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Laser notices

Laser notice

The printer is certified in the U.S. to conform to the requirements of DHHS 21 CFR Subchapter J for Class I (1) laser products, and elsewhere is certified as a Class I laser product conforming to the requirements of IEC 60825-1.

Class I laser products are not considered to be hazardous. The printer contains internally a Class IIIb (3b) laser that is nominally a 5 milliwatt gallium arsenide laser operating in the wavelength region of 770-795 nanometers. The laser system and printer are designed so there is never any human access to laser radiation above a Class I level during normal operation, user maintenance, or prescribed service condition.

Laser

Der Drucker erfüllt gemäß amtlicher Bestätigung der USA die Anforderungen der Bestimmung DHHS (Department of Health and Human Services) 21 CFR Teil J für Laserprodukte der Klasse I (1). In anderen Ländern gilt der Drucker als Laserprodukt der Klasse I, der die Anforderungen der IEC (International Electrotechnical Commission) 60825-1 gemäß amtlicher Bestätigung erfüllt.

Laserprodukte der Klasse I gelten als unschädlich. Im Inneren des Druckers befindet sich ein Laser der Klasse IIIb (3b), bei dem es sich um einen Galliumarsenlaser mit 5 Milliwatt handelt, der Wellen der Länge 770-795 Nanometer ausstrahlt. Das Lasersystem und der Drucker sind so konzipiert, daß im Normalbetrieb, bei der Wartung durch den Benutzer oder bei ordnungsgemäßer Wartung durch den Kundendienst Laserbestrahlung, die die Klasse I übersteigen würde, Menschen keinesfalls erreicht.

Avis relatif à l'utilisation de laser

Pour les Etats-Unis : cette imprimante est certifiée conforme aux provisions DHHS 21 CFR alinéa J concernant les produits laser de Classe I (1). Pour les autres pays : cette imprimante répond aux normes IEC 60825-1 relatives aux produits laser de Classe I.

Les produits laser de Classe I sont considérés comme des produits non dangereux. Cette imprimante est équipée d'un laser de Classe IIIb (3b) (arséniure de gallium d'une puissance nominale de 5 milliwatts) émettant sur des longueurs d'onde comprises entre 770 et 795 nanomètres. L'imprimante et son système laser sont conçus pour impossible, dans des conditions normales d'utilisation, d'entretien par l'utilisateur ou de révision, l'exposition à des rayonnements laser supérieurs à des rayonnements de Classe I.

Avvertenze sui prodotti laser

Questa stampante è certificata negli Stati Uniti per essere conforme ai requisiti del DHHS 21 CFR Sottocapitolo J per i prodotti laser di classe 1 ed è certificata negli altri Paesi come prodotto laser di classe 1 conforme ai requisiti della norma CEI 60825-1.

I prodotti laser di classe non sono considerati pericolosi. La stampante contiene al suo interno un laser di classe IIIb (3b) all'arseniuro di gallio della potenza di 5mW che opera sulla lunghezza d'onda compresa tra 770 e 795 nanometri. Il sistema laser e la stampante sono stati progettati in modo tale che le persone a contatto con la stampante, durante il normale funzionamento, le operazioni di servizio o quelle di assistenza tecnica, non ricevano radiazioni laser superiori al livello della classe 1.

Avisos sobre el láser

Se certifica que, en los EE.UU., esta impresora cumple los requisitos para los productos láser de Clase I (1) establecidos en el subcapítulo J de la norma CFR 21 del DHHS (Departamento de Sanidad y Servicios) y, en los demás países, reúne todas las condiciones expuestas en la norma IEC 60825-1 para productos láser de Clase I (1).

Los productos láser de Clase I no se consideran peligrosos. La impresora contiene en su interior un láser de Clase IIIb (3b) de arseniuro de galio de funcionamiento nominal a 5 milivatios en una longitud de onda de 770 a 795 nanómetros. El sistema láser y la impresora están diseñados de forma que ninguna persona pueda verse afectada por ningún tipo de radiación láser superior al nivel de la Clase I durante su uso normal, el mantenimiento realizado por el usuario o cualquier otra situación de servicio técnico.

Declaração sobre Laser

A impressora está certificada nos E.U.A. em conformidade com os requisitos da regulamentação DHHS 21 CFR Subcapítulo J para a Classe I (1) de produtos laser. Em outros locais, está certificada como um produto laser da Classe I, em conformidade com os requisitos da norma IEC 60825-1.

Os produtos laser da Classe I não são considerados perigosos. Internamente, a impressora contém um produto laser da Classe IIIb (3b), designado laser de arseneto de potássio, de 5 milliwatts, operando numa faixa de comprimento de onda entre 770 e 795 nanómetros. O sistema e a impressora laser foram concebidos de forma a nunca existir qualquer possibilidade de acesso humano a radiação laser superior a um nível de Classe I durante a operação normal, a manutenção feita pelo utilizador ou condições de assistência prescritas.

Laserinformatie

De printer voldoet aan de eisen die gesteld worden aan een laserprodukt van klasse I. Voor de Verenigde Staten zijn deze eisen vastgelegd in DHHS 21 CFR Subchapter J, voor andere landen in IEC 60825-1.

Laserprodukten van klasse I worden niet als ongevaarlijk aangemerkt. De printer is voorzien van een laser van klasse IIb (3b), dat wil zeggen een gallium arsenide-laser van 5 milliwatt met een golflengte van 770-795 nanometer. Het lasergedeelte en de printer zijn zo ontworpen dat bij normaal gebruik, bij onderhoud of reparatie conform de voorschriften, nooit blootstelling mogelijk is aan laserstraling boven een niveau zoals voorgeschreven is voor klasse 1.

Lasermeddelelse

Printeren er godkendt som et Klasse I-laserprodukt, i overensstemmelse med kravene i IEC 60825-1.

Klasse I-laserprodukter betragtes ikke som farlige. Printeren indeholder internt en Klasse IIIB (3b)-laser, der nominelt er en 5 milliwatt galliumarsenid laser, som arbejder på bølglængdeområdet 770-795 nanometer. Lasersystemet og printeren er udformet således, at mennesker aldrig udsættes for en laserstråling over Klasse I-niveau ved normal drift, brugervedligeholdelse eller obligatoriske servicebetingelser.

Huomautus laserlaitteesta

Tämä kirjoitin on Yhdysvalloissa luokan I (1) laserlaitteiden DHHS 21 CFR Subchapter J -määrityksen mukainen ja muualla luokan I laserlaitteiden IEC 60825-1 -määrityksen mukainen.

Luokan I laserlaitteiden ei katsota olevan vaarallisia käyttäjälle. Kirjoittimessa on sisäinen luokan IIb (3b) 5 milliwatin galliumarsenidilaser, joka toimii aaltoalueella 770 - 795 nanometriä. Laserjärjestelmä ja kirjoitin on suunniteltu siten, että käyttäjä ei altistu luokan I määrityksiä voimakkaammalle säteilylle kirjoittimen normaalin toiminnan, käyttäjän tekemien huoltotoimien tai muiden huoltotoimien yhteydessä.

VARO! Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

VARNING! Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

Laser-notis

Denna skrivare är i USA certifierad att motsvara kraven i DHHS 21 CFR, underparagraf J för laserprodukter av Klass I (1). I andra länder uppfyller skrivaren kraven för laserprodukter av Klass I enligt kraven i IEC 60825-1.

Laserprodukter i Klass I anses ej hälsovådliga. Skrivaren har en inbyggd laser av Klass IIb (3b) som består av en laserenhet av gallium-arsenid på 5 milliwatt som arbetar i våglängdsområdet 770-795 nanometer. Lasersystemet och skrivaren är utformade så att det aldrig finns risk för att någon person utsätts för laserstrålning över Klass I-nivå vid normal användning, underhåll som utförs av användaren eller annan föreskriven serviceåtgärd.

Laser-melding

Skriveren er godkjent i USA etter kravene i DHHS 21 CFR, underkapittel J, for klasse I (1) laserprodukter, og er i andre land godkjent som et Klasse I-laserprodukt i samsvar med kravene i IEC 60825-1.

Klasse I-laserprodukter er ikke å betrakte som farlige. Skriveren inneholder internt en klasse IIb (3b)-laser, som består av en gallium-arsenlaserenhet som avgir stråling i bølgelengdeområdet 770-795 nanometer. Lasersystemet og skriveren er utformet slik at personer aldri utsettes for laserstråling ut over klasse I-nivå under vanlig bruk, vedlikehold som utføres av brukeren, eller foreskrevne serviceoperasjoner.

Avís sobre el Làser

Segons ha estat certificat als Estats Units, aquesta impressora compleix els requisits de DHHS 21 CFR, apartat J, pels productes làser de classe I (1), i segons ha estat certificat en altres llocs, és un producte làser de classe I que compleix els requisits d'IEC 60825-1.

Els productes làser de classe I no es consideren perillosos. Aquesta impressora conté un làser de classe IIb (3b) d'arseniür de gal.li, nominalment de 5 mil.liwats, i funciona a la regió de longitud d'ona de 770-795 nanòmetres. El sistema làser i la impressora han sigut concebuts de manera que mai hi hagi exposició a la radiació làser per sobre d'un nivell de classe I durant una operació normal, durant les tasques de manteniment d'usuari ni durant els serveis que satisfacin les condicions prescrites.

Japanese Laser Notice

レーザーに関するお知らせ

このプリンターは、米国ではDHHS 21 CFRサブチャプターJのクラスI (1) の基準を満たしたレーザー製品であることが証明されています。また米国以外ではIEC 825の基準を満たしたクラスIのレーザー製品であることが証明されています。

クラスIのレーザー製品には危険性はないと考えられています。このプリンターはクラスIII b (3 b) のレーザーを内蔵しています。このレーザーは、波長が770 ~ 795ナノメートルの範囲で、通常5ミリワットのガリウム砒化物を放射するレーザーです。このレーザーシステムとプリンターは、通常の操作、ユーザのメンテナンス、規定された修理においては、人体がクラスIのレベル以上のレーザー放射に晒されることのないよう設計されています。

注意：

本打印机被美国认证合乎 DHHS 21 CFR Subchapter I 对分类 I (1) 激光产品的标准，而在其他地区则被认证合乎 IEC 825 的标准。

分类 I 激光产品一般认为不具危险性，本打印机内部含有分类 IIIb (3b) 的激光，在操作过程中会产生 5 毫瓦含镓及砷的微量激光，其波长范围在 770-795 nm 之间。本激光系统及打印机的设计，在一般操作、使用者维护或规定内的维修情况下，不会使人体接触分类 I 以上等级的辐射。

Korean Laser Notice

본프린터는 1등급 레이저 제품들에 대한 DHHS 21 CFR Subchapter 3의 규정을 준수하고 있음을 미국에서 인증받았으며, 그외의 나라에서도 IEC 825 규정을 준수하는 1등급 레이저 제품으로서 인증을 받았습니다.

1등급 레이저 제품들은 안전한 것으로 간주됩니다. 본 프린터는 5 밀리와트 갈륨 아르세나이드 레이저로서 770-795 나노미터의 파장대에서 활동하는 Class III (3b) 레이저를 내부에 갖고 있습니다. 본 레이저 시스템과 프린터는 정상 작동 중이나 유지 보수 중 또는 규정된 서비스 상태에서 상기의 Class I 수준의 레이저 방출에 사람이 절대 접근할 수 없도록 설계되어 있습니다.

Safety information

- The safety of this product is based on testing and approvals of the original design and specific components. The manufacturer is not responsible for safety in the event of use of unauthorized replacement parts.
- The maintenance information for this product has been prepared for use by a professional service person and is not intended to be used by others.
- There may be an increased risk of electric shock and personal injury during disassembly and servicing of this product. Professional service personnel should understand this and take necessary precautions.
-  **CAUTION:** When you see this symbol, there is a danger from hazardous voltage in the area of the product where you are working. Unplug the product before you begin, or use caution if the product must receive power in order to perform the task.
-



<1-13> Do not connect or disconnect a communication port, a teleport, or any other connector during an electrical storm.

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Consignes de sécurité

- La sécurité de ce produit repose sur des tests et des agréments portant sur sa conception d'origine et sur des composants particuliers. Le fabricant n'assume aucune responsabilité concernant la sécurité en cas d'utilisation de pièces de rechange non agréées.
- Les consignes d'entretien et de réparation de ce produit s'adressent uniquement à un personnel de maintenance qualifié.
- Le démontage et l'entretien de ce produit pouvant présenter certains risques électriques, le personnel d'entretien qualifié devra prendre toutes les précautions nécessaires.
-  **ATTENTION :** Ce symbole indique la présence d'une tension dangereuse dans la partie du produit sur laquelle vous travaillez. Débranchez le produit avant de commencer ou faites preuve de vigilance si l'exécution de la tâche exige que le produit reste sous tension.
-



<1-13> Do not connect or disconnect a communication port, a teleport, or any other connector during an electrical storm.

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orme di sicurezza

- La sicurezza del prodotto si basa sui test e sull'approvazione del progetto originale e dei componenti specifici. Il produttore non è responsabile per la sicurezza in caso di sostituzione non autorizzata delle parti.
- Le informazioni riguardanti la manutenzione di questo prodotto sono indirizzate soltanto al personale di assistenza autorizzato.
- Durante lo smontaggio e la manutenzione di questo prodotto, il rischio di subire scosse elettriche e danni alla persona è più elevato. Il personale di assistenza autorizzato deve, quindi, adottare le precauzioni necessarie.
-  **ATTENZIONE:** Questo simbolo indica la presenza di tensione pericolosa nell'area del prodotto. Scollegare il prodotto prima di iniziare o usare cautela se il prodotto deve essere alimentato per eseguire l'intervento.

Sicherheitshinweise

- Die Sicherheit dieses Produkts basiert auf Tests und Zulassungen des ursprünglichen Modells und bestimmter Bauteile. Bei Verwendung nicht genehmigter Ersatzteile wird vom Hersteller keine Verantwortung oder Haftung für die Sicherheit übernommen.
- Die Wartungsinformationen für dieses Produkt sind ausschließlich für die Verwendung durch einen Wartungsfachmann bestimmt.
- Während des Auseinandernehmens und der Wartung des Geräts besteht ein zusätzliches Risiko eines elektrischen Schlags und körperlicher Verletzung. Das zuständige Fachpersonal sollte entsprechende Vorsichtsmaßnahmen treffen.
-  **ACHTUNG:** Dieses Symbol weist auf eine gefährliche elektrische Spannung hin, die in diesem Bereich des Produkts auftreten kann. Ziehen Sie vor den Arbeiten am Gerät den Netzstecker des Geräts, bzw. arbeiten Sie mit großer Vorsicht, wenn das Produkt für die Ausführung der Arbeiten an den Strom angeschlossen sein muß.

Pautas de Seguridad

- La seguridad de este producto se basa en pruebas y aprobaciones del diseño original y componentes específicos. El fabricante no es responsable de la seguridad en caso de uso de piezas de repuesto no autorizadas.
- La información sobre el mantenimiento de este producto está dirigida exclusivamente al personal cualificado de mantenimiento.
- Existe mayor riesgo de descarga eléctrica y de daños personales durante el desmontaje y la reparación de la máquina. El personal cualificado debe ser consciente de este peligro y tomar las precauciones necesarias.
-  **PRECAUCIÓN:** este símbolo indica que el voltaje de la parte del equipo con la que está trabajando es peligroso. Antes de empezar, desenchufe el equipo o tenga cuidado si, para trabajar con él, debe conectarlo.

Informações de Segurança

- A segurança deste produto baseia-se em testes e aprovações do modelo original e de componentes específicos. O fabricante não é responsável pela segurança, no caso de uso de peças de substituição não autorizadas.
- As informações de segurança relativas a este produto destinam-se a profissionais destes serviços e não devem ser utilizadas por outras pessoas.
- Risco de choques eléctricos e ferimentos graves durante a desmontagem e manutenção deste produto. Os profissionais destes serviços devem estar avisados deste facto e tomar os cuidados necessários.
-  **CUIDADO:** Quando vir este símbolo, existe a possível presença de uma potencial tensão perigosa na zona do produto em que está a trabalhar. Antes de começar, desligue o produto da tomada eléctrica ou seja cuidadoso caso o produto tenha de estar ligado à corrente eléctrica para realizar a tarefa necessária.

Informació de Seguretat

- La seguretat d'aquest producte es basa en l'avaluació i aprovació del disseny original i els components específics.
El fabricant no es fa responsable de les qüestions de seguretat si s'utilitzen peces de recanvi no autoritzades.
- La informació pel manteniment d'aquest producte està orientada exclusivament a professionals i no està destinada a ningú que no ho sigui.
- El risc de xoc elèctric i de danys personals pot augmentar durant el procés de desmuntatge i de servei d'aquest producte. El personal professional ha d'estar-ne assabentat i prendre les mesures convenients.
-  **PRECAUCIÓ:** aquest símbol indica que el voltatge de la part de l'equip amb la qual esteu treballant és perillós. Abans de començar, desendolieu l'equip o extremeu les precaucions si, per treballar amb l'equip, l'heu de connectar.

안전 사항

- 본 제품은 원래 설계 및 특정 구성품에 대한 테스트 결과로 안정성이 입증된 것입니다. 따라서 무허가 교체부품을 사용하는 경우에는 제조업체에서 안전에 대한 책임을 지지 않습니다.
- 본 제품에 관한 유지 보수 설명서는 전문 서비스 기술자용으로 작성된 것이므로, 비전문가는 사용할 수 없습니다.
- 본 제품을 해체하거나 정비할 경우, 전기적인 충격을 받거나 상처를 입을 위험이 커집니다. 전문 서비스 기술자는 이 사실을 숙지하고, 필요한 예방 조치를 취하도록 하십시오.
-  **주의:** 이 표시는 해당영역에서 고압전류가 흐른다는 위험 표시입니다. 시작전에 플러그를 뽑으시거나, 주의를 기울여 주시기 바랍니다.

Preface

This manual contains maintenance procedures for service personnel. It is divided into the following chapters:

1. **General information** contains a general description of the printer and the maintenance approach used to repair it. Special tools and test equipment are listed in this chapter, as well as general environmental and safety instructions.
2. **Diagnostic information** contains an error indicator table, symptom tables, and service checks used to isolate failing field replaceable units (FRUs).
3. **Diagnostic aids** contains tests and checks used to locate or repeat symptoms of printer problems.
4. **Repair information** provides instructions for making printer adjustments and removing and installing FRUs.
5. **Connector locations** uses illustrations to identify the connector locations and test points on the printer.
6. **Preventive maintenance** contains the lubrication specifications and recommendations to prevent problems.
7. **Parts catalog** contains illustrations and part numbers for individual FRUs.

Definitions

Note: A note provides additional information.

Warning: A warning identifies something that might damage the product hardware or software.

CAUTION: A caution identifies something that might cause a servicer harm.



CAUTION: When you see this symbol, there is a danger from hazardous voltage in the area of the product where you are working. Unplug the product before you begin, or use caution if the product must receive power in order to perform the task.

1. General information

The IBM Infoprint 1332/1352/1372 laser printers are letter quality page printers designed to attach to IBM-compatible personal computers and to most computer networks.

The IBM Infoprint 1332/1352/1372 laser printers are available in the following models:

IBM Model name	Configuration	IBM Machine type	Lexmark Model name	Lexmark Machine type
IBM Infoprint 1332	Non-network	4527-001, 002	Lexmark T630	4060-000
IBM Infoprint 1332 network	Network	4527-N01, N02	Lexmark T630n	4060-010
IBM Infoprint 1352	Non-network	4528-001, 002	Lexmark T632	4060-200
IBM Infoprint 1352 network	Network	4528-N01, N02	Lexmark T632n	4060-210
IBM Infoprint 1372	Non-network	4529-001, 002	Lexmark T634	4060-400
IBM Infoprint 1372 network	Network	4529-N01, N02	Lexmark T634n	4060-410

Maintenance approach

The diagnostic information in this manual leads you to the correct field replaceable unit (FRU) or part. Use the service error codes, user status messages, user error messages, service checks, and diagnostic aids to determine the printer problem and repair the failure. After you complete the repair, perform tests as needed to verify the repair.

Options

The following options are available. Some options are not available in every country. Contact your point of purchase for options available in your country.

- Memory options of 8MB, 16MB, 32MB, 64MB and 128MB SDRAM
- Flash memory options of 16MB and 32MB
- Hard disk—20GB+ with adapter
- Integrated network options
 - Token-ring
 - Ethernet
 - External serial adapter
 - IR adapter
 - IPDS card assembly and SCS/TNe
 - ImageQuick™ card assembly
 - Bar code card assembly
 - Parallel interface card
 - MarkNet™ Print Servers
 - Decryption card
- Media handling operations
 - 250- and 500-sheet paper trays of A4, letter, A5, B5, Executive, folio, statement, and legal size
 - 250-sheet universally adjustable tray
 - 250- and 500-sheet paper drawers
 - 400-sheet universally adjustable tray
 - 2000-sheet high-capacity feeder
 - Envelope feeder
 - Duplex option—250-sheet (For IBM Infoprint 1332)
 - Duplex option—500-sheet (For IBM Infoprint 1352/1372)
 - Output expander
 - High-capacity output stacker
 - StapleSmart™ Finisher
 - 5-bin Mailbox
 - Vertical Kiosk Presenter
 - Horizontal Kiosk Presenter
- Application solutions
 - Lexmark Document Solutions
 - Optra Forms™, including a Forms Hard Disk—20+GB with adapter
- DBCS font cards
 - Simplified Chinese
 - Traditional Chinese
 - Japanese

Print speed and performance print speed

Performance

Performance speed depends on:

- Interface to the host (USB, serial, parallel, network)
- Host system and application
- Page complexity and content
- Printer options installed or selected
- Available printer memory
- Media size and type
- Resolution

The following table specifies throughput based on resolution and media size.

	IBM Infoprint 1332		IBM Infoprint 1352,		IBM Infoprint 1372	
	300, 600, 1200 image quality	1200 dpi	300, 600, 1200 image quality	1200 dpi	300, 600, 1200 image quality	1200 dpi
Simplex printing on full-size media (pages per minute)						
Letter 8.5 in. x 11 in.	35.1	18.0	40.1	21.5	45	
A4 8.3 in. x 11.7 in.	33.2	17.1	38.0	20.4	43	
Legal 8.5 in. x 14 in.	28.4	14.6	32.8	17.4		
Duplex printing on letter-size media (sides per minute)						
Letter 8.5 in. x 11 in.	30.6	16.9	33.2	19.2		
A4 8.3 in. x 11.7 in.	29.2	16.1	31.6	18.3		
Legal 8.5 in. x 14 in.	22.6	14.4	27.8	15.8		

Time to first print

	IBM Infoprint 1332,	IBM Infoprint 1352,	IBM Infoprint 1372,
Time from standby mode	<8.5 sec.	<10 sec.	
Time from Power Saver mode	42 sec.	42 sec.	
All first copy times are measured for 600 dpi simplex printing on letter size paper. The test job consists of the character "A" followed by a form-feed (single page job). The first copy time is defined as the elapsed time from pressing Enter on the PC keyboard to the page exiting to the output bin. All tests pick paper from the indicated tray and the page exits into the primary output bin.			

Memory configuration

Memory	IBM Infoprint 1332,	IBM Infoprint 1352	IBM Infoprint 1372
Standard DRAM	32/64MB	64/64MB	64/80MB
Maximum	288/320MB	320/320MB	320/336MB

Depending upon the options and features used, additional memory may be required to optimize performance.

Available memory options

Optional 8MB, 16MB, 32MB, 64MB, and 128MB SDRAM DIMMs are available. The memory options are 168-pin synchronous DRAM DIMMs.

Flash memory options include 16MB and 32MB.

Printer specifications

Dimensions

Description	Width	Depth	Height	Weight
Printer				
IBM Infoprint 1332 (base printer)	16.6 in. (421 mm)	19.6 in. (498 mm)	13.6 in. (345 mm)	38 lb (17 kg)
IBM Infoprint 1352 (base printer)	17.2 in. (436 mm)	20.2 in. (513 mm)	16 in. (406 mm)	41.5 lb (19 kg)
IBM Infoprint 1372 (base printer)	17.2 in. (436 mm)	20.2 in. (513 mm)	16 in. (406 mm)	41.5 lb (19 kg)
Options				
2,000-Sheet drawer	15.6 in. (398 mm)	19.5 in. (495 mm)	11.8 in. (300 mm)	28 lb (12.7 kg)
Output Expander	15.6 in. (398 mm)	14.9 in. (374 mm)	6.8 in. (173.2 mm)	7 lb (3.2 kg)
500-Sheet drawer	15.6 in. (398 mm)	20.5 in. (520 mm)	5.3 in. (134 mm)	7 lb (3.2 kg)
250-Sheet drawer	15.6 in. (398 mm)	19.5 in. (495 mm)	3.5 in. (90 mm)	6 lb (2.7 kg)
5-Bin Mailbox	15.7 in. (399 mm)	12.2 in. (310 mm)	13.1 in. (332 mm)	8.2 lb (3.7 kg)
High-capacity output stacker	15.7 in. (399 mm)	18 in. (457 mm)	11.4 in. (290 mm)	10 lb (4.5 kg)
StapleSmart finisher	17.6 in. (447.7 mm)	19.5 in. (495.3 mm)	9.0 in. (228.6 mm)	13 lb (5.9 kg)
Envelope option (closed position)	*	7.72 in. (196 mm)	*	4 lb (1.8 kg)
Envelope option (support fully extended)	*	12.28 in. (312 mm)	*	4 lb (1.8 kg)
Printer cabinet	30.4 in. (772 mm)	23.2 in. (594 mm)	31.8 in. (808 mm)	76 lb (34.5 kg)
Printer cabinet stand	34.8 in. (883 mm)	23.2 in. (594 mm)	31.8 in. (808 mm)	83 lb (37.6 kg)
* Envelope option fits within height and width of printer.				

Operating clearances

Printer side	Measurement
Left and right side	12 in. (304.8 mm)
Front	20 in. (508 mm)
Rear	12 in. (304.8 mm)
Top*	54 in. (1,371.6 mm)
* Allow clearance above the printer front door clearance and for adding options, such as additional input drawers, output expander, high-capacity output stacker, or StapleSmart finisher.	

Power and electrical specifications

Average nominal power requirements for the base printer configuration (110 volt). Power levels are shown in watts.

Printing states	IBM Infoprint 1332	IBM Infoprint 1332n	IBM Infoprint 1352	IBM Infoprint 1352n	IBM Infoprint 1372	IBM Infoprint 1372n
Printing—average power						
Base model	429 W	432 W	523 W	527 W	584 W	590 W
All options	457 W	460 W	540 W	544 W	608 W	614 W
Idle—average power						
Power Saver on	12 W	15 W	14 W	14 W	15 W	16 W
Power Saver off	81 W	84 W	81 W	84 W	86 W	87 W
Printing—maximum current						
110V	8.8 A	8.8 A	9.8 A	9.8 A	10.2 A	10.2 A
230V	4 A	4 A	5 A	5 A	5 A	5 A

Note: Using a 220 to 110 power converter with the 110 volt printer is not recommended.

Electrical specifications

Low voltage model

- 110 to 127 V ac at 50 to 60 Hz nominal
- 99 to 137 V ac, extreme

High voltage model

- 220 to 240 V ac at 50 to 60 Hz nominal (not available in all countries)

- 190 to 259 V ac, extreme

Acoustics

All measurements are made in accordance with ISO 7779 and conform with ISO 9296.

Model	Status	1 Meter average sound pressure	Declared sound power
IBM Infoprint 1332(n)	Idle (standby mode)	31 dBA	4.6 Bels
	Simplex printing	52 dBA	6.7 Bels
	Duplex printing	55 dBA	N/M Bels
IBM Infoprint 1352(n)	Idle (standby mode)	32 dBA	4.7 Bels
	Simplex printing	54 dBA	6.8 Bels
	Duplex printing	57 dBA	N/M Bels
IBM Infoprint 1372(n)	Idle (standby mode)		
	Simplex printing		
	Duplex printing		

Measurements apply to 300 dpi, 600 dpi, and 1200 dpi printing.

Environment

Printer temperature and humidity

- Operating
 - Temperature: 16 to 32° C (60° to 90° F)
 - Relative humidity: 8 to 80%
 - Altitude: 10,000 ft. (0 to 3,048 meters)
- Storage and shipping environment (packaged)
 - Temperature: -40° to 43° C (-40° to 110° F)
 - Relative humidity: 5% to 95%
 - Altitude: equivalent to 10,300 meters. (0 to 34,000 feet)
- Storage environment (unpacked)
 - Temperature: 0° to 40° C (32° to 104° F)
 - Relative humidity: 5% to 80%

Media specifications

Media type

Media type	500-Sheet input	Multipurpose tray	2,000-Sheet drawer	Duplex	Standard output	5-Bin Mailbox	Output Expander	Finisher to staple, hole punch, offset stack or with output bin
Paper	x	x	x	x	x	x	x	x
Card stock	x	x		x	x		x	
Transparencies	x	x			x		x	
Envelopes		x						
Vinyl labels	x				x			
Paper labels	x				x			
Polyester labels	x				x			
Dual web labels	x			x	x			
Integrated labels	x			x	x			

Media size

Media size supported	Integrated tray	250 Input tray	250 Universally adjustable tray	500 Input tray	400 Universally adjustable tray	Multipurpose tray	2000-sheet drawer	Envelope feeder	Duplex	Standard output bin	Output Expander	5-Bin Mailbox	High-capacity output stacker	StapleSmart output bin	StapleSmart—Staple/jogger
A4 8.27 in. x 11.7 in. (210 mm x 297 mm)	x	x		x		x	x		x	x	x	x	x	x	x
A5 5.83 in. x 8.27 in. (148 mm x 210 mm)	x	x		x		x	x		x	x	x		x		
JIS-B5 7.17 in. x 10.23 in. (182 mm x 257 mm)	x	x		x		x	x		x	x	x	x	x	x	
Letter 8.5 in. x 11 in. (216 mm x 279 mm)	x	x		x		x	x		x	x	x	x	x	x	x
Legal 8.5 in. x 14 in. (216 mm x 355.6 mm)	x	x		x		x	x		x	x	x	x	x	x	x
Executive 7.25 in. x 10.5 in. (184 mm x 267 mm)	x	x		x		x	x		x	x	x	x	x	x	
Folio 8.5 in. x 13 in. (216 mm x 330 mm) ¹	x	x		x		x			x	x	x	x	x	x	x
Statement 5.5 in. x 8.5 in. (140 mm x 216 mm) ¹	x	x		x		x				x	x		x		
Universal ²															
5.5 x 8.27 in. to 8.5 x 14 in. (139.7 x 210 mm to 215.9 x 355.6 mm)	x	x	x	x	x	x				x	x		x		
2.75 x 5 in. to 8.5 x 14 in. (69.85 x 127 mm to 229 x 355.6 mm)			x		x	x				x	x		x		
5.83 x 7.17 in. to 8.5 x 14 in. (148 x 182 mm to 215.9 x 355.6 mm)	x	x	x	x	x	x			x	x	x		x		
¹ This size does not appear in the Paper Size menu until Tray Size Sensing is turned off. ² This size setting formats the page for 215.9 x 355.6 mm (8.5 x 14 in.) unless the size is specified by the software program.															

Media size supported	Integrated tray	250 Input tray	250 Universally adjustable tray	500 Input tray	400 Universally adjustable tray	Multipurpose tray	2000-sheet drawer	Envelope feeder	Duplex	Standard output bin	Output Expander	5-Bin Mailbox	High-capacity output stacker	StapleSmart output bin	StapleSmart—Staple/jogger
Envelopes															
7¾ Envelope 3.875 in. x 7.5 in. (98 mm x 191 mm)						x		x		x	x		x		
9 Envelope 3.875 in. x 8.9 in. (98 mm x 225.4 mm)						x		x		x	x		x		
10 Envelope 4.125 in. x 9.5 in. (105 mm x 241 mm)						x		x		x	x		x		
DL Envelope 4.33 in. x 8.66 in. (110 mm x 220 mm)						x		x		x	x		x		
C5 Envelope 6.38 in. x 9.01 in. (162 mm x 229 mm)						x		x		x	x		x		
B5 Envelope 6.93 in. x 9.84 in. (176 mm x 250 mm)						x		x		x	x		x		
Other envelope															
3.87 x 6.38 in. to 6.93 x 9.84 in. (98.4 x 162 mm to 176 x 250 mm)						x		x		x	x		x		
Media types															
Paper	x	x	x	x	x	x	x		x	x	x	x	x	x	x
Card stock	x	x	x	x	x	x			x	x	x		x	x	
Transparencies	x	x	x	x	x	x				x	x		x	x	x
Vinyl labels ³	x	x	x	x		x				x	x		x		
Paper labels ³	x	x	x	x	x	x				x	x		x		
Polyester labels ³	x	x	x	x	x	x				x	x		x		
Dual web and integrated labels ³	x	x	x	x	x	x				x	x		x		
³ Printing label application on the printer requires a special label fuser cleaner which prevents duplexing. The label fuser cleaner is included with a special label cartridge for label applications.															

Input media types and weights

Media weights—input

Media	Type	Weight
Integrated trays and optional 500-sheet drawers		
Paper	Xerographic or business paper	60 to 176 g/m ² grain long (16 to 47 lb bond)
Card stock—maximum (grain long) ¹	Index Bristol	163 g/m ² (90 lb bond)
	Tag	163 g/m ² (100 lb bond)
	Cover	176 g/m ² (65 lb bond)
Card stock—maximum (grain short) ¹	Index Bristol	199 g/m ² (110 lb bond)
	Tag	203 g/m ² (125 lb bond)
	Cover	216 g/m ² (80 lb bond)
Transparencies	Laser printer	138 to 146 g/m ² (37 to 39 lb bond)
Labels—maximum ²	Paper	180 g/m ² (48 lb bond)
	Dual-web paper	180 g/m ² (48 lb bond)
	Polyester	220 g/m ² (59 lb bond)
	Vinyl ³	300 g/m ² (92 lb liner)
Integrated forms	Pressure sensitive area ²	140 to 175 g/m ²
	Paper base (grain long)	75 to 135 g/m ² (20 to 36 lb bond)
Multipurpose feeder and optional 250-sheet drawer		
Paper	Xerographic or business paper	60 to 135 g/m ² grain long (16 to 36 lb bond)
Card stock—maximum (grain long) ¹	Index Bristol	120 g/m ² (67 lb bond)
	Tag	135 g/m ² (50 lb bond)
	Cover	135 g/m ² (50 lb bond)
Card stock—maximum (grain short) ¹	Index Bristol	163 g/m ² (90 lb bond)
	Tag	163 g/m ² (100 lb bond)
	Cover	176 g/m ² (65 lb bond)
Transparencies	Laser printer	138 to 146 g/m ² (37 to 39 lb bond)
Labels—maximum ²	Paper	163 g/m ² (43 lb bond)
	Dual-web paper	163 g/m ² (43 lb bond)
	Polyester	220 g/m ² (59 lb bond)
	Vinyl ³	260 g/m ² (78 lb liner)

Media weights—input (continued)

Media	Type	Weight
Integrated forms	Pressure sensitive area ²	140 to 175 g/m ²
	Paper base (grain long)	75 to 135 g/m ² (20 to 36 lb bond)
Envelope	Sulfite, wood-free or up to 100% cotton bond	60 to 105 g/m ² (16 to 28 lb bond) ^{3, 4}
Envelope feeder		
Envelope	Sulfite, wood-free or up to 100% cotton bond	60 to 105 g/m ² (16 to 28 lb bond) ^{3, 4}
2000-sheet drawer		
Paper	Xerographic or business paper	60 to 135 g/m ² grain long (16 to 36 lb bond)
¹ Grain short is preferred for paper over 135 g/m ² . ² Printing label applications on your printer requires a special label fuser cleaner which prevents duplexing. ³ 28 lb bond envelopes are limited to 25% cotton content. ⁴ Includes envelopes fed from the multipurpose feeder only. ⁵ Information on whether your vinyl label converter has passed Lexmark's criteria is available at Lexmark's Web site (www.lexmark.com). Search for "converter list." You can also check Lexmark's Automated Fax system (LEXFAX SM).		

Print area

The printable area is limited to within 4.2 mm (0.167 in.) of all edges of the media. Any information placed outside this specified printable area does not print.

Media guidelines

Paper designed for use with xerographic copies should provide satisfactory print quality and feed reliability. Other types of supplies may be suitable. We recommend that users test any particular brand for suitability to their applications. Refer to the printer's user information for additional media specifications.

Paper

Use the following media guidelines for successful printing:

- Rough, highly textured, limp, or pre-curved paper results in lower print quality and more frequent paper feed failures.
- Colored paper must be able to withstand 227° C (440° F) fusing temperature.
- Preprinted forms and letterheads should be selected using guidelines found in the printer's user information. The chemical process used in preprinting may render some papers unsuitable for use with this printer.

- Unsuitable papers include:
 - Multi-part forms and documents
 - Chemically treated papers
 - Coated, synthetic, and thermal papers
 - A5 paper less than 80 g/m² (21 lb)
 - Recycled paper less than 75 g/m² (20 lb)
 - Preprinted paper requiring a high degree of registration
- Recycled paper less than 80 g/m² (21 lb) may cause unacceptable results.

Envelopes

- All envelopes should be new, unused, and without package damage.
- Envelopes with excessive curl or twist exceeding 6 mm, those stuck together, those with bent corners or nicked edges, or those that interlock should not be used.
- Minimum weight should not be less than 75 g/m² (20 lb).
- The following envelopes should not be used:
 - Envelopes with windows, holes, perforations, cutouts, or deep embossing
 - Envelopes with metal clasps, string ties, or metal folding bars
 - Envelopes with exposed flap adhesive when the flap is in the closed position.
- For best results, printing on new 90 g/m² (24 lb) sulfite or 25% cotton bond envelopes is recommended.
- Under high humidity conditions (over 60%), envelopes may seal during printing.

Transparencies

- Use letter or A4-size transparencies only.
- Transparencies specifically designed for xerographic copy machines or laser printers may be used with this printer.

Labels

Select labels using guidelines from in this printer's user information, refer to the *Card Stock and Label Guide*, or depend upon tested acceptability.

Tools required

Flat-blade screwdrivers, various sizes
Phillips screwdrivers, various sizes
7.0 mm nut driver
5.5 mm wrench
Needlenose pliers
Diagonal side cutters
Spring hook
Feeler gauges
Analog or digital multimeter
Parallel wrap plug 1319128
Twinax/serial debug cable 1381963
Flash light (optional)

Acronyms

BLDC	Brushless DC motor
CSU	Customer setup
DIMM	Dual Inline Memory Module
DRAM	Dynamic Random Access Memory
DVM	Digital multimeter
EDO	Enhanced Data Out
EEPROM	Electrically Erasable Programmable Read-Only Memory
EP	Electrophotographic process
EPROM	Erasable Programmable Read-Only Memory
ESD	Electrostatic Discharge
FRU	Field Replaceable Unit
GB	Gigabyte
HCIT	High-capacity Input Tray
HVPS	High Voltage Power Supply
ITC	Internal Tray Card
LASER	Light Amplification by Stimulated Emission of Radiation
LCD	Liquid Crystal Display
LED	Light-Emitting Diode
LVPS	Low Voltage Power Supply
MPF	Multipurpose feeder
MROM	Masked Read Only Memory
MS	Microswitch
NVRAM	Nonvolatile Random Access Memory
OEM	Original Equipment Manufacturer
OPT	Optical Sensor
PC	Photoconductor
pel	Picture element
POR	Power-On Reset
POST	Power-On Self Test
PWM	Pulse Width Modulation
RIP	Raster Imaging Processor
ROM	Read Only Memory
SDRAM	Synchronous Dynamic Random Access Memory
SIMM	Single Inline Memory Module
SRAM	Static Random Access Memory
UPR	Used Parts Return
V ac	Volts alternating current
V dc	Volts direct current
VOM	Volt Ohmmeter

2. Diagnostic information

Start



CAUTION: Remove the power cord from the printer or wall outlet before you connect or disconnect any cable or electronic board or assembly for personal safety and to prevent damage to the printer. Use the handholds on the side of the printer. Make sure your fingers are not under the printer when you lift or set the printer down.

Use the service error code, user status message, user error message, symptom table, service checks, and diagnostic aids in this chapter to determine the corrective action necessary to repair a malfunctioning printer.

Service error codes are indicated by a three-digit error code. If a service error code displays, go to **“Service error codes” on page 2-2**.

User status messages provide the user with information on the current status of the printer. Ready displays on the first line of the display unless Power Saver is invoked, and then Power Saver displays. If a user status message is displayed, go to **“User status displays” on page 2-14**.

User error messages are indicated by a two or three-digit error code that provides the user with information that explains a problem with a print cartridge, paper jam, option, port, and so on. If a user error message displays, go to **“User attendance messages” on page 2-19**.

If your machine completes the **“Power-On Self Test (POST)” on page 2-34** without an error, and you have a symptom, go to **“Symptom tables” on page 2-35**. Locate your symptom and take the appropriate action.

If a service error code appears while you are working on the machine, go to **“Service error codes” on page 2-2** and take the indicated action for that error.

Messages and error codes

Service error codes

Service error codes are generally non-recoverable except in an intermittent condition when you can POR the printer to temporarily recover from the error condition.

Service error code

Error code	Action
900 RIP Software	Go to "900 Error Code service check" on page 2-41.
901 Engine Flash	Indicates that the flash which the system board code is programmed into is bad. Replace the system board.
902 General Engine Software Error	These errors indicate an unrecoverable system software error. Replace the system board.
903 Paperport Link Driver Error	
904 Interface Violation by RIP	
905 Interface Violation by Paperport Device	
906 RIP Interface Driver Error	Error Codes 910, 911, 912, 913, and 914 are indications that a Tray 1 paper feed problem has been detected. Go to "Input tray(s) service check" on page 2-64.
910 DC Pick Motor DC Pick Motor Stall	
911 DC Pick Motor Excessive PWM	
912 DC Pick Motor below speed	
913 DC Pick Motor over speed	Check the integrated paper tray (Tray 1) for correct paper loading. Reload the paper and POR the printer. If the error continues, go to "Input tray(s) service check" on page 2-64.
914 DC Pick Motor: No encoder feedback	
917 Transfer Roll	Indicates a problem in the transfer roll area. Go to "Transfer roll service check" on page 2-94.
920 Fuser Error	Indicates that the fuser is below temperature when printing. Go to "Fuser service checks" on page 2-52.
921 Fuser Error	Indicates that the fuser is below standby temperature when the printer is idle. Go to "Fuser service checks" on page 2-52.
922 Fuser Error	Fuser failed to reach standby temperature. Go to "Fuser service checks" on page 2-52.
923 Fuser Error	Fuser is too hot during printing or when printer is idle. Go to "Fuser service checks" on page 2-52.

Service error code (continued)

Error code	Action
924 Fuser Error	An open circuit has been detected in the Fuser Thermistor Circuit. Go to “Fuser service checks” on page 2-52.
925 Fuser Error	Wrong fuser lamp installed. Go to “Cold fuser service check” on page 2-52.
927 Fan Stalled	This is an indication that a printer fan has stalled. Go to “Main fan service check” on page 2-69.
929 Toner Sensor	The toner sensor is not operating properly, the developer drive assembly is not operating properly or the print cartridge is defective. Go to “Toner sensor service check” on page 2-93.
930 Printhead Error	The wrong printhead may be installed. If you <i>have not</i> replaced the system board recently, replace the correct printhead. If the problem remains, replace the system board. If you <i>have</i> recently replaced the system board and you still have a 930 error, the wrong system board may be installed. Replace the system board with the correct system board.
931-935 Printhead Error	These errors represent a problem with the printhead. Go to “Printhead service check” on page 2-78.
932 - Printhead: Lost Hsync	
933 - Mirror Motor Locks/Lost Hsync	
934 - Mirror Motor Lost Lock	
935 - Mirror Motor unable to reach operating speed.	
936-937 Transport Motor	Indicates a problem with the main drive motor. Go to “Main drive service check” on page 2-68.
936 - Main Drive Motor initial lock failure	
937 - Main Drive Motor lost lock	
940 Service LV Power Supply 	The low voltage power supply zero crossover test failed. Check the LVPS for correct installation. Make sure the connector on the LVPS assembly is firmly seated with the connector on the interconnect card connector. This error may also be caused by a noisy AC input power source. • Be sure the correct LVPS has been installed. • If all the above are correct, replace the LVPS assembly.
948 PEL Clock Error	Indicates the pel clock check failed. Replace the system board.
949 Delay Line Calibration Failure	Indicates a delay line calibration failure. Replace the system board.
950 NVRAM Mismatch	Go to “950 Error Code service check” on page 2-42.
951 NVRAM Secure NVRAM Missing	Replace the system board.
953 NVRAM Chip Failure	Indicates the NVRAM chip on the interconnect board has failed. Replace the interconnect board.

Service error code (continued)

Error code	Action
954 NVRAM CRC Failure	Indicates the NVRAM experienced a CRC failure. Replace the interconnect board.
955 Code CRC <loc>	Replace the system board. Where <loc> = CRC Failure or ECC Failure on the system board.
956, 957, 959 System Board	Error codes 956 thru 959 are system board failures. Perform a power on reset (POR). If this does not fix the problem, replace the system board. • 956 = Processor failure • 957 = ASIC failure • 959 = SRAM failure
958 NAND Failure	Before proceeding when a 958 NAND failure displays, perform a power on reset (POR) to see if the ECC error correction code can reflash NAND. If this does not fix the problem, replace the system board.
960 RAM Memory Error	Indicates a DRAM Memory Error on the system board. Replace the system board.
961 RAM in Slot 2 is Bad	If another SDRAM memory DIMM is installed in slot 1, turn the power off, switch the DIMM in slot 1 to slot 2. If the memory in slot 2 now works correctly, replace the failing DIMM that was in slot 2. If this does not fix the problem, replace the system board. If another DIMM is not available, replace the memory option. If this does not fix the problem, replace the system board.
962 RAM in Slot 1 is Bad	If another SDRAM memory DIMM is installed in slot 2, turn the power off, switch the DIMM in slot 2 to slot 1. If the memory in slot 1 now works correctly, replace the failing DIMM that was in slot 1. If this does not fix the problem, replace the system board. If another DIMM is not available, replace the memory option. If this does not fix the problem, replace the system board.
964 Emulation Error	Indicates a failure within the Download Emulation which is programmed into the code overlay card. The specific error is as follows: 964 - Download Emulation CRC Failure. Checksum Failure. Go to "Disabling Download Emulations" on page 3-3.
975 - 979 Network Card x	The following errors indicate a failure with the network card in the specified slot. (x=any card installed in slots 1 or 2.) • 975 - Unrecognizable Network Card x. Replace network card x. • 976 - Unrecoverable software error in network card x. • 978 - Bad checksum while programming network card x. Replace network card x. • 979 - Flash parts failed while programming network card x. If the printer is a network model, replace the system board.
980 <device> Comm	The engine is experiencing unreliable communications to the specified device.
981 <device>	The engine protocol violation detected by the specified device.
982 <device> Comm	Communications error detected by the specified device.
983 <device>	Invalid command received by the specified device.
984 <device>	Invalid command parameter received by the specified device. Note: Service errors 980 thru 984 <device> can be one of the following: system board, duplex, tray x (1, 2, 3, 4, or 5), envelope feeder or output bin.

Service error code (continued)

Error code	Action
990 <device>	Indicates an equipment check condition has occurred in the specified device, but the device is unable to identify the exact component failure. Note: <device> can be one of the following: duplex, tray x (1, 2, 3, 4, or 5), envelope feeder or output bin.
991 <device> Card	The specified device has detected an equipment check in its system card. Note: <device> can be one of the following: duplex, tray x (1, 2, 3, 4, or 5), envelope feeder or output bin.

Sub error codes**Sub error codes for 9xx and 2xx error codes**

The sub error codes are helpful troubleshooting a paper path problem, especially paper jams in the base printer, envelope feeder, and duplex option.

Displayed error codes

When a 9xx or 2xx error displays:

1. Press and hold **Return** and press **Select** to enter for sub error codes.
The first screen of information displays. Write down the information.
2. Continue pressing **Return** and **Select** until each screen of information is obtained.
3. When the last screen displays, the original message displays.

The following is an example of how the printer displays a duplex option sub error code.

	Byte 1	Byte 2	Byte 3	Byte 4
DU	xx	xx	xx	xx
DU	xx	xx	xx	xx
	Byte 5	Byte 6	Byte 7	Byte 8

Printed error codes

Additional information is available by printing the error log. See **"Printing the error log" on page 3-7.**

Base printer sub error codes

Each status byte has a different level of troubleshooting value for each area of the printer. The following table displays up to 8 status bytes of data. Some or all of these bytes may be used to help diagnose a printer problem. These status bytes are designed to help isolate paper jams and paper feed problems in the base printer.

Sub error code variable values

Displayed value of x	Printer area
Values for tray sources	
10	Multipurpose Tray (MPT)
11	Tray 1
12	Tray 2
13	Tray 3
14	Tray 4
15	Tray 5
31	Envelope feeder
40	Manual feeder
Values for stacker destinations	
91	Stacker 1
92	Stacker 2
93	Stacker 3
Values for media size	
1	Letter
2	Legal
3	B5
4	A4
5	Executive
6	A5
7	Custom size
9	7¼ in. envelope
A	#9 Envelope
B	#10 Envelope
C	8.661 in. Envelope
D	C5 Envelope
E	B5 Envelope
F	Legal envelope

Base printer sub error codes

First 6 bytes sub error code data (xx can be any value)	Explanation
84 xx 00 x1 x2	This code indicates that the input sensor in the printer is still actuated from the first sheet and the second sheet is ready to arrive at the sensor. (x1=media size, x2=media source) • Check the printer input sensor and flag for correct operation. The flag should operate freely. • Check for debris in the area of the input sensor. • Check the area of the transfer plate and input to the fuser for anything that might cause the paper to remain over the input sensor.
84 xx 01 x1	Video never started on the page. (x1=media size) The video signal never started within 2 inches after actuating the input sensor. Check input sensor and flag.
84 xx 02 x1	This error is the most common type of paper jam. Possible causes are: (x1=media size) • Multi sheet feeding. • A tray size sensing problem. • The media feeding from the paper source is slipping or media is slipping in input to the printer.
84 xx 04	The input sensor was covered during POST by a piece of media still in the machine when it was turned on. • Clear the media from the printer. • Run the base sensor test (input sensor) from the diagnostic tests menu to test the input sensor and flag for correct operation.
84 xx 05	There was media at the input sensor too early. There was not enough time between printhead start and the printhead mirror motor to lock. Possible causes for this error are: • Paper might be pre-staged in the paper source tray. • Paper is picking too fast. • A defective input sensor.
84 00 06	A paper jam has been declared by a smart device. Immediate stop homing not allowed.
84 00 07	A paper jam has been declared by a smart device. Homing was allowed before the stop.
84 xx 0B x1 x2 x3	The option tray pass thru sensor was never actuated by a piece of media. (x1=media size, x2=media source, and x3=paper source where paper jam was detected) • Run the sensor test for the option tray that is displaying the error code and check the pass thru sensor for that tray for correct operation. • Check for paper picking from the selected paper input source. • If the error is being detected from a lower paper source, see if paper is feeding correctly from a paper source above the detected source.
84 xx 0f x1 x2 x3	The option tray pass thru sensor was never deactivated. (x1=media size, x2=media source, and x3=media source where paper jam was detected) • Check the pass thru sensor and flag for correct operation. • Check to see if paper has cleared the pass thru area of the option where the paper jam occurred.
84 00 10	The main motor ID failed to identify either motor after two tries. Possible causes for this error are: • The main drive motor has stalled. • An incorrect main drive motor/gearbox assembly has been installed.

Base printer sub error codes (continued)

First 6 bytes sub error code data (xx can be any value)	Explanation
84 xx 17	There is an envelope or envelopes in the envelope feeder during warm up. An envelope may have partially fed from the envelope feeder. Remove any envelopes from the feeder and check the envelope feeder for correct operation.
84 xx 18	There is media over the Tray 2 pass thru sensor during warm up. Check for media over the sensor. If no media is present, check the pass thru sensor, flag, and cables. - Try running the Input Tray Tests for Tray 2 and see if Tray 2 is feeding paper correctly and all the sensors are working correctly. - Make sure the paper size setting is correct for the size paper in the tray.
84 xx 19	There is media over the Tray 3 pass thru sensor during warm up. Check for media over the sensor. If no media is present, check the pass thru sensor, flag, and cables. - Try running the Input Tray Tests for Tray 3 and see if Tray 3 is feeding paper correctly and all the sensors are working correctly. - Make sure the paper size setting is correct for the size paper in the tray.
84 xx 1A	There is media over the Tray 4 pass thru sensor during warm up. Check for media over the sensor. If no media is present, check the pass thru sensor, flag, and cables. - Try running the Input Tray Tests for Tray 4 and see if Tray 4 is feeding paper correctly and all the sensors are working correctly. - Make sure the paper size setting is correct for the size paper in the tray.
84 xx 1B	There is media over the Tray 5 pass thru sensor during warm up. Check for media over the sensor. If no media is present, check the pass thru sensor, flag, and cables. - Try running the Input Tray Tests for Tray 5 and see if Tray 5 is feeding paper correctly and all the sensors are working correctly. - Make sure the paper size setting is correct for the size paper in the tray.
84 xx 1C	There is media over the Tray 6 pass thru sensor during warm up. Check for media over the sensor. If no media is present, check the pass thru sensor, flag, and cables. - Try running the Input Tray Tests for Tray 6 and see if Tray 6 is feeding paper correctly and all the sensors are working correctly. - Make sure the paper size setting is correct for the size paper in the tray.
84 xx 1D	The envelope feeder pass thru sensor never deactivated. The display of this code indicates that an envelope never crossed over the sensor flag and passed beyond the sensor, or the flag and sensor are not operating properly. Go to "Envelope feeder service check" on page 2-49.
84 xx 1E x1 x2	The envelope feeder pass thru sensor was never activated. (x1=media size, x2=media source) Make sure envelopes are feeding over the sensor. If an envelope feeds over the sensor but the sensor does not activate, check the sensor and flag for correct operation. If the sensor and flag are operating correctly, go to "Envelope feeder service check" on page 2-49.
84 xx 20 x1 x2	The imaged page is not the expected page. (x1=media size, x2=media source) Check the pass thru sensor to make sure it is operating properly. If no problem is found, it may be necessary to try a new pass thru sensor.
84 xx 21 x1 x2	The smart tray x did not pick a sheet of paper. (x1=media size, x2=media source) Check tray x auto compensator and tray parts for correct operation. If no problem is found, go to "Input tray(s) service check" on page 2-64.

Base printer sub error codes (continued)

First 6 bytes sub error code data (xx can be any value)	Explanation
84 xx 22 x1 x2	This code indicates that the media activated the input sensor before the printer EP was ready. (x1=leading edge of media state, x2=trailing edge of media state)
84 xx 23 x1 x2	The transfer servo never started. (x1=media size, x2=leading edge of media state)
84 xx 25	This code indicates that the media has activated the input sensor before the printhead has locked. Enough time has elapsed since printhead start to expect a lock. One of the following may be failing: • Printhead assembly • System board • Printhead cables
84 xx 26	This code indicates that media has activated the input sensor; however, the printhead fell out of lock condition or not enough time elapsed since the printhead start to expect a stable lock. The media may have also reached the input sensor early.
89 00 01 	The exit sensor in the fuser is activated by a piece of media indicating there is a piece of media in the machine during POST. Check for media in the exit of the fuser assembly or redrive assembly. Feed a sheet of paper, and if the same error occurs after clearing the fuser or the same error occurs when no media is present, check the exit sensor assembly, internal fuser assembly cabling, DC fuser cable to the system board, and the cable connection to J14 on the system board. Service tip: Turn the printer off, enter the diagnostic tests menu, and select the base sensor test. Select output sensor and check the sensor for correct operation.
89 xx 03	The fuser exit sensor did not detect the trailing edge of the media going through the fuser assembly. • This failure can be caused by a broken fuser exit sensor flag. • This may also be caused by erratic operation of exit sensor flag or exit sensor or a defective piece of media.
89 xx 04 x1	The fuser exit sensor never actuated from the sheet going through the fuser before the next page begins feeding. (x1=media size)
89 xx 07	The narrow media sensor in the fuser was covered by a sheet of paper when not expected or a piece of media is in the machine during POST. This error can occur when a 202 paper jam has occurred. 1. Remove any piece of media that is over the narrow media sensor. 2. Try to feed a piece of paper through the printer (could run the print test from the diagnostic test menu). If the media stops over the narrow media sensor again, check the flag and sensor for correct operation.
89 xx 0B x1	The fuser exit sensor may be bouncing. This error can be caused by a failing exit sensor or system board.
89 xx 0D	The fuser exit sensor bounced. Check the exit sensor for correct operation. Check the fuser DC cable to J14 on the system board. Also, the system board may be failing.

Base printer sub error codes (continued)

First 6 bytes sub error code data (xx can be any value)	Explanation
8D 00 00	The fuser exit sensor was never activated by the leading edge of the media fed through the printer. • This error can be displayed after a 201 paper jam. • This can be caused by a defective fuser exit sensor assembly. Note: Enter the diagnostic tests menu, select Base Sensor Tests, select Output Sensor Test and check the fuser exit sensor for correct operation. If the test fails, check the internal fuser cabling, DC autoconnect on the fuser frame, fuser DC autoconnect to the system board cable, and the cable connection to J14 on the system board.
8E xx 02 x1 x2	This error can be caused by the input sensor not being activated by a page that was known to have been picked by a source other than the duplex option. Ensure the correct source has been selected and the media is feeding from that source.
8E xx 06 x1	The second pick failed from a paper source when paper was in the source and the only sheet in the paper path.
8E xx 07 x1	The second pick failed from a paper source when paper was in the source. Other sheets may have started to feed, but none were in the paper path.
8E xx 08	The paper in the output bin was flushed. The paper ahead of it, in the paper path, never made it past the output bin sensor or into the tray.
8E xx 09 x1	The second pick from the MPT, Tray 1, or feeder failed when paper was in the source. Other sheets may be in the paper path. (x1=media source)
8E xx 0A x1	The second pick from the MPT, Tray 1, or feeder failed when paper was in the source. Other sheets may have started to pick, but none were in the paper path. x1=media source)
8E x1 0B	The DC autocompensator failed or stalled when trying to feed a sheet of media.
8E xx 11	It took too long for the DC autocompensator motor to come up to speed.
8E xx 13 x1 x2	Late feeding from a paper source interfered with the next pick retry. (x1=media size, x2=media source)

Base printer (fuser) sub error codes

The following sub error codes could help in diagnosing fuser assembly failures:

Base printer (fuser) sub error codes

First 6 bytes sub error code data (xx can be any value)	Explanation
920 Service - Fuser Error (under temperature while printing)	
EN 08 xx yy - 1 EN- zz - - 2	xx= Actual fuser temperature yy= The temperature that the fuser wants to reach. zz= 00 The hot roll took too long to heat up. zz= 01 The hot roll fell too far below the desired temperature while printing. zz= 02 The hot roll was too cool while the system was doing some checking. zz= 03 The hot roll was too cool when heating to the desired temperature.
921 Service - Fuser Error (fuser under temperature while at standby)	
EN 41 xx yy -- 1 EN -- zz -- -- 2	xx= Actual fuser temperature yy= The temperature that the fuser wants to reach. zz= 00 The fuser temperature did not change enough from the fuser lamp temperature at turn on. 01 The fuser temperature rose more than desired from the fuser temperature at turn on.
922 Service - Fuser Error (fuser failed to reach standby temperature)	
EN 42 xx yy -- 1 EN z1 z2 -- -- 2	xx= Actual fuser temperature yy= The temperature that the fuser wants to reach. zz= 00 The fuser temperature did not change enough from the fuser lamp temperature at turn on. 01 The fuser temperature rose more than desired from the fuser temperature at turn on. z2= 00 The hot roll did not reach standby temperature in time during standby. 01 The hot roll took too long to reach the beginning lamp detection temperature. 02 The hot roll reached 'final lamp detection temperature' but took longer than expected. 03 The hot roll timed out trying to reach the 'final lamp detection temperature.' 04 After hot roll lamp detection, did not reach steady state control in time. 05 The hot roll did not reach operating temperature in time.
923 Service - Fuser Error (Fuser Cover Temperature)	
EN 12 xx yy -- 1 EN -- -- -- -- 2	This sub error code displays anytime that the hot roll has reached a higher than desired temperature. xx= Actual fuser temperature yy= The temperature that the fuser wants to reach.
924 Service - Fuser Error (Open Thermistor Failure)	
EN 18 xx -- -- 1 EN -- 00 -- -- 2	This code is usually generated when an open circuit check is made of the thermistor circuit in the fuser. xx= Actual Fuser Temperature

Base printer (fuser) sub error codes (continued)

First 6 bytes sub error code data (xx can be any value)	Explanation
925 Service - Fuser Error (Wrong Fuser Lamp Installed) Note: The following sub error codes are only for an incorrect lamp being installed.	
EN 07 xx yy zz 1 EN -- -- -- 2	This error code is generated anytime an incorrect lamp is detected. xx= 00 Lamp detection performed and found an error. 01 It took long to do lamp detection and NVRAM detected a previous wrong lamp detected. yy= Actual temperature zz= The temperature that the fuser was trying to reach.

Duplex option sub error codes

Status byte 4 contains the most valuable information to help isolate a failing part or assembly in the duplex option and is the only byte contained in the following table.

Status byte 4	Explanation
00	No duplex error. No problem was reported to the engine by the duplex system card.
01	The leading edge of the sheet of paper never arrived at the input sensor.
02	The duplex option system board never received media notification from the printer.
03	The trailing edge of the sheet of paper never cleared the input sensor.
04	The leading edge of the sheet of paper never arrived at the exit sensor. Note: This error is the most common due to the long length of the paper path between the input sensor and the exit sensor.
05	The duplex logic thinks a sheet of paper is feeding to the duplex option due to a sensor malfunction in the paper path when in fact the printer has not sent a command to send a sheet of paper to the duplex option.
06	The exit sensor detected a sheet of paper too early.
07	The sheet of paper trailing edge did not clear the exit sensor in the desired length of time.
08	The feed motor experienced a complete motor stall.
0E	The DC motor is under speed. The motor never reached the correct operating speed.
13	There is paper left in the duplex option. Paper was sensed during the homing operation during POST.
15	There is paper left in the duplex option. Paper was sensed during the DC motor diagnostic test during POST.
18	The DC motor experienced an acceleration error.
3D	There is paper left in the duplex option. Paper was sensed during IR clear during POST.

Envelope feeder sub error codes

First 6 bytes sub error code data (xx can be any value)	Explanation
84 xx 17	There is an envelope in the feeder during POST.
84 xx 1D x1 x2	The envelope feeder pass thru sensor activated but never deactivated. (x1=media size, x2=media source) This error can be caused by an envelope over the pass thru sensor. Remove the envelope and try to feed an envelope. If the envelope stops over the pass thru sensor, try the following: • Enter the diagnostic test menu, select Input Tray Sensor Tests, select Envelope Feeder Sensor Test. • Check the envelope pass thru sensor to ensure it is operating correctly. If the sensor test fails, go to "Envelope feeder service check" on page 2-49. If the test passes, look for anything that might cause the envelope to stop over the sensor.
84 xx 1E x1 x2	An envelope never activated the envelope feeder pass thru sensor or the sensor never sensed the presence of an envelope. (x1=media size, x2=media source) • Make sure the envelope feeds to the pass thru sensor. • Check to see if the envelope actuates the pass thru sensor flag.

User status displays

Each user status screen may also display a warning message. See **“Warning messages (second lines)” on page 2-16** for additional information when they display.

User status displays	Status	Action
Ready <warning>	The printer is ready to receive and process data.	Press Menu to take the printer out of Ready and enter all the menus except the Tests Menu (Busy State).
Ready <fax status> <warning>	The printer displays the fax status.	Press Menu to take the printer out of Ready and enter all the menus except the Tests Menu (Busy State).
Ready HEX <warning>	The printer is ready and HEX Trace is active, which is known as HEX Trace Ready.	Press Menu to take the printer out of Ready and enter the Tests Menu (Busy State). Press Select for the values. Press Menu until Reset Printer displays on the second line. Press Select to reset the printer.
Power Saver HEX <warning>	When in the power saver mode the printer displays this screen instead of the ready screen. When a job is received, the power saver screen remains displayed until the printer exits the power saver mode and the printer warms up.	Press Menu to take the printer offline and access the Ready Menu Group. or Press Go to take the printer out of power saver and initiate a printer warm up cycle.
Power Saver <fax status> <warning>	When the printer has been configured to receive or send faxes the printer displays this screen.	or Press Stop to take the printer offline. Not Ready is displayed and no more data is processed. Press Go to return the printer to the previous state.
Res Reduced <warning>	The printer is processing data or printing pages and the resolution of a page belonging to the current job has been reduced from 600 to 300 dpi to prevent a Memory Full Error.	Press Stop to take the printer offline. Not Ready is displayed, no more data is processed, and the current job in the paper path is processed. Press Go to return the printer to the previous state.
Res Reduced <fax status> <warning>	Displayed whenever the printer has been configured to receive or send faxes.	or Press Menu to access the Busy/Waiting Menu. The following functions may be available: • Cancel Job • Reset Printer • Reset Active Bin • Cancel FAX

User status displays	Status	Action
Waiting <interpreter> <warning>	Displayed until the current job is terminated or until additional data is received on the active link. (PCL, PS, PjL, PPDS, SIC, or HEX) may be displayed for the value for <i>interpreter</i> if the printer is not configured for fax.	Press Go to print the contents of the printer buffer, staple the accumulated sheets, or terminate the collation set. Note: Go does not terminate the current print job. Press Menu to access the Busy/Waiting Menu group. The following functions may be available: • Cancel Job • Reset Printer • Reset Active Bin • Print Buffer.

Warning messages (second lines)

These second line warnings apply to the User status displays (see **“User status displays” on page 2-14**). For example,

Ready <warning>

If none of the conditions exist that are listed in the following table, line two is blank. If any of the messages in the table are displayed, the following actions can be taken:

- Press **Menu** to take the printer offline and access the Ready Menu group. The **Menu** buttons are not active if Menu Lockout is turned on.
- Press **Stop** to take the printer offline. The Not Ready message displays. No additional data is processed from the host computer. Press **Go** to return the printer to the Ready state.

User message	Explanation
Toner Low	If the toner cartridge is low, then Toner Low displays. The Toner Low condition clears whenever the upper front door is opened, and Toner Low displays again if the condition exists after the upper front door is closed.
Tray x Missing	If any of the input trays equipped with tray present sensing are missing, then Tray x Missing displays (where x designates which tray (1 through 5) is missing. If multiple trays are missing, they are prioritized in this order: Tray 1, 2..., then Tray 5. Tray x Missing status clears whenever Tray x is reinserted. If the Tray 1 Missing message does not clear when tray 1 is inserted, go to “Parallel port service check” on page 2-77 . If Tray 2 through 5 Missing message does not clear by inserting the tray, go to “Input tray(s) service check” on page 2-64 .
Tray x Empty	If any of the input trays are empty, then Tray x Empty displays, where x designates which tray (Tray 1 through 5) is empty. If multiple trays are empty, then they are prioritized in this order: Tray 5, Tray 4,...Tray 1. Note: Tray x Empty status clears whenever Tray x is removed. When Tray x is reinserted, it is examined and the appropriate status, if any, displays. Empty status is not displayed for the Envelope Feeder or Multipurpose Feeder.
Tray x Low	If any of the input trays are low, then “Tray x Low” displays, where x designates which tray (1 through 5) is low. If multiple trays are low, they are prioritized in the following order: Tray 5, 4, 3, 2, and 1. Note: Tray x Low clears whenever tray x is empty, or tray x is removed. When tray x is reinserted, it is examined and the appropriate status, if any, displays. The printer cannot detect when the envelope feeder or multipurpose feeder are low.

User status messages

User status messages	Status	Action
Busy	The printer is busy receiving or processing data, or printing data. Note: The printer indicator light blinks while the printer is processing data.	Press Stop to take the printer out of Busy status. Not Ready displays. No additional data processes, but the printer processes all paper currently in the printer paper path. Press Go to return to Ready .
Flushing Buffer	The printer is flushing corrupted print data and the current print job is being discarded.	No button actions are possible while this message displays.
Printing Menu Settings	The printer is processing or printing a list of current settings menus because Print Menu Settings is selected from the menu.	Press Stop to take the printer out of Ready status. Not Ready displays. No additional data is processed, but the printer processes all paper currently in the printer paper path. Press Go to return to Ready status after the page prints. Press Menu to take the printer out of Ready and enter the Tests Menu (Busy state). Press Select for the values. Press Menu until Reset Printer displays on the second line. Press Select to reset the printer.
Printing Directory List	A directory of the flash and disk contents is processing or printing because Print Directory is selected from the menu.	Press Stop to take the printer out of Ready status. Not Ready displays. No additional data is processed, but the printer processes all paper currently in the paper path. Press Go to return to Ready after the page prints. Press Menu to take the printer out of Ready and enter the Tests Menu (Busy state). Press Select for the values. Press Menu until Reset Printer displays on the second line. Press Select to reset the printer.
Restoring Factory Defaults	The printer is restoring factory defaults.	No button actions are possible while this message displays.
Performing Self Tests	The printer is running the normal series of start-up tests after it is powered on. When the tests are complete, the printer returns to Ready .	No button actions are possible while this message displays.
Not Ready (Press Go)	The printer is in the Not Ready state, which means it is not ready to receive or process data. This message displays when Menu is pressed during a print job.	Press Go to take the printer out of the Not Ready state. Press Menu to take the printer out of Ready and enter the Tests Menu (Busy state). Press Menu until Reset Printer displays on the second line. Press Select to reset the printer.
Resetting Printer	The printer is deleting any print jobs in process and restoring all settings to user defaults.	No button actions are possible while this message displays.

User status messages	Status	Action
Formatting Flash (Do Not Power Off)	The flash memory is being formatted.	No button actions are possible while this message displays.
Program Flash (Do Not Power Off)	The flash memory is being programmed, which means fonts or macros are being written to flash memory.	Do not perform any button actions while this message displays.
Formatting Disk	The disk is being formatted.	No button actions are possible while this message displays.
Programming Disk (Do Not Power Off)	The disk is being programmed, which means fonts or macros are being written to disk.	No button actions are possible while this message displays. Note: If information is written to flash memory and to disk at the same time, the Program Flash message displays.
Menus Disabled	The printer menus have been disabled. This occurs when Menu is pressed while the printer is Ready and Menu Lockout is active. The printer display shows this message for one second and then returns to the Ready message.	No button actions are possible while this message displays.
Activating Menu Changes	The printer is reset to activate a printer setting changed in the menus.	No button actions are possible while this message displays.

User attendance messages

User attendance messages

Primary message	Secondary message	Explanation
Change Cartridge Invalid Refill		Select one of the following actions: - Remove the toner cartridge and install a new cartridge. - Press and hold Select and press Return to display debug data for the engine and cartridge code. Note: This message may help diagnose a potential printer problem.
Change <input source> <Custom Type name>		This message displays when the user should change the media installed in one of the input options. <input source>=Tray 1, Tray 2, Tray 3, Tray 4, Tray 5, MPF Feeder, Envelope Feeder. <Custom Type name>=Custom 1 through Custom 6 using the MarkVision™ utility. When the printer is prompting for one of the custom types which has been named by the user, then only the custom type name is displayed on line 2. The name may be truncated to fit the display.
Change <input source> <custom string>		This message displays when the user should change the media installed in one of the input options. <input source>=Tray 1, Tray 2, Tray 3, Tray 4, Tray 5, MPF Feeder, Envelope Feeder. <custom string>= a user definable name.
Change <input source> <size>		This message displays when the user should change the media installed in one of the input options: <input source>=Tray 1, Tray 2, Tray 3, Tray 4, Tray 5, MPF Feeder, Envelope Feeder. <size>=letter, legal, B5, A4, Executive, Universal, A5, B4, A3, 11x17, Folio, or Statement. For envelopes, <size>=7¾ Envelope, 9 Envelope, 10 Envelope, DL Envelope, C5 Envelope, B5 Envelope, or other Envelope.
Change <input source> <type><size>		This message displays when the user should change the media installed in one of the input options. <input source>=Tray 1, Tray 2, Tray 3, Tray 4, Tray 5, MPF Feeder, Envelope Feeder. <type>=Bond, Card stock, Colored, Envelope, Labels, Ltrhead, Plain, Preprint, or Transparency. <size>=letter, legal, B5, A4, Executive, Universal, A5, B4, A3, 11x17, Folio, or Statement. For envelopes, <size>=7¾ Envelope, 9 Envelope, 10 Envelope, DL Envelope, C5 Envelope, B5 Envelope, or other Envelope.

User attendance messages (continued)

Primary message	Secondary message	Explanation
Check Duplex Connection		This messages displays for the following conditions: • The duplex option may have been removed from the printer, possibly to clear a paper jam or to remove the option. • The duplex option may be attached to the printer but a communications problem may prevent the printer from detection. For example, there may be a poor connection or a hardware failure. The following actions may be taken: • If the option was temporarily removed or not connected properly, reattach or reconnect it. • Press Go to execute a configuration change which notifies the printer the option has been hot unplugged (removed with the power on). Note: This action is not available if the printer is in Diagnostics Mode or running diagnostics. • If the device is experiencing a hardware problem, turn the printer off and on. If the message continues to be displayed, go to "Duplex option service check" on page 2-47.
Check Tray x Connection		Tray x=Tray 2, Tray 3, Tray 4, or Tray 5 This messages displays for the following conditions: • The specified device may have been removed from the printer, possibly to clear a paper jam or to uninstall the option. • The option may be attached to the printer but a communications problem may prevent the printer from detecting the option. For example, there may be a poor connection or a hardware failure. The following actions may be taken: • If the option was temporarily removed or not connected properly, reattach or reconnect it. • Press Go to execute a configuration change which notifies the printer the option has been hot unplugged (removed with the power on). Note: This action is not available if the printer is in Diagnostics Mode or running diagnostics. • If the device is experiencing a hardware problem, turn the printer off and on. If the message continues to be displayed, go to "Input tray(s) service check" on page 2-64.
Close Finisher Side Door		Close the finisher side door. If the message does not clear automatically when the door is closed, go to "StapleSmart finisher service check" on page 2-86.
Close Finisher Top Cover		Close the finisher top cover. If the message does not clear automatically when the cover is closed, go to "StapleSmart finisher service check" on page 2-86.
Delete All Jobs Go/Stop?		When the user has selected the Print and Hold Delete All Jobs selection, this message is displayed. The following actions may be taken: • Press Go to confirm the selection. All jobs are deleted. • Press Return or Stop to cancel the delete operation.

User attendance messages (continued)

Primary message	Secondary message	Explanation
Disk Corrupted Reformat?		The printer has detected there are errors on the hard disk that cannot be corrected. The disk cannot be used until it is reformatted. Warning: All data on the disk will be lost if you format the disk. The following actions can be taken: • Power off and remove the disk. The disk will not be formatted. • Press Go to format the disk. All data is lost when you format the disk.
Empty Box M		This message is displayed when the hole punch alarm is on and the printer informed by the code the hole punch box M is full. The following actions may be taken: • Empty the hole punch box. • Press Go to ignore the message. The Box M Full appears on line 2 of the display and the job is printed without hole punching. The message remains until the box is emptied. If this message continues to be displayed when the box has been emptied, go to “StapleSmart finisher service check” on page 2-86.
Insert Box M		This message is displayed when the hole punch box is missing or installed incorrectly. The message is displayed during any of the following times, regardless of the hole punch alarm setting: • At POST • After the finisher side door has been closed • Before the first page of a job requesting hole punch. The message displays once per job. The following actions can be taken: • Install the hole punch box. • Press Go to ignore the message. The Box M Missing message appears on the status line. A job that is set for hole punching will not be punched. The message continues to display on all subsequent jobs that request hole punching. If this message cannot be cleared after inserting the box, go to “StapleSmart finisher service check” on page 2-86.
Insert Cartridge or Close Door		This message displays when the printer front door is open or the print cartridge is missing. If this message cannot be cleared, go to “Cover closed switch/cable service check” on page 2-44.
Insert Staple Cartridge		This message displays when the staple cartridge is missing or installed incorrectly. The message appears, regardless of the Staple Alarm setting, at the following times: • At POR • After the Stapler Door has been closed. The following actions can be taken: • Install the stapler cartridge. • Press Go to clear the message. The printer handles stapled jobs as if the staple cartridge were installed, but empty. The Staples Empty message appears on the status line and the Load Staples may display.

User attendance messages (continued)

Primary message	Secondary message	Explanation
Insert <tray>		<tray>=Tray 1, Tray 2, Tray 3, Tray 4, or Tray 5. The printer detects a tray needs to be inserted. The printer does not continue until it detects the tray is inserted. Note: This situation usually occurs when the tray is refilled during a job. To refill a tray during a printing session, press Stop and wait for pages to reach the output bin before refilling the tray. The following actions may be taken: • Insert the requested tray. • Press Menu until Busy/Waiting displays. The following selections are available: - Cancel Job - Reset Printer - Reset Active Bin If the message cannot be cleared, go to “Internal tray card/paper size sensing service check” on page 2-66 or “Input tray(s) service check” on page 2-64.
Install Bin x or Cancel Job		Bin x=Bin 1, Bin 2, or Bin 3. This message is displayed when a paper handling option has been hot unplugged. The printer requires the reinstallation of the option to print a page which has been formatted by the interpreter before the option was removed. The following actions may be taken: • Install the option. • Press Menu until Busy/Waiting displays. Select one of the following: - Cancel Job - Reset Printer - Reset Active Bin If the message cannot be cleared, go to “Input tray(s) service check” on page 2-64.
Install Duplex or Cancel Job		This message is displayed when a duplex option has been hot unplugged. The printer requires the reinstallation of the option to print a page which has been formatted by the interpreter before the option was removed. The following actions may be taken: • Install the duplex option. • Press Menu until Busy/Waiting displays. Select one of the following: - Cancel Job - Reset Printer - Reset Active Bin If the message cannot be cleared, go to “Duplex option service check” on page 2-47.
Install Env Feed or Cancel Job		This message is displayed when the envelope feeder has been hot unplugged. The printer requires the reinstallation of the feeder to print a page which has been formatted by the interpreter before the feeder was removed. The following actions may be taken: • Install the envelope feeder. • Press Menu until Busy/Waiting displays. Select one of the following: - Cancel Job - Reset Printer - Reset Active Bin If the message cannot be cleared, go to “Envelope feeder service check” on page 2-49.

User attendance messages (continued)

Primary message	Secondary message	Explanation
Install Tray x or Cancel Job		Tray x=Tray 2, Tray 3, Tray 4, Tray 5. This message is displayed when a paper handling option has been hot unplugged. The printer requires the reinstallation of the option to print a page which has been formatted by the interpreter before the option was removed. The following actions may be taken: • Install the option. • Press Menu until Busy/Waiting displays. Select one of the following: - Cancel Job - Reset Printer - Reset Active Bin If the message cannot be cleared, go to “Input tray(s) service check” on page 2-64.
Load Staples		This message displays when the Staples Empty Alarm is activated and one of the following occurs: • There are no staples in the stapler. • The maximum number of staples have been fired after the engine has reported that the staple cartridge is low. • The printer does not detect the staple cartridge is present. The following actions may be taken: • Install a new staple cartridge to clear this message and select Start or Continue to resume printing the staple job. • Choose to ignore the Load Staples message for this print job by pressing Go or Select. The printer starts or resumes printing, but does not staple the rest of the job. • Press Menu until Busy/Waiting displays. The following actions may be available: - Cancel Job - Reset Printer - Reset Active Bin
Priming Failed Retry. Go/Stop?		This message displays when an error has occurred during the staple priming operation. This message not only notifies the user that a specific error interfered with the priming, but allows the user to request the process begin again. The following actions are available: • Press Go to restart the priming operation. • Press Return or Stop to cancel the priming operation.

User attendance messages (continued)

Primary message	Secondary message	Explanation
Reattach Bins x–y		Bins x–y=Bins 1 to 5, Bins 2 to 6, or Bins 6 to 10 This messages displays for the following conditions: • The specified output bins may have been removed from the printer, possibly to clear a paper jam or to remove the option. • The option(s) may be attached to the printer but a communications problem may prevent the printer from detecting the option. For example, there may be a poor connection or a hardware failure. The following actions may be taken: • If the option was temporarily removed or not connected properly, reattach or reconnect it. • Press Go to execute a configuration change which notifies the printer the option has been hot unplugged (removed with the power on). Note: This action is not available if the printer is in Diagnostics Mode or running diagnostics. • If the device is experiencing a hardware problem, turn the printer off and on. If the message continues to be displayed, go to “Input tray(s) service check” on page 2-64.
Reattach Envelope Feeder		This messages displays for the following conditions: • The feeder may have been removed from the printer, possibly to clear a paper jam or to remove the option. • The feeder may be attached to the printer but a communications problem may prevent the printer from detecting the option. For example, there may be a poor connection or a hardware failure. The following actions may be taken: • If the option was temporarily removed or not connected properly, reattach or reconnect it. • Press Go to execute a configuration change which notifies the printer the option has been hot unplugged (removed with the power on). Note: This action is not available if the printer is in Diagnostics Mode or running diagnostics. • If the device is experiencing a hardware problem, turn the printer off and on. If the message continues to be displayed, go to “Envelope feeder service check” on page 2-49.
Reattach Output Bin x		Bin x=Bin 1, Bin 2, or Bin 3 This messages displays for the following conditions: • The specified output bin may have been removed from the printer, possibly to clear a paper jam or to remove the option. • The option may be attached to the printer but a communications problem may prevent the printer from detecting the option. For example, there may be a poor connection or a hardware failure. The following actions may be taken: • If the option was temporarily removed or not connected properly, reattach or reconnect it. • Press Go to execute a configuration change which notifies the printer the option has been hot unplugged (removed with the power on). Note: This action is not available if the printer is in Diagnostics Mode or running diagnostics. • If the device is experiencing a hardware problem, turn the printer off and on. If the message continues to be displayed, go to “Output expander service check” on page 2-72.

User attendance messages (continued)

Primary message	Secondary message	Explanation
31 Defective Print Cartridge		Error code 31 displays when the top front cover is closed and a defective print cartridge is detected. It may take the printer 10-20 seconds to determine if the print cartridge is defective. Depending on the setting of the Machine Class ID the printer may be allowed to print pages during this 10-20 second interval. If pages are allowed to print, they are not reprinted once a good print cartridge is inserted. Note: This error indicates the printer was able to read the cartridge ID, but the ID did not pass the verification test. To pass the verification test, the ID read from the print cartridge must match the ID from the last "good" print cartridge or the same ID must be read from the print cartridge twice. The last "good" print cartridge ID is stored in NVRAM.
32 Unsupported Print Cartridge		Error 32 displays when the top cover is closed and an unsupported print cartridge is detected. It may take the printer 10-20 seconds to determine if the print cartridge is supported. Depending on the setting of the Machine Class ID the printer may be allowed to print pages during this 10-20 second interval. If pages are allowed to print, then they are not reprinted once a good print cartridge is inserted. If this does not fix the problem, go to "Smart contact assembly service check" on page 2-85.
34 Short Paper		The printer determines the paper length is too short to print the formatted data. This occurs when the printer does not know the actual paper size loaded in the tray. For auto-size sensing trays, this error occurs if the paper stop is in the incorrect position. Make sure the Paper Size setting is correct for the size paper that is being used.
36 Resolution Reduced		The resolution of the page has been reduced from 600 dpi to 300 dpi to prevent a Memory Full error. This message can only occur if the Resolution Reduction setting is turned on. Note: 1200 dpi pages are not resolution reduced. If a 1200 dpi job runs out of memory, a Memory Full error displays.
37 Insufficient Collation Area		This message displays when the printer memory is insufficient to perform the Flash Memory Defragment operation. Note: This message is posted prior to the actual start of the defragment operation. The printer code determines if enough printer memory is available to complete the defragment operation. The user should not be concerned with losing resources stored in the flash option. The following actions may be taken: - Press Go to clear the message. To perform the defragment operation: - Delete fonts, macros, and other data in RAM. - Install additional printer memory. - Press Menu until Busy/Waiting appears. The following actions are available: - Cancel Job - Reset Printer - Reset Active Bin

User attendance messages (continued)

Primary message	Secondary message	Explanation
37 Insufficient Memory	Held Jobs may be lost	This message displays when the printer memory used to restore the Print and Hold jobs from the disk and found that some or all of the jobs could not be restored. The printer ran out of memory while attempting to restore the jobs. - Press Go to clear the message. Some of the Print and Hold jobs on the disk will not be restored. They remain on the disk, but cannot be accessed. - Press Menu until Busy/Waiting appears. The following functions may be available: - Cancel Job - Reset Printer - Reset Active Bin
38 Memory Full		This message displays when the printer is processing an incoming job and there is insufficient memory available to continue processing the job. The following actions may be taken: - Press Go to clear the message. Perform the defragment operation: - Perform the defragment operation - Delete fonts, macros, and other data in RAM - Install additional memory - Press Menu to display Busy/Waiting. The following functions may be available: - Cancel Job - Reset Printer - Reset Active Bin
39 Complex Page		This message displays when the page is too complex to print. The following actions may be taken: - Press Go to clear the message and continue the job. Some data loss may occur. Simplify the print job and reprint, if necessary. - Press Menu until Busy/Waiting appears. The following selections are possible: - Cancel Job - Reset Printer - Reset Active Bin
50 PPDS Font Error		This message displays when the PPDS interpreter has encountered a font error. Note: This error may only occur when the printer is formatting PPDS print data. The following actions may be taken: - Press Go to clear the message and continue processing the job. - Press Menu until Busy/Waiting appears. The following are available: - Cancel Job - Reset Printer - Reset Active Bin
51 Defective Flash		This message displays when the printer detects a defective flash. This error may occur at power on, or during flash format and write operations. Press Go to clear the message. The flash is marked as bad and normal operation continues. Flash operations are not allowed until the problem is resolved.
52 Flash Full		This message displays when there is not enough free space in the flash memory to hold the resources that have been requested to be written to flash.

User attendance messages (continued)

Primary message	Secondary message	Explanation
53 Unformatted Flash		This message displays when the printer detects an unformatted flash at power on. Press Go to clear the message. The flash is marked as bad and normal operation continues. Flash operations are not allowed until the flash is formatted.
54 Standard Network Software Error		This error displays when a network port is detected, but the printer cannot establish communications with it.
54 Network x Software Error		This error displays when a network port is detected, but the printer cannot establish communications with it.
55 Unsupported option in Slot x		An unsupported option is installed in the specified solutions port. Power off the printer and remove the unsupported option in the specified slot.
55 Unsupported Flash in Slot x		An unsupported flash option is installed in the solutions port. Power off the printer and remove the unsupported flash option in the specified slot.
56 Standard Serial Disabled		This error displays when data is sent to the printer across the standard serial port, but the port has been disabled.
56 Serial Port x Disabled		This error displays when data is sent to the printer across an optional parallel port, but the port has been disabled. Once this message displays, reporting of further errors is suppressed until the menus are entered, or the printer is reset.
56 Standard USB Port Disabled		Displayed when status is requested over the USB port, but the port has been disabled. Once the error has been displayed for the first time, reporting of further errors is suppressed until the menus are entered or the printer is reset. The following actions may be taken: • Press Go to clear the message. The printer discards any data received on the USB port. • Press Menu until Busy/Waiting appears. The following are available: - Reset Printer - Reset Active Bin
56 Standard USB Port x Disabled		Displayed when status is requested over the USB port indicated, but the port has been disabled. Once the error has been displayed for the first time, reporting of further errors is suppressed until the menus are entered or the printer is reset. The following actions may be taken: • Press Go to clear the message. The printer discards any data received on the USB port. • Press Menu until Busy/Waiting appears. The following are available: - Reset Printer - Reset Active Bin

User attendance messages (continued)

Primary message	Secondary message	Explanation
56 Standard Parallel Port Disabled		This error is displayed when data is sent to the printer across the parallel port, but the parallel port has been disabled. Once this message is displayed, reporting of further errors is suppressed until the menus are entered, or the printer is reset. The following actions may be taken: - Press Go to clear the message. The printer discards any data received on the parallel port. - Press Menu until Busy/Waiting appears. The following are available: - Reset Printer - Reset Active Bin
56 Parallel Port x Disabled		This error is displayed when data is sent to the printer across the parallel port, but the parallel port indicated has been disabled. Once this message is displayed, reporting of further errors is suppressed until the menus are entered, or the printer is reset. The following actions may be taken: - Press Go to clear the message. The printer discards any data received on the parallel port. - Press Menu until Busy/Waiting appears. The following are available: - Reset Printer - Reset Active Bin
57 Configuration Change		The printer has attempted to restore the Print and Hold jobs from the disk and found that some or all of the jobs could not be restored. The printer could not restore jobs from the disk because the configuration of the printer has changed. This message alternates with the secondary message, "Held jobs may not be restored." Some configuration changes that may cause this condition are: - Code version change - Paper handling option is removed - Disk has been moved to a different model printer. Press Go to clear the message. Some of the Print and Hold jobs stored on the disk will not be restored. They remain on the disk, but cannot be accessed.
58 Too Many Trays Attached		This error code displays when too many input trays are attached to the printer.
58 Too Many Disks Installed		This error displays when too many disks are attached to the printer.
59 Incompatible Output Bin x		An incompatible output bin is installed. For Output Bin x, x=1, 2, or 3. Remove the incompatible output bin and press Go to clear the message. Note: If the user installed the incompatible device to satisfy a Check Device Connections/reattach message, the user should reinstall an associated compatible option or hot unplug the option.
59 Incompatible Envelope Feeder		An incompatible envelope feeder is installed. Remove the incompatible feeder and press Go to clear the message. Note: If the user installed the incompatible device to satisfy a Check Device Connections/reattach message, the user should reinstall an associated compatible option or hot unplug the option.

User attendance messages (continued)

Primary message	Secondary message	Explanation
59 Incompatible Tray x		An incompatible tray is installed. For Tray x, x= 2, 3, 4, or 5. Remove the incompatible tray and press Go to clear the message. Note: If the user installed the incompatible device to satisfy a Check Device Connections/reattach message, the user should reinstall an associated compatible option or hot unplug the option.
59 Incompatible Duplex		An incompatible duplex option is installed. Remove the incompatible duplex option and press Go to clear the message. Note: If the user installed the incompatible device to satisfy a Check Device Connections/reattach message, the user should reinstall an associated compatible option or hot unplug the option.
61 Defective Disk		This error code displays when the printer detects a defective disk. This error may occur at power on or during disk format and write operations. While this message displays, press Go to clear the message. The disk is marked defective and normal printer operations continue. Disk operations are not allowed with a defective disk. The Format Disk menu is not shown.
62 Disk Full		This error code displays when there is not enough free space on the disk to hold the resources that have been requested to be written to the disk. This message displays for both resource and PostScript Disk operators when the disk is full.
63 Unformatted Disk		This error code displays when the printer detects an unformatted disk at power on. Press Go to clear the message. The disk is marked as bad and normal operation continues. Disk operations are not allowed until the disk is formatted.
64 Unsupported Disk Format		The printer detects an unsupported disk format at POR. Press Go to clear the message. The disk is marked as bad and normal operation continues. Further disk operations are not allowed until the disk is formatted.
80 Scheduled Maintenance		The operator panel displays this message at each 300K page count interval. It is necessary to replace the fuser assembly, transfer roller, charge roll, and pick rolls at this interval to maintain the print quality and reliability of the printer. The parts are available as a maintenance kit. For more information, go to "Scheduled maintenance" on page 6-1.
81 Engine Code CRC Failure		This error displays when the microcode to be programmed in the engine flash code module has failed a CRC check. Press Go to clear the message. The microcode data is discarded and must be re-transmitted from the host computer.
88 Toner Low		This message displays when toner low occurs and the toner low alarm is activated. Press Go to clear this message.

User attendance messages (continued)

Primary message	Secondary message	Explanation
200 Paper Jam Remove Cartridge	Leave Job in Finisher	Primary: Paper is jammed at the printer input sensor. Open the printer upper front door and remove the print cartridge to access the paper jam area. Secondary: When this message is displayed, do not remove accumulated sheets during the jam clearance procedure as the printer will not reprint the removed sheets. Also, if the accumulated sheets are removed, the portion of the job printed after the jam will not be stapled.
201 Paper Jam Remove Cartridge	Leave Job in Finisher	Primary: Paper is jammed between the printer input and exit sensors. Open the printer upper front door and remove the print cartridge to access the jam area. Secondary: When this message is displayed, do not remove accumulated sheets during the jam clearance procedure as the printer will not reprint the removed sheets. Also, if the accumulated sheets are removed, the portion of the job printed after the jam will not be stapled.
202 Paper Jam Open Rear Door	Leave Job in Finisher	Primary: Paper is jammed at the printer exit sensor. Open the printer rear door to access the jam area. Secondary: When this message is displayed, do not remove accumulated sheets during the jam clearance procedure as the printer will not reprint the removed sheets. Also, if the accumulated sheets are removed, the portion of the job printed after the jam will not be stapled.
231 Duplex Paper Jam - Rear	Leave Job in Finisher	Primary: A piece of media did not arrive at the duplex input sensor, but did leave the printer exit sensor. Secondary: When this message is displayed, do not remove accumulated sheets during the jam clearance procedure as the printer will not reprint the removed sheets. Also, if the accumulated sheets are removed, the portion of the job printed after the jam will not be stapled.
232 Duplex Paper Jam - Rear	Leave Job in Finisher	Primary: A piece of media did not clear the duplex input sensor but did leave the printer exit sensor. Secondary: When this message is displayed, do not remove accumulated sheets during the jam clearance procedure as the printer will not reprint the removed sheets. Also, if the accumulated sheets are removed, the portion of the job printed after the jam will not be stapled.
233 Duplex Paper Jam - Rear	Leave Job in Finisher	Primary: A piece of media failed to make the duplex double feed sensor during turnaround. Secondary: When this message is displayed, do not remove accumulated sheets during the jam clearance procedure as the printer will not reprint the removed sheets. Also, if the accumulated sheets are removed, the portion of the job printed after the jam will not be stapled.
234 Duplex Paper Jam - Rear	Leave Job in Finisher	Primary: The media did not reach the duplex exit sensor. Secondary: When this message is displayed, do not remove accumulated sheets during the jam clearance procedure as the printer will not reprint the removed sheets. Also, if the accumulated sheets are removed, the portion of the job printed after the jam will not be stapled.

User attendance messages (continued)

Primary message	Secondary message	Explanation
235 Duplex Paper Jam - Front	Leave Job in Finisher	Primary: A piece of media is over the duplex double feed sensor. Secondary: When this message is displayed, do not remove accumulated sheets during the jam clearance procedure as the printer will not reprint the removed sheets. Also, if the accumulated sheets are removed, the portion of the job printed after the jam will not be stapled.
236 Duplex Paper Jam - Front	Leave Job in Finisher	Primary: A piece of media did not leave the duplex exit sensor. Secondary: When this message is displayed, do not remove accumulated sheets during the jam clearance procedure as the printer will not reprint the removed sheets. Also, if the accumulated sheets are removed, the portion of the job printed after the jam will not be stapled.
237 Duplex Paper Jam - Front	Leave Job in Finisher	Primary: A piece of media did not reach the printer input sensor. Secondary: When this message is displayed, do not remove accumulated sheets during the jam clearance procedure as the printer will not reprint the removed sheets. Also, if the accumulated sheets are removed, the portion of the job printed after the jam will not be stapled.
238 Duplex Paper Jam	Leave Job in Finisher	Primary: A piece of media is over one of the duplex sensors during a reset. Secondary: When this message is displayed, do not remove accumulated sheets during the jam clearance procedure as the printer will not reprint the removed sheets. Also, if the accumulated sheets are removed, the portion of the job printed after the jam will not be stapled.
239 Duplex Paper Jam	Leave Job in Finisher	Primary: A paper jam has occurred in the duplex option. Secondary: When this message is displayed, do not remove accumulated sheets during the jam clearance procedure as the printer will not reprint the removed sheets. Also, if the accumulated sheets are removed, the portion of the job printed after the jam will not be stapled.
24x Paper Jam Check Tray x		Paper is jammed around Tray x. (x=tray 1 thru 5) Try opening Tray x. If the tray is difficult to remove, then you may have to remove the tray above or below tray x to remove the jammed pages.
250 Paper Jam Check MP Feeder		Paper is jammed in the multipurpose feeder.
260 Paper Jam Check Envelope Feeder		Paper is jammed in the envelope feeder.
27x Paper Jam Check Output		Paper is jammed in output bin. Open the rear door to access the jammed pages.

User attendance messages (continued)

Primary message	Secondary message	Explanation
280 Paper Jam Check Finisher	Leave Job in Finisher	Primary: Paper is jammed in the finisher option. Open the finisher option side door or top cover to access the jammed pages. Secondary: When this message is displayed, do not remove accumulated sheets during the jam clearance procedure as the printer will not reprint the removed sheets. Also, if the accumulated sheets are removed, the portion of the job printed after the jam will not be stapled.
281 Paper Jam Check Finisher	Remove Job from Finisher	Primary: Paper is jammed in the finisher option. Open the finisher option side door or top cover to access the jammed pages. Secondary: When this message is displayed, remove the job from the finisher. The printed will not reprint the removed sheets.
282 Staple Jam Check Stapler	Remove Job from Finisher	Primary: A staple jam has been detected during normal stapler operation. Secondary: The printer flashes the secondary message to indicate that all accumulated sheets should be removed during the jam clearance.
283 Staple Jam Check Stapler		A staple jam has been detected during the priming operation. Note: Press Go to initiate priming and resume printing while either of the primary or secondary messages displays.
1565 Emul Error Load Emul Option		This message appears when the IPDS emulation version contained in the SIMM does not function with the printer code. This message automatically clears in 30 seconds, and the IPDS emulation is disabled. No other printer functions are affected. The correct IPDS emulation must be downloaded.

User line 2 link messages

If the printer is locked on a particular link, the link indication displays. If the printer is ready to process any link, no messages display. Link messages are listed in the following table.

User message	Explanation
Parallel	Standard Parallel Port, if available.
Serial	Standard Serial Port, if available.
Serial x	Serial Port is attached to PCI connector x, where x=1, 2, or 3.
Network x	Network card x is attached to PCI connector x, where x=1, 2, or 3.
LocalTalk x	LocalTalk Card x is attached to PCI connector x, where x=1, 2, or 3.
Infrared	Standard Infrared port, if available.
Infrared x	Infrared Port x is attached to PCI connector x, x=1, 2, or 3.

Check device connection messages

The messages in the following table display when the printer loses communications with one of the following devices.

User status message	Explanation
Check Env Feeder Connection	Check envelope feeder connection.
Check Tray x Connection	Check tray x, where x=1, 2, 3, 4, or 5.
Check Duplex Connection	Check duplex option connection.

The messages in the following table can occur in two ways. The specified device could have been removed from the printer, for instance to clear a paper jam. Otherwise, the device can still be attached to the printer, but is experiencing a communications problem, not fully connected, or having a hardware failure.

If the device is temporarily removed or not connected properly, then the user is advised to reattach it. When the option is recognized, the printer automatically clears the error and continues. If the option is experiencing a hardware problem, turn the printer off and back on. If the error occurs again, the user is advised to turn the printer off, remove the option, and call for service.

User status message	Explanation
Turn Printer OFF to Enable Option	A printer option, Input Tray, or Envelope Feeder, has been attached while the printer is powered on. To use the option, the printer must first be powered off and back on again. Data loss results if print jobs are active when the printer is power cycled. If a print job is active, then remove the option and finish the job. The printer automatically clears the message once the option is removed. Once the job is complete, turn off the printer and attach the option again.
Insert Duplex Front Cover	The duplex front access cover is not installed.
Close Duplex Rear Door	The duplex rear door is open.

Power-On Self Test (POST)

When you turn the printer on, it performs a Power-On Self Test. Check for correct POST functioning of the base printer by observing the following:

1. The LED comes on.
2. The operator panel displays one and a half row of pels, and then clears.
3. Diamonds scroll across the display, and then clear.
4. The operator panel displays one and a half row of pels, and then clears.
5. The top line of the operator panel displays one square block of pels that turn on one at a time until all sixteen blocks display and then they all turn off.

For example:

*	
32MB	350 Mhz

6. Performing Self Test appears on the display.
 - The high-capacity option elevator tray moves to the uppermost position if installed.
 - The duplex option is checked if installed.
7. Busy appears on the display.

If present, the following errors or messages may display:

 - Close Door or Insert Cartridge display if the upper front cover is open or the print cartridge is missing.
 - Any cartridge errors, such as Defective Cartridge, Prebate Violation, or Missing Cartridge.
8. The fuser lamp turns on. The fuser takes longer to warm up from a cold start than a warm start.
9. The main fan turns on.
10. The main drive motor turns on.
11. The developer drive assembly drives the developer shaft in the toner cartridge.
12. The exit rollers turn.
13. The operator panel LED starts blinking.
14. Ready appears on the display.

Symptom tables

Base printer symptoms

Symptom	Action
Dead machine	Go to "Dead machine service check" on page 2-45.
Operator panel—one or more buttons do not work.	Go to "Operator panel buttons service check" on page 2-70.
Operator panel—display is blank. Printer sounds 5 beeps.	Go to "Operator panel service check" on page 2-70.
Operator panel—display is blank. Printer does not sound 5 beeps.	Replace the operator panel assembly.
Operator panel continuously displays all diamonds, sounds 5 beeps, and does not complete POST.	Go to "Operator panel service check" on page 2-70.
Paper feed problems—base printer or integrated 500-sheet paper tray	Go to "Paper feed service check" on page 2-76.
Paper jams at exit of redrive assembly—duplex option not installed.	Go to "Paper feed service check" on page 2-76.
Paper jams at exit of redrive assembly—duplex option installed.	Go to "Duplex option service check" on page 2-47.
Fuser solenoid fails to operate.	Go to "Fuser solenoid service check" on page 2-55.
Print quality—black page	Go to "Print quality—all black page" on page 2-79.
Print quality—blank page	Go to "Print quality—blank page." on page 2-79.
Print quality—light print	Go to "Print quality—light print" on page 2-84.
Print quality—background	Go to "Print quality—background" on page 2-82.
Print quality—residual image	Go to "Print quality—residual image" on page 2-83.
Print quality—skew	Go to "Paper feed service check" on page 2-76.
Print quality—banding	Go to "Print quality—banding" on page 2-83.
Print quality—random marks	Go to "Print quality—random marks" on page 2-80.
Print quality—toner on backside of printed page.	Go to "Print quality—toner on backside of printed page" on page 2-84.
Print quality—vertical black bands on edge of copy.	Go to "Print quality—black bands on outer edges of the page" on page 2-83.
Unable to clear a 32-Unsupported Print Cartridge user error message.	Go to "Smart contact assembly service check" on page 2-85.

High-capacity feeder (2000-sheet) symptoms

Symptom	Action
The printer does not recognize the high-capacity feeder installed.	Go to "High-capacity feeder input tray service check" on page 2-56.
Paper feed problem with the high-capacity feeder.	Go to "High-capacity feeder input tray service check" on page 2-56.

Paper tray symptoms

Symptom	Action
Paper feed problem with 250-Sheet Paper Tray.	Go to “Input tray(s) service check” on page 2-64.
Paper feed problem with 500-Sheet Paper Tray.	Go to “Input tray(s) service check” on page 2-64.
Media fails to pass through from the lower attached Paper Tray option to the next higher mounted option.	Go to “Input tray(s) service check” on page 2-64.

Duplex option symptoms

Symptom	Action
Paper feed problem with Duplex.	Go to “Duplex option service check” on page 2-47.
Paper jams at Paper Removal Tray.	Go to “Duplex option service check” on page 2-47.
Paper skews in the Duplex Option.	Go to “Duplex option service check” on page 2-47.
Paper fails to pass from lower option through the Duplex Option.	Go to “Duplex option service check” on page 2-47.

Envelope feeder symptoms

Symptom	Action
Envelopes do not feed from the envelope feeder.	Go to “Envelope feeder service check” on page 2-49.
Envelopes do not feed properly into base printer.	Go to “Envelope feeder service check” on page 2-49.

Output expander

Symptom	Action
Printer does not display Output Bin Full.	Go to “Output bin sensor standard tray service check” on page 2-72.
Paper does not feed all the way into the output tray.	Go to “Output expander service check” on page 2-72.

StapleSmart finisher

Symptom	Action
Finisher does not staple.	Go to “StapleSmart finisher service check” on page 2-86.
Printer does not recognize StapleSmart Finisher Option as being installed.	Go to “StapleSmart finisher service check” on page 2-86.
Close Top Cover displayed. Unable to clear or reset message (POST incomplete).	Go to “StapleSmart finisher service check” on page 2-86.
Close Finisher Side Cover displayed. Unable to clear or reset message (POST incomplete).	Go to “StapleSmart finisher service check” on page 2-86.
Paper feeds into finisher option output tray. Paper is not stapled and paper does not align with the right side.	Go to “StapleSmart finisher service check” on page 2-86.
Paper feeds into finisher option. Paper aligns with the right side. The stapler does not staple.	Go to “StapleSmart finisher service check” on page 2-86.
Paper is transported into the output tray but is not stapled.	Go to “StapleSmart finisher service check” on page 2-86.
Stapled sheets are not transported to the output tray.	Go to “StapleSmart finisher service check” on page 2-86.

Service Checks

Anytime the system board is replaced, the Configuration ID must be reset in NVRAM. Go to **“Setting configuration ID” on page 3-18**.

Review the following information before performing any service checks.

- Paper feed problems (especially paper jams): Go to **“Viewing the error log” on page 3-6** and check the printer error log for indications of repetitive entries that help to isolate a problem to a particular area of the printer or option.
- Paper feed problems with error message: Use the **“Sub error codes for 9xx and 2xx error codes” on page 2-5** to help diagnose the problem.
- Print quality problems: Go to **“Print quality test pages” on page 3-20** and print a test page to help diagnose problems before changing any settings or working on the printer.
- Use the resident diagnostics test provided to help isolate a problem before taking the machine apart or removing any options.

5-Bin mailbox service check

Service tip: The majority of the mechanical components can be observed during operation by removing the left and right side covers.

Make sure the option(s) are correctly installed and the machine is configured correctly before attempting to service the unit.

Problems with excessive static electricity buildup.

	FRU	Action
1	Front cover assembly	Check the front cover assembly to make sure the ESD brush ground lead is firmly attached to the 5-Bin mailbox frame. Also check to make sure the ESD brush is not loose or damaged.

The printer does not recognize one or more output options as installed.

Service tip: If more than a single output option is installed, check each one to see if the printer recognizes any single option as being installed. If the printer recognizes any of the output options then the base printer autoconnect system is operating correctly and the problem is in the unrecognized option. Continue with this service check or go to the service check for the failing output option.

	FRU	Action
1	5-Bin mailbox option	Check the autoconnects, cables, and connectors of the option for any signs of loose or damaged parts.
2	Mechanical linkage assembly	Remove the left and right side covers and check the two autoconnects for damage, especially the connector pins. Remove the output option and check the voltages on the standard output bin autoconnect located on the top left rear of the printer. Go to "Autoconnect" on page 5-1 . If the voltages are correct, reinstall the output option noting the position of the toroid on the autoconnect cable of the lower autoconnect. Check the voltages on each of the autoconnects. If the toroid was moved, make sure to move it back to its original position on the cable. If the voltages are correct, replace the control board. If the voltages are incorrect, replace the failing autoconnect assembly.

271 Paper Jam - Check Bin 1 displays

	FRU	Action
1	Bottom pass thru sensor flag assembly Control board	Check the flag for correct operation, binding, broken parts, or interference from the sensor cable. If incorrect, repair as necessary. If correct, make sure the bottom pass thru sensor is correctly connected to J5 on the control board. Disconnect the pass thru sensor cable and check the voltage at J5-3. The voltage measures approximately +5 V dc. If incorrect, check the voltage at J5-2. The voltage measures approximately 0 V dc. If incorrect, replace the sensor assembly. If this does not fix the problem, replace the control board.

274 Paper Jam - Check Bin 4 displays

Service tip: When a 274 Paper Jam Check Bin 4 message displays, a problem exists with the top pass thru sensor assembly or the control board.

	FRU	Action
1	Top pass thru sensor flag assembly Control board	Check the flag for correct operation, binding, broken parts or interference from the sensor cable. If incorrect, repair as necessary. If correct check to make sure the top pass thru sensor is correctly connected to J11 on the control board. Disconnect the pass thru sensor cable and check the voltage at J11-3. The voltage measures approximately +5 V dc. If incorrect, check the voltage at J11-2. The voltage measures approximately 0 V dc. If incorrect, replace the sensor assembly. If this does not fix the problem, replace the lower control board.

Ready Bin x Full displays—May be able to clear message and feed paper into bin selected.

	FRU	Action
1	Bin x sensor Bin x sensor cable Bin x sensor flag Control board	Check the sensor and sensor cable for the bin that is displaying the message to make sure the sensor is seated correctly in the side of the tray and the cable is connected to the sensor and the control board. Check the flag for binding and proper operation. If correct, replace the bin x sensor. If this does not fix the problem, replace the control board. Note: This sensor is in a normally open position with the flag out of the sensor slot.

Bin x is full—message that Bin x is Full does not display.

	FRU	Action
1	Bin x sensor Bin x sensor cable Bin x sensor flag Bin x sensor flag Control board	Check the sensor flag for binds, broken or missing parts. If correct, check the bin sensor for correct installation in the side of the tray. If the bin sensor is installed correctly, check the sensor cable for correct installation to the sensor and control board. If correct, replace the bin x sensor. If this does not fix the problem, replace the control board.

Ready—Bin x Full displays and paper feeds into bin x.

	FRU	Action
1	Bin x sensor Bin x sensor control board	Check the sensor flag for binds. Make sure the sensor flag is not in an up position. If the sensor flag is operating correctly, replace the bin x sensor. If this does not fix the problem, replace the control board.

271 Paper Jam - Check Bin 1 displays—paper does not feed into the bin selected

	FRU	Action
1	Deflector Deflector spring Deflector cover Deflector cover spring Shaft assemblies	Check all the bin parts for missing or loose springs, binds in the deflector or deflector cover, broken or binding shaft assemblies, or broken gear teeth. If incorrect, repair as necessary.
2	Bin x solenoid assembly Control board	Check the solenoid for any binds. Make sure the solenoid is contacting the latch correctly. If incorrect, repair as necessary. If the solenoid appears to be operating mechanically, check the resistance of the solenoid. It measures between 30 and 50 ohms. If incorrect, replace the failing solenoid assembly. If correct, replace the control board.
3	Mechanical linkage Motor assembly	If the DC motor is functioning properly, check the gears, clutch, and other linkage parts for correct operation and wear, broken gear teeth, or damaged parts. If incorrect, replace the mechanical linkage assembly/DC motor assembly.

990 Service Error displays

	FRU	Action										
1	Mechanical linkage DC motor assembly	Check the DC motor cable connector to be sure it is correctly installed at J2 on the control board. If correct, disconnect J2 from the control board and check the resistance of the motor on the cable connector. J2-1 to J2-2 measures between 115 and 135 ohms. Also check J2-1 and J2-4 to the motor case for shorts. If either the resistance is incorrect or a short is found, replace the mechanical linkage/DC motor assembly. Note: If the DC motor is shorted, it may also be necessary to replace the control board.										
2	Control board	Disconnect the motor cable J2 from the control board and check the voltages at J2 on the board. Warning: Use caution not to short adjacent pins on the connector as damage to the board could result. <table><tr><th>Pin</th><th>Measured (motor idle)</th></tr><tr><td>J2-1</td><td>+24 V dc</td></tr><tr><td>J2-2</td><td>+24 V dc</td></tr><tr><td>J2-5</td><td>+5 V dc</td></tr><tr><td>J2-6</td><td>+5 V dc</td></tr></table> If any of the voltages are incorrect, replace the control board. If correct, replace the mechanical linkage/ DC motor assembly.	Pin	Measured (motor idle)	J2-1	+24 V dc	J2-2	+24 V dc	J2-5	+5 V dc	J2-6	+5 V dc
Pin	Measured (motor idle)											
J2-1	+24 V dc											
J2-2	+24 V dc											
J2-5	+5 V dc											
J2-6	+5 V dc											

900 Error Code service check

	FRU	Action
1	Printer POR	Turn the printer off and on several times. If Error Code 900 continues to display, go to step 2.
2	System board	Make sure the system board is properly seated in connector J7 on the interconnect board. Turn the machine off and on several times, waiting a few minutes between power on and power off. If Error Code 900 continues to display, go to step 3.
3	Factory defaults	Restore factory defaults. See “Restore EP Factory Defaults” on page 3-18 . This resets the non-critical areas of the user NVRAM. If Error Code 900 continues to display, go to step 4.
4	Sub error codes	With Error Code 900 displayed, press Select and Return . Record the complete list of Sub Error Codes on the display. Check the “Base printer sub error codes” on page 2-6 . If none of the Sub Error Codes are listed, then call your next level of support.

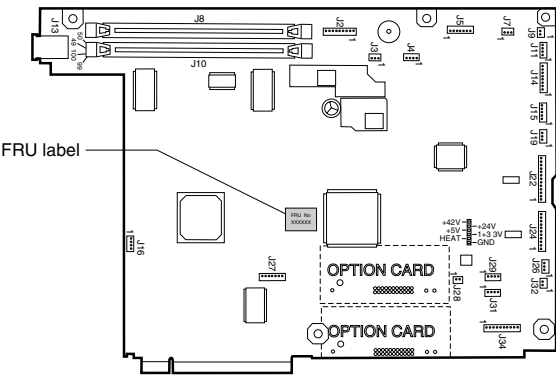
950 Error Code service check

Note: Before proceeding with this service check, make sure you have the correct system board installed in the printer.

950 Error displayed on the printer and you are not sure if the printer had the interconnect or system boards previously replaced.

	FRU	Action
1	Interconnect board	Note: Before replacing the interconnect board, make absolutely sure you have the correct FRU number for the interconnect board that should go into your printer. Warning: Any time the interconnect board assembly is replaced, the Configuration ID must be reset in NVRAM on the interconnect board. See "Setting configuration ID" on page 3-18. Unplug the machine and replace the interconnect board assembly. Turn the printer on. If a 950 error still displays, replace the system board assembly.

950 Error after replacing the system board

	FRU	Action
1	System board	Note: Make sure you have the correct system board FRU number before installing the board in the printer.  Replace the system board.

950 Error after replacing interconnect board

	FRU	Action
1	Interconnect board	Note: Before replacing the interconnect board, make absolutely sure you have the correct FRU number for the interconnect board that should go into your printer. Warning: Any time the interconnect board assembly is replaced, the Configuration ID must be reset in NVRAM on the interconnect board. Go to "Setting configuration ID" on page 3-18. Replace the interconnect board. If this does not clear the message, contact the next level of support.

Charge roll service check

Service tip: Close and evenly spaced repetitive marks 47.19 mm (1.86 in.) apart, or spots on the page can be caused by a damaged or contaminated charge roll.

Service tip: Make sure the right charge roll arm bushing is correctly installed and operates correctly.

To remove the charge roll:

1. Wrap a piece of plain white paper around the charge roll to prevent contamination or damage.
2. Carefully remove the roll by pressing outward and to the right on the charge roll link arm and remove the charge roll from the right side charge roll bearing.
3. Remove the charge roll from the left side charge roll bearing and remove the roll from the printer. Leave the paper wrapped around the charge roll until it is reinstalled.

	FRU	Action
1	Charge roll assembly	Check the charge roll for correct installation, toner buildup, marks, cuts, or other signs of contamination or damage. Replace as necessary.
2	Left side charge roll link	Check the left side charge roll link assembly for correct assembly operation. Check for damage to the arm or bearing assembly.
3	Right side charge roll link Right charge roll bushing	Check the right side charge roll link assembly for correct assembly operation. If incorrect, replace the charge roll link assembly with the charge roll link assembly kit. If correct, check the right charge roll link assembly bearing for signs of wear or contamination. Excessive contamination could cause intermittent charging of the charge roll. If incorrect, replace the link assembly. Check for continuity of the right link assembly from the bearing to the charge roll high voltage contact on the right side frame. If incorrect, replace the link assembly. Make sure the charge roll bushing is installed and operating correctly. Note: The screw that attaches the charge roll lead to the contact must be secure.

Cover closed switch/cable service check

	FRU	Action
1	Toner cartridge	Make sure the toner cartridge is correctly installed and that the right and left cartridge tracks are not loose or broken. Make sure the cover closed switch activation tab on the toner cartridge is not broken and that the tab correctly activates the cover closed switch spring.
2	Cover closed switch/cable assembly	Check the cover closed switch for proper mechanical operation. If incorrect, repair as necessary. Disconnect the cover closed switch cable from J3 at the system board and measure the voltage at J3-3. It measures approximately +5 V dc. If the voltage is incorrect, replace the system board. If the voltage is correct, check the voltage at J3-1. If the voltage measures greater than +1.0 V dc, replace the system board. If the voltage is correct, check the continuity between J3-1 and J3-3 on the cable. If no change in continuity occurs as the switch is activated, replace the cover open switch/cable assembly. If the continuity changes as the switch is activated, replace the system board.

Cover closed switch table

J3	Switch status	
Pin number	Cover open	Cover closed
Pin 1-3	Open	Closed
Pin 1-2	Closed	Open

Dead machine service check

A dead machine is a condition where the display is blank, the LED on the operator panel is off, no fans turn, no motors turn, and the fuser lamp does not come on.

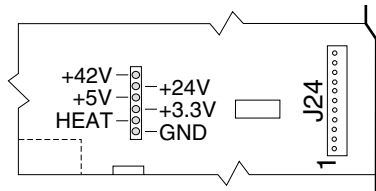
If a high-capacity input tray is installed, remove the option and check the base printer for correct operation. If the base printer operates correctly, go to **“High-capacity feeder input tray service check” on page 2-56**. If the base printer continues to not operate correctly, remove any other attached paper handling options.

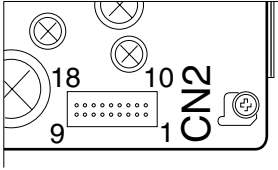
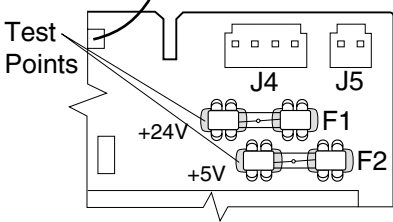
Warning: Observe all necessary ESD precautions when removing and handling the system board or any installed option cards or assemblies. See **“Handling ESD-sensitive parts” on page 4-1**.



CAUTION: When you see this symbol, there is a danger from hazardous voltage in the area of the printer where you are working. Unplug the printer before you begin, or use caution if the printer must receive power in order to perform the task.

Remove any input and output paper handling options from the printer.

	FRU	Action
1	Line voltage	Check the AC line voltage. If the line voltage is incorrect, inform the customer.
2	AC line cord	Unplug the line cord from the wall outlet and check the line cord for damage, such as, a damaged plug, or cut or damaged cord. If incorrect, replace the cord. If incorrect, check the continuity of the line cord and replace if necessary. If the cord is correct, go to step 3.
3	+5 V dc test point on the system board	Check for approximately +5 V dc at the +5 V test point on the system board. Note: Use care not to short adjacent voltage test points.  If the voltage is correct, replace the system board assembly. If the voltage is incorrect, go to step 4.
4	System board and interconnect board	Check the system board is firmly seated in connector J7 on the interconnect board. If it is not seated correctly, reseal and recheck the voltage at the +5 V dc test point on the system board. If test point does not measure +5 V dc, go to step 5.

	FRU	Action
5	LVPS	Unplug the AC line cord from the LVPS and disconnect the interconnect card cable on the LVPS. Reconnect the AC line cord and measure the voltage on CN2-1 on the LVPS. The voltage should measure approximately +5 V dc.  If the voltage is correct, go to step 6. If the voltage is incorrect, go to step 10.
6	Interconnect board	Unplug the AC line cord from the LVPS and reconnect the interconnect board cable to CN2 on the LVPS. Reconnect the AC line cord, turn the machine on and measure the voltage at the +5 V test point on the interconnect board. The voltage should read approximately +5 V dc.  If correct, replace the following FRUs in the order shown: • System board • Interconnect board If the voltage is incorrect, go to step 7.
7	Interconnect board	Unplug the AC line cord from the LVPS, remove the inner shield and system board assembly from the interconnect board. Note: The inner shield with system board attached can be moved far enough away from the printer to access the interconnect board voltage test points. Measure the voltage at the +5 V test point on the interconnect board. The voltage should measure +5 V dc. If correct, go to step 11. If incorrect, go to step 8.
8	Communications card	Turn the printer off and remove the communications card. Check the voltage at the 5 V test point on the interconnect board. If the voltage is correct, replace the communication card assembly. If the voltage is incorrect, go to step 9.
9	Features or option installed on the interconnect board assembly	Warning: Observe all the ESD precautions and turn the printer off before any feature or option cards are removed or replaced. Remove one option/feature at a time to help isolate the failing part. Replace the faulty part.
10	LVPS fuse F1 (primary power)	Unplug the AC line cord, remove the LVPS from the printer, and check the continuity of fuse F1. See “Low voltage power supply removal” on page 4-42. If continuity is correct, replace the LVPS assembly. If continuity is incorrect, replace fuse F1 and measure the voltage at CN2-1. If the voltage is correct, reconnect the interconnect board cable, reinstall the system board, and recheck the printer for a dead machine condition. If the printer is still inoperative, go to step 11. If the voltage is incorrect, replace the LVPS assembly.

	FRU	Action
11	Loads connected to the system board	Turn the printer off and disconnect each cable connected to the system board and each option installed on the system board until the problem is located. Warning: When removing any card installed on the system board observe all ESD precautions when handling these options.

Duplex option service check

Messages displayed when a 23x Duplex Paper Jam displays.

23x Paper Jam Check Duplex

Primary message

Leave Job in Finisher

Secondary message

If sheets have been accumulated to be stapled or offset when the jam is detected, the printer alternately flashes the primary and secondary messages to indicate that all accumulated sheets should not be removed during the jam clearance procedure. Obviously, if no sheets have accumulated for stapling, then no message flashing occurs and the primary message is used.

When the secondary message is posted, if accumulated sheets are removed during jam clearance, the printer does not reprint the removed sheets. Furthermore, after the printer resumes printing and the print job is completed, the portion of the job printed after the jam is not stapled.

Duplex paper jams

23x jam code	Jam location
231 Rear	Media did not arrive at the duplex input sensor, but did leave the fuser exit sensor.
232 Rear	Media did not clear the duplex input sensor, but did leave the printer fuser exit sensor.
233 Rear	Media failed to make the duplex double feed sensor during turnaround.
234 Rear	Media did not arrive at the duplex exit sensor.
235 Front	A piece of media is over the duplex double feed sensor.
236 Front	Media did not leave the duplex exit sensor.
237 Front	A duplexed sheet did not reach the printer input sensor.
238 General Error	A piece of media is over the duplex sensors during a reset.

Duplex does not recognize that the option is installed, or other options below the duplex are installed

	FRU	Action
1	Autoconnect cables/connections	Check the top and bottom autoconnect connectors for signs of damage. If damaged, replace the duplex option. If not damaged, check the cables are correctly connected to the duplex system board at J9, J10, J11, and J12. If no problem is found, replace the duplex option.

Note: Before proceeding with the following service checks, verify the media used in the duplex option meets specification and is not dog-eared or damaged in any way. See **"Media specifications" on page 1-8**.

231 Jam displays on the operator panel

	FRU	Action
1	Fuser exit sensor	Check the sheet of media is leaving the exit sensor in the fuser and feeding properly into the duplex option. Check the duplex link for correct operation and any signs of damage. If the problem is prior to the duplex input sensor and in the base machine, repair as necessary. If the jam occurs in the duplex option prior to the duplex input sensor, go to step 2.
2	Duplex input sensor	If the paper does not reach the duplex input sensor, make sure the sensor is connected to the duplex system board. If correct, check for any paper or other objects that might cause a paper jam. If none are found, replace the duplex option assembly.

232 Jam displays on the operator panel

	FRU	Action
1	Duplex input sensor	If the paper reaches the duplex input sensor, but does not clear the sensor, make sure the sensor is connected to the duplex system board. If connected correctly, check for correct operation of the sensor. If a problem is found and cannot be corrected, replace the duplex option assembly. If no problem is found, check for a piece of paper or other object in the paper path that might cause a paper jam over the input sensor. If no problem is found, replace the duplex option assembly.

233 Jam displayed on operator panel

	FRU	Action
1	Duplex double feed sensor	If a sheet of paper fails to reach the double feed sensor during turnaround, check for any signs of paper or other objects that might cause the paper to jam. If no problem is found, replace the duplex option assembly.

Envelope feeder service check

Service tip: Check the envelope feeder paper path for any debris, pieces of envelope and so on. If any other options are installed make sure they are operating normally. If only the envelope feeder is failing to operate correctly, continue with this service check, otherwise verify the interconnect card is functioning properly.

Service tip: The envelope feeder receives its +5 V dc operating voltage from the +24 V dc bulk at J1-7. If +24 V dc is not present at J1-7, tray 1 is the only tray that is recognized.

Note: If a 260 Paper Jam Check Envelope message displays, check the **“Sub error codes for 9xx and 2xx error codes” on page 2-5.**

Printer does not recognize the envelope feeder as an attached input option.

	FRU	Action
1	Envelope feeder	Make sure the envelope feeder is correctly installed and mated to the autoconnect at the front of the printer.
2	Front autoconnect on printer	Check the connector for signs of damage to the connector or contacts. If you find damage, replace the damaged cable/connector assembly. Remove the envelope feeder and check the voltages at the autoconnect on the front of the printer. If incorrect, check the interconnect board. If correct, reinstall the envelope feeder and continue with step 3.
3	Autoconnect on the envelope feeder	Check for damage to the connector or contacts. If you find damage, replace the damaged cable/connector assembly. Disconnect the autoconnect cable at J1 on the envelope system board and measure the following voltages: • J1-3 measures +5 V dc • J1-5 measures +5 V dc • J1-7 measures +24 V dc If any of the voltages are incorrect, replace the autoconnect cable/connector. If the voltages are correct, replace the envelope system board.

Operator panel displays 260 Paper Jam immediately when envelope feed is requested—POST incomplete.

	FRU	Action
1	Pass thru sensor	Check for any debris or pieces of envelope over the pass thru sensor. Check for correct installation of the pass thru sensor flag. Make sure the sensor cable is attached to the envelope system board. Perform an envelope feeder sensor test to check both the sensor and sensor flag. Note: It may be necessary to use a small tool to actuate the sensor flag because it is located under the front cover. Be careful not to damage the flag. If the test fails, check the flag for damage or binds. If incorrect, replace the flag. If the flag is operating correctly, check the voltage at J3-3. The voltage measures approximately +5 V dc. If incorrect, replace the envelope system board. If correct, check the voltage at J3-2. The voltage changes from 0 to +5 V dc when the flag is moved in and out of the sensor. If incorrect, replace the sensor assembly. If this does not fix the problem, replace the envelope system board.

Operator panel displays 260 Paper Jam after attempted feed but before envelopes are put in the hopper OR the operator panel continues to display Load Envelopes after envelopes are placed in the hopper.

Service tip: The kick rolls rotate during the attempted feed cycles.

	FRU	Action
1	Envelope out hopper sensor flag	Check the envelope out sensor flag for damage, correct installation and operation. If incorrect, repair or replace the flag.
2	Envelope out hopper input sensor	Make sure the sensor is installed correctly and the sensor cable is properly connected to the envelope system board. If correct, perform the Envelope Feed Sensor Test to check both the sensor and flag. If the test fails, remove any envelopes in the hopper, turn the printer off and disconnect J3 from the system board. Turn the printer on and check the voltage at J3-3 on the system board. The voltage measures approximately +5 V dc. If incorrect, replace the envelope system board. If correct, replace the input sensor assembly.

990 Service Error, envelopes fail to feed from the hopper.

	FRU	Action
1	DC feed motor assembly	Check the motor and motor cable for loose wires or poor connections. Make sure the motor cable is connected to the envelope system board.
2	Envelope feeder system board	Check the voltage on J4-1. The voltage measures approximately +24 V dc. If incorrect, replace the envelope system board. If correct, measure the voltage at J4-6. The voltage measures approximately +5 V dc. If incorrect, disconnect J4 and measure the voltage again. If incorrect, replace the envelope feeder system board. If correct, replace the DC motor assembly.

260 Paper Jam displays, unable to clear and envelopes fail to feed from the hopper—Kick rolls are not rotating.

	FRU	Action
1	Main drive belt	Check the belt for correct installation and for signs of damage. Replace as necessary.
2	Gears	Check all the gears for correct installation and for signs of damage. Repair or replace parts as necessary.
3	Clutch latch assembly	Check the clutch latch assembly to make sure it moves freely.
4	Master cam gear master/kick gear	Check the master cam gear and master/kick gear to make sure they rotate together. If not, then the tenons on the master kick gear may be sheared off. If incorrect, replace the master kick gear.

260 Paper Jam displays, unable to clear and envelopes fail to feed from the hopper. Kick rolls are rotating.

Check the deflector gap adjustment before continuing this service check.

	FRU	Action
1	Deflector gap adjustment	Check the deflector gap adjustment. The adjustment may be too narrow.
2	Weight assembly	Check the weight assembly to make sure it moves up and down freely without any binds. Make sure the weight assembly rests on all the rear kick rollers when the hopper is empty. Replace the weight assembly if it is damaged or does not operate properly.
3	Envelope edge guide	Check the envelope edge guide to make sure it is not warped or set too close to the envelopes in the hopper. Replace the edge guide if it is damaged or does not operate properly.

260 Paper Jam displays, envelope stops in feeder paper path.

	FRU	Action
1	Kick rolls/feed rolls/drive rolls	Check all the rolls for oil, grease, or other contamination. If you find a problem, clean the rolls. If this does not correct the problem, replace the envelope feeder.
2	Deflector gap adjustment	Check the deflector gap adjustment. The adjustment may be too narrow.

Envelope feeder multifeeds or may not display a 260 Paper Jam message.

	FRU	Action
1	Envelopes	Check the envelopes being used in the feeder. Check for signs of the envelopes being stuck together or signs of glue. Make sure the flaps are not interleaved.
2	Deflector	Check the deflector gap adjustment. The adjustment may be too wide.
3	Restraint roll bias spring	Check for a missing, broken or incorrectly installed restraint roll bias spring. If incorrect, reinstall or replace the spring.

260 Paper Jam displays, an envelope stopped in the paper path of the feeder and an envelope also stopped in the base printer paper path.

	FRU	Action
1	Latch lever	Make sure the tip of the latch lever is centered in the opening in the floor of the paper path. The latch lever may not be detented on the latch.

Fuser service checks

Cold fuser service check

Error codes 920, 921, and 922 may display for a cold fuser failure. A 920 error caused by low line voltage can sometimes be cleared by turning the machine off and then on again. A 925 service error indicates the wrong fuser lamp is installed. Be sure the correct type of fuser lamp is installed.



CAUTION: There is a danger from hazardous voltage in the area of the printer where you are working. Unplug the printer before you begin, or use caution if the printer must receive power in order to perform the task.

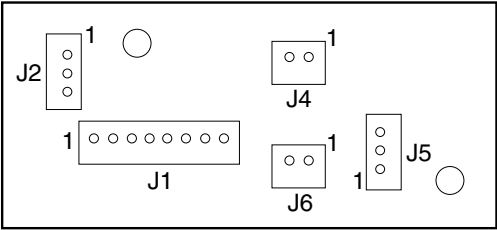
If the correct lamp is installed and a 925 error remains, the problem may be due to the following:

- The fuser may have reached standby temperature too quickly.
- The line voltage may be above the maximum rating for the printer.

Note: A 920, 921 or 922 fuser error may be caused by an incorrectly mounted thermistor.

Service tip: Set the Fuser Temperature to NORMAL before starting this service check.

	FRU	Action
1	Fuser lamp (incorrect lamp/ 925 Service Error)	Install the correct voltage and wattage lamp or fuser assembly. See "Fuser assembly removal" on page 4-23 . If the correct fuser lamp is installed and the 925 error remains, the fuser may have reached standby temperature too quickly. Check that the line voltage is not exceeding the maximum rating for the printer.
2	Fuser lamp fuser top cover assembly	Observe the lamp through the left side frame. If the lamp does not come on, do the following: • Remove the redrive assembly. • Remove the fuser assembly, disconnect the LVPS to fuser AC cable from the fuser assembly, and remove the fuser. See "Fuser assembly removal" on page 4-23. • Verify that the lamp is installed correctly. If correct, check the continuity of the fuser top cover assembly by verifying the lamp contacts on the right contact assembly. If incorrect, check continuity of the fuser lamp. If incorrect, replace the lamp. If correct, replace the fuser top cover assembly.
3	LVPS LVPS to fuser AC cable	CAUTION: When taking measurements for AC power, observe all safety precautions. Measure the AC line voltage between the two connectors on the fuser end of the LVPS to fuser AC cable. If the voltage is incorrect, turn the power off, and remove the LVPS. Measure the AC line voltage between pins CN1-1 and CN1-3 on the board. If correct, check the continuity of the LVPS to fuser AC cable. If incorrect, replace the cable. If the AC line voltage at CN1 is incorrect, check fuse F2. If the fuse is blown, replace the fuse. If the fuse is not blown, replace the LVPS assembly.

	FRU	Action
4	Fuser top cover assembly (assembly includes thermistor and thermal fuses)	Disconnect the thermistor cable from the fuser control board at J6.  Resistance: • HOT J2-1–J2-2 <10K ohms • COLD approximately 450K ohms If the resistance is incorrect, replace the fuser top cover assembly. If the resistance is correct, check each pin of J6 to ground. If there is continuity, replace the fuser cover assembly. See “Fuser cover removal” on page 4-25.

Hot fuser service check

Error Code 923: Indicates the fuser is too hot during printing or when the printer is idle.

Error code 924: Indicates an open circuit has been detected in the fuser thermistor circuit.

Note: Check the fuser sub error codes to help diagnose between a 923 and 924 error.

CAUTION: The fuser may be hot, use caution before removing or servicing.



CAUTION: There is a danger from hazardous voltage in the area of the printer where you are working. Unplug the printer before you begin, or use caution if the printer must receive power in order to perform the task.

	FRU	Action
1	Fuser cover assembly (assembly includes thermistor and thermal fuses)	Check for damage to the thermistor assembly. If damage is found, replace the fuser top cover assembly. If no damage is found, check the resistance of the thermistor between pins J6-1 and J6-2 on the cable. • HOT < 10K ohms • COLD = approximately 450K ohms If the resistance is incorrect, replace the fuser top cover assembly. If the resistance is correct, check each pin of J6 to ground. If there is continuity, replace the fuser cover assembly. See "Fuser cover removal" on page 4-25.
2	Fuser assembly	Check for continuity between J6-1 and J1-2 and between J6-2 and J1-3. If incorrect, replace the fuser assembly. If correct, go to step 3.
3	Fuser to system board DC cable	Check the continuity of the cable. If incorrect, replace the cable. If correct, go to step 4.
4	System board	Measure the voltage on J14-3 on the system board. The voltage should change from approximately +2.5 V dc with the thermistor cold to approximately +1.6 V dc when the thermistor is hot. If incorrect, replace the system board. If correct, go to step 5.
5	Fuser hot roll Fuser hot roll bearings Fuser backup roll bearings Fuser backup roll Fuser mechanical parts	Examine the fuser assembly for signs of overheating or damage. Check the hot roll and backup roll for signs of excessive toner, label glue, labels, or other contaminants. If problems are found, replace the fuser assembly.

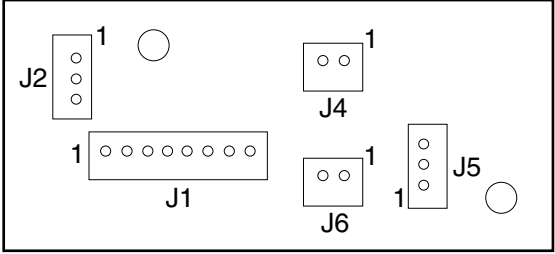
Fuser solenoid service check



CAUTION: There is a danger from hazardous voltage in the area of the printer where you are working. Unplug the printer before you begin, or use caution if the printer must receive power in order to perform the task.

Service tip: Try changing the envelope enhance level setting. A different setting may correct the problem.

Note: Check the fuser envelope conditioner solenoid adjustment as described in the adjustment section **“Fuser solenoid adjustment” on page 4-2.**

	FRU	Action
1	Fuser envelope conditioner solenoid	Observe the operation of the fuser solenoid by removing the redrive assembly. Check for proper mechanical operation of the solenoid and associated hardware, link, and so on. If correct, check the resistance of the solenoid between J4-1 and J4-2 on the fuser control board.  The resistance measures between 5 ohms and 10 ohms. If incorrect, replace the fuser assembly. If correct, go to step 2.
2	System board	Measure the voltage at the +42 V dc test point on the system board. The voltage should measure approximately +42 V dc. If incorrect, go to step 3. If incorrect, go to step 4.
3	LVPS	Measure the voltage at CN2-18 on the LVPS. The voltage should measure approximately +42 V dc. If incorrect, replace the LVPS assembly. If correct, replace the system board. If this does not fix the problem, replace the interconnect board assembly.
4	Fuser board to system board cable	Make sure the cable is connected properly to the system board and fuser control board. Reconnect the cable, if necessary. If the cable is connected correctly, go to step 5.
5	Fuser assembly	If no problems were found in steps 1 through 4, replace the fuser assembly. See “Fuser assembly removal” on page 4-23.

High-capacity feeder input tray service check

Note: Voltage measurements in the high-capacity feeder input tray service checks must be made with the high-capacity feeder attached to the base printer to obtain accurate results.

Service tip: Be sure the paper size switch is set to the correct paper size setting and the rear paper guides are in the correct locations for the size of paper installed in the high-capacity feeder tray.

Service tip: Check the other paper sources to be sure they are operating correctly.

The base printer indicates a dead machine condition when the high-capacity input tray is installed.

	FRU	Action
1	AC line cord AC jumper (HCIT to printer) AC input and output receptacles AC wiring harness 	If the base printer works normally using the AC line cord from the AC wall outlet and does not work when using the AC jumper from the HCIT, check the AC jumper cord. If defective, replace the cord. If not defective, check the AC input and output receptacles and wiring harness in the HCIT. Repair or replace the receptacles or AC wiring harness as required. Note: Make sure the ground wire is installed correctly from the AC wiring harness to the frame of the HCIT and the nut and lock washer are tightened.

The base printer does not recognize that the high-capacity input tray is installed.

	FRU	Action
1	high-capacity feeder autoconnect mechanical check	Check the high-capacity feeder input tray to make sure it is mounted correctly and is not pushed down into the frame assembly or damaged. Be sure the high-capacity feeder input tray autoconnect is properly connected to the high-capacity feeder tray option board assembly.
2	Base printer or option mounted above	Check the option or base printer autoconnect for signs of damage. Repair the high-capacity option autoconnect as necessary.
3	LVPS Option system board 	Check the voltages at J11-2 and J11-4. The voltage measures +24 V dc. If the voltage is correct, replace the high-capacity system board assembly. If the voltage is incorrect, check the continuity of the AC input cable to the LVPS. If correct, replace the LVPS assembly. If incorrect, replace the AC cable to the input of the LVPS.

	FRU	Action
4	High-capacity feeder option control board 	Check the voltage on J8-1 (green). The voltage measures +24 V dc. If incorrect, check the autoconnect system for any problems. +24 V dc must come from the base printer through the autoconnect system to the high-capacity input for the high-capacity feeder to be recognized. If the voltage is correct, check the voltages at J11-3(red) and J11-4(red). The voltages measure +24 V dc. If correct, replace the high-capacity feeder option system board. If incorrect, disconnect J8 from the system board and measure the voltages again. If incorrect, check the LVPS cable and the AC internal wiring from the input appliance receptacle. If incorrect, replace as necessary. If correct, replace the LVPS. If the voltages are correct, check the stepper motor for shorts from the motor housing to each pin on the motor connector. If you find a short between any pin and the motor housing, replace the motor assembly. If no shorts are found, replace the high-capacity feeder option control board. Check the voltage at J9-1 (light blue). The voltage measures approximately +24 V dc. If incorrect, disconnect the cable at J9 and check the voltage again. If the voltage continues to be incorrect, replace the high-capacity feeder option system board. If the voltage measures correctly, check the cable. If the cable is damaged, replace as necessary. If no problem is found with the cable, replace the high-capacity feeder option control board.

24x Paper Jam displays, paper jammed over the Pass Thru Sensor.

Where x=the printer displays the value of x for the paper tray where the error occurs. For example: 242 is a Paper Jam Tray 2

	FRU	Action
1	Pass thru sensor and flag assembly	The tray x option system board did not detect a piece of paper actuating the pass thru sensor. Remove any jammed sheets of paper from the printer and check the pass thru sensor and flag for proper operation by running the appropriate Tray Sensor Test from the diagnostics menu. If the test fails, check the sensor for correct installation and the flag for proper operation. Also check the sensor cable to make sure it is correctly connected to the option system board. If incorrect, replace the tray x option pass thru sensor assembly.
2	Power takeoff shaft and spring, bevel gear, feed roll gear, drive roll assembly, wear plate, drive shaft bearings, and skewed backup roller	Check these parts for signs of broken or damaged parts, contamination on the drive rollers or wear plate and wear or damage to the drive shaft bearings. Check the drive roll assembly and skewed backup roller for wear, slick spots, material buildup, and oil or grease on the rollers. Also check for proper operation of the paper aligning assembly. Repair or replace parts as necessary.

Tray x Paper Low displays when tray x is full or has adequate paper in the tray.

	FRU	Action
1	Paper low switch Paper low switch cable High-capacity feeder Input system board	Run the sensor diagnostics for tray x (x=the number that represents the high-capacity input tray). If the test fails, disconnect the paper low switch cable from J3 on the high-capacity system board. Short pins 1 and 2 together while observing the sensor test on the display. If the display does not change, replace the high-capacity feeder system board. If the display changes check the continuity of the switch. If incorrect, replace the switch. If correct, replace the switch cable.

Tray x empty displays when there is paper in the high-capacity feeder input tray.

	FRU	Action
1	Paper out sensor flag	Check the paper out sensor flag for correct operation and installation. If correct, replace the high-capacity feeder system board. (The paper out sensor is mounted on the high-capacity feeder system board.)
2	Paper out sensor (on option system board)	

The elevator tray fails to stop at the correct position and continues to drive into the bottom frame.

	FRU	Action
1	Lower limit switch Lower limit switch cable	Check continuity of the lower limit switch. If incorrect, replace the switch. If correct, check the switch cable. If incorrect, replace the cable. If correct, replace the high-capacity feeder option control board.
2	High-capacity feeder control board	Disconnect the lower limit switch cable and check the voltage at J2-1 (orange). The voltage measures approximately +5 V dc. If incorrect, replace the high-capacity feeder option control board.

The elevator tray down button does not operate. The tray moves to the upper position.

Service tip: Open the high-capacity feeder front door and check the black rubber bumper attached to the door switch spring. Be sure the rubber button is centered and not touching the sides of the hole or the switch will not function properly.

	FRU	Action
1	Lower limit switch Lower limit switch cable High-capacity feeder control board	Check the lower limit switch to make sure it is not closed (normally open). If incorrect, replace the switch. Check the lower limit switch cable for a short between pins 1 and 2. If incorrect, replace the cable. If correct, replace the high-capacity feeder control board.

Paper from the high-capacity feeder input tray does not reach the pass thru sensor.

Service tip: Be sure the paper in tray is within specifications.

	FRU	Action
1	Autocompensator assembly	Check the autocompensator pick arm rollers for sign of glazing, toner or other buildup. Replace as necessary.
2	Wear strips	Check the wear strips for glazing or contamination. Replace as required. It is advisable to replace all four wear strips at the same time.

The elevator tray does not move up or down. The printer recognizes that the option is installed.

	FRU	Action
1	DC drive motor high-capacity feeder option system board	Be sure the motor cable is correctly installed at J1 on the board. Check the cables, damaged or loose wires. Disconnect the motor. Check for a short between each pin and the motor housing. If a problem is found, replace the motor assembly. If no problem is found, measure the resistance between the following pins on the motor cable connector: Pins 1 (brown) and pin 2 (Yellow) The resistance measures between approximately 7.5 and 10.5 ohms. If incorrect, replace the motor assembly. If correct, replace the high-capacity feeder option system board.

The elevator moves in one direction only.

	FRU	Action																														
1	DC drive motor assembly high-capacity feeder system board	Check the voltages at J1 on the high-capacity system board. The voltages measure approximately as follows: <table border="1"> <thead> <tr> <th>Pin</th><th>Color</th><th>Voltage</th></tr> </thead> <tbody> <tr> <td colspan="3">Static (motor not running)</td></tr> <tr> <td>J1-1</td><td>Brown</td><td>0 V dc</td></tr> <tr> <td>J1-2</td><td>Yellow</td><td>0 V dc</td></tr> <tr> <td colspan="3">Motor running forward</td></tr> <tr> <td>J1-1</td><td>Brown</td><td>0 V dc</td></tr> <tr> <td>J1-2</td><td>Yellow</td><td>+24 V dc</td></tr> <tr> <td colspan="3">Motor running in reverse</td></tr> <tr> <td>J1-1</td><td>Brown</td><td>+24 V dc</td></tr> <tr> <td>J1-2</td><td>Yellow</td><td>0 V dc</td></tr> </tbody> </table> If any of the voltages are incorrect, disconnect the motor and measure the resistance between J-1 and J-2. The resistance measures between 7.5 and 10.5 ohms. If incorrect, replace the motor. If correct, replace the system board.	Pin	Color	Voltage	Static (motor not running)			J1-1	Brown	0 V dc	J1-2	Yellow	0 V dc	Motor running forward			J1-1	Brown	0 V dc	J1-2	Yellow	+24 V dc	Motor running in reverse			J1-1	Brown	+24 V dc	J1-2	Yellow	0 V dc
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Motor running in reverse																																
J1-1	Brown	+24 V dc																														
J1-2	Yellow	0 V dc																														

Paper size switch not selecting paper size that is selected.

	FRU	Action																								
1	Paper size switch High-capacity feeder option control board	Check for continuity between the common pin (J5-1) and the pin of the paper size selected. <table border="1"> <thead> <tr> <th>Pin</th><th>Color</th><th>Paper size</th></tr> </thead> <tbody> <tr> <td>J5-1</td><td>Black</td><td>Common lead</td></tr> <tr> <td>J5-2</td><td>Blue</td><td>B5</td></tr> <tr> <td>J5-3</td><td>Green</td><td>Executive</td></tr> <tr> <td>J5-4</td><td>Yellow</td><td>A4</td></tr> <tr> <td>J5-5</td><td>Orange</td><td>Letter</td></tr> <tr> <td>J5-6</td><td>Red</td><td>Legal</td></tr> <tr> <td>J5-7</td><td>Brown</td><td>A5</td></tr> </tbody> </table> If any position does not measure continuity when selected, replace the paper size switch assembly. If the switch assembly is operating correctly, replace the high-capacity feeder option control board.	Pin	Color	Paper size	J5-1	Black	Common lead	J5-2	Blue	B5	J5-3	Green	Executive	J5-4	Yellow	A4	J5-5	Orange	Letter	J5-6	Red	Legal	J5-7	Brown	A5
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J5-4	Yellow	A4																								
J5-5	Orange	Letter																								
J5-6	Red	Legal																								
J5-7	Brown	A5																								

24x Paper Jam Check Tray x displays when tray x is empty. Tray x does not display.

	FRU	Action
1	High-capacity feeder option control board	Check the voltages on the board at J4-1(red) and J4-3 (blue). The voltages measure approximately +5 V dc. If incorrect, disconnect J4 from the board and measure the voltages again. If incorrect, replace the high-capacity feeder option control board.
2	Elevator top optical sensor cable Elevator top optical sensor	Check the continuity of the sensor cable. If incorrect, replace the cable. If correct, replace the top optical sensor assembly.

Tray x Empty displays. Tray does not respond to loading paper. No response from the front door switch.

	FRU	Action
1	High-capacity feeder option control board	Check the voltage on the board at J4-2 (green). The voltage measures approximately +5 V dc. If incorrect, disconnect the cable at J4 and check the voltage again. If incorrect, replace the high-capacity feeder option control board.
2	Elevator top optical sensor cable Elevator top optical sensor	Check the continuity of the sensor cable. If incorrect, replace the cable. If correct, replace the top optical sensor assembly.

Tray x Paper Low displays when the high-capacity feeder input tray is full or has adequate paper in the tray.

	FRU	Action
1	Paper low switch Paper low switch cable High-capacity feeder option control board	Run the sensor diagnostics for tray x (x=the number that represents the high-capacity input tray). If the test fails, check the voltage at J3-1 (gray). The voltage measures approximately +24 V dc. If incorrect, disconnect the paper low switch cable from J3 and measure the voltage again on J3-1. If incorrect, replace the high-capacity feeder option control board. If correct, check the cable for a short between pins 1 and 2 on the cable. If incorrect, replace the cable. If correct, check the switch for a bent or deformed actuator lever or defective switch. If incorrect, replace the switch.

Excessive noise or vibration

	FRU	Action
1	DC motor assembly	Make sure all the motor plate mounting screws are tight.
2	Idler pulley DC motor assembly	Make sure the idler pulley is not binding on the pulley shaft. Check the pulley for wear. Check the idler pulley shaft on the motor mounting plate for damage or contamination.
3	Drive pulley	Check the drive pulley for wear, binds or damage to the pulley or pulley shaft. Make sure the pulley turns freely on the pulley shaft.
4	Motor drive belt tray drive belt	Check the DC motor drive belt for damage. Make sure the belt is tracking correctly on the drive pulley, idler pulley, and motor pulley. Check the tray drive belt for damage. Make sure the belt is tracking correctly on the lower section of the drive pulley and lead screw pulleys.

High-capacity output stacker service check

Service tip: The majority of the mechanical components can be observed during operation by removing the left, right, and front covers. The high-capacity output stacker option functions without the covers installed.

Determine which paper path stacker assembly is not functioning properly.

Make sure the option(s) are installed correctly and the machine is configured correctly before attempting to service the high-capacity output stacker option.

See **“High-capacity output stacker board” on page 5-3** to identify the correct jumper locations at J6 for the upper and lower units.

Problems with excessive static electricity buildup.

	FRU	Action
1	Front Cover Assembly	Check the front cover assembly to make sure the ESD brush ground lead is firmly attached to the high-capacity option. Also check to make sure the ESD brush is not loose or damaged.

The printer does not recognize one or more output options as installed.

Service tip: If more than a single output option is installed, check each one to see if the printer recognizes any single option as installed. If the printer recognizes any of the output options, the base printer autoconnect system is operating correctly. The problem is in the unrecognized option. Continue with this service check or go to the service check for the failing output option.

	FRU	Action
1	High-capacity stacker feeder	Check the autoconnects, cables, and connectors of the option for any signs of loose or damaged parts.
2	High-capacity output stacker/mechanical linkage assembly	Remove the left and right side covers and check all four autoconnects for damage, especially the connector pins. Remove the output option and check the voltages on the standard output bin autoconnect located on the top left rear of the printer. Go to “Autoconnect” on page 5-1 . If the voltages are correct, reinstall the output option and note the positions of the toroids on the autoconnect cables on the upper and lower assemblies, and check the voltages on the autoconnects. If all voltages are correct and the lower assembly is failing, replace the lower control board. If the upper assembly is failing, replace the upper control board. If the voltages are incorrect, replace the upper or lower failing mechanical linkage assembly.

202 Paper Jam Open Rear Door displays and a sheet of paper is jammed prior to the pass thru sensor flag or 202 Paper Jam Open Rear Door displays, a sheet of paper feeds out to the standard bin even though bin x is selected and paper exits half way out of the redrive assembly.

Service tip: For this type of problem check the **“Base printer sub error codes” on page 2-6**. They can help isolate the problem. A 202 paper jam message can also occur prior to the high-capacity output stacker pass thru sensors.

	FRU	Action
1	Lower Pass Thru Sensor/ Flag Assembly	Check the flag for correct operation, binding, broken parts, or interference from the sensor cable. If incorrect, repair as necessary. If correct, check to make sure the lower pass thru sensor is correctly connected to J3 on the lower control board. Disconnect the pass thru sensor cable and check the voltage at J3-3. The voltage measures approximately +5 V dc. If incorrect, check the voltage at J3-2. The voltage measures approximately 0 V dc. If incorrect, replace the sensor assembly. If this does not fix the problem, replace the lower control board.
2	High-capacity output stacker drive belt(s) Drive pulleys Belt idlers Belt tension springs	Check to ensure the output stacker drive belt or the failing assembly is correctly installed on the drive pulley and belt idler pulley. Check the belt tension spring to make sure it is not loose or broken. Repair as necessary.
3	Mechanical linkage/motor assembly (upper or lower)	If the DC motor is functioning properly check the gears, clutch and other linkage parts for correct operation and wear, broken gear teeth, or damaged parts. If incorrect, replace the mechanical linkage assembly/DC motor assembly.

Remove Paper - Output Bin x Full displays. You may not be able to clear the message.

	FRU	Action
1	Dual output bin sensor flag (upper assembly)	Check the flag for correct operation, binding, broken parts, or interference from the sensor cable. If incorrect, repair as necessary.

271 Paper Jam - Check Bin x, POST incomplete.

	FRU	Action
1	Upper pass thru sensor flag assembly Upper control board	Check the flag for correct operation, binding, broken parts, or interference from the sensor cable. If incorrect, repair as necessary. If correct, make sure the lower pass thru sensor is correctly connected to J3 on the lower control board. Disconnect the pass thru sensor cable and check the voltage at J3-3. The voltage measures approximately +5 V dc. If incorrect, check the voltage at J3-2. The voltage measures approximately 0 V dc. If incorrect, replace the sensor assembly. If this does not fix the problem, replace the lower control board.

Input sensor service check

Service tip: Run the Base Sensor Test. Check the input sensor for proper operation. The display changes from open to closed as the sensor flag is manually moved in and out of the sensor.

	FRU	Action
1	Input sensor flag	Check the input sensor flag for damage and proper operation. If a problem is found, repair as necessary.
2	System board	Check for approximately +5 V dc at J22-10 on the system board. If incorrect, replace the system board.
3	Input sensor cable	Check the continuity of the input sensor cable section of the front wiring harness. If incorrect, replace the harness. If correct, replace the input sensor assembly.

Input tray(s) service check

Optional 250-sheet and 500-sheet trays

Service tip: Try all the other input paper sources to make sure they are properly feeding paper.

For 990 Error Code- Service Tray x, x= displays the number of the tray that has a problem or needs service.

	FRU	Action
1	Tray x Option system board or compensator assembly or autoconnect cable	Check the autoconnect cables and connectors for damage. Replace if necessary. Check the cables for continuity. If incorrect, replace the compensator assembly cable. If the cables, connectors, and connections are good, replace the FRUs in the following order: • Autocompensator assembly option • Option system board.

24x Paper Jam displays, paper jammed over the pass thru sensor.

(The printer displays the value of x for the paper tray where the error occurs. Example: 241 is a Paper Jam Tray 1)

	FRU	Action
1	Pass thru sensor and flag assembly	The tray x option system board did not detect a piece of paper actuating the pass thru sensor. Remove any jammed sheets of paper from the printer and check the pass thru sensor and flag for proper operation by running the appropriate Tray Sensor Test from the diagnostics menu. If the test fails, check the sensor for correct installation and the flag for proper operation. Also check the sensor cable to make sure it is correctly connected to the option system board. If incorrect, replace the tray x option pass thru sensor assembly.

	FRU	Action
2	Power takeoff shaft and spring, bevel gear, feed roll gear, drive roll assembly, wear plate, drive shaft bearings, and skewed backup roller	Check these parts for broken or damaged parts, contamination on the drive rollers or wear plate, and wear or damage to the drive shaft bearings. Check the drive roll assembly and skewed backup roller for signs of wear, slick spots, material buildup, and oil or grease on the rollers. Also check for proper operation of the paper aligning assembly. Repair or replace parts as necessary.

Tray x Low displays when tray x is full or has adequate paper in the tray.

	FRU	Action
1	Paper low sensor assembly Paper low sensor flag tray x option system board	Run the Tray x Sensor Test and check the sensor for proper operation. If incorrect, check the following: • Paper low sensor flag for smooth and correct operation. • Paper low sensor for correct installation on the autocompensator housing. • Paper low sensor cable for signs of cuts, pinched wiring, or other damage especially at connector J5 on the system board. If no problem is found, replace the paper low sensor assembly. If this does not correct the problem, replace the option system board.

Tray x Empty displays when Tray x has paper in the tray.

	FRU	Action
1	Paper out sensor flag	Check the paper out sensor flag for correct operation and installation. If correct, replace the option system board. (The paper out sensor is mounted on the system board).
2	Paper out sensor (on option system board)	

Printer does not recognize Tray x is installed.

	FRU	Action
1	Autoconnect cables Tray x system board	Check the autoconnect from the printer or option above tray x. Check for cuts, pinched wiring, or damage to the contacts in the connector. Check the autoconnect cable(s) for correct installation at the tray x system board. If correct, check the continuity of the autoconnect cable(s). If correct, replace the tray x system board. If incorrect, replace the cable.

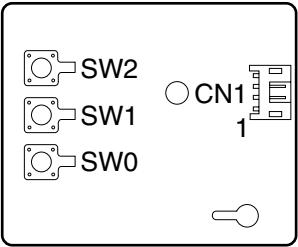
Paper from Tray x does not reach the pass thru sensor.

Service tip: Check the media in tray x to make sure it is within specifications. Some types of labels, foil material, and slick papers can cause misfeeds and slippage of the rollers.

	FRU	Action
1	Autocompensator assembly	Check the autocompensator pick arm rollers for any sign of glazing, toner or other buildup. Clean or replace as necessary.

Internal tray card/paper size sensing service check

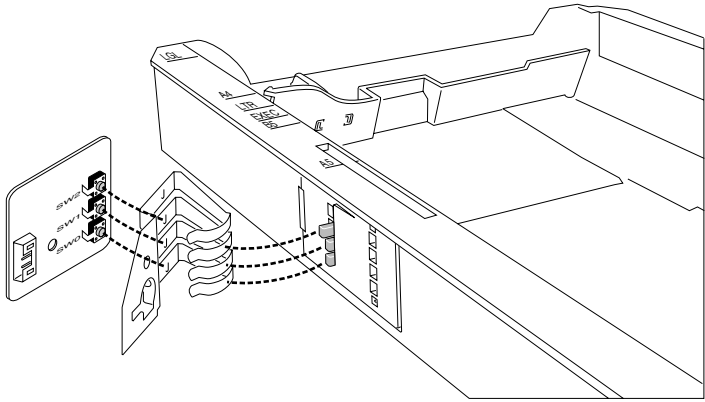
Before proceeding, check for the correct paper size loaded in the tray and that the tray has been set to accept the size paper loaded in the tray.



Paper size sensing switch chart

ITC CN1 pin	Signal	ITC switch	Paper tray size selection (X is activated)						System board J34 pin
			Letter	Legal	A4	Exec	B5	A5	
1	PSIZE2	SW1	X	X			X		1
2	Ground	Ground							2
3	PSIZE1	SW0			X	X	X		3
4	PSIZE3	SW2	X			X		X	4

Tray 1 not recognized as being installed. Unable to clear Tray 1 Missing message.

	FRU	Action
1	Tray 1	Check Tray 1 for damaged or broken autosize fingers. Check for anything that would prevent the autosize fingers from activating the paper activate springs and ITC switches.  If a problem is found, repair as necessary. If no problem is found, go to step 2.
2	Integrated card/autocompensator cable	Check for correct installation of the cable at J34 on the system board. If installed correctly, go to step 3. If incorrectly installed, install and recheck the printer.
3	System board	Check the continuity between J34-2 on the system board and ground. It should measure approximately 0 ohms.

The printer does not recognize the paper size selected.

	FRU	Action																																																																																																									
1	Back restraint Side restraint Snap-in plate Autosize slider Autosize finger	Check all the paper size parts for damage or broken parts. make sure the parts operate correctly. If a problem is found, repair as necessary. If no problem is found, go to step 2.																																																																																																									
2	Switch activate spring	Make sure the switch activate spring is not bent or broken. Replace the spring if damaged. If the spring is not damaged, go to step 3.																																																																																																									
3	Internal tray card (ITC) System board ITC cable	Set the tray for the paper size that is not recognized and install the tray in the printer. Select the paper size and corresponding paper switch from table, below. <table><tr><th rowspan="2">Pin</th><th rowspan="2">Signal</th><th rowspan="2">Static tray out (V dc)</th><th colspan="6">Static with paper tray in and set to: (V dc)</th></tr><tr><th>Letter</th><th>Legal</th><th>A4</th><th>Exec</th><th>B5</th><th>A5</th></tr><tr><td>1</td><td>PSIZE2</td><td>+3.3</td><td>0</td><td>0</td><td>+3.3</td><td>+3.3</td><td>0</td><td>+3.3</td></tr><tr><td>2</td><td>Ground</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>3</td><td>PSIZE1</td><td>+3.3</td><td>+3.3</td><td>+3.3</td><td>0</td><td>0</td><td>0</td><td>+3.3</td></tr><tr><td>4</td><td>PSIZE3</td><td>+3.3</td><td>0</td><td>+3.3</td><td>+3.3</td><td>0</td><td>+3.3</td><td>0</td></tr><tr><td>5</td><td colspan="8">N/A</td></tr><tr><td>6</td><td colspan="8">N/A</td></tr><tr><td>7</td><td colspan="8">N/A</td></tr><tr><td>8</td><td>+3.3</td><td>+3.3</td><td>+3.3</td><td>+3.3</td><td>+3.3</td><td>+3.3</td><td>+3.3</td><td>+3.3</td></tr><tr><td>9</td><td colspan="8">N/A</td></tr><tr><td>10</td><td colspan="8">N/A</td></tr></table> If the voltage on J34 does not change, go to step 4. If the voltage changes, recheck the printer. If Tray 1Missing is still displayed, replace the system board assembly.	Pin	Signal	Static tray out (V dc)	Static with paper tray in and set to: (V dc)						Letter	Legal	A4	Exec	B5	A5	1	PSIZE2	+3.3	0	0	+3.3	+3.3	0	+3.3	2	Ground	0	0	0	0	0	0	0	3	PSIZE1	+3.3	+3.3	+3.3	0	0	0	+3.3	4	PSIZE3	+3.3	0	+3.3	+3.3	0	+3.3	0	5	N/A								6	N/A								7	N/A								8	+3.3	+3.3	+3.3	+3.3	+3.3	+3.3	+3.3	+3.3	9	N/A								10	N/A							
Pin	Signal	Static tray out (V dc)				Static with paper tray in and set to: (V dc)																																																																																																					
			Letter	Legal	A4	Exec	B5	A5																																																																																																			
1	PSIZE2	+3.3	0	0	+3.3	+3.3	0	+3.3																																																																																																			
2	Ground	0	0	0	0	0	0	0																																																																																																			
3	PSIZE1	+3.3	+3.3	+3.3	0	0	0	+3.3																																																																																																			
4	PSIZE3	+3.3	0	+3.3	+3.3	0	+3.3	0																																																																																																			
5	N/A																																																																																																										
6	N/A																																																																																																										
7	N/A																																																																																																										
8	+3.3	+3.3	+3.3	+3.3	+3.3	+3.3	+3.3	+3.3																																																																																																			
9	N/A																																																																																																										
10	N/A																																																																																																										
4	System board	Ground the appropriate pin on connector J34 on the system board. Tray 1 Missing should not be displayed. If it is not displayed, go to step 5. If it still displays, replace the system board assembly.																																																																																																									
5	ITC/autocomp cable ITC assembly	Check continuity of the ITC/Autocomp cable. If correct, replace the ITC assembly. If incorrect, replace the ITC/autocomp cable.																																																																																																									

Main drive service check

Service tip: Excessive gear or main drive assembly noise is usually caused by a defective motor assembly or system board.

Service tip: If there are equally spaced horizontal lines across the page, go to **“Print quality—
evenly spaced horizontal lines or marks” on page 2-80.**

Warning: Whenever the gearbox assembly is removed from the machine it must be handled very carefully. Do not allow any of the gears to come in contact with any metal or other hard surface to avoid gear damage. It is also very important not to let any dirt, paper, staples, or other material come in contact with the grease in the gearbox assembly.

	FRU	Action																										
1	Main drive assembly (excessive noise or vibration)	Remove the controller board and run a Diagnostic Print Test in the continuous mode. Check the main drive assembly for any excessive noise or vibration. Determine if the noise is in the main drive, toner cartridge, fuser, or main drive gearbox. Look for any loose or worn parts in the developer drive assembly, main drive gearbox, or fuser. Repair as necessary.																										
2	Main drive motor assembly (excessive noise, gears ratcheting and so on)	A service error code 936 - Transport Motor may be displayed. Check the voltage at J24-6 on the system board. It measures approximately +5 V dc when the motor is not running and goes to 0 V dc when the motor is running. If incorrect, replace the system board. If this does not fix the problem, replace the main drive motor.																										
3	Main drive motor cable	Check the continuity of the main drive motor cable. If incorrect, replace the cable.																										
4	Motor does not turn, no gear error code 936 or user message 201 Paper Jam displays.	Check the voltages at J24 on the system board. <table border="1"> <thead> <tr> <th rowspan="2">Pin</th><th colspan="2">Voltage</th></tr> <tr> <th>Static</th><th>When main drive motor is running</th></tr> </thead> <tbody> <tr> <td>J24-11</td><td></td><td>+24 V dc</td></tr> <tr> <td>J24-8</td><td>+5 V dc</td><td>0 V dc</td></tr> <tr> <td>J24-7</td><td>+5 V dc</td><td>0 V dc</td></tr> <tr> <td>J24-6</td><td>+5 V dc</td><td>+2.5 V dc</td></tr> <tr> <td>J24-5</td><td>+5 V dc</td><td>0 V dc</td></tr> <tr> <td>J24-4</td><td>+5 V dc</td><td>+5 V dc</td></tr> <tr> <td>J24-1</td><td>+5 V dc</td><td>0 V dc</td></tr> </tbody> </table> If the voltage is incorrect, replace the FRUs in the following order: • Main drive motor assembly • System board	Pin	Voltage		Static	When main drive motor is running	J24-11		+24 V dc	J24-8	+5 V dc	0 V dc	J24-7	+5 V dc	0 V dc	J24-6	+5 V dc	+2.5 V dc	J24-5	+5 V dc	0 V dc	J24-4	+5 V dc	+5 V dc	J24-1	+5 V dc	0 V dc
Pin	Voltage																											
	Static	When main drive motor is running																										
J24-11		+24 V dc																										
J24-8	+5 V dc	0 V dc																										
J24-7	+5 V dc	0 V dc																										
J24-6	+5 V dc	+2.5 V dc																										
J24-5	+5 V dc	0 V dc																										
J24-4	+5 V dc	+5 V dc																										
J24-1	+5 V dc	0 V dc																										

Main fan service check

Check the cable connections at J7 on the system board and at the main fan assembly. The main fan runs continuously when the printer is powered on unless the printer is in the Power Saver mode.

	FRU	Action
1	Main fan	Manually spin the fan and check that it rotates freely. Check the cable connection to the system board, J7 for correct installation.
2	Main fan to system board cable	Check the continuity of the cable. If incorrect, replace the cable.
3	Error code 927 (fan runs)	Check the voltage at J7-1 on the system board. The voltage measures +5 V dc (static) 0 V dc (fan running). If incorrect, replace the main fan. If this does not fix the problem, replace the system board.
4	Error code 927 (fan not running)	Check the voltage at J7-3 on the system board. The voltages are: • +22 V dc to +24 V dc (printer and fan running) • +12 V dc to +15 V dc (printer not running—fan running about half speed). If incorrect, replace the system board. If this does not fix the problem, replace the main fan.

Operator panel service check

Operator panel buttons service check

Before continuing with this service check do the **“Button Test” on page 3-8**.

	FRU	Action
1	Operator panel assembly	If any button fails the Button Test, replace the operator panel assembly.
2	Operator panel assembly (no buttons work)	If no buttons work, replace the operator panel assembly.
3	System board	Disconnect the operator panel cable from J15 on the system board and measure the voltage at J15-5. The voltage should measure approximately +5 V dc. If incorrect, replace the system board. If incorrect, replace the cable. If correct, replace the operator panel assembly.

Operator panel display service check

Service tip: The printer has detected a problem with the system board, operator panel cable or operator panel assembly if POST does not complete and the printer emits 5 beeps and stops in a continuous pattern until the printer is turned off. The operator panel cable is an individual cable on some printers and a combination cable assembly with the cover switch cable on later models.

Note: If the operator panel is operating properly except for a pel or a few pels missing or broken, run the **“LCD Test” on page 3-8** from the hardware tests before continuing with this service check.

	FRU	Action
1	Operator panel cable	Check for proper installation of the cable at the system board (J15) and at the operator panel. Check the continuity of the operator panel cable. If incorrect, replace the cable.
2	Operator panel display blank, 5 beeps, LED off	Check for correct installation of the operator panel cable at J15 on the system board. If incorrect, reinstall the cable properly. If correct, measure the voltage at J15-2 on the system board. The voltage should measure approximately +5 V dc. If incorrect, replace the system board. If correct, check continuity of the operator panel cable. If the continuity is incorrect, replace the cable. If the continuity is correct, replace the operator panel assembly.
3	Operator panel display blank, 5 beeps, LED on	Check for ground between J15-4 and ground. If correct, replace the operator panel assembly. If incorrect, replace the system board.
4	Operator panel all diamonds, no beeps	Make sure a card is not plugged in backward. This condition causes the printer to fail POST, displaying all diamonds on the operator panel with no beeps.
5	Operator panel all diamonds, 5 beeps	Check the voltage at Pin J15-1 and J15-3. The voltage measures approximately +5 V dc. If incorrect, replace the FRUs in the following order: • Operator panel assembly • System board

Options service check

Service tip: When you have a problem with any of the options installed in the options slots on the interconnect board, switch the non operating option to one of the other option slots to isolate the failure.

Flash Memory Option(s)

Run a copy of the test page and check to see if the option you are checking is listed. The printer does not recognize the option being installed if the option is not listed. Make sure the memory card is installed correctly and is not broken or damaged. If the memory card is correctly installed and not broken or damaged then run the **"Flash Test" on page 3-3**. If the test fails, replace the Flash card. If the problem continues, replace the controller board.

DRAM Memory Option(s)

This service check is the same as the flash memory option service check with the following exception:

Run the **"SDRAM Memory Test" on page 3-9** from the menu if the SDRAM Memory card is correctly installed and not broken or damaged. If the test fails, replace the SDRAM card. If the problem continues, replace the controller board.

Hard Disk Option

Service tip: These printers support one hard disk option. Make sure only one hard disk option is installed.

Make sure the fixed disk and the fixed disk board are correctly installed. Run the **"Quick Disk Test" on page 3-2** from the Device Test on the Diagnostics menu when a problem is suspected either with the hard disk system board or with the hard disk.

Note: The Quick Disk Test is a non-destructive test and indicates Pass or Fail. If the test fails, replace the hard disk. If a problem still exists, replace the hard disk board.

The **"Disk Test/Clean" on page 3-2** is used to help restore the disk if the disk contains bad data and is unusable. This test is divided into a cleaning and a verifying or testing section.

Warning: This can be a very lengthy test depending on the disk size. This test leaves the hard disk unformatted. The servicer or user must reformat the disk using the Format Disk Menu operation. This is a destructive type of test. All the data on the disk is destroyed and should not be performed on a known good disk.

Error Code 976 - Network Card x (x=Network card 1, 2, or 3)

A 976 error code indicates an unrecoverable software error in network card x. Verify that network card x is correctly installed in the socket on the interconnect board and is properly grounded. If you find no problem, contact your next level of support before replacing the network card.

Error Code 977 - Network Card x

A 977 error displays when the RIP software detects that a network card is installed in slot x on the interconnect board but cannot establish communications with the network card.

Output bin sensor standard tray service check

Service tip: If the output bin standard tray fills up and the bin full sensor fails to post the Remove Paper Standard Bin message:

1. Enter the Diagnostics Mode.
2. Select **Output Bin Tests**.
3. Select **Sensor Tests**.
4. Select **Standard Bin**.
5. Check the sensor and flag for proper operation.

If you find no problem with the sensor and flag, continue with the service check.

Service tip: Be sure the flag is correctly installed. The output bin sensor is a normally closed sensor with the sensor flag down. Therefore, unless the flag is in the up position or out of the sensor slot, a Remove Paper Standard Bin message does not display.

	FRU	Action
1	System board Printer fails to display Remove Paper Standard Bin message. Output Bin Sensor Test fails.	Check the voltage at J11-1. It measures +5 V dc when the flag is in the sensor, and 0 V dc when the flag is out of the sensor. If the voltage does not change, replace the sensor cable assembly. If this does not fix the problem, replace the system board.
2	Output bin sensor flag	Make sure the correct flag is installed. Check the flag for damage or improper operation. If incorrect, replace the flag. Note: A broken or improper operating sensor flag causes a Remove Paper Standard Bin message to display before POST completes and cannot be cleared.

Output expander service check

Service tip: The majority of the mechanical components can be observed during operation by removing the left, right, and system board covers. The output expander functions without the covers installed.

Make sure the option is correctly installed before attempting to service the unit. No jumpers should be installed at connector J6 on the output expander board.

Problems with excessive static electricity buildup.

	FRU	Action
1	Output expander control board cover	Check the output expander control board cover to make sure the ESD brush ground lead is firmly attached to the output expander frame. Also make sure the ESD brush is not loose.

Printer does not recognize one or more output expander options as being installed.

Service tip: If more than a single output expander option is installed, check each one to see if the printer recognizes any single option as being installed. If the printer recognizes any of the output expander options then the base printer autoconnect system is operating correctly and the problem is in the unrecognized expander option.

	FRU	Action
1	Output expander option	Make sure the output expander option is the only option that is not recognized by the base printer. If the output expander is the only option not recognized by the printer, continue with step 2. If not, check the autoconnects of the options not recognized and the interconnect board and cable connections.
2	Output expander assembly mechanical linkage	Check the autoconnects for damage, especially the connector pins. Remove the left and right side covers. Remove the front control board cover. Check the cables at J1A, J1B, J2A and J2B on the control board to make sure they are attached securely and correctly. Remove the output expander and check the voltages on the output bin autoconnect located on the top left rear of the printer. Go to "Autoconnect - Top" on page 5-11 . If the voltages are correct, reinstall the output expander unit and check the voltages at J1A and J1B on the connector. If correct, replace the output expander control board. If incorrect, replace the output expander assembly mechanical linkage.

202 Paper Jam Open Rear Door message displays. A sheet of paper is jammed prior to the pass thru sensor flag.

202 Paper Jam Open Rear Door message displays. A sheet of paper feeds out to the standard bin even though bin x is selected. Paper exits half way out of the redrive.

Service tip: For this type of problem check the sub error codes. They can help isolate the problem. 202 Paper Jam messages can also occur prior to the output expander pass thru sensor.

	FRU	Action
1	Output expander drive belt drive Pulley drive belt Idler pulley belt tension spring	Check to ensure the output expander drive belt is correctly installed on the drive pulley and belt idler pulley. Check the belt tension spring to make sure it is not loose or broken. Repair as necessary.
2	Mechanical linkage DC motor assembly	If the DC motor is functioning properly check the gears, clutch, and other linkage parts for correct operation and wear, broken gear teeth, or damaged parts. If incorrect, replace the mechanical linkage/DC motor assembly.

Remove Paper - Output Bin x is displayed, POST incomplete, unable to clear the message.

	FRU	Action
1	Dual output bin sensor flag	Check the flag for correct operation, binding, broken parts, or interference from the sensor cable. If incorrect, repair as necessary.

271 Paper Jam - Check Bin x, POST incomplete

	FRU	Action
1	Pass thru sensor and flag assembly Control board	Check the sensor flag for proper operation. If correct, check to make sure the pass thru sensor cable is correctly connected to J3 on the control board. Disconnect the pass thru sensor cable from J3 on the control board and check the voltage at J3-3. The voltage measures approximately +5 V dc. If incorrect, replace the control board. If correct, check the voltage at J3-2. The voltage measures approximately 0 V dc. If incorrect, replace the sensor assembly. If this does not fix the problem, replace the control board.

271 Paper jam - Check Bin x, POST complete, first sheet of paper feeds into output bin x.

Note: Before performing the following checks, run the Output Bin X Sensor Test and check for the failing sensor.

Sensor Test:

NF = Near Full (Upper part of sensor assembly)

F = Full (Lower part of sensor assembly)

P = Pass Thru Sensor

990 Service - Bin x

	FRU	Action
1	D.C. motor mechanical linkage assembly	Make sure the DC motor cable connector is correctly installed at J4 on the output expander option board. If correct, disconnect J4 from the option board and check the resistance of the motor on the cable connector: J4-1 to J4-2 (measures between 115 and 135 ohms.) Also check J4-1 and J4-2 to the motor case for shorts. If either the resistance is incorrect or a short is found, replace the motor/mechanical linkage assembly. Note: If the DC motor is shorted, it may also be necessary to replace the control board.

	FRU	Action															
2	Output expander control board	Disconnect the motor cable J4 and check the voltages at J4 on the board. Note: Use caution not to short to adjacent pins on the connector. <table border="1"> <thead> <tr> <th>Pin</th><th>Status</th><th>Voltage</th></tr> </thead> <tbody> <tr> <td>J4-1</td><td>(Motor Idle)</td><td>+24 V dc</td></tr> <tr> <td>J4-2</td><td>(Motor Idle)</td><td>+24 V dc</td></tr> <tr> <td>J4-5</td><td>(Motor Idle)</td><td>+5 V dc</td></tr> <tr> <td>J4-6</td><td>(Motor Idle)</td><td>+5 V dc</td></tr> </tbody> </table> If any of the voltages are incorrect, replace the control board. If the voltages are correct, replace the DC motor/mechanical linkage assembly.	Pin	Status	Voltage	J4-1	(Motor Idle)	+24 V dc	J4-2	(Motor Idle)	+24 V dc	J4-5	(Motor Idle)	+5 V dc	J4-6	(Motor Idle)	+5 V dc
Pin	Status	Voltage															
J4-1	(Motor Idle)	+24 V dc															
J4-2	(Motor Idle)	+24 V dc															
J4-5	(Motor Idle)	+5 V dc															
J4-6	(Motor Idle)	+5 V dc															

No indication that bin x is full or no indication that bin x is near full

	FRU	Action
1	Dual output bin x sensor assembly Output expander control board	Check for correct installation of the sensor cable at J5 on the output expander control board. If either the Bin Full (F) or Bin Near Full (NF) fail the sensor test then check the voltage at J5-3 and J5-4. The voltage measures approximately +5 V dc. If the voltage is incorrect, replace the output expander control board. If correct, replace the sensor assembly.

Paper feed service check

If you have a 936 Transport Motor Error go to **“Main drive service check” on page 2-68.**

	FRU	Action
1	Alignment assembly	Check to ensure the alignment assembly is correctly attached to the left side frame and the mounting screws are tight. Check the alignment assembly for worn rollers, contaminated rollers, or binds. Replace the alignment assembly if any problem is found.
2	Inner deflector	Check the inner paper deflector for correct installation. If the deflector is bowed or not fitting correctly, replace the deflector.

Autocompensator fails to feed paper. Failures occur randomly throughout the stack of paper.

	FRU	Action
1	Pass thru sensor	Check the pass thru sensor for correct installation and operation.
2	Autocompensator assembly	The autocompensator pick roll shaft assembly is not providing enough torque if the pick rollers are not picking the paper correctly. Replace the autocompensator assembly.
3	Wear strips in tray x problem is found.	Check the wear strips for excessive wear, scratches, or rough spots. Replace the wear strips if a problem is found.

Paper feed failures occur only near the top of the stack of paper.

The most common cause of this problem is paper curl. Remove the paper from tray x and check for the natural curvature in the paper. Reinstall the paper in the correct manner. If the problem persists, it may be necessary to reduce the stack height. Replace both pick rolls if the paper appears to be flat in the tray but there is still a problem.

Failures occur mainly near the bottom of the stack of paper.

The autocompensator pick arm may not be coming down far enough to allow the pick rolls to properly contact the paper. Also the autocompensator motor may be failing. If this problems continues, replace the autocompensator assembly.

Double feeding paper

Note: If double feeding paper occurs mostly from the bottom of the stack, check for missing or damaged restraint pads in the tray.

	FRU	Action
1	Paper	Paper is usually the primary cause of a double feeding paper problem. Flex the paper before placing the paper in the tray. Edge-welded paper is the most common cause of double feeding. Loading the paper in the tray in different locations and directions and using rough paper and short grain paper also causes double feeding.
2	Autocompensator	Make sure the counterbalance spring is not missing, loose, or broken at the top of the autocompensator arm assembly. If you find a problem, replace the autocompensator assembly.

Multipurpose tray. Paper fails to feed from the multipurpose tray.

The pick roll should make one complete revolution and stop with the flat side down. If the pick roll turns but does not pick paper, check the roll for signs of wear, oil or grease on the surface of the pick roll or slick spots. If you find a problem, replace the pick roll assembly. Check to ensure the media that is being fed through the multipurpose tray assembly meets recommended paper specifications.

Parallel port service check

Run the **“Parallel Wrap Test”** on page 3-9.

Note: The Parallel Wrap Test is designed to check the parallel port hardware by using a wrap plug (P/N 1319128) and invoking the Parallel Diagnostic Test. This test helps isolate the printer from the parallel cable and host. The test provides failure information on the display for approximately three seconds. If the test indicates that a problem is detected, replace the controller board.

Printhead service check

The printhead assembly does not contain any service replaceable parts or components. If service error code 930 displays, the wrong printhead is installed in the printer. See **“Printhead 1 (Infoprint 1332)” on page 7-10**, **“Printhead 2 (Infoprint 1352)” on page 7-11**, or **“Printhead 3 (1372)” on page 7-12**.

Note: A 201 paper jam may also indicate a failing printhead. The paper may have jammed prior to or at the input sensor. Print the error log and see if 201 or 931 errors are logged.

	Service Error Code	Explanation
1	Error code 931 No first HYSNC Signal Error Code 932 Lost HYSNC	These errors usually indicate a failure in the HYSNC signal to the printhead. Check the continuity of the cables connected to J5 and J4 on the system board. If incorrect, replace the defective cable. The voltage at J4-1 measures approximately +5 V dc. If incorrect, replace the system board. The voltage at J5-7 measures approximately +24 V dc. If incorrect, replace the system board. If correct, replace the printhead assembly.
2	Error Code 934 Mirror motor lost lock Error Code 935 Mirror motor unable to reach operating speed	These error codes indicate a problem with the mirror motor circuit in the printhead assembly or the mirror motor cable to the system board cable or system board assembly. Check the continuity of the mirror motor cable connected to J5 on the system board. If incorrect, replace the cable. The voltage at J5-7 measures approximately +24 V dc. If incorrect, replace the system board. If correct, replace the FRUs in the following order: • System board • Printhead assembly

Print quality service check

Service tip: Before troubleshooting any print quality problems do the following:

- Install another print cartridge if available before proceeding with the service checks.
- Use Tray 1 to test for print quality of the base printer.
- Replace the charge roll if it is damaged or contaminated.
- Replace the transfer roll if it is damaged or contaminated.
- Make sure the fuser assembly is installed correctly.
- Verify proper paper type, texture, and weight settings for the media being used.
- Test the printer using plain paper (20 lb).

Select the following menu settings as indicated. Be sure and note the original settings so you can return the printer to the original customer printer setup.

- Print Resolution: Set to 300 dpi (print quality problems should be checked at different resolution settings).
- Print Darkness: Set to NORMAL.
- Toner Saver: Set to OFF.
- PQET: Set to OFF.
- Fuser Temperature: Set to NORMAL.
- Test the printer using plain paper (20 lb).

An incorrect printer driver for the installed software can cause problems. Incorrect characters could print and the copy may not fit the page correctly.

Measure all voltages from the connector to printer ground. All voltages measured during the print cycle are measured with the controller board removed while running the print test.

Print quality—all black page

Service tip: An all black page is generally caused by a problem in the high voltage system or an incorrect high voltage in the printing process resulting in toner development on the entire photoconductor drum.

	FRU	Action
1	High voltage contacts	Check the high voltage contacts on the right side frame to ensure they fit securely and are not pitted, contaminated, or damaged. If incorrect, replace the contact with one from the HV contact kit. Screws are included to attach the contacts to the right side frame in the HV contact kit.
2	Charge roll conductive bushing	Make sure the charge roll bushing is correctly installed in the right charge roll arm.
3	HVPS	Check the voltages on J22-1 thru J22-8. If incorrect, replace the system board.
4	HVPS cable (part of front harness cable) System board	Check the continuity of the HVPS cable. If incorrect, replace the cable assembly. If correct, replace the system board.

Print quality—blank page.

	FRU	Action
1	Print cartridge	Check the print cartridge for damage, especially the PC drum contact on the cartridge.
2	High voltage contact	Check the PC drum contact on the right side frame for damage, PC drum contact wear or contamination. If the contact is bent or damaged, replace the contact. Note: Inspect the HVPS PC drum contact on the board for damage or contamination.
3	HVPS	Check the fuse on the HVPS. If open, replace the HVPS. Check the voltages at J22 on the system board. Measure the following voltages from connector J22 to printer ground: • Printer Idle J22-5 measures +24 V dc • Printer Printing J22-5 measures +24 V dc If the voltages at J10-5 are incorrect, replace the system board.
4	Front cable harness HVPS section	Check the front cable harness at J22 on the system board and at CN1 on the HVPS to make sure the harness is connected properly. If connected properly, check the continuity of the cable harness. If there is no continuity, replace the front cable harness.
5	Printhead assembly	Generally a 93x service error is posted if the printhead assembly fails and the printer does not give a blank copy symptom. The printhead used in the printer does not have a mechanical shutter as previous laser printers. The printer is interlocked through the front top cover interlock switch.

Print quality—random marks

Service tip: The primary cause of random marks is due to loose material moving around inside the printer and attaching to the photoconductor, charge roll, or transfer roll.

	Symptom	Action
1	Random marks	Check the print cartridge for loose or foreign material that might be on the photoconductor. Check the transfer roll and charge roll for any pieces of material that are stuck to the rolls.

Print quality—blurred or fuzzy print

Blurred or fuzzy print is usually caused by a problem in the main drive gearbox assembly, alignment assembly, any feed roller, or in the transfer roll bearings or transfer roll. Check the gearbox assembly for correct operation. Check the transfer roll for binds or a contaminated shaft or bearings.

Blurred print can also be caused by incorrect feeding from one of the input paper sources, paper trays, duplex option, or envelope feeder.

Check the high voltage contacts to ensure they are not bent, corroded, or damaged. Replace as necessary.

Print quality—evenly spaced horizontal lines or marks

	FRU	Action
1	Lines spaced 3.19 mm (.126 inch) apart	This can be caused by the motor pinion gear on the main drive motor. Replace the main drive motor.
2	Lines spaced 22.32 mm (.882 inch) apart Lines spaced 28.7 mm (1.130 inch) apart Lines spaced 47.83 mm (1.883 inch) apart Lines spaced 63.77 mm (2.511 inch) apart	This can be caused by a defective gear in the main drive gearbox assembly. Replace the main drive gearbox assembly.
3	Lines spaced 38.26 mm (1.506 inch) apart	This can be caused by defective gear(s) in the main drive gearbox. Replace the FRUs in the following order: • Main drive gearbox • Reference edge
4	Lines spaced 44.64 mm (1.757 inch) apart	Replace the FRUs in the following order: • Developer drive assembly • Main drive gearbox assembly
5	Lines spaced 47.19 mm (1.858 inch) apart	Replace the FRUs in the following order: • Toner cartridge • Charge roll • Developer drive assembly
6	Lines spaced 49.16 mm (1.935 inch) apart	Replace the toner cartridge.

	FRU	Action
7	Lines spaced 49.74 mm (1.958 inch) apart	Replace the FRUs in the following order: • Redrive assembly • Fuser assembly  There is a danger from hazardous voltage in the area of the printer where you are working. Unplug the printer before you begin, or use caution if the printer must receive power in order to perform the task.
8	Lines spaced 51.02 mm (2.009 inch) apart	Replace the transfer roll.
9	Lines spaced 52.23 mm (2.056 inch) apart	Replace the redrive assembly.
10	Lines spaced 76.53 mm (3.013 inch) apart	Replace the FRUs in the following order: • Alignment assembly • Main drive gearbox assembly
11	Lines spaced 95.66 mm (3.766 inch) apart	Replace the FRUs in the following order: • Toner cartridge • Main drive gearbox assembly
12	Lines spaced 99.49 mm (3.917 inch) apart	Replace the redrive assembly.
13	Lines spaced 114.79 mm (4.519 inch) apart	Replace the alignment assembly.

Print quality—background

Service tip: Some background problems can be caused by rough papers, non-IBM toner cartridges or if the media texture is set to the rough setting.

Some slick or coated papers may also cause background. Some problems occur with printers that run a large amount of graphics in a humid environment. The customer may try to improve the print quality by increasing the transfer setting.

Check the charge roll to make sure it is not at the end of life.

	FRU	Action																		
1	Printhead	The printhead on the IBM printers cannot be cleaned. Try another printhead if all other attempts fail to correct a background problem.																		
2	Transfer roll assembly	Check the high voltage contact from the HVPS to the transfer roll. Check the transfer arm assembly right side bearing for contamination, pitting, or a loose cable to the bearing. If any problems are found, replace the defective part. Check the transfer roll shaft for contamination, wear, or pitting on the ends of the shaft that go into the bearings. If a problem is found, clean the ends of the shaft or replace the transfer roll assembly.																		
3	High voltage contacts	Check the high voltage contacts on the right side frame to ensure they are clean and not bent, deformed, or pitted. If incorrect, replace the contact.																		
4	System board HVPS connector	Check the following voltages at J22 on the system board. Measure the voltages from J22 to printer ground. <table><tr><th>Pin</th><th>Voltage (approximate)</th></tr><tr><td colspan="2">Printer idle</td></tr><tr><td>J22-1</td><td>0 V dc</td></tr><tr><td>J22-2</td><td>+4 V dc</td></tr><tr><td>J22-4</td><td>0 V dc</td></tr><tr><td colspan="2">Printer printing</td></tr><tr><td>J22-1</td><td>0 V dc to +5 V dc</td></tr><tr><td>J22-2</td><td>0 V dc to +4 V dc</td></tr><tr><td>J22-4</td><td>0 V dc to +1.9 V dc</td></tr></table> If J22-1 voltage is incorrect, check the continuity of the front harness cable (J22-1 line). If there is no continuity, replace the harness cable. If there is continuity, replace the HVPS. If this does not correct the problem, replace the system board. If J22-2 voltage is incorrect or if the voltage remains at 0 V dc, check the continuity of the front harness cable (J22-2 line). If there is no continuity, replace the harness cable. If there is continuity, replace the HVPS. If this does not correct the problem, replace the system board. If J22-4 voltage is incorrect, check the front harness cable (J22-3 line). If there is not continuity, replace the harness cable. If correct, replace the system board. if this does not correct the problem, replace the HVPS.	Pin	Voltage (approximate)	Printer idle		J22-1	0 V dc	J22-2	+4 V dc	J22-4	0 V dc	Printer printing		J22-1	0 V dc to +5 V dc	J22-2	0 V dc to +4 V dc	J22-4	0 V dc to +1.9 V dc
Pin	Voltage (approximate)																			
Printer idle																				
J22-1	0 V dc																			
J22-2	+4 V dc																			
J22-4	0 V dc																			
Printer printing																				
J22-1	0 V dc to +5 V dc																			
J22-2	0 V dc to +4 V dc																			
J22-4	0 V dc to +1.9 V dc																			

Print quality—banding

Service tip: Banding is difficult to detect except on a page with a uniform gray or a large amount of graphics printed on the page. Banding is primarily due to a variation in the speed of the paper as it feeds through the printer, especially in the development and transfer process. Inspect the alignment assembly, main drive assembly, and all other paper feed components for signs of wear, dirt, binds, or damage, especially the drive gears. Banding appears as light or dark horizontal lines on a uniformly gray page.

Banding can also be caused by a defective charge roll brush contact or HVPS. Check the charge roll contact for damage and for proper connection to the HVPS and print cartridge.

Print quality—black bands on outer edges of the page

This print quality problem appears as vertical black bands on one or both sides of the copy and can be wide, narrow, light, or dark.

	FRU	Action
1	Charge roll counterbalance springs	If the problem is just on one side of the page, check the charge roll counterbalance spring on that side. You can check to see if enough force is being applied to the charge roll by applying a slight downward pressure with your finger to the charge roll link arm that the spring is attached to while you run a print test sample. See if the problem changes or goes away. If this fixes or changes the problem, then check the springs and charge roll link arm assemblies for binds or defective parts. Replace as necessary.
2	Charge roll assembly Charge roll link arm	Check the charge roll for toner buildup or other contamination on the outer edges that correspond to the bands on the page. Check the charge links and arms for proper operation, binds or incorrectly mounted counterbalance springs. Repair or replace as necessary.
3	HVPS	Check the following voltages at J22-8 on the system board: - Printer Idle J22-8 measures 0 V dc - Printer Printing Test Page J22-8 voltage changes from 0 V dc to +4 V dc If the voltage does not vary, check the continuity of line J22-8 in the front cable harness. If there is no continuity, replace the cable harness. If there is continuity, replace the HVPS. If this does not correct the problem, replace the system board. Turn the printer off and check the resistance between J22-7 and printer ground. The resistance measures approximately 0 ohms. If incorrect, make sure the system board is mounted correctly and securely grounded. If correct, replace the system board.

Print quality—residual image

Service tip: Install a new print cartridge if available before doing this service check. Residual image can be caused by the photoconductor, cleaning blade, and other parts inside the print cartridge.

	FRU	Action
1	Hot roll fuser assembly	Check the fuser assembly for toner contamination. The hot roll especially might cause toner to be retained and deposited on the page.

Print quality—light print

Service tip: Check the toner saver and print darkness settings first if the print is light.

	FRU	Action
1	Transfer roll	Check the right end of the transfer roll shaft for signs of wear or contamination. If incorrect, replace the transfer roll.
2	Right side transfer roll arm assembly HVPS	Check the right side transfer roll arm assembly bearing for wear or contamination. Also make sure the transfer cable is firmly attached to the bearing. If incorrect, replace the right side transfer arm assembly. Check the connection of the transfer roll assembly cable to the transformer on the HVPS board. Check the continuity of the cable from the bearing to the spade terminal on the cable. If incorrect, replace the right side transfer arm assembly. If correct, replace the HVPS.
3	Printhead	A contaminated printhead may be the cause of light print. If no other cause is found, install a new printhead.

Print quality—toner on backside of printed page

Service tip: This is generally caused by loose toner in the machine in the paper path being carried through the printer on the backside of the paper.

	FRU	Action
1	Hot roll fuser assembly	Toner is being carried out on the backside of the media. This problem is generally caused by a toner buildup on the fuser hot roll or backup roll. Check the fuser hot roll and backup roll for any noticeable buildup of toner. Repair as necessary.
2	Transfer roll transfer plate assembly	Check the transfer roll for toner buildup or loose toner around the area of the transfer plate assembly. Clean the area and run another copy. If the problem continues, replace the FRUs in the following order: • HVPS • System board

Smart contact assembly service check

Note: If you are unable to clear a “32-Unsupported Cartridge” User Error message, be sure an IBM print cartridge is correctly installed in the printer. The cartridge is easily identified by the contact board on the right side rear of the cartridge. Install another print cartridge before attempting to troubleshoot the printer. Make sure the smart cable is properly connected to J19 on the system board. Check the print cartridge for damage or improper installation of the smart chip. Also, be sure there is proper contact between the smart chip on the cartridge, and the smart contact assembly.

Service tip: An intermittent “32-Unsupported Cartridge” User Error message can be caused by poor contact between the smart cartridge contacts in the upper front cover and the smart chip. Also check for proper seating of the smart cartridge cable to the system board.

	FRU	Action
1	Smart contact assembly System board	Check the voltage on the smart cartridge contact. The voltage measures approximately +3.8 V dc when not writing data to the system board. If data is being written, the voltage measures approximately 0 V dc. If incorrect, disconnect the cable from J19 on the system board and check the voltage on J19-1. The voltage measures approximately +5 V dc. • If incorrect, replace the system board. • If correct, replace the smart cartridge contact assembly.

StapleSmart finisher service check

Note: When removing the stapler mechanism from the option, first remove the staple supply cartridge.

Note: When replacing staples in the supply cartridge, discard any old staples in the cartridge and replace with a fresh strip.

Problems with static electricity buildup

	FRU	Action
1	Top cover	Make sure the brush is attached to the top cover assembly, the ground clips are installed, and the brush is grounded.

Printer does not recognize StapleSmart finisher option as being installed.

	FRU	Action
1	StapleSmart finisher option	Ensure that the StapleSmart finisher is the only option that is not recognized by the base printer. If the finisher is the only option not recognized by the printer continue with step 2. If not, check the autoconnects of the options not recognized and the interconnect board and cable connectors.
2	Stapler motor/drive assembly stapler card assembly	Check the autoconnects for signs of damage, especially the connector pins. Remove the right side cover and check the cables at J1A, J1B (bottom autoconnect), J14A, J14B (top autoconnect) to the stapler card assembly to make sure they are attached securely. Check the voltages at the printer top autoconnect. If incorrect, remove the finisher option and go to "Autoconnect" on page 5-1 . If voltages are correct, reinstall the finisher option and check the voltages at J1A and J1B on the connector. If correct, replace the stapler card assembly. If incorrect, replace the stapler motor/drive mechanical assembly.

Close Finisher Top Cover displayed—unable to clear or reset message. (POST incomplete)

	FRU	Action
1	Top cover assembly	Check the top cover assembly to ensure that it is actuating the top cover switch and the cover is opening and closing correctly.
2	Top cover switch stapler card assembly	Check continuity of the stapler top cover open switch. If incorrect, replace the switch assembly. If correct, replace the stapler card assembly.

Close Finished Side Door displayed—unable to clear or reset message. (POST incomplete)

	FRU	Action
1	Side cover door	Check the stapler access door for any signs of damage or broken parts. Make sure the door correctly actuates the stapler side access door switch.
2	Side cover door switch Stapler card assembly	Check the continuity of the stapler access door switch. If incorrect, replace the stapler access door switch assembly. If correct, replace the stapler card assembly.

POST incomplete—stapler cycles several times.

	FRU	Action
1	Stapler assembly	Replace the stapler assembly. Note: When replacing the stapler assembly, observe the location of the ground lead from the stapler assembly and the finisher frame. Make sure the ground lead is correctly reattached.

990 Service Error Code - Check Bin x displayed—POST Incomplete

- “Step 1—During POST the stapler option does not try to home.” on page 2-88.
- “Step 2—During POST the stapler option tries to home.” on page 2-88.

Step 1—During POST the stapler option does not try to home.

	FRU	Action																					
1	Stapler card assembly Drive motor assembly	Turn the printer off, disconnect the motor from J2 and check for continuity between J2 pins 1, 2, 5, and 6 on the cable and the motor case. If you get continuity, replace the motor drive assembly. If you do not measure continuity, continue with this step. Reconnect J2 and check the voltages on connector J2. Note: All voltages are approximate values. <table border="1"> <thead> <tr> <th>Pin No.</th><th>Voltage static</th><th>Voltage feeding</th></tr> </thead> <tbody> <tr> <td>1</td><td>+24 V dc</td><td>+24 V dc</td></tr> <tr> <td>2</td><td>+24 V dc</td><td>Varies +11.4 V dc to +24 V dc</td></tr> <tr> <td>3</td><td>Not used</td><td></td></tr> <tr> <td>4</td><td>Ground</td><td></td></tr> <tr> <td>5</td><td>+5 V dc</td><td>Varies +3.6 V dc to +5 V dc</td></tr> <tr> <td>6</td><td>+5 V dc</td><td>+5 V dc</td></tr> </tbody> </table> If the voltages are correct, replace the motor drive assembly. If the voltages are incorrect, replace the stapler card assembly.	Pin No.	Voltage static	Voltage feeding	1	+24 V dc	+24 V dc	2	+24 V dc	Varies +11.4 V dc to +24 V dc	3	Not used		4	Ground		5	+5 V dc	Varies +3.6 V dc to +5 V dc	6	+5 V dc	+5 V dc
Pin No.	Voltage static	Voltage feeding																					
1	+24 V dc	+24 V dc																					
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3	Not used																						
4	Ground																						
5	+5 V dc	Varies +3.6 V dc to +5 V dc																					
6	+5 V dc	+5 V dc																					
2	Drive motor assembly (mechanical)	Check the drive motor assembly (99A2513) for normal operation. Normal operation for this assembly during POST is the motor turns, the motor pinion gear turns, the drive gear turns, and the clutch rotates and sets.																					

Step 2—During POST the stapler option tries to home.

Note: When a 990 Service Error is displayed during POST, the failure is usually in the stapler mechanical unit or stapler card.

281 Paper Jam—The paper feeds partway into the standard bin even if finisher is selected

Note: When a 900 Service Error is displayed during POST the failure is usually in the stapler gearbox assembly or stapler cartridge.

	FRU	Action																					
1	DC motor in drive gearbox assembly Stapler card assembly	Turn the printer off, disconnect the motor from J4 and check for continuity between J4 pins 1, 2, 5, and 6 on the cable and the motor case. If you get continuity, replace the drive gearbox assembly. If you do not measure continuity, continue with this step. Check the voltages on connector J4. Note: All voltages are approximate values <table border="1"> <thead> <tr> <th>Pin No.</th><th>Voltage static</th><th>Voltage feeding</th></tr> </thead> <tbody> <tr> <td>1</td><td>+24 V dc</td><td>+24 V dc</td></tr> <tr> <td>2</td><td>+24 V dc</td><td>Varies +11 V dc to +24 V dc</td></tr> <tr> <td>3</td><td>Not used</td><td></td></tr> <tr> <td>4</td><td>Ground</td><td></td></tr> <tr> <td>5</td><td>+5 V dc</td><td>Varies +3 V dc to +5 V dc</td></tr> <tr> <td>6</td><td>+5 V dc</td><td>+5 V dc</td></tr> </tbody> </table> If the voltages are correct, replace the mechanical drive assembly. If the voltages are incorrect, replace the stapler card assembly.	Pin No.	Voltage static	Voltage feeding	1	+24 V dc	+24 V dc	2	+24 V dc	Varies +11 V dc to +24 V dc	3	Not used		4	Ground		5	+5 V dc	Varies +3 V dc to +5 V dc	6	+5 V dc	+5 V dc
Pin No.	Voltage static	Voltage feeding																					
1	+24 V dc	+24 V dc																					
2	+24 V dc	Varies +11 V dc to +24 V dc																					
3	Not used																						
4	Ground																						
5	+5 V dc	Varies +3 V dc to +5 V dc																					
6	+5 V dc	+5 V dc																					

	FRU	Action
1	Swing arm spring	Make sure the swing arm spring is connected and not loose or broken.
2	Clutch assembly Drive motor assembly Drive gear	Check the clutch assembly on the right side frame assembly for correct operation and broken or loose parts. Check the drive motor assembly and drive gear for damage.

281 Paper Jam—The paper may jam at the upper deflector.

	FRU	Action
1	Upper deflector	Check the upper deflector for signs of broken parts, especially the hook that holds the upper deflector spring. Check for bowing of the deflector. Make sure the deflector moves smoothly and freely with no signs of binds.
2	Upper deflector spring	Make sure the upper deflector spring is not loose or broken.

281 Paper Jam—paper jams into stapler output bin.

	FRU	Action
1	Center stapler bail	Check the center stapler bail for broken parts and that the bail moves freely on the upper exit shaft assembly.
2	Upper exit shaft assembly Lower exit shaft assembly Exit shaft bearings	Check the upper and lower shaft assembly for wear, binds, or damage. Check the exit shaft bearings for damage or binding.

282 Staple Jam - Check Stapler displays.

	FRU	Action
1	Stapler assembly	Check the stapler assembly for broken or damaged parts.

POST incomplete—Insert Stapler Cartridge displays (cartridge holder is installed and cannot clear message)

When this failure occurs, the following may also occur in the order shown:

- **Insert Staple Cartridge** displayed.
The stapler assembly may cycle or fire a few times.
- **282 Stapler Jam** displayed.
The stapler assembly may try to cycle or fire.
- **990 Service - Check Bin 1** displayed.

	FRU	Action
1	Stapler cartridge holder Stapler assembly	Before proceeding with the service check, gently try to remove the stapler cartridge holder from the stapler assembly. If the holder is jammed in the stapler assembly: 1. Turn the printer off and remove the right side cover. Use care when removing the cover as the right side door switch and cable assembly are easily damaged. Do not allow the right side cover to hang by the switch and cable assembly. 2. Disconnect the 10 pin cable from the stapler assembly. 3. Hold the stapler assembly with one hand while removing the three screws from the assembly. The assembly is heavy and easy to drop. 4. Check the stapler assembly for damaged or broken parts. Check the flag and spring assembly on the front of the stapler assembly to see if the flag or spring are broken or missing. If any problem is found, replace the stapler assembly. If no problem is found, continue with step 5. 5. Carefully cycle the large gear on the side of the stapler assembly and try to free the cartridge holder assembly. Note: Look for staples jammed at the throat of the cartridge holder and remove any that are found. Gently try to remove the cartridge holder from the stapler assembly. It may be necessary to manually cycle the large gear on the side of the stapler assembly to release the cartridge holder. 6. Reinstall the stapler assembly with a new stapler cartridge holder and staples. Run the Finisher Feed Test to check the option. If the problem continues, go to step 2.
2	Stapler to stapler board (J3) cable	Check the continuity of the cable. If a problem is found, replace the cable.

	FRU	Action																																	
3	Stapler board Stapler assembly	Check the voltages on connector J3 on the board. Note: All voltages are approximate values. <table border="1"> <thead> <tr> <th>Pin No.</th><th>Voltage static</th><th>Voltage feeding</th></tr> </thead> <tbody> <tr><td>1</td><td>+24 V dc</td><td>+24 V dc</td></tr> <tr><td>2</td><td>+24 V dc</td><td>+24 V dc</td></tr> <tr><td>3</td><td>+24 V dc</td><td>+24 V dc</td></tr> <tr><td>4</td><td>+24 V dc</td><td>+24 V dc</td></tr> <tr><td>5</td><td>0 V dc</td><td>0 V dc</td></tr> <tr><td>6</td><td>0 V dc</td><td>0 V dc</td></tr> <tr><td>7</td><td>0 V dc</td><td>Varies (0 V -1.5 V dc)</td></tr> <tr><td>8</td><td>GND</td><td></td></tr> <tr><td>9</td><td>+5V dc</td><td>+5V dc</td></tr> <tr><td>10</td><td>0 V dc</td><td>0 V dc</td></tr> </tbody> </table> If the voltages are correct, replace the stapler assembly. If the voltages are incorrect, replace the stapler board.	Pin No.	Voltage static	Voltage feeding	1	+24 V dc	+24 V dc	2	+24 V dc	+24 V dc	3	+24 V dc	+24 V dc	4	+24 V dc	+24 V dc	5	0 V dc	0 V dc	6	0 V dc	0 V dc	7	0 V dc	Varies (0 V -1.5 V dc)	8	GND		9	+5V dc	+5V dc	10	0 V dc	0 V dc
Pin No.	Voltage static	Voltage feeding																																	
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2	+24 V dc	+24 V dc																																	
3	+24 V dc	+24 V dc																																	
4	+24 V dc	+24 V dc																																	
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6	0 V dc	0 V dc																																	
7	0 V dc	Varies (0 V -1.5 V dc)																																	
8	GND																																		
9	+5V dc	+5V dc																																	
10	0 V dc	0 V dc																																	

283 Staple Jam - Check Stapler displays.

	FRU	Action
1	Staple cartridge holder	Check the staple cartridge holder for any signs of damage and for any jammed staples in the cartridge. Replace the staple cartridge holder if damaged. If staples are jammed in the cartridge, replace the old strip of staples with a new strip and try the finisher feed test from the diagnostic menu.
2	Staple unit	Remove the staple cartridge holder from the staple unit and remove the staple unit. Check for any staples that might be in the staple unit mechanism. Check for correct operation and for any signs of damage.

Paper feeds into finisher option output tray—Paper is not stapled—Paper does not align with the right side.

	FRU	Action																					
1	Paper alignment wheel Paper alignment pad	Check to make sure the gamma wheel aligner assembly is operating correctly and that the wheel is touching the paper. If the gamma wheel is not turning or touching the paper, go to step 2. If the wheel is turning and touching the paper, check the wheel for wear, damage, or contamination. If any problem with the wheel is found, replace the wheel. Check to make sure the aligner assembly and pads are operating correctly. Make sure the pads are touching the paper and moving the paper to the right side frame. If the aligner pads are not moving into the lower position and touching the paper, go to step 3. If the aligner pads are touching the paper, make sure the pads are not worn, damaged, or contaminated. Replace if necessary.																					
2	Paper wheel aligner assembly	Check the paper wheel aligner assembly to make sure it is mounted correctly. Check to make sure there are no broken gears or other mechanical parts. If any are found, replace the aligner assembly. If no problem is found, go to step 3.																					
3	Stapler board	Check to make sure the cable to J4 (Accessory) is properly connected to J4 on the board. Turn the printer off, disconnect the motor cable from J4, and check for continuity between J4 pins 1,2,3, and 4 to the motor case. If you get continuity, replace the gearbox drive assembly. If you do not get continuity, continue with the step. <table border="1"> <thead> <tr> <th>Pin No.</th><th>Voltage static (Motor not running)</th><th>Voltage feeding (Motor running)</th></tr> </thead> <tbody> <tr> <td>1</td><td>+24 V dc</td><td>+24 V dc</td></tr> <tr> <td>2</td><td>+24 V dc</td><td>Should vary when motor running</td></tr> <tr> <td>3</td><td>Not used</td><td></td></tr> <tr> <td>4</td><td>Ground</td><td></td></tr> <tr> <td>5</td><td>+5 V dc</td><td>Should vary when motor running</td></tr> <tr> <td>6</td><td>+5 V dc</td><td>+5 V dc</td></tr> </tbody> </table> If the voltages are correct, replace the gearbox drive assembly. If the voltages are incorrect, replace the stapler board.	Pin No.	Voltage static (Motor not running)	Voltage feeding (Motor running)	1	+24 V dc	+24 V dc	2	+24 V dc	Should vary when motor running	3	Not used		4	Ground		5	+5 V dc	Should vary when motor running	6	+5 V dc	+5 V dc
Pin No.	Voltage static (Motor not running)	Voltage feeding (Motor running)																					
1	+24 V dc	+24 V dc																					
2	+24 V dc	Should vary when motor running																					
3	Not used																						
4	Ground																						
5	+5 V dc	Should vary when motor running																					
6	+5 V dc	+5 V dc																					

Misalignment of sheets to be stapled.

	FRU	Action
1	Left side bail assembly	Check the left side bail assembly for any signs of binding, missing, or broken parts.
2	Stapler gearbox assembly	Check the stapler gearbox assembly for correct operation.

Sheets are transported into output tray but not stapled.

	FRU	Action
1	Sol 1, stapler drive Stapler assembly Stapler card assembly	Disconnect Sol 1 cable from J5 on the stapler card and measure the resistance of the solenoid across the cable connector. It should measure approximately 48 ohms (when cold). If incorrect, replace the stapler/finisher option assembly. If correct, replace the stapler card assembly.

Stapled sheets are not transported to the output tray.

	FRU	Action
1	Sol 2 (stapler gearbox assembly) Stapler card assembly	Disconnect Sol 2 cable from J8 on the stapler card and measure the resistance of the solenoid across the cable connector. It should measure approximately 48 ohms (cold). If incorrect, replace the stapler/finisher option assembly. If correct, replace the stapler card assembly.

POST incomplete—stapler cycles several times

	FRU	Action
1	Stapler assembly	Replace the stapler assembly. Note: When replacing the stapler assembly, observe the location of the ground lead from the stapler assembly and the finisher frame, and make sure the ground lead is correctly reattached. (Flag or spring off stapler unit) Will also happen when pin 7 of J3 is open.

Toner sensor service check

Service tip: Check the print darkness menu setting before checking the toner sensor.

This service check is intended to be used when a 929 Service Error displays.

	FRU	Action
1	Developer drive assembly	Incorrect operation of the developer drive assembly can cause the printer to display a 929 error code (Toner Sensor). Check the developer drive assembly for correct installation, any sign of worn, loose, or broken parts.
2	Front harness cable	Check the toner sensor portion of the front harness cable to make sure it is properly seated into the toner sensor. If correct at both the sensor and system board (J22), check the continuity of the cable. If incorrect, replace the cable.
3	Toner sensor	The toner sensor cable is part of the front harness and part of connector J22 on the system board. Check the voltage at J22-11. It reads approximately +5 V dc. If incorrect, replace the system board. If correct, check the voltage at J22-12. It reads approximately +5 V dc with the system board removed from the printer. If incorrect, replace the system board. If correct, replace the toner sensor assembly. A bad ground connection between J22-13 on the system board and pin 3 on the toner sensor results in a 929 service error.

Transfer roll service check

Service tip: The transfer roll is 51.02 mm (2.009 inch) circumference. Any print quality problems such as lines that are spaced 51.02 mm apart indicate you should check the transfer roll for damage and check for toner or foreign material buildup.

Service tip: The transfer roll assembly is part of the maintenance kit and is replaced when an 80 Scheduled Maintenance displays. Ask the customer if they have replaced the transfer roll recently.



CAUTION: Make sure the printer is unplugged before making any checks on the transfer roll or associated parts for personal safety and to prevent damage to the printer.

	FRU	Action
1	Transfer roll assembly	Check the transfer roll for toner buildup, surface damage to the roll, oil, or other contaminants on the surface of the roll. Replace the transfer roll as necessary.
2	Left transfer arm assembly	Check the left transfer roll arm assembly to make sure it is fastened and locked in the down position. If the arm is not locked down, make sure the arm is not broken and locks into the EP frame correctly. Check the left transfer arm assembly spring for proper operation.
3	Right transfer arm assembly	Check the right transfer arm assembly to make sure it is fastened and locked in the down position. If the arm is not locked down, make sure the arm is not broken and locks into the EP frame correctly. Check the right transfer arm assembly spring for proper operation. For any background problems, ensure the contact to the HVPS board is correct and that there is approximately 0 ohms resistance between the transfer roll shaft and the HVPS contact. If correct, go to "Print quality—background" on page 2-82.
4	HVPS—917 Error code	Check the voltage at J22-3. The voltage changes from +24 V dc with the printer idle to 0 V dc when the printer runs the print test. If the voltage is incorrect, check the continuity of line J22-3 in the front cable harness to the HVPS. If there is no continuity, replace the cable harness. If there is continuity, replace the HVPS. If the problem continues, replace the system board.

3. Diagnostic aids

This chapter explains the tests and procedures to identify printer failures and verify repairs have corrected the problem.

To run the printer diagnostic tests described in this chapter, you must put the printer in Diagnostic Mode.

Diagnostics mode

Entering Diagnostic Mode:

1. Turn the printer off.
2. Press and hold the **Go** and **Return** buttons.
3. Turn the printer on.
4. Release the buttons when Performing Self Test displays on the operator panel.

Available tests

The tests display on the operator panel in the order shown:

- Print Registration
- Print Tests
- Hardware Tests
- Duplex Tests (if installed)
- Input Tray Tests
- Output Bin Tests
- Finisher Tests (if installed)
- Base Sensor Test
- Device Tests (displayed only if flash or disk option is installed)
- Printer Setup
- EP Factory Defaults
- Error Log

Exiting Diagnostics Mode

Select **Exit Diagnostics** to exit the Diagnostics Mode and return to normal mode.

Device tests

Quick Disk Test

This test performs a non-destructive read/write on one block per track on the disk. The test reads one block on each track, saves the data, and proceeds to write and read four test patterns to the bytes in the block. If the block is good, the saved data is written back to the disk.

To run the Quick Disk Test:

1. Select **Quick Disk Test** from the Device Tests menu.
 - The power indicator blinks while the test is in progress.
 - “Quick Disk Test/Test Passed” message displays if the test passes and the power indicator turns on solid.
 - “Quick Disk Test/Test Failed” message displays if the test failed and the power indicator turns on solid.
2. Press **Go**, **Return**, or **Stop** to return to the Device Tests menu.

Disk Test/Clean

Warning: This test destroys all data on the disk and should not be attempted on a good disk. Also note that this test may run approximately 1 1/2 hours depending on the disk size.

To run the Disk Test/Clean Test:

1. Select **Disk Test/Clean** from the Device Tests menu.
“Files will be lost/Go or Stop?” message displays to warn the user that all contents on the disk will be lost.
2. To exit the test immediately and return to the Device Tests menu, press **Return/Stop**. To continue with the test, press **Go**.
If **Go** is selected, “Disk Test/Clean/BAD:000000 00%” message displays. The screen updates periodically indicating the percentage of test completed and the number of bad blocks found.
3. The power indicator blinks during the test. The test can be canceled anytime during the test by pressing **Return/Stop**.
 - Once the test is complete, the power indicator turns on solid and a message displays.
 - “xxxx Bad Blocks/yyyyy Usable” message displays if fewer than 2000 bad blocks are detected. xxxx indicates the number of bad blocks and yyyyyy indicates the number of usable blocks.
 - “xxxx Bad Blocks/Replace Disk” message displays if more than 2000 bad blocks are detected. The disk cannot be recovered because too many bad blocks exist on the disk.
4. Press **Go** or **Return/Stop** to return to the Device Tests menu.

Flash Test

This test causes the file system to write and read data on the flash to test the flash.

Warning: This test destroys all data on the flash because the flash is reformatted at the end of the test.

To run the Flash Test:

1. Select **Flash Test** from the Device Tests menu.
 - The power indicator blinks while the test is running.
 - “Flash Test/Test Passed” message displays if the test passes and the power indicator turns on solid.
 - “Flash Test/Test Failed” message displays if the test fails and the power indicator turns on solid.
2. Press **Go** or **Return/Stop** to return to the Device Tests menu.

Disabling Download Emulations

- Error Code 964: Download Emulation CRC Failure. Checksum failure detected in the emulation header or emulation file.
- Error Code 965: Download Emulation Outdated. Time stamps indicate the download emulation and RIP code are incompatible.

To help resolve download emulation problems the following steps are necessary to instruct the printer to POR without activating any download emulations.

To disable the download emulation:

1. Turn the printer off.
2. Press and hold the **Go** and **Menu** buttons.
3. Turn the printer on and release the buttons once “Performing Self Test” displays.
Once the printer is idle, the emulation can be downloaded again.
4. Program the download emulation into the code overlay card assembly again.
5. If these steps do not resolve the problem, replace the code overlay card assembly and download the emulation again.

Duplex tests

Duplex Quick Test

This test is used to verify that the Duplex Option Top Margin is set correctly. This test prints a duplexed version of the Quick Test Page that can be used to adjust the Top Margin for the backside of the duplexed page. You can run one duplexed page (Single) or continue printing duplexed pages (Continues) until **Return/Stop** is pressed.

The paper you choose to print the page on should be either Letter or A4.

To run the Duplex Quick Test:

1. Select **Duplex Quick Test** from the menu.
2. Select **Single** or **Continuous**.
 - The single Duplex Quick test cannot be canceled.
 - The printer attempts to print the Quick Test Page from the default paper source. If the default paper source only supports envelopes, then the page is printed from Tray 1.
 - Check the Quick Test Page for the correct offset between the placement of the first scan line on the front and back side of a duplexed sheet.
 - If adjustment is necessary the Top Margin Offset must be adjusted first. The range of the adjustment is -25 to +25. The Duplex Top Margin Offset range is -20 to +20.
 - Adjustment of this setting lets you shift up or down the position of the Top Margin. Changing this parameter by 1 unit moves the margin 1/100 inch. A positive offset moves the text down the page and widens the top margin while a negative offset moves the text up the page and narrows the top margin.
3. Press **Return/Stop** to exit the test.

Check the Top Margin Offset of the base printer.

Duplex Sensor Test

This test is used to determine whether or not the duplex sensors and switches are working correctly.

1. Select **Sensor Test** from the Duplex Tests menu.
2. Manually actuate each of the duplex sensors. When the sensor/switch is closed, CL (closed) displays, when the sensor/switch is open, OP (Open) displays.
 - Duplex input sensor
 - Duplex exit sensor
3. Press **Return/Stop** to exit the test.

Duplex Motor Test

This test lets you test the duplex option paper feed drive system, and verify that the power and velocity values are acceptable.

To run the Duplex Motor Test:

1. Select **Motor Test** from the Duplex Tests menu. The duplex motor test continues to run until the printer is powered off.

- The power indicator blinks while the test is running.
- The duplex option runs the motor at a high speed and then a low speed and takes an average of the power required for each speed.
- After all the information is computed, the motor turns off.

DUPLEX MOTOR AA BB CC DD EE FF

appears on the printer display.

To pass the test the following results must display:

AA = 00

BB = in the range of 20 through 3F inclusively (hex)

CC = in the range of 3A through 5D inclusively (hex)

DD = in the range of 11 through 1F inclusively (hex)

Ignore bytes EE and FF.

If the test fails, remove the drive belt from the duplex DC motor and run the motor test again. For the duplex DC motor to pass the test the following results must display:

AA = 00

BB = in the range of 29 through 3E inclusively (hex)

CC = in the range of 35 through 51 inclusively (hex)

DD = in the range of 0C through 13 inclusively (hex)

For the duplex drive system to pass the test the following results must display:

AA = 00

BB = in the range of 29 through 3F inclusively (hex)

CC = in the range of 3A through 5D inclusively (hex)

DD = in the range of 11 through 1F inclusively (hex)

2. Press **Return/Stop** to exit the test.

Duplex Feed 1 Test

This test feeds a blank sheet of paper to the duplex paper stop position 1.

To run the Duplex Feed 1 Test:

Select **Duplex Feed 1** from the Duplex Test menu.

- The power indicator blinks while the paper is feeding.
- "Duplex Feed 1/Feeding" message displays while the paper is feeding through the printer.
- "Duplex Feed 1/Clear Paper" message displays when the paper reaches paper stop position 1 and the power indicator turns on solid.

Duplex Feed 2 Test

This test feeds a blank sheet of paper to the duplex paper stop position 2.

To run the Duplex Feed 2 Test:

Select **Duplex Feed 2** from the Duplex Test menu.

- The power indicator blinks while the paper is feeding.
- “Duplex Feed 2/Feeding” message displays while the paper is feeding through the printer.
- “Duplex Feed 2/Clear Paper” message displays when the paper reaches the duplex paper stop position 2 and the power indicator turns on solid.

Error log

Viewing the error log

The error log provides a history of printer errors. It contains the 12 most recent errors that have occurred on the printer. The most recent error displays in position 1 and the oldest error displays in position 12 (if 12 errors have occurred). If an error occurs after the log is full, the oldest error is discarded. Identical errors in consecutive positions in the log are entered. All 2xx and 9xx error messages are stored in the error log.

To view the error log:

1. Select **Display Log** from the Error Log menu. The error log displays on three screens as only four entries display at a time.

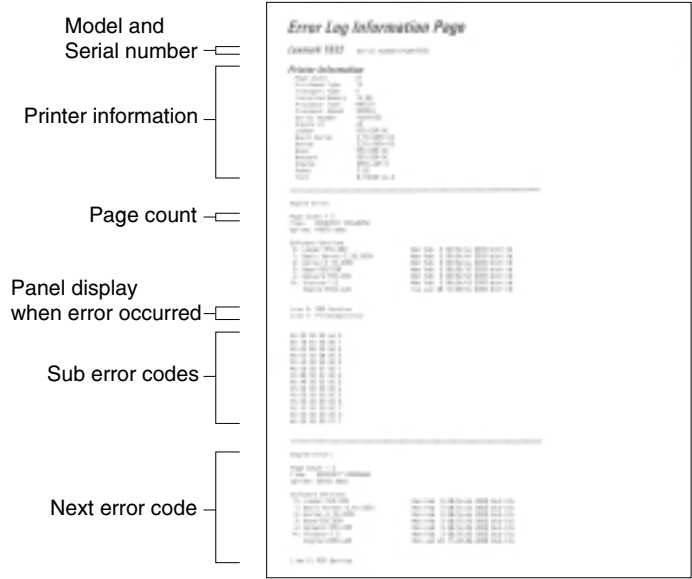
ERROR LOG Display Log

2. To move to the next screen press **Menu**.
3. Press **Return/Stop** to exit the Error Log.

Printing the error log

Additional diagnostic information is available when you print the error log. Some of the additional information includes:

- Detailed printer information
 - Time and date stamps
 - Page counts for each error
 - Sub error code information for each 9xx or 2xx error
- Note:** The 900 error code does not have sub error codes.



The printed error log can be faxed to your next level of support for verification or diagnosis.

To print the error log:

1. Select **Print Log** from the Error Log menu.



2. To move to the next screen, press **Menu**.
3. Press **Return/Stop** to exit the Error Log menu.

Clearing the error log

1. Select **Clear Log** from the Error Log menu.

ERROR LOG Clear Log

2. Select **YES** to clear the Error Log or **NO** to exit the Clear Log menu. If **YES** is selected, **Empty Error Log** displays on the screen.
3. Press **Return/Stop** to exit the Clear Log menu.

Hardware tests

Select the following Hardware Tests from this menu:

- LCD Test
- Button Test
- DRAM Memory Test
- ROM Memory Test
- Parallel Wrap (if available)
- Serial Wrap (if available)
- Serial 1 Wrap (if available)
- Serial 3 Wrap (if available)

LCD Test

1. Select **LCD Test** from the Diagnostic menu. The LCD test continually executes the LCD display test.
2. Press **Return/Stop** to cancel the test.

Button Test

1. Select **Button Test** from the Diagnostic menu. With no buttons pressed, several OP (Open) appear on the display.
2. Press each button one at a time and a CL (Closed) displays in place of an OP. The proper operation of each button can be checked.
3. Press **Return/Stop** to cancel the test.

SDRAM Memory Test

The purpose of this test is to check the validity of SDRAM, both standard and optional. The test writes patterns of data to SDRAM to verify that each bit in memory can be set and read correctly.

To run the SDRAM Memory Test:

1. Select **SDRAM Memory Test** from the menu. The power indicator blinks indicating the test is in progress.
2. Press **Return/Stop** to exit the test.

P:##### represents the number of times the memory test has passed and finished successfully. Initially 000000 displays with the maximum pass count being 999,999.

F:##### represents the number of times the memory test has failed and finished with errors. Initially 00000 displays with the maximum fail count being 99,999.

Once the maximum pass count or fail count is reached, the test is stopped, the power indicator is turned on solid, and the final results display. If the test fails, the message SDRAM Error, displays for approximately three seconds and the failure count increases by 1.

ROM Memory Test

The ROM Memory Test is used to check the validity of the controller board code and fonts.

To run the ROM Memory Test:

1. Select **ROM Memory Test** from the menu. P and F represent the same numbers for DRAM. The power indicator blinks indicating the test is in process. The test runs continuously. Each time the test finishes, the screen updates with the result. If the test passes, the Pass Count increases by 1, however if the test fails, one of the following messages displays for approximately three seconds: ROM Checksum Error or ROM Burst Read Error. Once the maximum pass count or fail count is reached, the test stops with the power indicator on solid. The results appear on the screen.
2. Press **Return/Stop** to exit the test.

Parallel Wrap Test

This test is used with a wrap plug to check operation of the parallel port hardware. Each parallel signal is tested.

To run the Parallel Wrap Test:

1. Disconnect the parallel interface cable and install the wrap plug (P/N 1319128).
2. Select **Parallel Wrap Test** from the menu. The power indicator blinks indicating the test is in progress. The test runs continuously until canceled. Each time the test finishes, the screen updates. If the test passes, the Pass Count increases by 1, however if the test fails, a message displays for approximately three seconds. Once the maximum count is reached the test stops. The power indicator goes on solid and the final results display.
3. Press **Return/Stop** to exit the test.

Input tray tests

Input Tray Feed Test

This test lets the servicer observe the paper path as media is feeding through the printer. A blank sheet of paper feeds through the printer as the laser turns off during this test. The only way to observe the paper path is to open the lower front door that is used to access the envelope or multipurpose feeder. The paper is placed in the output bin.

To run the Input Tray Feed Test:

1. Select **Input Tray Feed Test** from the menu.
2. Select the input source from the sources displayed on the Feed Test menu. All installed sources are listed.
3. Select either Single (feeds one sheet of media from the selected source) or Continuous (continues feeding media from the selected source until **Return/Stop** is pressed).
4. Press **Return/Stop** to exit the test.

Input Tray Sensor Test

This test is used to determine if the input tray sensors are working correctly. To run the Input Tray Sensor Test:

1. Select the **Sensor Test** from the Input Tray Test menu.
 - “Input Tray/Emptying/Pass=OP” message displays.
 - EM = Input Tray Empty Sensor
 - LO = Input Tray Paper Low Sensor
 - P = Input Tray Pass Thru Sensor
2. Once this message displays, the servicer can manually actuate each sensor. The tray empty sensor can be actuated by hand, however a sheet of paper can be used to cover the pass thru sensor. When the sensor is closed, CL displays, when the sensor is open, OP displays.
3. Press **Return/Stop** to exit the test.

The multipurpose tray and the envelope feeder do not have a paper low sensor. The multipurpose tray does not have a pass thru sensor.

Tray sensor support by source

Source	Tray empty sensor	Paper low sensor	Pass thru sensor
Tray 1	YES	YES	NO
Tray 2	YES	YES	YES
Tray 3	YES	YES	YES
Tray 4	YES	YES	YES
Tray 5	YES	YES	YES
Multipurpose tray	YES	NO	NO
Envelope feeder	YES	NO	YES

Output Bin Tests

Output Bin Test—Standard Bin

This test is used to verify if the standard bin sensor is working correctly.

To run the Standard Bin Sensor Test:

1. Select **Output Bin Tests** from the Diagnostic menu.
2. Select **Output Bin Tests - Sensor Tests**.
3. Select **Sensor Tests - Standard Bin**. "Standard Bin/Full=CL" message displays.
Manually actuate the bin sensor by moving the flag in and out of the sensor. The display indicates OP (open) when the flag is out of the sensor and CL (closed) when the flag is in the sensor.
4. Press **Return/Stop** to exit the test.

Output Bin Feed Test

Note: If the Configure Bins printer setting is link rather than mailbox, the printer selects its own internal bin linking regardless of which output bin is selected for the feed test

This test is used to verify that media can be fed to a specific output bin. No information is printed on the media fed to the output bin because the printhead is not turned on during this test. This test can be run from any input source and will support any size paper or envelope supported by the printer.

To run the Output Bin Feed Test:

1. Select **Feed Test** from the Output Bin Test menu.
2. Select the output bin you want the paper to exit into. The standard bin as well as any output option bin installed on the printer is shown on the menu. (The output bin displayed is in the order installed on the printer.)
3. Select either **Single** (one sheet of media feeds to the selected output bin) or **Continuous** (media continues feeding to the selected output bin) until **Return/Stop** is pressed.
4. Press **Return/Stop** to exit the test.

Feed to All Bins Test

This test can be used to verify that the printer can feed media to the standard bin or any installed output options. No information will be printed on the test pages as the printhead is not turned on during the feed test.

To run the Feed to all Bins Test:

Select **Feed to all Bins Test** from the menu.

- The media feeds from the default paper source.
- The printer feeds a separate piece of media to the standard bin first, then it feeds a separate piece of media to each output bin installed in the following order:

Sheets fed	Output bins	Sheets fed	Output bins	Sheets fed	Output bins
1	Standard bin	9	Bin #8	17	Bin #5
2	Bin #1	10	Bin #9,	18	Bin #4
3	Bin #2	11	Bin #10	19	Bin #3
4	Bin #3	12	Bin #10	20	Bin #2
5	Bin #4	13	Bin #9	21	Bin #1
6	Bin #5	14	Bin #8	22	Standard bin
7	Bin #6	15	Bin #7		
8	Bin #7	16	Bin #6		

The test is continuous until either the **Return** or **Stop** button is pressed.

Output Bin Sensor Test

This test is used to determine whether or not the output bin sensor is working correctly for the Standard Bin or the sensors are working for the output expander, high-capacity output stacker, 5-bin mailbox or StapleSmart finisher, if installed.

To run the Output Bin Sensor Test for:

Standard Bin

1. Select **Output Bin Test** from the menu.
2. Select **Output Bin Tests - Sensor Tests**.
3. Select **Standard Bin** from the menu.

The following screen is displayed:

Standard Bin
F=OP

F=Standard Bin's Bin Full Sensor

4. Once the screen is displayed, manually actuate the sensor flag to check the Bin Full Sensor. When the sensor is closed, **CL** displays, and when the sensor is open **OP** displays.
5. Select **Return** or **Stop** to exit the test.

Output Expander

1. Select **Output Bin Tests** from the menu.
2. Select **Output Bin Tests - Sensor Tests**.
3. Select **Sensor Tests for Output Bin x** (x=number of the output option to be tested)
The following screen is displayed:
Output Bin x
P=OP F=OP NF=OP

P=Pass Thru Sensor
F=Bin Full Sensor
NF=Near Full Sensor
4. Once the screen is displayed, manually actuate each of the output expander sensors. When the sensor is closed, **CL** displays, and when the sensor is open **OP** displays.
5. Select **Return** or **Stop** to exit the test.

High-Capacity Output Stacker

1. Select **Output Bin tests** from the menu.
2. Select **Output Bin Tests - Sensor Tests**.
3. Select **Sensor Tests for Output Bin x** (x=number of the output option to be tested).
The following screen is displayed:
HC Bin x TP=OP
P=OP F=OP NF=OP

TP=High-Capacity Stacker top position sensor
P=High-Capacity Stacker pass thru sensor
F=High-Capacity Stacker bin full sensor (lower part of dual sensor)
NF=High-Capacity Stacker near full sensor (upper part of dual sensor)
4. Once the screen is displayed, manually actuate each of the sensors of the high-capacity stacker. When the sensor is closed **CL** displays, and when the sensor is open **OP** displays.
5. Select **Return** or **Stop** to exit the test.

5-Bin Mailbox Option

1. Select **Output Bin Tests** from the menu.
2. Select **Output Bin tests - Sensor Tests**.
3. Select **Sensor Tests for Output Bin x** (x=number of the output option to be tested).
The following screen is displayed:
Output Bin x
P1=OP P2=OP L=NL

P1=5-Bin Mailbox first pass thru sensor
P2=5-Bin Mailbox second pass thru sensor
L=EM, 5-Bin x empty
L=NL, bin contains media, but the bin is NOT near full nor full
L=NF, the bin is near full
L=FL, the bin is full
4. Once the screen is displayed, manually actuate each of the sensors of the high-capacity stacker, except for the output level sensor. When the sensor is closed, **CL** displays, and when the sensor is open **OP** displays.
5. Select **Return** or **Stop** to exit the test.

Finisher Tests for StapleSmart Finisher

Finisher Feed Tests

This test is used to verify whether or not media can be fed to a finisher output bin and stapled. No information is printed on the test pages as the printhead is not turned on. Eight sheets of paper feed and then the pages staple.

Note: This test can be run using any of the paper sizes supported by the printer.

The media is fed from the selected source and then outputted to the finisher output bin.

To run the StapleSmart Finisher Feed Test:

1. Select **Finisher Tests** from the menu.
2. Select **Feed Tests** from Finisher Tests menu.
3. The feed test runs (may take a minute for the test to complete).
Eight sheets of paper feed into the finisher and then are stapled.
Note: This test cannot be stopped until the test is completed.
4. Select **Return/Stop** to exit the test.

Finisher Sensor Tests

This test can be used to verify whether or not the finisher sensors are working correctly.

To run the Finisher Sensor Test:

1. Select **Finisher Tests** from main menu.
2. Select **Sensor Tests** from the Finisher Tests menu.

There are four sensor tests that can be selected from the Sensor Tests:

- Staple Sensors
- Cover and Door sensor
- Pass and Media Sensor
- Bin Level Sensor

Select the test for the sensors you want to test from the menu. The following appear on the display for each test selected.

Staple Sensor Test

Staple C=CL
SL=CL SP=CL H=CL

C=Cartridge present sensor
SL=Staple low sensor
SP=Self-priming sensor
H=Home signal sensor

Cover and Door Sensors

Cover and Door
TC=CL SD=CL

TC=Finisher top cover sensor
SD=Finisher stapler access door

Pass and Media Sensors

Pass and Media
P=OP M=OP

P=Finisher pass thru sensor
M=Finisher medium sensor

Bin Level Sensor

Bin Level
EM=OP NF=OP F=OP

EM=Finisher bin empty sensor
NF=Finisher bin near full sensor
F=Finisher bin full sensor

Once the screen is displayed for the test you have selected, manually actuate the sensor you want to test. When the sensor is closed CL displays, and when the sensor is open OP displays.

Select **Return** or **Stop** to exit the test.

Base Sensor Test

This test is used to determine if the sensors located inside the printer are working correctly.

The following sensors can be checked:

- Toner optical sensor
- Input sensor
- Output sensor (fuser exit)
- Narrow media sensor (fuser)
- Cover closed switch (upper front cover)

To run the Base Sensor Test:

1. Select **Base Sensor Test**.
The operator panel displays OP for open and CL for closed.
2. Manually toggle the sensors to verify that each sensor switches from open to closed.

Print registration

To set print registration:

1. Select **Registration** from the Diagnostic menu.
The Top margin sign/value pair blinks. This indicates it is the margin value being changed.

T=xxx*	B=xxx*
L=xxx*	R=xxx*

2. To select the margin value to be changed press **Select** until the margin value pair you want to change is blinking.

The print registration range is:

Variable	Description	Value
B=	Bottom margin	-20 to +20 Each increment causes approximately 55 mm shift in the bottom margin
T=	Top margin	-25 to +25
L=	Left margin	-25 to +25
R=	Right margin	-10 to +10

3. To change the margin value press **Menu**. When the value you want displays, press **Select** to save the value.
4. To exit the Registration menu, press **Return**.

To verify the margin values are correct you must print the "Quick Test Page" from the registration screen. Press **Go** to print the test page. While printing the Quick Test Page the "Quick Test Printing" message displays. Once the Quick Test Page completes printing, the Registration screen displays again.

Print the Quick Test Page on letter or A4 paper.

Printer setup

Setting the page count

This lets the servicer change the page count from the Diagnostics Menu. This is used whenever the system board is replaced because this board contains the printer NVRAM Memory where the page count is stored.

To set the page count:

1. Select **Page Count** from the Diagnostic menu.
 - The current page count displays.
 - The leftmost digit blinks, indicating it is the first digit to be changed.
2. Press **Menu** until the value you want displays.
3. Press **Select** to move to the next digit, and press **Menu** until the value you want displays. Continue with each digit until you set the page count. You can skip any digit by pressing **Select**.
4. Press **Select** to save the new page count in NVRAM.
5. Press **Return/Stop** to exit the Diagnostic menu.

Viewing the permanent page count

The permanent page count can only be viewed and cannot be changed.

To view the permanent page count:

1. Select **Permanent Page Count** from the menu.
2. Press **Return/Stop** to exit the Diagnostic menu.

Maintenance page count

This counter is reset by the servicer after a 80 Scheduled Maintenance message displays (300K copies) and a maintenance kit is installed.

To view the maintenance page count:

1. Select **Maintenance Count Value** from the Configuration menu.
2. Press **Return** to go to the previous menu.

To reset the maintenance page count to zero:

1. Select **Reset Maintenance Count** Configuration menu.
2. Pressing **Select** resets the maintenance page counter to zero. Reset Maintenance Count Saved displays momentarily. When the reset operation is complete, the menu returns to the Printer Setup Reset Maintenance Count screen.

Setting configuration ID

The configuration ID is used to communicate information about certain areas of the printer that cannot be determined using hardware sensors. The configuration ID is originally set at the factory when the printer is manufactured, however it requires resetting whenever you replace the interconnect board and can be set on the operator panel. However the configuration ID is the only diagnostic function displayed until a valid ID is entered.

To set the configuration ID:

1. Enter the Diagnostic mode.
2. Select **Configuration ID** from the Printer Setup menu.
3. At the prompt, enter the model name and serial number for your printer.
4. Enter the configuration ID.
 - The current ID displays on the screen. The Configuration ID is on a label located inside the printer. The label is attached to the top front cover hinge assembly and is visible when the top front cover is open.
 - The leftmost digit blinks indicating that it is the first digit to be changed.
5. To change the value, press **Menu** until the value you want is reached. Press **Select** to move to the next digit, or press **Select** again to skip a digit. Change each digit as required. When the last digit is changed, press **Select** to validate the Configuration ID. If the ID is invalid then "INVALID ID" message displays on Line 2 before the ID displays. You have to reenter the Configuration ID until a valid ID is verified. If the ID is valid then the ID is saved in NVRAM and the printer automatically PORs to activate the new setting.

Note: When the printer PORs it does so in the normal mode.

Restore EP Factory Defaults

To restore each of the printer settings contained in the EP Setup menu to their factory default value select **Restore** from the menu. To exit the menu without restoring the settings to the factory default values, select **Do Not Restore**. Sometimes this is used to help correct print quality problems.

Fuser Temperature

This adjustment can be used to help solve some customer problems with paper curl on low grade papers and problems with letterheads on some types of media.

The fuser temperature can be adjusted to: NORMAL, LOWER, LOWEST

Warm Up Time

You can change the amount of time the printer warms up before allowing pages to print by changing this setting from 0 to 5. The factory sets the warm up at 0 or no warm up time. This time period lets the backup roll heat up and helps reduce curl in some environments.

Transfer

The transfer can be adjusted to: LOW, MEDIUM, HIGH

Print Contrast

The print contrast setting controls the developer voltage offset.

The print contrast can be adjusted to:
LOW, MEDIUM, HIGH

Charge Roll

The charge roll can be adjusted to:
LOW, MEDIUM, HIGH

Print tests

The purpose of the diagnostic Print Tests is to verify that the printer can print on media from each of the installed input options. Each of the installed options is listed in the following order in the menu:

- Tray 1
- Tray 2 (if installed)
- Tray 3 (if installed)
- Tray 4 (if installed)
- Tray 5 (if installed)
- Multipurpose Feeder (if installed)
- Envelope Feeder (if installed)

For each input source selected you have the following choices:

- Single (prints the Print Test Page once)
- Continuous (continue printing the Print Test Page until **Return** or **Stop** is pressed).

The contents of the Print Test Page varies depending on the media installed in the selected input source.

Note: The Print Test Page always prints on one side of the paper, regardless of the duplex setting or the presence of a duplex option.

If a source is selected that contains envelopes, an envelope test pattern is printed. If Continuous is selected, the test pattern is printed only on the first envelope.

To run the Print Test Page:

1. Select **Print Tests** from the Diagnostic menu.
2. Select the media source.
3. Select **Single** or **Continuous**.
 - If Single is selected no buttons are active during printing.
 - If Continuous is selected, **Return** or **Stop** can be selected to cancel the test.

Check each Test Page from each source to assist in print quality and paper feed problems.

Print quality test pages

The purpose of this diagnostic function is to allow printing of the print quality test pages with the toner cartridge lockout function disabled. The print quality test consists of three pages. Page one contains a mixture of graphics and text. Pages two and three only contain graphics. If duplex is turned on, the pages are duplexed. The Print Quality Test pages are printed in English and must always be printed on letter, legal, or A4 paper.

Note: The print quality test pages can also be printed from the Configuration menu, however a cartridge must be installed with a machine class ID matching the machine class ID stored in NVRAM. Some diagnostic information may be printed on the pages when printing from this menu.

To run the Print Quality Test Pages:

1. Turn the printer off.
2. Press and hold **Select** and **Return**.
3. Turn on the printer.
4. Release the buttons once Performing the Self Test displays.
5. The printer performs its normal POR cycle then prints one copy of the Print Quality Test pages. If you want more than one copy, perform these steps again.

The following is printed:

- Diagnostic EP Setup:
Fuser temperature, warm up time, transfer, print contrast, and charge roll settings.
- Contents of the Diagnostic Error Log.
- Printer configuration information:
Printer serial number, controller code level, engine code level, operator panel code level, smart option code levels, font versions, and so on.
- Values for the Quality Menu settings used to print the pages.

Printing menu settings page

Note: This test page must be printed on letter, legal, or A4 paper.

To print the Menu Settings Page:

1. Select the **TESTS MENU**.
2. Select **Print Menus** from the TESTS MENU.

The page contains the following information:

- A list of all the printer settings contained in the operator panel menus and their values.
- A list of the installed options and features such as RAM memory cards, optional input paper trays, envelope feeder, duplex option, output bins, flash, or disk.
- Printer information such as serial number, page count, installed RAM, engine code level, RIP code level, envelope feeder code level, tray 1-5 code levels, output bin 1-3 code levels, operator panel code levels, font ROM version, and SRAM availability.

Theory

Autocompensator operation

The autocompensator is a paper pick device that generates its own normal force. This force generation is inherent in the fundamental design of the pick arm. If light media is used, it picks very gently. If a heavy media is used, it picks very aggressively. No customer adjustments are necessary, therefore no special trays are needed for card stock or labels. The gearing in the arm is designed so the input torque from the motor produces a movement about the pivot of the arm. This movement produces a downward force at the pick rolls. The friction between the pick roll and the paper produces a frictional locking condition. If the paper is physically held and not allowed to feed, then the motor stalls. Slippage between the roll and the paper is theoretically impossible. When the motor is energized, the pick rolls are driven down into the stack, increasing the normal force and drive force until the bending strength of the paper is overcome and the paper bends and moves up the dam.

Once this critical threshold is achieved, the normal force remains at a level just high enough to reliably feed the paper. Rather than having a fixed spring force for feeding all weights of paper like the D-roll, this device has its own mechanical logic for producing only enough pick energy to feed a single sheet of paper regardless of its stiffness. High normal force is one of the most significant contributors to double feeding paper. The pick arm is counterbalanced by an extension spring located on the pick arm to reduce weight in the rest state. This spring is factory set to exert no more than ten to fifteen grams on the stack. This is as light as can be realistically set and always guarantee there is some force to start the autocompensating phenomena. This spring is not to be considered an adjustment for feeding problems unless it is obvious that the pick arm cannot fall all the way down to the bottom of the tray or has come loose. Poor gear efficiency can cause the arm to generate higher normal forces. If the pick assembly is noisy, replacement may be required. The arm must pivot freely through its full range of motion. On 500-sheet trays there are wrap springs located on the pivot arbors of the arm. These springs help prevent the arm from bouncing. If the arm appears to be binding or sticky near the bottom of the tray, these springs may be the problem. Reducing the tension on the counterbalance spring may be used as a temporary fix to get additional weight at the bottom, until the pick assembly can be replaced. However, the counterbalance spring is not to be considered an adjustment for feeding problems.

Autoconnect system, paper tray options, envelope feeder—electrical

Autoconnect cabling and connectors

The printer options make electrical connection automatically, requiring no external cables when the option is mechanically installed under the printer. Communication between the option and the base printer stops when you remove an option. The printer no longer recognizes the option and deletes associated messages. Each installed option below the base printer provides an electrical autoconnect to the option attached below it. We do not recommend to attach or "Hot Plug" any options with the base printer power turned on.

Duplex Option

The duplex option interface is a six pin autoconnector that provides a +24 V dc, +24 V dc return, serial interface transmit signal, serial interface receive signal, and two ground pins. The duplex option receives the +24 V dc from the base printer for the duplex motors and also converts the voltage to +5 V dc for duplex electronics.

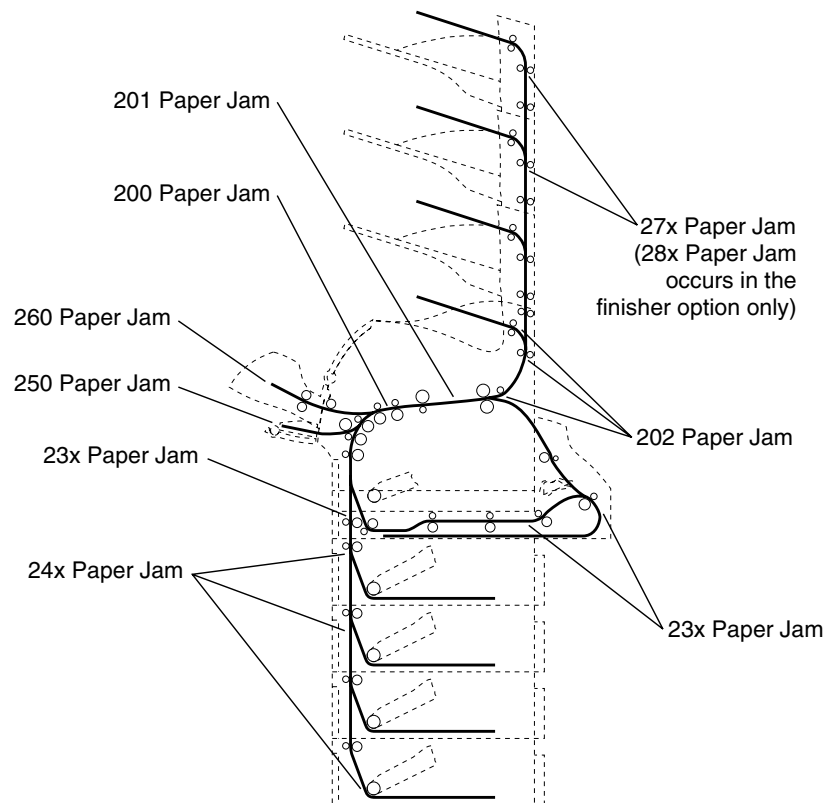
Duplex chassis grounding is provided from the printer to the duplex option through a ground spring attached to the frame and base of the printer. The ground connection is automatically made when the option is installed below the printer.

The paper input sensor is located in the rear of the duplex option under the input paper guide. The paper exit sensor is located on the left frame assembly.

Option microcode

The options are “Smart Options” or options that have a system board. The option system board has a microprocessor that controls the option mechanism. A software architecture is provided that controls the option and communicates information such as paper path status, sensor status, motor status, and so on to the base printer.

Paper feed jams



Paper jams—base printer

Error Message 200 Paper Jam - Remove Cartridge

This message indicates that paper is jammed at the printer input sensor. This condition can be caused by the paper jamming prior to activating the input sensor flag, the sensor not detecting paper over the sensor, or paper arriving at the sensor too late.

Note: A defective system board or printhead can also cause a 200 Paper Jam message to occur prior to the paper reaching the input sensor flag. This error can display due to a problem with the HSYSC signal to or in the printhead. Use the sub error code table to assist in isolating a 200 Paper Jam message. See **“Base printer sub error codes” on page 2-6.**

Note: When the StapleSmart finisher option is installed, a secondary message may be displayed which advises whether or not to remove the job from the finisher. If a job has accumulated in the finisher, then the printer alternately flashes the primary and secondary messages to indicate that all accumulated sheets should not be removed during the jam clearance procedure. If the sheets are removed, then the printer does not reprint these sheets.

Error Message 201 Paper Jam - Remove Cartridge

This message indicates the paper is jammed between the printer input and exit sensors. This condition can be caused by the paper exiting the input sensor too late or jamming in the fuser assembly prior to activating the exit sensor flag in time or not at all.

Note: When the StapleSmart finisher option is installed, a secondary message may be displayed which advises whether or not to remove the job from the finisher. If a job has accumulated in the finisher, then the printer alternately flashes the primary and secondary messages to indicate that all accumulated sheets should not be removed during the jam clearance procedure. If the sheets are removed, then the printer does not reprint these sheets.

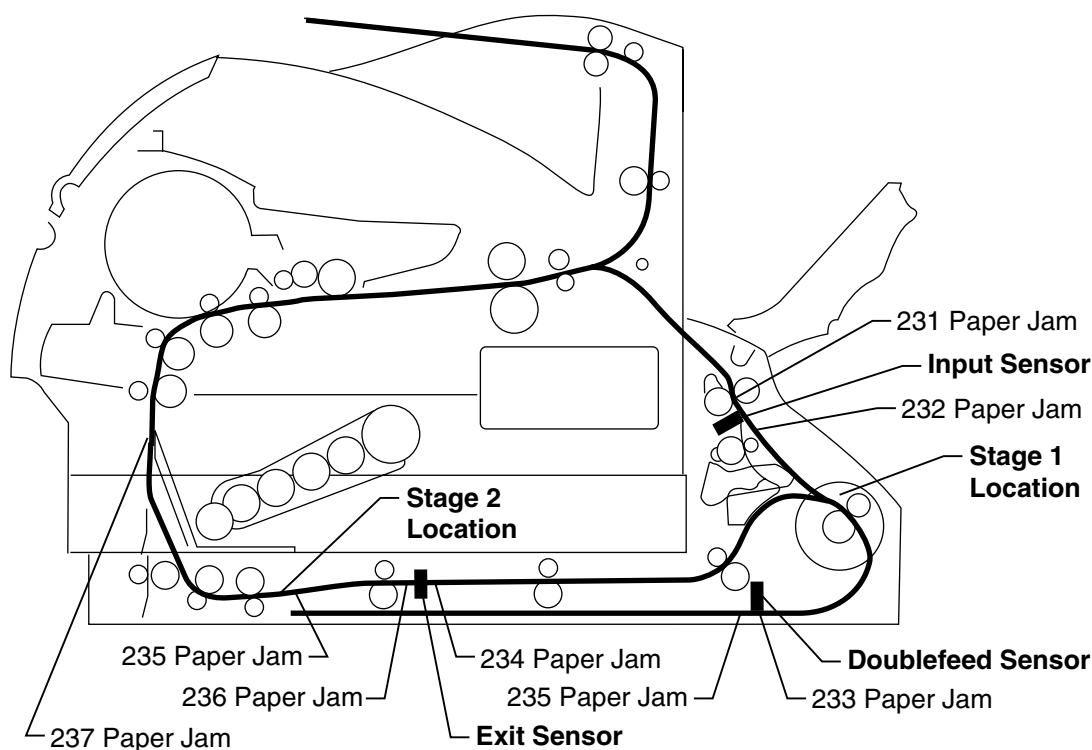
Error Message 202 Paper Jam - Open Rear Door

This message indicates the paper is jammed at or near the printer exit sensor located in the fuser assembly. This can be caused by the paper arriving at the sensor too late, the paper jammed in the fuser assembly, or jammed exiting the fuser assembly in the redrive assembly, or the exit sensor flag is not operating correctly. If an output option is installed on the printer, a 202 Paper Jam may be displayed if the option is not operating properly, especially the pass thru sensor of the output option. Remove the output options from the printer and check the printer for correct operation. If the printer operates correctly, then install one output option at a time and check which one fails.

Note: When the StapleSmart Finisher option is installed, a secondary message may be displayed which advises whether or not to remove the job from the finisher. If a job has accumulated in the finisher, then the printer alternately flashes the primary and secondary messages to indicate that all accumulated sheets should not be removed during the jam clearance procedure. If the sheets are removed, then the printer does not reprint these sheets.

Paper jams—options

Error Message 23x Paper Jam - Check Duplex Option



The paper is most likely jammed in the duplex option, however the paper can also be jammed in the redrive at the input to the duplex option. The redrive assembly may not be correctly installed or locked in position or the duplex link is bent and not aligned properly to allow paper to feed correctly into the duplex option. Use the specific errors below:

- **231 Duplex Paper Jam - Rear**—A piece of media did not arrive at the duplex input sensor, but did leave the printer exit sensor.
- **232 Duplex Paper Jam - Rear**—A piece of media did not clear the duplex input sensor but did leave the printer exit sensor.
- **233 Duplex Paper Jam - Rear**—A piece of media failed to make the duplex doublefeed sensor during turnaround.
- **234 Duplex Paper Jam - Rear**—The media did not reach the duplex exit sensor.
- **235 Duplex Paper Jam - Front**—A piece of media is over the duplex doublefeed sensor.
- **236 Duplex Paper Jam - Front**—A piece of media did not leave the duplex exit sensor.
- **237 Duplex Paper Jam - Front**—A piece of media did not reach the printer input sensor.
- **238 Duplex Paper Jam**—A piece of media is over one of the duplex sensors during a reset.
- **239 Duplex Paper Jam**—A paper jam has occurred in the duplex option.

Note: When the StapleSmart finisher is installed, a secondary message may be displayed which advises whether or not to remove the job from the finisher. If a job has accumulated in the finisher, then the printer alternately flashes the primary and secondary messages to indicate that all accumulated sheets should not be removed during the jam clearance procedure. If the sheets are removed, then the printer does not reprint these sheets.

Error Message 24x (x=tray 1 through 5) Paper Jam Check Tray x

The paper has not cleared the pass thru sensor or reached the pass thru sensor of the option above tray x.

Note: When the StapleSmart Finisher option is installed, a secondary message may be displayed which advises whether or not to remove the job from the finisher. If a job has accumulated in the finisher, then the printer alternately flashes the primary and secondary messages to indicate that all accumulated sheets should not be removed during the jam clearance procedure. If the sheets are removed, then the printer does not reprint these sheets.

Error Message 250 Paper Jam - Check MP Feeder

The paper is jammed in the multipurpose feeder and has not reached the base machine input sensor or has not reached the input sensor in time.

Note: When the StapleSmart Finisher option is installed, a secondary message may be displayed which advises whether or not to remove the job from the finisher. If a job has accumulated in the finisher, then the printer alternately flashes the primary and secondary messages to indicate that all accumulated sheets should not be removed during the jam clearance procedure. If the sheets are removed, then the printer does not reprint these sheets.

Error Message 260 Paper Jam - Check Envelope Feeder

An envelope is jammed in the envelope feeder or has not reached the base machine input sensor.

Error Message 27x Paper Jam - Check Bin x

Paper is jammed in output bin x (x=bin 1 through 3). Generally this message appears when the paper has not cleared the exit sensor in time, has jammed in the redrive assembly, or has not fed into the output bin selected.

Note: A 271 paper jam (bin 1) may be displayed when the StapleSmart finisher is installed and a piece of media is actuating the pass thru sensor of the finisher.

Error Message 28x Paper Jam (x=StapleSmart finisher)

Error Message 280 Paper Jam - Check Finisher

or

Error Message 281 Paper Jam - Check Finisher

When either of these two messages are displayed, they indicate that paper is jammed in the finisher option. Open the finisher rear door and top cover to remove the jam. **Note:** If the paper is still covering the finisher pass thru sensor, then a 271 Error message is displayed. A 281 Paper Jam message may also be displayed when there is a problem with the stapler assembly or the stapler card.

Note: When the StapleSmart finisher option is installed, a secondary message may be displayed which advises whether or not to remove the job from the finisher. If a job has accumulated in the finisher, then the printer alternately flashes the primary and secondary messages to indicate that all accumulated sheets should not be removed during the jam clearance procedure. If the sheets are removed, then the printer does not reprint these sheets.

Error Message 282 - Check Stapler

This message indicates that a staple jam has been detected during normal operation, when printing and stapling jobs. The printer alternately flashes the primary and secondary message to indicate that all accumulated sheets should be removed during the jam clearance procedure.

Error Message 283 - Check Stapler

This message indicates that a staple jam has been detected during a stapler priming operation. There is no secondary message displayed.

Note: After the error has been cleared, the printer does not reprint any pages which existed in the accumulator for stapling.

Note: Do not use the Sub Error chart to help diagnose problems when 281, 282, and 283 are displayed.

4. Repair information

Warning: Read the following before handling electronic parts.

Handling ESD-sensitive parts

Many electronic products use parts that are known to be sensitive to electrostatic discharge (ESD). To prevent damage to ESD-sensitive parts, follow the instructions below in addition to all the usual precautions, such as turning off power before removing logic boards:

- Keep the ESD-sensitive part in its original shipping container (a special "ESD bag") until you are ready to install the part into the machine.
- Make the least-possible movements with your body to prevent an increase of static electricity from clothing fibers, carpets, and furniture.
- Put the ESD wrist strap on your wrist. Connect the wrist band to the system ground point. This discharges any static electricity in your body to the machine.
- Hold the ESD-sensitive part by its edge connector shroud (cover); do not touch its pins. If you are removing a pluggable module, use the correct tool.
- Do not place the ESD-sensitive part on the machine cover or on a metal table; if you need to put down the ESD-sensitive part for any reason, first put it into its special bag.
- Machine covers and metal tables are electrical grounds. They increase the risk of damage because they make a discharge path from your body through the ESD-sensitive part. (Large metal objects can be discharge paths without being grounded.)
- Prevent ESD-sensitive parts from being accidentally touched by other personnel. Install machine covers when you are not working on the machine, and do not put unprotected ESD-sensitive parts on a table.
- If possible, keep all ESD-sensitive parts in a grounded metal cabinet (case).
- Be extra careful in working with ESD-sensitive parts when cold-weather heating is used because low humidity increases static electricity.

Adjustment procedures

Duplex motor drive belt adjustment

Do the duplex motor belt and drive belt adjustment whenever you remove or replace the duplex motor or loosen the motor or drive belt idler pulley.

Service tip: Excessive belt tension can result in stalling the duplex motor. Too little belt tension can result in belt slippage.

To do the duplex drive belt adjustment:

1. Do the removal procedure **“Duplex front cover door removal” on page 4-19** to access the drive belt idler pulley.
2. Loosen the idler pulley mounting screw and position the idler to provide 3 mm (± 5 mm) drive belt deflection.
3. Tighten the idler pulley mounting screw being careful to maintain the adjustment.
4. Reassemble the Duplex Option.

To do the duplex motor belt adjustment:

1. Do the removal procedure **“Duplex motor removal” on page 4-19** to access the motor mounting screws but do not remove the motor.
2. Loosen the screw in the elongated adjustment slot and position the motor to provide 3 mm (± 5 mm) motor belt deflection.
3. Tighten both mounting screws being careful to maintain the adjustment.
4. Reassemble the Duplex Option.

Fuser solenoid adjustment

Perform the fuser solenoid adjustment whenever you replace the fuser solenoid. Adjust the fuser solenoid while installed in the printer. Adjust the screw on the eccentric mounted on the solenoid housing to provide an air gap between the rear of the solenoid stator and the solenoid armature. The solenoid air gap for all models is 4.5 mm $\pm$ 0.1 mm.

Gap adjustment

The gap adjustment allows you to increase the minimum gap between sheets of paper as they are fed through the printer. This adjustment reduces the printer overall performance, such as pages per minute, but can help in reducing the amount of curl of some printed medias, thus improving media stacking in the output bin.

1. Enter the Diagnostic Mode.
2. Select **Ep Setup** from the Diagnostic Menu.
3. Select **Gap Adjust**.
4. The range of the GAP adjustment is 0 to 255. Adjust the gap setting by using **Menu** to select the value. If GAP=0 displays, it indicates a factory setting to minimum gap. Select a value and run several copies of the media that displays a curl problem. It may take several tries before improvement is noticed.

Note: This setting has no effect when duplexing.

Printhead assembly adjustment

Do the printhead assembly adjustment whenever you remove or replace the printhead assembly or loosen the mounting screws.

Install the new printhead with the three mounting screws centered in the slots in the printhead frame assembly. Leave the screws loose enough to allow the printhead assembly to move from side to side within the slots. It is necessary to perform a registration adjustment before locking down the three printhead mounting screws.

To perform the registration adjustment:

1. Turn the printer off.
2. Press and hold **Return** and **Go**.
3. Turn the printer on and release the buttons when "Performing Self Test" displays.
4. Select **Registration** from the menu.
5. Select **Quick Test Page**. The test page should only be printed on letter or A4 paper from Tray 1. The Quick Test Page consists of alignment diamonds, horizontal lines that can be used for skew adjustment, page count setting, printer serial number code levels, and print registration settings.
6. Check the Quick Test Page for any sign of skew by checking the diamonds at the top left and top right of the test page for equal distance from the top of the page. If necessary, adjust the left or right printhead mounting screws and check the skew again by running another Quick Test Page. This procedure may take two or three attempts before you get satisfactory results.
7. When you have the correct adjustment, gently tighten the printhead mounting screws being careful not to move the printhead assembly.

Paper alignment assembly adjustment

Do the alignment assembly adjustment whenever you replace the alignment assembly. Always print a copy of the Quick Test Page before making any adjustments to the alignment assembly reference adjustment screw. When replacing the alignment assembly, it is necessary to back the reference adjustment screw out far enough to remove the old assembly and install the new one.

- If you are replacing the alignment assembly go to step A.
- If you are only adjusting the reference adjustment screw go to step B.

Step A

Print a copy of the Quick Test Page and check the margin adjustments printed on the test page. These settings should be within the range specified in **"Print registration" on page 3-16**.

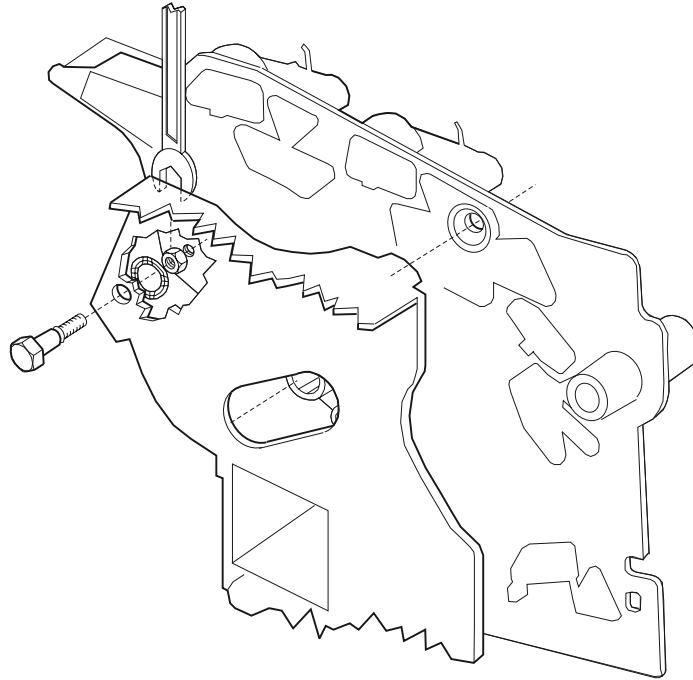
Do the reference adjustment if you are sure the margins are set correctly.

1. Loosen the locknut on the inside rear of the alignment assembly.
2. Remove the two screws holding the alignment assembly to the left side frame.
3. Back the reference adjustment screw out far enough to allow the alignment assembly to be removed from the printer. It is not necessary to completely remove the screw.
4. Install the new alignment assembly. Turn the reference screw clockwise with a 7 mm nut driver until it touches the back of the reference plate and tighten the nut with a 5.5 mm wrench.

The reference adjustment screw can be adjusted without loosening the nut. Turn the screw clockwise a few turns and print a copy of the Quick Test Page as you check the diamonds on the left margin. Continue adjusting the screw as you check the results of each adjustment on a new test page until you obtain the results you want.

Step B

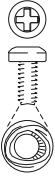
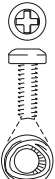
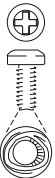
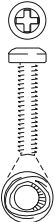
Print a copy of the Quick Test Page and check the margin adjustments printed on the test page. These settings should be within the range specified in **“Print registration” on page 3-16**. The reference screw can be adjusted without loosening the locknut. Turn the screw a few turns and print a copy of the Quick Test Page as you check the diamonds on the left margin. Continue adjusting the screw as you check the results of each adjustment on a new test page until you obtain the results you want.

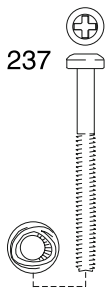
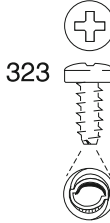
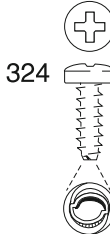
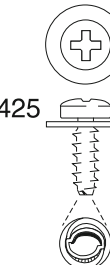


Screw identification table

The following table contains screw types, locations, and quantities necessary to service the printer. Each screw callout in the removal procedure graphic displays the screw reference number listed in the table. Pay careful attention to each screw type location when doing removals. You must install the correct screw type in each location during reassembly.

Reference number	Screw type	Location	Purpose	Qty
102 	M3.5x8 mm Thread Cutting	right side frame to center pan	attach	1
		toner level sensor	mounting	1
		charge roll bracket	mounting	1
		main drive gearbox	mounting	3
		EP module to left and right side frame	attach	9
		developer drive assembly	mounting	2
		stacker duct to frame	mounting	2
		cartridge hold down assembly	mounting	2
		MPT deflector	mounting	2
		laser cover	mounting	4
		deflector	mounting	2
		spring	mounting	1
		system board	mounting (front)	2
		integrated tray (ITC) board	mounting	1
		stacker support to right side frame	attach	2
104 	M3.5x12 mm Thread Cutting	paper alignment assembly	mounting	2
		toner cartridge guide track	mounting	2
		left side frame to center pan	attach	3
		right side frame to center pan	attach	2
		deflector	mounting	2
201 	M3x5 mm Taptite	INA cover (2 screws per cover)	attach	6

Reference number	Screw type	Location	Purpose	Qty
202 	M3x6 mm Taptite	outer shield	mounting	6
		inner redrive deflector	mounting	2
		interconnect board to center pan	mounting	2
		system board to interconnect board ground	attach	2
		system board to inner shield	mounting	2
		system board (back)	mounting	2
		lower stacker duct	mounting	1
		ground cables to ground (center pan—front)	attach	1
		cable clip (main drive gearbox, BTM)	mounting	2
203 	M3x8 mm Taptite	LVPS	mounting	2
		autocompensator hanger bracket	mounting	1
232 	M3x6 mm Taptite Panhead	stacker duct	mounting	1
		system board to shield	mounting	2
		system board	mounting	2
		shield ground	attach	1
		LVPS	mounting	2
		fuser cover	mounting	2
		cable clip	mounting	2
		outer shield	mounting	6
		INA cover	mounting	1
235 	M3x12 mm Taptite Panhead	HVPS board	mounting	2

Reference number	Screw type	Location	Purpose	Qty
 237	M3x28 mm Taptite Panhead	developer drive ground (bottom hole)	attach	1
 323	M3.5x8 mm Plastite Thread Forming	autocompensator	mounting	3
 324	M3.5x10 mm Plastite Thread Forming	right side cover	mounting	1
		right side frame to pan	attach	3
		left side frame to pan	attach	1
		right side frame to right side cover	attach	1
 425	M3.5x12 mm Plastite Thread Forming with washer	printhead to EP frame	mounting	3

Removal procedures



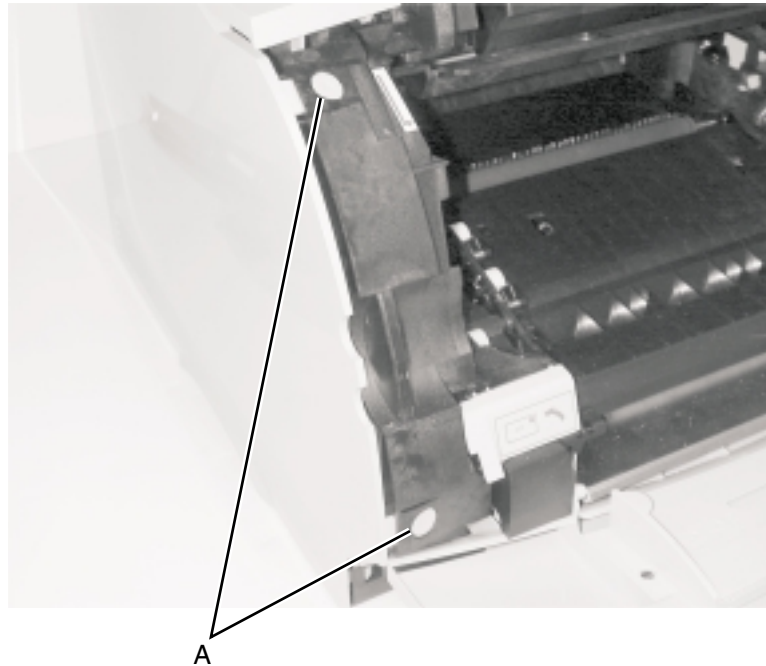
CAUTION: Remove the power cord from the printer or wall outlet before you connect or disconnect any cable or electronic board or assembly for personal safety and to prevent damage to the printer. Use the handholds on the side of the printer. Make sure your fingers are not under the printer when you lift or set the printer down.

Note: Some removal procedures require removing cable ties. You must replace cable ties during reassembly to avoid pinching wires, obstructing the paper path, or restricting mechanical movement.

Covers removals

Left door removal

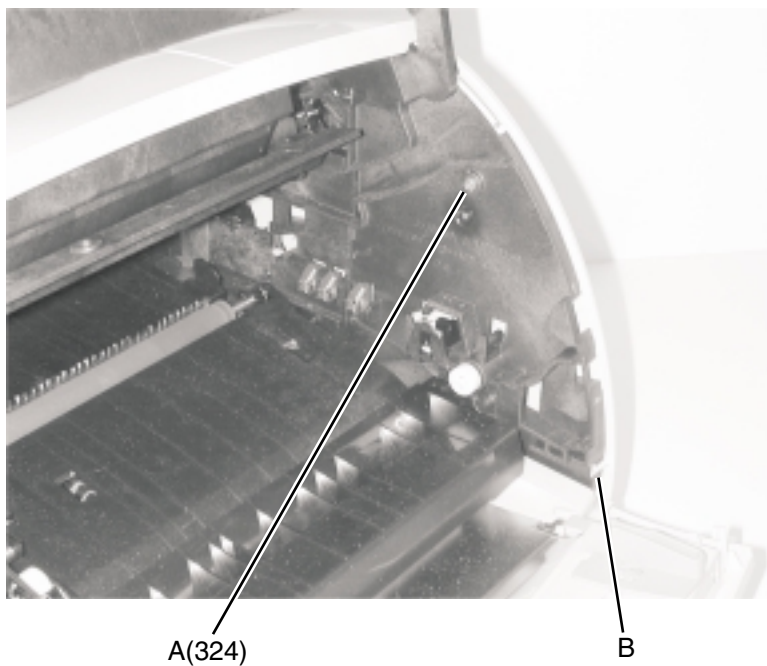
1. Open the upper and bottom front covers.
2. Press the two left door latch buttons (A) and open the left door.



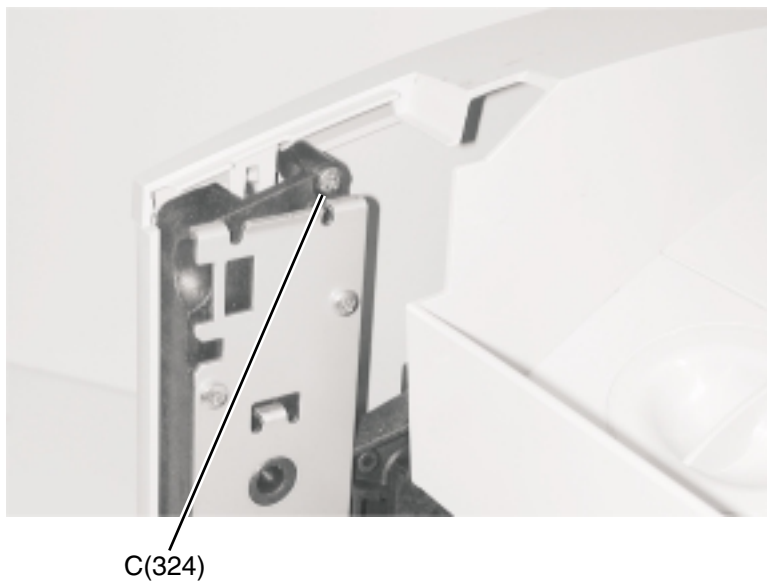
3. Release the left door from the rear hinges and remove the door.

Right cover removal

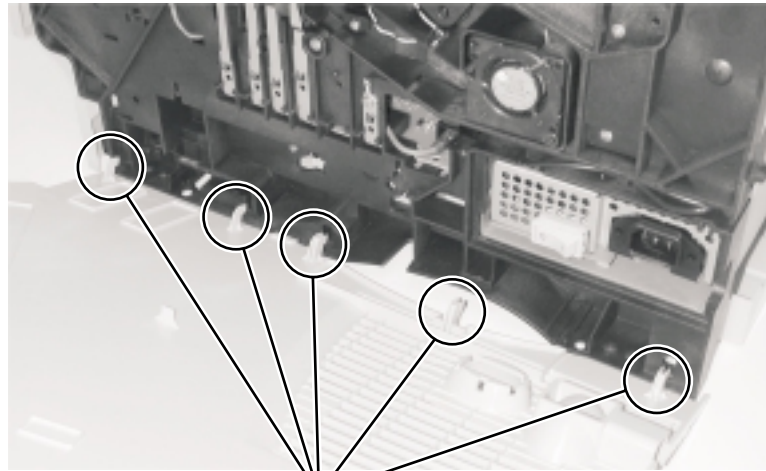
1. Remove the redrive cap
2. Remove the redrive assembly.
3. Open the upper and lower front covers.
4. Remove the print cartridge.
5. Remove the right cover mounting screw (A) and release the cover latch (B).



6. Remove the right side cover mounting screw (C).



7. Remove the right side cover.

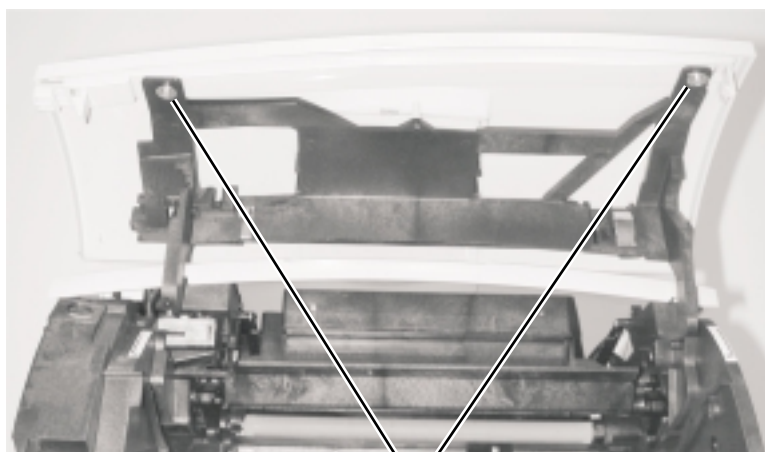


Cover retainers

Note: When replacing the right side cover, make sure the cover retainers are correctly located in the appropriate slots in the right side frame.

Upper front cover removal

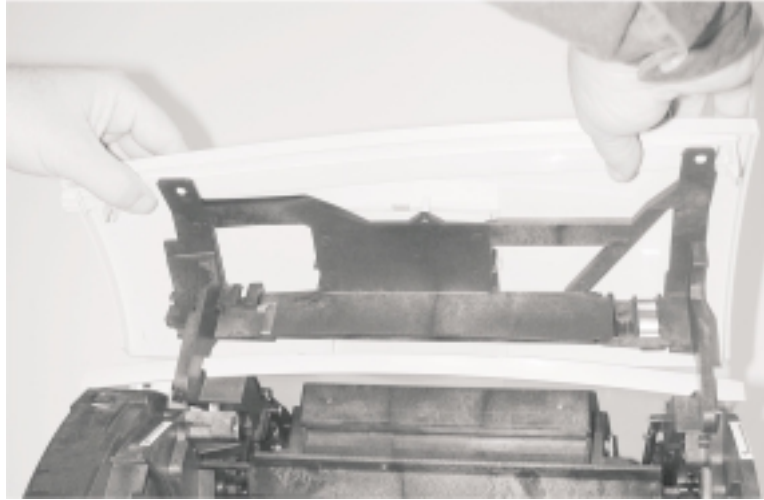
1. Raise the upper front cover.
2. Remove the upper front cover mounting screws (A).



A(323)

3. While holding the two upper front cover latches, lift off the cover.

Note: When removing the cover, hold the upper and lower latch and spring to prevent them from falling into the printer.



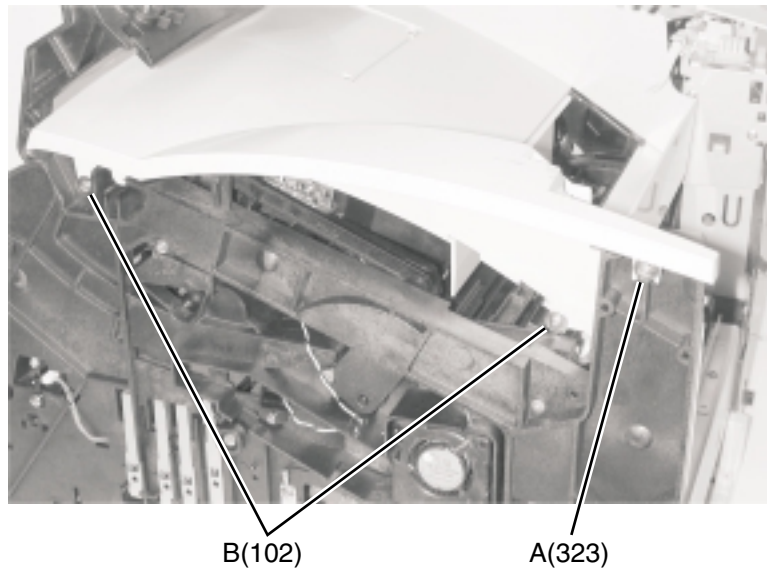
Note: Use caution to avoid scratching or damaging the operator panel lens cover.

4. Set aside the operator panel overlay.

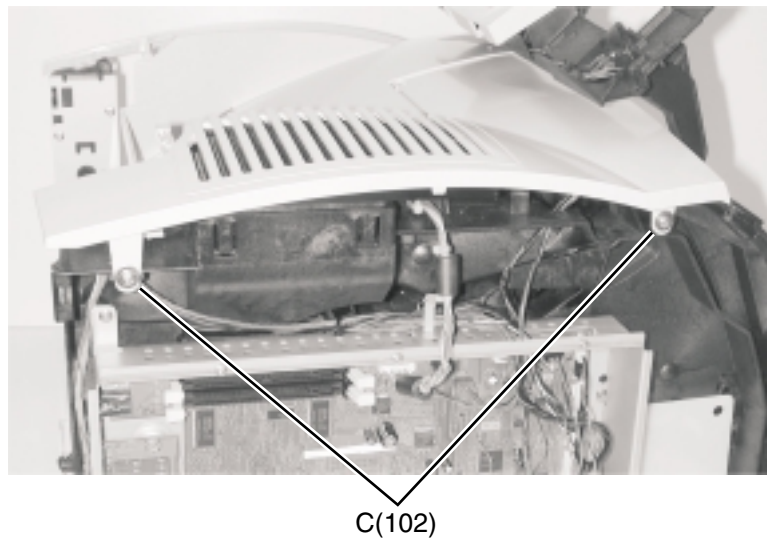
Note: Be sure to replace the overlay when you replace the upper front cover.

Laser cover removal

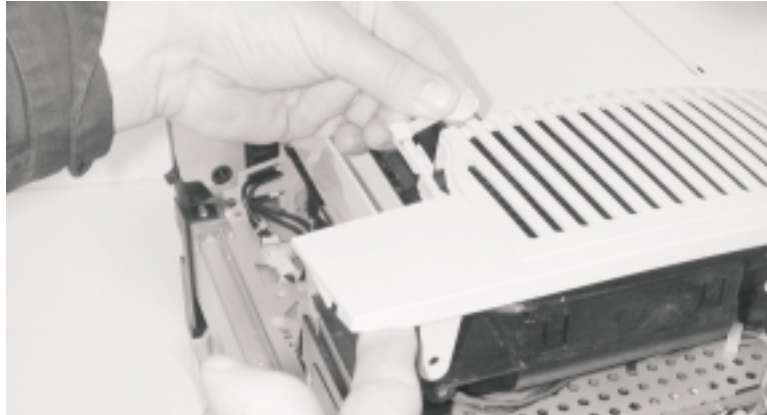
1. Remove the left door.
2. Remove the right cover. See **“Right cover removal” on page 4-10.**
3. Remove the paper support.
4. Remove the redrive cap.
5. Press the fuser wiper cover latch and remove the cover.
6. Loosen screw (A) and remove the two screws (B) on the right side.



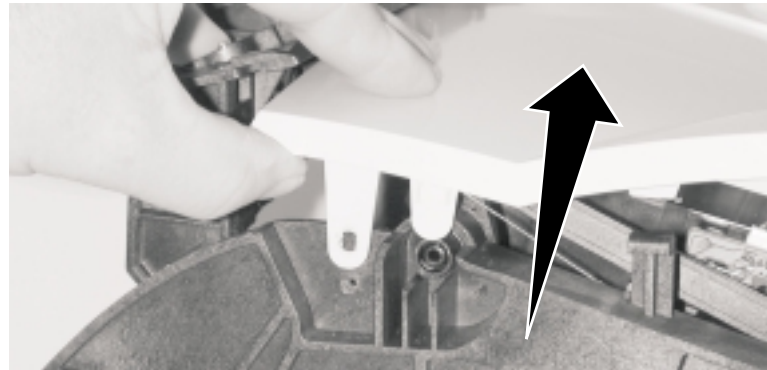
7. Remove the mounting screws (C) from the left side.



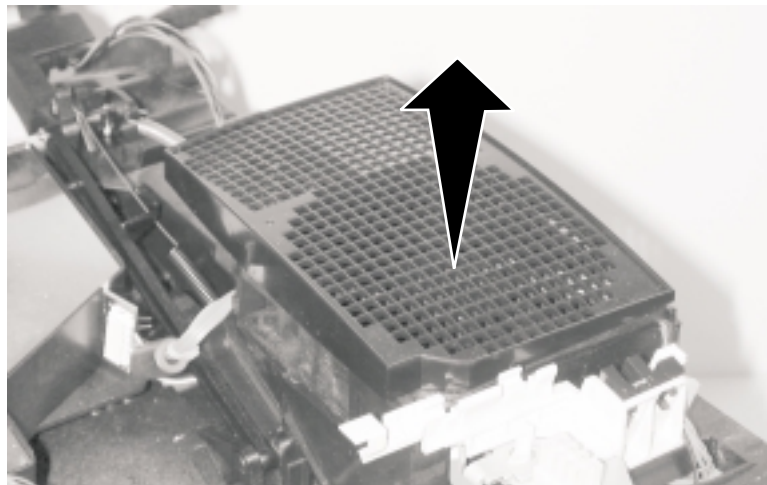
8. Remove the paper bin full sensor flag assembly from the mounting bracket. See **“Paper bin full sensor flag assembly removal” on page 4-54.**



9. Unlatch the front right and front cover posts (left) and remove cover.



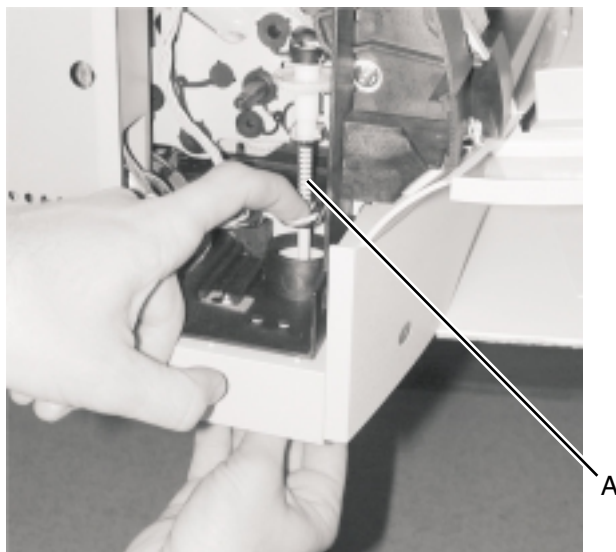
10. Remove fan grill cover.



Note: Be sure to reseat the fan grill cover before replacing the laser assembly cover.

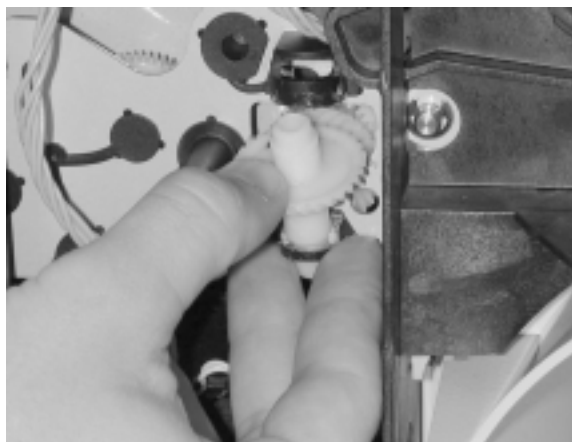
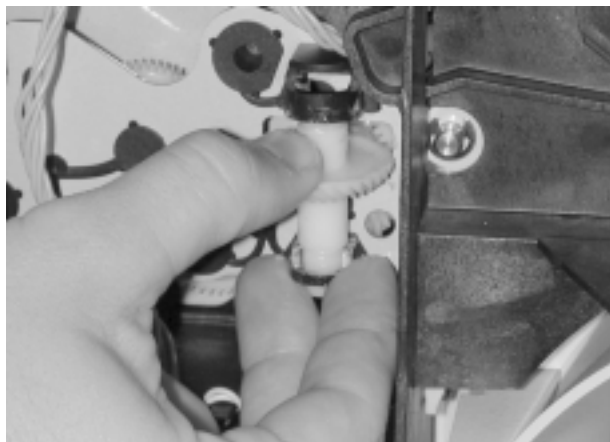
Bevel gear removal

1. Open the left door.
2. Remove the inner shield.
3. Remove the gear guard.
4. Remove the power takeoff shaft and spring (A) through the bottom of the printer.



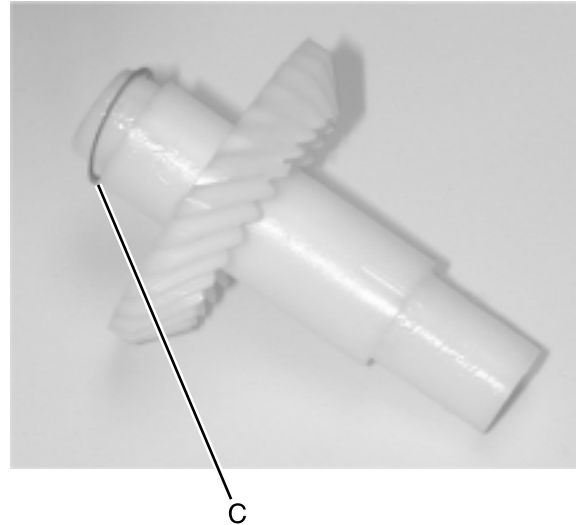
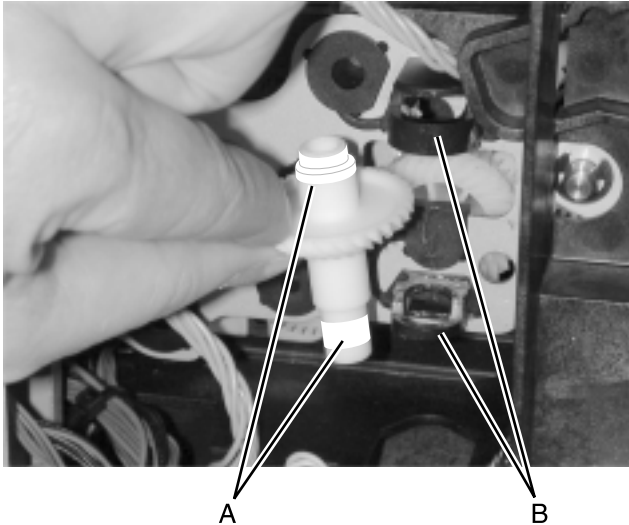
5. Place your thumb on the top of the gear and press firmly down and away.

Note: You need to exert firm pressure to snap the bevel gear out.



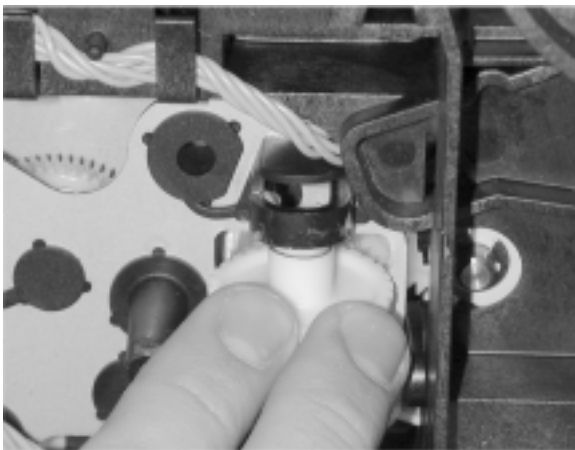
Installation

1. Remove any washer that may be present (A) and discard.
2. Lubricate areas (A) that engage the journal (B) with grease, from the provided packet.
3. Place the new washer (C) on the bevel gear shaft.



4. Insert the bottom portion and press or pull into position.
Note: You should hear two distinct *snaps*. If you only hear one, the bevel gear is only partially engaged and you should continue to press until the second *snap* is heard. Very firm pressure is required.

CAUTION: Do not brace your hands below the bevel gear itself. When the gear double-*snaps* into place, it may pinch your hand.



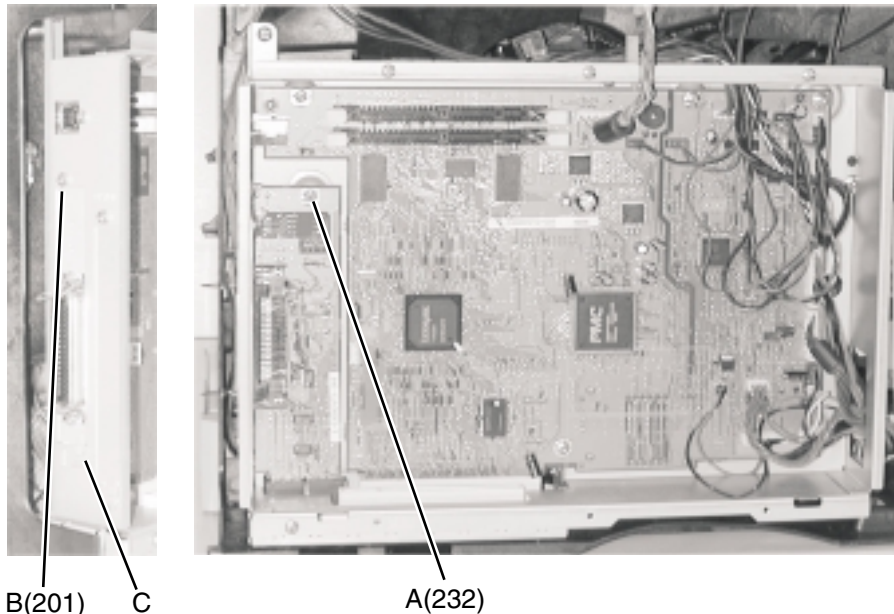
5. Install the power takeoff shaft and spring.
6. Install the gear guard.
7. Install the inner shield.

Communications board removal

1. Remove the outer shield. See **“Outer shield removal” on page 4-52.**
2. Remove features and options from the interconnect board only if they block access.

Warning: Observe all ESD precautions while handling ESD-sensitive parts. See **“Handling ESD-sensitive parts” on page 4-1.**

3. Remove the communications board mounting screw (A).



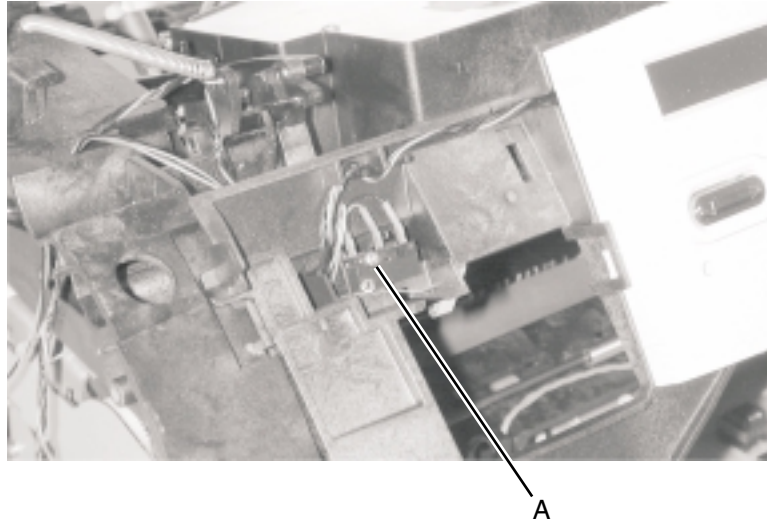
4. Remove the communications board shield mounting screw (B).
5. The communications board is held in place by a ground clip (C) on the shield that attaches the communications board shield to the side frame. Pull the board up to unclip the shield.
6. Remove the screws that hold the shield to the communications board.

Note: Retain the shield and screws to install on the new board.

Cover closed switch/cable removal

Note: Pay careful attention to the cable routing through the printer before you remove the cover closed switch and cable assembly.

1. Remove the left cover, upper front cover, and outer system board shield.
2. Disconnect the cover closed switch cable from the system board (J3).
3. Remove the screw (A) that attaches the cover closed switch.

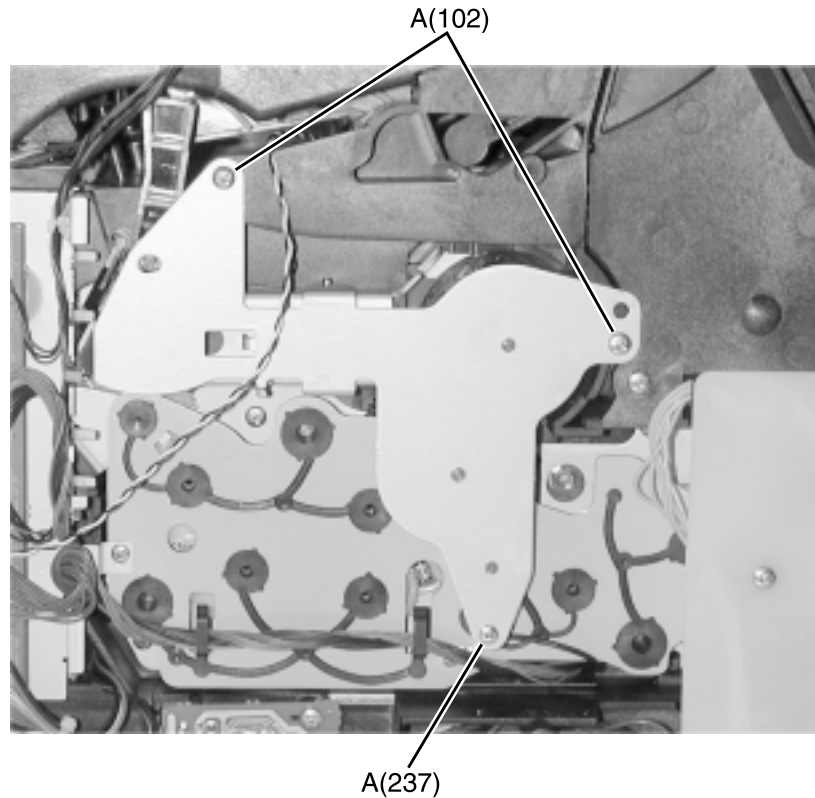


4. Remove the cable retainer from the left side of the upper front cover hinge assembly.
Note the routing of the cover closed switch and operator panel cables.
5. Remove the cover closed switch/cable assembly.

Developer drive assembly removal

1. Remove the inner shield. See **“Inner shield removal” on page 4-34.**
2. Remove the developer drive assembly mounting screws (A).
3. Remove the developer drive assembly.

Note: Be sure the developer drive shaft and coupler aligns with the hub on the main drive assembly when reinstalling the assembly.



Frames removals

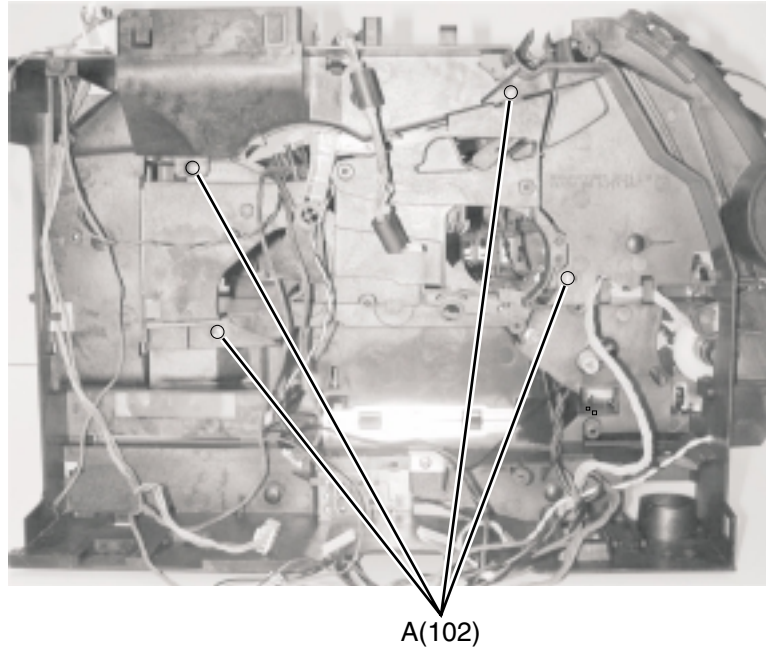
EP frame assembly

1. Remove the left and right side frames. See **“Left side frame” on page 4-20** and **“Right side frame” on page 4-22.**
2. Remove the EP frame assembly.

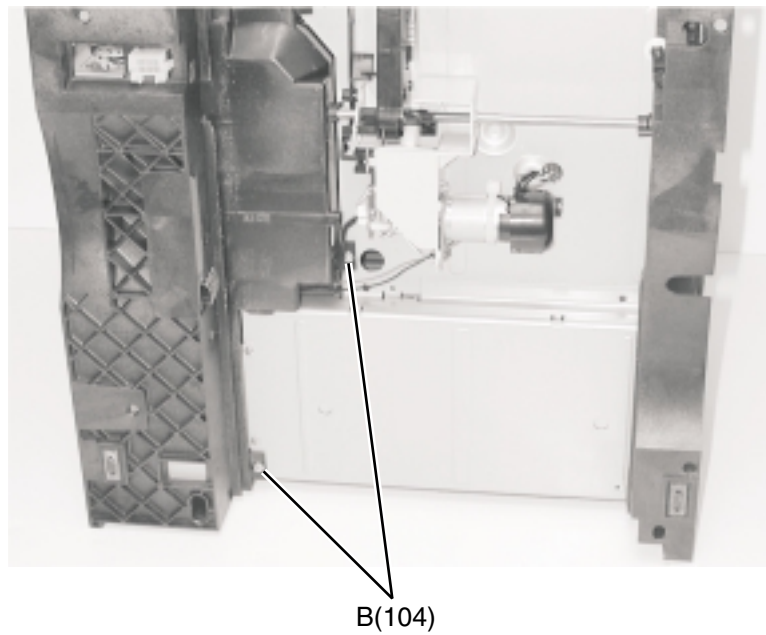
Left side frame

1. Remove the covers.
2. Remove the inner shield. See **“Inner shield removal” on page 4-34.**
3. Remove the main drive assembly. See **“Main drive assembly removal” on page 4-44.**
4. Remove the upper front cover hinge assembly. See **“Upper front cover hinge assembly removal” on page 4-62.**
5. Remove the multipurpose tray/lower deflector assembly.

6. Remove the paper alignment assembly. See **"Paper alignment assembly removal"** on **page 4-52**.
7. Remove the left side frame mounting screws (A).



8. Place the printer on its back and remove the left side frame mounting screws (B).



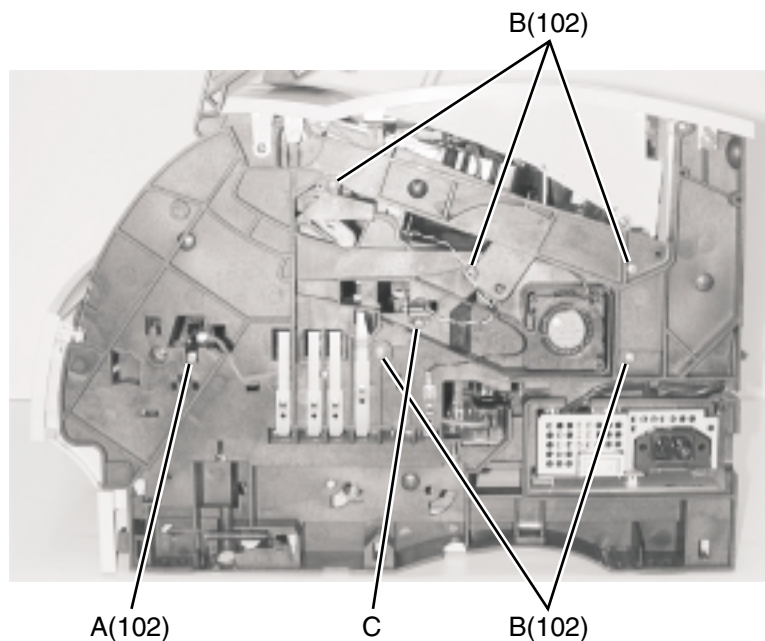
9. Remove the left side frame.

Right side frame



CAUTION: Unplug the printer before you begin.

1. Remove the right side cover. See **“Right cover removal”** on page 4-10.
2. Remove the laser cover. See **“Laser cover removal”** on page 4-14.
3. Remove the LVPS. See **“Low voltage power supply removal”** on page 4-42.
4. Remove the multipurpose tray assembly.
5. Disconnect the autocompensator arm bias spring from the right side frame.
6. Remove the toner sensor mounting screw (A), disconnect the sensor cable and remove the toner sensor.
7. Remove the smart cartridge contact assembly mounting screw (C)
8. Remove the right side frame mounting screws (B) and remove the right side frame.



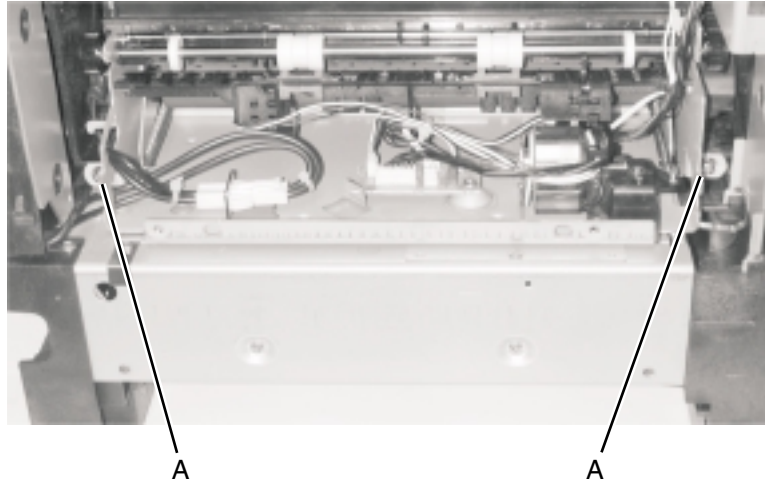
CAUTION: Be sure the fuser assembly has cooled before working on any of the fuser FRUs.

Fuser assembly removal

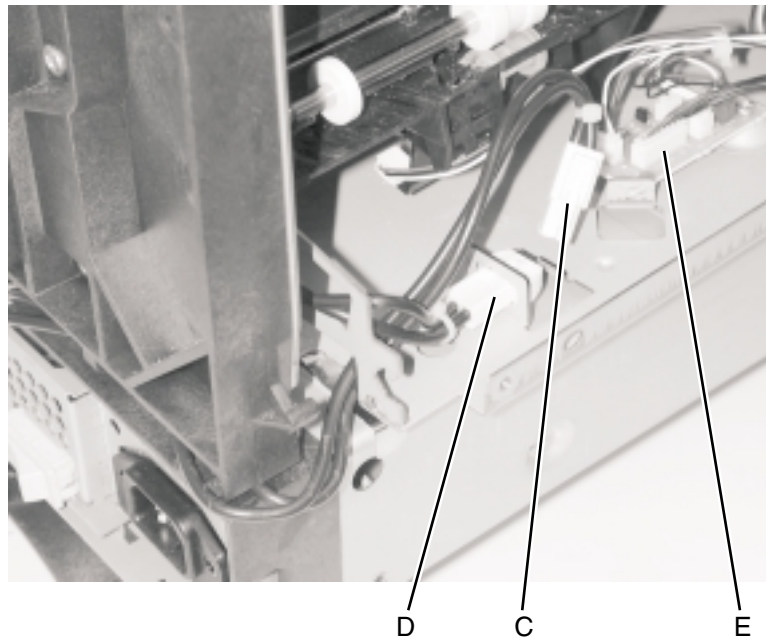


CAUTION: Unplug the printer before you begin.

1. Remove the redrive assembly. See **“Redrive assembly removal”** on page 4-57.
2. Remove the fuser mounting screws (A).



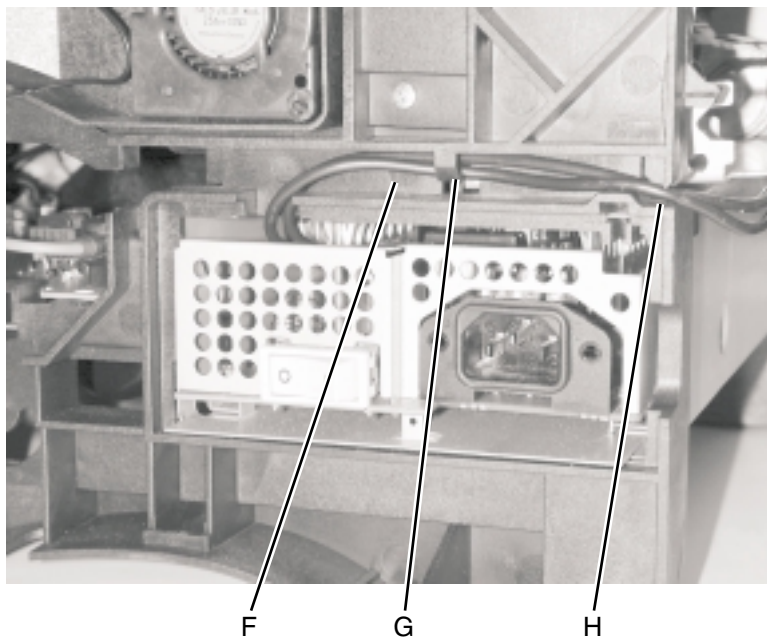
3. Disconnect the AC fuser lamp cable (C) from the fuser lamp connector (D).
4. Pull the fuser assembly out far enough to remove the fuser lamp cable.
5. Disconnect the DC fuser cable (E) from the fuser board.



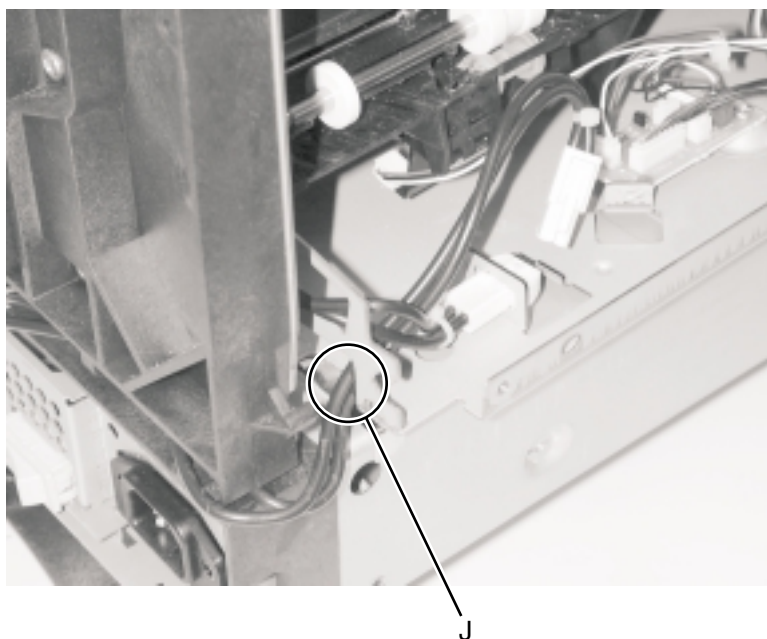
6. Pull the cables free and remove the fuser.

Installation

1. When you reinstall the fuser, be sure to route the fuser lamp cable through the channel (F) on the right side frame above the LVPS, under the clip (G), and through the notch in the frame (H)



2. Route the fuser lamp cable through the opening in the fuser as shown (J).

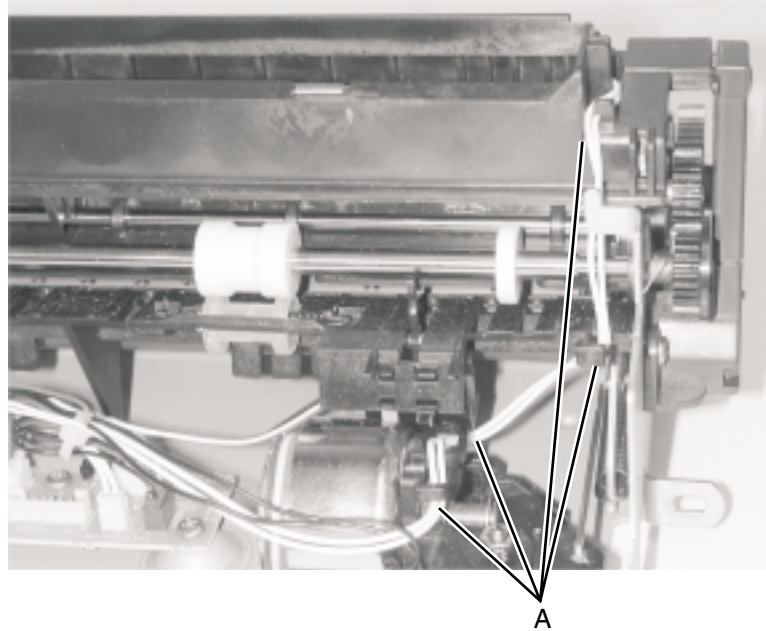


Fuser cover removal

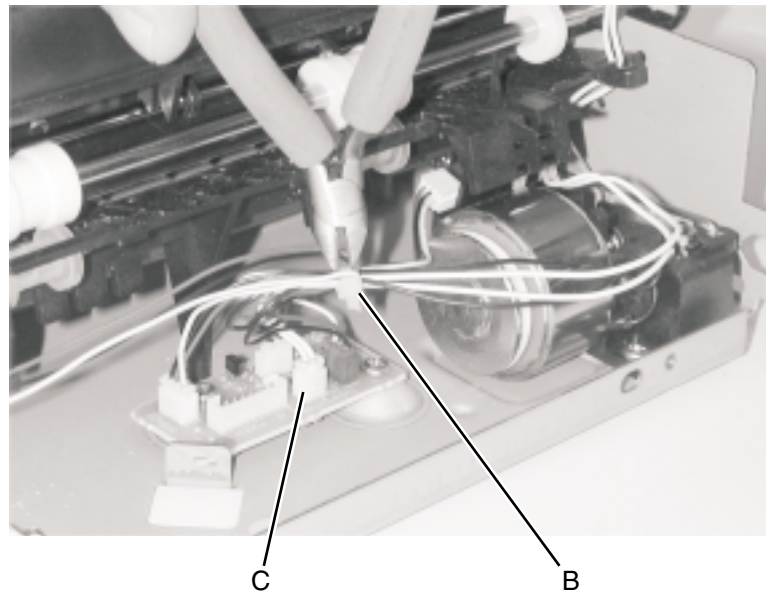


CAUTION: Unplug the printer before you begin.

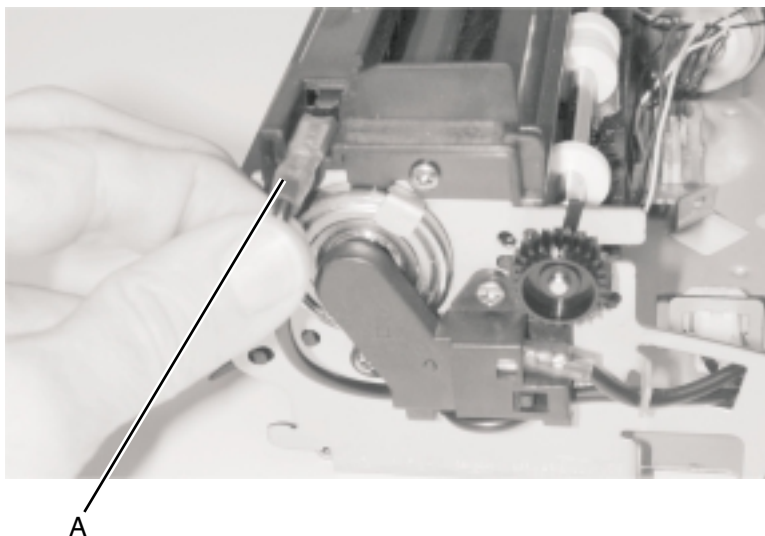
1. Remove the fuser assembly. See **"Fuser assembly removal"** on page 4-23.
2. Note the thermistor cable (A) routing.



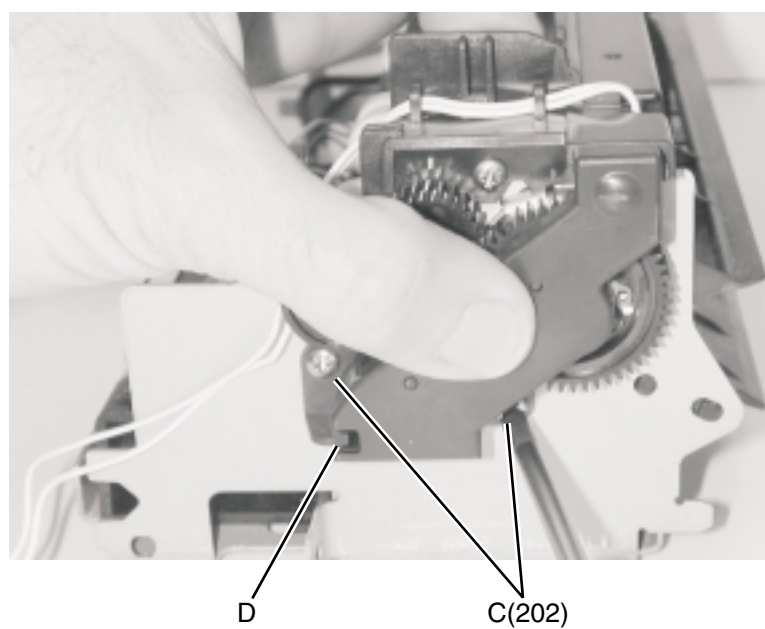
3. Clip the cable tie (B) and disconnect the thermistor cable (C) from the fuser board.



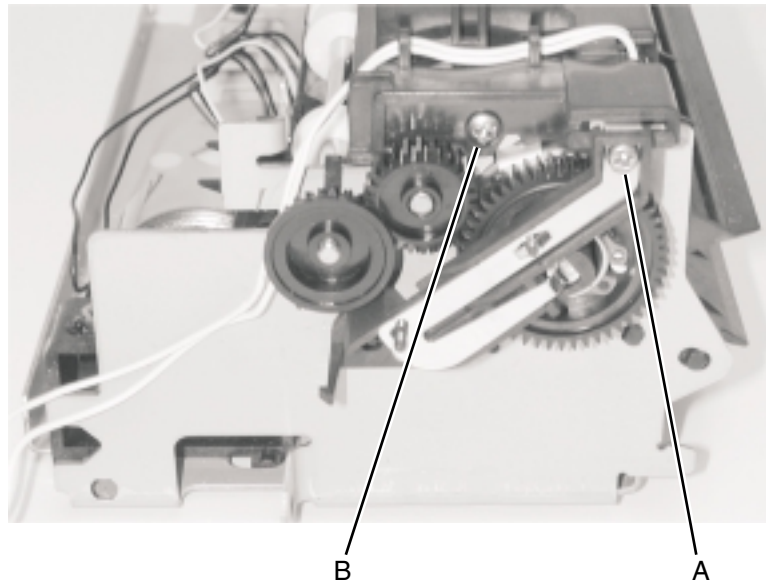
4. Disconnect the AC fuser lamp cable (A) from the top left side of the fuser cover.



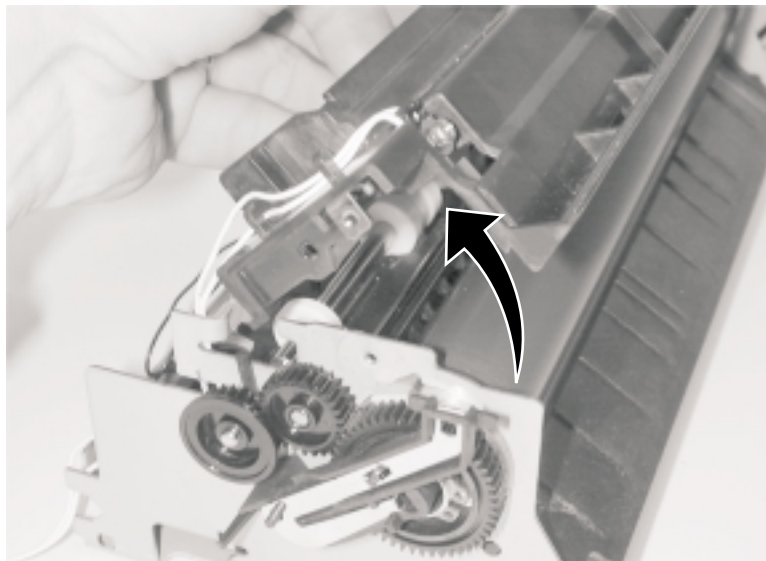
5. Remove the two screws (C) from the right side fuser lamp contact cover.
6. Release the latch (D) and remove the cover.



7. Remove screw (A) that attaches the fuser lamp contact to the fuser cover.

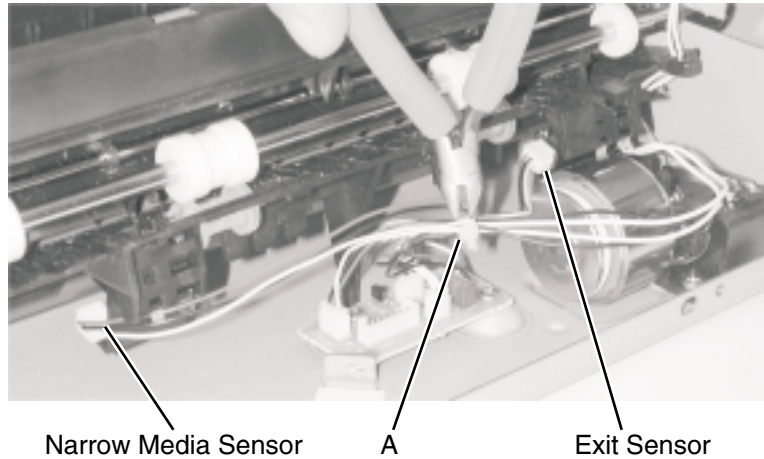


8. Remove the two screws (B), one on each side of the fuser, that attach the fuser upper cover assembly to the fuser frame.
9. Remove the fuser laser cover.



Fuser exit sensor or fuser narrow media sensor removal

1. Remove the fuser. See **“Fuser assembly removal” on page 4-23.**
2. Cut the cable tie (A).

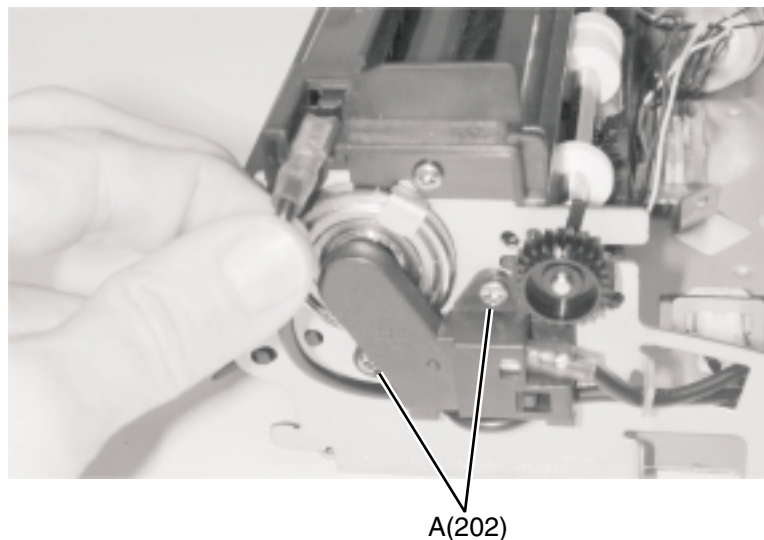


3. Unplug the sensor from the fuser control board.
4. Remove the sensor from the lower exit guide assembly.

Fuser lamp removal

1. Remove the fuser assembly. See **“Fuser assembly removal” on page 4-23.**
2. Disconnect the fuser lamp AC cable from the left side of the top cover assembly.
3. Remove the two screws (A) from the left side fuser lamp contact cover.

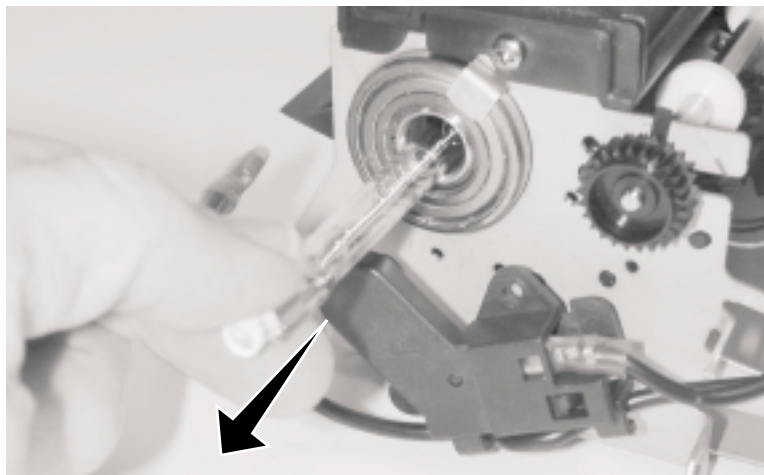
Warning: Take care when removing the screw, as the lamp is under spring tension. When the contact is released, damage to the lamp or contact may occur.



4. Remove the left lamp contact assembly.

5. Remove the fuser lamp.

Warning: The lamp is under spring tension and care must be used when removing the lamp from the fuser. Grip the lamp by the ceramic end piece and remove it from the fuser assembly. Be careful not to touch the glass as skin oils and acids can reduce the life of the lamp.

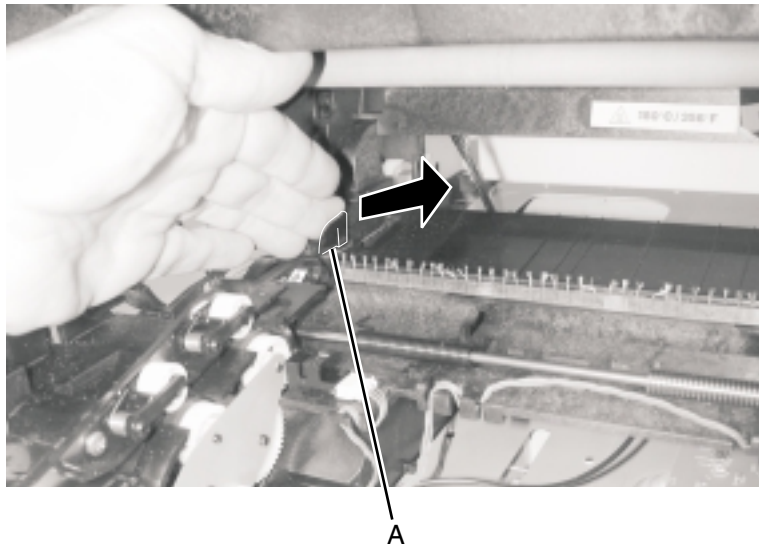


Use the following table to identify and install the correct lamp.

Description	P/N
Fuser Lamp 115 V	56P1362
Fuser Lamp 220 V	56P1363

Fuser transfer plate removal

1. Remove the upper paper deflector. See **“Upper paper deflector assembly removal” on page 4-63.**
2. Remove the transfer roll.
3. Remove the inner paper deflector. See **“Inner paper deflector assembly removal” on page 4-33.**
4. Lift the left side of the fuser transfer plate (A) and move the plate to the left to clear the right side from its mounting.



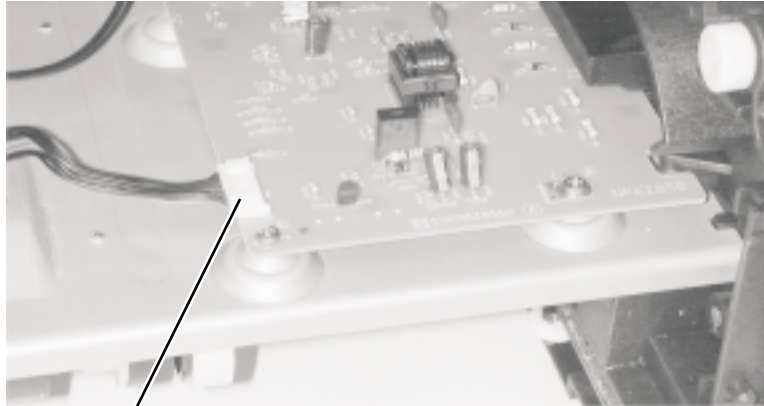
5. Remove the screw that attaches the transfer plate ground wire to the center pan.
6. Remove the fuser transfer plate.
7. Remove the screw that attaches the deflector cable to the transfer plate.

High voltage power supply removal



CAUTION: There is a danger from hazardous voltage in the area of the printer where you are working. Unplug the printer before you begin, or use caution if the printer must receive power in order to perform the task.

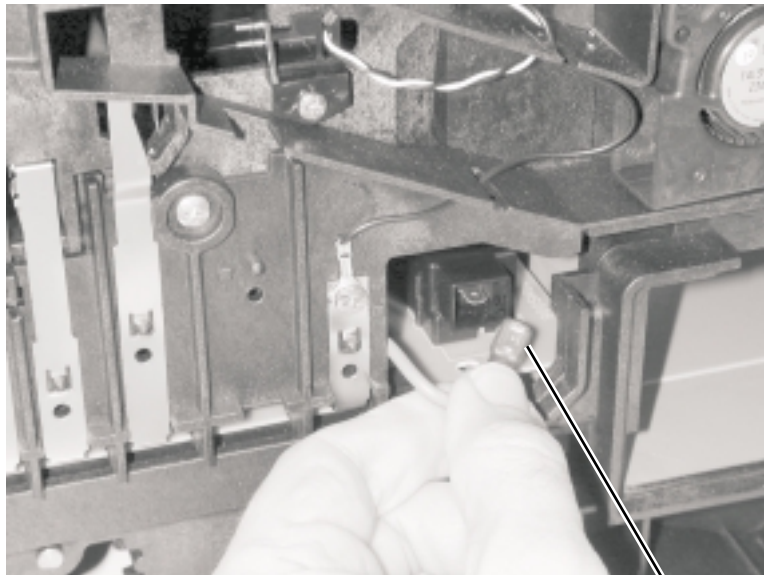
1. Remove the inner paper deflector. See **"Inner paper deflector assembly removal"** on page 4-33.
2. Remove the right side cover. See **"Right cover removal"** on page 4-10.
3. Disconnect the HVPS cable from the HVPS at connector (A).



A

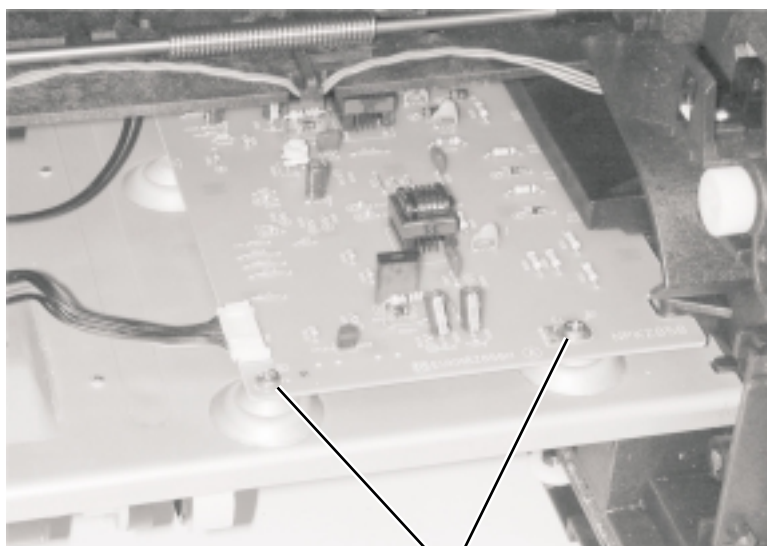
4. Disconnect the transfer roll cable (B) from the HVPS board.

Warning: Use care when disconnecting the cable from the transformer on the HVPS. The cable and connector can be easily damaged.



B

5. Remove the HVPS mounting screws (C).

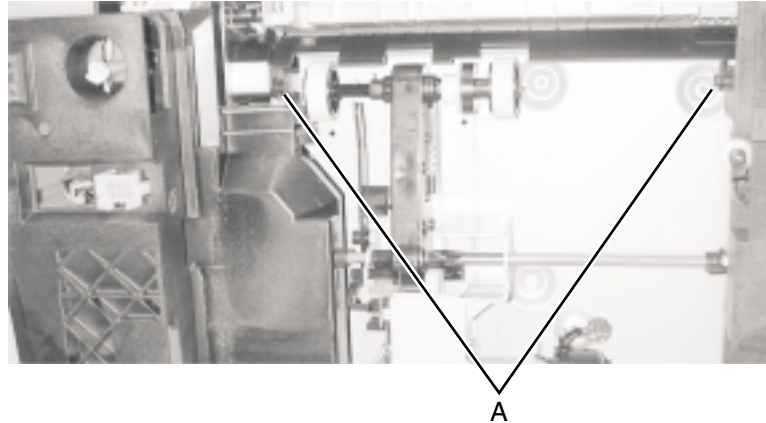


C(235)

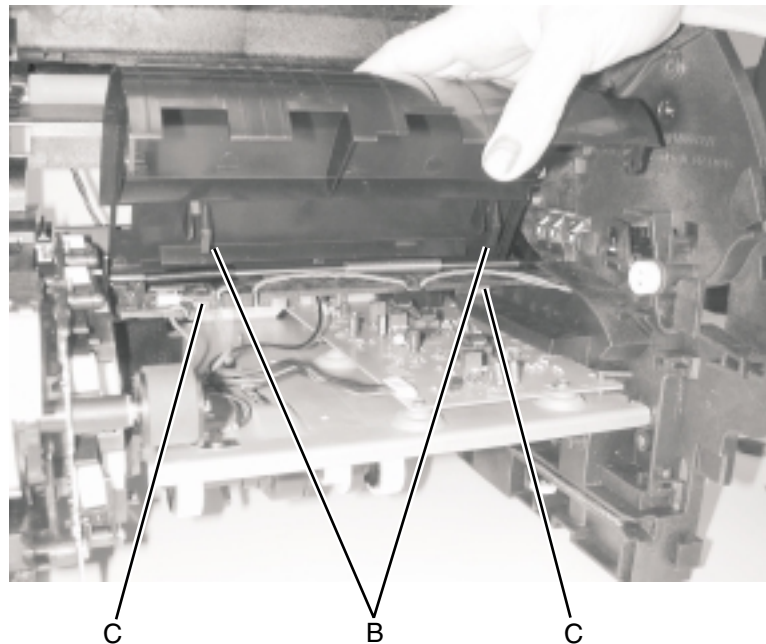
6. Slide the HVPS to the left to release the mounting tab from the center pan and remove the HVPS.

Inner paper deflector assembly removal

1. Remove the paper tray.
2. Remove the upper paper deflector assembly. See **“Upper paper deflector assembly removal” on page 4-63.**
3. Place the printer on its side.
4. Remove the MPT deflector assembly. See **“Inner paper deflector assembly removal” on page 4-33.**
5. Gently pry the inner paper deflector from the left and right mounting posts (A) located on the bottom of the printer and remove the deflector.



6. Disengage the two latches (B) on the upper part of the deflector from the upper edge of the frame (C) and lift to remove.

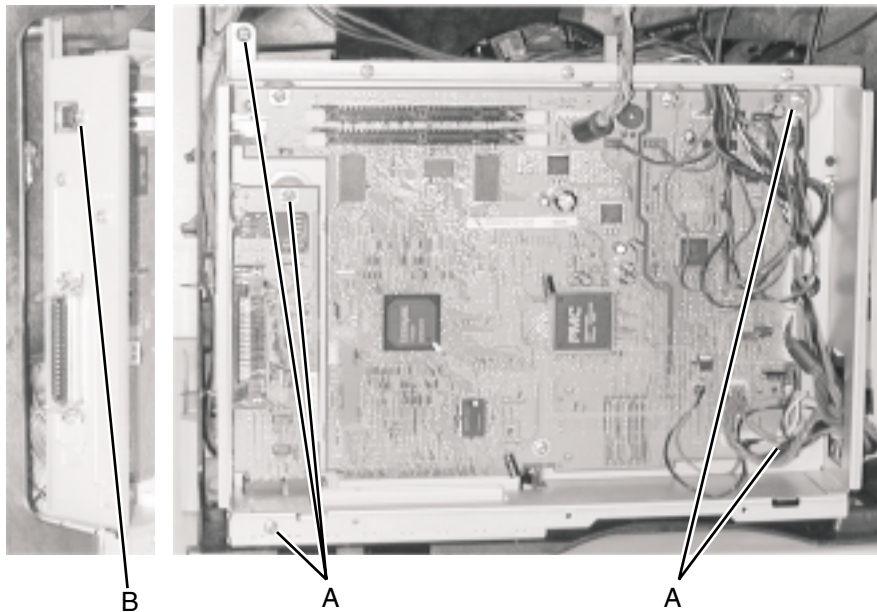


Inner shield removal

1. Remove the left door.
2. Remove the outer system board shield. See **“Outer shield removal” on page 4-52.**
3. Remove all features or option boards from the interconnect board.

Warning: Observe all ESD precautions while handling ESD-sensitive parts. See **“Handling ESD-sensitive parts” on page 4-1.**

4. Disconnect all cables from the system board.
5. Remove the inner shield mounting screws (A).
6. Remove the USB connector mounting screw (B), if present.
7. Remove the inner shield.

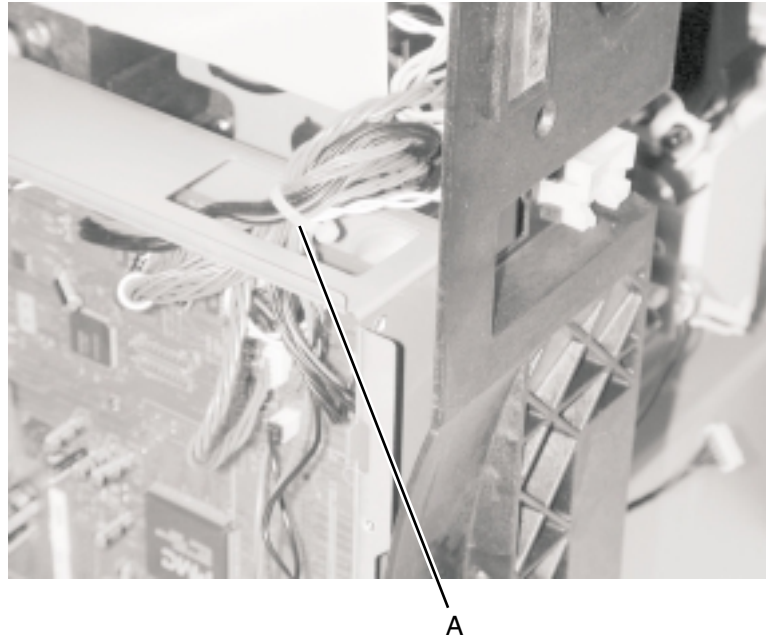


Input sensor removal

1. Remove the inner paper deflector assembly.
2. Disconnect the input sensor cable from the input sensor.
3. Release the input sensor from its mounting and remove.

Integrated tray autocompensator assembly removal

1. Remove the paper tray.
2. Remove the left door.
3. Remove the outer shield. See **"Outer shield removal" on page 4-52.**
4. Disconnect the autocompensator motor cable from the system board (J28).
5. Cut cable tie (A) on left side.

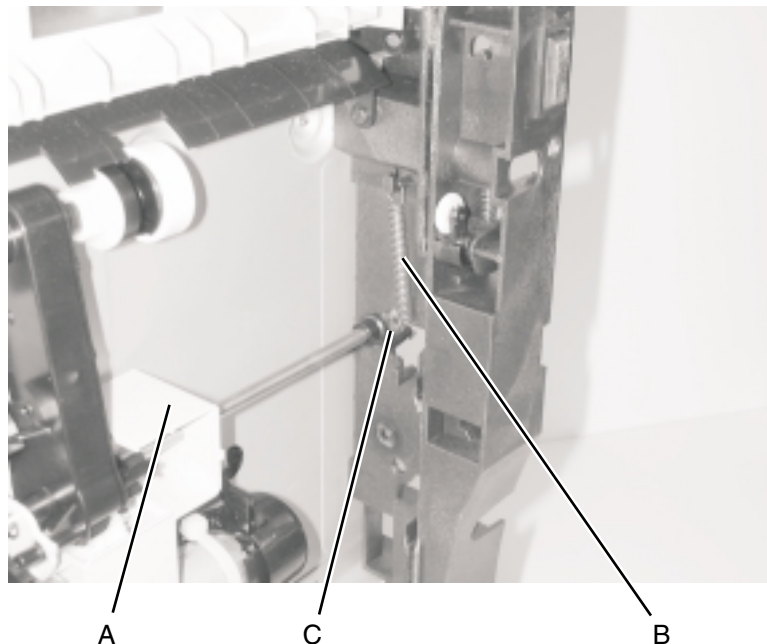


6. Place the printer on its back.

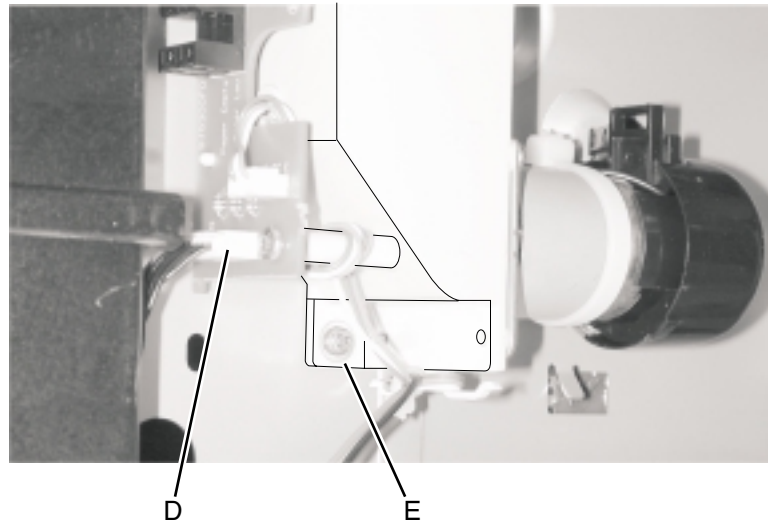
7. Locate the integrated tray autocompensator assembly (A) on the bottom of the printer and disconnect the autocompensator arm bias spring (B).

Note: When you remove the spring, note the larger loop attaches to the side frame.

8. Remove the C-clip (C) that rests against the right side frame from the autocompensator pivot shaft.



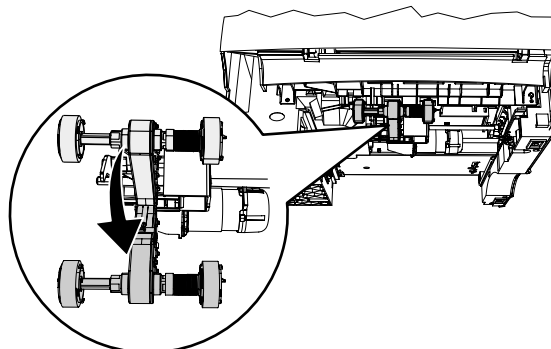
9. Disconnect the autocompensator sensor cable (D) from the assembly.
10. Remove the autocompensator assembly mounting screw (E).



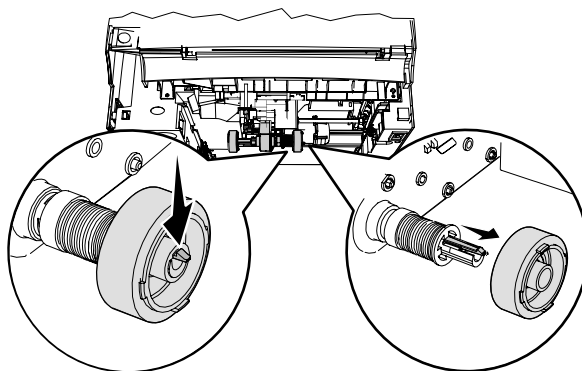
11. Remove the integrated tray autocompensator assembly.
- Note:** When you reinstall the assembly, reinstall the cable tie.

Integrated tray autocompensator pick roll assembly removal

1. Remove the integrated tray and look underneath the printer for the autocompensator arm. Pull the arm down.

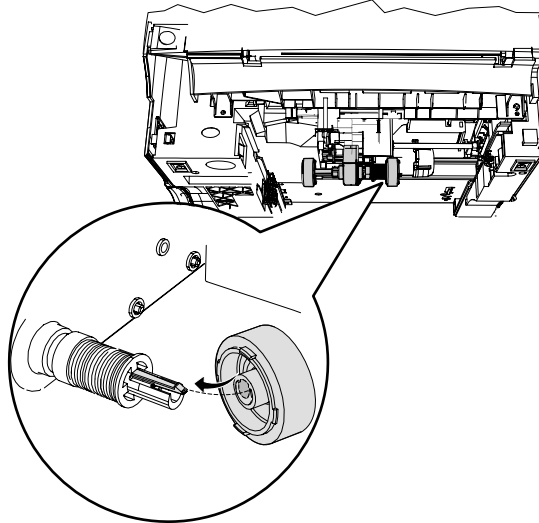


2. Press on the end of the tab and pull the pick roll off the arm. Repeat this step for the pick roll on the other side. Next, gently release the autocompensator arm. Discard the used pick rolls.

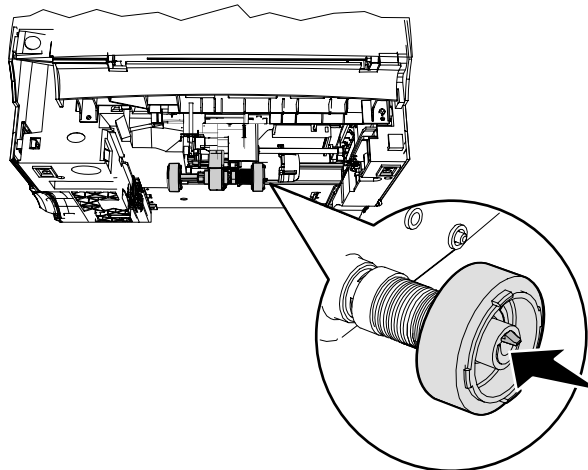


Installation

1. Remove the new pick rolls from their packaging.
2. Pull the autocompensator arm down. Locate the recessed area on the pick roll and align it with the tab on the arm. There are two arrows on each pick roll. Make sure the bottom arrow faces you as you align the recessed area with the tab.



3. Push the pick roll onto the arm with the tab aligned. Repeat this step on the other side to install the other pick roll.



4. Gently release the autocompensator arm. Insert integrated tray.

Interconnect board assembly removal

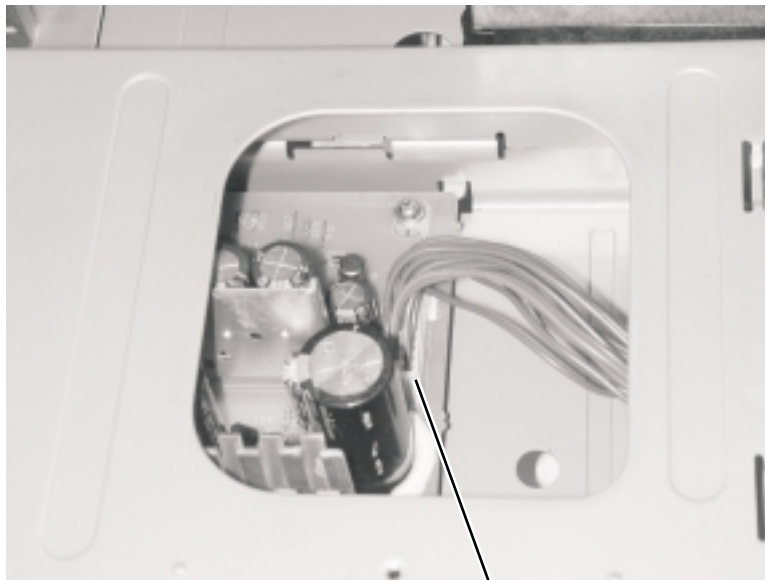


CAUTION: Unplug the printer before you begin.

Warning: Observe all ESD precautions while handling ESD-sensitive parts. See **“Handling ESD-sensitive parts” on page 4-1**.

Note: Any time the interconnect board assembly is replaced, the Configuration ID must be reset in NVRAM on the new interconnect board. Go to **“Setting configuration ID” on page 3-18**.

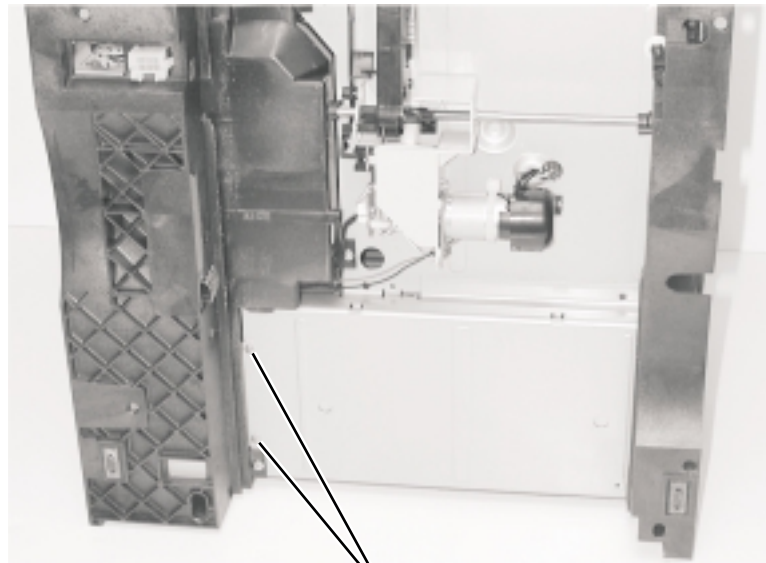
1. Remove any feature or option cards from the interconnect board.
2. Remove the inner shield. See **“Inner shield removal” on page 4-34**.
3. Remove the LVPS access plate and disconnect the LVPS cable from CN2 (A).



A

4. Disconnect cables J4 and J5 from the interconnect board.

5. Place the printer on its side and remove the mounting screws (A).

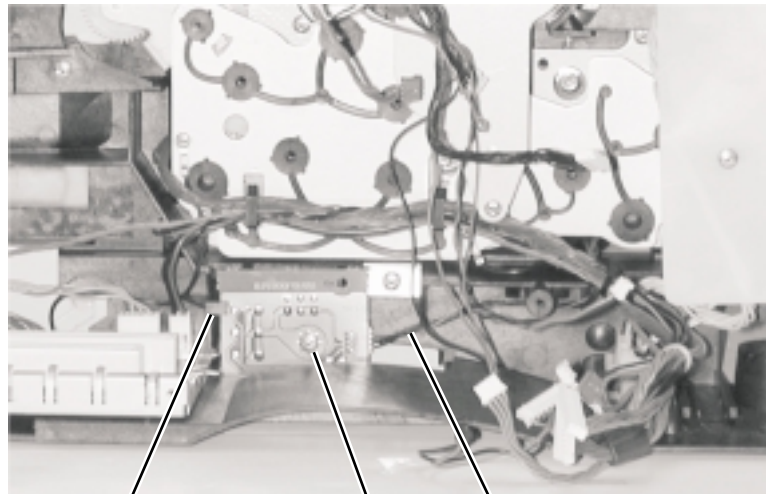


A(202)

6. Remove the interconnect board assembly.

Internal tray card (ITC)/Paper size sensing board removal

1. Remove the paper size sensing board mounting screw (A).



C

A

B

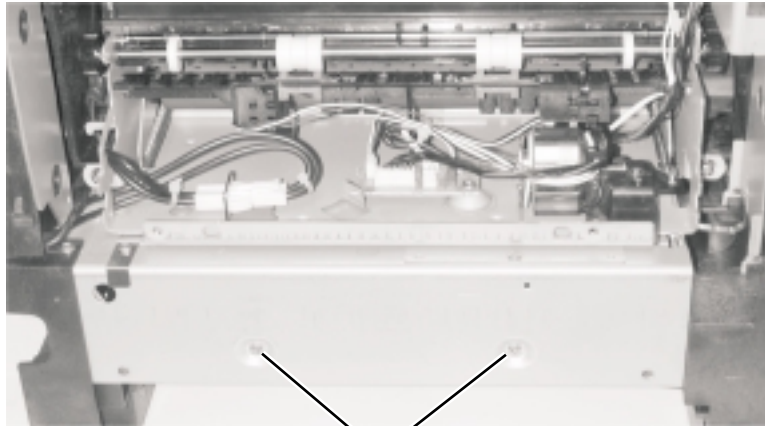
2. Disconnect the paper size sensing board cable (B) from the board.
3. Remove the paper size sensing board from the ITC latch (C).
4. Remove the paper size sensing board.

Low voltage power supply removal



CAUTION: Unplug the printer before you begin.

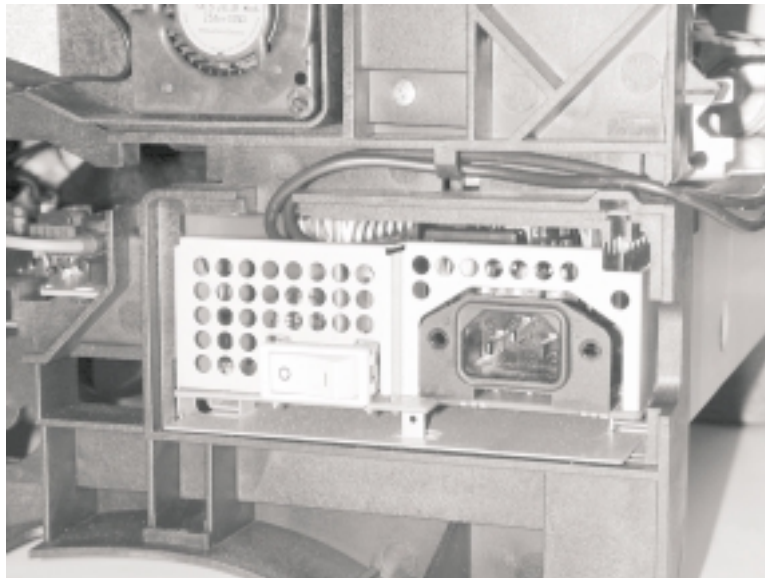
1. Remove the right side cover. See **“Right cover removal”** on page 4-10.
2. Remove fuser assembly. See **“Fuser assembly removal”** on page 4-23.
3. Remove the LVPS mounting screws (A) from the rear of the bottom pan.



A(203)

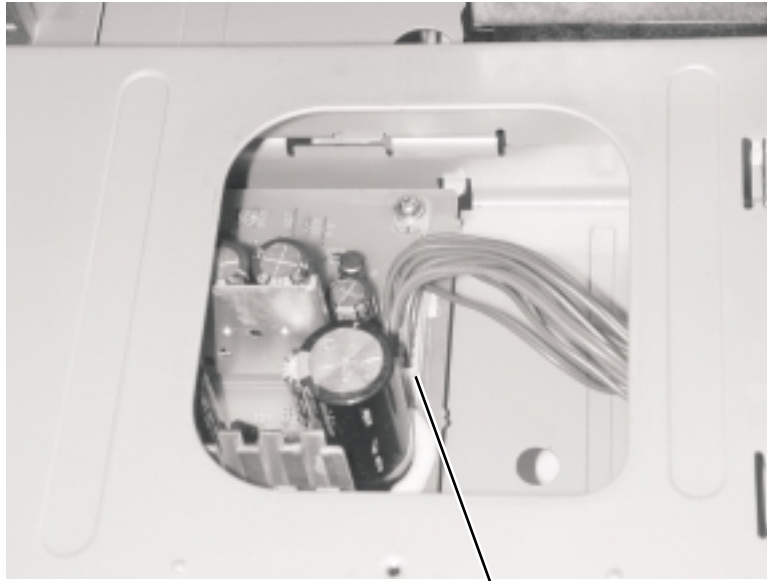
4. Pull the LVPS assembly far enough out from the right side of the printer to disconnect the fuser lamp cable.

Warning: The LVPS assembly may be difficult to remove from the printer. Do not use excessive force in the removal.



5. Remove the LVPS access plate.

6. Disconnect the interconnect card cable from the LVPS (A).

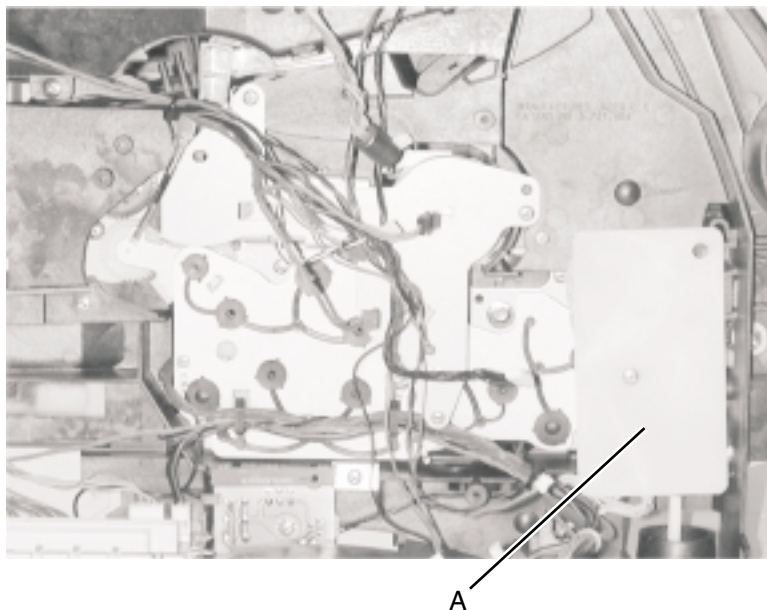


A

7. Remove the LVPS.

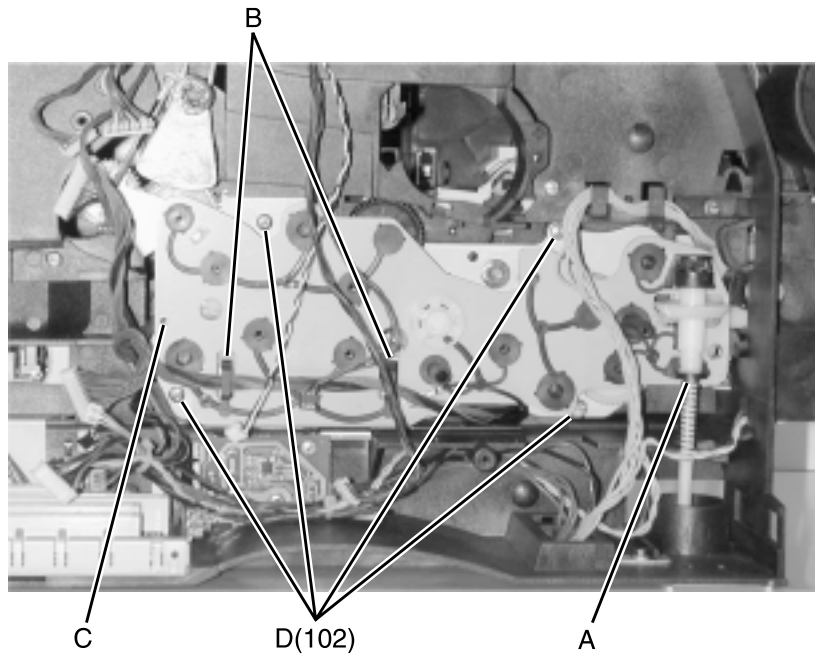
Main drive assembly removal

1. Remove the inner shield. See **“Inner shield removal” on page 4-34.**
2. Remove the gear guard (A).



3. Remove the developer drive assembly. See **“Developer drive assembly removal” on page 4-20.**

4. Remove the power takeoff shaft and spring (A) through the bottom of the printer.
5. Remove all cables from the cable clamps (B) on the main drive assembly.
6. Remove the ground cable screw (C).
7. Remove the main drive assembly mounting screws (D).



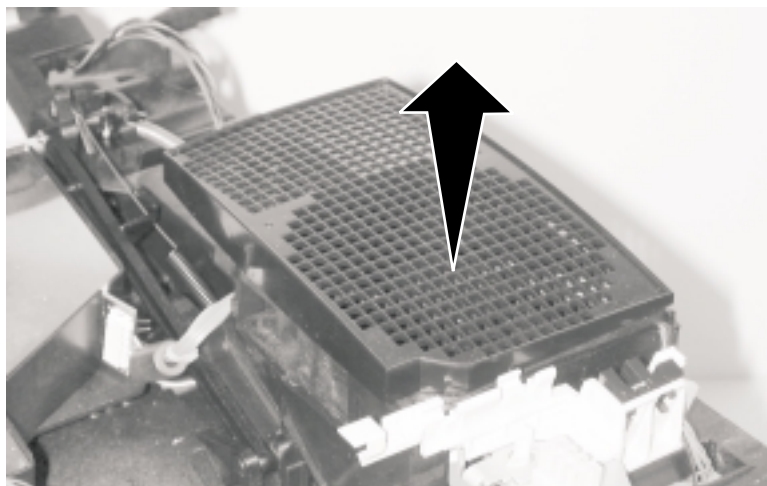
8. Remove the link from the rear of the main drive assembly.
9. Disconnect the cable from the main drive motor.
10. Remove the main drive assembly.

Note: Be sure the main drive assembly gear shaft aligns with the hub on the left side frame when reinstalling the main drive assembly.

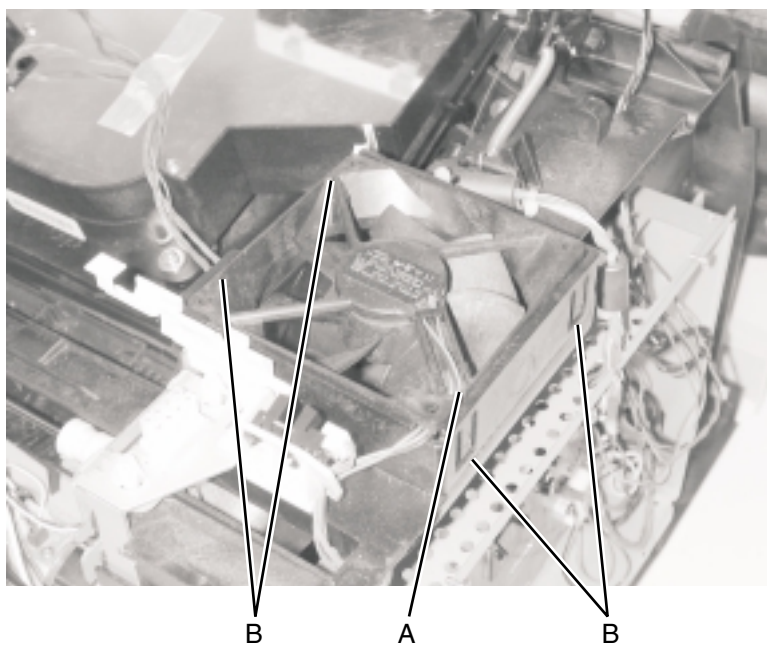
Warning: Whenever the main drive assembly is removed from the printer it must be handled very carefully. Do not allow any of the gears to come in contact with any metal or other hard surface to avoid gear damage. It is also very important not to let any dirt, paper, staples, or other material come in contact with the grease in the gears.

Main fan removal

1. Remove the laser cover. See **“Laser cover removal”** on page 4-14.
2. Remove the inner shield. See **“Inner shield removal”** on page 4-34.
3. Remove the fan grill cover.



4. Note the routing of the main fan cable (A) and disconnect the cable from the system board at connector J7.

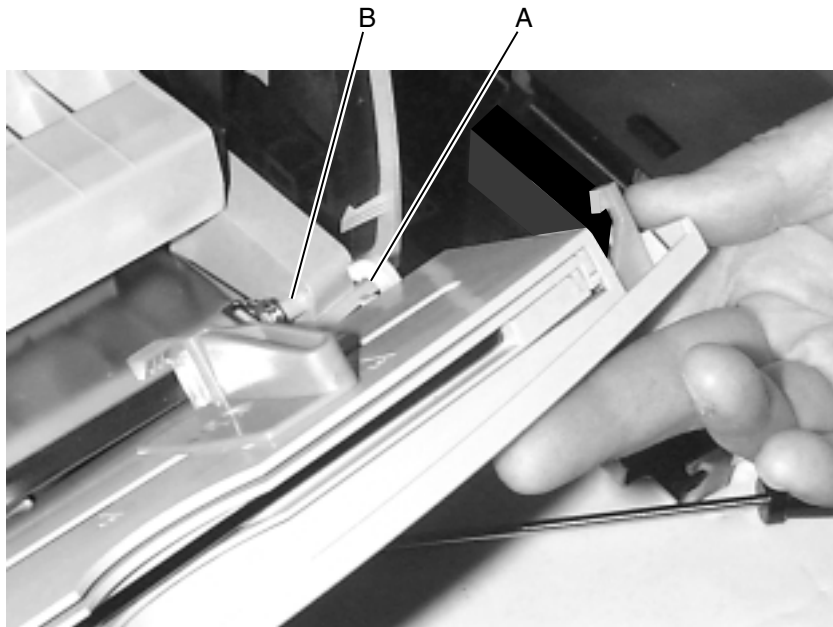


5. Release the four latches (B) and remove the fan from the left side frame.

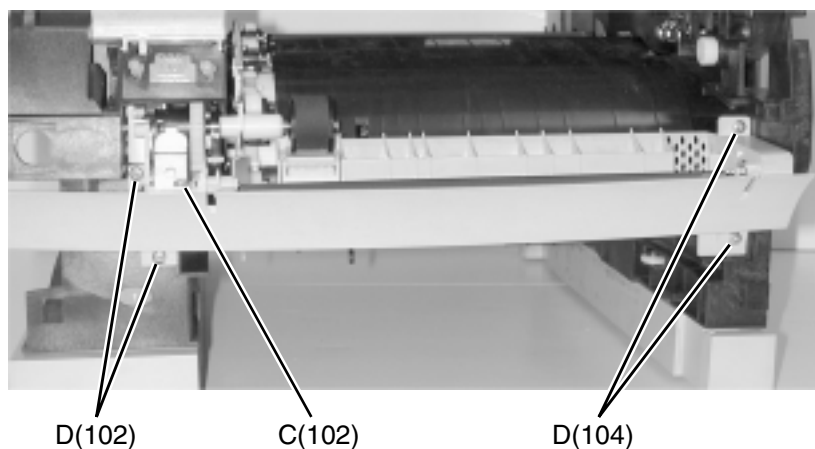
Multipurpose tray/lower deflector assembly removal

1. Open the multipurpose tray to a position that allows the left and right tray hinge slots (A) to align with the rectangular mounting posts (B). Pull upward on each tray hinge to remove the tray from the two mounting posts.

Warning: Be careful not to break the hinges.

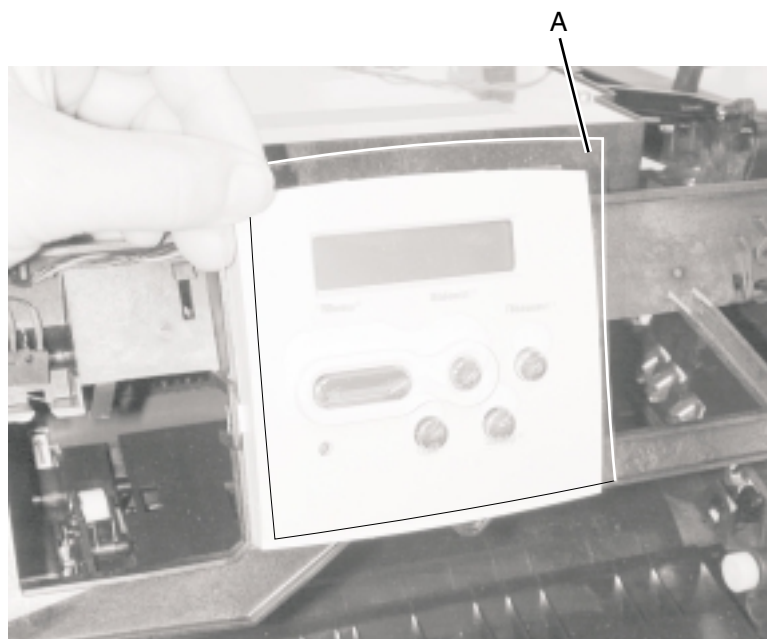


2. Remove the upper paper deflector. See **“Upper paper deflector assembly removal” on page 4-63.**
3. Remove the solenoid mounting screw (C).
4. Remove the screws (D) mounting the multipurpose tray/lower deflector assembly.
5. Remove the multipurpose tray/lower deflector assembly.



Operator panel assembly removal

1. Remove the upper front cover.
2. Remove the operator panel overlay (A) and set it aside.



3. Gently press the operator panel lens tabs to loosen the operator panel.



4. Disconnect the operator panel cable and remove the operator panel.

Operator panel bezel removal

1. Remove the upper front cover. See **"Upper front cover removal" on page 4-12.**
2. With the upper front cover upside down on a soft, non-scratching surface, release the clips and remove the operator panel lens cover.

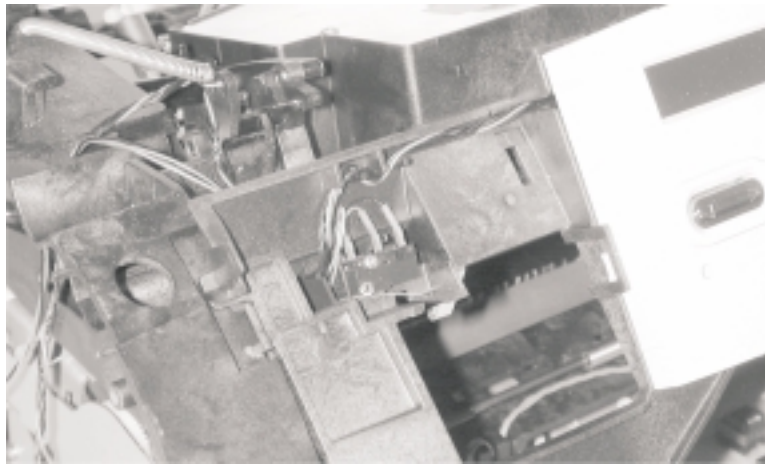
Note: Use caution to avoid scratching or damaging the operator panel lens cover.



Operator panel cable removal

Note: Pay careful attention to the cable routing through the printer before you remove the operator panel cable.

1. Remove the left cover. See **“Left door removal” on page 4-9.**
2. Remove the upper front cover. See **“Upper front cover removal” on page 4-12.**
3. Remove the outer system board shield. See **“Outer shield removal” on page 4-52.**
4. Disconnect the operator panel cable from connector J15 on the system board.
5. Remove the operator panel. See **“Operator panel assembly removal” on page 4-48.**
6. Remove the cable retainer from the left side of the upper front cover hinge assembly.
Note the routing of the operator panel and cover closed switch cables.



7. Remove the old cable from the printer.
8. Plug the new operator panel cable into the operator panel.
9. Snap the operator panel into the upper front cover.

Optional 250 or 500-sheet paper tray assembly removal

Note: Remove the printer and other paper feed options to access the failing optional paper tray assembly.

Paper tray autocompensator assembly removal

1. Remove the printer and other paper feed options.
2. Disconnect the autocompensator assembly bias spring from the tray frame.
3. Disconnect the autocompensator assembly motor cable.
4. Remove the three autocompensator assembly mounting screws and remove the compensator assembly.

Paper tray frame assembly removal

1. Remove the autocompensator assembly.
2. Release the paper pass thru sensor from its retaining tabs.
3. Release the frame assembly from the front and rear retaining tabs and remove the paper tray frame assembly.

Paper tray board removal

1. Remove the paper tray frame assembly.
2. Disconnect all cables from the paper tray board.
3. Remove the three paper tray board mounting screws and remove the board.

Note: Reinstall with the paper out sensor flag positioned in the sensor slot on the paper tray board.

Paper tray paper out sensor flag removal

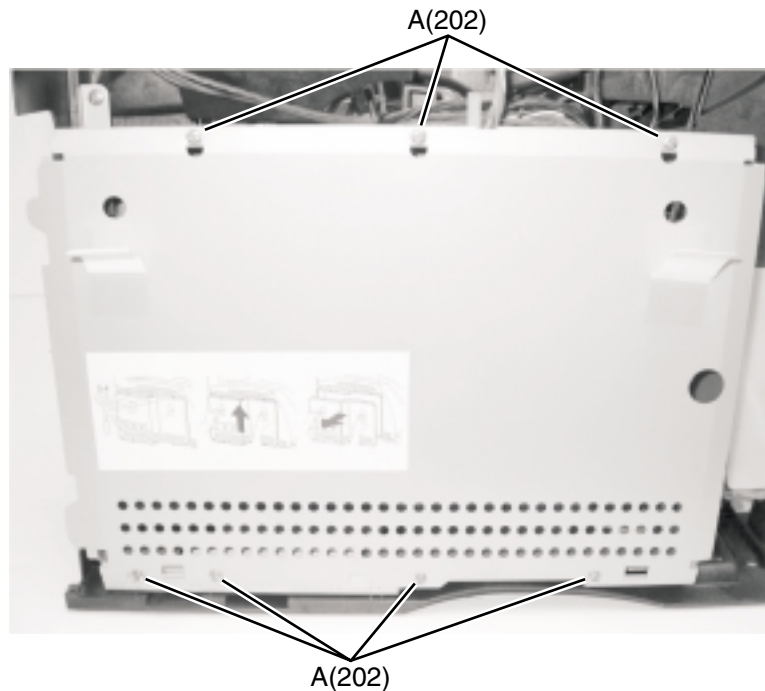
1. Remove the paper tray frame assembly.
2. Remove the paper tray board.
3. Remove the paper out sensor flag.

Paper size spring comb removal

1. Remove the paper tray board.
2. Remove the paper size spring comb mounting screw and remove the spring comb.

Outer shield removal

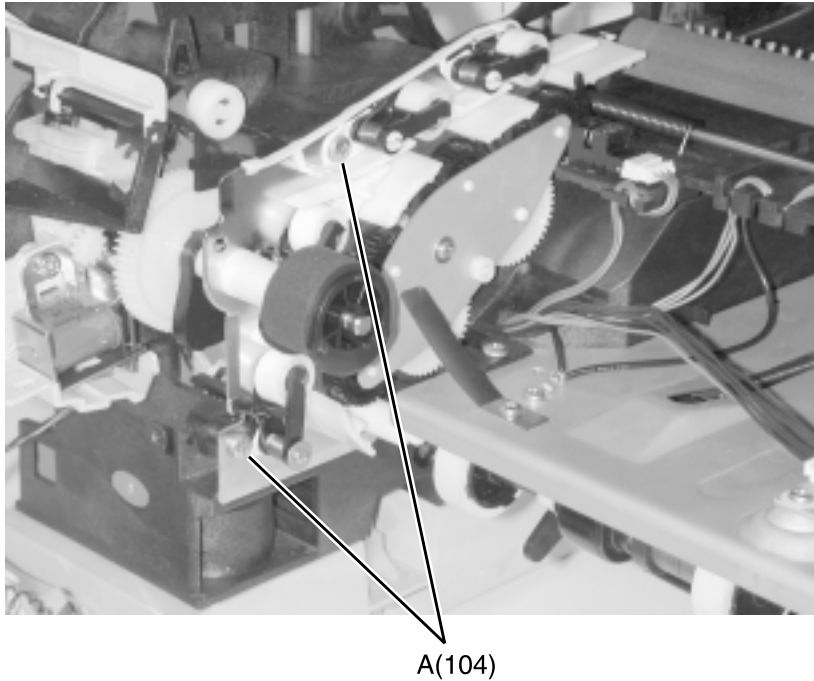
1. Remove the left door. See **“Left door removal” on page 4-9.**
2. Loosen the outer shield mounting screws (A) and remove the shield.



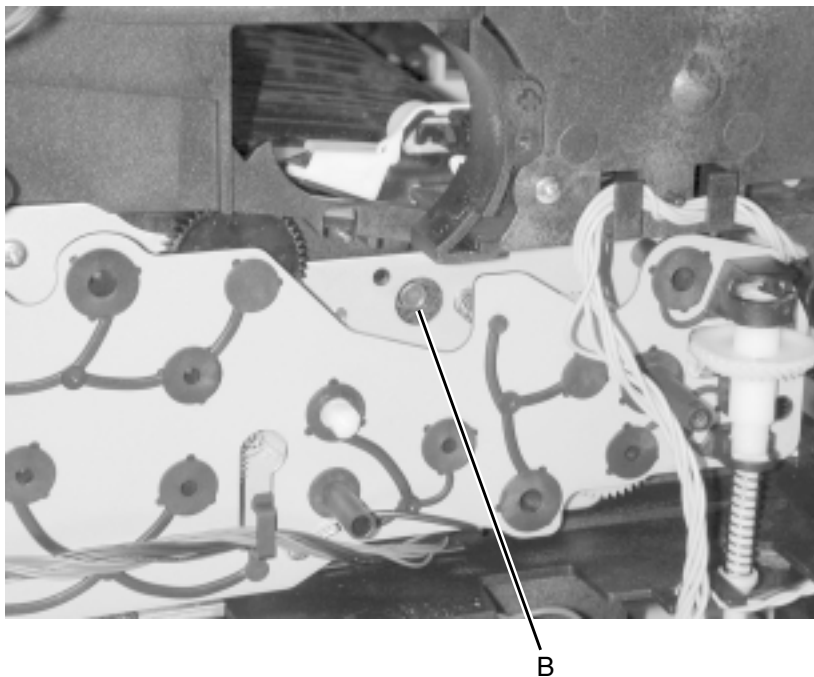
Paper alignment assembly removal

1. Remove the upper paper deflector assembly. See **“Upper paper deflector assembly removal” on page 4-63.**
2. Remove the inner paper deflector assembly. See **“Inner paper deflector assembly removal” on page 4-33.**
3. Release the input paper sensor from its mounting and remove.
4. Remove the left door.

5. Remove the paper alignment assembly mounting screws (A).



6. Locate the paper alignment assembly reference adjustment screw (B) through the left frame and remove the screw.

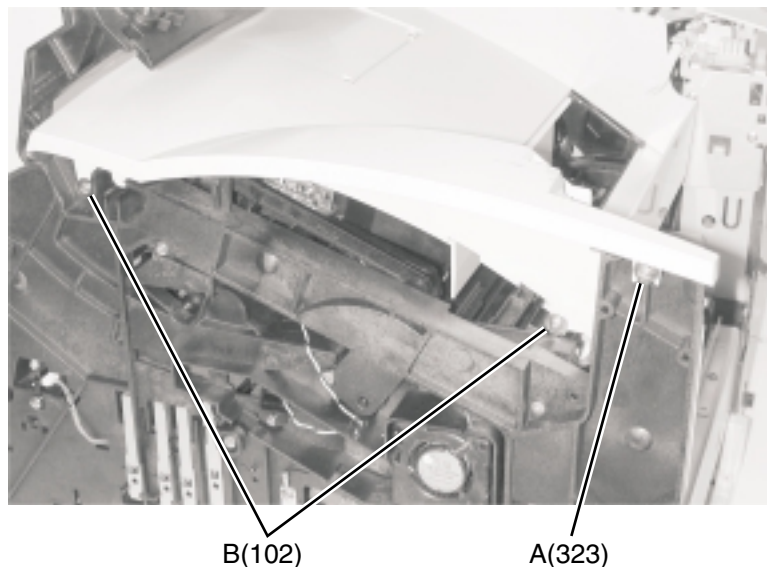


7. Remove the paper alignment assembly.

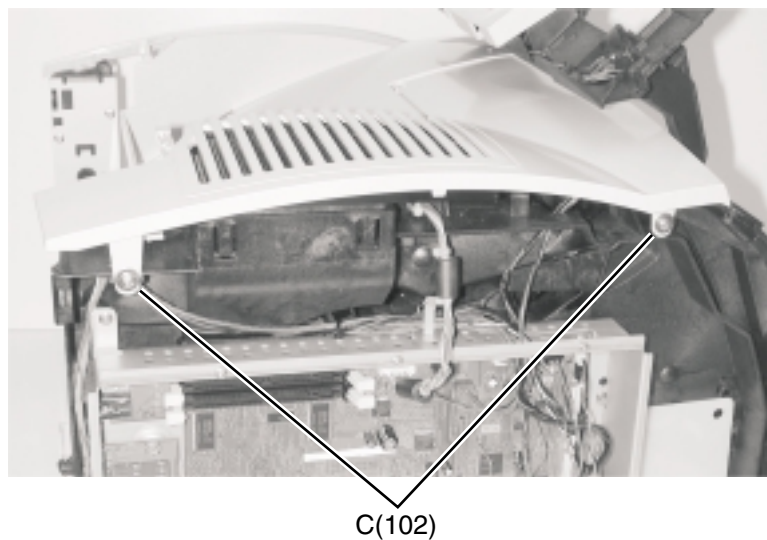
Note: Do the **"Paper alignment assembly adjustment"** on page 4-4 when you reinstall the assembly.

Paper bin full sensor flag assembly removal

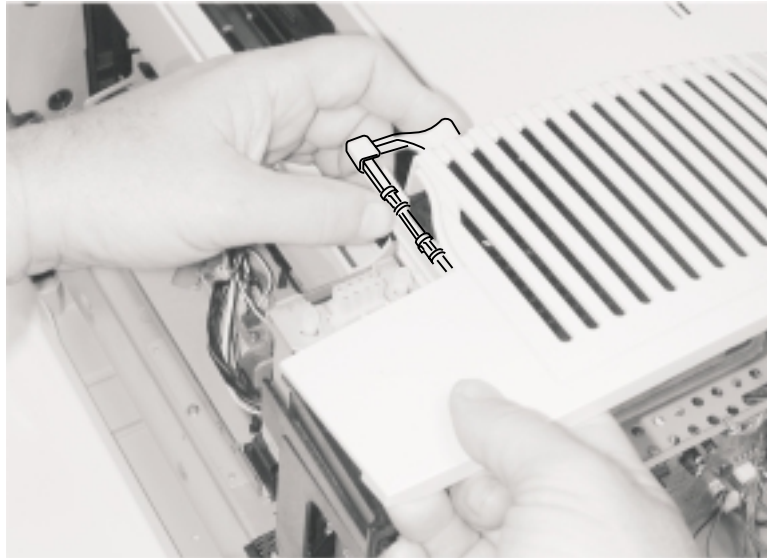
1. Remove the left door.
2. Remove the right cover.
3. Remove the rear paper deflector.
4. Press the fuser wiper cover latch and remove the cover.
5. Loosen screw (A) and remove the two screws (B) on the left side.



6. Remove the mounting screws (C) from the right side.



7. Lift the right corner of the laser assembly cover to access the flag.



8. Use your thumb to bend the paper full flag assembly slightly to unlatch it from the mounting bracket.

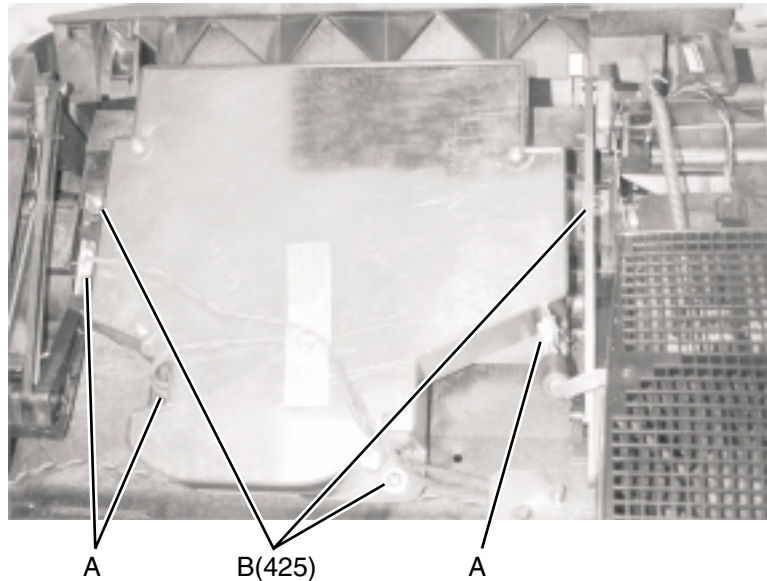
Pick roll removal (MPT)

1. Remove the upper paper deflector. See **“Upper paper deflector assembly removal” on page 4-63.**
2. Release the pick roll retaining tab and slide the pick roll off the shaft.

Printhead removal

1. Remove the laser assembly cover. See **"Laser cover removal" on page 4-14.**
2. Disconnect the printhead cables (A) from the printhead assembly.
3. Remove the printhead mounting screws (B) and remove the printhead.

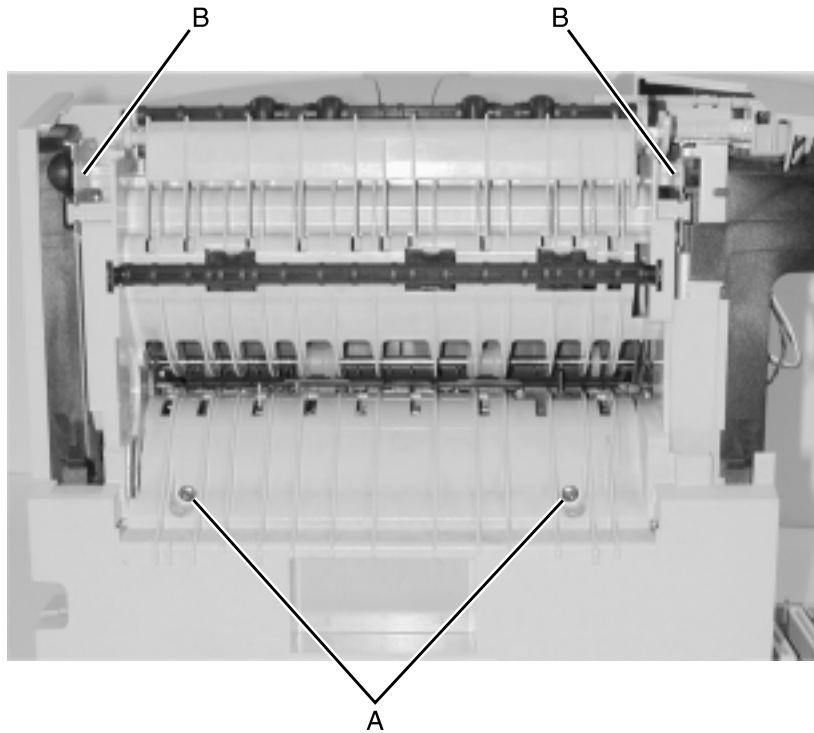
Note: Do the **"Printhead assembly adjustment" on page 4-3** whenever you remove or replace the printhead assembly or loosen the mounting screws.



Note: The Infoprint 1332 machine type printhead is shown. Cables for the Infoprint 1352 and for the Infoprint 1372 machine type are different. See **"Printhead 1 (Infoprint 1332)" on page 7-10**, **"Printhead 2 (Infoprint 1352)" on page 7-11**, and **"Printhead 3 (1372)" on page 7-12**.

Redrive assembly removal

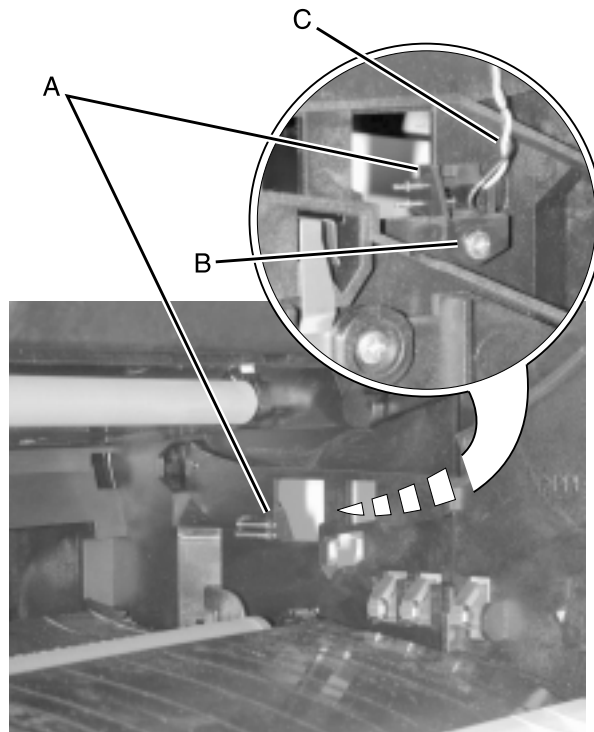
- 1.** Remove the redrive door assembly.
- 2.** Remove the redrive exit cover.
- 3.** Remove the redrive assembly mounting screws (A).
- 4.** Release the redrive assembly mounting latches (B) and remove the redrive assembly.



Smart contact assembly removal

1. Remove the print cartridge.
2. Remove the left side door. See **“Left door removal” on page 4-9.**
3. Remove outer system board shield. See **“Outer shield removal” on page 4-52.**
4. Disconnect smart cartridge cable from connector J19 on the system board.
5. Remove smart cartridge contact assembly mounting screw (B).
Note the routing of the smart cartridge contact assembly cable (C).
6. Remove the assembly (A).

Note: Be sure to route the cable in the same location, as shown (C), when replacing the assembly.

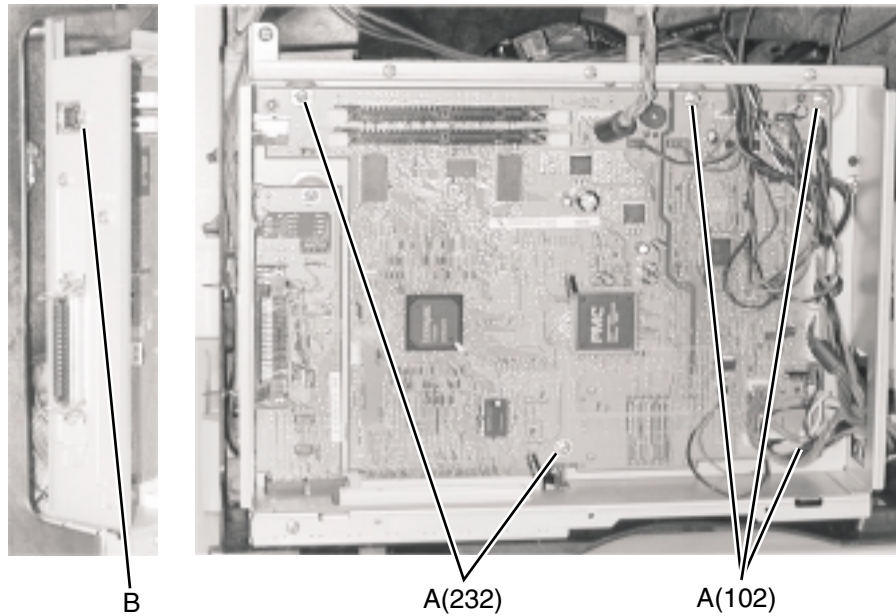


System board removal

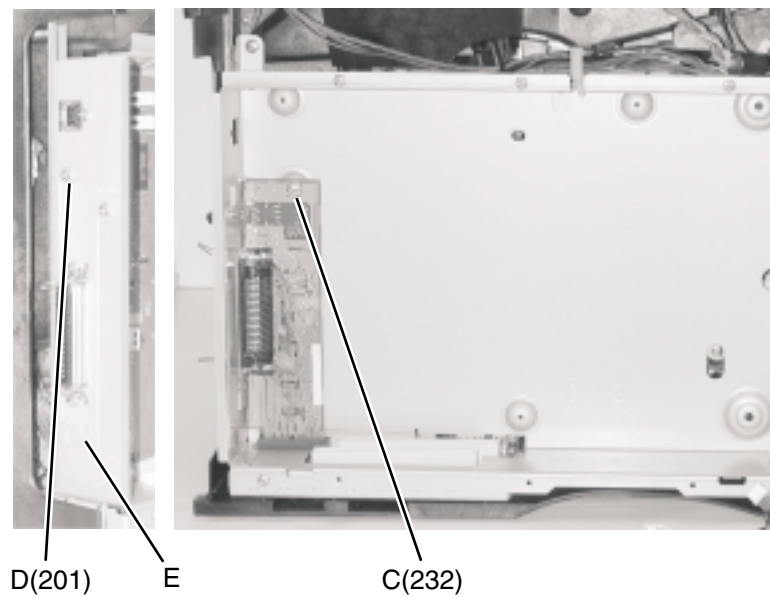
Warning: Observe all ESD precautions while handling ESD-sensitive parts. See **“Handling ESD-sensitive parts” on page 4-1.**

1. Remove the outer shield. See **“Outer shield removal” on page 4-52.**
2. Disconnect all cables from the system board.
3. Remove all features and options from the interconnect board.

4. Remove the five system board mounting screws (A).
5. Remove the USB screw (B)



6. Remove the system board.
7. Remove the communications board mounting screw (C).



8. Remove the communications board shield mounting screw (D).
9. The communications board is held in place by a ground clip (E) that attaches the communications board shield to the side frame. Pull the board up to unclip the shield.
10. For the non-network system board, remove the two screws that hold the shield to the communications board.

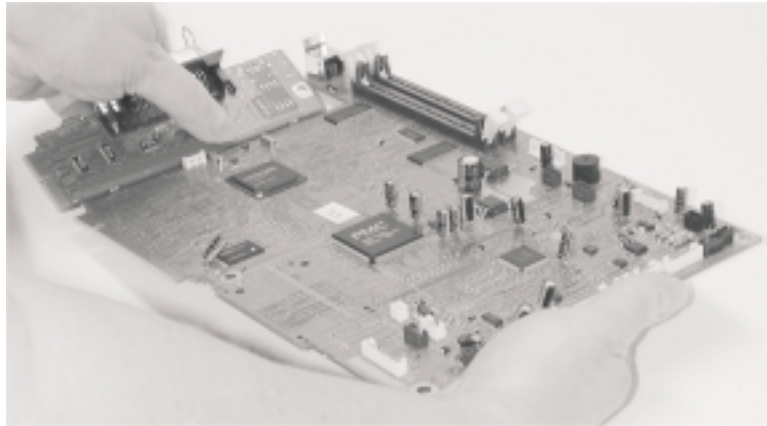
Note: Retain the shield and any screws to install on the new board.

System board installation

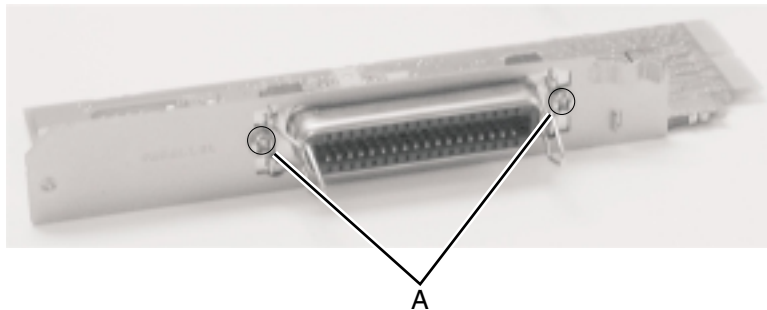
Note: The replacement system board assembly contains a communications board connected to the system board. To install, you need to separate the boards.

Warning: Observe all ESD precautions while handling ESD-sensitive parts. See **“Handling ESD-sensitive parts” on page 4-1.**

1. Flex the communications board to separate the boards.



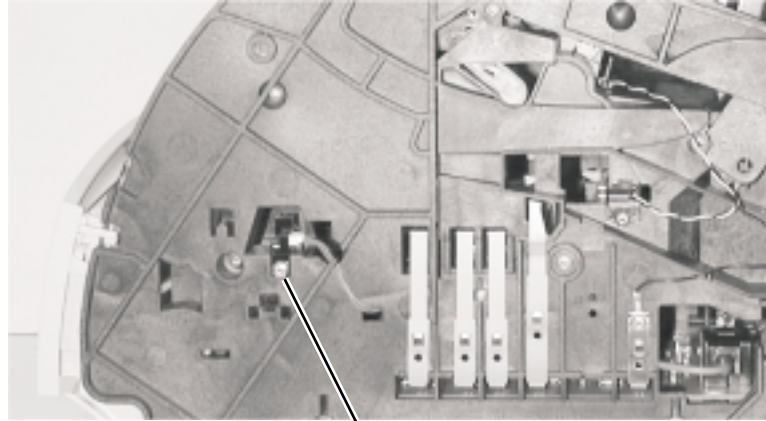
2. For non-network models, connect the communications board bracket to the communication board with two screws (A).



3. Clip the communications board shield ground clip on the frame and insert the communications card into the interconnect card slot.
4. Replace the communications board shield mounting screw to connect the bracket to the frame.
5. Insert the communications board mounting screw.
6. Install the system board.
7. Insert the USB screw.
8. Replace the five mounting screws.
9. Replace the features/options and reconnect all cables.

Toner sensor removal

1. Remove the right side cover. See **"Right cover removal" on page 4-10.**
2. Remove the toner sensor mounting screw (A).
3. Disconnect the toner sensor cable and remove the toner sensor.



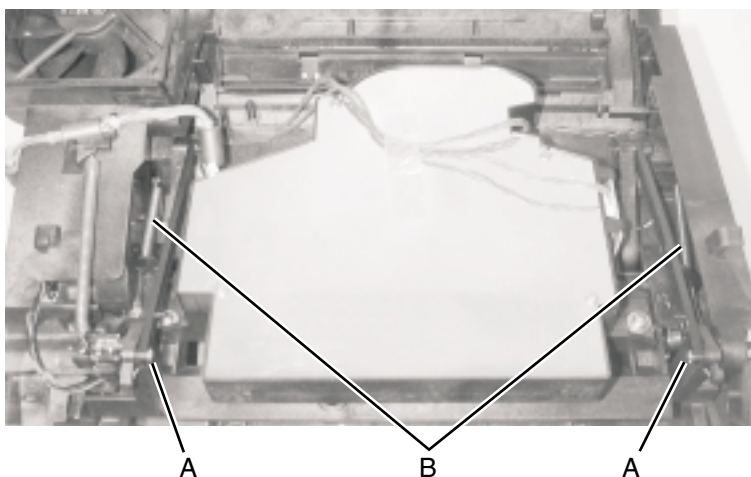
A(102)

Transfer roll assembly removal

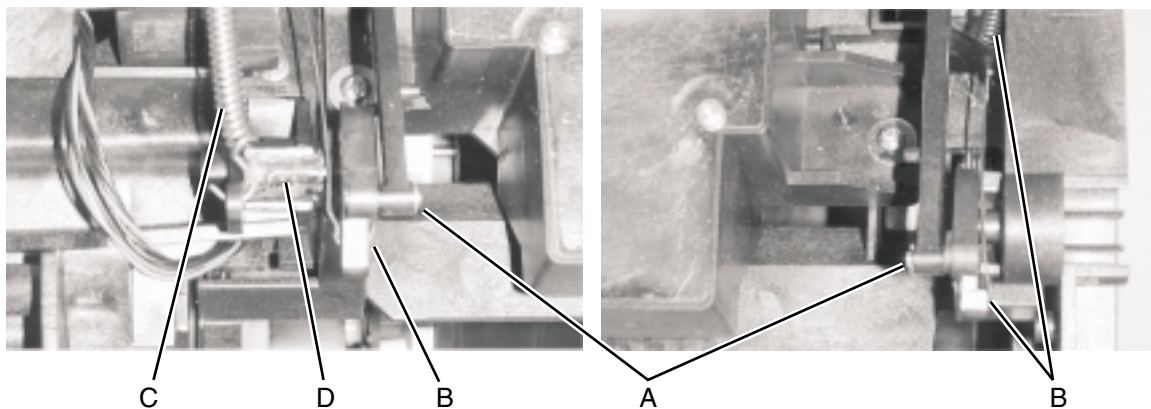
1. Open the upper front cover and remove the print cartridge.
2. Unsnap the transfer roll assembly from the left pivot arm.
3. Lift the transfer roll assembly toward the left and remove it from the printer.

Upper front cover hinge assembly removal

1. Remove the upper front cover. See **“Upper front cover removal” on page 4-12.**
2. Remove the laser cover assembly. See **“Laser cover removal” on page 4-14.**
3. Remove the C-clips (A) from the upper front cover hinge assembly left and right hinge pins and remove the pins. Note the pin orientation and the C-clip location on the inside of each hinge.



4. Detach the two springs (B) from the upper front cover hinges.
5. Detach spring (C) from the left side of the hinge assembly.
6. Remove the cover closed switch assembly.



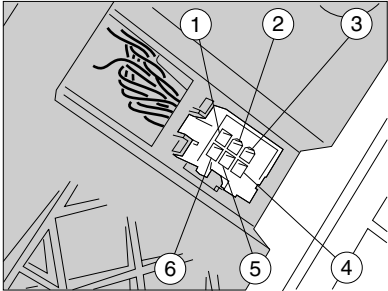
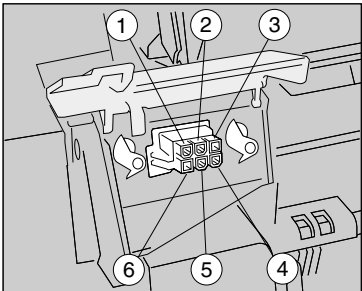
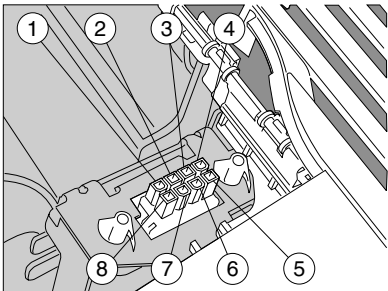
7. Disconnect the operator panel cable from the operator panel assembly.
8. Raise the upper front cover hinge assembly to a position that lets you lift the left pivot arm from the mounting bracket (D).
9. Lift the left pivot arm from the bracket and move the upper cover hinge assembly toward the left to clear the right upper cover pivot arm from the mounting bracket.
10. Remove the upper front cover hinge assembly.

Upper paper deflector assembly removal

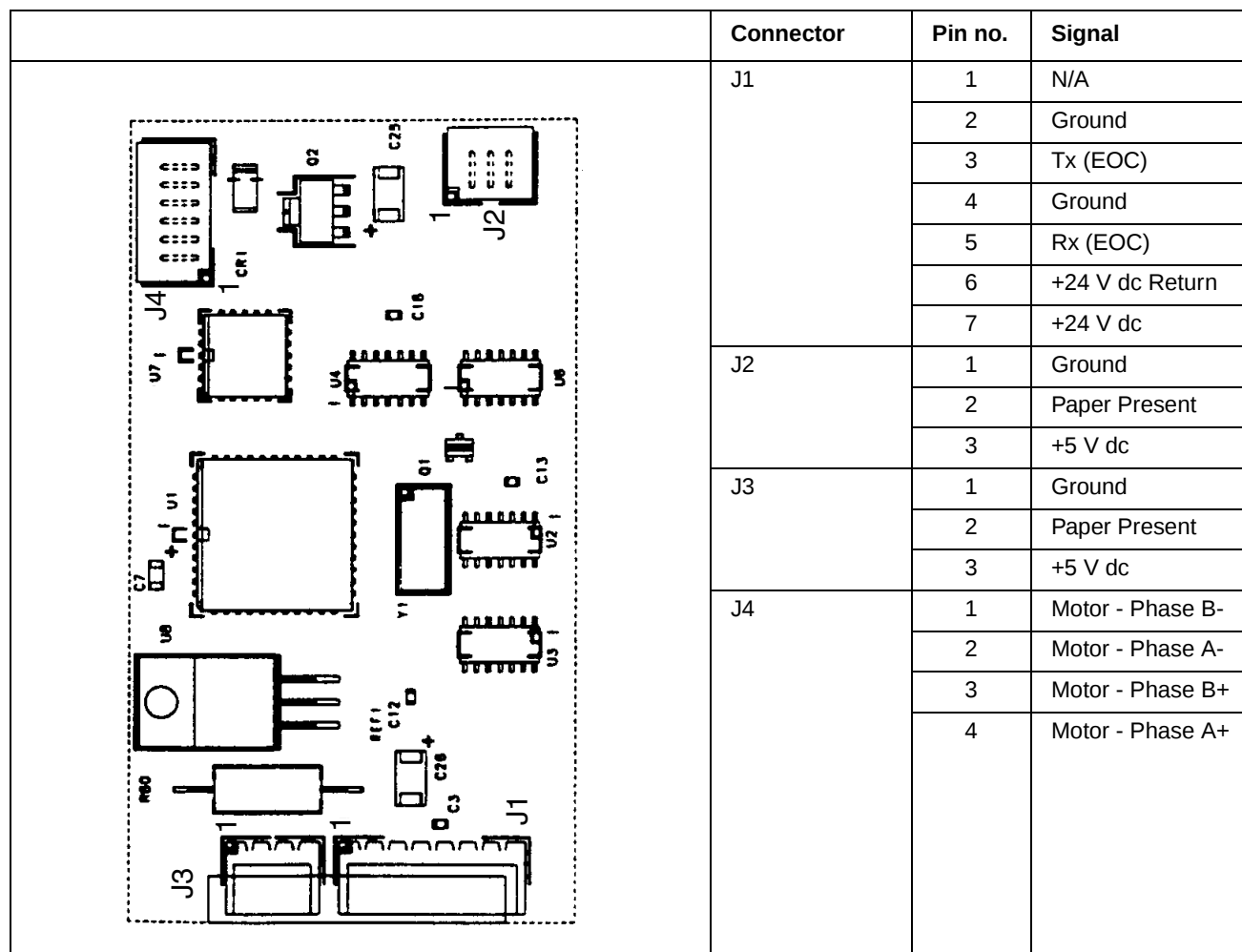
- 1.** Open the multipurpose tray and remove the tray from the two mounting posts.
- 2.** Gently release the upper deflector assembly latch from its mounting on the right side frame and slide to the right.
- 3.** Remove the upper deflector assembly.

5. Connector locations

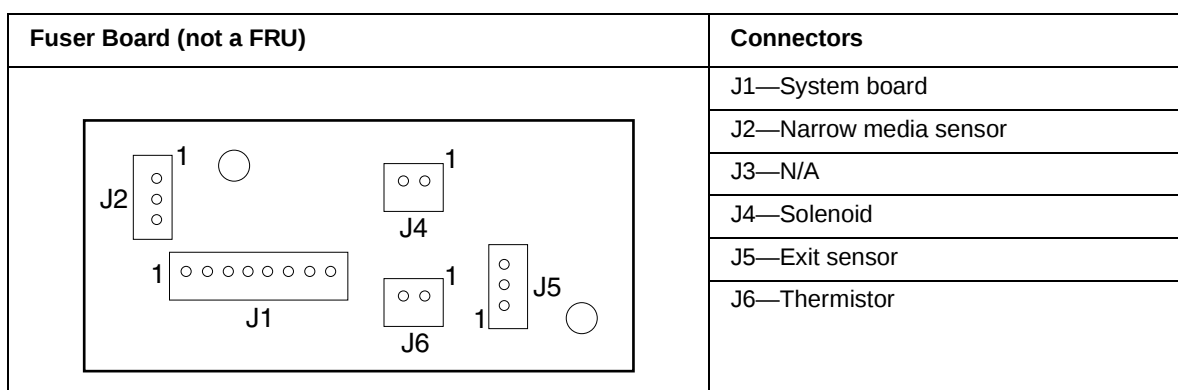
Autoconnect

Connector	Pin no.	Signal (static)
Bottom autoconnect 	1	+24 V dc
	2	0 V dc
	3	+5 V dc
	4	0 V dc
	5	0 V dc
	6	0 V dc
Front autoconnect 	1	0 V dc
	2	0 V dc
	3	0 V dc
	4	+5 V dc
	5	0 V dc
	6	+24 V dc
Top autoconnect 	1	0 V dc
	2	+5 V dc
	3	0 V dc
	4	0 V dc
	5	0 V dc
	6	+5 V dc
	7	0 V dc
	8	+24 V dc

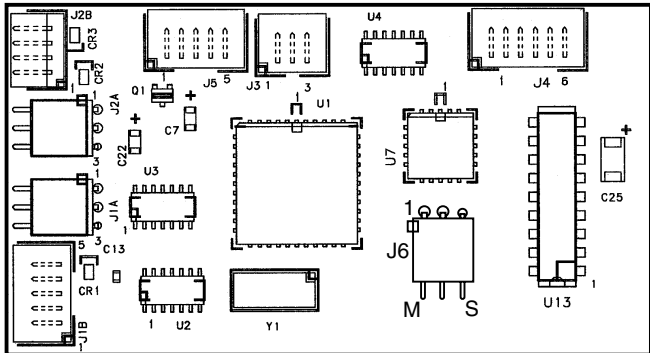
Envelope feeder board



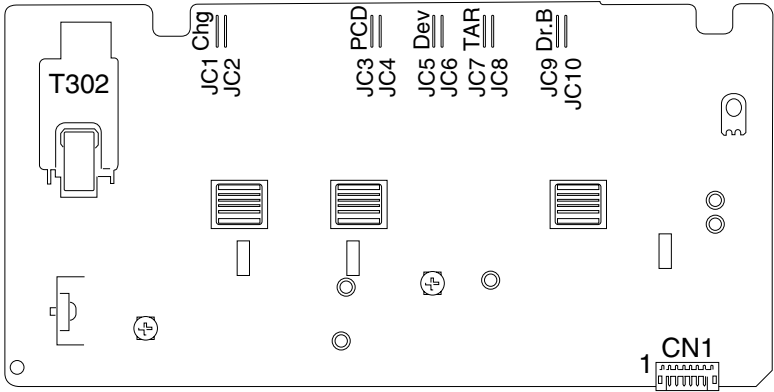
Fuser Board



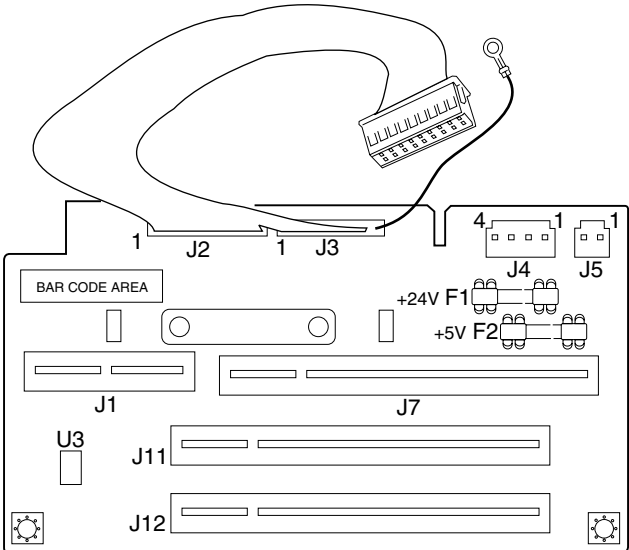
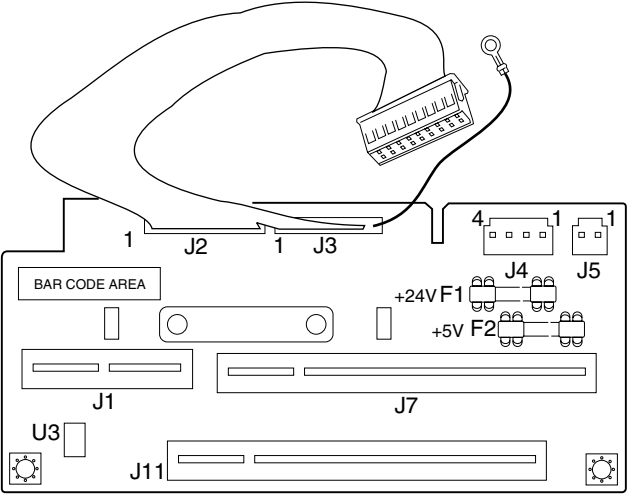
High-capacity output stacker board

 J6 connector jumper locations <table><tr><th>High-capacity stacker board</th><th>Pin 1</th><th>Pin 2</th><th>Pin 3</th></tr><tr><td>Upper unit board</td><td>X</td><td>X</td><td>Not used</td></tr><tr><td>Lower unit board</td><td>Not used</td><td>X</td><td>X</td></tr></table>	High-capacity stacker board	Pin 1	Pin 2	Pin 3	Upper unit board	X	X	Not used	Lower unit board	Not used	X	X	Connector	Pin no.	Signal
	High-capacity stacker board	Pin 1	Pin 2	Pin 3											
	Upper unit board	X	X	Not used											
	Lower unit board	Not used	X	X											
	J1A Autoconnect	1	+24 V dc												
		2	Ground												
		3	+5 V dc												
	J1B	1	Prtxdin												
		2	Ground												
		3	prtrxd												
		4	Ground												
		5	N/C												
	J2A Autoconnect	1	+24 V dc												
		2	Ground												
		3	+5 V dc												
	J2B	1	prtxdout												
		2	Ground												
		3	prtrxd												
		4	Ground												
	J3 Pass thru sensor	1	Ground												
2		Paper Present													
3		RVsnsr													
J4 DC motor	1	mtrout1													
	2	mtrout2													
	3	Ground													
	4	Ground													
	5	tach +													
	6	+5 V dc													
J5 Bin full/near full dual sensor	1	Ground													
	2	Ground													
	3	binful													
	4	binful													
	5	RVsnsr													
J6 Jumper connector	1	Upper unit													
	2	Upper/Lower Unit													
	3	Lower Unit													

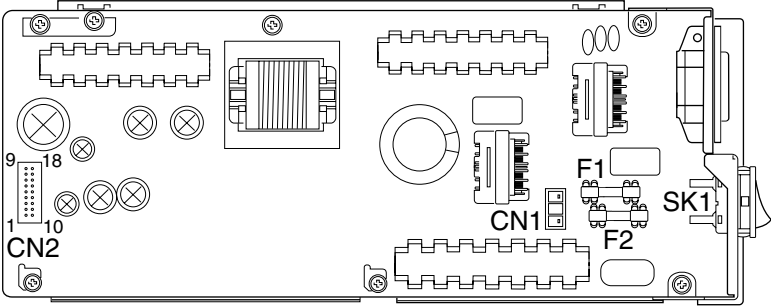
High voltage power supply

Connector	CN no.	Signal
CN1 System board 	1	Developer PWM
	2	+24 V dc Return
	3	Charge PWM
	4	+24 V dc IN
	5	TX PWM
	6	TX Enable
	7	TX CUR PWM
	8	SVRO OUT

Interconnect board

	Connector	Pin no.	Signal
Infoprint 1352/1372 	J1 System board (comm board)	1	N/A
	J2 LVPS	1	+42 V dc
		2	Heaton
		3	Xeroxing
		4	+24 V dc
		5	+24 V dc
		6	+24 V dc
		7	Ground
		8	Ground
		9	Ground
		10	Ground
	J3 LVPS	1	Ground
		2	Ground
		3	Ground
		4	Ground
		5	+5 V dc
		6	+5 V dc
		7	+5 V dc
		8	+5 V dc
Infoprint 1332 	J4 Autoconnect	1	0 V dc
		2	+5 V dc
		3	0 V dc
		4	+24 V dc
	J5 Autoconnect	1	+24 V dc
		2	Ground
	J6 Autoconnect BTM/FNT	1	+24 V dc
		2	Ground
	J7 System board	1	N/A
	J11 Feature/option	1	N/A
	J12 Feature/option	1	N/A

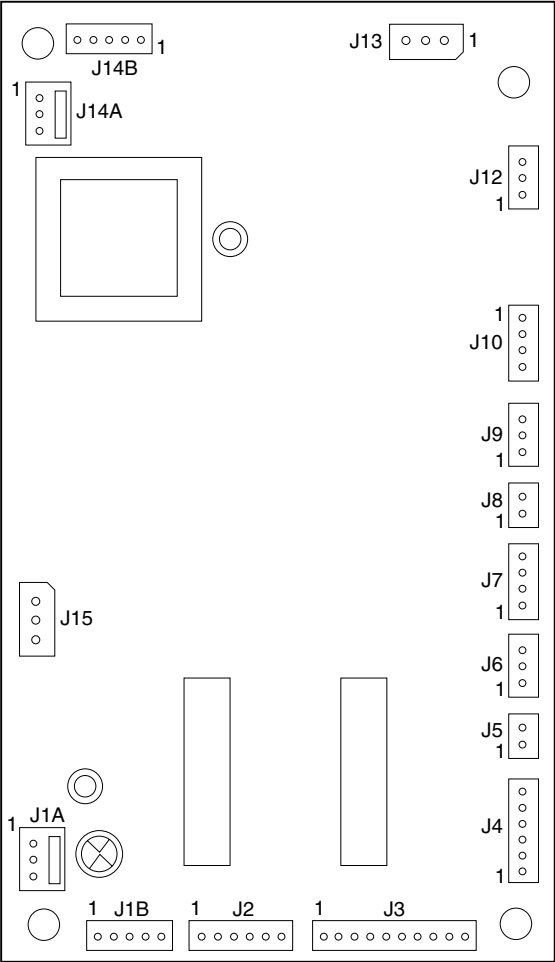
Low voltage power supply

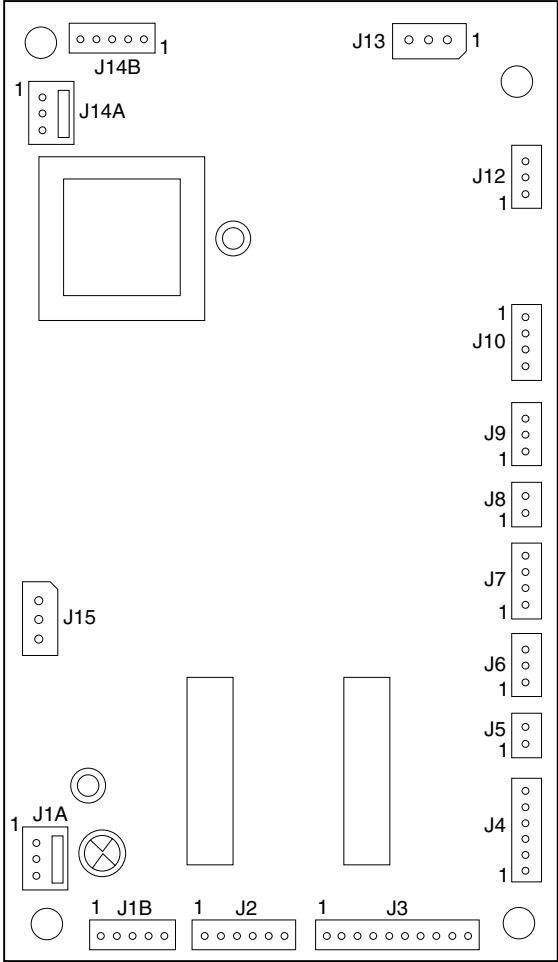
Connector	CN pin no.	Signal
CN1 Fuser lamp AC 	1	AC fuser lamp
	2	Not used
	3	AC fuser lamp
CN2 DC output	1	+5 V dc
	2	+5 V dc
	3	Ground
	4	Ground
	5	Ground
	6	Ground
	7	+24 V dc
	8	+24 V dc
	9	Heat on
	10	+5 V dc
	11	+5 V dc
	12	Ground
	13	Ground
	14	Ground
	15	Ground
	16	+24 V dc
	17	ZC Out*
	18	+42 V dc

Output expander control board

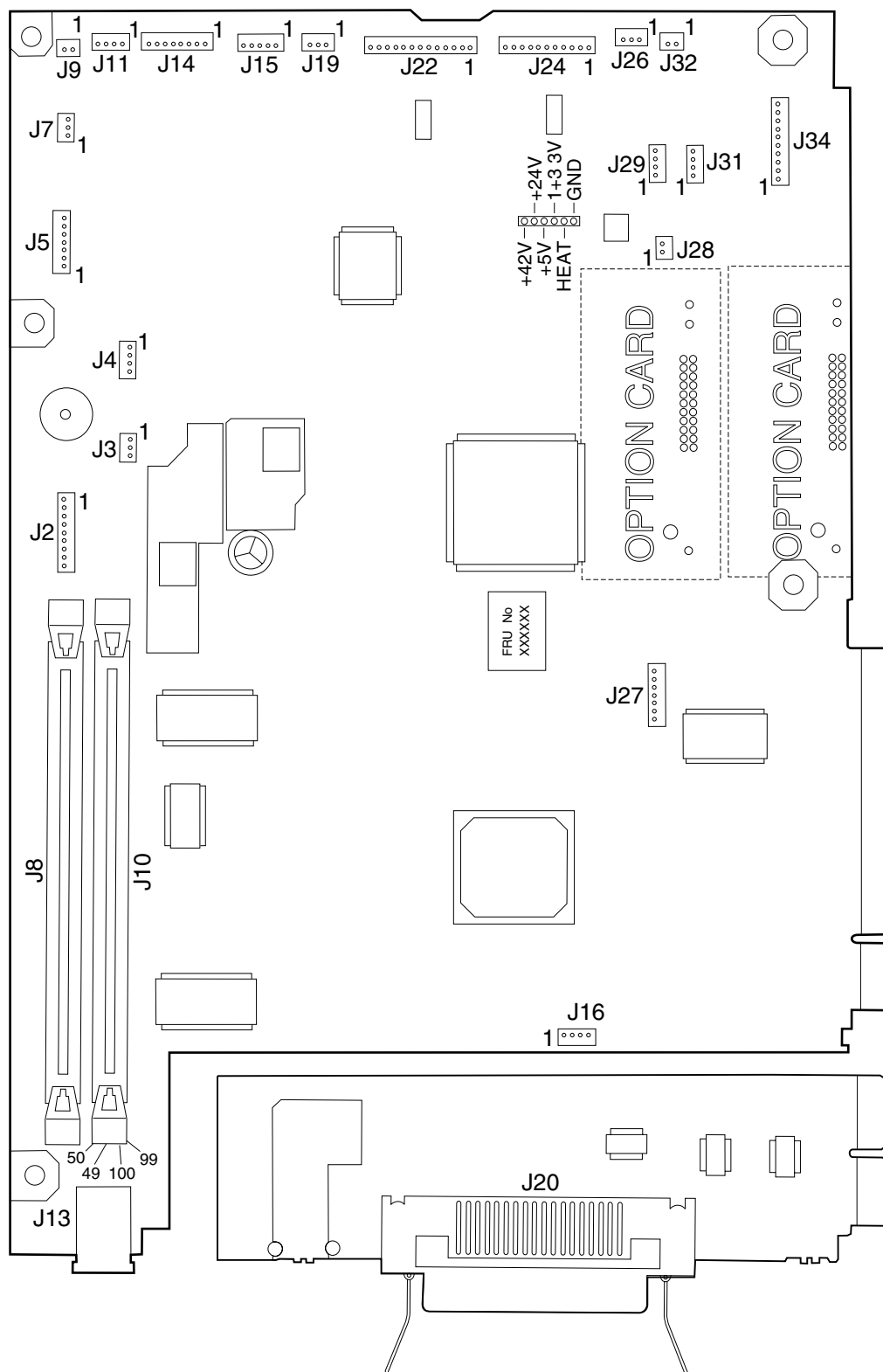
	Connector	Pin no.	Signal
	J1A Autoconnect	1	+24 V dc
		2	Ground
		3	+5 V dc
	J1B	1	Prtxdin
		2	Ground
		3	prtrxd
		4	Ground
		5	N/C
	J2A Autoconnect	1	+24 V dc
		2	Ground
		3	+5 V dc
	J2B	1	prtxdout
		2	Ground
		3	prtrxd
		4	Ground
	J3 Pass thru sensor	1	Ground
		2	Paper Present
		3	RVsnsr
	J4 DC motor	1	mtrout1
		2	mtrout2
		3	Ground
		4	Ground
		5	tach +
		6	+5 V dc
	J5 Bin full/near full dual sensor	1	Ground
		2	Ground
		3	binful
		4	binful
		5	RVsnsr
	J6 Jumper connector	1	Not used
		2	Not used
		3	Not used

StapleSmart finisher

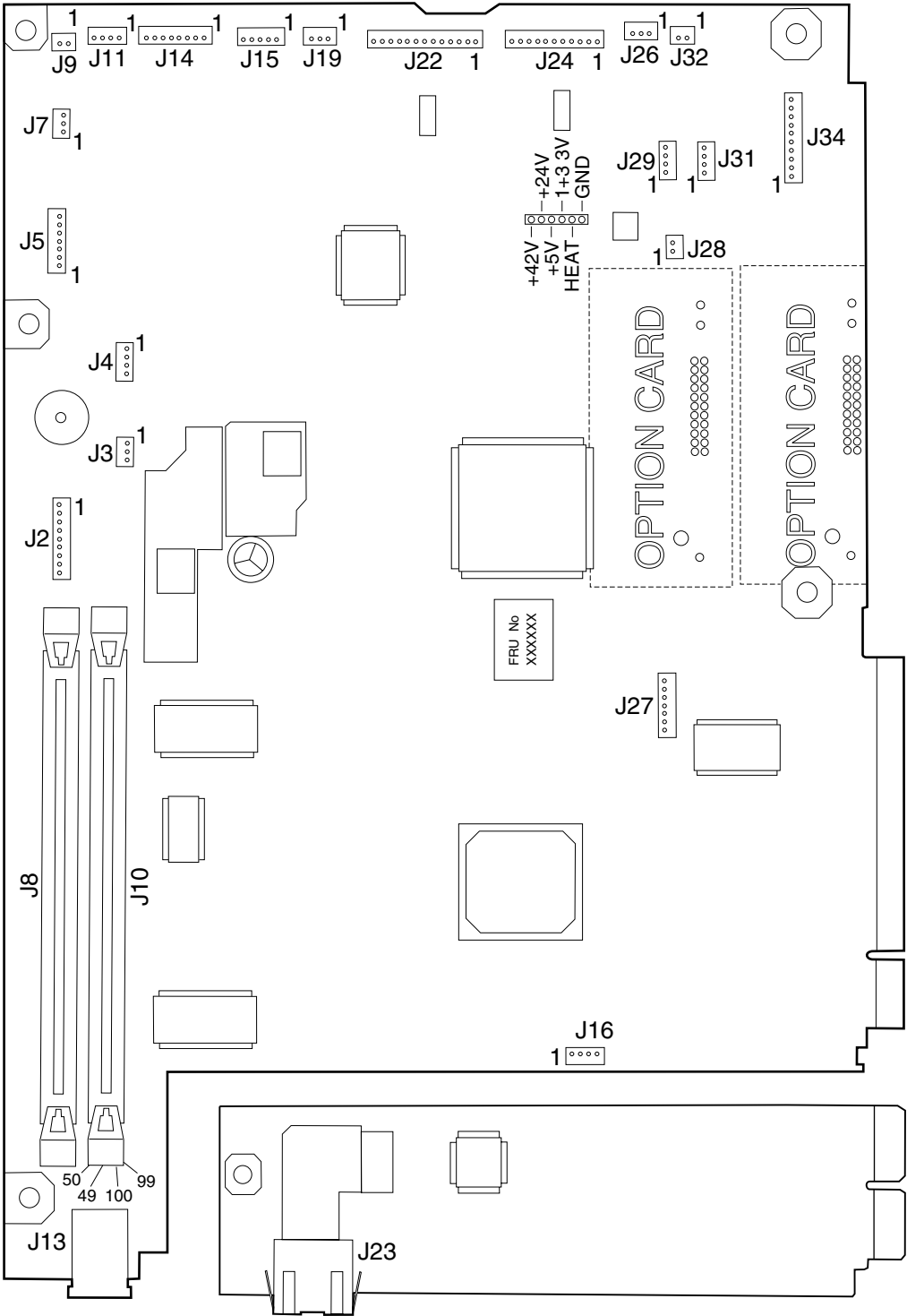
	Connector	Pin no.	Signal
Staple card assembly 	J1A Bottom autoconnect	1	+24 V dc
		2	Ground
		3	+5 V in
	J1B Bottom autoconnect	1	rtxdin
		2	Ground
		3	prtrxd
		4	Ground
		5	Ground
	J2 Feed motor	1	fdmtr1
		2	fdmtr2
		3	Ground
		4	Ground
		5	tachft
		6	5Vptt
	J3 Stepper motor	1	stpmtr-
		2	stpmtr-
		3	stpmtr+
		4	stpmtr+
		5	crtprsnt-
		6	stplow+
		7	'stpphomo-
		8	Ground
		9	5Vstpl
		10	stprimed-
	J4 Accessory connector	1	+24 V dc
		2	accmtr-
		3	Ground
		4	Ground
		5	tacha+
		6	5Vptt
	J5 Solenoid	1	Sol1-
		2	+24 V dc
	J6 Stapler	1	Ground
		2	pfrinstp+
		3	5Vsnsr2

	Connector	Pin no.	Signal
Staple card assembly (continued) 	J7 Right side sensor board	1	Ground
		2	Bottom
		3	Top
		4	Ground
	J8 Solenoid	1	Sol2-
		2	+24 V dc
	J9 Bin empty sensor	1	Ground
		2	bnempty-
		3	5Vsnsr2
	J10 Left side sensor board	1	Ground
		2	full+
		3	NRFull+
		4	Ground
	J12 Pass thru sensor	1	Ground
		2	psthruint
		3	5Vptt
	J13 Cover open switch	1	+5V dc
		2	Ground
		3	cvropin-
	J14A	1	+24V dc
		2	Ground
		3	5V in
	J14B	1	prtxdout
		2	Ground
		3	prtrxd
		4	Ground
		5	Ground
	J15 Stapler door open	1	Dooropin-
		2	Ground
		3	5Vswitch

System board—non-network



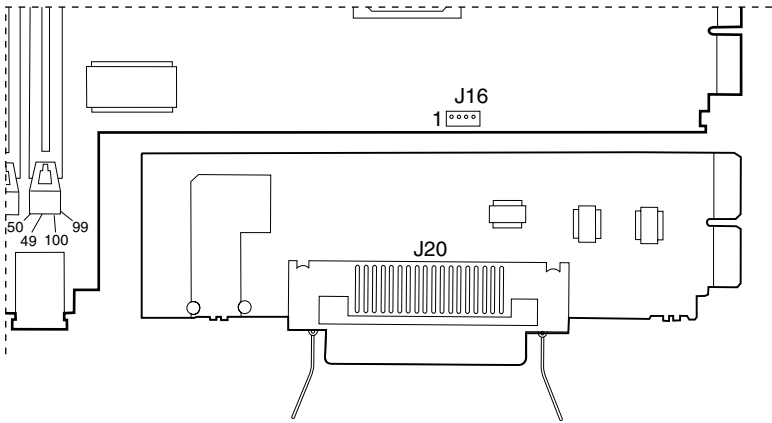
System board—network



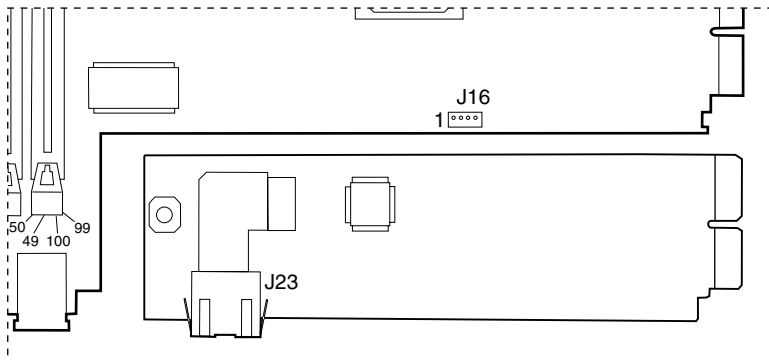
System board—non-network and network (see **“System board—non-network”** on page 5-10 or **“System board—network”** on page 5-11)

Connector	Pin no.	Signal
J1 (not used)		N/A
J2 Printhead (laser cable)	1	Video Level 2+
	2	Video3*
	3	Ground
	4	+5PHead
	5	LPOW
	6	LADJ*
	7	LPOW FB
	8	LENA*
J3 Cover closed switch	1	Cov Closed
	2	Ground
	3	+5V dc
J4 Printhead (HSYNC)	1	+5V dc
	2	HSYNC ID
	3	HSYNC IN
	4	Ground
J5 Printhead (mirror motor)	1	Ground
	2	Ground
	3	MM REF R
	4	MM LOCK*
	5	MM Stgart*
	6	Ground
	7	+24V dc
J6 Printhead fan (Infoprint 1372)	1	+24V dc
	2	PH FAN*
J7 Main fan	1	FANSTALL
	2	Ground
	3	MAINFAN
J8 SDRAM memory		
J9 Cartridge fan	1	CARTFAN
	2	Ground
J10 SDRAM memory		
J11 Output level (output bin sensor)	1	HOP FULL*
	2	Ground
	3	HOP LED
	4	Ground
J12 (not used)	1	

System board—non-network and network (see “**System board—non-network**” on page 5-10 or “**System board—network**” on page 5-11)

Connector	Pin no.	Signal
J13 USB connector	J1 G12	Ground
	1	USB +5
	2	USB MINUS 2
	3	USB PLUS 3
	4	Ground
	J1 G2	Ground
J14 Fuser DC	1	NARMEDIA*
	2	Ground
	3	THERM
	4	Ground
	5	THUMP
	6	+5V dc
	7	THUMPRET
	8	EXIT SNS*
J15 Operator Panel	1	OPPAN INT
	2	Ground
	3	I2C CLK R
	4	+5V dc
	5	I2C DAT R
J16 (not used)		
J17 (not used)		
J18 (not used)		
J19 Smart cartridge	1	SM Cart
	2	Ground
	3	Ground
J20 Parallel port (not used for network model)		
 The diagram illustrates the physical layout of the system board. It shows the locations of various connectors and components. J16 is a 4-pin connector located near the top center. J20 is a parallel port connector located near the bottom center. Other components shown include the fuser, operator panel, and various other connectors and components. The diagram is a top-down view of the board, with a dashed line indicating the edge of the board.		
J21 (not used)		

System board—non-network and network (see “System board—non-network” on page 5-10 or “System board—network” on page 5-11)

Connector	Pin no.	Signal
J22 HVPS input sensor cartridge sensor	1	ATSERVO
	2	TXCURPWM
	3	TXENABLE
	4	TDXPWM
	5	+24V dc
	6	CHGPWM
	7	Ground
	8	DEVB
	9	Ground
	10	INSENSE
	11	+5V dc
	12	TONER WHEEL
	13	Ground
J23 (not used for non-network model) 		
J24 BLDC main drive motor	1	ON/OFF
	2	Ground
	3	BLDC CLK
	4	+5V dc
	5	MTR1
	6	DIR
	7	BLDC HALL
	8	BLDC LOCK
	9	Ground
	10	Ground
	11	+24V dc

System board—non-network and network (see “**System board—non-network**” on page 5-10 or “**System board—network**” on page 5-11)

Connector	Pin no.	Signal
J25 Autocomp motor	1	+5V_TRAY1
	2	+5v_SWITCHED
	3	PAPER_OUT-IN
	4	AUTOCOMP_ENC
	5	PAPER_LOW_IN
	6	Ground
	7	Ground
	8	Ground
	9	AUTOCOMP_OUT1
	10	AUTOCOMP_OUT2
J26 MPF paper out	1	MPF POUT
	2	Ground
	3	MPF LED
J27 (not used)		
J28 Autocompensator internal tray	1	+24V dc
	2	AutoComp*
J29 Bottom options	1	RXD1R
	2	Ground
	3	TXD1BR
	4	Ground
J30 (not used)		
J31 top options	1	RXD1R
	2	Ground
	3	TXD1BR
	4	Ground
J32 MPF pick solenoid	1	MPFPick*
	2	+24V dc
J33 Ethernet connector		

System board—non-network and network (see “**System board—non-network**” on page 5-10 or “**System board—network**” on page 5-11)

Connector	Pin no.	Signal
J34 Paper size sensor autocomp motor	1	PSIZE2
	2	Ground
	3	PSIZE1
	4	PSIZE3
	5	Ground
	6	TRAY1 POUT
	7	TRAY1 PLOW*
	8	+3.3V dc
	9	ENCODER
	10	+5V dc
J35 System board edge connector		
J36 (not used)		
J37 (not used)		
J40 SDRAM (on board)		

6. Preventive maintenance

This chapter describes procedures for printer preventive maintenance. Following these recommendations can help prevent problems and maintain optimum performance.

Safety inspection guide

The purpose of this inspection guide is to aid you in identifying unsafe conditions.

If any unsafe conditions exist, find out how serious the hazard could be and if you can continue before you correct the hazard.

Check the following items:

- Damaged, missing, or altered parts, especially in the area of the on/off switch and the power supply.
- Damaged, missing, or altered covers, especially in the area of the top cover and the power supply cover.
- Possible safety exposure from any non-IBM attachments.

Lubrication specifications

No requirements for this printer.

Scheduled maintenance

The operator panel displays the message “80 Scheduled Maintenance” at each 300K page count interval. It is necessary to replace the fuser assembly, transfer roller, charge roll, and pick tires at this interval to maintain the print quality and reliability of the printer. The parts are available as a maintenance kit with the following part numbers:

Maintenance kits

Description	Part number	
	Infoprint 1332/1352	Infoprint 1372
115 V Maintenance kit	56P1409	56P1855
220 V Maintenance kit	56P1412	56P1856
100 V Maintenance kit	56P1413	56P1857

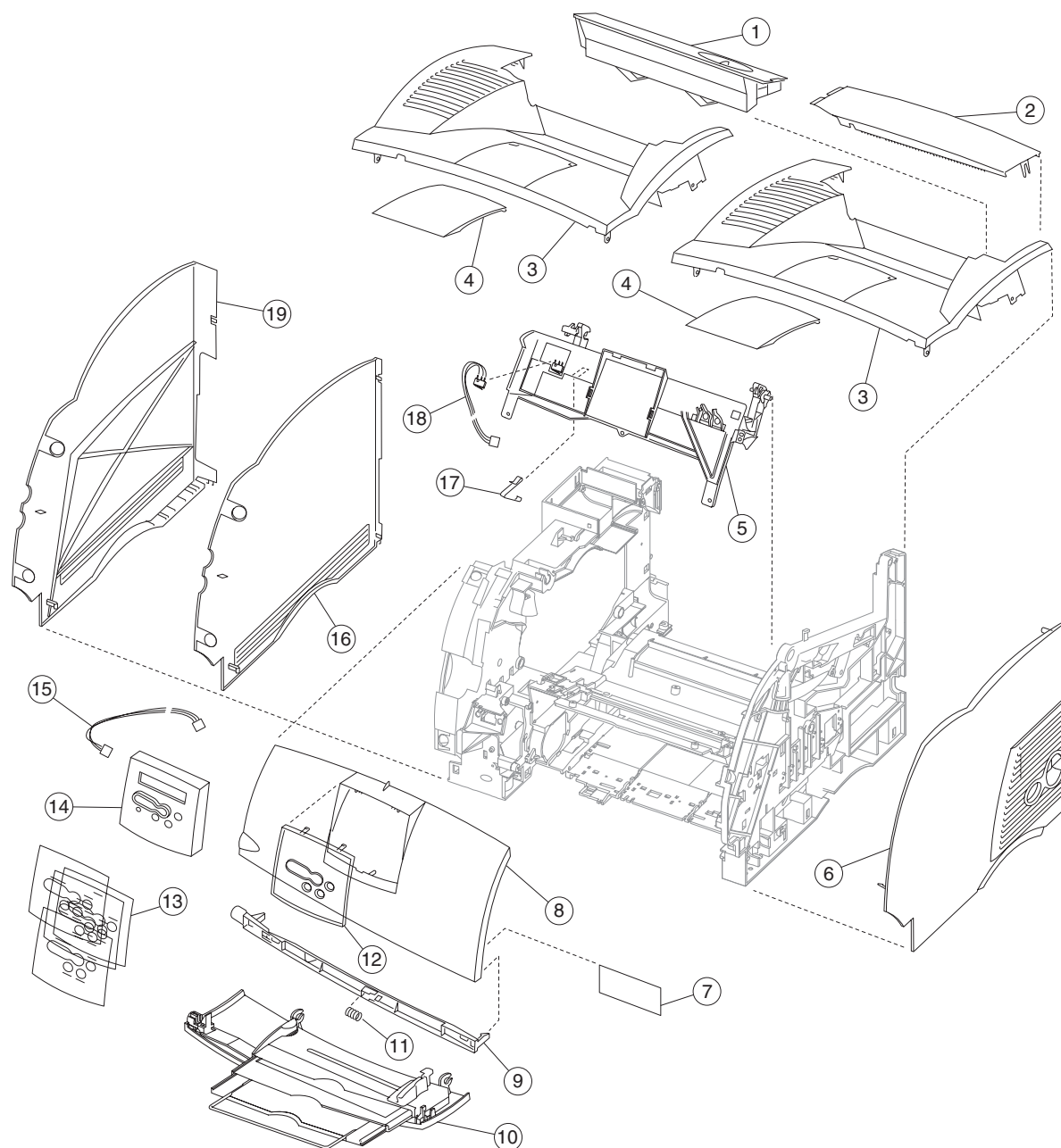
After replacing the kit, the maintenance count must be reset to zero to clear the “80 Scheduled Maintenance” message. See **“Maintenance page count” on page 3-17**.

7. Parts catalog

How to use this parts catalog

- **SIMILAR ASSEMBLIES:** If two assemblies contain a majority of identical parts, they are shown on the same list. Common parts are shown by one index number. Parts peculiar to one or the other of the assemblies are listed separately and identified by description.
- **NS:** (Not Shown) in the Asm—Index column indicates that the part is procurable but is not pictured in the illustration.
- **PP:** (Parts Packet) in the Description column indicates the part is contained in a parts packet.

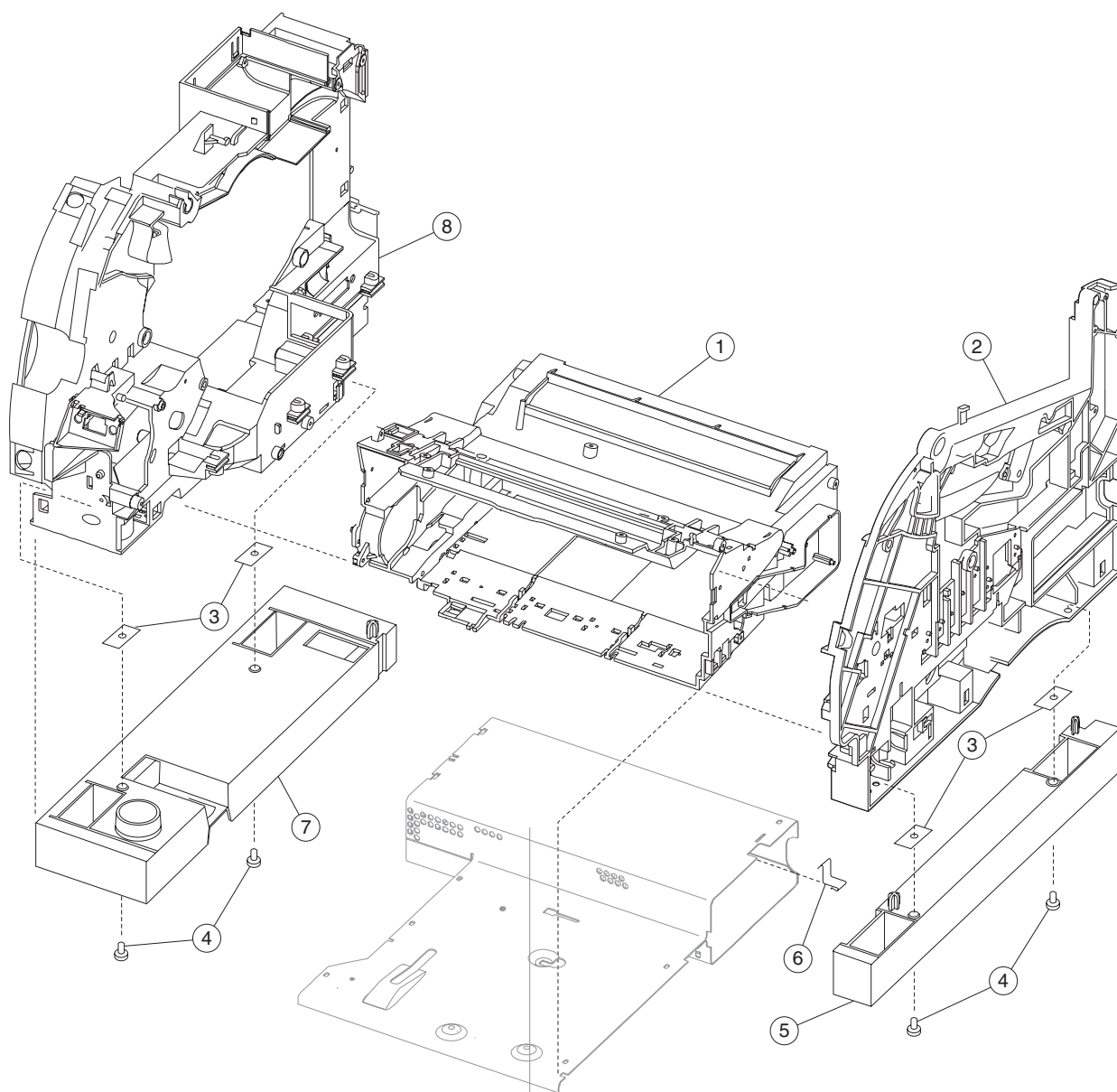
Assembly 1: Covers



Assembly 1: Covers

Asm-Index	Part number	Units	Description
1-1	56P1300	1	Cover, fuser wick assembly
2	53P8916	1	Cover assembly, redrive cap, Infoprint 1332
2	53P8434	1	Cover assembly, redrive cap, Infoprint 1352/1372
3	56P1301	1	Cover assembly, laser assembly, 250-sheet output, Infoprint 1332
3	56P1302	1	Cover assembly, laser assembly, 500-sheet output, Infoprint 1352/1372
4	53P8465	1	Support, paper
5	56P1305	1	Hinge, upper front cover
6	56P1306	1	Cover, right side, 250-sheet output, Infoprint 1332
6	56P1307	1	Cover, right side 500-sheet output, Infoprint 1352/1372
7	53P8316	1	Label, TLI/ID/serial number-blank
8	56P2000	1	Upper front cover with logo
9	56P1308	1	Latch, upper cover
10	56P1309	1	Cover assembly, lower front
11	53P8201	1	Spring, latch
12	56P1359	1	Cover, clear beze
13	56P1753	1	Kit, operator panel overlay-English, Brazilian Portuguese, French, and Spanish
13	56P1754	1	Kit, operator panel overlay-Dutch, French, German, and Italian
13	56P1755	1	Kit, operator panel overlay-Czech and Hungarian
13	56P1756	1	Kit, operator panel overlay-Danish, Finnish, Norwegian, and Swedish
13	56P1757	1	Kit, operator panel overlay-Polish, Russian, and Turkish
13	56P1758	1	Kit, operator panel overlay-WW English and Spanish
13	56P1759	1	Kit, operator panel overlay-WW English, Simplified Chinese, Traditional Chinese, and Japanese
14	56P2004	1	Operator panel assembly 110V
14	56P2005	1	Operator panel assembly 220V
15	56P1394	1	Cable assembly, operator panel
16	56P2122	1	Cover, left door, 250 1-slot, Infoprint 1332
17	53P8441	1	Cartridge load spring
18	56P1395	1	Switch, cover closed w/cable assembly
19	56P2126	1	Cover, left door, 500 2-slot, Infoprint 1352/1372
NS	53P8360	1	Parts packet, cable ties (10 each)
NS	53P8469	1	Retainer, cable
NS	53P8617	5	Parts packet, screw (left side cover mounting)
NS	53P8617	3	Parts packet, screw (right side cover mounting)
NS	53P8617	6	Parts packet, screw (laser cover)
NS	53P8617	5	Parts packet, screw (upper front cover mounting)

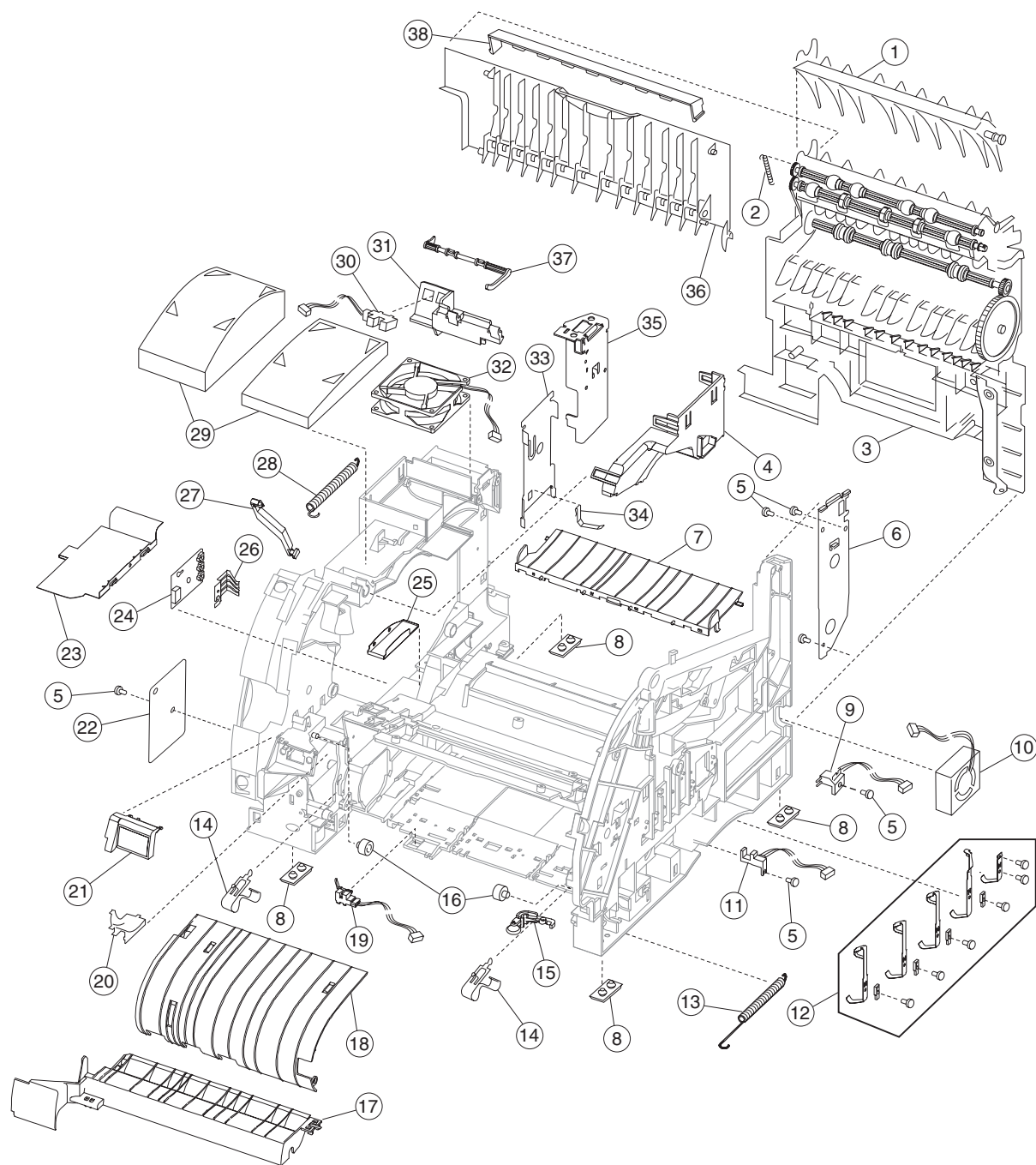
Assembly 2: Frame 1



Assembly 2: Frame 1

Asm-index	Part number	Units	Description
2-1	56P1322	1	Frame, EP module, Infoprint 1332
1	56P1347	1	Frame, EP module, Infoprint 1352/1372
2	56P1320	1	Right side frame assembly
3	53P8449	4	Nut plate, frame extension, Infoprint 1352/1372
4	53P8617	4	Parts packet, screw
5	53P8437	1	Frame extension, right, Infoprint 1352/1372
6	53P8448	1	Contact, RSF ground
7	53P8436	1	Frame extension, left, Infoprint 1352/1372
8	56P1321	1	Left side frame

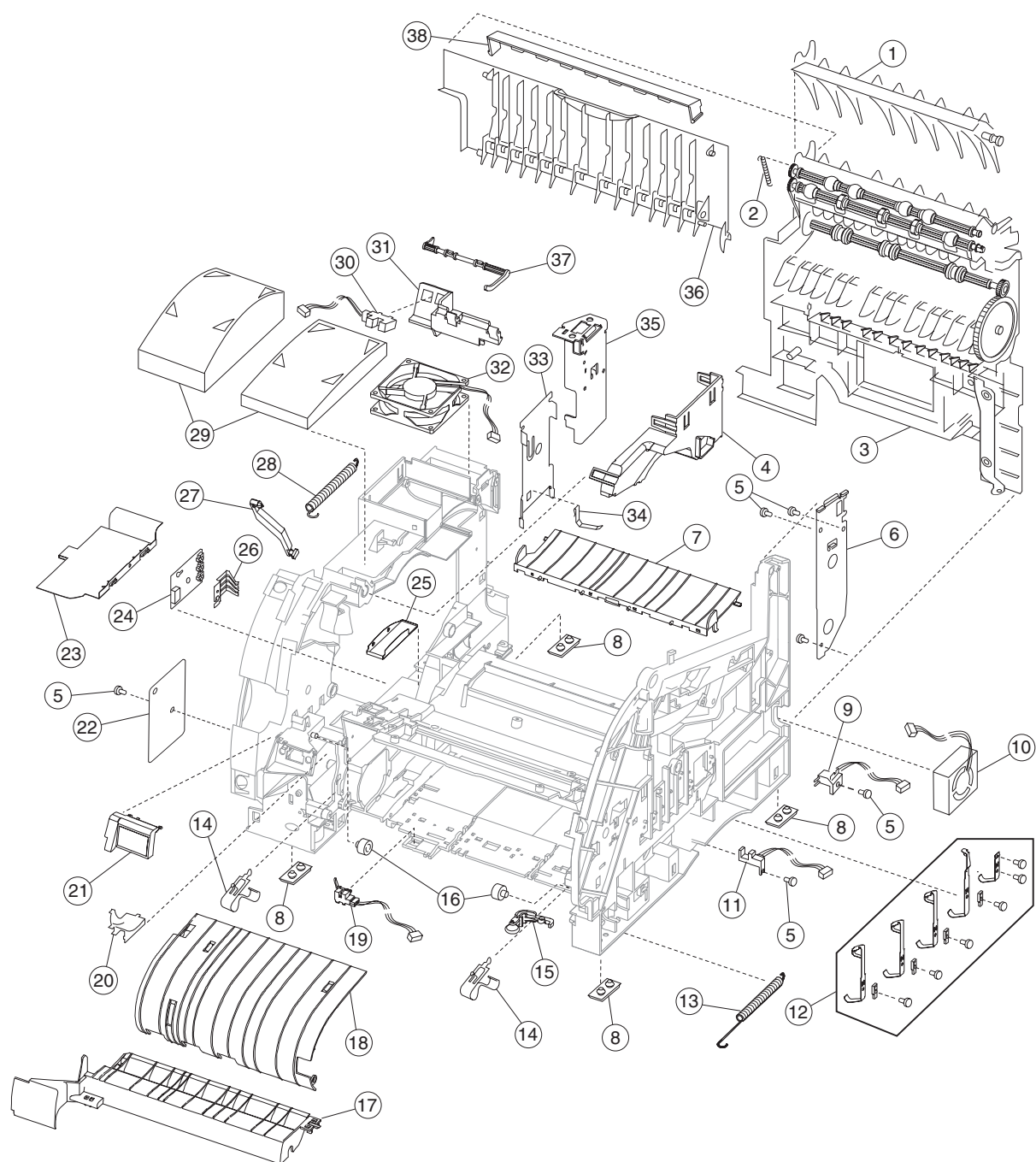
Assembly 3: Frame 2



Assembly 3: Frame 2

Asm-index	Part number	Units	Description
3-1	53P8610	1	Upper redrive deflector
2	53P8222	1	Upper diverter spring
3	53P8931	1	Redrive assembly, 250 in/250 out, Infoprint 1332
3	56P1328	1	Redrive assembly, 500 in/500 out, Infoprint 1352/1372
4	56P1318	1	Duct, main cap
5	53P8617	3	Parts packet, screw
6	53P8888	1	Support, right stacker plate, Infoprint 1332
6	56P1319	1	Support, right stacker plate, Infoprint 1352/1372
7	53P8887	1	Transfer plate assembly
8	53P8919	4	Pad, machine mounting
9	56P1399	1	Smart cartridge contact assembly w/cable
10	56P1408	1	Cartridge fan
11	56P1361	1	Toner sensor assembly
12	53P8361	1	Parts packet, contact kit - Contact, doctor blade/TAR/developer roll (3) - Contact, PC drum (1) - Contact, charge roll (1) - Block, contact mounting (4) - Screw, contact mounting (5)
13	53P8204	1	Spring, tray bias
14	53P8886	2	Spring, cartridge hold down
15	53P8203	1	Tray bias arm assembly
16	53P8205	2	Roller, developer support
17	53P8442	1	Deflector, upper PF
18	56P1336	1	Deflector, inner, Infoprint 1332
18	56P1334	1	Deflector, inner, Infoprint 1352/1372
19	53P8207	1	Sensor, input
20	53P8452	1	Shield, gear #60/MPF
21	53P8351	1	Shield, ESD assembly with label
22	53P8641	1	Guard, gear
23	53P8920	1	Pan, motor drip
24	56P1350	1	Board, input tray (ITC)
26	53P8211	1	Paper switch activate
27	53P8357	1	Link, gear release
28	53P8352	1	Spring, counterbalance
29	56P1314	1	Shroud, fan, Infoprint 1332
29	56P1315	1	Shroud, fan, Infoprint 1352/1372
30	56P1391	1	Sensor, standard bin level with cable
31	53P8863	1	Bracket, level sensor
32	56P1360	1	Fan, main w/cable
33	53P8885	1	Support, left lower stacker

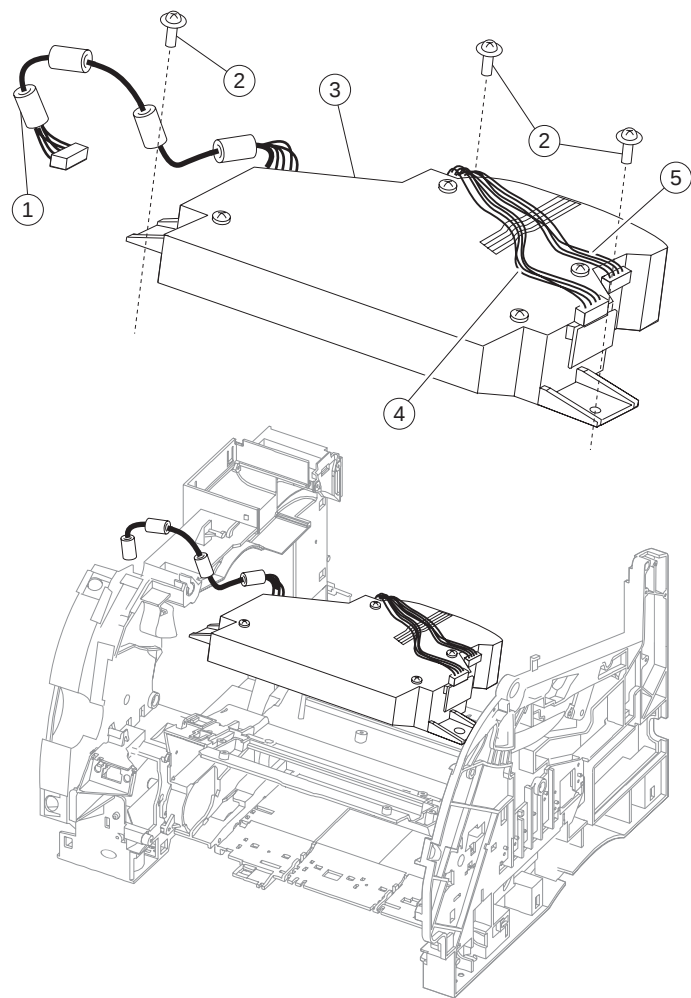
Assembly 3 (cont.): Frame 2



Assembly 3 (cont.): Frame 2

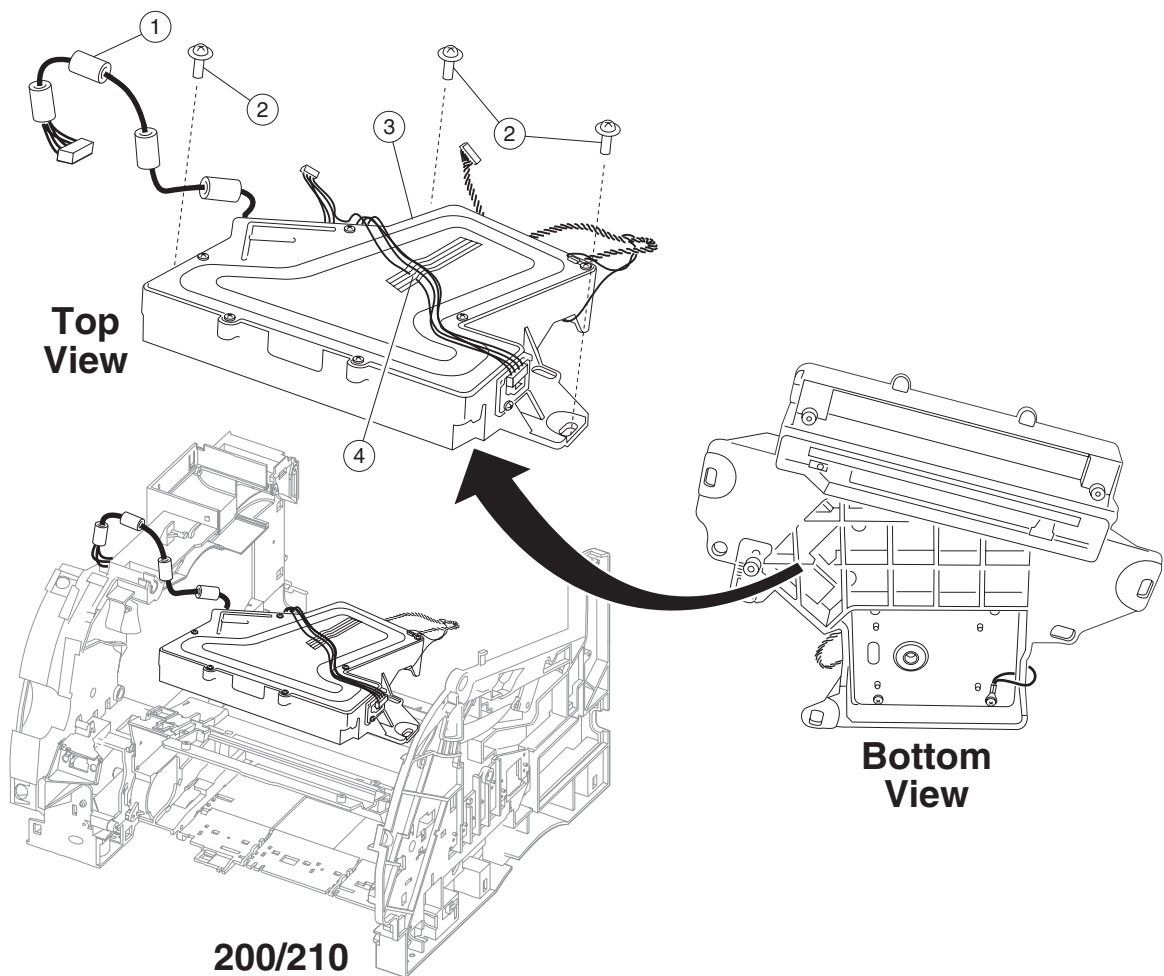
Asm-index	Part number	Units	Description
3-34	53P8470	1	Contact, LSF ground
35	53P8883	1	Duct, left stacker, 250-sheet, Infoprint 1332
35	56P1317	1	Duct, left stacker, 500-sheet, Infoprint 1352/1372
36	53P8876	1	Door assembly, redrive 250 sheet
37	53P8479	1	Flag, output paper level, Infoprint 1332
37	56P1316	1	Flag, output paper level, Infoprint 1352/1372
38	53P8884	1	Guide, extension
NS	53P8450	1	Clip, external ground
NS	53P8617	17	Parts packet, screw

Assembly 4: Printhead 1 (Infoprint 1332)



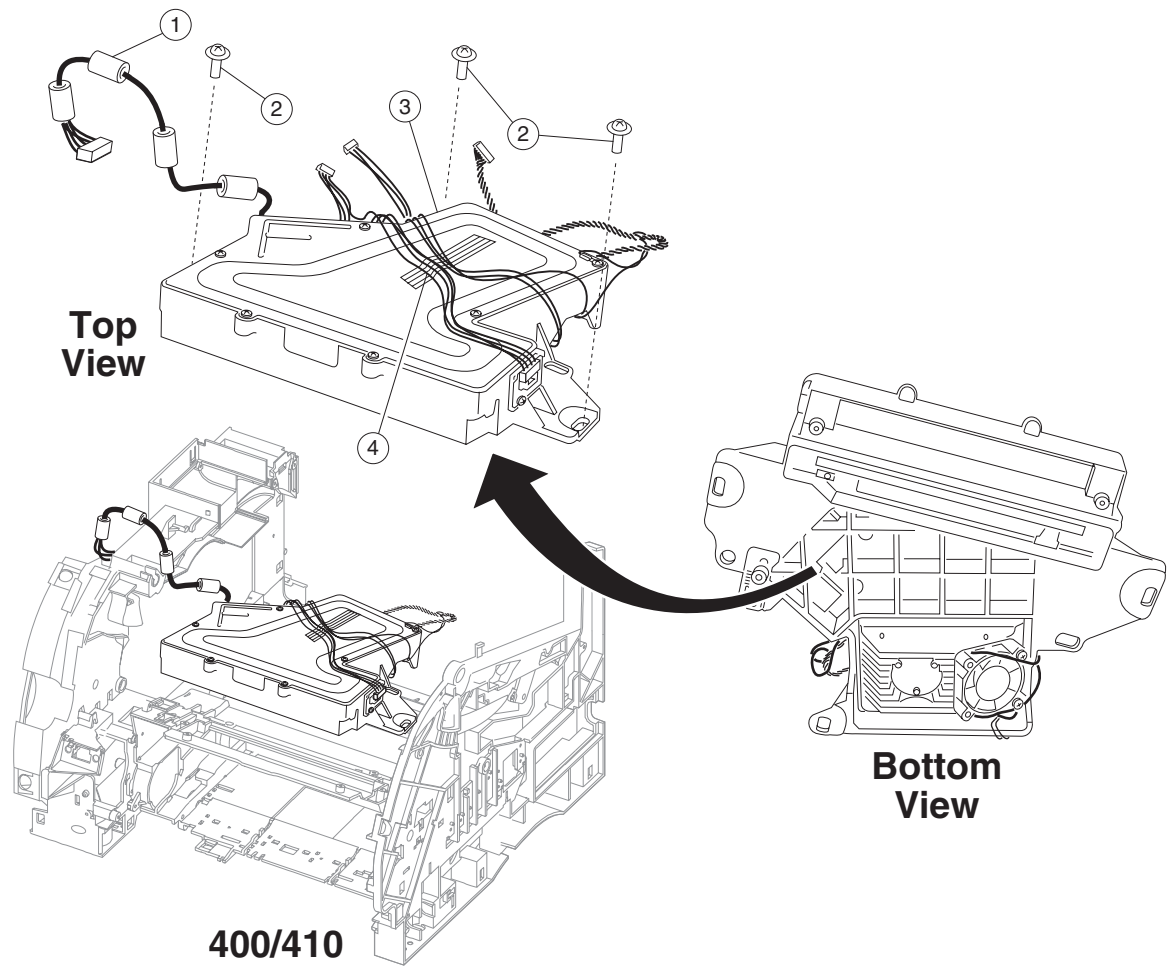
Asm-index	Part number	Units	Description
4-1	56P1386	1	Cable, laser
2	53P8617	3	Parts packet, screw (printhead mounting)
3	56P1396	1	Printhead assembly (includes all cables), Infoprint 1332
4	56P1387	1	Cable, HSYNC
5	56P1388	1	Cable, mirror motor, Infoprint 1332

Assembly 5: Printhead 2 (Infoprint 1352)



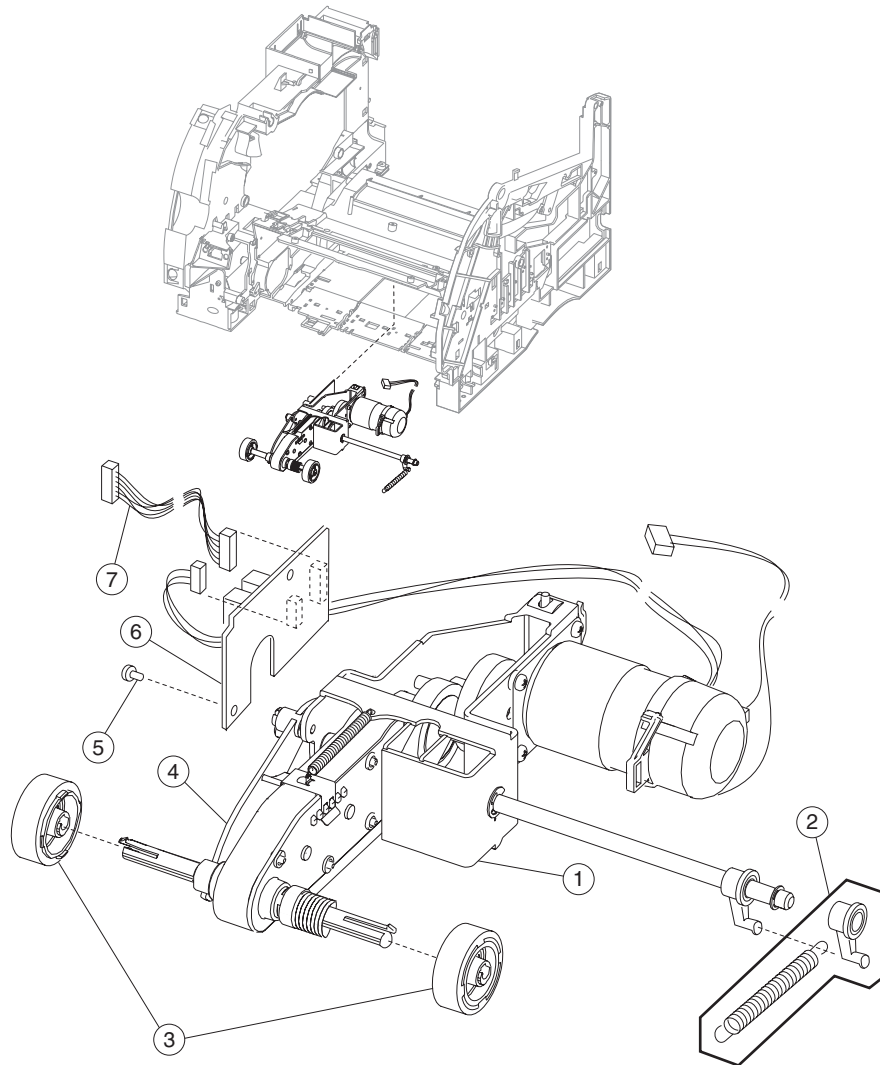
Asm-index	Part number	Units	Description
5-1	56P1386	1	Cable, laser
2	53P8617	3	Parts packet, screw (printhead mounting)
3	56P1443	1	Printhead assembly (includes all cables), Infoprint 1352
4	56P1387	1	Cable, HSYNC

Assembly 6: Printhead 3 (1372)



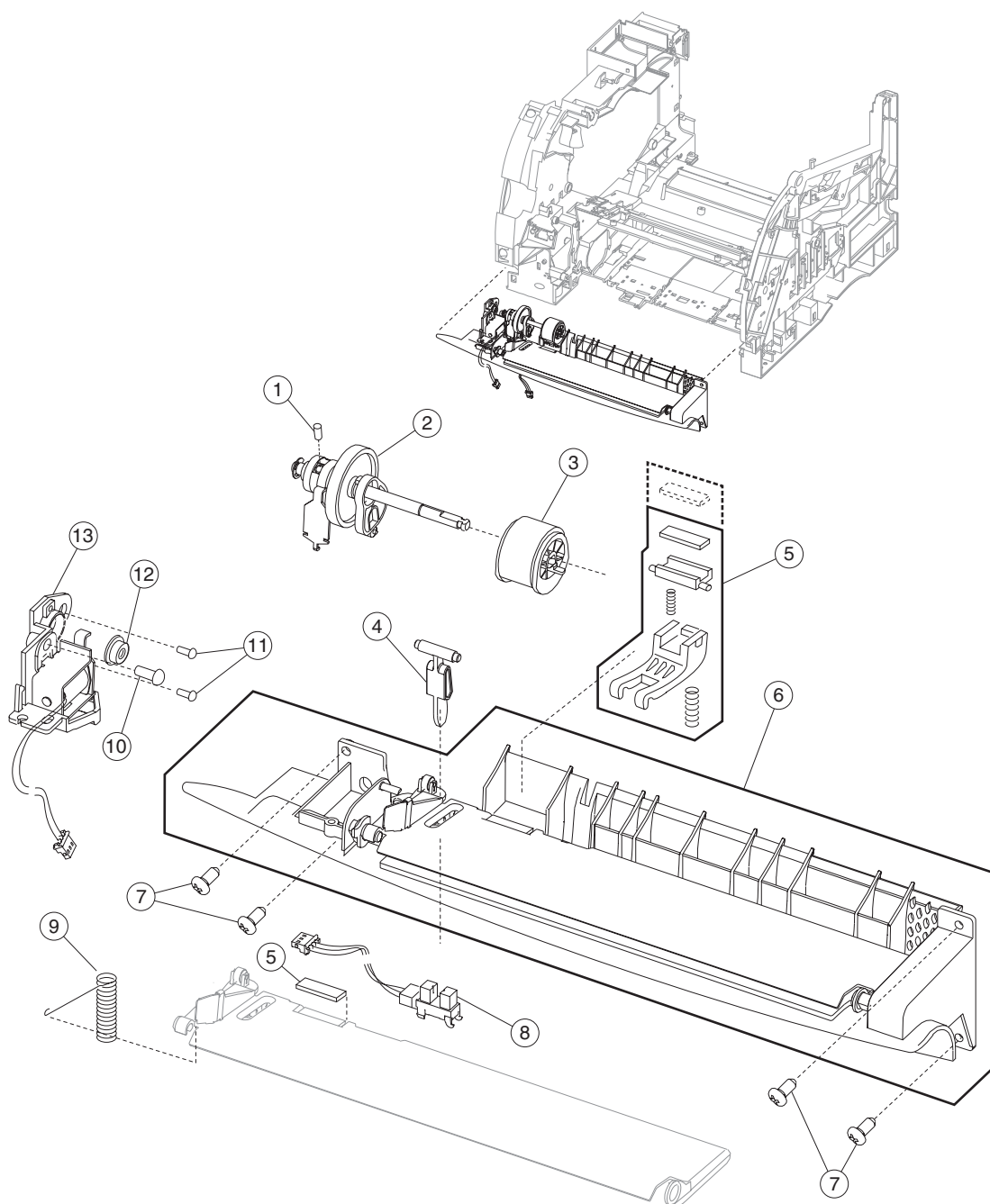
Asm-index	Part number	Units	Description
6-1	56P1386	1	Cable, laser
2	53P8617	3	Parts packet, screw (printhead mounting)
3	56P1854	1	Printhead assembly (includes all cables), 1372
4	56P1387	1	Cable, HSYNC

Assembly 7: Paper feed—autocompensator



Asm-index	Part number	Units	Description
7-1	56P1325	1	Pick arm assembly (500-sheet), Infoprint 1352/1372
1	56P1326	1	Pick arm assembly (250-sheet), Infoprint 1332
2	56P1337	1	Parts packet, bellcrank and spring for 250 tray, Infoprint 1332
2	56P1331	1	Parts packet, bellcrank and spring for 500 tray, Infoprint 1352/1372
3	75P5958	1	Pick roll assembly (2 per pack)
4	56P1324	1	Flag, paper out 250-sheet tray, Infoprint 1332
4	56P1323	1	Flag, paper out 500-sheet tray, Infoprint 1352/1372
5	53P8617	1	Parts packet, screw (hanger)
6	56P1406	1	Card asm, paper wt/paper low/out sensor
7	56P1382	1	Int. card/autocomp card cable (paper low/out sensors)

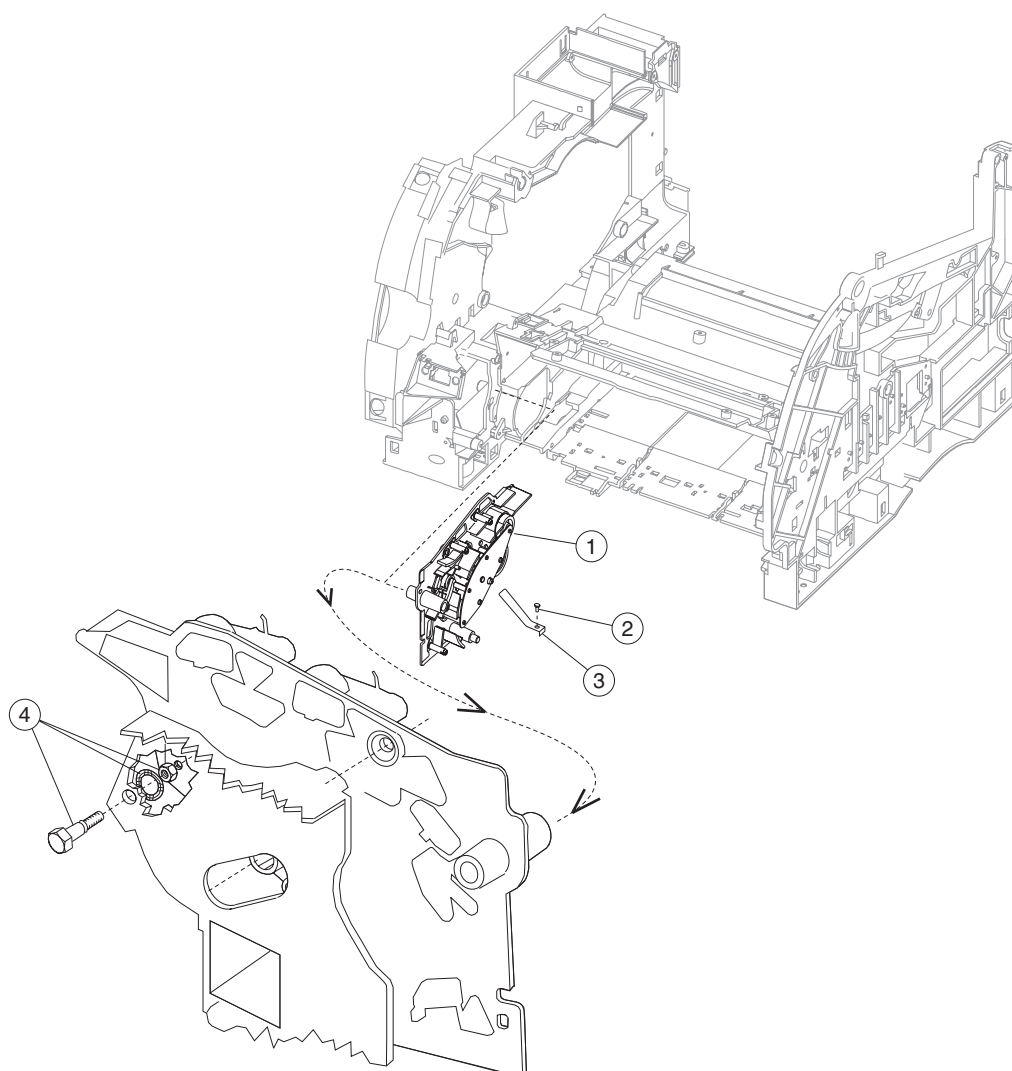
Assembly 8: Paper feed—multipurpose feeder



Assembly 8: Paper feed—multipurpose feeder

Asm-index	Part number	Units	Description
8-1	53P8215	1	Screw, socket set M4X5 mm
2	53P9106	1	Arm assembly, MPF
3	53P8795	1	Pick roll assembly
4	53P8220	1	Flag, MPT paper out
5	56P1352	1	MPF pad/separator arm assembly, includes: • Pad, restraint • Pad, separator • Housing, separator pad • Spring, sep pad • Arm, separator • Spring, sep
6	56P0125	1	MPF lower deflector
7	53P8617	2	Parts packet, screw (lower deflector mounting 8 mm)
7	53P8617	2	Parts packet, screw (lower deflector mounting 12 mm)
8	53P8914	1	Sensor, MPF paper out
9	53P8217	1	Spring assembly, separator
10	53P8617	1	Parts packet, screw (frame mounting)
11	53P8213	2	Screw, damper
12	53P8214	2	Bushing, pick roll shaft
13	53P8893	1	MPF frame assembly
NS	53P8249	2	Parts packet, clip (pick roll shaft)

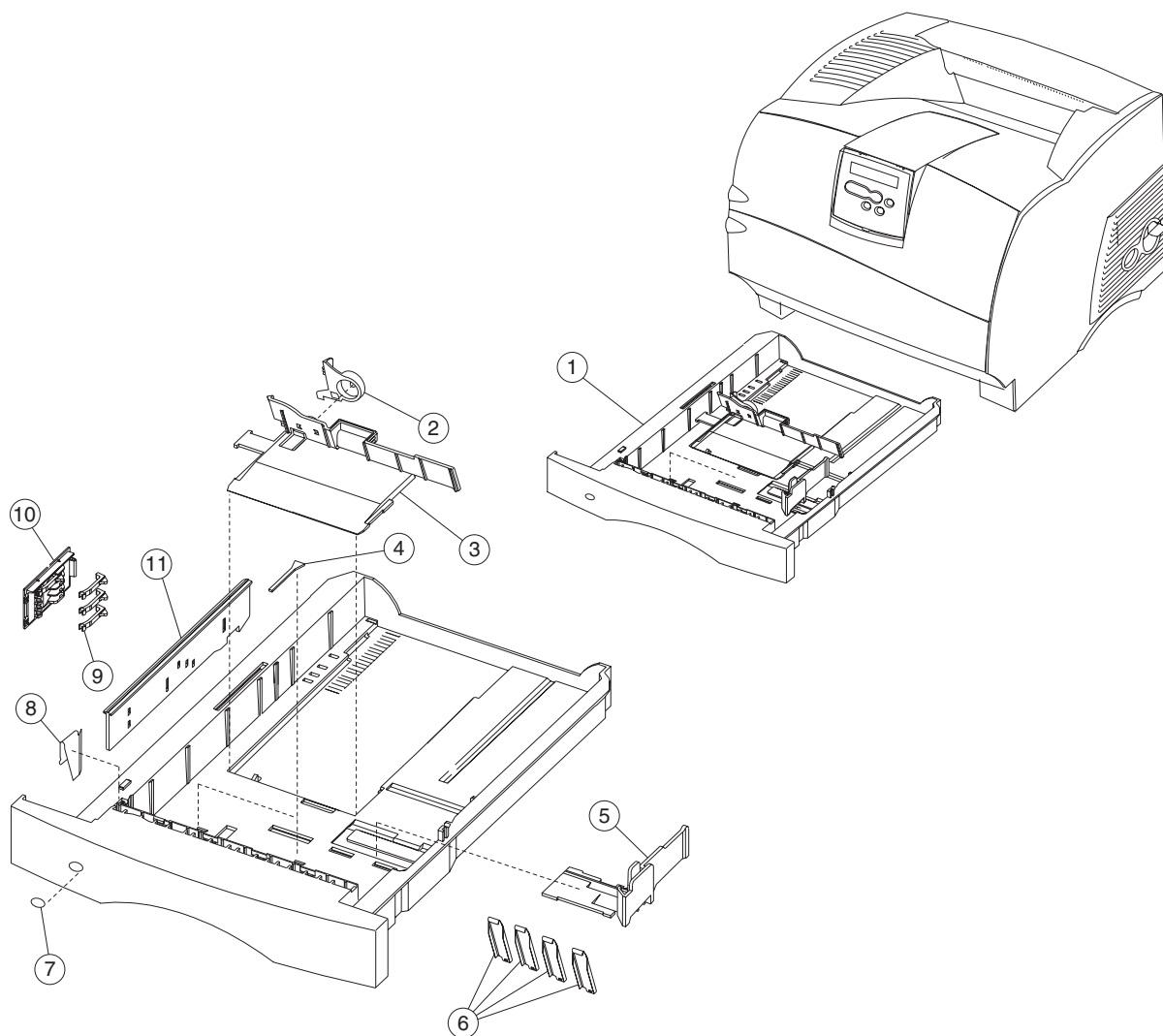
Assembly 9: Paper feed—alignment



Assembly 9: Paper feed—alignment

Asm-index	Part number	Units	Description
9-1	56P1327	1	Alignment assembly paper feed
2	53P8617	1	Parts packet, screw (clip ref ground mounting)
3	56P1349	1	Clip, reference ground
4	56P1346	1	Parts packet (reference adjust) Screw, paper reference adjust Washer, paper reference adjust Nut, paper reference adjust
NS	53P8617	3	Parts packet, screw (alignment asm mounting)

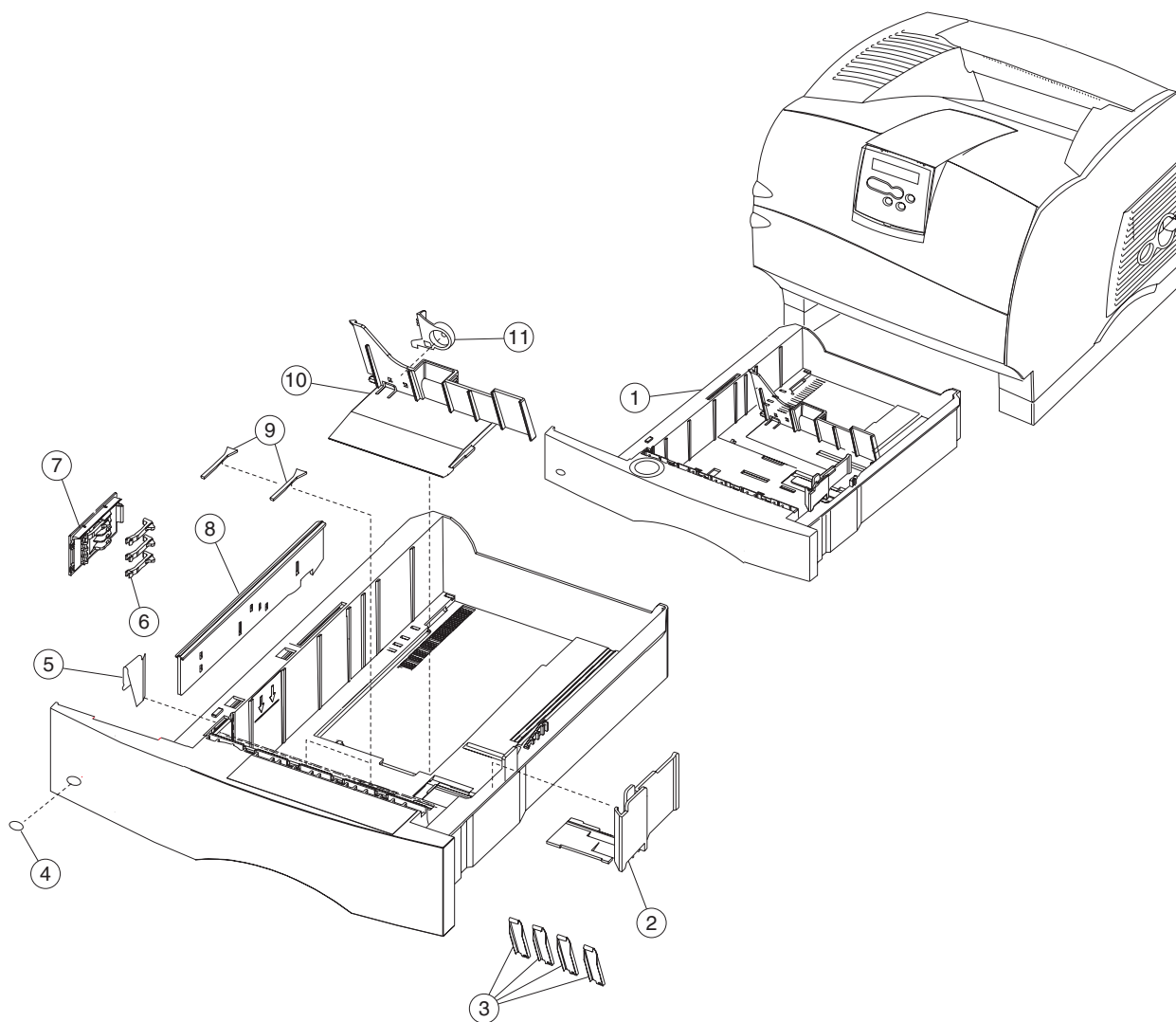
Assembly 10: Integrated paper tray—250-sheet



Assembly 10: Integrated paper tray—250-sheet

Asm-index	Part number	Units	Description
10-1	53P8446	1	Tray, integrated 250-sheet
2	53P8473	1	Latch, back restraint
3	53P9136	1	Restraint, back 250-sheet tray
4	53P8226	2	Restraint pad
5	53P8823	1	Restraint, side 250-sheet tray
6	56P1279	4	Wear strips
7	53P8483	1	Label, tray option number
8	53P8227	1	Clip, 250-sheet tray wear
9	53P8229	3	Finger, autosize
10	53P8228	1	Plate, snap-in
11	53P8230	1	Slider, autosize 250-sheet

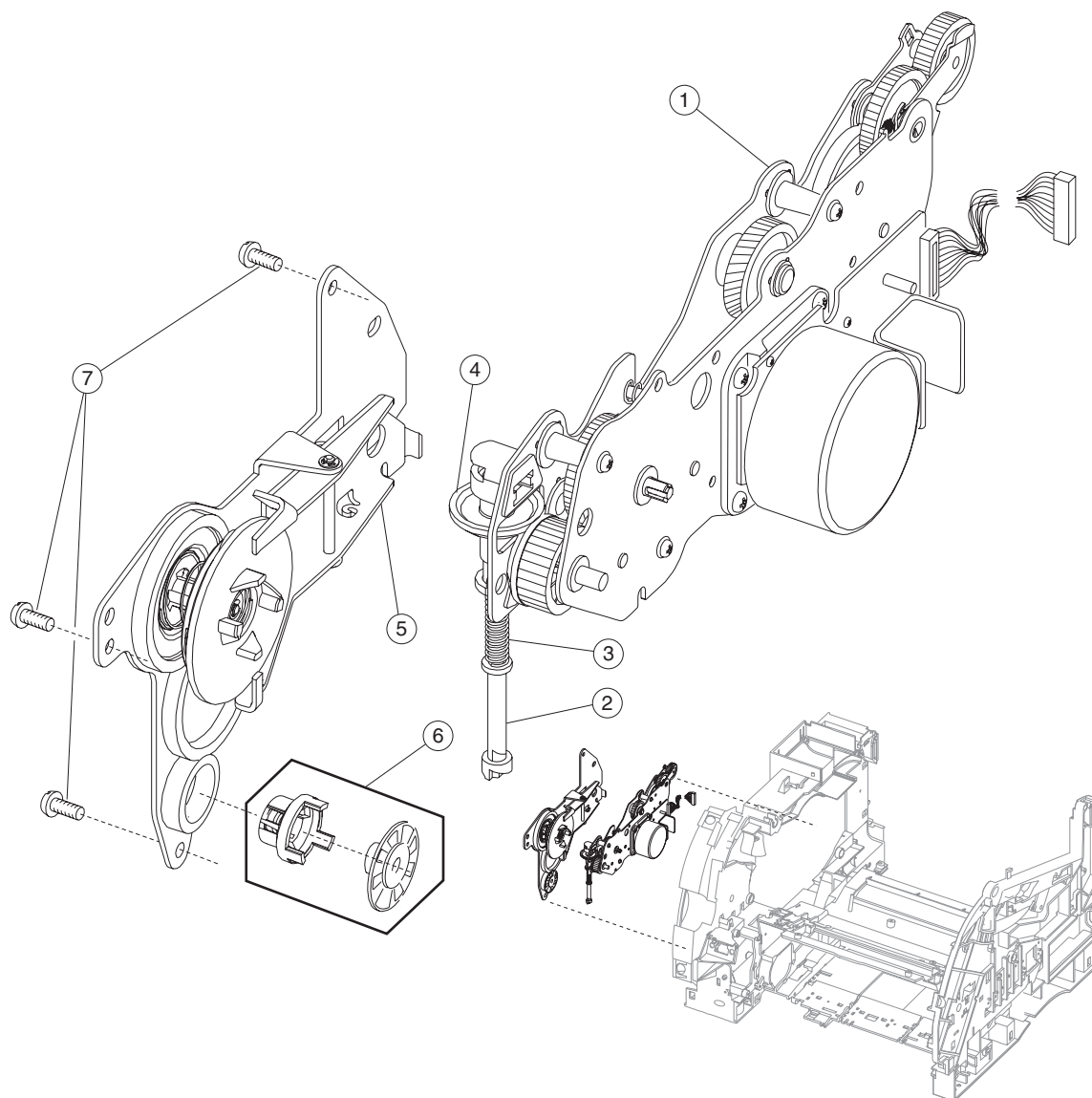
Assembly 11: Integrated paper tray—500-sheet



Assembly 11: Integrated paper tray—500-sheet

Asm-index	Part number	Units	Description
11-1	53P8459	1	Tray assembly 500-sheet
2	53P8747	1	Restraint, side
3	53P8266	4	Strip, wear
4	53P8483	1	Label, tray option number
5	53P8464	1	Plate, 500-sheet tray wear
6	53P8229	3	Finger, autosize
7	53P8228	1	Plate, snap-in
8	53P8463	1	Slider, autosize 500-sheet
9	53P8226	2	Restraint pad
10	53P9135	1	Restraint, back
11	53P8473	1	Latch, back restraint

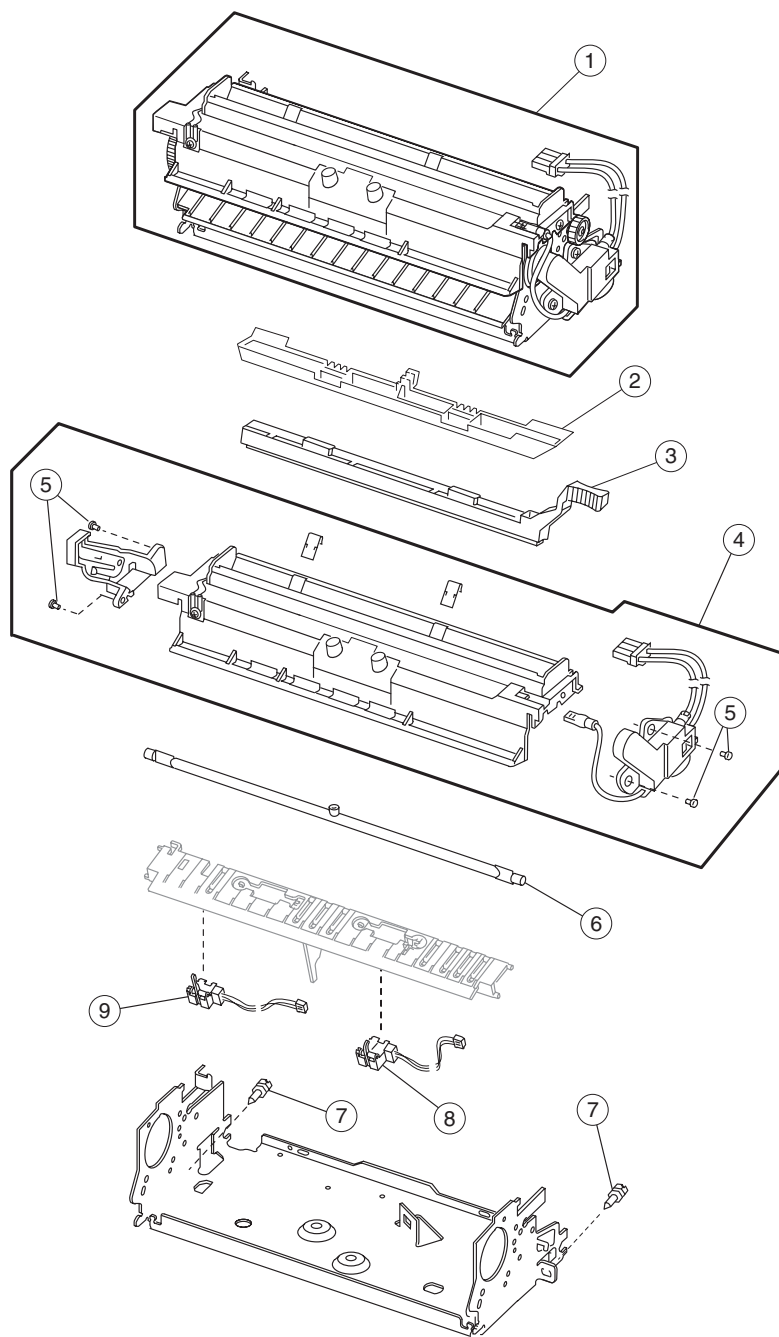
Assembly 12: Drives—Main drive and developer drive



Assembly 12: Drives—Main drive and developer drive

Asm-index	Part number	Units	Description
12-1	56P1330	1	Gearbox, w/motor, Infoprint 1332
1	56P1332	1	Gearbox, w/motor, Infoprint 1352
1	56P1858	1	Gearbox, w/motor, 1372
2	53P8925	1	Shaft, power takeoff 250, Infoprint 1332
2	53P8457	1	Shaft, power takeoff 500, Infoprint 1352/1372
3	53P8256	1	Spring, power takeoff shaft
4	56P2162	1	Gear, bevel with grease packet and washer
5	53P8451	1	Developer drive assembly
6	53P8922	1	Parts packet, developer drive shaft, coupler gear #55
7	53P8617	3	Parts packet, screw (developer drive ground)
NS	53P8617	4	Parts packet, screw (gearbox mounting)
NS	53P8617	3	Parts packet, screw (motor mounting)

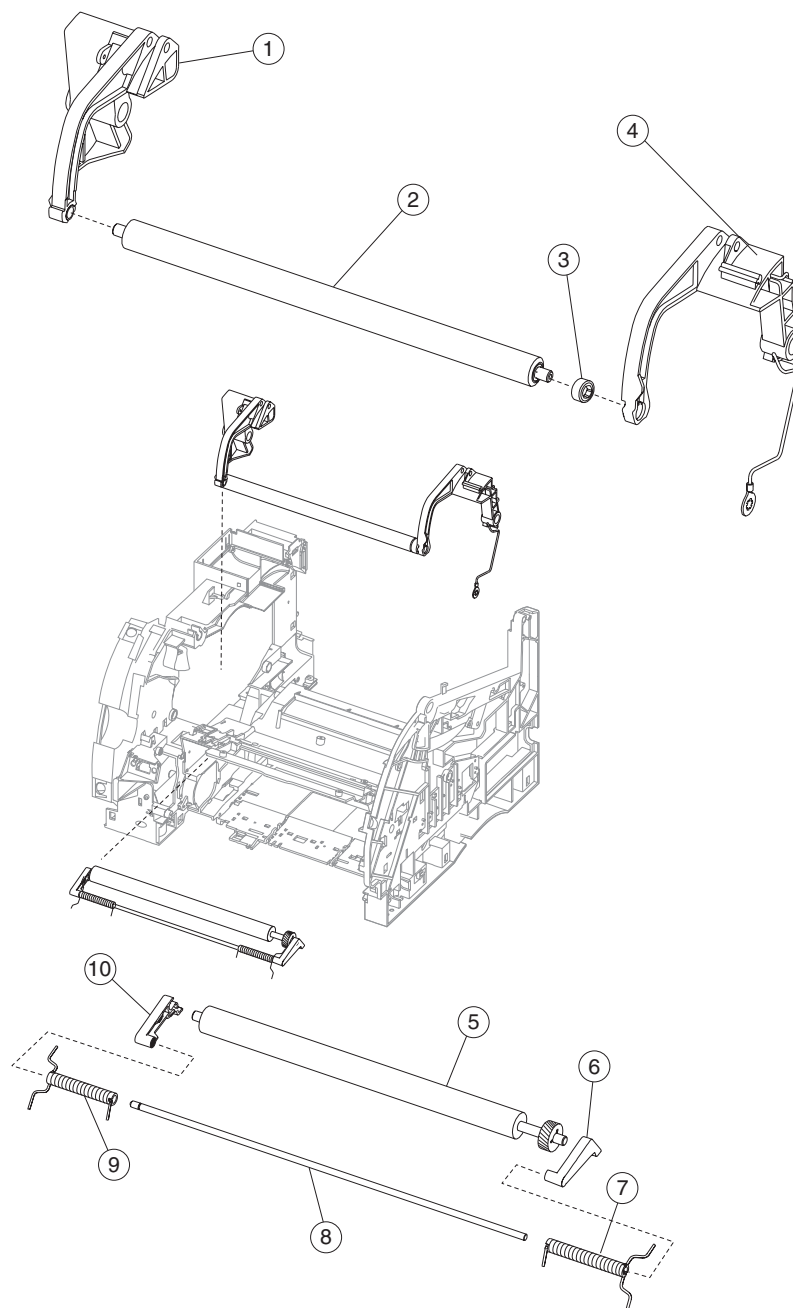
Assembly 13: Hot roll fuser



Assembly 13: Hot roll fuser

Asm-index	Part number	Units	Description
13-1	56P2542	1	Fuser assembly w/115V lamp, Infoprint 1332/1352
1	56P2543	1	Fuser assembly w/100V lamp, Infoprint 1332/1352
1	56P2544	1	Fuser assembly w/220V lamp, Infoprint 1332/1352
1	56P2545	1	Fuser assembly w/115V lamp, Infoprint 1372
1	56P2546	1	Fuser assembly w/220V lamp, Infoprint 1372
1	56P2547	1	Fuser assembly w/100V lamp, Infoprint 1372
2	53P8488	1	Cover, fuser wiper cavity
3	56P1415	1	Wiper assembly, wet, Infoprint 1332/1352 MICR
4	56P1348	1	Kit, fuser cover assembly with thermistor, thermal fuse, and L & R fuser lamp contact assemblies, w/ fuser cover control card
5	53P8617	4	Parts packet, screws: • Contact assembly (4) • Solenoid mounting (1) • Board cover mounting (1) • Fuser cover assembly (4) • Hanger (7)
6	56P1362	1	Lamp, 115V
6	56P1363	1	Lamp, 220V
7		2	Screw, PP 53P8617
8	56P1402	1	Sensor, narrow media
9	56P1403	1	Sensor, exit

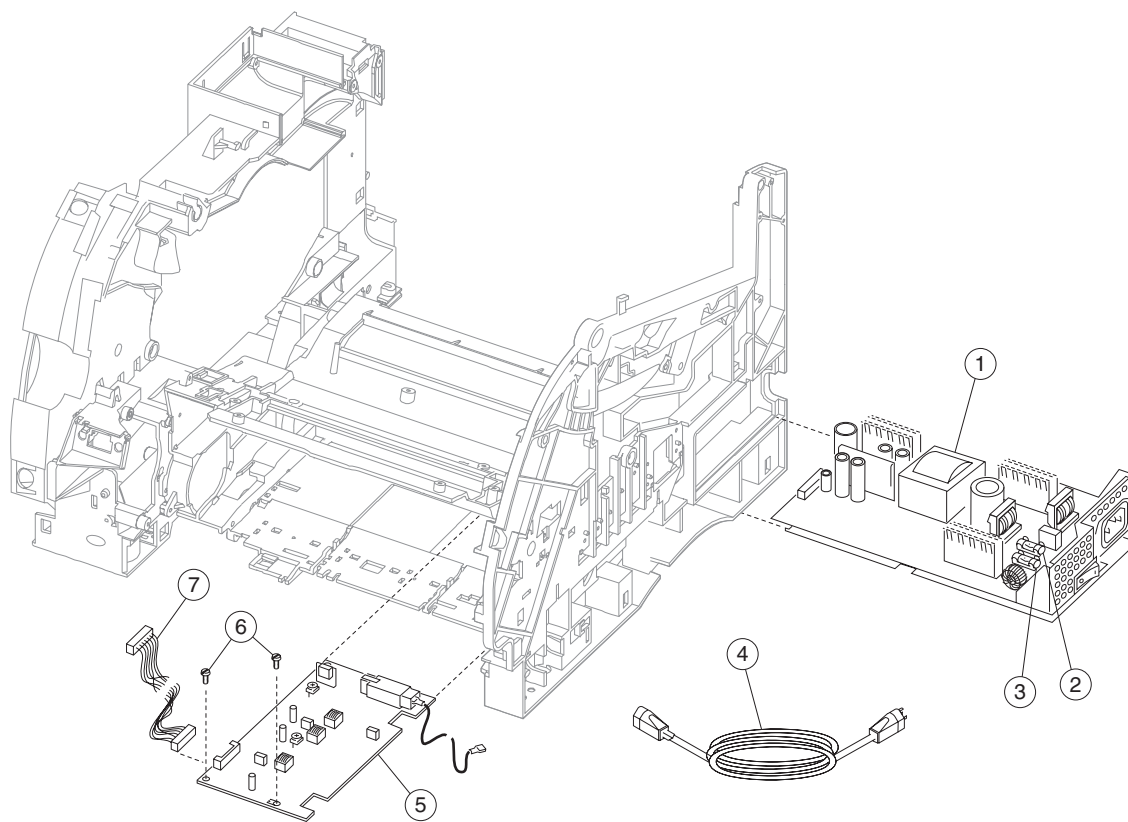
Assembly 14: Transfer/charging



Assembly 14: Transfer/charging

Asm-index	Part number	Units	Description
14-1	53P8348	1	Parts kit, charge roll link asm, left side
2	SUPPLY	1	Roll assembly, charge
3	53P8456	1	Bushing, charge roll
4	53P8349	1	Parts kit, charge roll link asm, right side
5	SUPPLY	1	Transfer roll assembly
6	53P8293	1	Arm, transfer roll assembly right
7	53P8242	1	Spring, transfer roll right
8	53P8243	1	Shaft, transfer pivot
9	53P8241	1	Spring, transfer roll left
10	53P8460	1	Arm, transfer roll left
NS	53P8617	1	Parts packet, screw (charge roll)
NS	53P8249	1	Parts packet, retainer (pivot shaft)

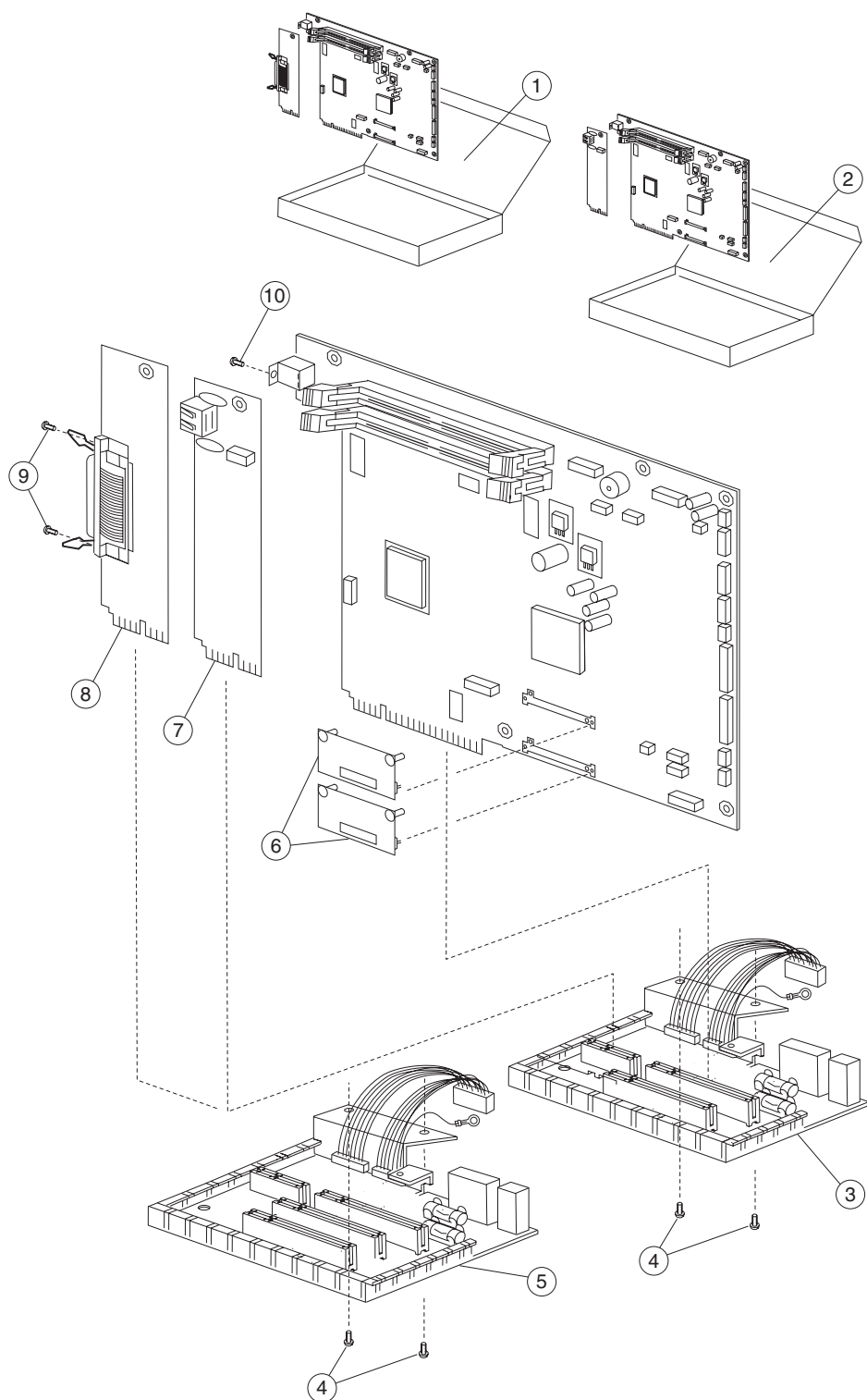
Assembly 15: Electronics—power supplies



Assembly 15: Electronics—power supplies

Asm-index	Part number	Units	Description
15-1	56P1369	1	LVPS, 110 V ac, Infoprint 1332
1	56P1371	1	LVPS, 110 V ac, Infoprint 1352/1372
1	56P1372	1	LVPS, 220 V ac, Infoprint 1332
1	56P1374	1	LVPS, 220 V ac, Infoprint 1352/1372
2	56P1365	1	Fuse, for 110 V ac LVPS 5 a/250V (fuse F1), Infoprint 1332
2	56P1367	1	Fuse, for 220 V ac LVPS 3.15 a/250V (fuse F1), Infoprint 1352/1372
3	56P1366	1	Fuse, for 110 V ac LVPS 10 a/250V (fuse F2), Infoprint 1352/1372
3	56P1364	1	Fuse, for 220 V ac LVPS 6.3 a/250V (fuse F2), Infoprint 1332
4	6952298	1	Power cord set,-USA, Canada, Columbia, Costa Rica, Dominican Republic, El Salvador, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Puerto Rico, Saudi Arabia, Taiwan (LV), Venezuela, Virgin Islands
4	13F9975	1	Power cord set -Austria, Belgium, BlueMark, Catalan, CIS, Czechoslovakia, Finland, France, Germany, Greece, Hungary, Italy, Netherlands, Norway, Poland, Portugal, Russia, Slovak countries, Spain, Sweden, Turkey
4	14F0029	1	Power cord set-Ireland, U.K.
4	14F0083	1	Power cord set-Israel
4	6952298	1	Power cord set-Japan
4	14F0047	1	Power cord set-Switzerland
4	14F0011	1	Power cord set-Botswana, Lesotho, Namibia, Pakistan, South Africa
4	13F9993	1	Power cord set-Denmark
4	02K0542	1	Power cord set-PRC (HV)
5	56P1375	1	Power supply, high voltage
6	53P8617	1	• Parts packet, screw(s): • System board mtg (2) • System board mtg Front (2) • System mtg ground (1) • HVPS mtg (2) • INA cover mtg (12) • Interconnect board mtg (2) • Interconnect board shield ground (1) • Interconnect shield mtg (5) • Outer shield mtg (10) • Parallel connector mtg (2)
7	56P1385	1	Cable, front harness (HVPS/input sensor/toner sensor)

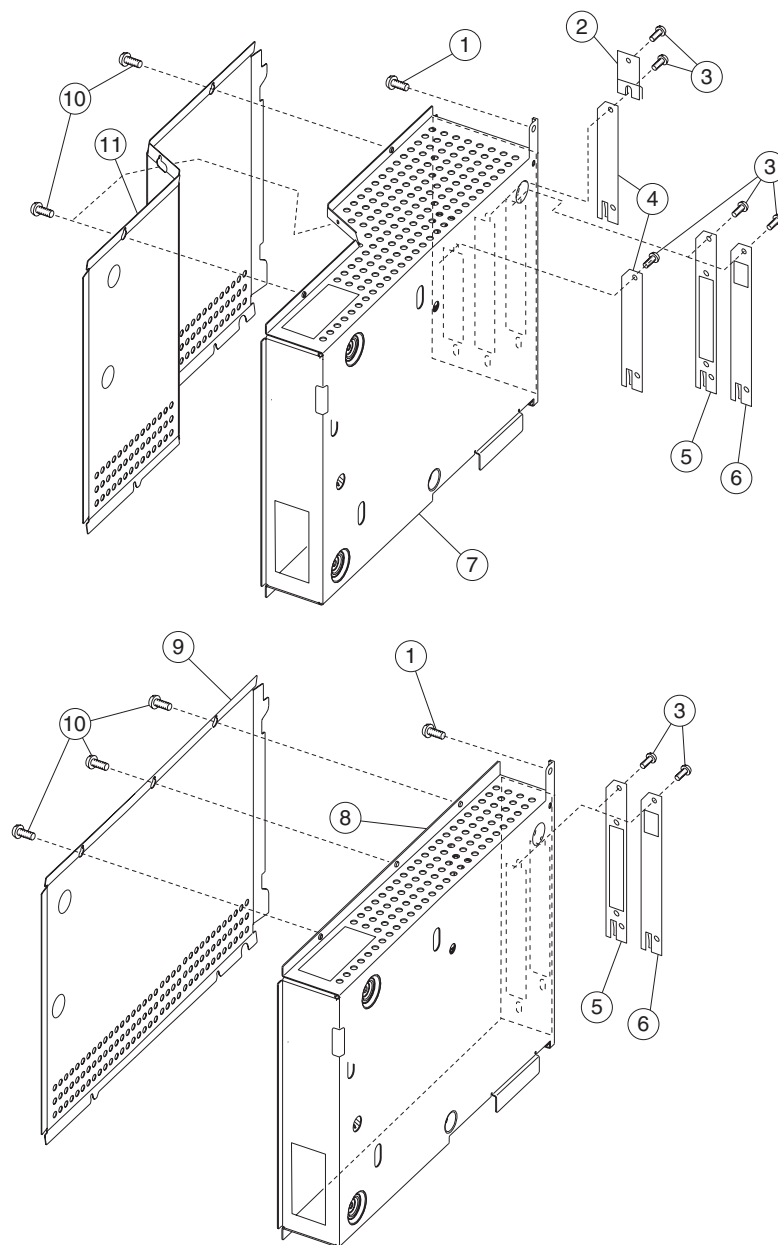
Assembly 16: Electronics—card assemblies



Assembly 16: Electronics—card assemblies

Asm-index	Part number	Units	Description
16-1	56P3080	1	System board assembly (non-network), Infoprint 1332 - includes 56P1444
1	56P3082	1	System board assembly (non-network), Infoprint 1352 - includes 56P1444
1	56P3084	1	System board assembly (non-network) Infoprint 1372 - includes 56P1444
2	56P3081	1	System board assembly (network), Infoprint 1332 - includes 56P1445
2	56P3083	1	System board assembly (network), Infoprint 1352 - includes 56P1445
2	56P3085	1	System board assembly (network) Infoprint 1372 - includes 56P1445
3	56P2001	1	Interconnect board assembly 1 slot, Infoprint 1332
4		2	Screws, PP 53P8617
5	56P2002	1	Interconnect board assembly 2 slot, Infoprint 1352
5	56P2003	1	Interconnect board assembly 2 slot, Infoprint 1372
6	56P1850	1	Card assembly, Bar code
6	56P2584	1	Card assembly, IPDS and SC5/TNe
6	56P2182	1	Card assembly, ImageQuick
7	56P1445	1	Card assembly, communications, network
8	56P1444	1	Card assembly, communications, non-network
9	53P9113	2	Screws, parallel connector mounting
10	53P8617	1	Screw, USB attaching (PP 53P8617)

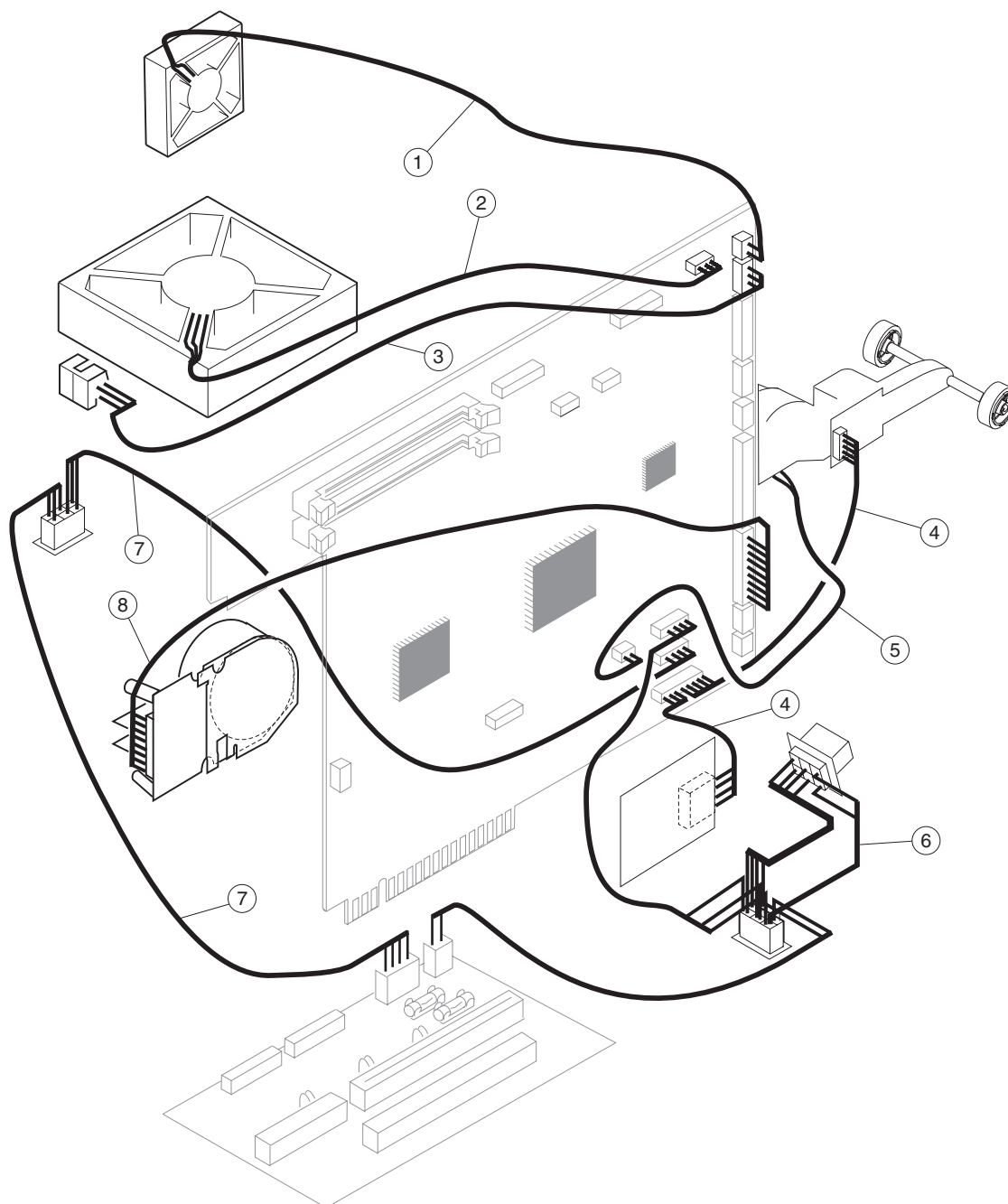
Assembly 17: Electronics—shields



Assembly 17: Electronics—shields

Asm-index	Part number	Units	Description
16-1	53P8617	1	Parts packet, screw (INA cover mounting)
2	56P1341	1	Cover, INA flat (blank)
3	53P8617	6	Parts packet, screw (outer shield mounting)
4	53P8617	1	Parts packet, screw (inner shield mounting)
5	56P1344	1	Shield, outer 2 slot, Infoprint 1352/1372
6	56P1342	1	Shield, inner assembly, 2 slot, Infoprint 1352/1372
7	53P8477	1	Shield, Ethernet (blank)
8	56P1343	1	Shield, inner assembly, 1 slot. Infoprint 1332
9	56P1345	1	Shield, outer 1 slot, Infoprint 1332

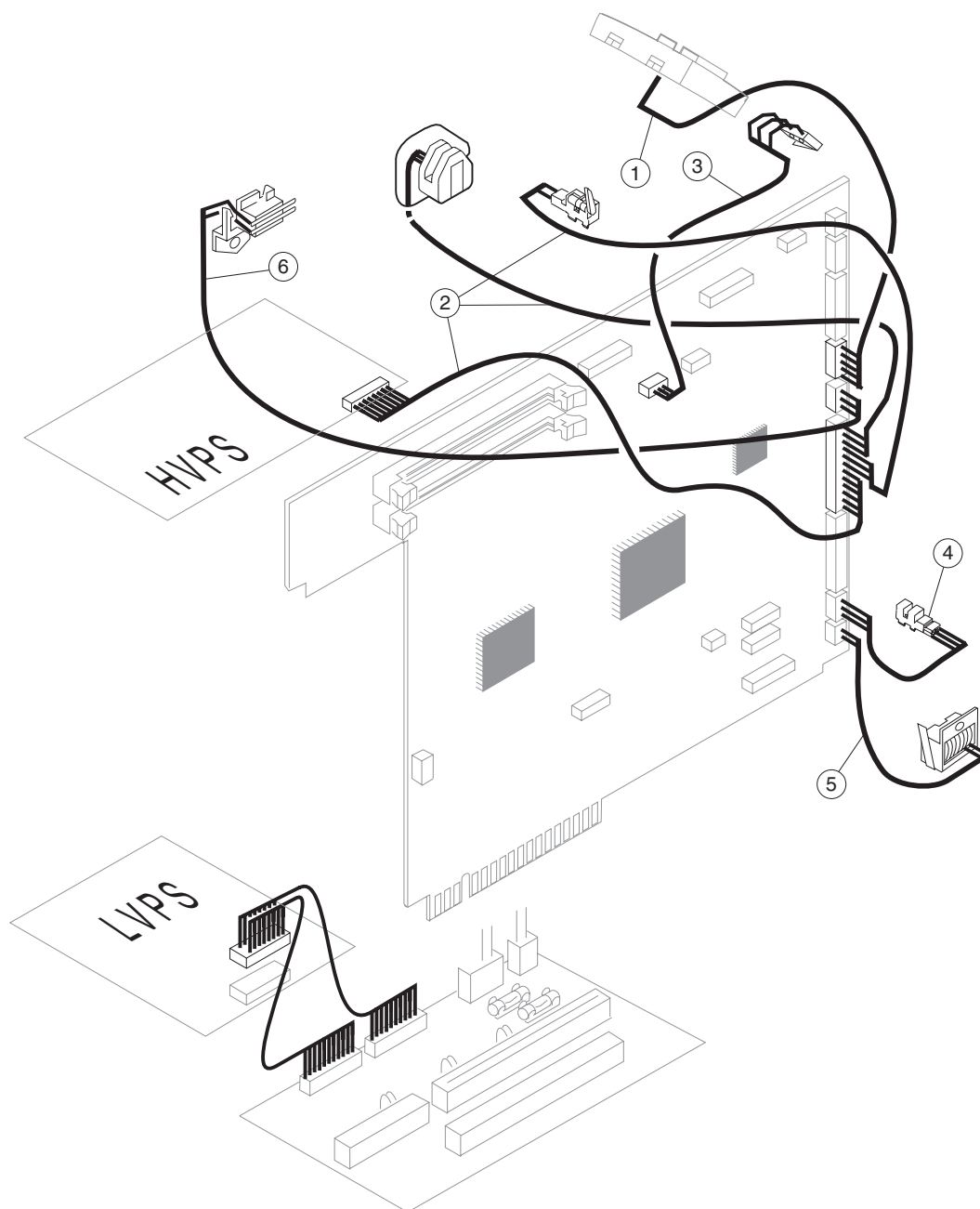
Assembly 18: Cabling diagrams 1



Assembly 18: Cabling diagrams 1

Asm-index	Part number	Units	Description
18-1	56P1408	1	Cartridge fan
2	56P1360	1	Fan, main w/cable
3	56P1391	1	Sensor, standard bin level with cable
4	56P1382	1	Int. card/autocomp card cable (paper low/out sensors)
5	56P1326	1	Pick arm assembly (250-sheet) Infoprint 1332
5	56P1325	1	Pick arm assembly (500-sheet) Infoprint 1352/1372
6	56P1383	1	Cable, autoconnect bottom
7	56P1400	1	Autoconnect top, Infoprint 1332
7	56P1401	1	Autoconnect top, Infoprint 1352/1372
8	56P1384	1	Cable, main drive motor

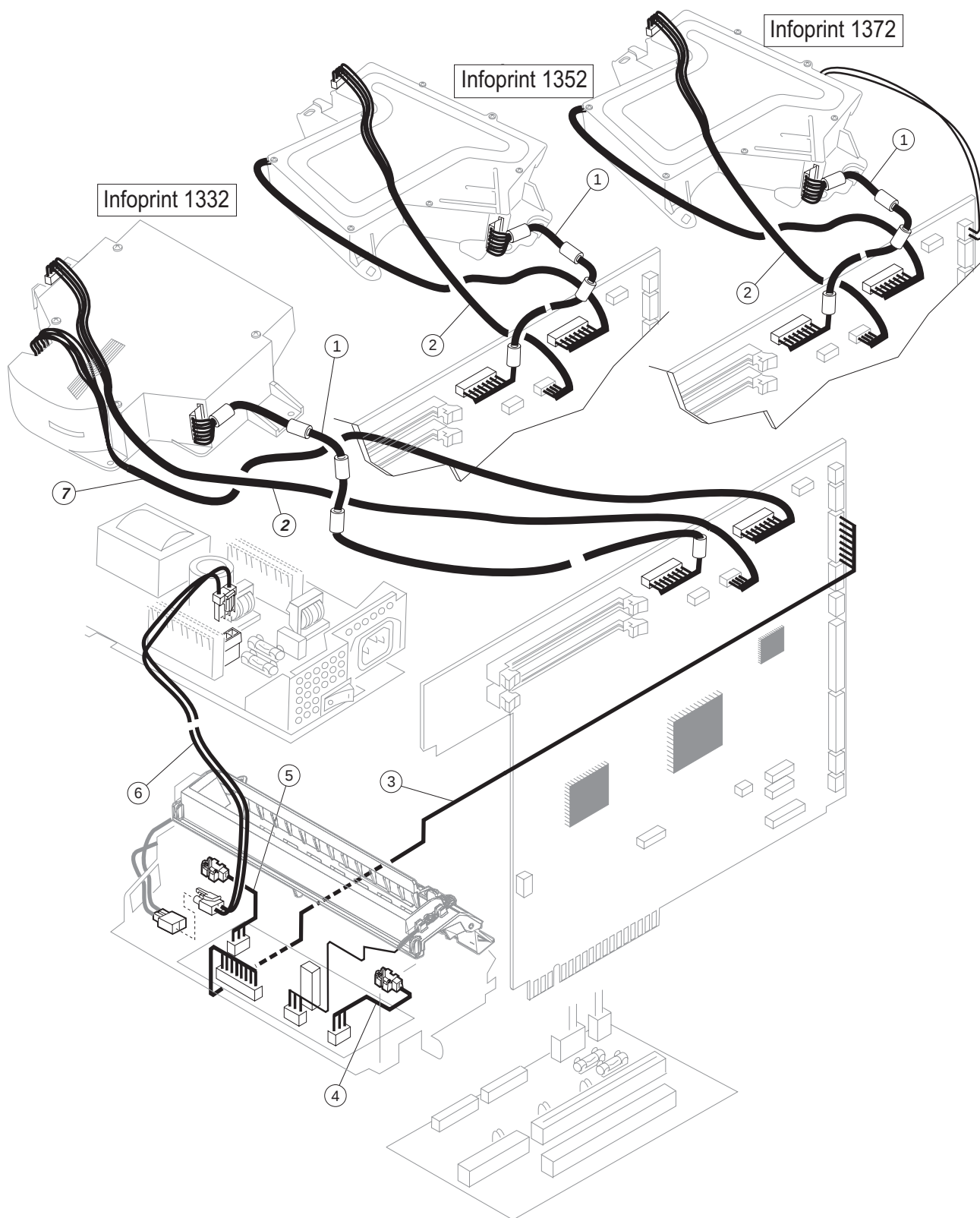
Assembly 19: Cabling diagrams 2



Assembly 19: Cabling diagrams 2

Asm-index	Part number	Units	Description
19-1	56P1394	1	Cable assembly, operator panel
2	56P1385	1	Cable, front harness (HVPS/input sensor/toner sensor)
3	56P1395	1	Switch, cover closed w/cable
4	56P1398	1	Sensor, MPF cable
5	53P8634	1	MPF solenoid w/cable
6	56P1399	1	Smart contact assembly w/cable
NS	56P1389	1	Cable, deflector

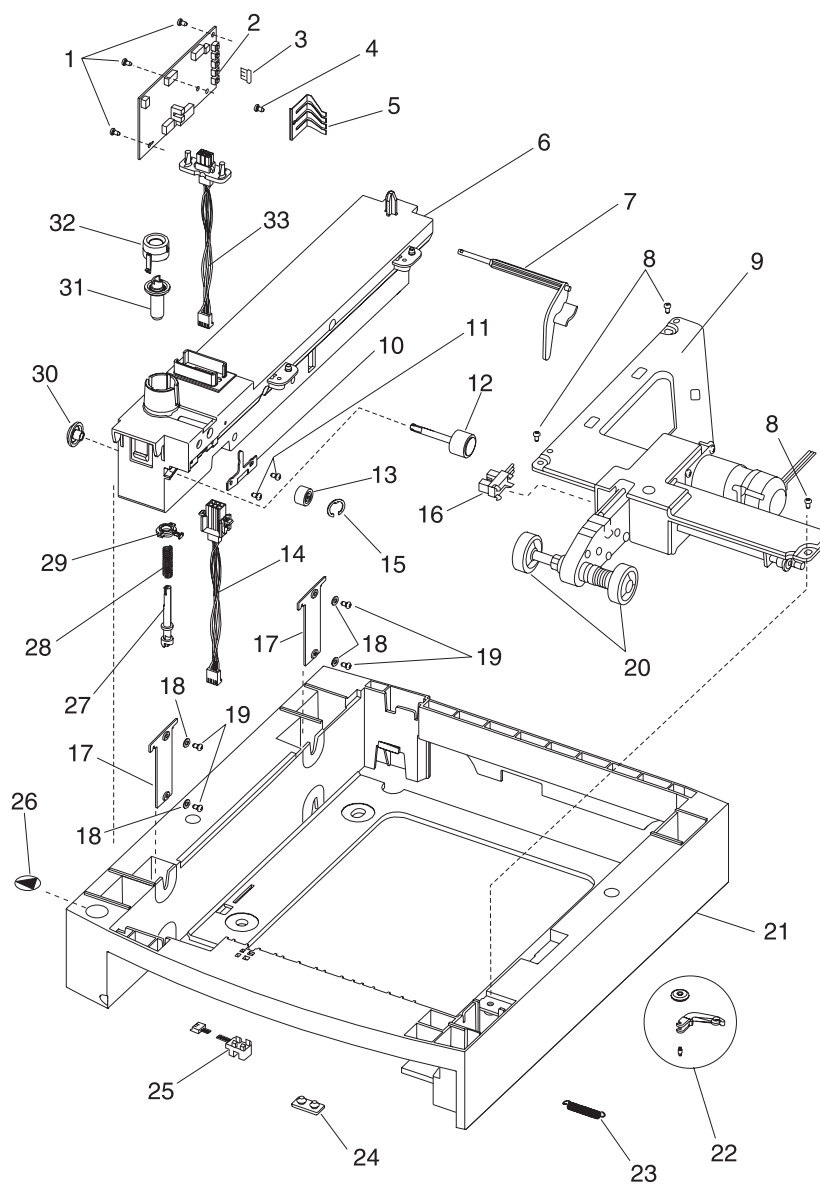
Assembly 20: Cabling diagrams 3



Assembly 20: Cabling diagrams 3

Asm-index	Part number	Units	Description
20-1	56P1386	1	Cable, laser
2	56P1387	1	Cable, HSYNC
3	56P1390	1	Cable, system board to fuser board
4	56P1403	1	Exit sensor
5	56P1402	1	Narrow media sensor
6	56P1405	1	Cable, AC fuser lamp to LVPS
7	56P1388	1	Cable, mirror motor, Infoprint 1332

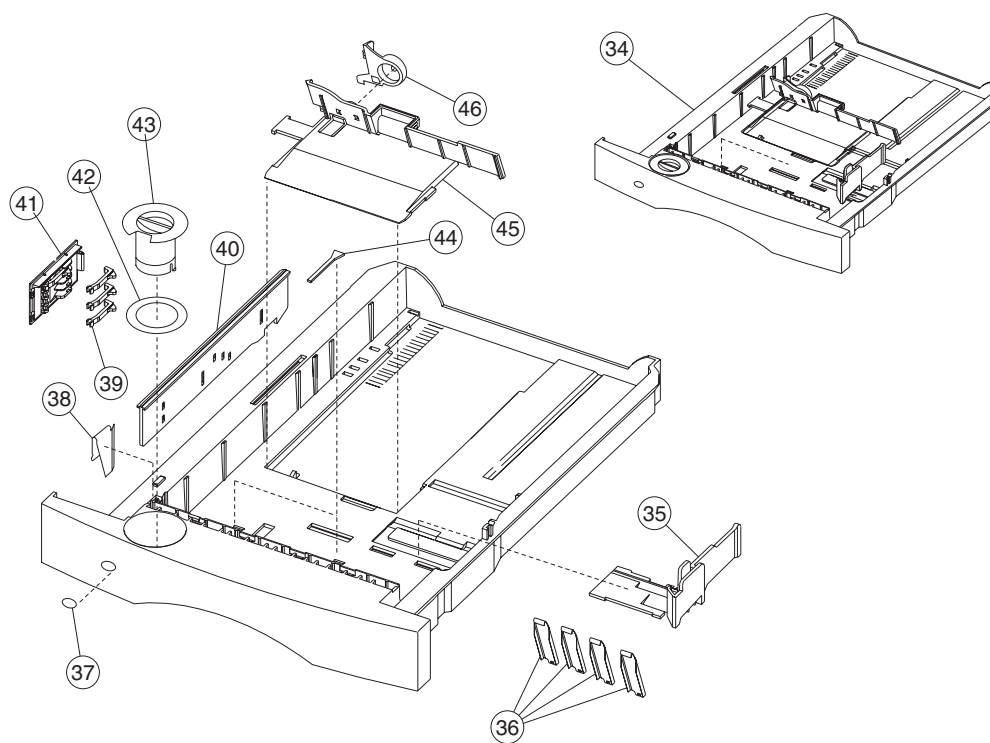
Assembly 21: 250-sheet paper tray



Assembly 21: 250-sheet paper tray

Asm-index	Part number	Units	Description
21-1	53P8617	3	Parts packet, screw (option board)
2	56P0557	1	Board, option tray
3	53P8362	1	Jumper, pin
4	53P8617	1	Parts packet, screw (switch spring)
5	53P8211	1	Spring, switch activate
6	53P8326	1	Stud assembly, 250-sheet frame
7	53P8928	1	Arm, paper out 250-sheet
8	53P8617	3	Parts packet, screw (auto comp mounting)
9	53P8423	1	Pick arm assembly
10	53P8258	1	Wear plate, pass thru
11	53P8617	2	Parts packet, screw (wear plate mounting)
12	53P8257	1	500 Drive roll assembly
13	53P8331	1	Roll, skewed backup
14	53P8263	1	Cable, 250-sheet autoconnect
15	53P8330	1	Retainer, roller
16	53P8294	1	Sensor, paper low
17	53P8384	2	Bracket, 250-sheet frame retention
18	53P8382	4	Parts packet, washer
19	53P8617	4	Parts packet, screw
20	75P5958	1	Pick roll assembly (2 per pack)
21	53P8484	1	Base, 250-sheet option
22	53P8203	1	Tray bias arm assembly
23	53P8322	1	Spring, tray bias
24	53P8209	4	Pad, machine mounting
25	53P8265	1	Sensor, option pass thru
26	53P8493	1	Label, tray options
27	53P8253	1	Shaft, 250-sheet drive
28	53P8256	1	Spring, power takeoff
29	53P8261	1	Bushing, drive shaft low
30	53P8255	1	Gear, feed roll
31	53P8254	1	Gear, bevel
32	53P8260	1	Bearing, drive shaft
33	53P8262	1	Cable, 250-sheet autoconnect

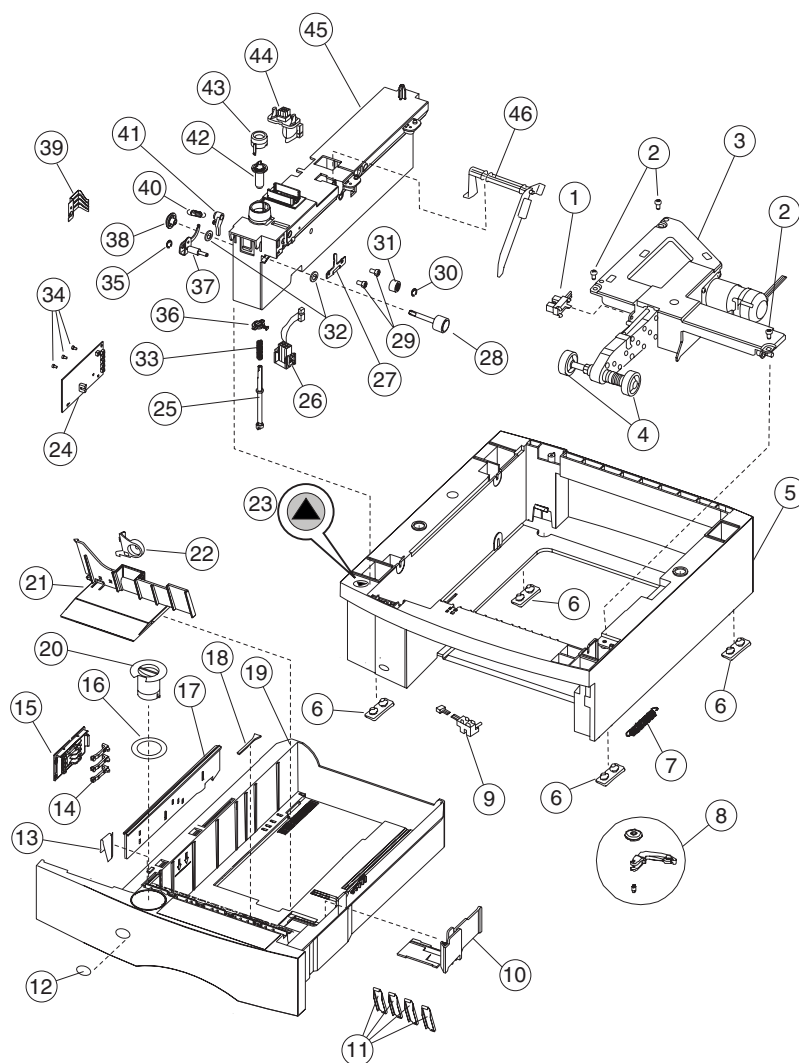
Assembly 21 (cont.): 250-sheet paper tray



Assembly 21 (cont.): 250-sheet paper tray

Asm-index	Part number	Units	Description
21-34	53P8446	1	Tray assembly, 250-sheet option
35	53P8823	1	Restraint, side 250-sheet tray
36	56P1279	4	Wear strips
37	53P8748	1	Label, tray option number
38	53P8227	1	Clip, 250-sheet tray wear
39	53P8229	3	Finger, autosize
40	53P8230	1	Slider, autosize 250-sheet
41	53P8228	1	Plate, snap-in
42	53P8614	1	Label, paper size
43	53P8447	1	Knob, paper size
44	53P8226	2	Restraint pad
45	53P9136	1	Restraint, back 250-sheet tray
46	53P8473	1	Latch, back restraint
NS	53P8264	1	Spring, backup roller
NS	56P2540	1	Spring, bellcrank 250-sheet tray option
NS	53P8325	2	Bushing, drive roll
NS	53P8259	1	Bellcrank, roller release

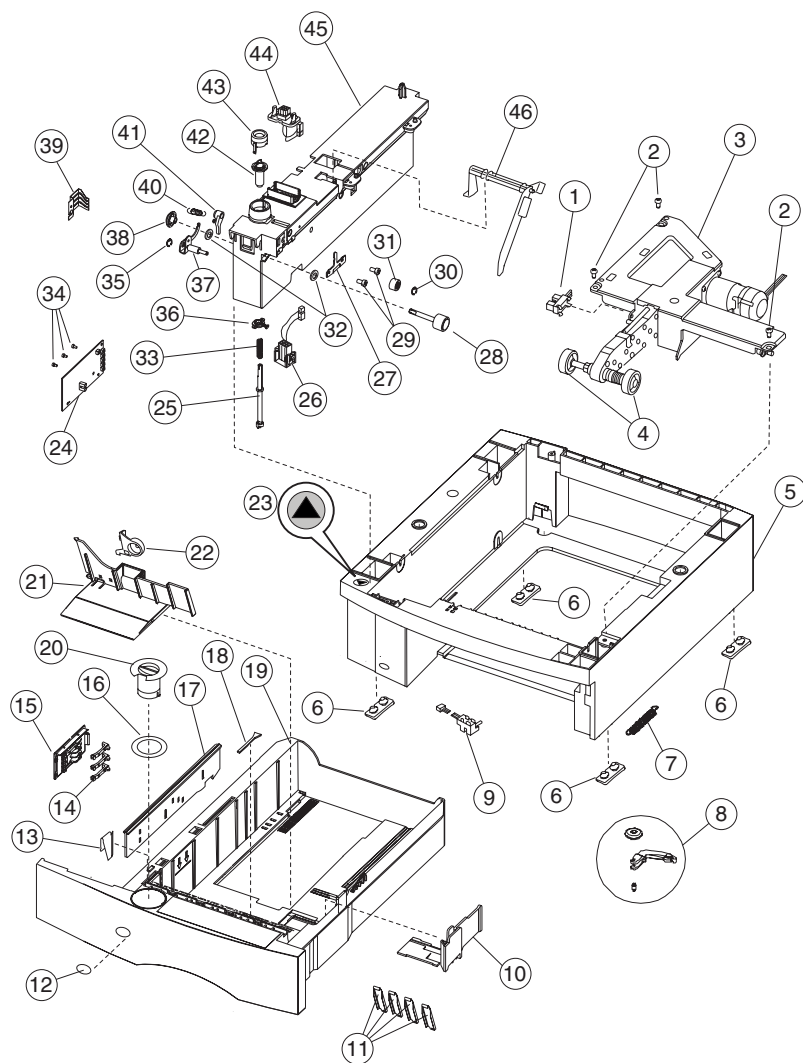
Assembly 22: 500-sheet paper tray



Assembly 22: 500-sheet paper tray

Asm-index	Part number	Units	Description
22-1	53P8294	1	Sensor, paper low
2	53P8617	3	Parts packet, screw (auto comp mounting)
3	53P8315	1	Pick arm assembly
4	75P5958	1	Pick roll assembly (2 per pack)
5	53P8482	1	Base, 500-sheet tray
6	53P8209	4	Pad, base 500-sheet
7	53P8322	1	Spring, tray bias
8	53P8203	1	Tray bias arm assembly
9	53P8265	1	Sensor, option pass thru
10	53P8747	1	Restraint, side 500-sheet tray
11	53P8266	4	Wear strips
12	53P8748	1	Label, tray option number
13	53P8464	1	Plate, 500-sheet tray wear
14	53P8229	3	Finger, autosize
15	53P8228	1	Plate, snap-in
14	53P8229	3	Finger, autosize
15	53P8228	1	Plate, snap-in
16	53P8614	1	Label, paper size
17	53P8463	1	Slider, autosize 500-sheet
18	53P8226	2	Restraint pad
19	53P8459	1	Tray assembly, 500-sheet
20	53P8447	1	Knob, paper size
21	53P9135	1	Restraint, back 500-sheet tray
22	53P8473	1	Latch, back restraint
23	53P8493	1	Label, options
24	56P0557	1	Board, option tray
25	53P8328	1	Shaft, 500-sheet drive
26	53P8263	1	Cable, 250 autoconnect
27	53P8568	1	Wear plate, pass thru
28	53P8257	1	500 Drive roll assembly
29	53P8617	2	Parts packet, screw (wear plate mounting)
30	53P8330	1	Retainer, roller
31	53P8331	1	Roller, skewed backup
32	53P8325	2	Bushing, drive roll
33	53P8256	1	Spring, power takeoff
34	53P8617	3	Parts packet, screw (board mounting)
35	53P8249	1	Parts packet, retainer (aligner assembly)
36	53P8261	1	Bearing, drive shaft low
37	53P8327	1	Aligner assembly, paper
38	53P8255	1	Gear, feed roll
39	53P8211	1	Spring, switch activate

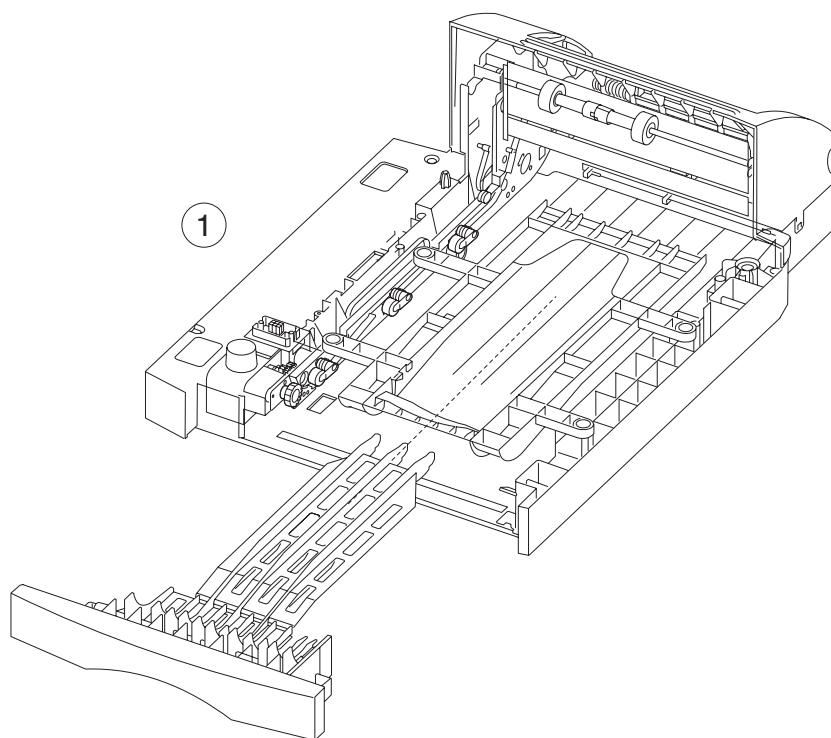
Assembly 22 (cont.): 500-sheet paper tray



Assembly 22 (cont.): 500-sheet paper tray

Asm-index	Part number	Units	Description
22-40	53P8264	1	Spring, backup roller
41	53P8491	1	Bellcrank, roller release
42	53P8254	1	Gear, bevel
43	53P8260	1	Bearing, drive shaft
44	53P8262	1	Cable, 250-sheet autoconnect
45	53P8526	1	Stud assembly, 500 frame
46	53P8485	1	Arm, paper out 500
NS	53P8332	4	Washer, frame mounting
NS	53P8492	1	Deflector, base 500
NS	53P8494	2	Bracket, 500-sheet tray retention
NS	53P8826	1	Spring, bellcrank 500-sheet option tray

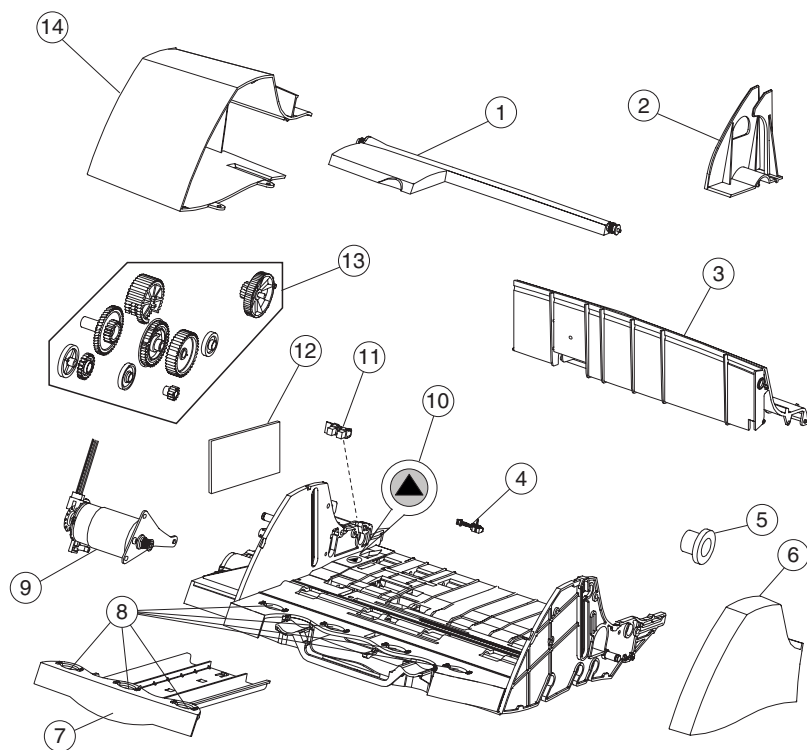
Assembly 23: Duplex option



Assembly 23: Duplex option

Asm-index	Part number	Units	Description
23-1	56P1414	1	250 duplex assembly
1	56P1416	1	500 duplex assembly

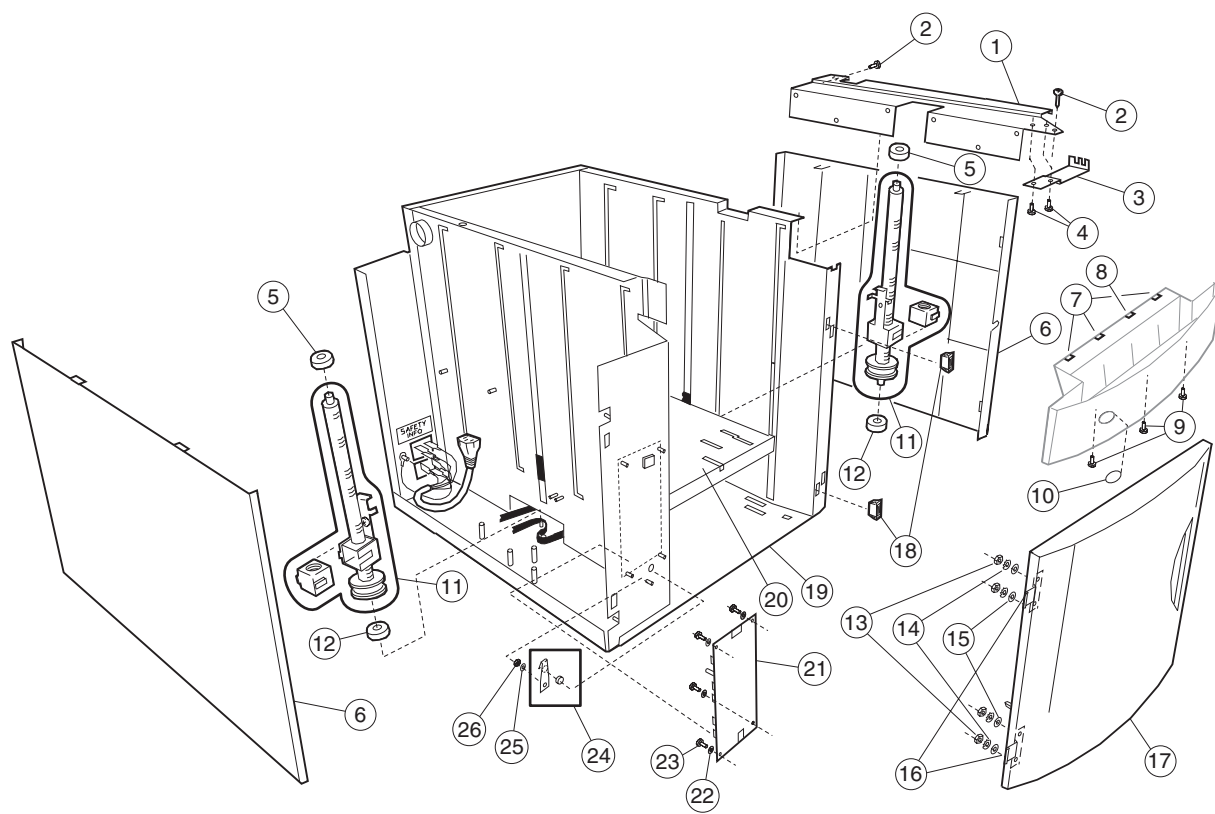
Assembly 24: Envelope feeder



Assembly 24: Envelope feeder

Asm-index	Part number	Units	Description
24-1	53P8308	1	Paper weight assembly
2	53P8518	1	Guide, edge
3	53P8520	1	Cover, top
4	53P8340	1	Sensor, envelope pass thru
5	53P8311	1	Clutch, restraint/gear
6	53P8521	1	Cover, right side
7	53P8309	1	Support, slide out
8	53P8342	7	Roller, support
9	53P8304	1	Motor, stepper DC
10	53P8493	1	Label, options
11	53P8307	1	Switch, envelope out
12	53P8829	1	Board assembly, electronic control
13	53P8252	1	Parts packet, gear kit
14	53P8522	1	Cover, left side
NS	53P8314	1	Parts packet, retainer (4 mm PP)
NS	53P8314	3	Parts packet, retainer (clip 5 mm shaft)
NS	53P8314	2	Parts packet, retainer (6 mm)
NS	53P8314	3	Parts packet, retainer (7 mm shaft)
NS	53P8305	1	Shaft, drive pressure roller
NS	53P8306	1	Cable, auto connect front
NS	53P8347	1	Spring, cam clutch
NS	53P9084	1	Label, envelope orientation icon
NS	53P8336	1	Deflector guide
NS	53P8523	1	Guard, pass thru sensor
NS	53P8319	6	Screw, top/motor/board
NS	53P8339	1	Belt, gear drive
NS	53P8345	1	Bracket, stack limiter
NS	53P8313	1	Spring, restraint roll shaft
NS	53P8343	1	Spring, latch return
NS	53P8341	1	Flag, envelope out sensor

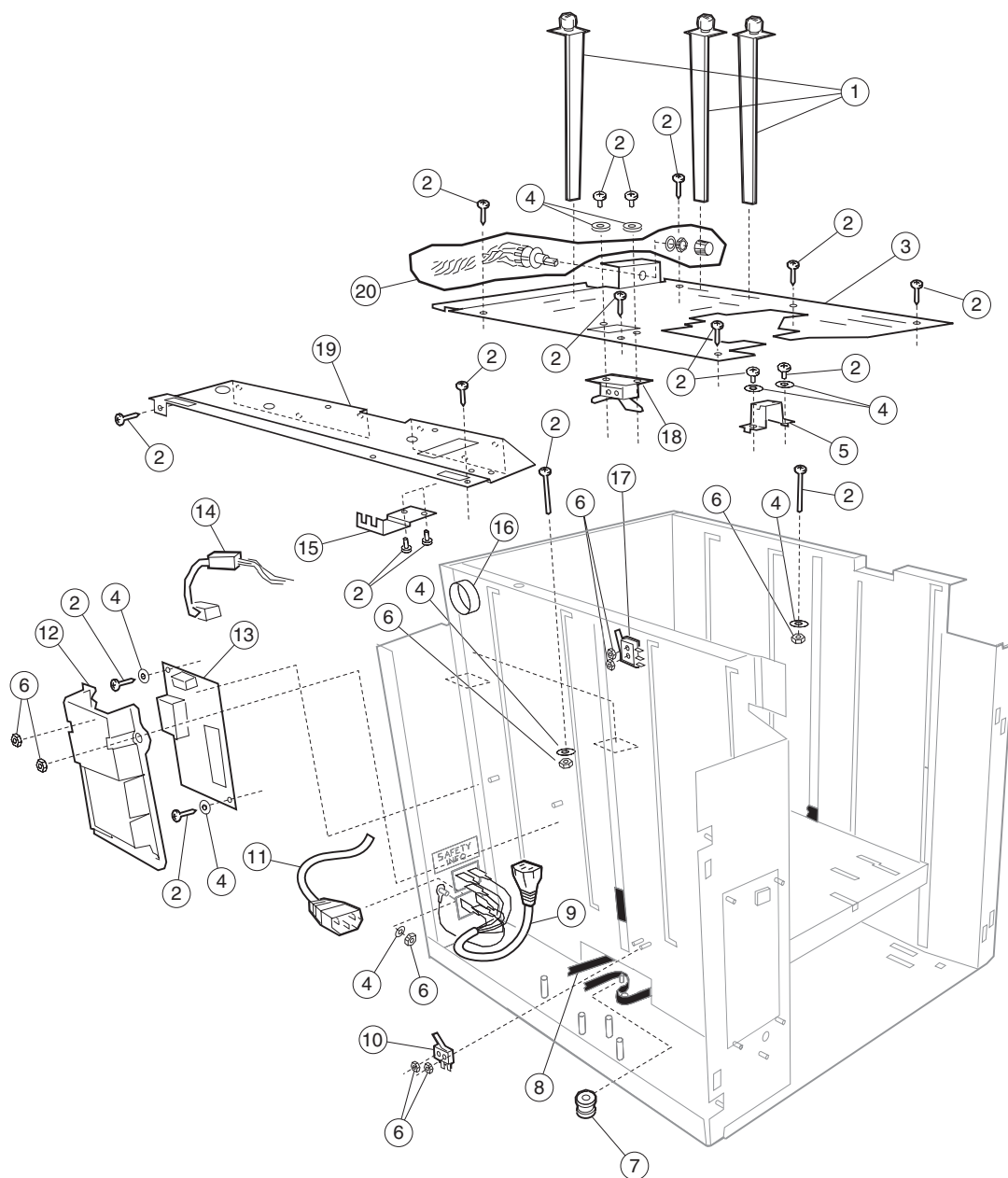
Assembly 25: High-capacity feeder 1



Assembly 25: High-capacity feeder 1

Asm-index	Part number	Units	Description
25-1	53P8372	1	Frame, printer support frame 2
2	53P8380	3	Parts packet, screw (printer support 2 frame mounting)
3	53P8395	2	Clamp, feed frame
4	53P8380	4	Parts packet, screw (feed frame clamp)
5	53P8391	2	Bearing, Nyliner leadscrew top
6	53P8368	1	Cover, left side
7	53P8385	3	Strip, wear
8	53P8815	1	Strip, wear dimple
9	53P8380	3	Parts packet, screw (deflector mt 8-18 x 7/8 inch)
10	53P8748	1	Label, tray option number
11	53P8374	2	Transfer leadscrew assembly
12	53P8398	2	Bearing, leadscrew bottom
13	53P8381	4	Parts packet, nut (6-32 hinge mounting)
14	53P8382	4	Parts packet, washer (hinge mounting flat)
15	53P8382	4	Parts packet, washer (hinge mounting star)
16	53P8369	2	Hinge, door
17	75P8380	1	High capacity feeder asm
18	53P8370	2	Magnet, door
19	53P8363	1	Frame assembly
20	53P8373	1	Tray assembly, elevator
21	56P0069	1	Card assembly, 2000 option control
22	53P8382	4	Parts packet, washer (card asm. mounting)
23	53P8380	4	Parts packet, screw (card asm. mounting)
24	75P8380	1	High capacity feeder asm
25	53P8382	1	Parts packet, washer (door switch spring mounting)
26	53P8381	1	Parts packet, nut (door switch spring mounting)
NS	53P8390	1	Cable, optical sensor

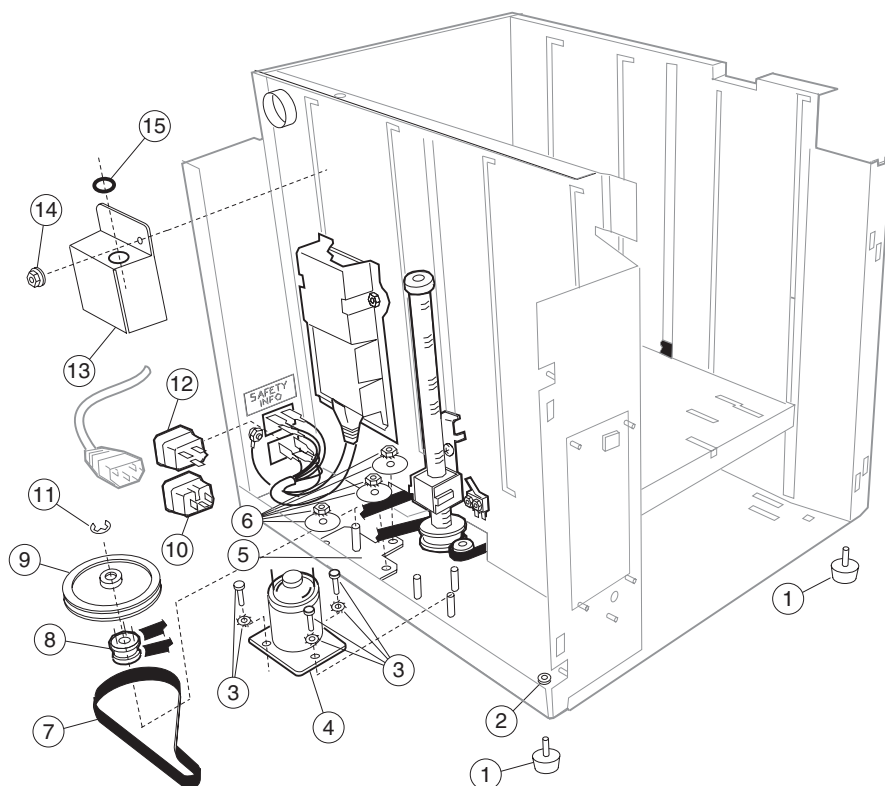
Assembly 26: High-capacity feeder 2



Assembly 26: High-capacity feeder 2

Asm-index	Part number	Units	Description
26-1	53P8244	3	Guide, rear paper, use with 53P8247
2	53P8380		Parts packet, screws (including): • Top frame mounting (6) • Base mounting (2) • Power supply board mtg (2) • Sensor bracket mtg (2) • Support 1 frame mtg (2) • Screw (2)
3	53P8247	1	Frame assembly, top with labels
4	53P8382		Parts packet, washers, (including): • Top frame clamp (2) • Base mounting (2) • Motor plate mtg (4) • Power supply board (2) • Sensor bracket mtg (2)
5	53P8400	1	Clamp, top frame mounting
6	53P8381		Parts packet, nuts, (including): • Base mounting (2) • 2-56 switch mounting (2) • Power supply cover (2) • Power supply ground (2)
7	53P8375	1	Pulley, idler
8	53P8376	1	Belt, drive
9	53P8602	1	Cable, AC internal wiring
10	53P8366	1	Switch, lower limit microswitch
11	53P8603	1	Cord, AC external jumper
12	53P8396	1	Cover, power supply
13	53P8377	1	Power supply board
14	53P8397	1	Cable, low voltage power supply
15	53P8395	2	Clamp, feed frame
16	53P8388	1	Bushing
17	53P8366	1	Switch, paper low
18	53P8364	1	Sensor assembly, paper out/upper limit
19	53P8371	1	Frame, printer support 1
20	53P8394	1	Parts kit, paper size switch assembly

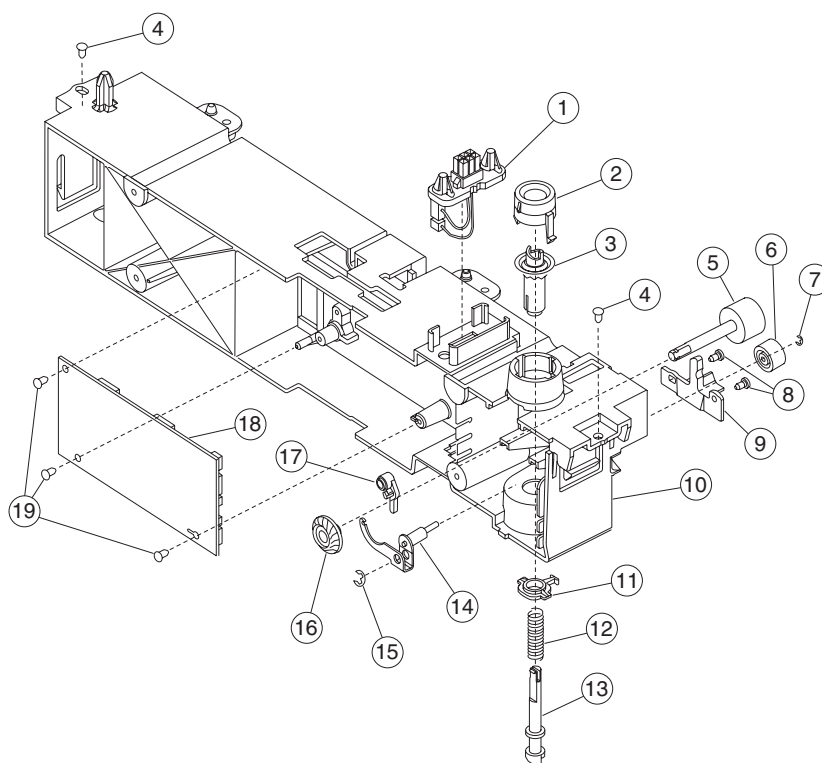
Assembly 27: High-capacity feeder 3



Assembly 27: High-capacity feeder 3

Asm-index	Part number	Units	Description
27-1	53P8389	4	Parts packet, mounting feet
3	53P8596	3	Parts packet, screw w/washer (motor mt)
4	53P8598	1	Motor assembly, DC
5	53P8809	1	Plate, drive pulley
6	53P8597	3	Parts packet, nut and washer (drive pulley plate)
7	53P8807	1	Belt, DC motor drive
8	53P8375	1	Idler pulley, belt tension
9	53P8811	1	Pulley, drive
10	53P8810	1	AC receptacle, lower AC
11	53P8812	1	Retainer, C-clip
12	53P8813	1	AC receptacle, upper AC
13	53P8814	1	Cover, top LVPS
14	53P8599	3	Nut w/lock washer, top LVPS cover mounting
15	53P8600	1	Grommet, top LVPS cover
27-1	53P8389	4	Parts packet, mounting feet

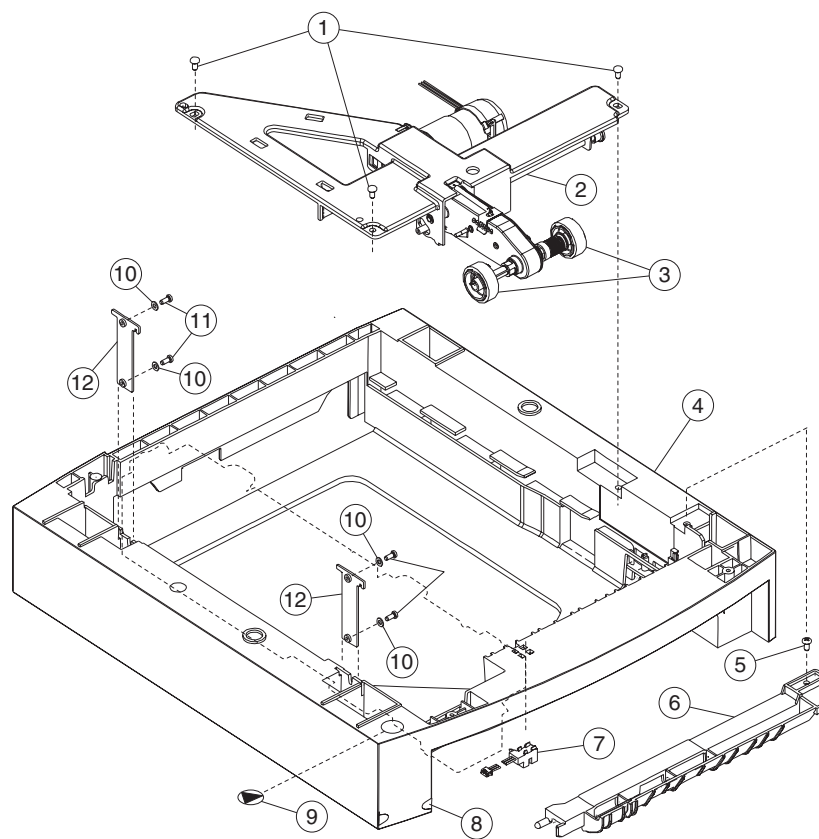
Assembly 28: High-capacity feeder 4



Assembly 28: High-capacity feeder 4

Asm-index	Part number	Units	Description
28-1	53P8262	1	Cable, 250-sheet autoconnect
2	53P8260	1	Bearing, drive shaft
3	53P8254	1	Gear, bevel
4	53P8617	2	Parts packet, screw (frame mounting)
5	53P8257	1	500 Drive roll assembly
6	53P8331	1	Roll, skewed backup
7	53P8249	1	Parts packet, retainer (roller)
8	53P8380	2	Parts packet, screw (wear plate mounting)
9	53P8258	1	Wear plate wear, pass thru
10	53P8326	1	Stud assembly, 250-sheet frame
11	53P8261	1	Bearing, drive shaft low
12	53P8256	1	Spring, power takeoff
13	53P8253	1	Shaft, 250-sheet drive
14	53P8327	1	Aligner assembly, paper
15	53P8249	1	Parts packet, retainer (aligner assembly)
16	53P8255	1	Gear, feed roll
17	53P8259	1	Bellcrank, roller release
18	56P0557	1	Card assembly, 2000 tray option
19	53P8617	3	Parts packet, screw (tray option card mounting)
NS	53P8380	10	Parts packet, screw (door to door frame mounting)
NS	53P8381	6	Parts packet, nut support frame 1 hex, support frame 2, hex
NS	53P8382	6	Parts packet, washer (support frame 1 star, support frame 2 star)
NS	53P8387	1	Cable, HCIT-14 pin flex
NS	53P8264	1	Spring, backup roller

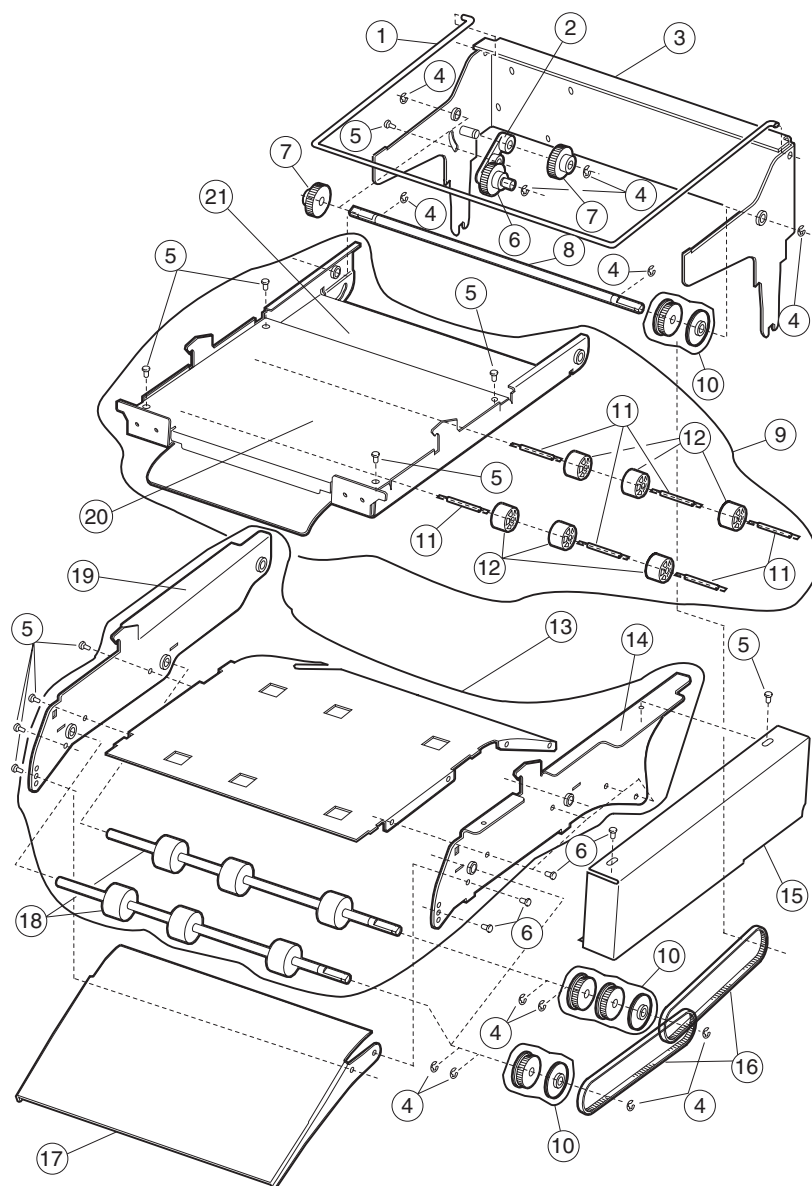
Assembly 29: High-capacity feeder 5



Assembly 29: High-capacity feeder 5

Asm-index	Part number	Units	Description
29-1	53P8617	3	Parts packet, screw (auto comp assembly mounting)
2	53P8379	1	Arm assembly, pick 2000
3	75P5958	1	Pick roll assembly (2 per pack)
4	53P8392	1	Base, 2000 option
5	53P8617	1	Parts packet, screw (deflector mounting)
6	53P8383	1	Deflector, base
7	53P8265	1	Sensor, pass thru
8	53P8483	1	Label, tray option number
9	53P8493	1	Label, options
10	53P8382	4	Parts packet, washer (bracket 250-sheet frame retention mounting)
11	53P8617	4	Parts packet, screw (bracket 250-sheet frame retention mounting)
12	53P8384	2	Bracket, 250-sheet frame retention
NS	53P8399	1	Cable, paper low switch
NS	53P8401	1	Cable, lower limit switch

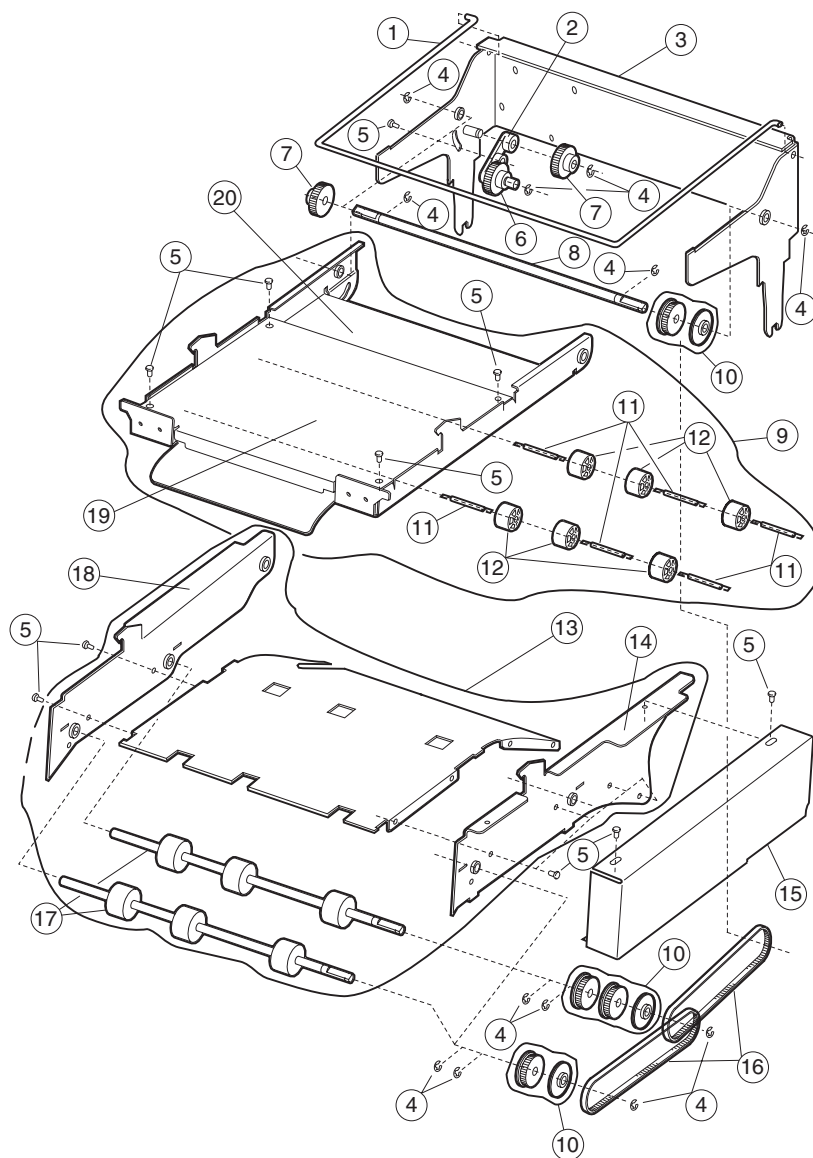
Assembly 30: Kiosk—vertical paper adapter



Assembly 30: Kiosk—vertical paper adapter

Asm-index	Part number	Units	Description
30-1	53P8608	1	Bail, support
2	53P8621	1	Arm assembly, pivot
3	53P8643	1	Mounting, frame assembly
4	53P8615	12	Parts packet, retainer
5	53P8770	16	Parts packet, screw
6	53P8627	1	Gear, idler
7	53P8626	2	Gear, idler
8	53P8427	1	Shaft, drive rear
9	53P8756	1	Tray assembly, backup roller
10	53P8472	3	Parts packet, pulley
11	53P8402	6	Spring, backup roller
12	53P8393	6	Roller, backup
13	53P8638	1	Tray assembly, drive roller
14	53P8408	1	Frame assembly, right side
15	53P8612	1	Cover, right
16	53P8607	2	Belt, 185G
17	53P8489	1	Guide, paper exit
18	53P8406	2	Shaft assembly, drive roller
19	53P8421	1	Frame assembly, left side
20	53P8404	1	Cover, backup tray
21	53P8386	1	Tray, backup roller

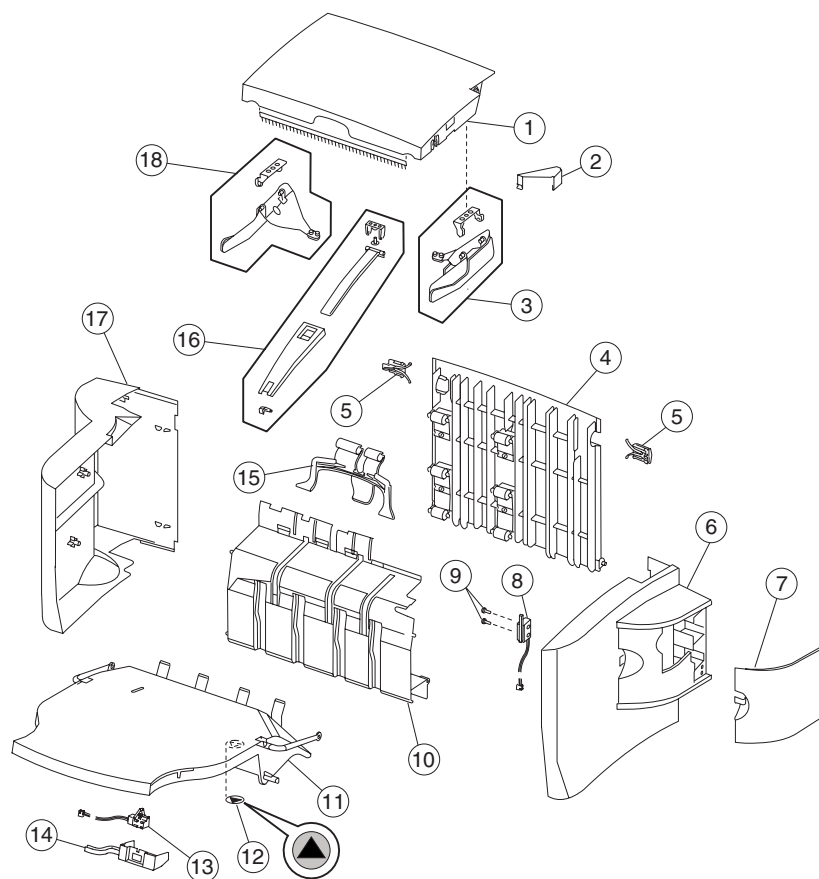
Assembly 31: Kiosk—horizontal paper adapter



Assembly 31: Kiosk—horizontal paper adapter

Asm-index	Part number	Units	Description
31-1	53P8608	1	Bail, support
2	53P8621	1	Arm assembly, pivot
3	53P8643	1	Mounting, frame assembly
5	53P8770	15	Parts packet, screw
6	53P8627	1	Gear, idler
7	53P8626	2	Gear, idler
8	53P8427	1	Shaft, drive rear
9	53P8756	1	Tray assembly, backup roller
10	53P8472	3	Parts packet, pulley
11	53P8402	6	Spring, backup roller
12	53P8393	6	Roller, backup
13	53P8642	1	Tray assembly, drive roller
14	53P8620	1	Frame assembly, right side
15	53P8612	1	Cover, right
16	53P8607	2	Belt, 185G
17	53P8406	2	Shaft assembly, drive roller
18	53P8618	1	Frame assembly, left side
19	53P8404	1	Cover, backup tray
20	53P8386	1	Tray, backup roller

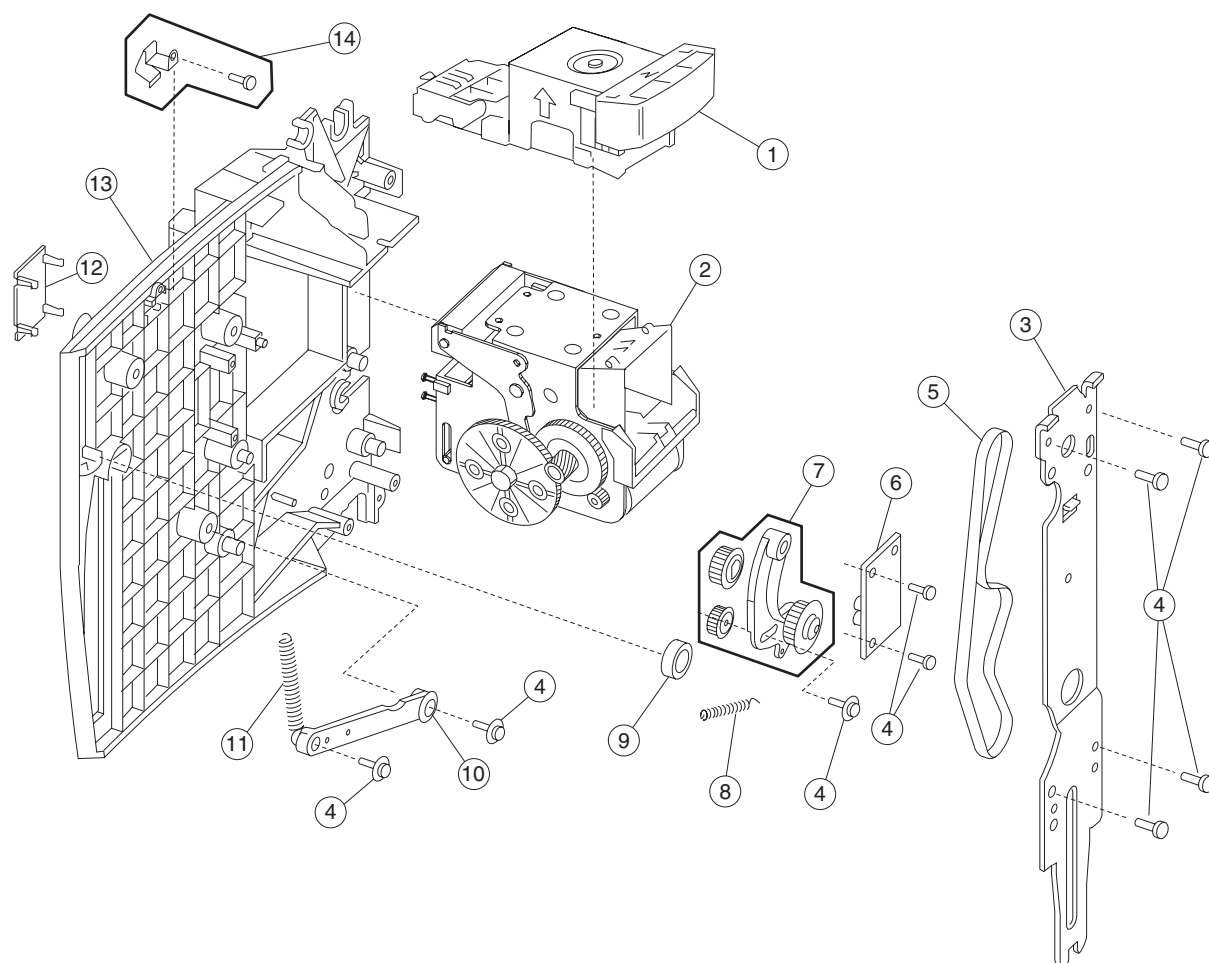
Assembly 32: StapleSmart finisher I



Assembly 32: StapleSmart finisher 1

Asm-index	Part number	Units	Description
32-1	53P8679	1	Cover, top assembly
2	53P8684	1	Clip, brush ground
3	53P8680	1	Top cover bail/plate, right side
4	53P8686	1	Door, rear access
5	53P8588	2	Latch, rear access door
6	53P8675	1	Cover, right base assembly
7	53P8677	1	Cover, stapler access
8	53P8676	1	Switch, stapler access door assembly
9		2	Screws, switch (stapled access) mounting 53P8683 Parts Packet
10	53P8692	1	Cover, accumulator assembly
11	53P8693	1	Tray, output assembly
11	53P8713	1	Tray, output
12	53P8493	1	Label, tray options
13	53P8694	1	Sensor, stapler bin empty
14	53P8712	1	Sensor cover, stapler bin empty
15	53P8685	1	Bail, center stapler
16	53P8682	1	Kit, stacking bail
17	53P8674	1	Cover, left base assembly
18	53P8681	1	Top cover bail/plate, left side

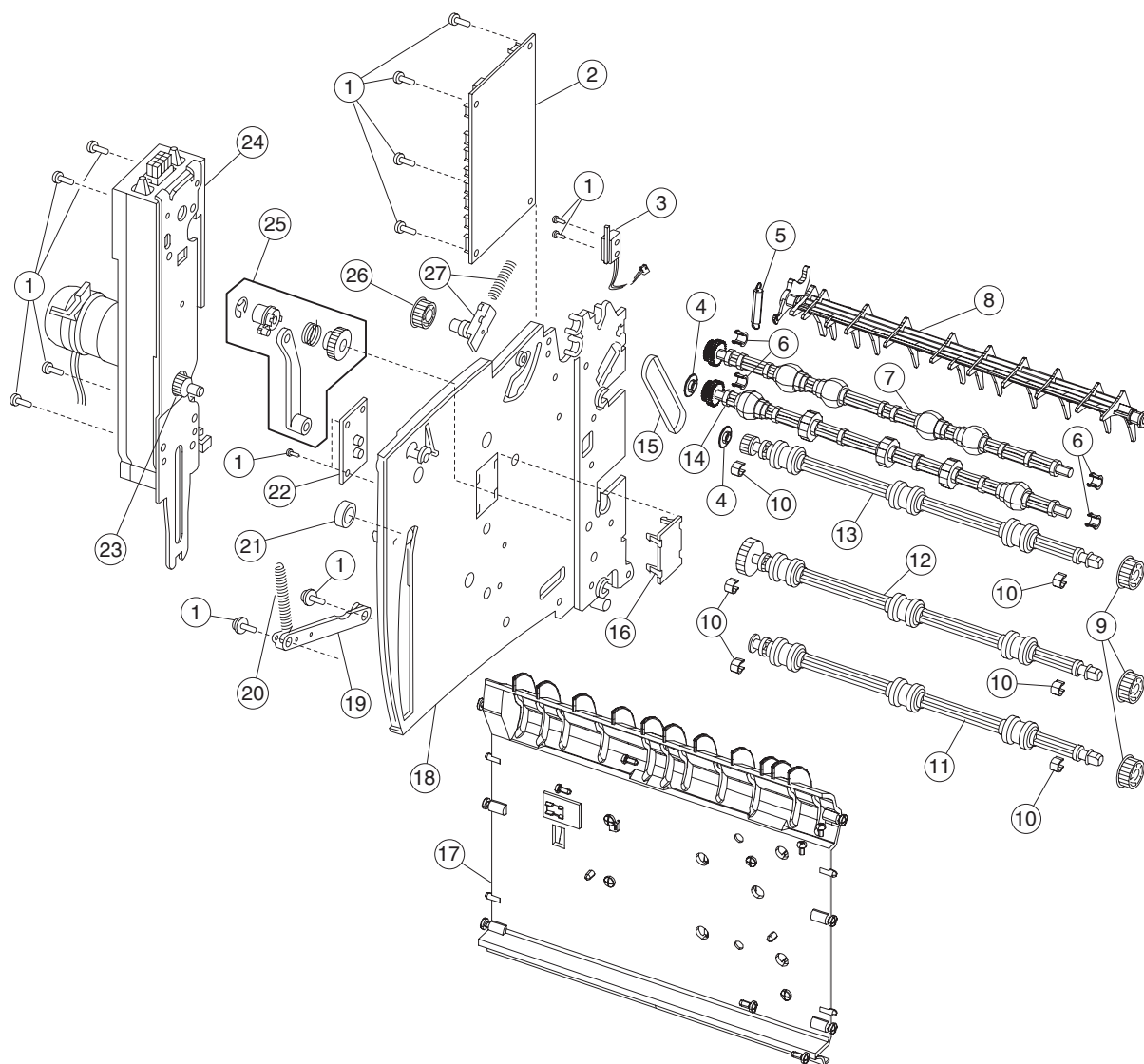
Assembly 33: StapleSmart finisher 2



Assembly 33: StapleSmart finisher 2

Asm-index	Part number	Units	Description
33-1	53P8862	1	Stapler cartridge holder 321-C
2	53P8699	1	Stapler assembly
3	53P8725	1	Bracket, attach
4	53P8617	1	Parts packet, screws
5	53P8607	1	Belt, 185G
6	53P8715	1	Card assembly, right stapler bin level
7	53P8297	1	Arm assembly, belt idler
8	53P8716	1	Spring, swing arm
9	53P8719	1	Bumper, output tray
10	53P8706	1	Bar, upper output tray
11	53P8696	2	Spring, output tray
12	53P8714	2	Cover, optical sensor
13	53P8701	1	Frame assembly, right
14	53P8726	1	Clip, static ground

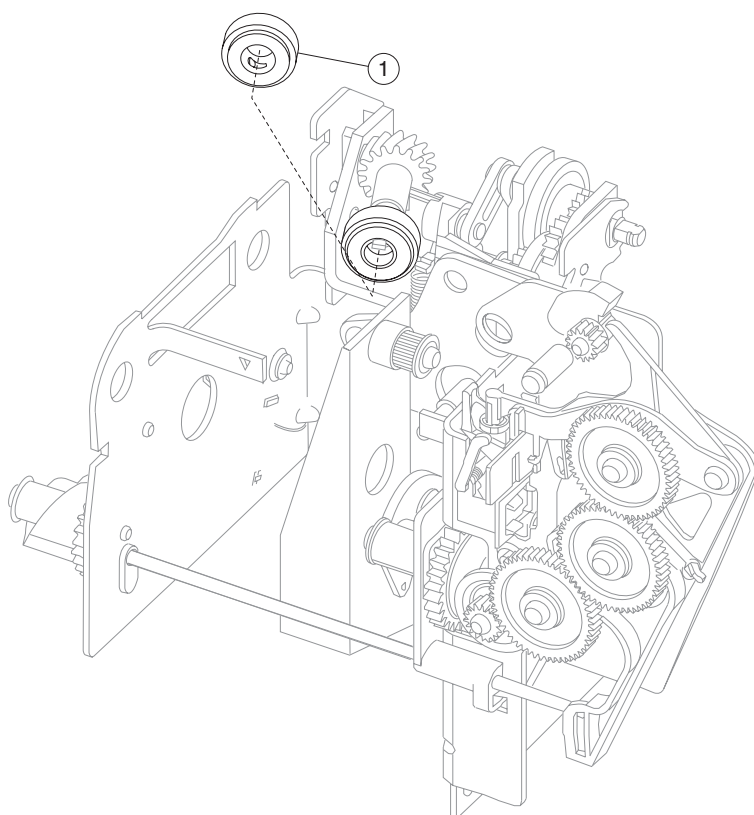
Assembly 34: StapleSmart finisher 3



Assembly 34: StapleSmart finisher 3

Asm-index	Part number	Units	Description
34-1	53P8617	1	Parts packet, screws
2	56P1747	1	System card assembly, stapler option
3	53P8704	1	Switch assembly, top cover open
4	53P8710	1	Flange, pulley
5	53P8222	1	Spring, upper diverter
6	53P8711	4	Bearing, redrive
7	53P8690	1	Shaft assembly, upper exit
8	53P8689	1	Deflector, upper
9	53P8298	1	Pulley, drive
10		1	Bearings, 500-sheet stacker PP 53P8359
11	53P8300	1	Shaft assembly, lower
12	53P8411	1	Shaft assembly, 40T middle stacker
13	53P8688	1	Shaft assembly, upper drive
14	53P8691	1	Shaft assembly, lower exit
15	53P8709	1	Belt, FHT 86T
16	53P8714	1	Cover, optical sensor
17	53P8702	1	Guide, inner bias
18	53P8700	1	Frame assembly, left
19	53P8706	1	Bar, upper output tray
20	53P8696	1	Spring, output tray
21	53P8719	1	Bumper, output tray
22	53P8720	1	Card assembly, left stapler bin level
23	53P8536	1	Gear, drive
24	53P8687	1	Motor assembly, drive
25	53P8721	1	Clutch assembly, stapler option
26	53P8718	1	Pulley, belt idler
27	53P8722	1	Bushing, tensioner CBM

Assembly 35: StapleSmart finisher 4



Assembly 35: StapleSmart finisher 4

Asm-index	Part number	Units	Description
35-1	53P8727	1	Paper alignment wheel
NS	53P8847	1	Kit, maintenance StapleSmart wheels
NS	53P8698	1	Sensor, stapler pass thru
NS	53P8703	1	Cable assembly, right stapler bin level
NS	53P8707	2	Ground cable, stapler tray bar
NS	53P8697	1	Cable, stapler
NS	53P8705	1	Cable, ground
NS	53P8678	1	Cable assembly, left stapler bin level
NS	53P8717	1	Label, pinch point
NS	53P8350	1	Tie, cable

Assembly 36: Options

Asm-index	Part number	Units	Description
NS	56P0695	1	8MB memory option
NS	56P0696	1	16MB memory option
NS	56P0697	1	32MB memory option
NS	56P0698	1	64MB memory option
NS	56P0699	1	128MB memory option
NS	56P1417	1	16MB Flash card
NS	56P1418	1	32MB Flash card
NS	56P1850	1	Card assembly, Bar Code
NS	56P2584	1	Card assembly IPDS and SCS/TNe
NS	56P1419	1	Hard disk, with adapter 20+GB
NS	56P0159	1	Adapter card, SES for SCS
NS	53P8859	1	Cable, Twinax
NS	53P8860	1	Cable, Coax
NS	53P9085	1	External serial adapter
NS	56P2182	1	Card assembly, ImageQuick
NS	56P1424	1	Optra Forms hard disk, with adapter (20+GB)
NS	53P8822	1	Tray assembly, 250-sheet special media
NS	53P8802	1	Tray, universal adjustable 250-sheet
NS	56P1100	1	Cartridge, empty shipping
NS	53P8475	1	Kit, cap/stack bails 500-sheet
NS	56P1742	1	MarkNet N2101e Ethernet 10BaseT/100Base TX internal print server
NS	56P1743	1	MarkNet N2104fl-SC fiber optic (10MB) internal
NS	56P1744	1	MarkNet N2103fx-SC fiber optic (100MB) internal
NS	56P1741	1	MarkNet N2100t token ring internal print server
NS	56P1437	1	Parallel 1284-B interface card
NS	56P1436	1	RS232C serial interface card
NS	53P8849	1	Tray assembly, UAT 400-sheet
NS	56P1851	1	PrintCryption card assembly, Infoprint 1332/Infoprint 1352
NS	56P1435	1	Serial adapter, int w/out +5 V ac

Assembly 36 (cont.): Options

Asm-index	Part number	Units	Description
NS	56P1427	1	Optra Forms 32MB Flash card
NS	56P1428	1	Optra Forms 16MB Flash card
NS	56P1429	1	Simplified Chinese font card
NS	56P1430	1	Traditional Chinese font card
NS	56P1438	1	Japanese font card
NS	56P2242	1	802.11g Wireless Print Server, external Ethernet to wireless (USA, Canada only)
NS	56P2243	1	802.11g Wireless Print Server, external Ethernet to wireless (All countries except USA and Canada)
NS	56P2744	1	802.11g Wireless Print Server, external USB to wireless (USA, Canada only)
NS	56P2745	1	802.11g Wireless Print Server, external USB to wireless (All countries except USA and Canada)

Assembly 37: Miscellaneous

Asm-index	Part number	Units	Description
NS	53P8481	1	Parts packet, screw
NS	53P8361	1	Parts packet, contact kit
NS	53P8249	1	Parts packet, retainers
NS	53P8250	1	Parts packet, springs paper feed
NS	53P8251	1	Parts packet, duplex option fan mounting
NS	53P8268	1	Parts packet, duplex option cam follower assembly
NS	53P8252	1	Parts packet, envelope option gears
NS	53P8314	1	Parts packet, retainers envelope option
NS	53P8319	1	Parts packet, screw duplex
NS	53P8359	1	Parts packet, bearings, 500-sheet stacker
NS	53P8360	1	Parts packet, cable ties (10 each)
NS	53P8380	1	Parts packet, screw high-capacity feeder
NS	53P8381	1	Parts packet, nuts high-capacity feeder
NS	53P8382	1	Parts packet, washers high-capacity feeder
NS	53P8219	1	Parts kit, multipurpose tray
NS	53P8348	1	Parts kit, charge roll link asm, left side
NS	53P8349	1	Parts kit, charge roll link asm, right side
NS	53P8777	2	Printer stand caster, non-locking
NS	53P8778	2	Printer stand caster, locking
NS	53P8779	1	Printer stand grommet, wire
NS	53P8780	2	Printer stand lock, cam
NS	53P8781	1	Printer stand storage shelf
NS	53P8782	1	Printer stand door assembly, cabinet
NS	53P8783	1	Printer stand filler, rear top piece
NS	53P8784	1	Printer stand table assembly, large
NS	53P8785	1	Printer stand table assembly, small
NS	53P8472	1	Parts packet, pulley
NS	53P8770	1	Parts packet, screw-kiosk
NS	53P8774	1	Grease packet, Nyogel 744
NS	NA	1	Relocation kit, 250/250-sheet printer
NS	NA	1	Relocation kit, 500/250-sheet printer

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