SERVICE MANUAL

Laser Printer

EPSON EPL-N4000 Optional Parts

EPSON®

SEPG98003

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PRECAUTIONS

Precautionary notations throughout the text are categorized relative to 1)Personal injury and 2) damage to equipment.

DANGER Signals a precaution which, if ignored, could result in serious or fatal personal injury. Great caution should be exercised in performing procedures preceded by DANGER Headings.

WARNING Signals a precaution which, if ignored, could result in damage to equipment.

The precautionary measures itemized below should always be observed when performing repair/maintenance procedures.

DANGER

1. ALWAYS DISCONNECT THE PRODUCT FROM THE POWER SOURCE AND PERIPHERAL DEVICES PERFORMING ANY MAINTENANCE OR REPAIR PROCEDURES.
2. NO WORK SHOULD BE PERFORMED ON THE UNIT BY PERSONS UNFAMILIAR WITH BASIC SAFETY MEASURES AS DICTATED FOR ALL ELECTRONICS TECHNICIANS IN THEIR LINE OF WORK.
3. WHEN PERFORMING TESTING AS DICTATED WITHIN THIS MANUAL, DO NOT CONNECT THE UNIT TO A POWER SOURCE UNTIL INSTRUCTED TO DO SO. WHEN THE POWER SUPPLY CABLE MUST BE CONNECTED, USE EXTREME CAUTION IN WORKING ON POWER SUPPLY AND OTHER ELECTRONIC COMPONENTS.

WARNING

1. REPAIRS ON EPSON PRODUCT SHOULD BE PERFORMED ONLY BY AN EPSON CERTIFIED REPAIR TECHNICIAN.
2. MAKE CERTAIN THAT THE SOURCE VOLTAGES IS THE SAME AS THE RATED VOLTAGE, LISTED ON THE SERIAL NUMBER/ RATING PLATE. IF THE EPSON PRODUCT HAS A PRIMARY AC RATING DIFFERENT FROM AVAILABLE POWER SOURCE, DO NOT CONNECT IT TO THE POWER SOURCE.
3. ALWAYS VERIFY THAT THE EPSON PRODUCT HAS BEEN DISCONNECTED FROM THE POWER SOURCE BEFORE REMOVING OR REPLACING PRINTED CIRCUIT BOARDS AND/OR INDIVIDUAL CHIPS.
4. IN ORDER TO PROTECT SENSITIVE MICROPROCESSORS AND CIRCUITRY, USE STATIC DISCHARGE EQUIPMENT, SUCH AS ANTI-STATIC WRIST STRAPS, WHEN ACCESSING INTERNAL COMPONENTS.
5. REPLACE MALFUNCTIONING COMPONENTS ONLY WITH THOSE COMPONENTS BY THE MANUFACTURE; INTRODUCTION OF SECOND-SOURCE ICs OR OTHER NONAPPROVED COMPONENTS MAY DAMAGE THE PRODUCT AND VOID ANY APPLICABLE EPSON WARRANTY.

About This Manual

This manual describes basic functions, theory of electrical and mechanical operations, maintenance and repair procedures of EPL-N4000 Optional Parts. The instructions and procedures included herein are intended for the experienced repair technicians, and attention should be given to the precautions on the preceding page.

Contents

This manual consists of six chapters and Appendix.

Symbols Used in This Manual

Various symbols are used throughout this manual either to provide additional information on a specific topic or to warn of possible danger present during a procedure or an action. Be aware of all symbols when they are used, and always read WARNING, CAUTION or NOTE messages.

Indicates an operating or maintenance procedure, practice or condition that, if not strictly observed, could result in injury or loss of life.

Indicates an operating or maintenance procedure, practice, or condition that, if not strictly observed, could result in damage to, or destruction of, equipment.

May indicate an operating or maintenance procedure, practice or condition that is necessary to accomplish a task efficiently. It may also provide additional information that is related to a specific subject, or comment on the results achieved through a previous action.

Revision Status

Revision	Issued Date	Description
Rev. A	November 4, 1998	First Release

Table of Contents

Mailbox(10-bin Multibin)

Duplex Module

High Capacity Feeder (HCF)

Envelope Feeder

CHAPTER

1

MAILBOX(10-BIN MULTIBIN)

1.1 Installation and Removal of Mailbox

CHECK POINT

HCF (High Capacity Feeder) must be installed in order to install the Mailbox.

1.1.1 Installation

1. Lock 2 casters at the front side of the HCF.
2. Fix the Left Bracket and Right Bracket to HCF.
3. Install Racks to Left Bracket and Right Bracket.
4. Put the mail box on the printer. Make sure that protrusion of upper Rack is inserted into the hole of the stopper of the mail box.
5. Install the Paper Stopper to the mail box.
6. Pull out the Handle and hang it on the Stopper.
7. Connect the cable of the mail box to the printer.

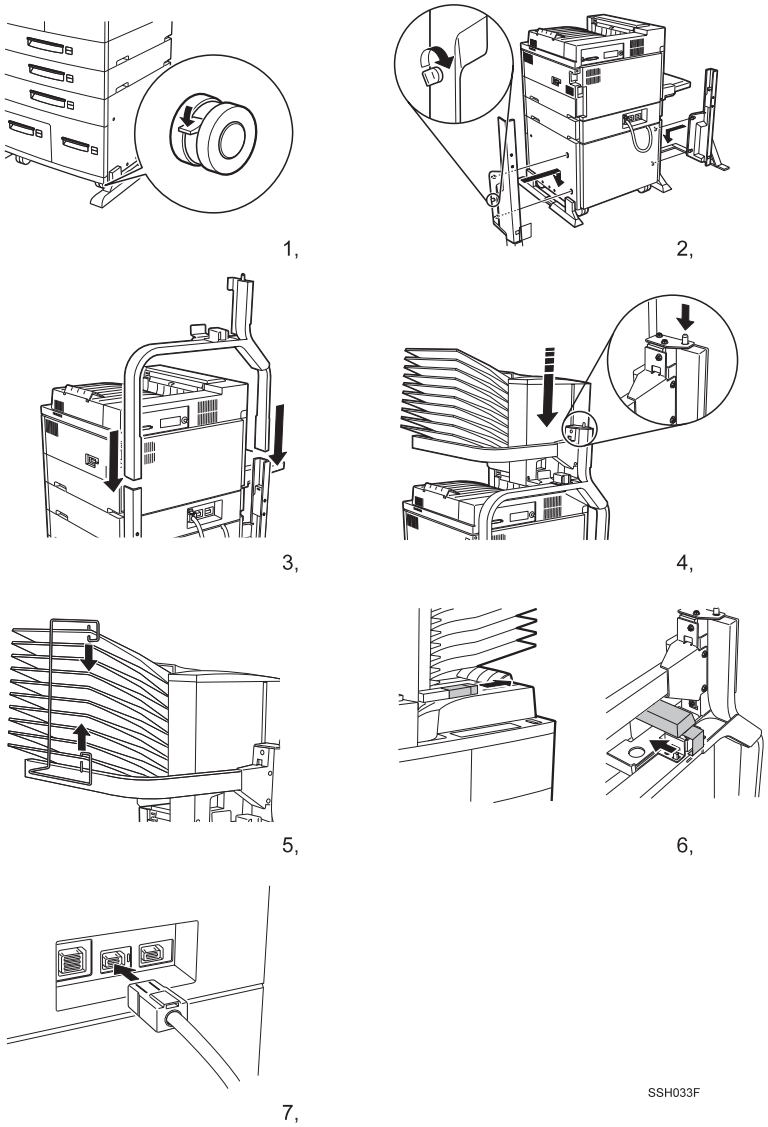


Figure 1-1. Installation

1.1.2 Removal (HCF is installed)

1. Remove the cable of mail box from the printer.
2. Remove the Handle from the Stopper and return it to the original place.
3. Remove the Paper Stopper from the mail box.
4. Pull out the stopper, pressing the Handle.
5. Lift up the mail box and remove it fro the printer and Rack, and leave it on the floor or table.
6. Remove Left Bracket and Right Bracket from Rack.
7. Remove Left Bracket and Right Bracket from Rack from HCF.

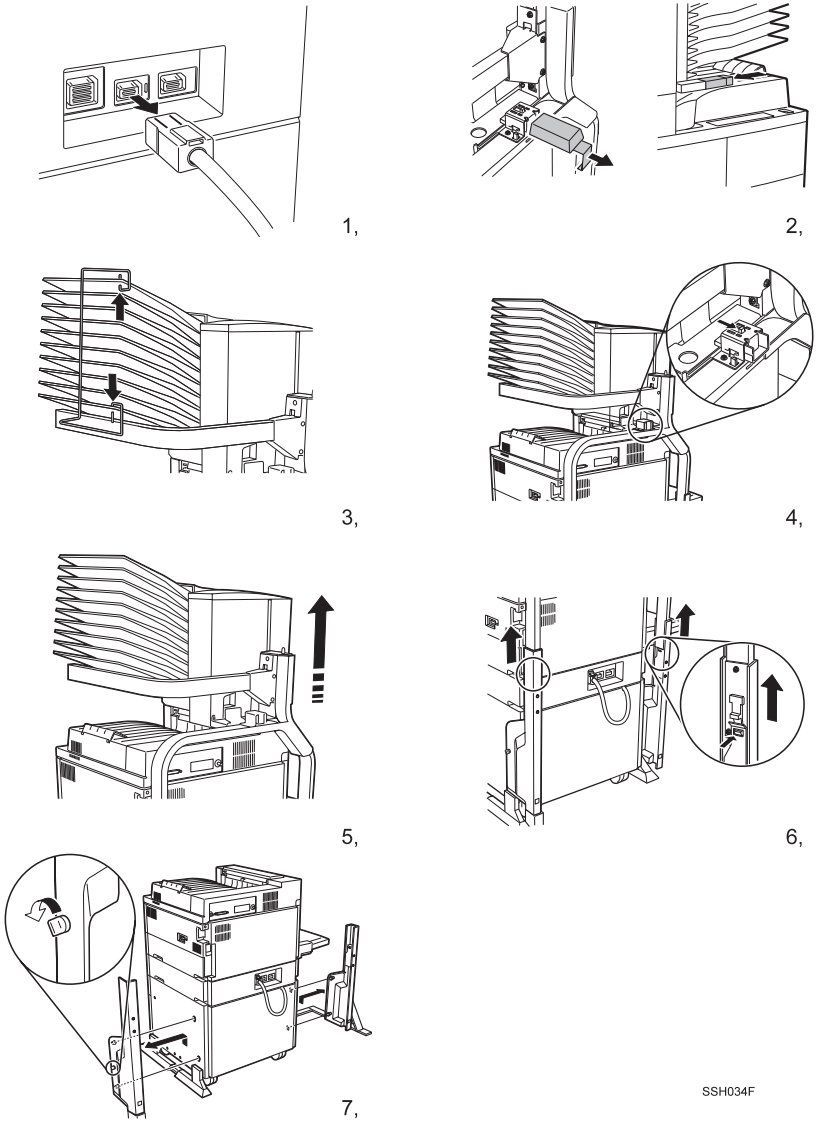


Figure 1-2. Installation

1.2 Introduction

This section shows procedure for disassembling and assembling of the mail box.

1.2.1 Preparation

Before you start disassembling and assembling,

1. Switch OFF the printer power.
2. Disconnect the AC power cord from the wall outlet.
3. Disconnect all interface cables from the back of the printer.
4. Wear an electrostatic discharge wrist strap to protect sensitive printer parts from damage.

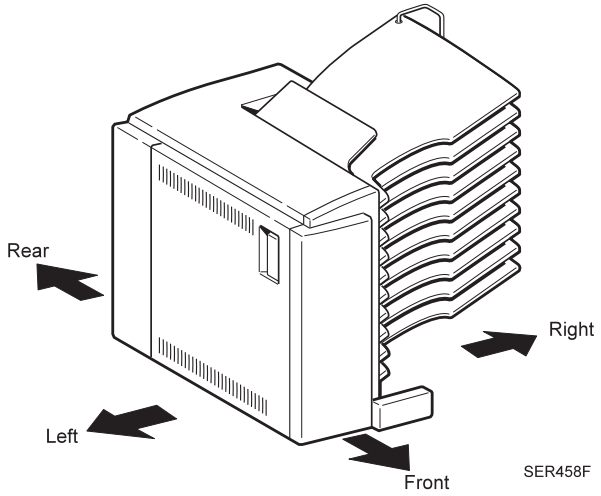
1.2.1.1 Precautions

CAUTION

- **Names of parts that appear in this section may not be exactly the same as the names appear in the parts list. For example, the MSI Tray Assembly in this section may appear on the parts list as Tray Assembly MSI. As used in this manual the terms Mail box and Sorter mean the same thing.**
- **Always reinstall the correct type and size screws. Using the wrong screw can damage tapped holes. Do not use excessive force to either remove or install a part.**

1.2.1.2 Notations

1. Locations given in the manual assume you are facing the printer console panel.



2. The notation “(PLX)” indicates that this component is listed in the PLX parts list.
3. Arrows in an illustration show direction of movement when removing a component.
4. Slashes in a part name indicate that numerous components share the same heading and function. For example, "Gears In/Feed/Out" refers to Gear In, Gear Feed, and Gear Out.

1.3 Disassembly and Assembly

1.3.1 Mailbox(10-bin Multibin)

(See “PL15.1. Mailbox/ Sorter and Rack” on page -36“)

1.3.1.1 Removal

1. Disconnect P612 from the jack that is located at the rear of the printer. (See “Removal (HCF is installed)” on page -8)
2. Unhook and remove the Stopper.
3. Lift the Mailbox off of the Rack, and place the Mailbox on a level and stable surface. (See “Removal (HCF is installed)” on page -8)
4. Press in on the latches securing the Rack to the Left and Right Brackets and lift the Rack up and off of the Brackets.
5. Remove the thumbscrew securing the Right Bracket to the printer, lift the Bracket up to release the tabs, and remove the Bracket.
6. Remove the thumbscrew securing the Left Bracket to the printer, lift the Bracket up to release the tabs, and remove the Bracket.
7. Remove the four screws securing the Stand L Connection to the Left Bracket and remove the Stand L Connection.
8. Remove the two screws securing Stand R to the Stand L Connection and remove Stand R.
9. Remove the two screws securing Stand L to the Right Bracket, and remove Stand L.

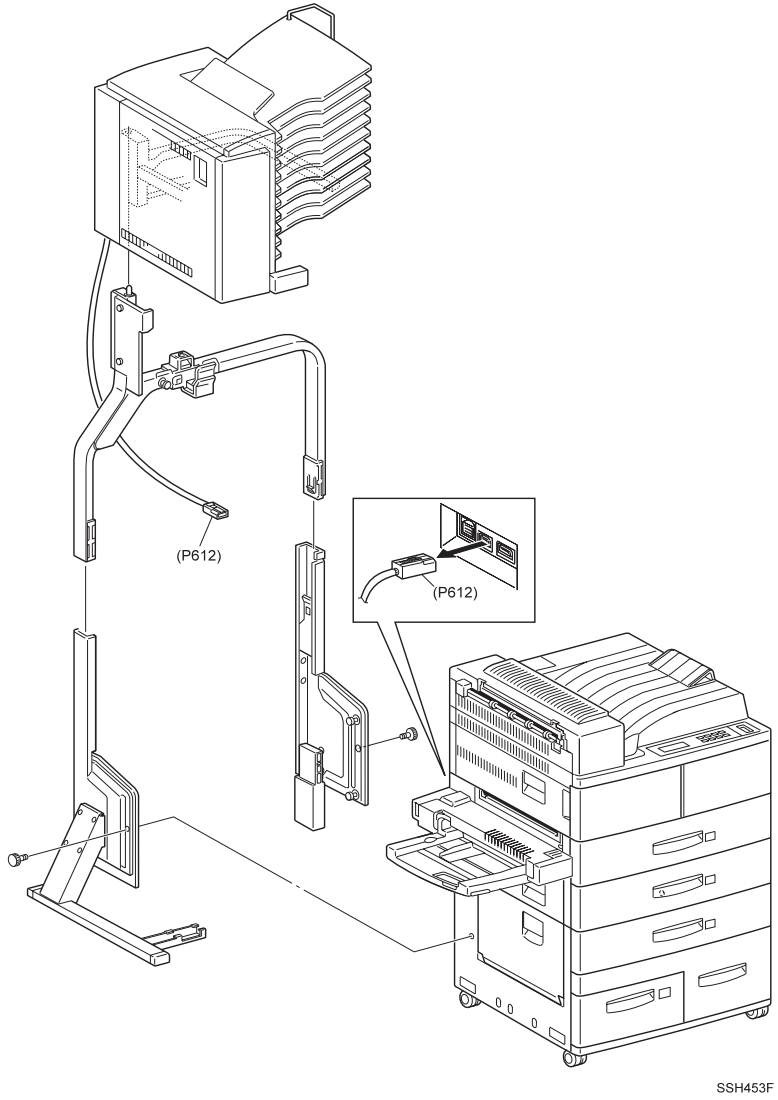


Figure 1-3. Mailbox(Multibin)

1.3.1.2 Assembly

1. Attach Stand R to the Stand L Connection, and use two screws to secure Stand R.
2. Attach the Stand L Connection to the Left Bracket, and use four screws to secure the Stand L Connection.
3. Attach the Left Bracket to the left side of printer by first inserting the two metal tabs on the back of the Bracket into the two holes in the left side of the printer.
4. Slide the Left Bracket down to lock the tabs in place.
5. Use a thumbscrew to secure the Left Bracket to the printer.
6. Attach Stand L to the Right Bracket, and use two screws to secure Stand L.
7. Attach the Right Bracket to the right side of the printer by first inserting the two metal tabs on the back of the Bracket into the two holes in the right side of the printer.
8. Slide the Right Bracket down to lock the tabs in place.
9. Use a thumbscrew to secure the Right Bracket to the printer.
10. Slide the legs of the Rack into the tops of the Left and Right Brackets.
11. Push down on the Rack until it locks into place.
12. Reinstall the Mailbox by carefully lowering the opening in the Mailbox support arm, onto the pin at the top of the Rack.
13. Position the Stopper so when it is installed it blocks paper from exiting the right side of the Mailbox bins.
14. Hook one end of the Stopper through the hole at the tip of Tray 1, and hook the other end of the Stopper through the hole at the tip of Tray 10.
15. Plug P612 into the jack that is located at the rear of the printer.

1.3.2 Sorter Left Cover Assembly

(See “PL15.2 Sorter Cover and Frame” on page -37)

1.3.2.1 Removal

1. Remove the screw securing the Left Cover Strap to the Sorter Top Cover.
2. Unhook the Left Cover Hook from the Sorter Frame Assembly.
3. Remove the KL clip from the Sorter Left Cover Assembly.
4. Lift the Cover up and off of the Sorter.

1.3.2.2 Assembly

1. Position the Left Cover Assembly approximately half way open, and reinstall it onto the Sorter.
2. Use a KL clip to secure the Left Cover to the Sorter.
3. Rehook the Left Cover Hook onto the Sorter Frame Assembly.
4. Reinstall the Left Cover Strap to the Sorter Top Cover, and use one screw to secure the Strap.

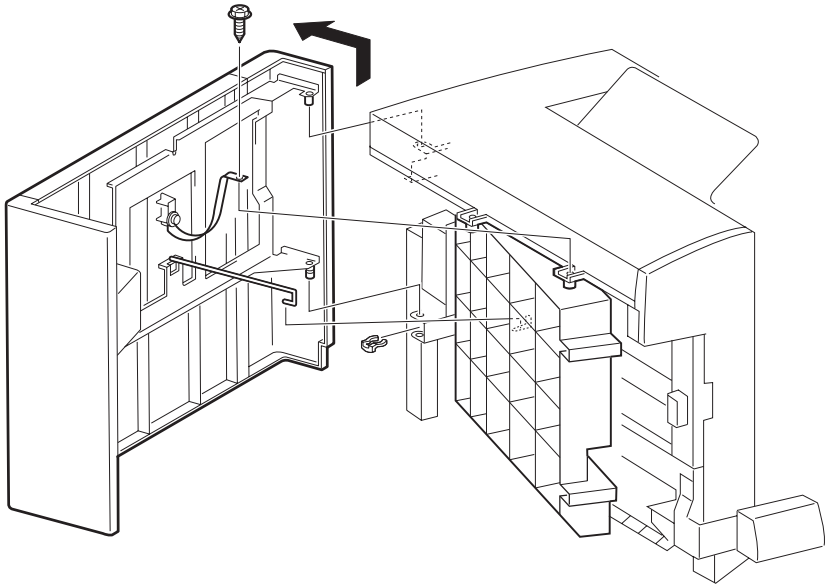


Figure 1-4. Sorter Left Cover Assembly

1.3.3 Sorter Front Cover

(See “PL15.2 Sorter Cover and Frame” on page -37)

1.3.3.1 Removal

1. Open the Sorter Left Cover Assembly.
2. Push down on the Handle and remove it from the Mailbox frame.
3. Remove the two screws securing the Sorter Front Cover to the Sorter, and remove the Front Cover.

1.3.3.2 Assembly

1. Reinstall the Front Cover onto the Sorter frame.
2. Use two screws to secure the Front Cover to the frame.
3. Reinstall the Handle.
4. Close the Sorter Left Cover Assembly.

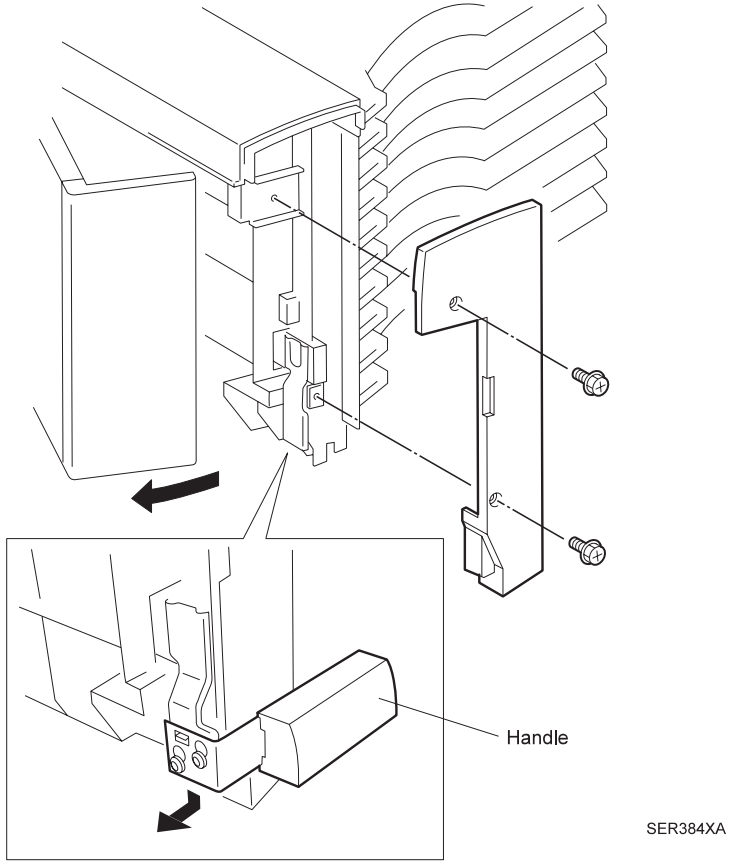


Figure 1-5. Sorter Front Cover

1.3.4 Sorter Rear Cover

(See “PL15.2 Sorter Cover and Frame” on page -37)

1.3.4.1 Removal

1. Remove the screw securing the Rear Cover to the Sorter frame.
2. Remove the Rear Cover from the Sorter frame.

1.3.4.2 Assembly

1. Reinstall the Rear Cover onto the Sorter frame.
2. Use one screw to secure the Rear Cover to the Sorter frame.

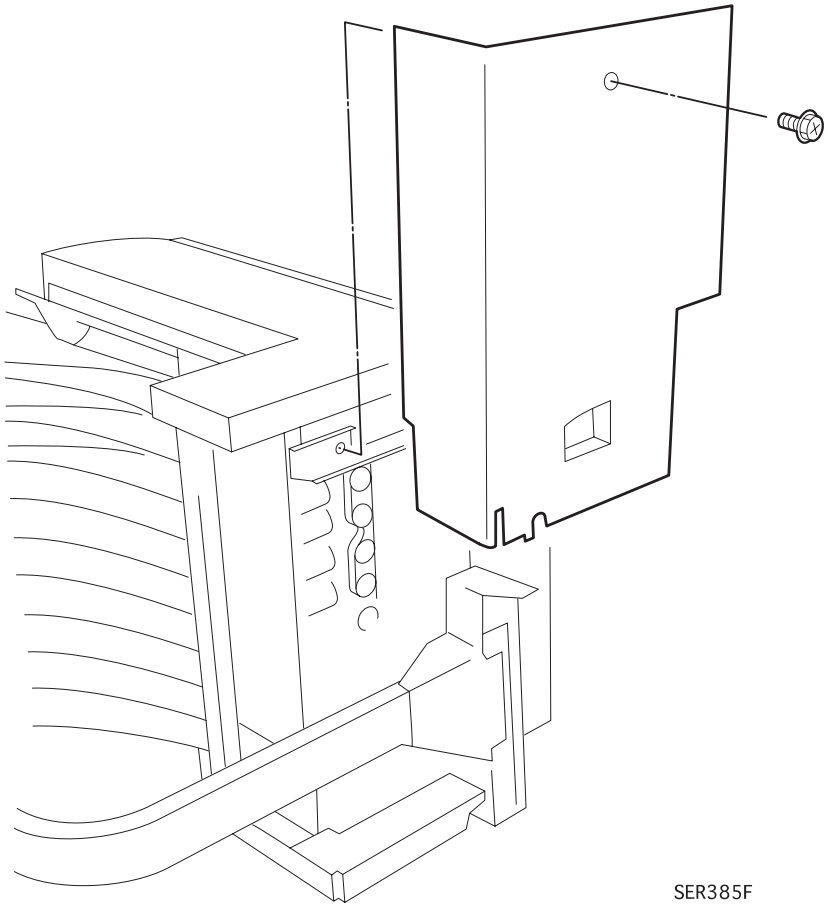


Figure 1-6. Sorter Rear Cover

1.3.5 Sorter Top Cover

(See “PL15.2 Sorter Cover and Frame” on page -37)

1.3.5.1 Removal

1. Remove Sorter Left Cover Assembly (See “Sorter Left Cover Assembly” on page -12).
2. Remove the Sorter Front Cover Assembly (See “Sorter Front Cover” on page -13).
3. Remove the Sorter Rear Cover Assembly (See “Sorter Rear Cover” on page -14).
4. Loosen the three screws securing the Top Cover to the Sorter frame, and remove the Top Cover.

1.3.5.2 Assembly

1. Reinstall the Sorter Top Cover to the Sorter frame, making sure you line up the slots in the Cover with the screws in the frame.
2. Tighten the three screws to secure the Top Cover to the frame.
3. Reinstall the Sorter Rear Cover Assembly (See “Sorter Rear Cover” on page -14).
4. Reinstall the Sorter Front Cover Assembly (See “Sorter Front Cover” on page -13).
5. Reinstall the Sorter Left Cover Assembly (See “Sorter Left Cover Assembly” on page -12).

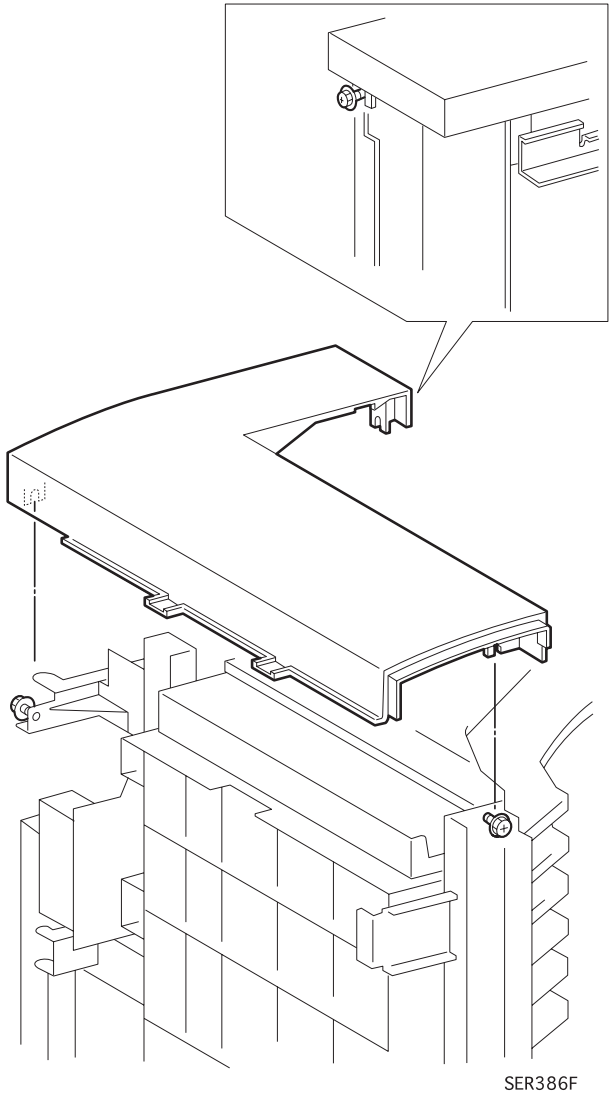


Figure 1-7. Sorter Top Cover

1.3.6 Actuator Cover Assembly

(See “PL15.3 Actuator Cover and Left Chute” on page -38)

1.3.6.1 Removal

1. Remove the Sorter Top Cover Assembly (See “Sorter Top Cover” on page -15).
2. Disconnect P/J 820 from the BIN 1 Jam Sensor.
3. Disconnect P/J 823 running to the Vertical Sensor.
4. Pull all of the wires free of the wire clips at the top of the Actuator cover.
5. Remove the three screws securing the Actuator Cover Assembly to the frame, lift the Cover free of the wire harness and remove it from the Mailbox.

1.3.6.2 Assembly

1. Position the Actuator Cover Assembly over the top of the Sorter.
2. Reach under the Actuator Cover and pull the Full Stack Actuator 2 up and out of the way.
3. Reinstall The Actuator Cover Assembly onto the Sorter.
4. Use three screws to secure the Actuator Cover to the Sorter.
5. Reinstall the wire harness under the wire clips located on the side of the Actuator Cover and reconnect the BIN 1 Jam Sensor P/J.
6. Reinstall the Sorter Top Cover Assembly (See “Sorter Top Cover” on page -15).

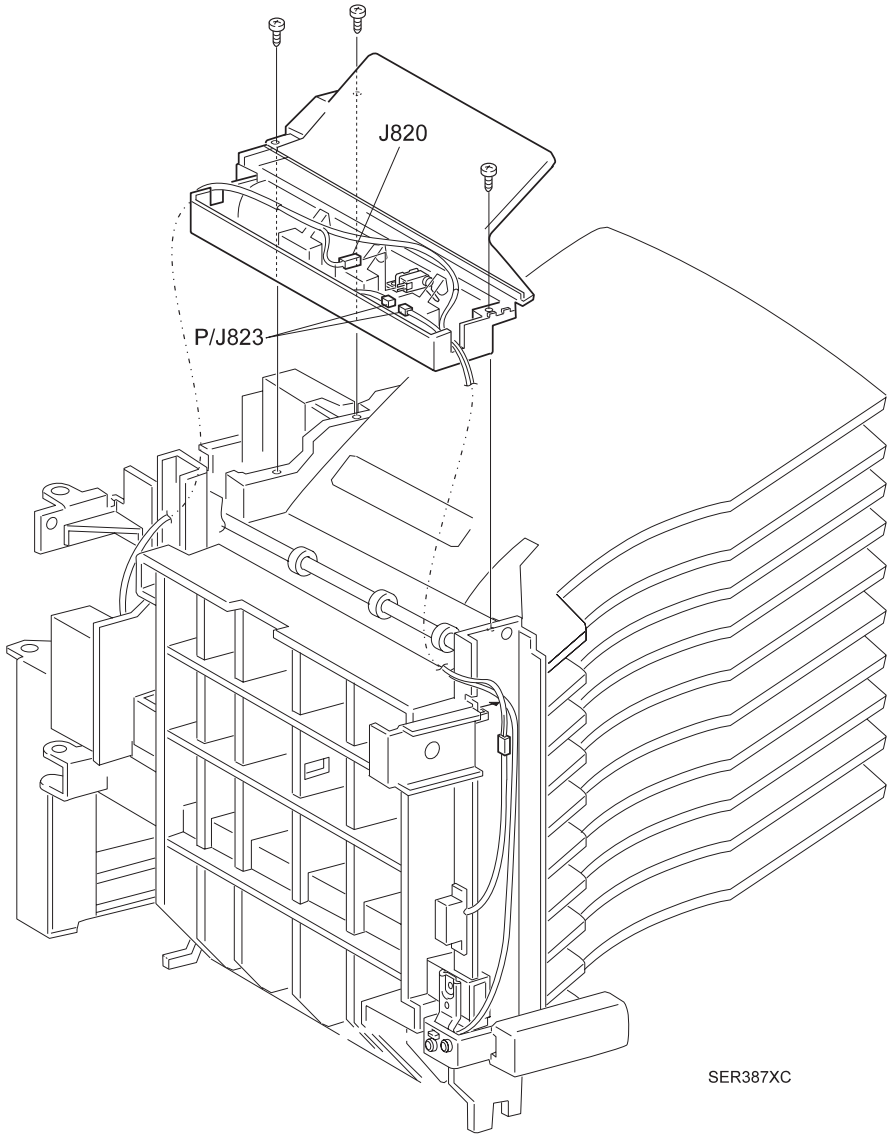


Figure 1-8. Actuator Cover Assembly

1.3.7 BIN 1 Jam Sensor

(See “PL15.3 Actuator Cover and Left Chute” on page -38)

1.3.7.1 Removal

1. Remove the Sorter Top Cover Assembly (See “Sorter Top Cover” on page -15).
2. Disconnect J 820 from the BIN 1 Jam Sensor.
3. Remove the screw securing the BIN 1 Jam Sensor to the Actuator Cover.
4. Remove BIN 1 Jam Sensor from the Actuator Cover.

1.3.7.2 Assembly

1. Reinstall BIN 1 Jam Sensor to the Actuator Cover. Make sure you insert the Sensor actuator through the rectangular slot in the Cover.
2. Use one screw to secure the Sensor to the Cover.
3. Reconnect J 820 to the BIN 1 Jam Sensor.
4. Reinstall the Sorter Top Cover Assembly (See “Sorter Top Cover” on page -15).

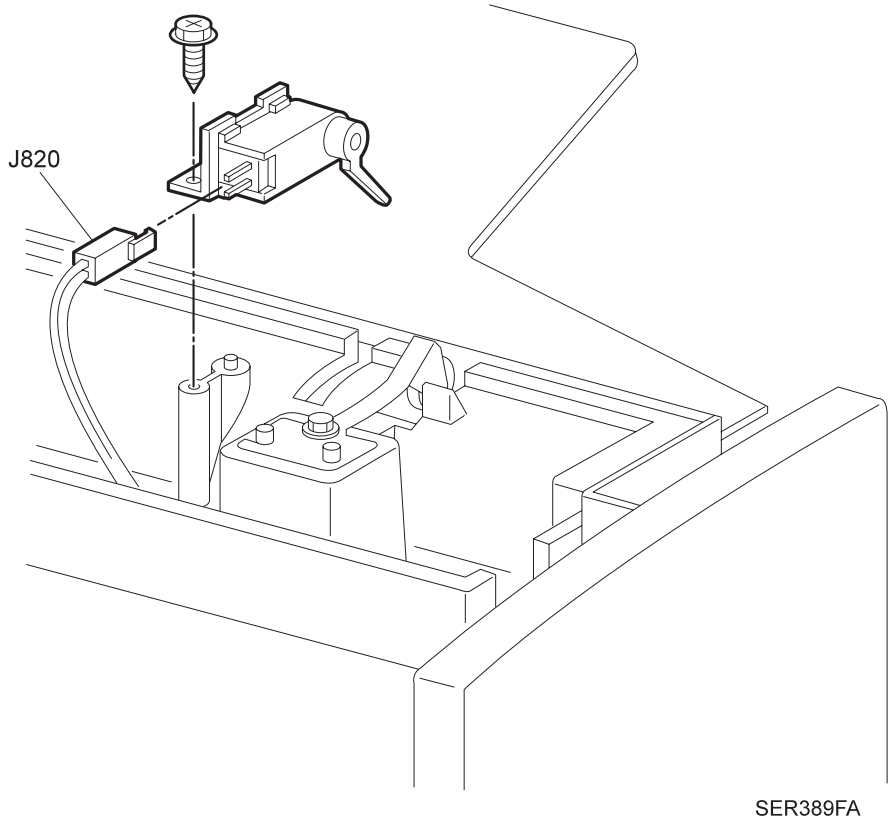


Figure 1-9. BIN Jam Sensor

1.3.8 BIN 1 Tray Assembly

(See “PL15.4 BinTray 1 Assembly” on page -39)

1.3.8.1 Removal

1. Remove the Paper Stopper.
2. Remove the Actuator Cover Assembly (See “Actuator Cover Assembly” on page -16).
3. Remove the screw securing the LED and the LED Cover to the BIN 1 Tray Assembly, and remove the LED and LED Cover (Inset 1).
4. Slip the Drive Belt off of BIN 1 Drive Pulley.
5. Remove the three screws securing BIN 1 Tray to the Mailbox frame.
6. Pull out on latch arms to release the latch that is securing BIN 1 Tray Assembly to BIN 2 Gate (inset 2) and remove BIN 1 Tray Assembly.

1.3.8.2 Assembly

1. Reinstall BIN 1 Tray onto the Mailbox frame. Make sure the tabs on the Tray line up with the slots in the frame.
2. Open the Sorter Chute so you can access BIN 2 Gate.
3. Hold on to BIN 2 Gate while you press down on the Tray Assembly so the latch arms on the Tray Assembly latch onto BIN 2 Gate.
4. Use three screws to secure BIN 1 Tray to the Mailbox frame.
5. Slip the Drive Belt onto BIN 1 Drive Pulley.
6. Reinstall the LED and the LED Cover, and use one screw to secure them to the BIN 1 Tray Assembly.
7. Reinstall the Actuator Cover Assembly (See “Actuator Cover Assembly” on page -16).
8. Reinstall the Paper Stopper.

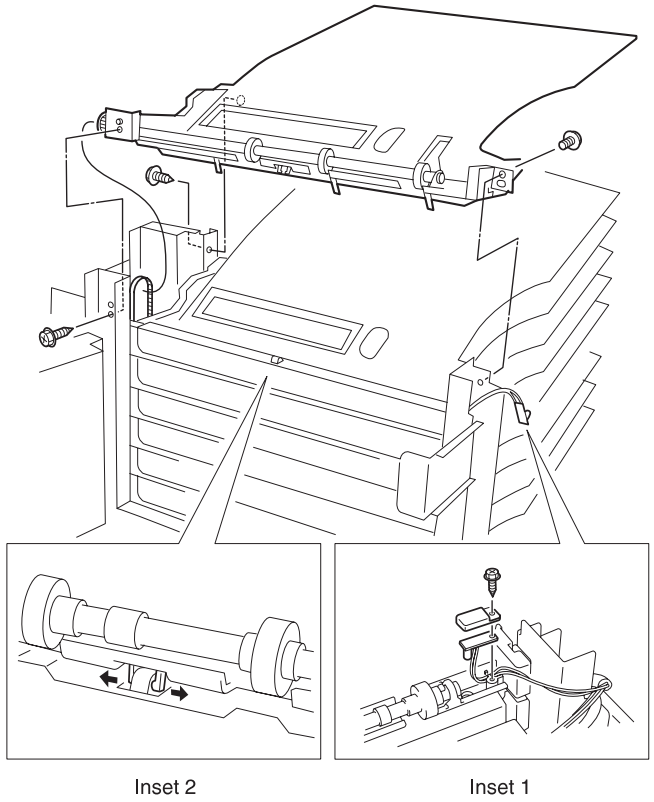


Figure 1-10. BIN 1 Tray Assembly

1.3.9 Sorter Drive Belt

(See “PL15.4 BinTray 1 Assembly” on page -39)

1.3.9.1 Removal

1. Remove Sorter Left Cover Assembly (See “Sorter Left Cover Assembly” on page -12).
2. Remove the Sorter Rear Cover Assembly (See “Sorter Rear Cover” on page -14).
3. Remove the Sorter Drive Motor Assembly (See “Sorter Drive Motor” on page -29).
4. Slide the Sorter Drive Gear off of the shaft.
5. Slip the Sorter Drive Belt off of the Drive Pulleys.

1.3.9.2 Assembly

1. Position the Sorter Belt as shown in the illustration, and reinstall the Belt onto the Drive Pulleys. Make sure you reinstall the Belt over the four Tension Pulleys, as shown by the arrows in the illustration.
2. Reinstall the Sorter Drive Gear.
3. Push up on the Sorter Drive Tension Bracket while you reinstall the Belt onto the Sorter Drive Gear.
4. Reinstall the Sorter Drive Motor Assembly (See “Sorter Drive Motor” on page -29).
5. Reinstall the Sorter Rear Cover Assembly (See “Sorter Rear Cover” on page -14).
6. Reinstall the Sorter Left Cover Assembly (See “Sorter Left Cover Assembly” on page -12).

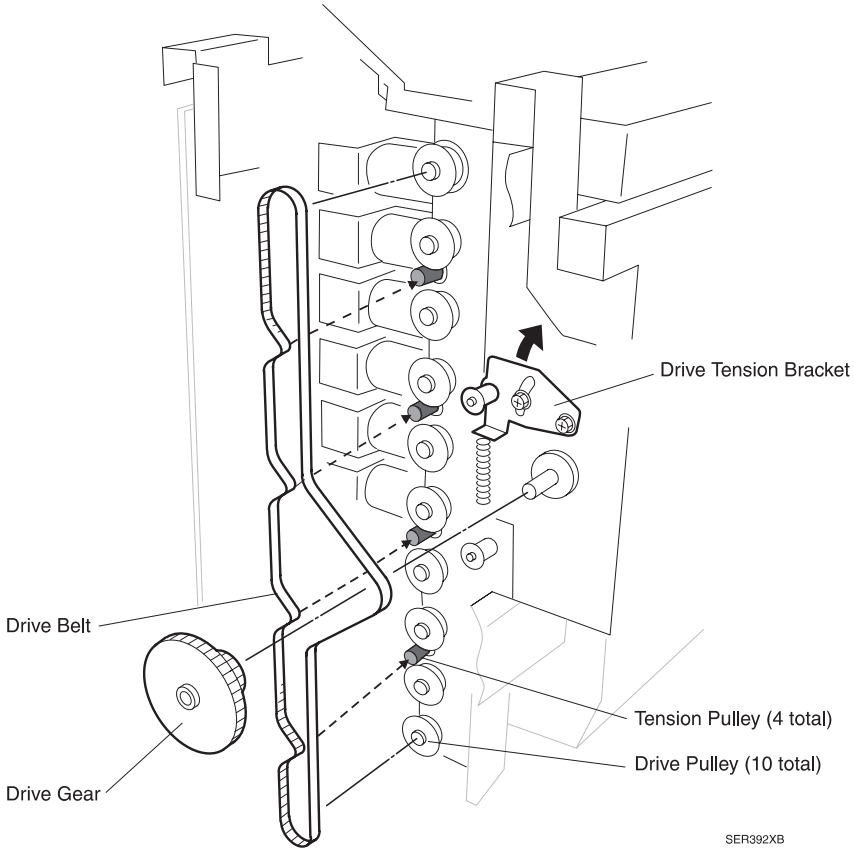


Figure 1-11. Sorter Drive Belt

1.3.10 BIN Trays2 ~10 Assemblies

(See “PL15.5 Bin Tray Assembly” on page -40)

This section describes the removal and replacement of a single BIN Tray, from BIN 2 through BIN 10. When removing a BIN Tray start by removing BIN Tray 1, then remove BIN Tray 2. Remove the BIN Trays sequentially, 2 through 10, by repeating the steps in this section for each remaining Tray.

1.3.10.1 Removal

1. Remove the Paper Stopper (See “Installation and Removal of Mailbox” on page -7).
2. Remove the Actuator Cover Assembly (See “Actuator Cover Assembly” on page -16).
3. Remove BIN 1 Tray Assembly (See “BIN 1 Tray Assembly” on page -18).
4. Remove Gate 2 Solenoid (See “Gate Solenoid 2 ~10” on page -22).
5. Pull out on latch arms to release the latch that is securing BIN 2 Tray Assembly to BIN 3 Gate and remove Bin 2 Tray Assembly.
6. Remove the three screws securing BIN 2 Tray to the Mailbox frame.
7. Slide Bin 2 Drive Pulley out of the Drive Belt and remove BIN 2 Tray Assembly

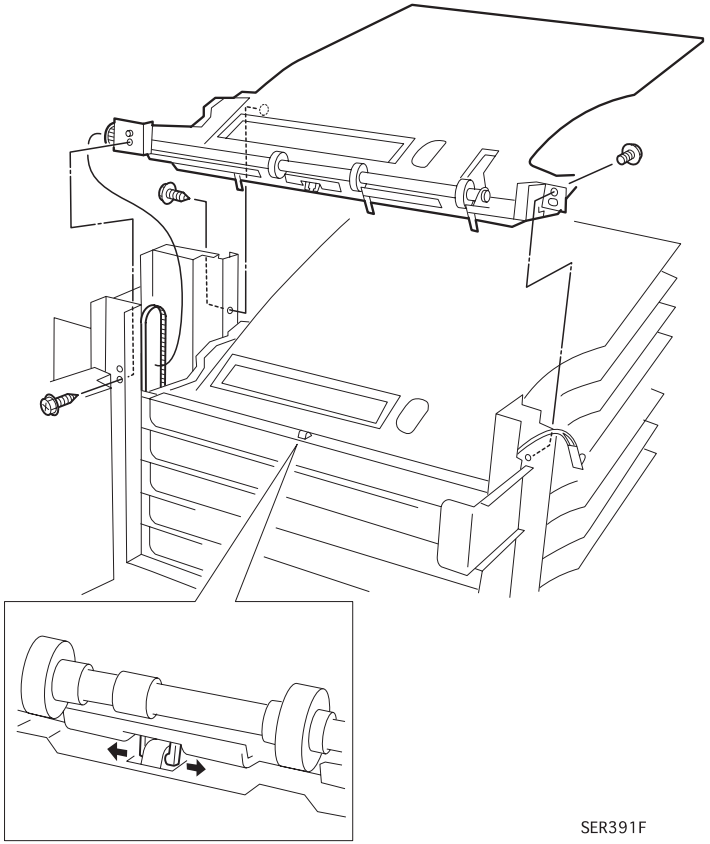


Figure 1-12. BIN Trays 2 ~10 Assemblies

1.3.10.2 Assembly

1. Reinstall BIN 2 Tray onto the Mailbox frame. Make sure the tabs on the Tray line up with the slots in the frame.
2. Open the Sorter Chute so you can access BIN 3 Gate.
3. Hold on to BIN 3 Gate while you press down on the Tray Assembly so the latch arms on the Tray Assembly latch onto BIN 3 Gate.
4. Use three screws to secure BIN 2 Tray to the Mailbox frame.
5. Slip the Drive Belt onto BIN 2 Drive Pulley.
6. Reinstall Gate 2 Solenoid (See “Gate Solenoid 2 ~10” on page -22).
7. Reinstall BIN 1 Tray Assembly (See “BIN 1 Tray Assembly” on page -18)
8. Reinstall the Actuator Cover Assembly (See “Actuator Cover Assembly” on page -16).
9. Reinstall the Paper Stopper (See “Installation and Removal of Mailbox” on page -7).

1.3.11 Gate Solenoid 2 ~10

(See “PL15.5 Bin Tray Assembly” on page -40)

1.3.11.1 Removal

1. Remove the Paper Stopper (See “Installation and Removal of Mailbox” on page -7).
2. Remove the Sorter Top Cover Assembly (See “Sorter Top Cover” on page -15).
3. Remove BIN Tray 1 (See “BIN 1 Tray Assembly” on page -18).
4. Disconnect J 803 (Solenoid 2) from the Sorter PWB.
5. Loosen, do not remove, the screw securing Solenoid 2 to the Mailbox frame.
6. Release the Solenoid plunger from the end of Gate 2, and remove Solenoid 2.
7. Remove BIN Tray 2 (See “BIN Trays2 ~10 Assemblies” on page -20).
8. Disconnect J 804 (Solenoid 3) from the Sorter PWB.
9. Loosen, do not remove, the secure securing Solenoid 3 to the Mailbox frame.
10. Release the Solenoid plunger from the end of Gate 3, and remove Solenoid 3.
11. Repeat steps 7 through 10 to access and remove the other Gate Solenoids.

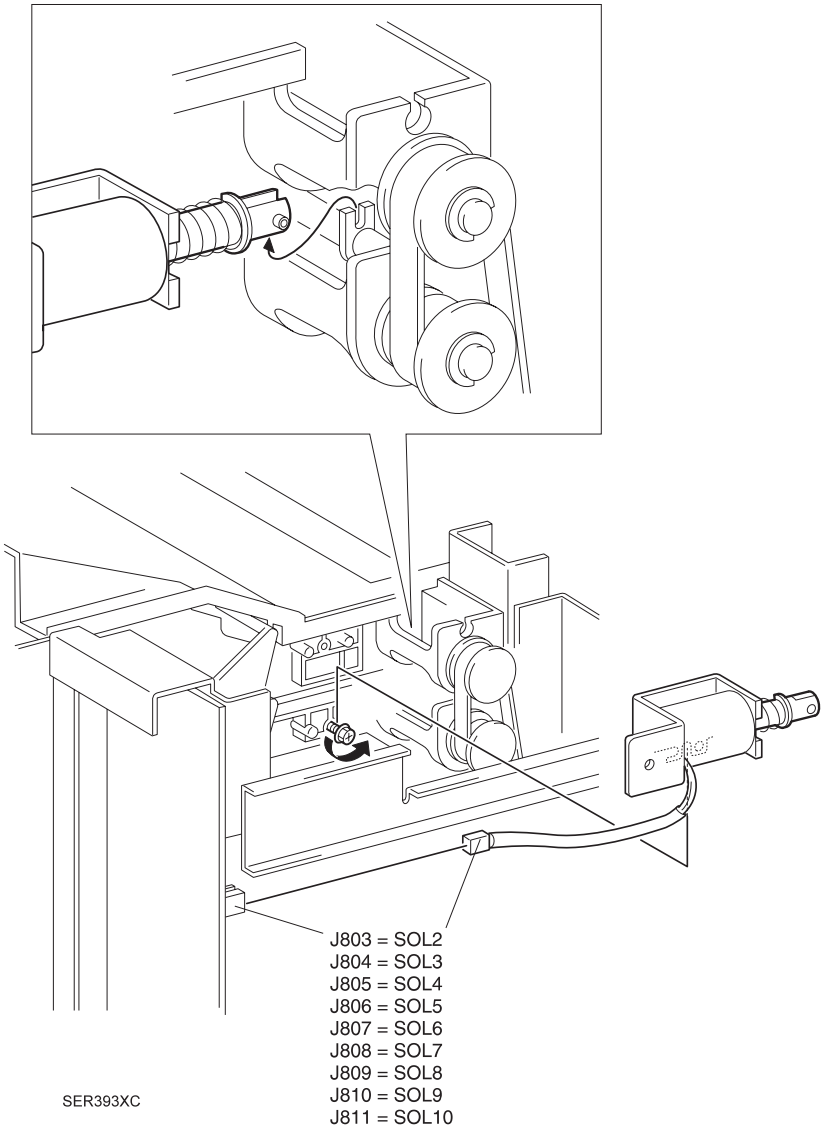


Figure 1-13. Gate Solenoid

1.3.11.2 Assembly

1. Reinstall the highest Solenoid number first (10 ~ 2) onto the Mailbox frame, making sure you line up the positioning holes in the Solenoid bracket with the positioning tabs on the frame.

2. Insert the Solenoid plunger into the end of the Gate (see the insert in figure)

3. Tighten the screw to secure the Solenoid to the frame.

4. Reconnect the Solenoid Js to the Sorter Control PWB.

5. Reinstall the BIN Tray you removed in order to reach the specific Solenoid (See “BIN 1 Tray Assembly” on page -18 or “BIN Trays2 ~10 Assemblies” on page -20).

6. Repeat steps 1 through 5 to reinstall the remaining Solenoid(s) and BIN Tray(s).

7. Reinstall the Sorter Top Cover Assembly (See “Sorter Top Cover” on page -15).

8. Reinstall the Paper Stopper (See “Installation and Removal of Mailbox” on page -7).

1.3.12 Sorter Exit Roll

(See “PL15.5 Bin Tray Assembly” on page -40)

This section covers the removal and replacement of a BIN 1 Exit Roll. When removing Sorter Exit Rolls, start with BIN 1 and procedure sequentially to BIN 10. Remove Exit Rolls 2 through 10 by repeating the steps in this section for each Roll in the Sorter.

1.3.12.1 Removal

1. Remove the Actuator Cover Assembly (See “Actuator Cover Assembly” on page -16).
2. Remove the Bin Tray Assembly of the Exit Roll you want to remove (See “BIN 1 Tray Assembly” on page -18 or “BIN Trays2 ~10 Assemblies” on page -20).
3. Rotate the Gate 90° and remove it from the Bin Tray Assembly.
4. Remove the two E-rings from the Pulley end of the Sorter Exit Roll.
5. Slide the Drive Pulley and Collar off of the Roll.
6. Slide the Roll out of the holes in the Bin Tray, and remove the Roll.

1.3.12.2 Assembly

1. Slide the Front Bearing onto the Roll.
2. Align the Sorter Exit Roll so the keyed end of the Roll is positioned on the drive side of the Bin Tray.
3. Slide the ends of the Exit Roll into the holes in the Tray.
4. Rotate the Rear Bearing until it slides into the hole in the Tray.
5. Use an E-ring, behind the Rear Bearing, to secure the Roll to the Tray.
6. Slide the Collar and Drive Pulley onto the end of the Roll.
7. Use an E-ring to secure the Pulley to the Roll.
8. Reinstall the Gate onto the Bin Tray Assembly.
9. Reinstall the Bin Tray Assembly (See “BIN 1 Tray Assembly” on page -18 or “BIN Trays2 ~10 Assemblies” on page -20).
10. Reinstall the Actuator Cover Assembly (See “Actuator Cover Assembly” on page -16).

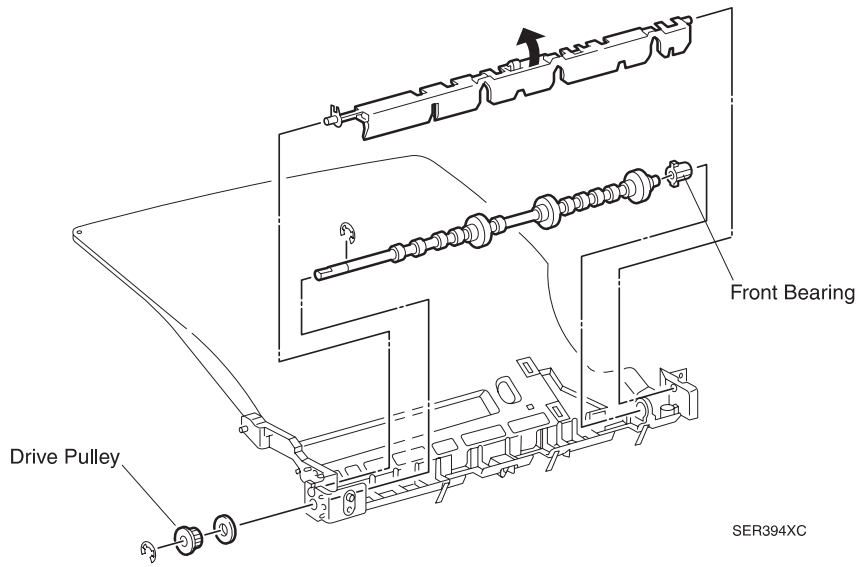


Figure 1-14. Sorter Exit Roll

1.3.13 Sorter Entrance Sensor

(See “PL15.5 Bin Tray Assembly” on page -40)

1.3.13.1 Removal

1. Open the Left Cover Assembly.
2. Remove the screw securing the Sorter Entrance Sensor to the Sorter frame, and remove the Sensor.
3. Disconnect the J815 from the Sorter Entrance Sensor.

1.3.13.1.1 Assembly

1. Reconnect the Sorter Entrance Sensor J815.
2. Reinstall the Sorter Entrance Sensor, and use one screw to secure it to the Sorter frame.
3. Make sure you insert the Sensor actuator through the rectangular slot.
4. Close the Left Cover Assembly.

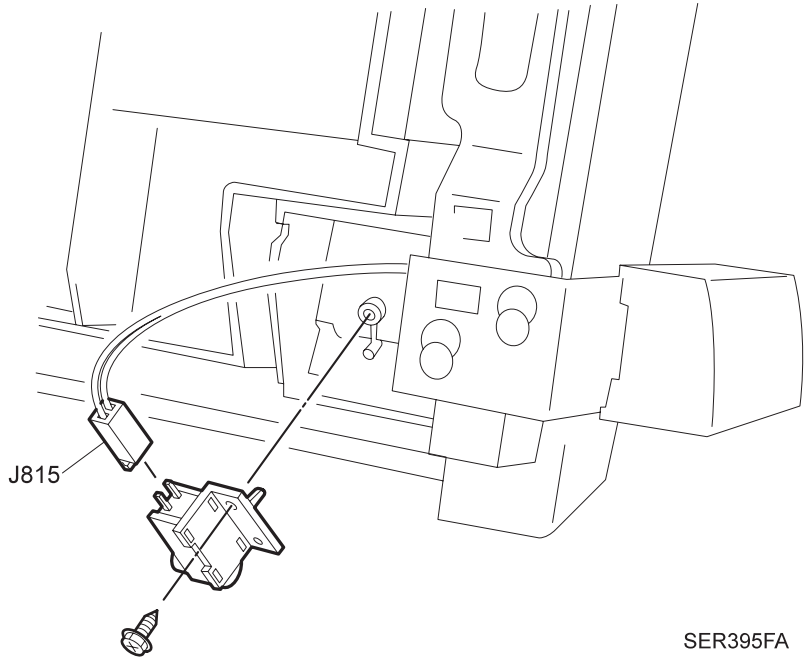


Figure 1-15. Sorter Entrance Sensor

1.3.14 In Gate Solenoid

(See “PL15.6 Solenoid and Sensor” on page -41)

1.3.14.1 Removal

1. Remove the Sorter Rear Cover Assembly (See “Sorter Rear Cover” on page -14).
2. Lift the Mailbox off of the printer (See “Installation and Removal of Mailbox” on page -7) and set it down on the Front Cover.
3. Disconnect J 812 (In Solenoid) from the Sorter Control PWB.
4. Remove the two screws securing the Tie Plate to the frame, and remove the Tie Plate.
5. Remove the two small brass screws securing the IN Gate Solenoid to the Rear Lower Cover.
6. Slide the Solenoid plunger out of the IN Gate Link and remove the IN Gate Solenoid from the Mailbox frame.

CAUTION

Do not lose the IN Gate Solenoid Spring or the two small brass screws.

1.3.14.2 Assembly

1. Reinstall the IN Gate Solenoid Spring onto the Solenoid plunger.
2. Slide the end of the Solenoid plunger into the slot in the IN Gate Link.
3. Reinstall the Solenoid and attached IN Gate Link onto the frame, making sure the tab on the Link fits into the slot in the frame.
4. Use two small brass screws to secure the Solenoid to the frame.
5. Reinstall the Tie Plate to the frame, and use two screws to secure the Tie Plate.
6. Reconnect J 812 to the Sorter Control PWB.
7. Reinstall the Mailbox onto the printer (See “Installation and Removal of Mailbox” on page -7).
8. Reinstall the Sorter Rear Cover Assembly (See “Sorter Rear Cover” on page -14).

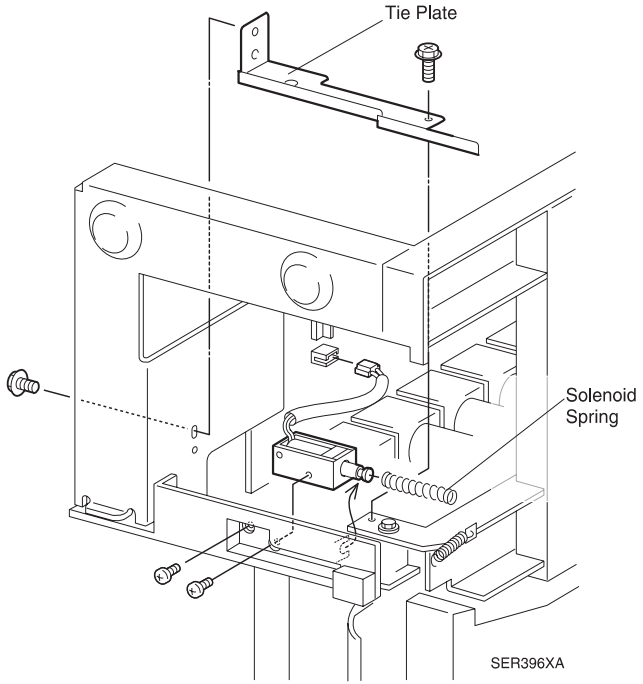


Figure 1-16. In Gate Solenoid

1.3.15 Vertical LED/Sensor

(See “PL15.6 Solenoid and Sensor” on page -41)

1.3.15.1 Removal

1. Remove the Actuator Cover Assembly (See “Actuator Cover Assembly” on page -16).
2. Disconnect J 823.
3. Remove the screw securing the LED Cover and LED to the Bin 1 Tray Assembly, and remove the LED Cover and LED (inset in illustration).
4. Remove the Lower Chute (See “Lower Chute” on page -34).
5. Remove the screw securing the Vertical Sensor to the Lower Chute and remove the Sensor, the wire harness, and the LED.

1.3.15.2 Assembly

1. Reinstall the Vertical Sensor to the Lower Chute, and use one screw to secure it to the Chute.
2. Reinstall the Lower Chute (See “Lower Chute” on page -34).
3. Reroute the wire harness up the front of the Mailbox frame.
4. Reinstall the LED Cover and LED to the Bin 1 Tray Assembly, and use one screw to secure it to the Assembly.
5. Reconnect J 823.
6. Reinstall the Actuator Cover Assembly (See “Actuator Cover Assembly” on page -16).

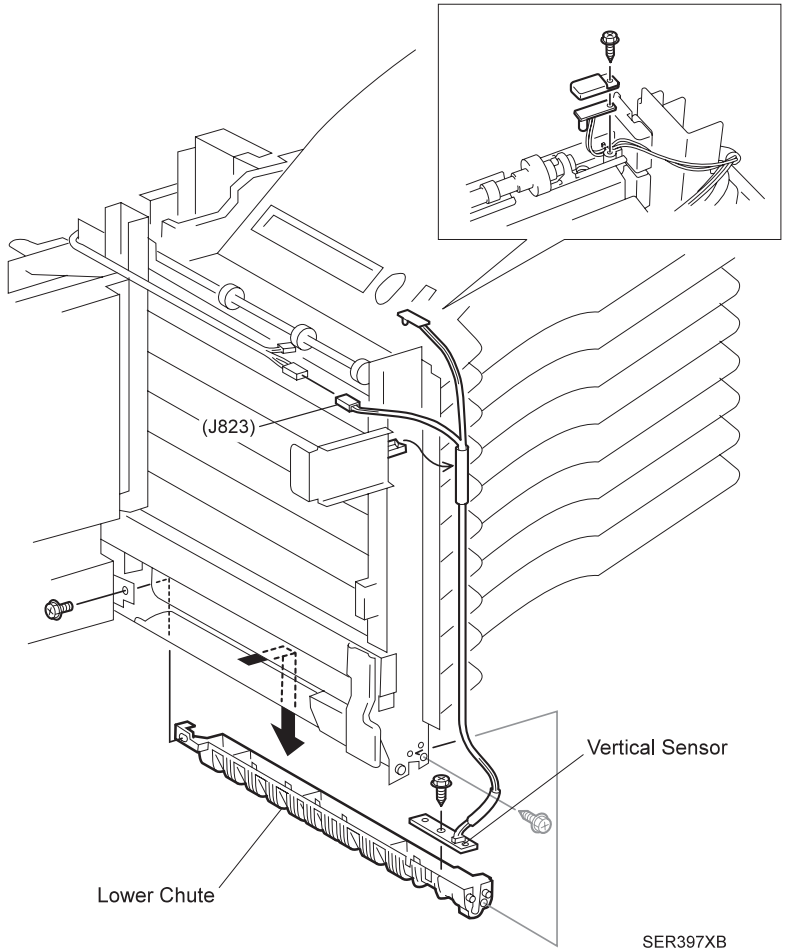


Figure 1-17. Vertical LED/Sensor

1.3.16 Sorter Control PWB

(See “PL15.7 Sorter Control PWB and Sorter Drive Motor” on page -42)

1.3.16.1 Removal

1. Remove Sorter Left Cover Assembly (See “Sorter Left Cover Assembly” on page -12).
2. Remove the Sorter Rear Cover Assembly (See “Sorter Rear Cover” on page -14).
3. Disconnect the thirteen P/Js from the Sorter Control PWB.
4. Remove the four screws securing the Sorter Control PWB to the Sorter frame, and remove the PWB.

CAUTION

Wear a grounded, electrostatic wrist strap and use caution when working with the Sorter Control PWB. Static electricity can damage the sensitive electronics of the PWB. Handle the PWB by the edges. Never touch any of the ICs that are mounted on the PWB.

1.3.16.2 Assembly

1. Reinstall the Sorter Control PWB to the Sorter frame, and use four screws to secure it to the frame.
2. Make sure all of the Full Stack Actuators move freely between the arms of the Full Stack Sensors.
3. Reconnect the thirteen P/Js (P/J 800 ~ P/J 812) to the Sorter Control PWB.
4. Reinstall the Sorter Rear Cover Assembly (See “Sorter Rear Cover” on page -14).
5. Reinstall the Sorter Left Cover Assembly (See “Sorter Left Cover Assembly” on page -12).

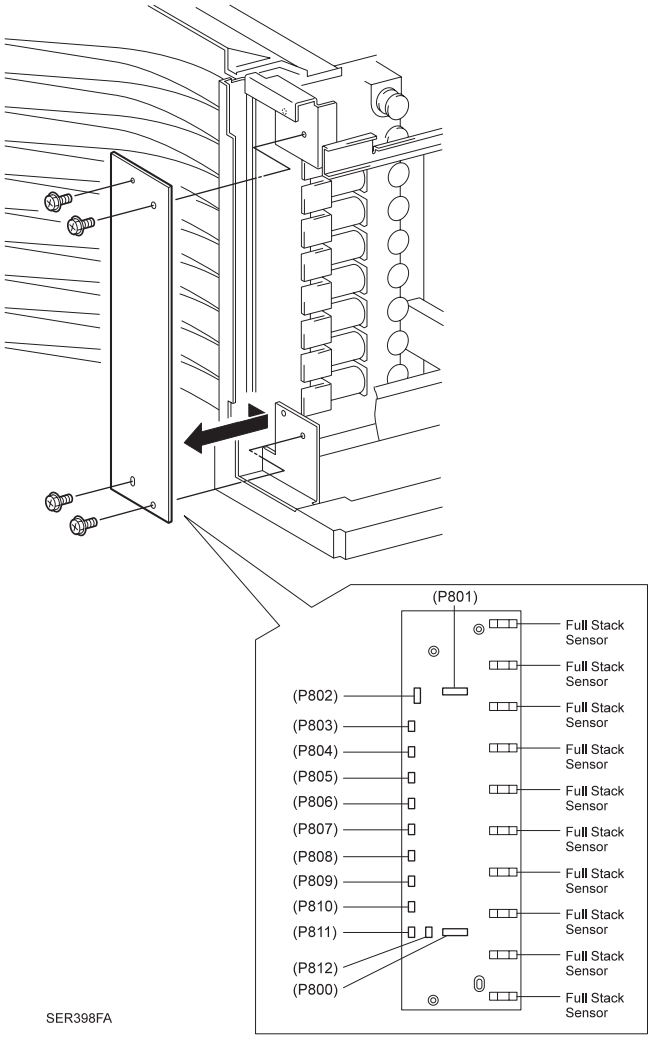


Figure 1-18. Sorter Control PWB

1.3.17 Sorter Drive Motor

(See “PL15.7 Sorter Control PWB and Sorter Drive Motor” on page -42)

1.3.17.1 Removal

1. Remove Sorter Left Cover Assembly (See “Sorter Left Cover Assembly” on page -12).
2. Remove the Sorter Rear Cover Assembly (See “Sorter Rear Cover” on page -14).
3. Disconnect J802 (Drive Motor) from the Sorter Control PWB.
4. Remove the two screws securing the Sorter Drive Motor Assembly to the frame, and remove the Motor Assembly.

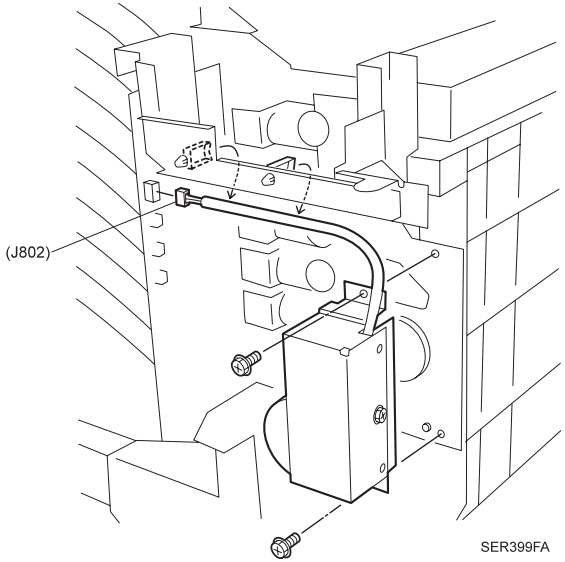


Figure 1-19. Sorter Drive Motor Assembly

5. Remove the screw securing the Sorter Drive Cover to the Sorter Drive Bracket, and remove the Cover (Figure below).

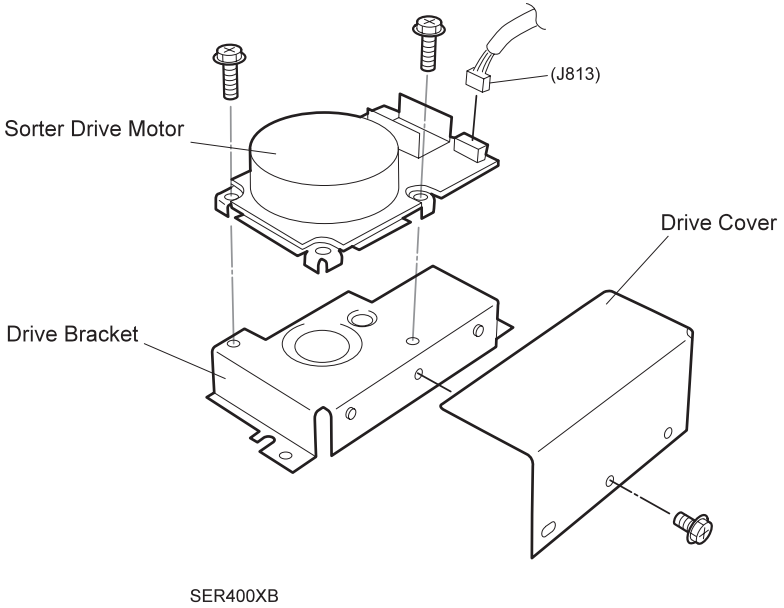


Figure 1-20. Sorter Drive Motor

6. Disconnect J813 from the Drive Motor PWB.
7. Remove the two screws securing the Sorter Drive Motor to the Sorter Drive Bracket, and remove the Motor (See Figure above).

1.3.17.2 Assembly

1. Reinstall the Sorter Drive Motor to the Sorter Drive Bracket, and use two screws to secure the Motor to the Bracket (See Figure1-20).
2. Reconnect J813 to the Drive Motor PWB.
3. Reinstall the Sorter Drive Cover to the Sorter Drive Bracket, and use one screw to secure the Cover to the Bracket.
4. Reinstall the Sorter Drive Motor Assembly to the frame, and use two screws to secure the Assembly to the frame (Figure 1-19).
5. Reconnect J802 to the Sorter Control PWB.
6. Reinstall the Sorter Rear Cover Assembly (See “Sorter Rear Cover” on page -14).
7. Reinstall the Sorter Left Cover Assembly (See “Sorter Left Cover Assembly” on page -12).

1.3.18 Full Stack Actuator

(See “PL15.3 Actuator Cover and Left Chute” on page -38)

1.3.18.1 Removal

1. Remove the Actuator Cover Assembly (See “Actuator Cover Assembly” on page -16).
2. Turn the Actuator Cover upside down.
3. Hold the center of Full Stack Actuator 2 between you fingers and bow the Actuator just enough to free one end it from the Actuator Cover, and remove the Actuator.
4. Pull the outside end of Full Stack Actuator 1 free of the Actuator Cover, and remove the Actuator.

1.3.18.2 Assembly

1. Position Full Stack Actuator 1 as shown in the figure.
2. Reinstall Full Stack Actuator 1 by first sliding the inside end of the Actuator into the inside slot in the Actuator Cover, then pressing the outside end of the Actuator into the slot near the edge of the Cover.
3. Position Full Stack Actuator 2 as shown in the figure.
4. Reinstall Full Stack Actuator 2 by first sliding the inside end of the Actuator into the inside slot in the Actuator Cover, then pressing the outside end of the Actuator into the slot near the edge of the Cover.
5. Reinstall the Actuator Cover Assembly (See “Actuator Cover Assembly”).

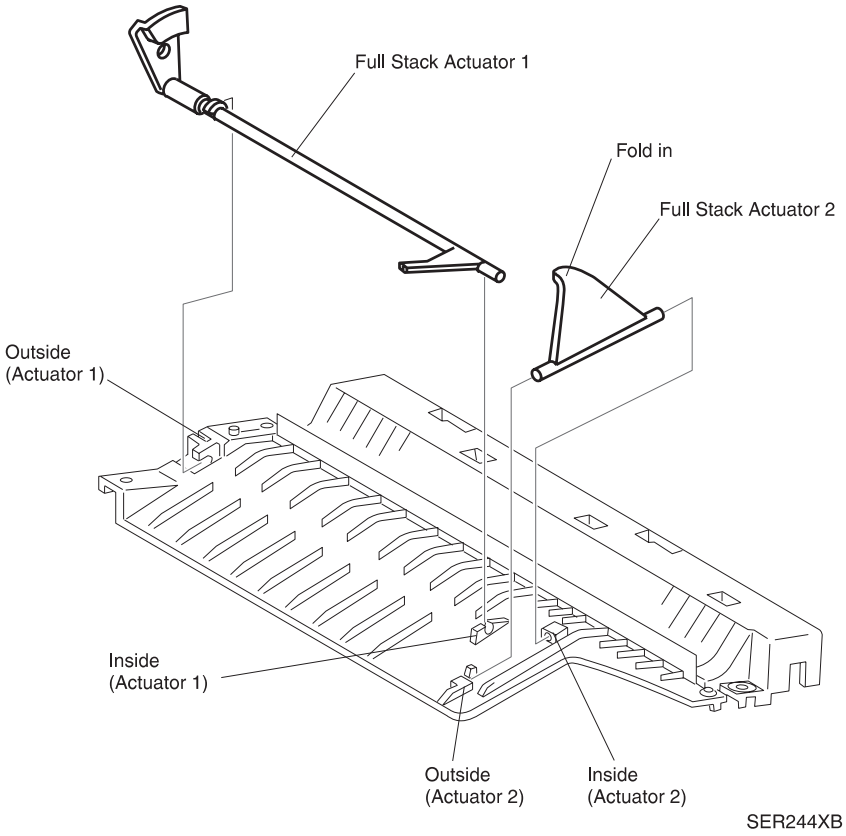


Figure 1-21. Full Stack Actuator

1.3.19 Rear Lower Cover

(See “PL15.6 Solenoid and Sensor” on page -41)

1.3.19.1 Removal

1. Remove the IN Gate (See “IN Gate” on page -33“).
2. Disconnect J 812 (IN Gate Solenoid) from the Sorter Control PWB.
3. Remove the two screws securing the Rear Lower Cover to the Mailbox frame, and remove the Rear Lower Cover, along with the attached. IN Gate Solenoid.
4. Remove the two brass screws securing the IN Gate Solenoid to the Rear Lower Cover, and remove the Solenoid along with the Solenoid Spring and Link.

1.3.19.2 Assembly

1. Reinstall the IN Gate Link onto the Rear Lower Cover.
2. Reinstall the Solenoid Spring onto the IN Gate Solenoid.
3. Use two brass screws to secure the IN Gate Solenoid to the Rear Lower Cover, making sure the Solenoid plunger hooks into the slot in the Link.
4. Reinstall the Rear Lower cover onto the Mailbox frame.
5. Use two screws to secure the Cover to the frame.
6. Reconnect J 812 (IN Gate Solenoid) to the Sorter Control PWB.
7. Reinstall the IN Gate (See “IN Gate” on page -33).

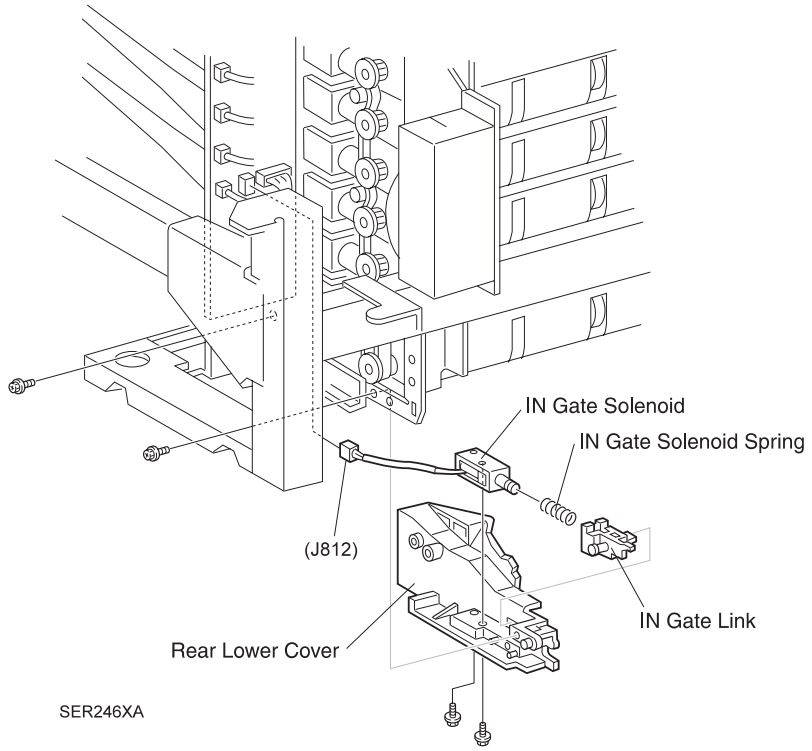


Figure 1-22. Rear Lower Cover

1.3.20 IN Gate

(See “PL15.6 Solenoid and Sensor” on page -41)

1.3.20.1 Removal

1. Remove the Lower Chute (See “Lower Chute” on page -34).
2. Remove the Sorter Rear Cover Assembly (See “Sorter Rear Cover” on page -14).
3. Lift the Mailbox off of the printer (See “Installation and Removal of Mailbox” on page -7) and set it down on the front frame.
4. Remove the screw securing the Gate IN Arm Bracket to the Mailbox frame, and remove the Bracket along with the attached IN Gate Arm and Arm Spring.
5. Unhook the IN Gate Spring from the IN Gate.
6. Remove the screw securing the IN Gate Support to the frame, and remove the Support.
7. Remove the IN Gate.

1.3.20.2 Assembly

1. Reinstall the IN Gate.
2. Reinstall the IN Gate Support onto the frame, making sure you slide the hole at the end of the Support through the arm of the IN Gate.
3. Use one screw to secure the IN Gate Support to the frame.
4. Hook the IN Gate Spring onto the tab on the end of the IN Gate.
5. Move the IN Gate back and forth to make sure it moves freely and has a spring-action return.
6. Reinstall the Gate IN Arm Bracket, along with the attached IN Gate Arm and Arm Spring. Make sure the small tab on the Arm is behind, not in front of, the IN Gate tab.
7. Use one screw to secure the Bracket to the frame.
8. Reinstall the Mailbox onto the printer (See “Installation and Removal of Mailbox” on page -7).
9. Reinstall the Sorter Rear Cover Assembly (See “Sorter Rear Cover” on page -14).
10. Reinstall the Lower Chute (See “Lower Chute” on page -34).

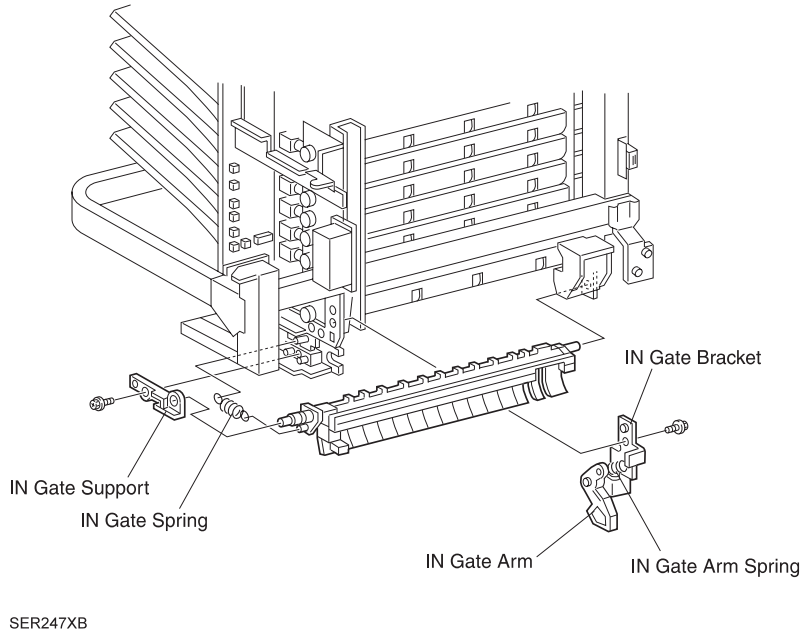


Figure 1-23. In Gate

1.3.21 Lower Chute

(See “PL15.6 Solenoid and Sensor” on page -41)

1.3.21.1 Removal

1. Remove the Sorter Left Cover Assembly (See “Sorter Left Cover Assembly” on page -12).
2. Remove the Sorter Front Cover (See “Sorter Front Cover” on page -13).
3. Remove the two screws securing the Lower Chute to the Mailbox frame.
4. Push the Lower Chute out through the front of the Mailbox.
5. Remove the screw securing the Vertical Sensor PWB to the Lower Chute and remove the PWB.
6. Remove the Lower Chute.

1.3.21.2 Assembly

1. Reinstall the Vertical Sensor PWB to the Lower Chute, and use one secure to secure the PWB.
2. Reinstall the Lower Chute by sliding it into position from the front of the Mailbox.
3. Reroute the Vertical Sensor wire harness through the slot in the side of the Mailbox frame.
4. Align the two positioning holes in the end of the Chute with the two positioning tabs on the frame.
5. Make sure the Chute is not caught on nor interferes with the IN Gate.
6. Use two screws to secure the Chute to the frame.
7. Reinstall the Sorter Front Cover (See “Sorter Front Cover” on page -13).
8. Reinstall the Sorter Left Cover Assembly (See “Sorter Left Cover Assembly” on page -12).

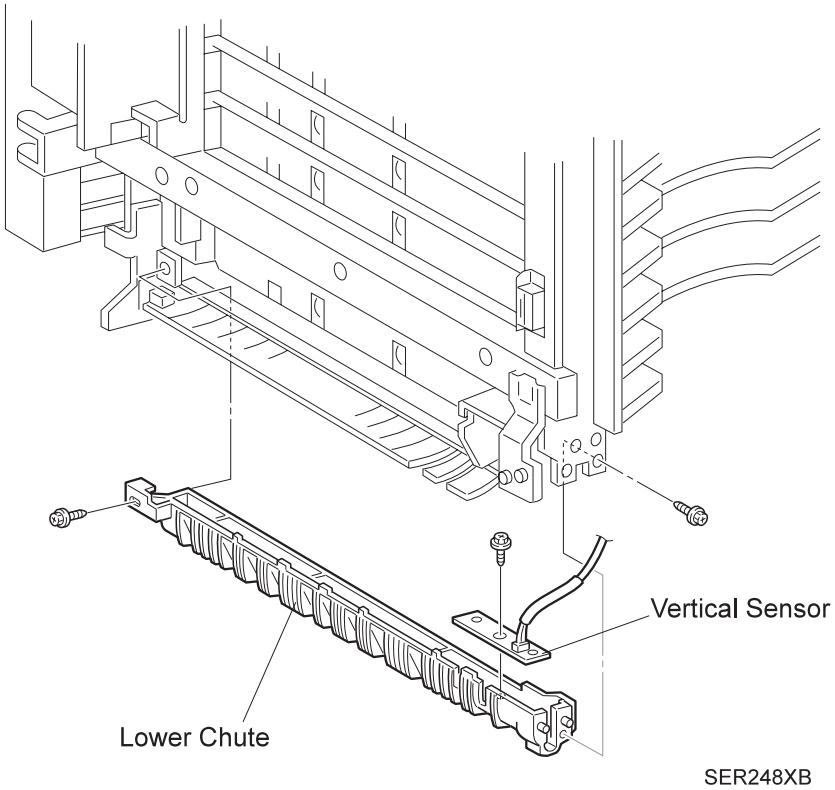


Figure 1-24. Lower Chute

1.3.22 Sorter Interlock Switch

(See “PL15.6 Solenoid and Sensor” on page -41)

1.3.22.1 Removal

1. Remove the Sorter Front Cover (See “Sorter Front Cover” on page -13).
2. Open the Left Cover.
3. Disconnect J 822.
4. Remove the two screws securing the Sorter Interlock Switch to the Mailbox frame, and remove the Switch.

1.3.22.2 Assembly

1. Position the Sorter Interlock Switch as shown in the figure, and reinstall the Switch onto the Mailbox frame.
2. Use two screws to secure the Switch to the frame.
3. Reconnect J 822.
4. Reinstall the Sorter Front Cover (See “Sorter Front Cover” on page -13).

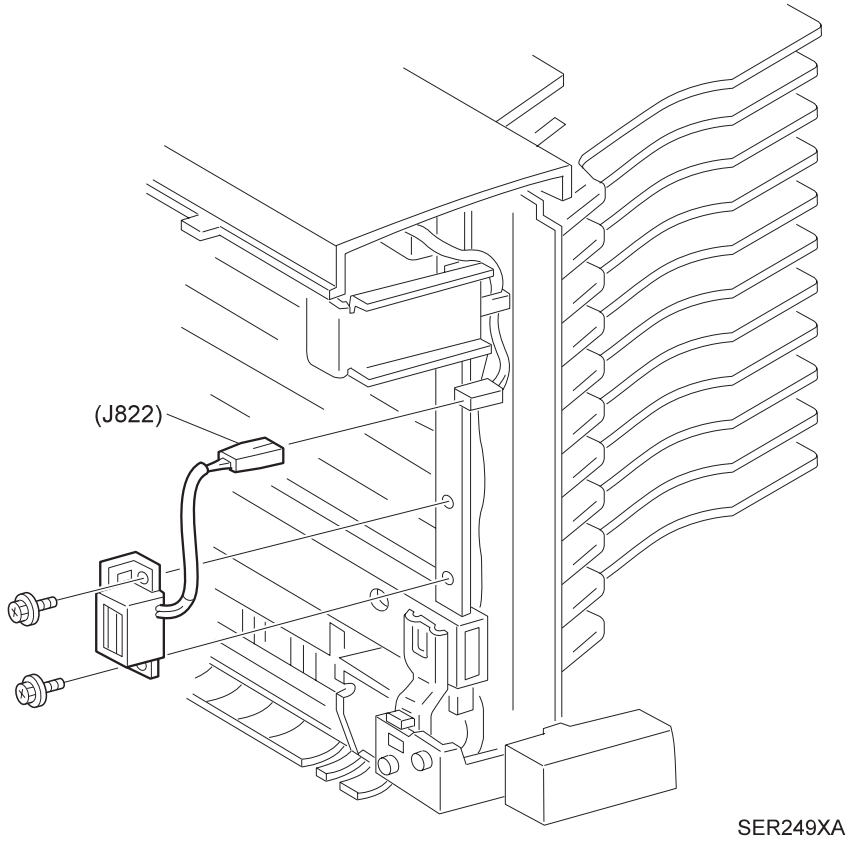


Figure 1-25. Sorter Interlock Switch

1.4 Exploded Diagram and Parts List

1.4.1 PL15.1. Mailbox/ Sorter and Rack

1. Mail Box/SORTER Unit(with PL15.2 ~ PL15.7)
2. STOPPER
3. RACK
4. SORTER LEFT BRACKET
5. SORTER RIGHT BRACKET
6. SCREW
7. STAND L
8. STAND L CONNECTION
9. STAND R

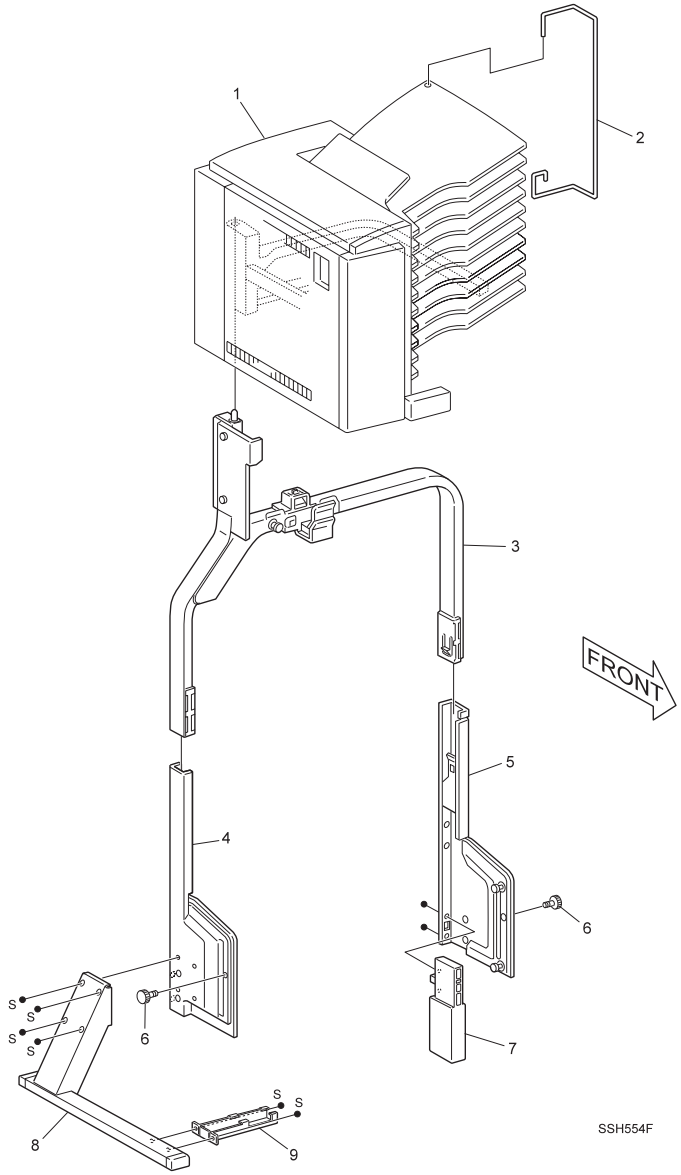


Figure 1-26. Mailbox/Sorter and Rack

1.4.2 PL15.2 Sorter Cover and Frame

1. SORTER PANEL
2. SORTER LABEL
3. SORTER FRONT COVER
4. SORTER TOP COVER
5. SORTER LEFT COVER ASSEMBLY
6. LEFT FRONT COVER
7. LEFT COVER
8. LEFT REAR COVER
9. LEFT COVER HANDLE
10. SORTER COVER FRAME
11. SORTER COVER SUPPORT
12. COVER PLATE SPRING
13. SORTER REAR COVER
14. HANDLE
15. LEFT COVER HOOK
16. LEFT COVER STRAP
17. SORTER FRAME ASSEMBLY
18. HANDLE SUPPORT

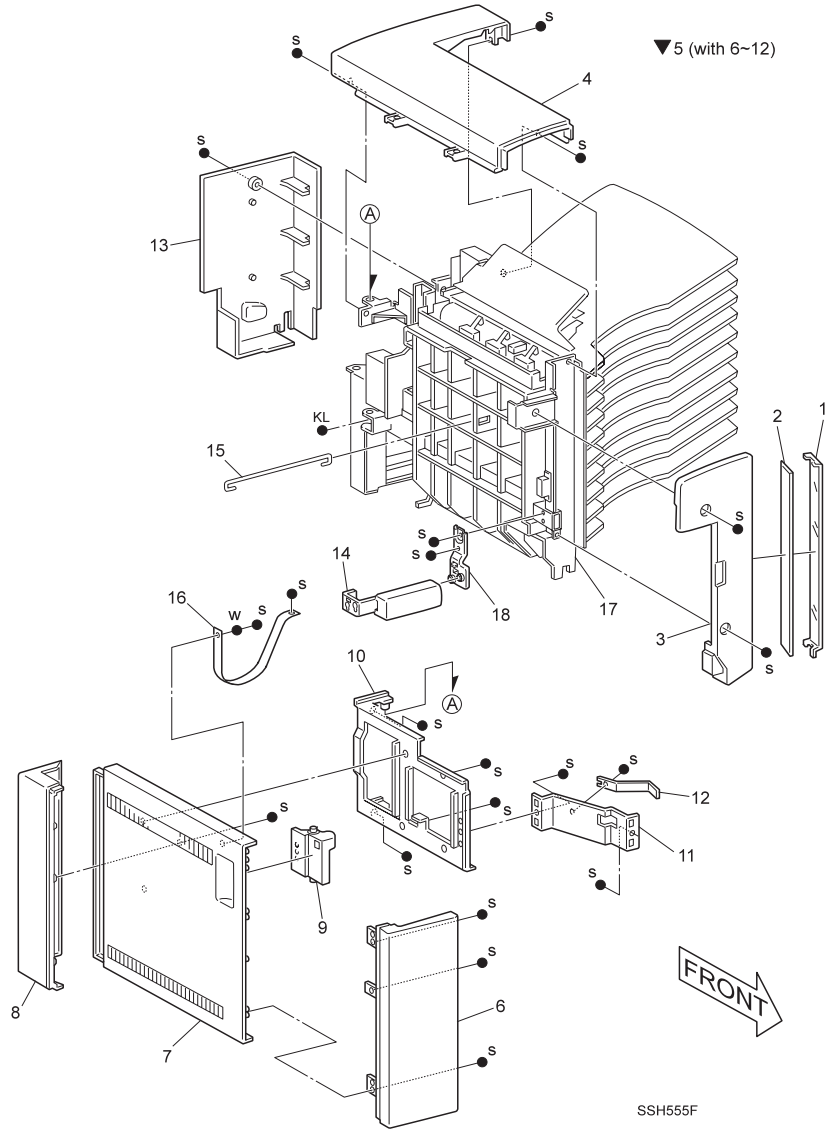


Figure 1-27. Sorter Cover and Frame

1.4.3 PL15.3 Actuator Cover and Left Chute

1. ACT COVER ASSEMBLY(with 2~11)
2. ACT COVER
3. PAPER GUIDE UPPER
4. PAPER GUIDE LOWER
5. PINCH ROLLER SPRING
6. PINCH ROLLER
7. BIN 1 JAM SENSOR
8. ELIMINATOR
9. FULL STACK ACTUATOR 1
10. FULL STACK ACTUATOR 2
11. SORTER LEFT CHUTE ASSEMBLY(with 12~14)
12. SPRTER LEFT CHUTE
13. LEFT CHUTE PINCH ROLLER SPRING
14. LEFT CHUTE PINCH ROLLER

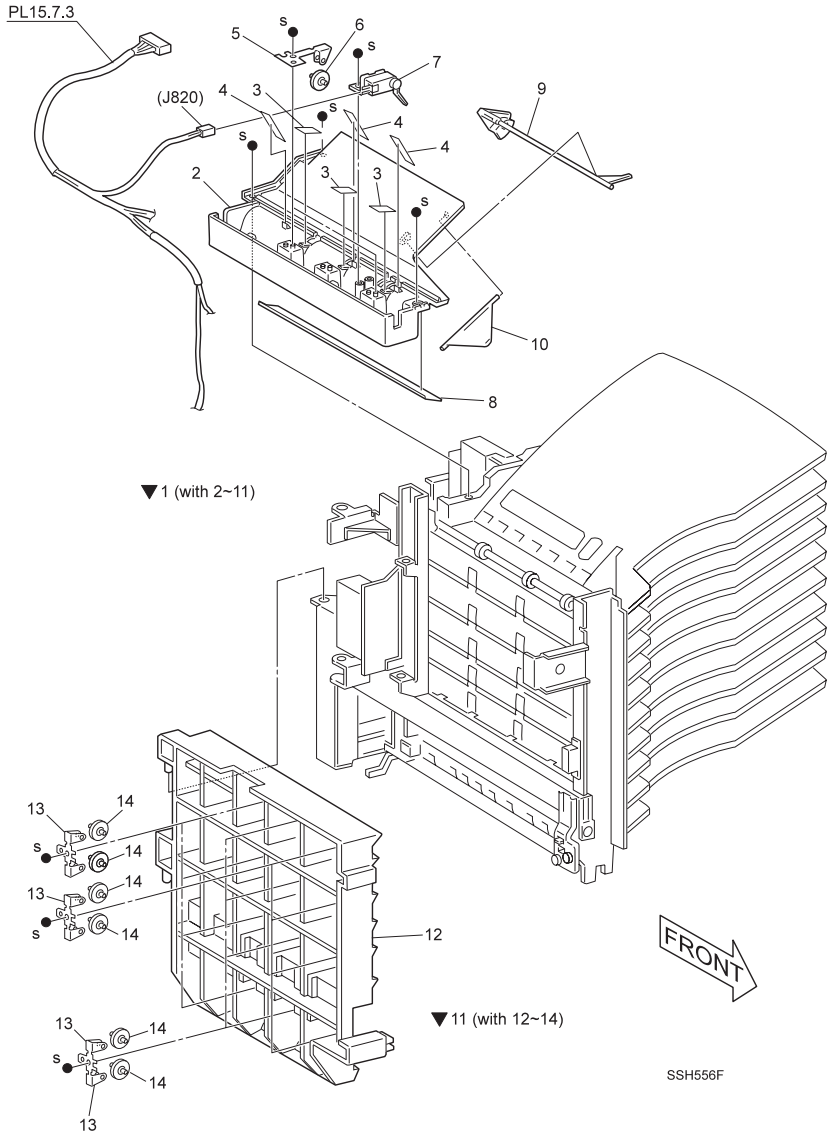


Figure 1-28. PL15.3 Actuator Cover and Left Chute

1.4.4 PL15.4 BinTray 1 Assembly

1. BIN TRAY 1 ASSEMBLY(with 2~12)
2. BIN TRAY
3. PAPER GUIDE LOWER
4. ELIMINATOR
5. FULL STACK ACTUATOR 1
6. FULL STACK ACTUATOR 2
7. BIN TRAY SUPPORT
8. SORTER BEARING FRONT
9. SORTER EXIT ROLLER
10. SORTER BEARING REAR
11. SORTER COLLAR
12. SORTER PULLEY
13. SORTER DRIVE BELT
14. LED COVER

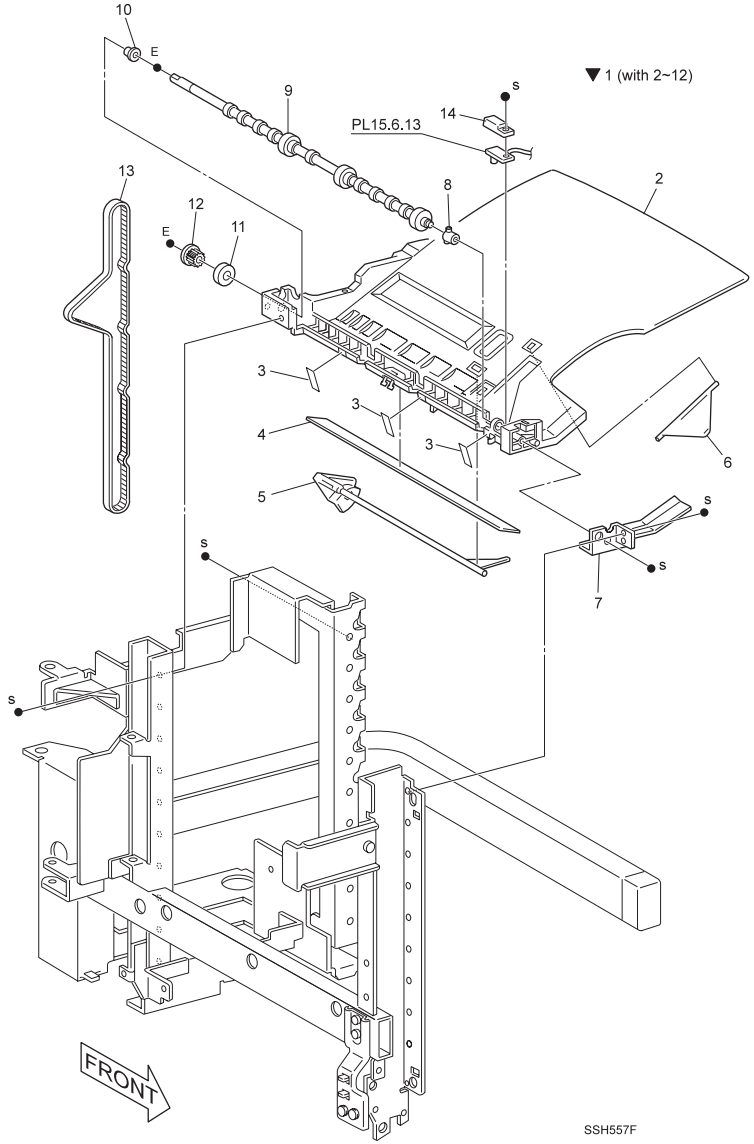


Figure 1-29. PL15.4 Bin Tray 1 Assembly

1.4.5 PL15.5 Bin Tray Assembly

1. BIN TRAY EVEN ASSEMBLY(with 4 ~16 and 18)
2. BIN TRAY 10 ASSEMBLY(with 4 and 9 ~18)
3. BIN TRAY ODD ASSEMBLY(with 4~16 and 18 ~ 20)
4. BIN TRAY
5. PAPER GUIDE LOWER
6. ELIMINATOR
7. FULL STACK ACTUATOR 1
8. FULL STACK ACTUATOR 2
9. BIN TRAY SUPPORT
10. GATE 2 10 SOLENOID(J803 ~ J811)
11. ---
12. ---
13. SORTER GATE
14. SORTER BEARING FRONT
15. SORTER EXIT ROLLER
16. SORTER BEARING REAR
17. SORTER COLLAR
18. SORTER PULLEY
19. SORTER TENSION ROLLER
20. SORTER TENSION ROLLER BRACKET

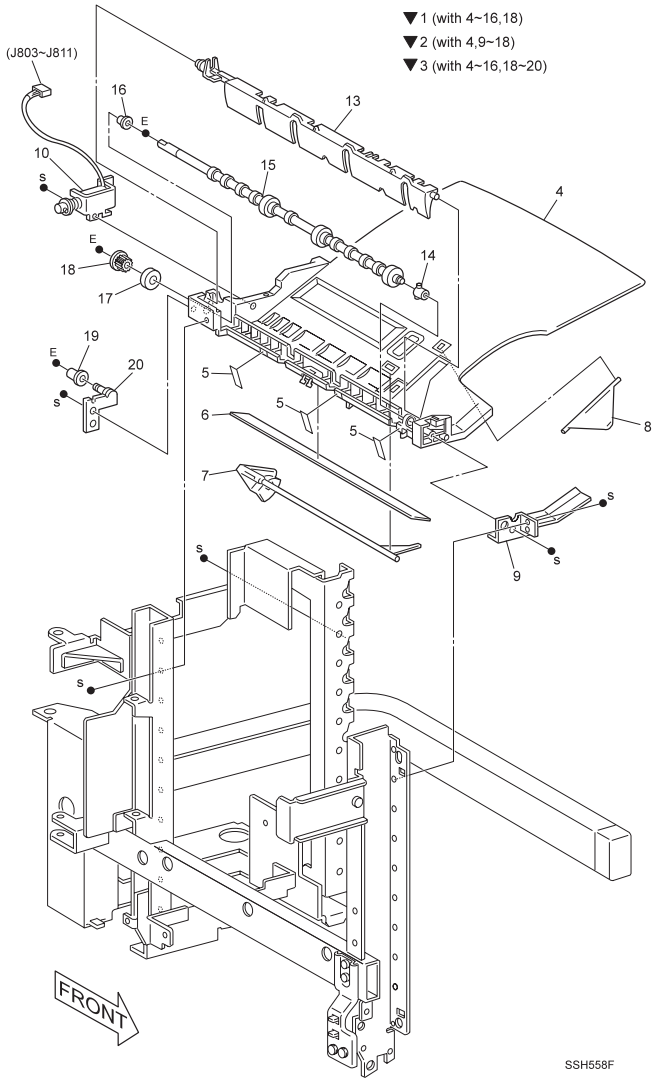


Figure 1-30. Bin Tray Assembly

1.4.6 PL15.6 Solenoid and Sensor

1. REAR LOWER COVER
2. SORTER GATE IN SOLENOID(J812)
3. GATE IN SOLENOID SPRING
4. GATE IN LINK
5. GATE IN SPRING
6. GATE IN ARM
7. GATE IN ARM SPRING
8. FRONT LEFT CHUTE
9. SORTER ENTRANCE SENSOR
10. IN GATE SUPPORT
11. IN GATE
12. LOWER CHUTE
13. VERTICAL LED/SENSOR
14. UPPER CHUTE
15. UPPER CHUTE PINCH ROLLER SPRING
16. UPPER CHUTE PINCH ROLLER
17. SORTER INTERLOCK SWITCH
18. HARNESS CLAMP
19. GATE IN ARM BRACKET
20. TIE PLATE
21. KIT UPPER CHUTE PINCH ROLLER(with 15 and 16)
22. KIT GATE IN ARM(with 6 and 7)
23. KIT IN SOLENOID(with 2 ~ 5)

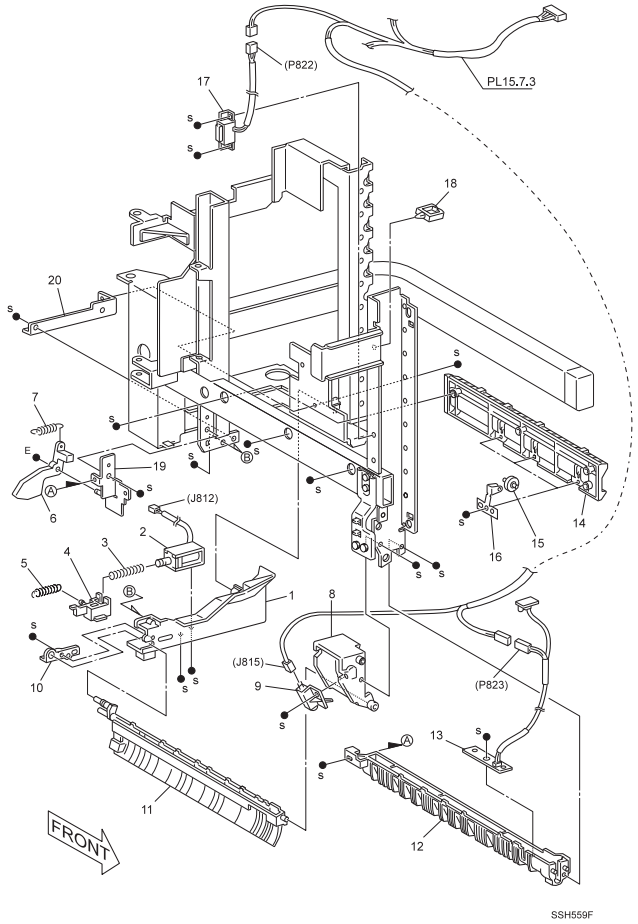


Figure 1-31. Solenoid and Sensor

1.4.7 PL15.7 Sorter Control PWB and Sorter Drive Motor

1. SORTER CONTROL PWB
2. BASE ENGINE CONNECTOR HARNESS(J800 <>P612)
3. SENSOR HARNESS(J801 <>J815/J820/J822/J823)
4. SORTER DRIVE MOTOR HARNESS
5. SORTER DRIVE BRACKET
6. SORTER DRIVE COVER
7. SORTER DRIVE MOTOR
8. SORTER DRIVE GEAR
9. SORTER DRIVE COLLAR
10. SORTER DRIVE TENSION BRACKET
11. SORTER DRIVE TENSION ROLLER
12. SORTER DRIVE TENSION SPRING
13. HARNESS CLAMP

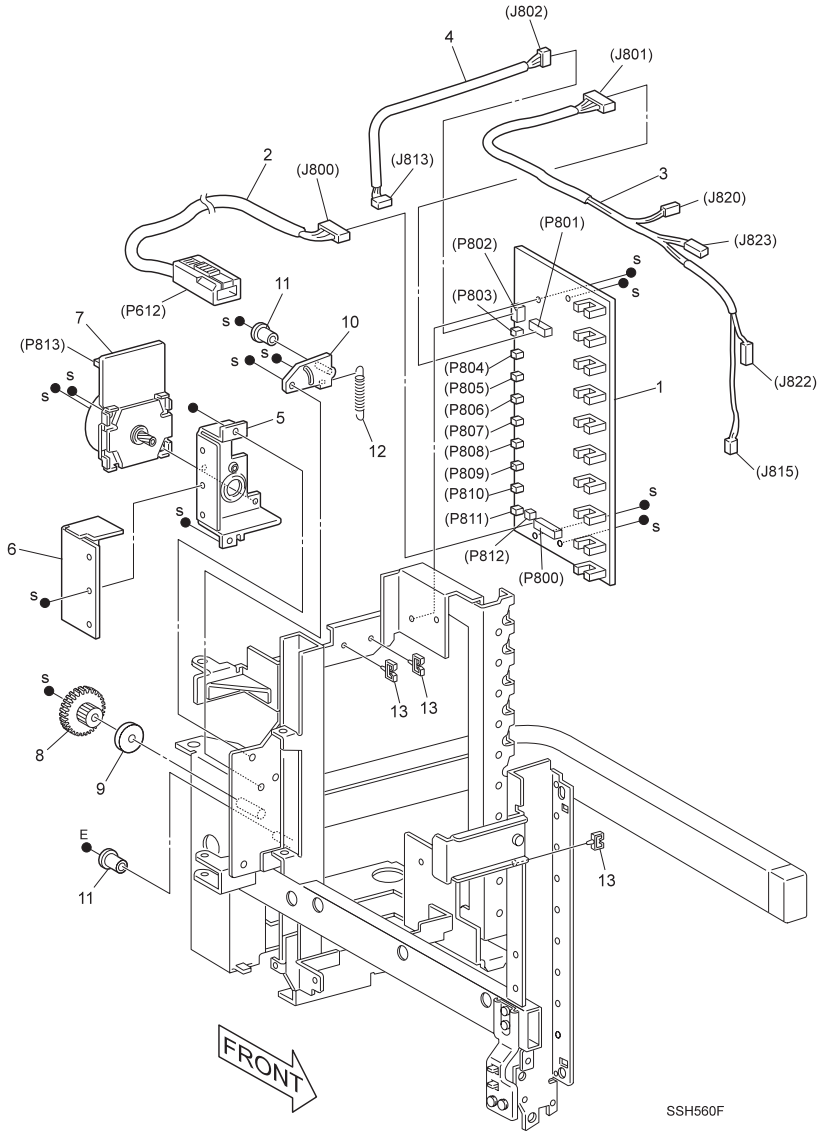


Figure 1-32. Sorter Control PWB and Sorter Drive Motor

1.4.8 PL15.8 Desktop Frame

1. KIT-FRAME, MBS-XC(with 2 ~ 5)
2. FRAME ASSEMBLY
3. BRACKET-DOCKING, RIGHT(Mailbox unique)
4. BRACKET-DOCKING, LEFT(common with PL12.1.11)
5. SCREW

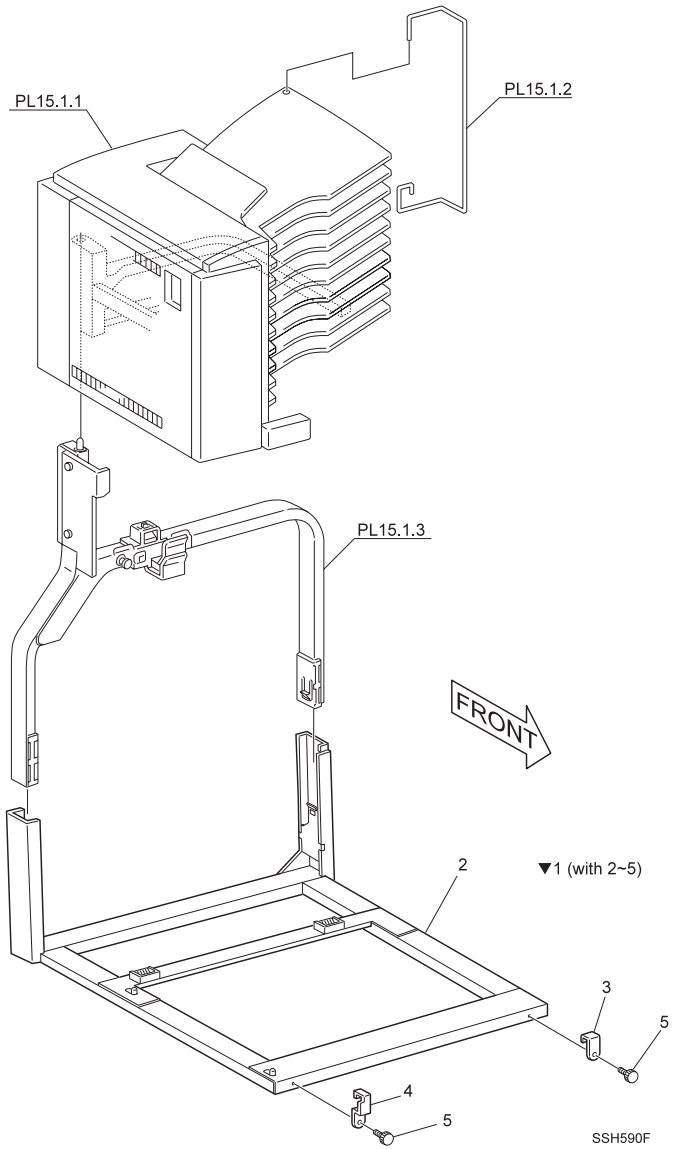


Figure 1-33. Desktop Frame

CHAPTER

2

DUPLEX MODULE

2.1 Installation and Removal of Duplex Module Assembly

2.1.1 Installation

1. Open the MSI, holding the Duplex Module level, hang the hooks of the Duplex Module on the printer.
2. Push the stopper located at the right side of the Duplex Module into the printer Frame.
3. Hook the support cable to the printer frame.
4. Connect the interface cable to the printer.
5. Close the Duplex Module.

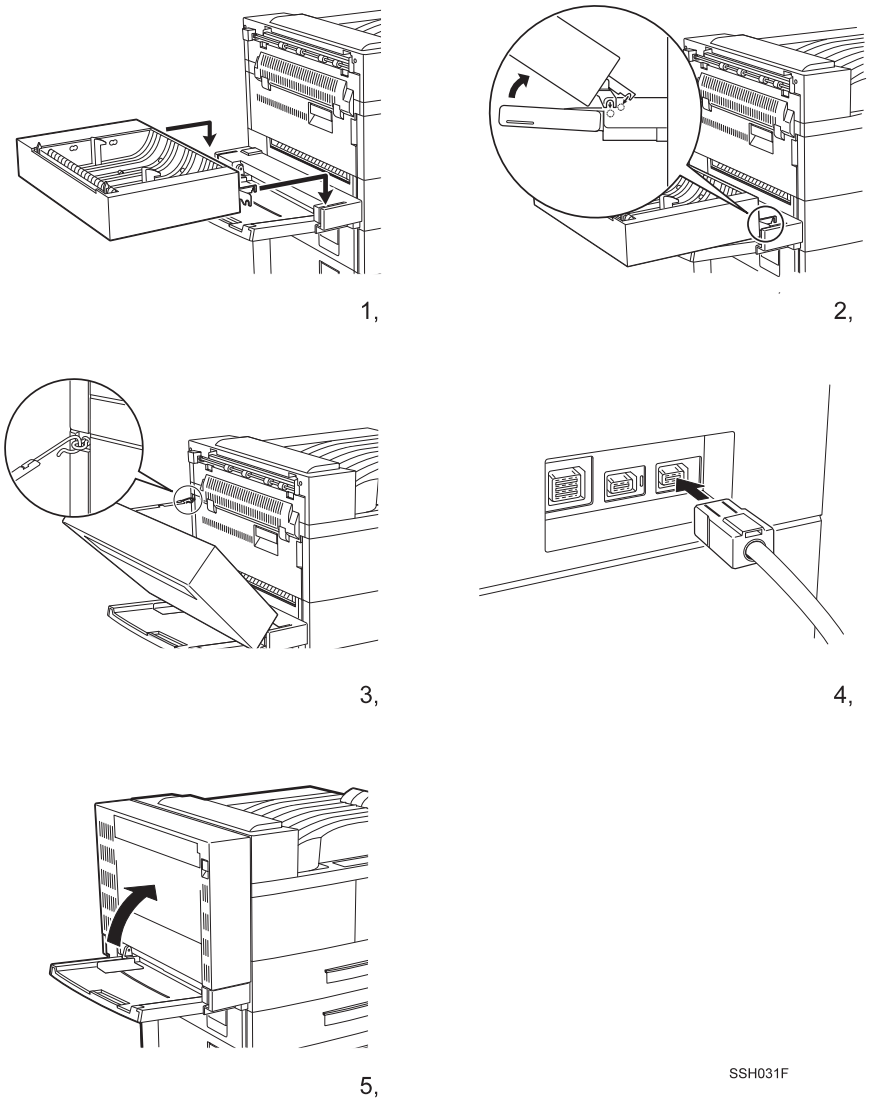


Figure 2-1. Installation

2.1.2 Removal

1. Open the Duplex Module.
2. Disconnect the interface cable from the printer.
3. Remove the stopper from the printer.
4. Unhook the support cable from the printer frame.
5. Holding the Duplex Module by your hands, lift it up to unhook from the printer.

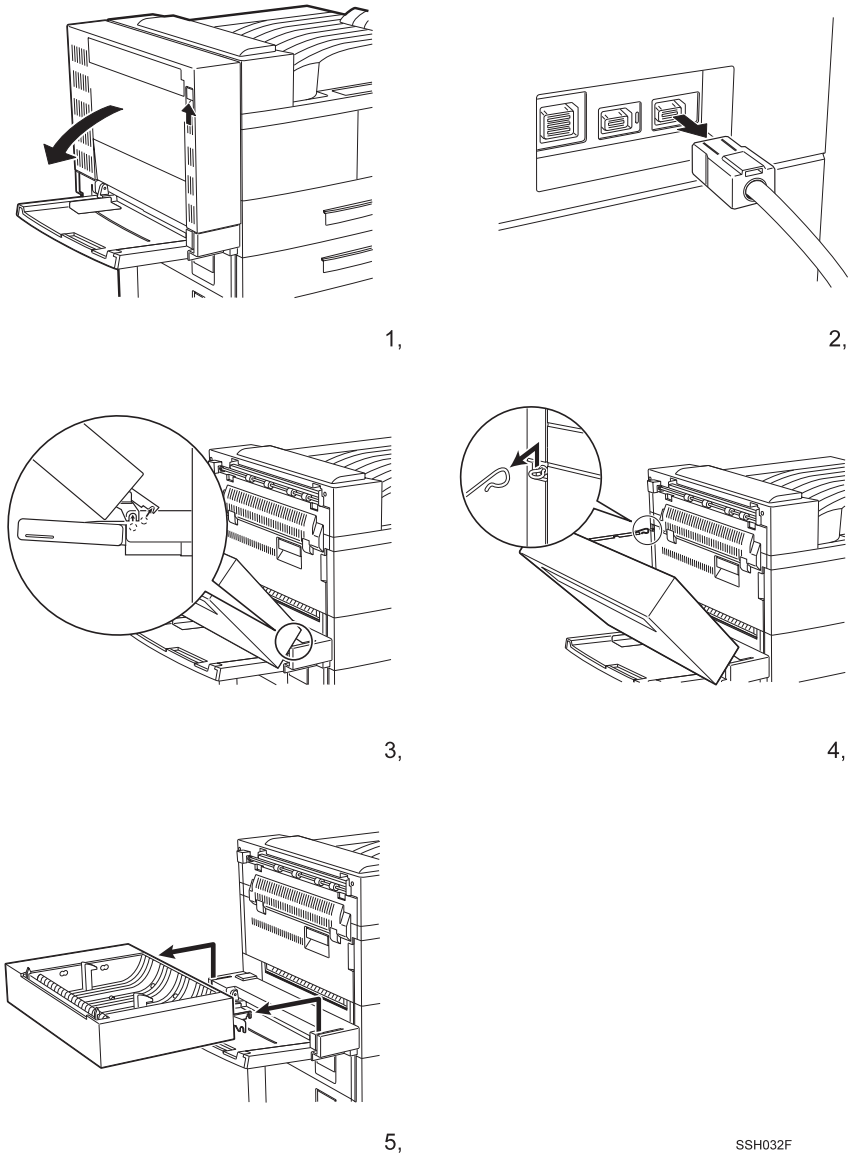


Figure 2-2. Removal

2.2 Introduction

This section shows procedure for disassembling and assembling of the duplex module.

2.2.1 Preparation

Before you begin any Removal and Assembly procedure;

1. Switch off the printer power.
2. Disconnect the AC power cord from the wall outlet.
3. Wear an electrostatic discharge wrist strap to protect sensitive printer parts from damage.

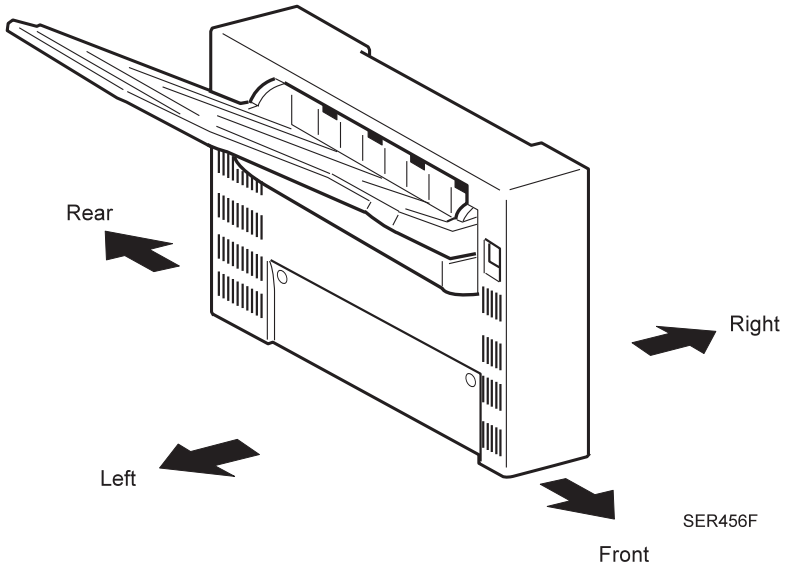
2.2.2 Preparation

CAUTION

- **Names of parts that appear in this section may not be exactly the same as the names appear in the parts list. For example, the MSI Tray Assembly in this section may appear on the parts list as Tray Assembly MSI. As used in this manual the terms Mail box and Sorter mean the same thing.**
- **Always reinstall the correct type and size screws. Using the wrong screw can damage tapped holes. Do not use excessive force to either remove or install a part.**

2.2.3 Notations in the Text

1. Locations given in the manual assume you are facing the printer console panel.



2. The notation “(PLX)” indicates that this component is listed in the PLX parts list.
3. Arrows in an illustration show direction of movement when removing a component.
4. Slashes in a part name indicate that numerous components share the same heading and function. For example, "Gears In/Feed/Out" refers to Gear In, Gear Feed, and Gear Out.

2.3 Disassembly and Assembly

2.3.1 Duplex Module Assembly

(See “PL14.1 Duplex Cover and Duplex Assembly” on page -63)

2.3.1.1 Removal

1. Disconnect the Duplex Module interface cable from the rear of the printer.
2. Tilt the Duplex Module back so it is open half way.
3. Unhook the Support Cable from the printer frame.
4. Support the Duplex Module with your left hand.
5. Close the Module just enough so you can release the metal arm that runs from the Unit to the metal stud on the Front MSI Support (see the inset in the illustration).
6. Open the Duplex Module all the way and lift it up to remove it from the printer.

2.3.1.2 Installation

1. Hold the Duplex Module so the front of the Unit is facing down and the metal hinges facing the printer.
2. Slip both the front and rear hinges onto the metal studs on the Front and Rear MSI Supports.
3. Support the Duplex Module with your left hand.
4. Close the Module just enough so you can hook the metal arm that runs from the Unit to the metal stud on the Front MSI Support.
5. Hook the Support Cable to the printer frame.
6. Close the Duplex Module.
7. Reconnect the Duplex Module interface cable to the rear of the printer.

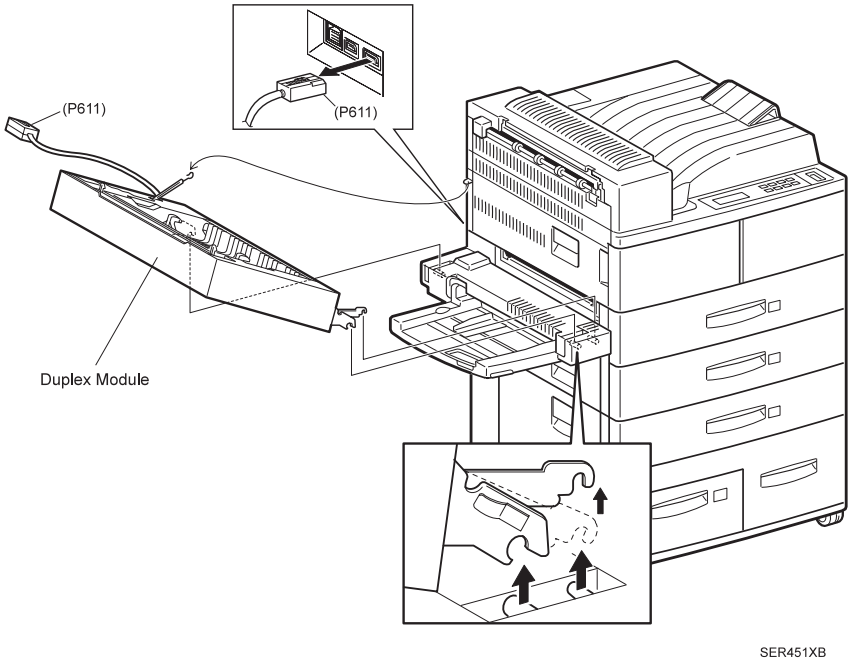


Figure 2-3. Duplex Module Assembly

2.3.2 Duplex Cover

(See “PL14.1 Duplex Cover and Duplex Assembly” on page -63)

2.3.2.1 Removal

1. If the Face Up Output Tray is installed, remove the two knurled screws securing the Tray to the Cover, and remove the Tray.
2. Remove the Duplex Assembly. (“Duplex Module Assembly” on page -48)
3. Place the Assembly on a flat and stable surface.
4. Remove the four screws securing the Duplex Cover to the Assembly, and remove the Cover.

2.3.2.2 Assembly

1. Place the Assembly, feed wheels up, on a flat and stable surface.
2. Reinstall the Duplex Cover over the Duplex Assembly, and use four screws to it to the Assembly.
3. Reinstall the Duplex Module onto the printer. (“Duplex Module Assembly” on page -48).
4. If a Face Up Output Tray is installed then reinstall the Tray onto the Cover and use two knurled screws to secure it to the Cover.

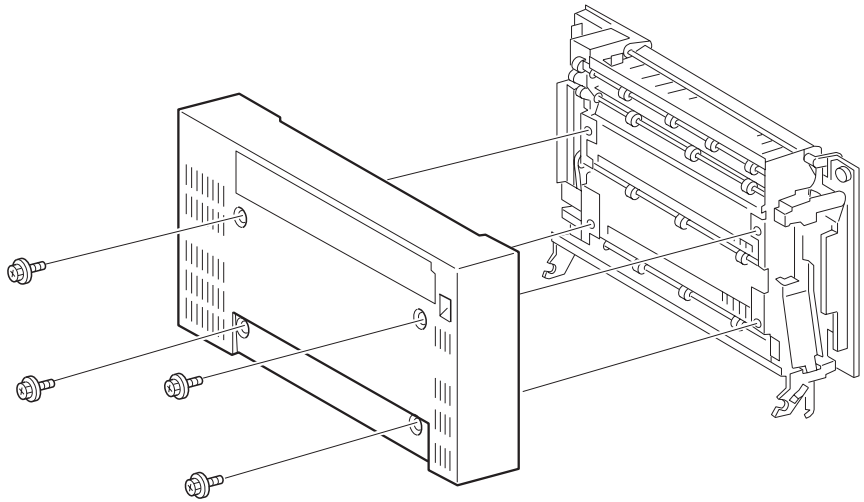


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Figure 2-4. Duplex Cover

2.3.3 Duplex Rear Cover

(See “PL14.1 Duplex Cover and Duplex Assembly” on page -63)

2.3.3.1 Removal

1. Remove the Duplex Cover (See “Duplex Cover” on page -49).
2. Position the Duplex Assembly so the Inner Chute faces up.
3. Remove the two screws, shown in the figure, securing the Rear Cover to the Duplex Assembly, and remove the Cover.

2.3.3.2 Assembly

1. Position the Rear Cover over the Duplex Assembly.
2. Route the Support Cable through the cutout in the side of the Rear Cover.
3. Seat the Cover on the Duplex Assembly, and use two screws to secure the Cover.
4. Reinstall the Duplex Cover (“Duplex Cover” on page -49).

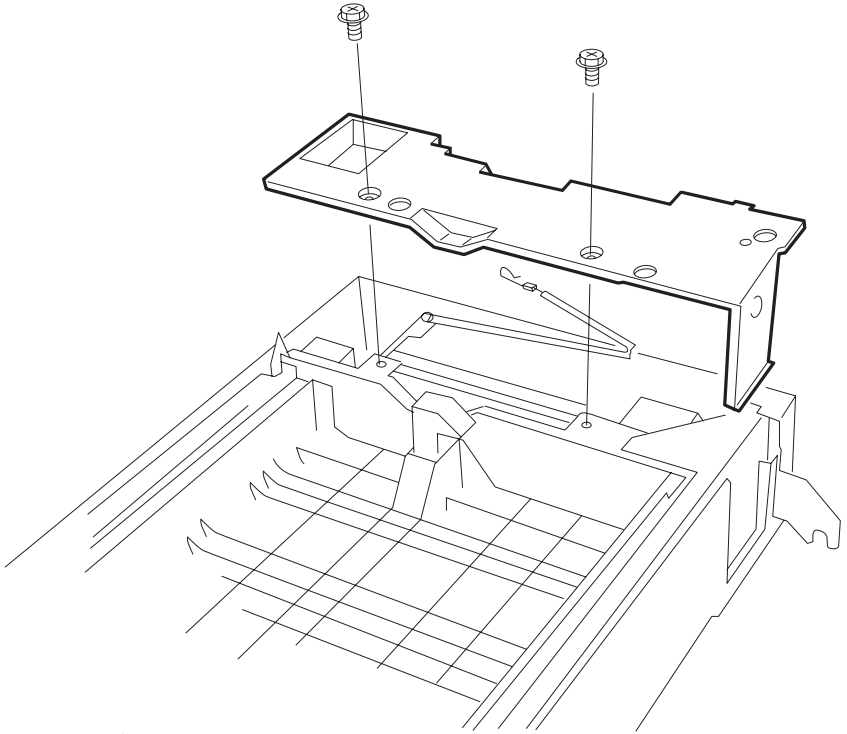

Figure 2-5. Duplex Rear Cover

2.3.4 Duplex Front Cover

(See “PL14.1 Duplex Cover and Duplex Assembly” on page -63)

2.3.4.1 Removal

1. Remove the Duplex Cover (“Duplex Cover” on page -49).
2. Position the Duplex Assembly so the Inner Chute faces up.
3. Remove the two screws, shown in the figure, securing the Front Cover to the Duplex Assembly, and remove the Cover.

2.3.4.2 Assembly

1. Seat the Front Cover on the Duplex Assembly, and use two screws to secure the Cover.
2. Reinstall the Duplex Cover (“Duplex Cover” on page -49).

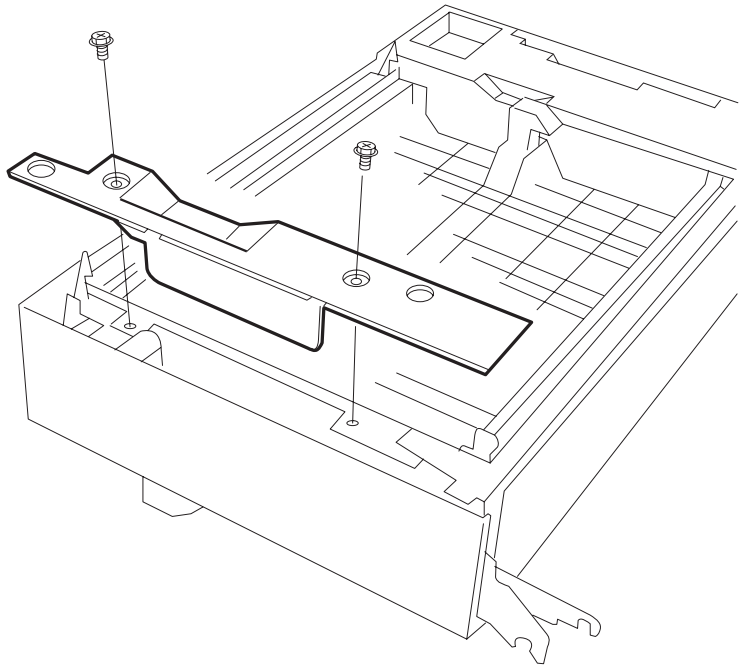

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Figure 2-6. Duplex Front Cover

2.3.5 Duplex PWB and Bracket

(See “PL14.2 Duplex Drive” on page -64)

2.3.5.1 Removal

1. Remove the Duplex Rear Cover (“Duplex Rear Cover” on page -50).
2. Disconnect the six P/Js(J222, J223, J224, J473, J474 and J475) that are connected to the Duplex PWB.
3. Remove the four screws securing the Duplex PWB to the Duplex PWB Bracket, and remove the PWB.

CAUTION

- **Wear an electrostatic wrist strap and use caution when working with the Duplex PWB. Static electricity can damage the sensitive electronics of the PWB.**
- **Handle the Duplex PWB by the edges of the PWB. Never touch any of the ICs that are mounted on the PWB.**

4. Remove the two screws securing the Bracket to the frame, and remove the Bracket.

2.3.5.2 Assembly

1. Remove the Duplex Rear Cover.
2. Reinstall the PWB Bracket onto the frame, and use two screws to secure it.
3. Reinstall the Duplex PWB onto the PWB Bracket.
4. Position the PWB so P223 is near the Duplex Motor.
5. Use four screws to secure the PWB to the Bracket.
6. Reconnect the six P/Js to the Duplex PWB.
7. Reinstall the Duplex Rear Cover (“Duplex Rear Cover” on page -50).

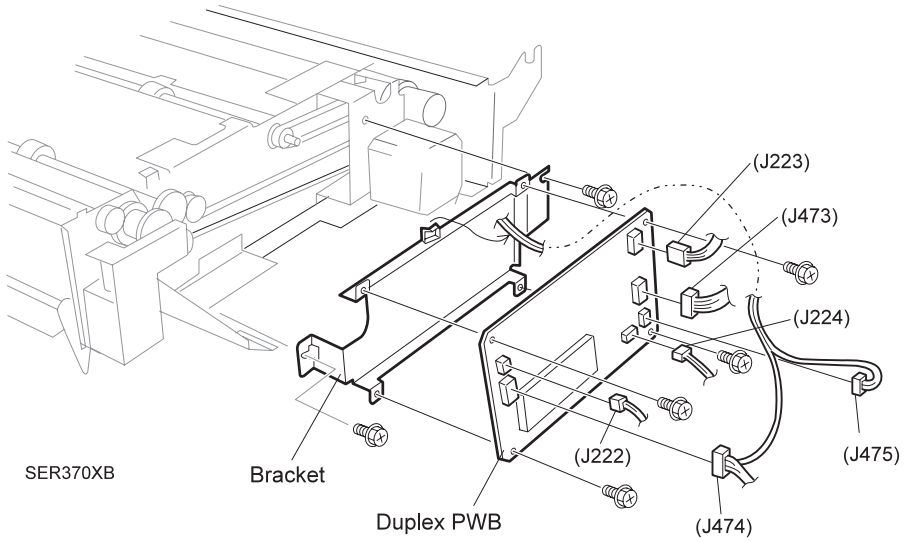


Figure 2-7. Duplex PWB and Bracket

2.3.6 Duplex Wait Clutch

(See “PL14.2 Duplex Drive” on page -64)

2.3.6.1 Removal

1. Remove the Duplex Rear Cover (“Duplex Rear Cover” on page -50).
2. Disconnect P/J224 (Wait Clutch) from the Duplex PWB.
3. Remove the E-ring from the end of the Wait Clutch shaft.
4. Push up on the shaft latch as you slide the Clutch off of the shaft.

2.3.6.2 Assembly

1. Position the Wait Clutch so the notch in the Clutch lines up with the tab on the Duplex frame.
2. Slide the Clutch onto the shaft. The shaft latch snaps the Clutch into place on the shaft.
3. Use an E-ring to secure the Clutch to the shaft.
4. Reconnect P/J224 to the Duplex PWB.
5. Reinstall the Duplex Rear Cover (“Duplex Rear Cover” on page -50).

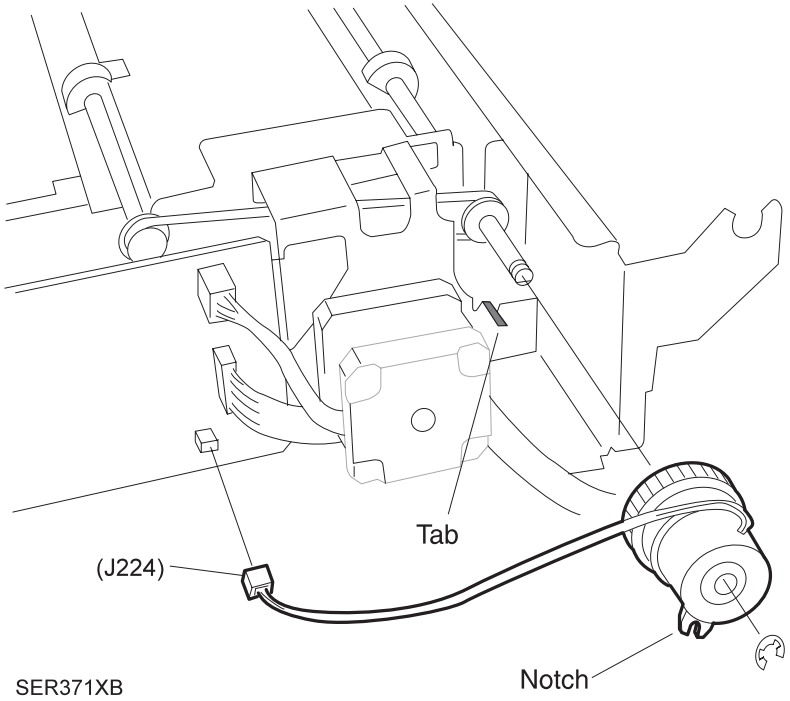


Figure 2-8. Duplex Wait Clutch

2.3.7 Duplex Drive Assembly

(See “PL14.2 Duplex Drive” on page -64)

2.3.7.1 Removal

1. Remove the Duplex Rear Cover (“Duplex Rear Cover” on page -50).
2. Remove the Duplex PWB and Bracket (“Duplex PWB and Bracket” on page -52).
3. Remove the four screws securing the Duplex Drive Assembly to the Duplex frame, and remove the Assembly.

2.3.7.2 Assembly

1. Reinstall the Drive Assembly onto the Duplex frame.
2. Slip the Drive Belt onto the Motor Gear.
3. Align the four screw holes in the Duplex Drive Assembly with the four screw holes in the frame.

CAUTION

Make sure you align the Notch on the Wait Clutch with the Tab on the Drive Assembly

4. Use four screws to secure the Drive Assembly to the Duplex frame.
5. Reinstall the Duplex PWB and Bracket (“Duplex PWB and Bracket” on page -52).
6. Reinstall the Duplex Rear Cover (“Duplex Rear Cover” on page -50).

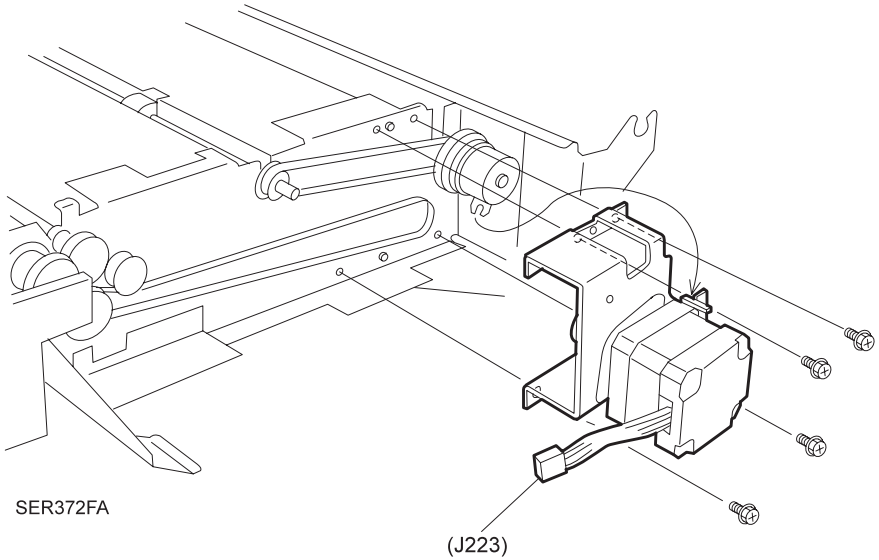


Figure 2-9. Duplex Drive Assembly

2.3.8 Duplex Exit Sensor

(See “PL14.3 Duplex Upper Chute” on page -65)

2.3.8.1 Removal

1. Remove the Duplex Cover (“Duplex Cover” on page -49).
2. Squeeze the four latches securing the Sensor to the bracket on the Upper Chute and remove the Duplex Exit Sensor.
3. Disconnect P/J 124 from the Sensor.

2.3.8.2 Assembly

1. Remove the Duplex Cover (“Duplex Cover” on page -49).
2. Position the Duplex Exit Sensor so the P/J 124 is facing the wire harness.
3. Insert the Sensor actuator through the opening in the Upper Chute.
4. Press the four latches on the bottom of the Sensor into the four openings in the bracket on the Upper Chute. The Sensor snaps into place.
5. Reconnect P/J 124 to the Sensor.
6. Reinstall the Duplex Cover (“Duplex Cover” on page -49).

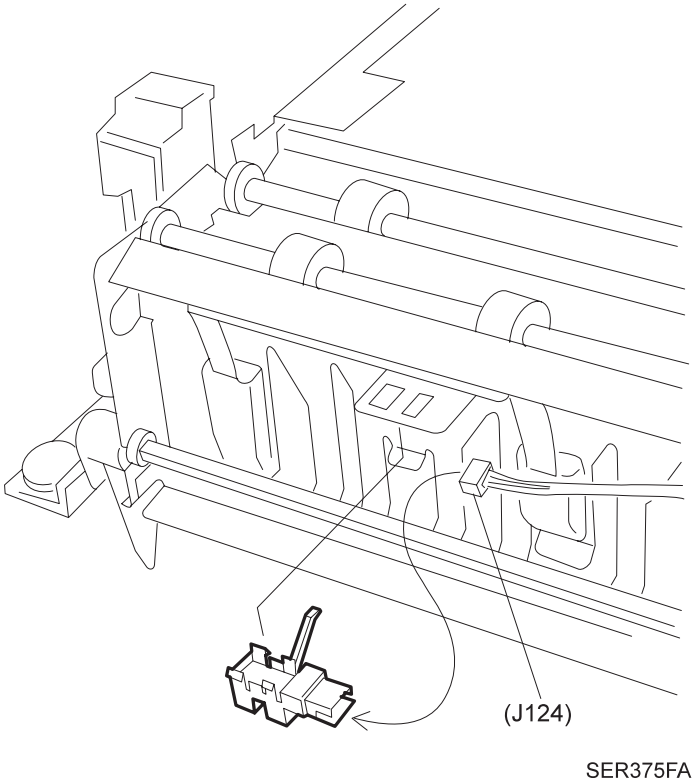


Figure 2-10. Duplex Exit Sensor

2.3.9 Duplex Exit Gate Solenoid

(See “PL14.3 Duplex Upper Chute” on page -65)

2.3.9.1 Removal

1. Remove the Duplex Cover (“Duplex Cover” on page -49).
2. Remove the Duplex Rear Cover (“Duplex Rear Cover” on page -50).
3. Disconnect P/J 222 from the Duplex PWB.
4. Remove the wire harnesses from the wire clip that is mounted on the Solenoid Bracket.
5. Remove the two screws securing the Duplex Exit Gate Solenoid Bracket to the Duplex frame, and remove the Bracket and attached Solenoid.
6. Remove the two screws securing the Duplex Exit Gate Solenoid from the Bracket, and remove the Solenoid.

2.3.9.2 Assembly

1. Reinstall the Duplex Exit Gate Solenoid onto the Bracket.
2. Line up the two screw holes in the Bracket with the two screw holes in the Solenoid, and use two short screws to secure the Solenoid to the Bracket.
3. Make sure the Exit Gate Link is in place.
4. Rotate the Solenoid plunger so the fork in the Link slips through the slot in the plunger.
5. Press the Solenoid Bracket against the Duplex frame.
6. Use two screws to secure the Bracket to the frame.
7. Lift and release the Solenoid plunger to make sure it opens the Link correctly.
8. Reconnect P/J 222 to the Duplex PWB.
9. Reroute the wire harness through the wire clip located on the Solenoid Bracket.
10. Reinstall the Duplex Rear Cover (“Duplex Rear Cover” on page -50).
11. Reinstall the Duplex Cover (“Duplex Cover” on page -49).

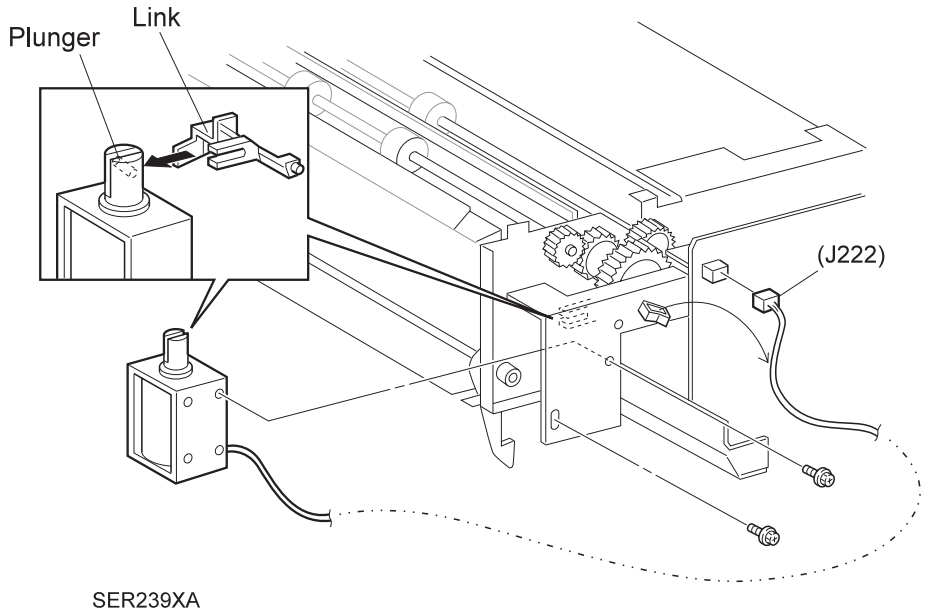


Figure 2-11. Duplex Exit Gate Solenoid

2.3.10 Exit Roll

(See “PL14.4 Duplex Paper Transport” on page -66)

2.3.10.1 Removal

1. Remove the Duplex Cover (“Duplex Cover” on page -49).
2. Remove the E-ring securing the Rear end of the Exit Roll shaft to the Duplex frame.
3. Remove the E-ring securing the Front end of the Exit Roll shaft to the Duplex frame.
4. Slide both bearings toward the center of the shaft, and lift the Exit Roll shaft out of the Duplex frame.
5. Remove the E-ring securing the Exit Roll Gear to the shaft, and remove the Gear.
6. Remove the two bearings from the shaft.

2.3.10.2 Assembly

1. Slide the two bearings, lip facing to the center of the shaft, onto the Exit Roll shaft.
2. Reinstall the Exit Roll Gear to the end of the shaft, and use an E-ring to secure it.
3. Reinstall the Exit Roll shaft, the Gear at the Rear of the Duplex Assembly, into the slot in the Duplex frame.
4. Slide the shaft so the rubber rollers drop into the cutouts in the Duplex Assembly.
5. Slide the bearings along the shaft and into the cutouts in the Assembly.
6. Rotate the bearings so they fit into the cutouts.
7. Use E-rings at the Front and Rear ends of the Exit Roll shaft to secure the bearings.
8. Reinstall the Duplex Cover (“Duplex Cover” on page -49).

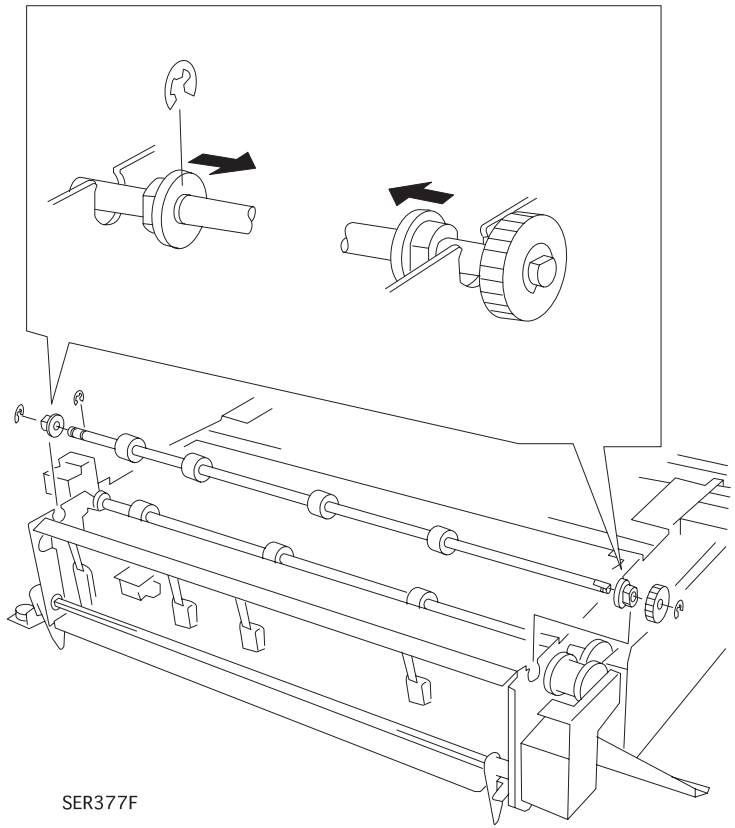


Figure 2-12. Exit Roll

2.3.11 Duplex Wait Sensor

(See “PL14.4 Duplex Paper Transport” on page -66)

2.3.11.1 Removal

1. Remove the Duplex Cover (“Duplex Cover” on page -49).
2. Remove the screw securing the Wait Sensor Bracket to the Duplex frame.
3. Remove the Bracket and the attached Wait Sensor.
4. Disconnect P/J 123 from the Sensor.
5. Squeeze the four latches securing the Sensor to the bracket and remove the Sensor.

2.3.11.2 Assembly

1. Position the Sensor on the Bracket so the Sensor latches match the openings in the Bracket.
2. Press the four latches on the bottom of the Sensor into the four openings in the Bracket. The Sensor snaps into place.
3. Reconnect P/J 123 to the Sensor.
4. Slide the Sensor actuator through the slot in the Duplex Module, and slide the two arms of the Sensor Bracket under the two tabs next to the actuator slot.
5. Use one screw to secure the Bracket to the Duplex Module.
6. Reinstall the Duplex Cover (“Duplex Cover” on page -49).

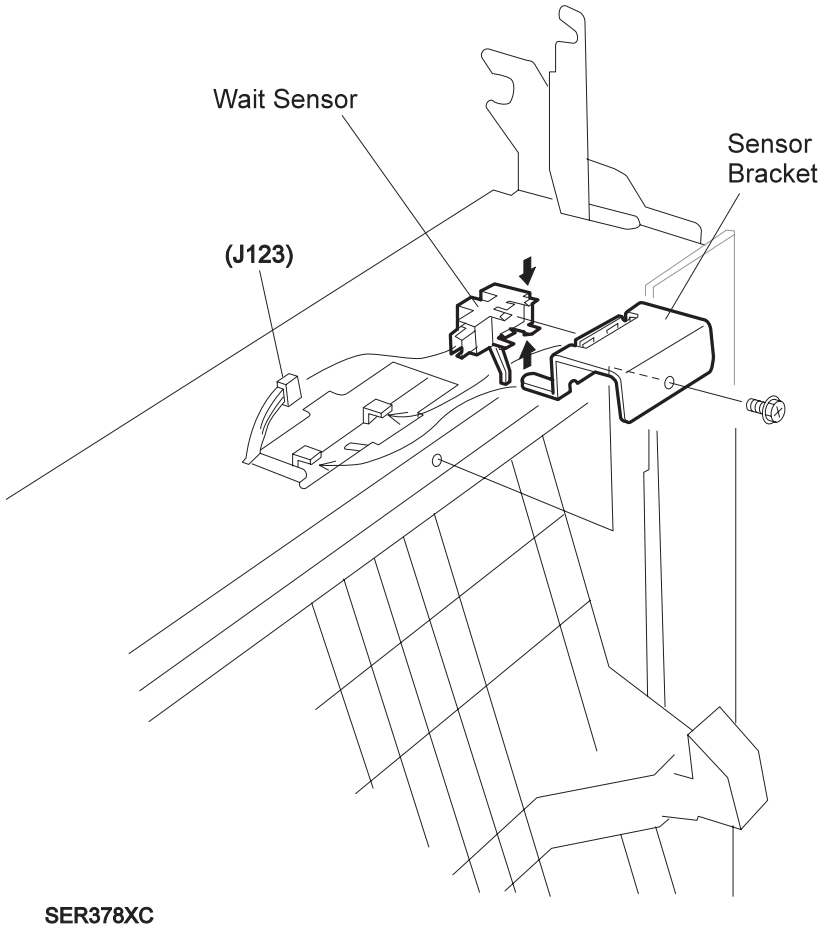


Figure 2-13. Duplex Wait Sensor

2.3.12 Duplex Interlock Switch

(See “PL14.4 Duplex Paper Transport” on page -66)

2.3.12.1 Removal

1. Remove the Duplex Cover (“Duplex Cover” on page -49).
2. Remove the Duplex Front Cover (“Duplex Front Cover” on page -51).
3. Disconnect P/J 125 from the Interlock Switch.
4. Squeeze the sides of the Switch together to release the two latches securing the Duplex Interlock Switch to the Duplex frame, and remove the Switch.

2.3.12.2 Assembly

1. Position the Interlock Switch as shown in the figure.
2. Insert the two locating tabs of the Switch into the two corresponding holes in the Duplex frame.
3. Press the Switch into the frame. The Switch snaps into place.
4. Reconnect P/J 125 to the Interlock Switch.
5. Reinstall the Duplex Front Cover (“Duplex Front Cover” on page -51).
6. Reinstall the Duplex Cover (“Duplex Cover” on page -49).

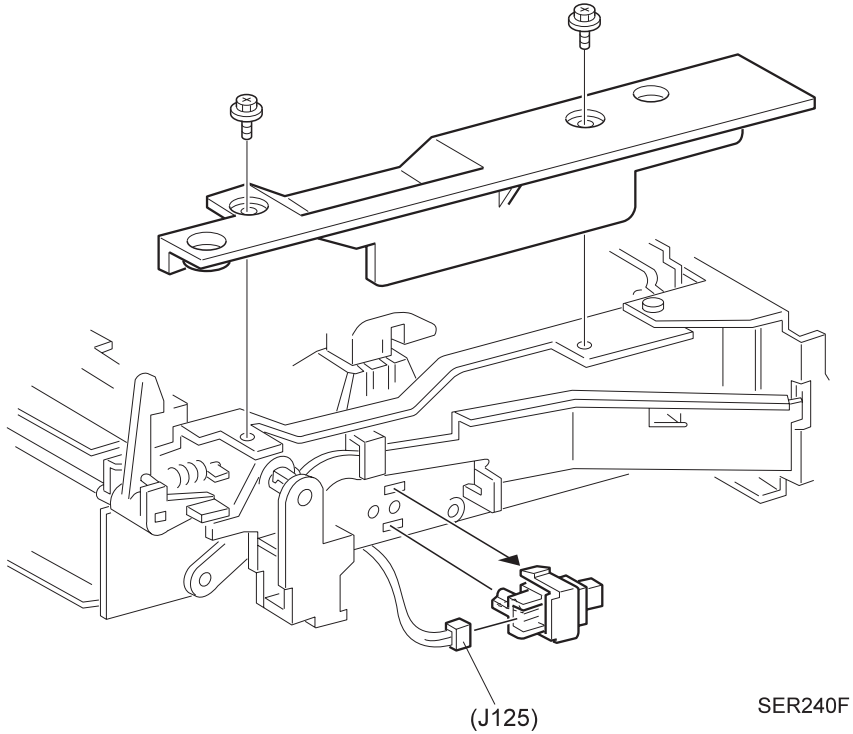


Figure 2-14. Duplex Interlock Switch

2.3.13 Exit Roll Belt

(See “PL14.4 Duplex Paper Transport” on page -66)

2.3.13.1 Removal

1. Remove the Duplex PWB Bracket (“Duplex PWB and Bracket” on page -52).
2. Remove the Duplex Drive Assembly (“Duplex Drive Assembly” on page -54).
3. Remove the two screws securing the Exit Gate Solenoid Bracket to the frame and remove the Bracket and Solenoid (“Duplex Exit Gate Solenoid” on page -56).
4. Remove the E-ring from the #1 Transport Roll Drive Gear, and slide the Gear off of the shaft.
5. Remove the E-ring from the Friction Clutch, and slide the Clutch off of the shaft.
6. Slide the Exit Roll Pulley off of the shaft and remove the Exit Roll Belt.

2.3.13.2 Assembly

1. Reinstall one end of the Exit Roll Belt over the small end of the Exit Roll Pulley.
2. Slide the Exit Roll Pulley onto the Exit Roll shaft.
3. Slide the Friction Clutch onto the shaft and use an E-ring to secure it to the shaft.
4. Slide the #1 Transport Roll Drive Gear onto the Transport Roll shaft and use an E-ring to secure it to the shaft.
5. Reinstall the Exit Gate Solenoid Assembly and Bracket onto the frame, and use two screws to secure the Bracket.
6. Reinstall the Duplex Drive Assembly (“Duplex Drive Assembly” on page -54).
7. Reinstall the Duplex PWB Bracket (“Duplex PWB and Bracket” on page -52).

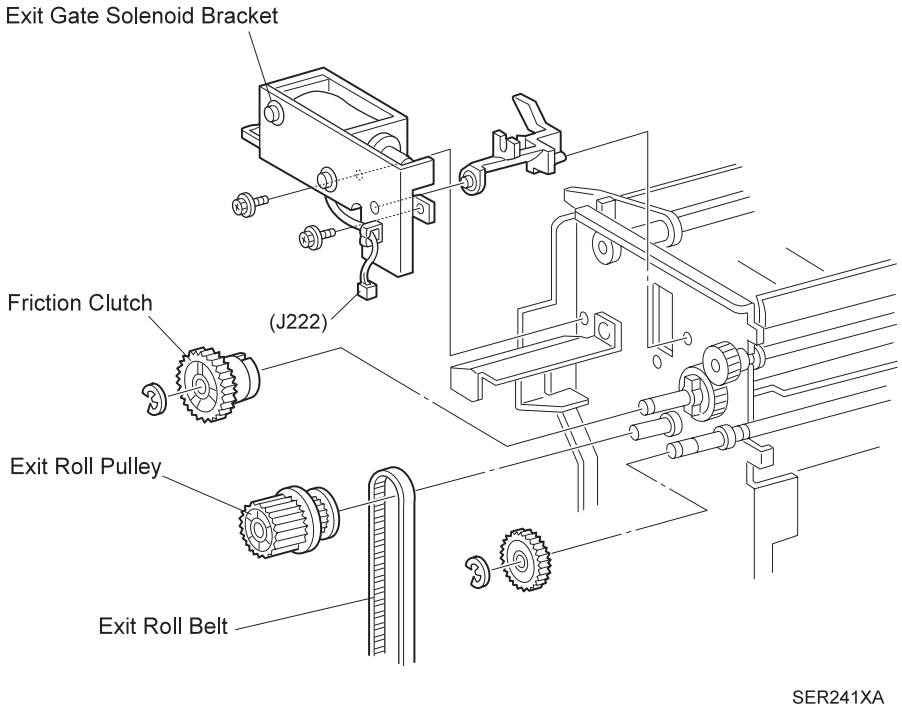


Figure 2-15. Exit Roll Belt

2.3.14 Duplex Pinch Roll

(See “PL14.5 Duplex Inner Chute” on page -67)

2.3.14.1 Removal

1. Remove the Duplex Module Assembly (“Duplex Module Assembly” on page -48).
2. Open the Inner Chute.
3. Working from the front of the Chute, use the flat blade of a screwdriver to carefully free the arms of the roll latch from the Inner Chute (see the figure), while pressing out on the rubber roll
4. Repeat step 3 for each of the remaining two rubber rolls on shaft.
5. Remove the Pinch Roll from the Inner Chute.
6. Repeat steps 3 through 5 and remove the other two Pinch Rolls attached to the Inner Chute.

2.3.14.2 Assembly

1. Open the Inner Chute.
2. Reinstall the Pinch Roll.
3. Rotate the three roll latches on each Pinch Roll shaft so the bow of the latches face down and the arms of the latches face up.
4. Press each latch into the Inner Chute until they snap into place.
5. Rotate the Pinch Roll to make sure it rotates smoothly.
6. Press and release the Pinch Roll to make sure it has a spring-action return.
7. Repeat steps 2 through 6 for each of the other two Pinch Rolls.
8. Close the Inner Chute.
9. Reinstall the Duplex Module Assembly (“Duplex Module Assembly” on page -48).

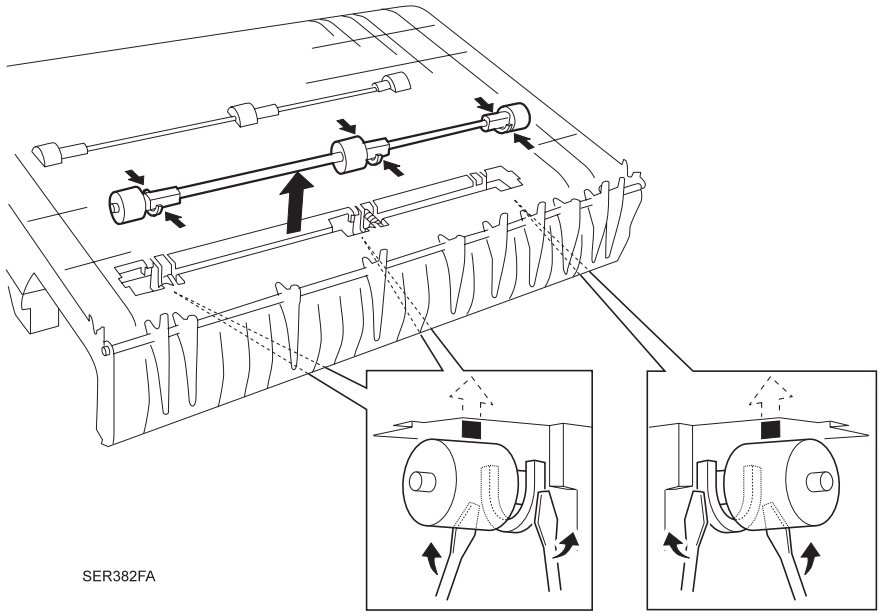


Figure 2-16. Duplex Pinch Roll

2.3.15 Inner Chute Assembly

(See “PL14.5 Duplex Inner Chute” on page -67)

2.3.15.1 Removal

1. Remove the Duplex Module Assembly (“Duplex Module Assembly” on page -48).
2. Open the Inner Chute.
3. Use the flat blade of a screwdriver to pry (arrow in the figure) the rear hinge of the Inner Chute out of hole in the Duplex frame.
4. Remove the Inner Chute.

2.3.15.2 Assembly

1. Position the Inner Chute as shown in the figure.
2. Insert the front hinge of the Chute into the hole in the Duplex frame.
3. Push in on the rear hinge and insert it into the hole in the frame.
4. Open and close the Chute to make sure it moves freely.
5. Reinstall the Duplex Module Assembly (“Duplex Module Assembly” on page -48).

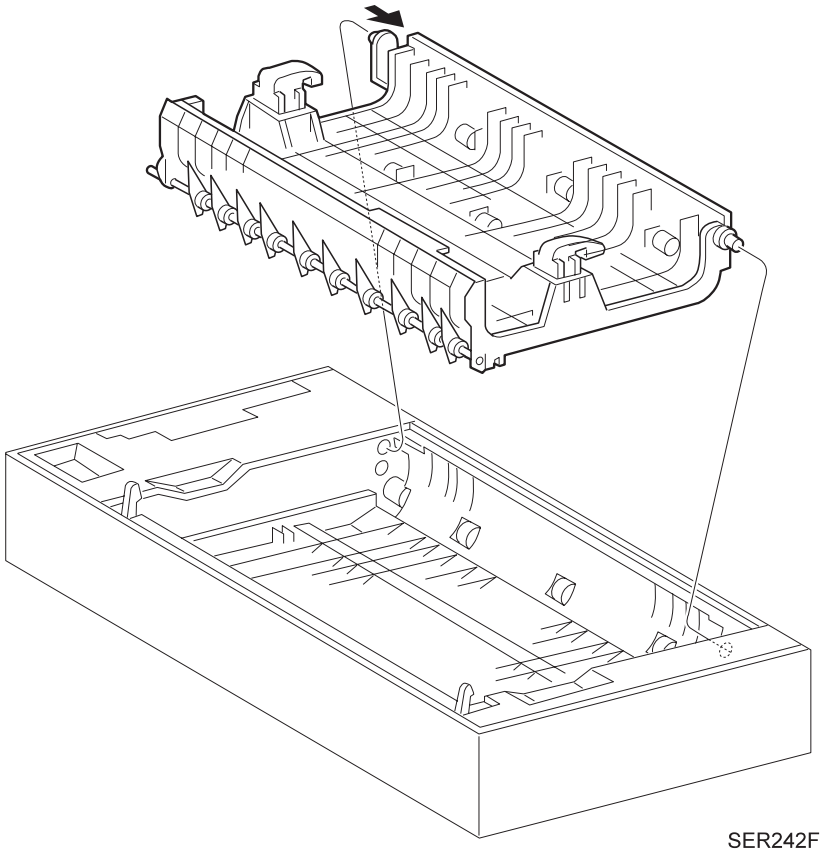


Figure 2-17. Inner Chute Assembly

2.4 Exploded Diagram and Parts List

2.4.1 PL14.1 Duplex Cover and Duplex Assembly

1. DUPLEX COVER
2. DUPLEX REAR COVER
3. DUPLEX FRONT COVER
4. ---
5. FACE UP TRAY
6. TRAY COVER
7. TRAY COVER KNURLED SCREW
8. TRAY LINK ASSEMBLY
9. DUPLEX ASSEMBLY(PL14.2, PL14.3, PL14.4, and PL14.5)
10. KIT TRAY COVER DUPLEX(with 6 and 7)

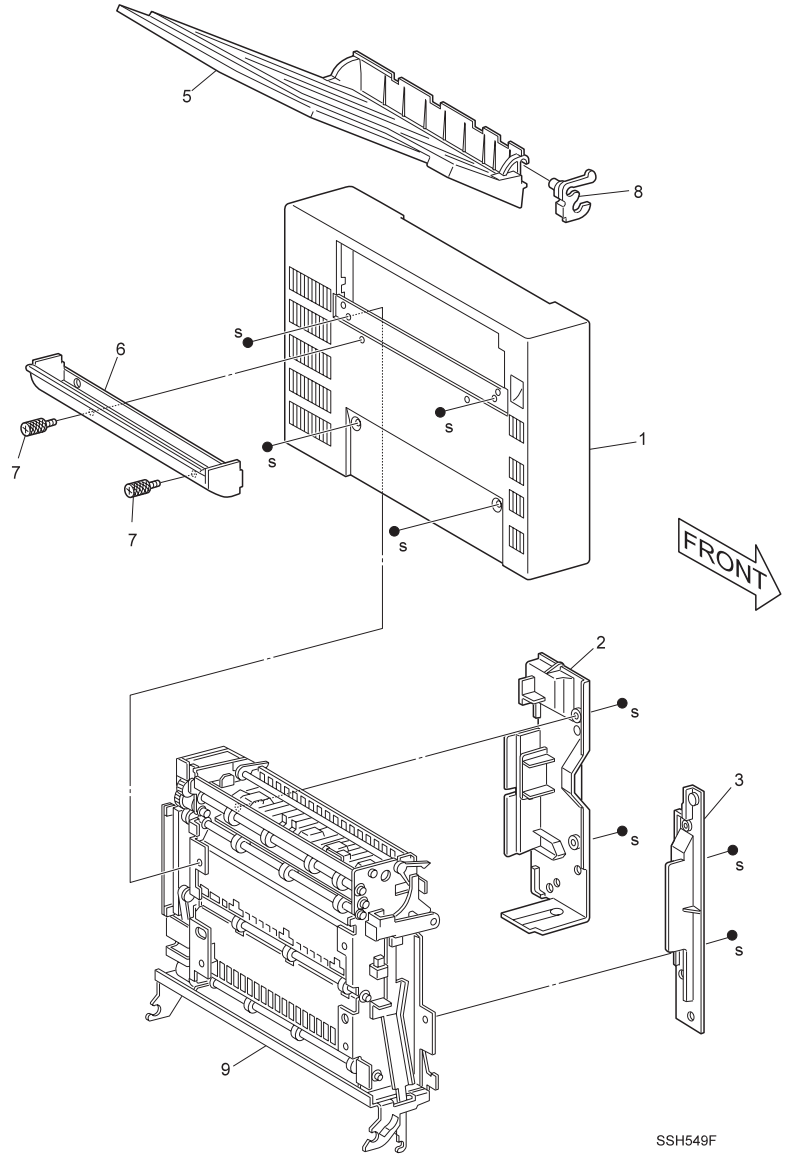


Figure 2-18. Duplex Cover and Duplex Assembly

2.4.2 PL14.2 Duplex Drive

1. DUPLEX PWB
2. DUPLEX PWB BRACKET
3. DUPLEX WAIT CLUTCH(J224)
4. DUPLEX DRIVE ASSEMBLY(with 5~9)
5. DUPLEX MOTOR(J223)
6. DAMPER
7. GEAR(24T/30T/22T)
8. BELT
9. BRACKET
10. DUPLEX SUPPORT WIRE
11. BASE ENGINE CONNECTOR HARNESS(J473<>P611)
12. WAIT SENSOR HARNESS(J475 <>J123)
13. INTERLOCK & EXIT SENSOR HARNESS(J474<>J124/J125)
14. CABLE CLAMP A
15. SUPPORT WIRE
16. CABLE CLAMP B
17. DUPLEX DRIVE BRACKET

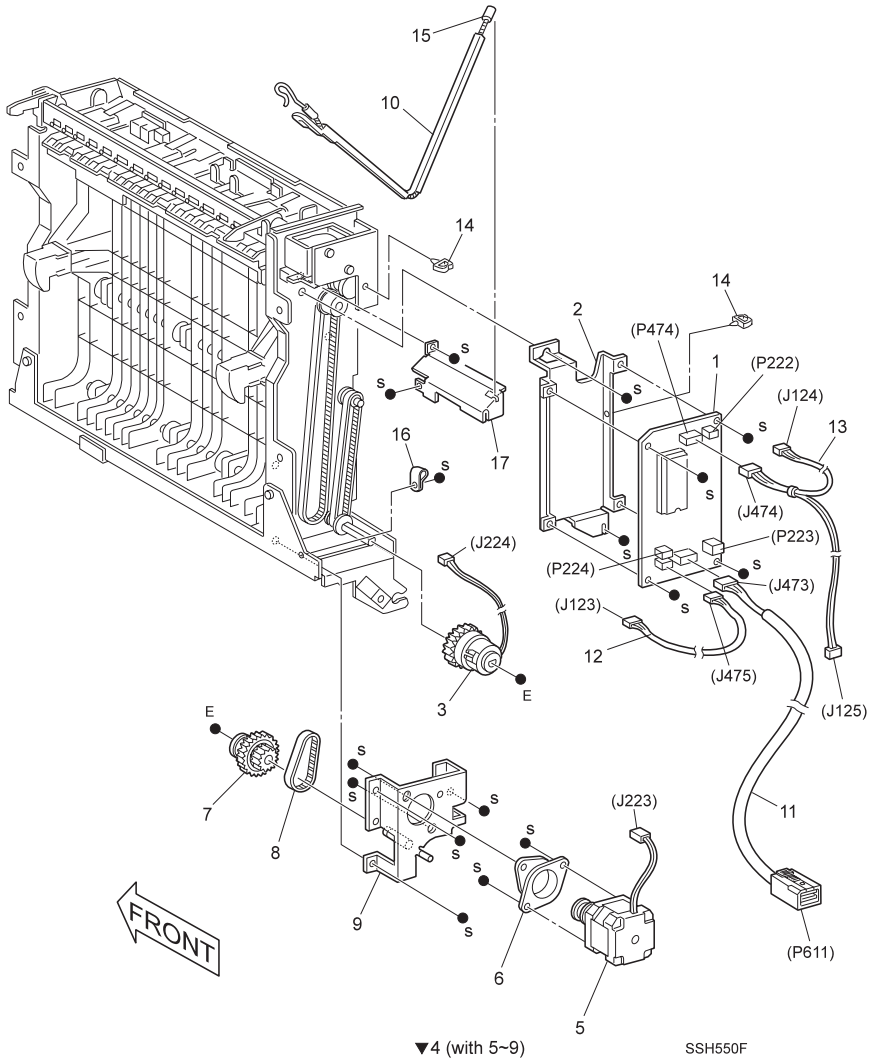


Figure 2-19. Duplex Drive

2.4.3 PL14.3 Duplex Upper Chute

1. SADDLE A
2. LATCH ASSEMBLY
3. DUPLEX LATCH SPRING
4. DUPLEX HANDLE
5. FRONT PINTCH ROLLER SPRING ASSEMBLY REAR
6. FRONT PINCH ROLLER SPRING ASSEMBLY FRONT
7. DUPLEX PINCH ROLLER FRONT
8. DUPLEX PINCH ROLLER REAR
9. DUPLEX EXIT SENSOR
10. DUPLEX EXIT GATE SOLENOID BRACKET
11. DUPLEX EXIT GATE SOLENOID (J222)
12. EXIT GATE LINK
13. REAR PINCH ROLLER SPRING ASSEMBLY REAR
14. REAR PINCH ROLLER SPRING ASSEMBLY FRONT
15. UPPER CHUTE
16. ELIMINATOR
17. SADDLE B

99.KIT DUPLEX LATCH(with 2 and 3)

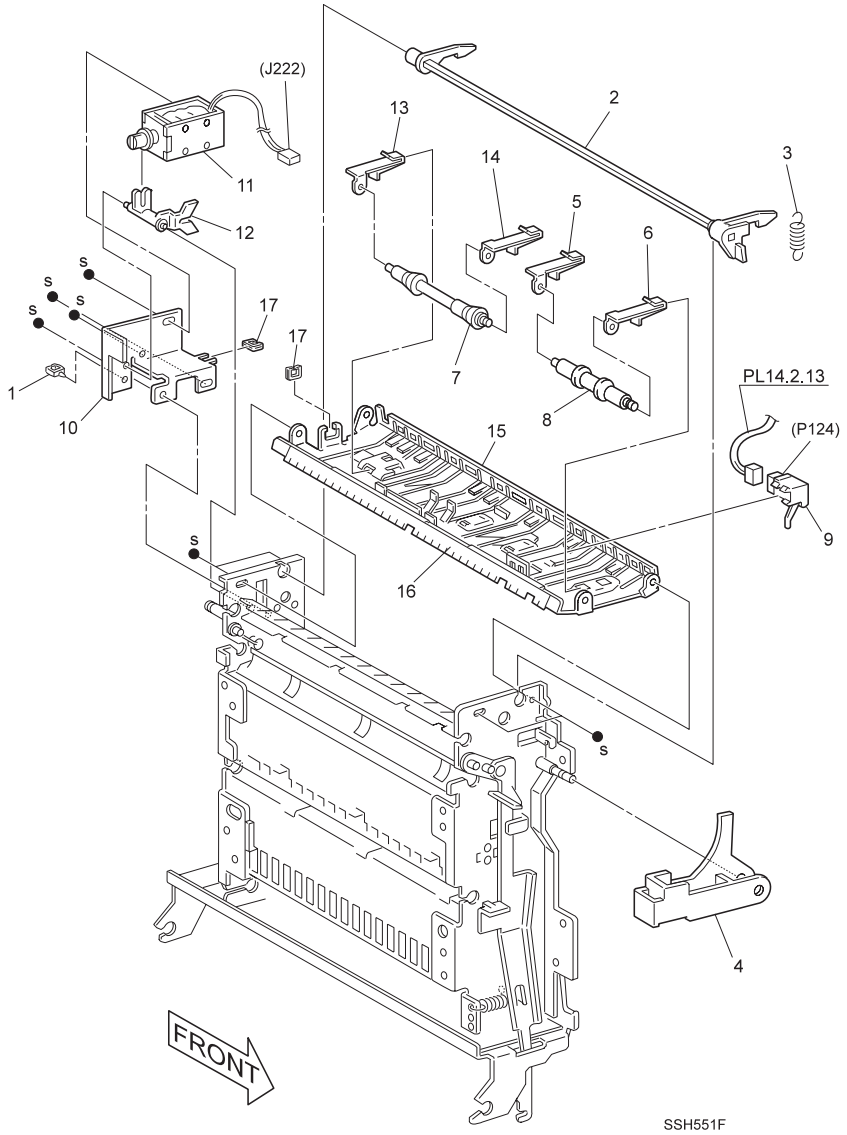


Figure 2-20. Duplex Upper Chute

2.4.4 PL14.4 Duplex Paper Transport

1. BEARING
2. EXIT ROLLER
3. EXIT ROLLER GEAR
4. CLUTCH ASSEMBLY FRICTION
5. EXIT ROLLER PULLEY
6. EXIT ROLLER BELT
7. TRANSPORT ROLLER
8. #1 TRANSPORT ROLLER GEAR
9. ---
10. WAIT/TRANSPORT ROLLER PULLEY
11. #2 TRANSPORT ROLLER BELT
12. WAIT ROLLER
13. WAIT ROLLER BEARING (One Way Clutch)
14. WAIT SENSOR BRACKET
15. DUPLEX WAIT SENSOR
16. DUPLEX INTERLOCK SWITCH

99.KIT DUPLEX TRANSPORT (2~5, 7, 8, 12, and 13)

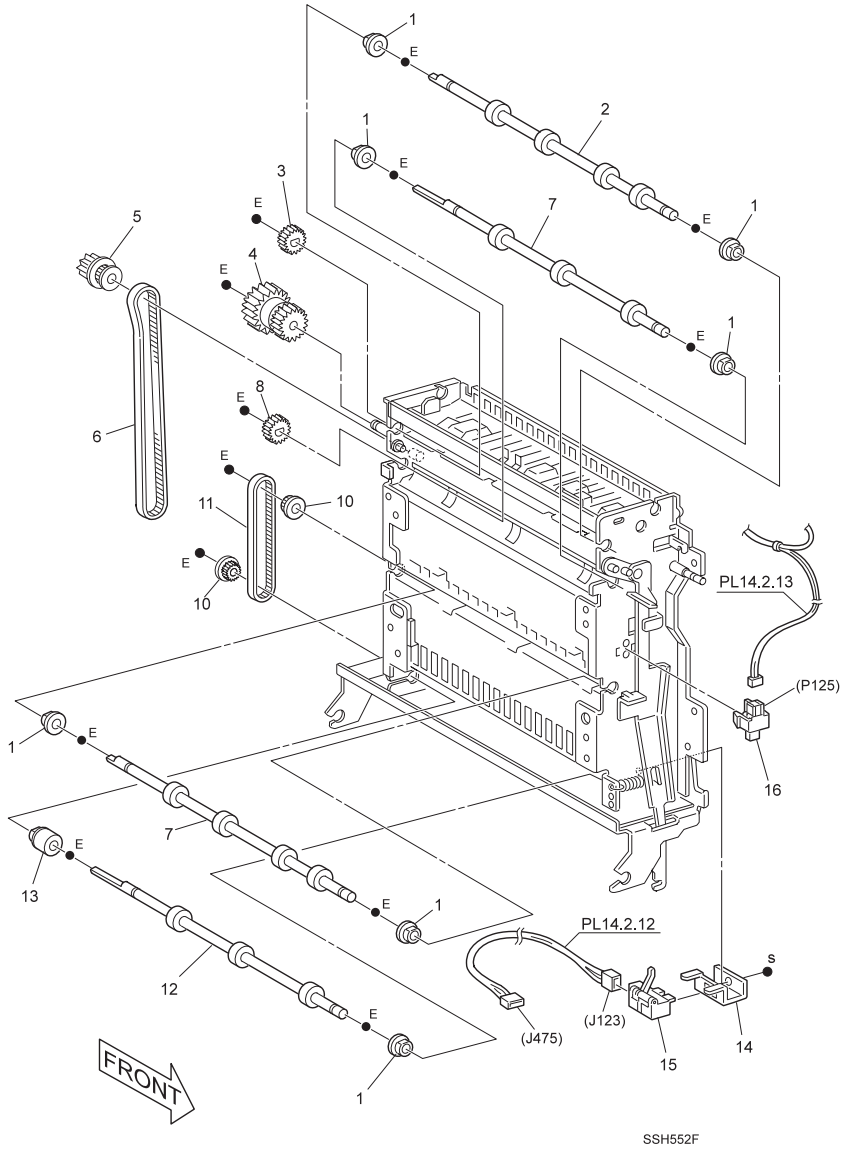


Figure 2-21. Duplex Paper Transport

2.4.5 PL14.5 Duplex Inner Chute

1. INNER CHUTE ASSEMBLY
2. DUPLEX EXIT GATE
3. DUPLEX EXIT GATE SPRING
4. DUPLEX PINCH ROLL
5. DUPLEX LOWER PINCH ROLL SPRING
6. DUPLEX HOLDER
7. DUPLEX HOLDER SPRING
8. INNER CHUTE
9. LABEL HANDLE

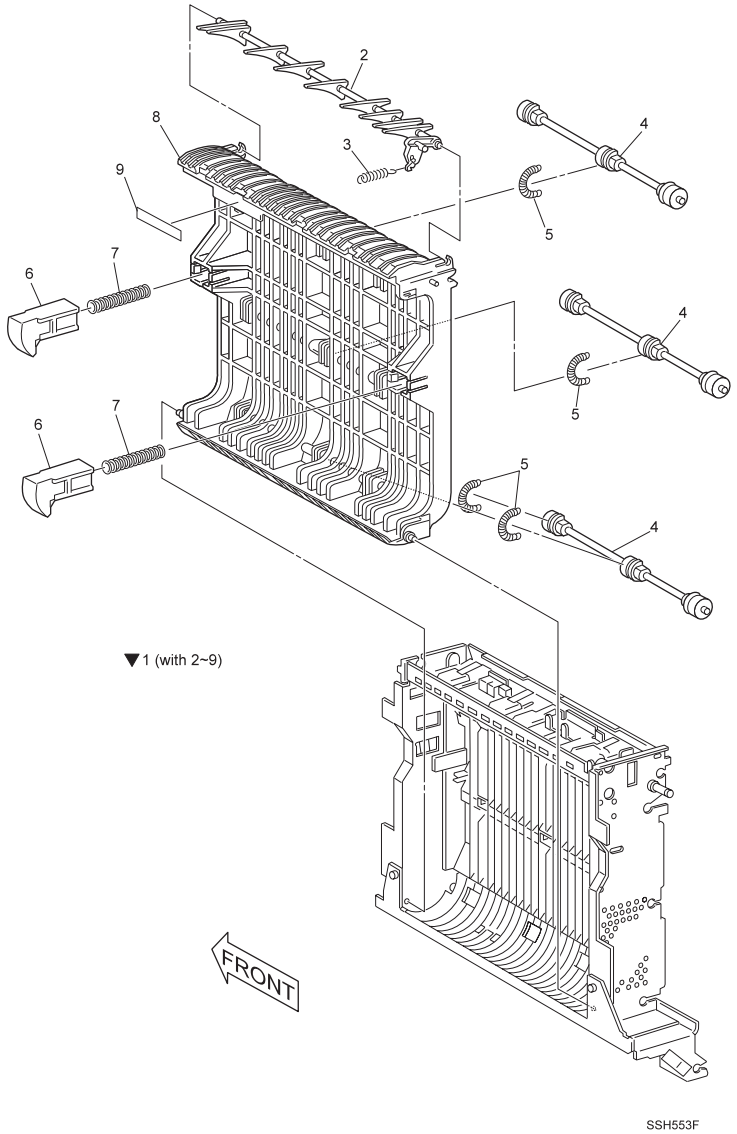


Figure 2-22. Duplex Inner Chute

CHAPTER

3

HIGH CAPACITY FEEDER (HCF)

3.1 Installation and Removal of HCF

3.1.1 Installing

1. Lock 2 casters located at the front of the HCF.
2. Lift up the printer by 2 people and leave it on the HCF, matching its corner position to the HCF.
3. Open the tray(Tray 2) under the printer all the way and lift it up to remove it. Remove the upper tray(Tray3) of HCF in the same way. Remove all protection(for transportation) materials.
4. Have Right and Left Docking Brackets and screws which come with the HCF.
5. Install the Right Docking Bracket between HCF and the printer by one screw.
6. Install the Left Docking Bracket between HCF and the printer by one screw.
7. Reinstall the 2 removed trays(Tray 2 and 3).
8. Peel off the tape, which is fixing the cable, and connect the cable to the connector of the printer.

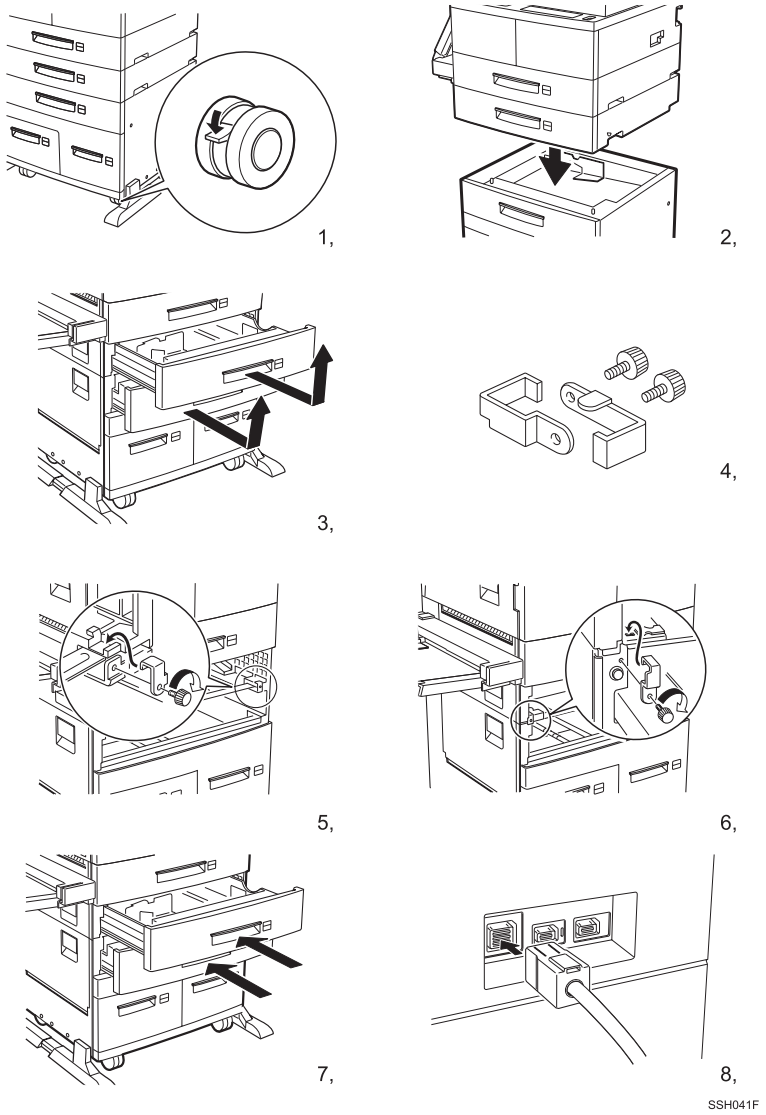


Figure 3-1. Installation

3.1.2 Removal

1. Lock 2 casters located at the front of the HCF. Disconnect the cable from the printer.
2. Open the tray(Tray2) under the printer all the way and lift it up to remove it. Remove the upper tray(Tray 3) of HCF in the same way.
3. Remove a screw securing the Right Docking Brackets to the HCF frame, and remove the Right Bracket.
4. Remove a screw securing the Left Docking Brackets to the HCF frame, and remove the Left Bracket.
5. Reinstall the 2 removed trays(Tray 2 and 3).
6. Remove the printer from the HCF.

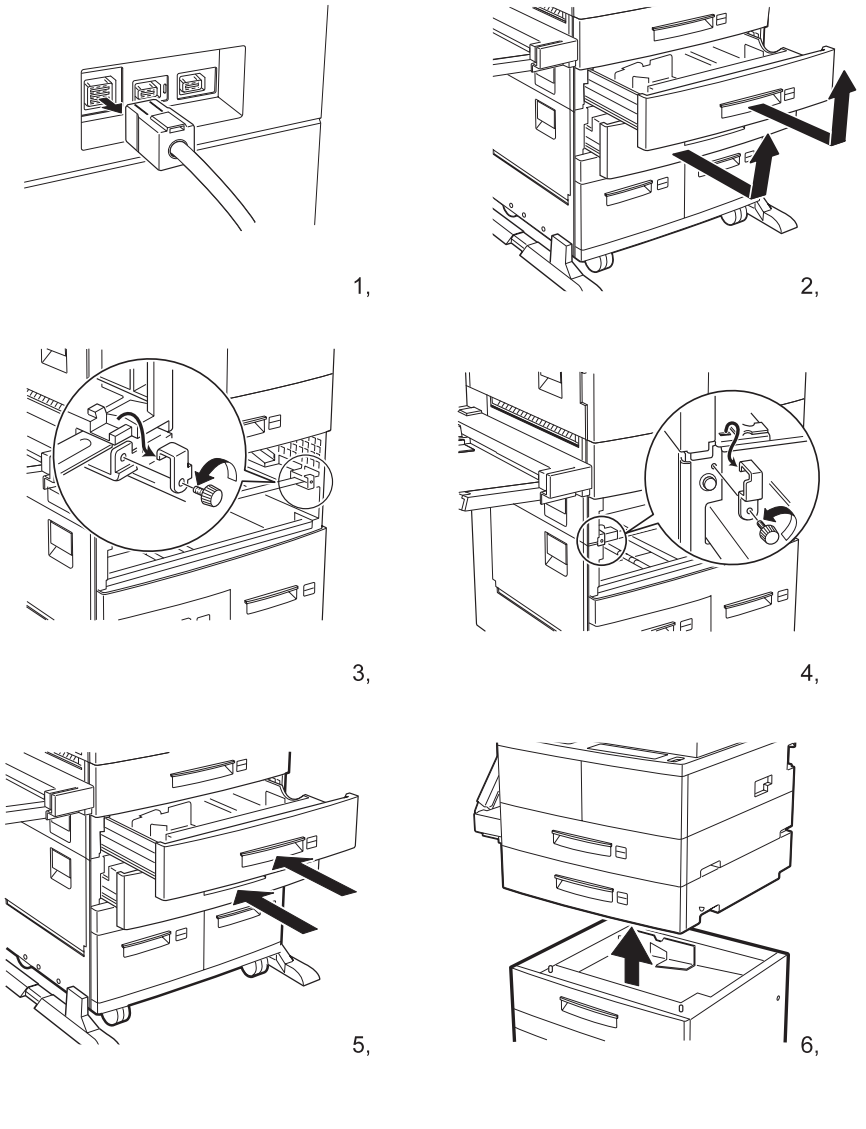


Figure 3-2. Removal

3.2 Introduction

This section contains the disassembly and assembly procedures for major parts within the High Capacity Feeder(HCF).

3.2.1 Preparation

Before you begin any disassembly and assembly procedure;

1. Switch OFF the printer power.
2. Disconnect the AC power cord from the wall outlet.
3. Remove the EP Cartridge and cover it with a dark cloth or place it in a sealed container to protect it from exposure to light.
4. Wear an electrostatic discharge wrist strap to protect sensitive printer parts from damage.

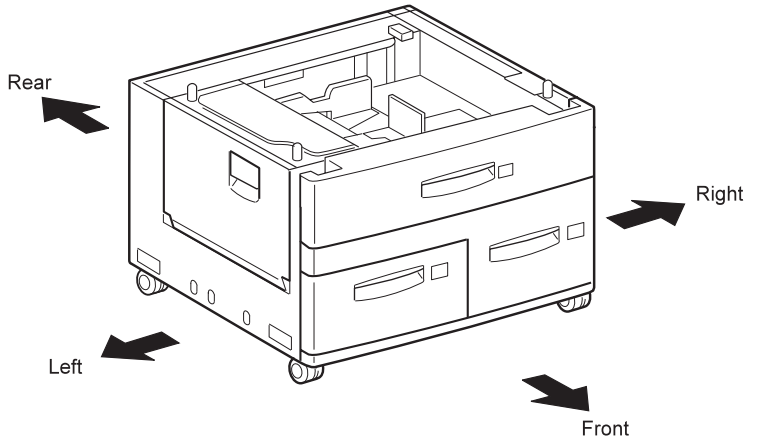
3.2.2 Precautions

CAUTION

- **Names of parts that appear in this section may not be exactly the same as the names appear in the parts list. For example, the MSI Tray Assembly in this section may appear on the parts list as Tray Assembly MSI. As used in this manual the terms Mail box and Sorter mean the same thing.**
- **Always reinstall the correct type and size screws. Using the wrong screw can damage tapped holes. Do not use excessive force to either remove or install a part.**

3.2.3 Notations in the Text

1. Locations given in the manual assume you are facing the printer console panel.



SSH455F

2. The notation “(PLX)” indicates that this component is listed in the PLX parts list.
3. Arrows in an illustration show direction of movement when removing a component.
4. Slashes in a part name indicate that numerous components share the same heading and function. For example, "Gears In/Feed/Out" refers to Gear In, Gear Feed, and Gear Out.

3.3 Disassembly and Assembly

3.3.1 HCF Rear Cover

(See “PL12.1 Cover and Frame” on page -110)

3.3.1.1 Removal

1. Remove the two screws securing the Rear Cover to the HCF frame.
2. Pull up on the Rear cover and remove it from the frame.

3.3.1.2 Assembly

1. Slip the two tabs that are located at the bottom of the Rear Cover into the openings at the bottom of the HCF frame.
2. Slide the edges the Rear Cover into the groves in the Left and Right Covers.
3. Use two screws to secure the Rear Cover to the HCF frame.

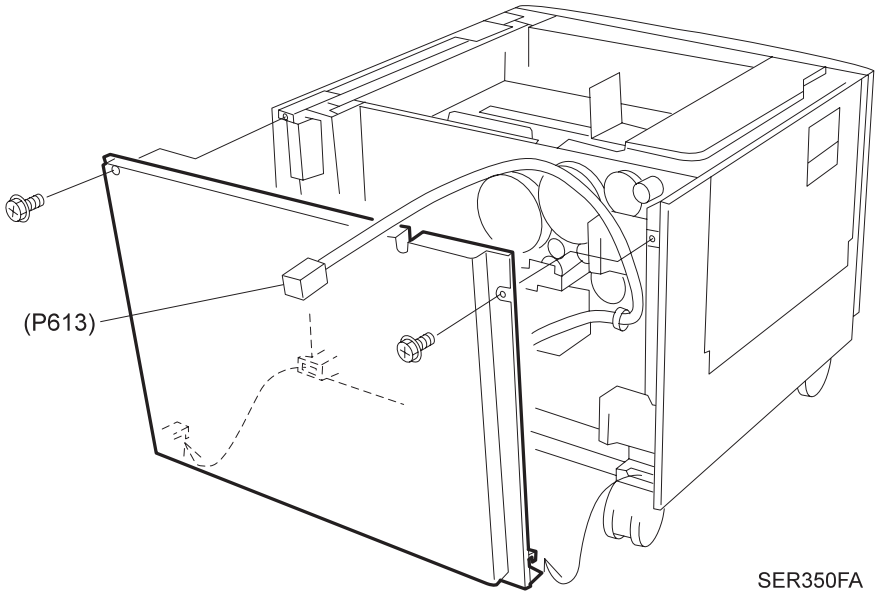


Figure 3-3. HCF Rear Cover

3.3.2 HCF Left Cover

(See “PL12.1 Cover and Frame” on page -110)

3.3.2.1 Removal

1. Slide Trays 3 and 4 a few inches out of the HCF.
2. Open the Left Cover door.
3. Remove two screws securing the Left Cover to the HCF frame.
4. Lift up the Left Cover to free the four latching tabs from the HCF frame, and remove the Cover.

3.3.2.2 Assembly

1. Slide Trays 3, 4, and 5 a few inches out of the HCF.
2. Open the Left Cover door.
3. Align the Left Cover so the four latches tabs on the back of the Cover are opposite the four openings in the HCF Frame.
4. Press the Cover into the frame, then push down on the Cover to lock the tabs in place.
5. Use two screws to secure the Left Cover to the HCF frame.

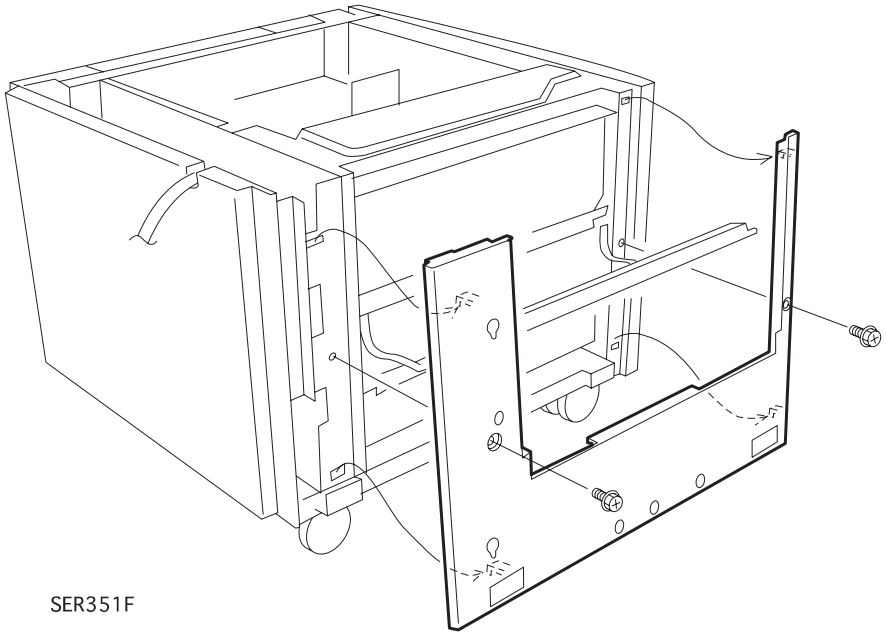


Figure 3-4. HCF Left Cover

3.3.3 Left Cover Assembly

(See “PL12.11 Left Cover Assembly” on page -120)

3.3.3.1 Removal

1. Remove the HCF Left Cover (“HCF Left Cover” on page -73).
2. Open the Left Cover Assembly.
3. Remove the two screws securing the Left Cover Assembly to the Left Cover.
4. Remove the ends of the two Straps from the Left Cover Assembly.
5. Remove the E ring from the rear of the Cover Assembly shaft.
6. Slide the Left Cover Assembly to the rear until the front of the Assembly clears the front shaft, and remove the Assembly.

3.3.3.2 Assembly

1. Slide the front of the Assembly onto the front shaft.
2. Slide the rear of the Assembly onto the rear shaft.
3. Use one E ring to secure the rear of the Assembly to the rear shaft.
4. Reinstall the ends of the two Straps to the Left Cover Assembly.
5. Use two screws to secure the Straps to the Assembly.
6. Reinstall the HCF Left Cover (“HCF Left Cover” on page -73).

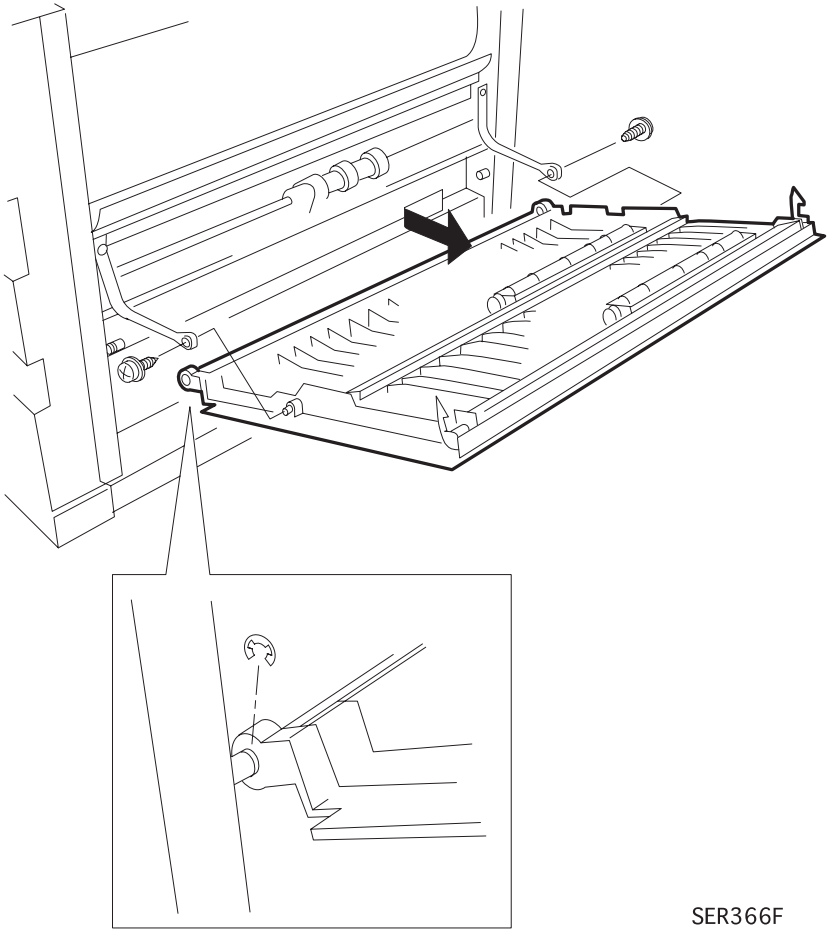


Figure 3-5. Left Cover Assembly

3.3.4 Right Cover

(See “PL12.1 Cover and Frame” on page -110)

3.3.4.1 Removal

1. Remove the two screws securing the Right Cover to the HCF frame.
2. Lift up the Right Cover to free the two latching tabs from the HCF frame, and remove the Cover.

3.3.4.1.1 Assembly

1. Hook the two latching tabs that are located at the bottom edge of the Right Cover into the openings at the bottom of the HCF frame.
2. Press the Right Cover against the frame.
3. Use two screws to secure the Right Cover to the HCF.

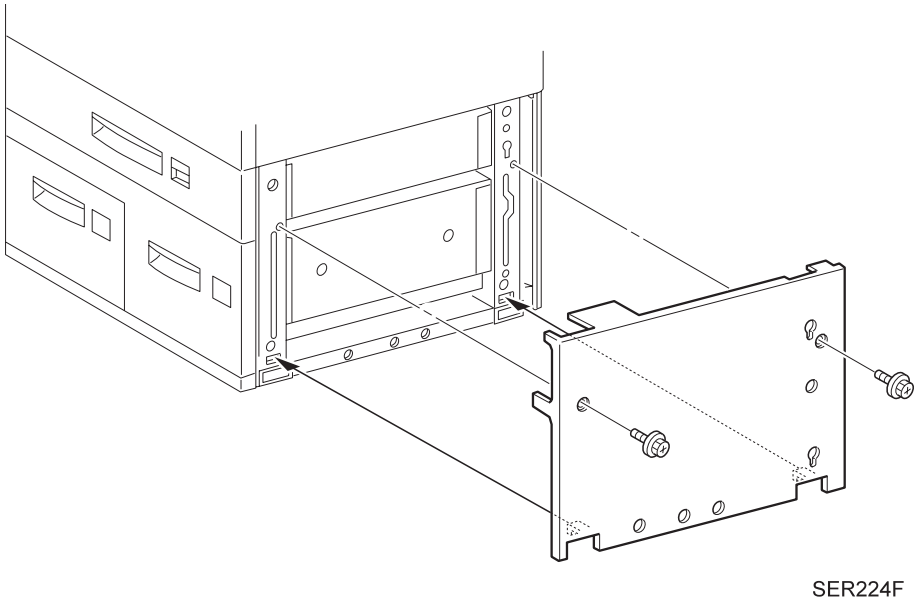


Figure 3-6. Right Cover

3.3.5 Front Cover BTM

(See “PL12.1 Cover and Frame” on page -110)

3.3.5.1 Removal

1. Slide Trays 4 and 5 out of the HCF far enough so you can access the two screws securing the Front Cover BTM to the HCF frame.
2. Remove the two screws securing the Front Cover BTM to the HCF frame, and remove the Cover.

3.3.5.2 Assembly

1. Slide Trays 4 and 5 out of the HCF far enough so you can access the two screw holes located on both ends of the Front Cover BTM.
2. Reinstall the Front Cover BTM onto the HCF frame.
3. Use two screws to secure the Cover to the frame.
4. Close Trays 4 and 5.

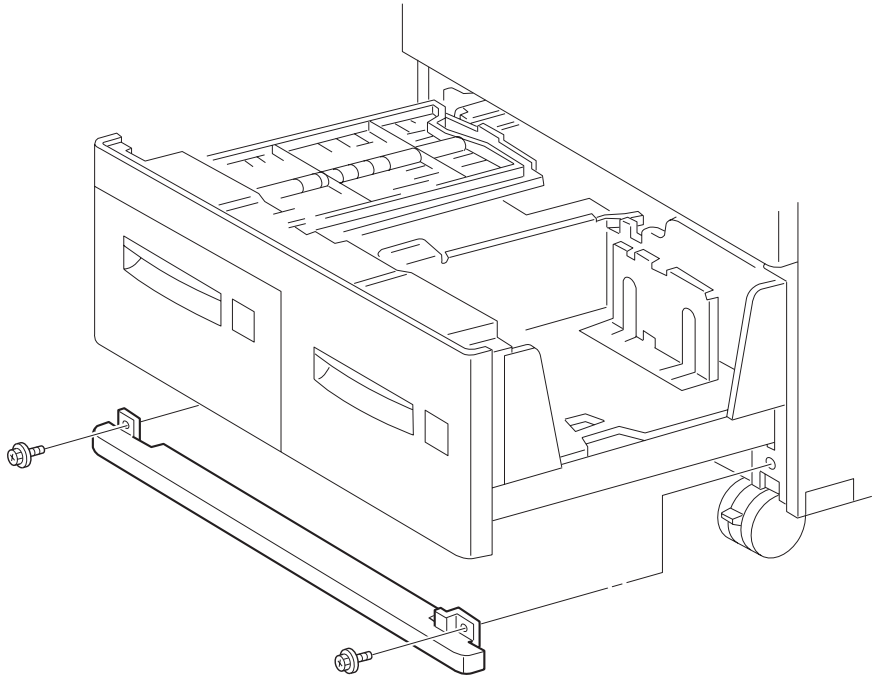


Figure 3-7. Front Cover BTM

3.3.6 HCF Feed Motor

(See “PL12.2 Drive, HCF PWB and Harness” on page -111)

3.3.6.1 Removal

1. Remove the HCF Rear Cover (“HCF Rear Cover” on page -72).
2. Disconnect P/J217 from the HCF PWB.
3. Hold on to the rear of the Feed Motor while you remove the two screws securing the Motor Bracket to the frame (Figure below).

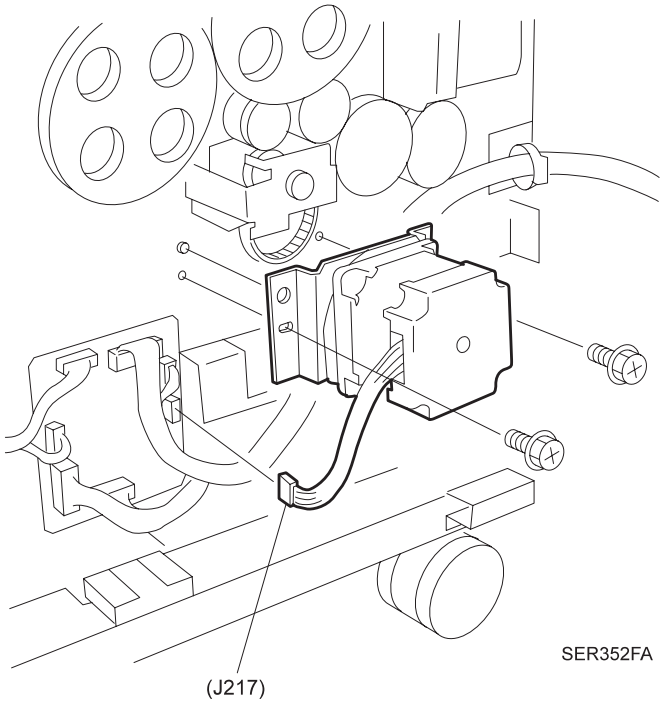


Figure 3-8. HCF Feed Motor

4. Slide the Feed Motor out of the HCF Drive Belt and remove the Motor from the frame.

3.3.6.2 Assembly

1. Position the Feed Motor so the wire harness is on the left side of the Motor (Figure 3-8).
2. Reinstall the Motor and slip the Drive Belt over the Feed Motor Gear.
3. Align the Motor Bracket with the frame positioning tabs.
4. Use two screws to secure the Motor Bracket to the frame, but do not tighten fully.
5. Tighten the Drive Belt tension by pushing the Motor Bracket in the direction of the arrow (see illustration) and fully tightening the two screws securing the Bracket to the frame (Figure below).

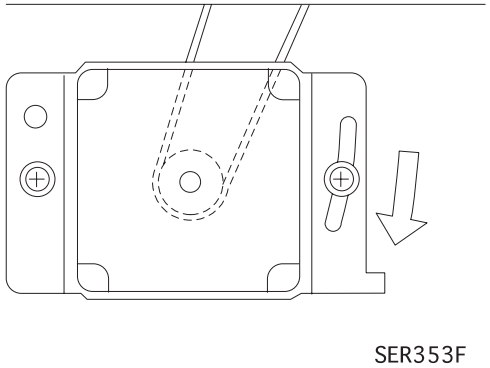


Figure 3-9. Drive Belt

6. Reconnect P/J217 to the HCF PWB.
7. Reinstall the Rear Cover (“HCF Rear Cover” on page -72).

3.3.7 HCF Drive Belt

(See “PL12.2 Drive, HCF PWB and Harness” on page -111)

3.3.7.1 Removal

1. Remove the HCF Rear Cover (“HCF Rear Cover” on page -72).
2. Remove the HCF Feed Motor (“HCF Feed Motor” on page -77).
3. Remove two screws securing the Take Away Bracket to the frame and remove the Bracket (Figure below).

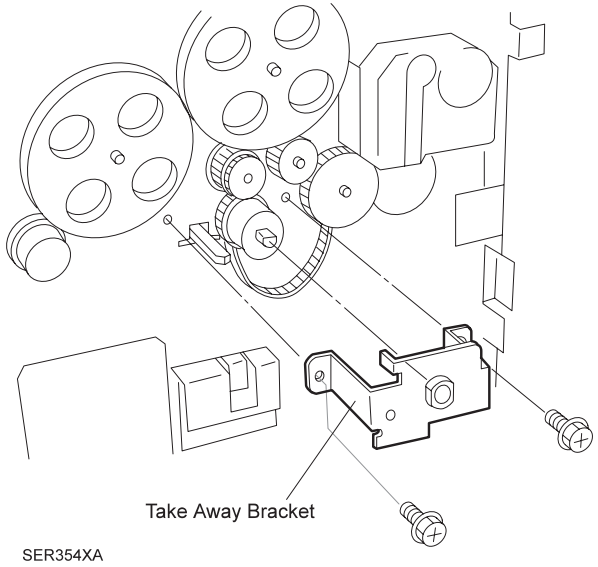


Figure 3-10. HCF Drive Belt

4. Remove the E-ring securing HCF Drive Gear 1 and the E-ring securing Tray 4 Drive Gear 1 and slide both Gears off of the shafts (Figure 3-11).
5. Remove the Drive Belt from the HCF Drive Pulley.

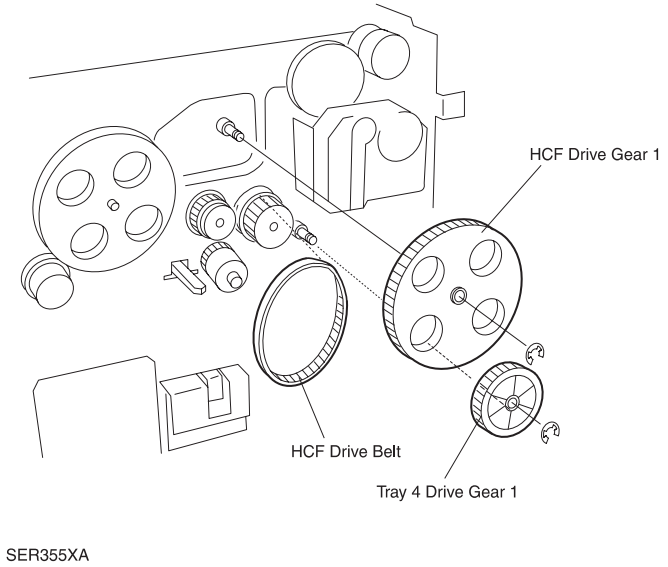


Figure 3-11. HCF Drive Belt

3.3.7.2 Assembly

1. Reinstall the Drive Belt over the HCF Drive Pulley.
2. Reinstall the HCF Drive Gear 1 and the Tray 4 Drive Gear 1 onto the respective shafts, and use one E-ring to secure each gear (Figure above).
3. Reinstall the Take Away Bracket to the frame, making sure the bearing is still in place on the end of the Feed Clutch, and use two screws to secure the Bracket (Figure 3-10).
4. Reinstall the HCF Feed Motor (“HCF Feed Motor” on page -77).
5. Reinstall the Rear Cover (“HCF Rear Cover” on page -72).

3.3.8 HCF PWB

(See “PL12.2 Drive, HCF PWB and Harness” on page -111)

3.3.8.1 Removal

1. Remove the HCF Rear Cover (“HCF Rear Cover” on page -72).
2. Disconnect all eight P/Js from the HCF PWB.
3. Press in and release the latches on the four plastic standoffs securing the PWB to the HCF frame, and remove the PWB.

3.3.8.2 Assembly

1. Position the HCF PWB so P/Js 484 and 480 are at the top.
2. Reinstall the HCF PWB onto the HCF frame, and align the four holes in the PWB with the four standoffs on the frame.
3. Press the PWB onto the four standoffs until they latch into place.
4. Reconnect the eight P/Js to the HCF PWB.
5. Reinstall the HCF Rear Cover (“HCF Rear Cover” on page -72).

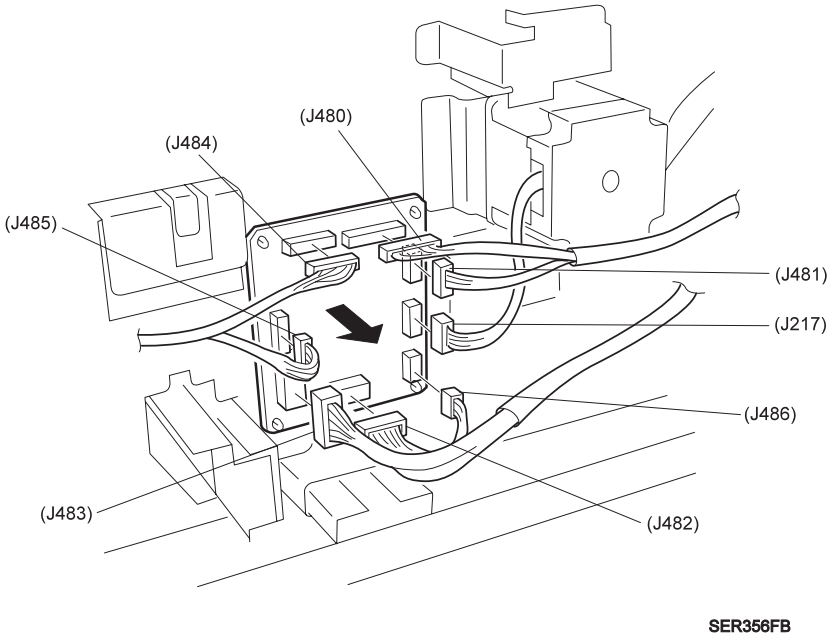


Figure 3-12. HCF PWB

3.3.9 Lift Up Motor

Use this procedure for removal of Tray 3, Tray 4, and Tray 5 Lift Up Motors. (See “PL12.3 Tray Interface 1” on page -112)

3.3.9.1 Removal

1. Remove the Paper Tray (3 ~ 5) from the Paper Feeder (3 ~ 5).
2. Remove the HCF Rear Cover (“HCF Rear Cover” on page -72).
3. Disconnect the P/J that is attached to the Lift Up Motor.
4. Remove the three long screws securing the Motor to the HCF frame.
5. Slide the Motor out to remove it.

3.3.9.2 Assembly

1. Remove the Paper Tray (3 ~ 5) from the Paper Feeder (3 ~ 5).
2. Remove the HCF Rear Cover (“HCF Rear Cover” on page -72).
3. Reinstall the Lift Up Motor onto the printer frame. Be careful not to trap any wires between the Motor and the frame.
4. Use three long screws to secure the Motor to the frame. Use one screw on the lower left and two screws on the right side of the Motor.
5. Reconnect the P/J to the rear of the Motor.
6. Reinstall the HCF Rear Cover (“HCF Rear Cover” on page -72).
7. Reinstall the Paper Tray.

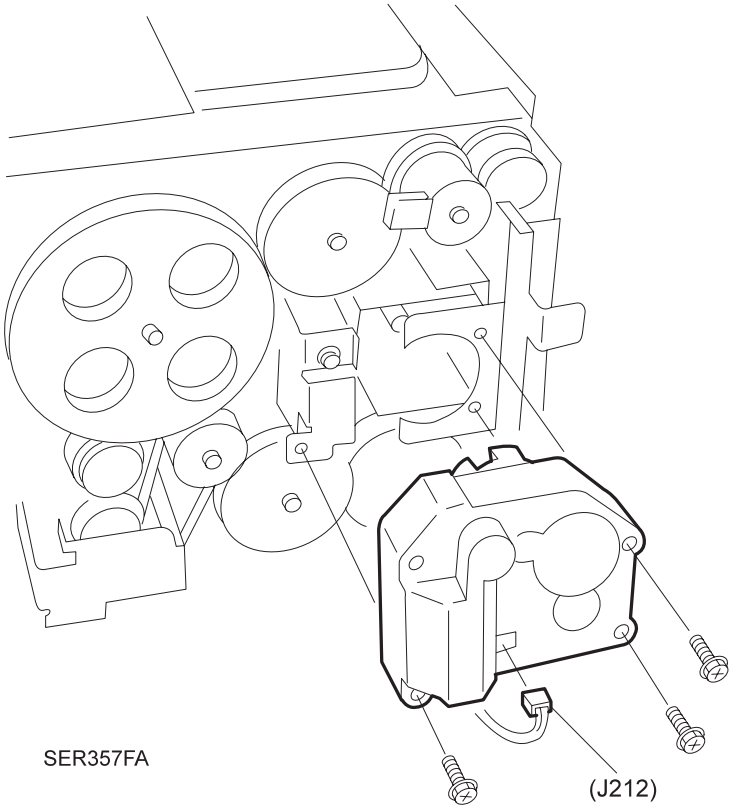


Figure 3-13. Lift Up Motor

3.3.10 Tray3 Paper Size Sensor PWB

(See “PL12.3 Tray Interface 1” on page -112)

3.3.10.1 Removal

1. Slide Paper Tray 3 out of the HCF.
2. Disconnect the P/J 110 from the Size Sensor PWB.
3. Remove the screw securing the Tray 3 Paper Size Sensor PWB to the HCF frame and remove the Sensor.

3.3.10.2 Assembly

1. Slide Paper Tray 3 out of the HCF.
2. Reinstall the Tray 3 Paper Size Sensor PWB onto the HCF frame. Align the two positioning tabs on the PWB with two holes in the frame.
3. Use one screw to secure the PWB to the frame.
4. Reconnect the P/J 110 to the Size Sensor PWB.
5. Reinstall Paper Tray 3.

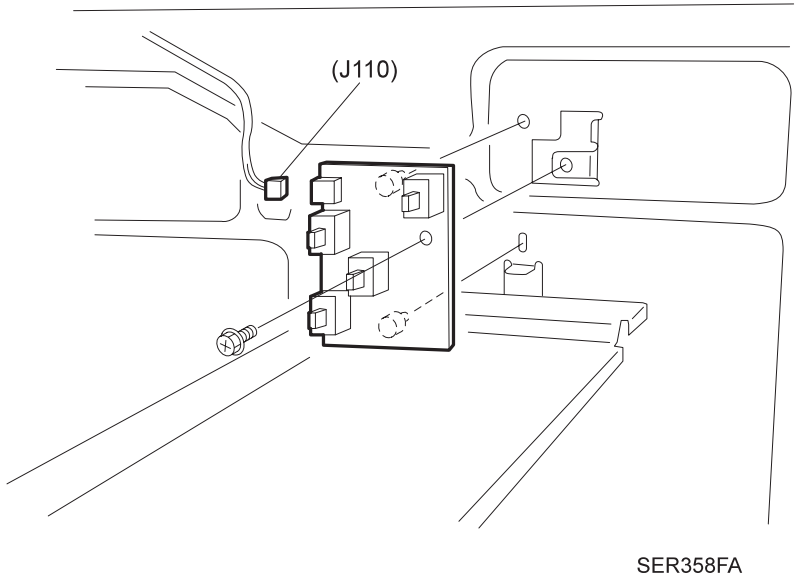


Figure 3-14. Tray 3 Paper Size Sensor PWB

3.3.11 Tray 4 and Tray 5 Paper Size Sensor PWBs

(See “PL12.3 Tray Interface 1” on page -112)

3.3.11.1 Removal

1. Remove Tray 4 (“HCF Tray 4” on page -95) and Paper Tray 5 (“HCF Tray 5” on page -104) from the HCF.
2. Disconnect the P/J(J115/J120) from the Size Sensor PWB.
3. Remove the screw securing the Size Sensor PWB to the HCF frame, pull the PWB straight out and remove it from the frame.

3.3.11.2 Assembly

1. Remove Paper Tray 4 and Paper Tray 5.
2. Reinstall the Paper Size Sensor PWB onto the HCF frame. Align the positioning tabs and screw holes.
3. Reconnect the P/J(J115/J120) to the Size Sensor PWB.
4. Use one screw to secure the PWB to the frame.
5. Reinstall Paper Tray 4 and Paper Tray 5.

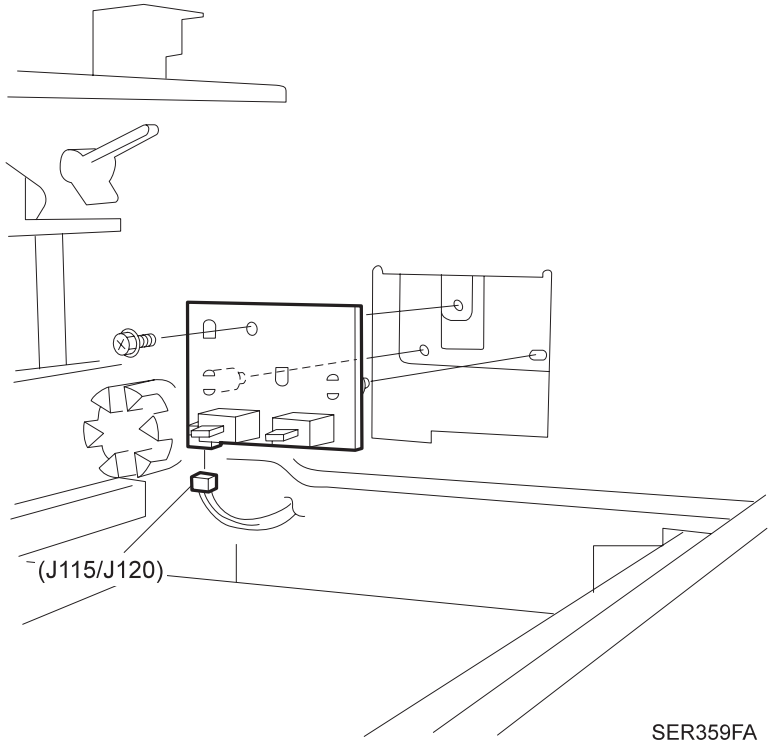


Figure 3-15. Tray4 and Tray5 Paper Size Sensor PWBs

3.3.12 Tray 3, 4 and 5 Feed Clutches

Removal and assembly of the three Feed Clutches are almost identical. (See “PL12.5 Paper Pick Up -Tray 3” on page -114, “PL12.7 Paper Pick Up - Tray 4” on page -116, “PL12.9 Paper Pick Up - Tray 5” on page -118)

3.3.12.1 Removal

1. Remove the Rear Cover (“HCF Rear Cover” on page -72).
2. Remove the Paper Tray associated with the Feed Clutch you are going to remove.
3. Disconnect the P/J(J211/J213/J215) from the Feed Clutch.
4. Remove the E-ring securing the Feed Clutch to the Feed Shaft and slide the Clutch off of the Shaft.

3.3.12.2 Assembly

1. Position the Feed Clutch on the Feed Shaft so the notch on the Clutch lines up with the tab on the frame.
2. Slide the Feed Clutch onto the Feed Shaft and use an E-ring to secure Clutch to the Shaft.
3. Reconnect the Feed Clutch P/J(J211/J213/J215).
4. Reinstall the Paper Tray.
5. Reinstall the HCF Rear Cover (“HCF Rear Cover” on page -72).

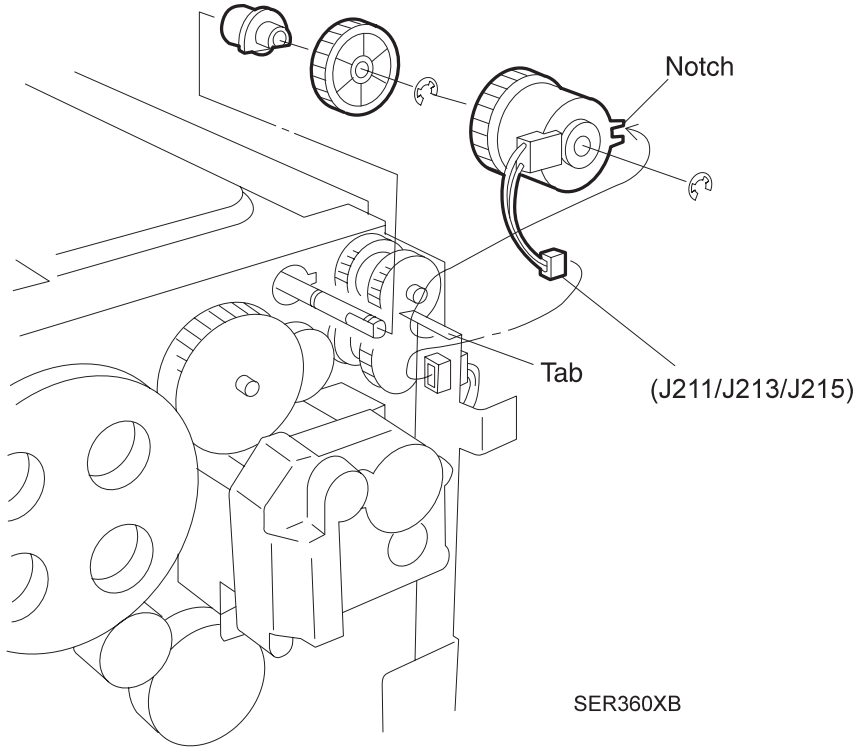


Figure 3-16. Tray3, 4 and 5 Feed Clutches

3.3.13 Trays 3, 4 and 5 No Paper Actuators

Use this procedure for removing and assembling the No Paper Actuator for Trays 3, 4, and 5. (See “PL12.3 Tray Interface 1” on page -112, “PL12.4 Tray Interface 2” on page -113)

3.3.13.1 Removal

1. Remove the Paper Tray associated with the No Paper Actuator you are going to remove.
2. Remove the No Paper Sensor (“Trays 3, 4 & 5 No Paper Sensors” on page -85) associated with the No Paper Actuator you are going to remove.
3. Squeeze together the sides of the Actuator Bracket and remove the Actuator Bracket from the HCF frame.
4. Press the Actuator out of the Bracket.

3.3.13.2 Assembly

1. Press the legs of the Actuator into the slots on the Bracket. The Actuator snaps in to place.
2. Reinstall the Bracket into the opening in the HCF frame by positioning the Bracket so the Actuator paddle faces the front of the printer.
3. Insert the left side of the Bracket into the opening, then squeeze together the sides of the Bracket while inserting the right side into the opening.
4. Release the Bracket and it should snap into place and secure the Bracket to the frame.
5. Reinstall the No Paper Sensor (“Trays 3, 4 & 5 No Paper Sensors” on page -85).
6. Reinstall the Paper Tray.

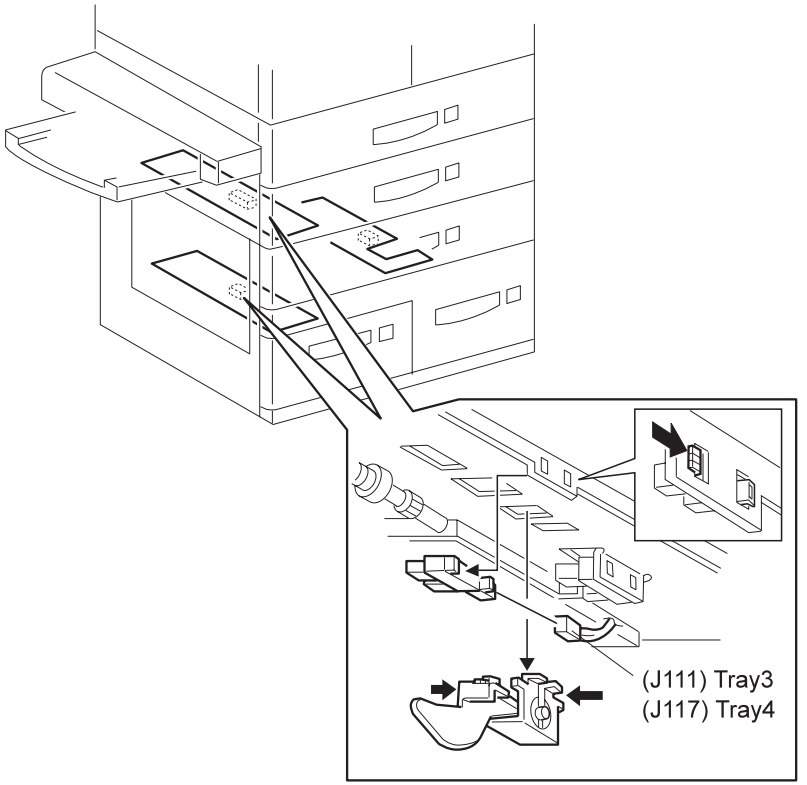


Figure 3-17. No Paper Actuator

3.3.14 Trays 3, 4 & 5 No Paper Sensors

Use this procedure for removing and replacing the No Paper Sensors for Trays 3, 4, and 5. (See “PL12.3 Tray Interface 1” on page -112, “PL12.4 Tray Interface 2” on page -113)

3.3.14.1 Removal

1. Remove the Paper Tray associated with the No Paper Sensor you are going to remove.
2. Squeeze the Sensor latches and remove the No Paper Sensor from the frame.
3. Disconnect the connectors(J111, J117, J116) from the Sensor.

3.3.14.2 Assembly

1. Reconnect the P/J to the Sensor.
2. Push the No Paper Actuator up and out of the way.
3. Position the Sensor with the arms of the Sensor facing the Actuator.
4. Reinstall the No Paper Sensor into the slot in the frame by first inserting the front latch of the Sensor through the front opening in the frame.
5. Press in on the rear latch and inserting it into the rear opening.
6. Release the rear latch and the Sensor snaps into place.
7. Release the Actuator and make sure it moves freely between the arms of the Sensor.
8. Reconnect the connectors (J111, J117, J116) to the Sensor.
9. Reinstall the Paper Tray.

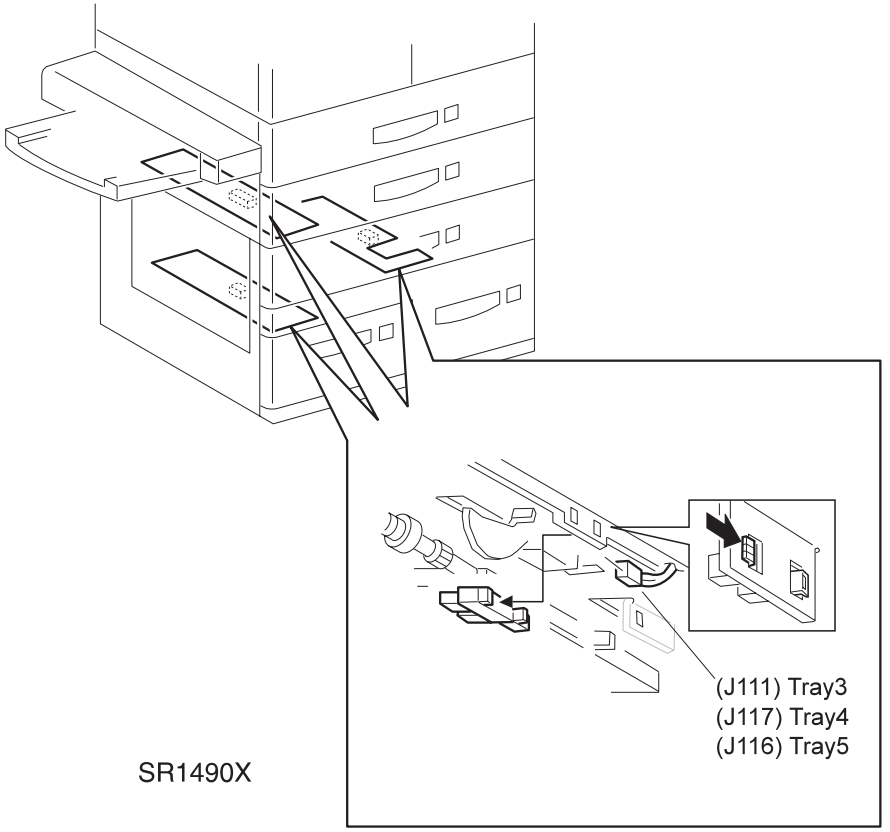


Figure 3-18. Tray 3, 4&5 No Paper Sensors

3.3.15 Trays 3,4, & 5 Paper Level Sensors

Use this procedure for removing and replacing the Paper Level Sensors for Trays 3, 4, and 5. (See “PL12.3 Tray Interface 1” on page -112 and “PL12.4 Tray Interface 2” on page -113

3.3.15.1 Removal

1. Remove the Paper Tray associated with the Paper Level Sensor you are going to remove.
2. Squeeze the Sensor latches and remove the Paper Level Sensor from the frame.
3. Disconnect the connectors(J112, J118, J119)from the Sensor.

3.3.15.2 Assembly

1. Reconnect the P/J to the Sensor.
2. Position the Sensor with the arms of the Sensor facing the Feed Assembly Actuator.
3. Reinstall the Paper Level Sensor into the slot in the frame by first inserting the front latch of the Sensor through the front opening in the frame.
4. Press in on the rear latch and inserting it into the rear opening.
5. Release the rear latch and the Sensor snaps into place.
6. Release the Actuator and make sure it moves freely between the arms of the Sensor.
7. Reconnect the P/J to the Sensor.
8. Reinstall the Paper Tray.

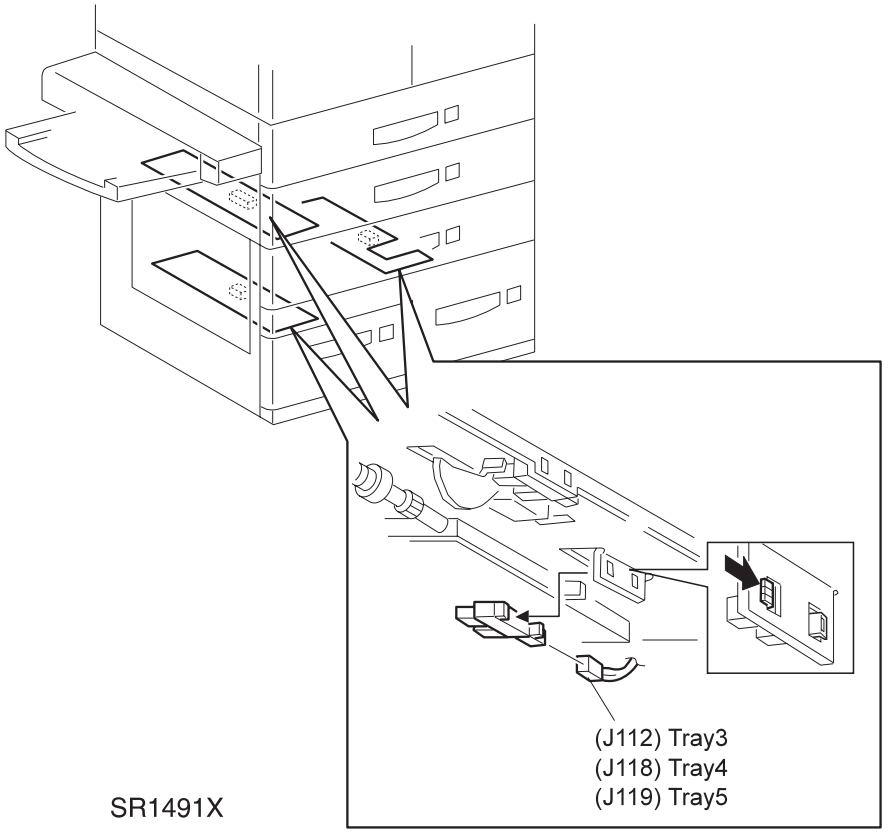


Figure 3-19. Tray3, 4 &5 Paper Level Sensors

3.3.16 Left Cover Interlock Switch

(See “PL12.11 Left Cover Assembly” on page -120)

3.3.16.1 Removal

1. Open the Left Cover Assembly.
2. Squeeze together the top and bottom of the Interlock Switch to release the Switch latches, and pull the Switch away from the HCF frame.
3. Disconnect P/J 121 from the Switch.

3.3.16.2 Assembly

1. Reconnect P/J 121 to the Left Cover Interlock Switch.
2. Squeeze together the top and bottom of the Switch while inserting the bottom of the Switch into the opening in the frame.
3. Insert the top of the Switch into the opening. The Switch snaps into place.
4. Close the Left Cover Assembly.

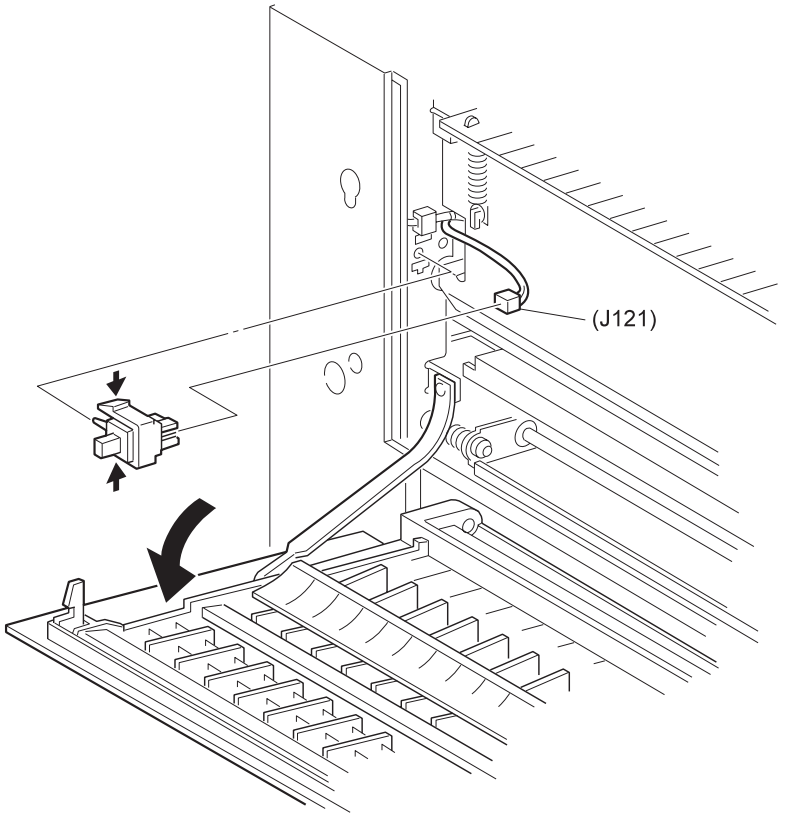


Figure 3-20. Let Cover Interlock Switch

3.3.17 Tray 3 Take Away Sensor

(See “PL12.10 Retard and Take Away Drive - Tray 5” on page -119 and “PL12.11 Left Cover Assembly” on page -120)

3.3.17.1 Removal

1. Open the Left Cover Assembly.
2. Remove the Spring that is located on the left side of the Inner Chute.
3. Remove the two screws securing the Inner Chute to the HCF frame, and remove the Inner Chute.
4. Squeeze together the four latches that are located at the four corners of the Sensor, while pulling the Sensor forward.
5. Remove the Sensor from the HCF frame.
6. Disconnect P/J 114 from the Sensor.

3.3.17.2 Assembly

1. Reconnect P/J 114 to the Sensor.
2. Position the Sensor with the positioning tab facing down.
3. Insert the Sensor into the opening in the HCF frame.
4. Press the Sensor into the opening unit it snaps into place.
5. Reinstall the Inner Chute onto the HCF frame.
6. Use two screws to secure the Inner Chute.
7. Reinstall the Spring to the left side of the Inner Chute.
8. Close the Left Cover Assembly.

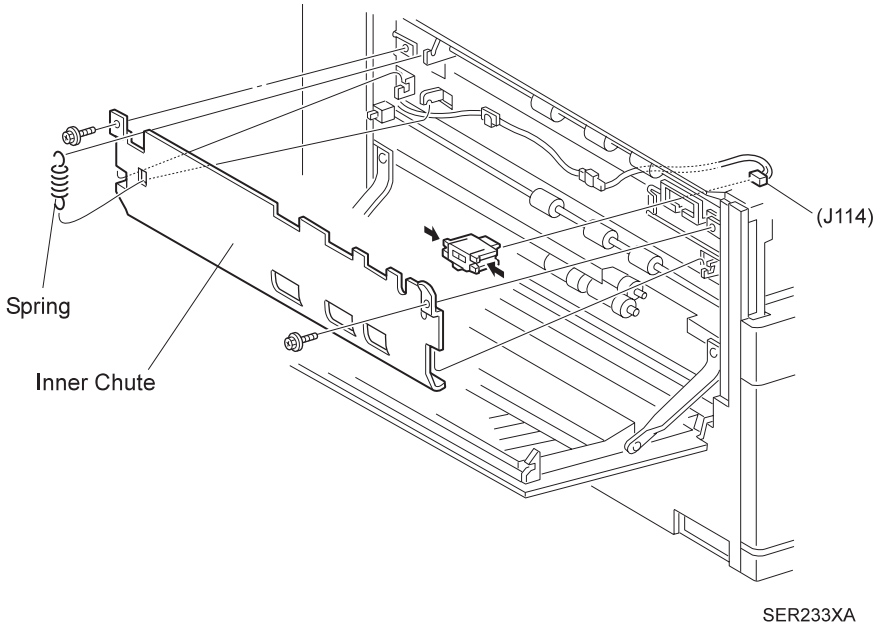


Figure 3-21. Tray 3 Take Away Sensor

3.3.18 Tray 3 Feeder Assembly

(See “PL12.5 Paper Pick Up -Tray 3” on page -114)

CAUTION

Take care not to break or dislodge the No Paper Actuator when removing or replacing the Tray 3 Feeder Assembly.

3.3.18.1 Removal

1. Remove Tray 3 from the HCF.
2. Remove the Rear Cover (“HCF Rear Cover” on page -72).
3. Open the Left Cover Assembly.
4. Remove the Spring that is located on the left side of the Inner Chute.
5. Remove the two screws securing the Inner Chute to the HCF frame, and remove the Inner Chute.
6. Remove the screw securing the Feed In Chute (PL12.6.16) to the HCF frame.
7. Lift the Retard Shaft up and out of the way while you slide the Feed In Chute to the front of the HCF. Sliding the Feed In Chute to the front unhooks the Chute from the HCF frame.
8. Push the Chute back and remove it from the frame.
9. Remove Tray 3 Feed Clutch (“Tray 3, 4 and 5 Feed Clutches” on page -83).
10. Remove the E ring that is securing the Feed Gear (located behind the Feed Clutch) to the shaft, and remove the Feed Gear and Bearing.
11. Hold down the Stopper Link while you pull the Feeder Assembly to the front of the HCF frame.
12. Remove the Feeder Assembly from Feeder 3.

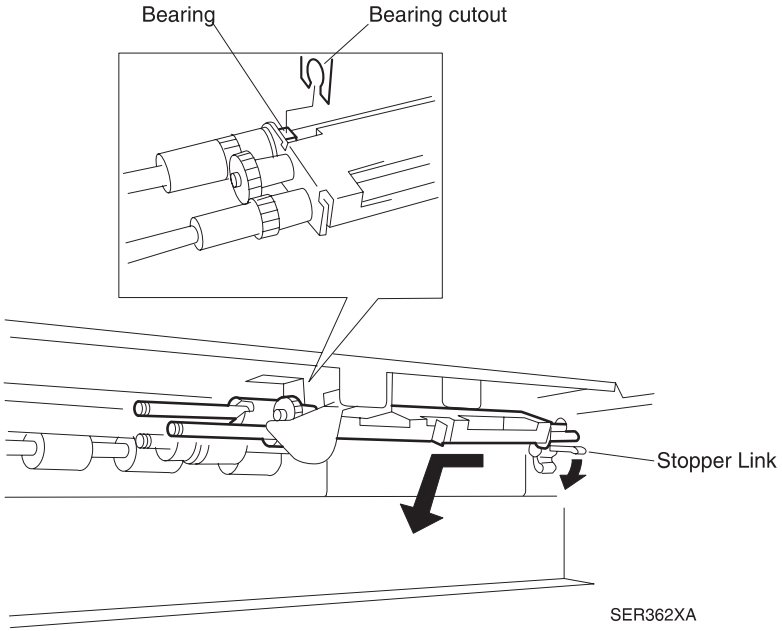


Figure 3-22. Tray 3 Feeder Assembly

3.3.18.2 Assembly

1. Hold down the Stopper Link while you insert the end of the Feed Shaft into the opening in the rear of the HCF frame.
2. Slide the Bearing into the Bearing cutout (refer to the figure).
3. When both the Bearing is in place and the end of the Feed Shaft is through the opening in the rear of the frame, release the Stopper Link. The Nudger Shaft should rest on top of the Stopper Link, and the Link should secure the Feeder Assembly in place on the frame.
4. Make sure the Paper Level Actuator tab on the Feeder is positioned in the center of the arms of the Paper Level Sensor.
5. Slide the Feed Bearing onto the Feed Shaft and press the Bearing into the cutout in the frame.
6. Reinstall the Feed Gear onto the Feed Shaft, and use an E ring to secure it to the Shaft.
7. Reinstall Tray 3 Feed Clutch (“Tray 3, 4 and 5 Feed Clutches” on page -83).
8. Lift the Retard Shaft up and out of the way while you slide the Feed In Chute under the Retard Assembly and against the HCF frame.
9. Slide the Chute to the rear of the HCF so the rear of the Chute hooks on to the frame, and the screw hole at the front of the Chute aligns with the screw hole in the HCF frame.
10. Use one screw to secure the Feed In Chute to the HCF frame.
11. Reinstall the Inner Chute onto the HCF frame.
12. Use two screws to secure the Inner Chute.
13. Reinstall the Spring to the left side of the Inner Chute.
14. Reinstall the Rear Cover (“HCF Rear Cover” on page -72).
15. Reinstall Tray 3.

3.3.19 Tray 3 Retard Assembly

(See “PL12.6 Retard and Take Away Roller-Tray 3” on page -115)

3.3.19.1 Removal

1. Remove Tray 3 from the HCF.
2. Remove the Rear Cover (“HCF Rear Cover” on page -72).
3. Remove the HCF Left Cover (“HCF Left Cover” on page -73)
4. Open the Left Cover Assembly.
5. Remove the Spring that is located on the left side of the Inner Chute (Figure below).

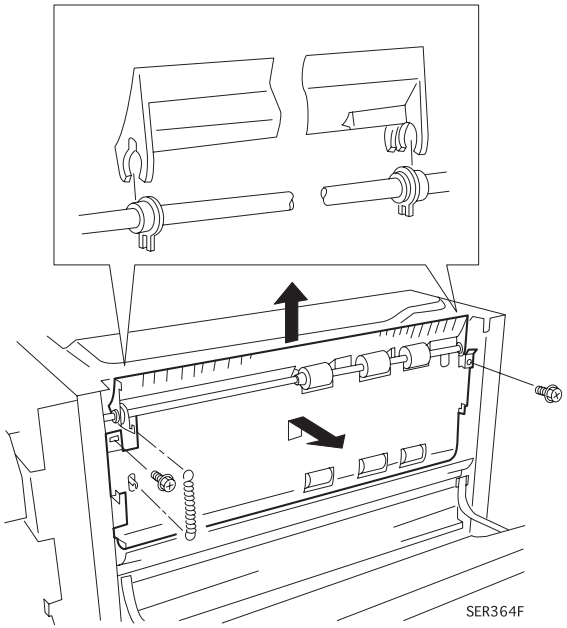


Figure 3-23. Spring

6. Remove the two screws securing the Inner Chute to the HCF frame, and remove the Inner Chute.
7. Pull the plastic Upper Take Away Chute off of the Bearings, and remove the Chute.
8. Remove the screw securing the Feed In Chute (PL12.6.16) to the HCF frame.
9. Lift the Retard Shaft up and out of the way while you slide the Feed In Chute to the front of the HCF. Sliding the Feed In Chute to the front unhooks the Chute from the HCF frame.
10. Push the Chute back and remove it from the frame.
11. Disconnect P/J 211 from Tray 3 Feed Clutch.
12. Disconnect J211 and J213 from the Bracket (PL 12.4.8) (Figure on next page), and free the wire harness from the harness clips.
13. Remove the two screws securing the Bracket to the HCF frame, and remove the Bracket.

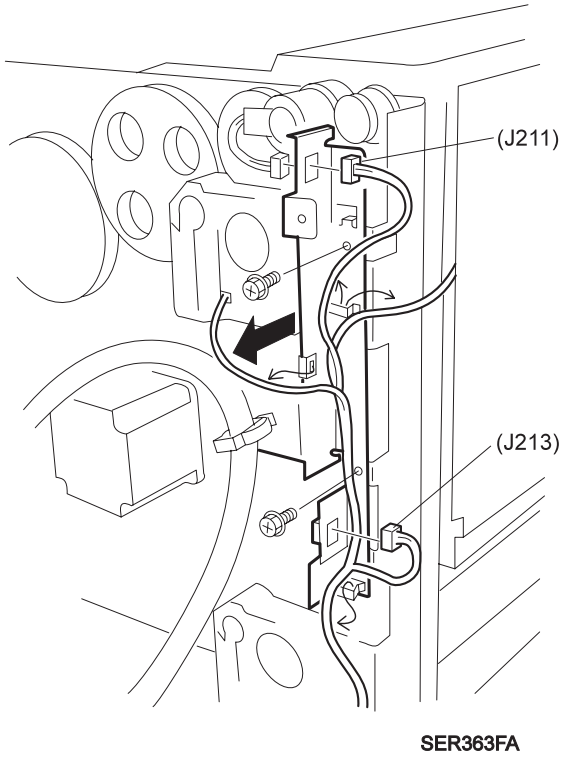


Figure 3-24. Wire Harness

14. Remove Tray 3 Feed Clutch (“Tray 3, 4 and 5 Feed Clutches” on page -83).

15. Remove the E ring securing the Drive Transmission Gear to the shaft and remove the Gear.

16. Remove the E ring securing the Take Away Gear to the shaft and remove the Gear.

17. Remove the E ring securing the Fixed Gear to the shaft and remove the Gear.

18. Slide the Retard Gear off of the shaft.

19. Slide the Take Away Bearing off of the shaft.

20. Slide the Retard Assembly to the front of the HCF, then swing the rear of the Assembly out of the HCF (Figure below).

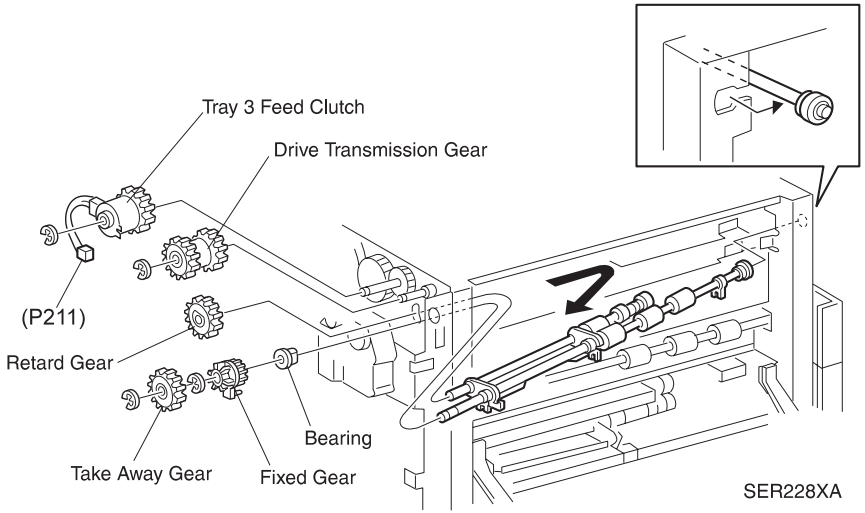


Figure 3-25. Retard Assembly

3.3.19.2 Assembly

1. Insert the Retard Assembly into the HCF as shown in the figure.
2. Insert the bearing end of the Shaft into the bearing cutout at the front of the HCF frame.
3. Slide the Shaft far enough to the front so you can insert the rear of the Shaft into the cutout in at the rear of the HCF frame.
4. Slide the Shaft to the rear, and seat the Bearing at the front of the shaft into the bearing cutout at the front of the HCF frame (Figure on the previous page).
5. Slide the Take Away Bearing onto the shaft (Figure on the previous page).
6. Reinstall the Retard Gear.
7. Reinstall the Fixed Gear and use an E ring to secure it to the shaft.
8. Reinstall the Take Away Gear and use an E ring to secure it to the shaft.
9. Reinstall the Drive Transmission Gear and use an E ring to secure it to the shaft.
10. Reinstall the Bracket to the HCF frame, and use two screws to secure it.
11. Reinstall the Tray 3 Feed Clutch (“Tray 3, 4 and 5 Feed Clutches” on page -83).
12. Reconnect J211 and J213 to the Bracket, and route the wire harness through the harness clips.
13. Lift the Retard Shaft up and out of the way while you slide the Feed In Chute under the Retard Assembly and against the HCF frame.
14. Slide the Chute to the rear of the HCF so the rear of the Chute hooks on to the frame, and the screw hole at the front of the Chute aligns with the screw hole in the HCF frame.
15. Use one screw to secure the Feed In Chute to the HCF frame.
16. Reinstall the plastic Upper Take Away Chute onto the three bearings on the Take Away Roll (Figure 3-23).
17. Reinstall the Inner Chute onto the HCF frame.
18. Use two screws to secure the Inner Chute.
19. Reinstall the Spring to the left side of the Inner Chute.
20. Reinstall the HCF Left Cover (“HCF Left Cover” on page -73).
21. Reinstall the Rear Cover (“HCF Rear Cover” on page -72).
22. Reinstall Tray 3.

3.3.20 Tray 3 Nudger Roll, Feeder Roll, Retard Roll

CHECK POINT

Replace the Feeder, Nudger and Retard Rolls as a unit.

(See “PL12.5 Paper Pick Up -Tray 3” on page -114 and “PL12.6 Retard and Take Away Roller-Tray 3” on page -115)

3.3.20.1 Removal

1. Remove the Tray 3.
2. Use a flat blade screwdriver to unhook the front of the Upper Chute, and remove the Chute.
3. Pull out on the Retard Roll latch and slide the Retard Roll off of the shaft.
4. Repeat step 3 for the Nudger and Feeder Rolls.

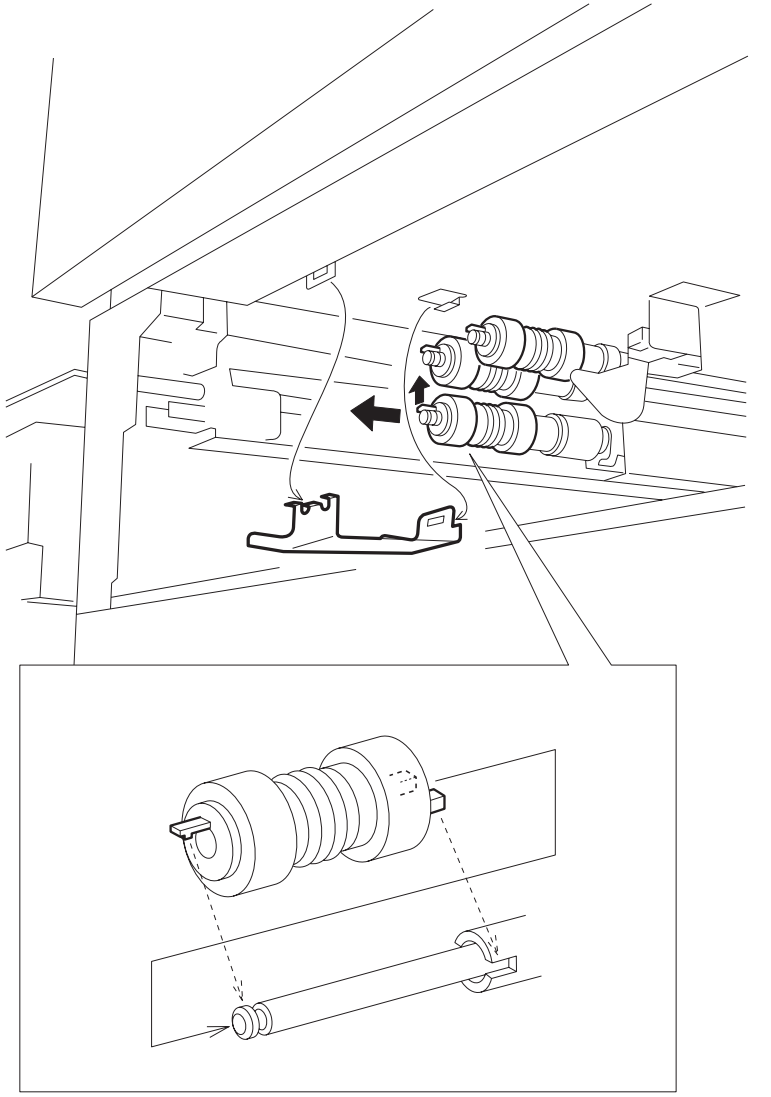


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Figure 3-26. Nudger Roll, Feeder Roll&Retard Roll

3.3.20.2 Assembly

1. Position the Roll with the latch end facing out, and slide the Roll onto the Feed shaft.
2. Rotate the Roll so the end tabs line up with the slots on the shaft One Way Clutch (PL12.5.7) and push the Roll down the shaft until the latch locks the Roll into place.
3. Repeat steps 1 and 2 for the Nudger and Retard Rolls.
4. Reinstall the Chute by sliding the opening in the rear of the Chute into the tab on the frame, then hooking the tab at the front of the Chute into the opening on the frame.
5. Reinstall Tray 3.
6. Reset the Paper Feeder Usage Log for the feeder with the new Rolls.

3.3.21 HCF Tray 4

(See “PL13.1 High Capacity Tray 4” on page -121)

3.3.21.1 Removal

1. Pull Tray 4 out until it stops.
2. Press and hold the tray release button while you slide Tray 4 out of the HCF.

3.3.21.2 Assembly

1. Align the guide rails on both sides of Tray 4 with the guide rails on the HCF frame.
2. Push Tray 4 all the way into the HCF.

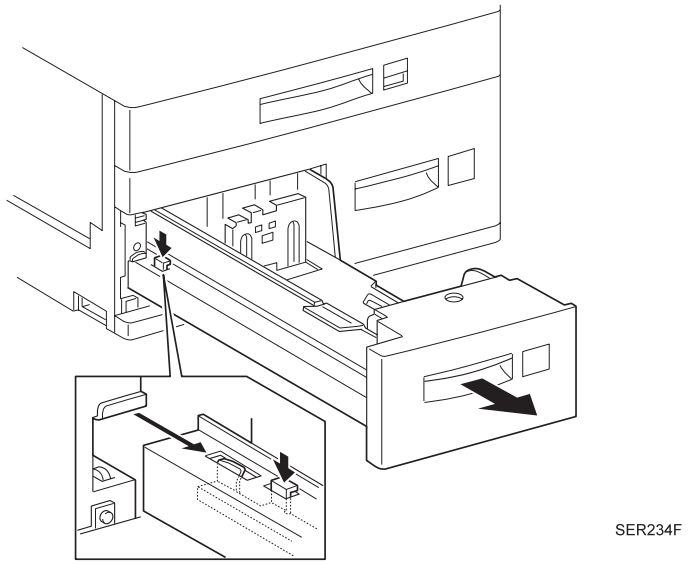

Figure 3-27. HCF Tray4

3.3.22 Tray 4 Front Cover

(See “PL13.1 High Capacity Tray 4” on page -121)

3.3.22.1 Removal

1. Slide Tray 4 a few inches out of the HCF.
2. Remove the screw securing the Tray 4 Front Cover to the Tray frame.
3. Lift up and out to remove the Front Cover.

3.3.22.2 Assembly

1. Insert the two latches located on the inside of the Front Cover into the two slots in the Tray frame.
2. Press the Cover against the frame.
3. Use one screw to secure the Cover to the frame.
4. Slide Tray 4 back into the HCF.

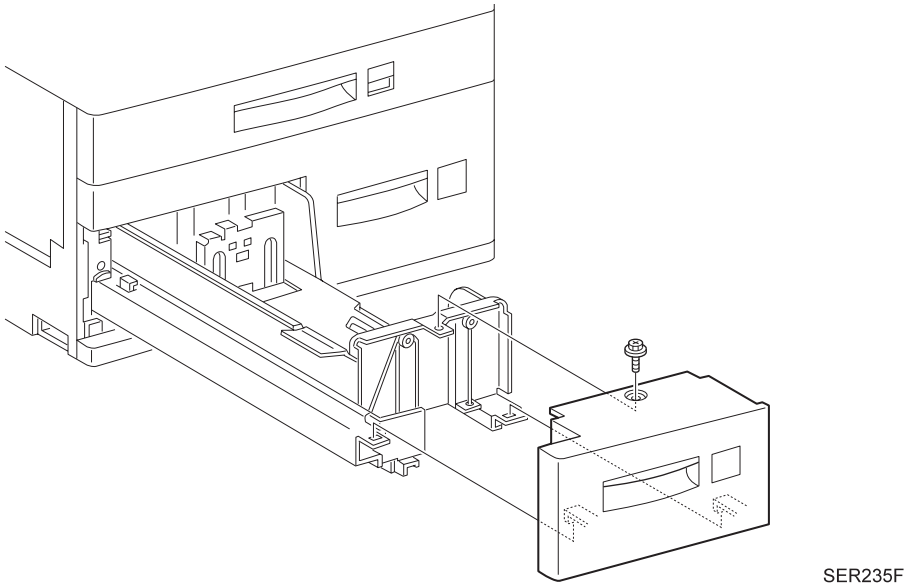

Figure 3-28. Tray4 Front Cover

3.3.23 Tray 4 Take Away Sensor

(See “PL12.4 Tray Interface 2” on page -113, “PL12.7 Paper Pick Up - Tray 4” on page -116)

3.3.23.1 Removal

1. Remove Tray 3, Tray 4 (“HCF Tray 4” on page -95), and Tray 5 (“HCF Tray 5” on page -104) from the HCF.
2. Squeeze together the four latches that are located at the four corners of the Tray 4 Take Away Sensor, while pulling the Sensor up and out of the cutout in the HCF frame.
3. Disconnect P/J 126 from the Sensor.

3.3.23.2 Assembly

1. Position the Sensor above the cutout in the HCF frame, and with the P/J facing down.
2. Insert the Sensor into the cutout, and press down on the Sensor to snap it into place.
3. Reconnect P/J 126 to the Sensor.
4. Reinstall Tray 5 (“HCF Tray 5” on page -104), Tray 4 (“HCF Tray 4” on page -95), and Tray 3.

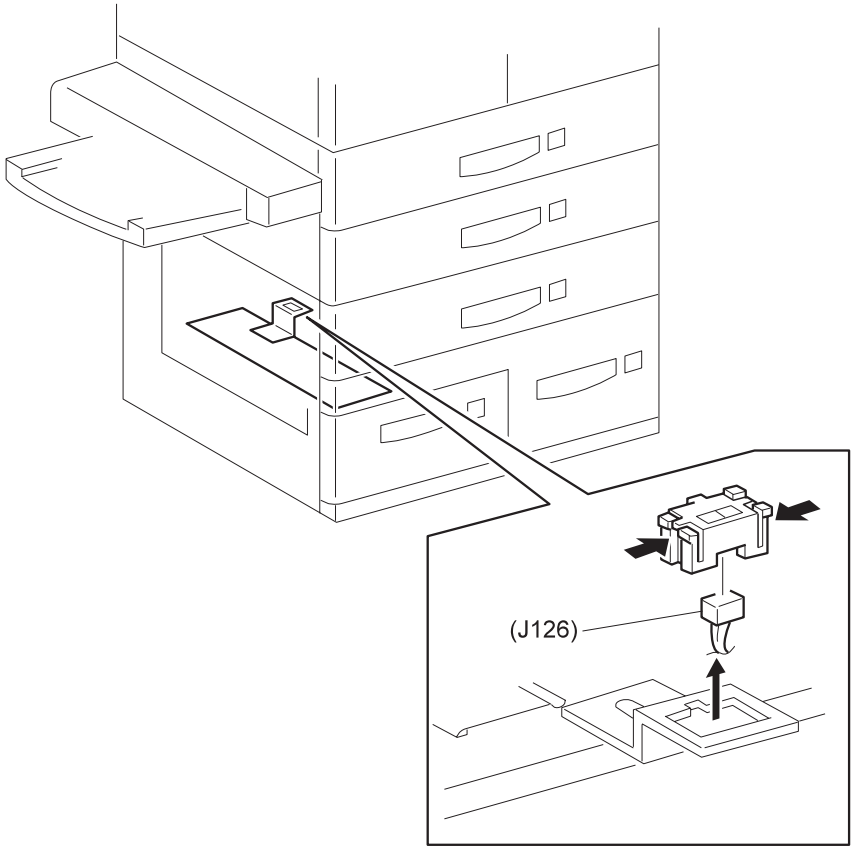

Figure 3-29. Tray4 Take Away Sensor

3.3.24 Tray 4 Take Away Roll

(See “PL12.8 Retard and Take Away Roll - Tray 4” on page -117, “PL13.3 High Capacity Tray 5 - Paper Feed” on page -124)

3.3.24.1 Removal

1. Slide out Tray 5.
2. Remove the Rear Cover (“HCF Rear Cover” on page -72).
3. Remove the HCF Left Cover (“HCF Left Cover” on page -73)
4. Open the Left Cover Assembly.
5. Remove the Spring that is located on the left side of the Inner Chute (Figure below).

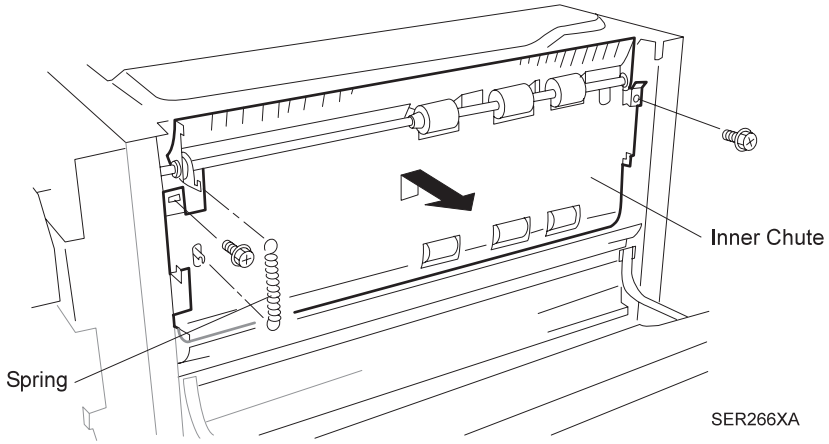

Figure 3-30. Inner Chute Spring

6. Remove the two screws securing the Inner Chute to the HCF frame, and remove the Inner Chute.
7. Disconnect P/J 211 from Tray 3 Feed Clutch.
8. Disconnect J211 and J213 from the Bracket (PL 12.4.8) (Figure below), and free the wire harness from the harness clips.

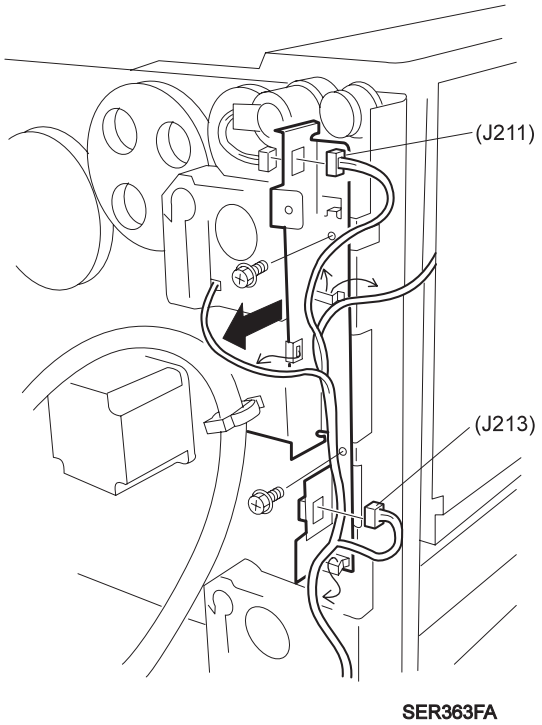

Figure 3-31. Wire Harness

9. Remove the two screws securing the Bracket to the HCF frame, and remove the Bracket.

10. Remove the E ring securing Gear 22 to the Take Away Roll shaft (Figure below).

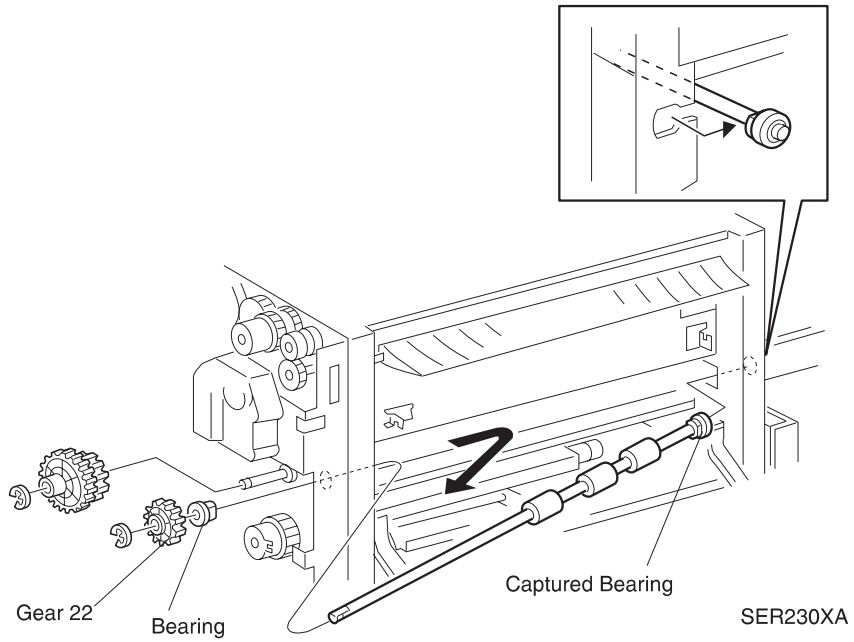

Figure 3-32. Take Away Roll Shaft

11. Hold on to Gear 22 as you slide Tray 4 Take Away Roll toward the front of the HCF.

12. Remove Gear 22 and the Bearing.

13. Remove Tray 4 Take Away Roll.

3.3.24.2 Removal

1. Slide the captured bearing end of the Take Away Roll shaft into the bearing hole at the front of the HCF frame (Figure 3-32).

2. Reinstall the Bearing into the bearing hole at the rear of the HCF.

3. Place Gear 22 over the Bearing and hold it there while you reinstall the Take Away Roll shaft.

4. Slide the rear of the Take Away Roll shaft through the bearing and Gear 22.

5. Reposition the shaft so the captured bearing at the front end of the shaft rests in the bearing hole at the front of the HCF.

6. Use an E ring to secure Gear 22 to the Take Away Roll shaft.

7. Reinstall the Bracket to the HCF frame, and use two screws to secure it frame.

8. Reconnect J211 and J213 to the Bracket, and route the wire harness through the harness clips.

9. Reconnect P/J211 to Tray 3 Feed Clutch.

10. Reinstall the Inner Chute to the HCF frame, and use two screws to secure it to the frame.

11. Reinstall the Spring to the left side of the Inner Chute.

12. Reinstall the HCF Left Cover (“HCF Left Cover” on page -73).

13. Reinstall the Rear Cover (“HCF Rear Cover” on page -72).

14. Slide Tray 5 back into the HCF.

3.3.25 Tray 4 Feeder Assembly

(See “PL12.7 Paper Pick Up - Tray 4” on page -116)

3.3.25.1 Removal

1. Remove Tray 4 from the HCF (“HCF Tray 4” on page -95).
2. Remove the HCF Rear Cover (“HCF Rear Cover” on page -72).
3. Open the Left Cover Assembly.
4. Remove Tray 4 Feed Clutch (“Tray 3, 4 and 5 Feed Clutches” on page -83).
5. Remove the E ring securing the Feed Shaft Bearing to the HCF frame, and slide the Bearing off of the shaft.
6. Hold down the Stopper Link while you pull the Feeder Assembly to the front of the HCF frame.
7. Remove the Feeder Assembly from Feeder 4.

3.3.25.2 Assembly

1. Hold down the Stopper Link while you insert the end of the Feed Shaft into the opening in the rear of the HCF frame.
2. Slide the Bearing into the Bearing cutout (refer to the figure).
3. When both the Bearing is in place and the end of the Feed Shaft is through the opening in the rear of the frame, release the Stopper Link. The Nudger Shaft should rest on top of the Stopper Link, and the Link should secure the Feeder Assembly in place on the frame.
4. Make sure the Paper Level Actuator tab on the Feeder is positioned in the center of the arms of the Paper Level Sensor.
5. Slide the Feed Shaft Bearing onto the Feed Shaft and press the Bearing into the cutout in the frame.
6. Use and E ring to secure the Bearing to the shaft.
7. Reinstall Tray 4 Feed Clutch (“Tray 3, 4 and 5 Feed Clutches” on page -83).
8. Reinstall the Rear Cover (“HCF Rear Cover” on page -72).
9. Reinstall Tray 4.

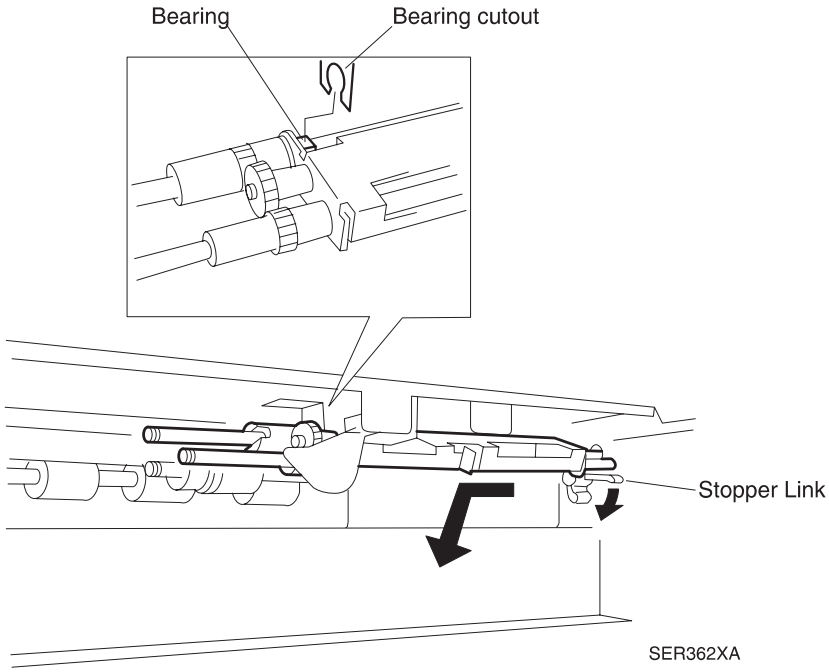

Figure 3-33. Tray4 Feeder Assembly

3.3.26 Tray 4 Retard Assembly

(See “PL12.8 Retard and Take Away Roll - Tray 4” on page -117)

3.3.26.1 Removal

1. Remove Tray 4 from the HCF (“HCF Tray 4” on page -95).
2. Remove the HCF Rear Cover (“HCF Rear Cover” on page -72).
3. Open the Left Cover Assembly.
4. Remove the screw securing the Left Cover Left Strap to the HCF frame, and move the Strap out of the way.
5. Unhook one arm of the Retard Spring from the hole in the HCF frame, and release the Spring.
6. Unhook the other arm of the Retard Spring from the Retard Assembly.
7. Remove the screw securing the Retard Support to the HCF frame, and remove the Support.
8. Hold on to the Retard Gear while you slide the Assembly off of the Spring shaft and out of the HCF.

3.3.26.2 Assembly

1. Position the Retard Assembly so the opening in the Assembly lines up with the Spring shaft.
2. Hold the Retard Gear in place against the frame while you slide the Retard Assembly to the rear of the HCF, making sure the Assembly shaft slides through the center of the Retard Gear and the Spring shaft slides through the opening in the Assembly (see the figure).
3. Insert the shaft of the Retard Support through the opening in the front of the Retard Assembly.
4. Reinstall the Retard Support onto the HCF frame, and use one screw to secure it to the frame.
5. Reinstall the Left Cover Left Strap to the HCF frame, and use one screw to secure it to the frame.
6. Reinstall the HCF Rear Cover (“HCF Rear Cover” on page -72).
7. Reinstall Tray 4 into the HCF (“HCF Tray 4” on page -95).

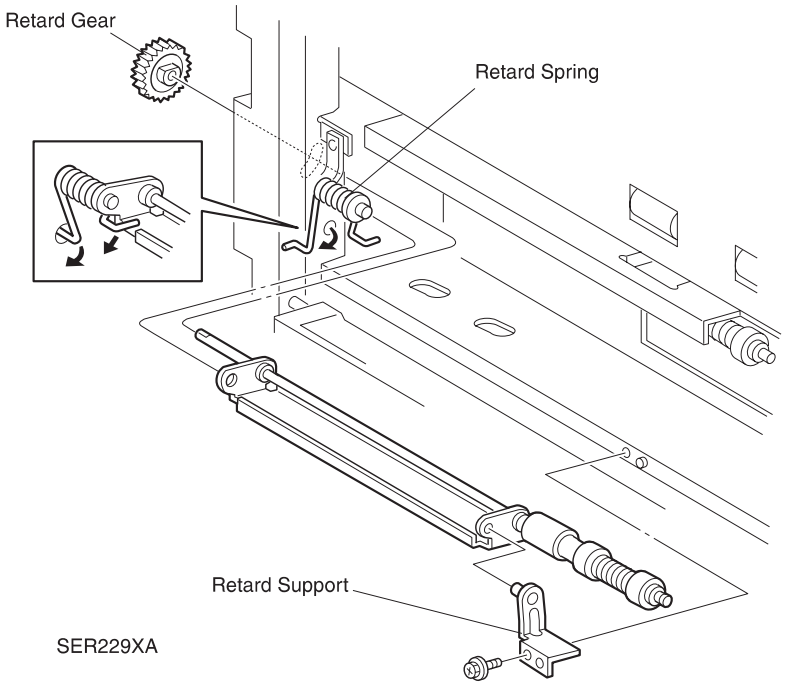

Figure 3-34. Tray4 Retard Assembly

3.3.27 Tray 4 Feed, Nudger and Retard Rolls

(See “PL12.7 Paper Pick Up - Tray 4” on page -116, “PL12.8 Retard and Take Away Roll - Tray 4” on page -117)

CHECK POINT

Replace the Feeder, Nudger and Retard Rolls as a unit.

3.3.27.1 Removal

1. Remove the Tray 4.
2. Use a flat blade screwdriver to unhook the front of the Upper Chute, and remove the Chute.
3. Pull out on the Retard Roll latch and slide the Retard Roll off of the shaft.
4. Repeat step 3 for the Nudger and Feeder Rolls.

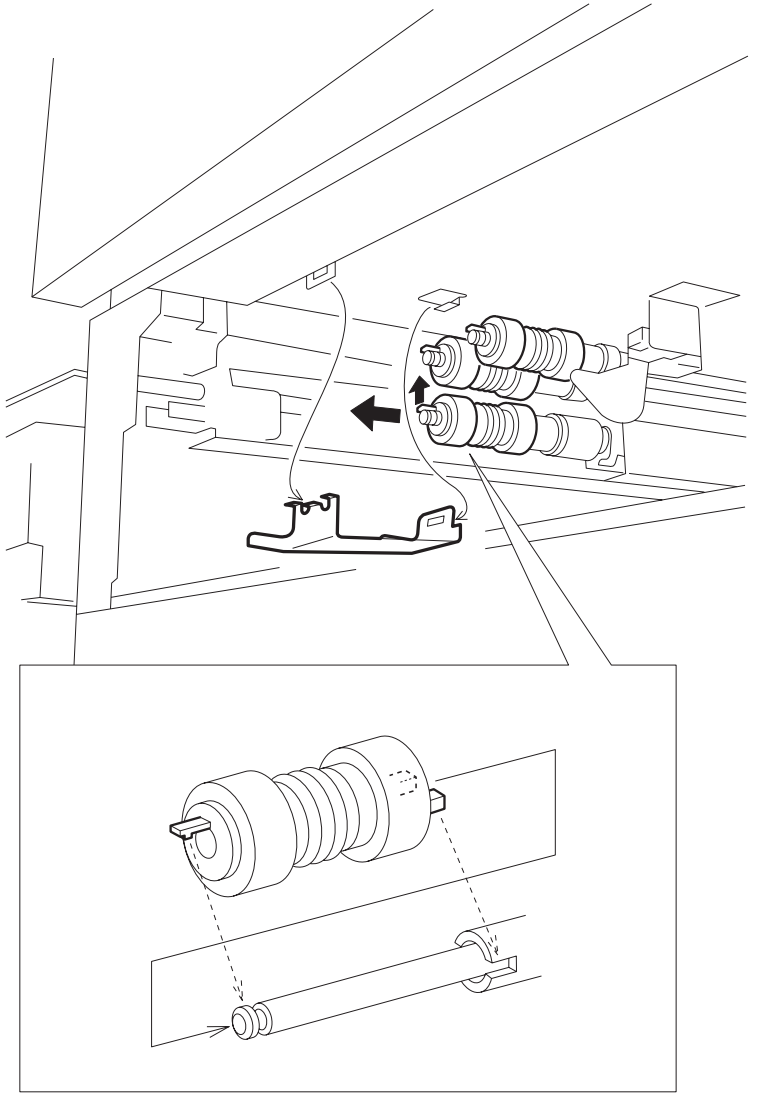

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Figure 3-35. Tray4 Feed, Nudger and Retard Rolls

3.3.27.2 Assembly

1. Position the Roll with the latch end facing out, and slide the Roll onto the Feed shaft.
2. Rotate the Roll so the end tabs line up with the slots on the shaft One Way Clutch (PL12.7.6) and push the Roll down the shaft until the latch locks the Roll into place.
3. Repeat steps 1 and 2 for the Nudger and Retard Rolls.
4. Reinstall the Chute by sliding the opening in the rear of the Chute into the tab on the frame, then hooking the tab at the front of the Chute into the opening on the frame.
5. Reinstall Tray 4.
6. Reset the Paper Feeder Usage Log for the feeder with the new Rolls.

3.3.28 HCF Tray 5

(See “PL13.2 High Capacity Tray 5 - Paper Stack” on page -123)

3.3.28.1 Removal

1. Remove Tray 3.
2. Slide Tray 5 out unit it stops.
3. Use a flat screwdriver blade to press down on the latch spring that is located on the left Tray 5 guide rail, while you slide free the left side of the Tray.
4. Press and hold the two release buttons, that are located behind Tray 5, while you slide Tray 5 out of the HCF.

3.3.28.2 Assembly

1. Align the guide rails on both sides of Tray 5 with the guide rails on the HCF frame.
2. Push Tray 5 all the way into the HCF.
3. Reinstall Tray 3.

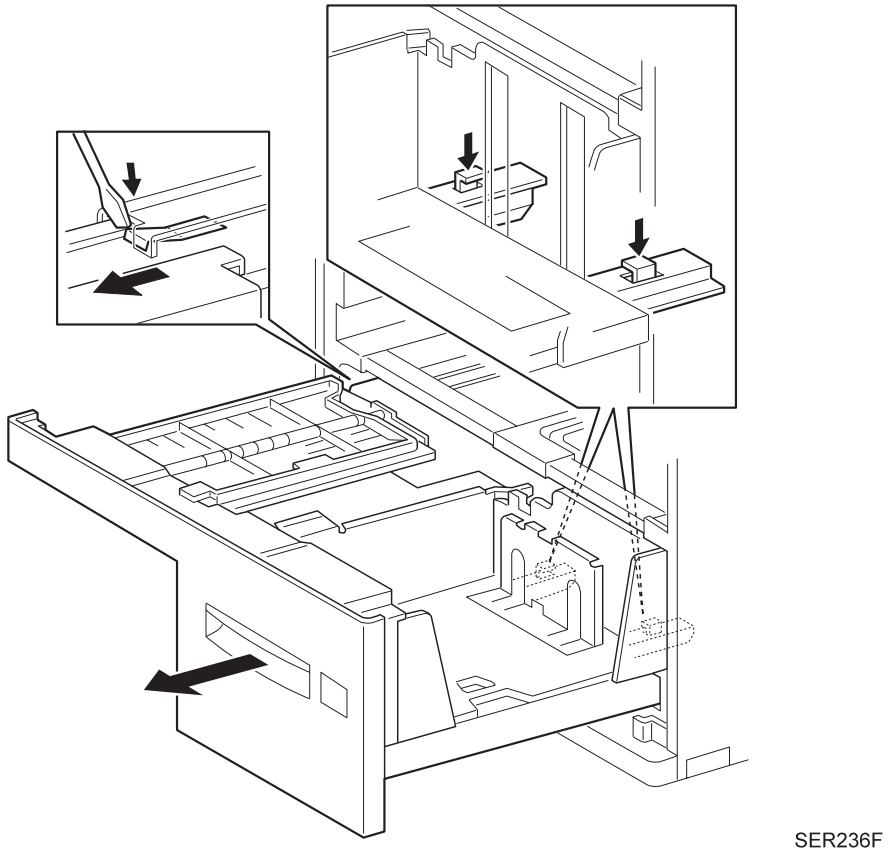

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Figure 3-36. HCF Tray 5

3.3.29 Tray 5 Front Cover

(See “PL13.3 High Capacity Tray 5 - Paper Feed” on page -124)

3.3.29.1 Removal

1. Slide Tray 5 out unit it stops.
2. Open Tray 5 Upper Chute.
3. Remove the two screws securing the Tray 5 Front Cover to the Tray frame.
4. Lift up and out to remove the Front Cover.

3.3.29.2 Assembly

1. Insert the two latches located on the inside bottom of the Front Cover into the two slots in the Tray frame.
2. Press the Cover against the frame.
3. Use two screws to secure the Cover to the frame.
4. Close Tray 5 Upper Chute.
5. Slide Tray 5 back into the HCF.

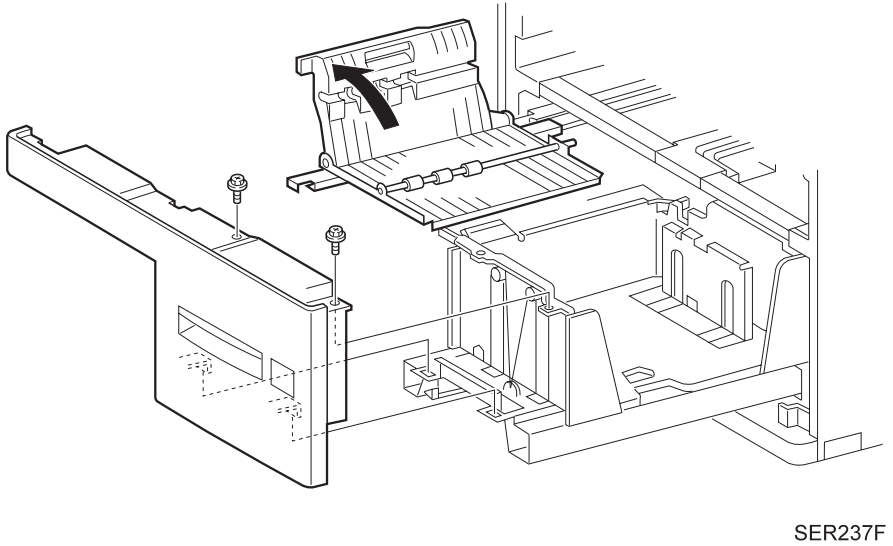

Figure 3-37. Tray 5 Front Cover

3.3.30 Tray 5 Feeder Assembly

(See “PL12.9 Paper Pick Up - Tray 5” on page -118)

3.3.30.1 Removal

1. Remove Tray 3 from the HCF.
2. Remove Tray 5 from the HCF (“HCF Tray 5” on page -104).
3. Remove the HCF Rear Cover (“HCF Rear Cover” on page -72).
4. Remove Tray 5 Feed Clutch (“Tray 3, 4 and 5 Feed Clutches” on page -83).
5. Remove the E ring securing the Feed Shaft Bearing to the HCF frame, and slide the Bearing off of the shaft.
6. Hold down the Stopper Link while you pull the Feeder Assembly to the front of the HCF frame.
7. Remove the Feeder Assembly from Feeder 5.

3.3.30.2 Assembly

1. Hold down the Stopper Link while you insert the end of the Feed Shaft into the opening in the rear of the HCF frame.
2. Slide the Bearing into the Bearing cutout (refer to the figure).
3. When both the Bearing is in place and the end of the Feed Shaft is through the opening in the rear of the frame, release the Stopper Link.
4. The Nudger Shaft should rest on top of the Stopper Link, and the Link should secure the Feeder Assembly in place on the frame.
5. Make sure the Paper Level Actuator tab on the Feeder is positioned in the center of the arms of the Paper Level Sensor.
6. Slide the Feed Shaft Bearing onto the Feed Shaft and press the Bearing into the cutout in the frame.
7. Use and E ring to secure the Bearing to the shaft.
8. Reinstall Tray 5 Feed Clutch (“Tray 3, 4 and 5 Feed Clutches” on page -83).
9. Reinstall the Rear Cover (“HCF Rear Cover” on page -72).
10. Reinstall Tray 5 (“HCF Tray 5” on page -104).
11. Reinstall Tray 3.

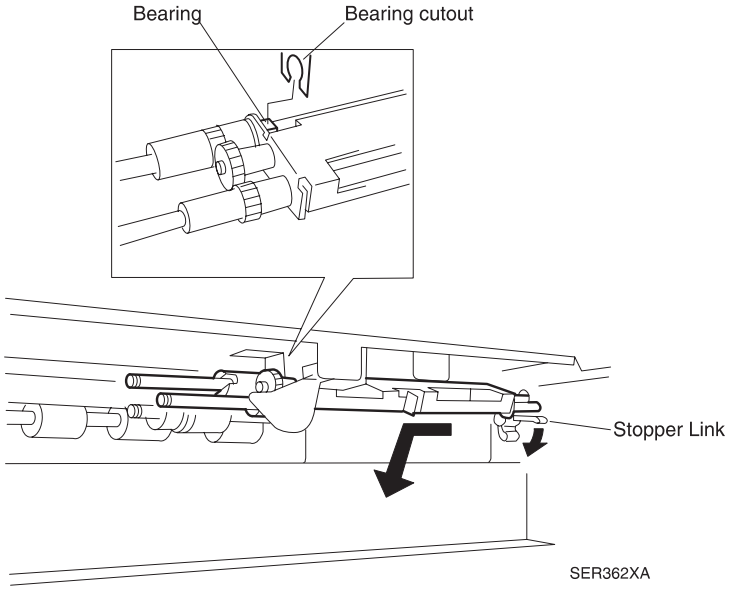

Figure 3-38. Tray5 Feeder Assembly

3.3.31 Tray 5 Retard Assembly

(See “PL12.10 Retard and Take Away Drive - Tray 5” on page -119)

3.3.31.1 Removal

1. Remove Tray 3 from the HCF.
2. Remove Tray 5 from the HCF (“HCF Tray 5” on page -104).
3. Remove the HCF Rear Cover (“HCF Rear Cover” on page -72).
4. Remove the screw securing the Fixed Gear to the HCF frame, and remove the Gear.
5. Slide the Retard Gear off of the Retard Shaft.
6. Slide the Retard Assembly to the rear of the HCF in order to release the front of the Retard Support Shaft from the cutout in the HCF frame.
7. Slide the Retard Assembly to the front of the HCF, and remove the Assembly.

3.3.31.2 Assembly

1. Position the rear of the Retard Assembly near the opening in the rear of the HCF frame.
2. Press and hold the arm of the Retard Spring against the shaft.
3. Slide the rear of the Retard Shaft and Retard Support Shaft through the two openings in the rear of the HCF frame.
4. Slide the Retard Assembly to the front and insert the front of the Retard Support Shaft into the cutout in the HCF frame.
5. Release the arm of the Retard Spring, and make sure it rests against the metal tab sticking out from the HCF frame.
6. Slide the Retard Gear onto the Retard Shaft.
7. Reinstall the Fixed Gear over the Retard Support Shaft, and use one screw to secure Gear to the frame.
8. Reinstall the HCF Rear Cover (“HCF Rear Cover” on page -72).
9. Reinstall Tray 5 (“HCF Tray 5” on page -104).
10. Reinstall Tray 3.

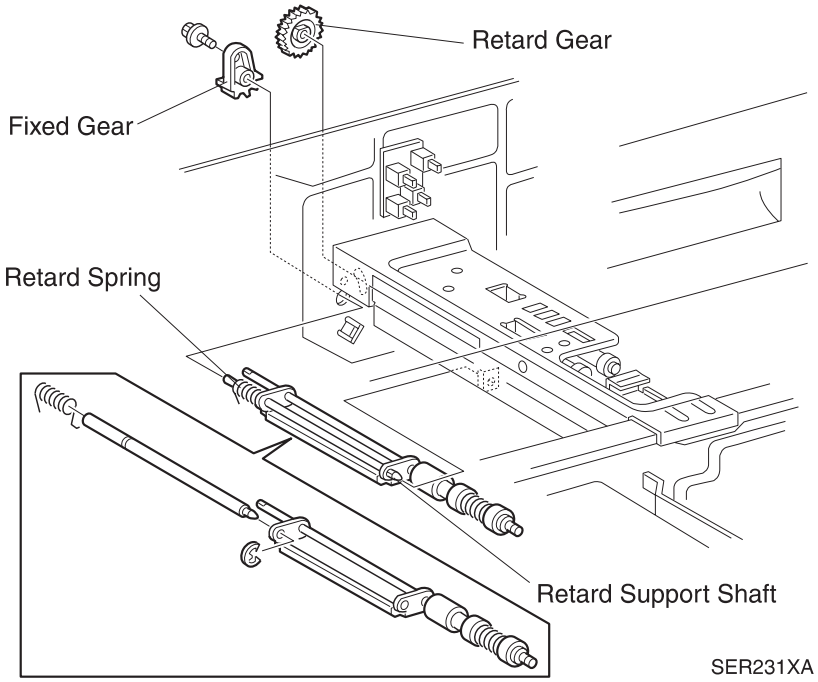

Figure 3-39. Tray5 Retard Assembly

3.3.32 Tray 5 Feed, Nudger, and Retard Rolls

CAUTION

Replace the Feeder, Nudger and Retard Rolls as a unit.

(See “PL12.9 Paper Pick Up - Tray 5” on page -118, “PL12.10 Retard and Take Away Drive - Tray 5” on page -119)

3.3.32.1 Removal

1. Remove the Tray 5.
2. Use a flat blade screwdriver to unhook the front of the Upper Chute, and remove the Chute.
3. Pull out on the Retard Roll latch and slide the Retard Roll off of the shaft.
4. Repeat step 3 for the Nudger and Feeder Rolls.

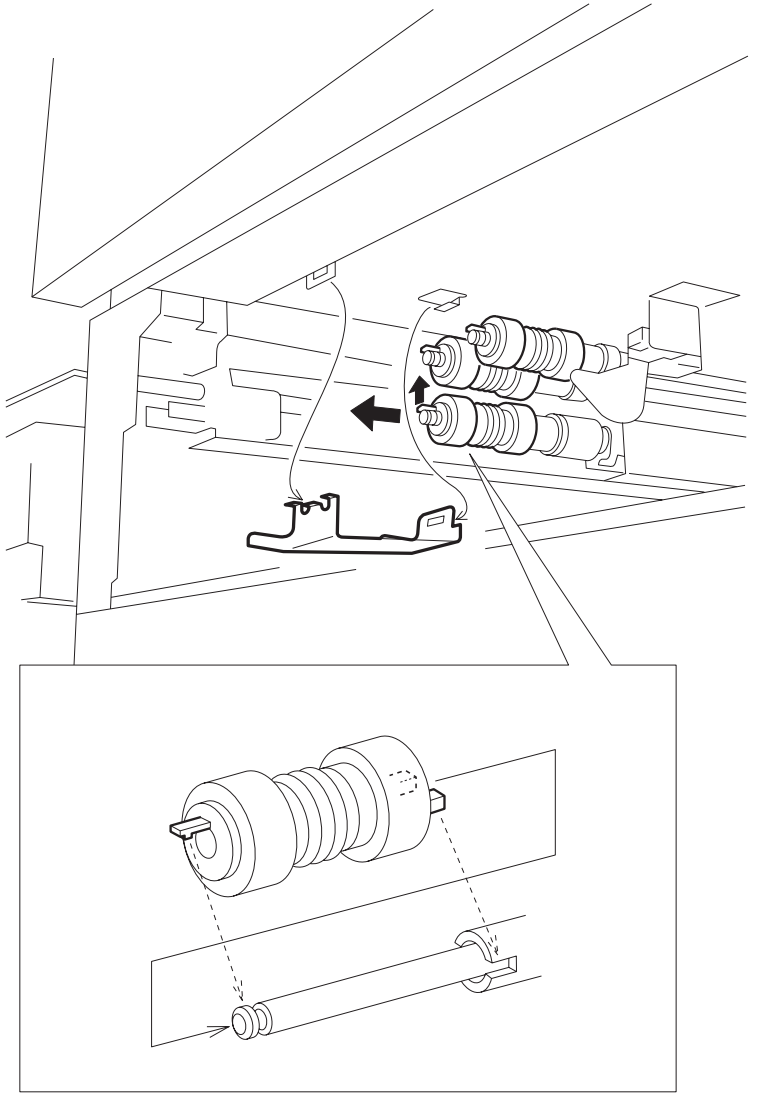

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Figure 3-40. Tray5 Feed, Nudger and Retard Rolls

3.3.32.2 Assembly

1. Position the Roll with the latch end facing out, and slide the Roll onto the Feed shaft.
2. Rotate the Roll so the end tabs line up with the slots on the shaft One Way Clutch (PL12.9.6) and push the Roll down the shaft until the latch locks the Roll into place.
3. Repeat steps 1 and 2 for the Nudger and Retard Rolls.
4. Reinstall the Chute by sliding the opening in the rear of the Chute into the tab on the frame, then hooking the tab at the front of the Chute into the opening on the frame.
5. Reinstall Tray 5.
6. Reset the Paper Feeder Usage Log for the feeder with the new Rolls.

3.4 Exploded Diagram and Parts List

3.4.1 PL12.1 Cover and Frame

1. COVER-LEFT, HCF
2. COVER FRONT BTM (AB)
3. SPRING-GROUND
4. COVER -RIGHT, HCF
5. COVER-REAR, CAB OEM
6. FRAME ASSEMBLY-CABINET, HCF(with 7 and 8)
7. CASTER-S (2)
8. CASTER (2)
9. BRACKET-DOCKING, LEFT
10. BRACKET-DOCKING, RIGHT
11. SCREW
12. SPRING CUSHION

99. KIT HCF MOUNTING (with 9~11)

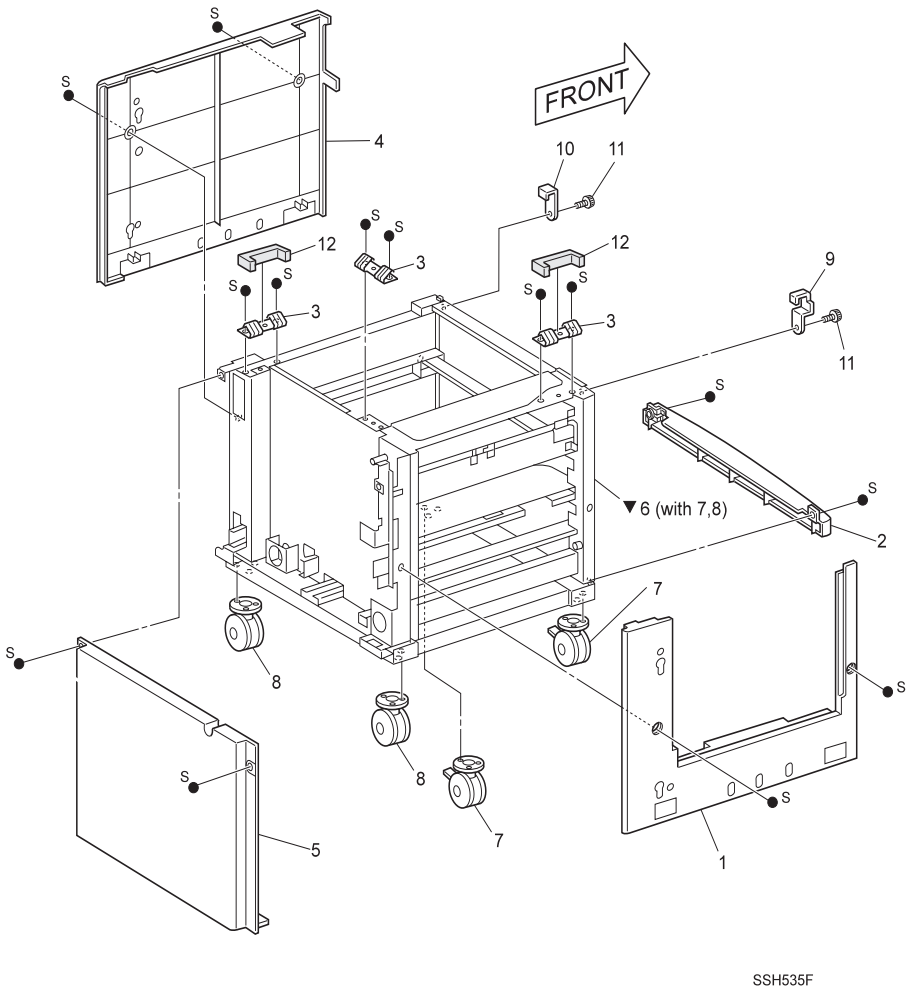


Figure 3-41. Cover and Frame

3.4.2 PL12.2 Drive, HCF PWB and Harness

1. HCF FEED MOTOR (with 17~19)
2. HCF DRIVE BELT
3. HCF DRIVE PULLEY
4. HCF DRIVE TRANS, GEAR 1
5. HCF DRIVE TRANS, GEAR 2
6. TRAY 3 DRIVE GEAR
7. TRAY 4 DRIVE GEAR 1
8. TRAY 4 DRIVE GEAR 2
9. ---
10. HCF PWB
11. HCF PWB HOOK
12. ---
13. ---
14. ---
15. ---
16. ---
17. MOTOR ASSEMBLY FEED
18. DAMPER
19. BRACKET MOTOR
20. HCF CONNECTOR (P613<>J480/J481)
21. TRAY 5 HARNESS (J484<>J120/J116/J119, J485, <>P215/J216)
22. TRAY 3/4 HARNESS 9J482 <>J121/J114/P211/J212/J214/P213, J483 <> J111/J112/J110/115/J117/J118, J486 <>J126)

99. KIT HF DRIVE GEAR(with 3~9)

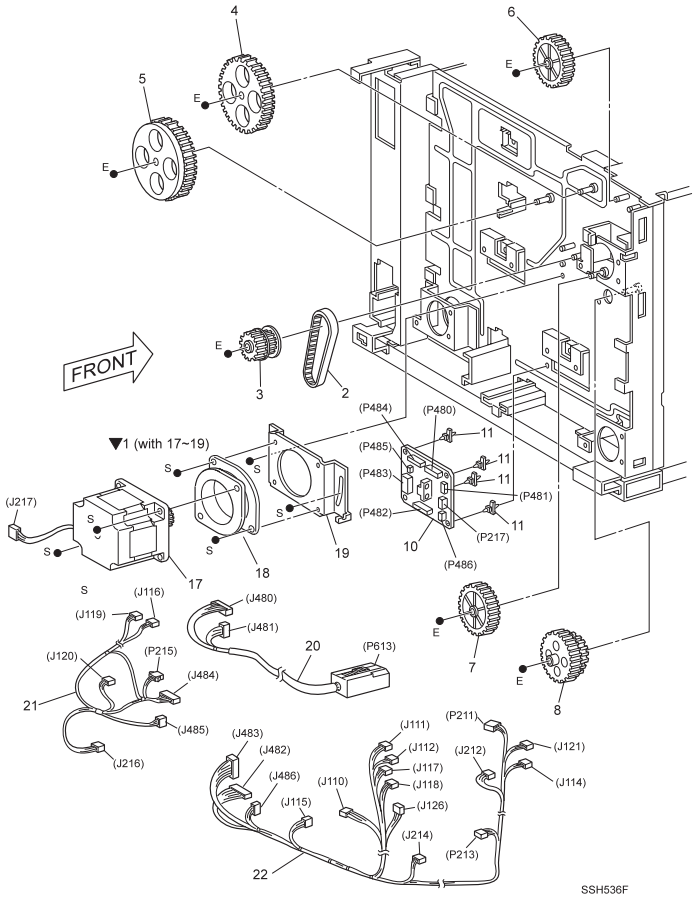


Figure 3-42. HCF PWB and Harness

3.4.3 PL12.3 Tray Interface 1

1. BOTTOM PLATE LEFT UP DRIVE ASSEMBLY
2. TRAY NO PAPER ACTUATOR (Trays 3 and 4)
3. TRAY NO PAPER ACTUATOR BRACKET (Trays 3 and 4)
4. TRAY NO PAPER SENSOR (Trays 3 and 4)
5. UPPER CHUTE TRAY 3
6. UPPER CHUTE TRAY 4
7. TRAY 3 PAPER SIZE SENSOR
8. TRAY 4/5 PAPER SIZE SENSOR PWB (Trays 4 and 5)
9. LIFT UP MOTOR (Trays 4 and 5)
10. TRAY 3 STOPPER FRONT
11. TRAY 3 SLIDE PAD REAR
12. TRAY 3 SLIDE PAD LEFT
13. TRAY 3 SLIDE PAD RIGHT
14. ---
15. TRAY 4/5 END GUIDE

99. KIT ACTUATOR SENSOR ASSY (with 2 and 3)

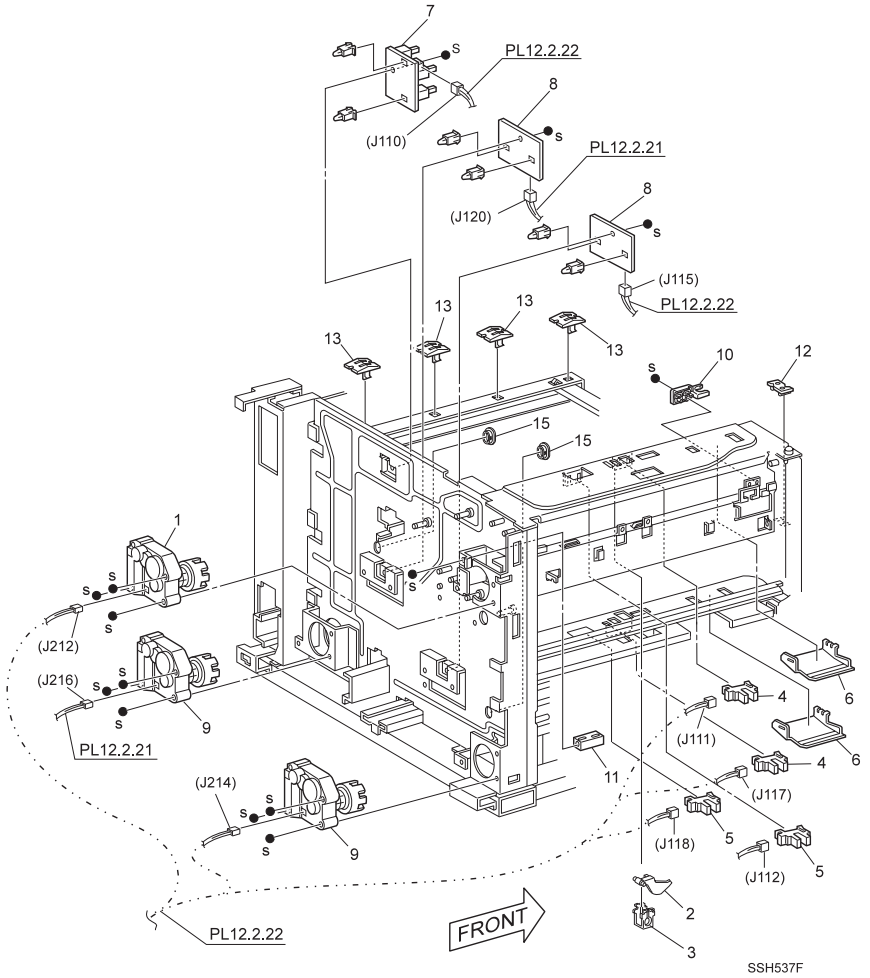


Figure 3-43. Tray Interface 1

3.4.4 PL12.4 Tray Interface 2

1. TRAY NO PAPER ACTUATOR (Tray 5)
2. TRAY NO PAPER ACTUATOR BRACKET (Tray 5)
3. TRAY NO PAPER SENSOR (Tray 5)
4. ---
5. STOPPER LINK(Tray 4)
6. STOPPER LINK SPRING
7. TRAY 5 FEED SENSOR
8. BRACKET - STOPPER
9. HARNESS CLAMP 1
10. HARNESS CLAMP 2
11. HARNESS CLAMP 3
12. STOPPER LINK (Tray 3 & 5)
13. UPPER CHUTE (Tray 5)
14. CONNECTOR
99. KIT ACTUATOR SENSOR ASSY (with 1 and 2)

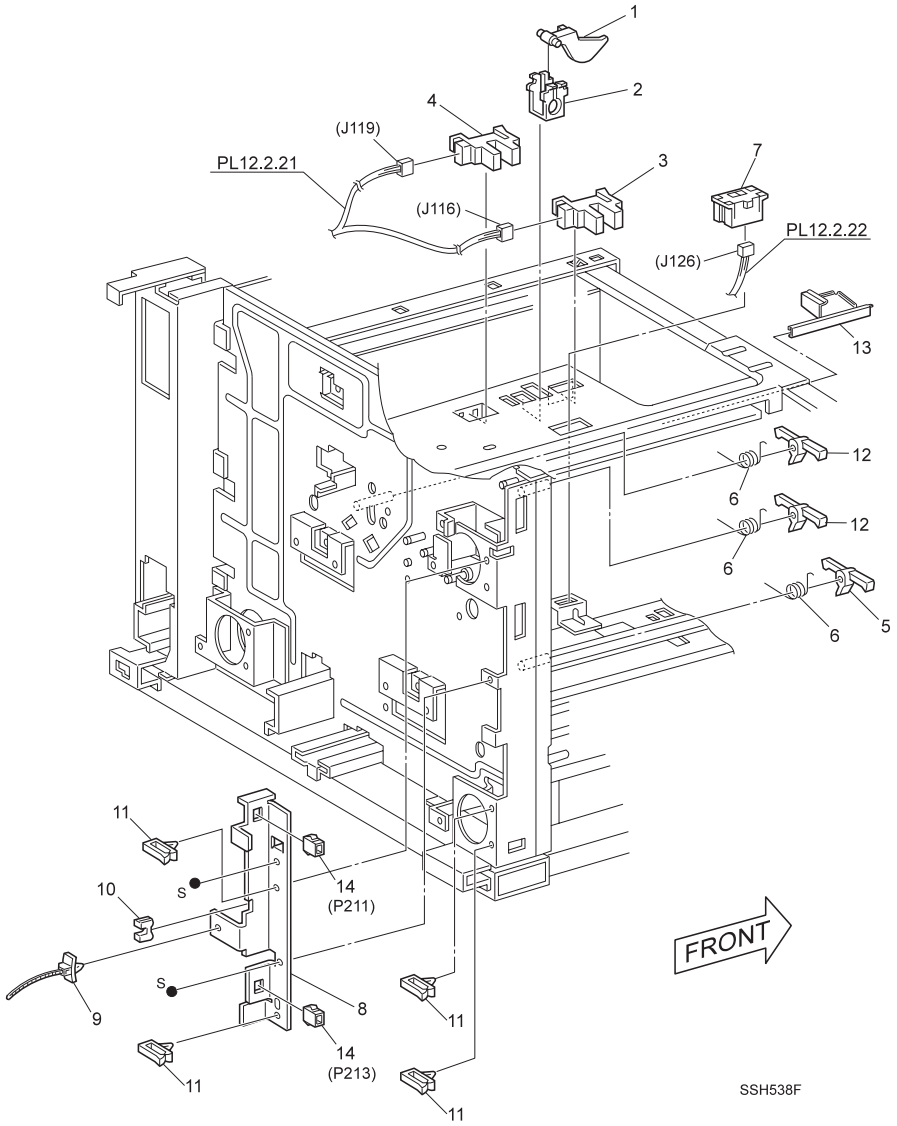


Figure 3-44. Tray Interface 2

3.4.5 PL12.5 Paper Pick Up -Tray 3

1. FEED CLUTCH (with harness)
2. BEARING
3. FEED GEAR
4. BEARING FEEDER
5. FEEDER ASSEMBLY (with 6 ~13)
6. FEED/NUDGER ROLLER
7. ONE WAY CLUTCH FRONT
8. FEED CLUTCH GEAR
9. FEED BEARING
10. FEED SHAFT
11. FEED IDLER GEAR
12. NUDGER GEAR
13. NUDGER SUPPORT ASSEMBLY

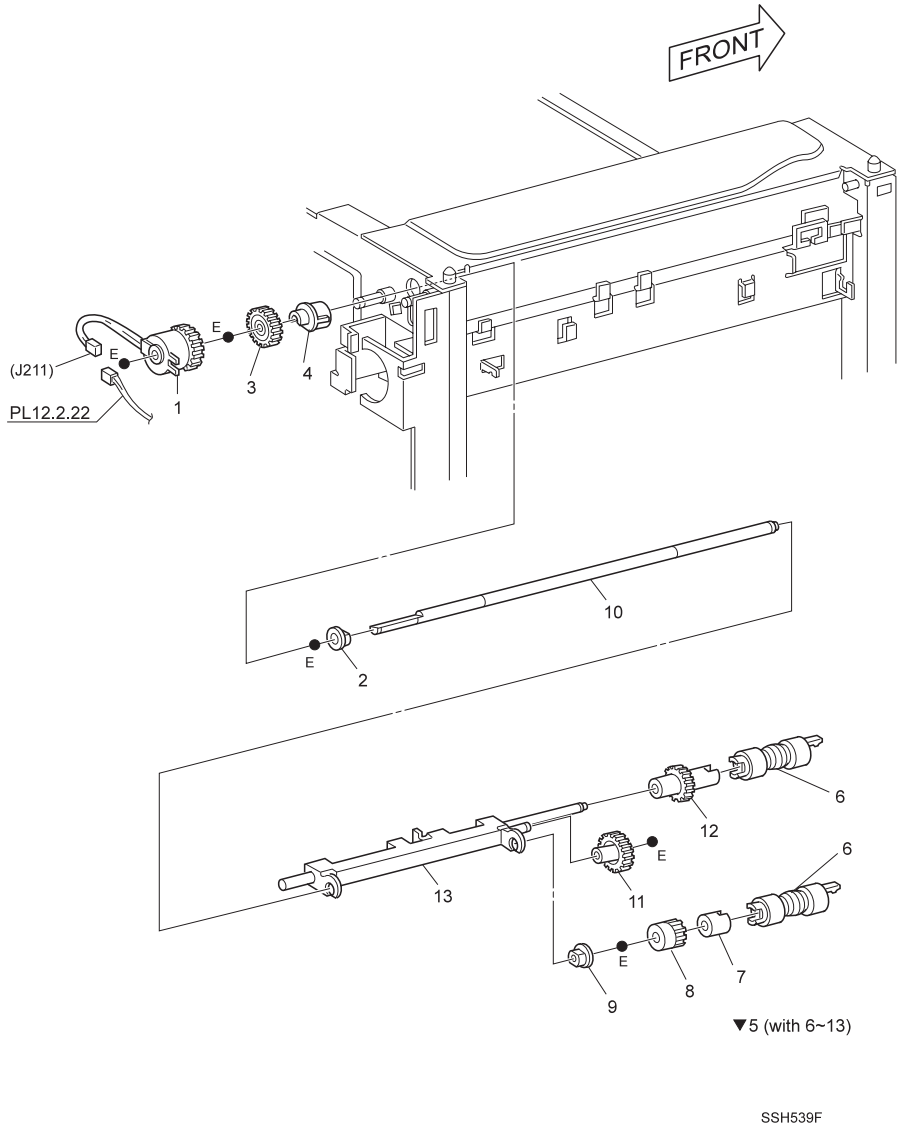


Figure 3-45. Paper Pick Up-Tray3

3.4.6 PL12.6 Retard and Take Away Roller-Tray 3

1. DRIVE TRANSMISSION GEAR
2. RETARD GEAR
3. RETARD SORING
4. RETARD ASSEMBLY (with 5 ~8, 17 and 18)
5. RETARD ROLLER
6. RETARD SPACER
7. FRICTION CLUTCH
8. RETARD SHAFT ASSEMBLY
9. TAKE AWAY GEAR
10. FIXED GEAR
11. TAKE AWAY BEARING REAR
12. COLLARED BEARING
13. TAKE AWAY ROLLER
14. TAKE AWAY BEARING FRONT
15. TAKE AWAY CHUTE UPPER
16. FEED IN CHUTE
17. RETARD SHAFT ASSEMBLY
18. RETARD BEARING
19. 99. KIT RETARD TAKEAWAY (with 1 ~ 4 and 9 ~16)

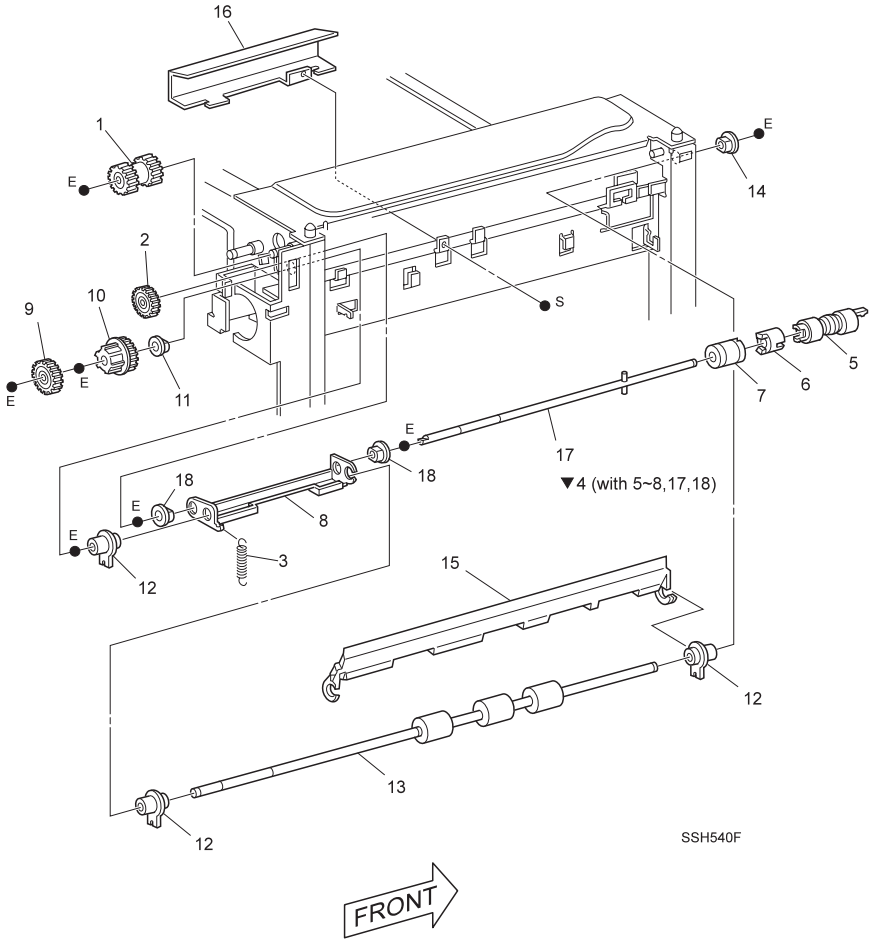


Figure 3-46. Retard and Take Away Roller-Tray3

3.4.7 PL12.7 Paper Pick Up - Tray 4

1. FEED CLUTCH (with harness)
2. FEED CLUTCH BEARING (with 4 ~12)
3. FEEDER ASSEMBLY
4. BEARING
5. FEED/NUDGER ROLLER
6. ONE WAY CLUTCH FRONT
7. FEED CLUTCH GEAR
8. FEED BEARING
9. FEED SHAFT
10. FEED IDLER GEAR
11. NUDGER GEAR
12. NUDGER SUPPORT ASSEMBLY

99.KIT PAPER PICKUP (with 1 and 2)

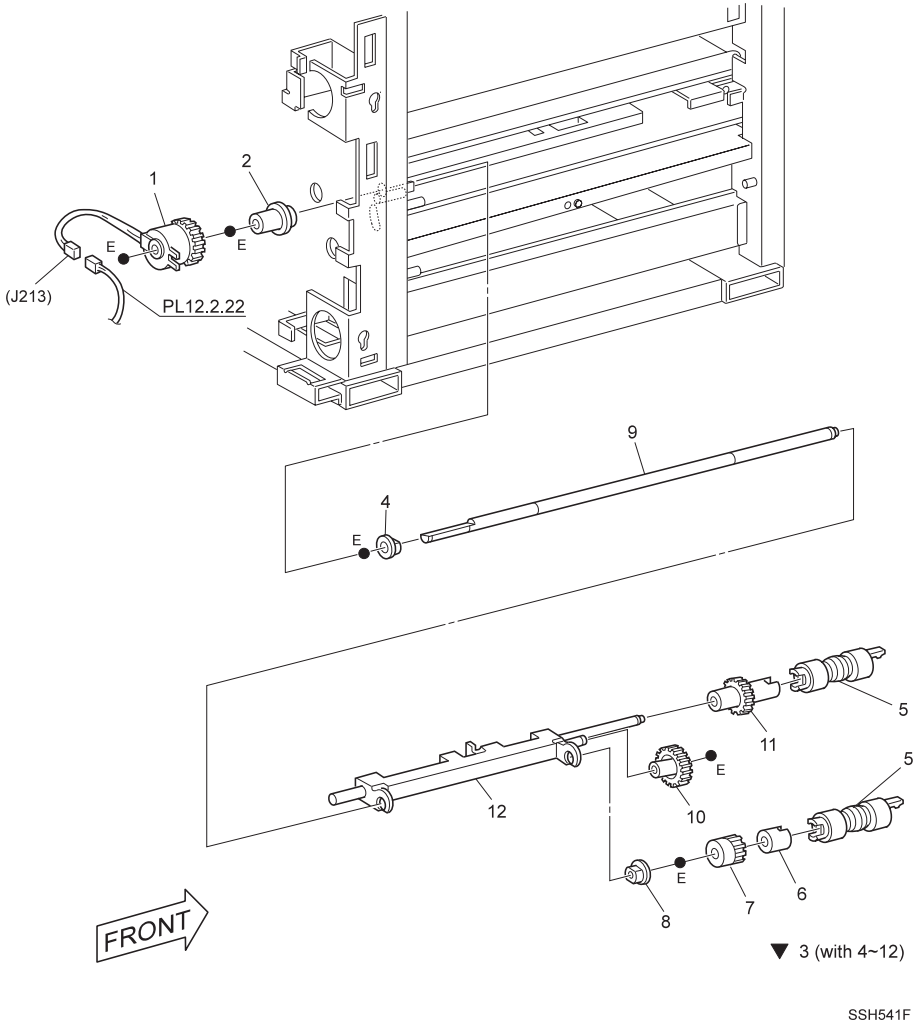


Figure 3-47. Paper Pick Up-Tray4

3.4.8 PL12.8 Retard and Take Away Roll - Tray 4

1. RETARD GEAR
2. RETARD SPRING TRAY 4
3. RETARD ASSEMBLY (with 4 ~9)
4. RETARD ROLLER
5. RETARD SPACER
6. FRICTION CLUTCH
7. RETARD BEARING
8. RETARD SHAFT ASSEMBLY TRAY 4
9. RETARD ASSEMBLY BRACKET
10. SUPPORT RETARD
11. GEAR STOPPER
12. GEAR 22
13. ROLL ASSEMBLY DRIVE, HCF
14. BEARING
15. BEARING

99.KIT RETARD, TAKEAWAY TRAY 4 (1~3 and 10~15)

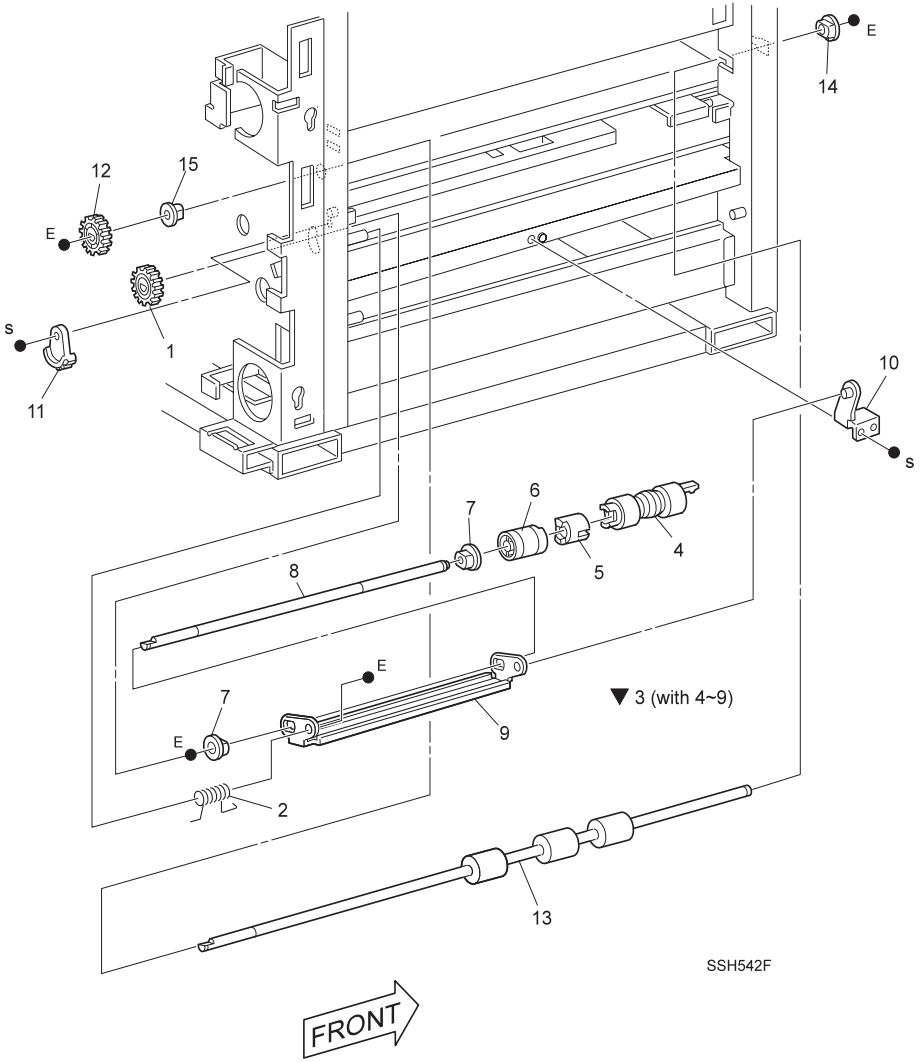


Figure 3-48. Retard and Take Away Roll-Tray4

3.4.9 PL12.9 Paper Pick Up - Tray 5

1. FEED CLUTCH (with harness)
2. FEED CLUTCH BEARING
3. FEEDER ASSEMBLY (with 4 ~12)
4. BEARING
5. FEED/NUDGER ROLLER
6. ONE WAY CLUTCH
7. FEED CLUTCH GEAR
8. FEED BEARING
9. FEED SHAFT
10. FEED IDLER GEAR
11. NUDGER GEAR
12. NUDGER SAHFT ASSEMBLY

99.KIT PAPER PICKUP (with 1 ~ 3)

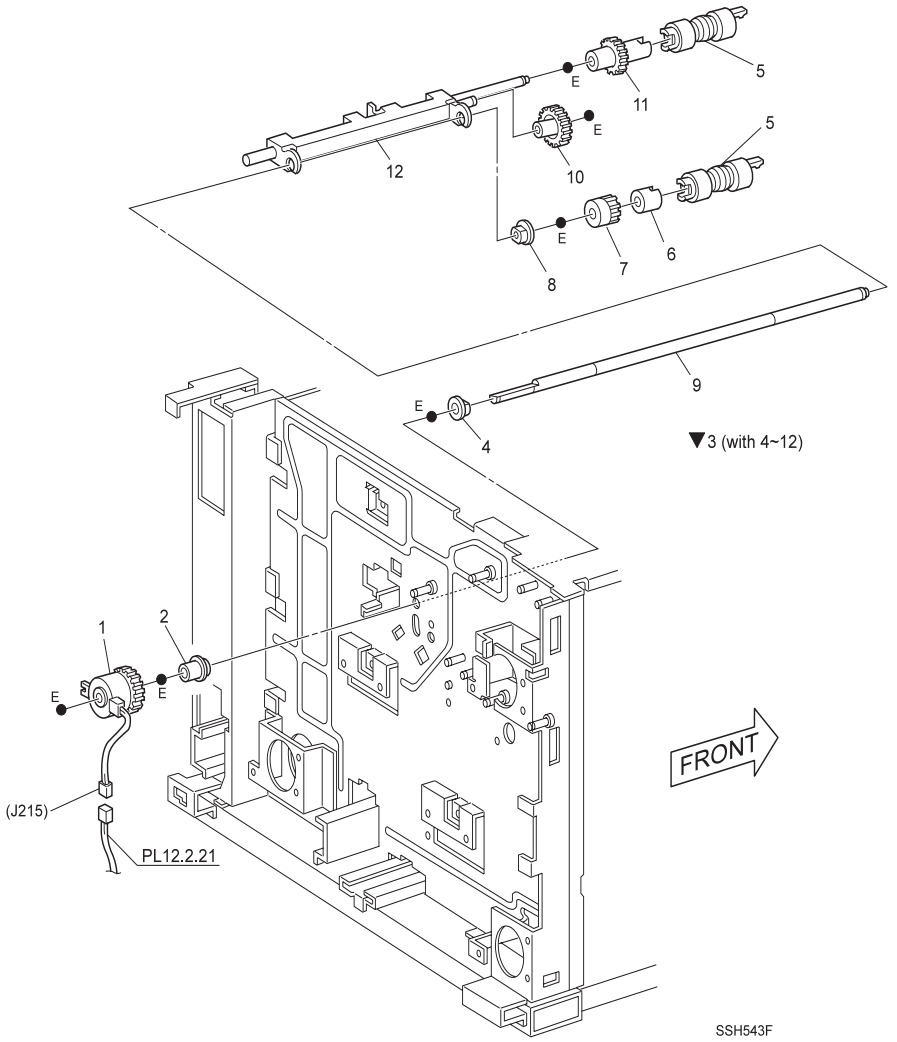


Figure 3-49. Paper Pick Up-Tray5

3.4.10 PL12.10 Retard and Take Away Drive - Tray 5

1. PAPER GEAR
2. RETARD SPRING TRAY 5
3. RETARD ASSEMBLY (with 4 ~ 9)
4. RETARD ROLLER
5. FRICTION SPACER
6. FRICTION CLUTCH
7. RETARD BEARING
8. RETARD SHAFT
9. RETARD SHAFT ASSEMBLY TRAY 5
10. RETARD SUPPORT SHAFT
11. FIXED GEAR
12. TAKE AWAY LINK
13. TAKE AWAY SPRING
14. TAKE AWAY SPRING ROLLER
15. TAKE AWAY DRIVE SHAFT
16. T/A GEAR
17. TAKE AWAY BEARING
18. TAKE AWAY BRACKET
19. TAKE AWAY TRAY SUPPORT
20. TRAY 5 DRIVE GEAR

99. KIT RETARD, TAKEAWAY TRAY 5 (with 1 ~3, 10 ~17, and 20)

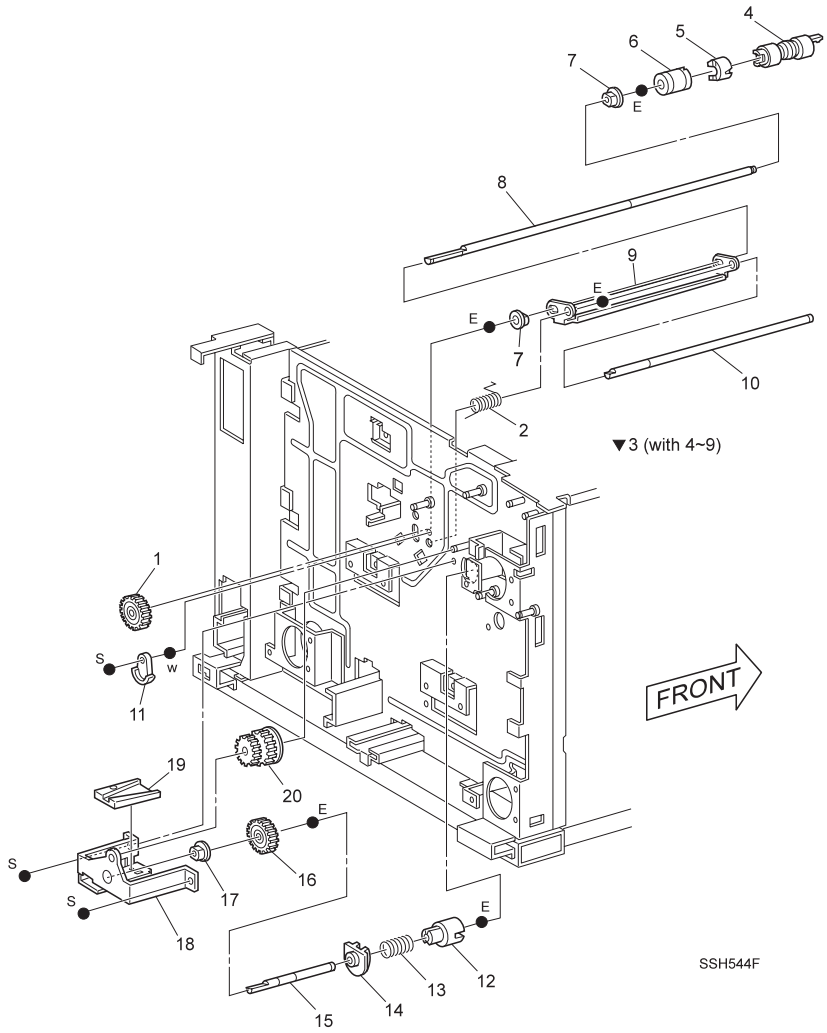


Figure 3-50. Retard and Take Away Drive-Tray5

3.4.11 PL12.11 Left Cover Assembly

1. LEFT COVER ASSEMBLY (with 2 ~ 6, and 12)
2. LEFT CHUTE COVER
3. PINCH ROLLER ASSEMBLY
4. LEFT COVER HANDLE ASSEMBLY
5. LEFT COVER FRAME
6. PINCH ROLLER COVER
7. LEFT COVER STRAP
8. INNER CHUTE
9. LEFT COVER INTERLOCK SWITCH
10. HCF REGISTRATION SENSOR
11. ---
12. LEFT COVER CHUTE
13. TAKE AWAY SENSOR SHIELD

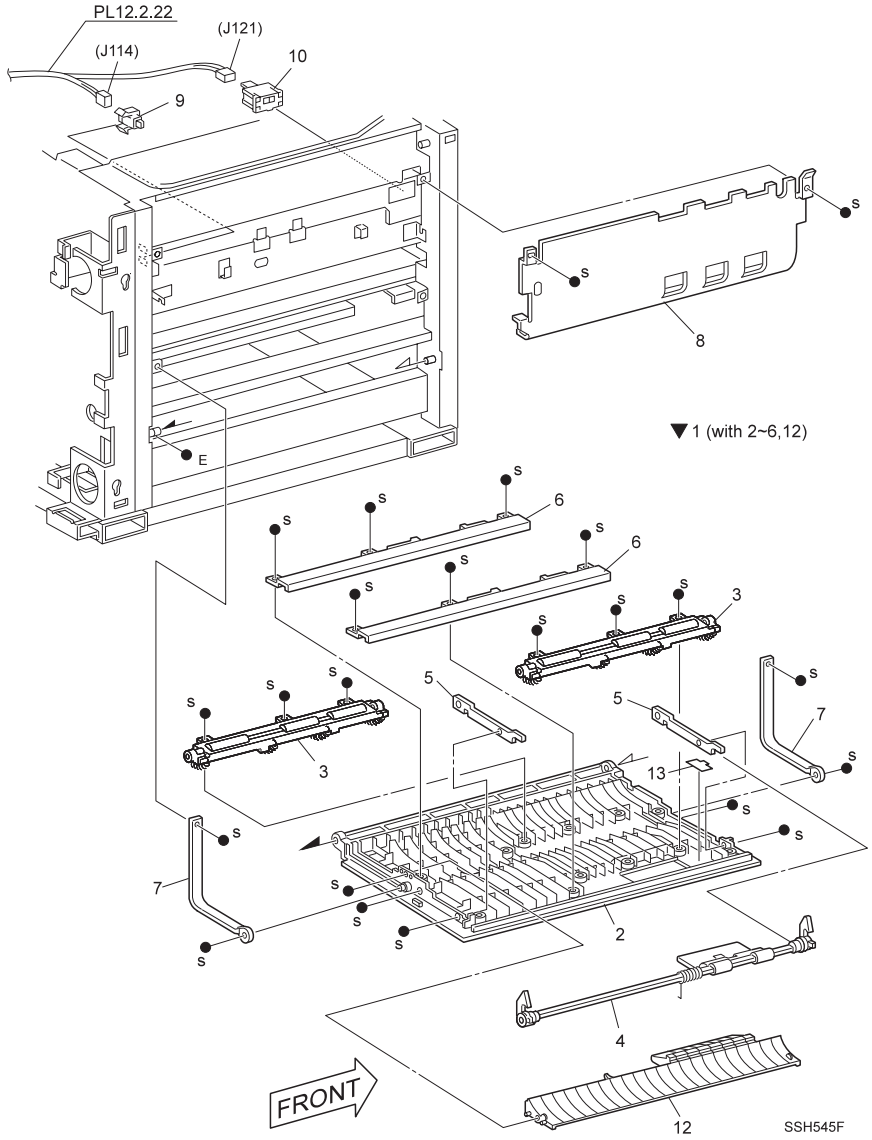


Figure 3-51. Left Cover Assembly

3.4.12 PL13.1 High Capacity Tray 4

1. TRAY 4 UNIT (with 2 ~ 27)
2. BOTTOM PLATE TRAY 4
3. BOTTOM PLATE LEFIT GEAR
4. TRAY 4 BOTTOM PLATE LIFT PULLEY
5. BOTTOM PLATE LIFT BEARING
6. TRAY 4 BOTTOM PLATE LIFT WIRE
7. BOTTOM PLATE LIFT IDLE PULLEY
8. IDLE PULLEY COVER
9. RETARD GEAR ASSEMBLY (with 10 ~13
10. RETARD GEAR 1
11. RETARD GEAR 2
12. RETARD GEAR 3
13. RETARD GEAR SUPPORT
14. TRAY 4 RETARD GEAR BRACKET
15. TRAY 4 STOPPER BRACKET
16. TRAY 4 STOPPER
17. PAPER END GUIDE
18. END POSITION INDICATION SHEET
19. END GUIDE SLIDE
20. TRAY 4 MAIN FRAME
21. TRAY 4 SHAFT COVER
22. TRAY 4 FRONT COVER
23. SLIDE KNOB
24. END GUIDE SPRING
25. END GUIDE STOPPER ROD
26. END GUIDE STOPPER LEVER
27. BOTTOM PLATE LIFT SHAFT
99. KIT TRAY 4 CABLES (Qty 4 of Item 6)

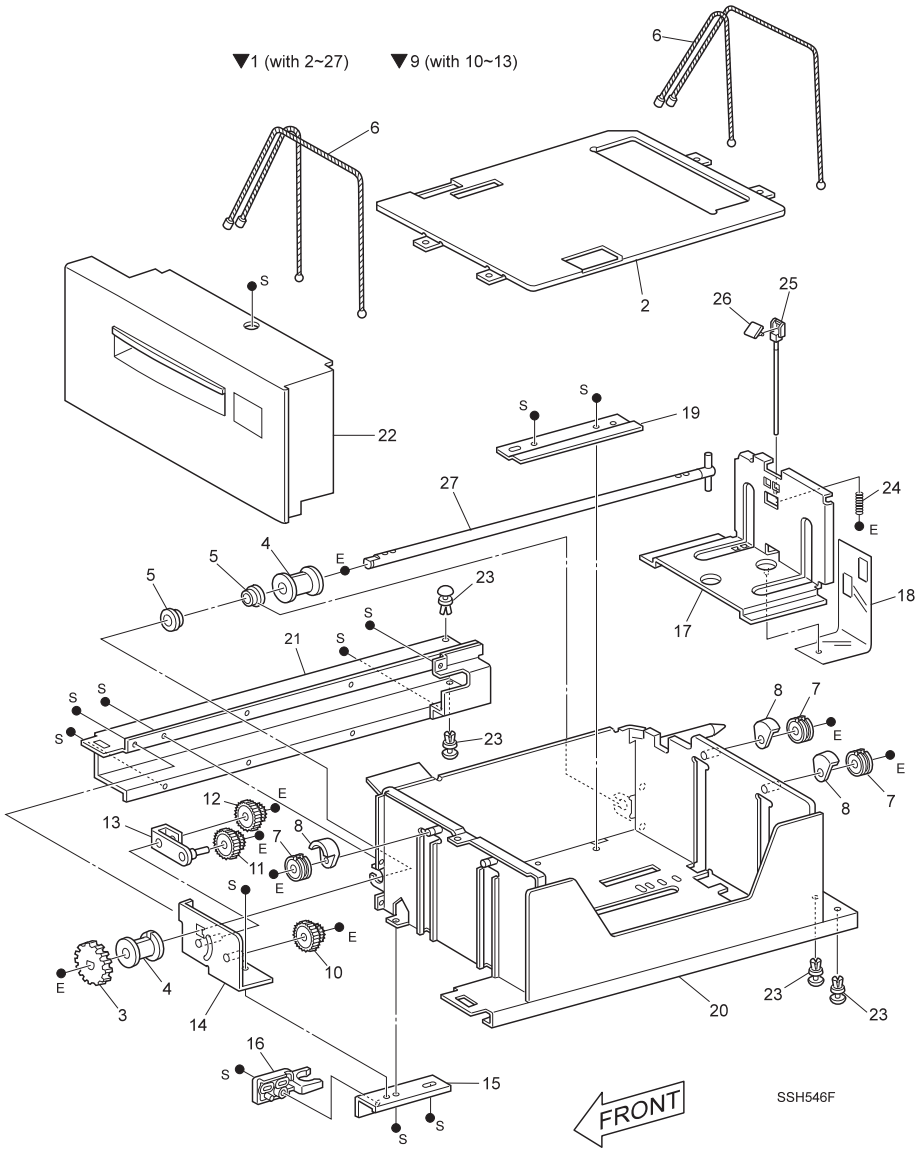


Figure 3-52. High Capacity Tray4

3.4.13 PL13.2 High Capacity Tray 5 - Paper Stack

1. TRAY 5 UNIT (with 2~22, and PL13.3)
2. BOTTOM PLATE TRAY 5
3. BOTTOM PLATE LIFT GEAR
4. TRAY 5 BOTTOM PLATE LIFT PULLEY
5. BOTTOM PLATE LIFT SHAFT ASSEMBLY
6. TRAY 5 BOTTOM PLATE LIFT WIRE
7. BOTTOM PLATE LIFT IDLE PULLEY
8. LIFT IDLE PULLEY COVER
9. BOTTOM PLATE LIFT RETARD GEAR ASSEMBLY (with 10~13)
10. RETARD GEAR 1
11. RETARD GEAR 2
12. RETARD GEAR 3
13. RETARD GEAR SUPPORT
14. TRAY 5 RETARD GEAR BRACKET
15. TRAY 5 STOPPER BRACKET
16. TRAY 5 STOPPER
17. PAPER END GUIDE
18. END POSITION INDICATION SHEET
19. PAPER END GUIDE SLIDE
20. END GUIDE STOPPER LEVER
21. END GUIDE SPRING
99. KIT TRAY 5 CABLES (4)

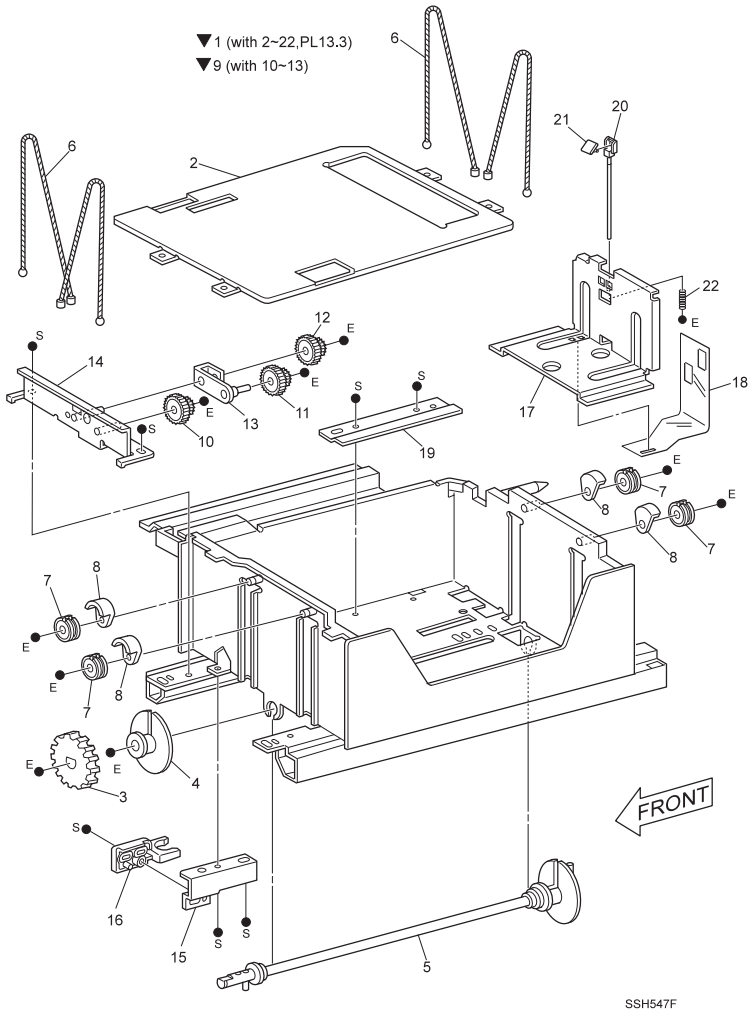


Figure 3-53. High Capacity Tray5-Paper Stack

3.4.14 PL13.3 High Capacity Tray 5 - Paper Feed

1. TRAY 5 UPPER CHUTE
2. TRAY 5 LOWER CHUTE ASSEMBLY (with 3 ~11, and 15)
3. TRAY 5 LOWER CHUTE
4. TRAY 5 TAKE AWAY BEARING FRONT
5. TRAY 5 TAKE AWAY BEARING REAR
6. TRAY 5 TAKE AWAY ROLL
7. TRAY 5 PINCH ROLL BEARING
8. TRAY 5 PINCH ROLL COLLAR
9. TRAY 5 PINCH ROLL CENTER BEARING
10. TRAY 5 PINCH ROLL SPRING
11. TRAY 5 PINCH ROLL
12. CHUTE SCREW
13. TRAY 5 MAIN FRAME
14. TRAY 5 FRONT COVER
15. SLIDE PAD
16. SLIDE BAR
17. SLIDE PAD

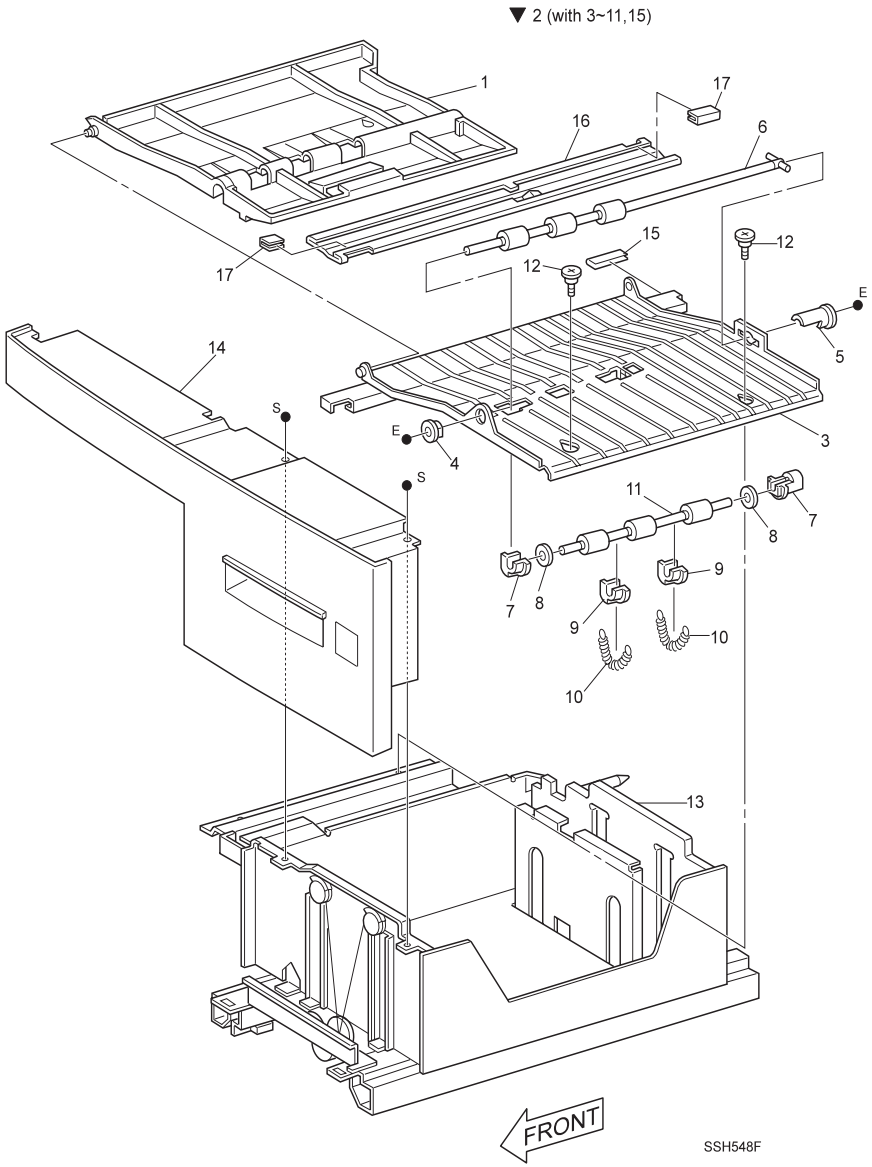


Figure 3-54. High Capacity Tray5-Paper Feed

CHAPTER

4

ENVELOPE FEEDER

4.1 Installation and Removal of Envelope Feeder

4.1.1 Installation

1. Pull the MSI Assembly out of the MSI Support.
2. Align the two pins on the Envelope Feeder with the corresponding openings in the MSI Support, and slide the Feeder into the Support.
3. Push the Envelope Feeder firmly against the MSI Support to make sure the Feeder is securely in place.

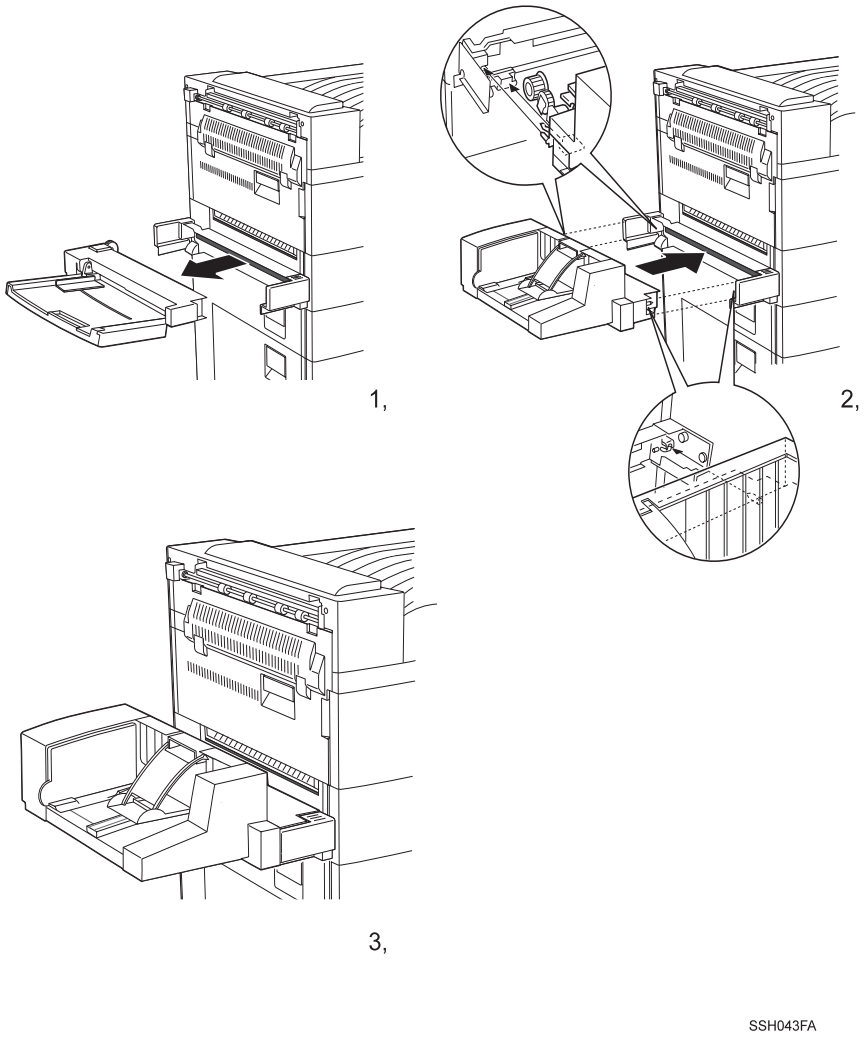


Figure 4-1. Installation

4.1.2 Removal

1. Pull the Envelope Feeder out and remove it from the printer.
2. Hold the MSI and match its protrusions with the holes of the printer's support part.
3. Push the MSI into the printer support part until it is completely attached.

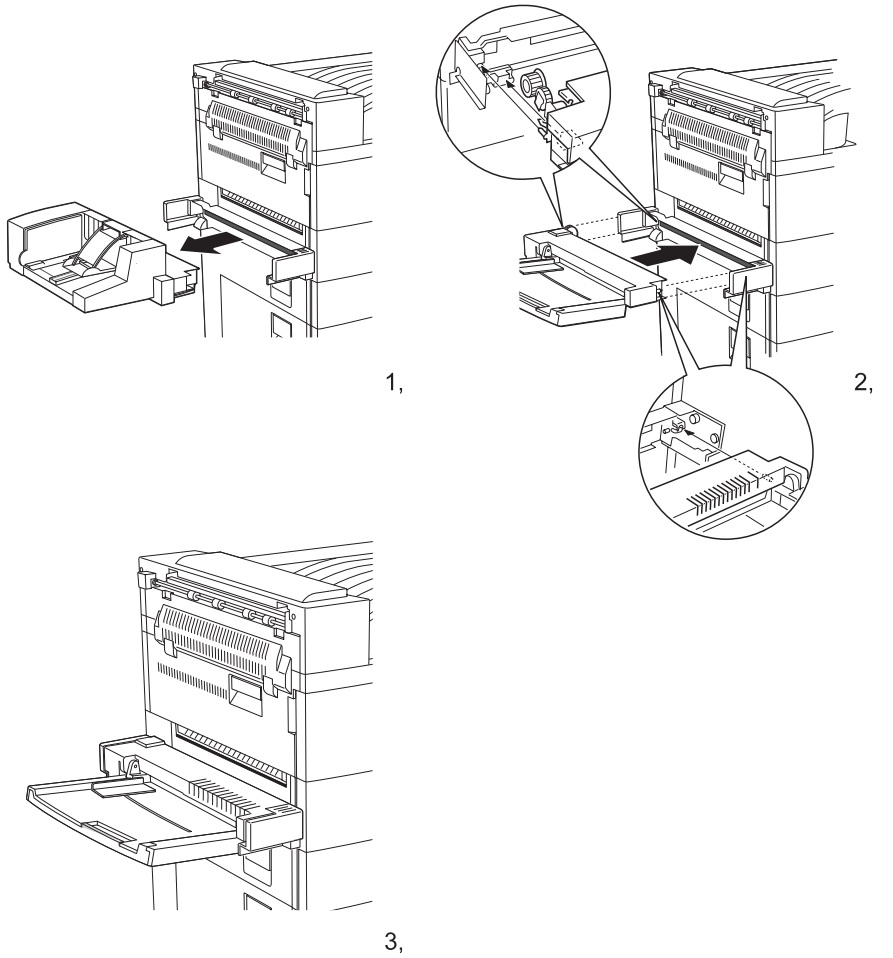


Figure 4-2. Removal

4.2 Introduction

This section contains the disassembly and assembly procedures for major parts within the Envelope Feeder.

4.2.1 Preparation

Before you begin any disassembly and assembly procedure;

1. Switch OFF the printer power.
2. Disconnect the AC power cord from the wall outlet.
3. Remove the EP Cartridge and cover it with a dark cloth or place it in a sealed container to protect it from exposure to light.
4. Wear an electrostatic discharge wrist strap to protect sensitive printer parts from damage.

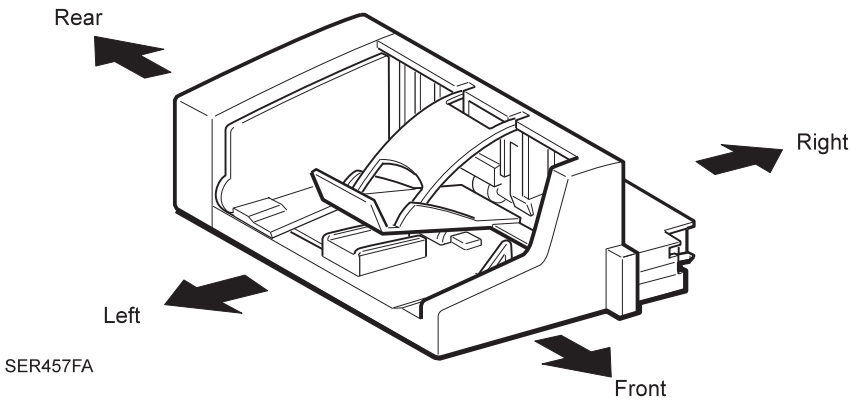
4.2.2 Precautions

CAUTION

- **Names of parts that appear in this section may not be exactly the same as the names appear in the parts list. For example, the MSI Tray Assembly in this section may appear on the parts list as Tray Assembly MSI. As used in this manual the terms Mail box and Sorter mean the same thing.**
- **Always reinstall the correct type and size screws. Using the wrong screw can damage tapped holes. Do not use excessive force to either remove or install a part.**

4.2.3 Notations in Text

1. Locations given in the manual assume you are facing the printer console panel.



2. The notation “(PLX)” indicates that this component is listed in the PLX parts list.
3. Arrows in an illustration show direction of movement when removing a component.
4. Slashes in a part name indicate that numerous components share the same heading and function. For example, "Gears In/Feed/Out" refers to Gear In, Gear Feed, and Gear Out.

4.3 Disassembly and Assembly

4.3.1 Envelope Feeder Bottom Cover

(See “PL16.1 Envelope Feeder 1” on page -148)

4.3.1.1 Removal

1. Remove the Envelope Feeder from the base engine (“Removal” on page -127).
2. Turn the Feeder over so you can access the bottom.
3. Remove the two screws securing the Bottom Cover to the Feeder frame, and remove the Cover.

4.3.1.2 Assembly

1. Turn the Feeder upside down.
2. Reinstall the Bottom Cover onto the Feeder frame.
3. Use two screws to secure the Bottom Cover to the Feeder frame.

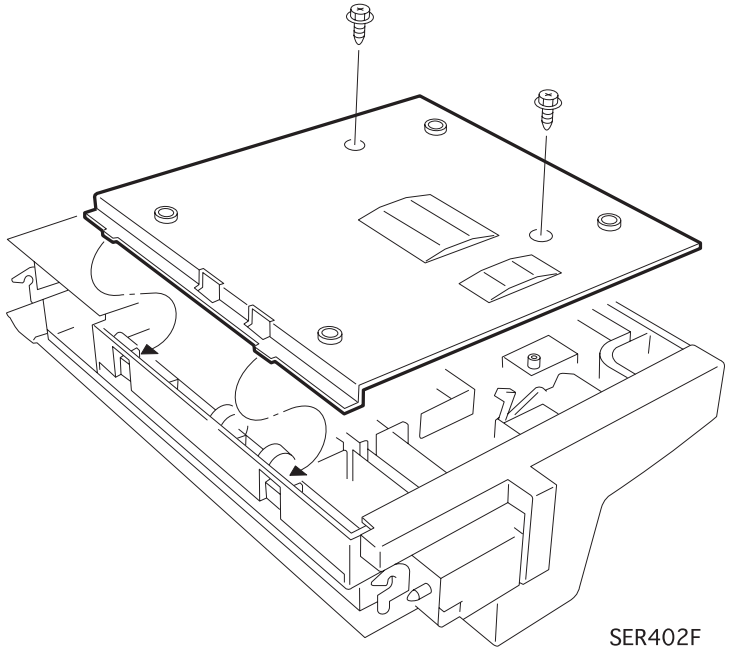


Figure 4-3. Envelope Feeder Bottom Cover

4.3.2 Envelope Feeder Top Cover

(See“PL16.1 Envelope Feeder 1” on page -148)

4.3.2.1 Removal

1. Remove the Envelope Feeder Bottom Cover (“Envelope Feeder Bottom Cover” on page -129).
2. Remove the two screws at the top and one screw on the side securing the Top Cover to the Feeder frame, and remove the Top Cover.

4.3.2.2 Assembly

1. Reinstall the Top Cover onto the Feeder frame.
2. Use three screws to secure the Top Cover to the Feeder frame.
3. Reinstall the Envelope Feeder Bottom Cover (“Envelope Feeder Bottom Cover” on page -129).

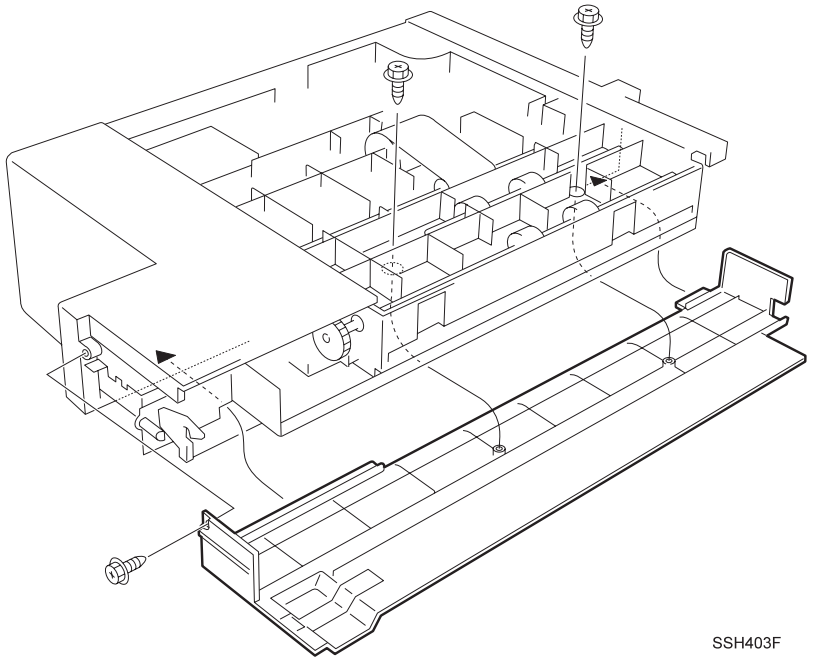


Figure 4-4. Envelope Feeder Top Cover

4.3.3 Envelope Feeder Front Cover

(See “PL16.1 Envelope Feeder 1” on page -148)

4.3.3.1 Removal

1. Remove the Bottom Cover (“Envelope Feeder Bottom Cover” on page -129).
2. Remove the screw securing the Front Cover to the Feeder frame, and remove the Cover.

4.3.3.2 Assembly

1. Reinstall the Front Cover onto the Feeder frame.
2. Align the positioning tabs on the Cover with the tabs on the frame.
3. Use one screw to secure the Cover to the frame.
4. Reinstall the Bottom Cover (“Envelope Feeder Bottom Cover” on page -129).

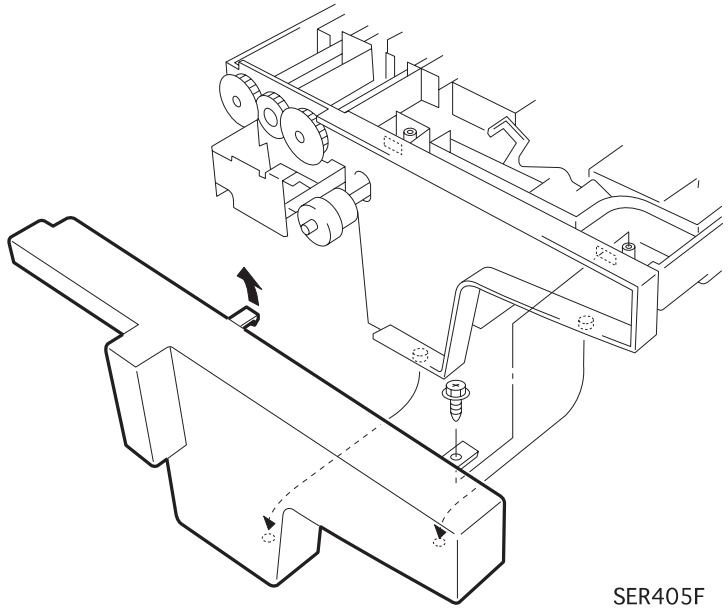


Figure 4-5. Envelope Feeder Front Cover

4.3.4 Envelope Feeder Rear Cover

(See“PL16.1 Envelope Feeder 1” on page -148)

4.3.4.1 Removal

1. Remove the Bottom Cover (“Envelope Feeder Bottom Cover” on page -129).
2. Remove the Top Cover (“Envelope Feeder Top Cover” on page -130).
3. Remove the screw securing the Rear Cover to the Feeder frame.
4. Release the latch and remove the Cover.

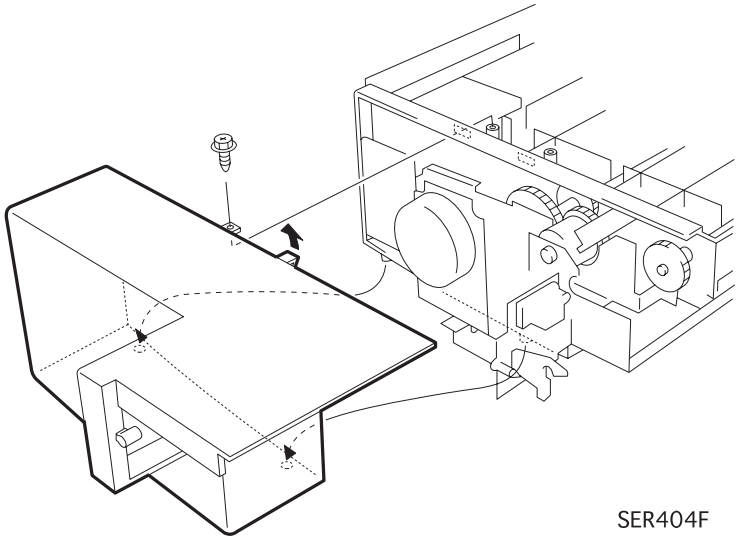


Figure 4-6. Envelope Feeder Rear Cover

4.3.4.2 Installation

1. Reinstall the Rear Cover onto the Feeder frame.
2. Press in to make sure the Cover latches into place.
3. Use a screw to secure the Cover to the frame.
4. Reinstall the Top Cover (“Envelope Feeder Top Cover” on page -130).
5. Reinstall the Bottom Cover (“Envelope Feeder Bottom Cover” on page -129).

4.3.5 Envelope Feeder Center Bracket Assembly

(See “PL16.1 Envelope Feeder 1” on page -148)

4.3.5.1 Removal

1. Remove the Top Cover (“Envelope Feeder Top Cover” on page -130).
2. Remove the two screws securing P/J 604 to the Center Bracket, and slide the P/J off of the Bracket.
3. Remove the three screws securing the Center Bracket Assembly to the frame, and remove the Center Bracket.

4.3.5.2 Assembly

1. Reinstall P/J 604 into the cutout in the Center Bracket, and use two screws to secure the P/J.
2. Align the three screw holes and two positioning holes with the three screw holes and two positioning tabs on the Center Bracket.
3. Use three screws to secure the Bracket to the frame.
4. Reinstall the Top Cover (“Envelope Feeder Top Cover” on page -130).

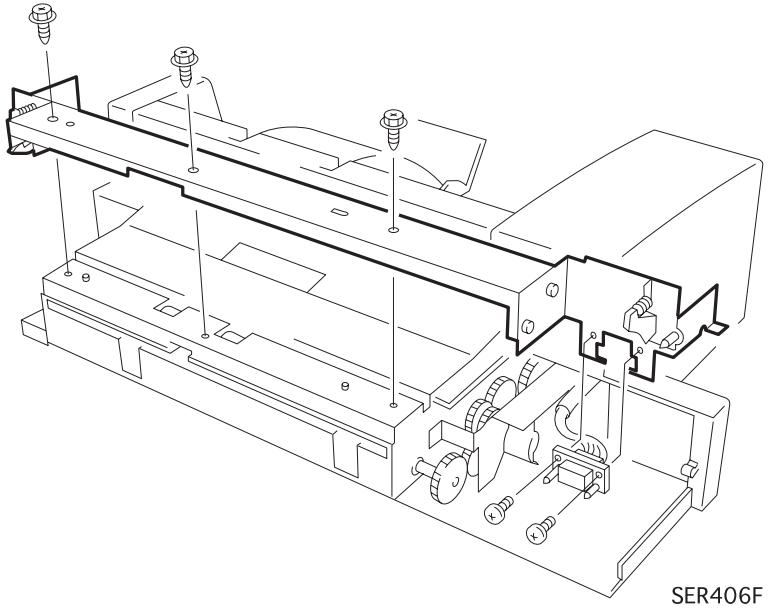


Figure 4-7. Envelope Feeder Center Bracket Assembly

4.3.6 Envelope Motor

(See “PL16.2 Envelope Feeder 2” on page -149)

4.3.6.1 Removal

1. Remove the Rear Cover (“Envelope Feeder Rear Cover” on page -132).
2. Disconnect the P/J 217 from the Envelope Motor PWB.
3. Remove four screws securing the Motor to the Motor Bracket, and remove the Motor.

4.3.6.2 Assembly

1. Reinstall the Motor onto the Motor Bracket, and use four screws to secure the Motor to the Bracket.
2. Reconnect the P/J 217 to the Envelope Motor PWB.
3. Reinstall the Rear Cover (“Envelope Feeder Rear Cover” on page -132).

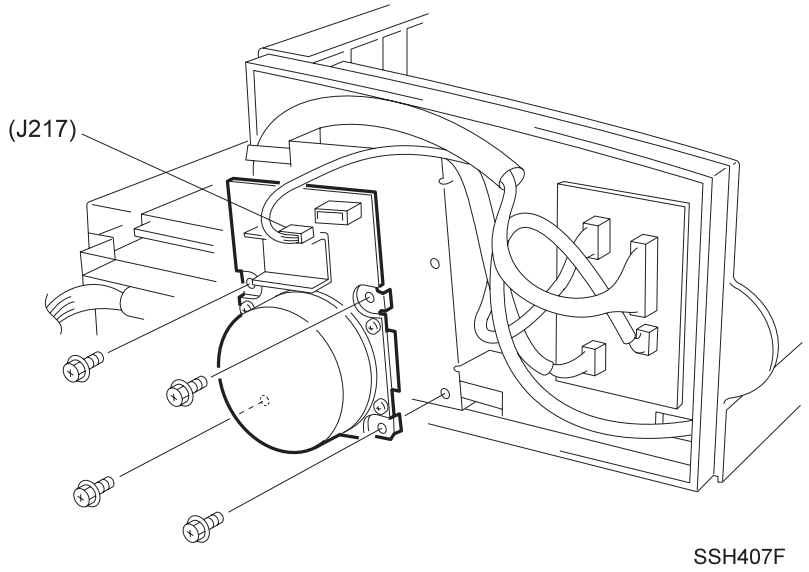


Figure 4-8. Envelope Motor

4.3.7 Envelope Feeder PWB

(See “PL16.2 Envelope Feeder 2” on page -149)

4.3.7.1 Removal

1. Remove the Rear Cover (“Envelope Feeder Rear Cover” on page -132).
2. Disconnect the six P/Js from the Envelope Feeder PWB.
3. Remove the two screws securing the PWB to the frame, and remove the PWB.

4.3.7.2 Installation

1. Reinstall the Envelope Feeder PWB onto the Envelope Feeder frame.
2. Use two screws to secure the PWB to the frame.
3. Reconnect the six P/Js to the PWB.
4. Reinstall the Rear Cover (“Envelope Feeder Rear Cover” on page -132).

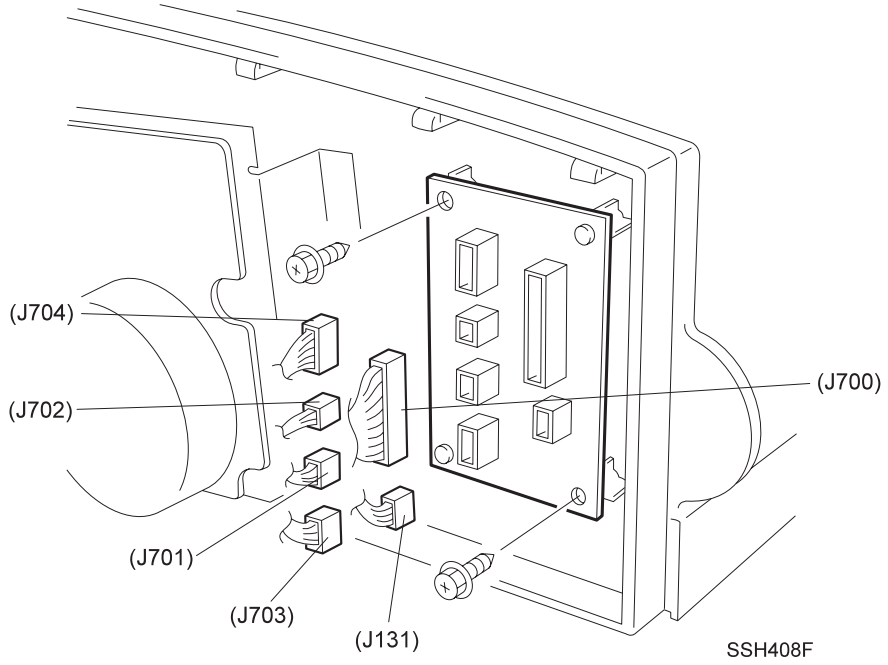


Figure 4-9. Envelope Feeder PWB

4.3.8 Feed Belt

(See “PL16.2 Envelope Feeder 2” on page -149)

4.3.8.1 Removal

1. Remove the Rear Cover (“Envelope Feeder Rear Cover” on page -132).
2. Remove the Center Bracket Assembly (“Envelope Feeder Center Bracket Assembly” on page -133).
3. Pull the Motor Bracket away from the Feeder (“Envelope Feed Clutch” on page -144).
4. Remove one KL clip from the end of the Core Roll shaft.
5. Slide the shaft free, and remove it and the Core Roll from the frame (Figure below).

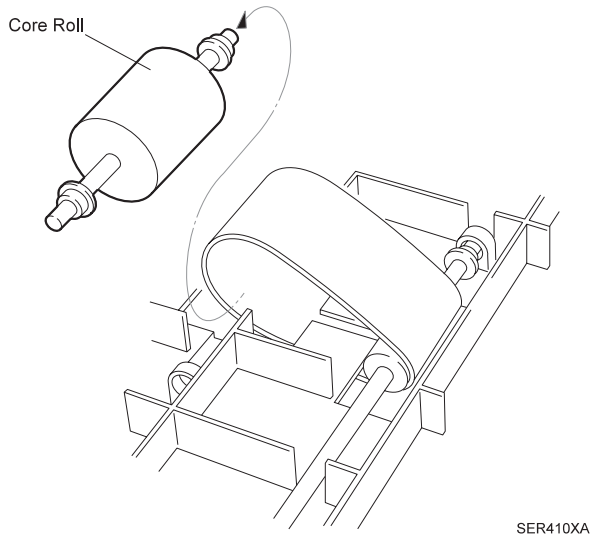


Figure 4-10. Core Roll

6. Remove the KL clip from the inboard end of the Bottom Roll shaft.
7. Slide the shaft out the side of the feeder, far enough to free the Feed Belt from the Bottom Roll.
8. Remove the Feed Belt from the Feeder (Figure below).

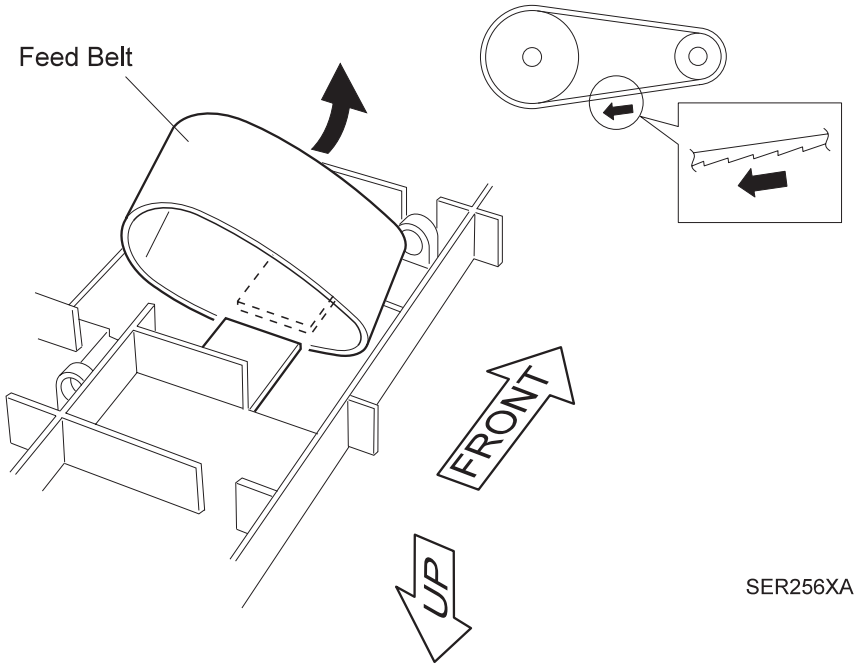


Figure 4-11. Feed Belt

4.3.8.2 Assembly

1. Position the Feed Belt so the tooth of the Belt is pointing in the direction as shown in the illustration (Figure 4-11).
2. Look at the side of the Feed Belt, and align the Belt so the teeth are in the position as shown in Figure 4-11.
3. Slide the Feed Belt over the Bottom Roll.
4. Reinstall the Bottom Shaft into the slot in the Feeder, and use a KL-clip to secure the shaft to the frame.
5. Reinstall the Motor Bracket to the frame (“Envelope Feed Clutch” on page -144).
6. Slide the Core Roll and Core Shaft through the Feed Belt.
7. Reinstall, if necessary, the Bearings on to both ends of the Core Shaft.
8. Slide the Core Shaft into the Bearing holes in the frame.
9. Use a LL-clip to secure the free end of the Core Shaft to the Feeder frame.
10. Use your finger to drive the Belt forward to make sure it is centered on the Core Roll.
11. Reinstall the Center Bracket Assembly (“Envelope Feeder Center Bracket Assembly” on page -133).
12. Reinstall the Rear Cover (“Envelope Feeder Rear Cover” on page -132).

4.3.9 Envelope Feeder Retard Roll Assembly

(See “PL16.3 Envelope Feeder 3” on page -151)

4.3.9.1 Removal

1. Remove the Top Cover (“Envelope Feeder Top Cover” on page -130).
2. Remove the Front Cover (“Envelope Feeder Front Cover” on page -131).
3. Spread the Weight Arm legs so they release from the Feeder frame, and remove the Weight Arm (Figure below).

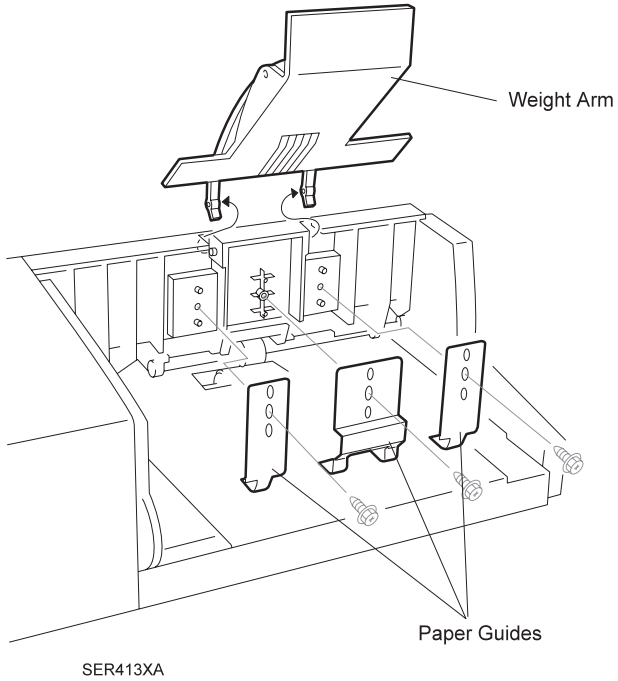


Figure 4-12. Weight Arm

4. Use a pencil to mark the position of the three screws that secure the two Paper Guide 1’s and the Paper Guide (Figure 4-12).
5. Remove the three screws that secure the two Paper Guide 1’s and the Paper Guide to the Upper Cover (Figure 4-12).
6. Remove the KL clip securing the Friction Clutch and Stopper to the Retard Shaft (Figure below), and remove the Clutch and the Stopper.

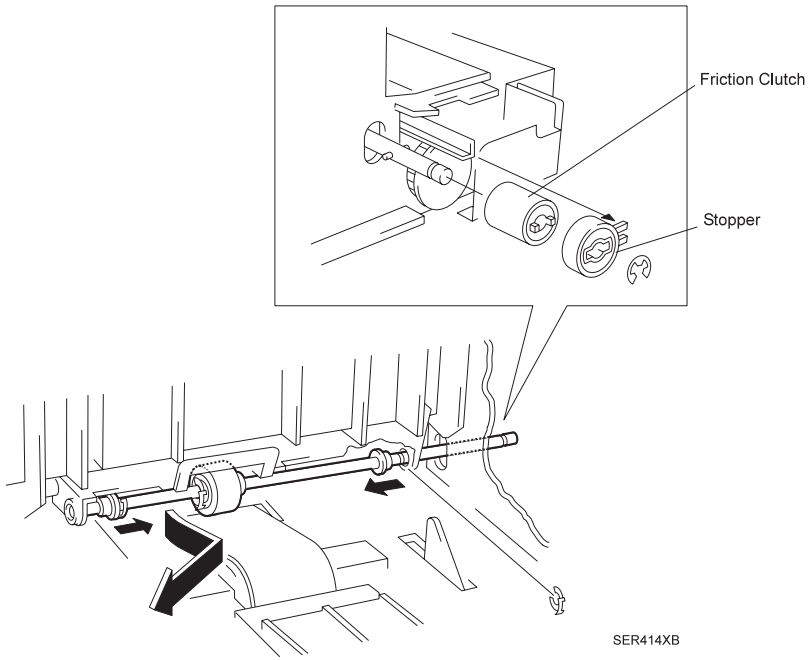


Figure 4-13. Clutch and Stopper

7. Remove the KL-clip securing one end of the Retard Shaft to the frame.

8. Slide the Retard Shaft out of the Feeder (Figure 4-13).
9. Slide the Feeder Bearing off of the Retard Shaft.
10. Remove the KL clip securing the Retard Roll to the Shaft and remove the Roll.

4.3.9.2 Assembly

1. Slide the Retard Roll onto the Retard Shaft.
2. Rotate the Roll until the notches in the Roll engage the pin in the Shaft (Figure below).

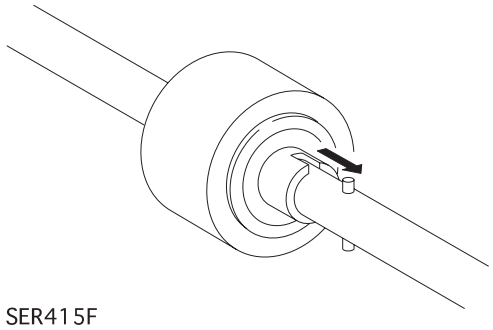


Figure 4-14. Roll

3. Use a KL clip to secure the Roll to the Shaft.
4. Reinstall, if necessary, the two Retard Shaft bearings.
5. Reinstall the Shaft into the Feeder (Figure 4-13), and use a KL clip to secure the Shaft.
6. Slide the Clutch Stopper and Friction Clutch onto the Retard Shaft (Figure 4-13).
7. Make sure the notch on the Stopper is trapped by the plastic lip of the Retard Holder.
8. Use a KL clip to secure the Clutch and Stopper.
9. Align the two Paper Guide 1's and the Paper Guide with the positioning tabs on the Upper Cover (Figure 4-12).
10. Reinstall the three screws in the marked positions and secure the Paper Guide 1's and the Paper Guide.
11. Reinstall the Weight Arm onto the Feeder Assembly.
12. Reinstall the Front Cover ("Envelope Feeder Front Cover" on page -131).
13. Reinstall the Top Cover ("Envelope Feeder Top Cover" on page -130).

4.3.10 No Paper Actuator

(See “PL16.3 Envelope Feeder 3” on page -151)

4.3.10.1 Removal

1. Remove the Bottom Cover (“Envelope Feeder Bottom Cover” on page -129).
2. Use the flat blade of a standard screwdriver to carefully pry the Actuator legs out of the slots in the frame, and remove the Actuator.

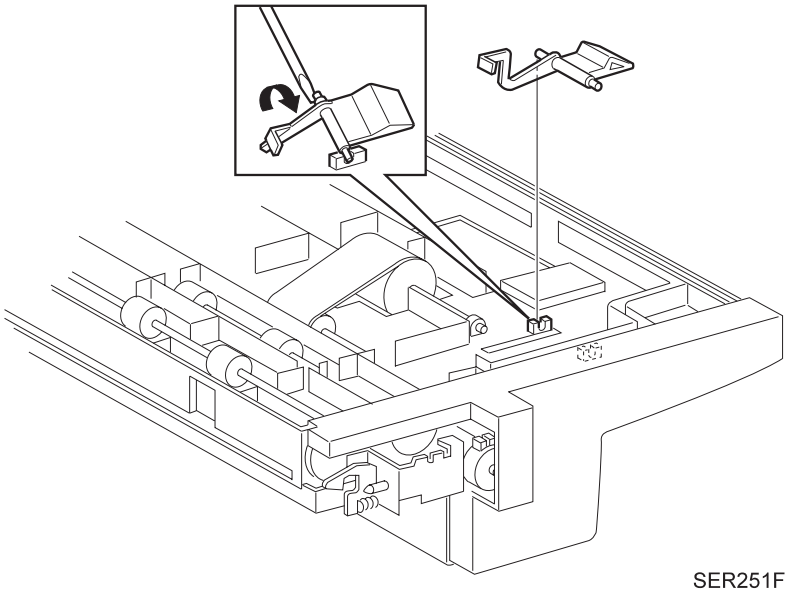


Figure 4-15. Actuator

4.3.10.2 Assembly

1. Position the Actuator as shown in the figure.
2. Press the Actuator legs into the slots in the frame.
3. Rock the Actuator back and forth to make sure it moves freely in the slots, and the small end of the Actuator moves freely between the two arms of the No Paper Sensor.
4. Reinstall the Bottom Cover (“Envelope Feeder Bottom Cover” on page -129).

4.3.11 No Paper Sensor

(See “PL16.3 Envelope Feeder 3” on page -151)

4.3.11.1 Removal

1. Remove the Bottom Cover (“Envelope Feeder Bottom Cover” on page -129).
2. Squeeze the Sensor latches while pulling the Sensor away from the frame, and remove the Sensor.
3. Disconnect P/J 130 from the Sensor.

4.3.11.2 Assembly

1. Reconnect P/J130 to the Sensor.
2. Position the Sensor so the P/J faces the rear of the Envelope Feeder.
3. Hook the front Sensor latches into the opening in the frame.
4. Insert the rear latches into the adjacent opening and press the Sensor into place. The latches snap into place.
5. Rock the No Paper Actuator to make sure it moves freely between the two arms of the No Paper Sensor.
6. Reinstall the Bottom Cover (“Envelope Feeder Bottom Cover” on page -129).

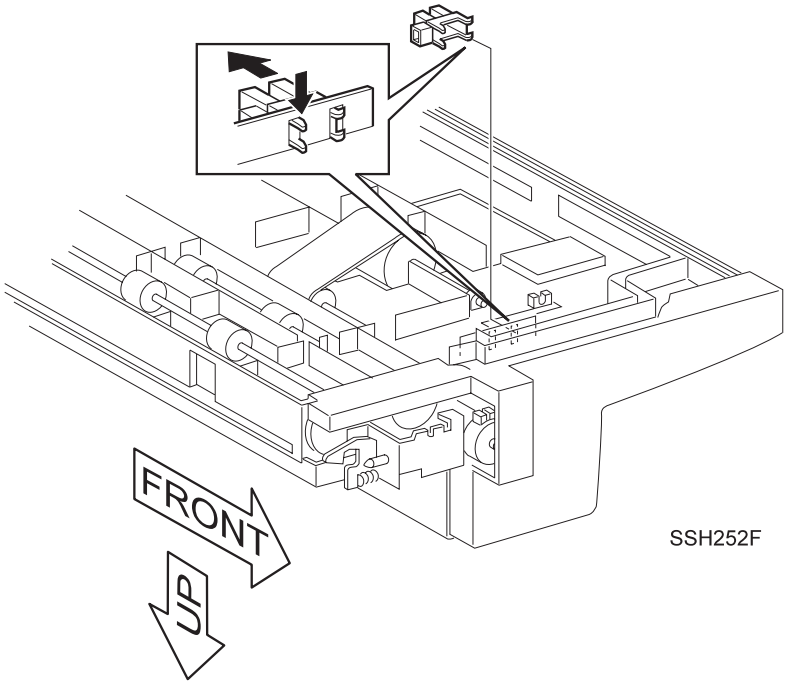


Figure 4-16. No Paper Sensor

4.3.12 Envelope Size Sensor Assembly

(See “PL16.3 Envelope Feeder 3” on page -151)

4.3.12.1 Removal

1. Remove the Bottom Cover (“Envelope Feeder Bottom Cover” on page -129).
2. Remove the Rear Cover (“Envelope Feeder Rear Cover” on page -132)
3. Disconnect P/J 131 from the Envelope PWB.
4. Remove the wire harness from the wire channel and from the harness clip.
5. Use the flat blade of a standard screwdriver to carefully turn the two tabs that secure the Sensor Assembly to the Side Guide, and remove the Assembly.

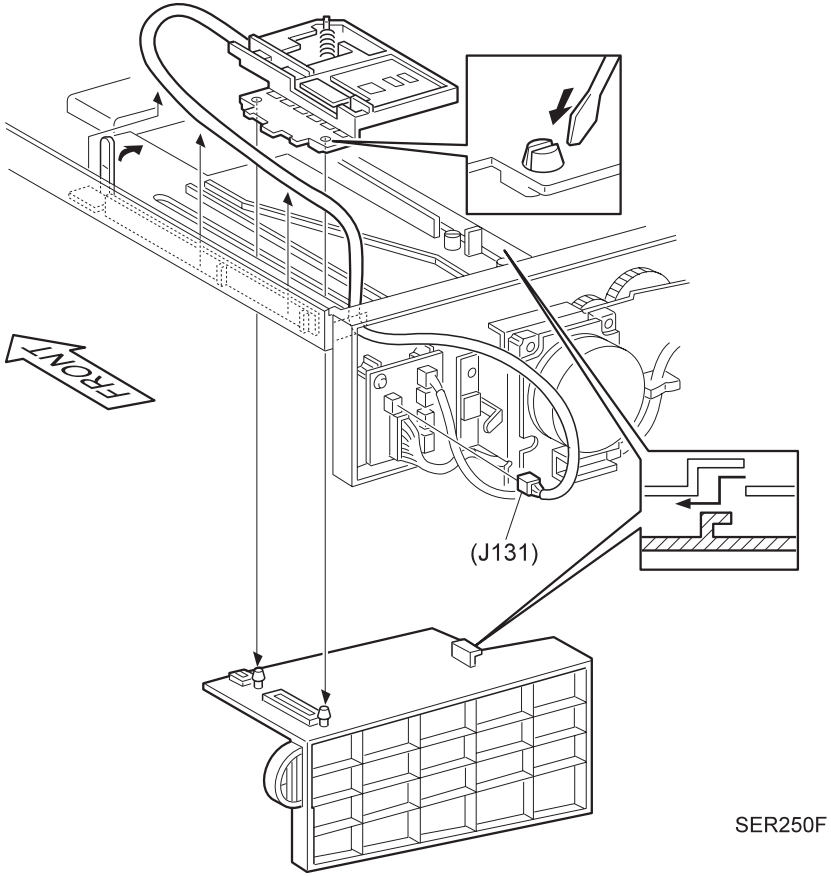


Figure 4-17. Envelope Size Sensor Assembly

4.3.12.2 Assembly

1. Route the wire harness through the wire channel and under the harness clip.
2. Insert the plug end of the wire harness into the square opening at the side of the frame, and reconnect it to P/J 131 on the Envelope PWB.
3. Make sure the opening in the spring-loaded plastic arm on underside of the Assembly hooks onto the metal tab of the variable resistor.
4. Push the arm back and forth to make sure it and the resistor tab move smoothly together.
5. Slide the Side Guide out to maximum so it presses against the frame.
6. Reinstall the Size Sensor Assembly, arm and resistor facing against the frame, onto the Feeder frame.
7. Line up the two circular holes in the Assembly with the two tabs on the Side Guide.
8. Push up slightly on the spring-loaded arm so the metal tab of the variable resistor is on top of the molded track.
9. Hold the Side Guide in place as you firmly press the Sensor Assembly against the frame until the two tabs snap into place in the two holes and secure the Assembly to the Side Guide.
10. Slide the Side Guide to the center of the Feeder and observe the Assembly plastic arm to make sure it moves up and down as you move the Side Guide to the center and out again.
11. If the arm does not move up and down, slide the Side Guide out to maximum again, and lift up slightly on the plastic arm and put it back on the track.
12. Reinstall the Rear Cover (“Envelope Feeder Rear Cover” on page -132)
13. Reinstall the Bottom Cover (“Envelope Feeder Bottom Cover” on page -129).

4.3.13 Envelope Feed Clutch

(See “PL16.2 Envelope Feeder 2” on page -149)

4.3.13.1 Removal

1. Remove the Rear Cover (“Envelope Feeder Rear Cover” on page -132).
2. Remove the Center Bracket (“Envelope Feeder Center Bracket Assembly” on page -133).
3. Disconnect P/J 221 from the Feed Clutch.
4. Remove the three screws securing the Motor Bracket to the Feeder frame.
5. Carefully pull the Motor Bracket an inch away from the frame.
6. Slide the Feed Clutch off of the Bracket.
7. Remove the Gear from the Clutch.

4.3.13.2 Assembly

1. Slide the Gear into the Feed Clutch.
2. Reinstall the Clutch into the cutout in the Motor Bracket. Make sure the metal tab on the Bracket slides into the locking notch on the Clutch.
3. Press the Motor Bracket against the Feeder frame, while guiding the end of the Clutch Gear into the Bearing in the frame.
4. Use three screws to secure the Bracket to the frame.
5. Reconnect P/J 221 to the Feed Clutch.
6. Reinstall the Center Bracket (“Envelope Feeder Center Bracket Assembly” on page -133).
7. Reinstall the Rear Cover (“Envelope Feeder Rear Cover” on page -132).

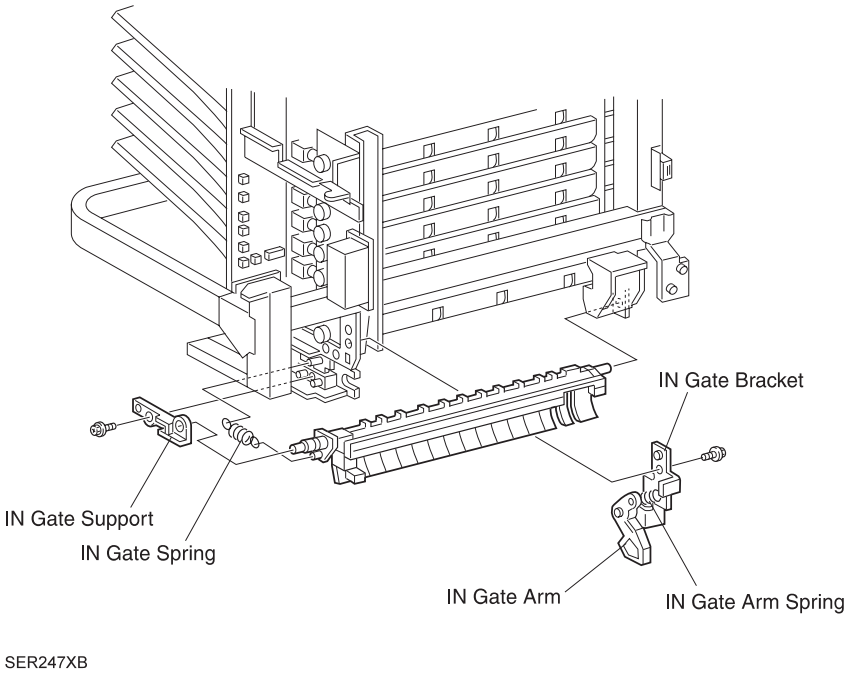


Figure 4-18. Envelope Feed Clutch

4.3.14 Upper Cover

(See “PL16.3 Envelope Feeder 3” on page -151)

4.3.14.1 Removal

1. Remove the Front Cover (“Envelope Feeder Front Cover” on page -131).
2. Remove the Center Bracket Assembly (“Envelope Feeder Center Bracket Assembly” on page -133).
3. Spread the Weight Arm legs so they release from the Feeder frame, and remove the Weight Arm.
4. Remove the KL clip securing the Friction Clutch and Stopper to the Retard Shaft (Figure below), and remove the Clutch and the Stopper.

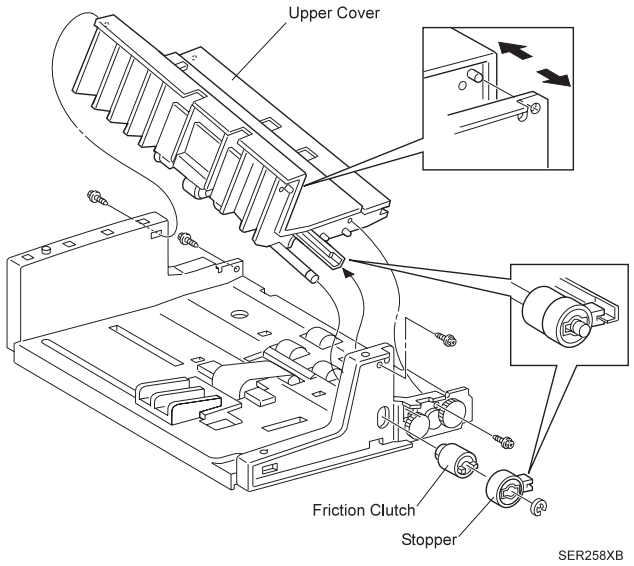


Figure 4-19. Upper Cover

5. Disconnect P/J 702 from the Envelope PWB.
6. Remove the Feed Sensor wire harness from the harness clips running from the PWB to the top of the Upper Cover.
7. Remove the four screws securing the Upper Cover to the Feeder frame.
8. Remove the Upper Cover.
9. Disconnect P/J 702 from the Feed Sensor.
10. Remove the screws securing the Paper Guides and remove the Guides.
11. Pry the two Pinch Rolls and the Retard Assembly out of the slots in the Upper Cover (Figure below).

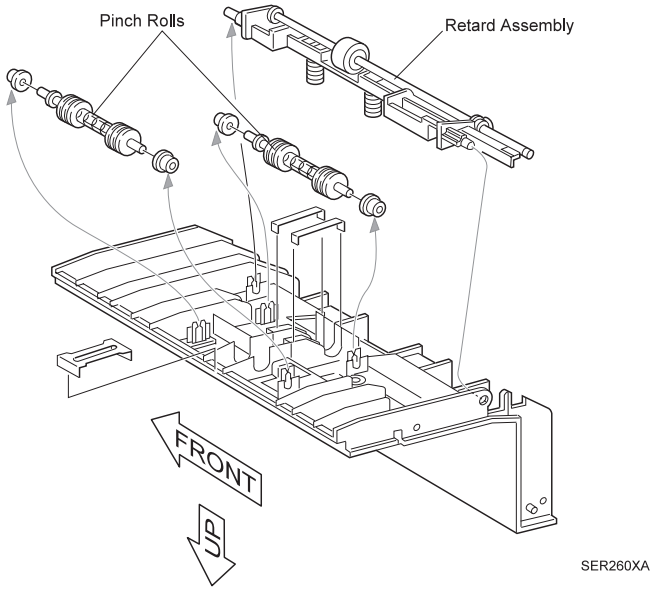


Figure 4-20. Pinch Roll & Retard Assembly

4.3.14.2 Assembly

1. Reinstall the Pinch Rolls and Retard Assembly into the slots in the Upper Cover (Figure 4-20).
2. Reinstall the Paper Guides and use three screws to secure them to the Feeder frame.
3. Reconnect P/J 702 to the Feeder Sensor.
4. Reinstall the Upper Cover onto the Feeder frame by first sliding the Retard Shaft through the hole in the side of the frame.
5. Lower the Cover onto the frame, and use four screws to secure it to the Frame.
6. Reinstall the Feed Sensor wire harness under the clips on top of the Upper Cover.
7. Reconnect P/J 702 to the Envelope PWB.
8. Slide the Clutch Stopper and Friction Clutch onto the Retard Shaft.
9. Make sure the notch on the Stopper is trapped by the plastic lip of the Retard Holder.
10. Use a KL clip to secure the Clutch and Stopper.
11. Reinstall the Weight Arm to the Feeder frame.
12. Reinstall the Center Bracket Assembly (“Envelope Feeder Center Bracket Assembly” on page -133).
13. Reinstall the Front Cover (“Envelope Feeder Front Cover” on page -131).

4.3.15 Feed Sensor

(See “PL16.3 Envelope Feeder 3” on page -151)

4.3.15.1 Removal

1. Remove the Upper Cover (“Upper Cover” on page -145).
2. Remove the wire harness from the wire clips.
3. Disconnect P/J 132 from the Sensor.
4. Squeeze the Sensor latches while pulling the Sensor away from the frame, and remove the Sensor.

4.3.15.2 Assembly

1. Position the Sensor so the faces up.
2. Press the Sensor latches into the holes in the frame. The latches snap into place.
3. Reconnect P/J132 to the Sensor.
4. Reinstall the wire harness into the wire clips.
5. Reinstall the Upper Cover (“Upper Cover” on page -145).

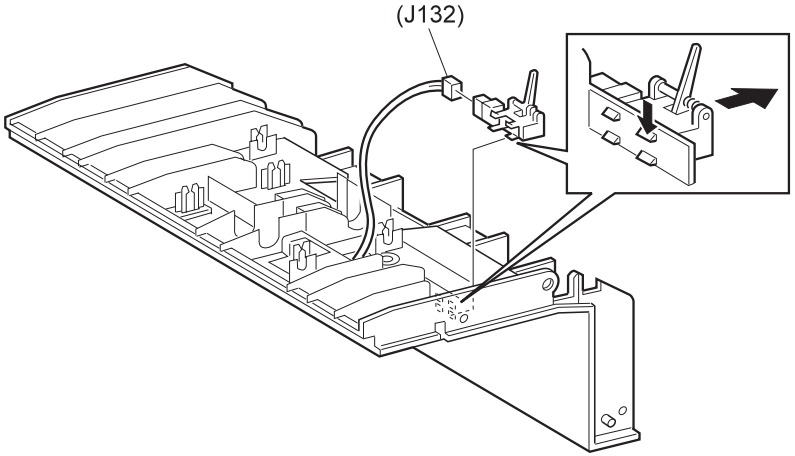


Figure 4-21. Feed Sensor

4.4 Exploded Diagram and Parts List

4.4.1 PL16.1 Envelope Feeder 1

1. COVER TOP
2. HARNESS I/F(J700 <> P604)
3. BRACKET REAR
4. LATCH ASSEMBLY REAR
5. SPRING LATCH
6. LATCH REAR
7. BRACKET CENTER
8. BRACKET FRONT
9. LATCH ASSEMBLY FRONT
10. LATCH FRONT
11. COVER REAR
12. GUIDE SIDE
13. COVER FRONT
14. ARM WEIGHT
15. WEIGHT PAPER L
16. SENSOR ASSEMBLY MSI (J131)
17. COVER BOTTOM

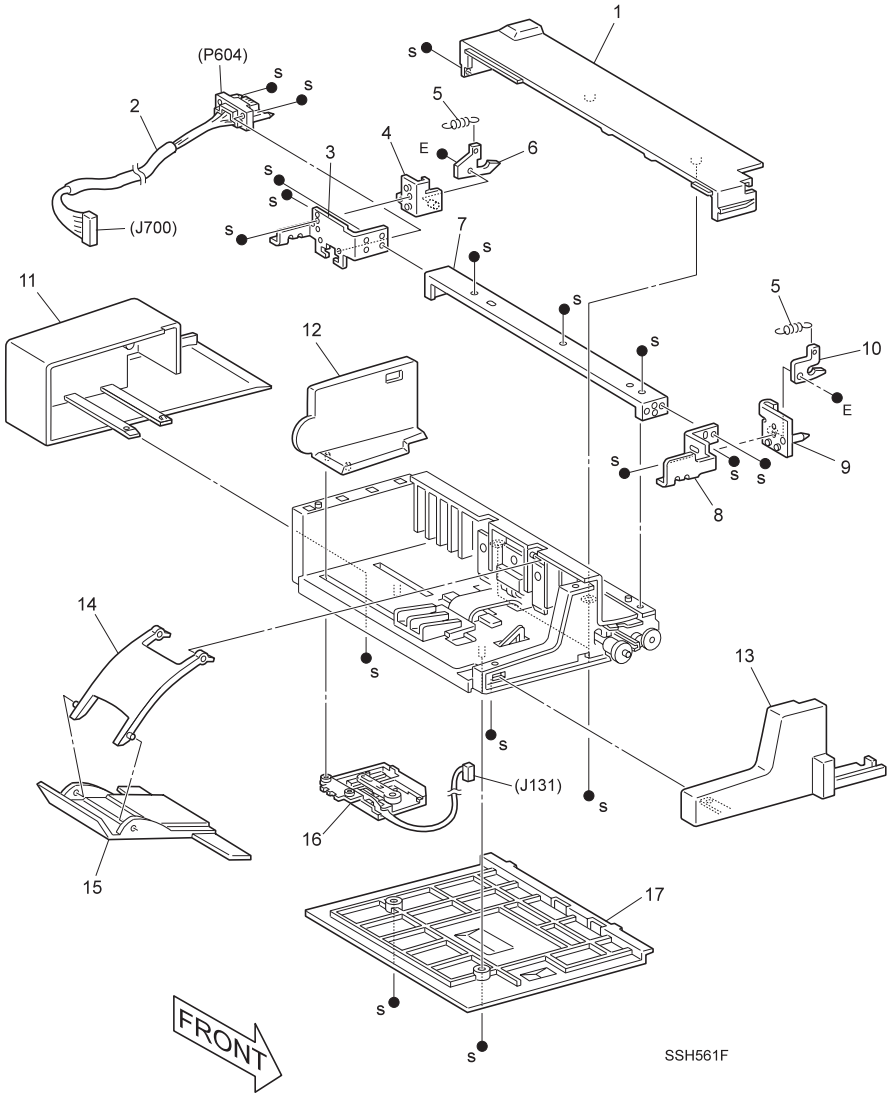


Figure 4-22. Envelope Feeder 1

4.4.2 PL16.2 Envelope Feeder 2

1. MOTOR HARNESS DC (J217 <> J704)
2. MOTOR ENVELOPE B
3. CLAMP 1
4. CLAMP 2
5. RACKET MOTOR
6. GEAR Z47
7. GEAR Z56/18
8. GEAR IDLER (19)
9. BEARING FEEDER
10. HARNESS CLUTCH(J221 <>J703)
11. CLUTCH ELECTROMAGNETIC
12. GEAR Z17
13. CL-SPRING
14. GEAR Z25
15. GEAR Z25 STOPPER
16. IDLER GEAR
17. PWBA ENVELOPE
18. ACTUATOR NO PAPER
19. SENSOR PI DH
20. HARNESS NO PAPER SENSOR (J130 < > J701)
21. CORE BELT
22. SHAFT FEED
23. BELT FEED
24. ROLL BOTTOM
25. SHAFT BOTTOM
26. ROLL ASSEMBLY TAKEAWAY
27. ROLL ASSEMBLY TRANSPORT
28. CLAMP 3

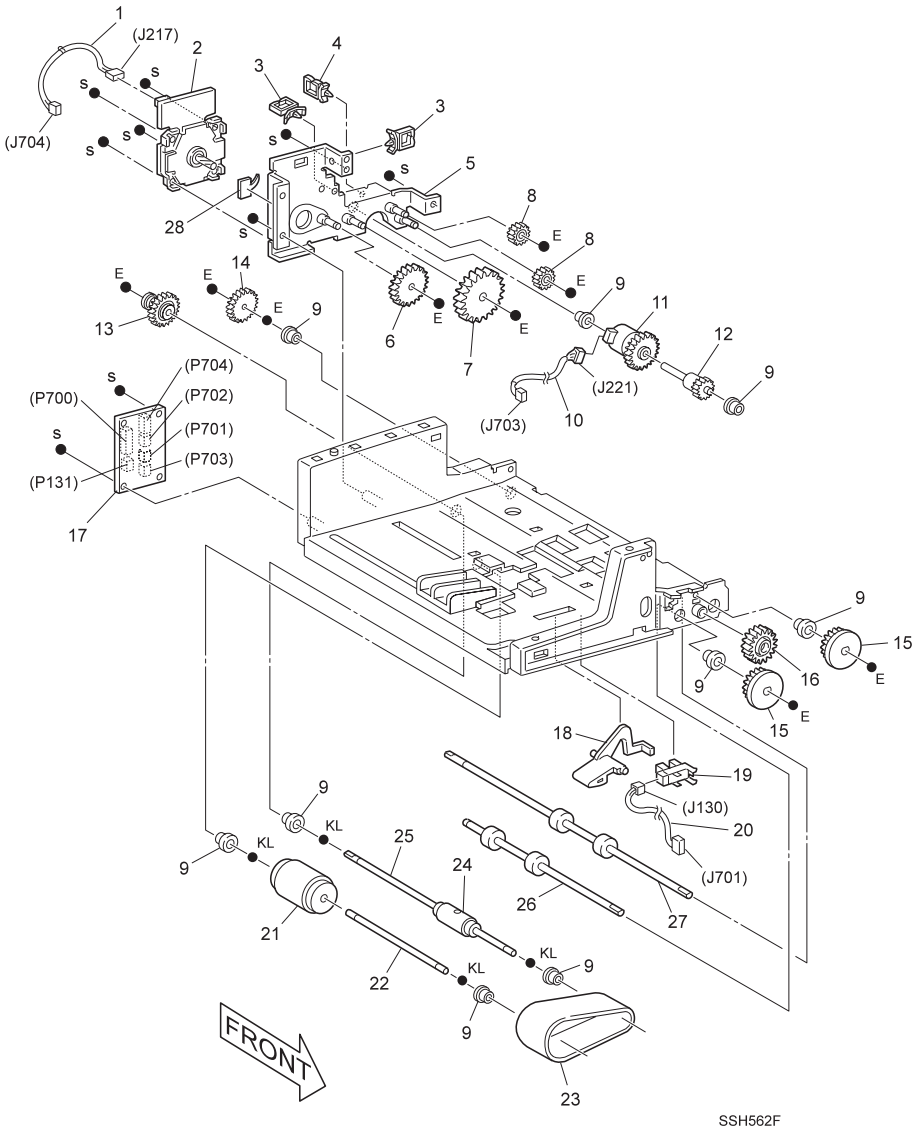


Figure 4-23. Envelope Feeder 2

4.4.3 PL16.3 Envelope Feeder 3

1. COVER UPPER
2. GUIDE PAPER 1
3. GUIDE PAPER
4. HARNESS PP SENSOR (J132 <>J702)
5. SENSNOR
6. BEARING FEEDER
7. ROLL PINCH
8. SPRING PLATE
9. SPRING PLATE
10. HOLDER RETARD
11. SPRING RETARD
12. ROLL ASSEMBLY RETARD (with 13 and 14)
13. SHAFT RETARD
14. ROLL ASSEMBLY RETARD (with 15 and 16)
15. CORE RETARD
16. ROLL RETARD
17. ---
18. ---
19. CLUTCH ASSEMBLY -FRICTION
20. STOPPER- CLUTCH (with 19)
21. FRAME-MAIN

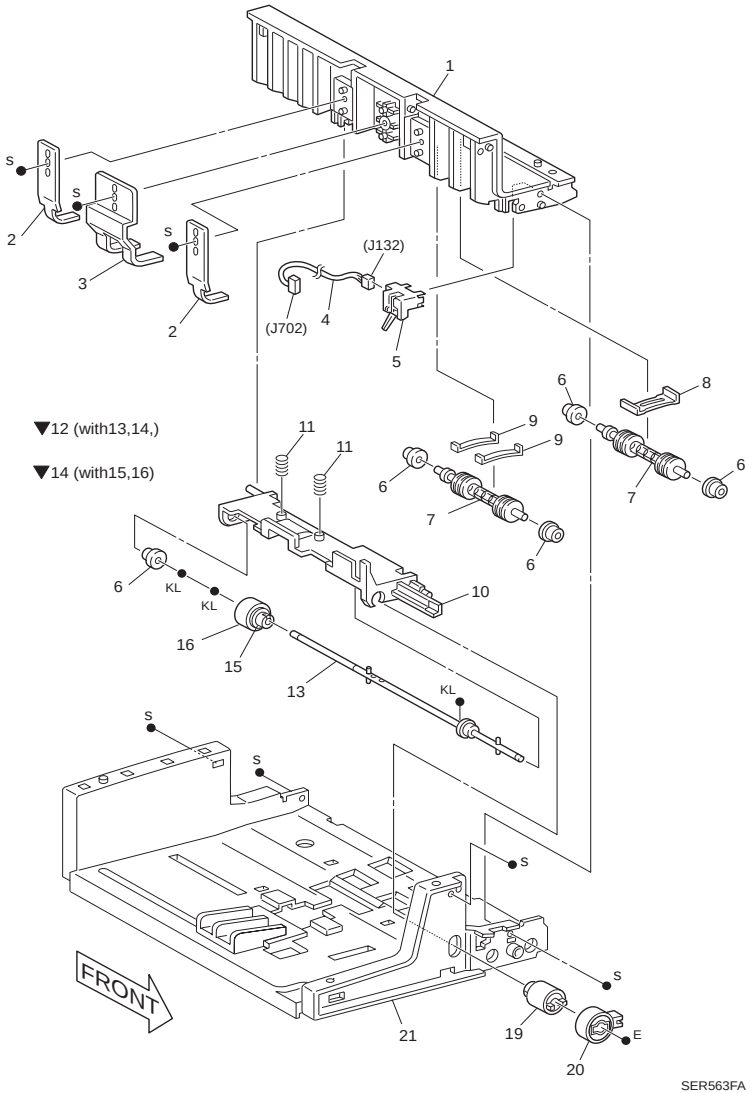


Figure 4-24. Envelope Feeder 3