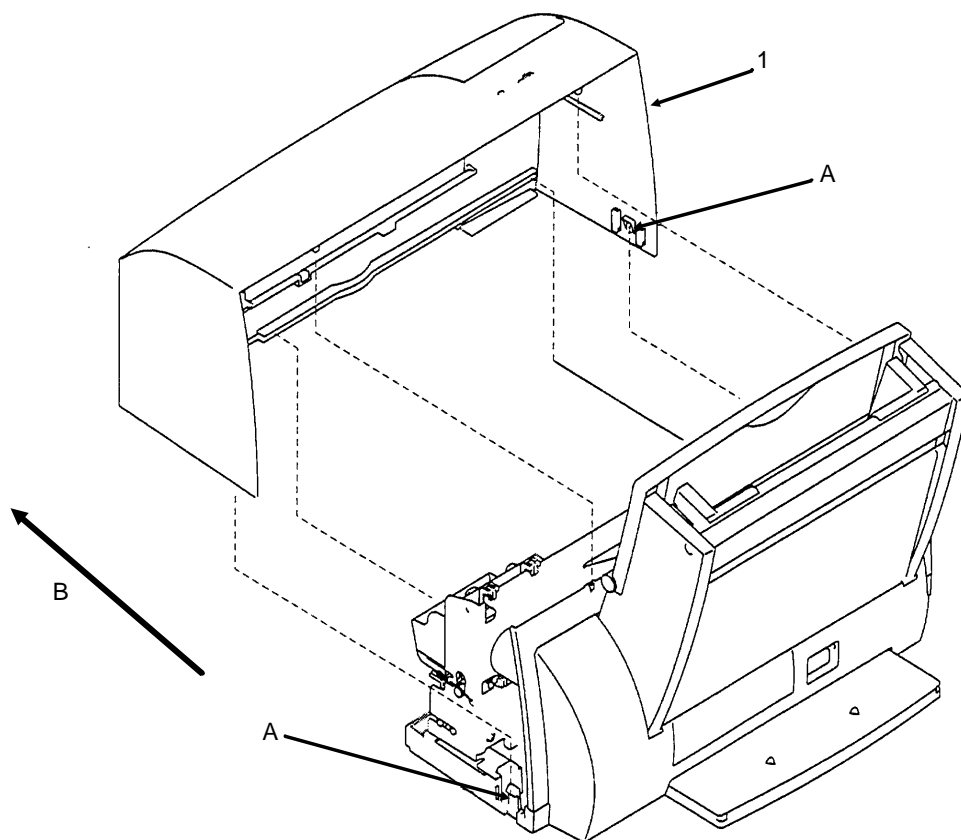
<input type="checkbox"/>	P/N 53075001	Assembly: Feed Arm	RSPL	B.2.04
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<input type="checkbox"/>	P/N 58237001	Packet: Accessory Parts	RSPL	B.2.04
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Includes

P/N N/A	C-Clip (PP)	B.2.04
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3.2.12 Front Cover



3-2-12.pcx

1. Remove the preliminary items. (3.2.01)
2. Place a straight-slot screwdriver in slot A and release the cover latches.
3. Slide the cover in the direction of Arrow B and remove the cover (1).

NOTE:

Installation

Slide the cover over the matching pieces on the bottom cover.

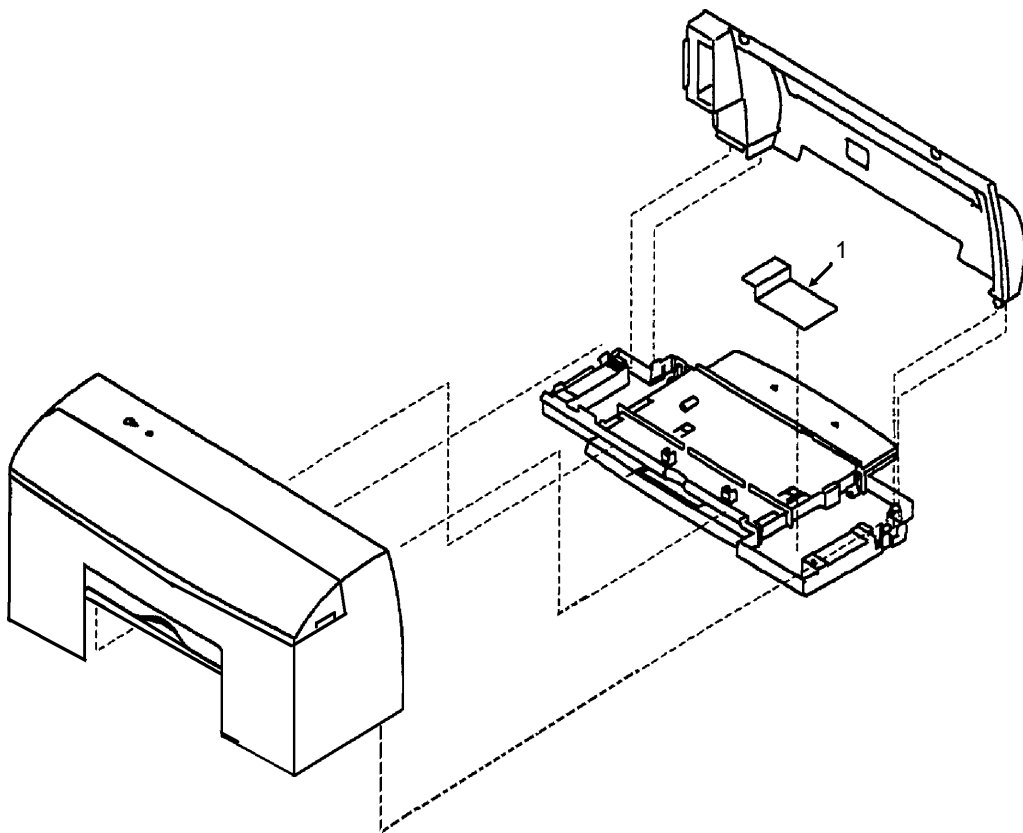
Press in both sides opposite the cover latches until they latch.

<input type="checkbox"/>	P/N 53074601	Assembly: Front Cover	RSPL	B.2.02
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Includes the parts listed below.

P/N N/A	Access Cover	B.2.02
P/N N/A	Button	B.2.02
P/N N/A	LED Lens	B.2.02

3.2.13 Gutter Pad

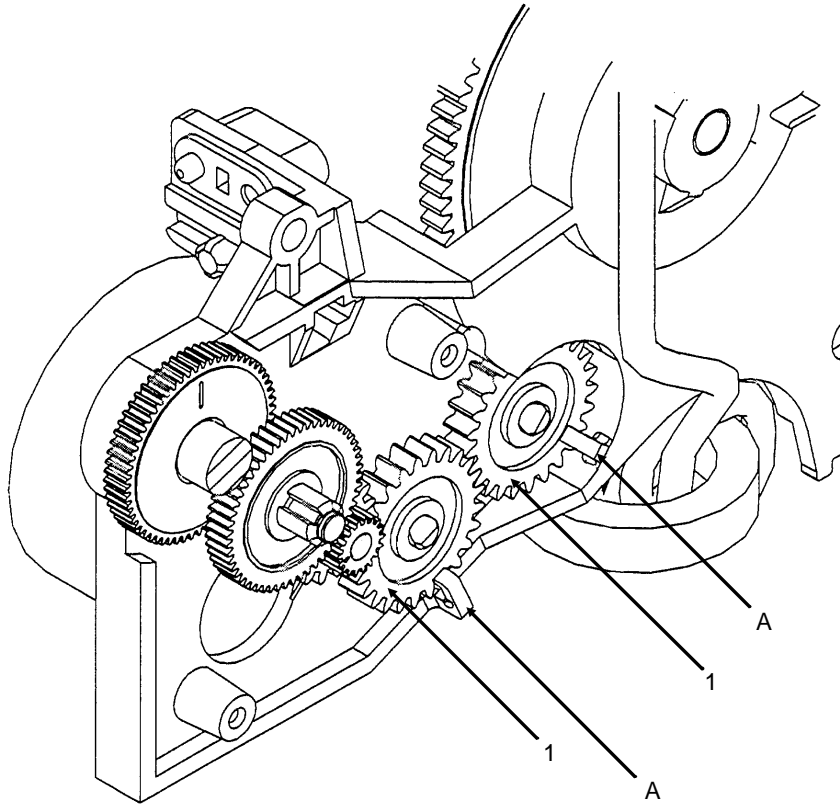


3-2-02.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Remove the base assembly. (3.2.02)
5. Scrape the gutter pad (1) off of the base.

P/N 50516901 Gutter Pad: Base Assembly RSPL B.2.02

3.2.14 Inside Idler Gears



3-2-14.pcx

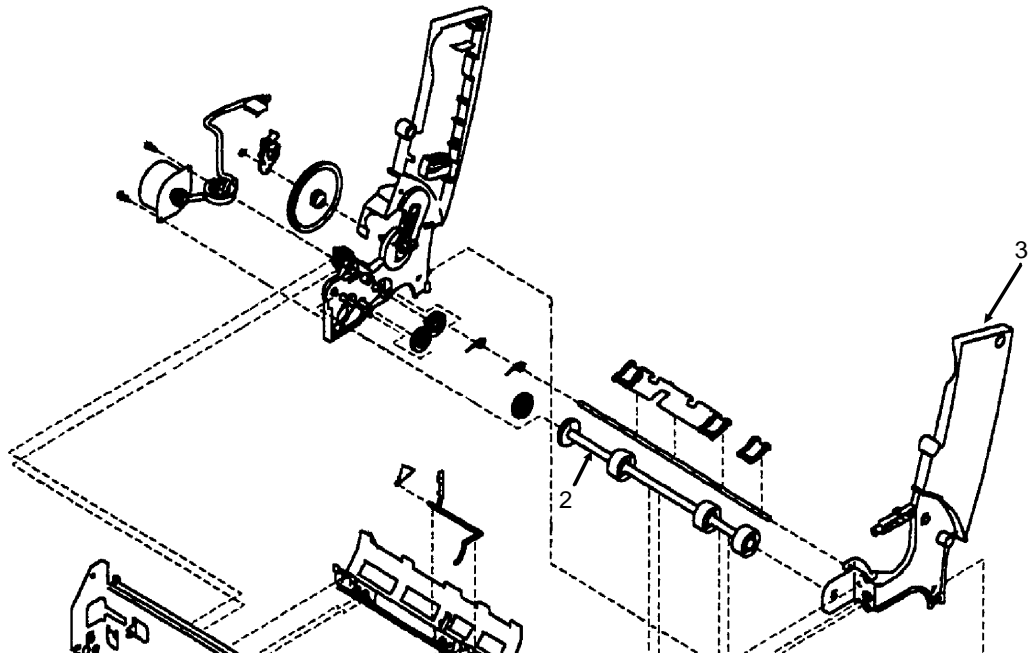
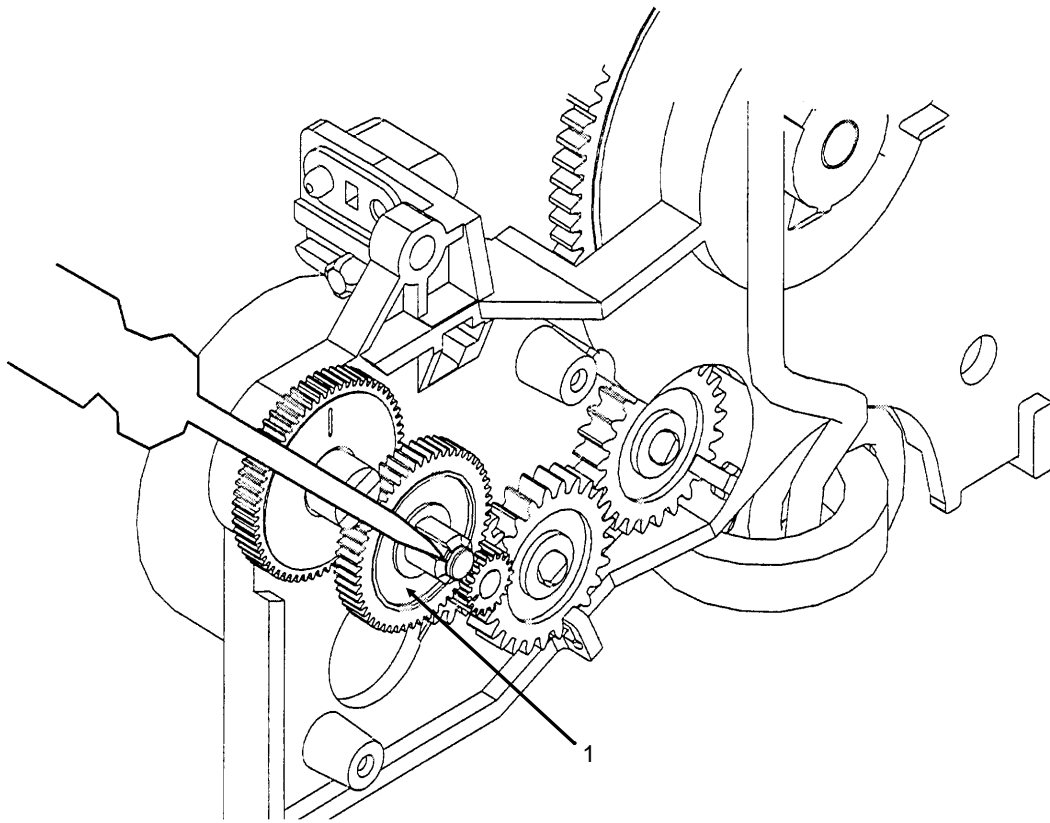
1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Remove the printer from the base assembly.
5. Remove the paper feed motor. (3.2.22)
6. Gently pry the two idler gears (1) from the left side frame. Be careful not to break the locking tabs (A).

P/N 51236201 Gears: B/M

RSPL

B.2.03, 04

3.2.15 Large Feed Roller



3-2-15.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Remove the carrier frame assembly. (3.2.04)
5. Use a small straight-slot screwdriver to break the four prongs of the small compound gear.
6. Remove the small compound gear.
7. Release the large feed roller (B/M) assembly (2) from the four mounting clips and remove the large feed roller assembly from the mid frame.
8. Spread the right side frame (3) and remove the large feed roll.

NOTE:

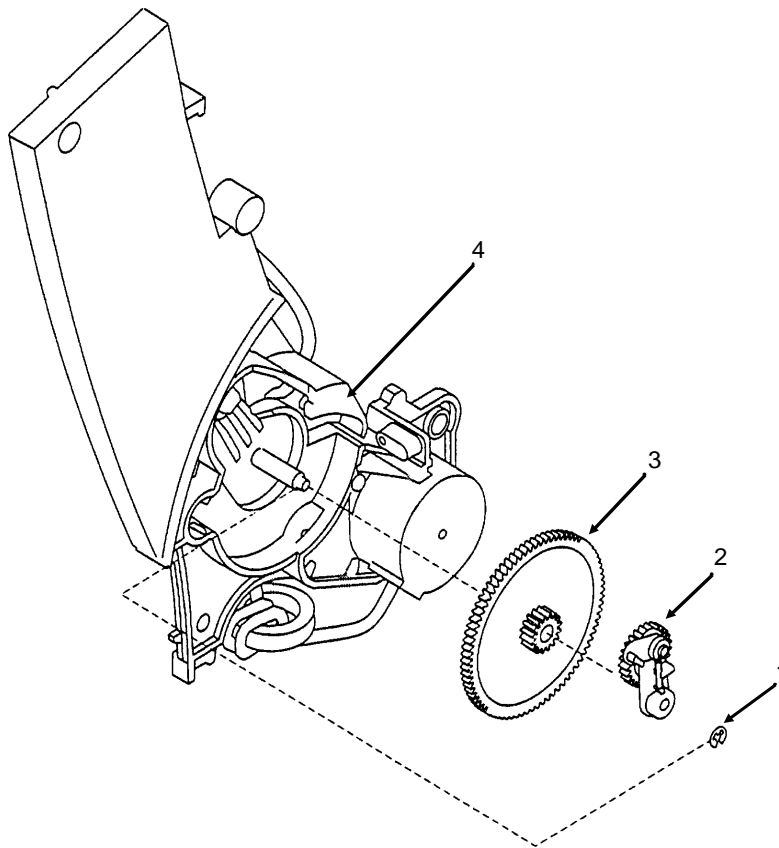
Install the new small compound gear after the machine is installed in the base assembly.

<input type="checkbox"/>	P/N 50409601	Assembly: Large Feed Roller B/M	RSPL	B.2.04
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Includes the part listed below.

P/N	Gear: Small Compound	B.2.04
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3.2.16 Large Outside Gear



3-2-16.pcx

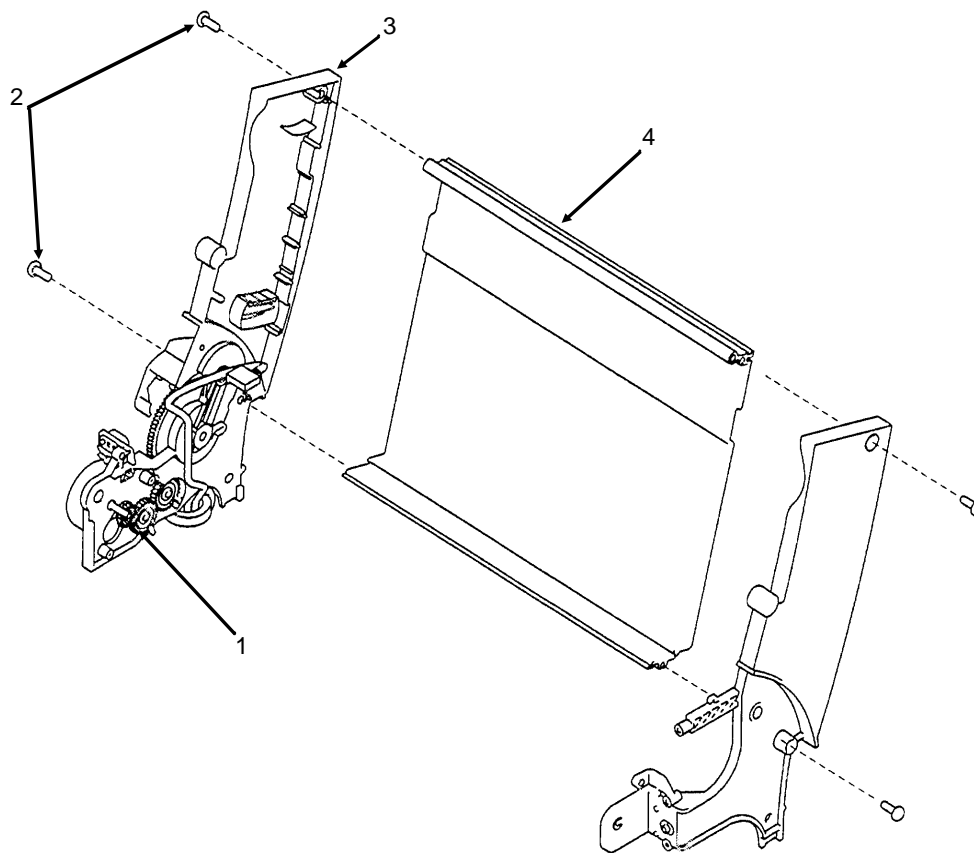
1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Remove the paper load door. (3.2.24)
5. Remove the manual insert tray. (3.2.20)
6. Remove the C-clip (1) from the feed arm assembly (2).
7. Remove the feed arm assembly.
8. Remove the C-clip from the left side of the pick roll shaft. *Not shown*
9. Pull the pick roll shaft out far enough to remove the large gear (3).
10. Gently pull the feed arm guide (4) on the left side frame forward and remove the large gear.

<input type="checkbox"/>	P/N 51236201	Gears: B/M	RSPL	B.2.03, 04
<input type="checkbox"/>	P/N 58237001	Packet: Accessory Parts	RSPL	B.2.04

Includes the part listed below.

P/N N/A	C-Clip (PP)	B.2.04
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3.2.17 Left Side Frame Assembly



3-2-17.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Remove the carrier frame assembly. (3.2.04)
5. Remove the paper load door. (3.2.24)
6. Remove the manual insert tray. (3.2.20)
7. Use a small straight-slot screwdriver to break the four prongs of the small compound idler gear (1).
8. Remove the gear.

NOTE:

Note the installation of the parts in the next two steps.

9. Remove the two screws (2) securing the left side frame (3) to the back plate (4).
10. Slide the left side frame off the back plate.

NOTE:

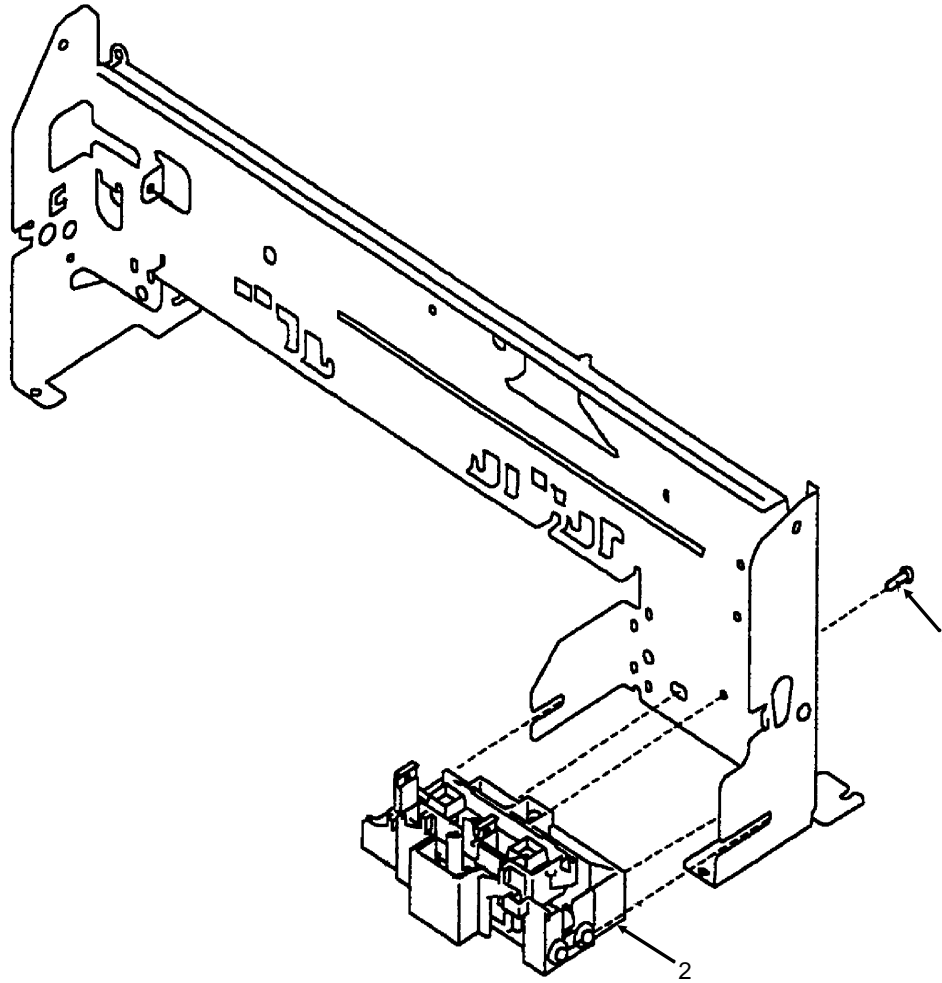
Install the new compound idler gear after the machine is installed in the base assembly.

<input type="checkbox"/>	P/N 53347401	Assembly: Left Side Frame Sub w/o Gears	RSPL	B.2.03
<input type="checkbox"/>	P/N 53347801	Frame: Back Plate Extrusion	RSPL	B.2.08
<input type="checkbox"/>	P/N 50409601	Assembly: Large Feed Roller B/M	RSPL	B.2.08

Includes the part listed below.

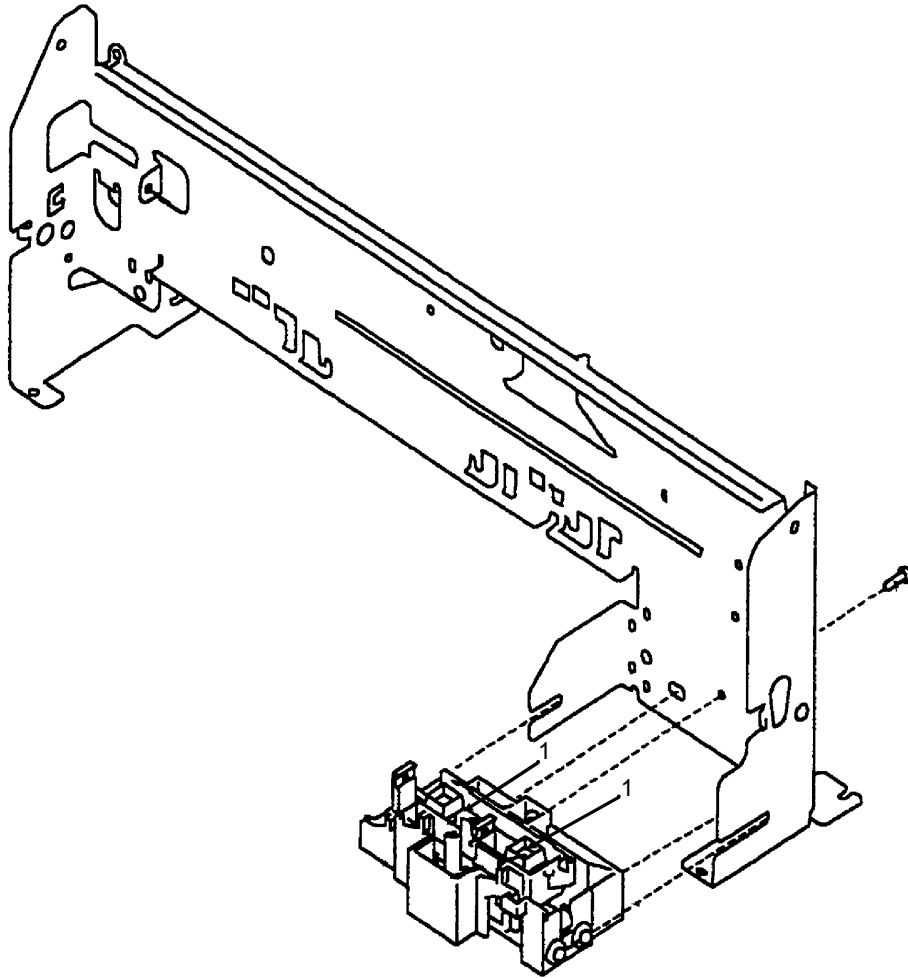
P/N N/A	Gear: Small Compound	B.2.04
P/N N/A	Screw: Side Frame (PP)	B.2.08

3.2.18 Maintenance Station Assembly



3-2-18.pcx

3.2.19 Maintenance Wipers and Caps



3-2-18.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Push the carrier to the left, away from the maintenance station.
4. Gently pull the caps and wipers (1) off of their mountings.

NOTE:

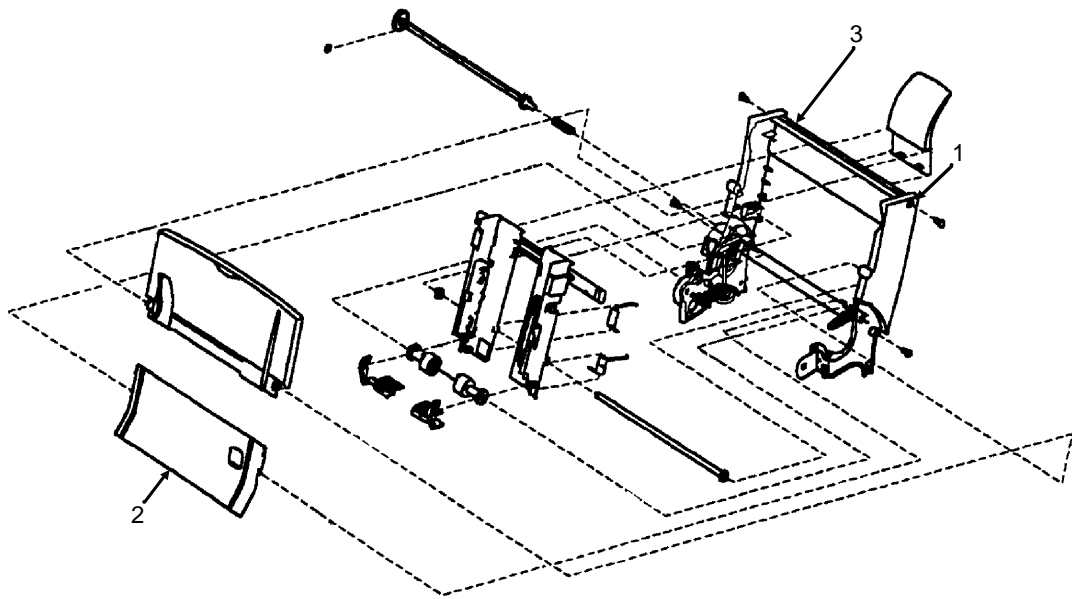
Installation

Be sure that each cap is positioned with the locking tabs to the left and right before pushing them down on their mounting posts.

Be sure that the wipers are completely sealed.

P/N 50220401 Packet: Main. Wiper & Cap Parts RSPL One of each B.2.09

3.2.20 Manual Insert Tray



3-2-07.pcx

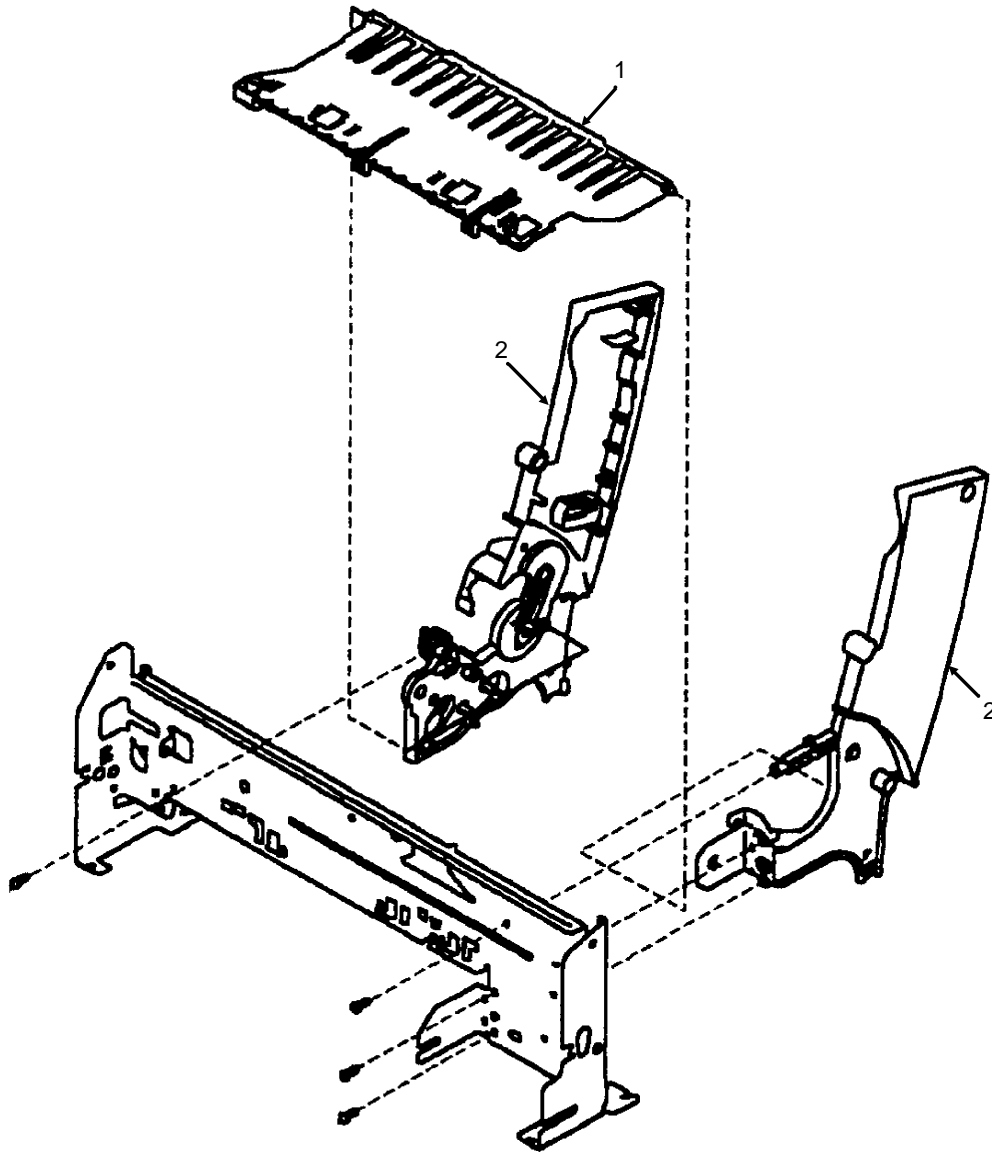
1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Remove the paper load door. (3.2.24)
5. Spread the right side frame (1) away from the manual insert tray (2) until the pins in the insert tray clear the frame.
6. Remove the manual insert tray from the left side frame (3).

P/N 50220301 Tray: Manual Insert

RSPL

B.2.08

3.2.21 Mid Frame Assembly

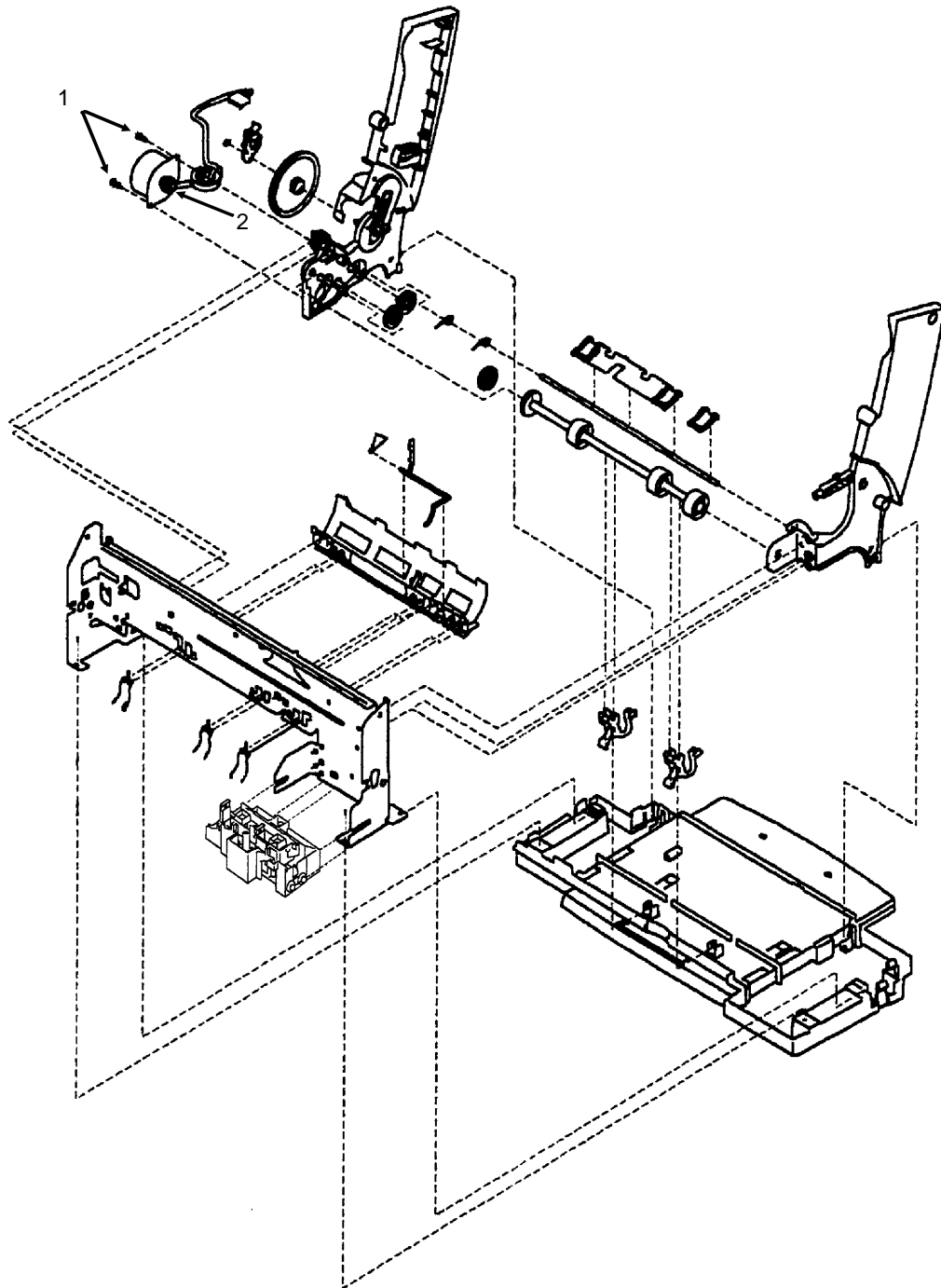


3-2-21.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Remove the carrier frame assembly. (3.2.04)
5. Remove the paper load door. (3.2.24)
6. Remove the manual insert tray. (3.2.20)
7. Remove the small feed roll shaft. (3.2.32)
8. Pull up the four clips securing the mid frame (1) to the large feed roll and work the mid frame out of both side frames (2).

P/N 53347701 Assembly: Mid Frame & Gutter Pad RSPL B.2.03

3.2.22 Paper Feed Motor



3-2-08.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Remove the base assembly. (3.2.02)

NOTE:

Be sure to note the routing of the motor cable before performing the next step.

5. Remove the two screws (1) securing the paper feed motor (2).
6. Remove the motor.

P/N 56512401 Assembly: Paper Feed Motor RSPL B.2.04

Includes the three parts listed below.

 P/N N/A Motor Gear B.2.04

 P/N N/A Paper Feed Motor B.2.04

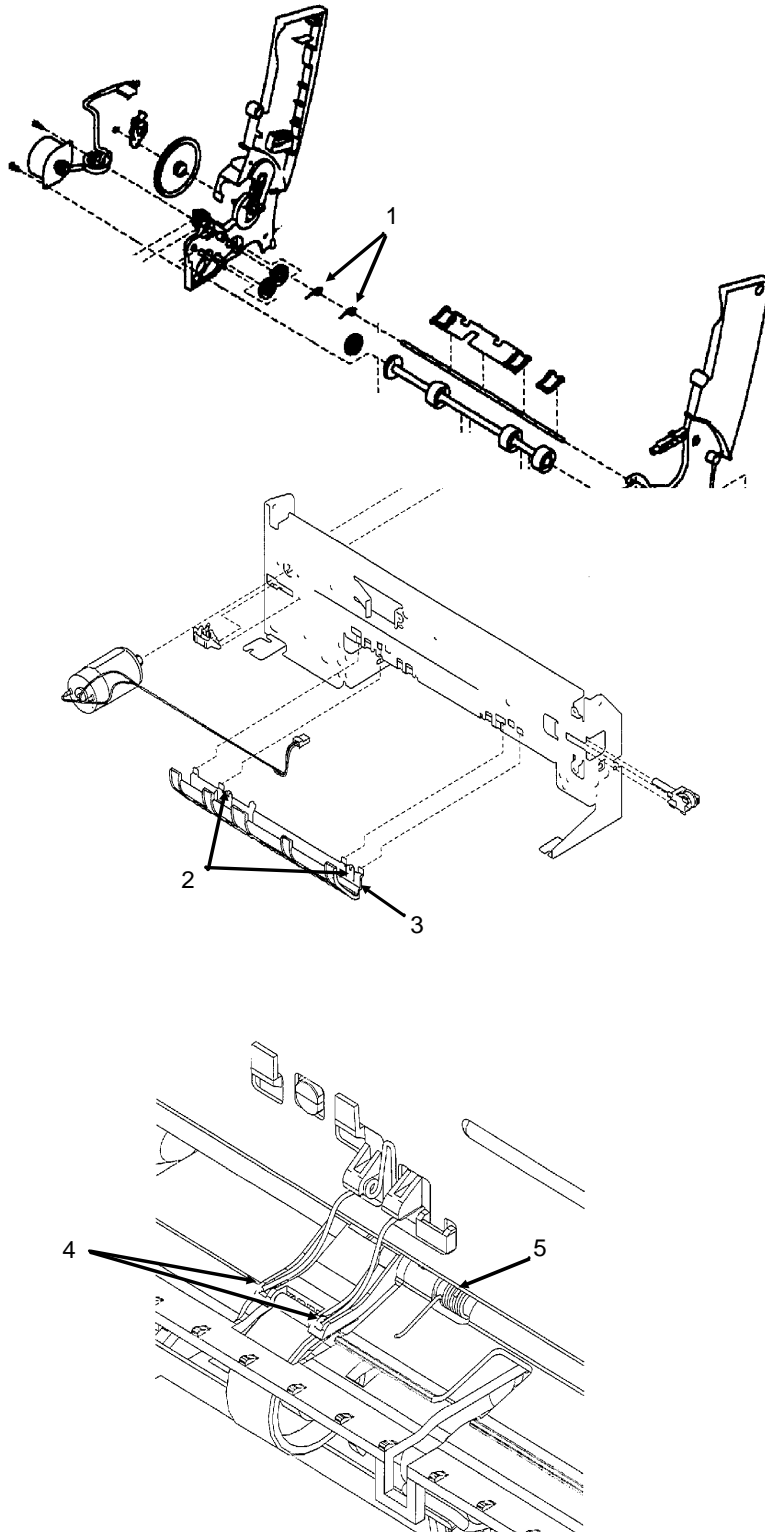
 P/N N/A Toroid B.2.04

P/N 58237001 Packet: Accessory Parts RSPL B.2.04

Includes the part listed below.

 P/N N/A Screw: Paper Feed Motor Mounting (PP) B.2.04

3.2.23 Paper Guide and End of Form (EOF) Flag Assembly



3-2-23.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Remove the carrier frame assembly. (3.2.04)
5. Remove the system board. (3.2.33)
6. Remove the encoder strip. (3.2.10)
7. Remove the three small feed roll springs (1).
8. Push the locking tabs (2) to the rear and pull the paper guide down and out of the carrier frame.

NOTE:

Installation

Be sure that the small feed roll spring extensions (4) are in the grooves of the small feed roll arms.

Be sure that the short extensions of the two paper flap springs are under the carrier frame (5).

<input type="checkbox"/>	P/N 51018101	Assembly: Paper Guide	RSPL	B.2.04
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Includes the parts listed below.

P/N N/A	EOF Flag	B.2.04
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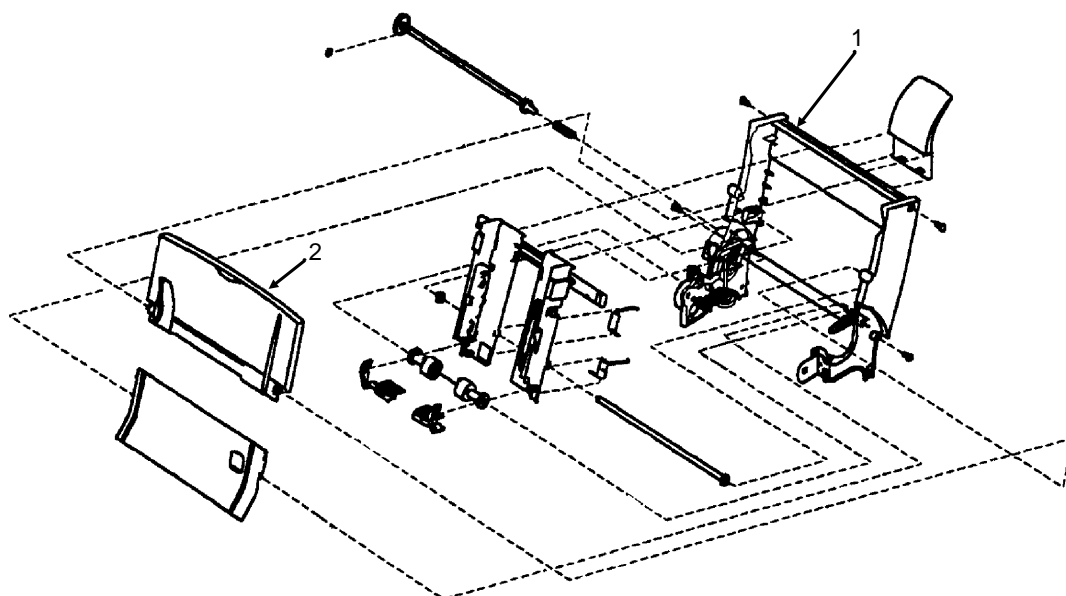
P/N N/A	Spring	B.2.04
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<input type="checkbox"/>	P/N 58237001	Packet: Accessory Parts	RSPL	B.2.04
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Includes the part listed below.

P/N N/A	Spring: Small Feed Roll (PP)	B.2.04
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3.2.24 Paper Load Door

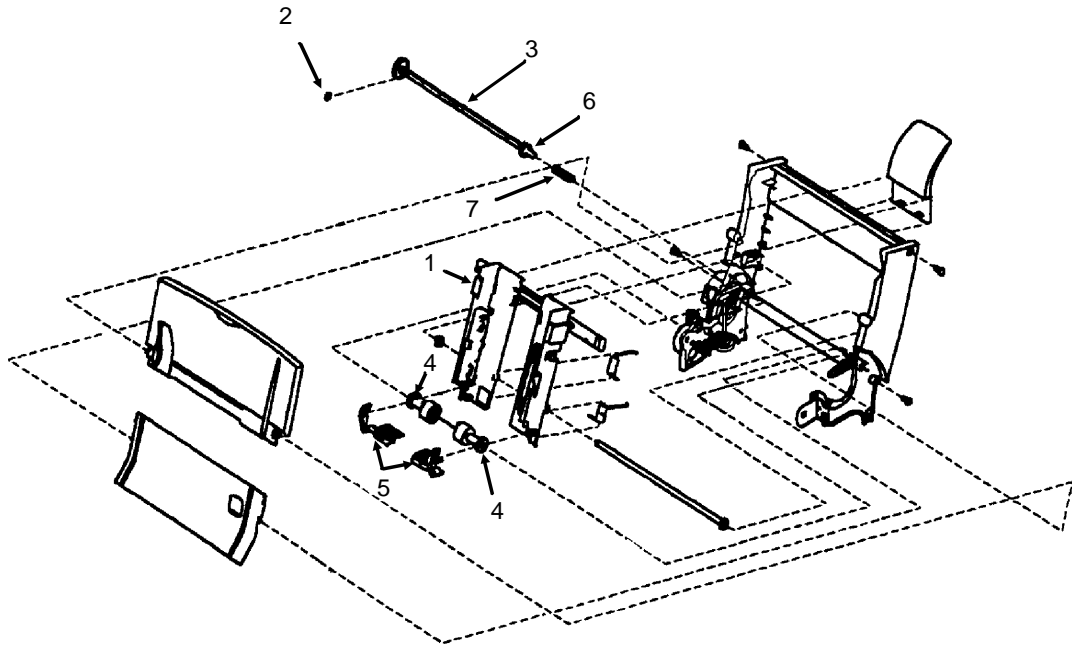


3-2-07.pcx

1. Remove the preliminary items. (3.2.01)
2. Spread the left side frame (1) where it joins the paper load door (left) assembly (2) and remove the door.

P/N 53075101 Assembly: Paper Load Door (Left) RSPL B.2.08

3.2.25 Pick Roll Hub, Shaft, and Envelope Bucklers



3-2-07.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Remove the paper load door. (3.2.24)
5. Remove the manual insert tray. (3.2.20)
6. Slide the left paper guide (1) to the right.
7. Remove the E-ring (2) from the left side of the pick roll shaft (3).
8. Pull the pick roll shaft out to the left and remove the pick roll shaft, hubs (4), envelope bucklers (5), spacer (6), and pick roll clutch spring (7).

NOTE:

Installation

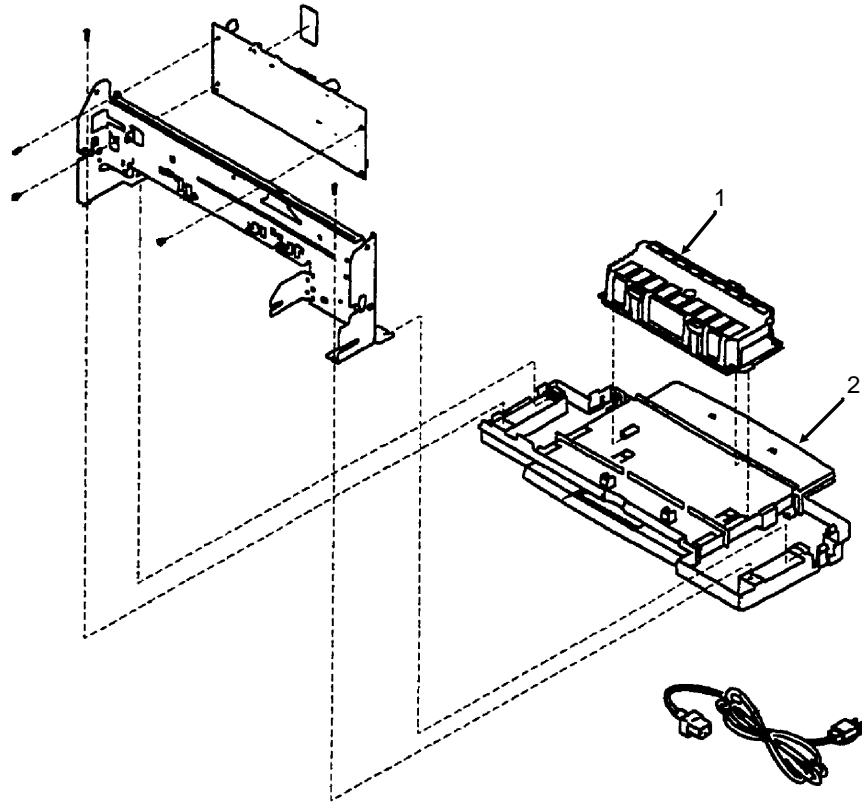
Be sure that the pick roll hubs are in the slots at the bottom of the paper guides and that the rolls are centered on the pick pads.

<input type="checkbox"/>	P/N 50409801	Assembly: Pick Roll Hub	RSPL	B.2.08
<input type="checkbox"/>	P/N 51113601	Shaft: Pick Roll & Paper Load	RSPL	B.2.08
<input type="checkbox"/>	P/N 58236901	Packet: Envelope Buckler Parts	RSPL	B.2.08
<input type="checkbox"/>	P/N 58237001	Packet: Accessory Parts	RSPL	B.2.08

Includes the part listed below.

P/N N/A	Spring: Pick Roll Clutch (PP)	B.2.08
P/N N/A	E-Ring (PP)	B.2.08
P/N N/A	Spacer (PP)	B.2.08

3.2.26 Power Supply

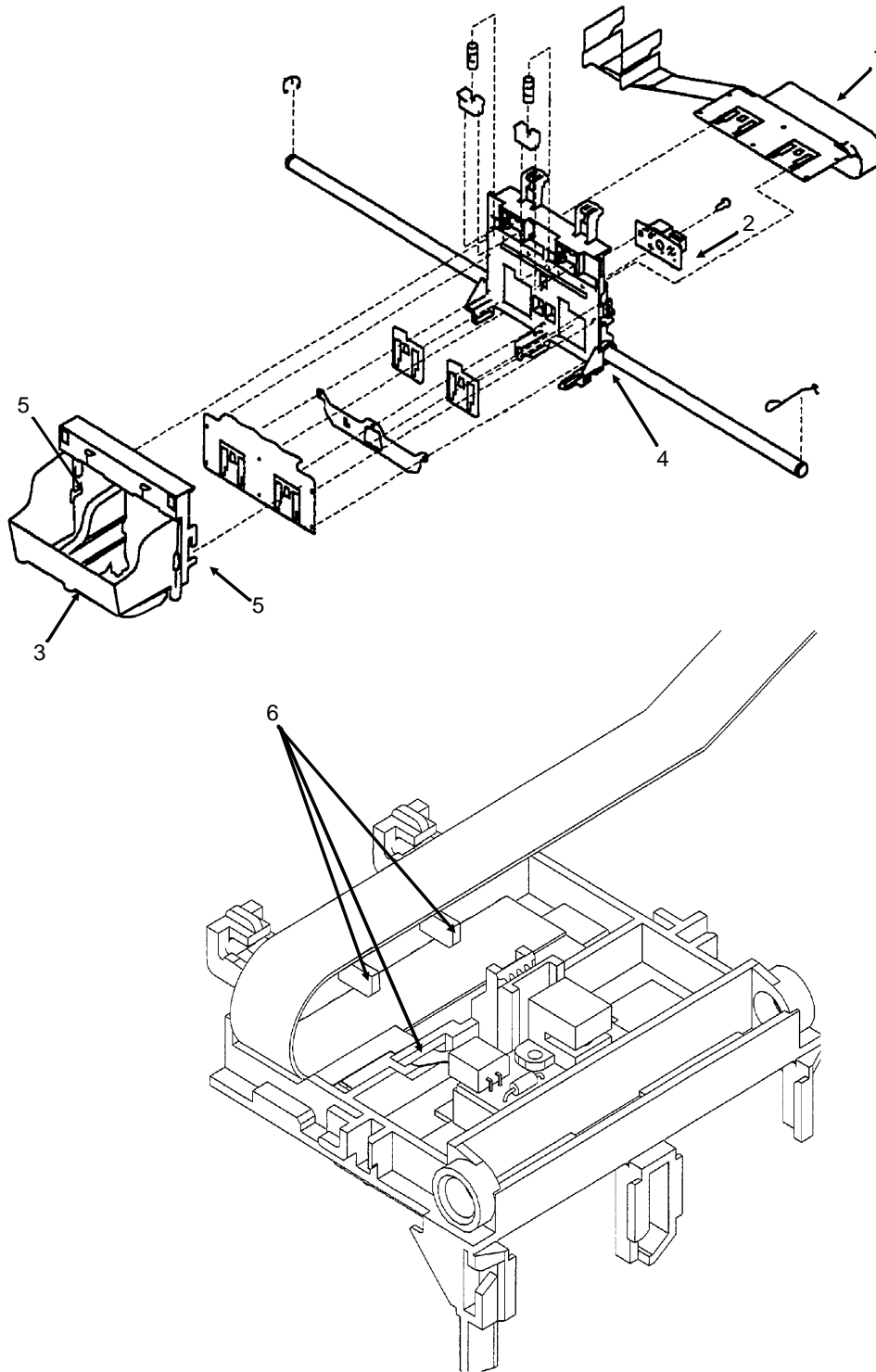


3-2-26.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Remove the base assembly. (3.2.02)
5. Push down on the latches and slide the power supply (1) forward and off the base assembly (2).

<input type="checkbox"/>	P/N 56414301	Power Supply (inc. Ground Plan ; Insulator; Cover)	RSPL	B.2.05
--------------------------	--------------	---	------	--------

3.2.27 Printhead Cable and Paper Deflector



3-2-27.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the printhead carrier assembly. (3.2.28)

NOTE:

Note that the printhead cable is routed under the retaining clip on the carrier.

4. Disconnect the printhead cable (1) from the encoder card (2).
5. Separate the cradle (3) from the printhead carrier assembly (4) by pushing out the cradle latches (5).
6. Feed the folded end of the printhead cable through the opening in the carrier assembly and remove the cable.

NOTE:

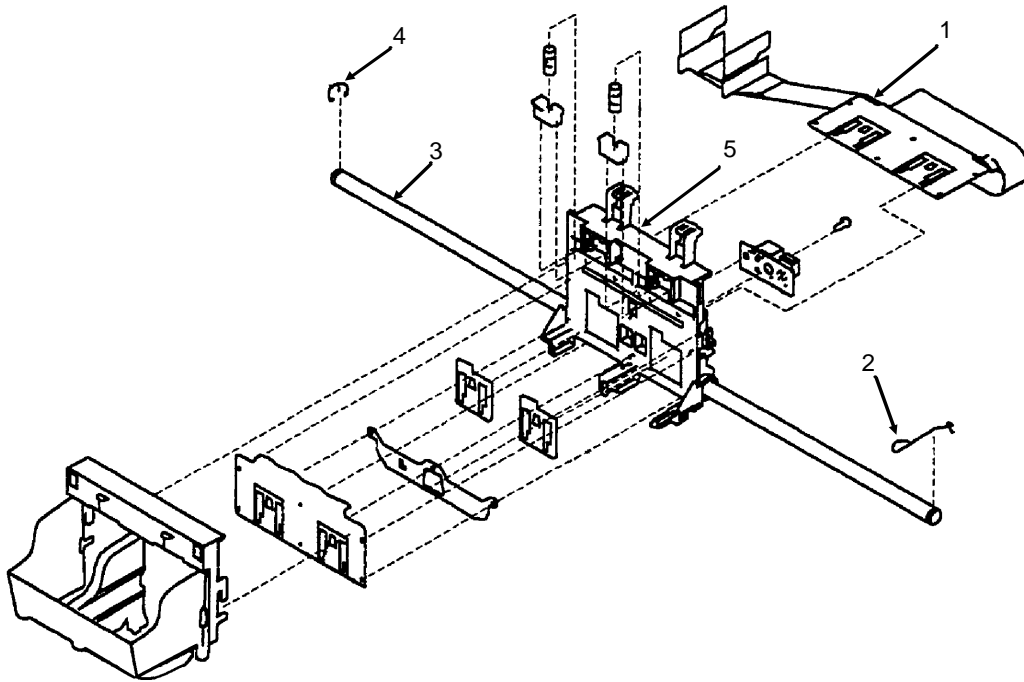
Installation

Use the diagram to assemble the carrier parts in the correct sequence.

Be sure that the cable is secured under the three retaining clips (6) on the back of the carrier.

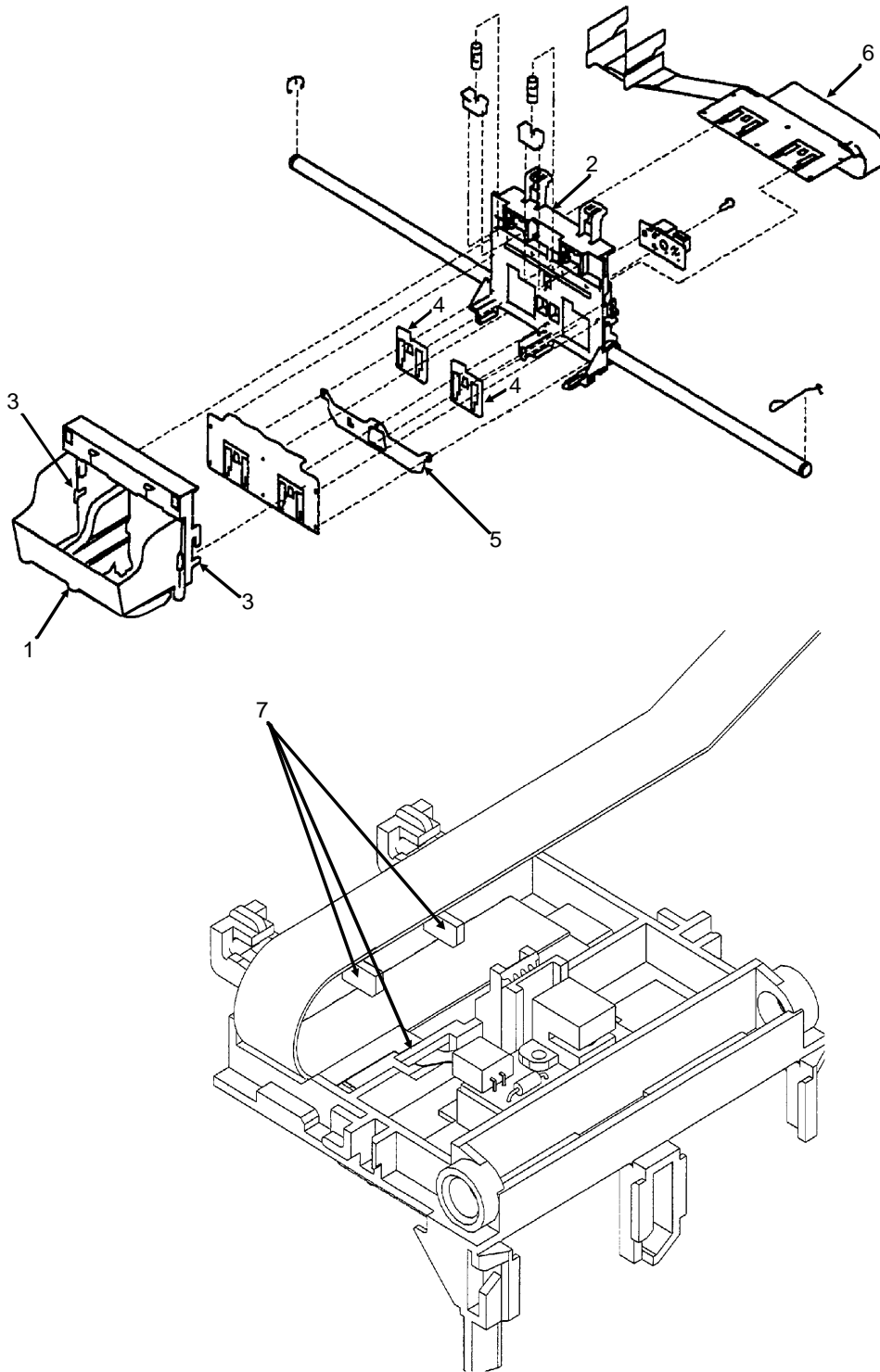
P/N 56632001 Cable: Printhead (With Folds) RSPL B.2.06

3.2.28 Printhead Carrier Assembly



3-2-09.pcx

3.2.29 Printhead Rubber Backer



3-2-27.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the printhead carrier assembly. (3.2.28)
4. Separate the cradle (1) from the printhead carrier assembly (2) by pushing out the cradle latches (3).
5. Remove the rubber backer (4) and paper deflector (5) from under the printhead carrier cable (6).

NOTE:

Installation

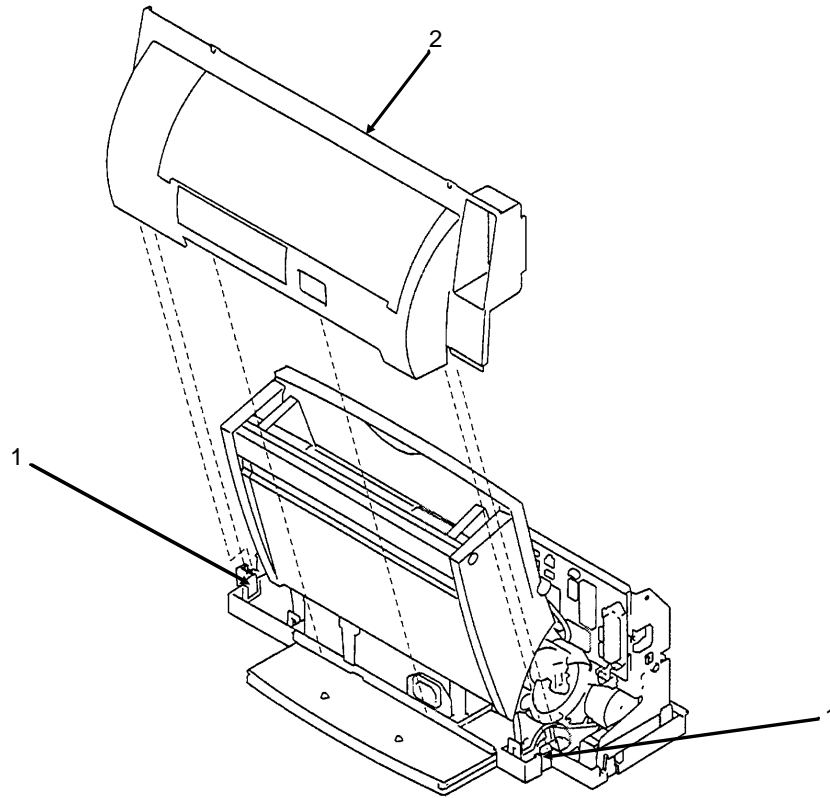
Use the diagram to assemble the carrier parts in the correct sequence.

Be sure that the cable is secured under the three retaining clips (7) on the back of the carrier.

P/N 51711201 Rubber Backer: Printhead

B.2.06

3.2.30 Rear Cover



3-2-30.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Place a straight-slot screwdriver in both slots (1) and release the cover latches.
4. Slide the cover (2) up and off the machine.

NOTE:

Installation

Place the cover over the tabs in the bottom cover.

Press down until the cover latches.

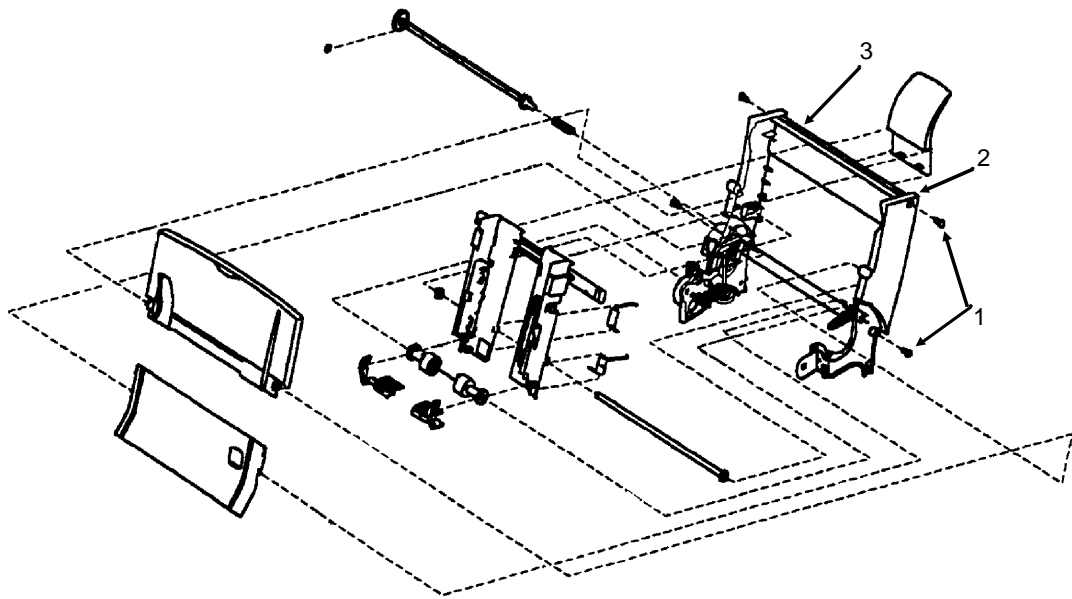
Be sure that the parallel connector snaps DO NOT get trapped behind the cover.

P/N 53074901 Cover: Rear

RSPL

B.2.02

3.2.31 Right Side Frame Assembly



3-2-07.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Remove the carrier frame assembly. (3.2.04)
5. Remove the paper load door. (3.2.24)
6. Remove the manual insert tray. (3.2.20)

NOTE:

Look at the relationship of the parts before performing the following steps.

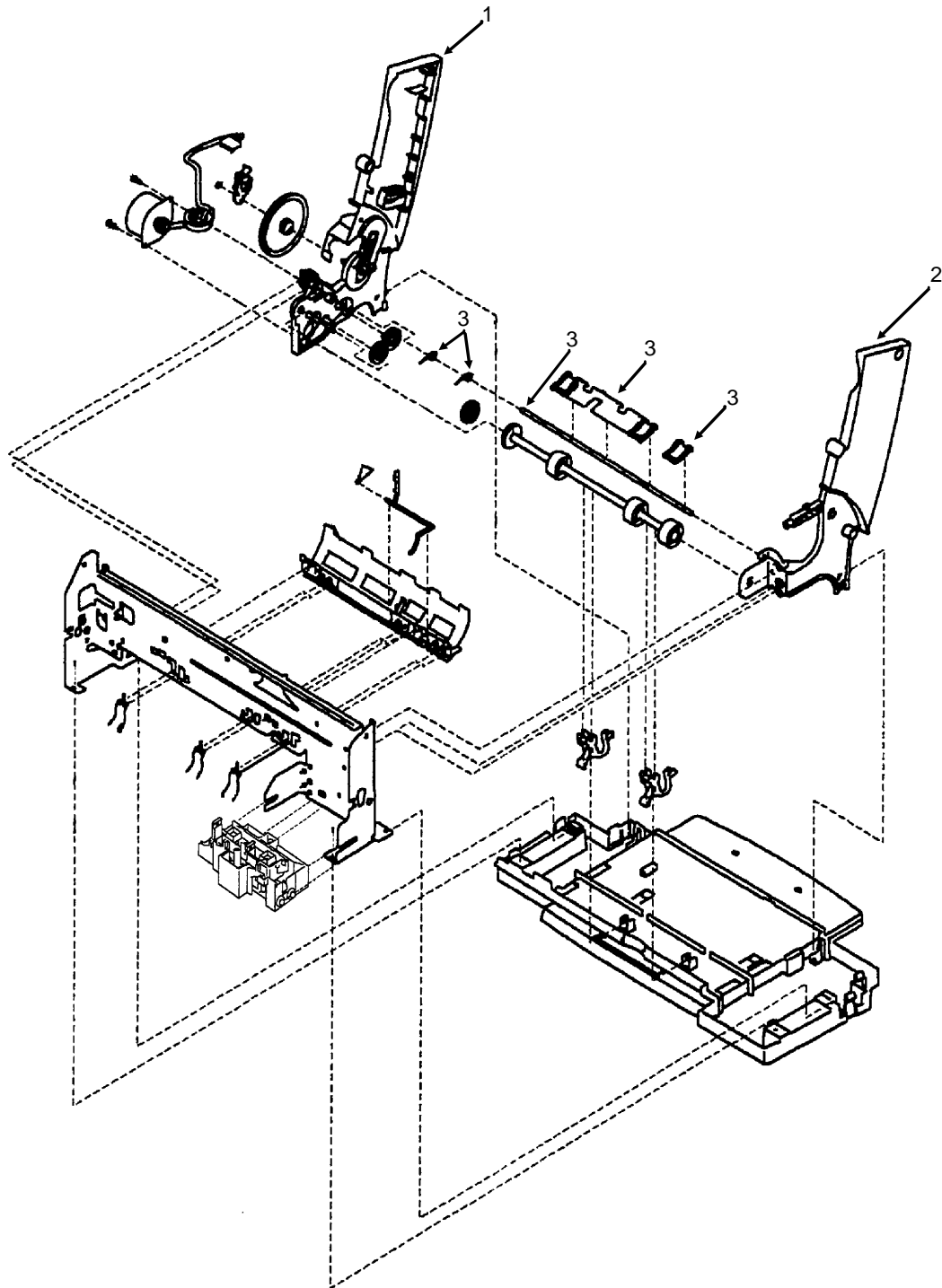
7. Remove the two screws (1) that secure the right side frame (2) to the back plate (3).
8. Slide the right side frame off the back plate.

P/N 53347501 Frame: Right Side

RSPL

B.2.03

3.2.32 Small Feed Roll Shaft, Rollers, and Flap

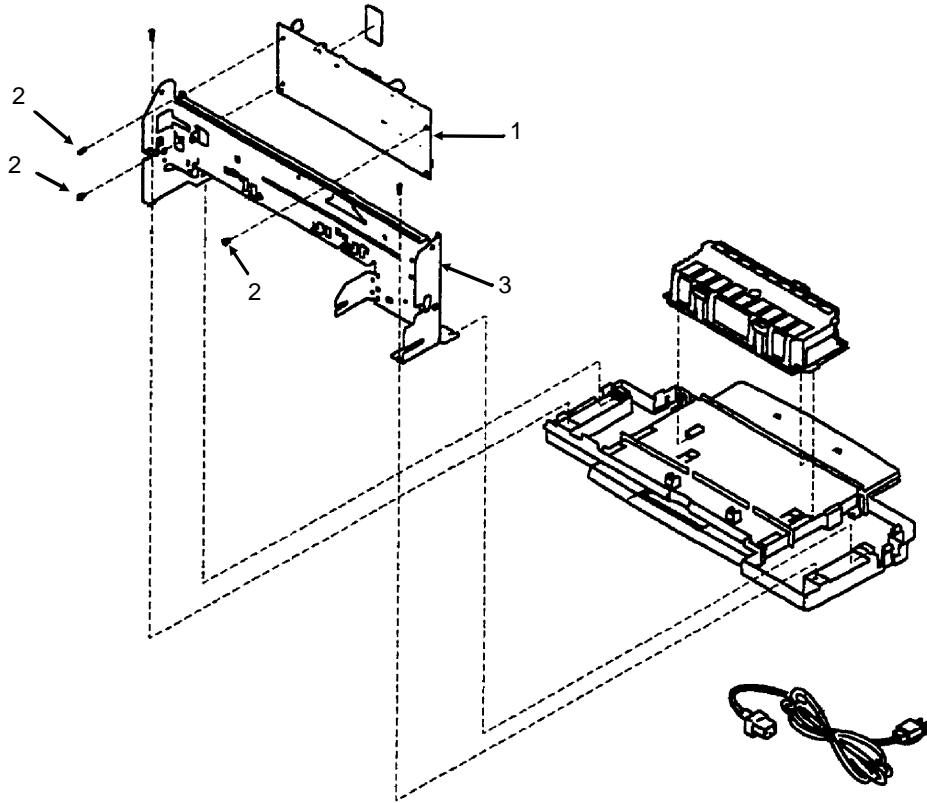


3-2-08.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Remove the rear cover. (3.2.30)
4. Remove the carrier frame assembly. (3.2.04)
5. Spread the left (1) and right side (2) frames apart far enough to remove the small feed roll shaft assembly (3).

<input type="checkbox"/>	P/N 51113501	Shaft: Small Feed Roll Shaft and Paper Flap	RSPL	B.2.04
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3.2.33 System Board



3-2-26.pcx

1. Remove the preliminary items. (3.2.01)
2. Remove the front cover. (3.2.12)
3. Unlock the four printhead cable connectors and disconnect the printhead cables from the system board (1).
4. Disconnect the other cables from the system board.
5. Gently release the tension on the encoder strip by flexing the encoder strip tensioner and remove the encoder strip from the left side only. *Not shown*

NOTE

Before performing the next steps, note the routing of the paper feed motor cable.

6. Remove the three screws (2) securing the system board to the carrier frame (3).
7. Remove the system board.

NOTES:

Installation

Insert the printhead cables into the four connectors before installing the board.

Removing the system board resets the head to head and bidirectional printing alignments to factory defaults. The end user performs these alignments through the User Software Utility. Refer to the User's Guide for details.

When replacing the system board, be sure to remove the EPROM (Code Module) at U56. Replacement boards are shipped WITHOUT the EPROM.

CAUTION:

When removing the board, you must follow standard electrostatic sensitive device (ESD) procedures or you may damage the components.

<input type="checkbox"/>	P/N 55078701	Board: System (w/o EPROM)	RSPL	B.2.05
<input type="checkbox"/>	P/N 58237001	Packet: Accessory Parts	RSPL	B.2.05

Includes the parts listed below.

P/N N/A	Jumper: 2-Pin (PP)	B.2.05
P/N N/A	Screw: Ground Jumper Mounting (PP)	B.2.05
P/N N/A	Screw: System Board Mounting (PP)	B.2.05

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3.3 ADJUSTMENTS

3.3.01 General Information

This section contains the procedures for performing adjustments on the printer. These procedures may be required when replacing either consumables or parts. The disassembly/assembly procedures list the required adjustments and refer you to this section. Failure to perform these procedures may result in unnecessary service calls.

3.3.02 Printhead Alignment

General Information

Before performing this adjustment, always verify that the print cartridges are properly installed.

Perform the printhead alignment procedure when any of the following occur.

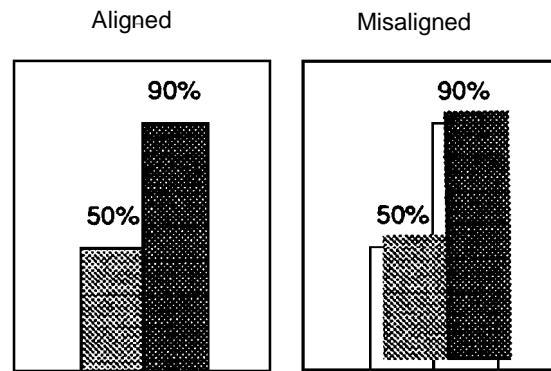
Poor Print Quality

Misaligned Print Quality

Parts are replaced

Print Cartridge (3.7)

System Board (3.2.33)



3-3-02a.pcx

NOTE:

Place a new print cartridge in the printer before testing.

Procedure

1. Open the printer control dialog box.
2. Click the Cartridges tab.
3. Click *Align Cartridges*.

The Align Cartridges tab appears on the screen.

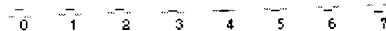
The printer prints a test page with horizontal patterns and vertical patterns. Each pattern has a number located beneath it.

Here is an example test page.

Horizontal Alignment of Heads



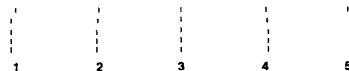
Vertical Alignment of Heads



Bi-directional Alignment Pattern (Black)



Bi-directional Alignment Pattern (Color)



3-3-02b.pcx

4. Using the printed test page, select the number of the patterns that are aligned correctly.

In this example, the correct choices are

3 for Horizontal Alignment.

4 for Vertical Alignment.

3 for Bi-directional Alignment for both black and color.

5. Enter the number located under each pattern into the boxes on the Align Cartridges Tab.
6. Click *OK*.

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3.3.10 Resets

Ink Counter

CAUTION:

Reset the ink counter ONLY when a NEW print cartridge is installed.

DO NOT reset the ink counter when an OLD print cartridge is re-installed.

The ink counter is reset as part of the Print Cartridge Replacement procedure.

Clicking on New Cartridge Installed during the Print Cartridge Replacement procedure resets the ink counter.

Refer to Section 3.7 of this Service Handbook or the User's Guide for further information.

Error Log

The error log tracks new errors.

The error log is set to zero (initialized) during the initialize error log test.

Refer to Section 4.8 of this Service Handbook for further information.

3.4 CLEANING

WARNING

When cleaning the printer, power OFF the printer and detach the AC power cable from the printer and the AC outlet.

3.4.01 General Information

An accumulation of paper dust is a frequent cause of print quality problems in a printer. Small pieces of paper can cause paper jams. Dirty paper guides and rollers will smudge paper. It is important to clean the printer regularly, paying particular attention to the paper paths.

If the lubrication procedures are not performed properly, the printer will require more frequent cleaning. Excessive lubricant attracts dust and accumulations build up quickly.

Keeping the covers in place and performing the cleaning procedures correctly will help ensure the highest quality printer output.

3.4.02 Cleaning Schedule

Clean when parts are replaced

or

Clean as needed.

There is no regular schedule for cleaning.

3.4.03 Cleaning Tools

1. Clean, soft, lint-free cloth
2. Water
3. All-purpose cleaner

3.4.04 Areas to be Cleaned

Printer Parts

Areas to be Cleaned	Action to be Taken
Carrier Guide Rod	Wipe with a clean, soft, lint-free cloth dampened with water. Wipe dry.
Contacts inside the print cartridge carrier	1. Refer to the Nozzle Test, Cleaning the Carrier Contacts in this section of the Service Handbook. Use a clean, dry cloth to clean the contacts inside the cartridge carrier in the printer. This procedure is also covered in the User's Guide and may be performed by the end user.
Covers	Clean with soft cloth and all-purpose cleaner
Paper Paths	Wipe up paper bits and dust.
Print Nozzles	1. Run the Nozzle Test to clean (purge) the nozzles. The Nozzle Test is in this section of the Service Handbook. 2. Refer to the Nozzle Test, Wiping the Nozzles and Contacts in this section of the Service Handbook. Use a clean cloth, dampened with water only, to gently clean the entire copper colored area of the print cartridge, including the nozzles and contacts. When cleaning the color print cartridge, wipe the nozzles in ONLY one direction so the colors DO NOT mix. DO NOT touch the copper-colored area with your fingers! To dissolve dried ink, hold the damp cloth against the nozzles for about three seconds. Gently blot and wipe dry. Allow the copper-colored area to dry before installing the cartridge. This procedure is also covered in the User's Guide and may be performed by the end user.

Ink Spills

Before discarding a used print cartridge, place it in a leak-proof bag to contain any remaining ink.

If ink is spilled, use an absorbent towel to wipe up the ink.

Rinse with soap and water.

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3.4.04 Nozzle Test

General Information

The Nozzle Test pinpoints and cleans (purges) any clogged nozzles in the print cartridges.

After the test is complete, a test line prints. Use the test line to determine if the cleaning process was successful.

Perform the Nozzle Test if either of the following occur.

The nozzles appear to be clogged.

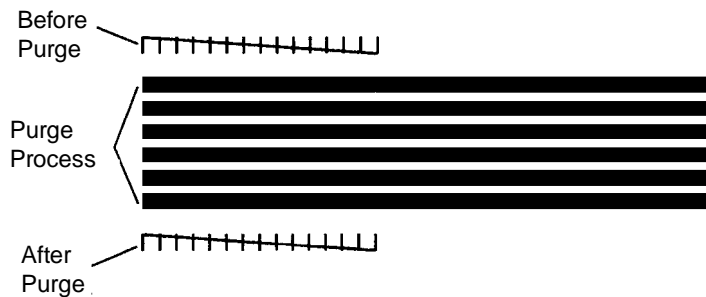
Characters are not printing properly.

The Nozzle Test is also covered in the User's Guide. It may be performed by the end user.

Procedure

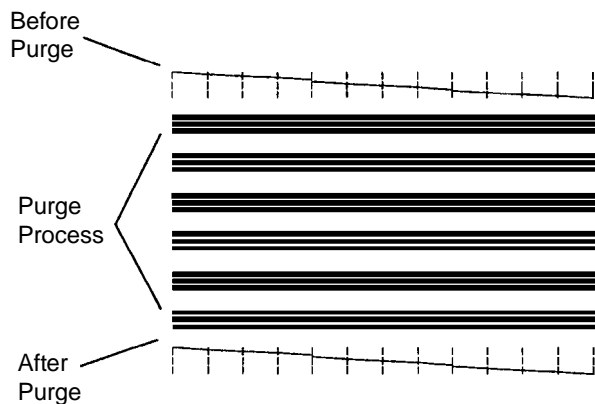
1. Load paper into the sheet feeder.
2. Open the printer control dialog box.
3. Click on the Cartridges tab.
4. Click on Clean Print Nozzles.
5. The printer feeds a sheet of paper and prints the nozzle test pattern.
6. Examine the test pattern.

This example shows a test pattern of all nozzles functioning correctly on the black print cartridge.



3-4-04a.pcx

This is a comparable example for the color cartridge. The actual pattern will be printed in color.



3-4-04b.pcx

7. Compare the diagonal lines at the top and bottom of the test pattern.

Look for a break in the diagonal line. A break in the line shows clogged nozzles.

If the bottom line shows improvement, run the test again.

If the improvement continues, run the test a third time.

If all the nozzles are not printing after running the test three times, continue with step eight.

8. If the print quality still has not improved, remove and reinstall the print cartridge.
9. Repeat the Nozzle Test.
10. If the line is still broken, wipe the nozzles and contacts. Refer to the Wipe the Nozzles and Contacts section of this procedure.

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Wipe the Nozzles and Contacts

Wipe the nozzles and contacts if the print quality does not improve after repeating the Nozzle Test three times.

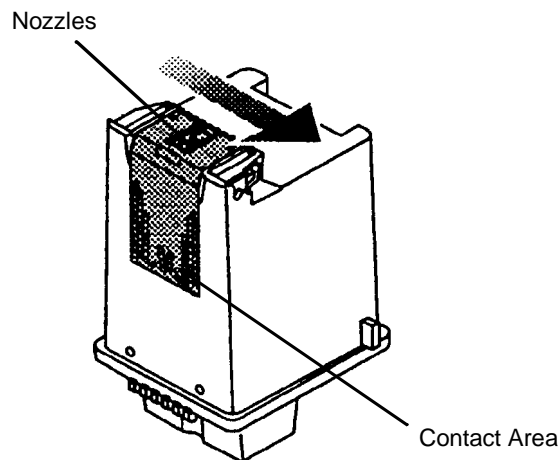
Dried ink may be on the print cartridge.

1. Remove the print cartridge.
2. Use a clean cloth, dampened with water only, to gently clean the entire copper colored area of the print cartridge, including the nozzles and contacts.

When cleaning the color print cartridge, wipe the nozzles in **ONLY** one direction so the colors **DO NOT** mix.

DO NOT touch the copper-colored area with your fingers!

To dissolve dried ink, hold the damp cloth against the nozzles for about three seconds. Gently blot and wipe dry.



3-4-04c.pcx

3. Allow the copper-colored area to dry before installing the cartridge.
4. Install the cartridge.
5. Repeat the Nozzle Test.
6. If the line is still broken, clean the contacts inside the print cartridge carrier in the printer. Refer to the Clean the Carrier Contacts section of this procedure.

Clean the Carrier Contacts

Wipe the nozzles and contacts if the print quality does not improve after repeating the Nozzle Test three times.

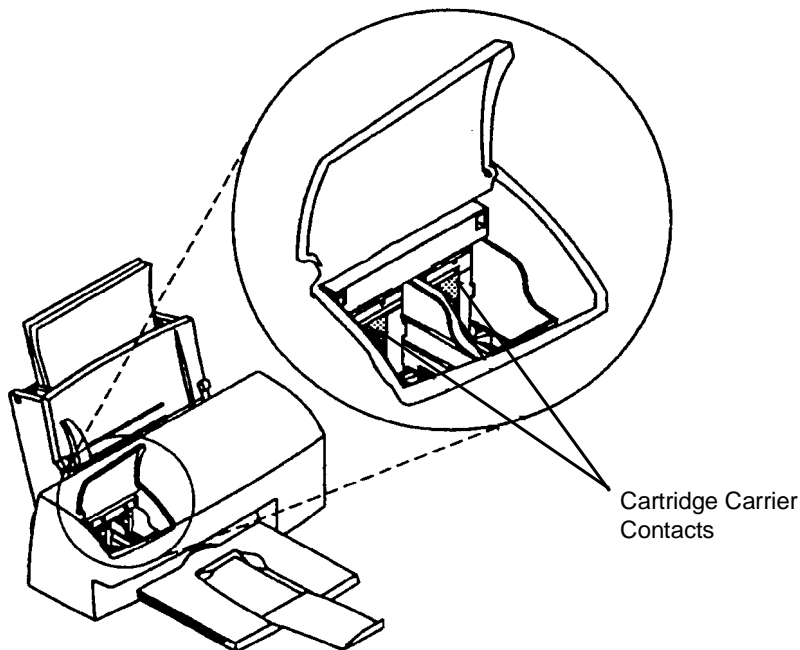
Dried ink may be on the print cartridge.

1. Open the printer control dialog box.
2. Click on the Cartridges tab.
3. Click on Install Black Cartridge or Install Color Cartridge to move the print cartridge carrier to the load position.
4. Unplug the printer power cord from the electrical outlet.

DO NOT power OFF the printer before it is unplugged!

This will force the print cartridge carrier to remain in the load position.

5. Remove the cartridges.



3-4-04d.pcx

6. Use a clean, dry cloth to clean the contacts inside the cartridge carrier in the printer.
7. Replace the cartridges.
8. Plug the printer power cord into an electrical outlet.
9. Power ON the printer.
10. Click on Old Cartridge Installed.
DO NOT click on New Cartridge Installed.
If you do, you will reset the ink counter.
11. Test the cartridges by clicking on Clean Print Nozzles on the Cartridges tab.
12. If the print quality does not improve, replace the print cartridge.

3.5 LUBRICATION

3.5.01 General Information

If the lubrication procedures are not performed properly, the printer will require more frequent cleaning. Excessive lubricant attracts dust and accumulations build up quickly. An accumulation of paper dust is a frequent cause of print quality problems in a printer.

3.5.02 Lubrication Schedule

Lubricate when parts are replaced

or

Lubricate as needed.

There is no regular schedule for lubrication.

3.5.03 Lubrication Types and Amounts

Do NOT over-lubricate the printer. Operational problems are caused by excess lubricant. The excess lubricant causes dust to accumulate. These accumulations can jam gears or cause print problems.

Type	Amount	Location
Nye Nyogel 744	Small	All gear mounting studs
	Small	Left and Right ends of the large feed roller at the left side frames
	Small	Both ends of the sheet feeder pick roll shaft at the side frames
	Small	The carrier to carrier frame engagement

3.5.04 Areas Not Lubricated

Lubricant should never contact the parts listed below.

Carrier Guide Rod

Carrier Guide Rod Bearings

Electrical Contacts and Connections

3.6 SHIPPING INSTRUCTIONS

3.6.01 Return for Service

CAUTION:

When shipping the printer, use the original packaging to prevent damage.

Be sure to remove the print cartridges.

1. Locate the original packaging or order replacement packaging from Okidata. (Refer to Appendix B)
2. Remove the print cartridges. This will prevent damage to the printer during shipment.
3. Pack the unit, using the materials from Step 1.

WARNING:

Failure to remove the print cartridges may result in Okidata charging your dealership a fee for cleaning / repairs.

3.6.02 All Other Returns

CAUTION:

*The product **MUST** be returned in the original packaging.*

*The product **MUST** be returned with **ALL** originally supplied factory items.*

Be sure to remove the print cartridges.

1. Locate the original packaging or order replacement packaging from Okidata. (Refer to Appendix B)
2. Locate the originally supplied factory items.
(Refer to the User's Guide.)
3. Remove the print cartridges. This will prevent damage to the printer during shipment.
4. Pack the unit, using the materials from Step 1.

WARNING:

Failure to remove the print cartridges may result in Okidata charging your dealership a fee for cleaning / repairs.

3.7 PRINT CARTRIDGE MAINTENANCE

3.7.01 General Information

NOTE:

DO NOT install the print cartridges in the printer until you are instructed to do so during the installation of the printer software.

The information provided in this section is also provided in the User's Guide.

The printer comes with two cartridges: one black and one color.

The installation process is the same for both.

Each cartridge must be inserted into the correct position in the print cartridge carrier. To do this, match the color of the cartridge top to the color of the strips on the carrier. Black goes to black (black cartridge) and green goes to green (color cartridge).

Observe the following recommendations to get the maximum benefit from the print cartridges.

Keep the print cartridges in their packaging until you are ready to install them. This prevents the printhead from drying out.

Never refill the print cartridges.

Refilling empty print cartridges with unapproved ink will invalidate your warranty. Incompatible inks can cause damage to the printhead or to the printer.

For best results, use Okidata supplies with the printer.

Store the print cartridge in the same environment as the printer.

Always keep the print cartridges in the print carriage, except to replace or clean them.

Always leave the print carriage in the parked position (at the far right end of the printer) when not printing. This prevents the printhead from drying out.

If you do remove the print cartridges, replace them immediately. They will not print correctly if they are left exposed to air for an extended period.

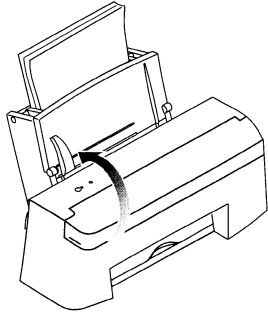
Each print cartridge includes both the ink supply and the printhead. When a print cartridge is replaced, the printhead is also replaced.

When the Ink Low message appears for the black cartridge, there is enough ink to print approximately 150 more pages of text.

When the Ink Low message appears for the color cartridge, you have enough ink to print approximately 30 pages.

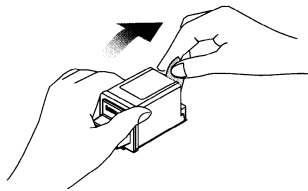
3.7.02 Installation

1. Make sure that the printer is powered ON.
2. Open the printer access cover.



3-7-01a.pcx

3. Remove the black print cartridge from its packaging.
DO NOT touch the copper-colored area!
Hold the cartridge by its plastic surfaces.
4. Carefully remove the tape covering the printhead on the print cartridge.
Be sure to remove all the tape.
DO NOT touch the copper-colored area!



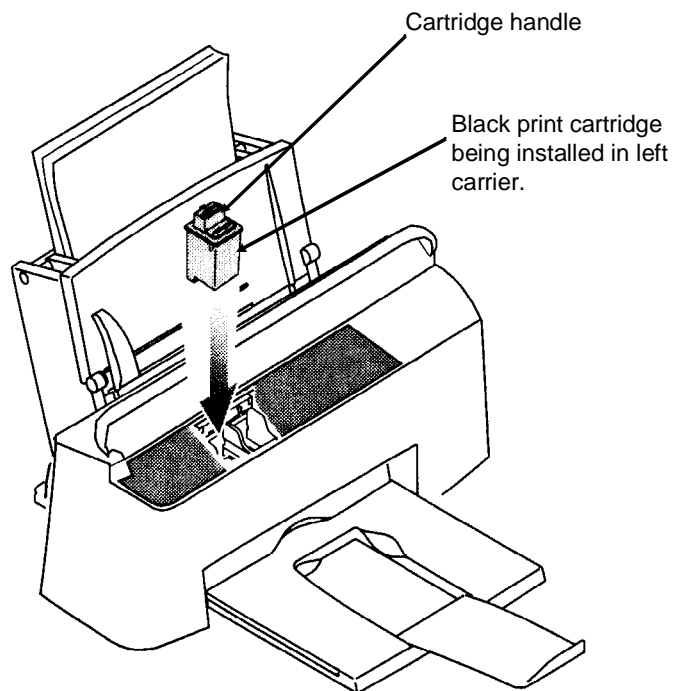
3-7-01b.pcx

5. Insert the black print cartridge in the carrier.

The print cartridges must be inserted in the correct position in the carrier.

Match the black print cartridge handle to the black color strip on the carrier.

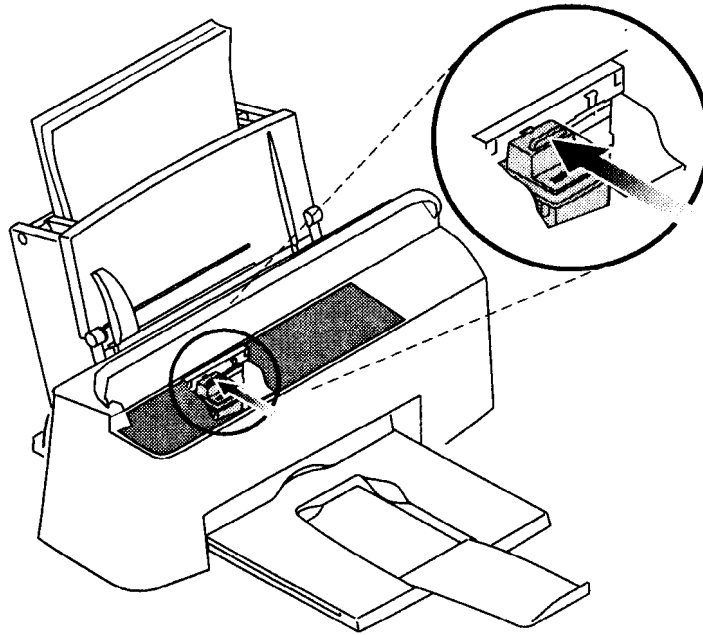
As you are facing the printer, the black print cartridge is installed in the left-hand position.



3-7-01c.pcx

6. Push back firmly on the handle until the print cartridge snaps into place.

If the print cartridge moves loosely in the carrier, it is not locked into place.
Repeat this step.



3-7-01d.pcx

7. Install the color cartridge using the same steps.

Match the color print cartridge's green handle to the green color strip on the carrier. As you are facing the printer, the color print cartridge is installed in the right-hand position.

8. Close the printer access cover.
9. Continue to follow the instructions on the computer screen.

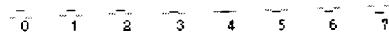
10. Align the printheads.

When the Align Cartridges dialog box appears, wait while the printer prints a test page with patterns. Each pattern has a number located beneath it.

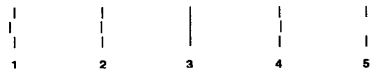
Horizontal Alignment of Heads



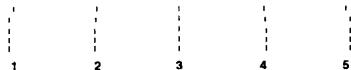
Vertical Alignment of Heads



Bi-directional Alignment Pattern
(Black)



Bi-directional Alignment Pattern
(Color)



3-3-02b.pcx

11. Using the printed test page, select the number of the patterns that are aligned correctly.

In this example, the correct choices are

3 for Horizontal Alignment.

4 for Vertical Alignment.

3 for Bi-directional Alignment for both black and color.

12. Enter the number located under each pattern into the boxes on the Align Cartridges Tab.

13. Click *OK*.

14. If you remove the print cartridges, they will dry out.

Remove them only when you are instructed to do so, or to replace them.

3.7.03 Replacement

NOTE:

Be sure to perform all print cartridge replacement steps from start to finish without interruption.

If you are interrupted when replacing the print cartridges and leave the print cartridge carrier in the load position for more than three (3) minutes, the carrier automatically returns to the far right position.

The Cartridges tab remains displayed on the screen.

If you have not yet inserted the new cartridge, click Cancel and begin the installation process again.

If you have inserted the new cartridge, click New Cartridge Installed.

1. Make sure that the printer is powered ON.
2. Open the printer access cover.
3. Double-click on the Printer Control Icon.
4. Click on the Cartridges tab.
5. Click on Install Black Cartridge or Install Color Cartridge, depending on which cartridge is being replaced.

The print cartridge carrier moves to the load position.
6. Pull the handle of the cartridge you are replacing towards you until it snaps free.
7. Lift the cartridge out of the printer. If you are removing and reinserting the same cartridge, skip to Step 10.
8. Remove the replacement print cartridge from its packaging.

DO NOT touch the copper-colored area!

Hold the cartridge by its plastic surfaces.
9. Carefully remove the tape covering the printhead on the print cartridge.

Be sure to remove all the tape.

DO NOT touch the copper-colored area!

10. Insert the cartridge in the carrier.

The print cartridges must be inserted in the correct position in the carrier.

Match the black print cartridge handle to the black color strip on the carrier.

Black

As you are facing the printer, the black print cartridge is installed in the left-hand position.

Color

Match the color print cartridge's green handle to the green color strip on the carrier. As you are facing the printer, the color print cartridge is installed in the right-hand position.

11. Push back firmly on the handle until the print cartridge snaps into place.

If the print cartridge moves loosely in the carrier, it is not locked into place. Repeat this step.

12. If you are installing a new print cartridge, click New Cartridge Installed. Then, go to Step 13.

Clicking on New Cartridge Installed resets the ink counter.

If you are removing and reinstalling the same print cartridge, click Old Cartridge Installed. The installation is complete.

13. Click Align Cartridges.

The Align Cartridges dialog box appears on the screen.

The printer prints a test page with horizontal patterns and vertical patterns.

Each pattern has a number located beneath it.

14. Referring to the printed test page, note the patterns that are correctly aligned.

15. Enter the number located under each properly aligned pattern into the boxes on the screen.

Refer to Section 3.3 for a sample alignment test pattern.

16. Click OK.

17. Close the printer access cover.

3.7.04 Disposal

CAUTION:

DO NOT shake the cartridge.

The remaining ink can leak.

Before discarding a used print cartridge, place it in a leak-proof bag to contain any remaining ink.

If ink is spilled, use an absorbent towel to wipe up the ink.

Rinse with soap and water.

SECTION FOUR
FAILURE ANALYSIS

4.1 OVERVIEW

4.1.01 Introduction

This section is used to isolate problems to the assembly level. Application problems and detection of faulty components on the printed circuit boards are NOT addressed.

When troubleshooting a defective unit, follow these steps.

1. Refer to Section 4.3, which explains where to check for updates to the troubleshooting information.
2. Section 4.4 contains tips on preventing problems, as well as a list of common problems.
3. Section 4.5 shows samples of abnormal outputs.
4. Section 4.6 provides tables of error messages.
5. Section 4.7 contains the Repair Analysis Procedures (RAPs). Each RAP will ask you questions or require you to make observations. The answers to these questions and the results of your observations determine your next course of action. Use the RAP Index to identify which RAP should be used to resolve the problem with the machine.
6. Section 4.8 provides the procedures for various printer tests.
7. Section 4.9 lists the resistance check points.
8. Section 4.2 lists methods for reporting problems. If you encounter a situation that is NOT addressed by the documentation in this kit, please report the problem to Okidata, using one of the methods listed.

Refer to the Course Administration Section of this Service Handbook or the Service Center Reference Guide for information on contacting Okidata.

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4.1.02 Printer Serial Number Identification

To identify the revision level of a printer, record the serial number from the back of the printer. Refer to the following to decode the serial number.

Example Printer Serial Number: 401A0154693

Date Code 401 (4 = year. 01 = month)

Revision A

Serial Number 0154693

4.1.03 Code Level Identification

To identify the code level and code level date, print the Test Page.

Refer to Section 4.8 for information on printing the test.

The first line of the test page is the code level and the code level date.

Header

At the top of the test is a header.

This header provides the information listed below.

1 ↓	2 ↓
1425527	3/24/95

4-8-02.pcx

- | | | |
|----|-----------------|----------|
| 1. | Code Level | 1425527 |
| 2. | Code Level Date | 03/24/95 |

4.2 REPORTING PROBLEMS

4.2.01 General Information

Okidata strives to provide accurate and detailed service information through its training materials. Okidata realizes that service technicians have valuable experience, knowledge, and opinions. Okidata strongly encourages you to report any problems you may encounter when using the materials of this training kit. Please be as specific and detailed as possible. Your comments, suggestions, and criticisms are used to update and revise training kits.

You should reference the training materials when servicing Okidata products. Most problems can be solved by using the information provided in the training materials. If you encounter a situation that cannot be solved, please let Okidata know.

Refer to the Course Administration section of this Service Handbook or the Service Center Reference Guide for information on contacting Okidata.

4.2.02 Problem Lists

Technicians frequently request a list of common problems specific to a product. Service Training Kits are written before a product is shipped to customers. Therefore, such information is NOT available when a product is first released.

However, Okidata wants to respond to these requests. Okilink II provides round-table discussions on technical problems. Errors and corrections in the training materials are listed in the Training Section of Okilink II. The Technical Service Bulletins (also known as Okidata's Monthly Mail) are available via Okilink II. Situations that are NOT addressed in the reference documentation, technical service bulletins, or round-tables may be reported to the Dealer Service and Support Engineers (Contact Technical Support) or the Technical Training Group (via Okilink). You will receive a response to your message within one business day.

The information on Okilink II is the most accurate and up-to-date technical information available from Okidata. This is only possible with your assistance. By reporting your suggestions, concerns, and problems, Okidata can provide the best possible information.

Your cooperation is greatly appreciated. Thank you for your help!

4.2.03 Reporting Methods

Okilink II

You may use Okilink II to report your findings. Refer to the Course Administration section of this Service Handbook or the Service Center Reference Guide for information on using Okilink II.

Course Critique

Use the Course Critique to report any problems you find as you are completing the self-paced training.

Fax Number

If you wish to fax your response, please use the numbers listed in the Course Administration section of this Service Handbook or the Service Center Reference Guide.

Mailing Address

If you respond by mail, please use the appropriate address listed in the Course Administration section of this Service Handbook or the Service Center Reference Guide.

Information Provided

Please provide the following information when reporting problems.

Okidata Dealer Number (if assigned)

Technician's Name

Company Name

Company's Address (Street, City, State/Province, ZIP / Postal Code, Country)

Telephone and Fax Numbers (with area / country access codes)

Product Name

Unit's Serial Number

Firmware Revision Level

Description of Problem

Document Name (with page number or procedure) with error or problem.

4.3 TROUBLESHOOTING UPDATES

4.3.01 General Information

Okidata distributes updated troubleshooting information five ways.

Okilink II

Faxable Facts

Technical Service Bulletins

Dealer Technical Support

Okidata Service Repair Depots

Refer to the Course Administration section of this Service Handbook and the Service Center Reference Guide for information on accessing these distribution methods.

4.4 TROUBLESHOOTING TIPS

4.4.01 Preliminary Checks

1. The printer can be serviced without being connected to a host computer.
2. Is the product being operated under the proper ambient conditions?
3. Does the paper being used meet the specifications for this product?
4. Have the print cartridges been replaced as recommended?
5. Have the print cartridge been installed properly?
6. Are Okidata print cartridges being used?
7. Are the printheads correctly aligned?
8. When replacing the system board, be sure to remove the EPROM. Keep it and install it in the new (replacement) board.

Replacement printed circuit boards are shipped WITHOUT the EPROM.

When removing the EPROM, you MUST follow standard Electrostatic Sensitive Device (ESD) safety precautions or you may damage the components.

9. Is the firmware the latest (current) revision?
10. Are the correct printer drivers being used for the printer?
11. Is the printer driver being used the latest (current) release?

4.4.02 Problem Categories

The categories of problems that you might encounter when servicing the printer are listed below.

Service Error Indicators (Power ON light flashes)

Service Error Indications are displayed as a series of flashes of the Power ON light.

There is a pause between each series of flashes.

If you believe that the printer is experiencing an intermittent error, or that the error has been cleared, perform the Printer Error Log Recovery to determine the last service error. Refer to Section 4.8 for further information.

Refer to the Error Indicator Table in Section 4.6 to identify both the error condition and the recommended corrective action for each condition.

Refer to Section 4.6 for further information.

Operational Errors

An Operational Error is usually not accompanied by an ALARM Lamp.

Refer to the Start Here Flowchart (Section 4.4.03) or the Symptoms List (Section 4.6) and perform the corrective action.

Power-On-Self-Test (POST) Sequence Fails

When the printer is powered ON, the Power On Self Test (POST) Sequence occurs.

If the unit DOES NOT complete POST, refer to the POST Symptom Table and perform the indicated action

Refer to Section 4.6 for further information.

4.4.03 START HERE Flowchart

START

Is the Power ON light flashing?

YES Count the number of flashes between pauses.

Refer to Service Error Indications, Section 4.6 of this Service Handbook.

NO The problem may be an intermittent error or the error indicator lights may have been cleared.

Perform the actions in the listed order.

1. Run the Printer Error Log Recovery. Refer to Section 4.8 of this Service Handbook.
2. Run the Initialize Error Log to clear the error. Refer to Section 4.8 of this Service Handbook.
3. Run the Test Page. Refer to Section 4.8 of this Service Handbook.
4. Run the Power On Self Test (POST) Sequence. Refer to Section 4.6 of this Service Handbook.

4.4.04 Tips for Preventing Image Problems

1. Make sure that the print cartridges are not "used up". If the printer output is faded, install a new print cartridge, then print another sample.
2. Make sure that the paper you are using is within specifications. Paper specifications can be found in Section 1 of this Service Handbook.
3. Always perform the Printhead Alignment Adjustment after installing a print cartridge. Refer to Section 3.3 of this Service Handbook for details about the Printhead Alignment Adjustment.
4. Perform the Print the Nozzle Test to clean the nozzles. Refer to Section 3.4 of this Service Handbook for details about the Print the Nozzle Test.

4.4.05 Common Problems

Use this section to identify and solve common printer problems.

Additional troubleshooting information can also be found in the on-line Help provided with the printer control software.

The printer can be serviced without being connected to a host computer.

1. Nothing happens when the printer is powered ON.

Make sure the printer is plugged in.

Check the power cord connection to the printer and the outlet.

If a power strip is being used, make sure the strip is powered ON.

2. Printer output is light or blurred.

In the printer setup dialog box:

Click the Media / Quality tab, then

change the Print Quality setting to something other than Draft.

and / or turn the Ink Saver setting off.

Click the Image Settings tab, then make a Brightness and Contrast adjustment.

Make sure that you are using the correct type of paper.

Check the print cartridges.

Make sure that the cartridges are installed correctly.

Clean the nozzles. Refer to Section 3.4 of this Service Handbook, Print the Nozzle Test.

Check the ink level. Click on the Cartridges tab in the Printer Control Dialog box.

3. Printer output is smudged or dark.

In the Printer Setup Dialog box, click the Media / Quality tab, then change the Ink Saver setting to Medium or Maximum.

Check the paper being used.

Make sure that the correct type of paper is being used.

Make sure that the paper is straight and unwrinkled.

Let the ink dry before handling the paper.

In the Printer Setup Dialog box, click the Media / Quality tab, then change Print Quality to Draft.

Clean the print cartridge nozzles. Refer to Section 3.4 of this Service Handbook, Print the Nozzle Test.

4. Printer output has characters with white lines.

Check the print cartridges.

Check the ink level by clicking on the Cartridges tab in the Printer Control Dialog box.

Remove and reinstall the print cartridge. Refer to Section 3.7 of this Service Handbook.

Clean the print cartridge nozzles. Refer to Section 3.4 of this Service Handbook, Print the Nozzle Test.

If printing on transparencies, try changing the fill pattern in the application software.

5. Printer output characters are improperly formed or misaligned.

Clean the print cartridge nozzles. Refer to Section 3.4 of this Service Handbook, Print the Nozzle Test.

6. Characters do not align correctly at the left margin.

Make sure that there are no hard-coded spaces at the left margin.

Clean the print cartridge nozzles. Refer to Section 3.4 of this Service Handbook, Print the Nozzle Test.

7. Vertical straight lines are not smooth in tables, borders, and graphs.

Clean the print cartridge nozzles. Refer to Section 3.4 of this Service Handbook, Print the Nozzle Test.

If high speed mode is being used, perform the printhead alignment. Refer to Section 3.3 of this Service Handbook.

In the printer setup dialog box, click the Media / Quality tab, then turn off the High Speed option.

8. Black portions of graphics do not align with color portions.

Perform the printhead alignment. Refer to Section 3.3 of this Service Handbook.

9. Solid black areas on transparencies contain white streaks.

Try using a different fill pattern in the application software.

10. Power is turned on at the power strip, but the printer power light is not on.

Press the printer power switch.

Make sure that the printer power cord is plugged into the printer and the electrical outlet.

Make sure that the electrical outlet is working.

11. The printer power light (next to the power switch) does not come on when the printer is powered on.

Make sure that the printer power cord is plugged into the printer and the electrical outlet.

Make sure that the electrical outlet is working.

12. Printer seems to be printing, but no characters appear on the paper.

Make sure that the print cartridges are installed in the printer and are locked into place.

Make sure that the tape was removed from the print cartridges before they were installed.

13. Old document prints with different fonts.

When you print a document that has been formatted for a different printer, Windows may substitute different fonts. Line breaks and page breaks may change also. Check the document and make any necessary changes. Then, save the changes for the next time the document is printed.

14. Printer power is on, but nothing prints (no action from the printer).

Make sure that the paper load door is closed.

Make sure that the interface cable is firmly inserted into the printer's interface connector.

Check the printer status in the control software Spool Manager. In the spool manager dialog box, click Queue, then make sure that no check mark appears next to the Hold option.

Try to print the test page.

Click on the Control tab in the Printer Control Dialog box.

If it prints, the printer is functioning properly.

If you are printing from a non-Windows based application, check your DOS printer port settings, driver, and your application settings.

15. Unexpected characters are printed or characters are missing.

Replace the parallel interface cable.

You may be printing a DOS application with the wrong printer driver selected. If you don't know if you are printing from a DOS or Windows-based application, press ALT + ENTER.

If the appearance of your screen changes, it's a DOS application. Press ALT + ENTER again. Refer to the User's Guide for instructions on printing from DOS applications.

16. Printer settings in the printer dialog boxes or the DOS Printing dialog box were not in effect.

Printer settings in your application sometimes override settings in the Printer Dialog Boxes.

Make all printer setting changes in your application if possible.

Use the Printer Dialog Boxes to make changes only if your application does not have that option.

17. Printer prints very slowly.

NOTE:

Graphics print more slowly than text.

Change print quality to Draft.

In the Printer Setup Dialog box, click the Media / Quality tab, then click the High Speed option.

Consider purchasing more memory for the personal computer.

In Windows, consider increasing the virtual memory to a larger value.

18. Printer power light is blinking and a Service Error message appears on your computer screen.

Power OFF the printer, then unplug the printer power cord from the electrical outlet.

Remove any paper fragments, objects, or paper jams in the printer.

Plug the printer power cord into an electrical outlet and power ON the printer.

If the light continues to blink, refer to Section 4.6 of this Service Handbook.

19. Paper jams.

Power OFF the printer.

Open the paper load door.

Pull firmly on the paper and remove it.

Close the paper load door.

Power ON the printer.

Resend the print job. Start with the page on which the paper jam occurred.

20. Paper sticks together / multiple sheets of paper feed together.

NOTE:

Humid conditions may cause some paper to stick together.

Make sure that there is not too much paper in the sheet feeder.

Make sure that the correct type of paper is being used.

Remove the paper from the sheet feeder and flex or fan it.

Make sure that the paper load door is closed.

When loading the paper, do not force the paper down into the printer.

21. Paper fails to feed.

Make sure that the paper load door is closed.

Remove any obstructions inside the printer.

22. Paper skews or buckles.

Make sure that there is not too much paper in the sheet feeder.

Make sure that the paper guides do not cause the paper to bow in the sheet feeder.

Make sure that you are using the correct type of paper.

When loading paper, do not force the paper down into the printer.

Make sure that the right side of the paper is against the right paper guide and the left paper guide is set against the left side of the paper.

Make sure that the envelope guides are not in the envelope position.

If loading paper into the manual feeder, make sure that the media guide is next to the left side of the paper.

Make sure that the printer is installed on a flat, level surface.

23. Envelopes skew or fail to feed correctly.

Make sure that the envelope guides have been turned to the envelope load position.

Make sure that the envelopes are loaded using the envelope guides.

If loading envelopes in the sheet feeder, make sure both envelope guides are against the envelopes.

Make sure that the envelope guides do not cause envelopes to bow in the sheet feeder.

If loading envelopes in the manual feeder, make sure that the right edge of the envelope is against the raised edge beside the envelope symbol on the manual feeder.

Make sure that the media guide is next to the left side of the envelope.

24. Transparencies stick together in the exit tray.

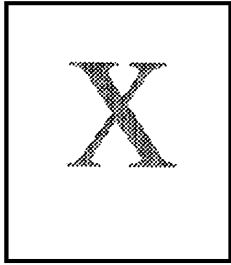
Make sure that the transparencies being used are designed for an ink-jet printer.

Remove each transparency as it exits from the printer. Be careful not to touch any printed area until the ink has dried.

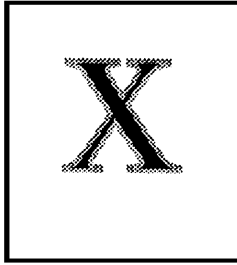
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4.5 ABNORMAL OUTPUT

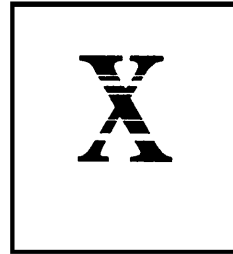
4.5.01 Output Samples



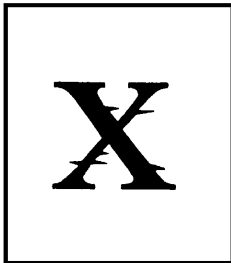
Light or Blurred
Characters



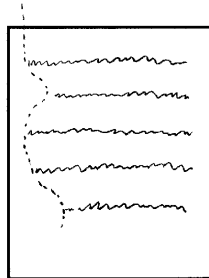
Smudged or Dark
Characters



Characters with
White Lines



Improperly formed or
mis-aligned characters



Drifting Margin

4-5-01a.pcx

Light Or Blurred Output

In the printer setup dialog box:

Click the Media / Quality tab, then

change the Print Quality setting to something other than Draft.

and / or turn the Ink Saver setting off.

Click the Image Settings tab, then make a Brightness and Contrast adjustment.

Make sure that you are using the correct type of paper.

Check the print cartridges.

Make sure that the cartridges are installed correctly.

Clean the nozzles. Refer to Section 3.4 of this Service Handbook, Print the Nozzle Test.

Check the ink level. Click on the Cartridges tab in the Printer Control Dialog box.

Smudged Or Dark Output

In the Printer Setup Dialog box, click the Media / Quality tab, then change the Ink Saver setting to Medium or Maximum.

Check the paper being used.

Make sure that the correct type of paper is being used.

Make sure that the paper is straight and unwrinkled.

Let the ink dry before handling the paper.

In the Printer Setup Dialog box, click the Media / Quality tab, then change Print Quality to Draft.

Clean the print cartridge nozzles. Refer to Section 3.4 of this Service Handbook, Print the Nozzle Test.

Characters With White Lines

Check the print cartridges.

Check the ink level by clicking on the Cartridges tab in the Printer Control Dialog box.

Remove and reinstall the print cartridge. Refer to Section 3.7 of this Service Handbook.

Clean the print cartridge nozzles. Refer to Section 3.4 of this Service Handbook, Print the Nozzle Test.

If printing on transparencies, try changing the fill pattern in the application software.

Improperly Formed Or Misaligned Characters

Clean the print cartridge nozzles. Refer to Section 3.4 of this Service Handbook, Print the Nozzle Test.

Characters Do Not Align Correctly At The Left Margin

Make sure that there are no hard-coded spaces at the left margin.

Clean the print cartridge nozzles. Refer to Section 3.4 of this Service Handbook, Print the Nozzle Test.

Vertical Straight Lines Are Not Smooth In Tables, Borders, And Graphs

Clean the print cartridge nozzles. Refer to Section 3.4 of this Service Handbook, Print the Nozzle Test.

If high speed mode is being used, perform the printhead alignment. Refer to Section 3.3 of this Service Handbook.

In the printer setup dialog box, click the Media / Quality tab, then turn off the High Speed option.

Black Portions Of Graphics Do Not Align With Color Portions

Perform the printhead alignment. Refer to Section 3.3 of this Service Handbook.

Solid Black Areas On Transparencies Contain White Streaks

Try using a different fill pattern in the application software.

4.6 FAULT ALARMS

4.6.01 General Information

The printer can be serviced without being connected to a host computer.

When an error condition exists, the Power ON light will flash. The type of error condition can be determined by counting the number of flashes.

Refer to the Flashing Power ON Error Indicators in this section to identify both the error condition and the recommended corrective action for each condition.

Flashing Power Light Error Indicator Table

Service Error Indications

Service Error Indications are displayed as a series of flashes of the Power ON light.

There is a pause between each series of flashes.

If a Service Error Indication is displayed, refer to the table shown below.

Locate the Service Error Indication and take the corrective action.

After taking the corrective action, unplug the unit to clear the error indicator.

Flashing Power ON Light Error Indicator Table

Number of Power Light Flashes	Error Code	Action
1	81	Perform RAP 09, Transport Service Check. Refer to Section 4.7 of this Service Handbook.
4	89	Perform RAP 09, Transport Service Check. Refer to Section 4.7 of this Service Handbook.
6	66 - 78	Replace the Code Module and / or the system board.
7	64 65	Replace the Code Module and / or the system board.
8	83	Replace the Code Module and / or the system board.
9	79	Replace the Code Module and / or the system board.
10	127 and up	Replace the Code Module and / or the system board.

4.6.02 Power On Self Test (POST) Sequence

When the printer is powered ON, the Power On Self Test (POST) Sequence occurs.

Correct POST

The correct POST sequence is listed below.

1. The power light comes on.
2. The carrier moves over the maintenance station and seals the printheads.
3. The paper feed gears turn.
4. All motors stop and the power light stays on.

If the unit completes the POST with no errors, refer to the Symptom Lists, Section 4.6 of this Service Handbook.

If the unit DOES NOT complete POST, refer to the POST Symptoms List and perform the indicated action

POST Interrupted by Errors

If the unit DOES NOT complete POST, refer to the POST Symptoms List and perform the indicated action

POST Symptoms List

No Power ON light and no motors run

Refer to RAP 07, Power Service Check, Section 4.7 of this Service Handbook

Paper feeds

Refer to RAP 02 First Print Line Service Check, Section 4.7 of this Service Handbook

Paper feed gears do not turn

Refer to RAP 04, Paper Feed Service Check, Section 4.7 of this Service Handbook

Carrier does not move

Refer to RAP 09, Transport Service Check, Section 4.7 of this Service Handbook

Carrier slams side frame

Refer to RAP 09, Transport Service Check, Section 4.7 of this Service Handbook

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4.6.03 Symptom Lists

Carrier Transport Problems

No carrier movement

Refer to RAP 09, Transport Service Check, Section 4.7 of this Service Handbook

Slow carrier movement

Refer to RAP 09, Transport Service Check, Section 4.7 of this Service Handbook

Carrier stops

Refer to RAP 09, Transport Service Check, Section 4.7 of this Service Handbook

Carrier slams side frame

Refer to RAP 09, Transport Service Check, Section 4.7 of this Service Handbook

Communications Problems

Printer is not communicating with the host computer

Refer to RAP 06, Parallel Port Service Check, Section 4.7 of this Service Handbook.

Maintenance Station Problems

Maintenance Station fails to cap the printhead

Refer to RAP 08, Maintenance Station Service Check, Section 4.7 of this Service Handbook

Maintenance Station fails to clean the printhead.

Refer to RAP 08, Maintenance Station Service Check, Section 4.7 of this Service Handbook

Paper Feed Problems

Paper fails to stop at the first print line.

Refer to RAP 02 First Print Line Service Check, Section 4.7 of this Service Handbook

The unit fails to pick paper.

Refer to RAP 04, Paper Feed Service Check, Section 4.7 of this Service Handbook

The unit picks more than one sheet of paper.

Refer to RAP 04, Paper Feed Service Check, Section 4.7 of this Service Handbook

The unit picks paper but fails to feed.

Refer to RAP 04, Paper Feed Service Check, Section 4.7 of this Service Handbook

Paper jams.

Refer to RAP 04, Paper Feed Service Check, Section 4.7 of this Service Handbook

Paper fails to exit.

Refer to RAP 04, Paper Feed Service Check, Section 4.7 of this Service Handbook

Noisy paper feed.

Refer to RAP 04, Paper Feed Service Check, Section 4.7 of this Service Handbook

Envelopes fail to feed.

Refer to RAP 01, Envelope Feed Service Check, Section 4.7 of this Service Handbook

Paper Skews

Refer to RAP 05, Paper Path Service Check, Section 4.7 of this Service Handbook

Power Problems

No power in machine

Refer to RAP 07, Power Service Check, Section 4.7 of this Service Handbook

No Power ON light

Refer to RAP 07, Power Service Check, Section 4.7 of this Service Handbook

No motors

Refer to RAP 07, Power Service Check, Section 4.7 of this Service Handbook

Print Quality Problems

Voids in Characters

Refer to RAP 08, Print Quality Service Service Check, Section 4.7 of this Service HandbookLight Print

Prints off the page

Refer to RAP 08, Print Quality Service Service Check, Section 4.7 of this Service HandbookLight Print

Fuzzy print

Refer to RAP 08, Print Quality Service Service Check, Section 4.7 of this Service HandbookLight Print

Carrier moves, but does not print

Refer to RAP 08, Print Quality Service Service Check, Section 4.7 of this Service HandbookLight Print

Printhead drying prematurely

Refer to RAP 08, Print Quality Service Service Check, Section 4.7 of this Service HandbookLight Print

Vertical alignment off

Refer to RAP 08, Print Quality Service Service Check, Section 4.7 of this Service HandbookLight Print

Ink Smearing

Refer to RAP 04, Paper Feed Service Check, Section 4.7 of this Service Handbook

Vertical streaks on paper

Refer to RAP 04, Paper Feed Service Check, Section 4.7 of this Service Handbook

Print lines crowded

Refer to RAP 04, Paper Feed Service Check, Section 4.7 of this Service Handbook

4.7 REPAIR ANALYSIS PROCEDURES (RAPs)

4.7.01 Using the RAPs

The printer can be serviced without being connected to a host computer.

When using the Repair Analysis Procedures, follow these steps.

1. Go to the Symptoms Lists. Refer to Section 4.6 of this Service Handbook.
2. Find the symptom that matches the printer's problem.
3. Find the RAP which is associated with the symptom.
4. Go to the appropriate RAP.

4.7.02 RAP Index

Description	RAP Number
Envelope Feed Service Check	01
First Print Line Service Check	02
Maintenance Service Check	03
Paper Feed Service Check	04
Paper Path Service Check	05
Parallel Port Service Check	06
Power Service Check	07
Print Quality Service Check	08
Transport Service Check	09

RAP 01: Envelope Feed Service Check

1. Check the envelope guides.

Be sure that the envelope guides have been turned to the envelope load positions.

Be sure the envelope guides are against the envelopes.

Perform the Paper Feed Service Check.

RAP 02: First Print Line Service Check

1. Check the End of Forms Flag for binds or damage.
2. Check the End of Forms Sensor for dirt.
3. Perform the End of Forms Sensor Test.

Refer to Section 4.8 of this Service Handbook.

This checks the operation of the end of forms sensor on the sensor board.

4. Check all parts of the feed arm assembly for binds, wear, or damage.

RAP 03: Maintenance Service Check

Check the maintenance station for worn or broken parts.

Check for loose or worn wipers.

Check for loose or worn caps.

The maintenance station has two functions.

1. It cleans the printhead nozzles during the print operation.
2. It seals the printhead when it is not being used. This prevents the nozzles from drying.

Maintenance Station Assembly

The carrier moves to the right over the maintenance station

A slot on the bottom of the carrier engages a tab on the sled of the maintenance station.

This causes the maintenance station caps to rise and seal the printheads.

Carrier movement to the left uncaps the printheads.

The wipers clean the printhead nozzles as the carrier leaves the maintenance station.

The wipers clean the printheads only when the carrier is moving to the left.

No wiping action (of the printhead nozzles) should occur when the carrier is moving to the right.

After the cleaning operation is complete, a tab on the maintenance station engages a slot on the carrier.

This lowers the wipers.

Wiper

A worn wiper causes degraded print quality just after a maintenance cleaning.

Cap

A worn cap causes the printhead nozzles to dry and clog.

RAP 04: Paper Feed Service Check

Does the machine have paper jam problems?

YES Perform the following procedures in the listed order. Check the operation of the unit between each step.

Check the entire paper path for obstructions.

Be sure that the sheet feeder is properly loaded. Be sure that there is not too much paper loaded.

Be sure that the paper being used meets specifications. Refer to Section 1 of this Service Handbook for paper specifications.

Check for static cling in the paper.

NO Perform the numbered checks in the listed order.

Check the operation of the unit between each step.

1. Check the system board.

Check for + 24 vdc between J5-3 and ground and between J5-4 and ground on the system board.

Disconnect J5.

Power ON the unit.

If the voltage is not present, check for motor pins shorted to the motor housing. Replace the motor if you find a shorted pin.

If the problem is not resolved, replace the system board.

2. Check the paper feed motor.

A noisy or chattering motor or a motor that fails to turn can be caused by:

an open or short in the motor.

an open or short in the motor driver on the system board.

a bind in the paper feed mechanism.

Check for 100 ohms (+/- 20 ohms) between the following pins on the paper feed motor.

Pin 1 to Pin 4

Pin 2 to Pin 4

Pin 3 to Pin 5

Pin 3 to Pin 6

If the readings are incorrect, replace the motor.

Check for motor pins shorted to the motor housing.

If you find a shorted pin, replace the motor.

If the problem remains, replace the system board.

Although the paper feeds in a forward direction only, the paper feed motor turns in two directions.

If the paper feed motor only turns in one direction, replace the system board.

Binds in the paper feed motor or gear train can cause intermittent false paper jam errors.

Remove the paper feed motor and check the shaft for binds.

Check for a loose or worn motor gear.

3. Check the gears.

Check for binds in the gear train and paper feed mechanism.

Rotate the large feed roll by hand.

If you find a bind, isolate it by removing one of the small idler gears on the inside of the left side frame.

Replace any worn or binding gears or rollers.

4. Check the feed arm assembly.

At the beginning of the paper feed operation, the paper feed motor reverses momentarily to allow the feed arm pawl to drop off the home position notch in the left side frame.

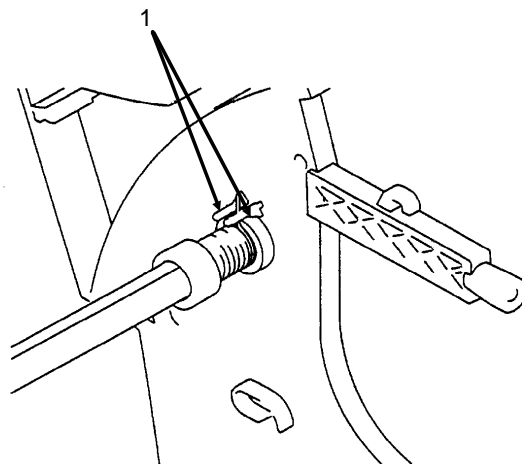
If the pawl fails to drop off the notch, check the feed arm assembly for binds, worn parts, and / or broken parts.

5. Check the pick roll clutch spring and right side frame.

After the paper reaches the feed rollers, the paper feed motor reverses, restoring the feed arm pawl to the home position notch in the left side frame.

If the feed arm pawl does not restore to the home position, or if a sheet of paper picks, check the pick roll clutch spring and right side frame for wear or broken parts.

Be sure that the extension on the clutch spring is between the two studs (1) in the right side frame.



4-7-01a.pcx

6. Check the sheet feeder.

Check the pick rollers for wear or damage.

Check the envelope bucklers for wear or damage.

Check all the parts inside the left and right edge guides for wear or damage.

7. Check the end-of-forms flag spring.

Check the spring for binds or damage.

8. Check the ejectors.

After the paper exits from the feed rollers, the paper feed motor reverses.

This causes the paper ejectors to move the last sheet of paper into the exit tray.

If the ejectors do not move or restore, check them for worn, loose, or broken parts.

Be sure that the ejectors are connected to the large feed roller shaft.

RAP 05: Paper Path Service Check

Examine the machine.

Check the entire paper path for obstructions.

Be sure that the paper guides are not worn or broken.

Be sure that the paper guides are positioned against the paper without binding or buckling the paper.

Be sure that the paper being used meets specifications. Refer to Section 1 of this Service Handbook for further information.

Be sure that the printer is installed on a flat surface.

Perform the numbered checks in the listed order. Check the operation of the unit between each step.

1. Check the large and small feed rollers for wear and binds. Replace if necessary.
2. Check the small feed roller springs, the paper guide, and the paper flap for damage. Replace if necessary.
3. Check the sheet feeder. Check the envelope bucklers for wear or damage. Check all parts inside the left and right edge guides. Replace if necessary.
4. Check the end of forms flag for binds or damage.
5. Check the operation of the ejectors.

After the paper exits from the feed rollers, the paper feed motor reverses. This causes the paper ejectors to move the last sheet of paper into the exit tray. If the ejectors do not restore, check them for worn, loose, or broken parts. Replace if necessary.

Be sure that the ejectors are connected to the large feed roll shaft.

RAP 06: Parallel Port Service Check

Check the parallel port.

Run a test page to be sure that the printer can print. Refer to Section 4.8 of this Service Handbook.

Run the Parallel Port Test. Refer to Section 4.8 of this Service Handbook.

If the test fails, replace the system board.

Check the communications jumper.

If the parallel cable has been replaced, and there is still a communications problem, move the communications jumper to pins 2 and 3.

RAP 07: Power Service Check

Check the power supply.

Disconnect J11 from the system board.

Check the following voltages on the power supply cable.

+ 5 vdc J11-1 to GND

+ 24 vdc J11-3 to GND

If you do not have the correct voltage, replace the power supply.

Be sure to unplug the machine before you reconnect the power supply to the system board.

Check the printhead cable, the parallel cable, and the encoder card.

Power OFF the printer.

Disconnect one of the printhead cables.

Power ON the printer.

Look for a symptom change.

Check the failing part for shorts and replace as necessary.

Repeat this procedure for the parallel cable and the encoder card.

Check the system board.

If the problem persists, replace the system board.

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RAP 08: Print Quality Service Check

1. Check the print cartridges. Replace if necessary.
2. Check the installation of the printhead carrier assembly.

Check the connections of the printhead cables to the system board.

Check the parts listed below for wear or damage. Replace if necessary.

Print Cartridge Latch

Latch Spring

Carrier

3. Check the system board, printhead cable, and rubber backer.

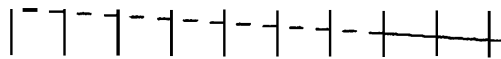
Print the Test Page. Refer to Section 4.8 of this Service Handbook.

Look for a break in the diagonal line of the test pattern.

A broken line indicates that one or more print nozzles are not working.

Run the test again to verify the failure.

If there are even breaks in the diagonal line similar to the pattern shown in the diagram, replace the system board.



4-7-01b.pcx

If there is a single break or random breaks in the diagonal line, check the items in the order listed below.

- A. Check the gold-plated contacts, on the end of the cable that connect to the carrier, for dirt and wear.

Use only a clean, dry cloth to clean the contacts.

Also check the cable for damage.

You may need to remove the cable from the carrier to inspect it.

- B. A worn rubber backer results in poor contact between the printhead cable and the print cartridge.

Check the rubber backer for wear.

Replace the rubber backer, if necessary.

4. Check the Maintenance Station

Intermittent nozzle failures can be caused by worn parts in the maintenance station.

Perform the Maintenance Station Service Check. Refer to RAP 03 of this Service Handbook.

If the Maintenance Station Service Check does not correct the problem, go to the next step listed below.

5. Check the Paper Feed

Ink smudging and smearing can be caused by paper problems or problems in the paper feed area.

Check the items listed below in the given order.

Verify that the correct type of paper is being used.

Check the paper for curl and wrinkles.

Check the feed rollers for wear, dirt, or looseness. Clean or replace as necessary.

Check the gears for wear or binds.

Clear any obstructions from the paper path.

6. Check the Transport Area.

Blurred print and voids can be caused by problems in the transport area.

Check the items listed below in the given order.

Transport belt for wear.

Carrier guide rod for wear or dirt.

The carrier to carrier frame engagement should be lubricated.

Refer to Section 3.5 of this Service Handbook for lubrication information.

DO NOT lubricate the carrier guide rod.

Idler pulley parts for wear, damage, or looseness.

Encoder strip for wear or dirt.

7. Perform the Printhead Alignment. Refer to Section 3.3 of this Service Handbook.

Uneven vertical lines can be adjusted by performing the Printhead Alignment.

The Printhead Alignment is performed whenever a print cartridge is installed.

The end user can perform the printhead alignment.

RAP 09: Transport Service Check

1. Check the transport motor.
 - A. Check the motor for binds, or a loose motor pulley.
 - B. Disconnect the transport motor (J6) from the system board.

Check for 8 to 18 ohms between pins 2 and 3 on the motor cable.
If the reading is incorrect, replace the motor.
 - C. Check for motor pins shorted to the motor housing.

If you find a pin shorted to the housing, replace the motor.
If the failure remains, replace the system board.
2. Check the system board.

Power OFF the printer.

Disconnect J6 from the system board.

Power ON the printer.

Check for a pulse of 6 to 8 vdc between J6-2 and ground and between J6-3 and ground on the system board as the printer goes through POST.

Refer to Section 4.4 of this Service Handbook for more information on POST.
3. Check the carrier guide rod.

Clean the carrier guide rod.

Use a clean, soft, lint-free cloth dampened with water.

Wipe dry.

DO NOT lubricate the rod or the carrier rod bearing surface.

4. Check the transport belt, idler pulley parts, and carrier frame.
 - A. Check for worn, loose or broken parts.
 - B. Check for obstructions blocking carrier movement.
 - C. The carrier to carrier frame engagement should be lubricated.
Refer to Section 3.5 of this Service Handbook for lubrication information.
DO NOT lubricate the carrier guide rod.
5. Check the encoder strip for wear and dirt.
6. Check the printhead cable.
 - A. Be sure that connector J4 is fully seated.
 - B. Check the cable for damage.
7. Check the encoder strip, the printhead cable, the encoder card, and the system board.

Perform the Encoder Sensor Test. Refer to Section 4.8 of this Service Handbook.

If you cannot enter the test, replace the system board.
8. Check the maintenance station.

A problem with the maintenance station can cause carrier movement problems at the right margin.

Perform the Maintenance Station Service Check. Refer to RAP 03 of this Service Handbook.

4.8 TESTS

4.8.01 General Information

This section covers the tests listed below.

Test Page

Parallel Port Test

Encoder Sensor Test

End of Forms Sensor Test

Initialize Error Log

Printer Error Log Recovery

4.8.02 Test Page

This procedure prints the test page.

The test page contains the code level and code level date information.

The test page is used to clean (purge) the nozzles.

It is also used to verify that all print nozzles are working. Any breaks in the diagonal line indicates that one or more nozzles are malfunctioning.

The test page also shows the vertical and horizontal alignment test patterns. These patterns are used to align the black printhead to the color printhead.

The printhead alignment must be performed whenever a print cartridge is replaced/installed.

Refer to Section 3.3 of this Service Handbook for information on the printhead alignment procedure.

Procedure

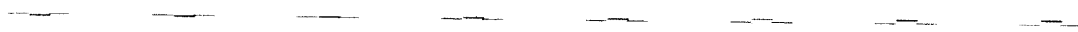
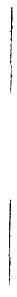
To print a test page, follow this procedure.

1. Read through the entire procedure before performing it.
2. Be sure that the print cartridges are in good condition.
3. Install a black print cartridge in the left side of the printhead cradle.
4. Install a color print cartridge in the right side of the printhead cradle.
5. Press the ON/OFF switch five times. Pause for one second between each press.
6. The test will print.
Pages will continue to print until the unit is powered OFF.
7. To end the test, power OFF the unit or unplug the printer.

Sample Test Page

1425527

3/24/95



4-8-02.pcx

Interpreting the Test Page

The first line of the test page is the code level and the code level date.

The next line is the black print cartridge nozzle pattern.

The next three lines are the purge pattern.

All nozzles print the purge pattern.

The purge pattern action cleans (purges) the nozzles.

Another nozzle test pattern follows the purge pattern.

The patterns repeat for the color cartridge.

The next patterns to print are the vertical and horizontal alignment test patterns.

These patterns are used to align the black printhead to the color printhead.

The alignment must be performed whenever a print cartridge is replaced.

Refer to Section 3.3 of this Service Handbook for information on the printhead alignment.

4.8.03 Parallel Port Test

This test performs a wrap around test between the printer parallel port and the parallel port test connector.

This test requires a parallel port wrap plug.

Procedure

To run the test, follow this procedure.

1. Power OFF the unit.
2. Move the two pin jumper on connector J13 of the system board to the position shown below.



4-8-03a.pcx

3. Install the parallel port wrap plug in the parallel port.
4. Power ON the printer.
5. The test will start.
6. The Power ON light should flash.
If the light does not flash, the test has failed.
7. To stop the test, power OFF the printer or unplug the printer.
8. Return the jumper to its original pin position.



4-8-03b.pcx

Parallel Port Wrap Plug

Wire together the pins listed below.

Pins 1 and 12

Pins 2, 4, 6, 8, and 32

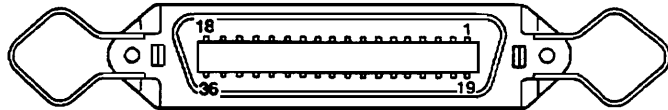
Pins 3, 5, 7, 9, and 10

Pins 13 and 31

Pins 11 and 14

Pins 15 and 33

Pins 34, 35, and 36



4-8-03c.pcx

4.8.04 Encoder Sensor Test

This test disables the printer motors to allow you to manually move the carrier to verify that the encoder is working correctly.

To run the test, follow this procedure.

1. Power OFF the unit.
2. Move the two pin jumper on connector J13 of the system board to the position shown below.



4-8-04a.pcx

3. Power ON the printer.
4. The test will start.
5. Manually move the carrier.

6. The Power ON light should flash.

If the Power ON light does not flash, power OFF the printer.

Remove the carrier assembly without unplugging the printhead cable.

Power ON the printer.

Check for + 5 vdc at pins 1, 2, and 3 of the encoder card connector.

If the voltage is not present, check the printhead cable for opens to the encoder card.

If the printhead cable is good, replace the system board.

If voltage is present, check the sensor on the encoder card by monitoring pin 3 of the encoder card connector as you pass a piece of paper through the sensor.

The voltage should go from + 5 vdc to 0 vdc.

Power OFF the printer.

Power ON the printer.

Check the voltage again.

If the voltage at Pin 3 does not change, replace the encoder card.

If the problem remains, replace the printhead cable.

7. To stop the test, power OFF the printer or unplug the printer.

8. Return the jumper to its original pin position.

J13



4-8-03b.pcx

4.8.05 End of Forms Sensor Test

This test checks the operation of the end of forms sensor on the sensor board.

1. Power OFF the unit.
2. Move the two pin jumper on connector J13 of the system board to the position shown below.



4-8-04a.pcx

3. Power ON the unit.
4. Check the sensor by performing either of the steps listed below.
 1. Activate the end of forms flag.
 2. Place a piece of paper in the manual feed slot.
5. The power light should go on and off as the flag moves past the sensor.
If it does not, replace the system board.
6. Power OFF the unit to end the test.
7. Return the jumper to its original pin position after completing the test.



4-8-03b.pcx

4.8.06 Initialize Error Log

This test allows you to track new errors.

Use this procedure to reset the error log to zero.

The error log is especially helpful in diagnosing intermittent or difficult problems.

1. Power OFF the printer.
2. Move the two pin jumper on connector J13 of the system board to the pin position shown below.



4-8-04a.pcx

3. Place a piece of paper in the manual paper feed slot *before* powering on the printer.

This opens the paper sensor.

The paper sensor must be open to start this procedure.

4. Power ON the printer.
5. The test will start.
6. To stop the test, power OFF the printer or unplug the printer.
7. Return the jumper to its original pin position.



4-8-03b.pcx

4.8.07 Printer Error Log Recovery

This test retrieves the last error from NVRAM.

To run the test, follow this procedure.

1. Power OFF the printer.
2. Move the two pin jumper on connector J13 of the system board to the pin position shown below.



4-8-03a.pcx

3. Power ON the printer.
4. The test will start.
5. To stop the test, power OFF the printer or unplug the printer.
6. Return the jumper to its original position after completing the test.



4-8-03b.pcx

7. The last error appears as a series of flashes of the Power ON light.
If the Power ON light does not flash, there are no errors.

4.9 RESISTANCE CHECKS

4.9.01 General Information

This section covers the resistance checkpoints for the motors listed below.

Paper Feed Motor

Transport Motor

4.9.02 Checkpoint Locations

Paper Feed Motor

1. Disconnect the paper feed motor cable (J5) from the system board.
2. Check the resistance between the motor pins listed below.

Pin 1 to Pin 4 100 ohms (+ / - 20 ohms)

Pin 2 to Pin 4 100 ohms (+ / - 20 ohms)

Pin 3 to Pin 5 100 ohms (+ / - 20 ohms)

Pin 3 to Pin 6 100 ohms (+ / - 20 ohms)

Transport Motor

1. Disconnect the transport motor cable (J6) from the system board.
2. Check the resistance between the motor cable pins listed below.

Pin 2 to Pin 3 8 to 18 ohms

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APPENDIX A
BOARD DIAGRAMS

A.1 OVERVIEW

A.1.01 General Information

This section describes the characteristics of the printed circuit boards used in the product.

The areas listed below are covered.

Firmware

Fuses

Jumpers

Switches

Sensors

Test Points

Where an item is not applicable, the word *NONE* will be listed.

NOTES:

This appendix provides a brief description of each board.

Troubleshooting information is provided in Section Four of this Service Handbook.

Test procedures are provided in Sections Three and Four of this Service Handbook.

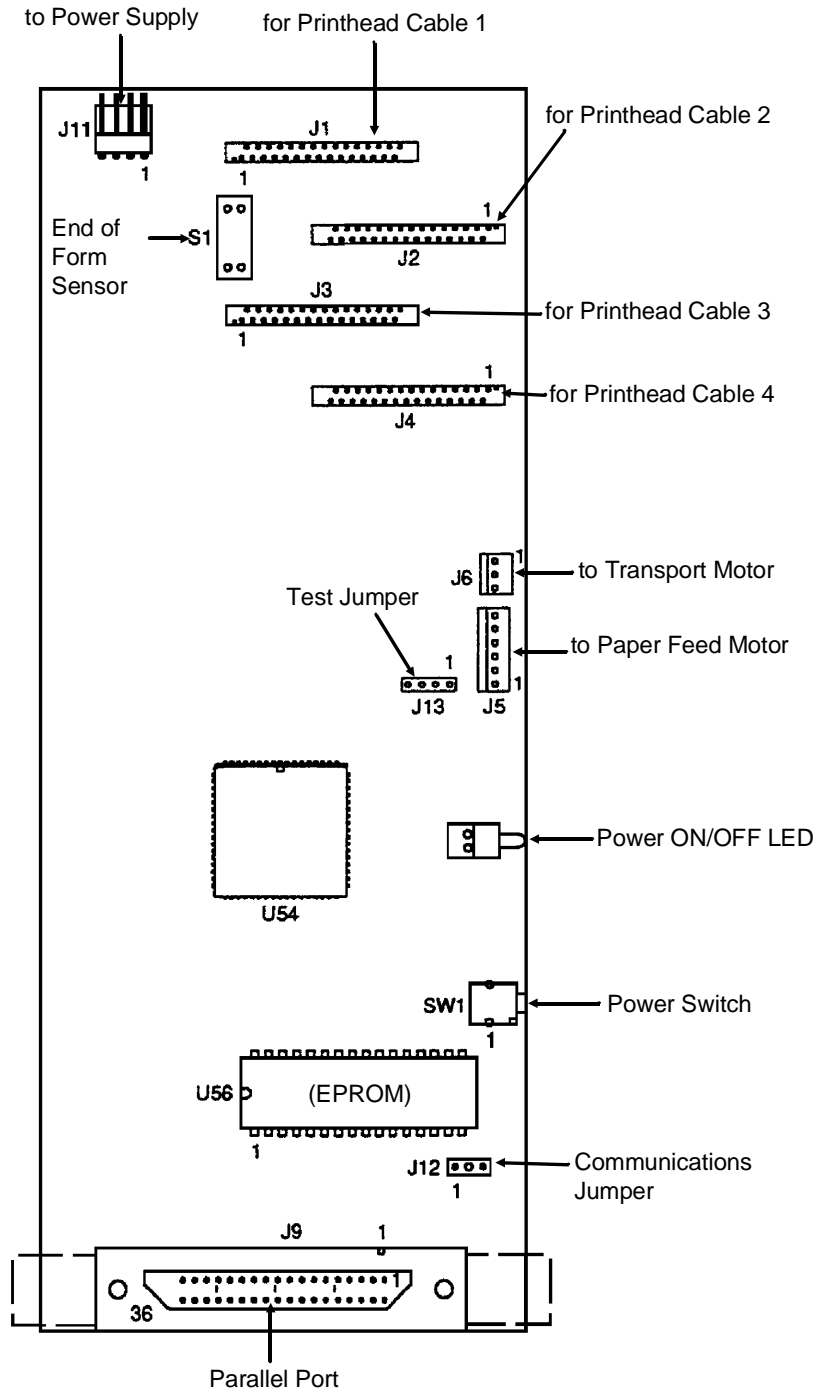
Please refer to Sections Three and Four for details on the adjustment and testing procedures mentioned in this appendix.

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A.2 INDEX TO CHARTS

Description	Board Designation	Section
System Board	N/A	A.2.01
Power Supply	N/A	A.2.02
Encoder Card	N/A	A.2.03

A.2.01 System Board



A-2-01.pcx

NOTES:

Removing the system board resets the head to head and bidirectional printing alignments to factory defaults. The end user performs these alignments through the User Software Utility. Refer to the User's Guide for details.

When replacing the system board, be sure to remove the EPROM (Code Module) at U56. Replacement boards are shipped WITHOUT the EPROM.

CAUTION:

When removing the EPROM, you must follow standard electrostatic sensitive device (ESD) procedures or you may damage the components.

Firmware

U56 Code Module: EPROM

Fuses

NONE

Jumpers

Refer to the following pages

Sensors

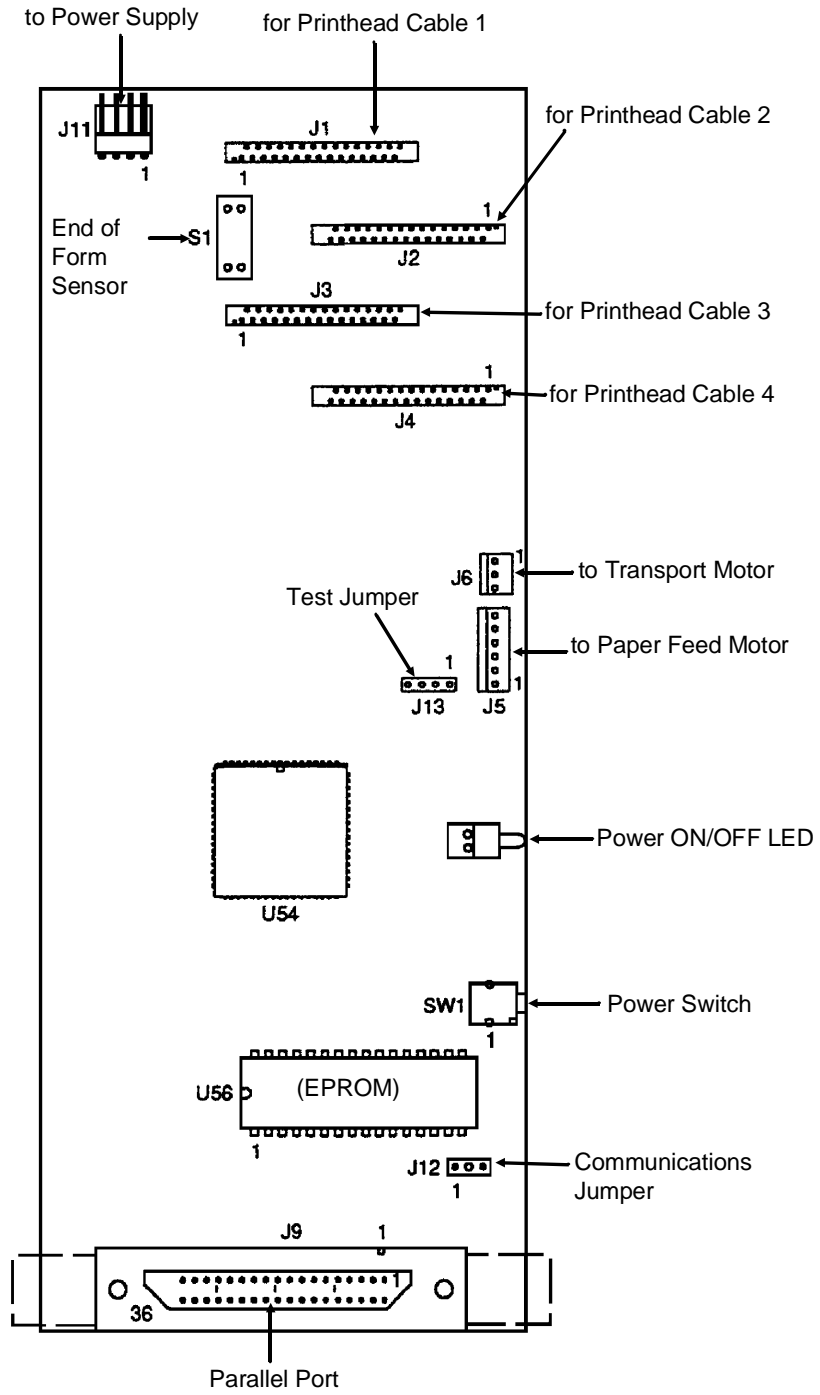
S1: End of Form (EOF) Sensor

Switches

SW1: Power Switch

Test Points



J5, Pin 3 and Ground	+ 24 Vdc	Paper Feed Service Check
J5, Pin 4 and Ground	+ 24 Vdc	
J6, Pin 2 and Ground	pulse of 6 to 8 vdc as unit goes through Power On Self Test (POST)	Transport Service Check
J6, Pin 2 and Ground		






A-2-01.pcx

Jumpers

J12, Communications Jumper

Factory Setting	Pins 1 and 2	 A-2-01b.pcx
If the parallel cable has been replaced due to a communication problem, but the problem continues, move this jumper to pins 2 and 3.	Pins 2 and 3	 A-2-01f.pcx

J13, Test Jumper

Factory Setting		 A-2-01c.pcx
Test Setting	Parallel Port Test	 A-2-01d.pcx
	Printer Error Log Recovery	
	Encoder Sensor Test	 A-2-01e.pcx
	End of Forms Sensor Test	
	Initialize Error Log	

NOTES:

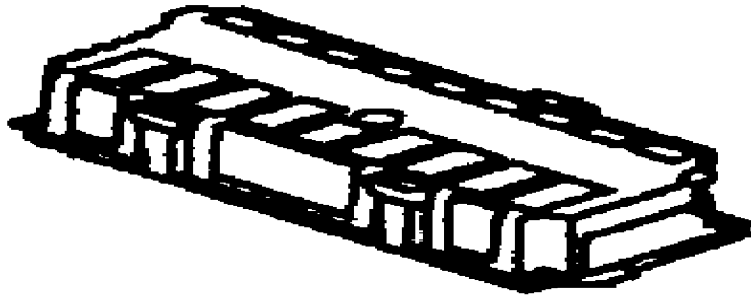
This appendix provides a brief description of each board.

Troubleshooting information is provided in Section Four of this Service Handbook.

Test procedures are provided in Sections Three and Four of this Service Handbook.

Please refer to Sections Three and Four for details on the adjustment and testing procedures mentioned in this appendix.

A.2.02 Power Supply



A-2-02.pcx

Firmware

NONE

Fuses

NONE

Jumpers

NONE

Sensors

NONE

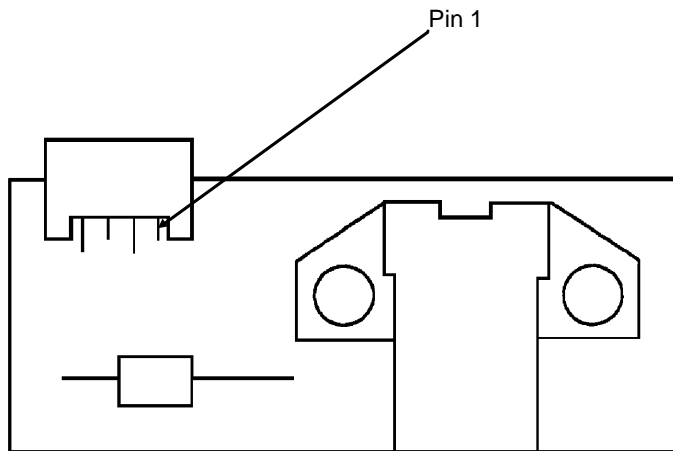
Switches

NONE

Test Points

J11, Pin 1 to Ground (Power Supply Cable)	+ 5 Vdc
J11, Pin 3 to Ground (Power Supply Cable)	+ 24 Vdc

A.2.03 Encoder Card



A-2-03.pcx

Firmware

NONE

Fuses

NONE

Jumpers

NONE

Sensors

NONE

Switches

NONE

Test Points

Pin 1	+ 5 V	Part of Encoder Sensor Test
Pin 2	+ 5 V	Part of Encoder Sensor Test
Pin 3	+ 5 V	Part of Encoder Sensor Test
Pin 3	+ 5 Vdc to 0 Vdc	Part of Encoder Sensor Test Voltage changes as paper passes the sensor

NOTES:

This appendix provides a brief description of each board.

Troubleshooting information is provided in Section Four of this Service Handbook.

Test procedures are provided in Sections Three and Four of this Service Handbook.

Please refer to Sections Three and Four for details on the adjustment and testing procedures mentioned in this appendix.

A.3 RESISTANCE CHECKPOINTS

A.3.01 General Information

This section covers the resistance checkpoints for the motors listed below.

Paper Feed Motor

Transport Motor

A.3.02 Checkpoint Locations

Paper Feed Motor

1. Disconnect the paper feed motor cable (J5) from the system board.
2. Check the resistance between the motor pins listed below.

Pin 1 to Pin 4 100 ohms (+ / - 20 ohms)

Pin 2 to Pin 4 100 ohms (+ / - 20 ohms)

Pin 3 to Pin 5 100 ohms (+ / - 20 ohms)

Pin 3 to Pin 6 100 ohms (+ / - 20 ohms)

Transport Motor

1. Disconnect the transport motor cable (J6) from the system board.
2. Check the resistance between the motor cable pins listed below.

Pin 2 to Pin 3 8 to 18 ohms

APPENDIX B
ILLUSTRATED PARTS LISTING

B.1 OVERVIEW

B.1.01 General Information

This appendix will assist you in identifying the assemblies and parts of the product.

Use Section Four (Failure Analysis) to determine the defective part(s).

Locate the part and its part number in this section.

Appendix B is cross-referenced to Section Three (Maintenance).

Format

The format for this appendix is a series of tables with diagrams. The tables contain the item reference number, the Okidata part number and Okidata control number, the part description, a comments section, and the disassembly procedure.

Item	Okidata P/N Okidata Control No.	Description	Comments Refer to B.1.02	Disassembly Procedure
------	------------------------------------	-------------	-----------------------------	--------------------------

The format for this appendix is a series of tables with diagrams. The tables contain the item reference number, the Okidata part number and Okidata control number, the part description, a comments section, and the disassembly procedure.

Please refer to the Definition of Terms section of this Appendix for definitions for the comments that may appear in the comments section of the tables.

Items with the comments RSPL (Recommended Spare Parts List), Consumable, Document, or Option are available from Okidata. Items without these comments are usually not stocked.

Some items are only available as assemblies. Every effort has been made to clearly indicate which items are in assemblies and which are not.

N/A will appear where a part number is not available.

Current Part Numbers

Okidata has made every effort to include current part numbers in this Service Handbook *at the time of publishing*.

However, technical information frequently changes. These changes often include new or modified parts, with new or modified part numbers.

Please refer to the following resources for current part numbers and pricing.

- Okilink II, an Electronic Bulletin Board Service, contains current part numbers, prices, and recommended stocking levels for each item listed as a recommended spare part. For instructions on accessing Okilink II, refer to the Course Administration section of this Service Handbook or the Service Center Reference Guide.
- Faxable Facts is an automated fax document retrieval system. Part numbers and pricing are available through Faxable Facts. For instructions on accessing Faxable Facts, refer to the Course Administration section of this Service Handbook or the Service Center Reference Guide.
- Dealer Technical Support is a telephone support line reserved for Authorized Dealers. Part numbers and pricing are available through this group. For instructions on accessing Dealer Technical Support, refer to the Course Administration section of this Service Handbook or the Service Center Reference Guide.

REMEMBER

Current part numbers, recommended stocking levels, and pricing information are available through Okilink II, Faxable Facts, and Dealer Technical Support. Refer to the the Course Administration section of this Service Handbook or the Service Center Reference Guide for information on accessing these resources.

B.1.02 Definition of Terms

Listed below are the definitions for the comments that may appear in the Comments section of the tables.

Items with the comments RSPL (Recommended Spare Parts List), Consumable, Document, or Option are available from Okidata. Items without these comments are usually not stocked.

Assemblies

Assemblies are parts grouped under a single description and/or part number. Generally, individual items in an assembly are not available from Okidata.

Assemblies are surrounded by broken line boxes in the diagrams.

Assemblies will say "Inc. xx xx" under the *Comments* section of the tables.

Parts in assemblies will say "Part of xx" under the *Comments* section of the tables.

Blank

Okidata does not recommend stocking this item. This item should be purchased on an As Required Basis *only*.

The availability of this item is *NOT* guaranteed by Okidata.

Consumable

A consumable is a supply item which has a specified life and must be periodically replaced. It is purchased and installed by the end user. Okidata machines are designed to work *exclusively* with Okidata consumables. By using genuine Okidata consumable products, the investment made in the equipment is protected.

Document

A document is a printed item which supports the service and marketing of a product. Various documents are available from Okidata.

Firmware

Firmware is revised frequently. Please refer to Okilink II for the latest firmware information.

Option

An option is a part/assembly which is added to a product. The option expands the product's functionality. An option may or may not be installed by the end user. Instructions for installation accompany each option.

Option RSPL

Okidata recommends that this part/assembly be on hand for servicing installed options.

RSPL

Okidata recommends that this part/assembly be on hand for servicing.

Technical Service Bulletins

Technical Service Bulletins (TSBs) are also referred to as Okidata's monthly mail.

The TSBs contain the latest information on firmware revisions, procedure changes, and technical information updates.

Okidata distributes the TSBs through Okilink II. The TSBs are issued monthly.

NOTE:

Refer to the the Course Administration section of this Service Handbook or the Service Center Reference Guide for information on accessing Okilink II.

B.1.03 Parts Ordering Information

Placing a Parts Order

All authorized Okidata resellers may order spare parts and consumables for Okidata products. Orders are placed through Okidata's Order Processing Center Department.

Please refer to your Service Center Reference Guide for details on ordering parts.

You should have the following information available *before* you place your order.

- Okidata Dealer Authorization Number
- Okidata Customer Number
- Your Purchase Order Number
- Okidata Part Number(s)

Use this Appendix, Okilink II, Faxable Facts, or contact Dealer Technical Support to find the correct part number.

Refer to the Course Administration section of this Service Handbook or the Service Center Reference Guide for information on contacting Okidata.

Service Center Reference Guide

When a technician has successfully completed a Service Training Course for a product and the Dealer has become Service Authorized, an information package is provided to the Dealer. One item in this information package is the Okidata Service Center Reference Guide.

The Okidata Service Center Reference Guide outlines the following items.

- Responsibilities of Okidata Service Centers
- Spare parts and consumables information
- Procedures for warranty repairs
- Product Training, Certification, and Authorization
- Product Support information
- Okidata Depot information and services
- Third Party Service information
- Information about Okidata's Customer Information Center
- Okidata Service and Support telephone numbers.

The Service Center Reference Guide is also available through Okilink II. For instructions on accessing Okilink II, refer to the Course Administration section of this Service Handbook or the Service Center Reference Guide.

The Service Center Reference Guide contains the procedures to follow for ordering parts. Please *read, understand, and follow* these procedures. Service Authorization for a specific product *must* be obtained before a Dealer can submit warranty claims.

Direct questions regarding the Service Center Reference Guide to Okidata Dealer Service. Refer to the Course Administration section of this Service Handbook or the Service Center Reference Guide for information on contacting Okidata.

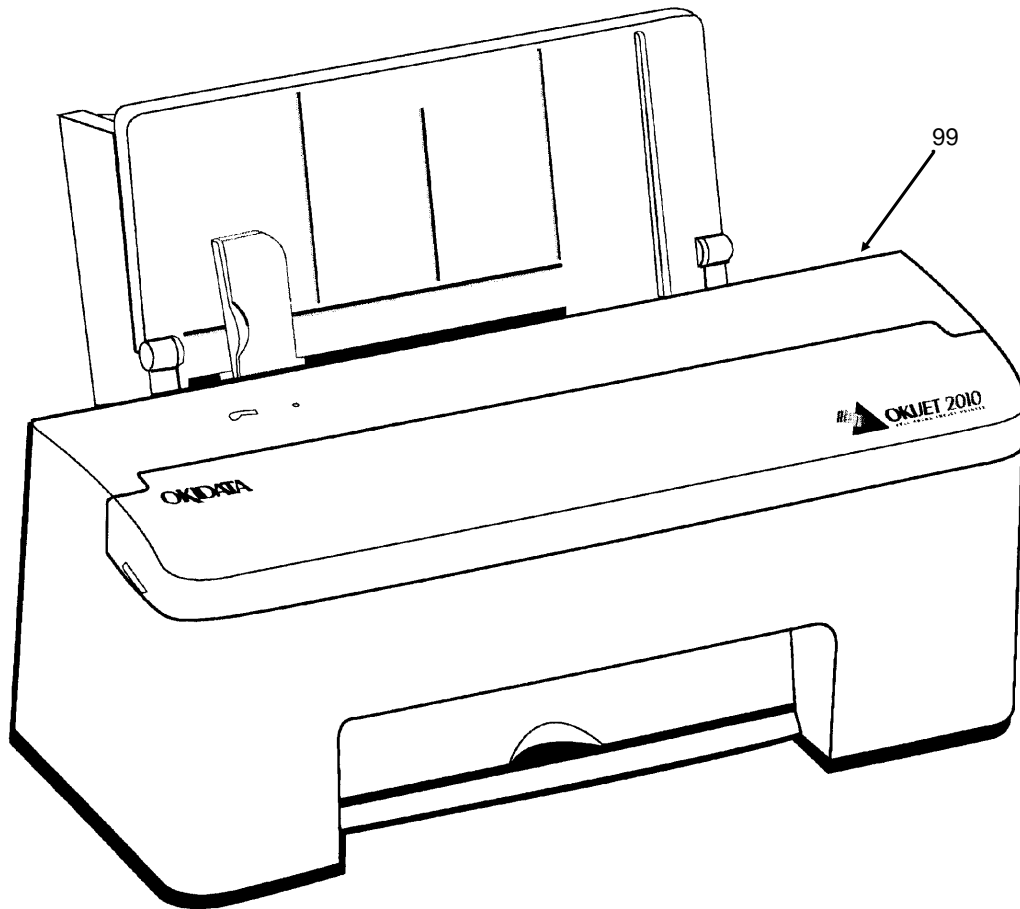
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B.2 CHARTS

Below is an index to the illustrated parts breakdown charts.

Description	Section
Printer	B.2.01
Covers	B.2.02
Frames	B.2.03
Paper Feed	B.2.04
Electronics	B.2.05
Carrier	B.2.06
Carrier Transport	B.2.07
Sheet Feeder	B.2.08
Maintenance Station	B.2.09
Packing Materials	B.2.10
Consumables	B.2.11
Documentation	B.2.12
Service Training Kit Revision List	B.2.13

B.2.01 Printer

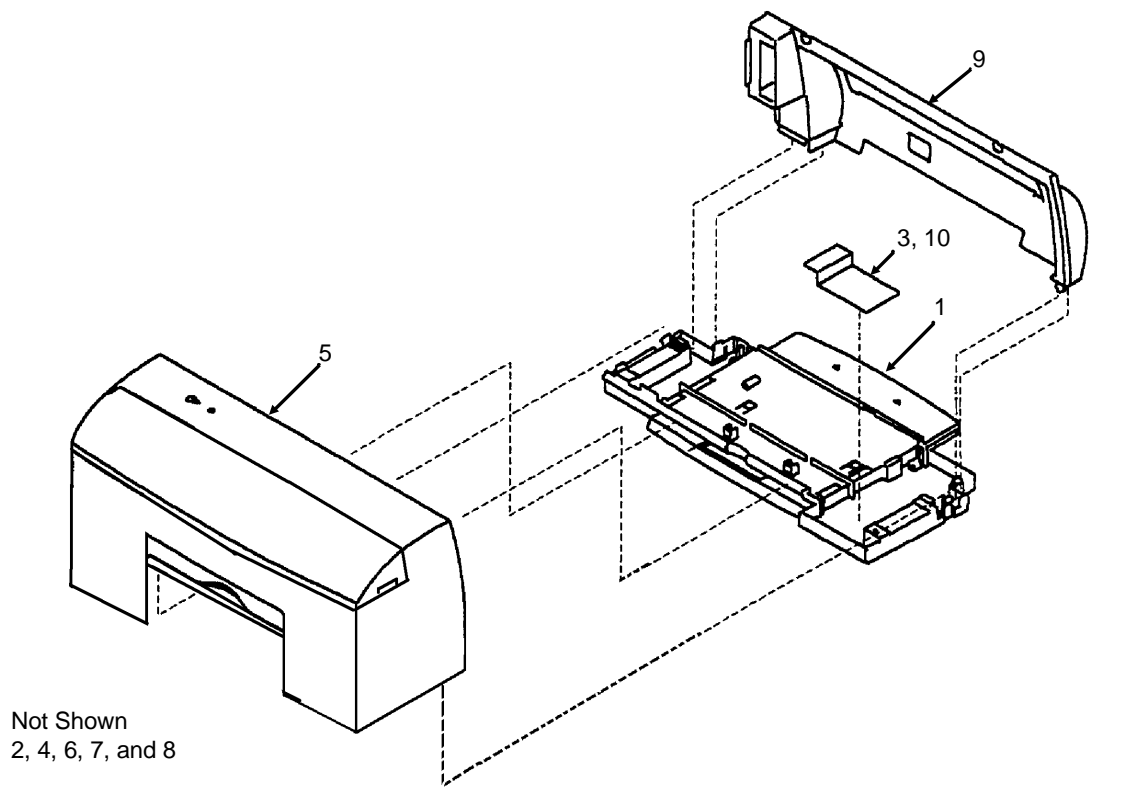


B-2-01.pcx

Part numbers are subject to change. Refer to Okilink II for current part numbers and pricing information.

Item	Okidata P/N Okidata Control No.	Description	Comments	Disassembly Procedure
99	62600101	Printer: OkiJet 2010		N/A

B.2.02 Covers



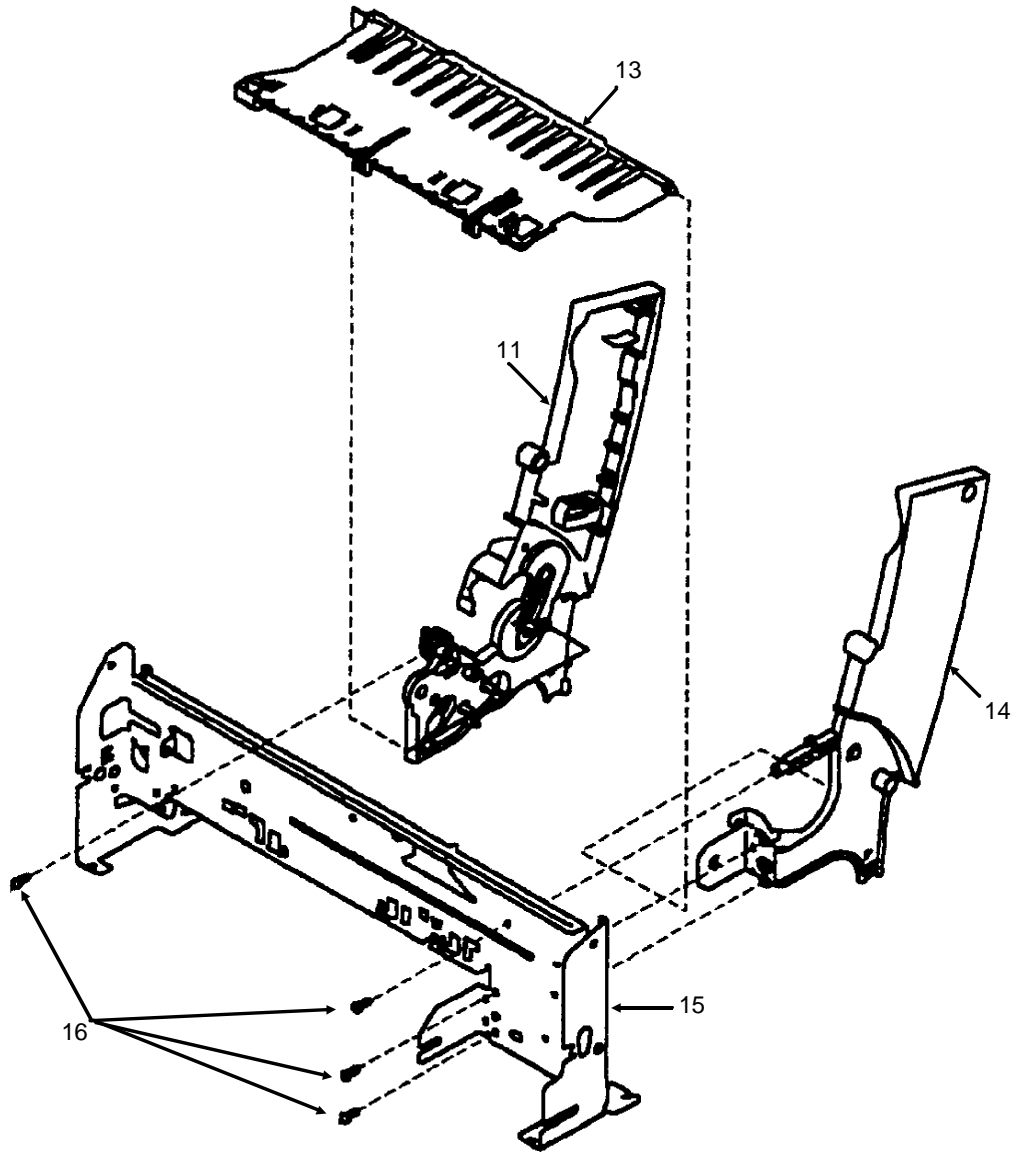
Not Shown
2, 4, 6, 7, and 8

B-2-02.pcx

Part numbers are subject to change. Refer to Okilink II for current part numbers and pricing information.

Item	Okidata P/N Okidata Control No.	Description	Comments	Disassembly Procedure
1	50220101 69G4115	Assembly: Base	RSPL Inc. 2 3 4	3.2.02
2		Exit Tray	Part of 1	3.2.02
3	50516901 69G4119	Gutter Pad: Base Assembly	RSPL Part of 1	3.2.02 13
4		Feet	Part of 1	3.2.02
5	53074601 7060476	Assembly: Front Cover	RSPL Inc. 6 7 8	3.2.12
6		Access Cover	Part of 5	3.2.12
7		Button	Part of 5	3.2.12
8		LED Lens	Part of 5	3.2.12
9	53074901 69G4118	Cover: Rear	RSPL	3.2.30
10	50516901 69G4119	Gutter Pad: Base Assembly	RSPL	3.2.13

B.2.03 Frames



Not Shown: 12

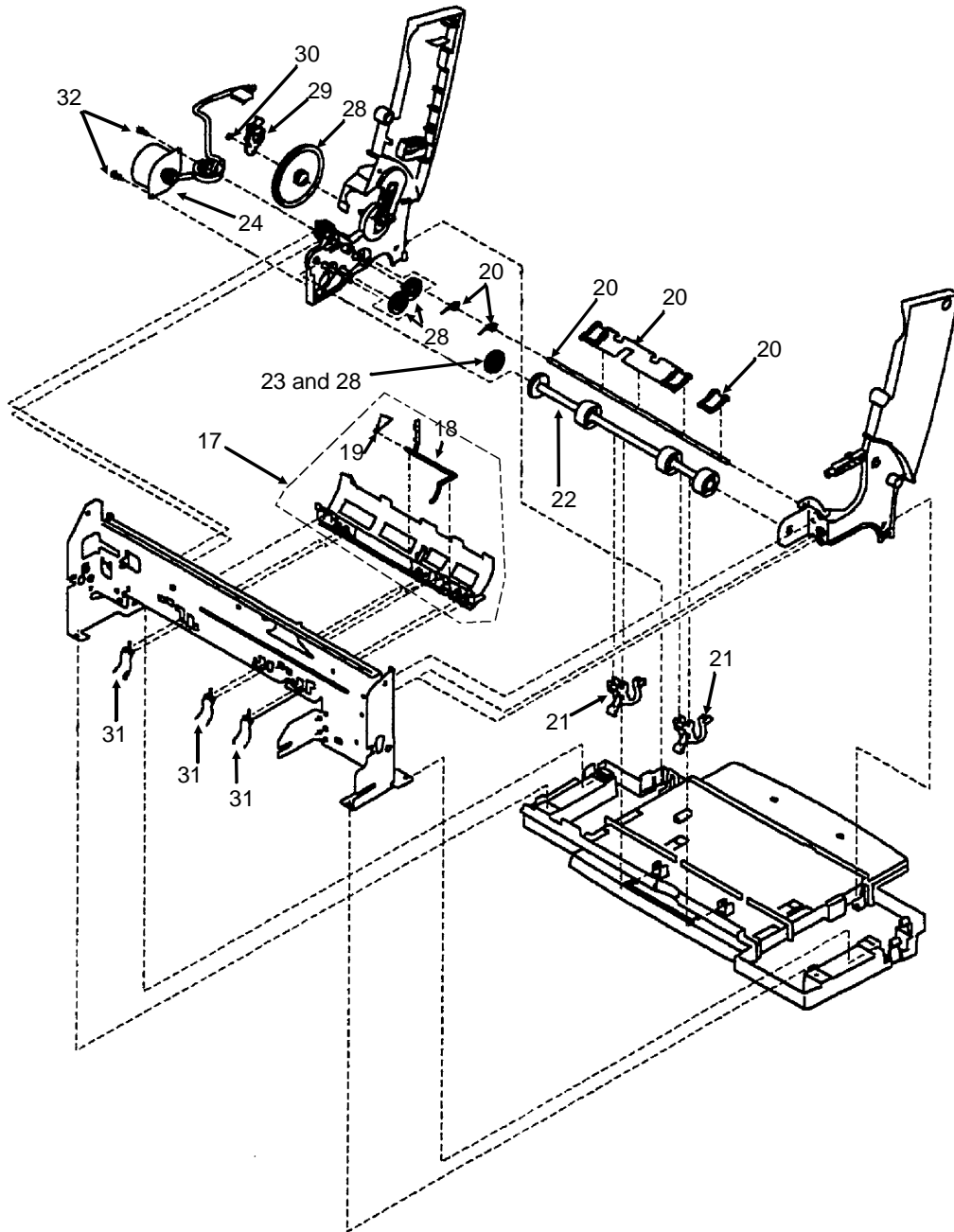
B-2-03.pcx

Part numbers are subject to change. Refer to Okilink II for current part numbers and pricing information.

Item	Okidata P/N Okidata Control No.	Description	Comments	Disassembly Procedure
11	53347401 69G4120	Assembly: Left Side Frame Sub w/o Gears	RSPL	3.2.17
12	51236201 69G4127	Gears: B/M	RSPL	3.2.14 16
13	53347701 69G4123	Assembly: Mid Frame & Gutter Pad	RSPL	3.2.21
14	53347501 69G4121	Frame: Right Side	RSPL	3.2.31
15	53347601 69G4122	Frame: Carrier	RSPL	3.2.04
16 *	69G4188	Screw: Frame Mounting (PP)		3.2.04

* This part is included in P/N 58237001, Packet: Accessory Parts. It is an RSPL item.

B.2.04 Paper Feed



Not Shown
25, 26, 27

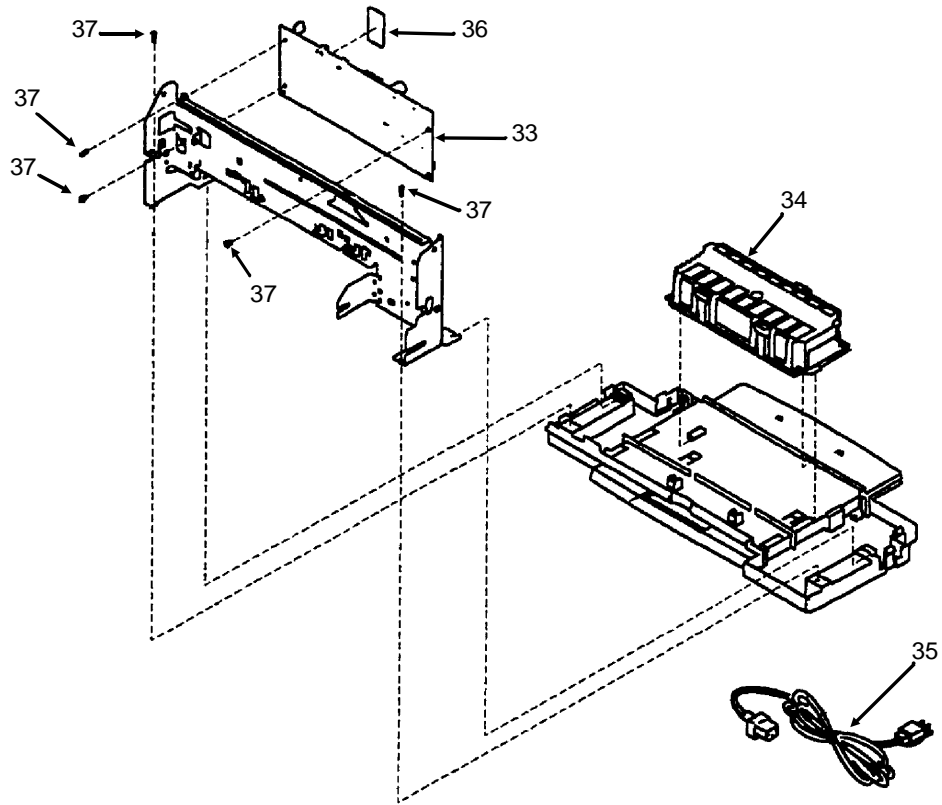
B-2-04.pcx

Part numbers are subject to change. Refer to Okilink II for current part numbers and pricing information.

Item	Okidata P/N Okidata Control No.	Description	Comments	Disassembly Procedure
17	51018101 69G4128	Assembly: Paper Guide	RSPL Incl. 18 19	3.2.23
18		EOF Flag	Part of 17	3.2.23
19		Spring	Part of 17	3.2.23
20	51113501 69G4126	Shaft: Small Feed Roll Shaft and Paper Flap	RSPL	3.2.32
21	50929601 69G4129	Arm: Ejector	RSPL	3.2.08
22	50409601 69G4124	Assembly: Large Feed Roller B/M	RSPL Incl. 23	3.2.15
23		Gear: Small Compound	Part of 22	3.2.15
24	56512401 69G4125	Assembly: Paper Feed Motor	RSPL Incl. 25 26 27	3.2.22
25		Paper Feed Motor	Part of 24	3.2.22
26		Motor Gear	Part of 24	3.2.22
27		Toroid	Part of 24	3.2.22
28	51236201 69G4127	Gears: B/M	RSPL	3.2.14 16
29	53075001 1367259	Assembly: Feed Arm	RSPL	3.2.11
30 *	69G4188	C-Clip (PP)		3.2.16
31 *	69G4188	Spring: Small Feed Roll (PP)		3.2.23
32 *	69G4188	Screw: Paper Feed Motor Mounting (PP)		3.2.22

* This part is included in P/N 58237001, Packet: Accessory Parts. It is an RSPL item.

B.2.05 Electronics



B-2-05.pcx

Part numbers are subject to change. Refer to Okilink II for current part numbers and pricing information.

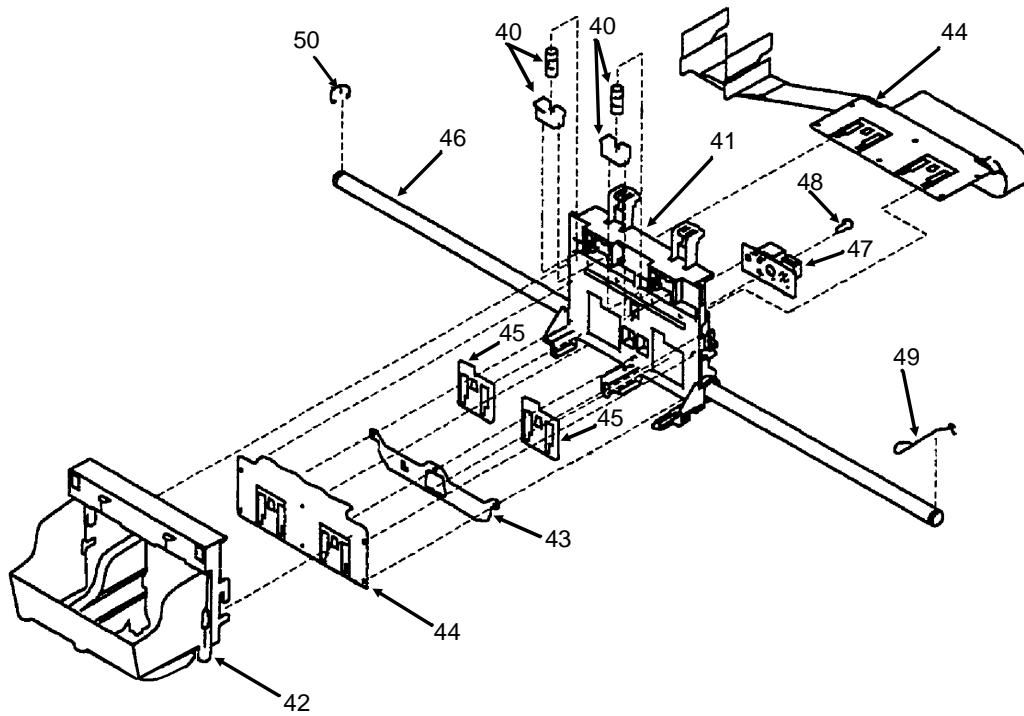
Item	Okidata P/N Okidata Control No.	Description	Comments	Disassembly Procedure
33 !	55078701 7060498	Board: System (w/o EPROM)	RSPL	3.2.33
34	56414301 69G4133	Power Supply (inc. Ground Plan, Insulator, Cover)	RSPL	3.2.26
35	56612101 70G0478	Cord: Power	RSPL	3.2.01
36		EPROM		3.2.06
37 *	69G4188	Screw: System Board Mounting (PP)		3.2.33
38 *	69G4188	Screw: Ground Jumper Mounting (PP)		3.2.33
39 *	69G4188	Jumper: 2-Pin (PP)		3.2.33

* This part is included in P/N 58237001, Packet: Accessory Parts. It is an RSPL item.

! When replacing the system board, be sure to remove the EPROM (or Masked ROM) at U56. Replacement boards are shipped WITHOUT the EPROM.

Removing the system board resets the head to head and bidirectional printing alignments to factory defaults. The end user performs these alignments through the User Software Utility. Refer to the User's Guide for details.

B.2.06 Carrier



Not Shown: 51

B-2-06.pcx

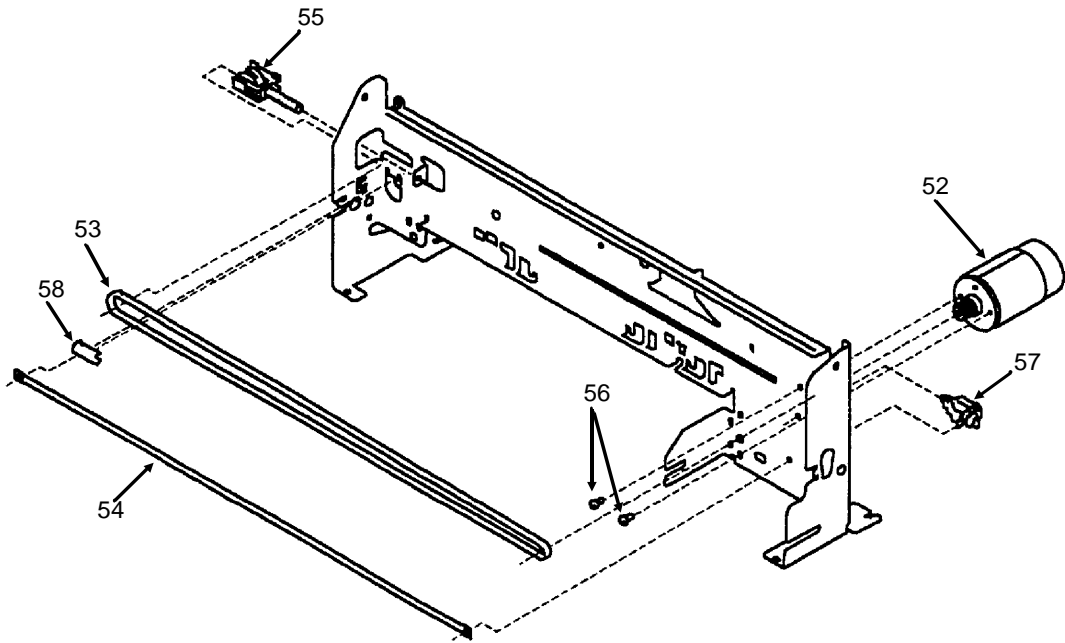
Part numbers are subject to change. Refer to Okilink II for current part numbers and pricing information.

Item	Okidata P/N Okidata Control No.	Description	Comments	Disassembly Procedure
40	51018301 69G4154	Assembly: Printhead Carrier B/M	RSPL Inc. 41 42 43	3.2.28
41		Carrier	Part of 40	3.2.28
42		Cradle	Part of 40	3.2.28
43		Deflector	Part of 40	3.2.28
44	56632001 69G4155	Cable: Printhead (With Folds)	RSPL	3.2.27
45	51711201 1367109	Rubber Backer: Printhead		3.2.29
46	51017801 69G4157	Rod: Carrier Guide	RSPL	3.2.28
47	50220201 69G4156	Assembly: Encoder Card	RSPL	3.2.09
48 *	69G4188	Screw: Encoder Card Mounting (PP)		3.2.09
49 *	69G4188	Retainer Right: Carrier Guide Rod (PP)		3.2.28
50 * #	69G4188	E-Ring: Carrier Guide Rod (PP)		3.2.28
51	50111701 7060479	Interlock Key: PH Cartridge	RSPL	

* This part is included in P/N 58237001, Packet: Accessory Parts. It is an RSPL item.

An E-Ring can be used in place of a retainer spring on the left end of the carrier guide rod.

B.2.07 Carrier Transport



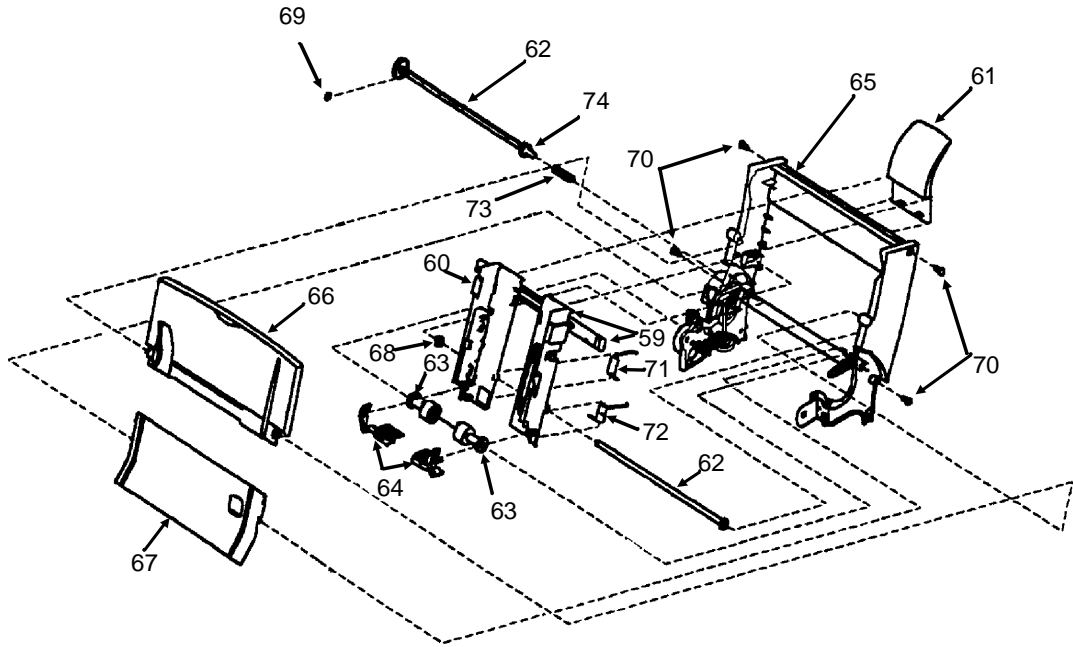
B-2-07.pcx

Part numbers are subject to change. Refer to Okilink II for current part numbers and pricing information.

Item	Okidata P/N Okidata Control No.	Description	Comments	Disassembly Procedure
52	56512501 69G4158	Assembly: Carrier Transport Motor	RSPL	3.2.05
53	51305001 69G4159	Belt: Carrier	RSPL	3.2.03
54	51017901 69G4162	Strip: Encoder	RSPL	3.2.10
55	51236101 69G4163	Assembly: Idler Pulley Tension	RSPL	3.2.03
56 *	69G4188	Screw: Carrier Transport Motor Mounting (PP)		3.2.05
57 *	69G4188	Tensioner: Encoder Strip (PP)		3.2.10
58 *	69G4188	Cuff: Tensioner (PP)		3.2.10

* This part is included in P/N 58237001, Packet: Accessory Parts. It is an RSPL item.

B.2.08 Sheet Feeder



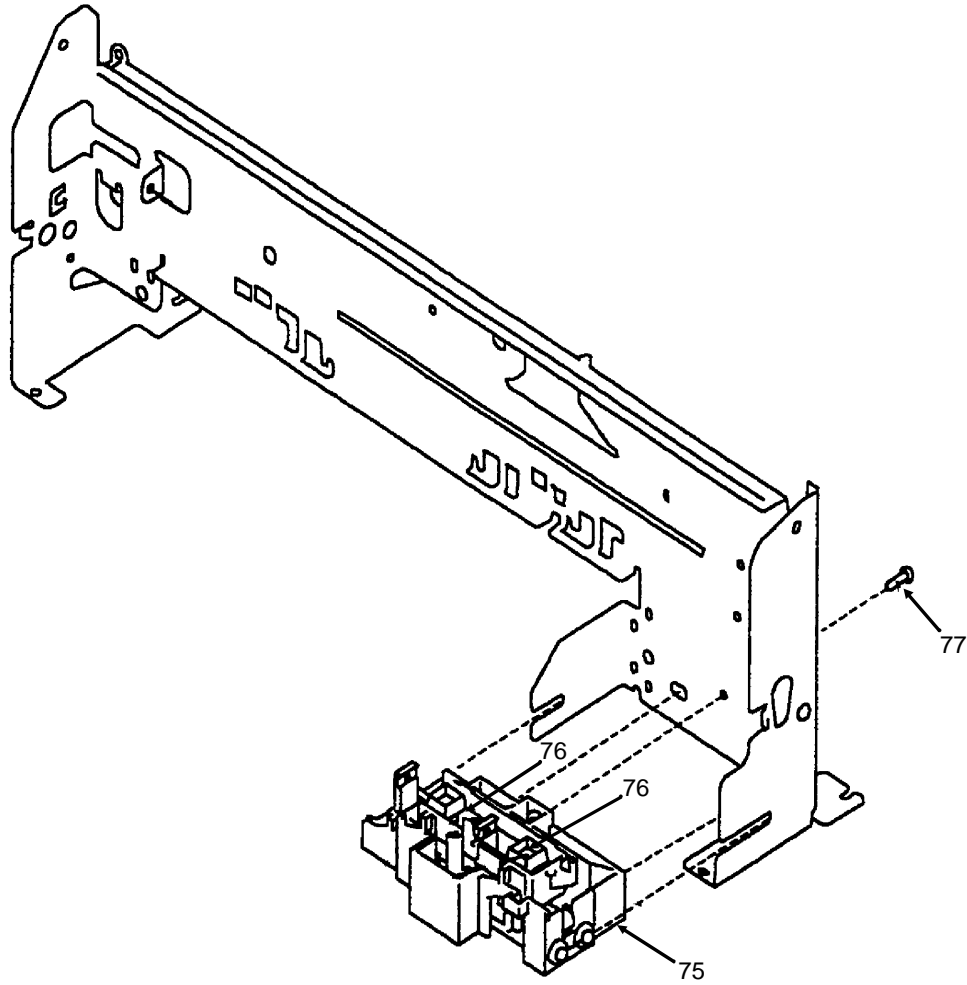
B-2-08.pcx

Part numbers are subject to change. Refer to Okilink II for current part numbers and pricing information.

Item	Okidata P/N Okidata Control No.	Description	Comments	Disassembly Procedure
59	51018201 70G0480	Guide: Right Edge & Width Strip	RSPL	3.2.07
60	51018001 70G0475	Assembly: Left Edge Guide	RSPL	3.2.07
61	50517101 69G4131	Support: Upper Paper	RSPL	3.2.17
62	51113601 69G4168	Shaft: Pick Roll & Paper Load	RSPL	3.2.25
63	50409801 1367463	Assembly: Pick Roll Hub	RSPL	3.2.25
64	58236901 1367019	Packet: Envelope Buckler Parts	RSPL	3.2.25
65	53347801 69G4169	Frame: Back Plate Extrusion	RSPL	3.2.17
66	53075101 69G4164	Assembly: Paper Load Door (Left)	RSPL	3.2.24
67	50220301 69G4165	Tray: Manual Insert	RSPL	3.2.20
68	69G4127	Gear: Paper Load (Gears B/M)		3.2.07
69 *	69G4188	E-Ring (PP)		3.2.25
70 *	69G4188	Screw: Side Frame (PP)		3.2.17 31
71 *	69G4188	Spring: Left Paper Load (PP)		3.2.07
72 *	69G4188	Spring: Right Paper Load (PP)		3.2.07
73 *	69G4188	Spring: Pick Roll Clutch (PP)		3.2.25
74 *	69G4188	Spacer (PP)		3.2.25

* This part is included in P/N 58237001, Packet: Accessory Parts. It is an RSPL item.

B.2.09 Maintenance Station



B-2-09.pcx

Part numbers are subject to change. Refer to Okilink II for current part numbers and pricing information.

Item	Okidata P/N Okidata Control No.	Description	Comments	Disassembly Procedure
75	50111801 69G4186	Assembly: Maintenance	RSPL	3.2.18
76	50220401 1367389	Packet: Main. Wiper & Cap Parts	RSPL One of each	3.2.19
77 *	69G4188	Screw: Maintenance Station Mounting (PP)		3.2.18

* This part is included in P/N 58237001, Packet: Accessory Parts. It is an RSPL item.

B.2.10 Packing Materials

No picture available at press time.

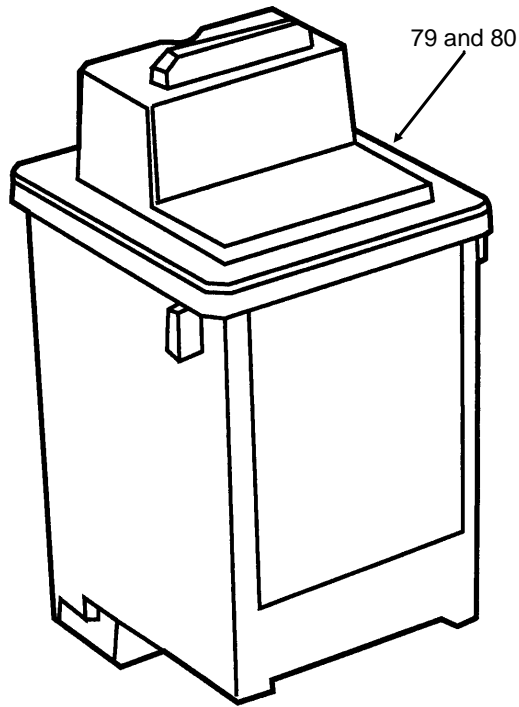
Part numbers are subject to change. Refer to Okilink II for current part numbers and pricing information.

Item	Okidata P/N Okidata Control No.	Description	Comments	Disassembly Procedure
78	58237101 7347359	Package: Field Replacement B/M		N/A

NOTE:

The Field Replacement (B/M) Package includes the box, the foam cushion set, sealing tape, and an RSPL label.

B.2.11 Consumables



B-2-11.pcx

Part numbers are subject to change. Refer to Okilink II for current part numbers and pricing information.

Item	Okidata P/N Okidata Control No.	Description	Comments	Disassembly Procedure
79	52109301 1380620	Cartridge: Black	Consumable	3.7
80	52109302 1380619	Cartridge: Color	Consumable	3.7

B.2.12 Documentation

Part numbers are subject to change. Refer to Okilink II for current part numbers and pricing information.

Item	Okidata P/N Okidata Control No.	Description	Comments Refer to B.1.02	Disassembly Procedure
81 A #	58237301 N/A	Kit: OkiJet 2010 Service Training	Document	N/A
81 B #	58237302 N/A	Kit: OkiJet 2010 Service Training	Document	N/A
82	59268701 N/A	Guide: User's	Document Part of 81 A B	N/A
83 A	59269701 N/A	Handbook: Service	Document Part of 81 A	N/A
83 B	59269702 N/A	Handbook: Service	Document Part of 81 B	N/A

* To order Marketing Literature, complete an Okidata Marketing Literature Order Form.
Fax the completed form to Okidata Marketing Services and Support.

** Obtain this form by faxing a request to Okidata Marketing Services and Support.
Refer to the Course Administration Section of this Service Handbook or the
Service Center Reference Guide for information on contacting Okidata.

Refer to Section B.2.13 of this Service Handbook.

Item	Okidata P/N Okidata Control No.	Description	Comments Refer to B.1.02	Disassembly Procedure
85	58067201 N/A	ABCD Warranty Claim Forms (Pkg of 20)	Document Both	N/A
86 *	N/A N/A	Marketing Literature	Document Both	N/A
87 **	N/A N/A	Okidata Marketing Literature Order Form	Document Both	N/A
88	N/A N/A	Okidata Service Center Reference Guide	Document Both	N/A
89	53547501 N/A	Okidata Support 3-Ring Binder	Document Both	N/A
90	N/A N/A	Product Updates	Document Refer to Okilink	N/A
91	N/A N/A	Recommended Spare Parts List	Document Refer to Okilink	N/A
92	N/A N/A	Firmware	Refer to Okilink	N/A
93	N/A N/A	Technical Service Bulletins	Document Refer to Okilink	N/A
94	58052401 N/A	Warranty Summary Forms (Pkg of 20)	Document Both	N/A

* To order Marketing Literature, complete an Okidata Marketing Literature Order Form. Fax the completed form to Okidata Marketing Services and Support.

** Obtain this form by faxing a request to Okidata Marketing Services and Support. Refer to the Course Administration Section of this Service Handbook or the Service Center Reference Guide for information on contacting Okidata.

Refer to Section B.2.13 of this Service Handbook.

B.2.13 Service Training Kit Revision List

P/N 58237301 OkiJet 2010 Service Training Kit

Except for the user's documentation (User's Guide), items in the training kit are NOT available separately.

Item	Okidata P/N Okidata Control No.	Description	Comments Refer to B.1.02	Disassembly Procedure
81 A	58237301 N/A	Kit: OkiJet 2010 Service Training	Document Includes 95 - 98 A	N/A
95 A	52080101 N/A	Label: Kit	Document Part of 81 A	N/A
96 A	58309601 N/A	Sheet: Read Me First	Document Part of 81 A	N/A
97 A	59268701 N/A	Guide: User's	Document Part of 81 A	N/A
98 A	59269701 N/A	Handbook: Service	Document Part of 81 A	N/A

P/N 58237302 OkiJet 2010 Service Training Kit

Except for the user's documentation (User's Guide), items in the training kit are NOT available separately.

Item	Okidata P/N Okidata Control No.	Description	Comments Refer to B.1.02	Disassembly Procedure
81 B	58237302 N/A	Kit: OkiJet 2010 Service Training	Document Includes 95 - 98 B	N/A
95 B	52080102 N/A	Label: Kit	Document Part of 81 B	N/A
96 B	58309601 N/A	Sheet: Read Me First	Document Part of 81 B	N/A
97 B	59268701 N/A	Guide: User's	Document Part of 81 B	N/A
98 B	59269702 N/A	Handbook: Service	Document Part of 81 B	N/A



OkiJet 2010 Service Handbook

P/N 59269702