



# **Lexmark MS81x, MS71x printer**

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## **Machine Type 4063-2xx, -4x0, -63x, -83x**

### **Service Manual**

- **Start diagnostics**
- **Maintenance**
- **Safety and notices**
- **Trademarks**
- **Index**

January 08, 2013

[www.lexmark.com](http://www.lexmark.com)

## Product information

Product name:

Lexmark MS71x and MS81x Series

Machine type:

4063

Model(s):

2xx, 4x0, 63x, 83x

## Edition notice

January 08, 2013

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# Notices and safety information

## Laser notices

### Laser notice

The printer is certified in the U.S. to conform to the requirements of DHHS 21 CFR, Chapter I, 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 10 milliwatt gallium arsenide laser operating in the wavelength of 787-800 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-Hinweis

Der Drucker wurde in den USA zertifiziert und entspricht den DHHS-Vorschriften 21 CFR, Kapitel I, Unterkapitel J für Laserprodukte der Klasse I (1); andernorts ist er als Laserprodukt der Klasse I zertifiziert, das den IEC 60825-1-Anforderungen entspricht.

Laserprodukte der Klasse I werden nicht als gefährlich eingestuft. Der Drucker enthält im Inneren einen Laser der Klasse IIIb (3b), und zwar einen 10-Milliwatt-Gallium-Arsenid-Laser, der im Wellenlängenbereich von 787 bis 800 Nanometern arbeitet. Das Lasersystem und der Drucker sind so konstruiert, dass unter normalen Betriebsbedingungen, bei der Wartung durch den Benutzer oder bei den vorgeschriebenen Wartungsbedingungen Menschen keiner Laserstrahlung ausgesetzt sind, die die Werte für Klasse I überschreitet.

### Avis relatif à l'utilisation du laser

L'imprimante est certifiée conforme aux exigences de la réglementation des Etats-Unis relative aux produits laser (DHHS 21 CFR, Chapter I, Subchapter J for Class I (1)). Pour les autres pays, elle est certifiée conforme aux exigences des normes IEC 60825-1 relatives aux produits laser de classe I.

Les produits laser de Classe I ne sont pas considérés comme dangereux. L'imprimante contient un laser de classe IIIb (3b), laser arséniure de gallium 10 milliwatts opérant sur une longueur d'onde de l'ordre de 787 à 800 nanomètres. Le système laser ainsi que l'imprimante ont été conçus de manière à ce que personne ne soit exposé à des rayonnements laser dépassant le niveau de classe I dans le cadre d'un fonctionnement normal, de l'entretien par l'utilisateur ou de la maintenance.

### Avvertenze sui prodotti laser

La stampante è certificata negli Stati Uniti come stampante conforme ai requisiti DHHS 21 CFR, Capitolo I, Sottocapitolo J per i prodotti laser di Classe I (1), mentre in altri paesi è certificata come prodotto laser di Classe I conforme ai requisiti IEC 60825-1.

I prodotti laser di Classe I non sono considerati pericolosi. La stampante contiene un laser di Classe IIIb (3b), che è nominalmente un laser ad arseniuro di gallio a 10milliwatt funzionante a una lunghezza d'onda di 787-800 nanometri. Il sistema laser e la stampante sono stati progettati in modo da impedire l'esposizione a radiazioni laser superiori al livello previsto dalla Classe I durante le normali operazioni di stampa, manutenzione o assistenza.

## Aviso de láser

Esta impresora se ha certificado en EE. UU. de conformidad con los requisitos de DHHS 21 CFR, capítulo I, subcapítulo J, para los productos láser de Clase I (1), y en otros países está certificada como un producto láser de Clase I de acuerdo con los requisitos de IEC 60825-1.

Los productos láser de Clase I no se consideran peligrosos. La impresora contiene un láser interno de Clase IIIb (3b) que nominalmente es un láser de arseniuro de galio de 10 milivatios que funciona en una longitud de onda de 787-800 nanómetros. El sistema láser y la impresora se han diseñado para que ningún individuo acceda nunca a las radiaciones láser por encima del nivel de Clase I durante su uso normal, ni en tareas de mantenimiento o intervenciones de servicio técnico prescritas.

## Aviso sobre laser

A impressora foi certificada nos EUA por estar em conformidade com os requisitos do DHHS 21 CFR, capítulo I, subcapítulo J, para produtos a laser de Classe I (1) e, nos demais países, foi certificada como produto a laser de Classe I em conformidade com os requisitos da IEC 60825-1.

Os produtos a laser de Classe I não são considerados perigosos. A impressora contém, internamente, um laser de Classe IIIb (3b) que é um laser de arsenieto de gálio de 10 miliwatts operando no comprimento de onda de 787-800 nanômetros. O sistema do laser e a impressora foram projetados para que jamais haja acesso humano à radiação do laser acima do nível da Classe I durante a operação normal ou a manutenção pelo usuário ou sob as condições de manutenção prescritas.

## Laserinformatie

Deze printer is in de Verenigde Staten gecertificeerd als een product dat voldoet aan de vereisten van DHHS 21 CFR, hoofdstuk 1, paragraaf J voor laserproducten van klasse I (1). Elders is de printer gecertificeerd als een laserproduct van klasse I dat voldoet aan de vereisten van IEC 60825-1.

Laserproducten van klasse I worden geacht geen gevaar op te leveren. De printer bevat intern een laser van klasse IIIb (3b), een galliumarsenide laser met een nominaal vermogen van 10 milliwatt en een golflengtebereik van 787-800 nanometer. Het lasersysteem en de printer zijn zodanig ontworpen dat gebruikers nooit blootstaan aan laserstraling die hoger is dan het toegestane niveau voor klasse I-apparaten, tijdens normaal gebruik, onderhoudswerkzaamheden door de gebruiker of voorgeschreven servicewerkzaamheden.

## Lasererklæring

Denne printer er certificeret i USA i henhold til kravene i DHHS 21 CFR, afsnit I, underafsnit J, for Klasse I-laserprodukter (1) og certificeret andetsteds som et Klasse I-laserprodukt i henhold til kravene i IEC 60825-1.

Klasse I-laserprodukter anses ikke for at være farlige. Printerens indeholder internt en klasse IIIb (3b)-laser, der nominelt er en 10 milliwatt galliumarsenid-laser, som fungerer i bølglængdeområdet 787-800 nanometer. Lasersystemet og printerens er udviklet på en sådan måde, at der ikke er en direkte laserstråling, der overskrider Klasse I-niveauet under normal brug, brugers vedligeholdelse eller de foreskrevne servicebetingelser.

## Laserilmoitus

Tämä tulostin on sertifioitu Yhdysvalloissa DHHS 21 CFR, Chapter I, Subchapter J -standardin mukaiseksi luokan I (1) -lasertuotteeksi ja muualla IEC 60825-1 -standardin mukaiseksi luokan I lasertuotteeksi.

Luokan I lasertuotteita ei pidetä haitallisina. Tulostimen sisällä on luokan IIIb (3b) laser, joka on nimellistehoaltaan 10 mW:n galliumarsenidilaser ja toimii 787–800 nanometrin aallonpituuksilla. Laserjärjestelmä ja tulostin ovat rakenteeltaan sellaisia, että käyttäjä ei joudu alttiiksi luokkaa 1 suuremmalle säteilylle normaalin käytön, ylläpidon tai huollon aikana.

## Lasermeddelande

Skrivaren är certifierad i USA enligt kraven i DHHS 21 CFR, avsnitt I, underavsnitt J för laserprodukter av klass I (1) och i andra länder är den certifierad som en laserprodukt av klass I som uppfyller kraven i IEC 60825-1.

Laserprodukter av klass I anses inte vara skadliga. Skrivaren innehåller en klass IIIb (3b)-laser, vilket är en 10 mW galliumarseniklaser som arbetar inom en våglängd på 787–800 nm. Lasersystemet och skrivaren är utformade så att människor aldrig utsätts för laserstrålning över klass I-nivå under normala förhållanden vid användning, underhåll eller service.

## Lasermerknad

Skriveren er sertifisert i USA for samsvar med kravene i DHHS 21 CFR, kapittel I, underkapittel J for laserprodukter av klasse I (1), og er andre steder sertifisert som et laserprodukt av klasse I som samsvarer med kravene i IEC 60825-1.

Laserprodukter av klasse I anses ikke som helseskadelige. Skriveren inneholder en intern laser av klasse IIIb (3b) som nominelt er en 10 milliwatt galliumarsenid-laser, og som opererer i bølgelengder på 787-800 nanometer. Lasersystemet og skriveren er utformet slik at mennesker ikke utsettes for laserstråling utover nivået i klasse I under normal drift, vedlikehold eller foreskrevet service.

## Avís sobre el làser

Als EUA, la impressora està certificada de conformitat amb els requisits del capítol I, apartat J del CFR 21 del Departament de Salut i Serveis Humans per a productes làser de classe I (1) i a la resta de països està certificada com a producte làser de classe I d'acord amb els requisits de la norma IEC 60825-1.

Els productes làser de classe I no es consideren perillosos. A l'interior de la impressora hi ha un làser de classe IIIb (3b) que nominalment es un arsenur de galió de 10 mil·liwatts que funciona a una longitud d'ona de 787-800 nanòmetres. El sistema làser y la impressora s'han dissenyat amb l'objectiu d'impedir l'accés humà de la radiació làser superior al nivell de classe I durant un funcionament normal, el manteniment per part de l'usuari o les condicions de servei prescrites.

## レーザーに関する通知

本機は、米国においてクラス I (1) レーザー製品に対する DHHS 21 CFR、Chapter I、Subchapter J の要件に準拠し、その他の国では IEC 60825-1 の要件に準拠するクラス I レーザー製品として認可されています。

クラス I レーザー製品は、危険性がないとみなされています。本機には、クラス IIIb (3b) レーザーが内蔵されています。これは、787 ~ 800 ナノメートルの波長で動作する定格 7 ミリワットのガリウムヒ素レーザーです。レーザーシステムとプリンタは、通常の操作、ユーザーによるメンテナンス、または所定のサービス条件の下で、ユーザーがクラス I レベルを超えるレーザー放射に絶対にさらされないように設計されています。

## 레이저 관련 공지

이 프린터는 미국에서 DHHS 21 CFR, Chapter I, Subchapter J 의 요구 사항을 준수하는 클래스 I(1) 레이저 제품으로 승인되었으며 이외 지역에서 IEC 60825-1 의 요구 사항을 준수하는 클래스 I 레이저 제품으로 승인되었습니다.

Class I 레이저 제품은 위험한 제품으로 간주되지 않습니다. 프린터에는 655-675 나노미터의 파장 영역에서 작동하는 공칭 7 밀리와트 갈륨 비소 레이저인 클래스 IIIb(3b) 레이저가 내부에 포함되어 있습니다. 레이저 시스템과 프린터는 정상적인 작동, 사용자 유지 관리 또는 사전 설명된 서비스 조건에는 사람에게 클래스 I 수준 이상의 레이저 방사가 노출되지 않도록 설계되었습니다.

## 激光注意事项

本打印机在美国认证合乎 DHHS 21 CFR Chapter I, Subchapter J 对分类 I (1) 激光产品的标准, 而在其他地区则被认证是合乎 IEC 60825-1 的分类 I 激光产品。

一般认为分类 I 激光产品不具有危险性。本打印机内部含有分类 IIIb (3b) 的激光, 在操作过程中会产生额定 7 毫瓦的砷化镓激光, 其波长范围在 787-800nm 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。

## 雷射聲明

本印表機係經過美國核可, 符合 DHHS 21 CFR, Chapter I, Subchapter J 規定的 I (1) 級雷射產品激光注意事項; 在美國以外的地區, 為符合 IEC 60825-1 規定的 I 級雷射產品。

根據 I 級雷射產品的規定, 這類產品不會對人體造成傷害。本機所採用之 IIIb (3b) 級雷射只會產生 7 百萬分之一瓦特 (milliwatt)、波長 787 至 800 億分之一米 (nanometer) 的鎵砷放射線 (gallium arsenide laser)。使用者只要以正確的方法操作及維護保養, 並依照先前所述之維修方式進行修護, 此印表機與其雷射系統絕不會產生 I 級以上的放射線, 而對人體造成傷害。

## Safety

### 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—POTENTIAL INJURY

The lithium battery in this product is not intended to be replaced. There is a danger of explosion if a lithium battery is incorrectly replaced. Do not recharge, disassemble, or incinerate a lithium battery. Discard used lithium batteries according to the manufacturer's instructions and local regulations.

### 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.

**AVERTISSEMENT—RISQUE DE BLESSURE**

La batterie lithium de ce produit n'est pas destinée à être remplacée. Il existe un risque d'explosion si une batterie lithium est placée de façon incorrecte. Ne rechargez pas, ne démontez pas et n'incinerez pas une batterie lithium. Mettez les batteries lithium usagées au rebut selon les instructions du fabricant et les réglementations locales.

**Norme 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 — PERICOLO DI LESIONI**

La batteria al litio presente del prodotto non deve essere sostituita. In caso di sostituzione errata della batteria al litio, potrebbe verificarsi un'esplosione. Non ricaricare, smontare o bruciare batterie al litio. Smaltire le batterie al litio usate seguendo le istruzioni del produttore e le norme locali.

**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.

**VORSICHT - VERLETZUNGSGEFAHR**

Die Lithiumbatterie in diesem Produkt darf nicht ausgetauscht werden. Wird eine Lithiumbatterie nicht ordnungsgemäß ausgetauscht, besteht Explosionsgefahr. Lithiumbatterien dürfen auf keinen Fall wieder aufgeladen, auseinander genommen oder verbrannt werden. Befolgen Sie zum Entsorgen verbrauchter Lithiumbatterien die Anweisungen des Herstellers und die örtlichen Bestimmungen.

**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: POSIBLES DAÑOS PERSONALES**

La batería de litio de este producto no debe reemplazarse. Existe riesgo de explosión si se sustituye incorrectamente una batería de litio. No recargue, desmonte ni incinere una batería de litio. Deseche las baterías de litio según las instrucciones del fabricante y las normativas locales.

## 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.



### ATENÇÃO — RISCO DE FERIMENTO

A bateria de lítio neste produto não deve ser substituída. Existe o risco de explosão se uma bateria de lítio for substituída incorretamente. Não recarregue, desmonte ou incinere uma bateria de lítio. Descarte as baterias de lítio usadas de acordo com as instruções do fabricante e regulamentos locais.

## 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.



### ATENCIÓ

La bateria de liti d'aquest producte no ha estat dissenyada perquè es substitueixi. Hi ha perill d'explosió si no es substitueix correctament la bateria de liti. No recarregueu, desmunteu o incinereu una bateria de liti. Desfeu-vos de les bateries de liti usades d'acord amb les instruccions del fabricant i les regulacions locals.

## 안전 사항

- 본 제품은 원래 설계 및 특정 구성에 대한 테스트 결과로 안정 성이 입증된 것입니다. 따라서 무허가 교체 부품을 사용하는 경우에는 제조업체에서 안전에 대한 책임을 지지 않습니다.
- 본 제품에 관한 유지 보수 설명서는 전문 서비스 기술자 용으로 작성된 것이므로, 비 전문가가 사용할 수 없습니다.
- 본 제품을 해체하거나 정비할 경우, 전기 전 인 충 경 을 받거나 상처를 입을 위험이 커집니다. 전문 서비스 기술자는 이 사실을 숙지하고, 필요한 예방 조치를 취하도록 하십시오.



### 주의—부상 위험

이 제품에 들어 있는 리튬 배터리는 교체할 수 없습니다. 리튬 배터리를 잘못 교체하면 폭발할 위험이 있습니다. 리튬 배터리를 재충전하거나, 분해하거나, 태우지 마십시오. 제조업체의 지침과 지역 규정에 따라 다 쓴 리튬 배터리를 폐기하십시오.

## 安全信息

- 本产品的安全性以原来设计和特定产品的测试结果和认证为基础。万一使用未经许可的替换部件，制造商不对安全性负责。
- 本产品的维护信息仅供专业服务人员使用，并不打算证其他人使用。
- 本产品在拆卸、维修时，遭受电击或人员受伤的危险性会增高，专业服务人员对这点必须有所了触，并采取必要的预防措施。

**当心—可能的伤害：**

本产品中的**锂电池不可更换**。如果不正确**更换锂电池**，可能会有**爆炸危险**。不要再**充电**、**拆解**或**焚烧锂电池**。**丢弃旧的锂电池时应按照制造商的指导及当地法规进行处理。**



# Preface

This manual contains maintenance procedures for service personnel.

It is divided into the following chapters:

- **General information** contains a general description of the printer and the maintenance approach used to repair it. Special tools and test equipment, as well as general environmental and safety instructions, are discussed.
- **Diagnostic information** contains diagnostic aids you can use to isolate failing field replaceable units. These diagnostic aids include error code tables, symptom tables, and service checks.
- **Diagnostic aids** contains descriptions of the printer interface, the user and service menus, and the basic theory of printer operation.
- **Repair** information provides instructions for making printer adjustments and removing and installing FRUs.
- **Connector locations** uses illustrations to identify the connector locations.
- **Preventive maintenance** contains the lubrication specifications and recommendations to prevent problems.
- **Parts catalog** contains illustrations and part numbers for individual FRUs.
- Appendix A—Contains service tips and detailed information about the product, including the basic theory of printer operation.
- Appendix B—Contains representative print samples.

## Service manual conventions

**Note:** A *note* provides additional information.

**Warning—Potential Damage:** A *warning* identifies something that might damage the product hardware or software.

This service manual uses several different types of caution statements:



**CAUTION—POTENTIAL INJURY:** A *caution* identifies something that might cause the service technician harm.



**CAUTION—SHOCK HAZARD:** This type of caution indicates a danger from hazardous voltage in the area of the product where you are working. Unplug the product before you start working, or use caution if the product must receive power to perform the task.



**CAUTION—HOT SURFACE:** This type of caution indicates a hot surface.



**CAUTION—TIPPING HAZARD:** This type of caution indicates a tipping hazard.



# General information

- **“Printer configurations” on page 28**
- **“Paper guidelines” on page 30**
- **“Data security notice” on page 33**
- **“Tools required for service” on page 34**

The Lexmark™M5150, M5160, M5170, MS710, MS711, MS810, MS811, and MS812 printers are network-capable laser printers that print monochrome print jobs. All information in this service manual pertains to all models unless explicitly noted.

The printers are available in the following models:

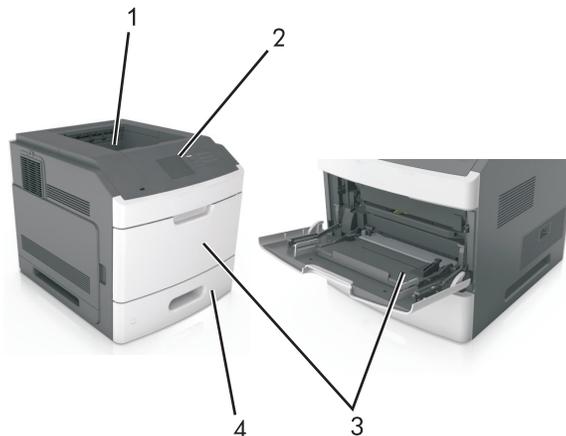
Model	Configuration	Machine type / model number
M5150	Network, 4.3" e-Task touch screen, duplex printer	4063-29E
M5160	Network, 4.3" e-Task touch screen, duplex printer	4063-49E
M5170	Network, 7" e-Task touch screen, duplex printer	4063-69E
MS710dn	Network, duplex printer	4063-832
MS711dn	Network, duplex printer	4063-835
MS810n	Network	4063-210
MS810dn	Network, duplex printer	4063-230
MS810de	Network, 4.3" e-Task touch screen, duplex printer	4063-23E
MS811n	Network	4063-410
MS811dn	Network, duplex printer	4063-430
MS812dn	Network, duplex printer	4063-630
MS812de	Network, 7" e-Task touch screen, duplex printer	4063-63E

The diagnostic information in this manual leads you to the correct field replaceable unit (FRU) or part. Use the error code charts, symptom index, and service checks to determine the symptom and then repair the failure. After you complete the repair, perform tests as needed to verify the repair.

To begin diagnosing a problem, go to **“Diagnostic information” on page 35**. See **“Repair information” on page 255** for information about removing and reinstalling parts. See **“Parts catalog” on page 540** to help identify parts.

## Printer configurations

### Basic model



1	Standard bin
2	Printer control panel
3	Multipurpose feeder
4	Standard 250- or 550-sheet tray (Tray 1)

### Fully configured model

**CAUTION—TIPPING HAZARD:** Floor-mounted configurations require additional furniture for stability. You must use either a printer stand or printer base if you are using multiple input options. If you purchased a printer with a similar configuration, then you may need additional furniture. For more information, see [www.lexmark.com/multifunctionprinters](http://www.lexmark.com/multifunctionprinters).

The following illustration shows the maximum number of optional finishers and trays that are supported by the printer. For more information on other configurations, visit [www.lexmark.com/multifunctionprinters](http://www.lexmark.com/multifunctionprinters).



	Hardware option	Alternative hardware option
1	Staple finisher	<ul style="list-style-type: none"> <li>• Output expander</li> <li>• 4-bin mailbox</li> </ul>
2	4-bin mailbox	<ul style="list-style-type: none"> <li>• Output expander</li> <li>• High-capacity output expander</li> <li>• Staple finisher</li> </ul>
3	Caster base	None

	Hardware option	Alternative hardware option
4	2100-sheet tray	None
5	550-sheet tray	250-sheet tray
6	250-sheet tray	550-sheet tray
7	4-bin mailbox	Output expander
8	Output expander	4-bin mailbox

In a configuration with two or more optional finishers:

- The staple finisher must always be on top.
- The high-capacity output expander must always be at the bottom.
- The output expander is the only finisher that can be placed on top of the high-capacity output expander.
- The output expander and mailbox may be installed in any order.

When using optional trays:

- Always use a caster base when the printer is configured with a 2100-sheet tray.
- The 2100-sheet tray must always be at the bottom of a configuration.
- A maximum of four optional trays may be configured with the printer.
- The optional 250- and 550-sheet trays may be installed in any order.

## Paper guidelines

### Paper characteristics

The following paper characteristics affect print quality and reliability. Consider these factors before printing on them:

#### Weight

The printer trays and multipurpose feeder can automatically feed paper weights between 60–176 g/m<sup>2</sup> (16–47-lb) grain long paper. The 2100-sheet tray can automatically feed paper weights up to 60–135 g/m<sup>2</sup> (16–36-lb) grain long paper. Paper lighter than 60 g/m<sup>2</sup> (16 lb) might not be stiff enough to feed properly, and may cause jams.

**Note:** Two-sided printing is supported for 60–176 g/m<sup>2</sup> (16–47-lb) paper.

#### Curl

Curl is the tendency for paper to curl at its edges. Excessive curl can cause paper feeding problems. Curl can occur after the paper passes through the printer, where it is exposed to high temperatures. Storing paper unwrapped in hot, humid, cold, or dry conditions, even in the trays, can contribute to paper curling prior to printing and can cause feeding problems.

#### Smoothness

Paper smoothness directly affects print quality. If paper is too rough, toner cannot fuse to it properly. If paper is too smooth, it can cause paper feeding or print quality issues. Always use paper between 100 and 300 Sheffield points; smoothness between 150 and 250 Sheffield points produces the best print quality.

## Moisture content

The amount of moisture in paper affects both print quality and the ability of the printer to feed the paper correctly. Leave paper in its original wrapper until it is time to use it. This limits the exposure of paper to moisture changes that can degrade its performance.

Store paper in its original wrapper in the same environment as the printer for 24 to 48 hours before printing. Extend the time several days if the storage or transportation environment is very different from the printer environment. Thick paper may also require a longer conditioning period.

## Grain direction

Grain refers to the alignment of the paper fibers in a sheet of paper. Grain is either *grain long*, running the length of the paper, or *grain short*, running the width of the paper.

For 60–176 g/m<sup>2</sup> (16–47-lb) paper, grain long paper is recommended.

## Fiber content

Most high-quality xerographic paper is made from 100% chemically treated pulped wood. This content provides the paper with a high degree of stability, resulting in fewer paper feeding problems and better print quality. Paper containing fibers such as cotton can negatively affect paper handling.

## Selecting paper

Using the appropriate paper prevents jams and helps ensure trouble-free printing.

To help avoid paper jams and poor print quality:

- *Always* use new, undamaged paper.
- Before loading paper, know the recommended printable side of the paper. This information is usually indicated on the paper package.
- *Do not* use paper that has been cut or trimmed by hand.
- *Do not* mix paper sizes, types, or weights in the same tray; mixing results in jams.
- *Do not* use coated papers unless they are specifically designed for electrophotographic printing.

## Selecting preprinted forms and letterhead

- Use grain long for 60–90-g/m<sup>2</sup> (16–24-lb) paper.
- Use only forms and letterhead printed using an offset lithographic or engraved printing process.
- Avoid paper with rough or heavily textured surfaces.
- Use inks that are not affected by the resin in toner. Inks that are oxidation-set or oil-based generally meet these requirements; latex inks might not.
- Print samples on preprinted forms and letterheads considered for use before buying large quantities. This determines whether or not the ink in the preprinted form or letterhead will affect print quality.
- When in doubt, contact your paper supplier.

## Using recycled paper and other office papers

As an environmentally conscientious company, Lexmark supports the use of recycled paper produced specifically for use in laser (electrophotographic) printers.

While no blanket statement can be made that all recycled paper will feed well, Lexmark consistently tests papers that represent recycled cut size copier papers available on the global market. This scientific testing is conducted with rigor and discipline. Many factors are taken into consideration both separately and as a whole, including the following:

- Amount of post-consumer waste (Lexmark tests up to 100% post-consumer waste content.)
- Temperature and humidity conditions (Testing chambers simulate climates from all over the world.)
- Moisture content (Business papers should have low moisture: 4–5%.)
- Bending resistance and proper stiffness means optimum feeding through the printer.
- Thickness (impacts how much can be loaded into a tray)
- Surface roughness (measured in Sheffield units, impacts print clarity and how well toner fuses to the paper)
- Surface friction (determines how easily sheets can be separated)
- Grain and formation (impacts curling, which also influences the mechanics of how the paper behaves as it moves through the printer)
- Brightness and texture (look and feel)

Recycled papers are better than ever; however, the amount of recycled content in a paper affects the degree of control over foreign matter. And while recycled papers are one good path to printing in an environmentally responsible manner, they are not perfect. The energy required to de-ink and deal with additives such as colorants and “glue” often generates more carbon emissions than does normal paper production. However, using recycled papers enables better resource management overall.

Lexmark concerns itself with the responsible use of paper in general based on life cycle assessments of its products. To gain a better understanding of the impact of printers on the environment, the company commissioned a number of life cycle assessments and found that paper was identified as the primary contributor (up to 80%) of carbon emissions caused throughout the entire life of a device (from design to end-of-life). This is due to the energy-intensive manufacturing processes required to make paper.

Thus, Lexmark seeks to educate customers and partners on minimizing the impact of paper. Using recycled paper is one way. Eliminating excessive and unnecessary paper consumption is another. Lexmark is well-equipped to help customers minimize printing and copying waste. In addition, the company encourages purchasing paper from suppliers who demonstrate their commitment to sustainable forestry practices.

Lexmark does not endorse specific suppliers, although a converter’s product list for special applications is maintained. However, the following paper choice guidelines will help alleviate the environmental impact of printing:

- 1** Minimize paper consumption.
- 2** Be selective about the origin of wood fiber. Buy from suppliers who carry certifications such as the Forestry Stewardship Council (FSC) or The Program for the Endorsement of Forest Certification (PEFC). These certifications guarantee that the paper manufacturer uses wood pulp from forestry operators that employ environmentally and socially responsible forest management and restoration practices.
- 3** Choose the most appropriate paper for printing needs: normal 75 or 80 g/m<sup>2</sup> certified paper, lower weight paper, or recycled paper.

### Unacceptable paper examples

Test results indicate that the following paper types are at risk for use with laser printers:

- Chemically treated papers used to make copies without carbon paper, also known as *carbonless papers*
- Preprinted papers with chemicals that may contaminate the printer
- Preprinted papers that can be affected by the temperature in the printer fuser

- Preprinted papers that require a registration (the precise location on the page) greater than  $\pm 2.3$  mm ( $\pm 0.9$  in.), such as optical character recognition (OCR) forms. In some cases, registration can be adjusted with a software application to successfully print on these forms.)
- Coated papers (erasable bond), synthetic papers, thermal papers
- Rough-edged, rough or heavily textured surface papers or curled papers
- Recycled papers that fail EN12281:2002 (European testing)
- Paper weighing less than 60 g/m<sup>2</sup> (16 lb)
- Multiple part forms or documents

For more information about Lexmark, visit [www.lexmark.com](http://www.lexmark.com). General sustainability-related information can be found at the **Environmental Sustainability** link.

## Storing paper

Use these paper storage guidelines to help avoid jams and uneven print quality:

- For best results, store paper where the temperature is 21°C (70°F) and the relative humidity is 40 percent. Most label manufacturers recommend printing in a temperature range of 18–24°C (65–75°F) with relative humidity between 40 and 60 percent.
- Store paper in cartons, on a pallet or shelf, rather than on the floor.
- Store individual packages on a flat surface.
- Do not store anything on top of individual paper packages.
- Take paper out of the carton or wrapper only when you are ready to load it in the printer. The carton and wrapper help keep the paper clean, dry, and flat.

## Data security notice

This printer contains various types of memory that are capable of storing device and network settings, information from embedded solutions, and user data:

- Volatile memory—This device utilizes standard Random Access Memory (RAM) to temporarily buffer user data during simple print and copy jobs.
- Non-volatile memory—This device may utilize two forms of non-volatile memory: EEPROM and NAND (flash memory). Both types are used to store the operating system, device settings, network information, scanner and bookmark settings, and embedded solutions.
- Hard disk memory—Some devices have a hard disk drive installed. The printer hard disk is designed for device-specific functionality and cannot be used for long term storage for data that is not print-related. The hard disk does not provide the capability for users to extract information, create folders, create disk or network file shares, or FTP information directly from a client device. The hard disk can retain buffered user data from complex scan, print, copy, and fax jobs, as well as form data, and font data.

To erase volatile memory, turn off the printer.

To erase non-volatile memory, see **“Erase All Information on Disk” on page 248**.

To erase the printer hard disk, see **“Wipe All Settings” on page 249**.

The printer control panel and RIP/controller board contain NVRAM. The old part must be returned to your next level support.

## Tools required for service

- Flat-blade screwdrivers, various sizes
- #1 Phillips screwdriver, magnetic
- #2 Phillips screwdriver, magnetic
- #2 Phillips screwdriver, magnetic short-blade
- 7/32 inch (5.5 mm) open-end wrench
- 7.0 mm nut driver
- Needlenose pliers
- Diagonal side cutters
- Spring hook
- Feeler gauges
- Analog or digital multimeter
- Parallel wrap plug 1319128
- Twinax/serial debug cable 1381963
- Coax/serial debug cable 1381964
- Flash light (optional)
- 3 mm hex wrench
- 5.5 mm hex wrench

## Diagnostic information

- [“Troubleshooting overview” on page 35](#)
- [“Power-on Reset \(POR\) sequence” on page 36](#)
- [“Using Safe Mode” on page 37](#)
- [“Fixing print quality issues” on page 37](#)
- [“Paper jams” on page 47](#)
- [“User attendance messages \(0-99.99\)” on page 94](#)
- [“Printer hardware errors \(100-199.99\)” on page 101](#)
- [“Firmware and/or system electronics errors \(900-999.99\)” on page 113](#)
- [“Input/output option hardware errors” on page 123](#)
- [“Input/output option paper jam errors” on page 143](#)
- [“Symptoms” on page 194](#)

 **CAUTION—SHOCK HAZARD:** If you are accessing the controller board or installing optional hardware or memory devices sometime after setting up the printer, then turn the printer off, and unplug the power cord from the electrical outlet before continuing. If you have any other devices attached to the printer, then turn them off as well, and unplug any cables going into the printer.

 **CAUTION—POTENTIAL INJURY:** The printer weight is greater than 18 kg (40 lb) and requires two or more trained personnel to lift it safely.

 **CAUTION—HOT SURFACE:** The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

## Troubleshooting overview

- [“Performing the initial troubleshooting check” on page 35](#)
- [“Error code number key” on page 36](#)

### Performing the initial troubleshooting check

Before you start the troubleshooting procedures, perform the following checks:

- With the power cord unplugged from the wall outlet, check that the cord is free from breakage, short-circuits, disconnected wires, or incorrect connections.
- Make sure the printer is properly grounded. Check the power cord ground terminal.
- Make sure the power supply line voltage is within 10% of the rated line voltage.
- Make sure the machine is securely installed on a level surface in a well-ventilated area.
- Make sure the room temperature is between 16 and 32°C (60 and 90°F) and that the relative humidity is between 20 and 80%.
- Avoid sites generating ammonia gas, high temperature, high humidity (near water faucets, kettles, humidifiers), cold spaces, near open flames, and dusty areas.
- Avoid sites exposed to direct sunlight.

- Make sure the paper is the recommended paper for this printer.
- Make a trial print with paper from a newly opened package, and check the result.

## Error code number key

The following chart identifies the error code numbers that should be consistent across product lines.

Range	Description	Go to page
0–99	User attendance messages	See <b>“User attendance messages (0-99.99)”</b> on page 94.
100–199	Printer hardware errors	See <b>“Printer hardware errors (100-199.99)”</b> on page 101.
200–299	Printer and input option paper jams	See <b>“Paper jams”</b> on page 47.
300–399	Input/output option hardware errors	See <b>“Input/output option hardware errors”</b> on page 123.
400–499 400–403 431–432 450–458 461	Output option paper jams HTU paper jam Mailbox (x = bin number) paper jam Finisher/Stacker paper jam Hole Punch paper jam	See <b>“Input/output option paper jam errors”</b> on page 143.
900–999	Firmware and/or system electronics errors	See <b>“Firmware and/or system electronics errors (900-999.99)”</b> on page 113.

## Power-on Reset (POR) sequence

When you turn the printer on, it performs a Power-on Reset (POR) sequence.

Check for correct POR functioning of the base printer by observing the following:

- 1 The LED turns on.
- 2 The main fan turns on.
- 3 The operator panel turns on.
- 4 The fuser heater turns on. The fuser takes longer to warm up from a cold start than a warm start.
- 5 The operator panel LED starts blinking.
- 6 A splash screen appears on the display. The following errors or messages may appear:
  - Close Door or Insert Cartridge appear if the front access door is open or the print cartridge is missing
  - Cartridge errors, such as Defective Cartridge or Missing Cartridge
- 7 Ready appears on the display.
- 8 The main drive motor turns on.
- 9 The EP drive assembly drives the developer shaft located in the print cartridge.

10 The exit rollers turn.

11 The printer may begin calibration.

## Using Safe Mode

Safe Mode lets the printer continue to operate in a special limited mode in which it attempts to continue offering as much functionality as possible despite known issues. See **“Safe Mode print behavior” on page 37**.

**Warning—Potential Damage:** Safe Mode is intended as a short-term workaround and should be used only in the case of a non-critical error when a print job must be completed before service can be arranged to repair the printer. The printer must be returned to standard operating mode before diagnostics can be run or full-function printing can continue.

You can enter Safe Mode in one of the following ways:

- Enter Safe Mode from the Configuration menu, and then POR the printer. See **“Safe Mode” on page 245**.
- For 2.4” display models, press the **Stop** and **Back** keys, and then POR the printer.
- For 4.3” and 7” display touchscreen models, press the **6** and **7** keys, and then POR the printer.
- For LED models, you must contact the next level of technical support for assistance.

Return the printer to standard operating mode to service the printer and return to full-function printing.

### Safe Mode print behavior

The following table outlines the behavior for this printer model while in Safe Mode:

Safe Mode engine features	Engine behavior	Control panel behavior
Simplex printing only	Reports that duplex printing is disabled.	Duplex print option is not selectable.
Ignore duplex sensor		
Ignore standard bin full sensor	Standard bin full messages are not reported.	Standard bin full messages will not occur.
Print at narrow media operating point	Pages are printed slower.	N/A
Ignore all input options	Reports that only Tray 1 is installed.	Only Tray 1 and the MPF are selectable.
Ignore all output options	Does not any report installed finishing options.	No finishing options are selectable.
Ignore rear door sensor	Rear door open messages are not reported.	Rear door open messages do not occur.
Reduce print speed	Pages are printed slower.	N/A
Reduce time to first print	Slower time to first print.	N/A

## Fixing print quality issues

- **“Initial print quality check” on page 38**
- **“Gray background on prints” on page 39**
- **“Printer is printing blank pages” on page 40**
- **“Printer is printing solid black pages” on page 41**

- **“Repeating defects” on page 41**
- **“Shadow images appear on prints” on page 42**
- **“Skewed print” on page 43**
- **“Streaked horizontal lines appear on prints” on page 44**
- **“Streaked vertical lines appear on prints” on page 46**
- **“Toner rubs off” on page 47**

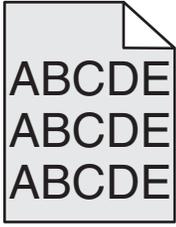
The symptoms described in this chapter might require replacement of one or more CRUs (Customer Replaceable Units) designated as supplies or maintenance items, which are the responsibility of the customer. With the customer's permission, you might need to install a developer (toner) cartridge.

## Initial print quality check

Before troubleshooting specific print problems, complete the following initial print quality check:

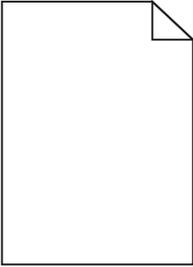
- 1** Print a menu settings page, and then check the life status of all supplies. Any supplies that are low should be replaced. Be sure to keep the original menu page to restore the customer's custom settings if needed.
- 2** On the menu page, make sure the following settings are at the default level:
  - Print Resolution: Set to 600 dpi (print quality problems should be checked at different resolution settings).
  - Toner Darkness: Set to 8 (default).
  - Check the paper type, texture and weight settings against the paper that is loaded in the printer.
- 3** Inspect the transfer roller for damage. Replace, if damaged.
- 4** Inspect the print cartridge and imaging unit for damage. Replace, if damaged.
- 5** If paper other than 20 lb plain letter/A4 paper is being used, load 20 lb plain letter/A4 and print the Print Quality pages to see if the problem remains. Use Tray 1 to test print quality problems.
- 6** Print the Print Quality Pages, and then look for variations in the print from what is expected.
- 7** Check to ensure the correct printer driver for the installed software is being used. An incorrect printer driver for the installed software can cause problems. Incorrect characters could print, and the copy may not fit the page correctly.
- 8** Measure all voltages from the connector to the printer ground.

## Gray background on prints



Actions	Yes	No
<p><b>Step 1</b> Ensure the toner cartridge has sufficient toner.</p> <p>Does the cartridge have sufficient toner?</p>	Go to step 2.	Replace the toner cartridge.
<p><b>Step 2</b> Remove any contamination from the CTLS contacts, located on the toner level/imaging unit high voltage contact. Perform a print test.</p> <p>Does the problem remain?</p>	Go to step 3.	Problem is solved.
<p><b>Step 3</b> Check the CTLS, located on the toner level/imaging unit high voltage contact, for damage.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the toner level/imaging unit high voltage contact.
<p><b>Step 4</b> Check the transfer roller for surface contamination or excessive wear.</p> <p>Is it free of contamination and wear?</p>	Go to step 5.	Replace the transfer roller.
<p><b>Step 5</b> Check the transfer roller left contact spring, located on the transfer roller left arm, for damage.</p> <p>Is it free of damage?</p>	Contact the next highest level of support.	Replace the transfer roller left arm. See <b>“Transfer roller left arm with cable removal” on page 313.</b>

## Printer is printing blank pages



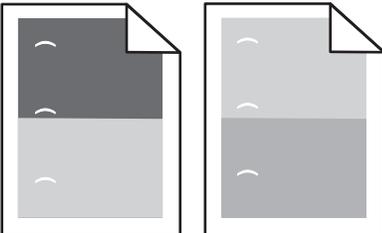
Actions	Yes	No
<p><b>Step 1</b> Check the toner cartridge level.</p> <p>Is the toner level low?</p>	<p>Replace the toner cartridge.</p>	<p>Go to step 2.</p>
<p><b>Step 2</b> Check the imaging unit for wear or damage.</p> <p>Is it free of wear or damage?</p>	<p>Go to step 3.</p>	<p>Replace the imaging unit.</p>
<p><b>Step 3</b> Check the transfer roller for surface contamination or excessive wear.</p> <p>Is it free of contamination and wear?</p>	<p>Go to step 4.</p>	<p>Replace the transfer roller.</p>
<p><b>Step 4</b> Check the transfer roller left contact spring, located on the transfer roller left arm, for damage.</p> <p>Is it free of damage?</p>	<p>Go to step 5.</p>	<p>Replace the transfer roller left arm with cable. See <b>“Transfer roller left arm with cable removal” on page 313.</b></p>
<p><b>Step 5</b> Reseat the cables on the HVPS.</p> <p>Does the problem remain?</p>	<p>Replace the HVPS. See <b>“HVPS removal” on page 365.</b></p>	<p>The problem is solved.</p>
<p><b>Step 6</b> Reseat the cables J101 (video) and "MIR MTR" on the controller board.</p> <p>Does the problem remain?</p>	<p>Replace the laser printhead. See <b>“Laser printhead removal” on page 291.</b></p>	<p>Contact the next level of support.</p>

## Printer is printing solid black pages



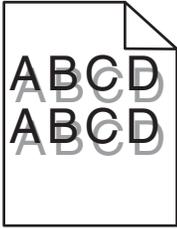
Actions	Yes	No
<b>Step 1</b> Check the imaging unit for damage.  Is it free of damage?	Go to step 2.	Replace the imaging unit.
<b>Step 2</b> Remove any contamination from the imaging unit contacts.  Does the problem remain?	Go to step 3.	Problem is solved.
<b>Step 3</b> Check the cables on the HVPS.  Are the above cables properly connected?	Replace the HVPS. See <b>“HVPS removal” on page 365.</b>	Reconnect the cables.

## Repeating defects



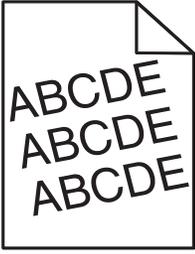
Actions	Yes	No
<b>Step 1</b> Measure the distance between defects. Is the distance between defects equal to any of the following? <ul style="list-style-type: none"> <li>• 3.81 in. (96.8 mm)</li> <li>• 1.88 in. (47.8 mm)</li> <li>• 1.12 in. (28.5 mm)</li> </ul>	Replace the imaging unit.	Go to step 2.
<b>Step 2</b> Is the distance between defects equal to 3.71 in. (94.25 mm) or 3.75 in. (95.2 mm)?	Replace the fuser.	Contact the next highest level of support.

## Shadow images appear on prints



Actions	Yes	No
<p><b>Step 1</b> Does the shadow image appear every two pages?</p>	Go to step 2.	Go to step 3.
<p><b>Step 2</b> Check the upper redrive for wear or damage.  Is it free of wear or damage?</p>	Go to step 3.	Replace the upper redrive. See <b>“Upper redrive removal” on page 331.</b>
<p><b>Step 3</b> Check the transfer roller for surface contamination or excessive wear.  Is it free of contamination and wear?</p>	Go to step 4.	Replace the transfer roller. See <b>“Transfer roller removal” on page 317.</b>
<p><b>Step 4</b> Check the following fuser components for wear or damage:</p> <ul style="list-style-type: none"> <li>• Gears</li> <li>• Exit rollers</li> <li>• Heat belt or hot roller</li> </ul> <p>Are they free of damage?</p>	Go to step 5.	Replace the fuser. See <b>“Fuser removal” on page 322.</b>
<p><b>Step 5</b> Reseat the connections on the LVPS.  Does the problem remain?</p>	Replace the LVPS. See <b>“LVPS removal” on page 366.</b>	Problem solved.

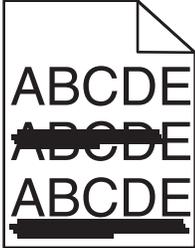
## Skewed print



Actions	Yes	No
<p><b>Step 1</b></p> <p><b>a</b> Perform a print test: Diagnostics menu &gt; PRINT TESTS &gt; Tray 1</p> <p><b>b</b> Adjust the margins if necessary: Diagnostics menu &gt; REGISTRATION</p> <p>Does the error remain?</p>	Go to step 2.	The problem is solved.
<p><b>Step 2</b></p> <p><b>a</b> Check the media source.</p> <p><b>b</b> If the media is from tray 1, go to step 3. If the media is from the MPF, go to step 5.</p>		
<p><b>Step 3</b></p> <p>Make sure the pick roller tires are free of debris. Check for wear or damage.</p> <p>Are they free of wear or damage?</p>	Go to step 4.	Replace the pick roller. See <b>“Pick roller assembly removal” on page 342.</b>
<p><b>Step 4</b></p> <p>Check the lift plate on the media tray for damage.</p> <p>Is it free of damage?</p>	Go to step 11.	Replace the media tray.
<p><b>Step 5</b></p> <p>Make sure the MPF pick roller and separator pad are free of debris. Check for wear or damage.</p> <p>Are they free of wear or damage?</p>	Go to step 6.	Replace the MPF pick roller/separator pad. See <b>“MPF pick roller removal” on page 305.</b>
<p><b>Step 6</b></p> <p>Perform the media skew adjustment. See <b>“Media aligner roller adjustment” on page 272.</b></p> <p>Does the problem remain?</p>	Contact the next level of support.	Problem solved.

Actions	Yes	No
<p><b>Step 7</b> Make sure the input roller/deskew assembly is free of debris. Check for wear or damage.</p> <p>Are they free of wear or damage?</p>	Problem solved.	Replace the printer.

## Streaked horizontal lines appear on prints

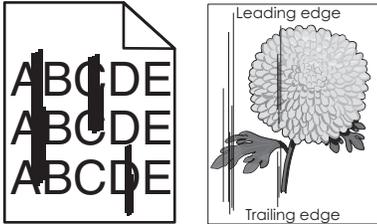


Actions	Yes	No
<p><b>Step 1</b> Select another tray or feeder and then resend the print job. Specify the paper tray before sending the print job.</p> <ul style="list-style-type: none"> <li>• For Windows users, specify the type and weight from Print Properties.</li> <li>• For Macintosh users, specify the type and weight from the Print dialog.</li> </ul> <p>Does the problem remain?</p>	Go to step 2.	The problem is solved.
<p><b>Step 2</b> From the Paper menu on the printer control panel, check the paper type and paper weight settings.</p> <p>Do the paper type and paper weight settings match the paper in the tray?</p>	Go to step 3.	Change the paper type and weight settings to match the paper in the tray.
<p><b>Step 3</b> Load paper from a fresh package. Paper absorbs moisture due to high humidity. Store paper in its original wrapper until you use it.</p> <p>Does the problem remain?</p>	Go to step 4.	The problem is solved.

Actions	Yes	No
<p><b>Step 4</b> Make sure the imaging unit or toner cartridge is not damaged.</p> <p><b>a</b> Remove the print or toner cartridge. <b>Warning—Potential Damage:</b> Be careful not to touch the photoconductor drum or imaging unit. Doing so may affect the print quality of future print jobs.</p> <p><b>b</b> Reinstall the print or toner cartridge.</p> <p><b>Note:</b> For some printer models, you may need to check all printer or toner cartridges.</p> <p>Does the problem remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b> Replace the imaging unit or toner cartridge.</p> <p>Does the problem remain?</p>	Go to step 6.	The problem is solved.
<p><b>Step 6</b></p> <p><b>a</b> Check the media condition. <b>b</b> Load new, dry, recommended media. <b>c</b> Reprint the defective image.</p> <p>Does the problem remain?</p>	Go to step 7.	The problem is solved.
<p><b>Step 7</b></p> <p><b>a</b> Check the media transfer route. <b>b</b> Check the media route for contamination or obstacles.</p> <p>Are there obstacles in the route?</p>	Go to step 8.	Remove obstacles or contamination.
<p><b>Step 8</b> Check the imaging unit for proper installation.</p> <p>Is the above component properly installed?</p>	Go to step 9.	Inspect, clean, and reinstall or replace the imaging unit.
<p><b>Step 9</b> Check the transfer roller assembly for contamination and wear.</p> <p>Is the above component free of excess wear and contamination?</p>	Go to step 10.	Replace the transfer roller. See <b>“Transfer roller removal” on page 317.</b>
<p><b>Step 10</b></p> <p><b>a</b> Check the heat belt and hot roller in the fuser. <b>b</b> Remove the fuser unit assembly.</p> <p> <b>CAUTION—HOT SURFACE:</b> The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.</p> <p>Is there contamination or cracks on the heat roll and/or pressure roll?</p>	Replace the fuser. See <b>“Fuser removal” on page 322.</b>	Go to step 11.

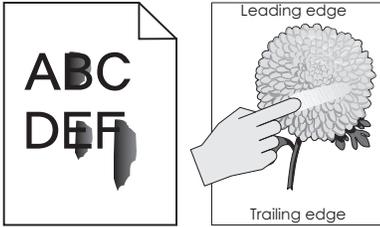
Actions	Yes	No
<p><b>Step 11</b> Perform a print test.</p> <p>Does the problem remain?</p>	<p>Contact your next level of support.</p>	<p>The problem is solved.</p>

**Streaked vertical lines appear on prints**



Actions	Yes	No
<p><b>Step 1</b> Check the transfer roll for contamination or excessive wear.</p> <p>Is it free of contamination or wear?</p>	<p>Go to step 2.</p>	<p>Replace the transfer roll.</p>
<p><b>Step 2</b> Remove the fuser, and check for damage or debris on the rollers and belts.</p> <p>Is it free of damage and debris?</p>		<p>Replace the fuser.</p>

## Toner rubs off



Actions	Yes	No
<p><b>Step 1</b></p> <p>Check if the fuser screws are tightly fastened.</p> <p>Are they tightly fastened?</p>	Go to step 2.	Reseat the fuser, and tighten the screws.
<p><b>Step 2</b></p> <p>Check the following fuser components for wear or damage:</p> <ul style="list-style-type: none"> <li>• Gears</li> <li>• Exit rollers</li> <li>• Heat belt or hot roller</li> </ul> <p>Are they free of damage?</p>	Go to step 3.	Replace the fuser. See <b>“Fuser removal” on page 322.</b>
<p><b>Step 3</b></p> <p>Check the cables on the LVPS.</p> <p>Are the connections on the above component properly connected?</p>	Contact the next level of support.	Replace the LVPS. See <b>“LVPS removal” on page 366.</b>

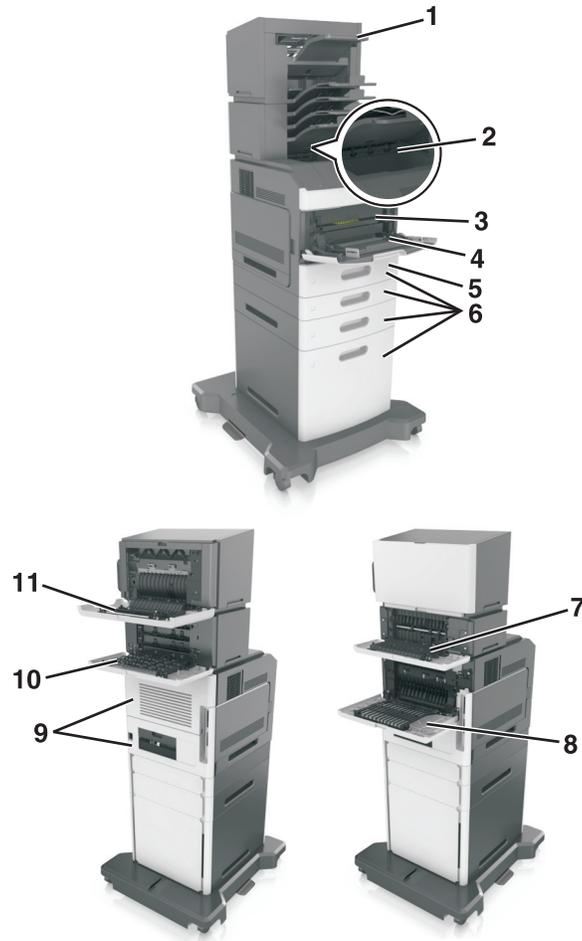
## Paper jams

- **“Understanding jam numbers and locations” on page 48**
- **“200–201 paper jams” on page 50**
- **“Sensor (input) static jam service check” on page 54**
- **“Sensor (input) early arriving jam service check” on page 54**
- **“Sensor (input) never- or late-arriving jam service check” on page 56**
- **“Sensor (input) late-leaving or did-not-clear jam service check” on page 57**
- **“Main drive motor control jam service check” on page 59**
- **“Printhead motor control jam service check” on page 59**
- **“Fuser drive motor control jam service check” on page 60**
- **“Sensor (input) miscellaneous jam 1 service check” on page 60**
- **“Sensor (input) miscellaneous jam 2 service check” on page 61**
- **“Sensor (input) miscellaneous jam 3 service check” on page 61**
- **“202 paper jams” on page 61**
- **“Sensor (fuser exit) static jam service check” on page 64**
- **“Sensor (fuser exit) late-leaving jam service check” on page 64**

- “Sensor (fuser exit) late-arriving jam service check” on page 65
- “Sensor (narrow media) late arriving jam service check” on page 66
- “Sensor (narrow media) static jam service check” on page 67
- “Sensor (fuser exit) miscellaneous jam service check” on page 68
- “Fuser ID chip control jam service check” on page 68
- “203 paper jams” on page 69
- “Upper redrive motor control jam service check” on page 69
- “230 paper jams” on page 70
- “Sensor (duplex path) static jam service check” on page 73
- “Sensor (duplex path) early arriving jam service check” on page 74
- “Sensor (duplex path) never- or late-arriving jam service check” on page 74
- “Sensor (duplex path) late leaving jam service check” on page 75
- “Duplex control jam service check” on page 76
- “Sensor (duplex path) miscellaneous jam service check” on page 77
- “Sensor (input) never-arriving jam (exiting duplex) service check” on page 78
- “235–239 paper jams” on page 78
- “24x paper jams” on page 79
- “Media feeder motor control service check” on page 81
- “Media tray 1, tray pulled jam” on page 82
- “Media feeder motor tray lift error service check” on page 83
- “Sensor (input) never-arriving jam from tray 1 service check” on page 83
- “250 paper jams” on page 84
- “Sensor (input) never-arriving jam from MPF media tray service check” on page 86
- “41y.xx paper jams” on page 88
- “43y.xx paper jams” on page 89
- “451 paper jams” on page 90
- “455–457 paper jams” on page 91

## Understanding jam numbers and locations

When a jam occurs, a message indicating the jam location appears on the display. Open doors and covers, and remove trays to access jam locations. To resolve any paper jam message, you must clear all jammed paper from the paper path.

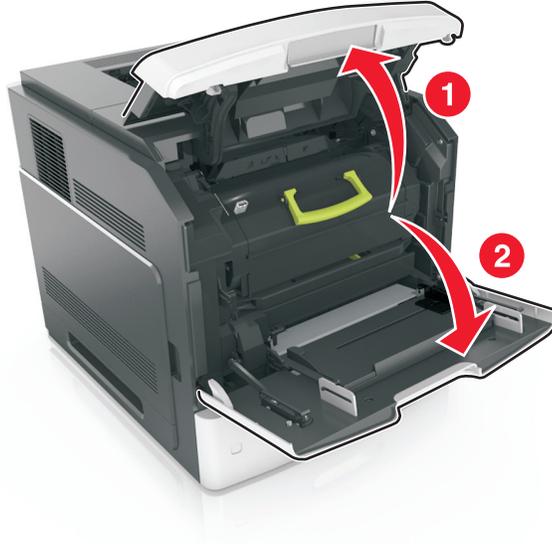


Area #	Jam location	Printer message	Go to this section
1	Staple finisher	455–457	See <b>“455–457 paper jams”</b> on page 91.
2	Standard bin	203	See <b>“203 paper jams”</b> on page 69.
3	Inside the printer	200–201	See <b>“200–201 paper jams”</b> on page 50.
4	Multipurpose feeder	250	See <b>“250 paper jams”</b> on page 84.
5	Duplex area	235–239	See <b>“235–239 paper jams”</b> on page 78.
6	Trays	24x	See <b>“24x paper jams”</b> on page 79.
7	Output expander	43y.xx	See <b>“43y.xx paper jams”</b> on page 89.
8	Upper rear door	202	See <b>“202 paper jams”</b> on page 61.
9	Upper door and rear duplex area	231–234	See <b>“230 paper jams”</b> on page 70
10	Mailbox	41y.xx	See <b>“41y.xx paper jams”</b> on page 88.
11	Staple finisher rear door	451	See <b>“451 paper jams”</b> on page 90.

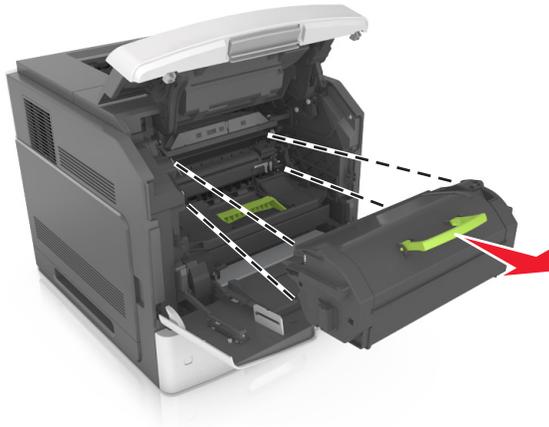
## 200–201 paper jams

**CAUTION—HOT SURFACE:** The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

- 1 Lift the front cover, and then pull down the multipurpose feeder door.

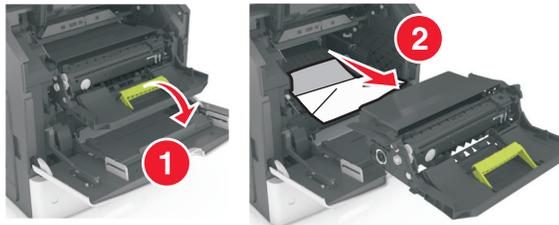


- 2 Lift the green handle, and then pull the toner cartridge out of the printer.



- 3 Place the cartridge aside.

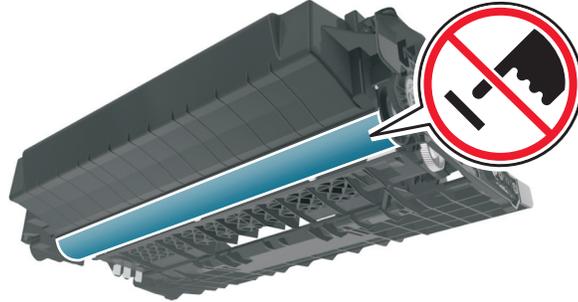
- 4 Lift the green handle, and then pull the imaging unit out of the printer.



- 5 Place the imaging unit aside on a flat, smooth surface.

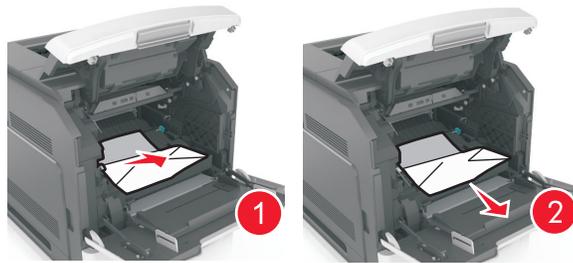
**Warning—Potential Damage:** Do not expose the imaging unit to direct light for more than 10 minutes. Extended exposure to light may cause print quality problems.

**Warning—Potential Damage:** Do not touch the photoconductor drum. Doing so may affect the print quality of future print jobs.



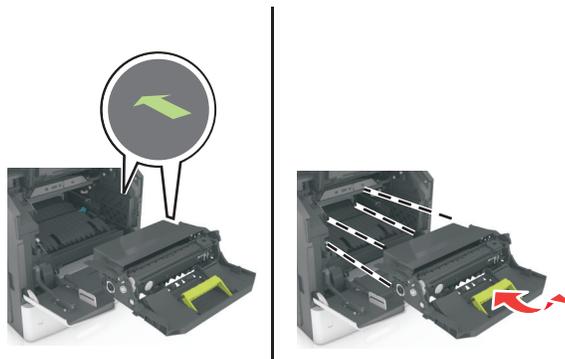
- 6 Pull the jammed paper gently to the right, and then remove it from the printer.

**Note:** Make sure all paper fragments are removed.



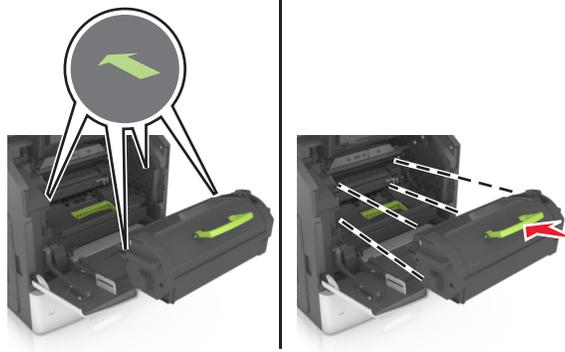
**Warning—Potential Damage:** The jammed paper may be covered with toner, which can stain garments and skin.

- 7 Install the imaging unit.



**Note:** Use the arrows on the side of the printer as a guide.

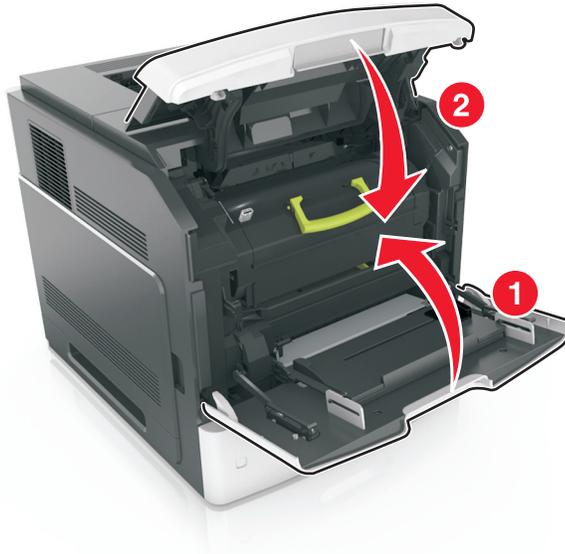
8 Insert the cartridge into the printer, and then push the green handle back into place.



**Notes:**

- Align the arrows on the guides of the toner cartridge with the arrows in the printer.
- Make sure the cartridge is fully pushed in.

9 Close the multipurpose feeder door and the front cover.



10 To clear the message and continue printing, select **Next** >  > **Clear the jam, press OK** > .

**200-201 paper jams**

Error code	Description	Action
200.01	Media remains on the sensor (input) during the warm-up sequence.	See <b>“Sensor (input) static jam service check” on page 54.</b>
200.02	Media reached the sensor (input) sooner than the specified time. The wrong config ID causes the engine to assume a 550 paper path on a 250 model.	See <b>“Sensor (input) early arriving jam service check” on page 54.</b>

Error code	Description	Action
200.03	Media is late reaching the sensor (input) within the specified time.	See <b>“Sensor (input) never- or late-arriving jam service check” on page 56.</b>
200.05	Media reached the sensor (input) but did not clear it within the specified time. (Media source = MPF tray)	See <b>“Sensor (input) late-leaving or did-not-clear jam service check” on page 57.</b>
200.07	Media reached the sensor (input) but did not clear it within the specified time.	See <b>“Sensor (input) late-leaving or did-not-clear jam service check” on page 57.</b>
200.08	Media is late reaching the sensor (input) within the specified time.	See <b>“Sensor (input) never- or late-arriving jam service check” on page 56.</b>
200.09	The proper main motor feedback to start laser servo was not received.	See <b>“Main drive motor control jam service check” on page 59.</b>
200.10	Printhead motor was not locked when page reached the sensor (input).	See <b>“Printhead motor control jam service check” on page 59.</b>
200.11	Printhead motor fell out of lock after the page reached the sensor (input).	See <b>“Printhead motor control jam service check” on page 59.</b>
200.12	Printhead was not ready for the page when the sensor (input) was reached.	See <b>“Printhead motor control jam service check” on page 59.</b>
200.13	The page at the sensor (input) is not the next page to be imaged.	See <b>“Sensor (input) miscellaneous jam 1 service check” on page 60.</b>
200.14	Proper main motor feedback to start laser servo was not received.	See <b>“Main drive motor control jam service check” on page 59.</b>
200.15	Media reached the sensor (input) but did not clear it within the specified time. (Media source = Tray 1)	See <b>“Sensor (input) late-leaving or did-not-clear jam service check” on page 57.</b>
200.16	Main drive motor stalled.	See <b>“Main drive motor control jam service check” on page 59.</b>
200.17	Fuser motor stalled.	See <b>“Fuser drive motor control jam service check” on page 60.</b>
200.19	Paper never reached the sensor (input), but it was successfully picked from the source.	See <b>“Sensor (input) miscellaneous jam 1 service check” on page 60.</b>
200.25	Media reached the sensor (input) but did not clear it within the specified time. (Media source = Tray 2)	See <b>“Sensor (input) late-leaving or did-not-clear jam service check” on page 57.</b>
200.32	Detected sensor (control panel interlock) bounce.	See <b>“Sensor (input) miscellaneous jam 2 service check” on page 61.</b>
200.33	Printhead was not ready for page when sensor (input) was reached.	See <b>“Printhead motor control jam service check” on page 59.</b>
200.34	Short media detected.	See <b>“Sensor (input) miscellaneous jam 3 service check” on page 61.</b>
200.35	Media reached the sensor (input) but did not clear it within the specified time. (Media source = Tray 3)	See <b>“Sensor (input) late-leaving or did-not-clear jam service check” on page 57.</b>

Error code	Description	Action
200.45	Media reached the sensor (input), but did not clear it within the specified time. (Media source = Tray 4)	See <b>“Sensor (input) late-leaving or did-not-clear jam service check”</b> on page 57.

### Sensor (input) static jam service check

Action	Yes	No
<p><b>Step 1</b> Check the media path for partially fed or jammed media.</p> <p>Is the media path free from partially fed or jammed media?</p>	Go to step 2.	Remove any pre-staged or jammed media.
<p><b>Step 2</b> Check the sensor (input) for proper operation.</p> <ul style="list-style-type: none"> <li>a Enter the diagnostic mode.</li> <li>b Select <b>Base sensor test</b>.</li> <li>c Observe the line item <b>input</b>.</li> </ul> <p>Does the display on the operator panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to <b>step 4</b> .	Go to step 3.
<p><b>Step 3</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	Replace the Sensor (input). See <b>“Sensor (input) removal”</b> on page 310. Go to step 4.	Reseat the connection. Go to step 4.
<p><b>Step 4</b> Perform a print test.</p> <p>Does the problem remain?</p>	Contact the next highest level of tech support.	Problem resolved.

### Sensor (input) early arriving jam service check

Action	Yes	No
<p><b>Step 1</b> Check media origination.</p> <p>Did the media originate from the MPF?</p>	Go to step 2.	Go to <b>step 5</b> .
<p><b>Step 2</b> Check the MPF pick roller.</p> <p>Is the MPF pick roller free of excess wear and contamination?</p>	Go to step 3.	Clean or replace the MPF pick roller. See <b>“MPF pick roller removal”</b> on page 305.

Action	Yes	No
<p><b>Step 3</b> Perform a MPF print test and check the MPF pick solenoid for proper operation.</p> <p>Does the above component operate properly?</p>	Go to step 4.	Replace the MPF pick solenoid.
<p><b>Step 4</b> Check the MPF feeder lift plate assembly for damage.</p> <p>Is the above component free from damage?</p>	Go to step 5.	Replace the MPF feeder lift plate. See <b>“MPF feeder lift plate removal” on page 302.</b>
<p><b>Step 5</b> Check all the media trays for proper media installation.</p> <p>Is the media properly installed in all the media trays?</p>	Go to step 6.	Remove and properly reinstall the media.
<p><b>Step 6</b> Check all of the media trays and the media path for partially fed media.</p> <p>Are the media trays and the media path free from any partially fed pieces of media?</p>	Go to step 7.	Remove any pre-staged or jammed media.
<p><b>Step 7</b> Check the sensor (input) for proper operation.</p> <ul style="list-style-type: none"> <li>a Enter the diagnostic mode.</li> <li>b Select <b>Base sensor test</b>.</li> <li>c Observe the line item <b>input</b>.</li> </ul> <p>Does the display on the operator panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to <b>step 9</b> .	Go to step 8.
<p><b>Step 8</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	Replace the Sensor (input). See <b>“Sensor (input) removal” on page 310.</b> Go to step 9.	Replace the connection. Go to step 9.
<p><b>Step 9</b> Perform a print test.</p> <p>Does the problem remain?</p>	Contact the next highest level of technical support.	Problem solved.

## Sensor (input) never- or late-arriving jam service check

Action	Yes	No
<p><b>Step 1</b> Check the media size setup and tray guides for all media trays.</p> <p>Does the media size, in use, match the size set for all media trays?</p>	Go to step 2.	Replace the media, or change the media size setup.
<p><b>Step 2</b> Check the media trays for overfilling.</p> <p>Are any of the media trays overfilled?</p>	Remove any excess new media.	Go to step 3.
<p><b>Step 3</b> Check the media condition in all media trays.</p> <p>Is any of the media in any of the media trays crumpled or damaged?</p>	Replace the damaged media.	Go to step 4.
<p><b>Step 4</b> Check media origination.</p> <p>Did the media originate from the MPF?</p>	Go to step 5.	Go to <b>step 7</b> .
<p><b>Step 5</b> Check the MPF pick roll assembly.</p> <p>Is the above component free of excess wear and contamination?</p>	Go to step 6.	Clean or replace the MPF pick roller. See <b>“MPF pick roller removal” on page 305</b> .
<p><b>Step 6</b> Perform a MPF print test, and check the MPF pick solenoid for proper operation.</p> <p>Does the above component operate properly?</p>	Go to <b>step 9</b> .	Replace the MPF pick solenoid.
<p><b>Step 7</b> Check the pick roller assembly in the media tray being picked from.</p> <p>Is the pick roller assembly free of excess wear and contamination?</p>	Go to step 8.	Clean or replace the pick roller assembly. See <b>“Pick roller assembly removal” on page 342</b> .
<p><b>Step 8</b> Check the pick roller assembly for proper installation. Fully press the pick roller assembly toward the sensor to make sure the mounting latches are properly engaging the slot in the shaft.</p> <p>Does the problem remain?</p>	Go to step 9.	The problem is solved.
<p><b>Step 9</b> Check the aligner assembly for obstructions.</p> <p>Is the above component free from obstructions?</p>	Go to step 10.	Remove obstructions.

Action	Yes	No
<p><b>Step 10</b> Check the sensor (input) for proper operation.</p> <ul style="list-style-type: none"> <li>a Enter the diagnostic mode.</li> <li>b Select <b>Base sensor test</b>.</li> <li>c Observe the line item <b>input</b>.</li> </ul> <p>Does the display on the operator panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to <b>step 12</b> .	Go to step 11.
<p><b>Step 11</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	Replace the Sensor (input). See <b>“Sensor (input) removal” on page 310</b> .	Replace the connection.
<p><b>Step 12</b> Perform a print test, and check the appropriate media feeder.</p> <p>Is the media properly picked and advanced out of the appropriate media tray?</p>	Go to step 13.	Replace the appropriate media feeder. See <b>“Media feeder removal” on page 356</b> .
<p><b>Step 13</b> Perform a print test, and check the main motor assembly.</p> <p>Is the media properly transported and able to reach the sensor (input)?</p>	Go to step 14.	Replace the main drive motor. See <b>“Main drive motor removal” on page 354</b> .
<p><b>Step 14</b> Perform a print test.</p> <p>Does the problem remain?</p>	Contact the next highest level of technical support.	Problem solved.

## Sensor (input) late-leaving or did-not-clear jam service check

Action	Yes	No
<p><b>Step 1</b> Check the media size setup and tray guides for all media trays.</p> <p>Does the media size, in use, match the size set for all media trays?</p>	Go to step 2.	Replace the media, or change the media size setup.
<p><b>Step 2</b> Check the media trays for overfilling.</p> <p>Are any of the media trays overfilled?</p>	Remove any excess new media.	Go to step 3.
<p><b>Step 3</b> Check the media condition in all media trays.</p> <p>Is any of the media in any of the media trays crumpled or damaged?</p>	Replace the damaged media.	Go to step 4.

Action	Yes	No
<p><b>Step 4</b> Check media origination.</p> <p>Did the media originate from the MPF?</p>	Go to step 5.	Go to <b>step 7</b> .
<p><b>Step 5</b> Check the MPF pick roll assembly.</p> <p>Is the above component free of excess wear and contamination?</p>	Go to step 6.	Clean or replace the MPF pick roller. See <b>“MPF pick roller removal” on page 305</b> .
<p><b>Step 6</b> Perform a MPF print test, and check the MPF pick solenoid for proper operation.</p> <p>Does the above component operate properly?</p>	Go to <b>step 9</b> .	Replace the MPF pick solenoid.
<p><b>Step 7</b> Check the pick roller in the media tray being picked from.</p> <p>Is the pick roller free of excess wear and contamination?</p>	Go to step 8.	Clean or replace the pick roller. See <b>“Pick roller assembly removal” on page 342</b> .
<p><b>Step 8</b> Check the aligner assembly for obstructions.</p> <p>Is the above component free from obstructions?</p>	Go to step 9.	Remove obstructions.
<p><b>Step 9</b> Check the sensor (input) for proper operation.</p> <ul style="list-style-type: none"> <li>a Enter the diagnostic mode.</li> <li>b Select <b>Base sensor test</b>.</li> <li>c Observe the line item <b>input</b>.</li> </ul> <p>Does the display on the control panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to <b>step 11</b> .	Go to step 10.
<p><b>Step 10</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	Replace the Sensor (input). See <b>“Sensor (input) removal” on page 310</b> .	Replace the connection.
<p><b>Step 11</b> Perform a print test, and check the appropriate media feeder.</p> <p>Is the media properly picked and advanced out of the appropriate media tray?</p>	Go to step 12.	Replace the appropriate media feeder. See <b>“Media feeder removal” on page 356</b> .
<p><b>Step 12</b> Perform a print test, and check the main motor assembly.</p> <p>Is the media properly transported and able to reach the sensor (input)?</p>	Go to <b>step 13</b> .	Replace the main drive motor. See <b>“Main drive motor removal” on page 354</b> .

Action	Yes	No
<p><b>Step 13</b> Perform a print test.</p> <p>Does the problem remain?</p>	Contact the next level of technical support.	Problem solved.

### Main drive motor control jam service check

Action	Yes	No
<p><b>Step 1</b> Check the main drive motor and the socket "TRANSPORT MTR" on the controller board for proper connection.</p> <p>Is the main drive motor properly connected?</p>	Replace the main drive motor. See " <b>Main drive motor removal</b> " on page 354.	Reseat the connection. Go to step 2.
<p><b>Step 2</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See " <b>Controller board removal</b> " on page 349.	Problem solved.

### Printhead motor control jam service check

Action	Yes	No
<p><b>Step 1</b> Ensure the cables for sockets "MIR MTR" and "VIDEO" on the controller card are properly connected and not damaged.</p> <p>Are the cables connected and undamaged?</p>	Go to step 2.	Reseat the connections. Go to step 2.
<p><b>Step 2</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the printhead. See " <b>Laser printhead removal</b> " on page 291.	Problem solved.
<p><b>Step 3</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See " <b>Controller board removal</b> " on page 349.	Problem solved.

## Fuser drive motor control jam service check

Action	Yes	No
<p><b>Step 1</b> Check the fuser drive motor and the socket “J24” on the controller board for proper connection.</p> <p>Is the main drive motor properly connected?</p>	<p>Replace the fuser drive motor. See <b>“Fuser drive motor removal” on page 351.</b></p> <p>Go to step 2.</p>	<p>Reseat the connection.</p>
<p><b>Step 2</b> Reset the machine.</p> <p>Does the error continue?</p>	<p>Replace the controller board. See <b>“Controller board removal” on page 349.</b></p>	<p>Problem solved.</p>

## Sensor (input) miscellaneous jam 1 service check

Action	Yes	No
<p><b>Step 1</b> Check the appropriate media tray sensor (pass through) in the appropriate input option for proper operation.</p> <ul style="list-style-type: none"> <li>a Enter the diagnostic mode.</li> <li>b Select <b>Input tray tests.</b></li> <li>c Select <b>Sensor test.</b></li> <li>d Select the appropriate input tray.</li> </ul> <p>Observe the line item “pass through” for the appropriate media tray.</p> <p>Does the display on the control panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	<p>Go to <b>step 3.</b></p>	<p>Go to step 2.</p>
<p><b>Step 2</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	<p>Replace the sensor (pass through). See <b>“Sensor (drawer pass through) removal” on page 417.</b></p>	<p>Reseat the connection.</p>
<p><b>Step 3</b> Perform a print test using the appropriate input tray.</p> <p>Does the error continue?</p>	<p>Replace the input option.</p>	<p>Problem solved.</p>

## Sensor (input) miscellaneous jam 2 service check

Action	Yes	No
<p><b>Step 1</b> Check the sensor (input) for proper operation.</p> <ul style="list-style-type: none"> <li>a Enter the diagnostic mode.</li> <li>b Select <b>Base sensor test</b>.</li> <li>c Observe the line item <b>control panel door interlock</b>.</li> </ul> <p>Does the display on the control panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to <b>step 3</b> .	Go to step 2.
<p><b>Step 2</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	Replace the sensor (control panel door interlock). Go to step 3.	Replace the connection. Go to step 3.
<p><b>Step 3</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See " <b>Controller board removal</b> " on <b>page 349</b> .	Problem solved.

## Sensor (input) miscellaneous jam 3 service check

Action	Yes	No
<p><b>Step 1</b> Check the media size setup and tray guides for all media trays.</p> <p>Does the media size in use match the size set for all media trays?</p>	Go to step 2.	Replace the media, or change the media size setup.
<p><b>Step 2</b> Check the media condition in all media trays.</p> <p>Is any of the media in any of the media trays crumpled or damaged?</p>	Replace the damaged media.	Go to step 3.
<p><b>Step 3</b> Reset the machine.</p> <p>Does the error continue?</p>	Contact the next level of technical support.	Problem solved.

## 202 paper jams



**CAUTION—HOT SURFACE:** The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

- 1 Pull down the rear door.



- 2 Firmly grasp the jammed paper on each side, and then gently pull it out.

**Note:** Make sure all paper fragments are removed.



- 3 Close the rear door.

- 4 To clear the message and continue printing, select **Next** >  > **Clear the jam, press OK** > .

### 200.xx paper jams

Error code	Description	Action
202.01	Media remains on the sensor (narrow media) during the warm-up sequence (MS71x)	See <b>“Sensor (narrow media) static jam service check” on page 67.</b>
202.01	Media remains on the sensor (fuser exit) during the warm-up sequence	See <b>“Sensor (fuser exit) static jam service check” on page 64.</b>

Error code	Description	Action
202.03	The media is late reaching the sensor (fuser exit) within the specified time	See <b>“Sensor (fuser exit) late-arriving jam service check” on page 65.</b>
202.05	The media reached the sensor (fuser exit) but did not clear it within the specified time	See <b>“Sensor (fuser exit) late-leaving jam service check” on page 64.</b>
202.07	The media reached the sensor (fuser exit) but did not clear it within the specified time	See <b>“Sensor (fuser exit) late-leaving jam service check” on page 64.</b>
202.13	The media is late reaching the sensor (fuser exit) within the specified time	See <b>“Sensor (fuser exit) late-arriving jam service check” on page 65.</b>
202.14	Expected banner sheet (assumed wide) not detected by narrow media sensor—possible accordion jam, unsupported narrow banner media, or missing signal	See <b>“Sensor (narrow media) late arriving jam service check” on page 66.</b>
202.16	Page at fuser nip before fuser started ramping toward desired area. Indicates code may be receiving more hall interrupts than intended	See <b>“Fuser drive motor control jam service check” on page 60.</b>
202.17	Page at fuser nip before fuser reached acceptable operating temperature. Page arrived at fuser earlier than expected, so it was probably staged	See <b>“Fuser drive motor control jam service check” on page 60.</b>
202.22	Cartridge Motor—Motor under-speed error. Motor made it to closed loop at a steady state, but then detected speed was below threshold	See <b>“Fuser drive motor control jam service check” on page 60.</b>
202.28	The sensor (fuser exit) rebounded upon being released by the trailing edge of the media	See <b>“Sensor (fuser exit) miscellaneous jam service check” on page 68.</b>
202.31	Media remains on the sensor (narrow media) during the warm-up sequence	See <b>“Sensor (narrow media) static jam service check” on page 67.</b>
202.32	The media reached the sensor (fuser exit) but did not clear it within the specified time	See <b>“Sensor (fuser exit) late-leaving jam service check” on page 64.</b>
202.33	Expected wide page not detected by sensor (narrow media), possible accordion jam or missing signal	See <b>“Sensor (narrow media) late arriving jam service check” on page 66.</b>
202.43	The media is late reaching the sensor (fuser exit) within the specified time	See <b>“Sensor (fuser exit) late-arriving jam service check” on page 65.</b>
202.45	Media remains on the sensor (fuser exit) during the warm-up sequence	See <b>“Sensor (fuser exit) static jam service check” on page 64.</b>
202.49	Fuser info chip error	See <b>“Fuser ID chip control jam service check” on page 68.</b>

## Sensor (fuser exit) static jam service check

Action	Yes	No
<p><b>Step 1</b> Check the media size setup and tray guides for all media trays.</p> <p>Does the media size, in use, match the size set for all media trays?</p>	Go to step 2.	Replace the media, or change the media size setup.
<p><b>Step 2</b> Check the media condition in all media trays.</p> <p>Is any of the media in any of the media trays crumpled or damaged?</p>	Replace the damaged media with new media.	Go to step 3.
<p><b>Step 3</b> Reset the machine.</p> <p>Does the error continue?</p>	Contact the next highest level of technical support.	Problem solved.

## Sensor (fuser exit) late-leaving jam service check

Action	Yes	No
<p><b>Step 1</b> Check the rear door.</p> <p>Is the rear door free of damage and properly closed?</p>	Go to step 2.	Close or replace the rear door. See <b>“Rear door removal” on page 285.</b>
<p><b>Step 2</b> Check the fuser unit assembly for damage and life expiration.</p> <p>Is the above component damaged or has it exceeded life?</p>	Replace the fuser. See <b>“Fuser removal” on page 322.</b>	Go to step 3.
<p><b>Step 3</b> Check the sensor (fuser output) for proper operation.</p> <ul style="list-style-type: none"> <li>a Enter the diagnostic mode.</li> <li>b Select <b>Base sensor tests</b>.</li> <li>c Observe the line item <b>fuser exit</b>.</li> </ul> <p>Does the display on the control panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to <b>step 5.</b>	Go to step 4.
<p><b>Step 4</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	Replace the fuser. See <b>“Fuser removal” on page 322.</b>	Reseat the connection.
<p><b>Step 5</b> Check the upper redrive for damage.</p> <p>Is the above component free from damage?</p>	Go to step 6.	Replace the upper redrive. See <b>“Upper redrive removal” on page 331.</b>

Action	Yes	No
<p><b>Step 6</b> Perform a print test, and check the upper redrive motor for proper operation.</p> <p>Does the above component operate properly?</p>	Go to step 7.	Replace the upper redrive motor. See <a href="#">upper-redrive-motor-removal-topic</a> .
<p><b>Step 7</b> Perform a print test.</p> <p>Does the problem remain?</p>	Contact the next highest level of technical support.	Problem solved.

## Sensor (fuser exit) late-arriving jam service check

Action	Yes	No
<p><b>Step 1</b> Check the fuser unit assembly for damage and life expiration.</p> <p>Is the above component damaged or has it exceeded life?</p>	Replace the fuser. See <a href="#">"Fuser removal" on page 322</a> .	Go to step 2.
<p><b>Step 2</b> Check the fuser unit assembly for obstructions.</p> <p>Is the above component free from obstructions?</p>	Go to step 3.	Go to step 3.
<p><b>Step 3</b> Check the sensor (fuser output) for proper operation.</p> <p><b>a</b> Enter the diagnostic mode. <b>b</b> Select <b>Base sensor tests</b>. <b>c</b> Observe the line item <b>output</b>.</p> <p>Does the display on the control panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to <b>step 5</b> .	Go to step 4.
<p><b>Step 4</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	Replace the fuser. See <a href="#">"Fuser removal" on page 322</a> .	Reseat the connection.
<p><b>Step 5</b> Check the transfer roller for damage.</p> <p>Is the above component free from damage?</p>	Go to step 6.	Replace the transfer roller. See <a href="#">"Transfer roller removal" on page 317</a> .
<p><b>Step 6</b> Check the media aligner roller for damage.</p> <p>Is the above component free from damage?</p>	Go to step 7.	Replace the media aligner roller. See <a href="#">"Media aligner roller removal" on page 297</a> .

Action	Yes	No
<p><b>Step 7</b> Perform a print test, and check the main motor assembly for proper operation.</p> <p>Is the media properly transported and able to reach the sensor (fuser exit)?</p>	Go to step 8.	Replace the upper fuser drive motor. See <b>“Fuser drive motor removal” on page 351.</b>
<p><b>Step 8</b> Perform a print test.</p> <p>Does the problem remain?</p>	Contact the next highest level of technical support.	Problem solved.

### Sensor (narrow media) late arriving jam service check

Action	Yes	No
<p><b>Step 1</b> Check the media size setup and tray guides for all media trays.</p> <p>Does the media size, in use, match the size set for all media trays?</p>	Go to step 2.	Replace the media, or change the media size setup.
<p><b>Step 2</b> Check all the media trays for proper media installation.</p> <p>Is the media properly installed in all the media trays?</p>	Go to step 3.	Remove and properly reinstall the media.
<p><b>Step 3</b> Check the rear door.</p> <p>Is the rear door free of damage and properly closed?</p>	Go to step 4.	Close or replace the rear door. See <b>“Rear door removal” on page 285.</b>
<p><b>Step 4</b> Check the fuser unit assembly for damage and life expiration.</p> <p>Is the above component damaged, or has it exceeded life?</p>	Replace the fuser. See <b>“Fuser removal” on page 322.</b>	Go to step 5.
<p><b>Step 5</b> Check the sensor (narrow media) for proper operation.</p> <p><b>a</b> Enter the diagnostic mode. <b>b</b> Select <b>Base sensor test</b>. <b>c</b> Observe the line item <b>input</b>.</p> <p>Does the display on the operator panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to <b>step 7</b> .	Go to step 6.
<p><b>Step 6</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	Replace the fuser. See <b>“Fuser removal” on page 322.</b>	Reseat the connection.

Action	Yes	No
<p><b>Step 7</b> Check the upper redrive for damage.</p> <p>Is the above component free from damage?</p>	Go to step 8.	Replace the upper redrive. See <b>“Upper redrive removal” on page 331.</b>
<p><b>Step 8</b> Perform a print test, and check the upper redrive motor for proper operation.</p> <p>Does the above component operate properly?</p>	Go to step 9.	Replace the upper redrive. See <b>“Upper redrive removal” on page 331.</b>
<p><b>Step 9</b> Perform a print test.</p> <p>Does the problem remain?</p>	Contact the next highest level of technical support.	Problem solved.

### Sensor (narrow media) static jam service check

Action	Yes	No
<p><b>Step 1</b> Check the fuser for jammed media.</p> <p>Is the fuser path free from jammed media?</p>	Go to step 2.	Remove any jammed media.
<p><b>Step 2</b> Check the sensor (fuser exit) for proper operation.</p> <p><b>a</b> Enter the diagnostic mode. <b>b</b> Select <b>Base sensor test.</b> <b>c</b> Observe the line item <b>fuser exit.</b></p> <p>Does the display on the control panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to <b>step 4.</b>	Go to step 3.
<p><b>Step 3</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	Replace the fuser. See <b>“Fuser removal” on page 322.</b> Go to step 4.	Reseat the connection. Go to step 4.
<p><b>Step 4</b> Perform a print test.</p> <p>Does the problem remain?</p>	Contact the next highest level of technical support.	Problem solved.

## Sensor (fuser exit) miscellaneous jam service check

Action	Yes	No
<p><b>Step 1</b> Check the sensor (fuser exit) for proper operation.</p> <ul style="list-style-type: none"> <li>a Enter the diagnostic mode.</li> <li>b Select <b>Base sensor test</b>.</li> <li>c Observe the line item <b>fuser exit</b>.</li> </ul> <p>Does the display on the control panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to <b>step 3</b> .	Go to step 2.
<p><b>Step 2</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	Replace the fuser. See <b>"Fuser removal" on page 322</b> .	Reseat the connection.
<p><b>Step 3</b> Perform a print test.</p> <p>Does the problem remain?</p>	Contact the next level of technical support.	Problem solved.

## Fuser ID chip control jam service check

Action	Yes	No
<p><b>Step 1</b> Ensure the fuser is properly installed.</p> <p>Is the fuser properly installed?</p>	Go to step 2.	Reinstall the fuser.
<p><b>Step 2</b> Remove the existing fuser, and install a different fuser.</p> <p>Does the error remain?</p>	Replace the fuser. See <b>"Fuser removal" on page 322</b> . Go to step 3.	Problem solved.
<p><b>Step 3</b> Ensure the cable for socket "J27" on the controller board is properly connected.</p> <p>Is the above connection properly connected?</p>	Go to step 4.	Reseat the connection.
<p><b>Step 4</b> Ensure the LVPS connections are properly connected.</p> <p>Are the above connections properly connected?</p>	Go to step 5.	Reseat the connections.
<p><b>Step 5</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the LVPS. Go to <b>"LVPS removal" on page 366</b> . Go to step 6.	Problem solved.

Action	Yes	No
<b>Step 6</b> Reset the machine.  Does the error continue?	Replace the controller board. See <b>“Controller board removal” on page 349.</b>	Problem solved.

## 203 paper jams

- 1 Firmly grasp the jammed paper on each side, and then gently pull it out.

**Note:** Make sure all paper fragments are removed.



- 2 To clear the message and continue printing, select **Next** >  > **Clear the jam, press OK** > .

## 203 paper jams

Error code	Description	Action
203.20	Took too long to ramp up upper redrive motor	See <b>“Upper redrive motor control jam service check” on page 69.</b>
203.21	Upper redrive motor stopped after successful start up	See <b>“Upper redrive motor control jam service check” on page 69.</b>
203.22	Upper redrive motor under-speed error	See <b>“Upper redrive motor control jam service check” on page 69.</b>
203.30	Upper redrive motor failed to stop the sheet at the duplex reverse point within the specified time	See <b>“Upper redrive motor control jam service check” on page 69.</b>

## Upper redrive motor control jam service check

Action	Yes	No
<b>Step 1</b> Ensure the upper redrive area is free of media jams.  Is the upper redrive area free from media jams?	Go to step 2.	Remove media jams. Go to step 2.
<b>Step 2</b> Check the upper redrive for damage.  Is the upper redrive free from damage?	Go to step 3.	Replace the upper redrive. See <b>“Upper redrive removal” on page 331.</b>

Action	Yes	No
<p><b>Step 3</b></p> <p>Ensure the upper redrive motor cable and the socket "REDRIVE" on the controller board is properly connected.</p> <p>Is the above cable properly connected?</p>	Go to step 4.	Reseat the connection.
<p><b>Step 4</b></p> <p>Reset the machine.</p> <p>Does the error continue?</p>	<p>Replace the upper redrive motor. See <a href="#">upper-redrive-motor-removal-topic</a>.</p> <p>Go to step 5.</p>	Problem solved.
<p><b>Step 5</b></p> <p>Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller card. See <a href="#">"Controller board removal" on page 349</a> .	Problem solved.

## 230 paper jams

 **CAUTION—HOT SURFACE:** The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

- 1 Pull down the rear door.



- 2 Firmly grasp the jammed paper on each side, and then gently pull it out.

**Note:** Make sure all paper fragments are removed.



3 Close the rear door.

4 Push the back of the standard tray.



5 Press down the rear duplex flap, then firmly grasp the jammed paper, and then gently pull the paper out.

**Note:** Make sure all paper fragments are removed.



6 Insert the standard tray.

7 To clear the message and continue printing, select **Next** >  > **Clear the jam, press OK** > .

### 230 paper jams

Error code	Description	Action
230.01	Media remains on the sensor (duplex path) during the warm up sequence	See <b>“Sensor (duplex path) static jam service check” on page 73.</b>
230.02	The media reached the sensor (duplex path) sooner than the specified time	See <b>“Sensor (duplex path) early arriving jam service check” on page 74.</b>
230.03	The media is late reaching the sensor (duplex path) within the specified time	See <b>“Sensor (duplex path) never- or late-arriving jam service check” on page 74.</b>
232.03	The media is late reaching the sensor (input) within the specified time when exiting the duplex	See <b>“Sensor (input) never-arriving jam (exiting duplex) service check” on page 78.</b>
230.05	The media reached the sensor (duplex path) but did not clear it within the specified time	See <b>“Sensor (duplex path) late leaving jam service check” on page 75.</b>
230.07	The media reached the sensor (duplex path) but did not clear it within the specified time	See <b>“Sensor (duplex path) late leaving jam service check” on page 75.</b>
230.20	Took too long to ramp up duplex motor	See <b>“Duplex control jam service check” on page 76.</b>
230.21	Duplex motor stopped after successful start up	See <b>“Duplex control jam service check” on page 76.</b>
230.22	Duplex motor under-speed error	See <b>“Duplex control jam service check” on page 76.</b>

Error code	Description	Action
230.28	The sensor (duplex path) rebounded upon being released by the trailing edge of the media	See <b>“Sensor (duplex path) miscellaneous jam service check” on page 77.</b>

## Sensor (duplex path) static jam service check

Action	Yes	No
<p><b>Step 1</b> Check the duplex path for jammed media.</p> <p>Is the duplex path free from jammed media?</p>	Go to step 2.	Remove any jammed media.
<p><b>Step 2</b> Check the sensor (duplex path) for proper operation.</p> <ul style="list-style-type: none"> <li>a Enter the diagnostic mode.</li> <li>b Select <b>duplex tests</b>.</li> <li>c Select <b>sensor test</b>.</li> <li>d Observe the line item <b>sensor</b>.</li> </ul> <p>Does the display on the control panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to <b>step 4</b> .	Go to step 3.
<p><b>Step 3</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	Replace the sensor (duplex path). See <b>“Sensor (duplex path) removal” on page 344.</b> Go to step 4.	Reseat the connection. Go to step 4.
<p><b>Step 4</b> Perform a print test.</p> <p>Does the problem remain?</p>	Contact the next level of technical support.	Problem solved.

## Sensor (duplex path) early arriving jam service check

Action	Yes	No
<p><b>Step 1</b> Check the duplex path for jammed media and obstructions.</p> <p>Is the duplex path free from jammed media and obstructions?</p>	Go to step 2.	Remove any jammed media or obstructions.
<p><b>Step 2</b> Check the sensor (duplex path) for proper operation.</p> <p><b>a</b> Enter the diagnostic mode. <b>b</b> Select <b>duplex tests</b>. <b>c</b> Select <b>sensor test</b>. <b>d</b> Observe the line item <b>sensor</b>.</p> <p>Does the display on the control panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to step 4.	Go to step 3.
<p><b>Step 3</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	Replace the sensor (duplex path). See <b>“Sensor (duplex path) removal” on page 344</b> .	Reseat the connection.
<p><b>Step 4</b> Perform a print test.</p> <p>Does the problem remain?</p>	Contact the next highest level of technical support.	Problem solved.

## Sensor (duplex path) never- or late-arriving jam service check

Action	Yes	No
<p><b>Step 1</b> Check the fuser access door area for media jams and obstructions.</p> <p>Is the fuser access door area free from jammed media and obstructions?</p>	Go to step 2.	Remove any jammed media or obstructions.
<p><b>Step 2</b> Check the fuser access door area and the attached diverter for damage.</p> <p>Is the fuser access door and diverter free from damage?</p>	Go to step 3.	Replace the fuser access door. See <b>“Fuser access door removal” on page 324</b> .
<p><b>Step 3</b> Check the duplex path for jammed media and obstructions.</p> <p>Is the duplex path free from jammed media and obstructions?</p>	Go to step 4.	Remove any jammed media or obstructions.

Action	Yes	No
<p><b>Step 4</b> Check the sensor (duplex path) for proper operation.</p> <ul style="list-style-type: none"> <li>a Enter the diagnostic mode.</li> <li>b Select <b>duplex tests</b>.</li> <li>c Select <b>sensor test</b>.</li> <li>d Observe the line item <b>sensor</b>.</li> </ul> <p>Does the display on the control panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to <b>step 6</b> .	Go to step 5.
<p><b>Step 5</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	Replace the sensor (duplex path). See <b>“Sensor (duplex path) removal” on page 344</b> .	Reseat the connection.
<p><b>Step 6</b> Ensure the duplex motor cable is properly connected.</p> <p>Is the above cable properly connected?</p>	Go to step 7.	Reseat the connection.
<p><b>Step 7</b> Perform a print test.</p> <p>Does the error continue?</p>	Replace the duplex motor. See <b>“Duplex motor removal” on page 320</b> .	Problem solved.
<p><b>Step 8</b> Perform a print test.</p> <p>Does the error continue?</p>	Replace the controller card. See <b>“Controller board removal” on page 349</b> .	Problem solved.

### Sensor (duplex path) late leaving jam service check

Action	Yes	No
<p><b>Step 1</b> Check the duplex path for media jams and obstructions.</p> <p>Is the duplex path free from media jams and obstructions?</p>	Go to step 2.	Remove media jams and obstructions.
<p><b>Step 2</b> Check the duplex front flap for damage.</p> <p>Is the duplex front flap free from damage?</p>	Go to step 3.	Replace the duplex front flap. See <b>“Duplex front flap removal” on page 335</b> .

Action	Yes	No
<p><b>Step 3</b> Check the sensor (duplex path) for proper operation.</p> <p><b>a</b> Enter the diagnostic mode. <b>b</b> Select <b>duplex tests</b>. <b>c</b> Select <b>sensor test</b>. <b>d</b> Observe the line item <b>sensor</b>.</p> <p>Does the display on the control panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to <b>step 5</b> .	Go to step 4.
<p><b>Step 4</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	Replace the sensor (duplex path) See <b>“Sensor (duplex path) removal” on page 344</b> .	Reseat the connection
<p><b>Step 5</b> Check the upper redrive for damage.</p> <p>Is the above component free from damage?</p>	Go to step 6.	Replace the upper redrive. See <b>“Upper redrive removal” on page 331</b> .
<p><b>Step 6</b> Perform a print test and check the upper redrive motor for proper operation.</p> <p>Does the above component operate properly?</p>	Go to step 7.	Replace the upper redrive motor. See <b>upper-redrive-motor-removal-topic</b> .
<p><b>Step 7</b> Perform a print test.</p> <p>Does the problem remain?</p>	Contact the next highest level of technical support.	Problem solved.

## Duplex control jam service check

Action	Yes	No
<p><b>Step 1</b> Check the duplex path for media jams and obstructions.</p> <p>Is the duplex path free from media jams and obstructions?</p>	Go to step 2.	Remove media jams and obstructions.
<p><b>Step 2</b> Ensure the duplex motor cable and the socket "DUPLEX MTR" on the controller board is properly connected.</p> <p>Is the above cable properly connected?</p>	Go to step 3.	Reseat the connection.

Action	Yes	No
<p><b>Step 3</b> Reset the machine.</p> <p>Does the error continue?</p>	<p>Replace the duplex motor. See <b>“Duplex motor removal” on page 320.</b></p> <p>Go to step 4.</p>	<p>Problem solved.</p>
<p><b>Step 4</b> Reset the machine.</p> <p>Does the error continue?</p>	<p>Replace the controller board. See <b>“Controller board removal” on page 349.</b></p>	<p>Problem solved.</p>

### Sensor (duplex path) miscellaneous jam service check

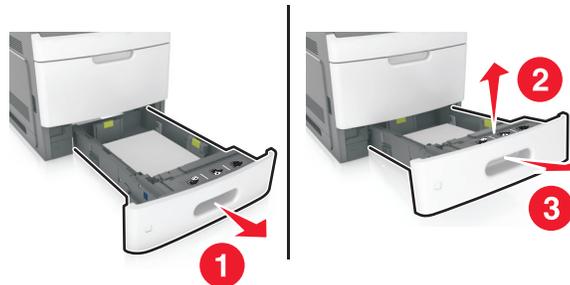
Action	Yes	No
<p><b>Step 1</b> Check the sensor (duplex path) for proper operation.</p> <ul style="list-style-type: none"> <li>a Enter the diagnostic mode.</li> <li>b Select <b>duplex tests</b>.</li> <li>c Select <b>sensor test</b>.</li> <li>d Observe the line item <b>sensor</b>.</li> </ul> <p>Does the display on the control panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	<p>Go to step 3.</p>	<p>Go to step 2.</p>
<p><b>Step 2</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	<p>Replace the sensor (duplex path) See <b>“Sensor (duplex path) removal” on page 344.</b></p>	<p>Reseat the connection.</p>
<p><b>Step 3</b> Perform a print test.</p> <p>Does the problem remain?</p>	<p>Contact the next level of technical support.</p>	<p>Problem solved.</p>

## Sensor (input) never-arriving jam (exiting duplex) service check

Action	Yes	No
<p><b>Step 1</b> Check the duplex path for media jams and obstructions.</p> <p>Is the duplex path free from media jams and obstructions?</p>	Go to step 2.	Remove media jams and obstructions.
<p><b>Step 2</b> Check the sensor (input) for proper operation.</p> <p><b>a</b> Enter the diagnostic mode. <b>b</b> Select Base sensor test. <b>c</b> Observe the line item input.</p> <p>Does the display on the operator panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to step 4.	Go to step 3.
<p><b>Step 3</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	Replace the sensor (input). See <b>"Sensor (input) removal" on page 310.</b>	Replace the connection.
<p><b>Step 4</b> Ensure the duplex motor cable and the socket "DUPLEX MTR" on the controller board is properly connected.</p> <p>Is the above cable properly connected?</p>	Go to step 5.	Reseat the connection.
<p><b>Step 5</b> Perform a print test.</p> <p>Does the problem remain?</p>	Replace the duplex motor. See <b>"Duplex motor removal" on page 320.</b>	Problem solved.
<p><b>Step 6</b> Perform a print test.</p> <p>Does the problem remain?</p>	Contact the next highest level of technical support.	Problem solved.

## 235–239 paper jams

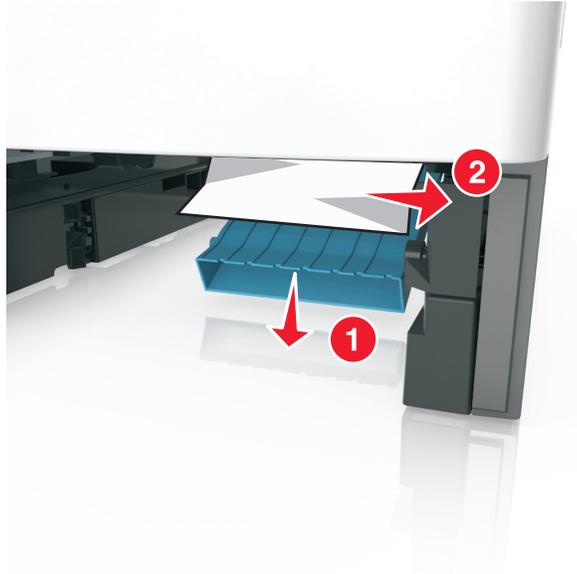
- 1 Lift the tray slightly, and then pull it out completely.



Diagnostic information

- 2 Push down the front duplex flap, then firmly grasp the jammed paper, and then gently pull the paper to the right and out of the printer.

**Note:** Make sure all paper fragments are removed.



- 3 Insert the tray.

- 4 To clear the message and continue printing, select **Next** >  > **Clear the jam, press OK** > .

## 24x paper jams

- 1 Check which tray is indicated on the printer display.
- 2 Lift the tray slightly, and then pull it out completely.



3 Firmly grasp the jammed paper on each side, and then gently pull it out.

**Note:** Make sure all paper fragments are removed.



4 Insert the tray.

5 To clear the message and continue printing, select **Next** >  > **Clear the jam, press OK** > .

### 24x paper jams

Error code	Description	Action
241.02	Sensor (input) early arriving jam	See <b>“Sensor (input) early arriving jam service check” on page 54.</b>
241.06	The media is late reaching the sensor (input) within the specified time from tray 1	See <b>“Sensor (input) never- or late-arriving jam service check” on page 56.</b>
241.10	The media is late reaching the sensor (input) within the specified time from tray 1	See <b>“Sensor (input) never- or late-arriving jam service check” on page 56.</b>
241.13	The media is late reaching the sensor (input) within the specified time from tray 1	See <b>“Sensor (input) never- or late-arriving jam service check” on page 56.</b>
241.14	The media is late reaching the sensor (input) within the specified time from tray 1	See <b>“Sensor (input) never- or late-arriving jam service check” on page 56.</b>
241.15	Media tray 1, tray pulled jam	See <b>“Media tray 1, tray pulled jam” on page 82.</b>
241.20	Took too long to ramp up media feeder motor in tray 1	See <b>“Media feeder motor control service check” on page 81.</b>
241.21	Media feeder motor stall in tray 1	See <b>“Media feeder motor control service check” on page 81.</b>
241.22	Media feeder motor pick motor under-speed in tray 1	See <b>“Media feeder motor control service check” on page 81.</b>

Error code	Description	Action
241.24	Media feeder motor stalled on the last pick attempt in tray 1	See <b>“Media feeder motor control service check” on page 81.</b>
241.29	Media feeder motor did not turn off when lifting the tray	See <b>“Media feeder motor tray lift error service check” on page 83.</b>
241.32	Media tray not ready	See <b>“Media tray 1, tray pulled jam” on page 82.</b>
241.33	The media tray was pulled during the media pick process	See <b>“Media tray 1, tray pulled jam” on page 82.</b>
241.41	Media feeder motor stall in tray 1	See <b>“Media feeder motor control service check” on page 81.</b>
241.42	Media feeder motor pick motor under-speed in tray 1	See <b>“Media feeder motor control service check” on page 81.</b>
241.43	Media feeder motor stalled on the last pick attempt in tray 1	See <b>“Media feeder motor control service check” on page 81.</b>
242.29	Media feeder motor did not turn off when lifting the tray	See <b>“Media feeder motor tray lift error service check” on page 83.</b>
243.29	Media feeder motor did not turn off when lifting the tray	See <b>“Media feeder motor tray lift error service check” on page 83.</b>
244.29	Media feeder motor did not turn off when lifting the tray	See <b>“Media feeder motor tray lift error service check” on page 83.</b>
245.29	Media feeder motor did not turn off when lifting the tray	See <b>“Media feeder motor tray lift error service check” on page 83.</b>

## Media feeder motor control service check

Action	Yes	No
<b>Step 1</b> Check the media size setup and tray guides for media tray 1.  Does the media size in use match the size set for media tray 1?	Go to step 2.	Replace the media, or change the media size setup in media tray 1.
<b>Step 2</b> Check the media trays for overfilling.  Are any of the media trays overfilled?	Remove any excess new media.	Go to step 3.
<b>Step 3</b> Check the media condition in media tray 1.  Is any of the media in media tray 1 crumpled or damaged?	Replace the damaged media.	Go to step 4.
<b>Step 4</b> Ensure the pick roller is properly installed.  Is the pick roller properly installed?	Go to step 5.	Remove and reinstall the pick roller. See <b>“Pick roller assembly removal” on page 342.</b>

Action	Yes	No
<p><b>Step 5</b> Ensure the cable for socket "INDEX / PAP OUT/ PICK MTR" on the controller board is properly connected.</p> <p>Is the above connection properly connected?</p>	Go to step 6.	Reseat the connection.
<p><b>Step 6</b> Reset the machine.</p> <p>Does the error continue?</p>	<p>Replace the media feeder. See "<b>Media feeder removal</b>" on <b>page 356</b>.</p> <p>Go to step 7.</p>	Problem solved.
<p><b>Step 7</b> Reset the machine.</p> <p>Does the error continue?</p>	<p>Replace the controller board. See "<b>Controller board removal</b>" on <b>page 349</b>.</p>	Problem solved.

### Media tray 1, tray pulled jam

Action	Yes	No
<p><b>Step 1</b> Remove all media jams from the media tray and printer.</p> <p>Are all of the media jams removed?</p>	Go to step 2.	Remove all media jams.
<p><b>Step 2</b> Ensure the media tray is properly inserted into the printer.</p> <p>Is the media tray properly inserted?</p>	Go to step 3.	Insert the media tray.
<p><b>Step 3</b> Perform a print test.</p> <p>Does the problem remain?</p>	Replace the media tray with a new media tray.	Problem solved.

## Media feeder motor tray lift error service check

Action	Yes	No
<p><b>Step 1</b> Ensure the pick roller is properly installed.</p> <p>Is the pick roller properly installed?</p>	Go to step 2.	Remove and reinstall the pick roller. See <b>“Pick roller assembly removal” on page 342.</b>
<p><b>Step 2</b> Ensure the cable for socket “INDEX / PAP OUT/ PICK MTR” on the controller board is properly connected.</p> <p>Is the above connection properly connected?</p>	Go to step 3.	Reseat the connection.
<p><b>Step 3</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the media feeder. See <b>“Media feeder removal” on page 356.</b> Go to step 4.	Problem solved.
<p><b>Step 4</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See <b>“Controller board removal” on page 349.</b>	Problem solved.

## Sensor (input) never-arriving jam from tray 1 service check

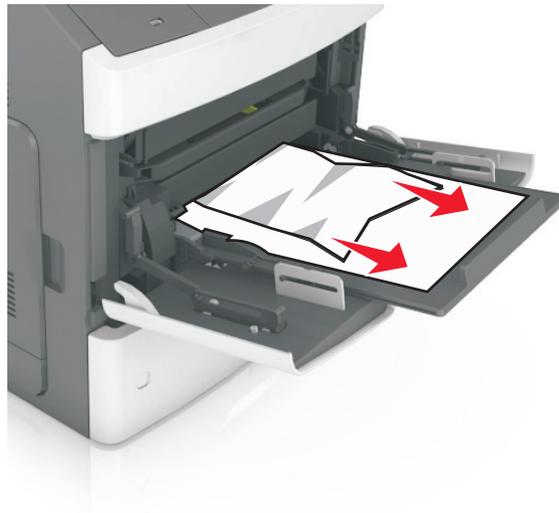
Action	Yes	No
<p><b>Step 1</b> Check the media size setup and tray guides for media tray 1.</p> <p>Does the media size, in use, match the size set for media tray 1?</p>	Go to step 2.	Replace the media, or change the media size setup in media tray 1.
<p><b>Step 2</b> Check the media tray 1 for overfilling.</p> <p>Is media tray 1 overfilled?</p>	Remove any excess new media.	Go to step 3.
<p><b>Step 3</b> Check the media condition in media tray 1.</p> <p>Is any of the media in media tray 1 crumpled or damaged?</p>	Replace the damaged media with new.	Go to step 4.
<p><b>Step 4</b> Check the pick roller in the media tray being picked from.</p> <p>Is the pick roller free of excess wear and contamination?</p>	Go to step 5.	Clean or replace the pick roller. See <b>“Pick roller assembly removal” on page 342.</b>

Action	Yes	No
<p><b>Step 5</b> Check the aligner assembly for obstructions.</p> <p>Is the above component free from obstructions?</p>	Go to step 6.	Remove obstructions.
<p><b>Step 6</b> Check the sensor (input) for proper operation.</p> <p><b>a</b> Enter the diagnostic mode. <b>b</b> Select <b>Base sensor test</b>. <b>c</b> Observe the line item <b>input</b>.</p> <p>Does the display on the operator panel, change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to step 8.	Go to step 7.
<p><b>Step 7</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	Replace the Sensor (input). See <b>“Sensor (input) removal” on page 310</b> .	Replace the connection.
<p><b>Step 8</b> Perform a print test and check the tray 1 media feeder.</p> <p>Is the media properly picked and advanced out of the media tray?</p>	Go to step 9.	Replace the media feeder. See <b>“Media feeder removal” on page 356</b> .
<p><b>Step 9</b> Perform a print test and check the main motor assembly.</p> <p>Is the media properly transported and able to reach the sensor (input)?</p>	Go to step 10.	Replace the main drive motor. See <b>“Main drive motor removal” on page 354</b> .
<p><b>Step 10</b> Perform a print test.</p> <p>Does the problem remain?</p>	Contact the next highest level of technical support.	Problem solved.

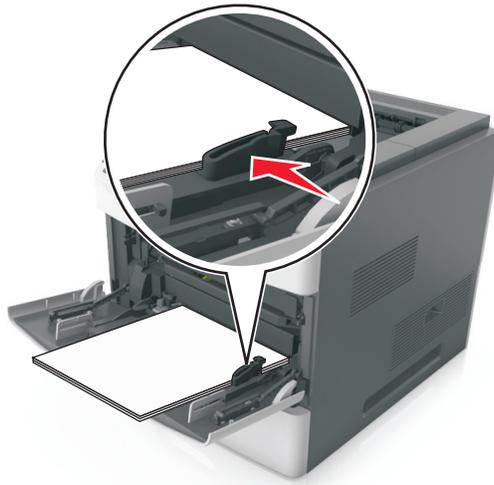
## 250 paper jams

- 1 From the multipurpose feeder, firmly grasp the jammed paper on each side, and then gently pull it out.

**Note:** Make sure all paper fragments are removed.



- 2 Flex the sheets back and forth to loosen them, and then fan them. Do not fold or crease the paper. Straighten the edges on a level surface.
- 3 Reload paper into the multipurpose feeder.
- 4 Slide the paper guide until it lightly rests against the edge of the paper.



- 5 To clear the message and continue printing, select **Next** >  > **Clear the jam, press OK** > .

### 250 paper jams

Error code	Description	Action
250.02	The input sensor detected a late feed during a pick retry from the MPF media tray	See <b>“Sensor (input) early arriving jam service check”</b> on page 54.
250.06	The media is late reaching the sensor (input) within the specified time from the MPF media tray	See <b>“Sensor (input) never-arriving jam from MPF media tray service check”</b> on page 86.

Error code	Description	Action
250.10	The media is late reaching the sensor (input) within the specified time from the MPF media tray	See <b>“Sensor (input) never-arriving jam from MPF media tray service check” on page 86.</b>
250.13	The media is late reaching the sensor (input) within the specified time from the MPF media tray	See <b>“Sensor (input) never-arriving jam from MPF media tray service check” on page 86.</b>
250.14	The media is late reaching the sensor (input) within the specified time from the MPF media tray	See <b>“Sensor (input) never-arriving jam from MPF media tray service check” on page 86.</b>
250.17	The media is late reaching the sensor (input) within the specified time from the MPF media tray	See <b>“Sensor (input) never-arriving jam from MPF media tray service check” on page 86.</b>
250.18	The media is late reaching the sensor (input) within the specified time from the MPF media tray	See <b>“Sensor (input) never-arriving jam from MPF media tray service check” on page 86.</b>

### Sensor (input) never-arriving jam from MPF media tray service check

Action	Yes	No
<p><b>Step 1</b> Check the media size setup and tray guides for the MPF tray.</p> <p>Does the media size, in use, match the size set for the MPF tray?</p>	Go to step 2.	Replace the media, or change the media size setup.
<p><b>Step 2</b> Check the MPF tray for overfilling.</p> <p>Is the MPF tray overfilled?</p>	Remove any excess new media.	Go to step 3.
<p><b>Step 3</b> Check the media condition in the MPF tray.</p> <p>Is any of the media in any of the MPF media tray crumpled or damaged?</p>	Replace the damaged media with new.	Go to step 4.
<p><b>Step 4</b> Check the MPF pick roll assembly.</p> <p>Is the above component free of excess wear and contamination?</p>	Go to step 5.	Clean or replace the MPF pick roller. See <b>“MPF pick roller removal” on page 305.</b>
<p><b>Step 5</b> Perform a MPF print test and check the MPF pick solenoid for proper operation.</p> <p>Does the above component operate properly?</p>	Go to step 6.	Replace the MPF pick solenoid.

Action	Yes	No
<p><b>Step 6</b> Check the aligner assembly for obstructions.</p> <p>Is the above component free from obstructions?</p>	Go to step 7.	Remove obstructions.
<p><b>Step 7</b> Check the sensor (input) for proper operation:</p> <ul style="list-style-type: none"> <li>a Enter the diagnostic mode</li> <li>b Select <b>Base sensor test</b>.</li> <li>c Observe the line item “input”.</li> </ul> <p>Does the display on the operator panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to step 9.	Go to step 8.
<p><b>Step 8</b> Check the above sensor for proper connection.</p> <p>Is the above sensor connected properly?</p>	Replace the Sensor (input). See <b>“Sensor (input) removal” on page 310.</b>	Replace the connection.
<p><b>Step 9</b> Perform a print test and check the MPF feeder lift plate.</p> <p>Is the media properly picked and advanced out of the MPF feeder lift plate?</p>	Go to step 10.	Replace the MPF feeder lift plate. See <b>“MPF feeder lift plate removal” on page 302.</b>
<p><b>Step 10</b> Perform a print test and check the main motor assembly.</p> <p>Is the media properly transported and able to reach the sensor (input)?</p>	Go to step 11.	Replace the main drive motor. See <b>“Main drive motor removal” on page 354.</b>
<p><b>Step 11</b> Perform a print test.</p> <p>Does the problem remain?</p>	Contact the next highest level of technical support.	Problem solved.

## 41y.xx paper jams

- 1 Open the rear output expander door.



- 2 Firmly grasp the jammed paper on each side, and then gently pull it out.

**Note:** Make sure all paper fragments are removed.



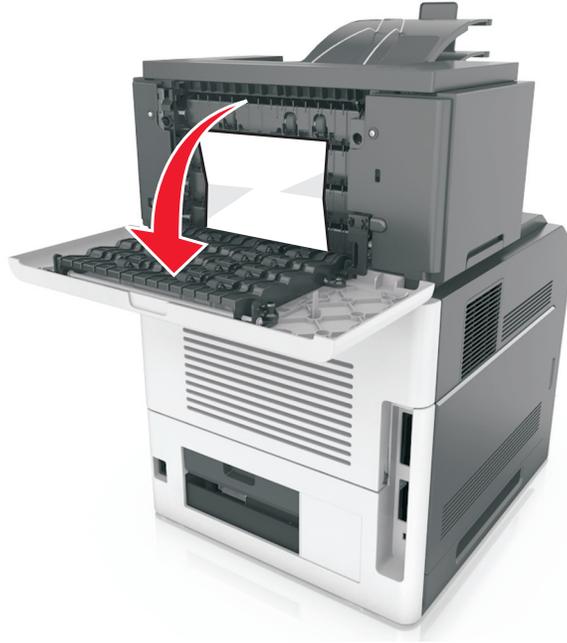
- 3 Close the rear output expander door.

- 4 To clear the message and continue printing, select **Next** >  > **Clear the jam, press OK** > .

Diagnostic information

## 43y.xx paper jams

- 1 Open the rear mailbox door.



- 2 Firmly grasp the jammed paper on each side, and then gently pull it out.

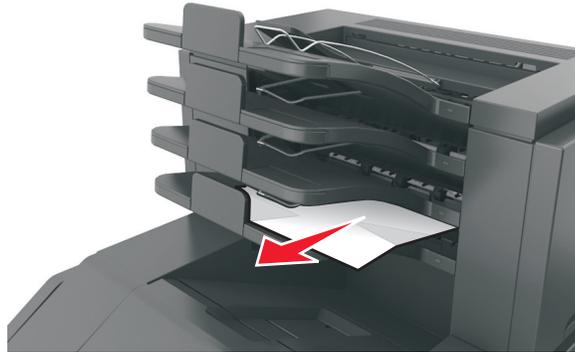
**Note:** Make sure all paper fragments are removed.



- 3 Close the rear mailbox door.

- 4 If the jam is in the mailbox bin, then firmly grasp the jammed paper, and then gently pull it out.

**Note:** Make sure all paper fragments are removed.



- 5 To clear the message and continue printing, select **Next** >  > **Clear the jam, press OK** > .

## 451 paper jams

- 1 Open the rear staple finisher door.



- 2 Firmly grasp the jammed paper on each side, and then gently pull it out.

**Note:** Make sure all paper fragments are removed.



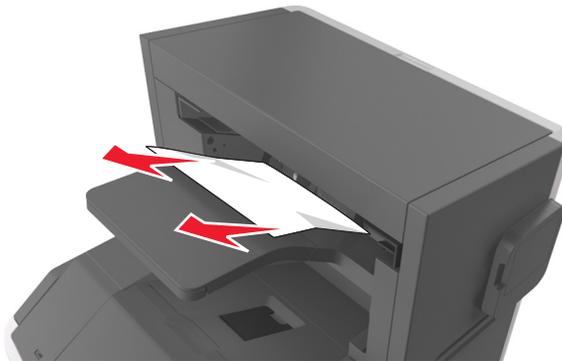
3 Close the staple finisher door.

4 To clear the message and continue printing, select **Next** >  > **Clear the jam, press OK** > .

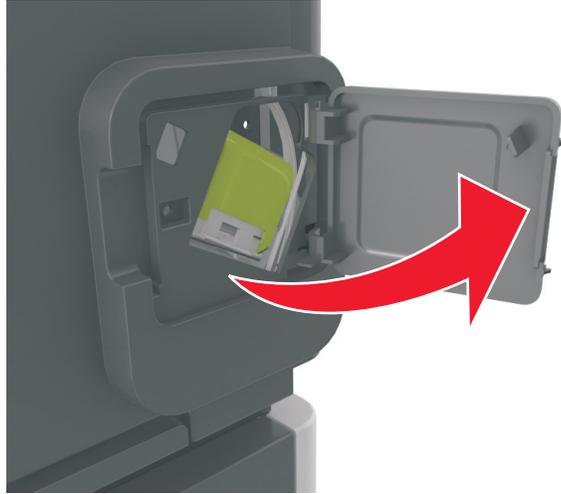
### 455–457 paper jams

1 From the stapler bin, firmly grasp the jammed paper on each side, and then gently pull it out.

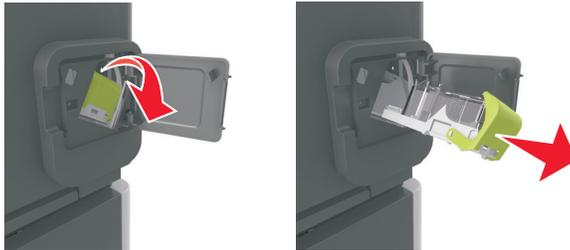
**Note:** Make sure all paper fragments are removed.



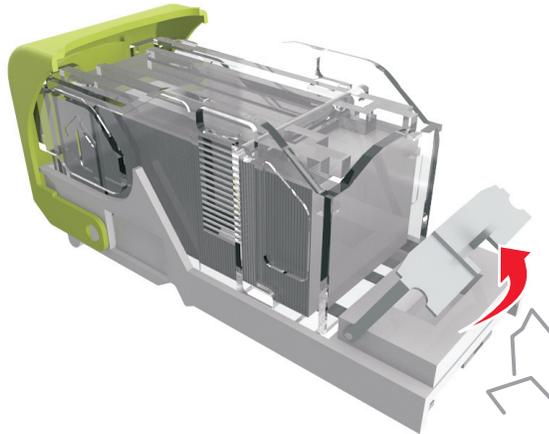
2 Open the stapler door.



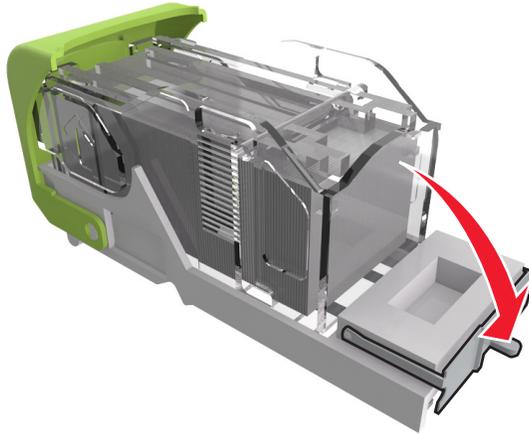
3 Pull down the latch of the staple cartridge holder, and then pull the holder out of the printer.



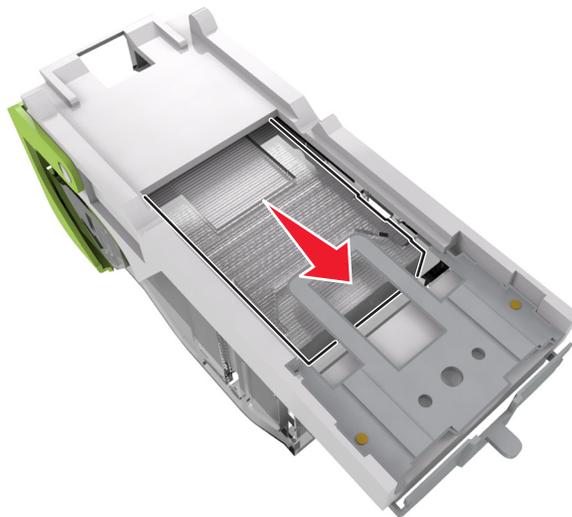
4 Use the metal tab to lift the staple guard, and then remove any loose staples.



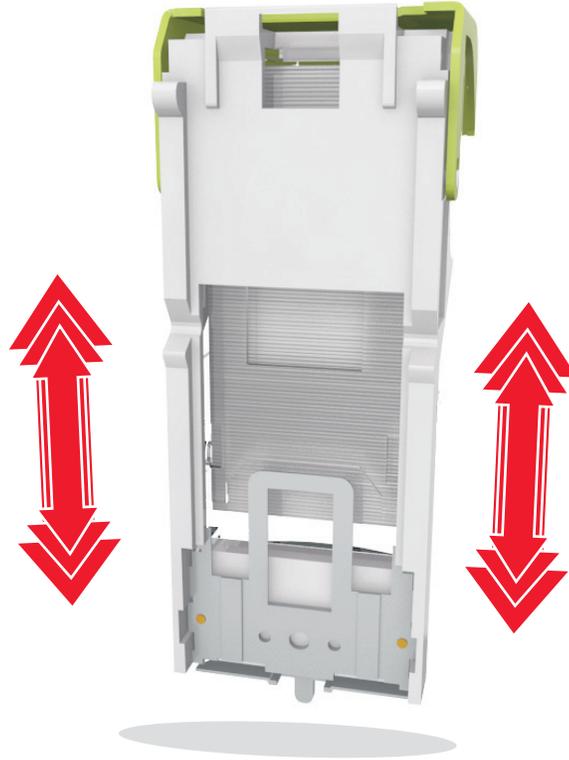
5 Press down the staple guard until it *clicks* into place.



6 Slide the staples toward the metal bracket.



**Note:** If the staples are at the rear of the cartridge, then shake the cartridge downward to bring the staples near the metal bracket.



**Warning—Potential Damage:** Do not tap the cartridge on a hard surface. This could damage the cartridge.

**7** Push the cartridge holder firmly back into the stapler unit until the cartridge holder *clicks* into place.

**8** Close the stapler door.

**9** To clear the message and continue printing, select **Next** >  > **Clear the jam, press OK** > .

## User attendance messages (0-99.99)

### User attendance messages (0-99.99)

#### User attendance messages

Error code	Description	Action
30.xx	Toner cartridge missing	Make sure all cartridges are installed properly.
31.21	Toner Level Sensing reading out of range	See <b>“Toner level sensing error check”</b> on page 99.
31.22	Excessive toner sensing line noise	See <b>“Toner level sensing error check”</b> on page 99.
31.23	Abrupt change detected in toner sensing reading	See <b>“Toner level sensing error check”</b> on page 99.

Error code	Description	Action
31.25	Toner level sensing calibration capacitor reading too low	See <b>“Toner level sensing error check” on page 99.</b>
31.40	Toner cartridge smart chip error	See <b>“Toner cartridge smart chip error service check” on page 99.</b>
31.41	Toner cartridge I2C packet time-out	See <b>“Toner cartridge smart chip error service check” on page 99.</b>
31.42	Toner cartridge I2C packet has been sent but code timed-out on receiving the data (callback)	See <b>“Toner cartridge smart chip error service check” on page 99.</b>
31.43	Toner cartridge security error in the send challenge sequence	See <b>“Toner cartridge smart chip error service check” on page 99.</b>
31.44	Toner cartridge ROM signature error	See <b>“Toner cartridge smart chip error service check” on page 99.</b>
31.45	Toner cartridge stuck or busy; status register and/or CRI Arbiter register report busy	See <b>“Toner cartridge smart chip error service check” on page 99.</b>
31.60	Imaging unit smart chip error	See <b>“Imaging unit smart chip service check” on page 100.</b>
31.61	Imaging unit I2C packet time-out	See <b>“Imaging unit smart chip service check” on page 100.</b>
31.62	Imaging unit I2C packet has been sent, but code timed-out on receiving the data (callback)	See <b>“Imaging unit smart chip service check” on page 100.</b>
31.63	Imaging unit security error in the send challenge sequence	See <b>“Imaging unit smart chip service check” on page 100.</b>
31.64	Imaging unit ROM signature error	See <b>“Imaging unit smart chip service check” on page 100.</b>
31.65	Imaging unit stuck or busy; status register and/or CRI Arbiter register report busy)	See <b>“Imaging unit smart chip service check” on page 100.</b>
31.80	Fuser smart chip error	See <b>“Fuser unit smart chip service check” on page 101.</b>
31.81	Fuser I2C packet time-out	See <b>“Fuser unit smart chip service check” on page 101.</b>
31.82	Fuser I2C packet has been sent but code timed out on receiving the data (callback)	See <b>“Fuser unit smart chip service check” on page 101.</b>
31.83	Fuser security error in the send challenge sequence	See <b>“Fuser unit smart chip service check” on page 101.</b>
31.84	Fuser ROM signature error	See <b>“Fuser unit smart chip service check” on page 101.</b>
31.85	Fuser smart chip stuck or busy; status register and/or CRI Arbiter register report busy)	See <b>“Fuser unit smart chip service check” on page 101.</b>
32.10	Toner cartridge smart chip compatibility error	Replace the toner cartridge.
32.11	Imaging unit smart chip compatibility error	Replace the imaging unit.

Error code	Description	Action
32.12	Fuser smart chip compatibility error	Replace the fuser. See <b>“Fuser removal” on page 322.</b>
33.xx	Non-license return program (NLRP) supply installers	Replace non-licensed supply with properly licensed supply.
34.xx	Media size mismatch—the printer detects the media as too short or too narrow	Do the following: <ul style="list-style-type: none"> <li>• Make sure that the media loaded is in the proper size. The print job settings must also coincide with the size of the media being printed on.</li> <li>• Make sure that the media tray guides are properly set.</li> </ul>
35.xx	Res save off deficient memory—the printer lacks sufficient memory to enable Resource Save	Try one or more of the following: <ul style="list-style-type: none"> <li>• From the printer control panel, press <b>Continue</b> to disable Resource Save, clear the message, and continue printing.</li> <li>• Install additional memory.</li> </ul>
37.xx	Insufficient collation area	Try one or more of the following: <ul style="list-style-type: none"> <li>• From the printer control panel, select <b>Continue</b> to stop the defragmentation and continue printing. For non-touch-screen printer models, press <b>OK</b> to confirm.</li> <li>• Delete fonts, macros, and other data from the printer memory.</li> <li>• Install additional printer memory.</li> </ul>
38.xx	Memory full	Try one or more of the following: <ul style="list-style-type: none"> <li>• From the printer control panel, press <b>Continue</b> to disable Resource Save, clear the message, and continue printing.</li> <li>• Install additional memory.</li> </ul>
39	Complex page—the page is too complex to print	Try one or more of the following: <ul style="list-style-type: none"> <li>• From the printer control panel, press <b>Continue</b> to clear the message.</li> <li>• Decrease the resolution setting.</li> <li>• Install additional printer memory.</li> </ul>
41	Cartridge/imaging unit type mismatch	Install properly regioned supply.

Error code	Description	Action
42.xy	Printer/cartridge mismatch	Install a toner cartridge that matches the region number of the printer. The .xy error code value represents the required region number, where x indicates the printer's region number and y for the cartridge's region number: <ul style="list-style-type: none"> <li>• 0—Global</li> <li>• 1—United States, Canada</li> <li>• 2—European Economic Area (EEA), Switzerland</li> <li>• 3—Asia Pacific, Australia, New Zealand</li> <li>• 4—Latin America</li> <li>• 5—Africa, Middle East, rest of Europe</li> <li>• 9—Invalid</li> </ul>
50	The PPDS interpreter has encountered a font error	Press <b>Continue</b> to clear the message and continue processing the job.
51	Defective flash—this error may occur at power on, or during flash format and write operations	Try one or more of the following: <ul style="list-style-type: none"> <li>• Replace the defective flash memory card.</li> <li>• From the printer control panel, press <b>Continue</b> to ignore the message and continue printing.</li> <li>• Cancel the current print job.</li> </ul>
52	Flash full	Try one or more of the following: <ul style="list-style-type: none"> <li>• From the printer control panel, touch <b>Continue</b> to ignore the message and continue printing.</li> <li>• Delete fonts, macros, and other data stored in the flash memory.</li> <li>• Install a flash memory card with larger capacity.</li> </ul> <p><b>Note:</b> Downloaded fonts and macros not previously stored in the flash memory are deleted.</p>
53	Unformatted flash	Try one or more of the following: <ul style="list-style-type: none"> <li>• From the printer control panel, press <b>Continue</b> to stop the defragmentation and continue printing.</li> <li>• Format the flash memory device.</li> </ul> <p><b>Note:</b> If the error message remains, then the flash memory device may be defective and need to be replaced.</p>

Error code	Description	Action
54	Network error—communication failure between the controller board and the network port	Try one or more of the following: <ul style="list-style-type: none"> <li>• From the printer control panel, press <b>Continue</b> to confirm.</li> <li>• Unplug the router, then wait for 30 seconds, and then plug it back again.</li> <li>• POR the machine.</li> <li>• Update the network firmware in the printer or print server.</li> </ul>
55	Unsupported option card detected	<ol style="list-style-type: none"> <li>1 Turn off the printer.</li> <li>2 Unplug the power cord from the electrical outlet.</li> <li>3 Remove the unsupported option card from the printer controller board, and then replace it with a supported card.</li> <li>4 Re-connect the power cord, and then turn the machine on.</li> </ol>
56	USB port disabled	Do either of the following: <ul style="list-style-type: none"> <li>• From the printer control panel, select <b>Continue</b> to clear the message and continue printing without using the specified bin/tray.</li> <li>• Select <b>Reset active bin</b> to reset the bin for a linked set of bins.</li> </ul>
59	Incompatible output bin/tray	Do either of the following: <ul style="list-style-type: none"> <li>• Remove the specified bin.</li> <li>• From the printer control panel, press <b>Continue</b> to clear the message and continue printing without using the specified bin/tray.</li> </ul>
80	Maintenance kit—end of life	Install maintenance kit.
80	Maintenance kit—late warning	
80	Maintenance kit—low	
80	Maintenance kit—nearly low	Maintenance kit is near the end of its life.
81	Roller kit—end of life	Install a roller kit.
84	Imaging unit—nearly low	
84	Imaging unit—middle warning	
84	Imaging unit—late warning	
84	Imaging unit—end of life	Replace the imaging unit.
88	Toner cartridge low	Replace the toner cartridge.

## Toner level sensing error check

Action	Yes	No
<p><b>Step 1</b> Ensure that the toner cartridge is installed properly.</p> <p>Is the toner cartridge properly installed?</p>	Go to step 2.	Reinstall the toner cartridge properly.
<p><b>Step 2</b> Remove the existing toner cartridge and install a different cartridge.</p> <p>Does the error continue?</p>	Go to step 3.	Problem resolved.
<p><b>Step 3</b> Ensure the cable for socket "JCTLS" on the controller board is properly connected.</p> <p>Is the above connection properly connected?</p>	Go to step 4.	Reseat the connection or replace the cable. Go to step 4.
<p><b>Step 4</b> Ensure the toner low / imaging unit high voltage contact is free from damage.</p> <p>Is the toner low / imaging unit high voltage contact free from damage?</p>	Go to step 5.	Replace the toner low / imaging unit high voltage contact.
<p><b>Step 5</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See " <b>Controller board removal</b> " on page 349.	Problem resolved.

## Toner cartridge smart chip error service check

Action	Yes	No
<p><b>Step 1</b> Ensure that the toner cartridge is installed properly.</p> <p>Is the toner cartridge properly installed?</p>	Go to step 2.	Reinstall the toner cartridge properly.
<p><b>Step 2</b> Remove the existing toner cartridge and install a different cartridge.</p> <p>Does the error remain?</p>	Go to step 3.	Problem resolved.
<p><b>Step 3</b> Ensure the cable for socket "TONER UNIT" on the controller board is properly connected.</p> <p>Is the above cable properly connected?</p>	Go to step 4.	Reseat the connection or replace the cable. Go to step 4.

Action	Yes	No
<p><b>Step 4</b> Ensure the toner cartridge smart chip contact with cable is free from damage.</p> <p>Is the toner cartridge smart chip contact with cable free from damage?</p>	Go to step 5.	Reseat the connection or replace the cable. Go to step 5.
<p><b>Step 5</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See <b>“Controller board removal” on page 349</b>	Problem resolved.

## Imaging unit smart chip service check

Action	Yes	No
<p><b>Step 1</b> Ensure that the imaging unit is installed properly.</p> <p>Is the imaging unit properly installed?</p>	Go to step 2.	Reinstall the imaging unit properly.
<p><b>Step 2</b> Remove the imaging unit and install a different unit.</p> <p>Does the error remain?</p>	Go to step 3.	Problem resolved.
<p><b>Step 3</b> Ensure the cable for socket "IMAG UNIT" on the controller board is properly connected.</p> <p>Is the above cable properly connected?</p>	Go to step 4.	Reseat the connection or replace the cable. Go to step 4.
<p><b>Step 4</b> Ensure the imaging unit smart chip contact with cable is free from damage.</p> <p>Is the imaging unit smart chip contact with cable free from damage?</p>	Go to step 5.	Replace the imaging unit smart chip contact with cable. Go to step 5.
<p><b>Step 5</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See <b>“Controller board removal” on page 349.</b>	Problem resolved.

## Fuser unit smart chip service check

Action	Yes	No
<b>Step 1</b> Ensure that the fuser is installed properly.  Is the fuser properly installed?	Go to step 2.	Reinstall the fuser properly.
<b>Step 2</b> Remove the fuser and install a different fuser.  Does the error remain?	Go to step 3.	Problem resolved.
<b>Step 3</b> Ensure the cable for socket "J27" on the controller board is properly connected.  Is the above component properly connected?	Go to step 4.	Reseat the connection or replace the cable. Go to step 4.
<b>Step 4</b> Reset the machine.  Does the error continue?	Replace the controller board. Go to <b>"Controller board removal" on page 349.</b>	Problem resolved.

## Printer hardware errors (100-199.99)

- **"Printer hardware error messages(100-199.99)" on page 102**
- **"Printhead ID service check" on page 106**
- **"Printhead service check" on page 106**
- **"Fuser drive motor service check" on page 107**
- **"Fuser service check" on page 107**
- **"LVPS service check" on page 108**
- **"Toner level sensing service check" on page 108**
- **"Main drive motor service check" on page 109**
- **"Media feeder service check" on page 109**
- **"Redrive motor service check" on page 110**
- **"Duplex motor service check" on page 110**
- **"Toner add motor service check" on page 111**
- **"Main cooling fan service check" on page 111**
- **"Cartridge cooling fan service check" on page 112**
- **"LVPS cooling fan service check" on page 112**
- **"HVPS cooling fan service check" on page 113**
- **"Miscellaneous cooling fan service check" on page 113**

## Printer hardware error messages(100-199.99)

### User attendance messages

Error code	Description	Action
111.30	Printhead ID error	See <b>“Printhead ID service check” on page 106.</b>
111.31	Printhead no first HSYNC error	See <b>“Printhead service check” on page 106.</b>
111.32	Printhead loss of HSYNC error	See <b>“Printhead service check” on page 106.</b>
111.33	Printhead loss of HSYNC during servo	See <b>“Printhead service check” on page 106.</b>
111.34	Printhead mirror motor loss of lock	See <b>“Printhead service check” on page 106.</b>
111.35	Printhead mirror motor initial lock	See <b>“Printhead service check” on page 106.</b>
111.36	Printhead mirror motor stabilization error	See <b>“Printhead service check” on page 106.</b>
111.37	Page reached input sensor but the mirror motor was not locked	See <b>“Printhead service check” on page 106.</b>
111.38	Page reached input sensor but the printhead startup was not complete	See <b>“Printhead service check” on page 106.</b>
111.90	Printhead video cable not plugged in	See <b>“Printhead service check” on page 106.</b>
120.10	Fuser drive Motor Halls detection error	See <b>“Fuser drive motor service check” on page 107.</b>
120.20	Fuser drive Motor took too long to stop	See <b>“Fuser drive motor service check” on page 107.</b>
120.30	Fuser drive Motor Unable To Lock (before motor ID)	See <b>“Fuser drive motor service check” on page 107.</b>
120.40	Fuser drive motor over-speed error	See <b>“Fuser drive motor service check” on page 107.</b>
120.60	Fuser drive motor unable to lock (after motor ID)	See <b>“Fuser drive motor service check” on page 107.</b>
120.70	Fuser drive motor out of lock	See <b>“Fuser drive motor service check” on page 107.</b>
120.80	Fuser drive motor excessive PWM / over temperature	See <b>“Fuser drive motor service check” on page 107.</b>
121.07	Fuser has been on for more than allowed after a gap blowout, and the temperature is still too cold	See <b>“Fuser service check” on page 107.</b>
121.08	Fuser was under temperature when page was in fuser	See <b>“Fuser service check” on page 107.</b>
121.20	Fuser undertemp during steady state control	See <b>“Fuser service check” on page 107.</b>
121.22	Fuser did not warm enough to start line voltage detection	See <b>“Fuser service check” on page 107.</b>
121.23	Fuser took too long to heat to line detection temperature	See <b>“Fuser service check” on page 107.</b>
121.24	Fuser never reached fuser detection temperature	See <b>“Fuser service check” on page 107.</b>

Error code	Description	Action
121.25	After line voltage detection, control did not roll over to steady state control in time	If the problem remains, replace the controller board. See <b>“Controller board removal” on page 349.</b>
121.26	Fuser failed to reach temperature during warm up	See <b>“Fuser service check” on page 107.</b>
121.28	Fuser failed to reach EP warm-up temperature in time	See <b>“Fuser service check” on page 107.</b>
121.29	Fuser failed to reach preheat temperature for motor start during warm up	See <b>“Fuser service check” on page 107.</b>
121.30	Fuser failed to reach printing temperature by the time a page got to the fuser	See <b>“Fuser service check” on page 107.</b>
121.31	Fuser has gotten too hot	See <b>“Fuser service check” on page 107.</b>
121.35	Attempting to reset the printer after receiving a 121.34	If the problem remains, replace the controller board. See <b>“Controller board removal” on page 349.</b>
121.36	Fuser did not heat to allow compression jog	See <b>“Fuser service check” on page 107.</b>
121.32	Open fuser main thermistor	If the problem remains, replace the fuser. See <b>“Fuser removal” on page 322</b>
121.33	Open fuser edge thermistor	If the problem remains, replace the fuser. See <b>“Fuser removal” on page 322</b>
121.34	Open fuser backup roll thermistor	If the problem remains, replace the fuser. See <b>“Fuser removal” on page 322.</b>
121.37	Fuser heated faster than allowed during line voltage detection (115V fuser in 220V machine)	If the problem remains, replace the fuser. See <b>“Fuser removal” on page 322.</b>
121.48	Fuser Hardware type does not match fuser driver loaded (for example, lamp hardware or belt firmware)	If the problem remains, replace the fuser. See <b>“Fuser removal” on page 322.</b>
121.49	Fuser backup roll too hot while printing non-wide media	If the problem remains, replace the fuser. See <b>“Fuser removal” on page 322.</b>
126.01	Line Frequency outside operating range of device	See <b>“LVPS service check” on page 108.</b>
126.02	No line frequency detected	See <b>“LVPS service check” on page 108.</b>
130.01	Transfer servo error	Reset the machine. If the error remains, replace the imaging unit.
133.05	Toner Level Sensing reading above maximum expected value	See <b>“Toner level sensing service check” on page 108.</b>
133.06	Toner Level Sensing reading below minimum expected value	See <b>“Toner level sensing service check” on page 108.</b>
133.07	Toner failed to replenish into the Imaging Unit	See <b>“Toner level sensing service check” on page 108.</b>
133.08	Excessive toner level sensing noise	See <b>“Toner level sensing service check” on page 108.</b>

Error code	Description	Action
140.10	Main drive motor halls not detected	See <b>“Main drive motor service check” on page 109.</b>
140.20	Main drive motor took too long to stop	See <b>“Main drive motor service check” on page 109.</b>
140.30	Main drive motor unable To lock (before motor ID)	See <b>“Main drive motor service check” on page 109.</b>
140.40	Main drive motor over speed detected	See <b>“Main drive motor service check” on page 109.</b>
140.60	Main drive motor unable to lock (after motor ID)	See <b>“Main drive motor service check” on page 109.</b>
140.70	Main drive motor out of lock Detected	See <b>“Main drive motor service check” on page 109.</b>
140.80	Main drive motor excessive PWM / Overtemp	See <b>“Main drive motor service check” on page 109.</b>
146.00	Media feeder encoder never detected in tray 1	See <b>“Media feeder service check” on page 109.</b>
149.00	Redrive motor encoder never detected	See <b>“Redrive motor service check” on page 110.</b>
150.00	Duplex motor encoder never detected	See <b>“Duplex motor service check” on page 110.</b>
155.00	Toner add motor encoder never detected	See <b>“Toner add motor service check” on page 111.</b>
171.03	Main cooling fan error; error took too long to ramp up	See <b>“Main cooling fan service check” on page 111</b>
171.04	Main cooling fan error; error under speed or stalled during speed adjustment state	See <b>“Main cooling fan service check” on page 111</b>
171.05	Main cooling fan error; error over speed during speed adjustment state	See <b>“Main cooling fan service check” on page 111</b>
171.06	Main cooling fan error; error capture data is invalid and speed control is at maximum in fan control idle state	See <b>“Main cooling fan service check” on page 111</b>
171.07	Main cooling fan error; error capture data is invalid and speed control is at maximum in fan control adjustment state	See <b>“Main cooling fan service check” on page 111</b>
172.03	Cartridge cooling fan took too long to ramp up	See <b>“Cartridge cooling fan service check” on page 112.</b>
172.04	Cartridge cooling fan under speed or stalled during speed adjustment state	See <b>“Cartridge cooling fan service check” on page 112.</b>
172.05	Cartridge cooling fan over speed during speed adjustment state	See <b>“Cartridge cooling fan service check” on page 112.</b>
172.06	Cartridge cooling fan capture data is invalid and speed control is at maximum in fan control idle state	See <b>“Cartridge cooling fan service check” on page 112.</b>
172.07	Cartridge cooling fan capture data is invalid and speed control is at maximum in fan control adjustment state	See <b>“Cartridge cooling fan service check” on page 112.</b>
173.03	LVPS cooling fan took too long to ramp up	See <b>“LVPS cooling fan service check” on page 112.</b>

Error code	Description	Action
173.04	LVPS cooling fan under speed or stalled during speed adjustment state	See <b>“LVPS cooling fan service check” on page 112.</b>
173.05	LVPS cooling fan over speed during speed adjustment state	See <b>“LVPS cooling fan service check” on page 112.</b>
173.06	LVPS cooling fan capture data is invalid and speed control is at maximum in fan control idle state	See <b>“LVPS cooling fan service check” on page 112.</b>
173.07	LVPS cooling fan capture data is invalid and speed control is at maximum in fan control adjustment state	See <b>“LVPS cooling fan service check” on page 112.</b>
174.03	HVPS cooling fan took too long to ramp up	See <b>“HVPS cooling fan service check” on page 113.</b>
174.04	HVPS cooling fan under speed or stalled during speed adjustment state	See <b>“HVPS cooling fan service check” on page 113.</b>
174.05	HVPS cooling fan over speed during speed adjustment state	See <b>“HVPS cooling fan service check” on page 113.</b>
174.06	HVPS cooling fan capture data is invalid and speed control is at maximum in fan control idle state	See <b>“HVPS cooling fan service check” on page 113.</b>
174.07	HVPS cooling fan capture data is invalid and speed control is at maximum in fan control adjustment state	See <b>“HVPS cooling fan service check” on page 113.</b>
175.03	Miscellaneous cooling fan took too long to ramp up	See <b>“Miscellaneous cooling fan service check” on page 113.</b>
175.04	Miscellaneous cooling fan under speed or stalled during speed adjustment state	See <b>“Miscellaneous cooling fan service check” on page 113.</b>
175.05	Miscellaneous cooling fan over speed during speed adjustment state	See <b>“Miscellaneous cooling fan service check” on page 113.</b>
175.06	Miscellaneous cooling fan capture data is invalid and speed control is at maximum in fan control idle state	See <b>“Miscellaneous cooling fan service check” on page 113.</b>
175.07	Miscellaneous cooling fan capture data is invalid and speed control is at maximum in fan control adjustment state	See <b>“Miscellaneous cooling fan service check” on page 113.</b>

## Printhead ID service check

Action	Yes	No
<p><b>Step 1</b> Ensure the correct laser printhead is installed.</p> <p>Is the proper laser printhead installed?</p>	Go to step 2.	Install the correct laser printhead. Go to step 2.
<p><b>Step 2</b> Ensure the cables for sockets "MIR MTR" and "VIDEO" on the controller card are properly connected and not damaged.</p> <p>Are the above cables properly connected and undamaged?</p>	Go to step 3.	Reseat the connections. Go to step 3.
<p><b>Step 3</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See " <b>Controller board removal</b> " on page 349.	Problem resolved.

## Printhead service check

Action	Yes	No
<p><b>Step 1</b> Ensure the cables for sockets "MIR MTR" and "VIDEO" on the controller card are properly connected and not damaged.</p> <p>Are the above cables properly connected and undamaged?</p>	Go to step 2.	Reseat the connections. Go to the next step.
<p><b>Step 2</b> Reset the machine.</p> <p>Does the error continue?</p>	Go to step 3.	Problem resolved.
<p><b>Step 3</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See " <b>Controller board removal</b> " on page 349.	Problem resolved.

## Fuser drive motor service check

Action	Yes	No
<p><b>Step 1</b> Ensure the cable for socket "J24" on the controller board is properly connected.</p> <p>Is the above connection properly connected?</p>	Go to step 2.	Reseat the connections. Go to step 2.
<p><b>Step 2</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the fuser drive motor. See " <b>Fuser drive motor removal</b> " on page 351. Go to step 3.	Problem resolved.
<p><b>Step 3</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See " <b>Controller board removal</b> " on page 349.	Problem resolved.

## Fuser service check

Action	Yes	No
<p><b>Step 1</b> Ensure the fuser is properly installed.</p> <p>Is the fuser properly installed?</p>	Go to step 2.	Reseat the connections. Go to step 2.
<p><b>Step 2</b> Remove the existing fuser and install a different fuser.</p> <p>Does the error remain?</p>	Replace the fuser. See " <b>Fuser removal</b> " on page 322. Go to step 3.	Problem resolved.
<p><b>Step 3</b> Ensure the cable for socket "J27" on the controller board is properly connected.</p> <p>Is the above connection properly connected?</p>	Go to step 4.	Reseat the connection.
<p><b>Step 4</b> Ensure the LVPS connections are properly connected.</p> <p>Are the above connections properly connected?</p>	Go to step 5.	Reseat the connections.
<p><b>Step 5</b> Reset the machine.</p> <p>Does the error remain?</p>	Replace the LVPS. See " <b>LVPS removal</b> " on page 366. Go to step 6.	Problem resolved.

Action	Yes	No
<b>Step 6</b> Reset the machine.  Does the error remain?	Replace the controller board. See <b>“Controller board removal” on page 349.</b>	Problem resolved.

## LVPS service check

Action	Yes	No
<b>Step 1</b> Reset the machine.  Does the error remain?	Replace the LVPS. See <b>“LVPS removal” on page 366.</b>  Go to step 2.	Problem resolved.
<b>Step 2</b> Reset the machine.  Does the error remain?	Replace the controller board. See <b>“Controller board removal” on page 349.</b>	Problem resolved.

## Toner level sensing service check

Action	Yes	No
<b>Step 1</b> Ensure that the toner cartridge is installed properly.  Is the toner cartridge properly installed?	Go to step 2.	Reinstall the toner cartridge properly.
<b>Step 2</b> Remove the existing toner cartridge and install a different cartridge.  Does the error remain?	Go to step 3.	Problem resolved.
<b>Step 3</b> Ensure the cable for socket “JCTLS” on the controller board is properly connected.  Is the above connection properly connected?	Go to step 4.	Reseat the connection or replace the cable. Go to the next step.
<b>Step 4</b> Ensure the toner low / imaging unit high voltage contact is free from damage.  Is the toner low / imaging unit high voltage contact free from damage?	Go to step 5.	Replace the toner low / imaging unit high voltage contact.  Go to step 5.
<b>Step 5</b> Reset the machine.  Does the error continue?	Replace the controller board. See <b>“Controller board removal” on page 349.</b>	Problem resolved.

## Main drive motor service check

Action	Yes	No
<p><b>Step 1</b> Ensure the cable for socket "TRANSPORT MTR" on the controller board is properly connected.</p> <p>Is the above connection properly connected?</p>	Go to step 2.	Reseat the connections. Go to step 2.
<p><b>Step 2</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the main drive motor. See " <b>Main drive motor removal</b> " on page 354. Go to step 3.	Problem resolved.
<p><b>Step 3</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See " <b>Controller board removal</b> " on page 349.	Problem resolved.

## Media feeder service check

Action	Yes	No
<p><b>Step 1</b> Ensure the pick roller is properly installed.</p> <p>Is the pick roller properly installed?</p>	Go to step 2.	Remove and reinstall the pick roller. See " <b>Pick roller assembly removal</b> " on page 342.
<p><b>Step 2</b> Ensure the cable for socket "INDEX / PAP OUT / PICK MTR" on the controller board is properly connected.</p> <p>Is the above connection properly connected?</p>	Go to step 3.	Reseat the connection.
<p><b>Step 3</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the media feeder. See " <b>Media feeder removal</b> " on page 356. Go to step 4.	Problem resolved.
<p><b>Step 4</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See " <b>Controller board removal</b> " on page 349.	Problem resolved.

## Redrive motor service check

Action	Yes	No
<p><b>Step 1</b> Ensure the cable for socket "REDRIVE" on the controller board is properly connected.</p> <p>Is the above connection properly connected?</p>	Go to step 2.	Reseat the connection.
<p><b>Step 2</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the upper redrive. See " <b>Upper redrive removal</b> " on page 331. Go to step 3.	Problem resolved.
<p><b>Step 3</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See " <b>Controller board removal</b> " on page 349.	Problem resolved.

## Duplex motor service check

Action	Yes	No
<p><b>Step 1</b> Ensure the cable for socket "DUPLEX MTR" on the controller board is properly connected.</p> <p>Is the above connection properly connected?</p>	Go to step 2.	Reseat the connection.
<p><b>Step 2</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the duplex motor. See " <b>Duplex motor removal</b> " on page 320. Go to <b>step 3</b> .	Problem resolved.
<p><b>Step 3</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See " <b>Controller board removal</b> " on page 349.	Problem resolved.

## Toner add motor service check

Action	Yes	No
<p><b>Step 1</b> Ensure the cable for socket "TONER AUG MTR" on the controller board is properly connected.</p> <p>Is the above connection properly connected?</p>	Go to step 2.	Reseat the connection.
<p><b>Step 2</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the toner add motor. See <b>"Toner add motor removal" on page 361.</b> Go to step 3.	Problem resolved.
<p><b>Step 3</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See <b>"Controller board removal" on page 349.</b>	Problem resolved.

## Main cooling fan service check

Action	Yes	No
<p><b>Step 1</b> Ensure the cable for socket "M FAN" on the controller board is properly connected.</p> <p>Is the above connection properly connected?</p>	Go to step 2.	Reseat the connection.
<p><b>Step 2</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the duplex motor. See <b>"Duplex motor removal" on page 320.</b>	Problem resolved.
<p><b>Step 3</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See <b>"Controller board removal" on page 349.</b>	Problem resolved.

## Cartridge cooling fan service check

Action	Yes	No
<p><b>Step 1</b> Ensure the cable for socket "HVPS" on the controller board is properly connected.</p> <p>Is the above connection properly connected?</p>	Go to step 2.	Reseat the connection.
<p><b>Step 2</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the cartridge cooling fan with cable. See " <b>Cartridge cooling fan removal</b> " on page 363. Go to step 3.	Problem resolved.
<p><b>Step 3</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See " <b>Controller board removal</b> " on page 349.	Problem resolved.

## LVPS cooling fan service check

Action	Yes	No
<p><b>Step 1</b> Ensure the LVPS cooling fan cable is properly connected.</p> <p>Is the above cable properly connected?</p>	Go to step 2.	Reseat the connection.
<p><b>Step 2</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the LVPS fan with cable. Go to step 3.	Problem resolved.
<p><b>Step 3</b> Reset the machine.</p> <p>Does the error continue?</p>	Replace the controller board. See " <b>Controller board removal</b> " on page 349.	Problem resolved.

## HVPS cooling fan service check

Action	Yes	No
<b>Step 1</b> Ensure the HVPS cooling fan cable is properly connected.  Is the above connection properly connected?	Go to step 2.	Reseat the connection.
<b>Step 2</b> Reset the machine.  Does the error continue?	Replace the HVPS fan with cable.  Go to step 3.	Problem resolved.
<b>Step 3</b> Reset the machine.  Does the error continue?	Replace the controller board. See <b>“Controller board removal” on page 349.</b>	Problem resolved.

## Miscellaneous cooling fan service check

Action	Yes	No
<b>Step 1</b> Ensure the miscellaneous cooling fan cable is properly connected.  Is the above connection properly connected?	Go to step 2.	Reseat the connection.
<b>Step 2</b> Reset the machine.  Does the error continue?	Replace the HVPS fan with cable.  Go to step 3.	Problem resolved.
<b>Step 3</b> Reset the machine.  Does the error continue?	Replace the controller board. See <b>“Controller board removal” on page 349.</b>	Problem resolved.

## Firmware and/or system electronics errors (900-999.99)

- **“9xx error messages” on page 114**
- **“System software error service check” on page 117**
- **“NVRAM mismatch failure service check” on page 122**

## 9xx error messages

Error code	Description	Action
900.xx	RIP firmware errors	Go to <b>“System software error service check” on page 117.</b>
912.xx	Unrecoverable Engine firmware error	POR the machine. If the error re-occurs, then update the firmware. If the error continues occurring, then replace the controller board. Go to <b>“Controller board removal” on page 349.</b>
940.xx	RIP to engine communication failure—the zero crossing signal used for fuser control in the low voltage (LV) power supply has failed, or the wrong low voltage power supply has been installed.	Check the LVPS. Go to <b>“LVPS service check” on page 108.</b>
948.xx	Failed engine card—pel clock check failed.	Replace the controller board. Go to <b>“Controller board removal” on page 349.</b>
949.xx	Failed engine card—delay line calibration failure.	
950.xx	NVRAM mismatch failure—mismatch between controller board EEPROM and control panel mirror. ".xx" codes: <ul style="list-style-type: none"> <li>• 00-29— mismatch between system and mirror</li> <li>• 30-60—mismatch between secure and system</li> </ul>	<p><b>Warning—Potential Damage:</b> When replacing any of the following components:</p> <ul style="list-style-type: none"> <li>• Control panel assembly</li> <li>• Controller board assembly</li> </ul> <p>Replace only one component at a time. Replace the required component and perform a POR before replacing a second component listed above. If this procedure is not followed, the printer will be rendered inoperable. Never replace two or more of the components listed above without a POR after installing each one or the printer will be rendered inoperable.</p> <p>Never install and remove components listed above as a method of troubleshooting components. Once a component has been installed in a machine, it can not be used in another machine. It must be returned to the manufacturer.</p> <p>Go to <b>“NVRAM mismatch failure service check” on page 122.</b></p>
952.xx	A recoverable NVRAM Cyclic Redundancy Check (CRC) error occurred—n is the offset at which the error occurred.	POR the printer.

Error code	Description	Action
953.xx	NVRAM chip failure with mirror part	Replace the controller board. Go to <b>“Controller board removal” on page 349.</b>
954.xx	NVRAM chip failure with system part	
955.xx	The Code ROM or NAND flash failed the Cyclic Redundancy Check (CRC) or the NAND experienced an uncorrectable multi-bit failure.	
956.xx	RIP card failure—processor failure	
956.01	Processor Overtemp	
957.xx	RIP card failure—ASIC failure	
958.xx	Controller Board NAND Failure—printer has performed more than 100 shift and reflash operations as a result of ECC bit corrections.	
959.01	Controller verification failure of smart chip boot code	Upgrade firmware. If that fails, replace the controller board. Go to <b>“Controller board removal” on page 349.</b>
959.02	Failure to authenticate Signature Verification Code	
959.03	Signature Verification Code failed to authenticate a code partition	
959.04	Jump to unverified address	
959.05	Unknown Boot Failure	
959.20	Smart chip hardware failure	Replace the controller board. Go to <b>“Controller board removal” on page 349.</b>
959.21	Smart chip did not respond to command request	Replace the controller board. Go to <b>“Controller board removal” on page 349.</b>
959.22	Challenge Secret Failure	
959.23	Smart chip self test failed during initialization	
959.24	EEPROM Retention Error (Write failure)	
959.25	Insufficient device space during HW prog	
959.26	Incremental counter reset exceeds maximum value	
959.27	Increment count failed due to maximum value limit	
959.28	Invalid SP Memory Configuration	

Error code	Description	Action
959.30	Smart chip library flagged an invalid argument(s)	Replace the controller board. Go to <b>“Controller board removal” on page 349.</b>
959.31	Smart chip library flagged an invalid device address	
959.32	Failure to initialize physical interface	
959.33	Unknown/unexpected Error	
959.34	System smart chip Bus Busy Error	
959.35	Transmission Error	
959.36	Smart chip command is invalid due to unlocked device status	
959.37	Smart chip command is invalid due to locked device status	
959.38	Incremental counter id(s) are invalid	
959.39	Invalid NV address	
959.40	Invalid smart chip command	Replace the controller board. Go to <b>“Controller board removal” on page 349.</b>
960.xx	RAM Memory Error—RAM soldered on the card is bad	
961.xx	RAM Memory Error—optional DRAM is bad	Replace the bad memory card.
964.xx	Download Emulation Cyclic Redundancy Check (CRC) Error—checksum failure detected in the emulation header or emulation file.	<ol style="list-style-type: none"> <li><b>1</b> Disable the Download Emulation.</li> <li><b>2</b> Program the download emulation into the firmware card again.</li> <li><b>3</b> If the above steps do not resolve the problem, then replace the firmware card and download the emulation again.</li> </ol>
975.xx	Network Error—unrecognizable network port	Call the next level of support.
976.xx	Network Error—unrecoverable software error in network port	
978.xx	Network Error—bad checksum while programming network port	
979.xx	Network Error—flash parts failed while programming network port	

Error code	Description	Action
980.xx	Engine experiencing unreliable communication with the specified device	Call the next level of support.
981.xx	Engine protocol violation detected by the specified device	
982.xx	Communications error detected by the specified device—device can be: <ul style="list-style-type: none"> <li>• Engine, Duplex, Tray x, Envelope Feeder</li> <li>• Output Bin x (Note: Used for single bin devices)</li> <li>• Bins x to y (Note: Used for multiple bin devices)</li> </ul>	
983.xx	Invalid command received by the specified device	
984.xx	Invalid command parameter received by the specified device	
990.xx	An equipment check condition has occurred in the specified device, but the device is unable to identify the exact component failure—device can be: <ul style="list-style-type: none"> <li>• Engine, Duplex, Tray x, Envelope Feeder</li> <li>• Output Bin x (Note: Used for single bin devices)</li> <li>• Bins x to y (Note: Used for multiple bin devices)</li> </ul>	Call the next level of support.
991.xx	The specified device has detected an equipment check in its controller board—device can be: <ul style="list-style-type: none"> <li>• Engine, Duplex, Tray x, Envelope Feeder</li> <li>• Output Bin x (Note: Used for single bin devices)</li> <li>• Bins x to y (Note: Used for multiple bin devices)</li> </ul>	

## System software error service check

There are different types of 900.xx errors that can occur. There may be a communication problem (bad cable, network connection, and so on) software issue, or a hardware problem with the controller board, or ISP (internal solutions port). The communication and software aspects should be checked first. Determine if the problem is constant or intermittent. Use the troubleshooting procedure below to isolate the issue. Take any notes as instructed. You will need that information in the event you need to contact your next level of support.

**Note:** Before troubleshooting, determine the operating system used when the error occurred. If possible determine whether a PostScript or PCL file was sent to the device when the error occurred. Ask the customer which Lexmark Solutions applications are installed on the device.

Action	Yes	No
<p><b>Step 1</b> POR the printer.</p> <p>Does the error remain?</p>	Go to step 2.	The problem is solved.
<p><b>Step 2</b></p> <ul style="list-style-type: none"> <li>a Write down the exact 900.xx error code displayed on the device.</li> <li>b Turn off the printer.</li> <li>c Clear the print queues.</li> <li>d Disconnect all communication cables, and remove all memory options.</li> <li>e Remove any installed ISP.</li> <li>f POR the printer into the Diagnostics menu.</li> </ul> <p>Does the error remain during startup?</p>	Go to step 3.	Go to step 6.
<p><b>Step 3</b> Check all the cables connected to the controller board for proper connectivity.</p> <p>Are the cables properly connected?</p>	Go to step 5.	Go to step 4.
<p><b>Step 4</b></p> <ul style="list-style-type: none"> <li>a Properly connect the cables to the controller board.</li> <li>b POR the printer into the Diagnostics menu.</li> </ul> <p>Does the error remain during startup?</p>	Go to step 5.	Go to step 6.
<p><b>Step 5</b></p> <ul style="list-style-type: none"> <li>a Replace the controller board.</li> <li>b POR the printer.</li> </ul> <p>Does the error remain during startup?</p> <p><b>Note:</b> If an error different from the original 900.xx is displayed, consult the service check for that error.</p>	Go to step 31.	The problem is solved.
<p><b>Step 6</b> Print the following:</p> <ul style="list-style-type: none"> <li>• Error log</li> <li>• Menu settings page</li> <li>• Network settings page</li> </ul> <p>Does the error remain while these pages were printing?</p>	Go to step 31.	Go to step 7.

Action	Yes	No
<p><b>Step 7</b></p> <p><b>Note:</b> Before performing this step, write down the following information about the file being sent to the printer:</p> <ul style="list-style-type: none"> <li>• Application used</li> <li>• Operating system</li> <li>• Driver type</li> <li>• File type (PCL, PostScript, XPS, etc.)</li> </ul> <p><b>a</b> Reattach the communications cable.</p> <p><b>b</b> POR the printer.</p> <p><b>c</b> Send the printer a print job.</p> <p>Does the error remain?</p>	Go to step 8.	Go to step 10.
<p><b>Step 8</b></p> <p><b>a</b> POR the printer.</p> <p><b>b</b> Send a different print job to the printer.</p> <p>Does the error remain?</p>	Go to step 9.	Go to step 10.
<p><b>Step 9</b></p> <p><b>a</b> Upgrade the firmware.</p> <p><b>Note:</b> Contact your next level of support for the correct firmware level to use.</p> <p><b>b</b> POR the printer.</p> <p><b>c</b> Send the printer a print job.</p> <p>Does the error remain?</p>	Go to step 31.	Go to step 10.
<p><b>Step 10</b></p> <p>Is the device an MFP?</p>	Go to step 11.	Go to step 13.
<p><b>Step 11</b></p> <p>Run a copy job.</p> <p>Does the error remain?</p>	Go to step 31.	Go to step 12.
<p><b>Step 12</b></p> <p>Run a scan to PC job.</p> <p>Does the error remain?</p>	Go to step 31.	Go to step 13.
<p><b>Step 13</b></p> <p>Is there optional memory installed?</p>	Go to step 14.	Go to step 16.
<p><b>Step 14</b></p> <p><b>a</b> Reinstall the memory.</p> <p><b>b</b> Send a print job to the printer.</p> <p>Does the error remain?</p>	Go to step 15.	Go to step 16.

Action	Yes	No
<p><b>Step 15</b></p> <p><b>a</b> Install a Lexmark recommended memory option.</p> <p><b>b</b> Send a print job to the printer.</p> <p>Does the error remain?</p>	Go to step 31.	The problem is solved.
<p><b>Step 16</b></p> <p>Is there a modem installed?</p>	Go to step 17.	Go to step 21.
<p><b>Step 17</b></p> <p><b>a</b> Reinstall the modem.</p> <p><b>b</b> POR the printer.</p> <p>Does the error remain?</p>	Go to step 18.	Go to step 20.
<p><b>Step 18</b></p> <p><b>a</b> Upgrade the firmware if it was not upgraded in a previous step.</p> <p><b>Note:</b> Contact your next level of support for the correct firmware level to use.</p> <p><b>b</b> POR the printer.</p> <p><b>c</b> Send the printer a print job.</p> <p>Does the error remain?</p>	Go to step 19.	The problem is solved.
<p><b>Step 19</b></p> <p><b>a</b> Replace the modem.</p> <p><b>b</b> POR the printer.</p> <p>Does the error remain?</p>	Go to step 31.	The problem is solved.
<p><b>Step 20</b></p> <p>Run a fax job.</p> <p>Does the error remain?</p>	Go to step 31.	Go to step 21.
<p><b>Step 21</b></p> <p>Is there an ISP option installed?</p>	Go to step 22.	The problem is solved.
<p><b>Step 22</b></p> <p><b>a</b> Reinstall the first ISP option.</p> <p><b>b</b> POR the printer.</p> <p>Does the error remain?</p>	Go to step 24.	Go to step 23.
<p><b>Step 23</b></p> <p>Run a job to test the option.</p> <p>Does the error remain?</p>	Go to step 24.	Go to step 26.

Action	Yes	No
<p><b>Step 24</b></p> <p><b>a</b> Upgrade the firmware if it was not upgraded in a previous step.  <b>Note:</b> Contact your next level of support for the correct firmware level to use.</p> <p><b>b</b> POR the printer.</p> <p><b>c</b> Send the printer a print job.</p> <p>Does the error remain?</p>	Go to step 25.	The problem is solved.
<p><b>Step 25</b></p> <p><b>a</b> Replace the faulty ISP option.</p> <p><b>b</b> POR the printer.</p> <p>Does the error remain?</p>	Go to step 31.	Go to step 26.
<p><b>Step 26</b></p> <p>Are there any more ISP options to install?</p>	Go to step 27.	The problem is solved.
<p><b>Step 27</b></p> <p><b>a</b> Install the next ISP option.</p> <p><b>b</b> POR the printer.</p> <p>Does the error remain?</p>	Go to step 29.	Go to step 28.
<p><b>Step 28</b></p> <p>Run a job to test the option.</p> <p>Does the error remain?</p>	Go to step 29.	Go to step 26.
<p><b>Step 29</b></p> <p><b>a</b> Upgrade the firmware if it was not upgraded in a previous step.  <b>Note:</b> Contact your next level of support for the correct firmware level to use.</p> <p><b>b</b> POR the printer.</p> <p><b>c</b> Send the printer a print job.</p> <p>Does the error remain?</p>	Go to step 30.	Go to step 26.
<p><b>Step 30</b></p> <p><b>a</b> Replace the faulty ISP option.</p> <p><b>b</b> POR the printer.</p> <p>Does the error remain?</p>	Go to step 31.	Go to step 26.

Action	Yes	No
<p><b>Step 31</b></p> <p>Contact your next level of support. You will need the following information:</p> <ul style="list-style-type: none"> <li>• Exact 900.xx error digits and complete error message</li> <li>• Printed menu settings page</li> <li>• Printed network settings page</li> <li>• Device error log</li> <li>• A sample print file if the error appears to be isolated to a single file</li> <li>• File/Application used if the error is related to specific print file</li> <li>• Device operating system</li> <li>• Driver used (PCL/PS)</li> <li>• Frequency of the occurrence of the error</li> </ul>		

## NVRAM mismatch failure service check

**Warning—Potential Damage:** When replacing any of the following components:

- Control panel assembly
- Controller board assembly

Replace only one component at a time. Replace the required component and perform a POR before replacing a second component listed above. If this procedure is not followed, the printer will be rendered inoperable. Never replace two or more of the components listed above without a POR after installing each one or the printer will be rendered inoperable.

**Warning—Potential Damage:** These components can be used as a method of troubleshooting as long as the machine is booted into diagnostic mode or is operating in diagnostic mode. Once a component has been installed in a machine and powered up into user mode, it cannot be used in another machine. It must be returned to the manufacturer.

Action	Yes	No
<p><b>Step 1</b></p> <p>Check the control panel assembly.</p> <p>Was the control panel assembly recently replaced?</p>	Go to step 3.	Go to step 2.
<p><b>Step 2</b></p> <p>Check the controller board assembly.</p> <p>Was the controller board assembly recently replaced?</p>	Go to step 4.	Contact next level of support.
<p><b>Step 3</b></p> <p>Replace the current control panel assembly with the control panel assembly. See <b>“Control panel removals” on page 369.</b></p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.

Action	Yes	No
<p><b>Step 4</b></p> <p>Replace the current controller board assembly with the original controller board assembly. See <b>“Controller board removal” on page 349.</b></p> <p>Does the problem continue?</p>	Go to step 6.	The problem is solved.
<p><b>Step 5</b></p> <p>Replace the original control panel assembly with a new and not previously installed control panel assembly.</p> <p>Does the error continue?</p>	Contact the next level of support.	The problem is solved.
<p><b>Step 6</b></p> <p>Replace the original control panel assembly with a new and not previously installed control panel door assembly.</p> <p>Does the error continue?</p>	Contact the next level of support.	The problem is solved.

## Input/output option hardware errors

### 3xx error messages (300-399.99)

#### User attendance messages

Error code	Description	Action
321.51	No encoder feedback detected from the tray 2 pick/lift motor.	Go to <b>“250/550-sheet media feeder failure service check” on page 130.</b>
321.52	Motor stop error—the tray 2 pick/lift motor kept on running some time after the motor was commanded to stop.	
321.53	The tray 2 pick/lift motor went over the normal speed	
322.54	No encoder feedback detected from the tray 2 transport motor.	Open the media tray, and make sure to remove all obstructions. If this doesn't solve the issue, then go to <b>“250/550-sheet transport motor failure service check” on page 128</b>
322.55	Motor stop error—the tray 2 transport motor kept on running some time after the motor was commanded to stop.	
322.56	The tray 2 transport motor went over the normal speed	

Error code	Description	Action
324.57	No encoder feedback detected from the tray 2 (HCIT) lift motor.	Go to <b>“HCIT lift drive motor failure service check” on page 133.</b>
324.58	Motor stop error—the tray 2 (HCIT) lift motor kept on running some time after the motor was commanded to stop.	
324.59	The tray 2 (HCIT) lift motor went over the normal speed	
325.60	Hardware Error—tray 2 board ID unknown	Go to <b>“250/550-sheet controller board failure service check” on page 132.</b>
325.61	Hardware Error—tray 2 option type unknown	
325.62	Hardware Error—tray 2 product ID unknown)	
325.63	Hardware Error—tray 2 sensors are not plugged on the board	
325.64	Hardware Error—tray 2 lift plate failed to reach its home position	Go to <b>“HCIT lift plate failure service check” on page 135.</b>
331.51	No encoder feedback detected from the tray 3 pick/lift motor.	Go to <b>“250/550-sheet media feeder failure service check” on page 130.</b>
331.52	Motor stop error—the tray 3 pick/lift motor kept on running some time after the motor was commanded to stop.	
331.53	The tray 3 pick/lift motor went over the normal speed	
332.54	No encoder feedback detected from the tray 3 transport motor.	Open the media tray, and make sure to remove all obstructions. If this doesn't solve the issue, then go to <b>“250/550-sheet transport motor failure service check” on page 128</b>
332.55	Motor stop error—the tray 3 transport motor kept on running some time after the motor was commanded to stop.	
332.56	The tray 3 transport motor went over the normal speed.	
334.57	No encoder feedback detected from the tray 3 (HCIT) lift motor.	Go to <b>“HCIT lift drive motor failure service check” on page 133.</b>
334.58	Motor stop error—the tray 3 (HCIT) lift motor kept on running some time after the motor was commanded to stop.	
334.59	The tray 3 (HCIT) lift motor went over the normal speed	
335.60	Hardware Error—tray 3 board ID unknown	Go to <b>“250/550-sheet controller board failure service check” on page 132.</b>
335.61	Hardware Error—tray 3 option type unknown	
335.62	Hardware Error—tray 3 product ID unknown	
335.63	Hardware Error—tray 3 sensors are not plugged on the board	
335.64	Hardware Error—tray 3 lift plate failed to reach its home position	Go to <b>“HCIT lift plate failure service check” on page 135.</b>

Error code	Description	Action
341.51	No encoder feedback detected from the tray 4 pick/lift motor.	Go to <b>“250/550-sheet media feeder failure service check” on page 130.</b>
341.52	Motor stop error—the tray 4 pick/lift motor kept on running some time after the motor was commanded to stop.	
341.53	The tray 4 pick/lift motor went over the normal speed	
342.54	No encoder feedback detected from the tray 4 transport motor.	Open the media tray, and make sure to remove all obstructions.  If this doesn’t solve the issue, then go to <b>“250/550-sheet transport motor failure service check” on page 128</b>
342.55	Motor stop error—the tray 4 transport motor kept on running some time after the motor was commanded to stop.	
342.56	The tray 4 transport motor went over the normal speed.	
344.57	No encoder feedback detected from the tray 4 (HCIT) lift motor.	Go to <b>“HCIT lift drive motor failure service check” on page 133.</b>
344.58	Motor stop error—the tray 4 (HCIT) lift motor kept on running some time after the motor was commanded to stop.	
344.59	The tray 4 (HCIT) lift motor went over the normal speed	
345.60	Hardware Error—tray 4 board ID unknown	Go to <b>“250/550-sheet controller board failure service check” on page 132.</b>
345.61	Hardware Error—tray 4 option type unknown	
345.62	Hardware Error—tray 4 product ID unknown	
345.63	Hardware Error—tray 4 sensors are not plugged on the board	
345.64	Hardware Error—tray 4 lift plate failed to reach its home position	Go to <b>“HCIT lift plate failure service check” on page 135.</b>

Error code	Description	Action
371.51	No encoder feedback detected from the output option 1/output expander main/interface motor.	<ol style="list-style-type: none"> <li>1 POR the machine.</li> <li>2 Reseat the output option on the printer.</li> <li>3 Open the rear door and clear obstructions along the paper path.</li> </ol> <p>If the problem remains, then go to <b>“Output expander failure service check” on page 141.</b></p>
371.52	Motor stop error—the output option 1/output expander main/interface motor kept on running some time after the motor was commanded to stop.	
372.51	No encoder feedback detected from the output option 2/output expander main/interface motor.	
372.52	Motor stop error—the output option 2/output expander main/interface motor kept on running some time after the motor was commanded to stop.	
373.51	No encoder feedback detected from the output option 3/output expander main/interface motor.	
373.52	Motor stop error—the output option 3/output expander main/interface motor kept on running some time after the motor was commanded to stop.	
375.51	No encoder feedback detected from the output option 1/high capacity output expander main/interface motor.	<ol style="list-style-type: none"> <li>1 POR the machine.</li> <li>2 Reseat the output option on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure the sensors (pass through) are free from obstruction.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“HCOE failure service check” on page 139.</b></p>
375.52	Motor stop error—the the output option 1/high capacity output expander main/interface motor kept on running some time after the motor was commanded to stop.	
376.51	No encoder feedback detected from the output option 2/high capacity output expander main/interface motor.	
376.52	Motor stop error—the output option 3/output expander main/interface motor kept on running some time after the motor was commanded to stop.	

Error code	Description	Action
377.51	No encoder feedback detected from the output option 1/mailbox main/interface motor.	<ol style="list-style-type: none"> <li><b>1</b> POR the machine.</li> <li><b>2</b> Reseat the output option on the printer.</li> <li><b>3</b> Open the rear door and clear obstructions along the paper path.</li> </ol> <p>If the problem remains, then go to <b>“Mailbox failure service check” on page 140.</b></p>
377.52	Motor stop error—the output option 1/mailbox main/interface motor kept on running some time after the motor was commanded to stop.	
378.51	No encoder feedback detected from the output option 2/mailbox main/interface motor.	
378.52	Motor stop error—the output option 2/mailbox main/interface motor kept on running some time after the motor was commanded to stop.	
379.51	No encoder feedback detected from the output option 3/mailbox main/interface motor.	
379.52	Motor stop error—the output option 3/mailbox main/interface motor kept on running some time after the motor was commanded to stop.	
381.51	No encoder feedback detected from the output option 1/finisher/offset stacker ejector motor.	
381.52	Motor stop error—the output option 1/finisher/offset stacker ejector motor kept on running some time after the motor was commanded to stop.	
381.54	No encoder feedback detected from the output option 1/finisher/offset stacker main/interface motor.	
381.55	Motor stop error—the output option 1/finisher/offset stacker main/interface motor kept on running some time after the motor was commanded to stop.	
381.56	The output option 1/finisher/offset stacker main/interface motor went over the normal speed	
382.51	No encoder feedback detected from the output option 2/finisher/offset stacker ejector motor.	
382.52	Motor stop error—the output option 2/finisher/offset stacker ejector motor kept on running some time after the motor was commanded to stop.	
382.54	No encoder feedback detected from the output option 2/finisher/offset stacker main/interface motor.	
382.55	Motor stop error—the output option 2/finisher/offset stacker main/interface motor kept on running some time after the motor was commanded to stop.	

Error code	Description	Action
382.56	The output option 2/finisher/offset stacker main/interface motor went over the normal speed	
383.51	No encoder feedback detected from the output option 3/finisher/offset stacker ejector motor.	
383.52	Motor stop error—the output option 3/finisher/offset stacker ejector motor kept on running some time after the motor was commanded to stop.	
383.54	No encoder feedback detected from the output option 3/finisher/offset stacker main/interface motor.	
383.55	Motor stop error—the output option 3/finisher/offset stacker main/interface motor kept on running some time after the motor was commanded to stop.	
383.56	The output option 3/finisher/offset stacker main/interface motor went over the normal speed	

## 250/550-sheet transport motor failure service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Remove all input options and re-install only the suspected 250/550-sheet tray option. POR into diagnostics mode and navigate to:</p> <p><b>INPUT TRAY TESTS &gt; Feed tests &gt; Tray 2</b></p> <p>Does the input option feed normally?</p>	<p>The problem may not be on this option tray. Re-install the remaining input options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the input option being tested.</p>	<p>Go to step 2.</p>
<p><b>Step 2</b></p> <p>Remove the tray from the drawer and do the following:</p> <ul style="list-style-type: none"> <li>• Check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another.</li> <li>• Check the media size finger flag for damage.</li> <li>• Check the lift plate gear for damage. Manually turn the lift plate gear and check if it causes the lift plate to move upward.</li> <li>• Check the separator gears for damage. Manually turn the gear and check if the gears function properly.</li> </ul> <p>Are the above components ok?</p>	<p>Go to step 3.</p>	<p>Replace the media tray. Go to <b>“Media tray assembly removal” on page 407.</b></p>

Action	Yes	No
<p><b>Step 3</b></p> <p>Open the left cover and do the following:</p> <ul style="list-style-type: none"> <li>• Reseat the connector (J10) on the controller board.</li> <li>• Check the motor cables. If damaged, then replace the transport motor. See <b>“Drawer transport motor removal” on page 416.</b></li> <li>• Remove the media tray. Manually turn the transport motor encoders, and check if it causes the transport and separator gears to turn. If there is a problem with the gears, then replace the input option. See <b>“250/550-sheet media tray and drawer assembly removal” on page 406.</b></li> </ul> <p>Replace the transport motor. See <b>“Drawer transport motor removal” on page 416.</b></p> <p>Does the error remain?</p>	<p>Replace the input option. Go to <b>“250/550-sheet media tray and drawer assembly removal” on page 406.</b></p> <p>If the error persists, then go to step 4.</p>	<p>The problem is solved.</p>
<p><b>Step 4</b></p> <p>Remove the 250/550-sheet input option and check the upper interface cable. If damaged, then replace the upper interface cable.</p> <p>Re-seat the connector (J1) on the controller board, then POR the machine.</p> <p>Does the error remain?</p>	<p>Go to step 5.</p>	<p>The problem is solved.</p>
<p><b>Step 5</b></p> <p>Check the interface cable of the printer or upper level option for damage.</p> <p>Is the above component still ok?</p>	<p>Go to step 6.</p>	<p>Replace the interface cable of the printer or upper level option.</p>
<p><b>Step 6</b></p> <p>Check the connectors on the controller board. If damaged, then replace the controller board. See <b>“Drawer controller PCBA removal” on page 411.</b></p> <p>Reseat all connectors on the controller board, then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller board. Go to <b>“Drawer controller PCBA removal” on page 411.</b></p> <p>If the error remains, then go to step 7.</p>	<p>The problem is solved.</p>
<p><b>Step 7</b></p> <p>If the 250/550-sheet tray option is the only input option installed, then replace the 250/550-sheet tray option. See <b>“250/550-sheet media tray and drawer assembly removal” on page 406.</b></p> <p>If there are multiple input options, then remove the suspected input option and install it as Tray 2. Run a print test, navigate to:</p> <p><b>Reports &gt; Device Statistics</b></p> <p>Does the error remain?</p>	<p>Replace the input tray option. Go to <b>“250/550-sheet media tray and drawer assembly removal” on page 406.</b></p>	<p>The problem is solved.</p>

## 250/550-sheet media feeder failure service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Remove the tray from the drawer and do the following:</p> <ul style="list-style-type: none"> <li>• Check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another.</li> <li>• Check the media size finger flag for damage.</li> <li>• Check the lift plate gear for damage. Manually turn the lift plate gear and check if it causes the lift plate to move upward.</li> <li>• Check the separator gears for damage. Manually turn the gear and check if the gears function properly.</li> </ul> <p>Are the above components ok?</p>	Go to step 2.	Replace the media tray. Go to <b>“Media tray assembly removal” on page 407.</b>
<p><b>Step 2</b></p> <p>Remove the tray from the drawer and do the following:</p> <ul style="list-style-type: none"> <li>• Check the pick roller's position. The pick roller should not hang vertically; it should lean horizontally underneath the top cover of the drawer.</li> <li>• Make sure the pick roller is installed correctly. If not, then re-install the pick roller.</li> <li>• Lower down the pick roller and then release. Check if the pick roller would spring back to its original position.</li> <li>• Check the pick roller for damage. Check for wear on the pick tires.</li> </ul> <p>Are the above components ok?</p>	Go to step 3.	Replace the pick roller. Go to <b>“Drawer pick roller removal” on page 408.</b>
<p><b>Step 3</b></p> <p>Open the left cover and do the following:</p> <ul style="list-style-type: none"> <li>• Reseat the connector (J10) on the controller board.</li> <li>• Check the motor cables. If damaged, then replace the transport motor. See <b>“Drawer transport motor removal” on page 416.</b></li> <li>• Remove the media tray. Manually turn the transport motor encoders, and check if it causes the transport and separator gears to turn. If there is a problem with the gears, then replace the input option. See <b>“250/550-sheet media tray and drawer assembly removal” on page 406.</b></li> <li>• Replace the transport motor. See <b>“Drawer transport motor removal” on page 416.</b></li> </ul> <p>Does the error remain?</p>	<p>Replace the input option. Go to <b>“250/550-sheet media tray and drawer assembly removal” on page 406.</b></p> <p>If the error persists, then go to step 4.</p>	The problem is solved.

Action	Yes	No
<p><b>Step 4</b></p> <p>Open the media tray and do the following:</p> <ul style="list-style-type: none"> <li>• Make sure the separator roller is properly installed.</li> <li>• Manually turn the separator roller drive gears and check if the separator rollers would also turn.</li> <li>• Check the separator roller gears for damage and obstructions.</li> </ul> <p>Is the separator roll still ok?</p>	Go to step 5.	Replace the separator roll.
<p><b>Step 5</b></p> <p>Remove the input option from the printer. Check the upper interface cable. If damaged, then replace the upper interface cable. See <b>“Drawer upper interface cable removal” on page 412.</b></p> <p>Open the left cover and reseal the connector (J1) on the controller board. POR the machine.</p> <p>Does the error remain?</p>	Go to step 6.	The problem is solved.
<p><b>Step 6</b></p> <p>Check the interface cable of the printer or upper level option for damage.</p> <p>Is the above component in good condition?</p>	Go to step 7.	Replace the interface cable of the printer or upper level option.
<p><b>Step 7</b></p> <p>Check the connectors on the controller board. If damaged, then replace the controller board. See <b>“Drawer controller PCBA removal” on page 411.</b></p> <p>Reseat all connectors on the controller board, then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller board. Go to <b>“Drawer controller PCBA removal” on page 411.</b></p> <p>If the error remains, then go to step 8.</p>	The problem is solved.
<p><b>Step 8</b></p> <p>If the 250/550-sheet tray option is the only input option installed, then replace the 250/550-sheet tray option. See <b>“250/550-sheet media tray and drawer assembly removal” on page 406.</b></p> <p>If there are multiple input options, then remove the suspected input option and install it as Tray 2. Run a print test, navigate to:</p> <p><b>Reports &gt; Device Statistics</b></p> <p>Does the error remain?</p>	Replace the input tray option. Go to <b>“250/550-sheet media tray and drawer assembly removal” on page 406.</b>	The problem is solved.

## 250/550-sheet controller board failure service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Remove all input options and re-install only the suspected 250/550-sheet tray option. POR into diagnostics mode and navigate to:</p> <p><b>INPUT TRAY TESTS &gt; Feed tests &gt; Tray 2</b></p> <p>Does the input option feed normally?</p>	<p>The problem may not be on this option tray. Re-install the remaining input options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the input option being tested.</p>	<p>Go to step 2.</p>
<p><b>Step 2</b></p> <p>Remove the input option from the printer. Check the upper interface cable. If damaged, then replace the upper interface cable. See <b>“Drawer upper interface cable removal” on page 412.</b></p> <p>Open the left cover and reseal the connector (J1) on the controller board. POR the machine.</p> <p>Does the error remain?</p>	<p>Go to step 3.</p>	<p>The problem is solved.</p>
<p><b>Step 3</b></p> <p>Check the interface cable of the printer or upper level option for damage.</p> <p>Is the above component in good condition?</p>	<p>Go to step 4.</p>	<p>Replace the interface cable of the printer or upper level option.</p>
<p><b>Step 4</b></p> <p>Check the connectors on the controller board. If damaged, then replace the controller board. See <b>“Drawer controller PCBA removal” on page 411.</b></p> <p>Reseat all connectors on the controller board, then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller board. Go to <b>“Drawer controller PCBA removal” on page 411.</b></p> <p>If the error remains, then go to step 5.</p>	<p>The problem is solved.</p>
<p><b>Step 5</b></p> <p>If the 250/550-sheet tray option is the only input option installed, then replace the 250/550-sheet tray option. See <b>“250/550-sheet media tray and drawer assembly removal” on page 406.</b></p> <p>If there are multiple input options, then remove the suspected input option and install it as Tray 2. Run a print test, navigate to:</p> <p><b>Reports &gt; Device Statistics</b></p> <p>Does the error remain?</p>	<p>Replace the input tray option. Go to <b>“250/550-sheet media tray and drawer assembly removal” on page 406.</b></p>	<p>The problem is solved.</p>

## HCIT lift drive motor failure service check

Action	Yes	No
<p><b>Step 1</b> Remove the media tray from the HCIT option and do the following:</p> <ul style="list-style-type: none"> <li>• Remove all media and check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another.</li> <li>• Check the media size finger flag for damage.</li> <li>• Check the elevator plate. Manually lower down the elevator plate and check if it springs back to its original position.</li> <li>• Check the elevator tension cables if there are problems.</li> <li>• Check the elevator gears for damage.</li> <li>• Manually turn the drive gear and check if the other gears engaged to it will also turn.</li> <li>• Check if the tray can be inserted properly into the HCIT option.</li> </ul> <p>Are the above components ok?</p>	Go to step 2.	Replace the media tray. Go to <b>“HCIT removal” on page 423.</b>
<p><b>Step 2</b> Remove the media tray and do the following:</p> <ul style="list-style-type: none"> <li>• Check the lift drive gears for damage. Manually turn the gears, and check if it causes the lift drive motor encoder to turn.</li> <li>• Open the right cover and check the motor connections. Check the motor cables for damage.</li> </ul> <p>If there is a problem with the lift drive motor, then replace it. See <b>“HCIT lift drive motor removal” on page 436.</b></p> <p>Remove the left cover, and reseal the connector (J1) on the controller board. POR the machine.</p> <p>Does the error remain?</p>	Go to step 3.	The problem is solved.
<p><b>Step 3</b> Separate the HCIT from the printer. Remove also the remaining input options. Check the HCIT interface cable. If damaged, then replace the cable. See <b>“HCIT drawer assembly interface cable removal” on page 438.</b></p> <p>Open the left cover, and reseal the connector (J1) on the controller board. POR the machine.</p> <p>Does the error remain?</p>	Go to step 4.	The problem is solved.
<p><b>Step 4</b> Remove all other options and install only the HCIT option.</p> <p>Does the error remain?</p>	Go to step 6.	Go to step 5.

Action	Yes	No
<p><b>Step 5</b> Check the interface cable of the printer or upper level option for damage.</p> <p>Is the above component still ok?</p>	Go to step 6.	Replace the interface cable of the printer or upper level option.
<p><b>Step 6</b> Check the connectors on the controller board. If damaged, then replace the controller board. See <b>“HCIT controller PCBA removal” on page 433.</b> Reseat all connectors on the controller board, then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller board. Go to <b>“HCIT controller PCBA removal” on page 433.</b></p> <p>If the error remains, then go to step 7.</p>	The problem is solved.
<p><b>Step 7</b> Remove the media tray from the HCIT option and do the following:</p> <ul style="list-style-type: none"> <li>• Check if there is no problem moving the tray input guides.</li> <li>• Manually push the media size sensor flags and check if it would spring back to its original position.</li> <li>• Check the sensor (HCIT media guide) for damage. Make sure all obstructions are removed.</li> </ul> <p>Are the above components ok?</p>	Go to step 8.	Replace the HCIT drawer assembly. Go to <b>“HCIT drawer assembly removal” on page 423.</b>
<p><b>Step 8</b> Replace the tray.</p> <p>Does the error remain?</p>	Go to step 9.	The problem is solved.
<p><b>Step 9</b> Replace the drawer.</p> <p>Does the error remain?</p>	Contact the next level of support.	The problem is solved.

## HCIT lift plate failure service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Remove the media tray from the HCIT option and do the following:</p> <ul style="list-style-type: none"> <li>• Remove all media and check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another.</li> <li>• Check the media size finger flag for damage.</li> <li>• Check the elevator plate. Manually lower down the elevator plate and check if it springs back to its original position.</li> <li>• Check the elevator tension cables if there are problems.</li> <li>• Check the elevator gears for damage.</li> <li>• Manually turn the drive gear and check if the other gears engaged to it will also turn. *Check if the tray can be inserted properly into the HCIT option.</li> </ul> <p>Are the above components ok?</p>	Go to step 2.	Replace the media tray. Go to <b>“HCIT removal” on page 423.</b>
<p><b>Step 2</b></p> <p>Remove the media tray and do the following:</p> <ul style="list-style-type: none"> <li>• Check the lift drive gears for damage. Manually turn the gears, and check if it causes the lift drive motor encoder to turn.</li> <li>• Open the right cover and check the motor connections. Check the motor cables for damage. If there is a problem with the lift drive motor, then replace it. See <b>“HCIT lift drive motor removal” on page 436.</b></li> </ul> <p>Remove the left cover, and reseal the connector (J1) on the controller board. POR the machine.</p> <p>Does the error remain?</p>	Go to step 3.	The problem is solved.
<p><b>Step 3</b></p> <p>Remove the media tray from the HCIT option and do the following:</p> <ul style="list-style-type: none"> <li>• Check if there is no problem moving the tray input guides.</li> <li>• Manually push the media size sensor flags and check if it would spring back to its original position.</li> <li>• Check the sensor (HCIT media guide) for damage. Make sure all obstructions are removed.</li> </ul> <p>Are the above components ok?</p>	Go to step 4.	Replace the HCIT drawer assembly. Go to <b>“HCIT drawer assembly removal” on page 423.</b>

Action	Yes	No
<p><b>Step 4</b> Separate the HCIT from the printer. Remove also the remaining input options. Check the HCIT interface cable. If damaged, then replace the cable. See <b>“HCIT drawer assembly interface cable removal” on page 438.</b></p> <p>Open the left cover, and reseal the connector (J1) on the controller board. POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b> Remove all other options and install only the HCIT option.</p> <p>Does the error remain?</p>	Go to step 7.	Go to step 6.
<p><b>Step 6</b> Check the interface cable of the printer or upper level option for damage.</p> <p>Is the above component still ok?</p>	Go to step 7.	Replace the interface cable of the printer or upper level option.
<p><b>Step 7</b> Check the connectors on the controller board. If damaged, then replace the controller board. See <b>“HCIT controller PCBA removal” on page 433.</b> Reseat all connectors on the controller board, then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller board. Go to <b>“HCIT controller PCBA removal” on page 433.</b></p> <p>If the error remains, then go to step 8.</p>	The problem is solved.
<p><b>Step 8</b> Replace the tray.</p> <p>Does the error remain?</p>	Go to step 9.	The problem is solved.
<p><b>Step 9</b> Replace the drawer.</p> <p>Does the error remain?</p>	Contact the next level of support.	The problem is solved.

## HCIT transport motor failure service check

Action	Yes	No
<p><b>Step 1</b> Remove all input options and re-install only the HCIT option. POR into diagnostics mode and navigate to: <b>INPUT TRAY TESTS &gt; Feed tests &gt; Tray 2</b></p> <p>Does the input option feed normally?</p>	<p>The problem may not be on this option tray. Re-install the remaining input options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the input option being tested.</p>	<p>Go to step 2.</p>
<p><b>Step 2</b> Open the media tray and do the following:</p> <ul style="list-style-type: none"> <li>• Make sure the separator roller is properly installed.</li> <li>• Manually turn the separator roller drive gears and check if the separator rollers would also turn.</li> <li>• Check the separator roller gears for damage and obstructions.</li> </ul> <p>Is the separator roll still ok?</p>	<p>Go to step 3.</p>	<p>Replace the separator roll.</p>
<p><b>Step 3</b> Remove the media tray and check the transport drive gears for damage. Manually turn the gears, and check if it causes the transport rollers to turn. If there is a problem, then replace the HCIT drawer. See <b>“HCIT drawer assembly removal” on page 423.</b></p> <p>Remove the left cover, and reseal the connector (J1) on the controller board. POR the machine.</p> <p>Does the error remain?</p>	<p>Go to step 4.</p>	<p>The problem is solved.</p>
<p><b>Step 4</b> Separate the HCIT from the printer. Remove also the remaining input options. Check the HCIT interface cable. If damaged, then replace the cable. See <b>“HCIT drawer assembly interface cable removal” on page 438.</b></p> <p>Open the left cover, and reseal the connector (J1) on the controller board. POR the machine.</p> <p>Does the error remain?</p>	<p>Go to step 5.</p>	<p>The problem is solved.</p>
<p><b>Step 5</b> Remove all other options and install only the HCIT option.</p> <p>Does the error remain?</p>	<p>Go to step 7.</p>	<p>Go to step 6.</p>

Action	Yes	No
<p><b>Step 6</b> Check the interface cable of the printer or upper level option for damage.</p> <p>Is the above component still ok?</p>	Go to step 7.	Replace the interface cable of the printer or upper level option.
<p><b>Step 7</b> Check the connectors on the controller board. If damaged, then replace the controller board. See <b>“HCIT controller PCBA removal” on page 433.</b> Reseat all connectors on the controller board, then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller board. Go to <b>“HCIT controller PCBA removal” on page 433.</b></p> <p>If the error remains, then go to step 8.</p>	The problem is solved.
<p><b>Step 8</b> Remove the media tray from the HCIT option and do the following:</p> <ul style="list-style-type: none"> <li>• Check if there is no problem moving the tray input guides.</li> <li>• Manually push the media size sensor flags and check if it would spring back to its original position.</li> <li>• Check the sensor (HCIT media guide) for damage. Make sure all obstructions are removed.</li> </ul> <p>Are the above components ok?</p>	Go to step 9.	Replace the HCIT drawer assembly. Go to <b>“HCIT drawer assembly removal” on page 423.</b>
<p><b>Step 9</b> Replace the tray.</p> <p>Does the error remain?</p>	Go to step 10.	The problem is solved.
<p><b>Step 10</b> Replace the drawer.</p> <p>Does the error remain?</p>	Contact the next level of support.	The problem is solved.

## HCOE failure service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Is the high capacity output expander the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b></p> <p>Remove all output options and re-install only the high capacity output expander.</p> <p>Enter Diagnostics Menu and navigate to:</p> <p><b>Output bin tests &gt; Feed to all bins.</b></p> <p>Does the output option feed to all bins normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b></p> <p>Check the auto connector end of the printer below the HCOE.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the printer under the high capacity output expander.
<p><b>Step 4</b></p> <p>Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“HCOE lower interface cable removal” on page 469.</b></p> <p>Reseat the connector (J1) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b></p> <p>Open the rear door, and check:</p> <ul style="list-style-type: none"> <li>• the gears for damage</li> <li>• the gears and shafts for obstruction</li> <li>• the rollers, if they can be manually turned</li> </ul> <p>Are the above components ok?</p>	Go to step 6.	<p>If the issue found is on the rear door side, then replace the rear door. Go to <b>“HCOE rear door removal” on page 461.</b></p> <p>If the issue found is on the printer side, then replace the high capacity output expander. Go to <b>“High capacity output expander assembly removal” on page 460.</b></p>
<p><b>Step 6</b></p> <p>Remove the left cover. Reseat the connector (J4) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 7.	The problem is solved.

Action	Yes	No
<p><b>Step 7</b> Reseat all connectors on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“HCOE controller PCBA removal” on page 467.</b></p>	<p>The problem is solved.</p>

## Mailbox failure service check

Action	Yes	No
<p><b>Step 1</b> Is the mailbox the only output option installed?</p>	<p>Go to step 4.</p>	<p>Go to step 2.</p>
<p><b>Step 2</b> Remove all output options and re-install only the mailbox. Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins.</b></p> <p>Does the output option feed to all bins normally?</p>	<p>The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.</p>	<p>Go to step 3.</p>
<p><b>Step 3</b> Check the auto connector end of the option previously installed below the mailbox.</p> <p>Is it free of damage?</p>	<p>Go to step 4.</p>	<p>Replace the damaged upper interface cable.</p>
<p><b>Step 4</b> Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Mailbox lower interface cable removal” on page 510.</b> Reseat the connector (J1) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	<p>Go to step 5.</p>	<p>The problem is solved.</p>

Action	Yes	No
<p><b>Step 5</b></p> <p>Open the rear door, and check:</p> <ul style="list-style-type: none"> <li>• the gears for damages</li> <li>• the gears and shafts for obstructions</li> <li>• the rollers, if they can be manually turned</li> </ul> <p>Are the above components ok?</p>	Go to step 6.	<p>If the issue found is on the rear door side, then replace the rear door. Go to <b>“Mailbox rear door removal” on page 500.</b></p> <p>If the issue found is on the mailbox side, then replace the mailbox assembly. Go to <b>“Mailbox assembly removal” on page 500.</b></p>
<p><b>Step 6</b></p> <p>Open the left cover and reseal the cable (J6) on the controller PCBA.</p> <p>Does the error remain?</p>	Go to step 7.	The problem is solved.
<p><b>Step 7</b></p> <p>Reseat all connectors on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Mailbox controller PCBA removal” on page 507.</b></p> <p>If the error persists, then replace the mailbox option. Go to <b>“Mailbox assembly removal” on page 500.</b></p>	The problem is solved.

## Output expander failure service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Is the output expander the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b></p> <p>Check the auto connector end of the option below the expander.</p> <p>Is it free of damage?</p>	Go to step 3.	Replace the upper interface cable of the output option under the expander.

Action	Yes	No
<p><b>Step 3</b> Remove all output options and re-install only the expander. Enter Diagnostics Menu and navigate to: <b>OUTPUT BIN TESTS &gt;Feed Tests &gt;Output Bin 1</b> Select <b>Single</b>.</p> <p>Does the output option feed normally?</p>	<p>The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.</p>	<p>Go to step 4.</p>
<p><b>Step 4</b> Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Lower interface cable removal” on page 455</b>. Reseat the cable (J1) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	<p>Go to step 5.</p>	<p>The problem is solved.</p>
<p><b>Step 5</b> Open the left cover, then check the cables (J4, J6, and J14) on the controller PCBA. If damaged, then replace the output expander assembly. Go to <b>“Output expander assembly removal” on page 446</b>. Reseat the cables (J4, J6 and J14) on the controller PCBA. Perform a feed test, navigate to: <b>OUTPUT BIN TESTS &gt;Feed Tests &gt;Output Bin 1</b></p> <p>Does the output option feed normally?</p>	<p>Go to step 6.</p>	<p>Replace the output expander assembly. Go to <b>“Output expander assembly removal” on page 446</b>.</p>
<p><b>Step 6</b> Open the left cover, reseat all connectors on the controller PCBA and then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Output expander controller PCBA removal” on page 454</b>. If the error persists, then replace the output expander option. Go to <b>“Output expander controller PCBA removal” on page 454</b>.</p>	<p>The problem is solved.</p>

## Input/output option paper jam errors

### Input option jam error messages (242-245.99)

Error code	Description	Action
242.01	Media remains detected by the tray 2 sensor (pass through) after power on.	<ol style="list-style-type: none"> <li><b>1</b> POR the printer.</li> <li><b>2</b> Open the media trays and make sure there are no obstructions on the media path.</li> <li><b>3</b> Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li><b>4</b> If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error. If the error persists, then perform the following service checks: <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul> </li> </ol>
242.02	The media is late reaching the sensor (input) when feeding from tray 2.	
242.03	The media fed from tray 3 did not reach the tray 2 sensor (pass through).	
242.06	Failure to feed from tray 2—media remains in tray 2	
242.07	The media while feeding from tray 3 remains detected by the tray 2 sensor (pass through).	
242.09	Tray 2 pick motor lost encoder error	
242.10	Failure to feed from tray 2	<p>Make sure the media path is free from obstructions on the following locations:</p> <ol style="list-style-type: none"> <li><b>1</b> Open all input media trays and make sure there are no obstructions on the media path.</li> <li><b>2</b> Remove the toner cartridge and the imaging unit. Make sure there are no obstructions on the media path.</li> <li><b>3</b> Open the rear door, and make sure there are no obstructions on the media path.</li> <li><b>4</b> Check all output bins. Make sure there are no obstructions on the media path</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT source jam service check” on page 159</b></li> </ul>

Error code	Description	Action
242.11	Pick/lift motor encoder not detected in tray 2.	<ol style="list-style-type: none"> <li><b>1</b> POR the printer.</li> <li><b>2</b> Open the media trays and make sure there are no obstructions on the media path.</li> <li><b>3</b> Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li><b>4</b> If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul>
242.12	Motor ramp up error in tray 2.	
242.13	Page to be stapled failed to feed from tray 2.	
242.14	Media flushed from media path either due to feed error or cartridge error	
242.15	One or more trays located above the source (tray 2) has been pulled.	
242.16	Tray 2 not ready	
242.17	Media was not properly picked from tray 2. Tray did not exhaust all pick retry attempts because of media committed to the media path from the tray below.	
242.18	Failed to feed from tray 2—exhausted pick retries, media committed to paper path.	
242.19	Failed to feed from tray 2—the leading edge of the media was not detected.	
242.20	Took too long to ramp up media feeder motor in tray 2	
242.21	Media feeder motor stall in tray 2.	<ol style="list-style-type: none"> <li><b>1</b> POR the printer.</li> <li><b>2</b> Open the media trays and make sure there are no obstructions on the media path.</li> <li><b>3</b> Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li><b>4</b> If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul>
242.22	Media feeder motor pick motor under-speed in tray 2.	
242.24	Media feeder motor stalled on the last pick attempt in tray 2.	

Error code	Description	Action
242.32	Tray 2 not ready	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Open the media trays and make sure there are no obstructions on the media path.</li> <li>3 Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li>4 If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul>
242.33	The media tray was pulled during the media pick process.	
242.41	Media feeder motor stall in tray 2	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Open the media trays and make sure there are no obstructions on the media path.</li> <li>3 Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li>4 If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul>
242.42	Media feeder motor under-speed in tray 2	
242.43	Media feeder motor did not reach the required speed	
242.44	Separator pass through motor stall in tray 2	
242.45	Separator pass through motor under-speed in tray 2	
242.46	Separator pass through motor did not reach the required speed.	

Error code	Description	Action
243.01	Media remains detected by the tray 3 sensor (pass through) after power on.	<ol style="list-style-type: none"> <li><b>1</b> POR the printer.</li> <li><b>2</b> Open the media trays and make sure there are no obstructions on the media path.</li> <li><b>3</b> Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li><b>4</b> If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error. If the error persists, then perform the following service checks: <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul> </li> </ol>
243.02	The media is late reaching the sensor (input) when feeding from tray 3.	
243.03	The media fed from tray 4 did not reach the tray 3 sensor (pass through).	
243.06	Failure to feed from tray 3—media remains in tray 3	
243.07	The media while feeding from tray 4, remains detected by the tray 3 sensor (pass through).	
243.09	Tray 3 pick motor lost encoder error	
243.10	Failure to feed from tray 3	<p>Make sure the media path is free from obstructions on the following locations:</p> <ol style="list-style-type: none"> <li><b>1</b> Open all input media trays and make sure there are no obstructions on the media path.</li> <li><b>2</b> Remove the toner cartridge and the imaging unit. Make sure there are no obstructions on the media path.</li> <li><b>3</b> Open the rear door, and make sure there are no obstructions on the media path.</li> <li><b>4</b> Check all output bins. Make sure there are no obstructions on the media path</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT source jam service check” on page 159</b></li> </ul>

Error code	Description	Action
243.11	Pick/lift motor encoder not detected in tray 3.	<ol style="list-style-type: none"> <li><b>1</b> POR the printer.</li> <li><b>2</b> Open the media trays and make sure there are no obstructions on the media path.</li> <li><b>3</b> Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li><b>4</b> If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul>
243.12	Motor ramp up error in tray 3.	
243.13	Page to be stapled failed to feed from tray 3.	
243.14	Media flushed from media path either due to feed error or cartridge error	
243.15	One or more trays located above the source (tray 3) has been pulled.	
243.16	Tray 3 not ready	
243.17	Media was not properly picked from tray 3. Tray did not exhaust all pick retry attempts because of media committed to the media path from the tray below.	
243.19	Failed to feed from tray 3—the leading edge of the media was not detected.	
243.20	Took too long to ramp up media feeder motor in tray 3	
243.21	Media feeder motor stall in tray 3.	
243.22	Media feeder motor pick motor under-speed in tray 3.	
243.24	Media feeder motor stalled on the last pick attempt in tray 3.	
243.32	Tray 3 not ready	
243.33	The media tray was pulled during the media pick process.	

Error code	Description	Action
243.41	Media feeder motor stall in tray 3	<ol style="list-style-type: none"> <li><b>1</b> POR the printer.</li> <li><b>2</b> Open the media trays and make sure there are no obstructions on the media path.</li> <li><b>3</b> Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li><b>4</b> If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul>
243.42	Media feeder motor under-speed in tray 3	
243.43	Media feeder motor did not reach the required speed	
243.44	Separator pass through motor stall in tray 3	
243.45	Separator pass through motor under-speed in tray 3	
243.46	Separator pass through motor did not reach the required speed.	
244.01	Media remains detected by the tray 4 sensor (pass through) after power on.	<ol style="list-style-type: none"> <li><b>1</b> POR the printer.</li> <li><b>2</b> Open the media trays and make sure there are no obstructions on the media path.</li> <li><b>3</b> Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li><b>4</b> If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul>
244.02	The media is late reaching the sensor (input) when feeding from tray 4.	
244.03	The media fed from tray 5 did not reach the tray 4 sensor (pass through).	
244.06	Failure to feed from tray 4—media remains in tray 4	
244.07	The media while feeding from tray 5 remains detected by the tray 4 sensor (pass through).	
244.09	Tray 4 pick motor lost encoder error	

Error code	Description	Action
244.10	Failure to feed from tray 4	<p>Make sure the media path is free from obstructions on the following locations:</p> <ol style="list-style-type: none"> <li>1 Open all input media trays and make sure there are no obstructions on the media path.</li> <li>2 Remove the toner cartridge and the imaging unit. Make sure there are no obstructions on the media path.</li> <li>3 Open the rear door, and make sure there are no obstructions on the media path.</li> <li>4 Check all output bins. Make sure there are no obstructions on the media path</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT source jam service check” on page 159</b></li> </ul>
244.11	Pick/lift motor encoder not detected in tray 4.	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Open the media trays and make sure there are no obstructions on the media path.</li> <li>3 Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li>4 If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul>
244.12	Motor ramp up error in tray 4.	
244.13	Page to be stapled failed to feed from tray 4.	
244.14	Media flushed from media path either due to feed error or cartridge error	
244.15	One or more trays located above the source (tray 4) has been pulled.	
244.16	Tray 4 not ready	
244.17	Media was not properly picked from tray 4. Tray did not exhaust all pick retry attempts because of media committed to the media path from the tray below.	
244.19	Failed to feed from tray 4—the leading edge of the media was not detected.	
244.20	Took too long to ramp up media feeder motor in tray 4	

Error code	Description	Action
244.21	Media feeder motor stall in tray 4.	<ol style="list-style-type: none"> <li><b>1</b> POR the printer.</li> <li><b>2</b> Open the media trays and make sure there are no obstructions on the media path.</li> <li><b>3</b> Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li><b>4</b> If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul>
244.22	Media feeder motor pick motor under-speed in tray 4.	
244.24	Media feeder motor stalled on the last pick attempt in tray 4.	
244.32	Tray 4 not ready	<ol style="list-style-type: none"> <li><b>1</b> POR the printer.</li> <li><b>2</b> Open the media trays and make sure there are no obstructions on the media path.</li> <li><b>3</b> Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li><b>4</b> If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul>
244.33	The media tray was pulled during the media pick process.	

Error code	Description	Action
244.41	Media feeder motor stall in tray 4	<ol style="list-style-type: none"> <li><b>1</b> POR the printer.</li> <li><b>2</b> Open the media trays and make sure there are no obstructions on the media path.</li> <li><b>3</b> Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li><b>4</b> If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul>
244.42	Media feeder motor under-speed in tray 4	
244.43	Media feeder motor did not reach the required speed	
244.44	Separator pass through motor stall in tray 4	
244.45	Separator pass through motor under-speed in tray 4	
244.46	Separator pass through motor did not reach the required speed.	
245.01	Media remains detected by the tray 5 sensor (pass through) after power on.	<ol style="list-style-type: none"> <li><b>1</b> POR the printer.</li> <li><b>2</b> Open the media trays and make sure there are no obstructions on the media path.</li> <li><b>3</b> Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li><b>4</b> If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul>
245.02	The media is late reaching the sensor (input) when feeding from tray 6.	
245.03	The media fed from tray 6 did not reach the tray 5 sensor (pass through).	
245.06	Failure to feed from tray 5—media remains in tray 5	
245.07	The media while feeding from tray 6 remains detected by the tray 5 sensor (pass through).	
245.09	Tray 5 pick motor lost encoder error	

Error code	Description	Action
245.10	Failure to feed from tray 5	<p>Make sure the media path is free from obstructions on the following locations:</p> <ol style="list-style-type: none"> <li>1 Open all input media trays and make sure there are no obstructions on the media path.</li> <li>2 Remove the toner cartridge and the imaging unit. Make sure there are no obstructions on the media path.</li> <li>3 Open the rear door, and make sure there are no obstructions on the media path.</li> <li>4 Check all output bins. Make sure there are no obstructions on the media path</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT source jam service check” on page 159</b></li> </ul>
245.11	Pick/lift motor encoder not detected in tray 5.	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Open the media trays and make sure there are no obstructions on the media path.</li> <li>3 Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li>4 If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul>
245.12	Motor ramp up error in tray 5.	
245.13	Page to be stapled failed to feed from tray 5.	
245.14	Media flushed from media path either due to feed error or cartridge error	
245.15	One or more trays located above the source (tray 5) has been pulled.	
245.16	Tray 5 not ready	
245.17	Media was not properly picked from tray 5. Tray did not exhaust all pick retry attempts because of media committed to the media path from the tray below.	
245.19	Failed to feed from tray 5—the leading edge of the media was not detected.	
245.20	Took too long to ramp up media feeder motor in tray 5	

Error code	Description	Action
245.21	Media feeder motor stall in tray 5.	<ol style="list-style-type: none"> <li><b>1</b> POR the printer.</li> <li><b>2</b> Open the media trays and make sure there are no obstructions on the media path.</li> <li><b>3</b> Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li><b>4</b> If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul>
245.22	Media feeder motor pick motor under-speed in tray 5.	
245.24	Media feeder motor stalled on the last pick attempt in tray 5.	
245.32	Tray 5 not ready	<ol style="list-style-type: none"> <li><b>1</b> POR the printer.</li> <li><b>2</b> Open the media trays and make sure there are no obstructions on the media path.</li> <li><b>3</b> Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li><b>4</b> If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul>
245.33	The media tray was pulled during the media pick process.	

Error code	Description	Action
245.41	Media feeder motor stall in tray 5	<ol style="list-style-type: none"> <li><b>1</b> POR the printer.</li> <li><b>2</b> Open the media trays and make sure there are no obstructions on the media path.</li> <li><b>3</b> Check the following: <ul style="list-style-type: none"> <li>• Make sure the size of the media loaded is within specifications.</li> <li>• Make sure the tray guides are not set too tight.</li> <li>• Make sure the tray is not overfilled.</li> </ul> </li> <li><b>4</b> If only one option is installed, re-seat the option tray. If there are multiple options installed, swap the current option with another matching media tray to determine the source of the error.</li> </ol> <p>If the error persists, then perform the following service checks:</p> <ul style="list-style-type: none"> <li>• For 250/550-sheet trays—go to <b>“250/550-sheet media tray option jam service check” on page 154</b></li> <li>• For HCIT—go to <b>“HCIT jam service check” on page 156</b></li> </ul>
245.42	Media feeder motor under-speed in tray 5	
245.43	Media feeder motor did not reach the required speed	
245.44	Separator pass through motor stall in tray 5	
245.45	Separator pass through motor under-speed in tray 5	
245.46	Separator pass through motor did not reach the required speed.	

## 250/550-sheet media tray option jam service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Open the media tray and check the media path.</p> <p>Is it free of obstructions?</p>	Go to step 2.	Remove all obstructions along the paper path.
<p><b>Step 2</b></p> <p>Check the pick roller assembly for proper installation. Fully press the pick roller assembly toward the sensor to make sure the mounting latches are properly engaging the slot in the shaft.</p> <p>Does the problem remain?</p>	Go to step 3.	The problem is solved.
<p><b>Step 3</b></p> <p>Check the pick roller assembly to make sure that the rollers are free from contamination and paper dust.</p> <p>Is the pick roller assembly free of wear or damage?</p>	Go to step 4.	Replace the pick roller assembly. Go to <b>“Drawer pick roller removal” on page 408.</b>

Action	Yes	No
<p><b>Step 4</b></p> <p>Check the separator roller tires and gears:</p> <ul style="list-style-type: none"> <li>• make sure that the rollers are free from contamination</li> <li>• manually turn the gears and check if it causes the rollers to turn</li> </ul> <p>Is it free of wear or damage?</p>	Go to step 5.	Replace the separator roller. Go to <b>“Media tray separation roller removal” on page 407.</b>
<p><b>Step 5</b></p> <p>Check the sensor (pass through) for proper operation. Enter Diagnostics Menu and navigate to:</p> <p><b>INPUT TRAY TESTS &gt; Sensor Test &gt;Tray [x]</b></p> <p>Does the display on the operator panel change every time the sensing area of the above sensors are interrupted or blocked?</p>	Go to <b>step 7.</b>	Go to step 6.
<p><b>Step 6</b></p> <p>Check the sensor (pass through):</p> <ul style="list-style-type: none"> <li>• make sure that the sensor is properly installed and seated</li> <li>• check if the sensor is in good condition. If damaged, then replace the sensor (pass through). Go to <b>“Sensor (drawer pass through) removal” on page 417.</b></li> </ul> <p>Re-seat the connector (J7) on the controller PCBA. POR the machine.</p> <p>Does the error remain?</p>	Go to step 7.	The problem is solved.
<p><b>Step 7</b></p> <p>Check the sensor (pick):</p> <ul style="list-style-type: none"> <li>• make sure that the sensor is properly installed and seated</li> <li>• check if the sensor is in good condition. If damaged, then replace the sensor (pick). Go to <b>“Sensor (pick) removal” on page 419.</b></li> </ul> <p>Re-seat the connector (J8) on the controller PCBA. POR the machine.</p> <p>Does the error remain?</p>	Go to step 8.	The problem is solved.
<p><b>Step 8</b></p> <p>Re-seat the connectors (J4, J8 and J7) on the controller PCBA.</p> <p>Does the error remain?</p>	Go to step 9.	The problem is solved.
<p><b>Step 9</b></p> <p>Remove the media tray. Manually turn the lift plate drive gear and observe the lift plate. If the lift plate doesn't move upward, then replace the media tray. Go to <b>“Media tray assembly removal” on page 407.</b></p> <p>With the printer turned on, insert the media tray into the drawer. Viewing from the rear side of the option, observe the lift plate if it moves up during the insertion.</p> <p>Does the lift plate automatically move up?</p>	Go to step 10.	Go to step 10.

Action	Yes	No
<p><b>Step 10</b></p> <p>Open the left cover. Do a feed test, enter Diagnostics Menu and navigate to:</p> <p><b>INPUT TRAY TESTS &gt; Feed Test &gt;Tray [x]</b></p> <p>Observe the pick/feed motor and the transport motor.</p> <p>Do the motors run?</p>	Go to step 11.	<p>If the pick motor doesn't run, then replace the media feeder. Go to <b>“Drawer media feeder removal” on page 414.</b></p> <p>If the transport motor doesn't run, then replace the transport motor. Go to <b>“Drawer transport motor removal” on page 416.</b></p>
<p><b>Step 11</b></p> <p>Re-seat all connectors on the controller PCBA.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Drawer controller PCBA removal” on page 411.</b></p> <p>If the error persists, then replace the option tray. Go to <b>“250/550-sheet media tray and drawer assembly removal” on page 406</b></p>	The problem is solved.

## HCIT jam service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Open the media tray and check the media path.</p> <p>Is it free of obstructions?</p>	Go to step 2.	Remove all obstructions along the paper path.
<p><b>Step 2</b></p> <p>Check the following:</p> <ul style="list-style-type: none"> <li>• Push down on the lift plate and check if the spring works.</li> <li>• Open and close the tray, then check if the HCIT closes properly.</li> </ul> <p>Is the tray functioning properly?</p>	Go to step 3.	Replace the HCIT. Go to <b>“HCIT and drawer assembly removal” on page 422.</b>

Action	Yes	No
<p><b>Step 3</b></p> <p>Check the interface cable of the printer or upper level option for damage.</p> <p>Check the separator roller tires and gears:</p> <ul style="list-style-type: none"> <li>• Make sure that the rollers are free from contamination</li> <li>• Manually turn the gears and check if it causes the rollers to turn.</li> </ul> <p>Does the error remain?</p>	Go to step 4.	Replace the separator roller. Go to <b>“HCIT separator roll assembly removal” on page 424.</b>
<p><b>Step 4</b></p> <p>Check the sensor (trailing edge):</p> <ul style="list-style-type: none"> <li>• Make sure that the sensor is properly installed and seated.</li> <li>• Check if the sensor is in good condition. If damaged, then replace the sensor. Go to <b>“Sensor (HCIT pick) removal” on page 442.</b></li> </ul> <p>Reseat the connector (J8) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b></p> <p>Check the pick roller assembly for proper installation. Fully press the pick roller assembly toward the sensor to make sure the mounting latches are properly engaging the slot in the shaft.</p> <p>Does the problem remain?</p>	Go to step 6.	The problem is solved.
<p><b>Step 6</b></p> <p>Check the pick roller assembly to make sure that the rollers are free from contamination and paper dust.</p> <p>Is the pick roller assembly free of wear or damage?</p>	Go to step 7.	Replace the pick roller assembly. Go to <b>“Drawer pick roller removal” on page 408.</b>
<p><b>Step 7</b></p> <p>Check the pick roller assembly for proper installation. Fully press the pick roller assembly toward the sensor to make sure the mounting latches are properly engaging the slot in the shaft.</p> <p>Does the problem remain?</p>	Go to step 8.	The problem is solved.
<p><b>Step 8</b></p> <p>Check the pick roller assembly to make sure that the rollers are free from contamination and paper dust.</p> <p>Is the pick roller assembly free of wear or damage?</p>	Go to step 9.	Replace the pick roller assembly. Go to <b>“Drawer pick roller removal” on page 408.</b>
<p><b>Step 9</b></p> <p>Check the pick roller assembly for proper installation. Fully press the pick roller assembly toward the sensor to make sure the mounting latches are properly engaging the slot in the shaft.</p> <p>Does the problem remain?</p>	Go to step 10.	The problem is solved.

Action	Yes	No
<p><b>Step 10</b></p> <p>Check the pick roller assembly to make sure that the rollers are free from contamination and paper dust.</p> <p>Is the pick roller assembly free of wear or damage?</p>	Go to step 11.	Replace the pick roller assembly. Go to <b>“Drawer pick roller removal” on page 408.</b>
<p><b>Step 11</b></p> <p>Check the pick roller assembly for proper installation. Fully press the pick roller assembly toward the sensor to make sure the mounting latches are properly engaging the slot in the shaft.</p> <p>Does the problem remain?</p>	Go to step 12.	The problem is solved.
<p><b>Step 12</b></p> <p>Check the pick roller assembly to make sure that the rollers are free from contamination and paper dust.</p> <p>Is the pick roller assembly free of wear or damage?</p>	Go to step 13.	Replace the pick roller assembly. Go to <b>“Drawer pick roller removal” on page 408.</b>
<p><b>Step 13</b></p> <p>Check the pick roller assembly for proper installation. Fully press the pick roller assembly toward the sensor to make sure the mounting latches are properly engaging the slot in the shaft.</p> <p>Does the problem remain?</p>	Go to step 14.	The problem is solved.
<p><b>Step 14</b></p> <p>Check the pick roller assembly to make sure that the rollers are free from contamination and paper dust.</p> <p>Is the pick roller assembly free of wear or damage?</p>	Go to step 15.	Replace the pick roller assembly. Go to <b>“Drawer pick roller removal” on page 408.</b>
<p><b>Step 15</b></p> <p>Reseat the connectors (J4, J8 and J7) on the controller PCBA.</p> <p>Does the error remain?</p>	Go to step 16.	The problem is solved.
<p><b>Step 16</b></p> <p>Open the rear cover. Do a feed test, enter Diagnostics Menu and navigate to:</p> <p><b>INPUT TRAY TESTS &gt; Feed Test &gt; Tray [x]</b></p> <p>Viewing from the holes at the rear side, observe the pick/feed motor.</p> <p>Does the feed motor run?</p>	Go to step 17.	Replace the media feeder. Go to <b>“HCIT media feeder removal” on page 443.</b>

Action	Yes	No
<p><b>Step 17</b></p> <p>Check the sensor (HCIT roller position) and make sure that it is properly installed. If damaged, then replace the sensor. Go to <b>“Sensor (pick roll position) removal” on page 440.</b></p> <p>Reseat the sensor connector on the controller PCBA and reseat also on the other end of the sensor. POR the machine.</p> <p>Does the error remain?</p>	Go to step 18.	The problem is solved.
<p><b>Step 18</b></p> <p>Open the right cover. Reseat the cable attached to the lift motor.</p> <p>Does the error remain?</p>	Go to step 19.	The problem is solved.
<p><b>Step 19</b></p> <p>Open the right cover. Do a feed test, enter Diagnostics mode and navigate to:</p> <p><b>INPUT TRAY TESTS &gt; Feed Test &gt; Tray [x]</b></p> <p>Does the lift motor run?</p>	Go to step 20.	Replace the lift motor. Go to <b>“HCIT lift drive motor removal” on page 436.</b>
<p><b>Step 20</b></p> <p>Reseat all connectors on the controller PCBA.</p> <p>Does the error remain?</p>	Replace the controller PCBA. Go to <b>“HCIT controller PCBA removal” on page 433.</b>	The problem is solved.

## HCIT source jam service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Remove the media tray from the HCIT option and do the following:</p> <ul style="list-style-type: none"> <li>Remove all media and check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another.</li> <li>Check the media size finger flag for damage.</li> <li>Check the elevator plate. Manually lower down the elevator plate and check if it springs back to its original position.</li> <li>Check the elevator tension cables if there are problems.</li> <li>Check the elevator gears for damage.</li> <li>Manually turn the drive gear and check if the other gears engaged to it will also turn.</li> <li>Check if the tray can be inserted properly into the HCIT option.</li> </ul> <p>Are the above components ok?</p>	Go to step 2.	Replace the media tray. Go to <b>“HCIT removal” on page 423.</b>

Action	Yes	No
<p><b>Step 2</b></p> <p>Open the media tray and do the following:</p> <ul style="list-style-type: none"> <li>• Make sure the separator roller is properly installed.</li> <li>• Manually turn the separator roller drive gears and check if the separator rollers would also turn.</li> <li>• Check the separator roller gears for damage and obstructions.</li> </ul> <p>Is the separator roll still ok?</p>	Go to step 3.	Replace the separator roll. Go to <b>“HCIT separator roll assembly removal” on page 424</b>
<p><b>Step 3</b></p> <p>Remove the left cover and do the following:</p> <ul style="list-style-type: none"> <li>• Lower down the media pick actuator and then release. Check if the actuator would spring back to its original position.</li> <li>• Manually move the media pick actuator, then check if the paper sensor flag moves along with it. Check also for damage.</li> <li>• Manually turn the media feeder motor encoders gently, and check if it causes the pick tires to turn.</li> <li>• Make sure the sensor connections on the media feeder sensors are secure.</li> </ul> <p>If there are problems with the above components, then replace the HCIT media feeder. See <b>“HCIT media feeder removal” on page 443</b>.</p> <p>Reseat the connector (J11) on the controller board.</p> <p>Does the error remain?</p>	Go to step 4.	The problem is solved.
<p><b>Step 4</b></p> <p>Remove the media tray from the HCIT option and do the following:</p> <ul style="list-style-type: none"> <li>• Check if there is no problem moving the tray input guides.</li> <li>• Manually push the media size sensor flags and check if it would spring back to its original position.</li> <li>• Check the sensor (HCIT media guide) for damage. Make sure all obstructions are removed.</li> </ul> <p>Are the above components ok?</p>	Go to step 5.	Replace the HCIT drawer assembly. Go to <b>“HCIT drawer assembly removal” on page 423</b> .
<p><b>Step 5</b></p> <p>Separate the HCIT from the printer. Remove also the remaining input options. Check the HCIT interface cable. If damaged, then replace the cable. See <b>“HCIT drawer assembly interface cable removal” on page 438</b>.</p> <p>Open the left cover, and reseat the connector (J1) on the controller board. POR the machine.</p> <p>Does the error remain?</p>	Go to step 6.	The problem is solved.

Action	Yes	No
<b>Step 6</b> Remove all other options and install only the HCIT option.  Does the error remain?	Go to step 8	Go to step 7.
<b>Step 7</b> Check the interface cable of the printer or upper level option for damage.  Is the above component still ok?	Go to step 8.	Replace the interface cable of the printer or upper level option.
<b>Step 8</b> Check the connectors on the controller board. If damaged, then replace the controller board. See <b>“HCIT controller PCBA removal” on page 433</b> . Reseat all connectors on the controller board, then POR the machine.  Does the error remain?	Replace the controller board. Go to <b>“HCIT controller PCBA removal” on page 433</b> .  If the error remains, then go to step 9.	The problem is solved.
<b>Step 9</b> Replace the tray.  Does the error remain?	Go to step 10.	The problem is solved.
<b>Step 10</b> Replace the drawer.  Does the error remain?	Contact the next level of support.	The problem is solved.

## 4xx error messages (400-499.99)

Error code	Description	Action
400.XX	Invalid parameters during output option paper jam	
411.01	Media remains detected by the output option 1/output expander sensor (pass through) after power on.	<ol style="list-style-type: none"> <li><b>1</b> Reseat all the installed output options on the printer.</li> <li><b>2</b> Open the rear door and clear obstructions along the paper path.</li> <li><b>3</b> Make sure that the sensors (pass through) are free from obstructions.</li> </ol> If the problem remains, then go to <b>“Output expander jam service check” on page 191</b> .
411.03	The media fed did not reach the output option 1/output expander sensor (pass through).	
411.05	The media while feeding remains detected by the output option 1/output expander sensor (pass through).	
411.09	Never received Page In Output from output option 1/output expander	
411.10	Invalid Page ID returned by output option 1/output expander	

Error code	Description	Action
411.41	Output option 1/output expander main/interface motor stalled	<ol style="list-style-type: none"> <li>1 POR the machine.</li> <li>2 Reseat the output option on the printer.</li> <li>3 Open the rear door and clear obstructions along the paper path.</li> </ol> <p>If the problem remains, then go to <b>“Output expander failure service check” on page 141.</b></p>
411.42	Output option 1/output expander main/interface motor did not reach the required speed.	
411.43	Took too long to ramp up main/interface motor in output option 1/output expander	
411.53	Output option 1/output expander main/interface motor did not reach the required speed.	
411.71	Diverter failed to leave its home position on the output option 1/output expander	<ol style="list-style-type: none"> <li>1 Reseat all the installed output options on the printer.</li> <li>2 Open the rear door and clear obstructions along the paper path.</li> <li>3 Make sure that the sensors (pass through) are free from obstructions.</li> </ol> <p>If the problem remains, then go to <b>“Output expander jam service check” on page 191.</b></p>
411.72	Diverter failed to reach its home position on the output option 1/output expander	
414.01	Media remains detected by the output option 2/output expander sensor (pass through) after power on.	<ol style="list-style-type: none"> <li>1 Reseat all the installed output options on the printer.</li> <li>2 Open the rear door and clear obstructions along the paper path.</li> <li>3 Make sure that the sensors (pass through) are free from obstructions.</li> </ol> <p>If the problem remains, then go to <b>“Output expander jam service check” on page 191.</b></p>
414.03	The media fed did not reach the output option 2/output expander sensor (pass through).	
414.05	The media while feeding remains detected by the output option 2/output expander sensor (pass through).	
414.09	Never received Page In Output from output option 2/output expander	
414.10	Invalid Page ID returned by output option 2/output expander	
414.41	Output option 2/output expander main/interface motor stalled	<ol style="list-style-type: none"> <li>1 POR the machine.</li> <li>2 Reseat the output option on the printer.</li> <li>3 Open the rear door and clear obstructions along the paper path.</li> </ol> <p>If the problem remains, then go to <b>“Output expander failure service check” on page 141.</b></p>
414.42	Output option 2/output expander main/interface motor did not reach the required speed.	
414.43	Took too long to ramp up main/interface motor in output option 2/output expander	
414.53	Output option 2/output expander main/interface motor did not reach the required speed.	

Error code	Description	Action
414.71	Diverter failed to leave its home position on the output option 2/output expander	<ol style="list-style-type: none"> <li>1 Reseat all the installed output options on the printer.</li> <li>2 Open the rear door and clear obstructions along the paper path.</li> <li>3 Make sure that the sensors (pass through) are free from obstructions.</li> </ol> <p>If the problem remains, then go to <b>“Output expander jam service check” on page 191.</b></p>
414.72	Diverter failed to reach its home position on the output option 2/output expander	
417.01	Media remains detected by the output option 3/output expander sensor (pass through) after power on.	<ol style="list-style-type: none"> <li>1 Reseat all the installed output options on the printer.</li> <li>2 Open the rear door and clear obstructions along the paper path.</li> <li>3 Make sure that the sensors (pass through) are free from obstructions.</li> </ol> <p>If the problem remains, then go to <b>“Output expander jam service check” on page 191.</b></p>
417.03	The media fed did not reach the output option 3/output expander sensor (pass through).	
417.05	The media while feeding remains detected by the output option 3/output expander sensor (pass through).	
417.09	Never received Page In Output from output option 3/output expander	
417.10	Invalid Page ID returned by output option 3/output expander	
417.41	Output option 3/output expander main/interface motor stalled	<ol style="list-style-type: none"> <li>1 POR the machine.</li> <li>2 Reseat the output option on the printer.</li> <li>3 Open the rear door and clear obstructions along the paper path.</li> </ol> <p>If the problem remains, then go to <b>“Output expander failure service check” on page 141.</b></p>
417.42	Output option 3/output expander main/interface motor did not reach the required speed.	
417.43	Took too long to ramp up main/interface motor in output option 3/output expander	
417.53	Output option 3/output expander main/interface motor did not reach the required speed.	
417.71	Diverter failed to leave its home position on the output option 3/output expander	
417.72	Diverter failed to reach its home position on the output option 3/output expander	<ol style="list-style-type: none"> <li>1 Reseat all the installed output options on the printer.</li> <li>2 Open the rear door and clear obstructions along the paper path.</li> <li>3 Make sure that the sensors (pass through) are free from obstructions.</li> </ol> <p>If the problem remains, then go to <b>“Output expander jam service check” on page 191.</b></p>

Error code	Description	Action
424.01	Media remains detected by the output option 1/high capacity output expander sensor (pass through) after power on.	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“Sensor (HCOE pass through) jam service check” on page 177.</b></p>
424.03	The media fed did not reach the output option 1/high capacity output expander sensor (pass through).	
424.05	The media while feeding remains detected by the output option 1/high capacity output expander sensor (pass through).	
424.09	Never received Page In Output from output option 1/high capacity output expander	
424.10	Invalid Page ID returned by output option 1/high capacity output expander	
424.41	Output option 1/high capacity output expander main/interface motor stalled	<ol style="list-style-type: none"> <li>1 POR the machine.</li> <li>2 Reseat the output option on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure the sensors (pass through) are free from obstruction.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“HCOE failure service check” on page 139.</b></p>
424.42	Output option 1/high capacity output expander main/interface motor did not reach the required speed.	
424.43	Took too long to ramp up main/interface motor in output option 1/high capacity output expander	
424.53	Output option 1/high capacity output expander main/interface motor did not reach the required speed.	
424.71	Diverter failed to leave its home position on the output option 1/high capacity output expander	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“HCOE diverter jam service check” on page 175.</b></p>
424.72	Diverter failed to reach its home position on the output option 1/high capacity output expander	
427.01	Media remains detected by the output option 2/high capacity output expander sensor (pass through) after power on.	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“Sensor (HCOE pass through) jam service check” on page 177.</b></p>
427.03	The media fed did not reach the output option 2/high capacity output expander sensor (pass through).	
427.05	The media while feeding remains detected by the output option 2/high capacity output expander sensor (pass through).	
427.09	Never received Page In Output from output option 2/high capacity output expander	
427.10	Invalid Page ID returned by output option 2/high capacity output expander	

Error code	Description	Action
427.41	Output option 2/high capacity output expander main/interface motor stalled	<ol style="list-style-type: none"> <li>1 POR the machine.</li> <li>2 Reseat the output option on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure the sensors (pass through) are free from obstruction.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“HCOE failure service check” on page 139.</b></p>
427.42	Output option 2/high capacity output expander main/interface motor did not reach the required speed.	
427.43	Took too long to ramp up main/interface motor in output option 2/high capacity output expander	
427.53	Output option 2/high capacity output expander main/interface motor did not reach the required speed.	
427.71	Diverter failed to leave its home position on the output option 2/high capacity output expander	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“HCOE diverter jam service check” on page 175.</b></p>
427.72	Diverter failed to reach its home position on the output option 2/high capacity output expander	
431.01	Media remains detected by the output option 1/mailbox sensor (pass through) after power on.	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“Sensor (mailbox pass through) jam service check” on page 171.</b></p>
431.03	The media fed did not reach the output option 1/mailbox sensor (pass through).	
431.05	The media while feeding remains detected by the output option 1/mailbox sensor (pass through).	
431.09	Never received Page In Output from output option 1/mailbox	
431.10	Invalid Page ID returned by output option 1/mailbox	
431.41	Output option 1/mailbox main/interface motor stalled	<ol style="list-style-type: none"> <li>1 POR the machine.</li> <li>2 Reseat the output option on the printer.</li> <li>3 Open the rear door and clear obstructions along the paper path.</li> </ol> <p>If the problem remains, then go to <b>“Mailbox failure service check” on page 140.</b></p>
431.42	Output option 1/mailbox main/interface motor did not reach the required speed.	
431.43	Took too long to ramp up main/interface motor in output option 1/mailbox	
431.53	Output option 1/mailbox main/interface motor did not reach the required speed.	

Error code	Description	Action
431.71	Diverter failed to leave its home position on the output option 1/mailbox	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“Mailbox diverter jam service check” on page 174.</b></p>
431.72	Diverter failed to reach its home position on the output option 1/mailbox	
436.01	Media remains detected by the output option 2/mailbox sensor (pass through) after power on.	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“Sensor (mailbox pass through) jam service check” on page 171.</b></p>
436.03	The media fed did not reach the output option 2/mailbox sensor (pass through).	
436.05	The media while feeding remains detected by the output option 2/mailbox sensor (pass through).	
436.09	Never received Page In Output from output option 2/mailbox	
436.10	Invalid Page ID returned by output option 2/mailbox	
436.41	Output option 2/mailbox main/interface motor stalled	<ol style="list-style-type: none"> <li>1 POR the machine.</li> <li>2 Reseat the output option on the printer.</li> <li>3 Open the rear door and clear obstructions along the paper path.</li> </ol> <p>If the problem remains, then go to <b>“Mailbox failure service check” on page 140.</b></p>
436.42	Output option 2/mailbox main/interface motor did not reach the required speed.	
436.43	Took too long to ramp up main/interface motor in output option 2/mailbox	
436.53	Output option 2/mailbox main/interface motor did not reach the required speed.	
436.71	Diverter failed to leave its home position on the output option 2/mailbox	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“Mailbox diverter jam service check” on page 174.</b></p>
436.72	Diverter failed to reach its home position on the output option 2/mailbox	

Error code	Description	Action
441.01	Media remains detected by the output option 3/mailbox sensor (pass through) after power on.	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“Sensor (mailbox pass through) jam service check” on page 171.</b></p>
441.03	The media fed did not reach the output option 3/mailbox sensor (pass through).	
441.05	The media while feeding remains detected by the output option 3/mailbox sensor (pass through).	
441.09	Never received Page In Output from output option 3/mailbox	
441.10	Invalid Page ID returned by output option 3/mailbox	
441.41	Output option 3/mailbox main/interface motor stalled	<ol style="list-style-type: none"> <li>1 POR the machine.</li> <li>2 Reseat the output option on the printer.</li> <li>3 Open the rear door and clear obstructions along the paper path.</li> </ol> <p>If the problem remains, then go to <b>“Mailbox failure service check” on page 140.</b></p>
441.42	Output option 3/mailbox main/interface motor did not reach the required speed.	
441.43	Took too long to ramp up main/interface motor in output option 3/mailbox	
441.53	Output option 3/mailbox main/interface motor did not reach the required speed.	
441.71	Diverter failed to leave its home position on the output option 3/mailbox	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“Mailbox diverter jam service check” on page 174.</b></p>
441.72	Diverter failed to reach its home position on the output option 3/mailbox	
451.01	Media remains detected by the finisher/offset stacker sensor (pass through) after power on.	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“Sensor (finisher pass through) jam service check” on page 179.</b></p>
451.03	The media fed did not reach the finisher/offset stacker sensor (pass through).	
451.05	The media while feeding remains detected by the finisher/offset stacker sensor (pass through).	
451.09	Never received Page In Output from the finisher/offset stacker	
451.10	Invalid Page ID returned by the finisher/offset stacker	
451.41	Finisher/offset stacker main/interface motor stalled	
451.42	Finisher/offset stacker main/interface motor did not reach the required speed.	
451.43	Took too long to ramp up main/interface motor in the finisher/offset stacker	

Error code	Description	Action
452.73	Finisher/offset stacker left tamper failed to leave its home position	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“Finisher left tamper jam service check” on page 181.</b></p>
452.74	Finisher/offset stacker left tamper failed to reach its home position	
453.75	Finisher/offset stacker right tamper failed to leave its home position	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“Finisher right tamper jam service check” on page 182.</b></p>
453.76	Finisher/offset stacker right tamper failed to reach its home position	
454.41	Finisher/offset stacker ejector motor stalled	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“Finisher ejector jam service check” on page 184.</b></p>
454.42	Finisher/offset stacker ejector motor did not reach the required speed.	
454.43	Took too long to ramp up ejector motor in the finisher/offset stacker	
454.53	Finisher/offset stacker main/interface motor went over the normal speed.	
454.77	Finisher/offset stacker left tamper failed to leave its home position	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“Finisher ejector jam service check” on page 184.</b></p>
454.78	Finisher/offset stacker left tamper failed to reach its home position	

Error code	Description	Action
455.71	Finisher/offset stacker diverter failed to leave its home position	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“Finisher diverter jam service check” on page 185.</b></p>
455.72	Finisher/offset stacker diverter failed to reach its home position	
455.79	Finisher/offset stacker paddle failed to leave its home position	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“Finisher paddle jam service check” on page 186.</b></p>
455.80	Finisher/offset stacker paddle failed to reach its home position	
455.81	Finisher/offset stacker tray holder failed to leave its home position	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“Finisher tray holder jam service check” on page 188.</b></p>
455.82	Finisher/offset stacker tray holder failed to reach its home position	
456.03	Failure to staple—media did not reach the stapler throat	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol> <p>If the problem remains, then go to <b>“Sensor (media in stapler) jam service check” on page 193.</b></p>
456.07	Paper Jam—media remains detected in the stapler throat	

Error code	Description	Action
456.31	SOD command received while finishing operation not yet complete—media is detected at the finisher sensor (pass through) while the stapler is still processing	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol>
456.32	DOC handler timeout error—stapler did not staple within the required period	<ol style="list-style-type: none"> <li>5 Close the rear door properly.</li> </ol>
456.33	Stapler not ready to perform stapling operation	If the problem remains, then go to <b>“Stapler carriage jam service check” on page 189.</b>
456.35	Stapler not ready to perform homing operation	
456.83	Stapler unit homing failure	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol>
456.84	Stapler unit jam while stapling—media remains detected by the home position sensor	If the problem remains, then go to <b>“Stapler carriage jam service check” on page 189.</b>
456.85	Stapler unit jam while stapling—unable to return to home position	
456.86	Stapler cartridge empty —unable to staple	
457.34	Stapler not ready to perform priming operation	<ol style="list-style-type: none"> <li>1 POR the printer.</li> <li>2 Reseat all the installed output options on the printer.</li> <li>3 Clear obstructions along the paper path.</li> <li>4 Make sure that the sensors (pass through) are free from obstructions.</li> <li>5 Close the rear door properly.</li> </ol>
457.87	Stapler failed to prime the staple wire after a stapling operation	If the problem remains, then go to <b>“Stapler carriage jam service check” on page 189.</b>
457.88	Stapler failed to prime the staple wire after a homing operation	
457.89	Stapler failed to prime after a stapling operation	
457.90	Stapler failed to prime before a stapling operation	

## Sensor (mailbox pass through) jam service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Is the mailbox the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b></p> <p>Remove all output options and re-install only the mailbox. Enter Diagnostics Menu and navigate to:</p> <p><b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b></p> <p>Check the auto connector end of the option previously installed below the mailbox.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the damaged upper interface cable of the output option previously installed under the mailbox.
<p><b>Step 4</b></p> <p>Check the lower interface cable. If damaged, replace the lower interface cable. Go to <b>“Mailbox lower interface cable removal” on page 510.</b></p> <p>Re-seat the connector (J1A) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b></p> <p>Open the rear door and check the two sensors (pass through) for proper operation. Enter Diagnostics Menu and navigate to:</p> <p><b>Output bin tests &gt; Sensor test</b></p> <p>Does the display on the operator panel change every time the sensing area of the above sensors are interrupted or blocked?</p>	Go to step 7.	Go to step 6.
<p><b>Step 6</b></p> <p>Open the rear door and check the sensors (pass through). If damaged, then replace the mailbox assembly. Go to <b>“Mailbox assembly removal” on page 500.</b></p> <p>Re-seat the sensor connections (J3T and J3B) on the controller PCBA. POR the machine.</p> <p>Does the error remain?</p>	Go to step 7.	The problem is solved.

Action	Yes	No
<p><b>Step 7</b></p> <p>Open the rear door and do the following:</p> <ul style="list-style-type: none"> <li>• check the rear door for damage</li> <li>• manually turn the rear door rollers and check if they are ok</li> <li>• check if the rear door opens and closes properly</li> </ul> <p>Is the rear door ok?</p>	Go to step 8.	Replace the mailbox rear door. Go to <b>“Mailbox rear door removal” on page 500.</b>
<p><b>Step 8</b></p> <p>Check each diverter if:</p> <ul style="list-style-type: none"> <li>• there is any visible damage or deformity</li> <li>• they could move freely</li> </ul> <p>Is the above component ok?</p>	Go to step 9.	Replace the mailbox assembly. Go to <b>“Mailbox assembly removal” on page 500.</b>
<p><b>Step 9</b></p> <p>Remove the mailbox option from the printer and check if the diverter plunger at the bottom is in good condition.</p> <p><b>Note:</b> The diverter plunger controls the diverter of the printer or output option directly below it.</p> <p>Is the diverter plunger free of damage?</p>	Go to step 10.	Replace the mailbox assembly. Go to <b>“Mailbox assembly removal” on page 500.</b>
<p><b>Step 10</b></p> <p>Check the sensor (divert motor). If damaged, then replace the sensor (divert motor). Go to <b>“Mailbox divert motor removal” on page 512.</b></p> <p>Re-seat the sensor connector (J8) on the controller PCBA. POR the machine.</p> <p>Does the error remain?</p>	Go to step 11.	The problem is solved.
<p><b>Step 11</b></p> <p>Re-seat the divert motor connector (J7) on the controller PCBA. POR the machine.</p> <p>Does the error remain?</p>	Replace the divert motor. If the error persists, then go to step 12.	The problem is solved.
<p><b>Step 12</b></p> <p>Re-seat the main motor connector (J6) on the controller PCBA. POR the machine.</p> <p>Does the error remain?</p>	Replace the mailbox assembly. If the error persists, then go to step 13.	The problem is solved.
<p><b>Step 13</b></p> <p>Open the inner right cover and check the belts.</p> <p>Are they free of damage or obstructions?</p>	Go to step 14.	Replace the belt. Go to <b>“Mailbox belt removal” on page 518.</b>

Action	Yes	No
<p><b>Step 14</b></p> <p>Open the rear door and actuate the sensor (rear door close) to override the interlock mechanism. Open the right cover to be able to view the solenoids.</p> <p>Enter Diagnostics Menu and navigate to:  <b>OUTPUT BIN TESTS &gt; Feed Tests &gt; Output Bin [x]</b></p> <p>Observe the designated solenoid for each bin tested.</p> <p>Do the solenoids activate during the feed test on each bin?</p>	Go to step 16.	Go to step 15.
<p><b>Step 15</b></p> <p>Re-seat the solenoid connectors on the controller PCBA. POR the machine.</p> <p>Does the error remain?</p>	<p>Swap the solenoids and find out which one is not functional. Replace the non-functional solenoid. Go to <b>“Mailbox solenoid removal” on page 504.</b></p> <p>If the error persists, then go to step 16.</p>	The problem is solved.
<p><b>Step 16</b></p> <p>Re-seat all the connectors on the controller PCBA. POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Mailbox controller PCBA removal” on page 507.</b></p> <p>If the error persists, then replace the mailbox assembly. Go to <b>“Mailbox assembly removal” on page 500.</b></p>	The problem is solved.

## Mailbox diverter jam service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Is the mailbox the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b></p> <p>Remove all output options and re-install only the mailbox.</p> <p>Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b></p> <p>Check the auto connector end of the option previously installed below the mailbox.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option previously installed under the mailbox.
<p><b>Step 4</b></p> <p>Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Mailbox lower interface cable removal” on page 510.</b></p> <p>Re-seat the connector (J1A) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b></p> <p>Check the sensor (diverter). If damaged, then replace the sensor (diverter). Go to <b>“Sensor (mailbox divert motor) removal” on page 509.</b></p> <p>Re-seat the sensor connector (J8) on the controller PCBA. POR the machine.</p> <p>Does the error remain?</p>	Go to step 6.	The problem is solved.
<p><b>Step 6</b></p> <p>Remove the mailbox option from the printer and check if the diverter plunger at the bottom is in good condition.</p> <p><b>Note:</b> The diverter plunger controls the diverter of the printer or output option directly below it.</p> <p>Is the diverter plunger free of damage?</p>	Go to step 7.	Replace the mailbox assembly. Go to <b>“Mailbox assembly removal” on page 500.</b>

Action	Yes	No
<p><b>Step 7</b> Re-seat the divert motor connector (J7) on the controller PCBA. POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the divert motor. Go to <b>“Mailbox divert motor removal” on page 512.</b></p> <p>If the error persists, then go to step 8.</p>	The problem is solved.
<p><b>Step 8</b> Re-seat all the connectors on the controller PCBA. POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Mailbox controller PCBA removal” on page 507.</b></p> <p>If the error persists, then replace the mailbox assembly. Go to <b>“Mailbox assembly removal” on page 500.</b></p>	The problem is solved.

## HCOE diverter jam service check

Action	Yes	No
<p><b>Step 1</b> Is the high capacity output expander the only output option installed?</p>	Go to step 3.	Go to step 2.
<p><b>Step 2</b> Remove all output options and re-install only the high capacity output expander.</p> <p>Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b> Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“HCOE lower interface cable removal” on page 469.</b></p> <p>Re-seat the connector (J1) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 4.	The problem is solved.
<p><b>Step 4</b> Check the auto connector end of the printer underneath the option.</p> <p>Is it free of damage or obstructions?</p>	Go to step 5.	Replace the upper interface cable of the base printer.

Action	Yes	No
<p><b>Step 5</b></p> <p>Check the sensor (diverter). If damaged, then replace the high capacity output expander. Go to <b>“High capacity output expander assembly removal” on page 460.</b></p> <p>Re-seat the sensor connector (J7) on the controller PCBA. POR the machine.</p> <p>Does the error remain?</p>	Go to step 6.	Replace the high capacity output expander. Go to <b>“High capacity output expander assembly removal” on page 460.</b>
<p><b>Step 6</b></p> <p>Check the diverter sensor flag.</p> <p>Is it free of damage?</p>	Go to step 7.	Replace the high capacity output expander. Go to <b>“High capacity output expander assembly removal” on page 460.</b>
<p><b>Step 7</b></p> <p>Remove the left cover. Reseat the diverter motor connector on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 8.	Replace the high capacity output expander. Go to <b>“High capacity output expander assembly removal” on page 460.</b>
<p><b>Step 8</b></p> <p>Reseat all the connectors on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“HCOE controller PCBA removal” on page 467.</b></p> <p>If the error persists, then go to <b>“High capacity output expander assembly removal” on page 460.</b></p>	The problem is solved.

## Sensor (HCOE pass through) jam service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Is the high capacity output expander the only output option installed?</p>	Go to step 3.	Go to step 2.
<p><b>Step 2</b></p> <p>Remove all output options and re-install only the high capacity output expander.</p> <p>Enter Diagnostics Menu and navigate to:</p> <p><b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b></p> <p>Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“HCOE lower interface cable removal” on page 469.</b></p> <p>Remove the left cover. Reseat the cable (J1) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 4.	The problem is solved.
<p><b>Step 4</b></p> <p>Check the auto connector end of the printer underneath the option.</p> <p>Is it free of damage or obstructions?</p>	Go to step 5.	Replace the upper interface cable of the base printer.
<p><b>Step 5</b></p> <p>Open the rear door, and check:</p> <ul style="list-style-type: none"> <li>• if the rear door opens and closes properly</li> <li>• the rollers for damage</li> </ul> <p>Are the above components ok?</p>	Go to step 6.	Replace the rear door. Go to <b>“HCOE rear door removal” on page 461.</b>
<p><b>Step 6</b></p> <p>Check if:</p> <ul style="list-style-type: none"> <li>• the diverter is free from damage</li> <li>• the bottom diverter is not open</li> <li>• the upper diverter can be manually moved, and if its spring causes it to return to its original position</li> </ul> <p>Are the above components ok?</p>	Go to step 7.	Replace the high capacity output expander. Go to <b>“High capacity output expander assembly removal” on page 460.</b>

Action	Yes	No
<p><b>Step 7</b> Check the feed/transport rollers.  Are they free of contamination or damage?</p>	Go to step 8.	Replace the high capacity output expander. Go to <b>“High capacity output expander assembly removal” on page 460.</b>
<p><b>Step 8</b> Check the gears. Manually turn the gears, and check if the parts engaged to the gear also turn.  Is it free of damage?</p>	Go to step 9.	Replace the high capacity output expander. Go to <b>“High capacity output expander assembly removal” on page 460.</b>
<p><b>Step 9</b> Open the rear door and check the sensors (pass through) for proper operation. Enter Diagnostics Menu and navigate to: <b>OUTPUT BIN TESTS &gt; Sensor Test</b>  Does the display on the operator panel change every time the sensing area of the above sensors are interrupted or blocked?</p>	Go to step 11.	Go to step 10.
<p><b>Step 10</b> Check the sensors (pass through). If damaged, then replace the high capacity output expander. Go to <b>“High capacity output expander assembly removal” on page 460.</b>  Reseat the sensor connections (J3) on the controller PCBA, then POR the machine.  Does the error remain?</p>	Replace the high capacity output expander. Go to <b>“High capacity output expander assembly removal” on page 460.</b>	The problem is solved.
<p><b>Step 11</b> Reseat all connectors on the controller PCBA, then POR the machine.  Does the error remain?</p>	Replace the controller PCBA. Go to <b>“HCOE controller PCBA removal” on page 467.</b>  If the error persists, then replace the HCOE. Go to <b>“High capacity output expander assembly removal” on page 460.</b>	The problem is solved.

## Sensor (finisher pass through) jam service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Is the staple finisher the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b></p> <p>Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b></p> <p>Check the auto connector end of the option previously installed below the staple finisher.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
<p><b>Step 4</b></p> <p>Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Stapler lower interface cable removal” on page 494.</b></p> <p>Remove the left cover. Reseat the cable (J15) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b></p> <p>Open the rear door and check the sensor (pass through) for proper operation. Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Sensor test</b></p> <p>Does the display on the operator panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to step 7.	Go to step 6.
<p><b>Step 6</b></p> <p>Check the sensor (pass through):</p> <ul style="list-style-type: none"> <li>• Make sure the sensor is properly seated</li> <li>• Check the sensor flag. If damaged, then replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471.</b></li> </ul> <p>Remove the left cover, reseat the connector (J13) on the controller PCBA, and then POR the machine.</p> <p>Does the error remain?</p>	Go to step 7.	The problem is solved.

Action	Yes	No
<p><b>Step 7</b></p> <p>Open the rear door, and check:</p> <ul style="list-style-type: none"> <li>• if the rear door opens and closes properly</li> <li>• the rollers for damage</li> </ul> <p>Is the above component ok?</p>	Go to step 8.	Replace the rear door. Go to <b>“Stapler rear door removal” on page 472</b>
<p><b>Step 8</b></p> <p>Open the left cover and check the feed gears. If damaged, then replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471.</b></p> <p>Reseat the connector (J3) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 9.	The problem is solved.
<p><b>Step 9</b></p> <p>Remove the staple finisher assembly from the printer. Check the feed rollers and gears under the staple finisher.</p> <p>Is it free of damage?</p>	Go to step 10.	Replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471.</b>
<p><b>Step 10</b></p> <p>Open the top cover, check the left media stack flap:</p> <ul style="list-style-type: none"> <li>• for damage</li> <li>• if it is not dislodged from its original position</li> <li>• if it has no problem moving when manually actuated</li> </ul> <p>Is the above component ok?</p>	Go to step 11.	Replace the left media stack flap. Go to <b>“Media stack flap (left) removal” on page 486.</b>
<p><b>Step 11</b></p> <p>Check the right media stack flap:</p> <ul style="list-style-type: none"> <li>• for damage</li> <li>• if it is not dislodged from its original position</li> <li>• if it has no problem moving when manually actuated</li> </ul> <p>Is the above component ok?</p>	Go to step 12.	Replace the right media stack flap. Go to <b>“Media stack flap (right) removal” on page 485.</b>
<p><b>Step 12</b></p> <p>Open the left cover, reseal all connectors on the controller PCBA and then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Stapler controller PCBA removal” on page 496.</b></p> <p>If the error persists, then replace the staple finisher. Go to <b>“Staple finisher assembly removal” on page 471.</b></p>	The problem is solved.

## Finisher left tamper jam service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Is the staple finisher the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b></p> <p>Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b></p> <p>Check the auto connector end of the option previously installed below the staple finisher.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
<p><b>Step 4</b></p> <p>Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Stapler lower interface cable removal” on page 494.</b></p> <p>Remove the left cover. Reseat the cable (J15) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b></p> <p>Remove the left and top cover. Reseat the cable (J4) on the controller PCBA, then reseat the same cable on the motor end. POR the machine.</p> <p>Does the error remain?</p>	Go to step 6.	The problem is solved.
<p><b>Step 6</b></p> <p>Swap the left and right tamper motors and take note of the error number, then swap also the motor cables.</p> <p>Does the same error occur?</p>	Go to step 7.	If a 453.75 or 453.76 error occurs, then replace the right tamper motor. Go to <b>“Tamper motor (right) removal” on page 491.</b>

Action	Yes	No
<p><b>Step 7</b> Remove the left cover and check the connector (J11) on the controller PCBA. If damaged, then replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471.</b></p> <p>Reseat the sensor cables (tamper motor HP and media stack flap) on the controller PCBA, and then do a print test on the machine.</p> <p>Does the error remain?</p>	Go to step 8.	The problem is solved.
<p><b>Step 8</b> Check the tamper drive belt.</p> <p>Is it free of damage?</p>	Go to step 9.	Replace the tamper drive belt. Go to <b>“Tamper drive belt removal” on page 492.</b>
<p><b>Step 9</b> Check the tamper home position flags:</p> <ul style="list-style-type: none"> <li>• for damage</li> <li>• if they move freely when the tamper guides are adjusted</li> </ul> <p>Are the above components ok?</p>	Go to step 10.	Replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471.</b>
<p><b>Step 10</b> Open the left cover, reseat all connectors on the controller PCBA and then POR the machine.</p> <p>Does the error remain?</p>	Replace the controller PCBA. Go to <b>“Stapler controller PCBA removal” on page 496.</b>	The problem is solved.

## Finisher right tamper jam service check

Action	Yes	No
<p><b>Step 1</b> Is the staple finisher the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b> Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.

Action	Yes	No
<p><b>Step 3</b></p> <p>Check the auto connector end of the option previously installed below the staple finisher.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
<p><b>Step 4</b></p> <p>Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Stapler lower interface cable removal” on page 494.</b></p> <p>Remove the left cover. Reseat the cable (J15) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b></p> <p>Remove the left and top cover. Reseat the cable (J6) on the controller PCBA, then reseat the same cable on the motor end. POR the machine.</p> <p>Does the error remain?</p>	Go to step 6.	The problem is solved.
<p><b>Step 6</b></p> <p>Swap the left and right tamper motors and take note of the error number, then swap also the motor cables.</p> <p>Does the same error occur?</p>	Go to step 7.	If a 452.73 or 452.74 error occurs, then replace the right tamper motor. Go to <b>“Tamper motor (right) removal” on page 491.</b>
<p><b>Step 7</b></p> <p>Remove the left cover and check the connector (J11) on the controller PCBA. If damaged, then replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471.</b></p> <p>Reseat the sensor cables (tamper motor HP and media stack flap) on the controller PCBA, and then do a print test on the machine.</p> <p>Does the error remain?</p>	Go to step 8.	The problem is solved.
<p><b>Step 8</b></p> <p>Check the tamper drive belt.</p> <p>Is it free of damage?</p>	Go to step 9.	Replace the tamper drive belt. Go to <b>“Tamper drive belt removal” on page 492.</b>
<p><b>Step 9</b></p> <p>Check the tamper home position flags:</p> <ul style="list-style-type: none"> <li>• for damage</li> <li>• if they move freely when the tamper guides are adjusted</li> </ul> <p>Are the above components ok?</p>	Go to step 10.	Replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471.</b>

Action	Yes	No
<p><b>Step 10</b> Open the left cover, reseal all connectors on the controller PCBA and then POR the machine.</p> <p>Does the error remain?</p>	Replace the controller PCBA. Go to <b>“Stapler controller PCBA removal” on page 496.</b>	The problem is solved.

## Finisher ejector jam service check

Action	Yes	No
<p><b>Step 1</b> Is the staple finisher the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b> Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b> Check the auto connector end of the option previously installed below the staple finisher.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
<p><b>Step 4</b> Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Stapler lower interface cable removal” on page 494.</b> Remove the left cover. Reseat the cable (J15) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b> Open the left cover, then reseal the cable (J8) on the controller PCBA.</p> <p>Does the error remain?</p>	Go to step 6.	The problem is solved.

Action	Yes	No
<p><b>Step 6</b></p> <p>Check the ejector and do the following:</p> <ul style="list-style-type: none"> <li>• clear obstructions</li> <li>• inspect the ejector</li> </ul> <p>Is the ejector free of damage?</p>	Go to step 7.	Replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471.</b>
<p><b>Step 7</b></p> <p>Open the left cover, reseal all connectors on the controller PCBA and then POR the machine.</p> <p>Does the error remain?</p>	Replace the controller PCBA. Go to <b>“Stapler controller PCBA removal” on page 496.</b>	The problem is solved.

## Finisher diverter jam service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Is the staple finisher the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b></p> <p>Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to:</p> <p><b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b></p> <p>Check the auto connector end of the option previously installed below the staple finisher.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
<p><b>Step 4</b></p> <p>Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Stapler lower interface cable removal” on page 494.</b></p> <p>Remove the left cover. Reseat the cable (J15) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.

Action	Yes	No
<p><b>Step 5</b> Remove the left cover. Reseat the cable (J14) on the controller PCBA, then reseat the same cable on the motor end. POR the machine.</p> <p>Does the error remain?</p>	Go to step 6.	The problem is solved.
<p><b>Step 6</b> Reseat the cable (J8) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 7.	The problem is solved.
<p><b>Step 7</b> Open the left cover, reseat all connectors on the controller PCBA and then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Stapler controller PCBA removal” on page 496.</b></p> <p>If the error persists, then replace the staple finisher. Go to <b>“Staple finisher assembly removal” on page 471.</b></p>	The problem is solved.

## Finisher paddle jam service check

Action	Yes	No
<p><b>Step 1</b> Is the staple finisher the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b> Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b> Check the auto connector end of the option previously installed below the staple finisher.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.

Action	Yes	No
<p><b>Step 4</b></p> <p>Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Stapler lower interface cable removal” on page 494.</b></p> <p>Remove the left cover. Reseat the cable (J15) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b></p> <p>Remove the left cover. Reseat the cable (J11) on the controller PCBA, then reseat the same cable on the sensor (paddle motor HP) end. POR the machine.</p> <p>Does the error remain?</p>	Go to step 6.	The problem is solved.
<p><b>Step 6</b></p> <p>Make sure the sensors (tamper motor HP) are not dislodged, then check the cables and sensors. If damaged, then replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471.</b></p> <p>Swap the sensor (left tamper motor HP) and the sensor (paddle motor HP).</p> <p>Does the same error occur?</p>	Go to step 7.	Replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471.</b>
<p><b>Step 7</b></p> <p>Check the paddle motor. If damaged, then replace the paddle motor. Go to <b>“Paddle drive motor removal” on page 493.</b></p> <p>Reseat the cable (J5) on the controller PCBA, then reseat the same cable on the motor end. POR the machine.</p> <p>Does the error remain?</p>	Go to step 8.	The problem is solved.
<p><b>Step 8</b></p> <p>Without disconnecting the paddle motor, remove it from the staple finisher and let it hang. POR the machine, and observe the motor.</p> <p>Does it run?</p>	Go to step 9.	Replace the paddle drive motor. Go to <b>“Paddle drive motor removal” on page 493.</b>
<p><b>Step 9</b></p> <p>Open the left cover, reseat all connectors on the controller PCBA and then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Stapler controller PCBA removal” on page 496.</b></p> <p>If the error persists, then replace the staple finisher. Go to <b>“Staple finisher assembly removal” on page 471.</b></p>	The problem is solved.

## Finisher tray holder jam service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Is the staple finisher the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b></p> <p>Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	Perform step 2 again using the other remaining output bins. The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b></p> <p>Check the auto connector end of the option previously installed below the staple finisher.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
<p><b>Step 4</b></p> <p>Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Stapler lower interface cable removal” on page 494.</b></p> <p>Remove the left cover. Reseat the cable (J15) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b></p> <p>Remove the left cover. Check and reseat the cables (J24 and J22) on the controller PCBA. If damaged, then replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471.</b></p> <p>POR the machine.</p> <p>Does the error remain?</p>	Go to step 6.	The problem is solved.

Action	Yes	No
<p><b>Step 6</b> Open the left cover, reseal all connectors on the controller PCBA and then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Stapler controller PCBA removal” on page 496.</b></p> <p>If the error persists then replace the staple finisher. Go to <b>“Staple finisher assembly removal” on page 471.</b></p>	The problem is solved.

## Stapler carriage jam service check

Action	Yes	No
<p><b>Step 1</b> Is the staple finisher the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b> Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b> Check the auto connector end of the option previously installed below the staple finisher.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
<p><b>Step 4</b> Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Stapler lower interface cable removal” on page 494.</b></p> <p>Remove the left cover. Reseat the cable (J15) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.

Action	Yes	No
<p><b>Step 5</b></p> <p>Remove the left cover. Reseat the cable (J7) on the controller PCBA then POR the machine.</p> <p>Does the error remain?</p>	Go to step 6.	The problem is solved.
<p><b>Step 6</b></p> <p>Remove the right cover. Reseat the two cables on the stapler carriage, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 7.	The problem is solved.
<p><b>Step 7</b></p> <p>Check the stapler carriage cable (J7) from the controller PCBA to the stapler end.</p> <p>Is it free of damage?</p>	Go to step 8.	<p>Replace the door limit switch with cable. Go to <b>“Stapler door close limit switch removal” on page 476.</b></p> <p>If the error persists, then replace the stapler carriage. Go to <b>“Stapler carriage assembly removal” on page 479.</b></p>
<p><b>Step 8</b></p> <p>Remove the stapler carriage. Manually turn the gears to open the stapling mechanism. While open, check the area inside the stapling mechanism and make sure it is free from obstructions.</p> <p>Is it free of damage?</p>	Go to step 9.	<p>Replace the stapler carriage. Go to <b>“Stapler carriage assembly removal” on page 479.</b></p>
<p><b>Step 9</b></p> <p>Open the left cover, reseat all connectors on the controller PCBA and then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Stapler controller PCBA removal” on page 496.</b></p> <p>If the error persists, then replace the staple finisher. Go to <b>“Staple finisher assembly removal” on page 471.</b></p>	The problem is solved.

## Output expander jam service check

Action	Yes	No
<p><b>Step 1</b> Is the output expander the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b> Remove all output options and re-install only the expander. Enter Diagnostics Menu and navigate to: <b>OUTPUT BIN TESTS &gt; Feed Tests &gt; Output Bin 1</b> Select <b>Single</b>.  Does the output option feed normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b> Check the auto connector end of the option previously installed below the expander.  Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option previously installed under the expander.
<p><b>Step 4</b> Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Lower interface cable removal” on page 455</b>. Remove the left cover. Reseat the cable (J1) on the controller PCBA, then POR the machine.  Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b> Enter Diagnostics Menu and navigate to: <b>OUTPUT BIN TESTS &gt; Sensor Test</b> Manually toggle the sensor (pass through) and sensor (rear door).  Does the display on the operator panel change every time the sensing area of the above sensors are interrupted or blocked?</p>	Go to step 7.	Go to step 6.
<p><b>Step 6</b> Open the rear door. Check the sensor flag for damage. Manually actuate the sensor flag and check if it functions properly. If damaged, then replace the output expander assembly. Go to <b>“Output expander assembly removal” on page 446</b>. Open the left cover and reseat the sensor connections on the controller PCBA. POR the machine.  Does the error remain?</p>	Go to step 7.	Replace the output expander assembly. Go to <b>“Output expander assembly removal” on page 446</b> .

Action	Yes	No
<p><b>Step 7</b></p> <p>Do the following:</p> <ul style="list-style-type: none"> <li>• check if the rear door closes properly</li> <li>• check the roller on the rear door for damage</li> </ul> <p>Are the above components ok?</p>	Go to step 8.	Replace the rear door. Go to <b>“Output expander rear door removal” on page 447.</b>
<p><b>Step 8</b></p> <p>Open the rear door and check if:</p> <ul style="list-style-type: none"> <li>• the diverters are free of damage</li> <li>• the diverters can be manually moved, and if its spring causes it to return to its original position</li> </ul> <p>Are the above components ok?</p>	Go to step 9.	Replace the output expander assembly. Go to <b>“Output expander assembly removal” on page 446.</b>
<p><b>Step 9</b></p> <p>Open the left cover, then check the cables (J4, J6, and J14) on the controller PCBA. If damaged, then replace the output expander assembly. Go to <b>“Output expander assembly removal” on page 446.</b></p> <p>Reseat the cables (J4, J6 and J14) on the controller PCBA. Perform a feed test, navigate to:</p> <p><b>OUTPUT BIN TESTS &gt; Feed Tests &gt;Output Bin 1</b></p> <p>Does the output option feed normally?</p>	Go to step 10.	Replace the output expander assembly. Go to <b>“Output expander assembly removal” on page 446.</b>
<p><b>Step 10</b></p> <p>Open the left cover, reseal all connectors on the controller PCBA and then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Output expander controller PCBA removal” on page 454.</b></p> <p>If the error persists, then replace the output expander. Go to <b>“Output expander assembly removal” on page 446.</b></p>	The problem is solved.

## Sensor (media in stapler) jam service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Is the staple finisher the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b></p> <p>Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b></p> <p>Check the auto connector end of the option previously installed below the staple finisher.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option under the staple finisher.
<p><b>Step 4</b></p> <p>Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Stapler lower interface cable removal” on page 494.</b></p> <p>Remove the left cover. Reseat the cable (J15) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b></p> <p>Check the sensor flag (media in stapler):</p> <ul style="list-style-type: none"> <li>• for damage</li> <li>• if it moves freely when manually actuated</li> </ul> <p>Is the above component ok?</p>	Go to step 6.	Replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471.</b>
<p><b>Step 6</b></p> <p>Open the left cover, reseat all connectors on the controller PCBA and then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Stapler controller PCBA removal” on page 496.</b></p> <p>If the error persists, then replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471.</b></p>	The problem is solved.

## Symptoms

- “Base printer symptoms” on page 194
- “Network service check” on page 194
- “Dead machine service check” on page 197
- “Option tray symptoms” on page 198
- “250/550-sheet media type error service check” on page 199
- “250/550-sheet tray undetected service check” on page 201
- “HCIT incorrect media error service check” on page 202
- “HCIT media type error service check” on page 204
- “HCIT undetected service check” on page 206
- “HCIT media low undetected service check” on page 207
- “Finisher side door error service check” on page 209
- “Mailbox incorrect bin exit service check” on page 211
- “Finisher cartridge error service check ” on page 212
- “Finisher undetected service check” on page 214
- “Finisher bin error service check ” on page 215
- “Finisher door undetected service check ” on page 216
- “Stapler carriage failure service check” on page 218
- “Finisher bin media present error service check” on page 219
- “Output expander error service check” on page 221

### Base printer symptoms

Symptom	Action
Network issues	See “Network service check” on page 194.
Dead machine	See “Dead machine service check” on page 197.

### Network service check

**Note:** Before starting this service check, print out the network setup page. This page is found under **Menu>Reports>Network Settings**. Consult the network administrator to verify that the physical and wireless network settings displayed on the network settings page for the device are properly configured. If a wireless network is used, then verify that the printer is in range of the host computer or wireless access point, and there is no electronic interference. Have the network administrator verify that the device is using the correct SSID, and wireless security protocols. For more network troubleshooting information, consult the Lexmark Network Setup Guide.

Actions	Yes	No
<p><b>Step 1</b> If the device is physically connected to the network, verify that the ethernet cable is properly connected on both ends.</p> <p>Is the cable properly connected?</p>	Go to step 3. If the network is wireless, then go to step 3.	Go to step 2.
<p><b>Step 2</b> Connect the ethernet cable.</p> <p>Does this fix the problem?</p>	Problem solved.	Go to step 3.
<p><b>Step 3</b> Check the printer's online status under Printers and Faxes on the host computer. Delete all print jobs in the print queue.</p> <p>Is the printer online and in a Ready state?</p>	Go to step 5.	Go to step 4.
<p><b>Step 4</b> Change the printer status to online.</p> <p>Did this fix the issue?</p>	Problem resolved.	Go to step 5.
<p><b>Step 5</b> Does the IP address displayed on the network settings page match the IP address in the port of the drivers using the printer?</p>	Go to step 10.	Go to step 6.
<p><b>Step 6</b> Does the LAN use DHCP? <b>Note:</b> A printer should use a static IP address on a network.</p>	Go to step 7.	Go to step 9.
<p><b>Step 7</b> Are the first two segments of the IP address 169.254?</p>	Go to step 8.	Go to step 9.
<p><b>Step 8</b> POR the printer.</p> <p>Did this resolve the issue?</p>	Problem resolved.	Go to step 10.
<p><b>Step 9</b> Reset the address on the printer to match the IP address on the driver.</p> <p>Did this resolve the issue?</p>	Problem fixed.	Go to step 10.
<p><b>Step 10</b> Have the network administrator verify that the printer and PC's IP address have identical subnet addresses.</p> <p>Are the subnet addresses the same?</p>	Go to step 12.	Go to step 11.

Actions	Yes	No
<p><b>Step 11</b> Using the subnet address supplied by the network administrator, assign a unique IP address to the printer.</p> <p><b>Note:</b> The printer IP address should match the IP address on the printer driver.</p> <p>Did this fix the problem?</p>	Problem resolved.	Go to step 12.
<p><b>Step 12</b> Is the device physically connected (ethernet cable) to the network?</p>	Go to step 13.	Go to step 15.
<p><b>Step 13</b> Try using a different ethernet cable.</p> <p>Did this fix the problem?</p>	Problem solved.	Go to step 14.
<p><b>Step 14</b> Have the network administrator check the network drop for activity.</p> <p>Is the network drop functioning properly?</p>	Replace the controller board. See <b>“Controller board removal” on page 349.</b>	Contact the network administrator.
<p><b>Step 15</b> Is the printer on the same wireless network as the other devices?</p>	Go to step 17.	Go to step 16.
<p><b>Step 16</b> Assign the correct wireless network to the printer.</p> <p>Did this fix the problem?</p>	Problem resolved.	Go to step 17.
<p><b>Step 17</b> Are the other devices on the wireless network communicating properly?</p>	Go to step 18.	Contact the network administrator.
<p><b>Step 18</b> Verify that the wireless card is properly seated on the controller board.</p> <p>Is the wireless card seated correctly?</p>	Go to step 20.	Go to step 19.
<p><b>Step 19</b> Properly reseal the wireless card.</p> <p>Did this fix the problem?</p>	Problem resolved.	Go to step 20.
<p><b>Step 20</b> If there is an attached antenna, is the antenna damaged?</p>	Go to step 22.	Go to step 21.
<p><b>Step 21</b> Replace the antenna.</p> <p>Did this fix the problem?</p>	Problem resolved.	Go to step 22.

Actions	Yes	No
<p><b>Step 22</b> Verify that the antenna is properly connected to the wireless card.</p> <p>Is it connected correctly?</p>	Problem resolved.	Go to step 24.
<p><b>Step 23</b> Properly connect the antenna.</p> <p>Did this fix the problem?</p>	Problem resolved.	Go to step 24.
<p><b>Step 24</b> Replace the wireless card.</p> <p>Did this fix the problem?</p>	Problem resolved.	Go to step 25.
<p><b>Step 25</b> Replace the controller board. See <b>“Controller board removal” on page 349.</b></p> <p>Did this fix the problem?</p>	Problem resolved.	Contact your next level of support.

## Dead machine service check

Action	Yes	No
<p><b>Step 1</b> Is the machine plugged in?</p>	Go to step 3.	Go to step 2.
<p><b>Step 2</b> Plug the machine in.</p> <p>Did this fix the problem?</p>	The problem is solved.	Go to step 3.
<p><b>Step 3</b> Check the power cord for continuity.</p> <p>Is there continuity?</p>	Go to step 4.	Replace the power cord.
<p><b>Step 4</b> Check the AC line voltage to the machine. The voltage should be within the following limits:</p> <ul style="list-style-type: none"> <li>• for 110 machines—100 to 127 V ac</li> <li>• for 220 V machines—200 to 240 V ac</li> </ul> <p>Is the voltage within the limits?</p>	Go to step 5.	Try a different outlet.

Action	Yes	No
<p><b>Step 5</b></p> <p>Check the voltages on the LVPS card.</p> <ul style="list-style-type: none"> <li>+5V at pin?</li> <li>+24V at pin?</li> </ul> <p>Are the voltages correct?</p>	Contact the next highest level of support.	Replace the LVPS. Go to <b>“LVPS removal” on page 366.</b>

## Option tray symptoms

Symptom	Action
Recurring media type error detected on the 250/550-sheet tray option.	Go to <b>“250/550-sheet media type error service check” on page 199.</b>
The 250/550-sheet tray is not detected or recognized.	Go to <b>“250/550-sheet tray undetected service check” on page 201.</b>
The 250/550-sheet option is not detected or recognized.	POR the machine <ol style="list-style-type: none"> <li>POR the machine.</li> <li>Reseat the input options.</li> <li>Make sure the upper and lower interface cable are not damaged. If damaged then replace the cable. Go to <b>“Drawer upper interface cable removal” on page 412</b> or <b>“Drawer lower interface cable removal” on page 413.</b></li> </ol>
Recurring media type error detected on the HCIT option.	Go to <b>“HCIT media type error service check” on page 204.</b>
The HCIT does not detect when the media level is low.	Go to <b>“HCIT media low undetected service check” on page 207.</b>
The HCIT is not detected or recognized.	Go to <b>“HCIT undetected service check” on page 206.</b>
Incorrect media is detected on the HCIT.	Go to <b>“HCIT incorrect media error service check” on page 202.</b>
The finisher detects the side door as open even when it is closed.	Go to <b>“Finisher side door error service check” on page 209.</b>
Media doesn't exit at the assigned mailbox bin.	Go to <b>“Mailbox incorrect bin exit service check” on page 211.</b>
The stapler unit does not detect the staple cartridge.	Go to <b>“Finisher cartridge error service check” on page 212.</b>
The staple finisher option is not detected or recognized.	Go to <b>“Finisher undetected service check” on page 214.</b>
The staple finisher detects media even when the bin is cleared.	Go to <b>“Finisher bin error service check” on page 215.</b>
The finisher detects the rear door as open even when it is closed.	Go to <b>“Finisher door undetected service check” on page 216.</b>

Symptom	Action
The stapler unit won't staple.	Go to <b>“Stapler carriage failure service check” on page 218.</b>
The stapler bin LED doesn't light up, media isn't detected on the output bin.	Go to <b>“Finisher bin media present error service check” on page 219.</b>
The expander detects the rear door as open even when it is closed.	Go to <b>“Output expander error service check” on page 221.</b>

## 250/550-sheet media type error service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Remove all input options and re-install only the suspected 250/550-sheet tray option. POR into diagnostics mode and navigate to:</p> <p><b>INPUT TRAY TESTS &gt; Feed tests &gt; Tray 2</b></p> <p>Does the input option feed normally?</p>	<p>The problem may not be on this option tray. Re-install the remaining input options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the input option being tested.</p>	<p>Go to step 2.</p>
<p><b>Step 2</b></p> <p>Remove the tray from the drawer and do the following:</p> <ul style="list-style-type: none"> <li>• Check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another.</li> <li>• Check the media size finger flag for damage.</li> <li>• Check the lift plate gear for damage. Manually turn the lift plate gear and check if it causes the lift plate to move upward.</li> <li>• Check the separator gears for damage. Manually turn the gear and check if the gears function properly.</li> </ul> <p>Are the above components ok?</p>	<p>Go to step 3.</p>	<p>Replace the media tray. Go to <b>“250/550-sheet media tray and drawer assembly removal” on page 406.</b></p>
<p><b>Step 3</b></p> <p>Remove the tray from the drawer and do the following:</p> <ul style="list-style-type: none"> <li>• Check the pick roller's position. The pick roller should not hang vertically; it should lean horizontally underneath the top cover of the drawer.</li> <li>• Make sure the pick roller is installed correctly. If not, then re-install the pick roller.</li> <li>• Lower down the pick roller and then release. Check if the pick roller would spring back to its original position.</li> <li>• Check the pick roller for damage. Check for wear on the pick tires.</li> </ul> <p>Are the above components ok?</p>	<p>Go to step 4.</p>	<p>Replace the pick roller. Go to <b>“Drawer pick roller removal” on page 408.</b></p>

Action	Yes	No
<p><b>Step 4</b></p> <p>Remove the left cover and do the following:</p> <ul style="list-style-type: none"> <li>• Lower down the media pick actuator and then release. Check if the actuator would spring back to its original position.</li> <li>• Manually move the media pick actuator, then check if the paper sensor flag moves along with it. Check also for damage.</li> <li>• On the left side of the option, manually turn the media feeder motor encoders, and check if it causes the pick tires to turn.</li> <li>• Make sure the sensor connections on the media feeder sensors are secure.</li> <li>• Check the media level sensor on the left side of the option including the sensor flag for damage.</li> </ul> <p>If there problems with the above components, then replace the media feeder. See <b>“Drawer media feeder removal” on page 414.</b></p> <p>Reseat the connector (J11) on the controller board, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b></p> <p>Remove the input option from the printer. Check the upper interface cable. If damaged, then replace the upper interface cable. See <b>“Drawer upper interface cable removal” on page 412.</b></p> <p>Open the left cover and reseat the connector (J1) on the controller board. POR the machine.</p> <p>Does the error remain?</p>	Go to step 6.	The problem is solved.
<p><b>Step 6</b></p> <p>Check the interface cable of the printer or upper level option for damage.</p> <p>Is the above component in good condition?</p>	Go to step 7.	Replace the interface cable of the printer or upper level option.
<p><b>Step 7</b></p> <p>Check the connectors on the controller board. If damaged, then replace the controller board. See <b>“Drawer controller PCBA removal” on page 411.</b></p> <p>Reseat all connectors on the controller board, then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller board. Go to <b>“Drawer controller PCBA removal” on page 411.</b></p> <p>If the error remains, then go to step 8.</p>	The problem is solved.
<p><b>Step 8</b></p> <p>If the 250/550-sheet tray option is the only input option installed, then replace the 250/550-sheet tray option. See <b>“250/550-sheet media tray and drawer assembly removal” on page 406.</b></p> <p>If there are multiple input options, then remove the suspected input option and install it as Tray 2. Run a print test, navigate to:</p> <p><b>Reports &gt; Device Statistics</b></p> <p>Does the error remain?</p>	Replace the input tray option. Go to <b>“250/550-sheet media tray and drawer assembly removal” on page 406.</b>	The problem is solved.

## 250/550-sheet tray undetected service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Remove the tray from the drawer and do the following:</p> <ul style="list-style-type: none"> <li>• Check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another.</li> <li>• Check the media size finger flag for damage.</li> <li>• Check the lift plate gear for damage. Manually turn the lift plate gear and check if it causes the lift plate to move upward.</li> <li>• Check the separator gears for damage. Manually turn the gear and check if the gears function properly.</li> </ul> <p>Are the above components ok?</p>	Go to step 2.	Replace the media tray. Go to <b>“Media tray assembly removal” on page 407.</b>
<p><b>Step 2</b></p> <p>Manually push the media size sensor flags and check if it would spring back to its original position. If problems are found with the media size sensor, then replace the input option. See <b>“250/550-sheet media tray and drawer assembly removal” on page 406.</b></p> <p>Open the left cover, and reseal the connector (J3) on the controller board. POR the machine.</p> <p>Does the error remain?</p>	Go to step 3.	The problem is solved.
<p><b>Step 3</b></p> <p>Remove the input option from the printer. Check the upper interface cable. If damaged, then replace the upper interface cable. See <b>“Drawer upper interface cable removal” on page 412.</b></p> <p>Open the left cover and reseal the connector (J1) on the controller board. POR the machine.</p> <p>Does the error remain?</p>	Go to step 4.	The problem is solved.
<p><b>Step 4</b></p> <p>Check the interface cable of the printer or upper level option for damage.</p> <p>Is the above component still ok?</p>	Go to step 5.	Replace the interface cable of the printer or upper level option.
<p><b>Step 5</b></p> <p>Check the connectors on the controller board. If damaged, then replace the controller board. See <b>“Drawer controller PCBA removal” on page 411.</b></p> <p>Reseat all connectors on the controller board, then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller board. Go to <b>“Drawer controller PCBA removal” on page 411.</b></p> <p>If the error remains, then go to step 6.</p>	The problem is solved.

Action	Yes	No
<p><b>Step 6</b></p> <p>If the 250/550-sheet tray option is the only input option installed, then replace the 250/550-sheet tray option. See <b>“250/550-sheet media tray and drawer assembly removal” on page 406.</b></p> <p>If there are multiple input options, then remove the suspected input option and install it as Tray 2. Run a print test, navigate to: <b>Reports &gt; Device Statistics</b></p> <p>Does the error remain?</p>	<p>Replace the input tray option. Go to <b>“250/550-sheet media tray and drawer assembly removal” on page 406.</b></p>	<p>The problem is solved.</p>

## HCIT incorrect media error service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Remove the media tray from the HCIT option and do the following:</p> <ul style="list-style-type: none"> <li>• Remove all media and check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another.</li> <li>• Check the media size finger flag for damage.</li> <li>• Check the elevator plate. Manually lower down the elevator plate and check if it springs back to its original position.</li> <li>• Check the elevator tension cables if there are problems.</li> <li>• Check the elevator gears for damage.</li> <li>• Manually turn the drive gear and check if the other gears engaged to it will also turn.</li> <li>• Check if the tray can be inserted properly into the HCIT option.</li> </ul> <p>Are the above components ok?</p>	<p>Go to step 2.</p>	<p>Replace the media tray. Go to <b>“HCIT removal” on page 423.</b></p>
<p><b>Step 2</b></p> <p>Remove the media tray from the HCIT option and do the following:</p> <ul style="list-style-type: none"> <li>• Check if there is no problem moving the tray input guides.</li> <li>• Manually push the media size sensor flags and check if it would spring back to its original position.</li> <li>• Check the sensor (HCIT media guide) for damage. Make sure all obstructions are removed.</li> </ul> <p>Are the above components ok?</p>	<p>Go to step 3.</p>	<p>Replace the HCIT drawer assembly. Go to <b>“HCIT drawer assembly removal” on page 423.</b></p>
<p><b>Step 3</b></p> <p>Check the HCIT media guide for damage. Check if the spring of the media guide functions properly when the guide is released.</p> <p>Is the above component ok?</p>	<p>Go to step 4.</p>	<p>Replace the HCIT media guide. Go to <b>“HCIT media guide removal” on page 424.</b></p>

Action	Yes	No
<p><b>Step 4</b> Separate the HCIT from the printer. Remove also the remaining input options. Check the HCIT interface cable. If damaged, then replace the cable. See <b>“HCIT drawer assembly interface cable removal” on page 438.</b></p> <p>Open the left cover, and reseal the connector (J1) on the controller board. POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b> Remove all other options and install only the HCIT option.</p> <p>Does the error remain?</p>	Go to step 7.	Go to step 6.
<p><b>Step 6</b> Check the interface cable of the printer or upper level option for damage.</p> <p>Is the above component still ok?</p>	Go to step 7.	Replace the interface cable of the printer or upper level option.
<p><b>Step 7</b> Check the connectors on the controller board. If damaged, then replace the controller board. See <b>“HCIT controller PCBA removal” on page 433.</b> Reseat all connectors on the controller board, then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller board. Go to <b>“HCIT controller PCBA removal” on page 433.</b></p> <p>If the error remains, then go to step 8.</p>	The problem is solved.
<p><b>Step 8</b> Replace the tray.</p> <p>Does the error remain?</p>	Go to step 9.	The problem is solved.
<p><b>Step 9</b> Replace the drawer.</p> <p>Does the error remain?</p>	Contact the next level of support.	The problem is solved.

## HCIT media type error service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Remove the media tray from the HCIT option and do the following:</p> <ul style="list-style-type: none"> <li>• Remove all media and check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another.</li> <li>• Check the media size finger flag for damage.</li> <li>• Check the elevator plate. Manually lower down the elevator plate and check if it springs back to its original position.</li> <li>• Check the elevator tension cables if there are problems.</li> <li>• Check the elevator gears for damage.</li> <li>• Manually turn the drive gear and check if the other gears engaged to it will also turn.</li> <li>• Check if the tray can be inserted properly into the HCIT option.</li> </ul> <p>Are the above components ok?</p>	Go to step 2.	Replace the media tray. Go to <b>“HCIT removal” on page 423.</b>
<p><b>Step 2</b></p> <p>Remove the media tray from the HCIT option and do the following:</p> <ul style="list-style-type: none"> <li>• Check the pick roller's position. The pick roller should not hang vertically; it should lean horizontally underneath the top cover of the drawer.</li> <li>• Make sure the pick roller is installed correctly. If not, then re-install the pick roller.</li> <li>• Lower down the pick roller and then release. Check if the pick roller would spring back to its original position.</li> <li>• Check the pick roller for damage. Check for wear on the pick tires.</li> </ul> <p>Are the above components ok?</p>	Go to step 3.	Replace the pick roller. Go to <b>“HCIT pick arm assembly removal” on page 427.</b>
<p><b>Step 3</b></p> <p>Remove the left cover and do the following:</p> <ul style="list-style-type: none"> <li>• Lower down the media pick actuator and then release. Check if the actuator would spring back to its original position.</li> <li>• Manually move the media pick actuator, then check if the paper sensor flag moves along with it. Check also for damage.</li> <li>• Manually turn the media feeder motor encoders gently, and check if it causes the pick tires to turn.</li> <li>• Make sure the sensor connections on the media feeder sensors are secure.</li> </ul> <p>If there problems with the above components, then replace the HCIT media feeder. See <b>“HCIT media feeder removal” on page 443.</b></p> <p>Reseat the connector (J11) on the controller board.</p> <p>Does the error remain?</p>	Go to step 4.	The problem is solved.

Action	Yes	No
<p><b>Step 4</b></p> <p>Remove the media tray from the HCIT option and do the following:</p> <ul style="list-style-type: none"> <li>• Check if there is no problem moving the tray input guides.</li> <li>• Manually push the media size sensor flags and check if it would spring back to its original position.</li> <li>• Check the sensor (HCIT media guide) for damage. Make sure all obstructions are removed.</li> </ul> <p>Are the above components ok?</p>	Go to step 5.	Replace the HCIT drawer assembly. Go to <b>“HCIT drawer assembly removal” on page 423.</b>
<p><b>Step 5</b></p> <p>Separate the HCIT from the printer. Remove also the remaining input options. Check the HCIT interface cable. If damaged, then replace the cable. See <b>“HCIT drawer assembly interface cable removal” on page 438.</b></p> <p>Open the left cover, and reseal the connector (J1) on the controller board. POR the machine.</p> <p>Does the error remain?</p>	Go to step 6.	The problem is solved.
<p><b>Step 6</b></p> <p>Remove all other options and install only the HCIT option.</p> <p>Does the error remain?</p>	Go to step 8.	Go to step 7.
<p><b>Step 7</b></p> <p>Check the interface cable of the printer or upper level option for damage.</p> <p>Is the above component still ok?</p>	Go to step 8.	Replace the interface cable of the printer or upper level option.
<p><b>Step 8</b></p> <p>Check the connectors on the controller board. If damaged, then replace the controller board. See <b>“HCIT controller PCBA removal” on page 433.</b></p> <p>Reseat all connectors on the controller board, then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller board. Go to <b>“HCIT controller PCBA removal” on page 433.</b></p> <p>If the error remains, then go to step 9.</p>	The problem is solved.
<p><b>Step 9</b></p> <p>Replace the tray.</p> <p>Does the error remain?</p>	Go to step 10.	The problem is solved.
<p><b>Step 10</b></p> <p>Replace the drawer.</p> <p>Does the error remain?</p>	Contact the next level of support.	The problem is solved.

## HCIT undetected service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Remove the media tray from the HCIT option and do the following:</p> <ul style="list-style-type: none"> <li>• Remove all media and check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another.</li> <li>• Check the media size finger flag for damage.</li> <li>• Check the elevator plate. Manually lower down the elevator plate and check if it springs back to its original position.</li> <li>• Check the elevator tension cables if there are problems.</li> <li>• Check the elevator gears for damage.</li> <li>• Manually turn the drive gear and check if the other gears engaged to it will also turn.</li> <li>• Check if the tray can be inserted properly into the HCIT option.</li> </ul> <p>Are the above components ok?</p>	Go to step 2.	Replace the media tray. Go to <b>“HCIT removal” on page 423.</b>
<p><b>Step 2</b></p> <p>Remove the media tray from the HCIT option and do the following:</p> <ul style="list-style-type: none"> <li>• Check if there is no problem moving the tray input guides.</li> <li>• Manually push the media size sensor flags and check if it would spring back to its original position.</li> <li>• Check the sensor (HCIT media guide) for damage. Make sure all obstructions are removed.</li> </ul> <p>Are the above components ok?</p>	Go to step 3.	Replace the HCIT drawer assembly. Go to <b>“HCIT drawer assembly removal” on page 423.</b>
<p><b>Step 3</b></p> <p>Separate the HCIT from the printer. Remove also the remaining input options. Check the HCIT interface cable. If damaged, then replace the cable. See <b>“HCIT drawer assembly interface cable removal” on page 438.</b></p> <p>Open the left cover, and reseal the connector (J1) on the controller board. POR the machine.</p> <p>Does the error remain?</p>	Go to step 4.	The problem is solved.
<p><b>Step 4</b></p> <p>Remove all other options and install only the HCIT option.</p> <p>Does the error remain?</p>	Go to step 6.	Go to step 5.
<p><b>Step 5</b></p> <p>Check the interface cable of the printer or upper level option for damage.</p> <p>Is the above component still ok?</p>	Go to step 6.	Replace the interface cable of the printer or upper level option.

Action	Yes	No
<p><b>Step 6</b></p> <p>Check the connectors on the controller board. If damaged, then replace the controller board. See <b>“HCIT controller PCBA removal” on page 433</b>. Reseat all connectors on the controller board, then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller board. Go to <b>“HCIT controller PCBA removal” on page 433</b>.</p> <p>If the error remains, then go to step 7.</p>	<p>The problem is solved.</p>
<p><b>Step 7</b></p> <p>Replace the tray.</p> <p>Does the error remain?</p>	<p>Go to step 8.</p>	<p>The problem is solved.</p>
<p><b>Step 8</b></p> <p>Replace the drawer.</p> <p>Does the error remain?</p>	<p>Contact the next level of support.</p>	<p>The problem is solved.</p>

## HCIT media low undetected service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Remove the media tray from the HCIT option and do the following:</p> <ul style="list-style-type: none"> <li>• Remove all media and check the paper guides for damage. Move the paper guide and verify if it can move freely from one position to another.</li> <li>• Check the media size finger flag for damage.</li> <li>• Check the elevator plate. Manually lower down the elevator plate and check if it springs back to its original position.</li> <li>• Check the elevator tension cables if there are problems.</li> <li>• Check the elevator gears for damage.</li> <li>• Manually turn the drive gear and check if the other gears engaged to it will also turn.</li> <li>• Check if the tray can be inserted properly into the HCIT option.</li> </ul> <p>Are the above components ok?</p>	<p>Go to step 2.</p>	<p>Replace the media tray. Go to <b>“HCIT removal” on page 423</b>.</p>

Action	Yes	No
<p><b>Step 2</b></p> <p>Remove the media tray from the HCIT option and do the following:</p> <ul style="list-style-type: none"> <li>• Check the sensor (HCIT media low) for damage. Make sure the sensor is properly installed.</li> <li>• Check also the sensor flag for damage. Manually trigger the flag and check if it springs back to its original position. If there are problems with the sensor, then replace it. Go to <b>“Sensor (HCIT media low) with flag removal” on page 439.</b></li> </ul> <p>Open the left cover, and reseal the connector (J1) on the controller board. POR the machine.</p> <p>Does the error remain?</p>	Go to step 3.	The problem is solved.
<p><b>Step 3</b></p> <p>Separate the HCIT from the printer. Remove also the remaining input options. Check the HCIT interface cable. If damaged, then replace the cable. See <b>“HCIT drawer assembly interface cable removal” on page 438.</b></p> <p>Open the left cover, and reseal the connector (J1) on the controller board. POR the machine.</p> <p>Does the error remain?</p>	Go to step 4.	The problem is solved.
<p><b>Step 4</b></p> <p>Remove the media tray from the HCIT option and do the following:</p> <ul style="list-style-type: none"> <li>• Check if there is no problem moving the tray input guides.</li> <li>• Manually push the media size sensor flags and check if it would spring back to its original position.</li> <li>• Check the sensor (HCIT media guide) for damage. Make sure all obstructions are removed.</li> </ul> <p>Are the above components ok?</p>	Go to step 5.	Replace the HCIT drawer assembly. Go to <b>“HCIT drawer assembly removal” on page 423.</b>
<p><b>Step 5</b></p> <p>Remove all other options and install only the HCIT option.</p> <p>Does the error remain?</p>	Go to step 7.	Go to step 6.
<p><b>Step 6</b></p> <p>Check the interface cable of the printer or upper level option for damage.</p> <p>Is the above component still ok?</p>	Go to step 7.	Replace the interface cable of the printer or upper level option.
<p><b>Step 7</b></p> <p>Check the connectors on the controller board. If damaged, then replace the controller board. See <b>“HCIT controller PCBA removal” on page 433.</b></p> <p>Reseat all connectors on the controller board, then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller board. Go to <b>“HCIT controller PCBA removal” on page 433.</b></p> <p>If the error remains, then go to step 8.</p>	The problem is solved.

Action	Yes	No
<b>Step 8</b> Replace the tray.  Does the error remain?	Go to step 9.	The problem is solved.
<b>Step 9</b> Replace the drawer.  Does the error remain?	Contact the next level of support.	The problem is solved.

## Finisher side door error service check

Action	Yes	No
<b>Step 1</b> Is the staple finisher the only output option installed?	Go to step 4.	Go to step 2.
<b>Step 2</b> Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins</b>  Does the output option feed to all bins normally?	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<b>Step 3</b> Check the auto connector end of the option previously installed below the staple finisher.  Is it free of damage?	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
<b>Step 4</b> Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Stapler lower interface cable removal” on page 494.</b> Remove the left cover. Reseat the cable (J15) on the controller PCBA, then POR the machine.  Does the error remain?	Go to step 5.	The problem is solved.
<b>Step 5</b> Check if the stapler cartridge access door closes properly. Make sure that obstructions are cleared and that the access door is correctly installed.  Is the above component functioning properly?	Go to step 6.	Replace the stapler cartridge access door. Go to <b>“Stapler cartridge access door removal” on page 482.</b>

Action	Yes	No
<p><b>Step 6</b></p> <p>Check the sensor (cartridge door interlock). Enter Diagnostics Menu and navigate to:</p> <p><b>FINISHER TESTS &gt; Sensor Test &gt; Cover and Door</b></p> <p>Does the display on the operator panel change every time the sensing area of the above sensor is interrupted or blocked?</p>	Go to step 8.	Go to step 7.
<p><b>Step 7</b></p> <p>Remove the left cover. Reseat the cable (J20) on the controller PCBA then POR the machine.</p> <p>Does the error remain?</p>	Go to step 8.	The problem is solved.
<p><b>Step 8</b></p> <p>Check the sensor (cartridge door interlock). Make sure the sensor is stable and properly installed.</p> <p>Swap the sensor with another common sensor. Reseat the cable on the sensor side, then POR the machine.</p> <p>Does the error remain?</p>	If the same error occurs, then go to step 9. If another error occurs, then the sensor needs to be replaced. Go to <b>“Sensor (cartridge door interlock) removal” on page 476.</b>	The problem is solved.
<p><b>Step 9</b></p> <p>Check the limit switch (door close). Make sure the switch is stable and properly installed. Do the following:</p> <ul style="list-style-type: none"> <li>• check if the switch toggles properly</li> <li>• check for damage</li> </ul> <p>Is the above component ok?</p>	Go to step 10.	Replace the limit switch. Go to <b>“Stapler door close limit switch removal” on page 476.</b>
<p><b>Step 10</b></p> <p>Open the left cover, reseat all connectors on the controller PCBA and then POR the machine.</p> <p>Does the error remain?</p>	Replace the controller PCBA. Go to <b>“Stapler controller PCBA removal” on page 496.</b>  If the error persists, then replace the staple finisher. Go to <b>“Staple finisher assembly removal” on page 471.</b>	The problem is solved.

## Mailbox incorrect bin exit service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Is the mailbox the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b></p> <p>Remove all output options and re-install only the mailbox.</p> <p>Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins.</b></p> <p>Does the output option feed to all bins normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b></p> <p>Check the auto connector end of the option previously installed below the mailbox.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option previously installed under the mailbox.
<p><b>Step 4</b></p> <p>Open the rear door and actuate the sensor (rear door interlock) to override the interlock mechanism.</p> <p>Perform feed test on all bins. Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins</b></p> <p>Do a feed test for each bin and check each diverter.</p> <p><b>Note:</b> Diverter 1 to 3 are normally closed while Diverter 4 is normally open if no output option is above the mailbox. A diverter will open when media is about to enter its assigned bin (Example: When feeding to Bin 2, Diverter 2 will open to direct the media path toward Bin 2).</p> <p>Do they operate properly during the feed test on each bin?</p>	Go to step 6.	Go to step 5.
<p><b>Step 5</b></p> <p>Check each diverter if:</p> <ul style="list-style-type: none"> <li>• there is any visible damage or deformity</li> <li>• they could move freely</li> </ul> <p>Are the diverters ok?</p>	Go to step 6.	Replace the mailbox assembly. Go to <b>“Mailbox assembly removal” on page 500.</b>
<p><b>Step 6</b></p> <p>Check the solenoids. If damaged, then replace the solenoid. Go to <b>“Mailbox solenoid removal” on page 504.</b></p> <p>Reseat the solenoid connectors on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 7.	The problem is solved.

Action	Yes	No
<p><b>Step 7</b> Reseat all the connectors on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Mailbox controller PCBA removal” on page 507.</b></p> <p>If the error persists, then replace the mailbox. Go to <b>“Mailbox assembly removal” on page 500.</b></p>	<p>The problem is solved.</p>

## Finisher cartridge error service check

Action	Yes	No
<p><b>Step 1</b> Is the staple finisher the only output option installed?</p>	<p>Go to step 4.</p>	<p>Go to step 2.</p>
<p><b>Step 2</b> Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	<p>The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.</p>	<p>Go to step 3.</p>
<p><b>Step 3</b> Check the auto connector end of the option previously installed below the staple finisher.</p> <p>Is it free of damage?</p>	<p>Go to step 4.</p>	<p>Replace the upper interface cable of the output option previously installed under the staple finisher.</p>
<p><b>Step 4</b> Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Stapler lower interface cable removal” on page 494.</b></p> <p>Remove the left cover. Reseat the cable (J15) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	<p>Go to step 5.</p>	<p>The problem is solved.</p>

Action	Yes	No
<p><b>Step 5</b> Remove the stapler cartridge. Check the stapler cartridge and make sure obstructions are removed.</p> <p>Is it free of damage?</p>	Go to step 6.	Replace the stapler cartridge.
<p><b>Step 6</b> Remove the left cover. Reseat the cable (J7) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 7.	The problem is solved.
<p><b>Step 7</b> Remove the right cover. Reseat the two cables on the stapler cartridge end, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 8.	The problem is solved.
<p><b>Step 8</b> Remove the stapler cartridge. Using a flashlight, check the sensor (cartridge present) inside the stapler cartridge assembly. Manually actuate the sensor flag, and check if it toggles properly.</p> <p>Is the sensor functioning properly?</p>	Go to step 9.	Replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471.</b>
<p><b>Step 9</b> Open the left cover, reseal all connectors on the controller PCBA and then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Stapler controller PCBA removal” on page 496.</b></p> <p>If the error persists, then replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471.</b></p>	The problem is solved.

## Finisher undetected service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Is the staple finisher the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b></p> <p>Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b></p> <p>Check the auto connector end of the option previously installed below the staple finisher.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
<p><b>Step 4</b></p> <p>Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Stapler lower interface cable removal” on page 494.</b></p> <p>Remove the left cover. Reseat the cable (J15) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b></p> <p>Open the left cover. Reseat the cables (J18 and J15) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 6.	The problem is solved.
<p><b>Step 6</b></p> <p>Open the left cover, reseal all connectors on the controller PCBA and then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Staple finisher assembly removal” on page 471.</b></p> <p>If the error persists, then replace the staple finisher. Go to <b>“Staple finisher assembly removal” on page 471.</b></p>	The problem is solved.

## Finisher bin error service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Is the staple finisher the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b></p> <p>Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	Perform step 2 again using the other remaining output bins.	Go to step 3.
<p><b>Step 3</b></p> <p>Check the auto connector end of the option previously installed below the staple finisher.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
<p><b>Step 4</b></p> <p>Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Stapler lower interface cable removal” on page 494.</b></p> <p>Remove the left cover. Reseat the cable (J15) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b></p> <p>Check the path between the sensor (bin full receive) and the sensor (bin full send).</p> <p>Is it free of obstructions?</p>	Go to step 6.	Clear the obstructions between the two sensors. Remove dirt on the sensor covers. Make sure the sensor covers are stable and properly installed; both sensors should be visible when viewed through the sensor covers.
<p><b>Step 6</b></p> <p>Open the left cover. Without disconnecting the cables, remove the controller PCBA to access the sensor underneath. Reseat the cable (J9) on the controller PCBA and reseat the connector on the sensor end. POR the machine.</p> <p>Does the error remain?</p>	Go to step 7.	The problem is solved.

Action	Yes	No
<p><b>Step 7</b></p> <p>Check the sensor (bin full receive) and sensor (bin full send). Re-install the sensors and make sure they are correctly aligned.</p> <p>Are the sensors free of damage?</p>	Go to step 8.	Replace the sensor (bin full receive) and the sensor (bin full send). Go to <b>“Sensor (bin full receive) removal” on page 498</b> and <b>“Sensor (bin full send) removal” on page 497</b> .
<p><b>Step 8</b></p> <p>Check the output bin elevator:</p> <ul style="list-style-type: none"> <li>manually push the elevator down and check if it goes back to its home position when released</li> <li>check the elevator springs if they are not dislodged or misaligned</li> </ul> <p>Is the above component ok?</p>	Go to step 9.	Replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471</b> .
<p><b>Step 9</b></p> <p>Open the left cover, reseal all connectors on the controller PCBA and then POR the machine.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Stapler controller PCBA removal” on page 496</b>.</p> <p>If the error persists, then replace the staple finisher. Go to <b>“Staple finisher assembly removal” on page 471</b>.</p>	The problem is solved.

## Finisher door undetected service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Is the staple finisher the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b></p> <p>Remove all output options and re-install only the staple finisher.</p> <p>Enter Diagnostics Menu and navigate to:</p> <p><b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	Perform step 2 again using the other remaining output bins.	Go to step 3.
<p><b>Step 3</b></p> <p>Check the auto connector end of the option previously installed below the staple finisher.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.

Action	Yes	No
<p><b>Step 4</b></p> <p>Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Stapler lower interface cable removal” on page 494.</b></p> <p>Remove the left cover. Reseat the cable (J15) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b></p> <p>Open the rear door and do the following:</p> <ul style="list-style-type: none"> <li>• check if the rear door closes properly</li> <li>• check the rear door rollers for damage</li> <li>• check the locking mechanism for damage</li> <li>• check the rear door for damage</li> </ul> <p>Are the above components ok?</p>	Go to step 6.	Replace the rear door. Go to <b>“Stapler rear door removal” on page 472.</b>
<p><b>Step 6</b></p> <p>Open the left cover, and check the sensor (rear door interlock) including its cable. If damaged, then replace the sensor.</p> <p>Reseat the cable (J26) on the controller PCBA and reseat the connector on the sensor end. POR the machine.</p> <p>Does the error remain?</p>	Go to step 7.	The problem is solved.
<p><b>Step 7</b></p> <p>Open the left cover, reseat all connectors on the controller PCBA and then POR the machine.</p> <p>Does the error remain?</p>	Replace the controller PCBA. Go to <b>“Stapler controller PCBA removal” on page 496.</b>	The problem is solved.

## Stapler carriage failure service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Is the staple finisher the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b></p> <p>Remove all output options and re-install only the staple finisher. Enter Diagnostics Menu and navigate to: <b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b></p> <p>Check the auto connector end of the option previously installed below the staple finisher.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
<p><b>Step 4</b></p> <p>Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Stapler lower interface cable removal” on page 494.</b></p> <p>Reseat the connector (J15) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b></p> <p>Open the left cover. Reseat the cables (J17 and J11) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 6.	The problem is solved.
<p><b>Step 6</b></p> <p>Open the left cover and do the following:</p> <ul style="list-style-type: none"> <li>• check the compactor assembly and compactor arm for damage</li> <li>• manually pull the compactor arm and observe if it retracts</li> <li>• make sure that obstructions on the compactor arm are removed</li> <li>• check if the compactor flag engages properly with the sensor (compactor HP)</li> </ul> <p>Are the above components ok?</p>	Go to step 7.	Replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471.</b>

Action	Yes	No
<p><b>Step 7</b></p> <p>Check the compactor:</p> <ul style="list-style-type: none"> <li>• for proper installation</li> <li>• for damage and contamination</li> <li>• for cable damage</li> </ul> <p>Is the above component ok?</p>	Go to step 8.	Replace the sensor (compactor HP).
<p><b>Step 8</b></p> <p>Remove the stapler carriage. Manually turn the gears to open the stapling mechanism. While open, check the area under the stapling mechanism and make sure it is free from obstructions.</p> <p>Is it free of damage?</p>	Go to step 9.	Replace the stapler carriage assembly. Go to <b>“Stapler carriage assembly removal” on page 479.</b>
<p><b>Step 9</b></p> <p>Reseat all connectors on the controller PCBA.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Stapler controller PCBA removal” on page 496.</b></p> <p>If the error persists, then replace the staple finisher. Go to <b>“Staple finisher assembly removal” on page 471.</b></p>	The problem is solved.

## Finisher bin media present error service check

Action	Yes	No
<p><b>Step 1</b></p> <p>Is the staple finisher the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b></p> <p>Remove all output options and re-install only the staple finisher.</p> <p>Enter Diagnostics Menu and navigate to:</p> <p><b>Output bin tests &gt; Feed to all bins</b></p> <p>Does the output option feed to all bins normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.

Action	Yes	No
<p><b>Step 3</b></p> <p>Check the auto connector end of the option previously installed below the staple finisher.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option previously installed under the staple finisher.
<p><b>Step 4</b></p> <p>Check the lower interface cable. If damaged, then replace the lower interface cable. Go to <b>“Stapler lower interface cable removal” on page 494.</b></p> <p>Reseat the cable (J15) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b></p> <p>Open the left and top covers. Check the beacon LED. If damaged, then replace the staple finisher assembly. Go to <b>“Staple finisher assembly removal” on page 471.</b></p> <p>Reseat the cable (J21) on the controller PCBA and reseat the connector on the beacon LED end. POR the machine.</p> <p>Does the error remain?</p>	Go to step 6.	The problem is solved.
<p><b>Step 6</b></p> <p>Reseat the cable (J12) on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 7.	The problem is solved.
<p><b>Step 7</b></p> <p>Check the sensor (finisher bin media present) and do the following:</p> <ul style="list-style-type: none"> <li>• check for damage</li> <li>• move the sensor flag and check if it toggles properly</li> </ul> <p>Is the above component ok?</p>	Go to step 8.	Replace the sensor (finisher bin media present). Go to <b>“Sensor (finisher bin media present) removal” on page 490.</b>
<p><b>Step 8</b></p> <p>Reseat all connectors on the controller PCBA.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Stapler controller PCBA removal” on page 496.</b></p> <p>If the error persists, then replace the staple finisher. Go to <b>“Staple finisher assembly removal” on page 471.</b></p>	The problem is solved.

## Output expander error service check

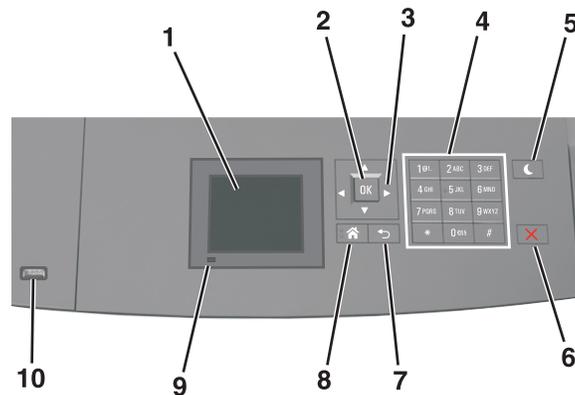
Action	Yes	No
<p><b>Step 1</b></p> <p>Is the output expander the only output option installed?</p>	Go to step 4.	Go to step 2.
<p><b>Step 2</b></p> <p>Remove all output options and re-install only the expander.</p> <p>Enter Diagnostics Menu and navigate to:  <b>Output bin tests &gt; Feed Tests &gt; Output Bin 1</b></p> <p>Select <b>Single</b>.</p> <p>Does the output option feed normally?</p>	The problem may not be on this option tray. Re-install the remaining output options one at a time and test each option for errors. Proceed with the appropriate service check based on the error message and the output option being tested.	Go to step 3.
<p><b>Step 3</b></p> <p>Check the auto connector end of the option previously installed below the expander.</p> <p>Is it free of damage?</p>	Go to step 4.	Replace the upper interface cable of the output option previously installed under the expander.
<p><b>Step 4</b></p> <p>Check the upper interface cable. If damaged, then replace the upper interface cable. Go to <b>“Upper interface cable removal” on page 456</b>.</p> <p>Remove the left cover. Reseat the upper interface cable on the controller PCBA, then POR the machine.</p> <p>Does the error remain?</p>	Go to step 5.	The problem is solved.
<p><b>Step 5</b></p> <p>Open the left cover, reseat all connectors on the controller PCBA. POR the machine and perform a Print test.</p> <p>Does the error remain?</p>	<p>Replace the controller PCBA. Go to <b>“Output expander controller PCBA removal” on page 454</b>.</p> <p>If the error persists, then replace the output expander. Go to <b>“Output expander assembly removal” on page 446</b>.</p>	The problem is solved.



# Service menus

- “Using the printer control panel” on page 223
- “Menu list” on page 224
- “Diagnostics menu” on page 224
- “Configuration menu” on page 242
- “Entering invalid engine mode” on page 252
- “Entering recovery mode” on page 252
- “Accessing the Network SE menu” on page 253
- “Service Engineer menu” on page 253

## Using the printer control panel



	Use the	To
1	Display	<ul style="list-style-type: none"> <li>• View the printer status.</li> <li>• Set up and operate the printer.</li> </ul>
2	Select button	Submit changes made in the printer settings.
3	Arrow buttons	Scroll up and down or left and right.
4	Keypad	Enter numbers, letters, or symbols.
5	Sleep button	Enable Sleep mode or Hibernate mode. Do the following to wake the printer from Sleep mode: <ul style="list-style-type: none"> <li>• Press any hard button.</li> <li>• Pull out Tray 1 or load paper in the multipurpose feeder.</li> <li>• Open a door or cover.</li> <li>• Send a print job from the computer.</li> <li>• Perform a power-on reset with the main power switch.</li> <li>• Attach a device to the USB port on the printer.</li> </ul>
6	Stop or Cancel button	Stop all printer activity.
7	Back button	Return to the previous screen.

	Use the	To
8	Home button	Go to the home screen.
9	Indicator light	Check the status of the printer.
10	USB port	Connect a flash drive to the printer. <b>Note:</b> Only the front USB port supports flash drives.

## Menus list

### Paper Menu

Default Source  
Paper Size/Type  
Configure MP  
Substitute Size  
Paper Texture  
Paper Weight  
Paper Loading  
Custom Types  
Universal Setup  
Bin Setup

### Security

Confidential Print  
Disk Wiping  
Security Audit Log  
Set Date and Time

### Reports

Menu Settings Page  
Device Statistics  
Stapler Test  
Network Setup Page <sup>1</sup>  
Profiles List  
Print Fonts  
Print Directory  
Asset Report

### Settings

General Settings  
Flash Drive Menu  
Print Settings

### Network/Ports

Active NIC  
Standard Network <sup>2</sup>  
Standard USB  
Parallel [x]  
Serial [x]  
SMTP Setup

### Help

Print All Guides  
Print Quality  
Printing Guide  
Media Guide  
Print Defects Guide  
Menu Map  
Information Guide  
Connection Guide  
Moving Guide  
Supplies Guide

<sup>1</sup> Depending on the printer setup, this menu item appears as Network Setup Page or Network [x] Setup Page.

<sup>2</sup> Depending on the printer setup, this menu item appears as Standard Network or Network [x].

## Diagnostics menu

- **“Entering diagnostics mode” on page 225**
- **“REGISTRATION” on page 225**
- **“PRINT TESTS” on page 226**
- **“HARDWARE TESTS” on page 226**
- **“DUPLEX TESTS” on page 229**
- **“INPUT TRAY TESTS” on page 231**

- “**OUTPUT BIN TESTS**” on page 232
- “**FINISHER TESTS**” on page 233
- “**BASE SENSOR TEST**” on page 235
- “**DEVICE TESTS**” on page 235
- “**PRINTER SETUP**” on page 236
- “**EP SETUP**” on page 238
- “**REPORTS**” on page 240
- “**EVENT LOG**” on page 241
- “**Exit Diags**” on page 242

The Diagnostics menu group contains the settings and operations used while manufacturing and servicing the printer.

## Entering diagnostics mode

- 1 Turn off the printer.
- 2 Press and hold **3** and **6**.
- 3 Turn on the printer.
- 4 Hold the buttons until the splash screen appears.
- 5 Select **Exit Diags** to exit Diagnostics mode and return to the printer home screen.

## REGISTRATION

These settings adjust the margins of the black plane.

To set the Registration:

- 1 Print a Quick test page.
  - a From the Diagnostics menu, navigate to:  
**REGISTRATION > Quick Test**
  - b Retain this page to determine the changes you need to make to the margin settings. The alignment diamonds in the margins should touch the margins of the page.

The Quick test page contains the following information:

- Printer registration settings
- Code levels
- Alignment diamonds at the top, bottom, and each side
- Horizontal lines for skew adjustment
- General printer information, including current page count, installed memory, processor speed, serial number, engine ID, and controller board ID

- 2 Change the value of any of the margin settings.

Top Margin	-25 to +25	Increasing the value moves the image down the page. Always adjust the top before the bottom margin.
Bottom Margin	-20 to +20	Increasing the value moves the image toward the top of the page.

Left Margin	-25 to +25	Increasing the value moves the image toward the right margin. Always adjust the left before the right margin.
Right Margin	-15 to +15	Increasing the value moves the image toward the right of the page.

## PRINT TESTS

The Print Test determines whether the printer can print on media from any of the paper input sources. Each of the installed sources is available within the Print Tests menu.

The content of the test page varies depending on the media in the selected input source:

- If the selected source contains paper, then a page similar to the Quick test page is printed, but without the print registration diamonds.
- If the selected source contains envelopes, then an envelope print test pattern is printed. This pattern contains only text, which consists of continuous prints of each character in the selected symbol set. If Continuous is selected, then the envelope print test pattern is printed on the first envelope; the rest are blank.

The Print Test page always prints single-sided, regardless of the duplex setting or the presence of the duplex option.

To run the Print Test:

- 1 From the Diagnostics menu, navigate to **PRINT TESTS**.
- 2 Select the paper source.
- 3 Select any of the following:
  - **Single**—Prints a single Print test page (No buttons are active while the Print Test Page is printing.)
  - **Continuous**—Continuously prints the Print test pages until **X** is pressed

## Print Quality Pages (Prt Quality Pgs)

This diagnostic function lets the user run print quality test pages with the toner cartridge lockout function disabled.

The report consists of four pages. The printer always uses media from Tray 1 to print this report. It will not prompt for a change in media regardless of the media type in Tray 1.

**Note:** This test cannot be canceled after it has begun. If duplex is activated, then the report is printed in duplex.

To print the Print quality pages:

From the Diagnostics menu, navigate to **PRINT TESTS > Prt Quality Pgs**.

## HARDWARE TESTS

If the hardware test fails, replace the failing part.

### Panel Test

This test verifies the control panel display function.

To run the Panel test:

- 1 From the Diagnostics menu, navigate to:
  - Hardware Tests > Panel Test**
- 2 Press **X** to exit the test.

## Button Test

This test verifies the control panel button function except for the Sleep button.

To run the test for non-touchscreen models:

- 1 From the Diagnostics menu, navigate to:  
**HARDWARE TESTS > Button Test**
- 2 The panel displays **Press** and an icon matching one of the control panel buttons. Press the physical button that is represented by the icon, and the printer tests the function of that button.  
If the test is successful, then the panel displays another icon to test.  
If a button fails the test, or if a different button is pressed, then the panel displays **Test Failed** and returns to the main section of the HARDWARE TESTS menu. After three seconds of inactivity, the panel automatically returns to the main section of the HARDWARE TESTS menu.  
If all buttons pass the test, then the panel displays **PASSED** and returns to the main section of the HARDWARE TESTS menu.
- 3 Press **X** or **Back** to exit the test.

To run the test for the touchscreen models:

- 1 From the Diagnostics menu, navigate to:  
**HARDWARE TESTS > Button Test**
- 2 With no buttons pressed, a pattern matching the control panel buttons is displayed. Press each control panel button one at a time, and the panel highlights the represented button in the matching pattern.
- 3 Release the button, and the highlight disappears.
- 4 Press **X** or **Back** to exit the test.

## DRAM Test

This test checks the validity of DRAM, both standard and optional. The test repeatedly writes patterns of data to the DRAM to verify that each bit in the memory can be set and read correctly.

To run the DRAM test:

- 1 From the Diagnostics menu, navigate to:  
**Hardware Tests > DRAM Test**
- 2 **Testing...** appears, followed by **Resetting the Printer**.
- 3 After the printer resets, the results of the test appear: **DRAM Test [x] P:##### F:#####**.
  - **[x]** —Represents the size of the installed DRAM.
  - **P:#####**—Represents the number of times the memory test has passed and finished successfully, with the maximum pass count being 999,999.
  - **F:#####**—Represents the number of times the memory test has failed and finished with errors, with the maximum fail count being 999,999.
- 4 After the maximum pass count or fail count is reached, or when all the DRAM has been tested, the test stops and the final results appear.

## Serial Wrap Test

Use this test to check the operation of the Serial Port Hardware using a wrap plug. Each signal is tested. If the test fails, replace the controller board.

To run the Serial Wrap Test:

- 1 Disconnect the serial interface cable, and install the wrap plug.
- 2 From the Diagnostics menu, navigate to **HARDWARE TESTS >Serial Wrap Test**.
- 3 Select the appropriate **Serial Wrap Test** from the list. Values may include **Serial Wrap, Serial 1 Wrap, Serial 2 Wrap, or Serial 3 Wrap**. Each time the test finishes, the screen updates with the result. P and F represent the same numbers for DRAM. If the test passes, the Pass Count increases by 1. However, if the test fails, one of the following failure messages appears for approximately three seconds, and the Fail Count increases by 1:

```

Receive Status Interrupt Error
Status Error
Receive Data Interrupt Error
Transmit Data Interrupt Error
Transmit Empty Error
Threshold Error
Receive Data Ready Error
Break Interrupt Error
Framing Error
Parity Error
Overrun Error
Data Error
Data 232 Error
Data 422 Error
FIFO Error
DSR Error
DSR PIO Error
DSR Interrupt Error
CTS Error
CTS PIO Error
CTS Interrupt Error

```

After the maximum count is reached or a failure occurs, the test stops.

- 4 Press **Stop (X)** to cancel the test.

## USB HS Test Mode

- 1 From the Diagnostics menu, navigate to:  
**Hardware Tests > USB HS Test Mode**
- 2 Choose the desired port, and then choose the desired test.

Ports	Tests
Port 0	Test J
Port 1	Test K
Port 2	Test SEO NAK
Port 3	Test Packet Test Force Enable
Single Step Get Device Single Step Set Feature	

- 3 To exit the test, POR the printer.
- 4 If the test fails, replace the failing USB cable.

## DUPLEX TESTS

### Quick Test

The Duplex quick test determines if the top margin at the back of a duplexed page is set correctly. This test prints a duplexed version of the Quick test page that can be used to adjust the duplex top margin. Use either Letter or A4 paper.

To run the Duplex quick test:

- 1 From the Diagnostics menu, navigate to:  
**Duplex Tests > Quick Test**
- 2 Choose any of the following:
  - Single—Prints a single Quick test page.
  - Continuous—Continuously prints the Quick test pages until **X** is pressed.

The printer attempts to print the Quick test page from the default paper source. If the default paper source supports only envelopes, then the page is printed from Tray 1.

The Quick test page contains the following information:

- Printer registration settings
  - Code levels
  - Alignment diamonds at the top, bottom, and each side
  - Horizontal lines for skew adjustment
  - General printer information, including current page count, installed memory, processor speed, serial number, engine ID, and controller board ID
- 3 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.
  - 4 If adjustment is necessary, the top margin in the Registration menu must be adjusted first. The duplex top margin offset may be adjusted next. 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.

## Top Margin

This setting controls the offset between the placement of the first scan line on the front and back side of a duplex sheet.

**Note:** If adjustment is necessary, the top margin in the Registration menu must be adjusted first. The duplex top margin may be adjusted next.

To adjust this setting:

- 1 From the Diagnostics menu, navigate to:  
**Duplex tests > Top Margin**
- 2 Change the margin values.  
Changing the value by 1 unit moves the margin by 1/100 in. A positive value moves the text down the page and widens the top margin. A negative value moves the text up the page and narrows the top margin.
- 3 Depending on the printer model, press **OK** or touch  to save the desired margin value.

## Sensor Test

Use this test to determine if the duplex sensor and switches are working properly.

To run this test:

- 1 From the Diagnostics menu, navigate to:  
**Duplex Tests > Sensor Test**
- 2 **Testing...** appears while the printer is verifying the state of the sensor.  
The control panel displays the current state of the sensor.
- 3 Manually actuate the sensor to make it toggle between **Open** and **Closed**. If the sensor does not toggle, then it is malfunctioning.
- 4 Press **X** to exit the test.

## Motor Test

Use this test to test the duplex option paper feed drive system and verify that the power and velocity values are acceptable. The duplex runs the DC motor at high speed and low speed, taking an average of the power (PWM) required for each speed and calculating the KE value.

To run this test:

- 1 From the Diagnostics menu, navigate to:  
**Duplex Tests > Motor Test**
- 2 When the motor stops and has passed the test, the following message appears:  
**Motor Test**  
**Test Passed**
- 3 Press **X** or **Back** to exit the test.

## Duplex Feed 1

This test feeds a blank sheet of paper from Tray 1 to the duplex paper stop position 1. This test can be run using any of the supported paper sizes.

To run this test:

- 1 From the Diagnostics menu, navigate to:

### Duplex Tests > Duplex Feed 1

The power indicator blinks while the paper is feeding, and **Duplex Feed 1 Feeding...** appears. This test cannot be canceled. The panel displays **Duplex Feed 1 Clear Paper** when the paper reaches the duplex paper stop position 1.

- 2 Remove the sheet of paper from the duplex unit, and shut the duplex door.
- 3 Press **X** to clear the message.

## Duplex Feed 2

This test feeds a blank sheet of paper to the duplex paper stop position 2. This test can be run using any of the supported paper sizes.

To run this test:

- 1 From the Diagnostics menu, navigate to:

### Duplex Tests > Duplex Feed 2

The power indicator blinks while the paper is feeding, and **Duplex Feed 2 Feeding...** appears. This test cannot be canceled.

The panel displays **Duplex Feed 2 Clear Paper** when the paper reaches the duplex paper stop position 2.

- 2 Remove the sheet of paper from the duplex unit, and shut the duplex door.
- 3 Press **X** to clear the message.

## INPUT TRAY TESTS

### Feed Tests

This test feeds blank pages through the paper path. It can run using any of the paper or envelope sizes supported by the printer.

To run the Feed test:

- 1 From the Diagnostics menu, navigate to:

### Input Tray Tests > Feed Tests

- 2 Choose the input source. All installed sources appear.
- 3 Choose any of the following:
  - **Single**—Feeds a single page.
  - **Continuous**—Continuously feeds pages until **X** is pressed.

## Sensor Tests

Use this test to determine if the input tray sensors are working correctly.

- 1 From the Diagnostics menu, navigate to:

**INPUT TRAY TESTS > Sensor Tests**

- 2 Select the input source. All installed sources appear.

Not all sensors appear for all trays. The following table indicates which tray sensors are available for each input source:

Input source	Empty (Input tray empty sensor)	Low (Input tray paper low sensor)	Pass through sensor
Tray 1	✓	✓	
Tray 2	✓	✓	✓
Tray 4	✓	✓	✓
Tray 5	✓	✓	✓
Multi-purpose feeder	✓		
Envelope feeder	✓		✓

- 3 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 through sensor.
- 4 Press **X** to exit the test.

## OUTPUT BIN TESTS

### Feed Tests

This test verifies that media can be fed to a specific output bin. No information is printed on the media.

To run the feed tests:

- 1 From the Diagnostics menu, navigate to:

**OUTPUT BIN TESTS > Feed Tests**

- 2 Select the output bin into which you want the paper to exit. All installed output bins appear.
- 3 Select one of the following:
  - **Single**—Feeds a single page
  - **Continuous**—Continuously feeds pages until **X** is pressed

### Feed To All Bins

This test verifies that media can be fed to the standard bin or any installed output options. No information is printed on the media.

To run the Feed To All Bins test:

- 1 From the Diagnostics menu, navigate to: **OUTPUT BIN TESTS > Feed to All Bins.**

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 order.

The test continuously prints the Print test pages until **X** is pressed.

- 2 Press **Back** to return to the OUTPUT BIN TESTS menu.

## Sensor Test

This test verifies that the output bin sensors are working correctly.

To run the Output Bin Sensor Test:

- 1 From the Diagnostics menu, navigate to:

**Output Bin Tests > Sensor Test > Standard Bin** or **Output Bin Tests > Sensor Test > [Output bin #]**

**Testing...** appears while the printer is verifying the state of the sensor.

The control panel displays the current state of the sensor.

- 2 Manually actuate the sensor to make it toggle between **empty** and **full** or between **open** and **closed**, depending on the sensor. If the sensor does not toggle, then the sensor is malfunctioning.
- 3 Press **X** to exit the test.

## Diverter Test

This test verifies that the mailbox option's output media diverters are working correctly. If more than one mailbox option is installed, then this test exercises the diverters on all installed mailbox devices.

To run the Diverter Test:

- 1 From the Diagnostics menu, navigate to:

**OUTPUT BIN TESTS > Diverter Test.**

**Diverter Test Testing...** appears while the printer is verifying the state of the diverter.

- 2 Press **X** to exit the test.

## FINISHER TESTS

### Staple Test

This test verifies the operation of the staple mechanism in the finisher. The printer feeds eight pieces of media to the finisher and accumulates all eight pieces in the finisher. After the last sheets are accumulated, the pack is stapled.

To run this test:

- 1 From the Diagnostics menu, navigate to:

**Finisher Tests > Staple Test**

- 2 Select the output bin, and press **✓**.

**Staple Test Running...** appears while the test is running.

## Hole Punch Test

This test verifies that media can be fed to the finisher output bin and then hole punched. The printer feeds eight pieces of blank media to the finisher and then the pages are hole-punched with a 2-hole, 3-hole, or 4-hole pattern, depending on the selected punch test.

To run this test:

- 1 From the Diagnostics menu, navigate to:

**Finisher Tests > Hole Punch Test**

- 2 Select one of the following:

- **2 Punch Test**
- **3 Punch Test**
- **4 Punch Test**

**Hole Punch Test Running...** appears while the test is running.

## Feed Test (finisher)

This test verifies that media can be fed from the default source to a finisher output bin. Any size paper that is supported can be used. The printer feeds one blank sheet of media from the default paper source to the finisher output bins.

To run this test:

- 1 From the Diagnostics menu, navigate to:

**Finisher Tests > Feed Test**

- 2 Select the output bin, and press **✓**.

**Feed Tests Running...** appears while the test is running.

## Finisher Sensor Test

This test determines if the finisher sensors are working correctly. The sensors that are tested include the following:

- **Bin Level**
  - Finisher Bin Empty
  - Bin Full sensor
  - Bin Near Full
- **Cover and Door**
  - Side Door sensor
- **Pass and Media**
  - Finisher Passthru
  - Media sensor
- **Staple Sensors**
  - Cartridge Presence sensor
  - Staple Low sensor
  - Self-priming sensor
  - Home Signal sensor

From the Diagnostics menu, navigate to: **FINISHER TESTS > Finisher Sensor Test.**

- When you select a Sensor group such as **Bin Level** from the menu, **Bin Level Testing...** appears, and the sensors in that group are polled.
- After the sensors are polled, you can manually actuate each of the sensors. When the sensor is closed, **Closed** appears; when the sensor is open, **Open** appears.
- To exit the sensor test, press **Stop (X)** or touch **Back**.

## BASE SENSOR TEST

Use the Base Sensor Test to determine that the sensors located inside the printer are operating correctly.

The following sensors can be checked using this test:

- NarrowMedia
- Input
- Exit
- Front Door



**CAUTION—SHOCK HAZARD:** Do not use your hand to toggle these switches. Use a nonconducting item.

To run the Base Sensor Test.

- 1 From the Diagnostics menu, navigate to **BASE SENSOR TEST.**
- 2 Choose a sensor.
- 3 Manually actuate the sensor to verify that it toggles. If the sensor does not toggle, then it is malfunctioning.

Sensor	Values
Toner	Open
Input	Closed
Output	
Front Door	
NarrowMedia	

- 4 Press **X** to exit the test.

## DEVICE TESTS

### Quick Disk Test

This test performs a non-destructive read/write test on one block per track on the disk. The test reads one block on each track, saves the data, and then writes and reads 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 From the Diagnostics menu, navigate to:
  - DEVICE TESTS > Quick Disk Test.**
  - The power indicator blinks while the test is in progress.
  - **Quick Disk Test/Test Passed** appears if the test passes.

- **Quick Disk Test/Test Failed** appears if the test fails.

2 Press **X** to return to the Device Tests menu.

## Disk Test/Clean

**Warning—Potential Damage:** This test destroys all data on the disk and should not be attempted on a good disk. This test may run approximately 1.5 hours, depending on the disk size.

1 From the Diagnostics menu, navigate to:

**DEVICE TESTS > Disk Test/Clean**

**Contents will be lost** appears.

2 Do one of the following:

- Touch  to continue.
- Press **X** to cancel.

The test cannot be stopped or canceled after it has begun.

3 After the test is complete, a message appears indicating a pass or fail result.

4 Press **X** to return to the Device tests menu.

## Flash Test

This test verifies the condition of the flash device by writing data to it and then reading data from it.

**Warning—Potential Damage:** This test destroys all data on the flash device.

**Note:** After this test is executed, reformat the flash using the Flash Format setting in the Utilities menu.

1 From the Diagnostics menu, navigate to:

**Device Tests > Flash Test**

**Files will be lost. Go/Stop?** appears.

2 Do one of the following:

- Depending on the printer model, press **OK** or touch  to continue.
- Press **X** to cancel.

**Note:** When the test starts, it cannot be stopped or canceled.

3 After the test is complete, a message appears indicating a pass or fail result.

4 Press **X** to return to the Device tests menu.

5 Reformat the flash device using the Flash format setting in the Utilities menu.

## PRINTER SETUP

### Defaults

**Warning—Potential Damage:** Modification of the printer setting Defaults causes the NVRAM space to be restored to the printer factory settings.

This setting is used by the printer to determine whether US or non-US factory default values should be used. The following printer settings have different US and non-US values:

Printer default values	US value	Non-US value
Paper Sizes setting in the General Settings menu	U.S.	Metric
Default Paper Size (paper feeding sources which do not have hardware size sensing capabilities)	Letter	A4
Default Envelope Size (envelope feeding sources which do not have hardware size sensing capability)	10 Envelope	DL Envelope
Fax media size	Letter	A4
PCL Symbol Set	PC-8	PC-850
PPDS Code Page	437	850
Universal Units of Measure	Inches	Millimeters

To change this setting:

- 1 From the Diagnostics menu, navigate to:  
**Printer Setup > Defaults**
- 2 Choose U.S. or Non-U.S.
- 3 Do one of the following:
  - Depending on the printer model, press **OK** or touch  to save any changes.
  - Press **X** to return to the Printer setup menu.

## Printed Page Count

The value of this setting gauges the amount of usage on the printer. The value of the Printed Page Count setting will equal the values of the Picked Sides meter. After all print tests have been completed, the value will reset to zero.

To view the page count:

From the Diagnostics menu, navigate to **PRINTER SETUP > Printed Page Count**.

**Note:** The value of the setting cannot be changed manually.

## Permanent Page Count (Perm page count)

The value of this setting indicates the total amount of pages that have been printed. After all print tests have been completed, the value will reset to zero.

To view the permanent page count:

From the Diagnostics menu, navigate to **PRINTER SETUP > Perm Page Count**.

**Note:** The Permanent Page Count value cannot be reset.

## Processor ID

The value of this setting indicates the ID of the processor on the controller card within the printer.

To view the Processor ID:

From the Diagnostics menu, navigate to **PRINTER SETUP > Processor ID**.

## Engine Setting [x]

These settings are used by the Engine code to further customize the behavior of the printer to applications. The value of [x] is any value from 1 to 16.

## Edge to Edge

When set to On, this shifts all four margins (top, bottom, left, and right) to the physical edge of the page (printable area of a supported paper size). This feature does not work in PPDS emulation.

To change this setting:

From the Diagnostics menu, navigate to **PRINTER SETUP > Edge to Edge**.

## Parallel Strobe Adjustment (Par 1 Strobe Adj)

This setting adjusts the factory setting for the amount of time the strobe is sampled to determine that valid data is available on the parallel port.

Each time the value is increased by one, the strobe is sampled 50 nanoseconds longer. Each time the value is decreased by one, the strobe is sampled 50 nanoseconds less than the default value. The range of values is between -4 and +6, in increments of one. A value of zero indicates no change is made from the factory setting.

To change this setting:

From the Diagnostics menu, navigate to **PRINTER SETUP > Par 1 Strobe Adj**.

## EP SETUP

### EP Defaults

This setting restores each printer setting listed in EP SETUP to its factory default value. Sometimes this is used to help correct print quality problems.

To restore the EP defaults:

- 1 From the Diagnostics menu, navigate to:  
**EP Setup > EP Defaults**
- 2 Select **Restore** to restore the default values, or press **X** to exit without changing the settings.

### Fuser Temperature (Fuser Temp)

This setting adjusts the fuser temperature to solve problems with paper curl on low-grade paper and/or melting of letterheads on some papers.

To adjust this setting:

- 1 From the Diagnostics menu, navigate to:  
**EP Setup > Fuser Temp**
- 2 Press **OK** or touch  to save any changes.

## Fuser Page Count

The value of this setting indicates the total number of pages that have been printed by the fuser in the space below the header.

To view the fuser page count:

From the Diagnostics menu, navigate to **EP Setup > Fuser Page Count**.

**Note:** The value of the setting cannot be changed manually.

## Warm Up Time

This setting controls the amount of time the printer warms up before allowing pages to print. The range of values is between 0 and 5, where 0 is no warm-up time and 5 is up to 90 seconds of warm-up time.

To change this setting:

From the Diagnostics menu, navigate to **EP Setup > Warm Up Time**.

## Transfer

This setting controls the transfer roll algorithm.

To adjust this setting:

- 1 From the Diagnostics menu, navigate to:  
**EP Setup > Transfer**
- 2 Press **Back**.

## Print Contrast

This setting controls the developer voltage offset.

To adjust this setting:

- 1 From the Diagnostics menu, navigate to:  
**EP Setup > Print Contrast**
- 2 Press **OK** or touch  to save any changes.

## Charge Roll

This setting controls the charge roll voltage.

To adjust this setting:

- 1 From the Diagnostics menu, navigate to:  
**EP Setup > Charge Roll**
- 2 Press **OK** or touch  to save any changes.

## Gap Adjust

The setting adjusts the minimum gap between sheets. Increasing this value may reduce curl of some printed media and eliminate some output bin stacking problems. However, increasing this value also results in slower overall performance, measured in pages per minute.

The range of values is 0 to 255, and the default value is 0.

To adjust this setting:

- 1 From the Diagnostics menu, navigate to:  
**EP Setup > Gap Adjust**
- 2 Press **OK** or touch  to save any changes.

## Automatic Darkness Adjust (Auto Dark Adj)

When activated, this setting attempts to optimize the amount of toner used when printing with a specific operating point.

Each time this setting executes, the printer performs the following:

- Calibrates its toner density sensor
- Measures the reflectivity of its bare drum
- Prints patches on the drum and measures the reflectivity of the drum through the patches
- Cleans the transfer roll
- Calculates reflectivity ratios and operating points to attain the darkness target of each operating point
- Modifies the EP mechanism as necessary to adjust toner darkness

The cartridge smart chip controls how often this process executes.

**Note:** No messages are displayed on the control panel to give any indication that this test is running. The device stores the results of its most recent process in the Auto dark Adj field on the Menu settings page report.

When deactivated, the printer disables and never executes this process.

To adjust this setting:

- 1 From the Diagnostics menu, navigate to:  
**EP Setup > Auto Dark Adj**
- 2 Choose **Enable** or **Disable**.
- 3 Press **OK** to save any changes.

## REPORTS

### Menu Settings Page

This setting prints the Menu Settings Page. The report prints the Diagnostics Menu settings and their current values.

To print the menu settings page:

From the Diagnostics menu, navigate to **EP Setup > Gap Adjust**.

## Installed Licenses

This setting prints a report that lists the currently installed licenses and the feature data of each license.

To print the menu settings page:

From the Diagnostics menu, navigate to **EP Setup > Installed Licenses**.

## EVENT LOG

### Display Log

This version of the Event log displays the panel text that appeared when the event occurred.

To view the Event log:

**1** From the Diagnostics menu, navigate to:

**Event Log > Display Log**

**2** Press ◀ or ▶ to view the entries.

### Print Log

Additional diagnostic information is available when the event log is printed. The first page of the report shows the general device information.

The specific events that appear in the report vary depending on the operational history of the printer. Logs may be printed from the following events:

- Job accounting log failures
- NV reset failures
- NV mirror entries
- 9xx and 1xx (print engine) service error entries
- Programming error entries
- Maintenance count reset entries
- Clear log entries
- Paper jam entries
- Firmware update entries
- JFFS2 partition format entries
- USB setup pkt info entries
- Supply event entries

To print the Event log:

From the Diagnostics menu, navigate to **Event Log > Print Log**.

### Clear Log

Use this to remove all the current information in the Event log. This affects both the viewed log and the printed log information.

To clear the event log:

- 1 From the Diagnostics menu, navigate to:  
**Event Log > Clear Log**
- 2 Choose any of the following:
  - Yes—To clear the Event log
  - No—To exit the Clear log menu

## Exit Diags

Select this option to exit the Diagnostics menu. The printer performs a POR and restarts in normal mode.

This menu appears as a soft button at the bottom right corner of the panel. This is always accessible to the user from the main Diagnostics menu.

## Configuration menu

- **“Entering configuration mode” on page 243**
- **“Roller Kit Counter Value” on page 243**
- **“Reset Roller Kit Counter” on page 243**
- **“Print Quality Pages” on page 244**
- **“Reports” on page 244**
- **“Size sensing” on page 244**
- **“Panel Menus” on page 245**
- **“PPDS Emulation” on page 245**
- **“Download Emuls” on page 245**
- **“Safe Mode” on page 245**
- **“Factory Defaults” on page 246**
- **“Energy Conserve” on page 246**
- **“Paper Prompts” on page 246**
- **“Envelope Prompts” on page 247**
- **“Action for Prompts” on page 247**
- **“Jobs on Disk” on page 248**
- **“Disk Encryption” on page 248**
- **“Erase All Information on Disk” on page 248**
- **“Wipe All Settings” on page 249**
- **“Font Sharpening” on page 249**
- **“Require Standby” on page 249**
- **“A5 Loading” on page 249**
- **“UI Automation” on page 250**
- **“LES Applications” on page 250**
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- [“Key Repeat Rate” on page 250](#)
- [“Wiper Message” on page 251](#)
- [“Clear Supply Usage History” on page 251](#)
- [“Clear Custom Status” on page 251](#)
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- [“Automatically Display Error Screens” on page 252](#)
- [“USB PnP” on page 252](#)

The Configuration menu group consists of menus, settings, and operations that are used to configure a printer for operation.

## Entering configuration mode

The Configuration Menu group contains a set of menus, settings, and operations which are infrequently required by a user. Generally, the options made available in this menu group are used to configure a printer for operation.

- 1 Turn off the printer.
- 2 Press and hold the **2** and **6** buttons simultaneously.
- 3 Turn on the printer.
- 4 Release the buttons after 10 seconds.

## Roller Kit Counter Value

When this setting is selected, the printer displays the current value for the Roller Kit counter. A print job containing a single page increments the counter by one and a duplex page by two. When the value has reached the rated life of the Roller Kit, it reminds the customer that scheduled maintenance is required. Reset this counter after an **81 Replace Roller Kit** message displays and a Roller Kit is installed. See [“Reset Roller Kit Counter” on page 243](#).

To view the maintenance kit count:

- 1 From the Configuration menu, navigate to **Roller Kit Counter Value**.  
The value is displayed and cannot be changed.
- 2 Press **Back** or **X** to return to the Configuration menu.

## Reset Roller Kit Counter

After scheduled maintenance, the roller count value must be reset to zero.

To reset the maintenance count value to zero:

- 1 From the Configuration menu, navigate to **Reset Roller Kit Counter**.
- 2 Depending on the printer model, press **OK** or touch  to reset the counter, or press **X** to exit without resetting the counter.

Once initiated, the reset operation cannot be canceled. When the operation is complete, the menu returns to the main Configuration Menu.

## Print Quality Pages

This option is a limited version of the Print quality pages setting that appears in the Diagnostics menu. See **“Print Quality Pages (Prt Quality Pgs)” on page 226**. This setting reports the values of a broad range of printer settings and tests the ability of the printer to generate acceptable printed output.

To print the report:

- 1 From the Configuration menu, navigate to **Print Quality Pages**.
- 2 Depending on the printer model, press **OK** or touch  to print the pages, or press **X** to exit without printing the pages.  
**Printing Quality Test Pages** appears on the display. Once started, the printing cannot be canceled and no buttons are active until the printing completes.

## Reports

### Menu Settings Page

This report generates a list of the Configuration menu settings and the value of each setting.

To print the Menu settings page from the Configuration menu:

- 1 From the Configuration menu, navigate to:  
**Reports > Menu Settings Page**
- 2 Depending on the printer model, press **OK** or touch  to print the page, or press **X** to return to the Configuration menu.

### Event Log

This generates a printed report of the events detailed in the Print log. See **“Print Log” on page 241**.

To print the Event log from the Configuration menu:

- 1 From the Configuration menu, navigate to:  
**Reports > Event Log**
- 2 Press **X** to return to the Configuration menu.

## Size sensing

This setting controls whether the printer automatically registers the size of paper installed in an input source with size sourcing.

Paper source	Size sensing
250-sheet Tray	X
500-sheet Tray	X
2100-sheet Tray	X
MP Feeder	

Paper source	Size sensing
Duplex	

When set to Auto, a size-sensing input option automatically reports the size of media that it contains to the device. When Off, the printer ignores the size reported by the size sensing hardware. The media size can be set by the control panel or the data stream.

To change the size sensing setting:

- 1 From the Configuration menu, navigate to **Size sensing**.
- 2 Select **Auto** or **Off**, and depending on the printer model, press **OK** or touch .
- 3 Press **Back** or **X** to return to the Configuration menu.

## Panel Menus

The value of this option determines whether the control panel menus are locked or available.

To run the Feed test:

- 1 From the Configuration menu, navigate to **Panel Menus**.
- 2 Choose one of the following:
  - **On**—Enables control panel menus
  - **Off**—Disables control panel menus

## PPDS Emulation

The value of this option determines if a printer can recognize and use the PPDS data stream.

Available options:

- Deactivate
- Activate

## Download Emuls

This appears only if at least one download emulator (DLE) is installed. The default setting is Disable. All download emulators (DLEs) are reenabled automatically after two PORs.

## Safe Mode

The settings for this menu item are On and Off (default). When enabled, Safe Mode lets the printer operate in a special limited mode in which it attempts to continue offering as much functionality as possible despite known issues. For more information about Safe Mode and the Safe Mode print behavior for this model, see **“Using Safe Mode” on page 37**.

To change the setting:

- 1 From the Configuration menu, navigate to **Safe Mode**.
- 2 Select **On** or **Off** to change the setting.

- 3 Select **Submit**.
- 4 POR the printer.

## Factory Defaults

**Warning—Potential Damage:** This operation cannot be undone.

This setting enables a user to restore all of the printer settings to either the network settings (on network models only) or to the base printer settings.

To restore Factory Default settings:

- 1 From the Configuration menu, navigate to **Factory Defaults**.
- 2 Select from the available options:
  - Restore Base—restores all non-critical base printer NVRAM settings.
  - Restore STD Net—restores all network NVRAM settings.
  - Restore LES (available on touchscreen model only)—restores the factory default values for all framework, standard applications and eSF configuration by removing all non-standard applications; and clears the SE logs.

After this setting is changed, the device automatically performs a POR, and restores the appropriate settings to their factory default values.

## Energy Conserve

This setting controls which values appear on the Power Saver menu.

To change the setting:

- 1 From the Configuration menu, navigate to **Energy Conserve**.
- 2 Select **On** or **Off**.
 

If **On** (default), then the Sleep Mode cannot be turned off. If **Off**, then **Disabled** appears on the Sleep Mode menu, and it can be turned off.

## Paper Prompts

This controls which tray a change prompt is directed to when paper is sensed to be the wrong size.

**Note:** The value of **“Action for Prompts”** on page 247 may override the value of this setting.

To change this setting:

- 1 From the Configuration menu, navigate to **Paper Prompts**.
- 2 Select from the available options:
  - Auto (default)
  - Multi-purpose Feeder
  - Manual Paper
- 3 Depending on the printer model, press **OK** or touch  to save the setting, or press **X** to return to the Configuration menu without saving any changes.

When it is set to **Auto**, the emulator selected to print the job determines which of the installed input sources will receive the change prompt. When set to a value other than Auto, the selected source always receives this type of prompt.

## Envelope Prompts

This controls which tray a change prompt is directed to when the envelopes are sensed to be the wrong size.

**Note:** The value of **“Action for Prompts” on page 247** may override the value of this setting.

To change this setting:

- 1 From the Configuration menu, navigate to **Envelope Prompts**.
- 2 Select from the available options:
  - Auto (default)
  - Multi-purpose Feeder
  - Manual Envelope
- 3 Depending on the printer model, press **OK** or touch  to save the setting, or press **X** to return to the Configuration menu without saving any changes.

When it is set to **Auto**, the emulator selected to print the job determines which of the installed input sources will receive the change prompt. When set to a value other than Auto, the selected source always receives this type of prompt.

## Action for Prompts

This setting enables a user to determine which input source would receive paper-related or envelope-related change prompts when they occur. Regardless of the target source, the printer always requires some type of user assistance to resolve the change prompt (examples: pushing a button to ignore the prompt and changing the source's installed media). However, this setting gives a user the option of having the printer resolve change prompt situations without requiring any user assistance.

To change this setting:

- 1 From the Configuration menu, navigate to **Action for Prompts**.
- 2 Select from the available options to change the setting.
  - Prompt User (default)
  - Continue
  - Use Current
- 3 Depending on the printer model, press **OK** or touch  to save the setting, or press **X** to return to the Configuration menu without saving any changes.

When set to **Prompt user**, the printer behaves like the past implementation. When a change prompt occurs, the printer stops printing, posts the change prompt to the target source, and waits for the user to select an action before continuing.

When set to **Continue**, the printer automatically assumes that the user selects **Continue** every time a change prompt is encountered. Likewise, when the device is set to **Use Current**, all change prompts will perform as if **Use Current** was selected by the user.

## Jobs on Disk

This setting appears only if a hard disk is installed. It allows buffered jobs to be deleted from the disk. This does not affect Print and Hold or parked jobs.

To change the setting:

- 1 From the Configuration menu, navigate to **Jobs on Disk**.
- 2 Select from the available options to change the setting:
  - Delete
  - Do Not Delete (default)
- 3 Press **X** to return to the Configuration menu.

## Disk Encryption

**Warning—Potential Damage:** If the settings are changed, then the printer completely formats the hard disk. All information on the disk will be unrecoverable.

This setting appears only if a hard disk is installed. It controls whether the printer encrypts the information that it writes to the hard disk.

To change the setting:

- 1 From the Configuration menu, navigate to **Disk Encryption**.
- 2 Select from the available options to change the setting.
  - Enable—enables encryption of hard disk.
  - Disable (default)—enables formatting of hard disk.
- 3 **Contents will be lost. Continue?** appears. Select **Yes** to proceed with the encryption or formatting of the disk, or **No** to cancel the operation. If Yes is selected, then a progress bar appears on the display that indicates the overall completion of the selected operation. After completion, the display returns to Disk Encryption.

## Erase All Information on Disk

This setting performs a wipe of the printer hard disk, erasing all data.

**Warning—Potential Damage:** This deletes all data on the printer hard disk, including downloaded fonts, macros, and held jobs. Do not initiate a disk wipe if you have information on the printer that you want to save.

Available options:

- Single Pass Erase—overwrites all data and the file system. This wipe is faster but less secure since it is possible to retrieve the deleted data with forensic data-retrieval techniques.
- Multi Pass Erase—overwrites all data without rewriting the file system. This wipe is DoD 5220.22-M compliant since the deleted data is irretrievable.

**Note:** If the printer is reset while a disk wipe operation is executing, then **Corrupt Disk** appears upon regaining power.

## Wipe All Settings

This makes any sensitive information that may exist on the volatile or non-volatile storage of the device completely indecipherable. When selected, the printer performs a non-critical NVRAM reset and then reboots.

## Font Sharpening

This setting allows a user to set a text point-size value below which the high-frequency screens will be used when printing font data.

To change the setting:

- 1 From the Configuration Menu, navigate to **Font Sharpening**.
- 2 To change the value, depending on the model, enter the numerical value or press the arrows, and then press **Submit**.
- 3 Press **Back** or **X** to return to the Configuration menu.

## Require Standby

**Note:** This setting is available on the touch screen models only.

This setting determines whether Standby Mode is On or Off. The default is On.

To change the setting:

- 1 From the Configuration Menu, navigate to **Require Standby**.
- 2 Select **On** or **Off** to change the setting.
- 3 Depending on the printer model, press **OK** or touch  to save the setting, or press **X** to return to the Configuration Menu without saving any changes.

If Standby Mode is On, the printer begins functioning in Standby Mode when it remains idle for an amount of time.

The Standby Mode enables the printer:

- To consume less energy than when operating in normal mode but not as little as when operating in Power Saver.
- To return to the Ready state more quickly than when operating in Power Saver. If set to Off, this setting disables Standby Mode in the General Settings Menu.

## A5 Loading

This determines the orientation used when printing on A5 paper.

Available options:

- Long Edge—The printer will print A5-size paper in the long-edge feed orientation from all trays.
- Short Edge—The printer will print A5-size paper in the short-edge feed orientation from all trays.

## UI Automation

When enabled, this setting creates an **ENABLE\_UI\_AUTOMATION** file in the `/var/fs/shared/` directory. As long as this file exists, the printer permits external developers to test the stability of their applications against the printer to make sure that their applications have an appropriate level of stability. Disabling this setting deletes the file and prohibits automated testing.

To change the setting:

- 1 From the Configuration Menu, navigate to **UI Automation**.
- 2 Select from the available options to change the setting.
  - Enable
  - Disable (default)
- 3 Depending on the printer model, press **OK** or touch  to save the setting, or press **X** to return to the Configuration Menu without saving any changes.

## LES Applications

This setting enables or disables all installed Lexmark Embedded Solution applications.

To change this setting:

- 1 From the Configuration Menu, navigate to **LES Applications**.
- 2 Select from the available options to change the setting.
  - Enable (Default)
  - Disable
- 3 Depending on the printer model, press **OK** or touch **Back** to save the setting, or press **X** to return to the Configuration Menu without saving any changes.

## Key Repeat Initial Delay

**Note:** This setting is available on the touch screen model only.

This setting determines the length of delay before a repeating key starts repeating. The range is 0.25–5 seconds, with increments of 0.25. The default setting is one second.

To adjust this setting:

- 1 From the Configuration Menu, navigate to **Key Repeat Initial Delay**.
- 2 Touch the arrow keys to adjust the setting.
- 3 Touch  to save the setting, or press **X** to return to the Configuration Menu without saving any changes.

## Key Repeat Rate

**Note:** This setting is available on the touch screen model only.

This setting indicates the number of presses per second for repeating keys. The range is 0.5–100, with increments of 0.5. The default setting is 15 presses per second.

To adjust this setting:

- 1 From the Configuration Menu, navigate to **Key Repeat Rate**.
- 2 Touch the arrow keys to adjust the setting.
- 3 Touch  to save the setting, or press **X** to return to the Configuration Menu without saving any changes.

## Wiper Message

This setting determines whether the printer posts the Replace Wiper message.

To change the setting:

- 1 From the Configuration Menu, navigate to **Wiper Message**.
- 2 Select **On** or **Off** to change the setting.
- 3 Depending on the printer model, press **OK** or touch  to save the setting, or press **X** to return to the Configuration Menu without saving any changes.

## Clear Supply Usage History

This setting reverts the supply usage history (number of pages and days remaining) to the factory shipped level.

To clear the supply usage history:

- 1 From the Configuration menu, navigate to **Clear Supply Usage History**.
- 2 Depending on the printer model, press **OK** or touch **Clear Supply Usage History** to proceed.

## Clear Custom Status

Executing this operation erases any strings that have been defined by the user for the default or alternate custom messages.

To clear the custom status:

- 1 From the Configuration menu, navigate to **Clear Custom Status**.
- 2 Depending on the printer model, press **OK** or touch **Clear Custom Status** to proceed.

## USB Speed

This setting is used to set the throughput of the USB port on the printer.

Available options:

- Auto
- Full—Forces the USB port to run at full speed and also disables its high-speed capabilities.

## Automatically Display Error Screens

If On, the panel automatically displays any existing printer-related message after the printer remains inactive on the home screen for a length of time equal to the Screen Timeout setting in the Timeouts section of the General Settings Menu. Any message that appears on the display gives the option of returning to the home screen without clearing it. From the home screen, any other workflow or feature can be initiated as usual. When the printer returns to the home screen, any existing message will again appear after the printer remains inactive for a length of time equal to the Screen Timeout setting.

To change this setting:

- 1 From the Configuration Menu, navigate to **Automatically Display Error Screens**.
- 2 Select from the available options:
  - On (default)
  - Off
- 3 Depending on the printer model, press **OK** or touch  to save the setting, or press **X** to return to the Configuration Menu without saving any changes.

## USB PnP

In some cases, the USB port at the back of the printer may be incompatible with the chipset in a user's PC. This setting lets the user change the USB driver mode to improve its compatibility with these PCs.

Available options:

- 1
- 2

## Entering invalid engine mode

This mode is used if the machine has invalid code and needs the correct code loaded. After entering this mode, the firmware code can be updated.

- 1 Turn off the printer.
- 2 Press and hold the **3**, **4**, and **6** buttons simultaneously.
- 3 Turn on the printer.
- 4 Release the buttons after 10 seconds.

## Entering recovery mode

This mode will allow the printer to boot from a secondary set of instructions to allow a code flash to the printer. Code can be flashed from a PC by USB.

- 1 Turn off the printer.
- 2 Press and hold the **7**, **2**, and **8** buttons simultaneously.
- 3 Turn on the printer.
- 4 Release the buttons after 10 seconds.

## Accessing the Network SE menu

This menu contains settings for fine tuning the communication settings for the network interfaces and protocols.

- 1 Navigate to:  
**Networks/Ports > Standard Network > Std Network Setup.**
- 2 Press and hold the **6**, **7**, and **9** simultaneously.

## Service Engineer menu

- [“Accessing the service engineer \(SE\) menu” on page 253](#)
- [“Service engineer \(SE\) menu” on page 253](#)

## Accessing the service engineer (SE) menu

From a Web browser on a host PC, add `/se` to the printer IP address.

## Service engineer (SE) menu

This menu should be used as directed by the next level of support.

Top-level menu	Intermediate menu
Print SE Menus	
General	Copyright — Displays copyright information
Code	<ul style="list-style-type: none"> <li>• Network code level — Displays network code level</li> <li>• Network Compile Info — Displays network compile information</li> <li>• Printer Code Level — Displays printer code information</li> <li>• Printer Compile Info — Displays compile information</li> </ul>
History	<ul style="list-style-type: none"> <li>• Print History</li> <li>• Mark History</li> <li>• History Mode</li> </ul>
MAC	<ul style="list-style-type: none"> <li>• Set Card Speed</li> <li>• Set LAA</li> <li>• Keep Alive</li> </ul>
NVRAM	<ul style="list-style-type: none"> <li>• Dump NVRAM</li> <li>• Reinit NVRAM</li> </ul>
NPAP	Print Alerts

Top-level menu	Intermediate menu
TCP/IP	<ul style="list-style-type: none"><li>• netstat-r</li><li>• arp-a</li><li>• Allow SNMP Set</li><li>• MTU</li><li>• Meditech Mode</li><li>• RAW LPR Mode</li><li>• Gather Debug</li><li>• Enable Debug</li></ul>

## Repair information

- “Removal precautions” on page 255
- “Adjustments” on page 271
- “Removal procedures” on page 277
- “Base printer - cover removals” on page 277
- “Base printer- front removals” on page 286
- “Base printer - rear removals” on page 319
- “Base printer - top removals” on page 328
- “Base printer - bottom removals” on page 333
- “Base printer - left removals” on page 348
- “Base printer - right removals” on page 362
- “Control panel removals” on page 369
- “250/550-sheet media tray option removals” on page 406
- “High capacity input tray option removals” on page 422
- “Output expander option removals” on page 446
- “High capacity output expander option removals” on page 460
- “Staple finisher option removals” on page 471
- “Mailbox option removals” on page 500

## Removal precautions

 **CAUTION—SHOCK HAZARD:** For personal safety and to prevent damage to the printer, remove the power cord from the electrical outlet before you connect or disconnect any cable, electronic board, or assembly. Disconnect any connections between the printer and the PCs/peripherals.

 **CAUTION—POTENTIAL INJURY:** The printer weight is greater than 18kg (40 lb) and requires two or more trained personnel to lift it safely. Use the hand holds on the side of the printer. Make sure your fingers are not under the printer when you lift or set the printer on the floor or another stable surface.

## 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, use the following instructions 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 while working with ESD-sensitive parts when cold-weather heating is used, because low humidity increases static electricity.

## Controller board/control panel replacement

This procedure should be followed only if both the controller board and the operator panel fail. If you need to replace only one of the FRUs, follow the startup procedure described in the FRU's removal procedure.



### CAUTION—POTENTIAL INJURY

The lithium battery in this product is not intended to be replaced. There is a danger of explosion if a lithium battery is incorrectly replaced. Do not recharge, disassemble, or incinerate a lithium battery. Discard used lithium batteries according to the manufacturer's instructions and local regulations.

**Warning—Potential Damage:** If the operator panel and the controller board are being replaced at the same time, replace the parts in this order to avoid damage to the machine.

- 1 Replace the controller board first.

**Note:** Do not replace the new operator panel and controller board in the machine at the same time.

- 2 After installing the new controller board, and before installing the new operator panel, start the printer into diagnostics mode.
- 3 After the printer has completed startup, turn off the printer and replace the operator panel.
 

**Note:** If the operator panel display has failed, the printers' startup cycle is complete when the driver motor and fans shut down, and the machine is quiet.
- 4 After installing the new operator panel, start the printer into diagnostics mode, and allow the printer to go through a complete startup cycle and the display to go to Ready.
- 5 If the problems persist, leave the new operator panel in the machine, place the old controller board back in the machine, and start it up. After the machine startup, shut down the machine, and install the new controller board. After installing the new controller board, restart the machine, and let it go through the startup cycle.

After this procedure is completed successfully, there is no need to adjust any settings.

If the above procedure fails, you must contact the technical support center for further instructions.

## eSF solutions backup

If a technician needs to replace the RIP board, the steps below should be taken to backup the eSF solutions and settings:

- 1 POR the printer into invalid engine code mode.
- 2 Open a Web browser, and navigate to the printer Web page.
- 3 Navigate to **Settings**, and click the link.

- 4 Navigate to **Solutions**, and click the link.
- 5 Navigate to **Embedded Solutions**, and click the link.
- 6 On the Embedded Solutions page, select the apps to be exported by clicking the selection box next to the app.
- 7 Choose **Export**.

If the Web page cannot be accessed, or an error persists despite trying to boot in Invalid Engine code mode, then there is no way to back up the eSF apps. The technician needs to make the customer aware that the applications and their settings could not be saved.

There is a size limit on the export file - 128kb. Because of this, it is recommended that you don't use the "global" backup found in **Settings > Import/Export > Export Shortcuts File, Export Settings File, Export Embedded Solutions Settings File and Export Security Setups File**. Customers with a large number of applications or settings may exceed the file size limit and have information truncated in the exported file.

## Ribbon cable connectors

### Zero Insertion Force (ZIF) connectors

Zero Insertion Force (ZIF) connectors are used on the boards and cards used in this printer. Before inserting or removing a cable from these connectors, read this entire section. Great care must be taken to avoid damaging the connector or cable when inserting or removing the cable.

**Warning—Potential Damage:** Do not insert the cable so that the contacts are facing the locking actuator. The contacts always face away from the actuator.

**Warning—Potential Damage:** Do not insert the cable diagonally into the ZIF socket. This can cause damage to the contacts on the cable.

**Warning—Potential Damage:** Avoid using a fingernail, or sharp object to open the locking mechanism. This could damage the cable.

**Warning—Potential Damage:** Avoid pressing against the cable when opening the locking mechanism. This can also damage the cable.

These are the types of ZIF connectors used in this printer:

- Horizontal top contact connector
- Horizontal bottom contact connector
- Vertical mount contact connector
- Horizontal sliding connector

## Horizontal top contact connector

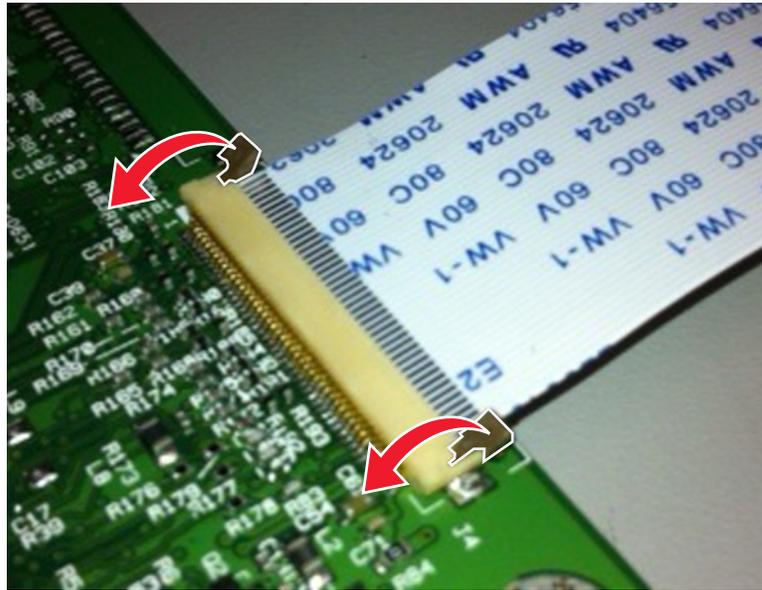
This FRU contains a horizontal top contact cable connector. Read the instructions before proceeding.

The horizontal top contact connector uses a back flip locking actuator to lock the ribbon cable into the Zero Insertion Force (ZIF) connector. The cable is inserted horizontally into the connector.

**Warning—Potential Damage:** When opening or closing this type of actuator, gently lift or close the two tabs located on each end of the actuator. The two tabs should be moved simultaneously. Do not close the actuator from the center of the actuator.

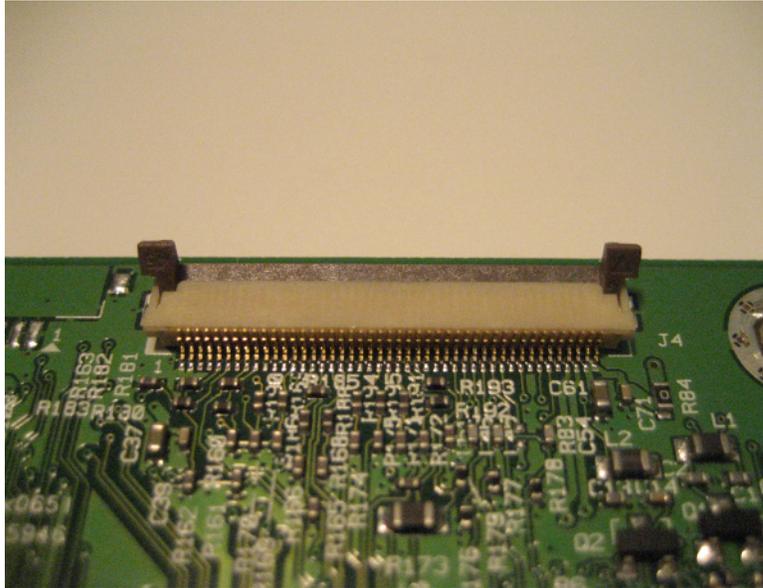
### Removing a cable from the horizontal top contact connector

- 1 Place a finger at each end of the locking actuator, and then gently lift the actuator to the unlocked position.



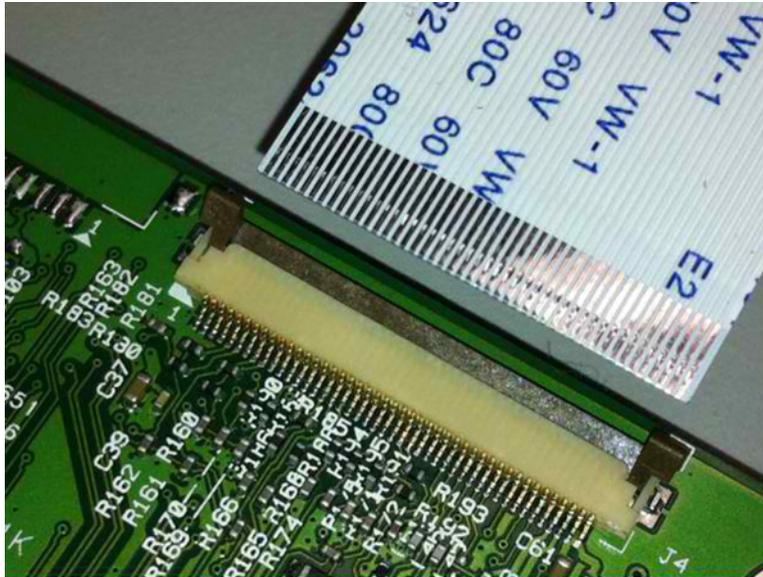
## Inserting a cable into the horizontal top contact connector

- 1 When installing the cable, check the locking actuator to ensure it is in the unlocked position. The tabs on the ends of the actuator are vertical when the actuator is unlocked.

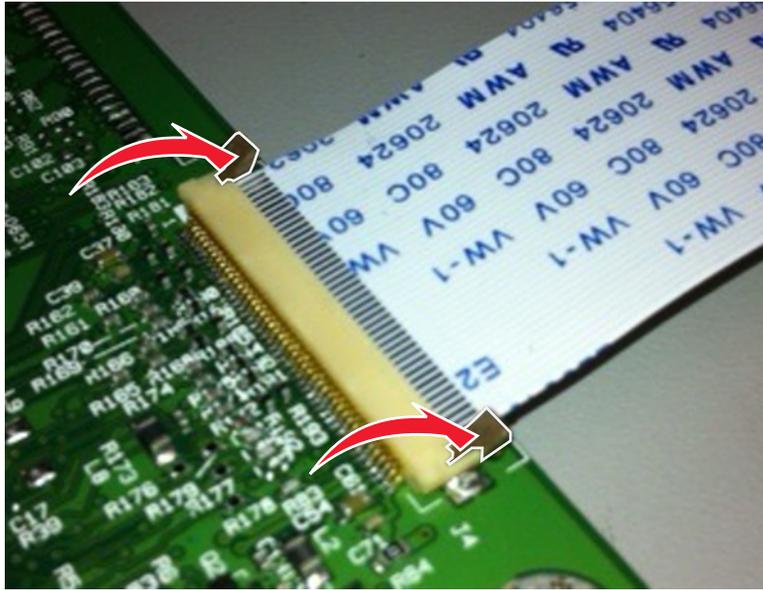


- 2 Insert the cable with the contacts on the cable facing up. Insert the cable on top of the actuator.

**Note:** Verify that the cable is installed squarely into the connector. If the cable is not squarely installed, then intermittent failures could occur.



- 3 Rotate the locking actuator to the locked position. The cable should not move while this step is performed. If the cable moves, open the actuator, reposition the cable, and then close the actuator to the down position.



## Horizontal bottom contact connector

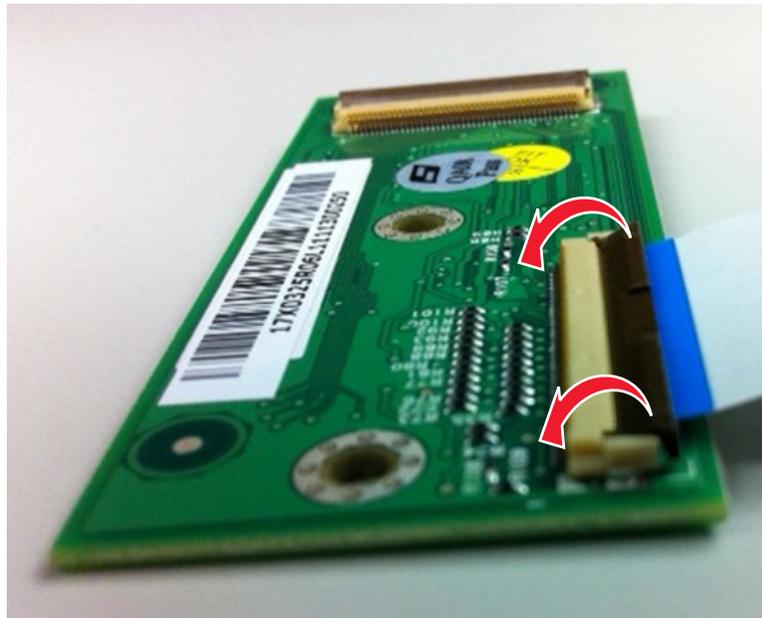
This FRU contains a horizontal bottom contact cable connector. Read the instructions before proceeding.

The horizontal bottom contact connector uses a flip locking actuator to lock the ribbon cable into the Zero Insertion Force (ZIF) connector. The cable is inserted horizontally into the connector.

**Warning—Potential Damage:** When opening or closing this type of actuator, gently lift the center of the actuator using your finger. Do not use a fingernail or screwdriver to open the actuator. This could damage the ribbon cable. Do not close the actuator from the ends of the actuator.

## Removing a cable from the horizontal bottom contact connector

- 1 Place two fingers towards each end of the locking actuator, and then gently lift the actuator to the unlocked position.



- 2 Slide the cable out of the connector.

## Inserting a cable into the horizontal bottom contact connector

- 1 Check the actuator to verify it is in the open position.

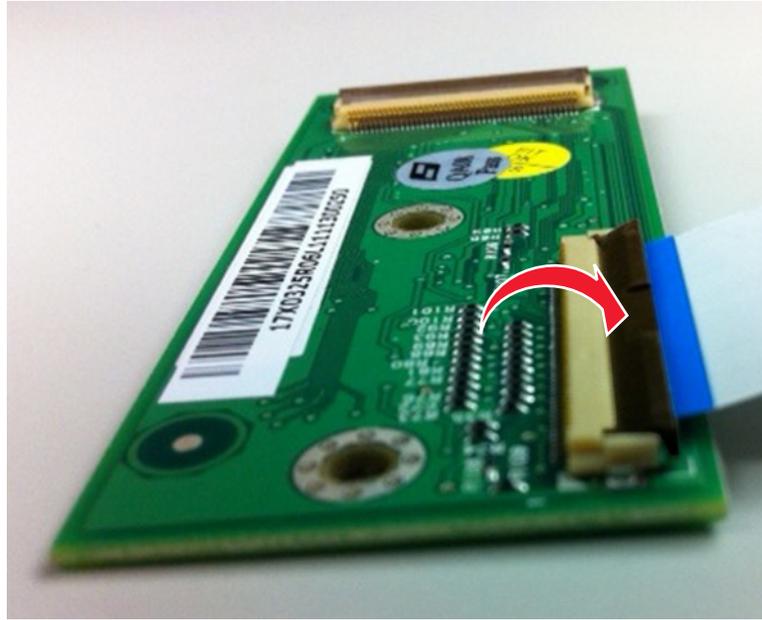


- 2 Insert the cable into the ZIF connector with the contacts facing downward and away from the locking actuator. The cable needs to be inserted below the actuator.

**Note:** Verify that the cable is installed squarely into the connector. If the cable is not squarely installed, then intermittent failures could occur.



- 3 Place your finger in the middle of the actuator, and then rotate the locking actuator to the locked position.



## Vertical mount contact connector

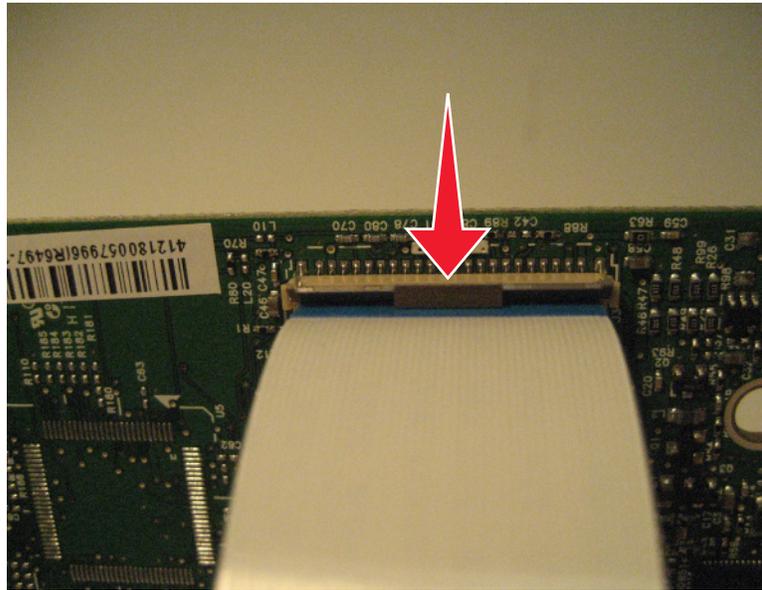
This FRU contains a vertical mount contact connector. Read the instructions before proceeding.

The vertical mount contact connector uses a back flip locking actuator to lock the ribbon cable into the Zero Insertion Force (ZIF) connector. The cable is inserted vertically into the connector.

**Warning—Potential Damage:** When opening or closing this type of actuator, gently lift the center of the actuator using your finger. Do not use a fingernail or screwdriver to open the actuator. This could damage the ribbon cable. Do not close the actuator from the ends of the actuator.

### Removing a cable from the vertical mount contact connector

- 1 Gently rotate the locking actuator from the center of the actuator to the unlocked position.



- 2 Slide the cable out of the connector.

## Inserting a cable into the vertical mount contact connector

- 1 When installing the cable, check the locking actuator to verify it is in the open position.



- 2 Insert the cable with the contacts on the cable away from the locking actuator. Insert the cable on top of the actuator.

**Note:** Verify that the cable is installed squarely into the connector. If the cable is not squarely installed, then intermittent failures could occur.





## Horizontal sliding contact connector

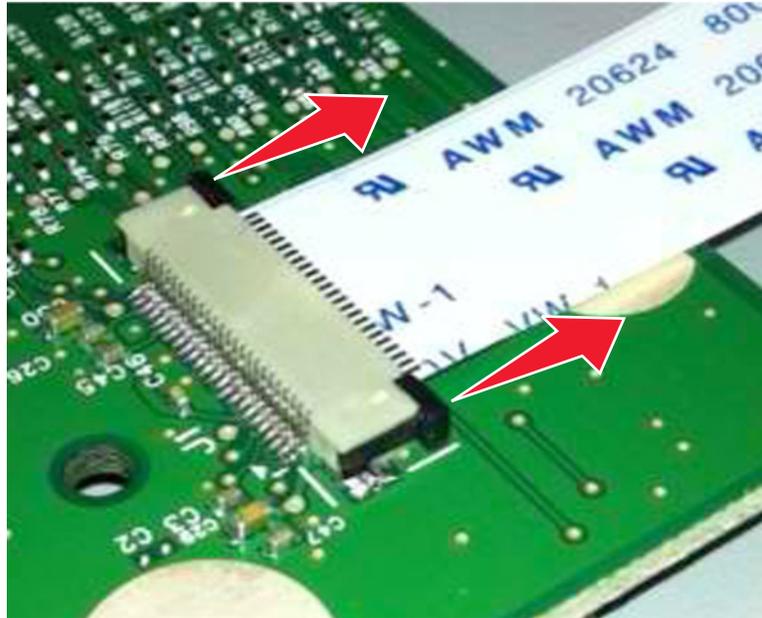
This FRU contains a horizontal sliding contact connector. Read the instructions before proceeding.

The horizontal sliding contact connector uses a slide locking actuator to lock the ribbon cable into the Zero Insertion Force (ZIF) connector. The cable is inserted horizontally into the connector.

**Warning—Potential Damage:** When opening or closing this type of actuator, gently push or pull the two tabs located on each end of the actuator. Do not close the actuator from the center of the actuator. Do not use a screwdriver to open or close the actuator. Damage to the cable or connector could occur.

### Removing a cable from the horizontal sliding contact connector

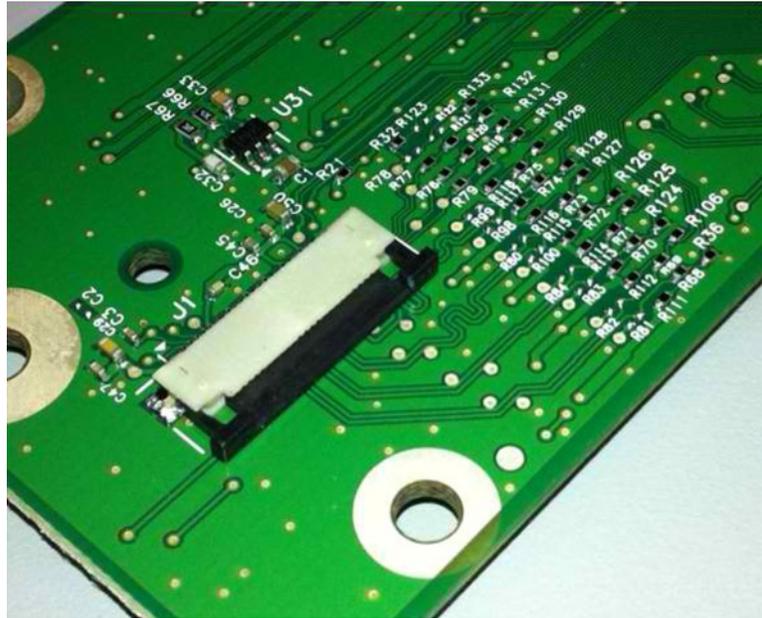
- 1 Simultaneously slide the two tabs located on the ends of the locking actuator away from the connector.



- 2 Slide the cable out of the connector.

## Inserting a cable into the horizontal sliding contact connector

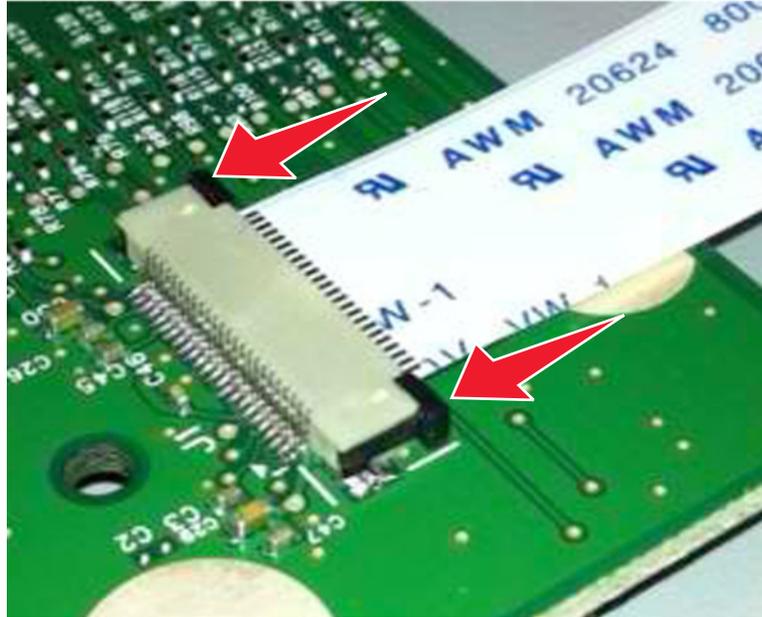
- 1 When installing the cable, check the locking actuator to verify it is in the open position. If you are opening the connector, pull back on both end tabs using equal force to avoid breaking the connector.



- 2 Insert the cable with the contacts on the cable facing away from the locking actuator. Insert the cable on top of the actuator.



- Slide the locking actuator towards the connector, locking the cable into place. The cable should not move when this step is performed. If the cable moves, open the actuator, reposition the cable, and then close the actuator to the down position.



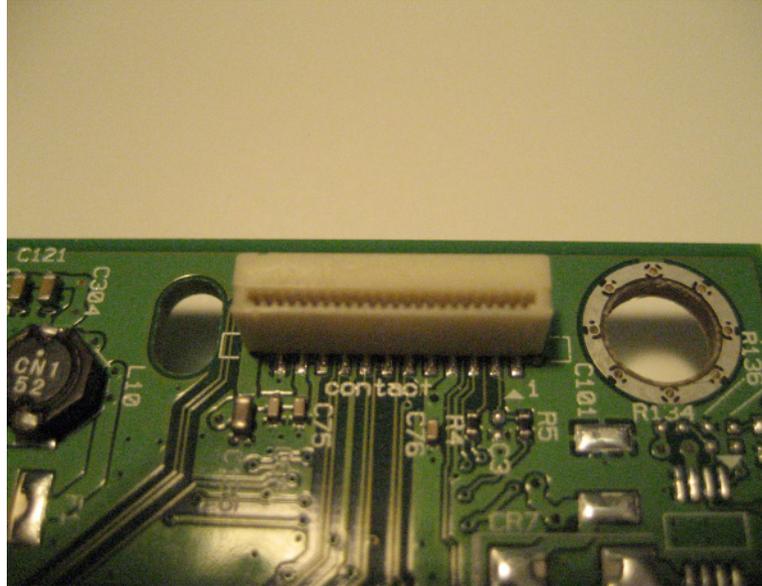
## Low Insertion Force (LIF) connector

This FRU contains a Low Insertion Force (LIF) connector. Read the instructions before proceeding.

**Warning—Potential Damage:** When installing a cable into an LIF connector, care must be taken to avoid bending the edges of the cables and damaging the contacts on the cables.

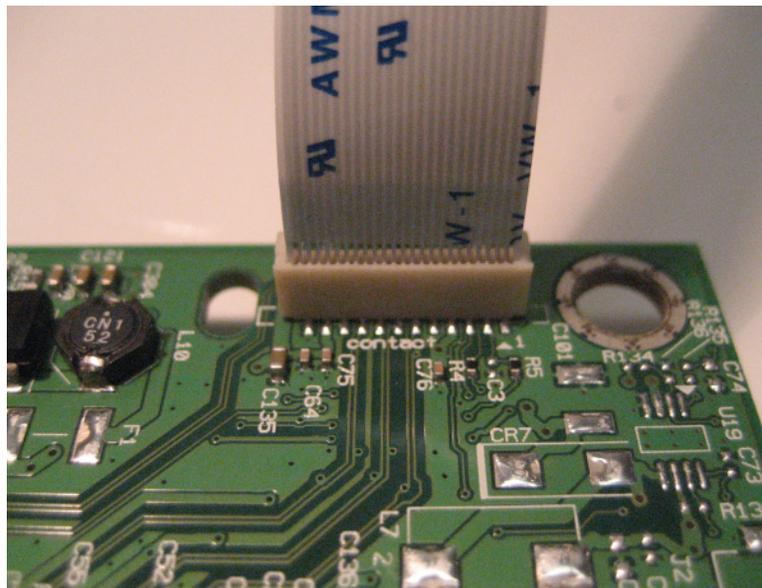
### Inserting a cable into the LIF connector

- 1 Looking at the connector, take note on which side the contacts are located. Many boards will have the word “contacts” stamped on them to indicate which side of the LIF has the contacts. When looking at the board, take note that the contacts from the board to the connector are located on the side of the connector with the contacts.



- 2 Insert the cable squarely into the connector.

**Note:** Verify that the cable is installed straight into the connector. If the cable is not installed properly, then intermittent failures could occur.



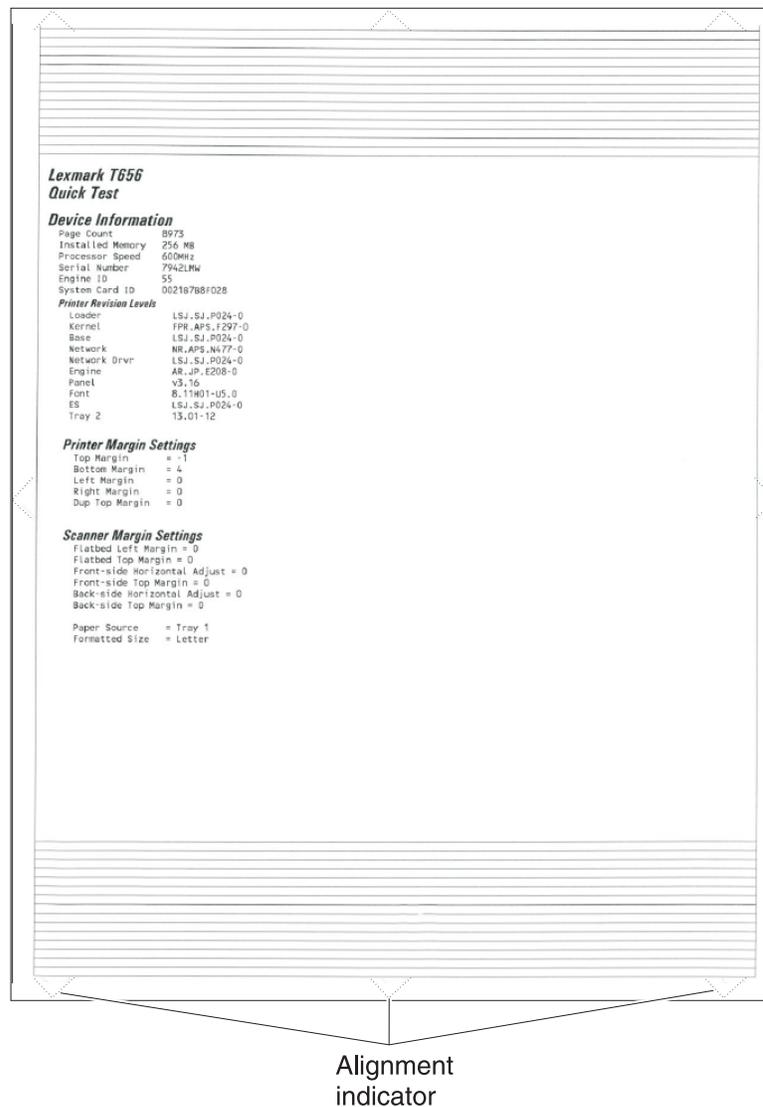
# Adjustments

- **“Media aligner roller adjustment” on page 272**
- **“Polygon printhead mechanical registration adjustment” on page 274**

The printer skew specification calls for image skew on the registration sheet to be one dot (0.5mm) or less delta between the left and right alignment indicators for the top and bottom margins. Some variation occurs from sheet to sheet, so a few sheets can be printed to get an improved feel for the skew. Also, top and bottom margin registration adjustments may be required before or after making skew adjustments. Use the diagrams below to help choose which adjustment is appropriate.

The margin registration page is used to evaluate skew. The Quick Test Page can be obtained by following these steps.

- 1 Turn the printer off.
- 2 Press and hold **3** and **6** to enter the diagnostic mode.
- 3 Turn the printer on, and release the buttons when the progress bar appears (after about 20 seconds).
- 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 and horizontal lines that can be used for mechanical registration adjustment. The following image shows an example of the Quick Test Page:



- 6 Review the page to determine which type of skew is present.

**Note:** Make sure that the side guide and rear guide are properly set in the paper tray before printing test pages or making adjustments. Out-of-position guides can contribute to print skew.

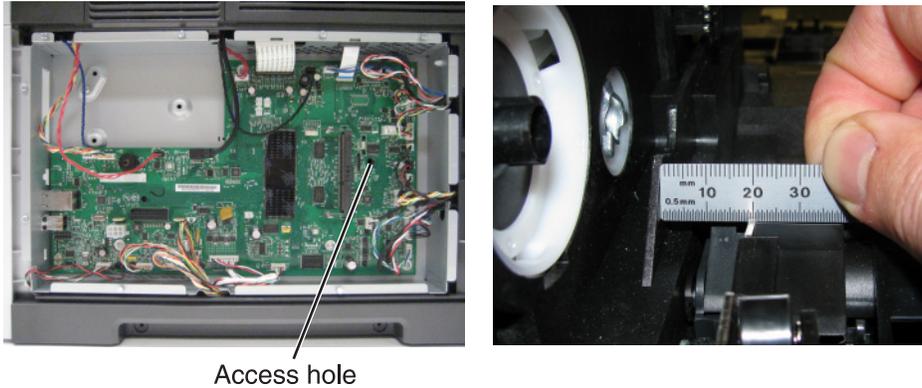
For top margin skew (or after the media aligner rollers are replaced), go to **“Media aligner roller adjustment” on page 272.**

For skew on both the top and bottom margins, or mainly the bottom margin, it is recommended that the **“Media aligner**

- If you have just replaced the media aligner roller, go to **“Step A” on page 273.**
- If you are only correcting the top margin skew, go to **“Step B” on page 273.**
- If you are correcting the bottom margin skew or both top and bottom margin skew, go to **“Step C” on page 274.**

## Step A

Set the initial position of the media aligner roller plate using a 3mm hex wrench at the access hole indicated in the following image (left), to give a position roughly 20.5mm as shown in the image below (right). This is the nominal point and should minimize the amount of adjustment needed.



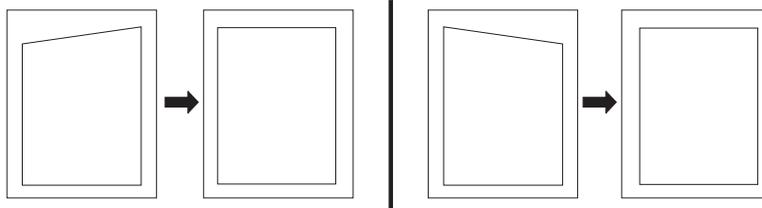
Access hole

Continue to **“Step B” on page 273.**

## Step B

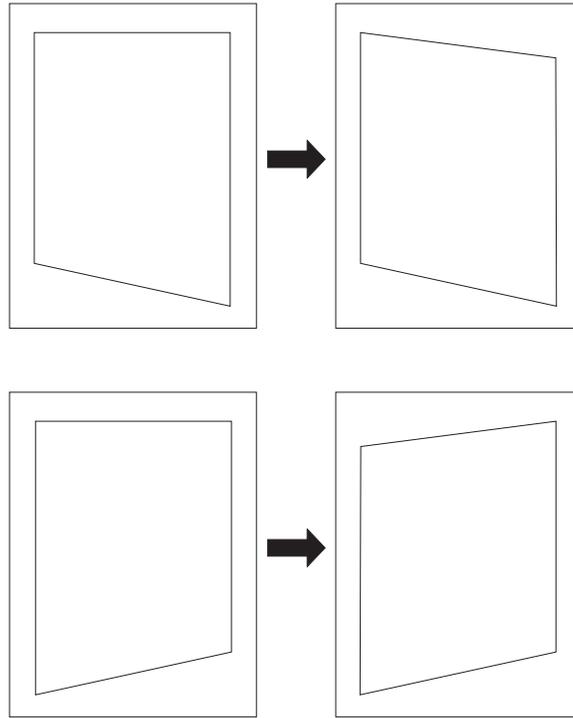
Print a copy of the Quick Test Page, and check the top alignment indicators printed on the test page. The difference in the print location to the top edge of the paper between the left and right alignment indicators should be 0.5mm (one dot) or less. Depending on the skew, turn the screw either clockwise or counterclockwise using a 3mm hex wrench, and print a copy of the Quick Test Page to check the diamonds on the top and bottom margin. Continue adjusting the screw as you check the results of each adjustment on a new test page until the top image skew is below 0.5mm. One full 360-degree turn of the aligner screw will change the top edge skew by roughly 1mm (2 alignment indicator dots).

Adjustment is typically 0-2 rotations. More than 3-4 turns, in either direction from the 20.5mm nominal spot, should not be necessary and may indicate other issues with the tray (such as problems with the back and side restraints), pick tires, or transfer roll mounting. If the top and bottom skew are below 0.5mm, the alignment process is complete.



## Step C

Print a copy of the Quick Test Page, and check the top and bottom alignment indicators printed on the test page. The goal is to make the skew at the top and bottom of the page parallel. Depending on the skew, turn the screw either clockwise or counterclockwise using a 3mm hex wrench, and print a copy of the Quick Test Page to check the diamonds on the top and bottom 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. One full 360-degree turn of the aligner screw will change the leading edge skew by roughly 1mm (2 alignment indicator dots).



Go to the polygon printhead mechanical registration adjustment procedure when this step is complete. See **“Polygon printhead mechanical registration adjustment”** on page 274.

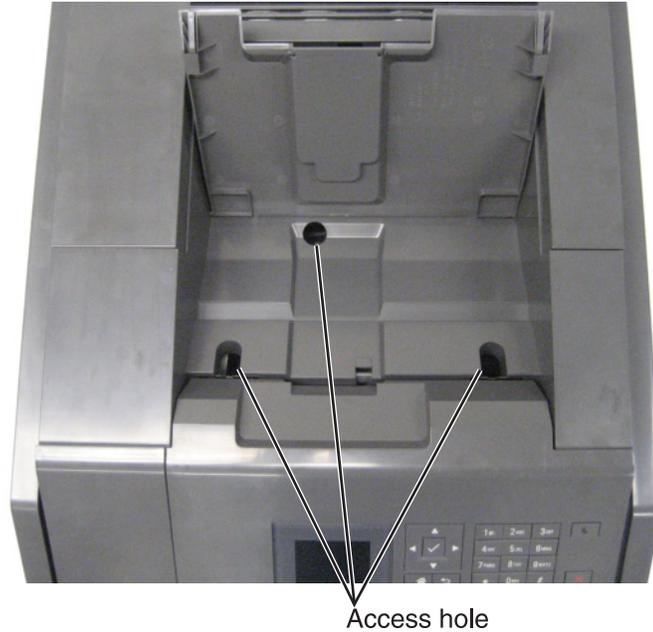
## Polygon printhead mechanical registration adjustment

Complete the printhead mechanical registration adjustment procedure when you remove or replace the printhead, or loosen the mounting screws.

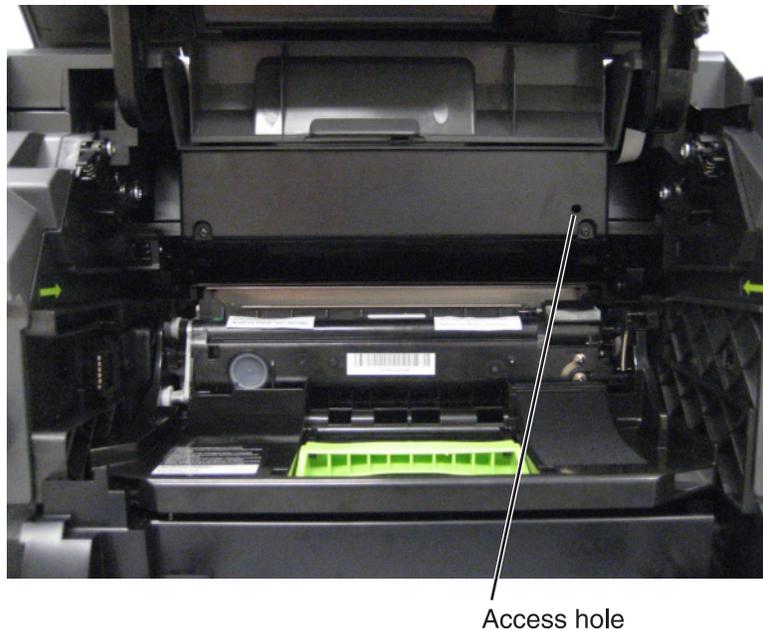
Install the new printhead with the mounting screws lightly tightened before printing the registration Quick Test Page to see if adjustment is needed. Before adjustment of the printhead, loosen each of the three mounting screws by a half turn. This will leave the screws loose enough to allow the printhead to move within its slots as the adjustment screw is rotated. If the adjustment plate was left alone during the laser printhead replacement, it will retain its position and should minimize the amount of printhead mechanical registration adjustment needed. When the registration is set, the three mounting screws should be tightened.

To perform the printhead mechanical registration adjustment:

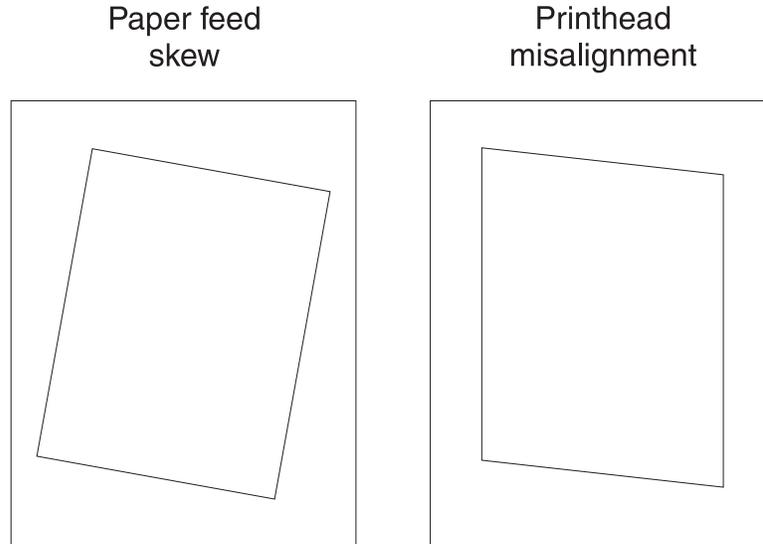
- 1 Print a Quick Test Page. See **“Adjustments” on page 271**. If the skew between the bottom left and bottom right alignment indicators is greater than 0.5mm (1 dot), then proceed with adjustment. Otherwise, no polygon printhead adjustment is needed.
- 2 Raise the paper support located in the top of the standard bin to its upright position to locate the three access holes as shown in the illustration below.



- 3 Loosen, by a half turn, each of the three printhead mounting screws securing the printhead to the printer frame. This will require a 5.5mm hex-socket screwdriver.
- 4 Locate the printhead adjustment screw access hole in the front of the printhead access cover. This will require a 3mm hex wrench to adjust. A ballhead hex wrench is suggested to make it easier to find the screw head.



- 5 Check the Quick Test Page for any sign of misalignment by checking the diamonds at the bottom left and bottom right of the test page for equal distance from the bottom of the page. If necessary, rotate the printhead adjusting screw with a 3mm hex wrench either clockwise (to rotate the image clockwise) or counterclockwise (to rotate the image counterclockwise), and run another Quick Test Page. One full 360-degree turn of the printhead screw will change the skew on both edges by roughly 0.5mm (1 alignment indicator dot). You may need to repeat this step two or three times before you get satisfactory bottom skew results.



<b>1</b>	To correct, turn the printhead screw clockwise to rotate both edges clockwise.
<b>2</b>	To correct, turn the printhead screw counterclockwise to rotate both edges counterclockwise.
One full 360-degree turn of the printhead screw will change the skew on both edges by roughly 0.5mm (one alignment indicator dot).	

**Warning—Potential Damage:** Caution should be taken to not turn the printhead adjustment mechanism more than a few turns counterclockwise, for the screw will fully back out and will become disassembled. Stop turning the screw when you stop feeling resistance, you may need to turn it clockwise to re-engage the screw into the adjustment plate. Turning more than a few turns clockwise will bottom out the screw. If the adjustment screw is difficult to turn, make sure that the printhead mounting screws are loose.

**Warning—Potential Damage:** In some cases the adjustment process may take several tightening and loosening cycles of the printhead mounting screws. Care should be taken to avoid stripping the mounting screw bosses. Use only a manual hex head screwdriver, for this reason.

- 6 When you have the correct adjustment, ensure that the printhead mounting screws are properly tightened, and print a final Quick Test Page for verification.
- 7 Check the top edge skew and perform the media aligner roller adjustment, if required. See **“Media aligner roller adjustment” on page 272.**

## Removal procedures

Keep the following tips in mind as you replace parts:

- 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.
- Remove the toner cartridges, imaging unit, and media tray before removing other printer parts. The imaging unit should be carefully set on a clean, smooth, and flat surface. It should also be protected from light while out of the device.
- Disconnect all external cables from the printer to prevent possible damage during service.
- Unless otherwise stated, reinstall the parts in reverse order of removal.
- When reinstalling a part held with several screws, start all screws before the final tightening.

## Base printer - cover removals

- **“Left cover removal” on page 277**
- **“Rear lower cover removal” on page 280**
- **“Top cover removal” on page 282**
- **“Right cover removal” on page 283**
- **“Rear door removal” on page 285**

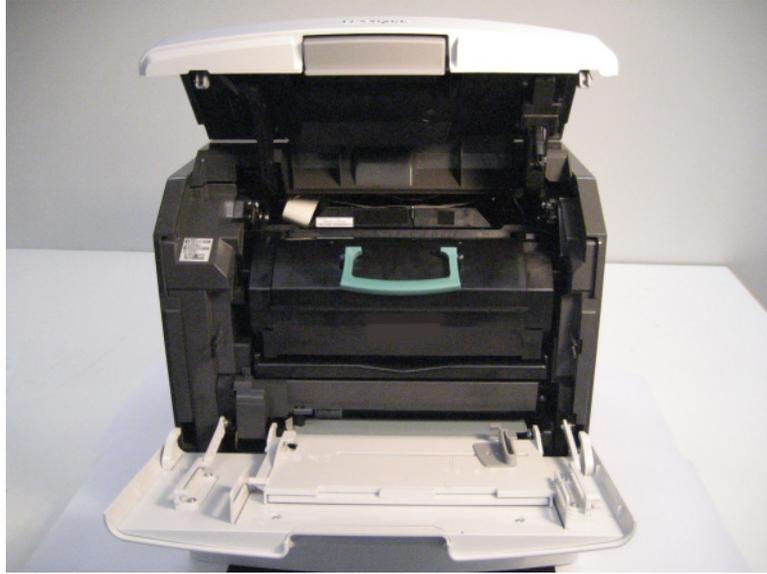
### Left cover removal

- 1 Open the front door.



- 2 Pull the media tray from the machine.

- 3 Raise the control panel to its uppermost position.

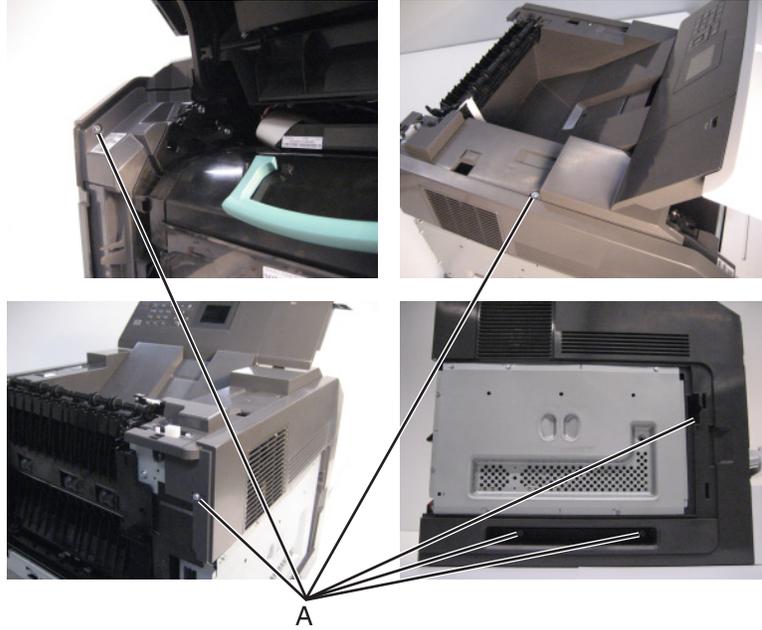


- 4 Remove the rear door. See **“Rear door removal”** on page 285.
- 5 Detach the controller board access cover.

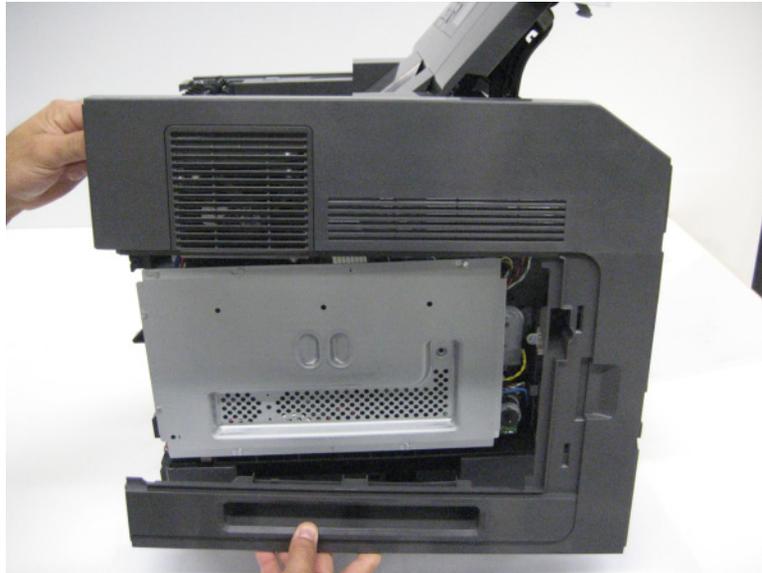


- 6 Remove the rear lower cover. See **“Rear lower cover removal”** on page 280.
- 7 Remove the top cover. See **“Top cover removal”** on page 282.

8 Remove the six screws (A) securing the left cover to the machine.



9 Remove the left cover.



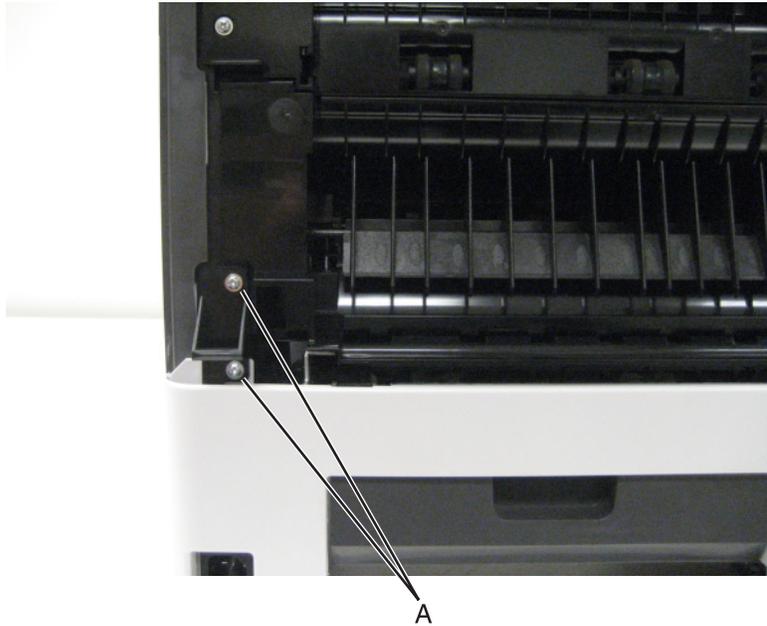
**Note:** When removing the left cover, the charcoal filter might become detached.



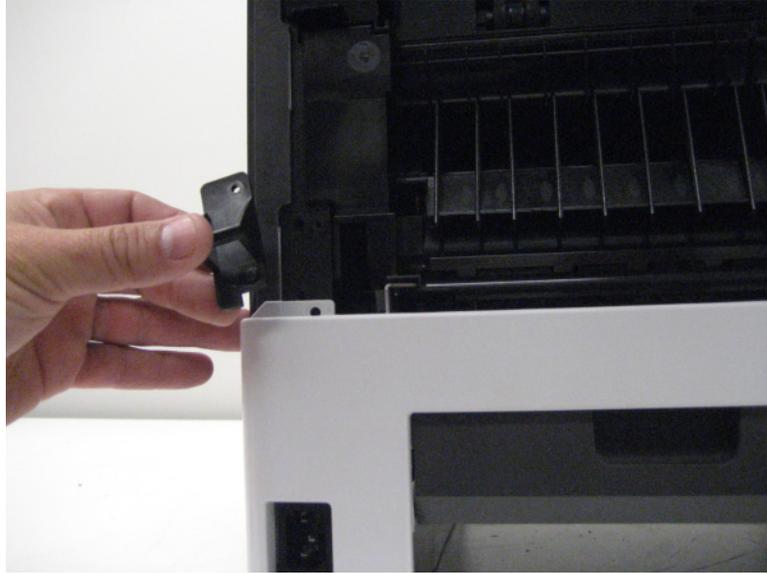
**Installation note:** When replacing the left cover, ensure that the charcoal filter is properly installed.

## Rear lower cover removal

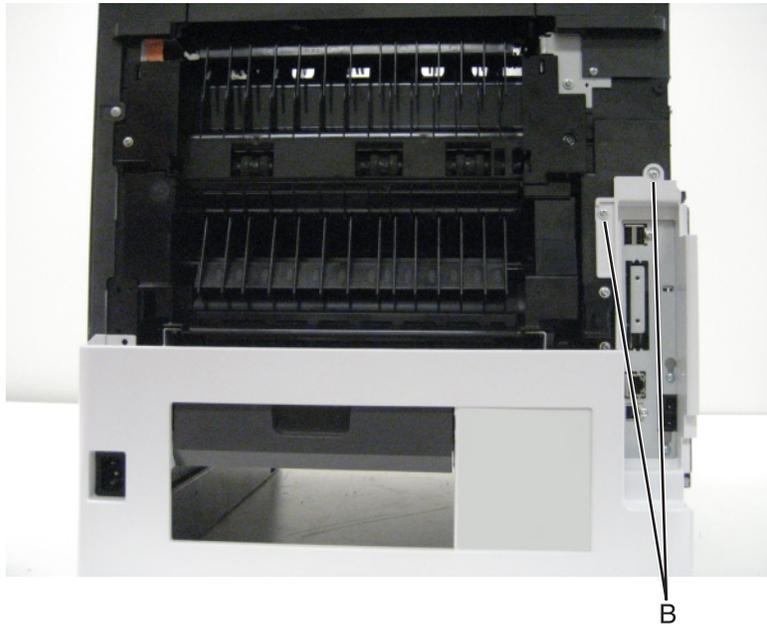
- 1 Remove the rear door. See **“Rear door removal”** on page 285.
- 2 Remove the two screws (A) securing the left frame pivot to the machine.



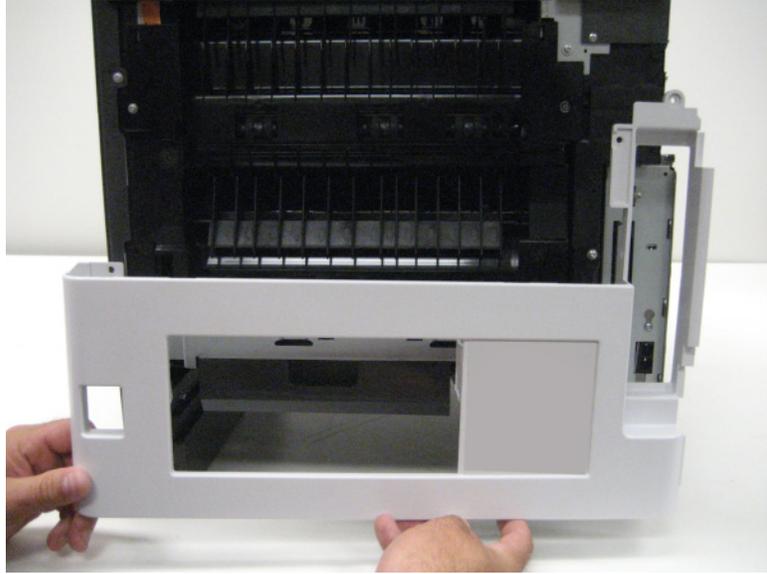
**3** Remove the left frame pivot.



**4** Remove the two screws (B) securing the rear lower cover.



- 5 Gently pull the rear lower cover up and out to remove it.



## Top cover removal

- 1 Gently lift the top cover from the machine.
- 2 Remove the top cover.



## Right cover removal

- 1 Open the front door.

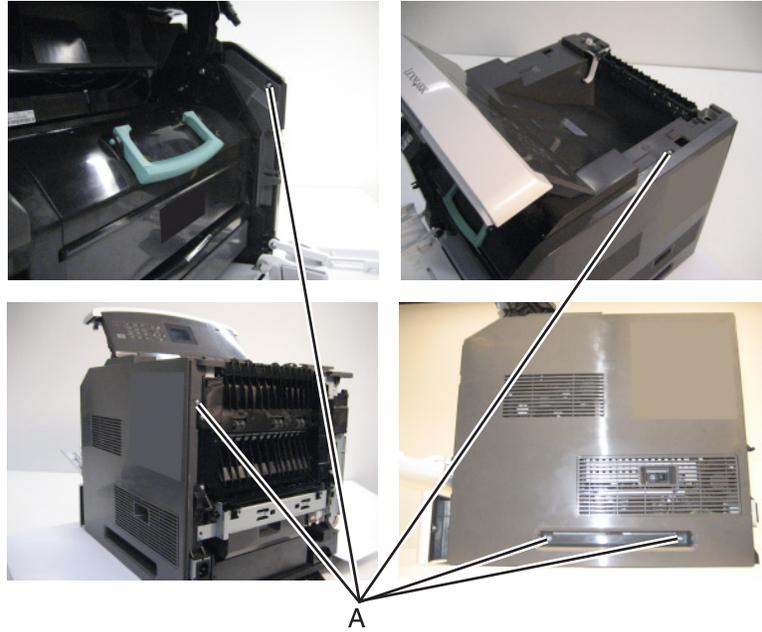


- 2 Raise the control panel to its uppermost position.



- 3 Remove the rear door. See **“Rear door removal” on page 285.**
- 4 Remove the rear lower door. See **“Rear lower cover removal” on page 280.**
- 5 Remove the top cover. See **“Top cover removal” on page 282.**

6 Remove the five screws (A) securing the right cover to the machine.



7 Remove the right cover.

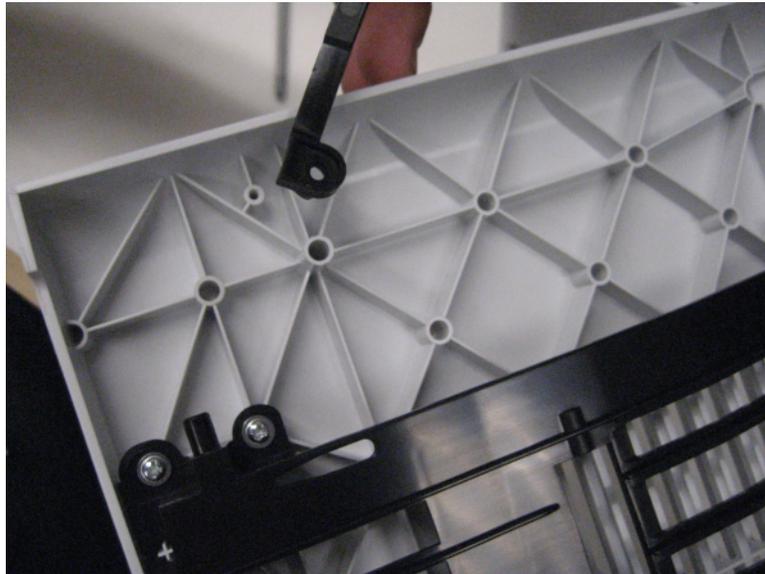


## Rear door removal

- 1 Open the rear door.
- 2 Remove the screw (A) securing the rear door support strap to the machine.



- 3 Remove the support strap.



- 4 Slide the rear door away from the machine, and remove it.



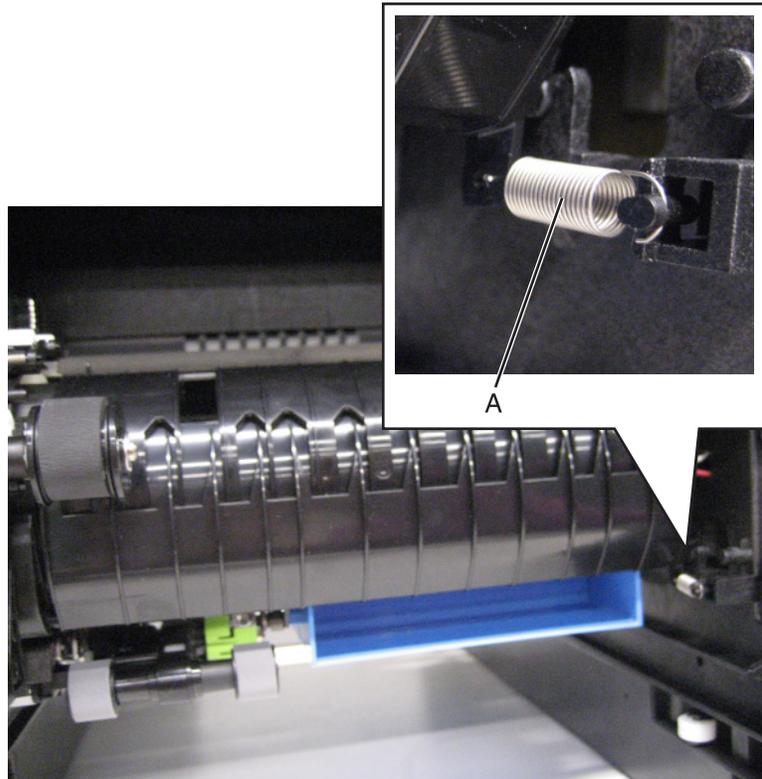
## Base printer- front removals

- “Duplex exit diverter removal” on page 286
- “Front door removal” on page 288
- “Inner guide deflector removal” on page 289
- “Laser printhead removal” on page 291
- “Left inner cover removal” on page 295
- “Media aligner roller removal” on page 297
- “Media turn guide removal” on page 299
- “Media vertical guide removal” on page 300
- “MPF feeder lift plate removal” on page 302
- “MPF pick roller removal” on page 305
- “MPF tray removal” on page 308
- “Right inner cover removal” on page 309
- “Sensor (input) removal” on page 310
- “Sensor (toner density) removal” on page 312
- “Transfer roller left arm with cable removal” on page 313
- “Transfer roller right arm removal” on page 314
- “Transfer roller removal” on page 317

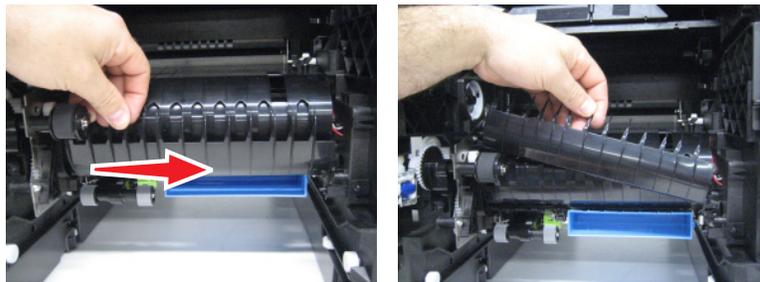
## Duplex exit diverter removal

- 1 Remove the left cover. See “Left cover removal” on page 277.
- 2 Remove the controller board access shield. See “Controller board access shield removal” on page 351.

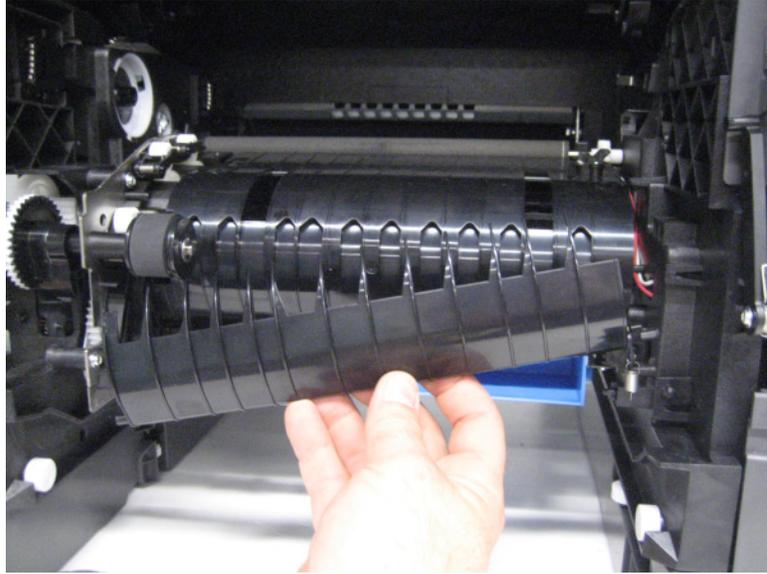
- 3 Remove the media tray. See **“Media tray removal”** on page 339.
- 4 Remove the MPF tray. See **“MPF tray removal”** on page 308.
- 5 Remove the front door. See **“Front door removal”** on page 288.
- 6 Remove the toner cartridge.
- 7 Remove the imaging unit.
- 8 Remove the MPF feeder lift plate. See **“MPF feeder lift plate removal”** on page 302.
- 9 Remove the media turn guide. See **“Media turn guide removal”** on page 299.
- 10 Remove the media vertical guide. See **“Media vertical guide removal”** on page 300.
- 11 Remove the spring (A).



- 12 Move the duplex exit diverter to the right, and detach the left hinge point.

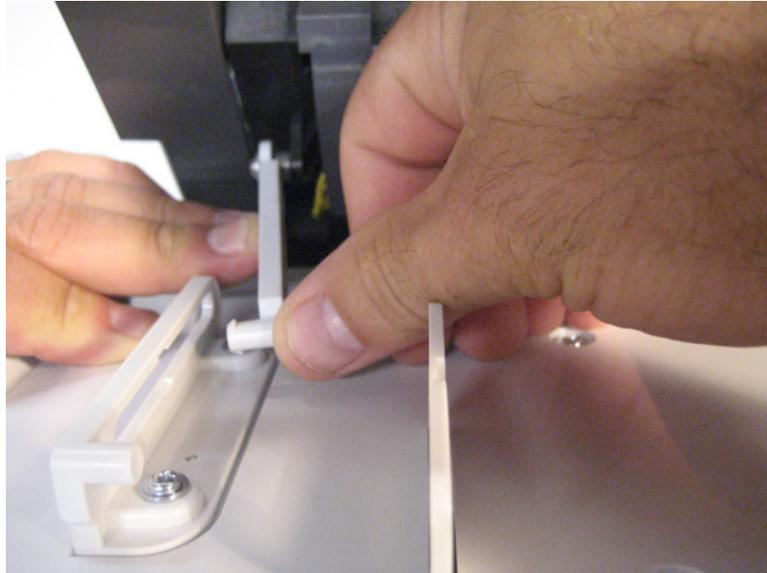


- 13 Lift the right hinge point, and remove the duplex exit diverter.

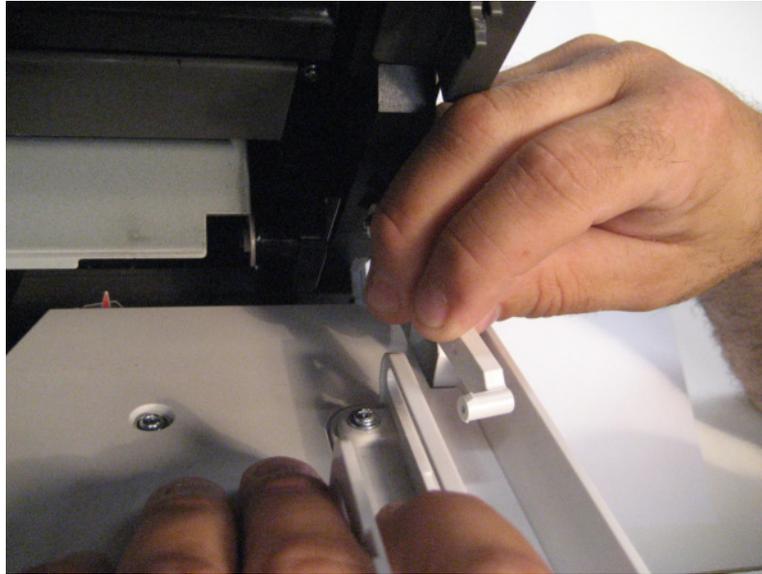


## Front door removal

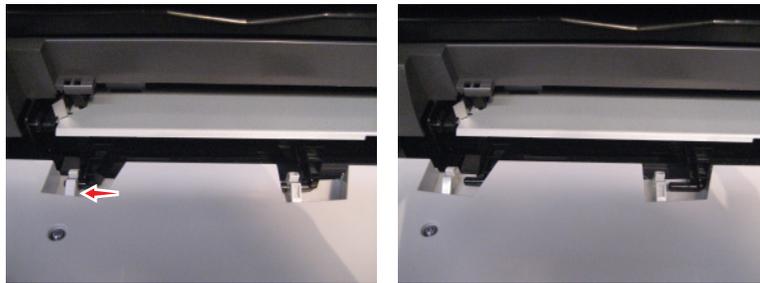
- 1 Remove the MPF tray. See **“MPF tray removal” on page 308.**
- 2 Raise the front door to a forty-five degree angle.
- 3 Gently flex the left bracket and release the tab on the MPF support link, as shown in the following image.



- 4 Gently flex the right bracket and release the tab on the MPF support link, as shown in the following image.



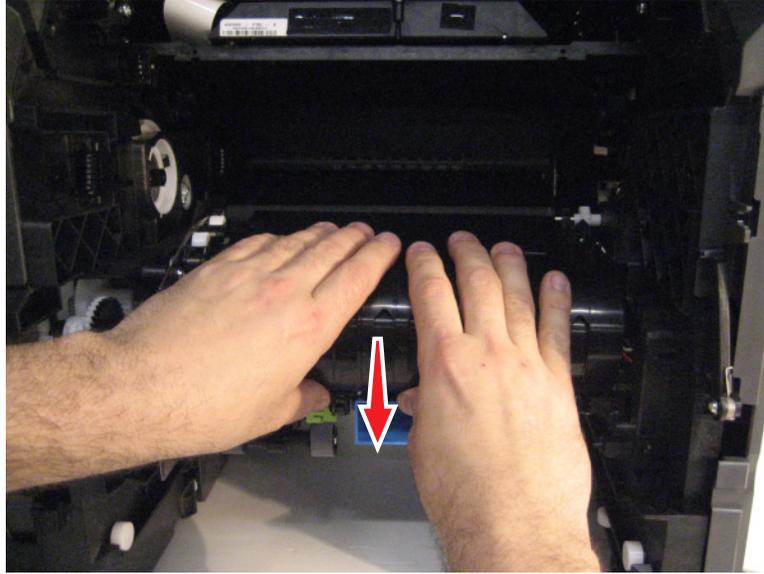
- 5 Slide the front door to the left, and detach it from the machine.



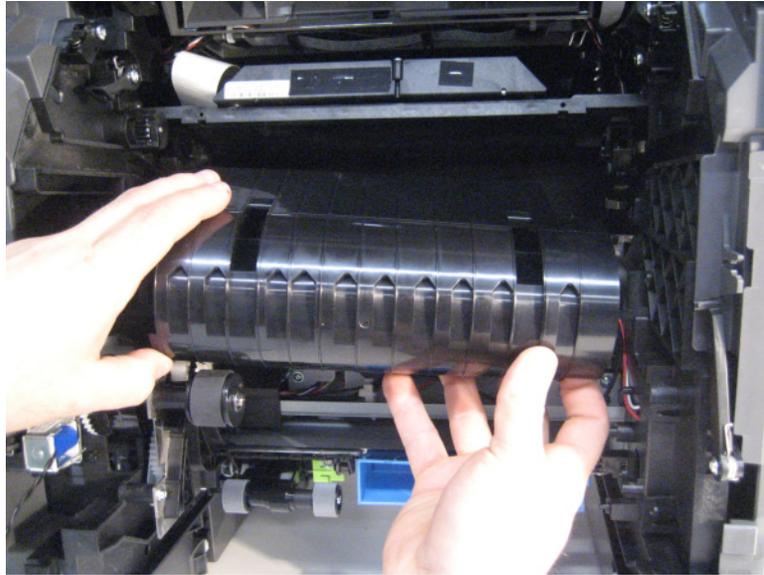
## Inner guide deflector removal

- 1 Remove the left cover. See **“Left cover removal” on page 277.**
- 2 Remove the controller board access shield. See **“Controller board access shield removal” on page 351.**
- 3 Remove the media tray. See **“Media tray removal” on page 339.**
- 4 Remove the MPF tray. See **“MPF tray removal” on page 308.**
- 5 Remove the front door. See **“Front door removal” on page 288.**
- 6 Remove the toner cartridge.
- 7 Remove the imaging unit.
- 8 Remove the MPF feeder lift plate. See **“MPF feeder lift plate removal” on page 302.**
- 9 Remove the media turn guide. See **“Media turn guide removal” on page 299.**
- 10 Remove the media vertical guide. See **“Media vertical guide removal” on page 300.**
- 11 Remove the duplex exit diverter. See **“Duplex exit diverter removal” on page 286.**
- 12 Gently press the mounting loops inward to free them from the bosses on the frame.

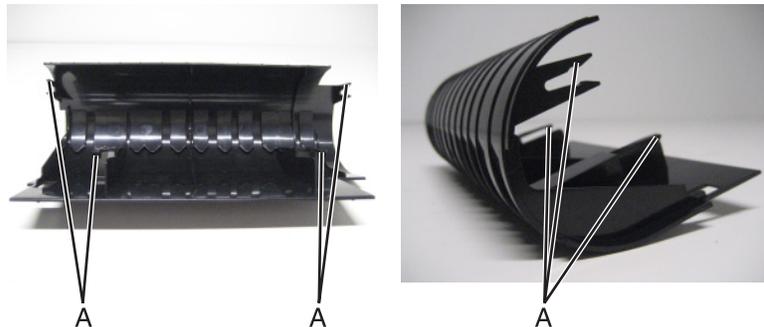
**13** Release the upper hooks on the inner guide deflector.



**14** Remove the inner guide deflector.



**Installation warning:** Ensure that the four retention hooks (A) on the inner guide deflector are properly reattached.

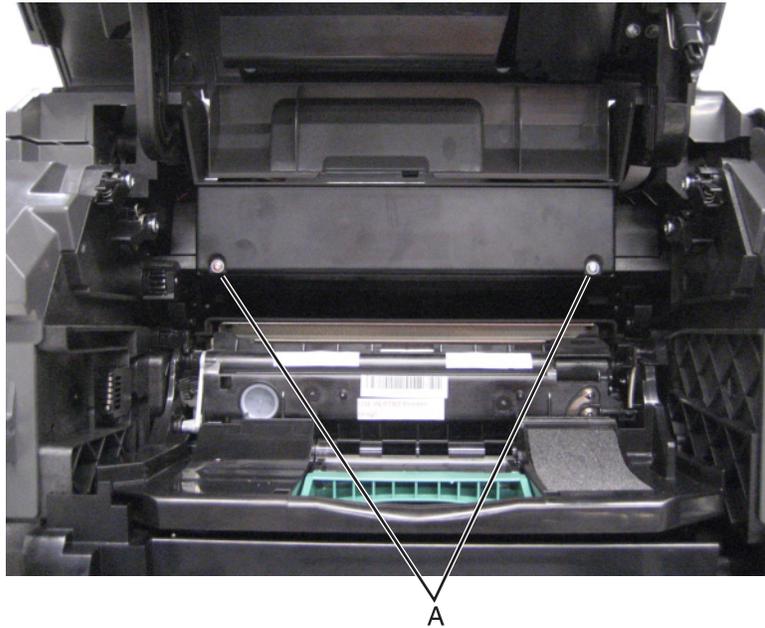


Repair information

## Laser printhead removal

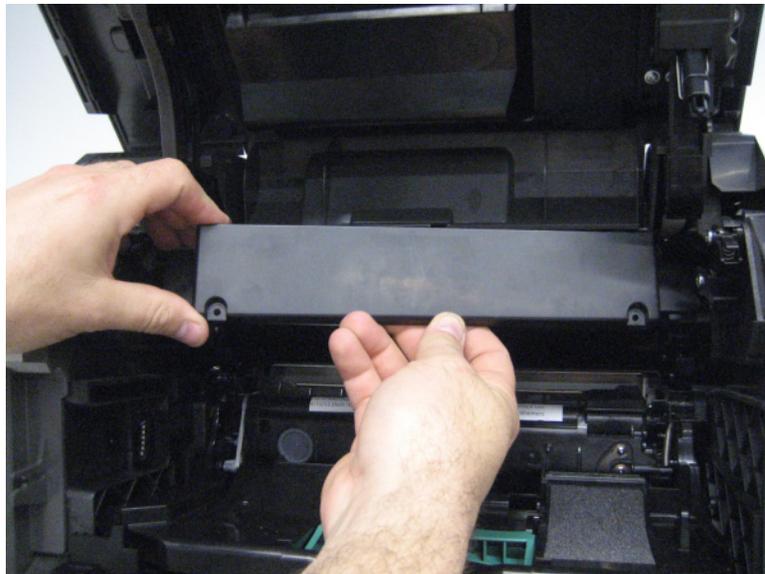
**Installation note:** When replacing the laser printhead, ensure that the proper adjustments are made. For more information, go to **“Polygon printhead mechanical registration adjustment” on page 274.**

- 1 Open the control panel door.
- 2 Remove the toner cartridge.
- 3 Remove the two screws (A) securing the printhead access cover to the machine.

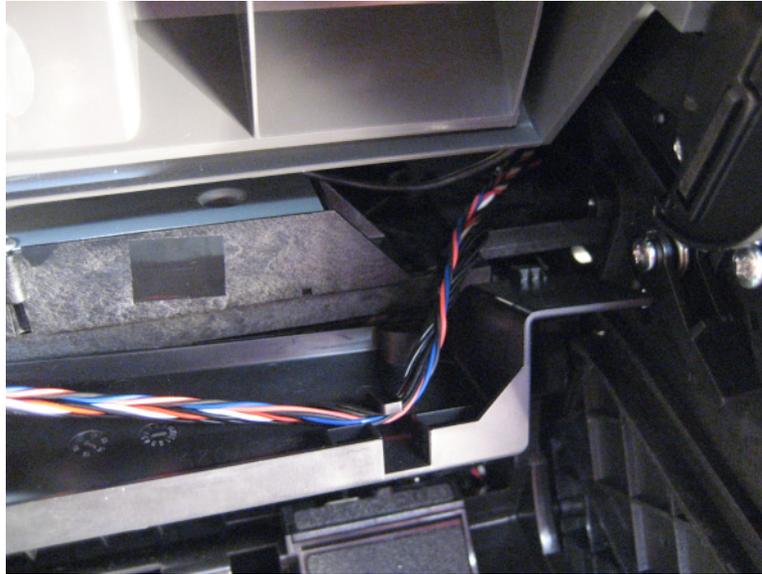


**Warning—Potential Damage:** When removing the printhead access cover, ensure that the cartridge cooling fan cable does not become disconnected.

- 4 Remove the printhead access cover.



- 5 Remove all of the harnesses from the back side of the printhead access cover.



- 6 Raise the paper support on top of the printer to provide access to the printhead mounting screws.
- 7 Remove the three 5.5mm hex screws (B) securing the laser printhead to the machine.

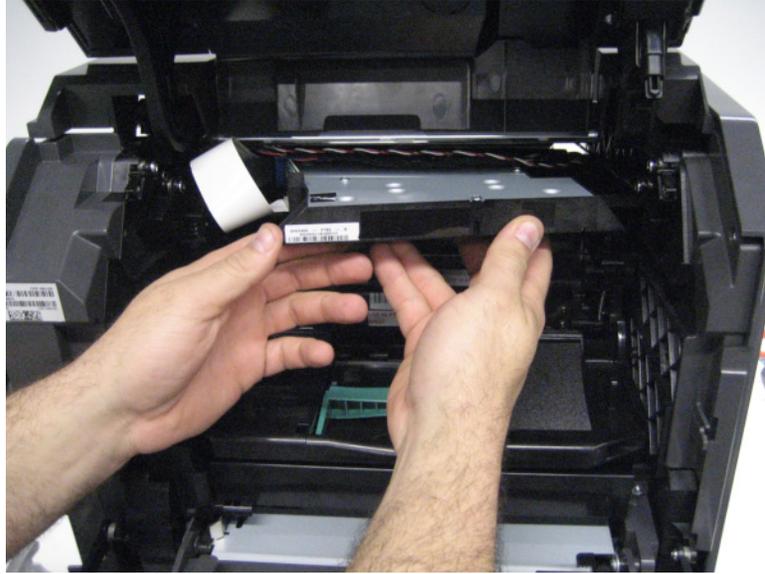
**Note:** For MX71x, the printhead mounting screws are located under the paper support which is located under the flatbed scanner.

**Note:** Ensure the screws do not fall inside the machine.

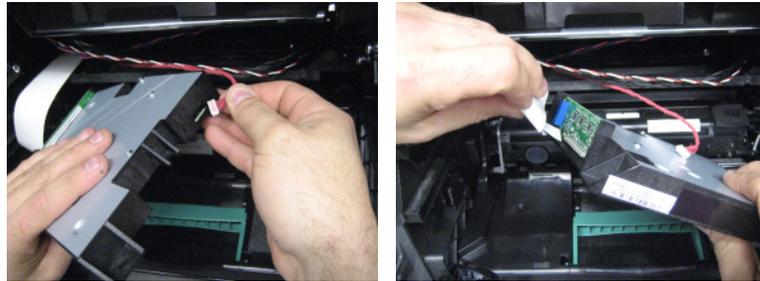


**Note:** When removing the laser printhead, do not adjust the printhead adjuster screw until the new printhead has been installed.

8 Gently lift and then remove the laser printhead from the machine.



9 Disconnect the two cables from the laser printhead.



**Installation note:** When the new laser printhead has been installed, complete the polygon printhead mechanical registration adjustment procedure, as needed. See **“Polygon printhead mechanical registration adjustment” on page 274.**

## Left inner cover removal

- 1 Open the front door.

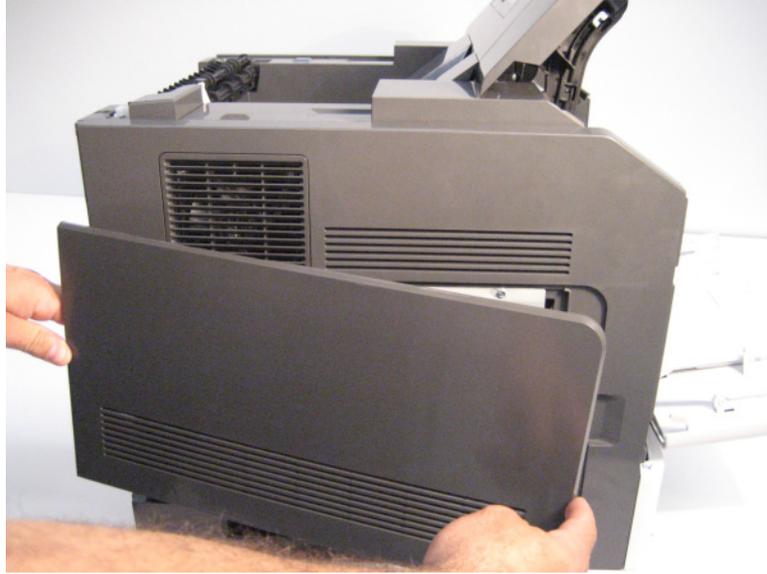


- 2 Pull the media tray from the machine.
- 3 Raise the control panel to its uppermost position.



- 4 Remove the rear door. See **“Rear door removal”** on page 285.

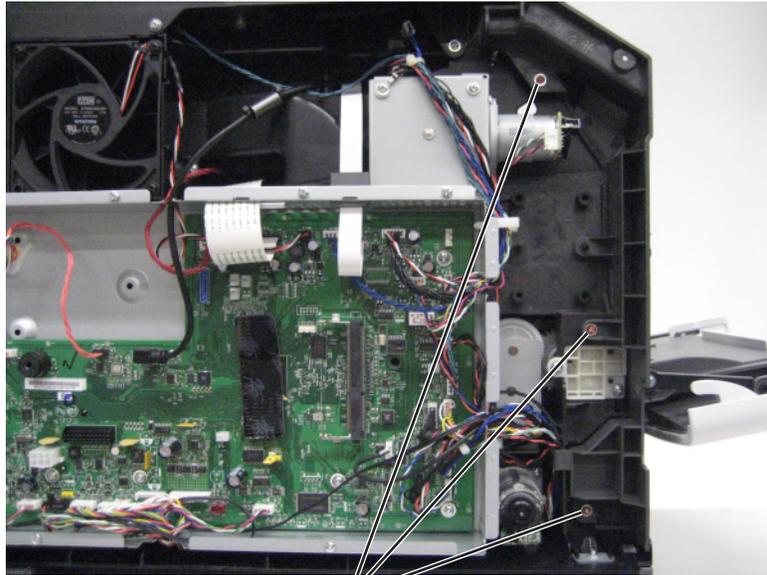
5 Detach the controller board access cover.



6 Remove the rear lower cover. See **“Rear lower cover removal”** on page 280.

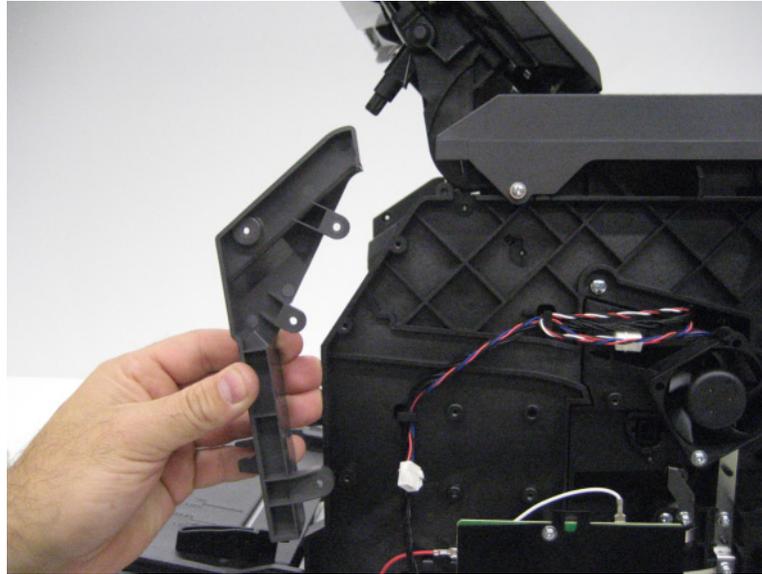
7 Remove the top cover. See **“Top cover removal”** on page 282.

8 Remove the three screws (A) securing the left inner cover to the machine.



A

- 9 Remove the left inner cover.



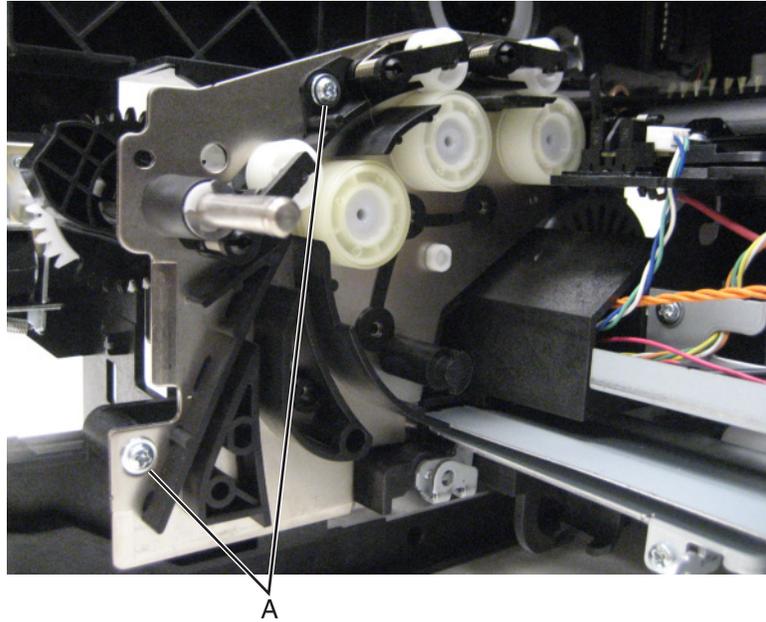
## Media aligner roller removal

**Installation warning:** When you reinstall the media aligner roller, you will have to adjust the media alignment. See [“Media aligner roller adjustment” on page 272](#).

**Warning—Potential Damage:** When removing the media aligner, ensure that you retain the attached spring.

- 1 Remove the left cover. See [“Left cover removal” on page 277](#).
- 2 Remove the media tray. See [“Media tray removal” on page 339](#).
- 3 Remove the MPF tray. See [“MPF tray removal” on page 308](#).
- 4 Remove the front door. See [“Front door removal” on page 288](#).
- 5 Remove the toner cartridge.
- 6 Remove the imaging unit.
- 7 Remove the media turn guide. See [“Media turn guide removal” on page 299](#).
- 8 Remove the MPF pick roller. See [“MPF pick roller removal” on page 305](#).
- 9 Remove the MPF feeder lift plate. See [“MPF feeder lift plate removal” on page 302](#).
- 10 Remove the media vertical guide. See [“Media vertical guide removal” on page 300](#).
- 11 Remove the duplex exit diverter. See [“Duplex exit diverter removal” on page 286](#).
- 12 Remove the inner guide deflector. See [“Inner guide deflector removal” on page 289](#).
- 13 Remove the three screws (A) securing the media aligner roller to the machine.

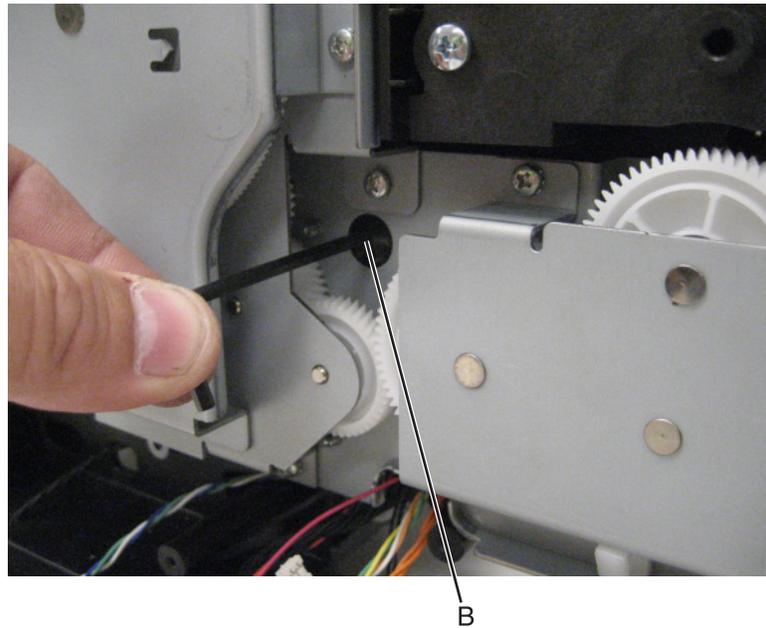
- 14** Remove the screw (B) securing the grounding wire to the media aligner roller.



- 15** Locate the adjuster screw access hole in the controller board shield.

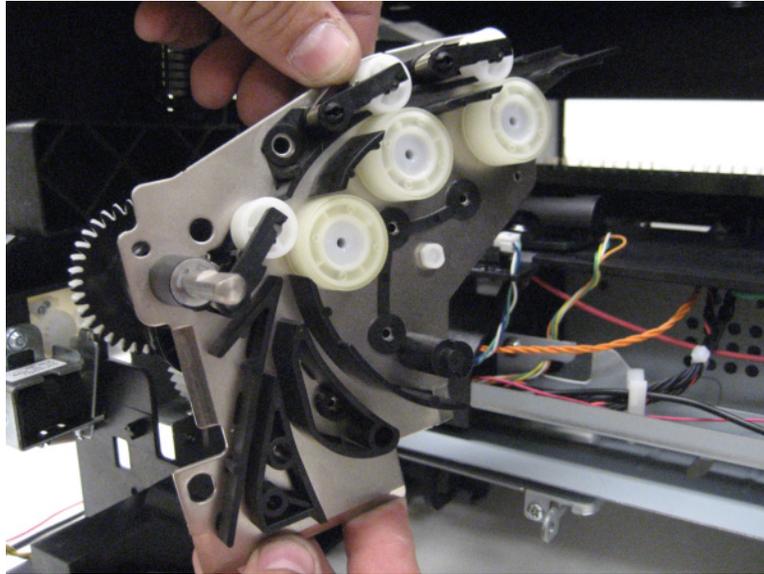
**Note:** The adjuster screw is contained between the left frame and the drive plate; it will stay in place during media aligner roller replacement. If the adjuster screw needs to be replaced, then the controller board and the main drive motor will also have to be removed to access the adjuster screw.

- 16** Using a 3mm hex wrench, completely loosen the adjuster screw (C) counterclockwise, as shown in the following image.

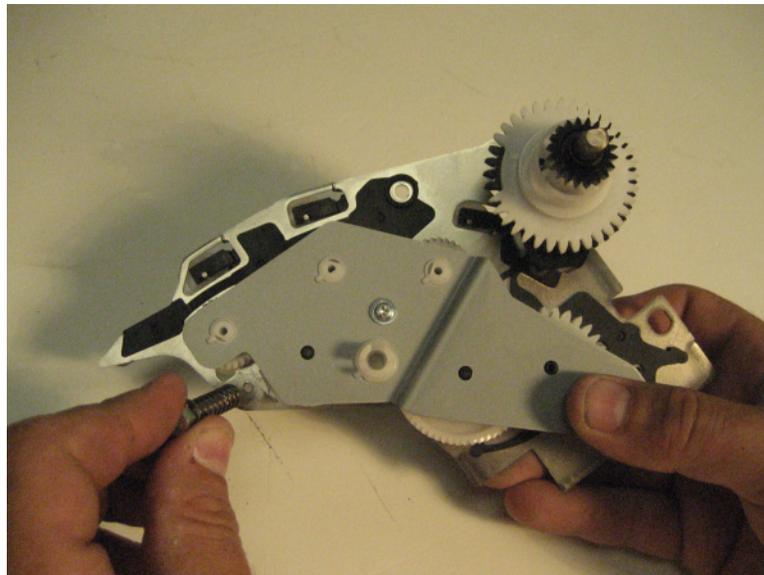


**Installation warning:** Make sure to reattach the grounding strap to the correct screw, and make sure the grounding strap is out of the paper path.

17 Gently detach the media aligner roller.



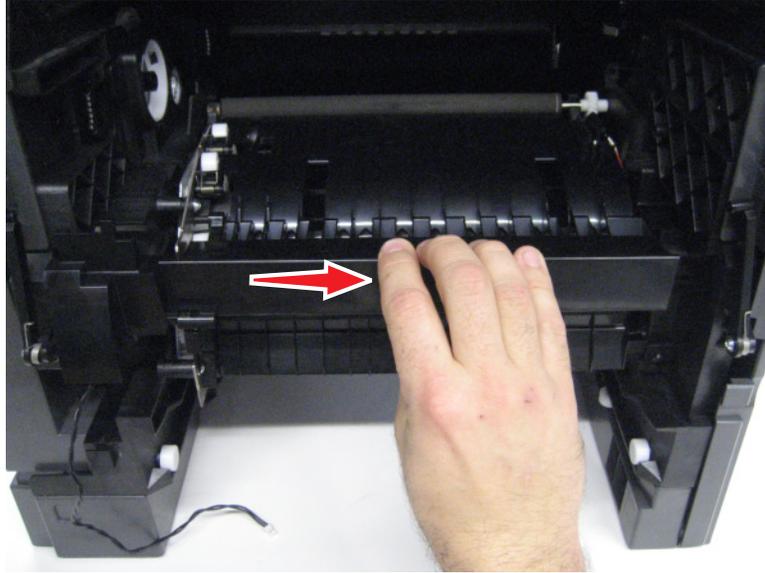
**Warning—Potential Damage:** When removing the media aligner, ensure that you retain the attached spring.



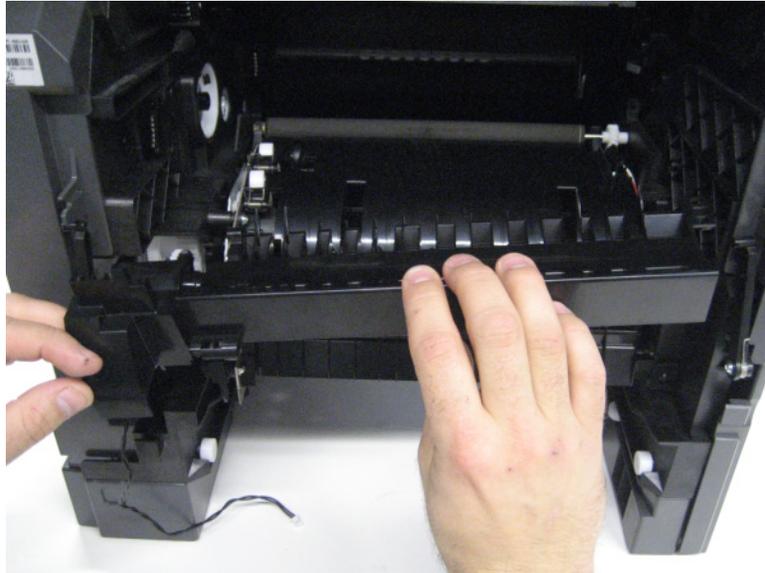
## Media turn guide removal

- 1 Remove the left cover. See [“Left cover removal” on page 277.](#)
- 2 Remove the controller board access shield. See [“Controller board access shield removal” on page 351.](#)
- 3 Remove the media tray. See [“Media tray removal” on page 339.](#)
- 4 Open the control panel door.
- 5 Remove the toner cartridge.
- 6 Remove the imaging unit.

- 7 Remove the MPF feeder lift plate. See **“MPF feeder lift plate removal”** on page 302.
- 8 Gently slide the media turn guide to the right to detach it from the machine.



- 9 Remove the media turn guide.

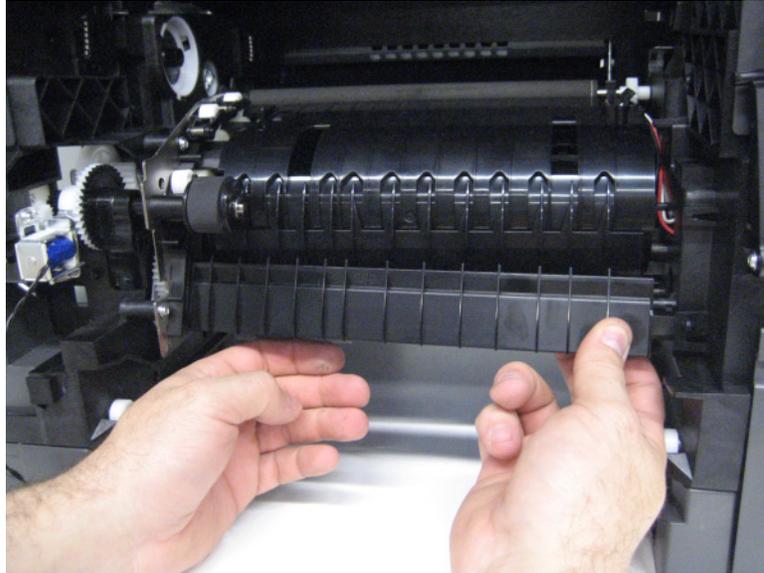


**Installation note:** When replacing the media turn guide, ensure that the alignment pin properly engages the media turn guide and that the alignment hooks properly engage the slots in the frame. If these parts are not properly engaged, paper jams will occur.

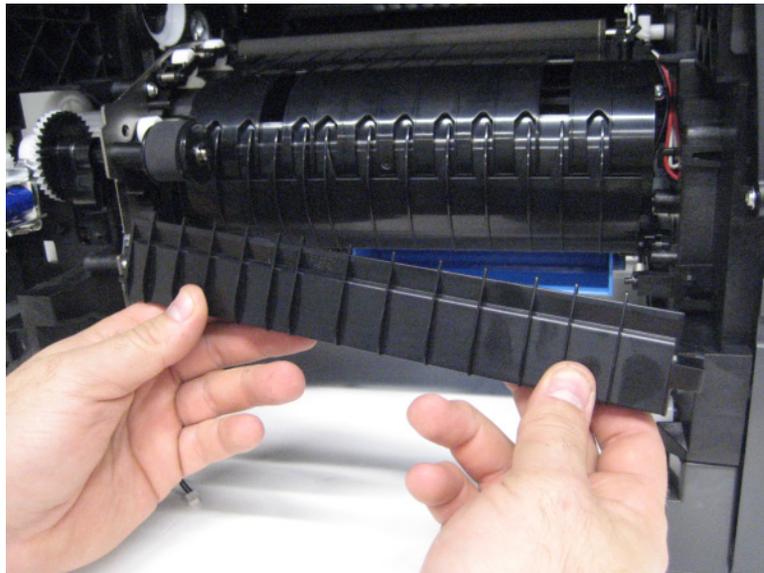
## Media vertical guide removal

- 1 Remove the left cover. See **“Left cover removal”** on page 277.
- 2 Remove the controller board access shield. See **“Controller board access shield removal”** on page 351.
- 3 Remove the media tray. See **“Media tray removal”** on page 339.

- 4 Open the control panel door.
- 5 Remove the toner cartridge.
- 6 Remove the imaging unit.
- 7 Remove the MPF feeder lift plate. See **“MPF feeder lift plate removal”** on page 302.
- 8 Remove the media turn guide. See **“Media turn guide removal”** on page 299.
- 9 Detach the right side of the media vertical guide.

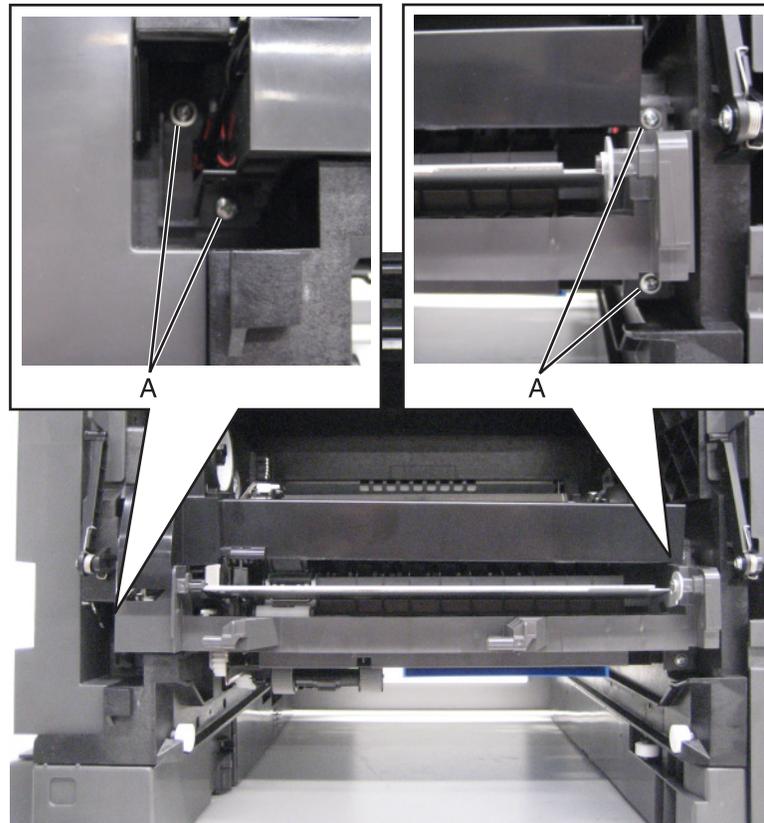


- 10 Remove the media vertical guide.

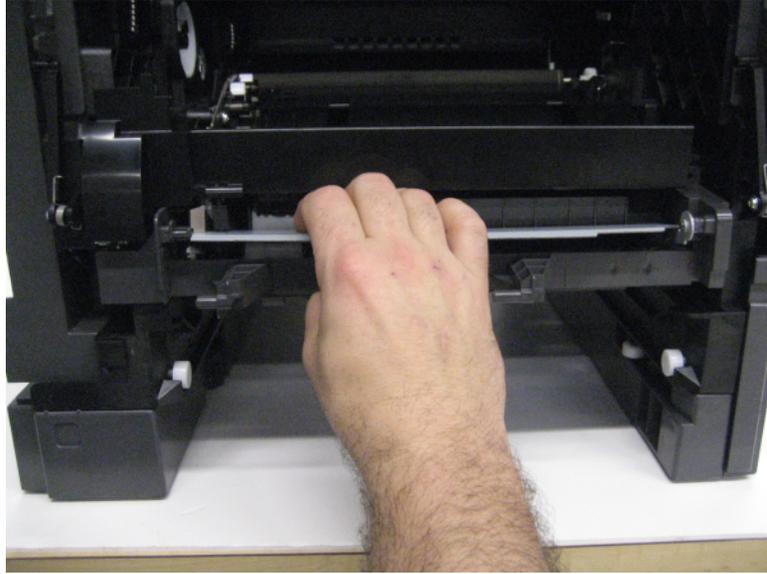


## MPF feeder lift plate removal

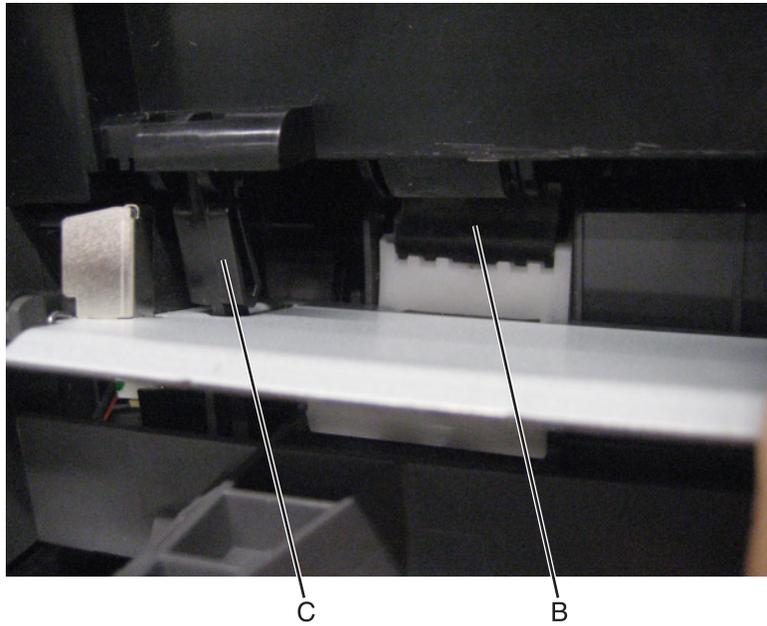
- 1 Remove the left cover. See **“Left cover removal”** on page 277.
- 2 Remove the controller board access shield. See **“Controller board access shield removal”** on page 351.
- 3 Remove the media tray. See **“Media tray removal”** on page 339.
- 4 Open the control panel door.
- 5 Remove the toner cartridge.
- 6 Remove the imaging unit.
- 7 Remove the four screws (A) securing the MPF feeder lift plate to the machine.



- 8 Press down the plate, as shown in the following image, and remove the MPF feeder lift plate.

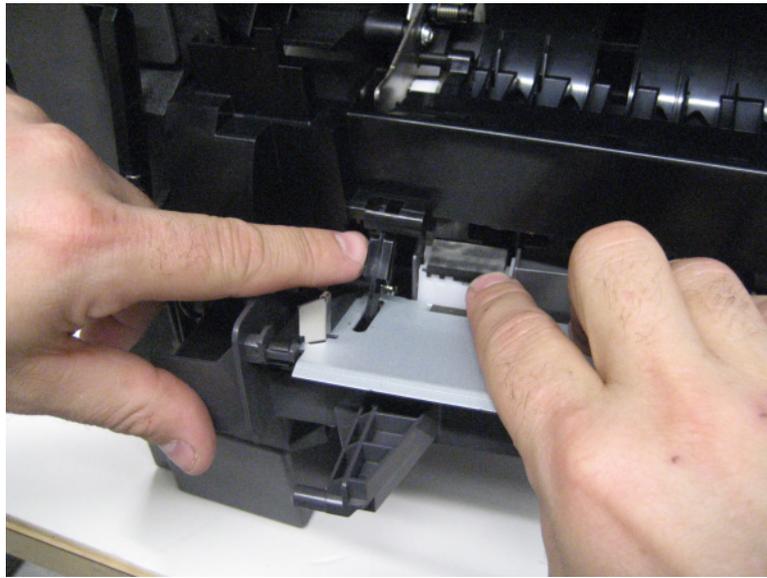


**Warning—Potential Damage:** When you press down the plate, you are lowering the pick pad (B) away from the MPF feed roller to prevent damage. If you do not do this, the pick pad will likely become damaged.



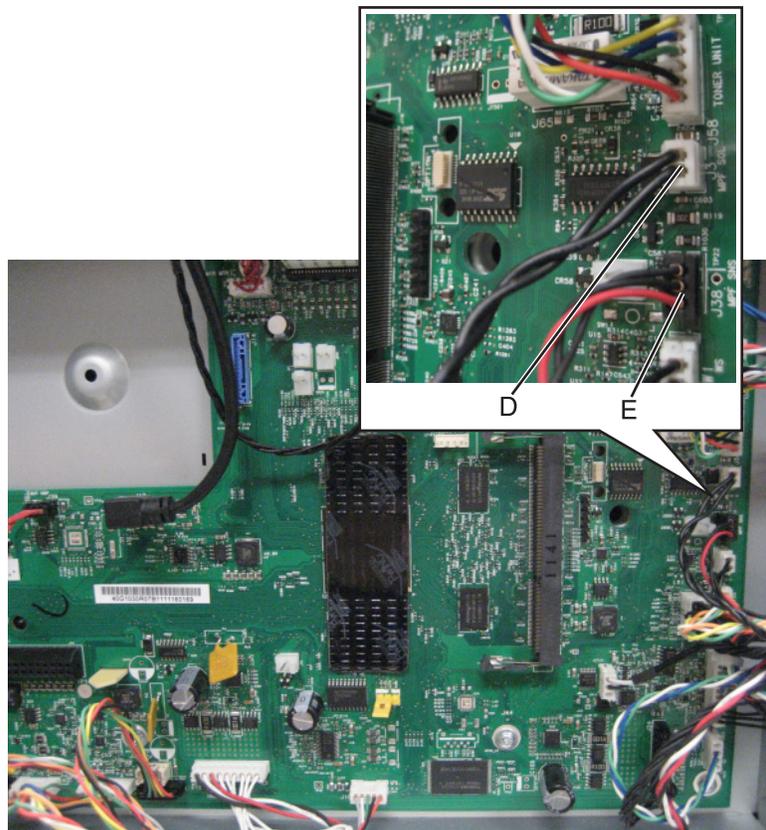
**Installation warning:** When replacing the MPF feeder lift plate ensure that the pick pad (B) is placed properly behind the MPF feed roller.

**Installation warning:** When replacing the MPF feeder lift plate ensure that the actuator flag (C) is placed in the slot, as shown in the following image.

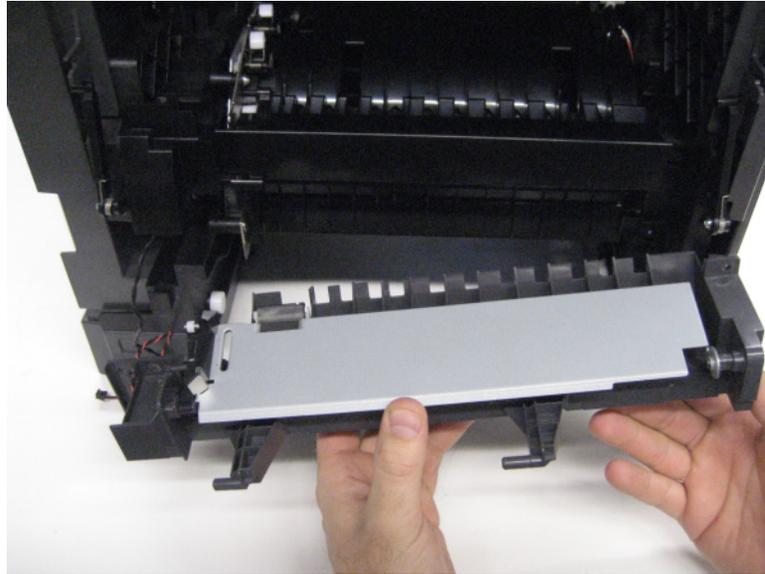


**9** Disconnect the MPF pick solenoid cable - J3 (D).

**10** Disconnect the MPF feeder lift plate cable - J38 (E).



- 11 Remove the MPF feeder lift plate.

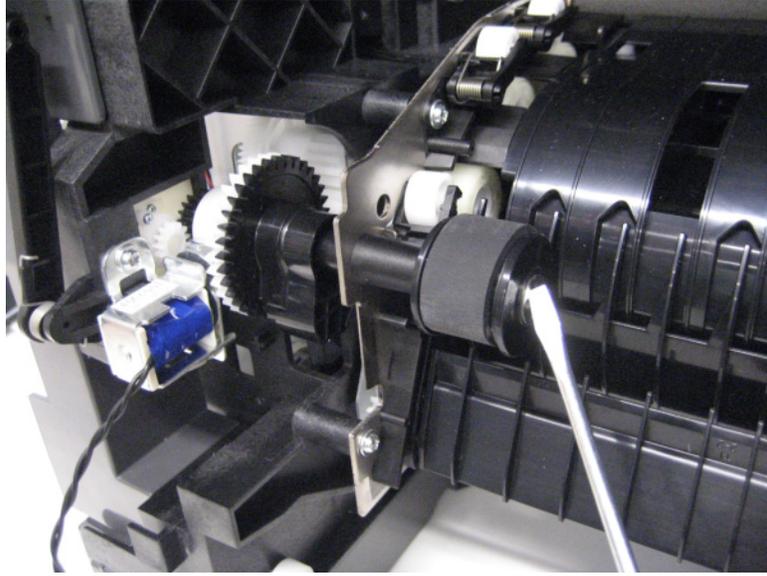


**Installation warning:** When replacing the MPF feeder lift plate, ensure that the MPF feeder lift plate cable and solenoid cable are properly rerouted and that all cables are properly reconnected. Make sure that these cables are not pinched between the MPF feeder lift plate and the frame before replacing the screws.

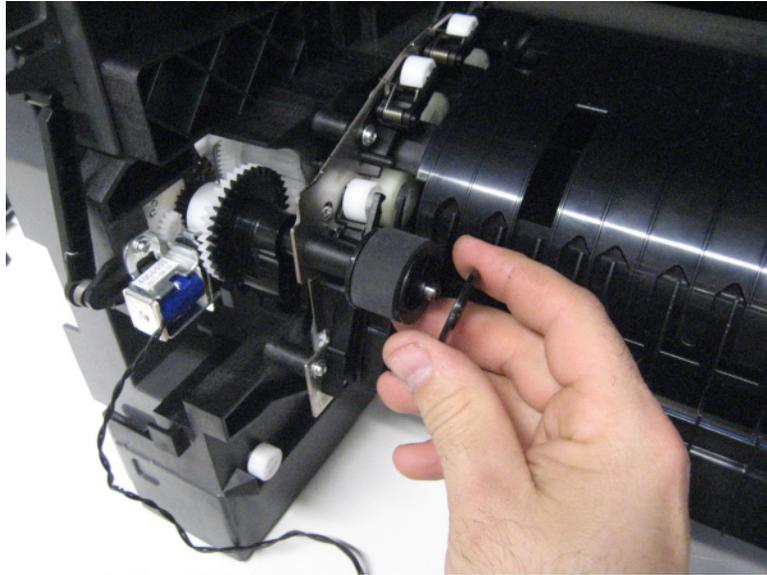
## MPF pick roller removal

- 1 Remove the left cover. See **“Left cover removal” on page 277.**
- 2 Remove the controller board access shield. See **“Controller board access shield removal” on page 351.**
- 3 Remove the media tray. See **“Media tray removal” on page 339.**
- 4 Open the control panel door.
- 5 Remove the toner cartridge.
- 6 Remove the imaging unit.
- 7 Remove the media turn guide. See **“Media turn guide removal” on page 299.**

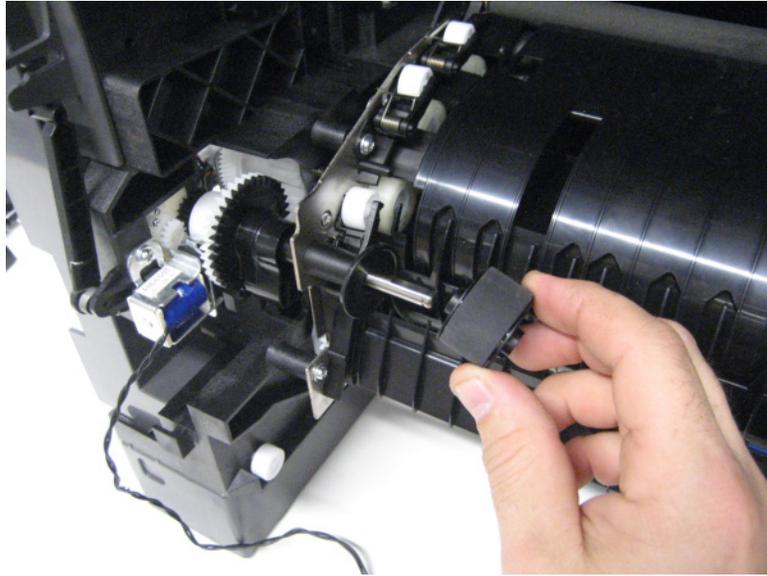
8 Remove the e-clip securing the MPF pick roller to the machine.



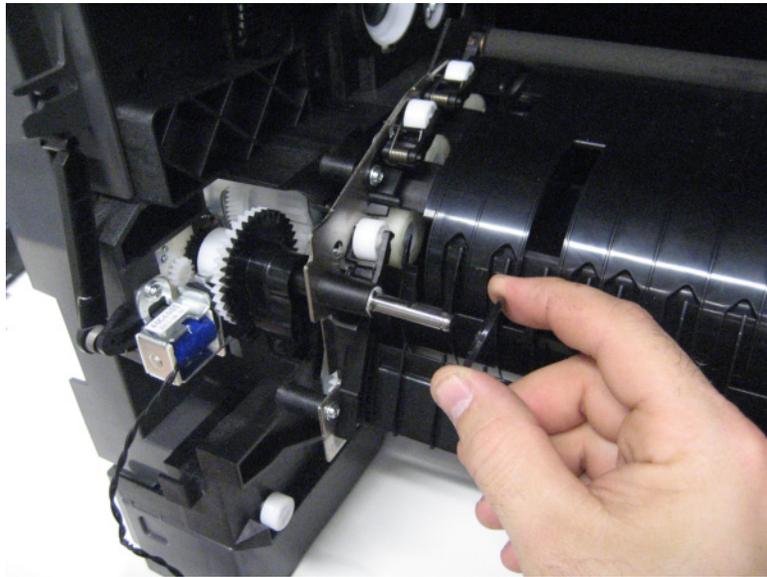
9 Remove the flange.



**10** Remove the MPF pick roller.



**11** Remove the second flange.

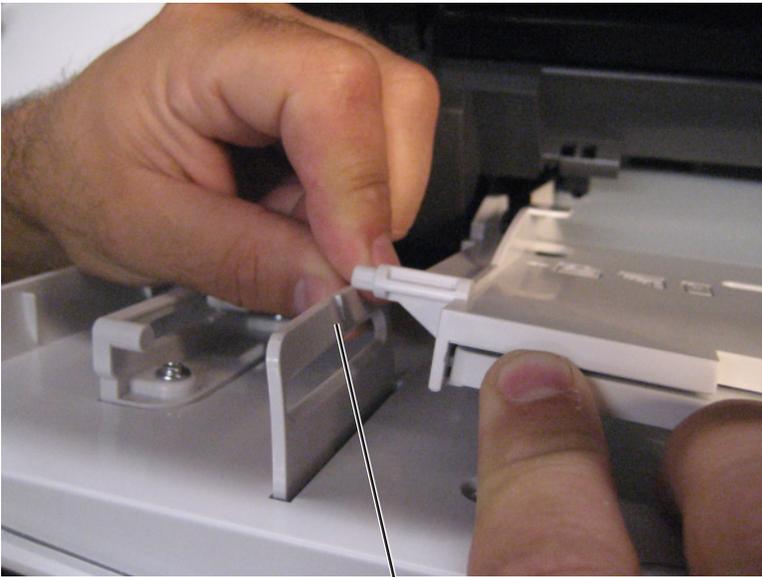


## MPF tray removal

- 1 Lower the front door to a 45-degree angle, as shown in the following image.

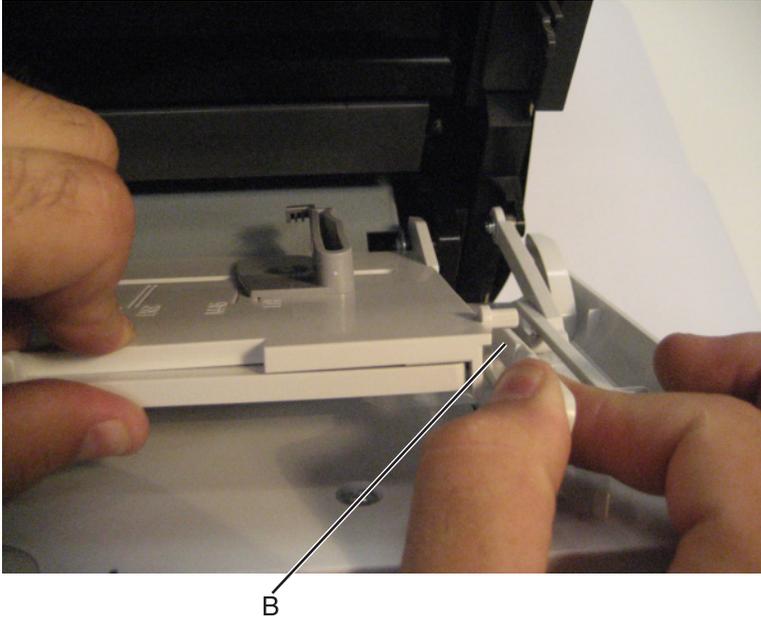


- 2 Gently flex the left bracket (A) and detach the left side of the MPF tray.

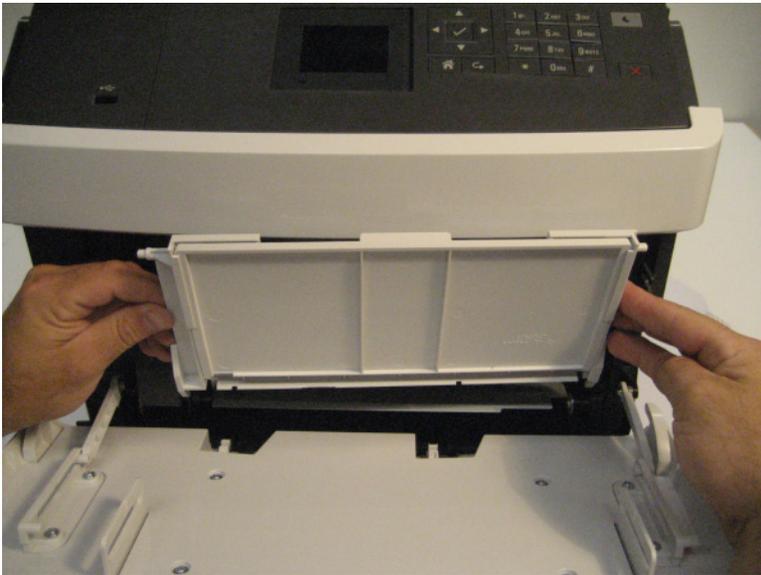


A

- 3 Gently flex the right bracket (B) and detach the right side of the MPF tray.



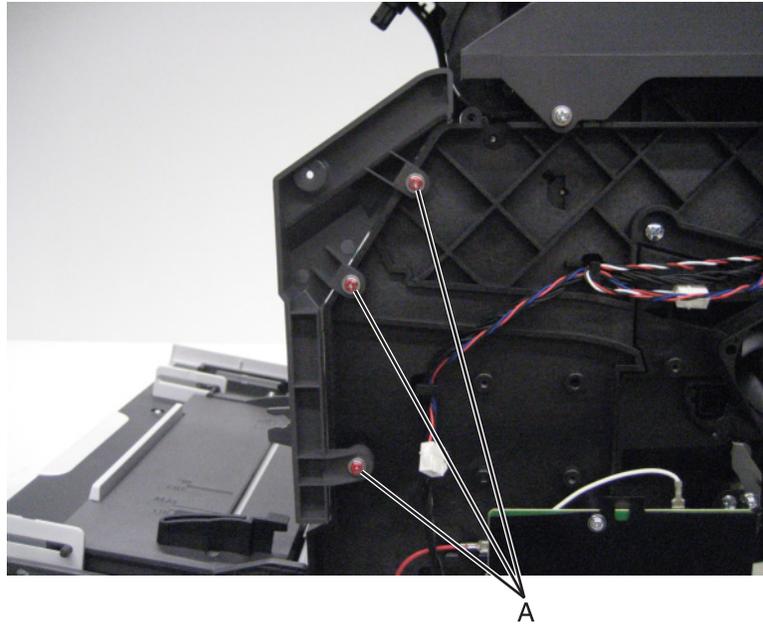
- 4 Raise the MPF tray to a vertical position, and detach it from the machine.



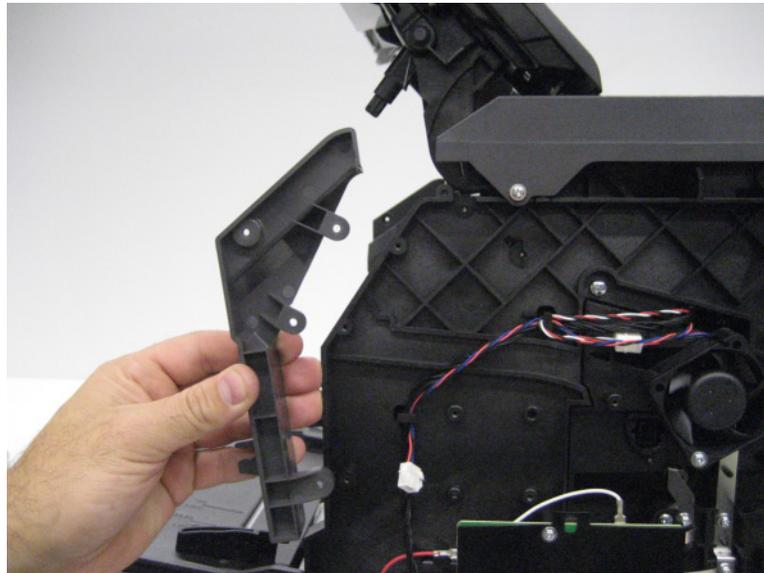
### Right inner cover removal

- 1 Open the front door.
- 2 Raise the control panel to its uppermost position.
- 3 Remove the right cover. See **“Right cover removal” on page 283.**

- 4 Remove the three screws (A) securing the right inner cover to the machine.



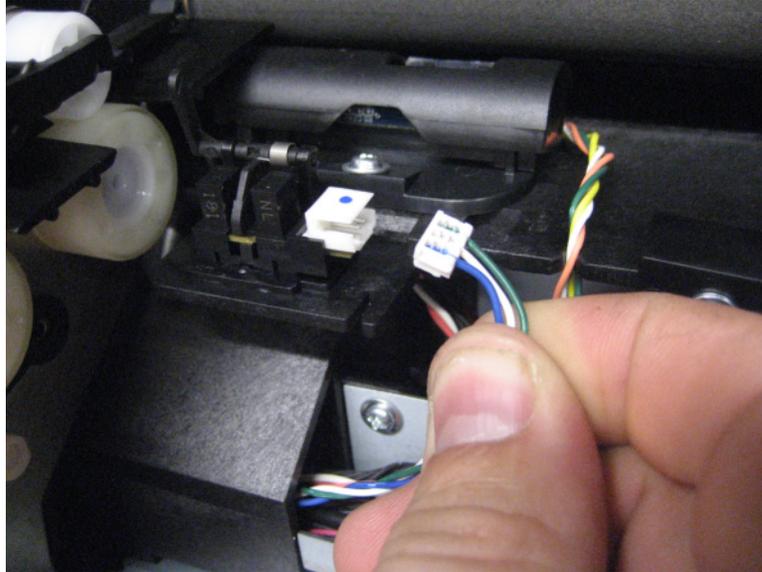
- 5 Remove the right inner cover.



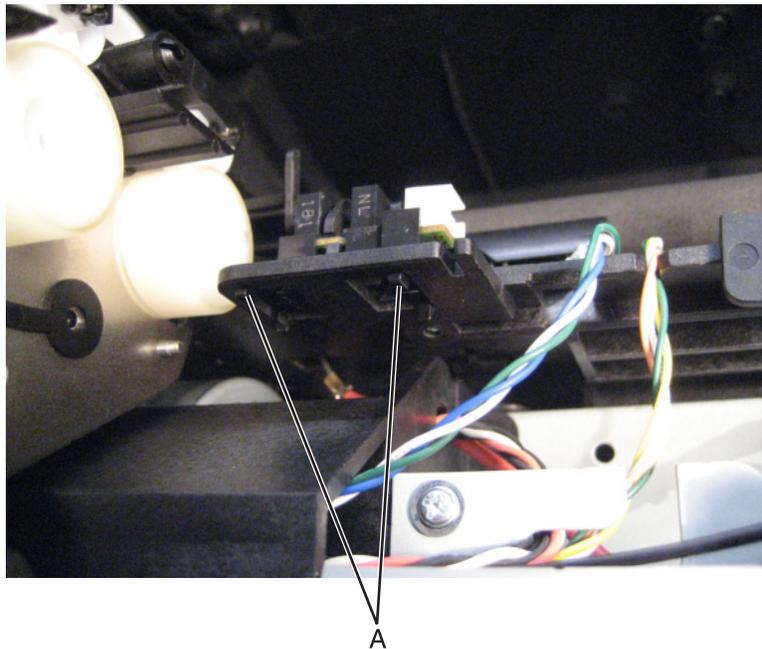
## Sensor (input) removal

- 1 Remove the left cover. See **“Left cover removal” on page 277.**
- 2 Remove the controller board access shield. See **“Controller board access shield removal” on page 351.**
- 3 Remove the media tray. See **“Media tray removal” on page 339.**
- 4 Remove the front door. See **“Front door removal” on page 288.**
- 5 Remove the toner cartridge.

- 6 Remove the imaging unit.
- 7 Remove the MPF feeder lift plate. See **“MPF feeder lift plate removal”** on page 302.
- 8 Remove the media turn guide. See **“Media turn guide removal”** on page 299.
- 9 Remove the media vertical guide. See **“Media vertical guide removal”** on page 300.
- 10 Remove the duplex exit diverter. See **“Duplex exit diverter removal”** on page 286.
- 11 Remove the inner guide deflector. See **“Inner guide deflector removal”** on page 289.
- 12 Disconnect the cable from the sensor (input).



- 13 Release the hooks (A) securing the sensor (input) to the machine.



- 14 Remove the sensor (input).

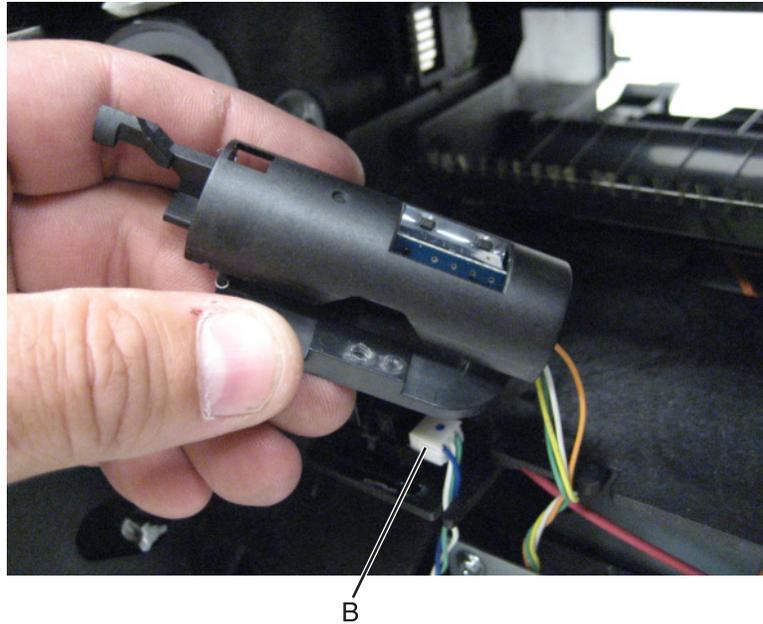
## Sensor (toner density) removal

- 1 Remove the left cover. See **“Left cover removal” on page 277.**
- 2 Remove the controller board access shield. See **“Controller board access shield removal” on page 351.**
- 3 Remove the media tray. See **“Media tray removal” on page 339.**
- 4 Remove the front door. See **“Front door removal” on page 288.**
- 5 Remove the toner cartridge.
- 6 Remove the imaging unit.
- 7 Remove the MPF feeder lift plate. See **“MPF feeder lift plate removal” on page 302.**
- 8 Remove the media turn guide. See **“Media turn guide removal” on page 299.**
- 9 Remove the media vertical guide. See **“Media vertical guide removal” on page 300.**
- 10 Remove the duplex exit diverter. See **“Duplex exit diverter removal” on page 286.**
- 11 Remove the inner guide deflector. See **“Inner guide deflector removal” on page 289.**
- 12 Remove the media aligner roller. See **“Media aligner roller removal” on page 297.**
- 13 Remove the screw (A) securing the sensor (toner density) to the machine.



- 14 Gently lift and remove the sensor (toner density).

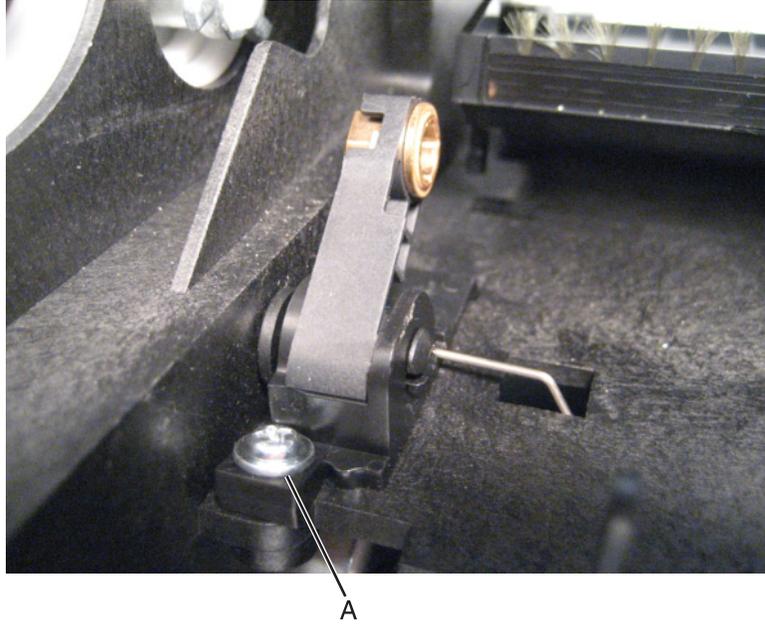
- 15 Disconnect the cable (B).



### Transfer roller left arm with cable removal

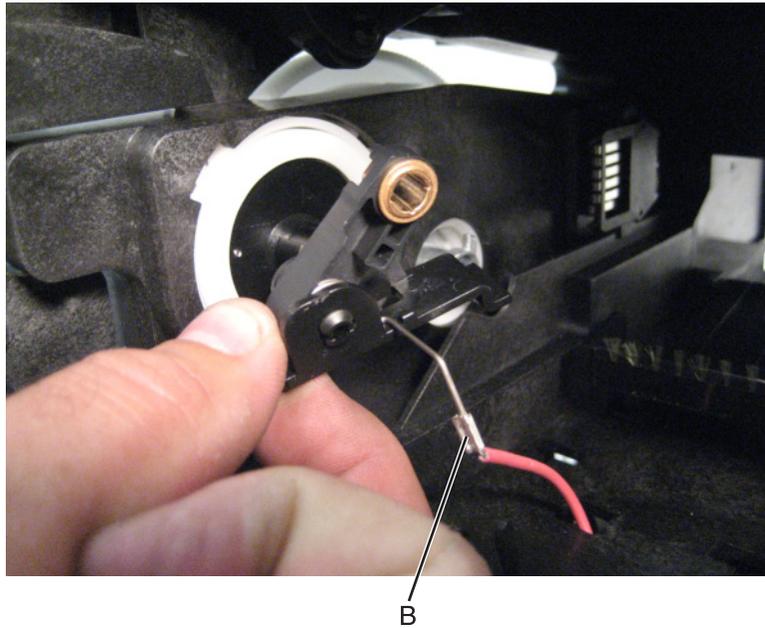
- 1 Remove the left cover. See **“Left cover removal” on page 277.**
- 2 Remove the controller board access shield. See **“Controller board access shield removal” on page 351.**
- 3 Remove the media tray. See **“Media tray removal” on page 339.**
- 4 Remove the front door. See **“Front door removal” on page 288.**
- 5 Remove the toner cartridge.
- 6 Remove the imaging unit.
- 7 Remove the media turn guide. See **“Media turn guide removal” on page 299.**
- 8 Remove the MPF pick roller. See **“MPF pick roller removal” on page 305.**
- 9 Remove the MPF feeder lift plate. See **“MPF feeder lift plate removal” on page 302.**
- 10 Remove the media vertical guide. See **“Media vertical guide removal” on page 300.**
- 11 Remove the duplex exit diverter. See **“Duplex exit diverter removal” on page 286.**
- 12 Remove the inner guide deflector. See **“Inner guide deflector removal” on page 289.**
- 13 Remove the transfer roller. See **“Transfer roller removal” on page 317.**
- 14 Remove the media aligner roller. See **“Media aligner roller removal” on page 297.**
- 15 Remove the sensor (toner density). See **“Sensor (toner density) removal” on page 312.**
- 16 Remove the right cover. See **“Right cover removal” on page 283.**

**17** Remove the screw (A) securing the part to the machine.



**18** Remove the transfer roller left arm with cable.

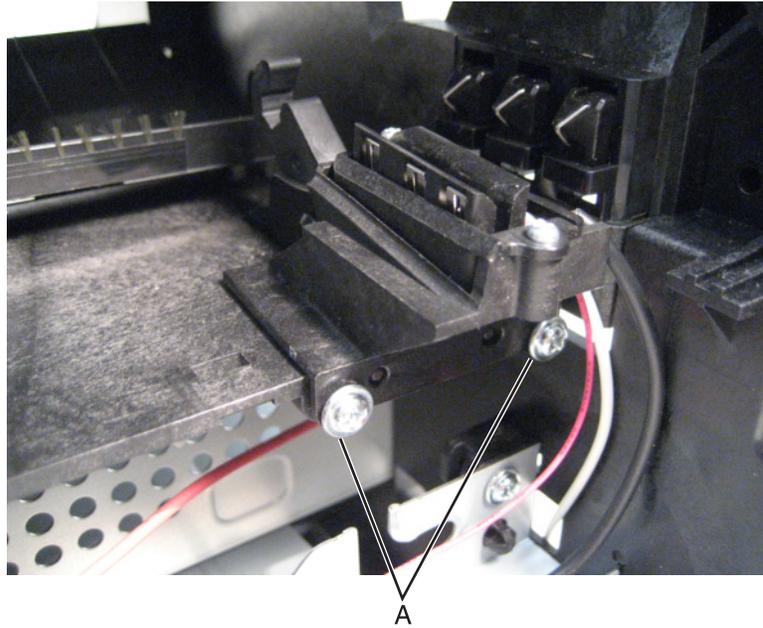
**19** Disconnect the cable (B) from the HVPS.



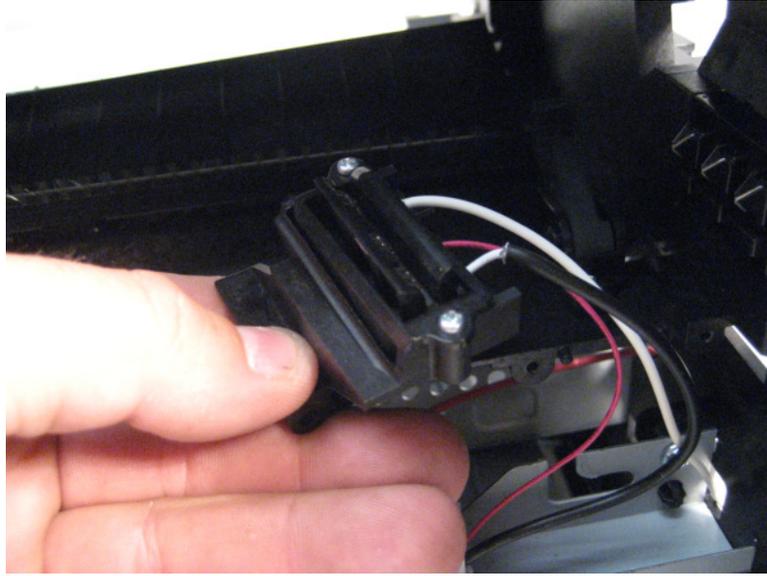
### Transfer roller right arm removal

- 1** Remove the left cover. See **“Left cover removal” on page 277.**
- 2** Remove the controller board access shield. See **“Controller board access shield removal” on page 351.**
- 3** Remove the media tray. See **“Media tray removal” on page 339.**

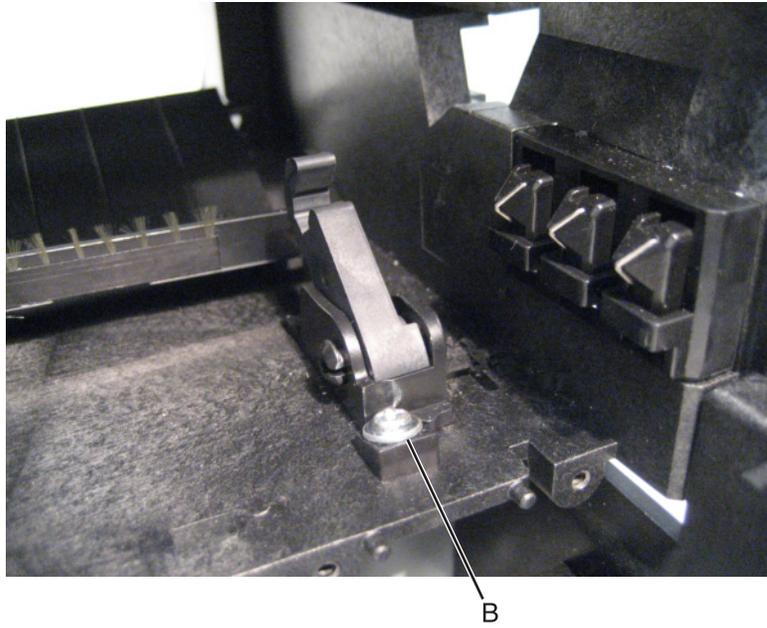
- 4 Remove the front door. See **“Front door removal” on page 288.**
- 5 Remove the toner cartridge.
- 6 Remove the imaging unit.
- 7 Remove the MPF feeder lift plate. See **“MPF feeder lift plate removal” on page 302.**
- 8 Remove the media turn guide. See **“Media turn guide removal” on page 299.**
- 9 Remove the media vertical guide. See **“Media vertical guide removal” on page 300.**
- 10 Remove the duplex exit diverter. See **“Duplex exit diverter removal” on page 286.**
- 11 Remove the inner guide deflector. See **“Inner guide deflector removal” on page 289.**
- 12 Remove the two screws (A) securing the toner level contact to the machine.



**13** Remove the toner level contact.



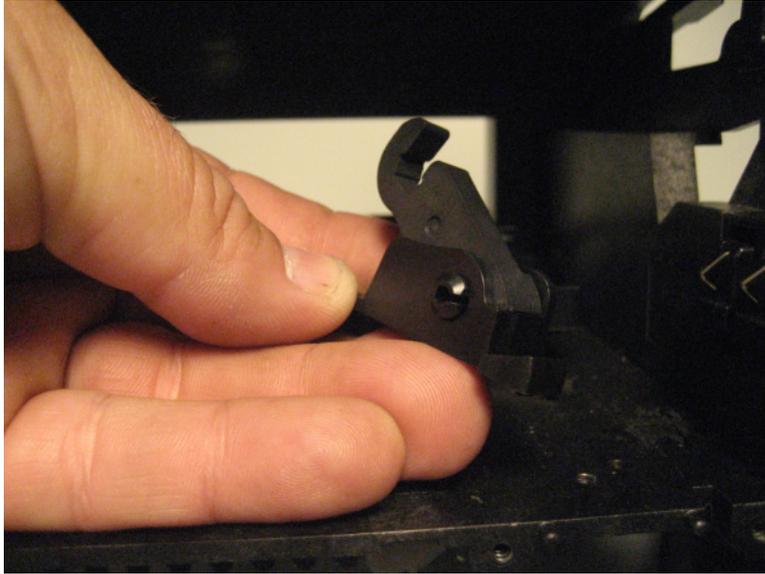
**14** Remove the screw (B) securing the transfer roller right arm to the machine.



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**15** Remove the transfer roller right arm.

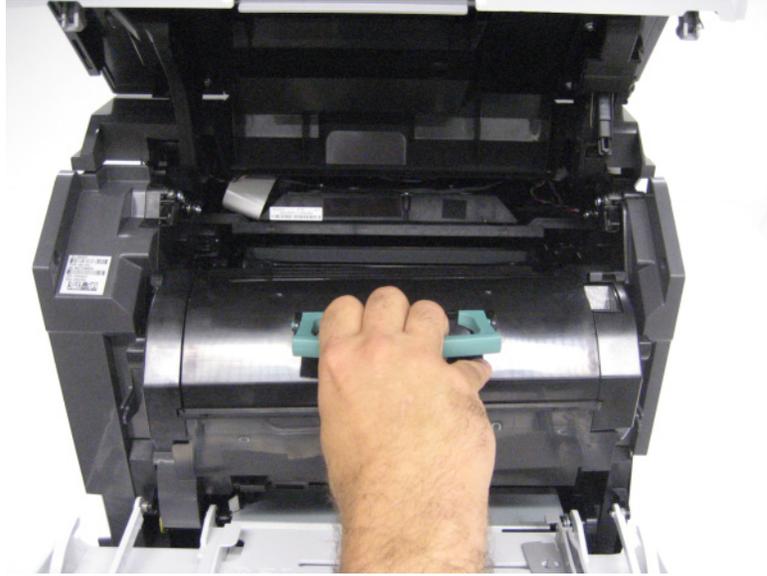


## Transfer roller removal

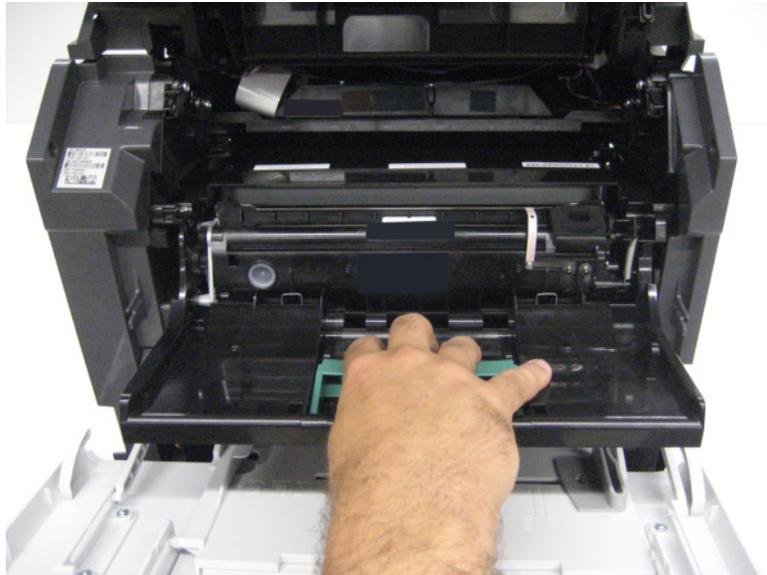
- 1 Open the control panel cover.
- 2 Open the front door.



**3** Remove the toner supply.

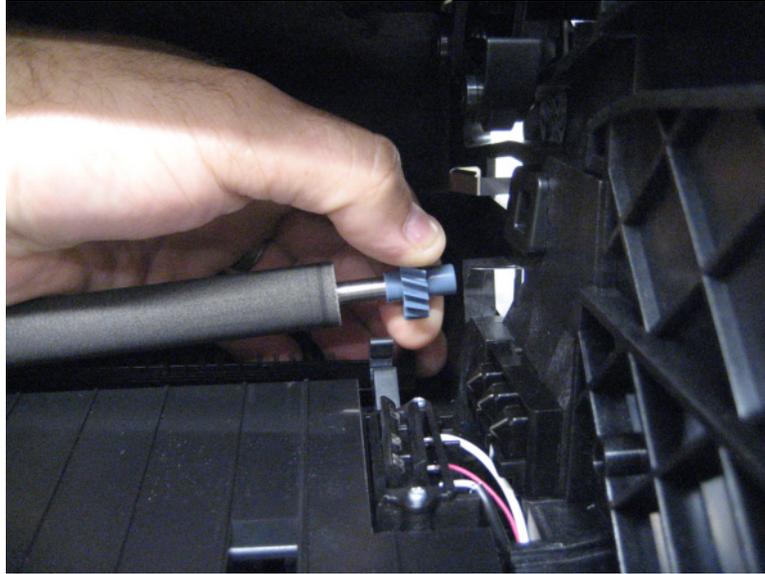


**4** Remove the imaging unit.



**5** Using the drive gear, gently pull the right side of the transfer roller to slightly detach it from the machine.

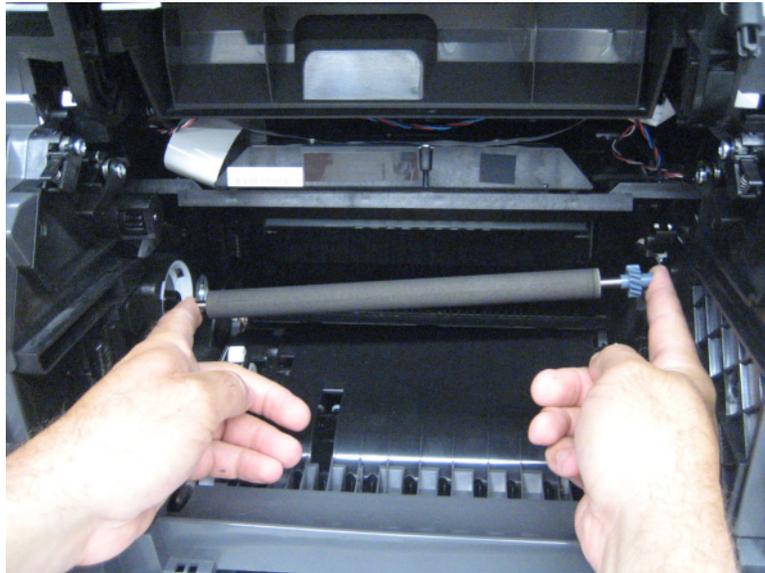
- 6 Gently move the transfer roller to the right to disengage it from the left transfer roller arm.



**Note:** When removing the transfer roller, avoid all contact with the foam surface, or print quality issues might occur.

**Installation note:** When replacing the transfer roller, do not touch the foam surface.

- 7 Remove the transfer roller.



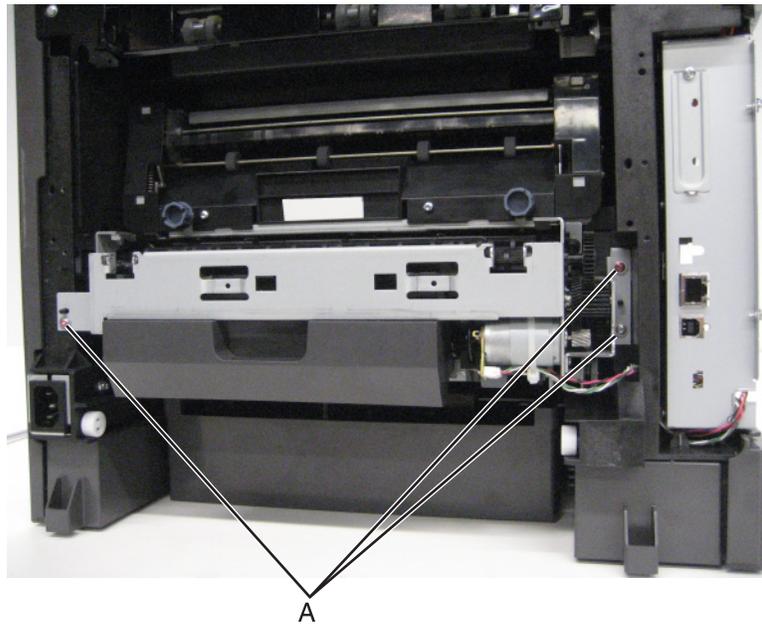
## Base printer - rear removals

- **“Duplex motor removal” on page 320**
- **“Fuser removal” on page 322**
- **“Fuser access door removal” on page 324**
- **“Left frame pivot removal” on page 325**

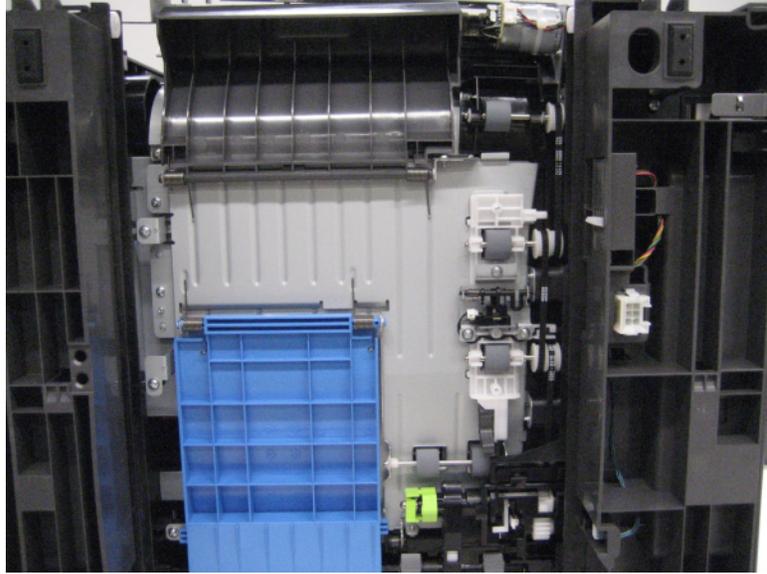
- **“Output bin sensor cover removal” on page 326**
- **“Right frame pivot removal” on page 327**
- **“Sensor (rear door interlock) removal” on page 328**

## Duplex motor removal

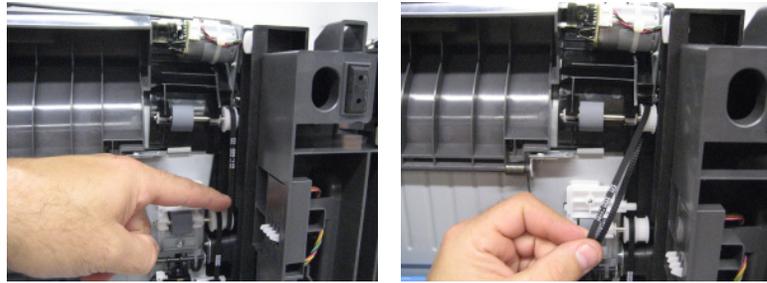
- 1 Remove the paper tray from the machine.
- 2 Remove the rear door. See **“Rear door removal” on page 285.**
- 3 Remove the rear lower cover. See **“Rear lower cover removal” on page 280.**
- 4 Remove the fuser access door. See **“Fuser access door removal” on page 324.**
- 5 Remove the three screws (A) securing the duplex motor to the machine.



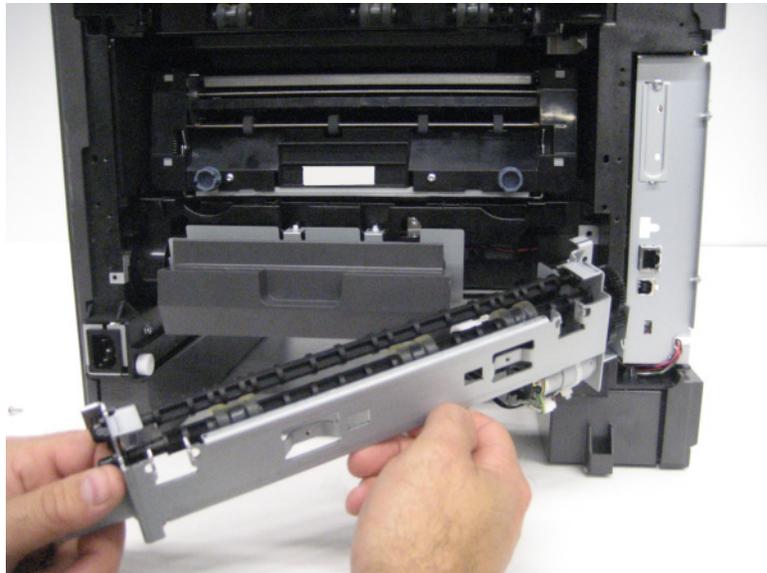
6 Position the printer so that you can access the bottom of the machine, as shown in the following image.



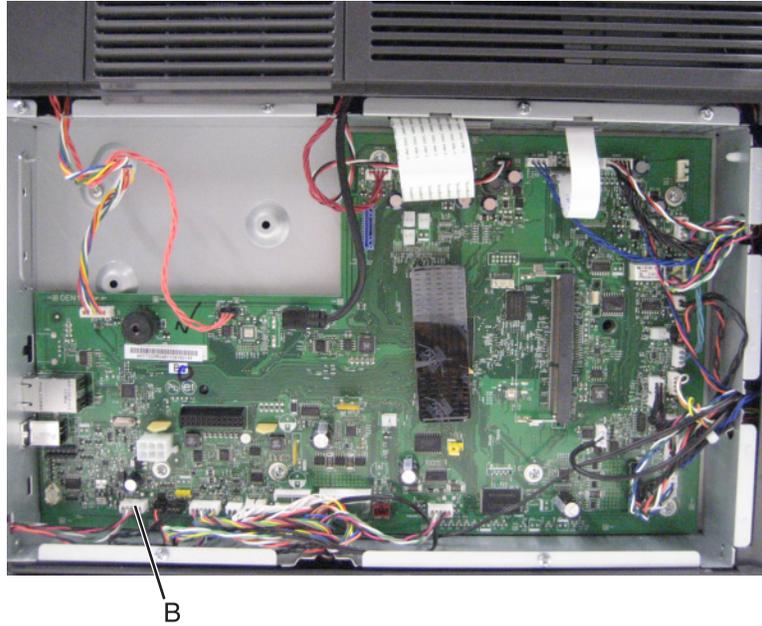
7 Detach the drive belt from the pulley.



8 Return the printer to the normal position, and remove the duplex motor.



9 Disconnect the cable (B) from the control board.



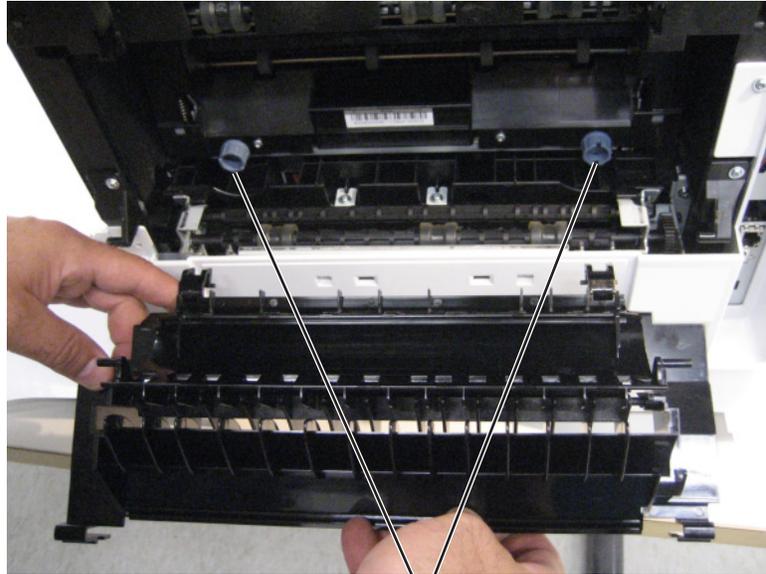
**Installation note:** When replacing the duplex motor, make sure the drive belt connected to the duplex is properly reattached.

## Fuser removal

 **CAUTION—HOT SURFACE:** The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

- 1 Remove the rear door. See **“Rear door removal” on page 285.**
- 2 Open and lower the fuser access door.

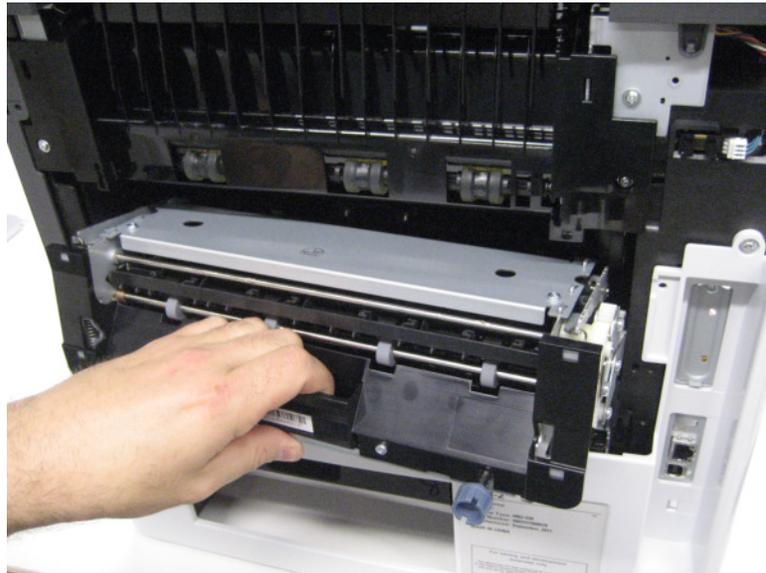
**3** Loosen the two fuser thumbscrews (A).



A

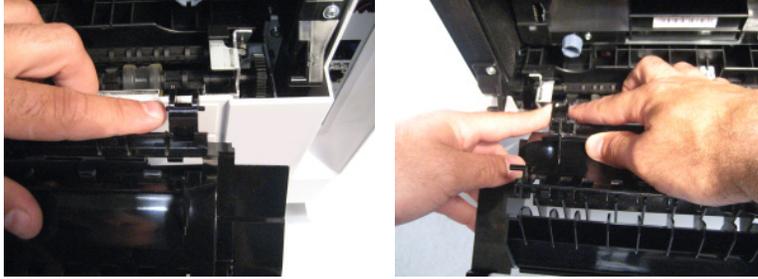
**4** If the printer is equipped with a hot roll fuser, remove the fuser wiper cover.

**5** Gently pull the fuser, and remove it from the machine.

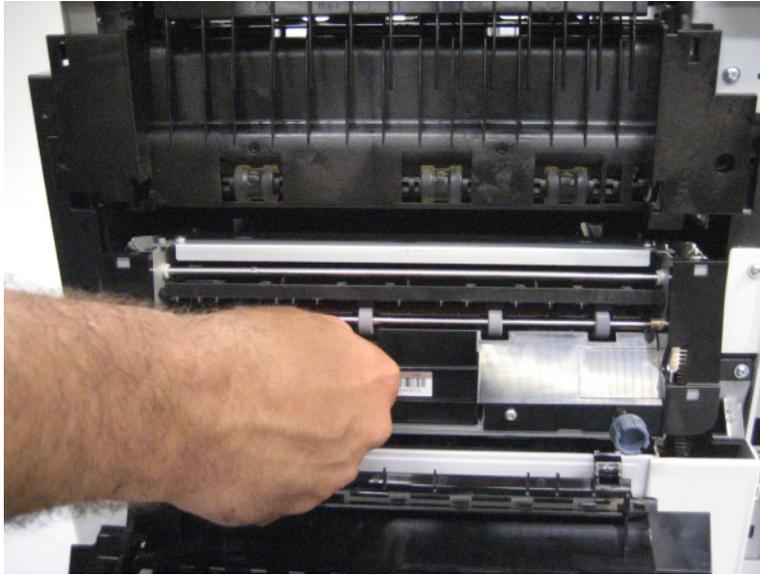


## Fuser access door removal

- 1 Remove the rear door. See **“Rear door removal”** on page 285.
- 2 Gently flex the fuser access door hinges.

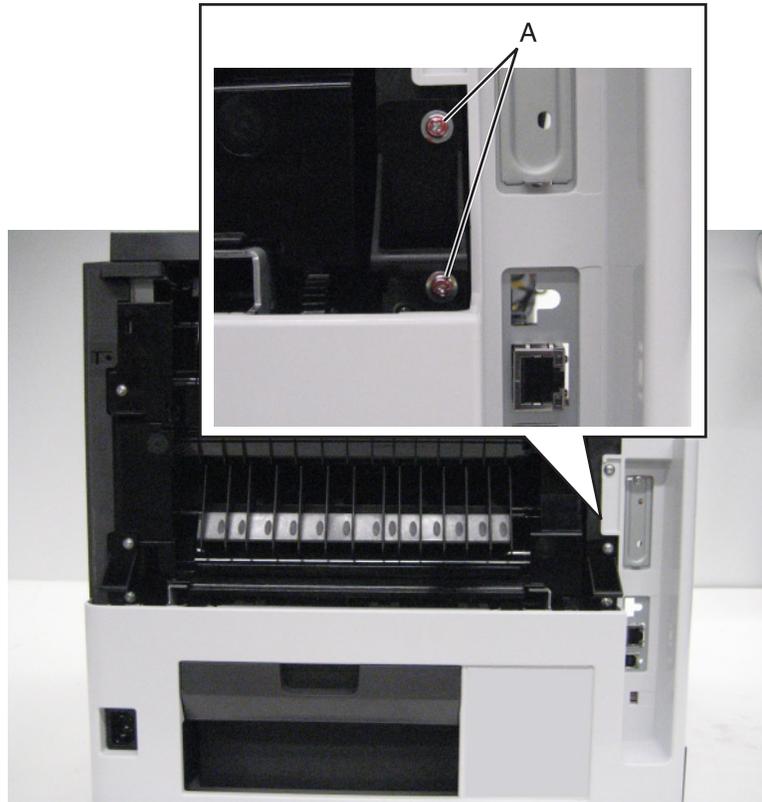


- 3 Pull the fuser access door away from the machine to remove it.



## Left frame pivot removal

- 1 Remove the rear door. See **“Rear door removal”** on page 285.
- 2 Remove the two screws (A) securing the left frame pivot to the machine.

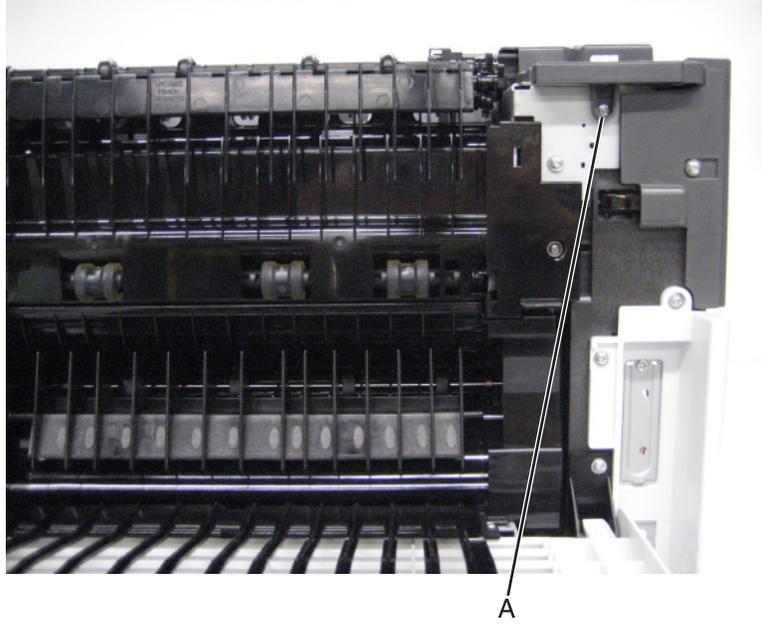


- 3 Remove the left frame pivot.

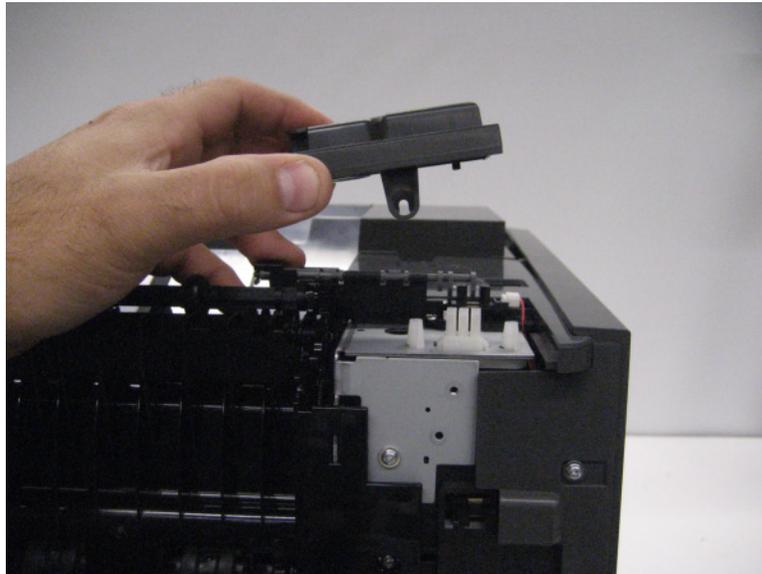


## Output bin sensor cover removal

- 1 Open the rear door.
- 2 Remove the screw (A).

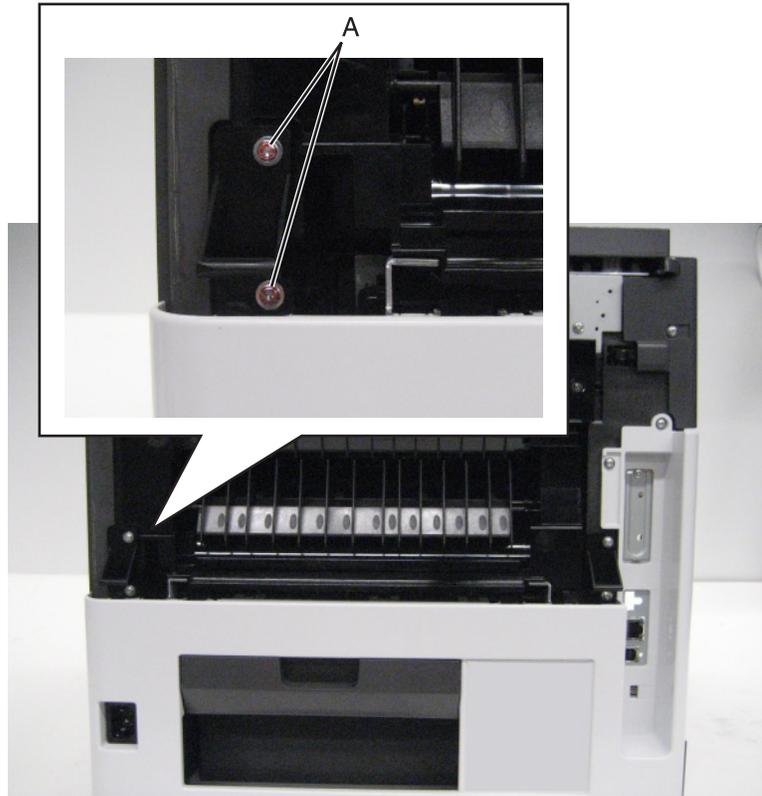


- 3 Remove the output bin sensor cover.

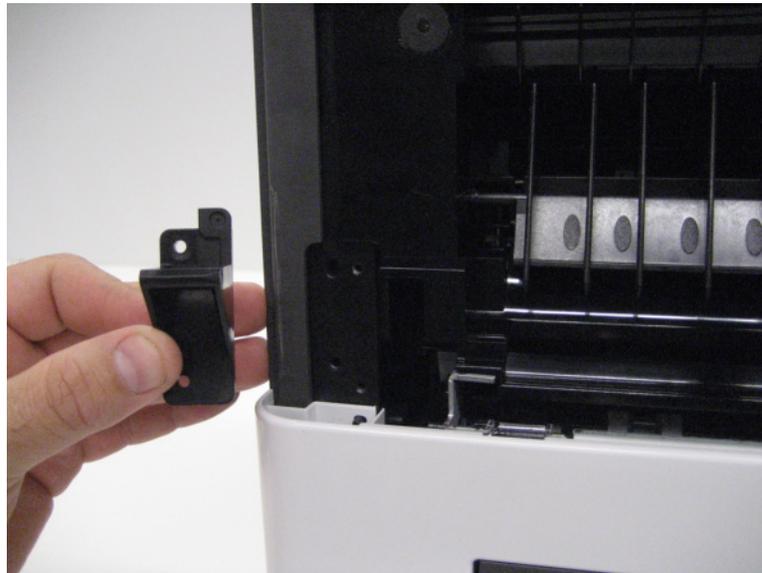


## Right frame pivot removal

- 1 Remove the rear door. See **“Rear door removal”** on page 285.
- 2 Remove the two screws (A) securing the right frame pivot to the machine.

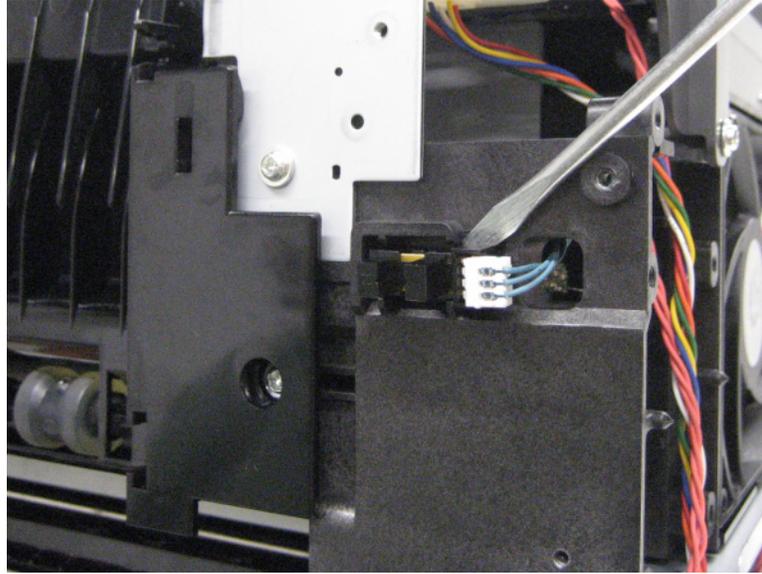


- 3 Remove the right frame pivot.



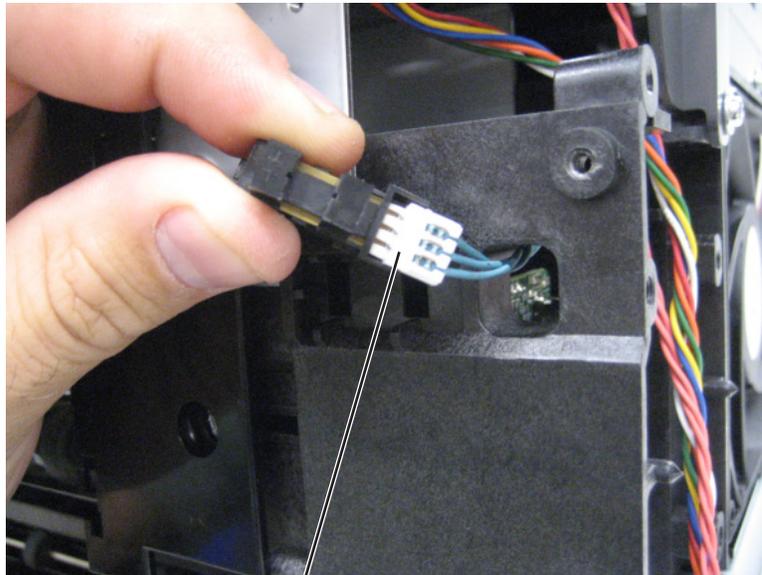
## Sensor (rear door interlock) removal

- 1 Open the printer rear door.
- 2 Remove the left cover. See **“Left cover removal” on page 277.**
- 3 Using a flat-tip screwdriver, pry the sensor (rear door interlock) away from the machine.



**Note:** It might take a small amount of force to remove the sensor (rear door interlock).

- 4 Disconnect the cable (A) from the sensor (rear door interlock).



A

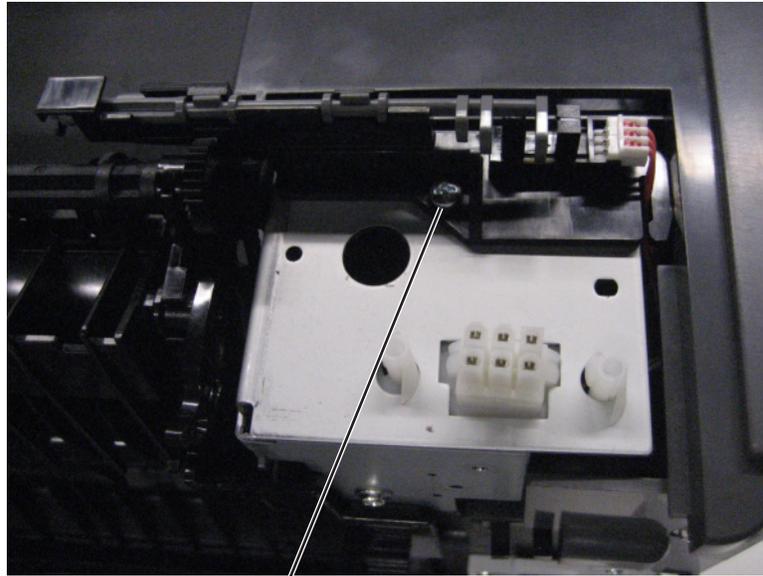
## Base printer - top removals

- **“Sensor (standard bin full) removal” on page 329**

- “Standard bin cover removal” on page 330
- “Upper redrive removal” on page 331

## Sensor (standard bin full) removal

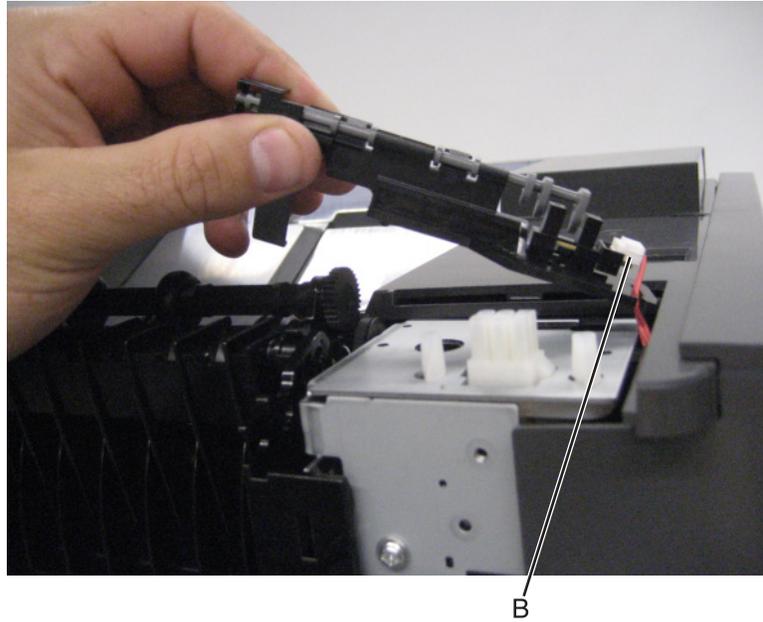
- 1 Open the control panel door.
- 2 Open the rear door.
- 3 Remove the sensor cover.
- 4 Remove the screw (A) securing the sensor (standard bin full) to the machine.



A

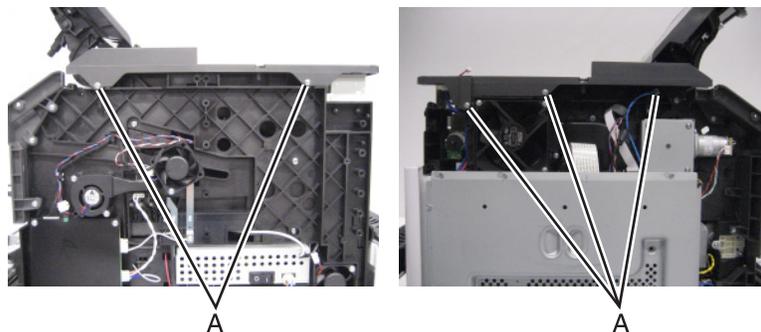
- 5 Remove the sensor (standard bin full).

- 6 Disconnect the cable (B).

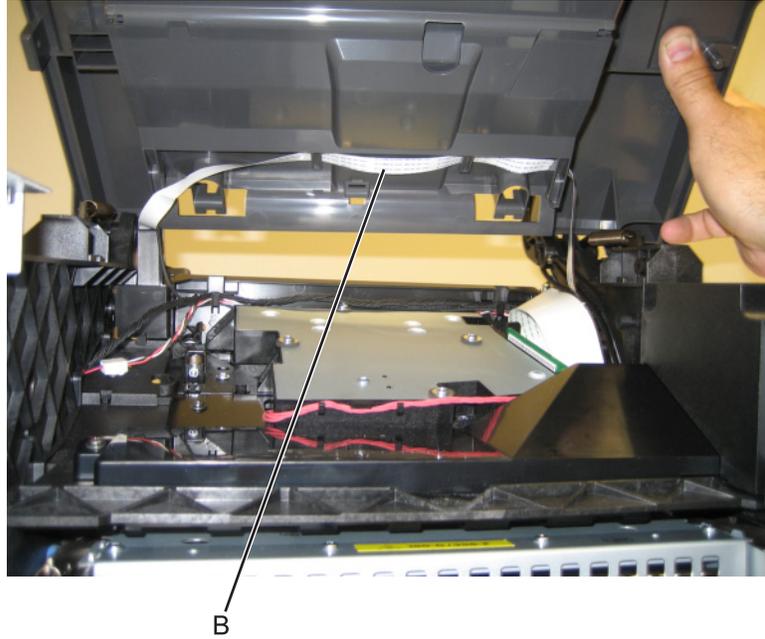


### Standard bin cover removal

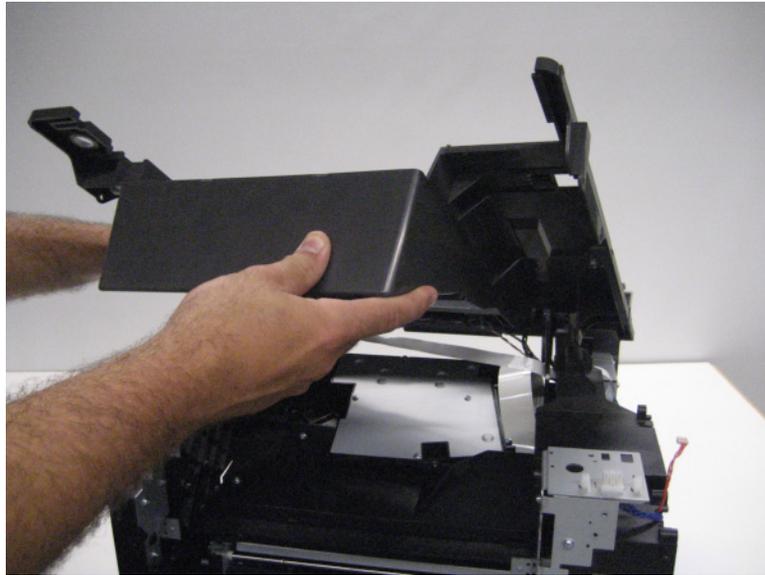
- 1 Remove the left cover. See **“Left cover removal” on page 277.**
- 2 Remove the right cover. See **“Right cover removal” on page 283.**
- 3 Open the rear door.
- 4 Remove the top cover. See **“Top cover removal” on page 282.**
- 5 Remove the upper redrive. See **“Upper redrive removal” on page 331.**
- 6 Remove the output bin sensor cover. See **“Output bin sensor cover removal” on page 326.**
- 7 Remove the sensor (standard bin full) with actuator. See **“Sensor (standard bin full) removal” on page 329.**
- 8 Remove the four screws (A).



9 Carefully detach the control panel ribbon cable from the standard bin cover.



10 Remove the standard bin cover.



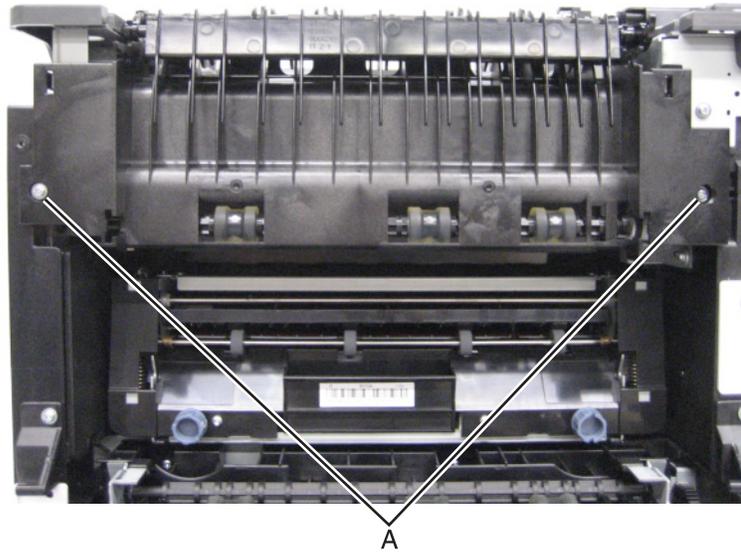
## Upper redrive removal

- 1 Open the rear door.
- 2 For MX81x, remove the top cover. See **"Top cover removal" on page 282.**

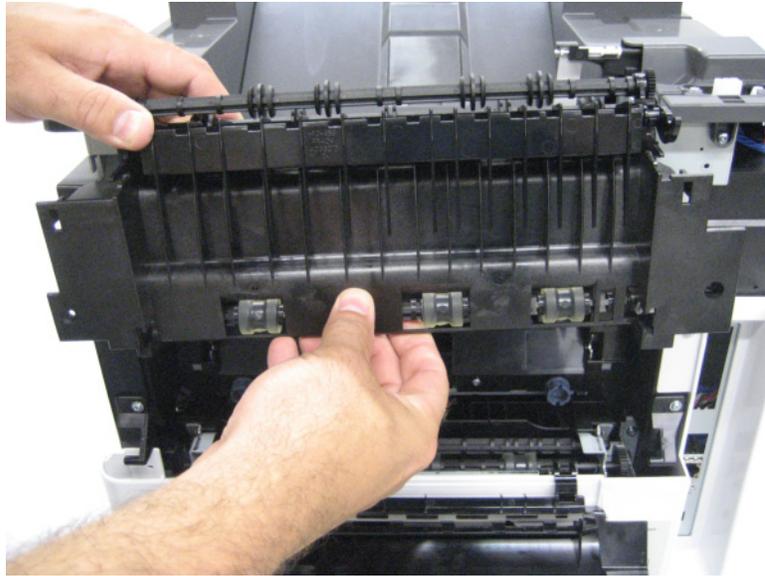
3 Open the fuser access door.



4 Remove the two screws (A).



- 5 Move the upper redrive down and away from the machine to remove it.



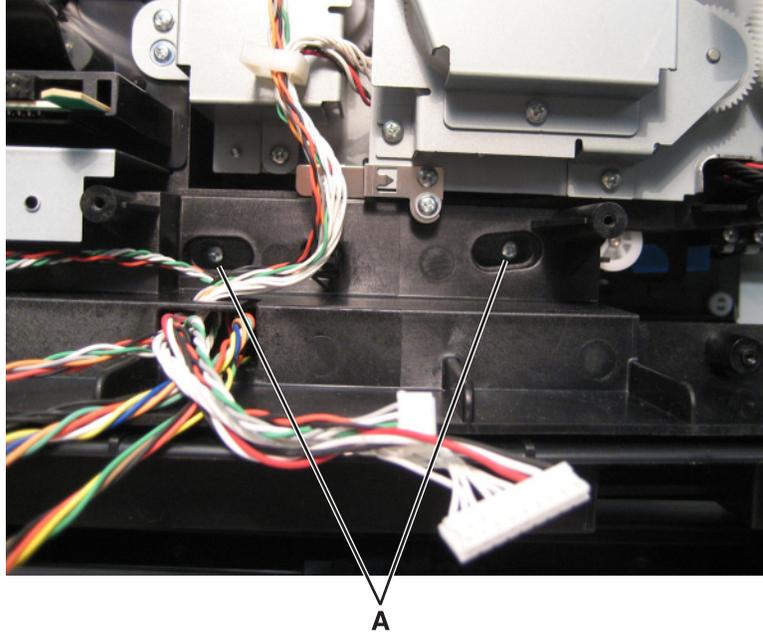
## Base printer - bottom removals

- [“Duplex removal” on page 333](#)
- [“Duplex front flap removal” on page 335](#)
- [“Duplex rear flap removal” on page 336](#)
- [“Left frame extension removal” on page 337](#)
- [“Media tray removal” on page 339](#)
- [“Media size actuator removal” on page 340](#)
- [“Pick roller assembly removal” on page 342](#)
- [“Right frame extension” on page 343](#)
- [“Sensor \(duplex path\) removal” on page 344](#)
- [“Sensor \(tray 1 media out\) removal” on page 345](#)
- [“Separator roller assembly removal” on page 347](#)

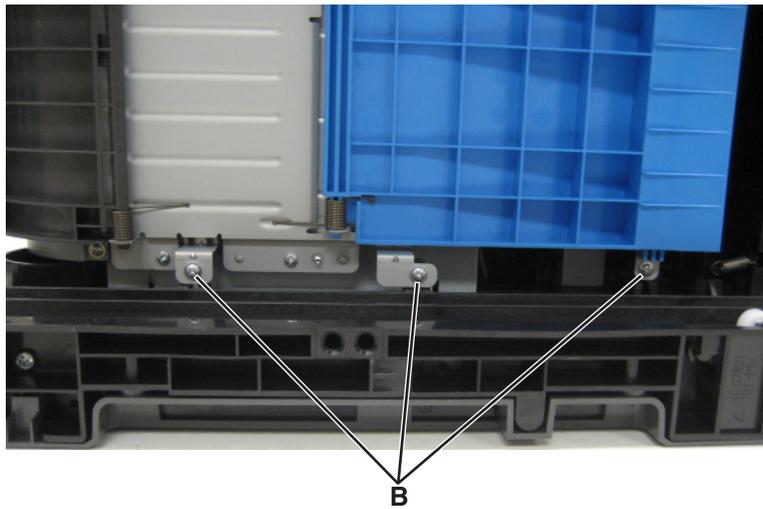
## Duplex removal

- 1 Remove the top cover. See [“Top cover removal” on page 282](#).
- 2 Remove the left cover. See [“Left cover removal” on page 277](#).
- 3 Remove the rear door. See [“Rear door removal” on page 285](#).
- 4 Remove the rear lower cover. See [“Rear lower cover removal” on page 280](#).
- 5 Remove the PCBA housing. See [“PCBA housing removal” on page 357](#).
- 6 Remove the fuser access door. See [“Fuser access door removal” on page 324](#).
- 7 Remove the duplex motor. See [“Duplex motor removal” on page 320](#).

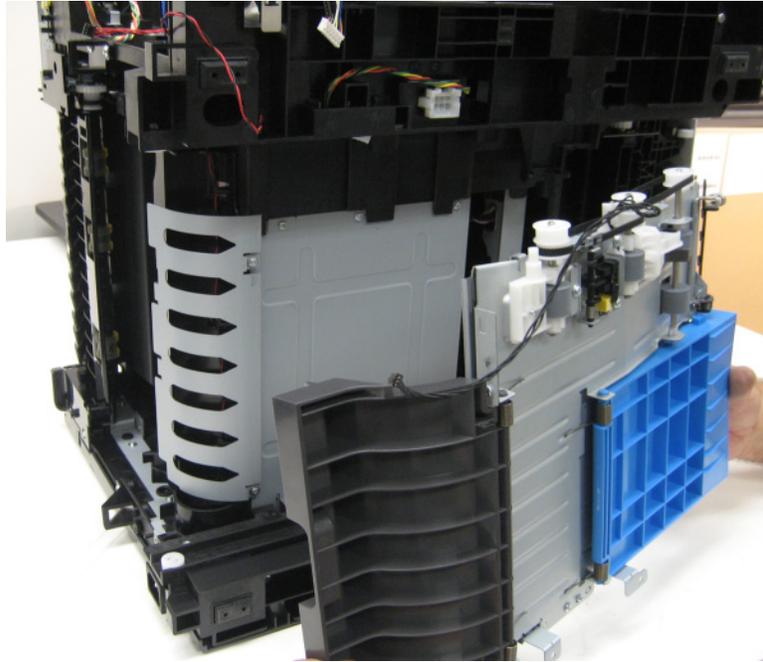
- 8 Remove the media tray. See **“Media tray removal”** on page 339.
- 9 Remove the pick roller assembly. See **“Pick roller assembly removal”** on page 342.
- 10 Remove the media feeder. See **“Media feeder removal”** on page 356.
- 11 Remove the two screws (A) securing the duplex to the machine.



- 12 Gently lay the printer on its side.
- 13 Remove the three screws (B) securing the duplex to the machine.



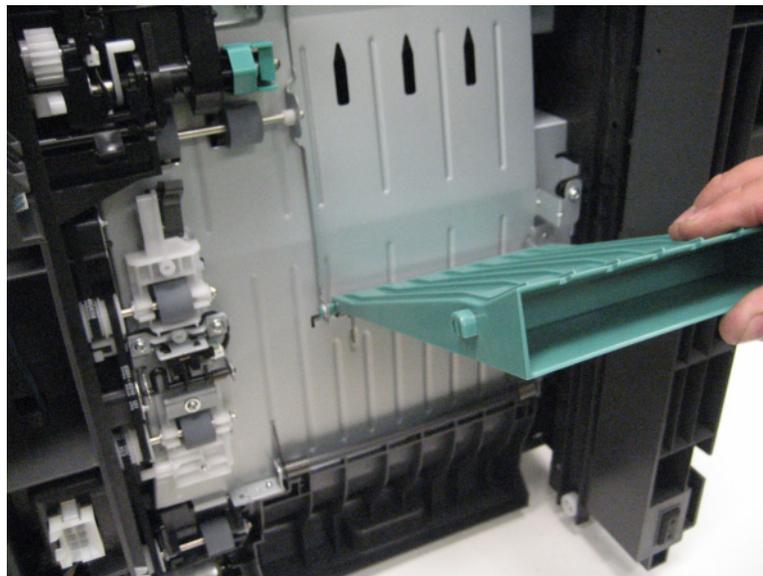
14 Gently remove the duplex from the machine.



## Duplex front flap removal

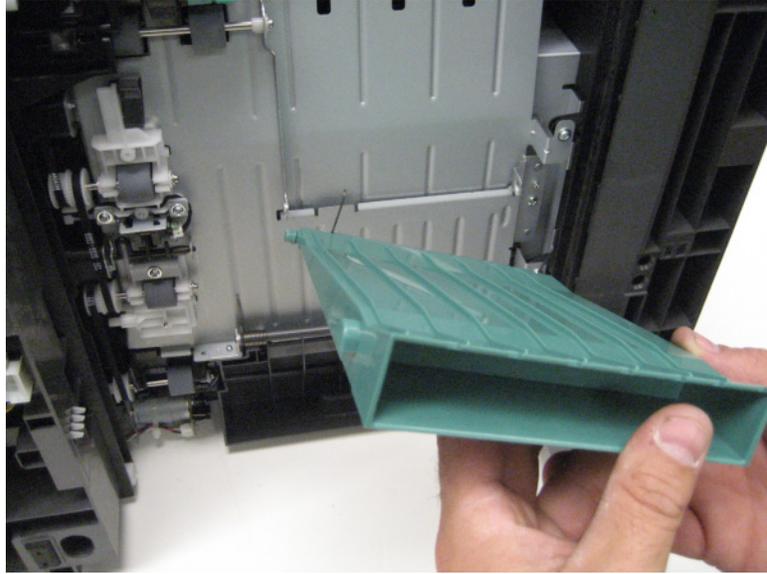
**Warning—Potential Damage:** When removing the duplex front flap, ensure that you retain the attached spring.

- 1 Disconnect the machine from any input options.
- 2 Carefully place the machine on its rear side so that the bottom of the machine is exposed, as shown in the following image.



**CAUTION—POTENTIAL INJURY:** Remove all data cables and the power cord from the back of the printer before you place it on its rear side. Otherwise, the weight of the printer will be on these cables.

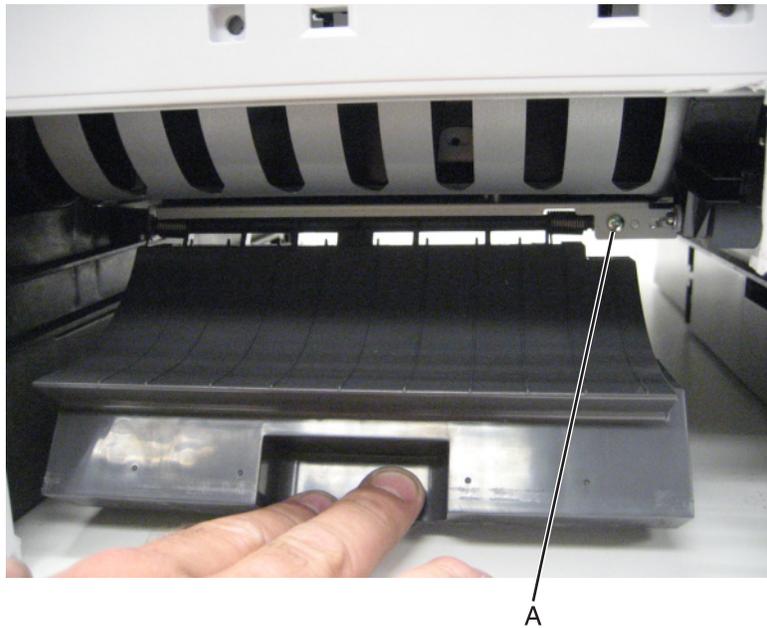
- 3 Lower the duplex front flap to the angle shown in the following image, and gently detach it from the machine.



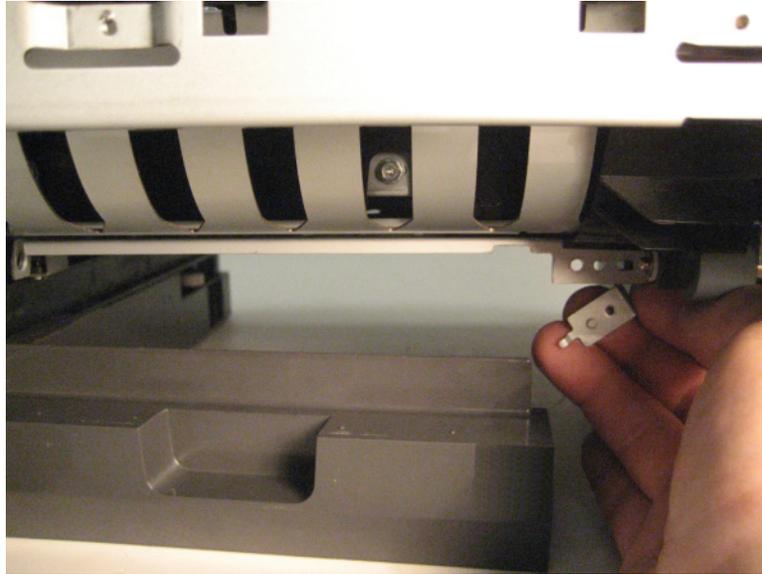
## Duplex rear flap removal

**Warning—Potential Damage:** When removing the duplex rear flap, ensure that you retain the attached springs.

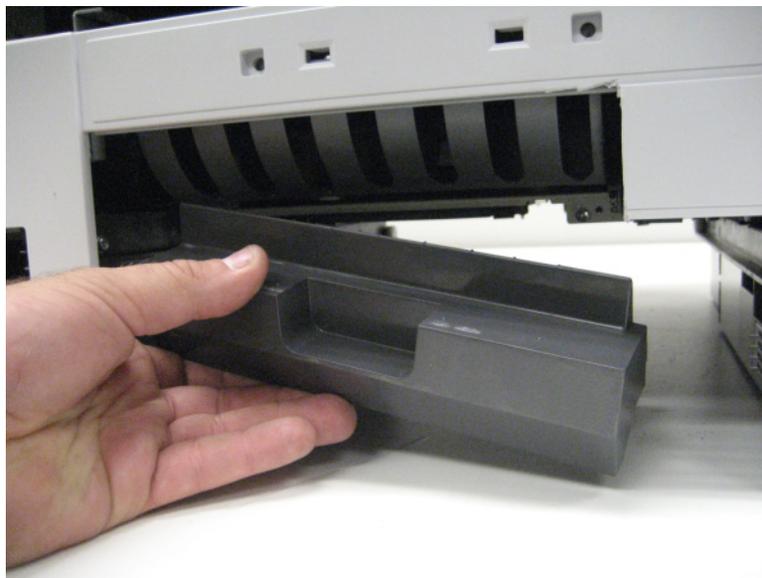
- 1 Press down on the duplex rear flap, and remove the screw (A) securing the bracket to the machine.



- 2 Remove the bracket from the machine.



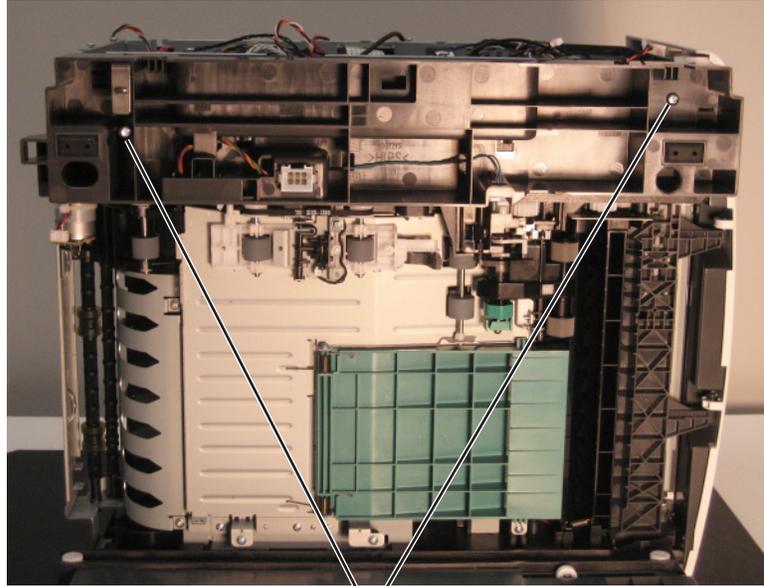
- 3 Gently remove the duplex rear flap.



## Left frame extension removal

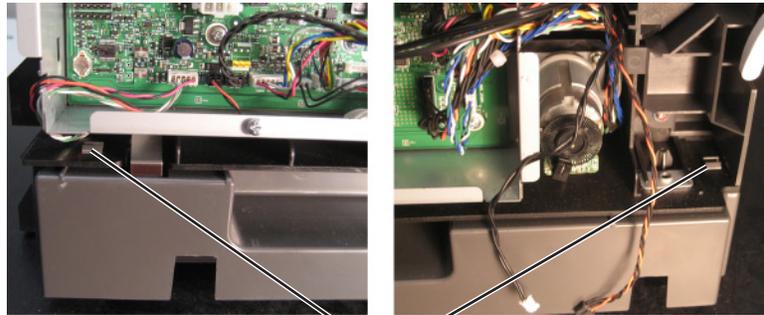
- 1 Remove the rear door. See [“Rear door removal” on page 285.](#)
- 2 Remove the controller board access cover. See [“Controller board access cover removal” on page 350.](#)
- 3 Remove the rear lower cover. See [“Rear lower cover removal” on page 280.](#)
- 4 Remove the top cover. See [“Top cover removal” on page 282.](#)
- 5 Remove the left cover. See [“Left cover removal” on page 277.](#)
- 6 Gently place the printer on its right side.

**7** Remove the two screws (A) securing the left frame extension to the machine.



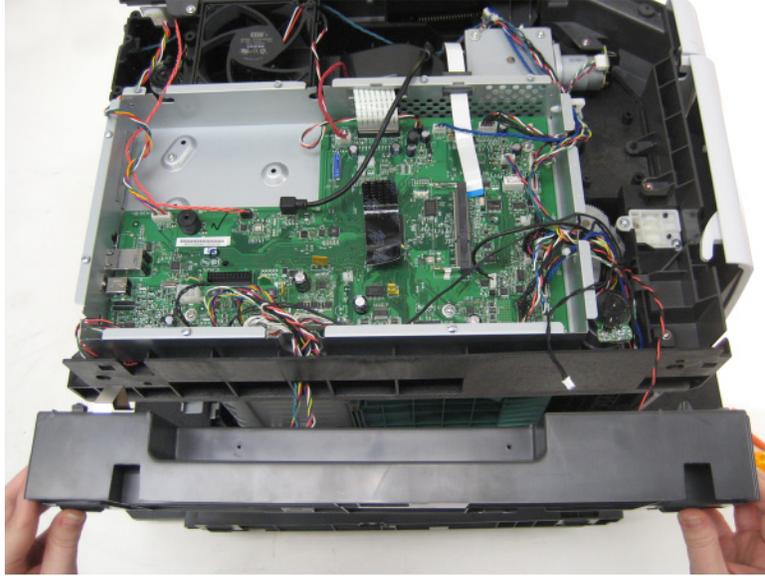
A

**8** Release the two hooks (B).



B

9 Remove the left frame extension.



10 Disconnect the three cables from the controller board.

## Media tray removal

1 Pull the media tray out from the machine until you meet resistance.

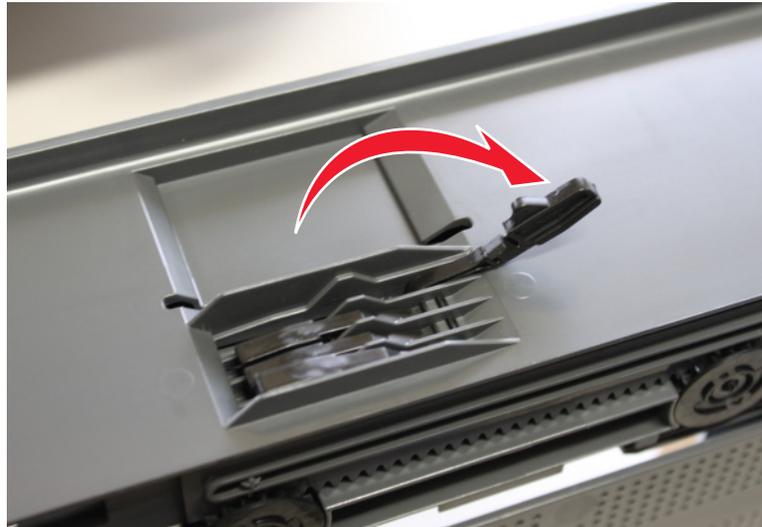


2 Lift the media tray, as shown in the following image, and remove it from the machine.

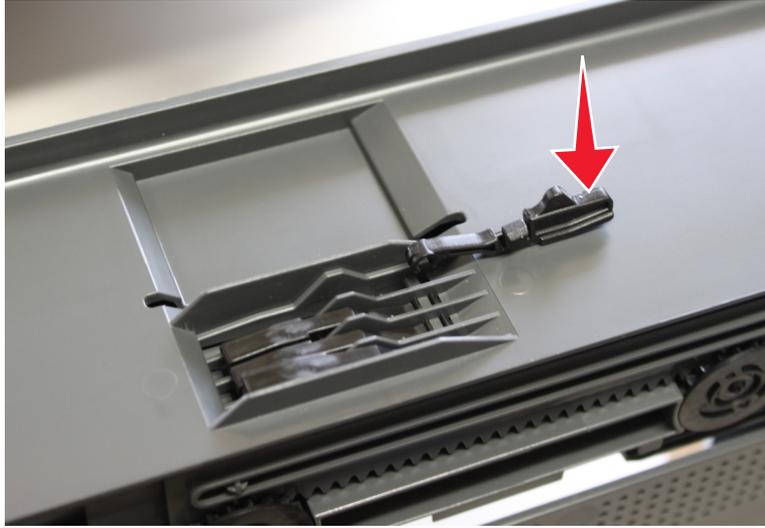


### Media size actuator removal

- 1 Remove the media tray. See **“Media tray removal” on page 339.**
- 2 Pry the free end, and then swing the actuator.

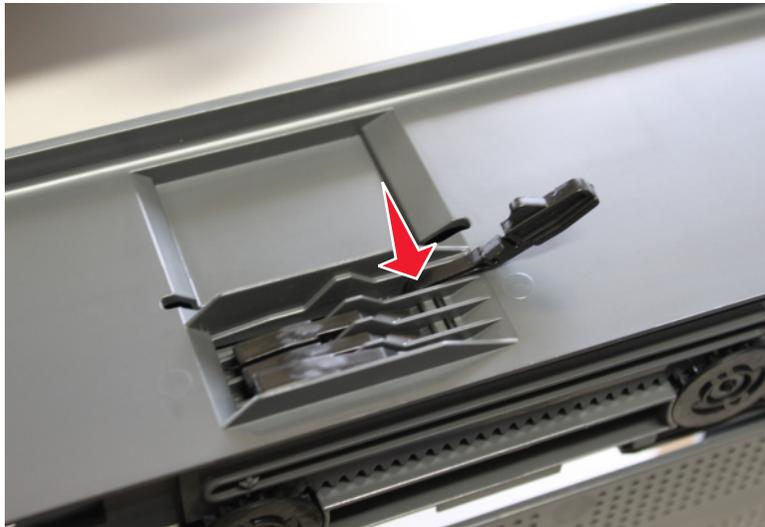


**3** Press the free end to remove the actuator.

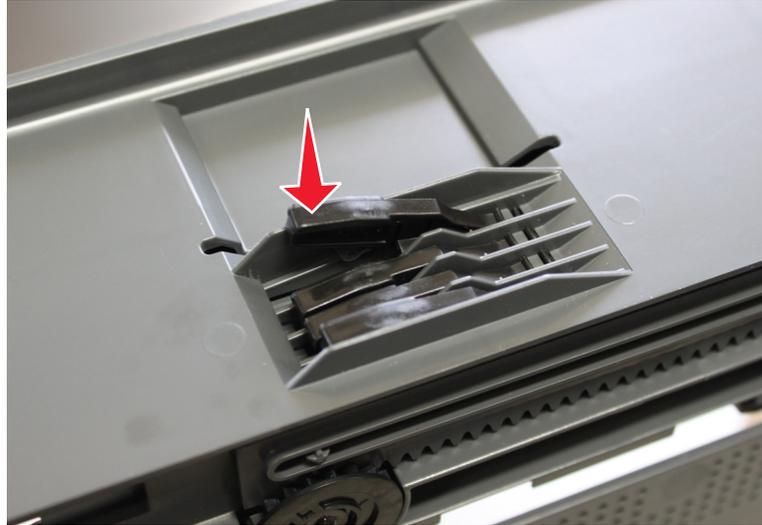


**Installation notes:**

**a** Press the actuator into the square bar to attach it.

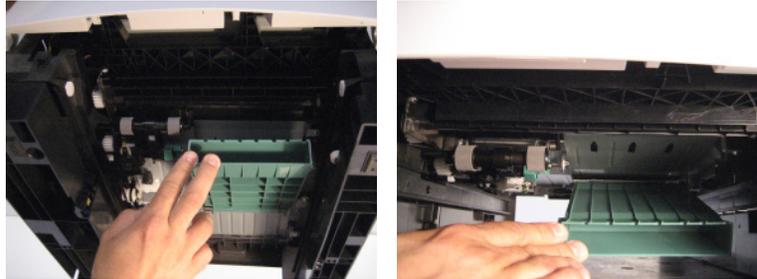


- b** Swing the actuator, and then press the free end to lock it in place.



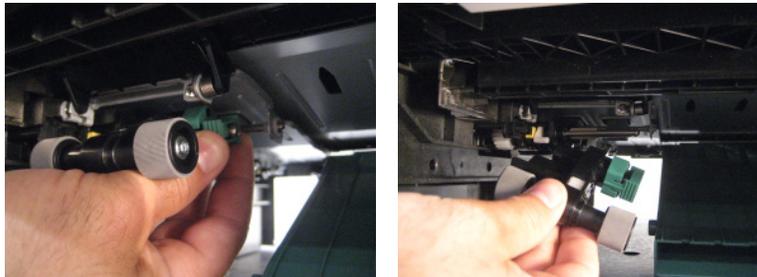
## Pick roller assembly removal

- 1** Remove the media tray. See **“Media tray removal”** on page 339.
- 2** Lower the front duplex flap to gain access to the pick roller assembly.



**Note:** When removing the pick roller assembly, avoid all contact with the roller surfaces, or paper jams might occur.

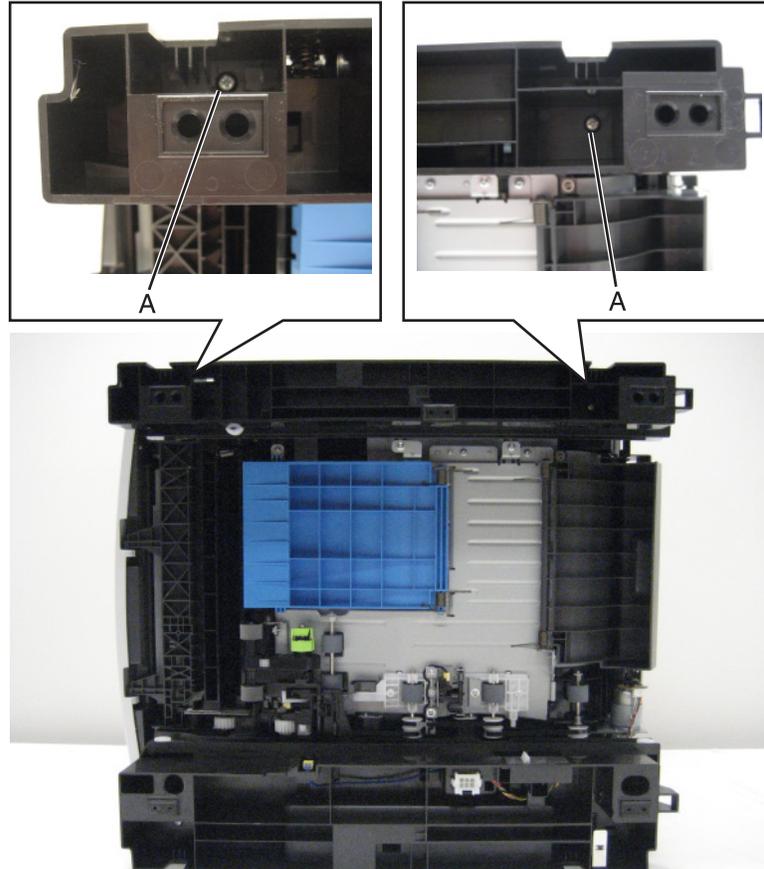
- 3** Squeeze both sides of the pick roller latch, and move the pick roller assembly to the right to remove it.



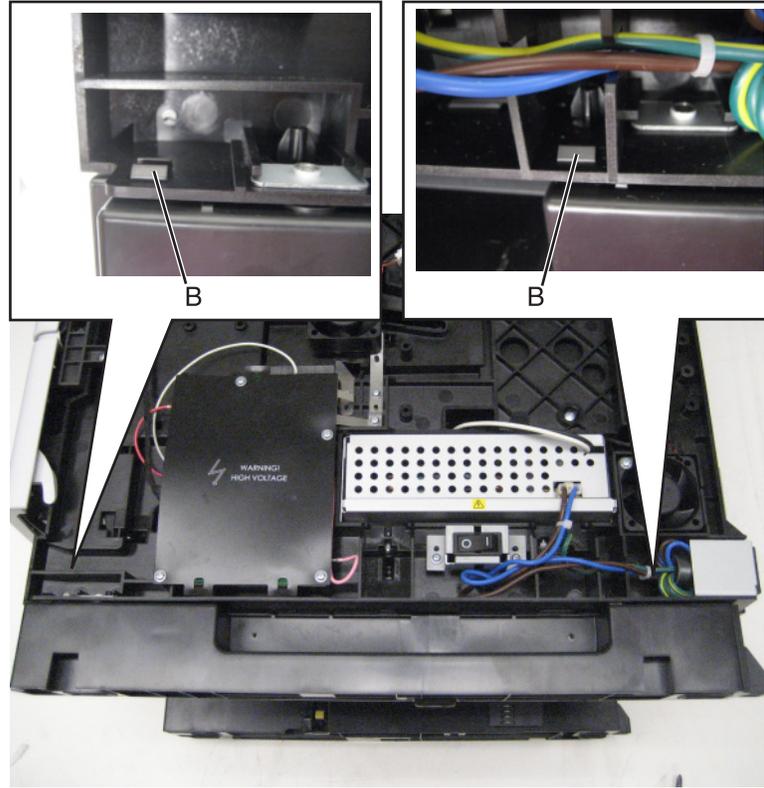
**Note:** When replacing the pick rollers, do not touch the roller surfaces, or paper jams might occur.

## Right frame extension

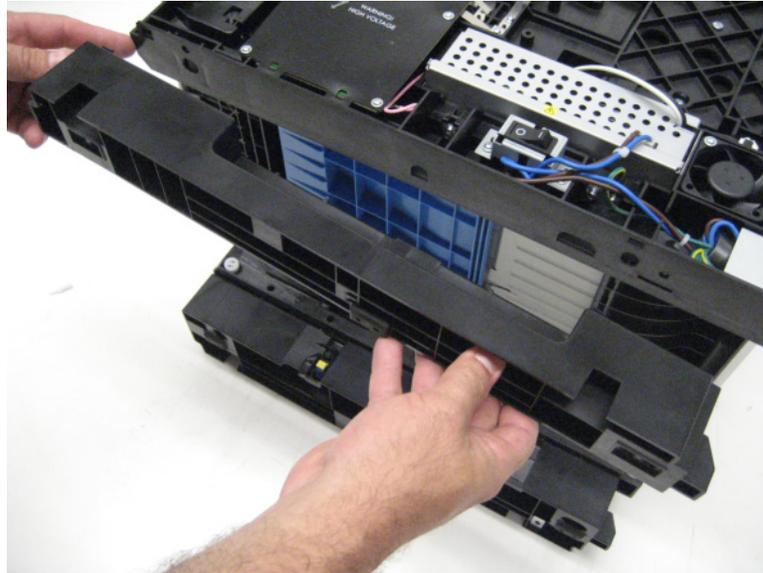
- 1 Remove the base machine from any input options.
- 2 Remove the media tray.
- 3 Carefully lay the machine safely on its left side.
- 4 Remove the two screws (A) securing the right frame extension to the machine.



5 Release the two hooks (B) securing the right frame extension to the machine.



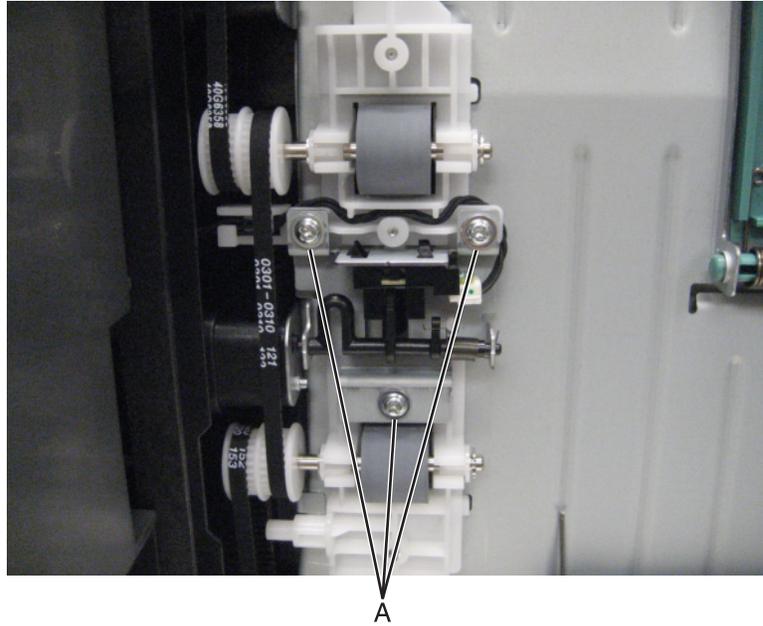
6 Remove the right frame extension.



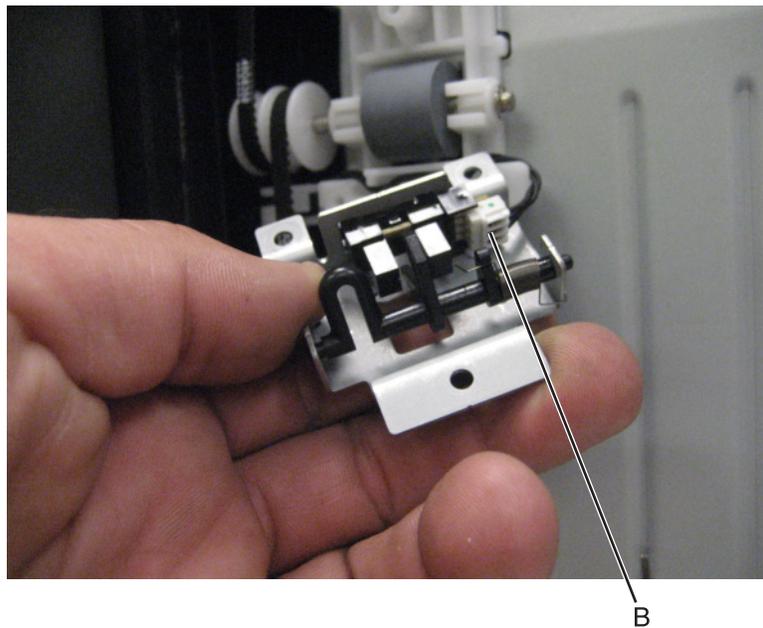
## Sensor (duplex path) removal

- 1 Disconnect the machine from any input options.
- 2 Carefully place the machine on its rear side so that the bottom of the machine is exposed.

- 3 Remove the three screws (A) securing the sensor (duplex path) to the machine.



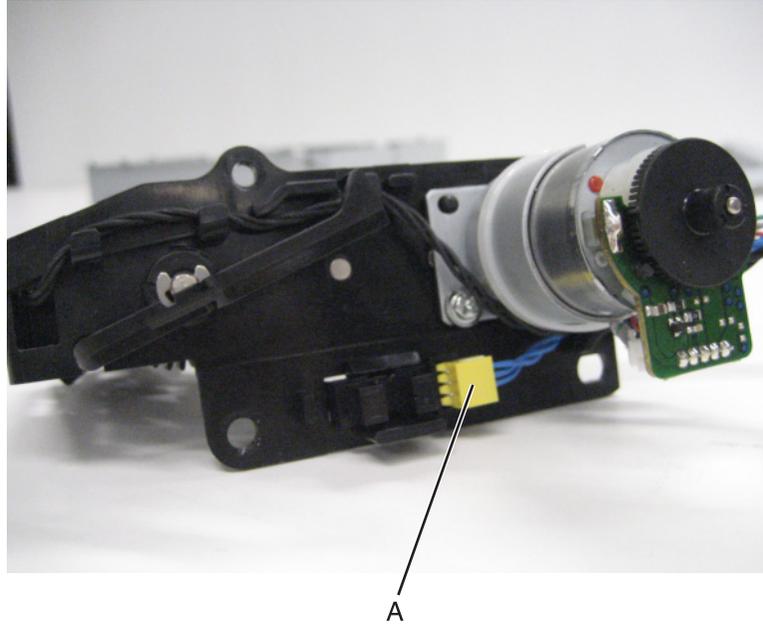
- 4 Remove the sensor (duplex path).  
5 Disconnect the cable (B) from the sensor (duplex path).



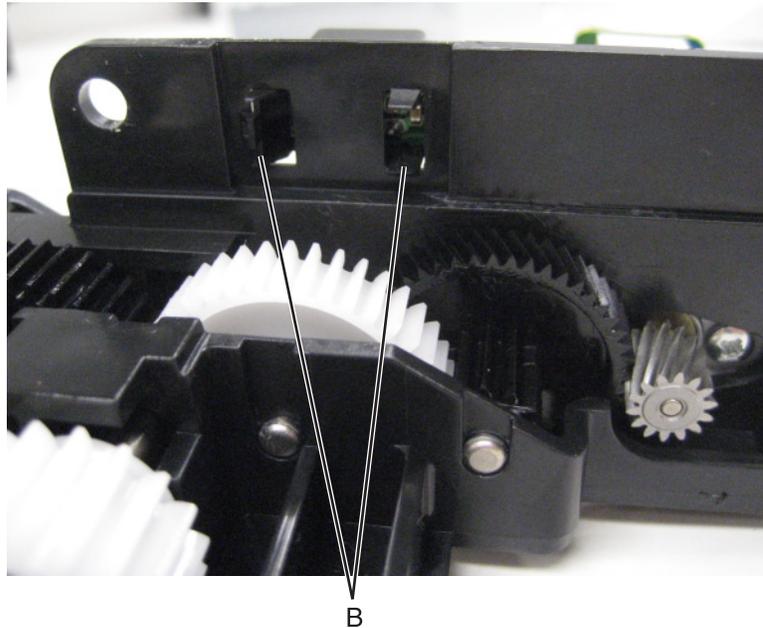
### Sensor (tray 1 media out) removal

- 1 Remove the right cover. **“Right cover removal” on page 283.**
- 2 Remove the rear lower door. See **“Rear lower cover removal” on page 280.**
- 3 Remove the LVPS. See **“LVPS removal” on page 366.**

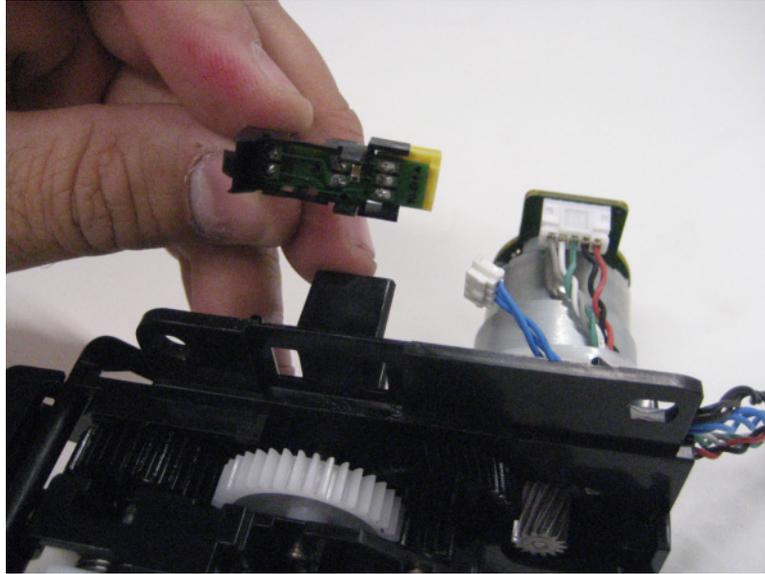
- 4 Remove the left cover. See **“Left cover removal”** on page 277.
- 5 Remove the PCBA housing. See **“PCBA housing removal”** on page 357.
- 6 Remove the media tray. See **“Media tray removal”** on page 339.
- 7 Remove the pick roller assembly. See **“Pick roller assembly removal”** on page 342.
- 8 Remove the media feeder. See **“Media feeder removal”** on page 356.
- 9 Disconnect the cable (A) from the sensor (tray 1 media out).



- 10 Release the hooks (B) securing the sensor (tray 1 media out) to the media feeder.

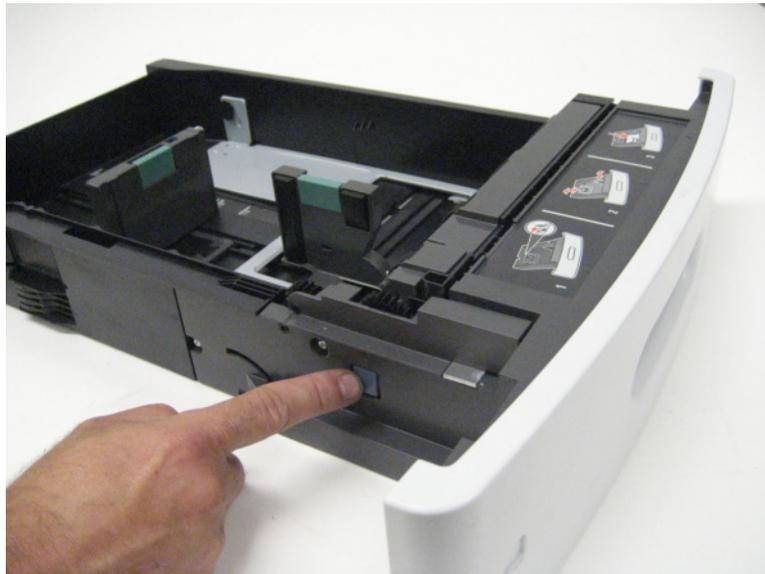


**11** Remove the sensor (tray 1 media out).



## Separator roller assembly removal

- 1 Remove the media tray from the machine.
- 2 Press the button to release the separator roller assembly from the media tray.



3 Remove the separator roller assembly.



## Base printer - left removals

- **“Controller board removal” on page 349**
- **“Controller board access cover removal” on page 350**
- **“Controller board access shield removal” on page 351**
- **“Fuser drive motor removal” on page 351**
- **“Main cooling fan removal” on page 353**
- **“Main drive motor removal” on page 354**
- **“Media feeder removal” on page 356**
- **“PCBA housing removal” on page 357**
- **“Sensor (control panel interlock) removal” on page 359**
- **“Sensor (pick roller position) removal” on page 360**
- **“Toner add motor removal” on page 361**

## Controller board removal

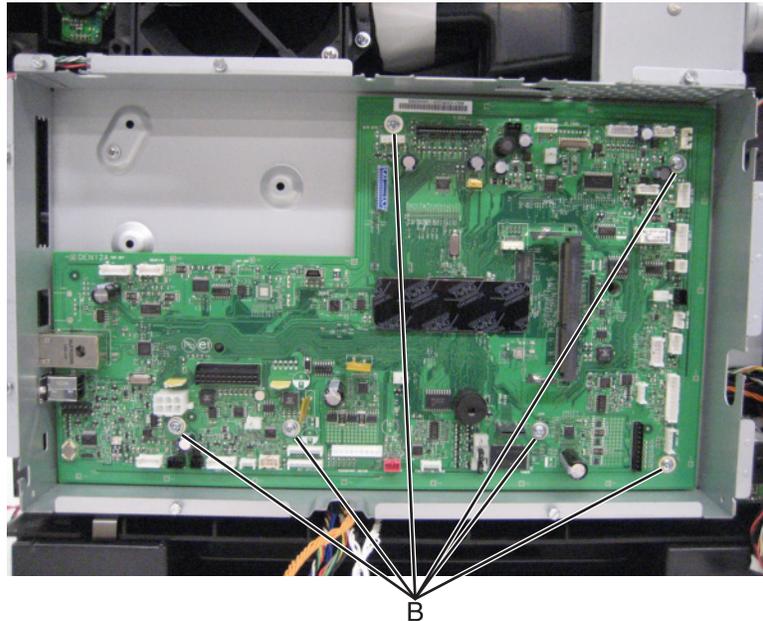
**Note:** If you are replacing the controller board, retain the flash card from the original controller board so that you can use it with the replacement controller board.

**Warning—Potential Damage:** When replacing the control panel, control panel board, or controller board, replace only one component at a time. Replace the required component and perform a POR before replacing a second component. If this procedure is not followed, the printer will be rendered inoperable. Never replace both the control panel and the controller board without a POR after installing each one or the printer will be rendered inoperable. Never install or remove these components as a method of troubleshooting while operating in normal user mode. See **“Controller board/control panel replacement” on page 256.**

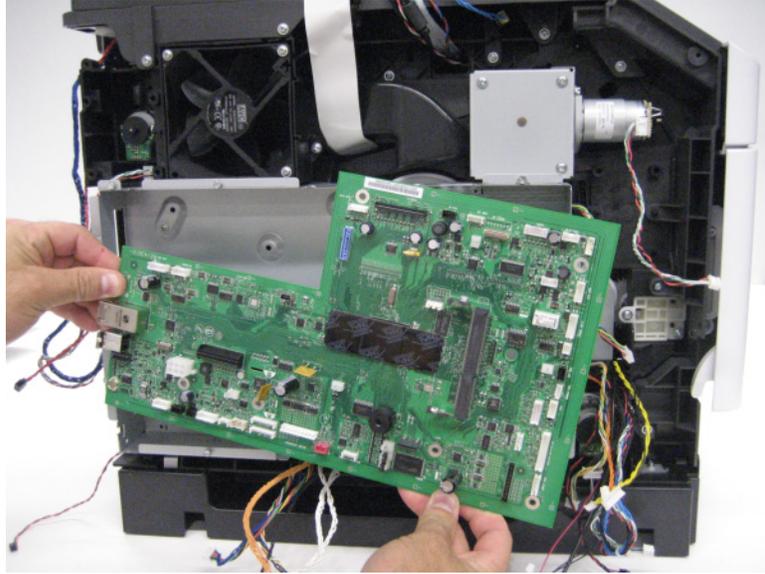
**Warning—Potential Damage:** When a component has been installed in a machine and has been powered up in normal user mode, it cannot be used in another machine; it must be returned to the manufacturer. The machine must be powered up in Diagnostic mode or the controller board, control panel boards, or control panel will become locked.

**CAUTION—POTENTIAL INJURY:** This product contains a lithium battery. There is a risk of explosion if the battery is replaced with an incorrect type. Discard used batteries according to the battery manufacturer’s instructions and local regulations.

- 1 Remove the right cover. See **“Right cover removal” on page 283.**
- 2 Remove the rear lower cover. See **“Rear lower cover removal” on page 280.**
- 3 Remove the LVPS. See **“LVPS removal” on page 366.**
- 4 Remove the left cover. See **“Left cover removal” on page 277.**
- 5 Remove the controller board access shield. See **“Controller board access shield removal” on page 351.**
- 6 Disconnect all cables from the controller board.
- 7 Remove the six screws (B) securing the controller board to the machine.



8 Remove the controller board.



**Installation note:** Make sure you retain the flash card from the original controller board so that you can use it with the replacement controller board.

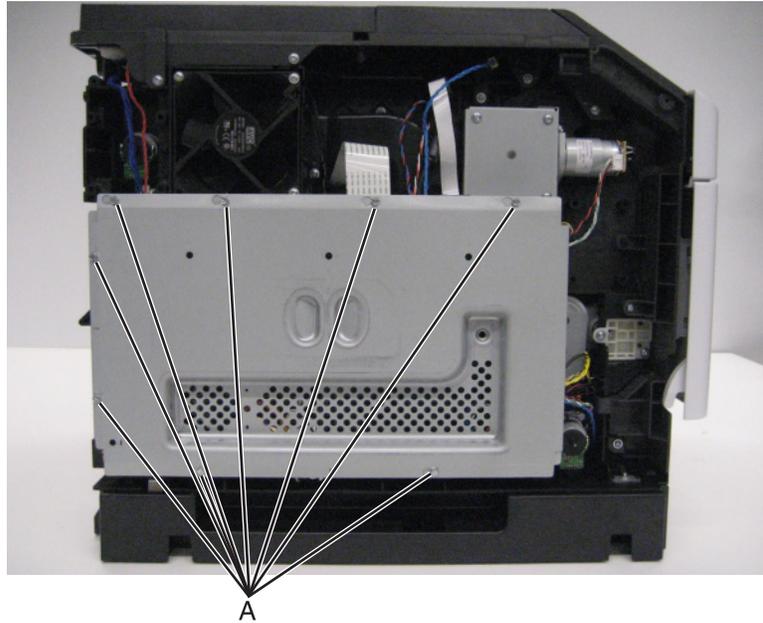
## Controller board access cover removal

Detach the controller board access cover from the machine.



## Controller board access shield removal

- 1 Remove the left cover. See **“Left cover removal”** on page 277.
- 2 Loosen the eight screws (A) securing the controller board access shield to the machine.



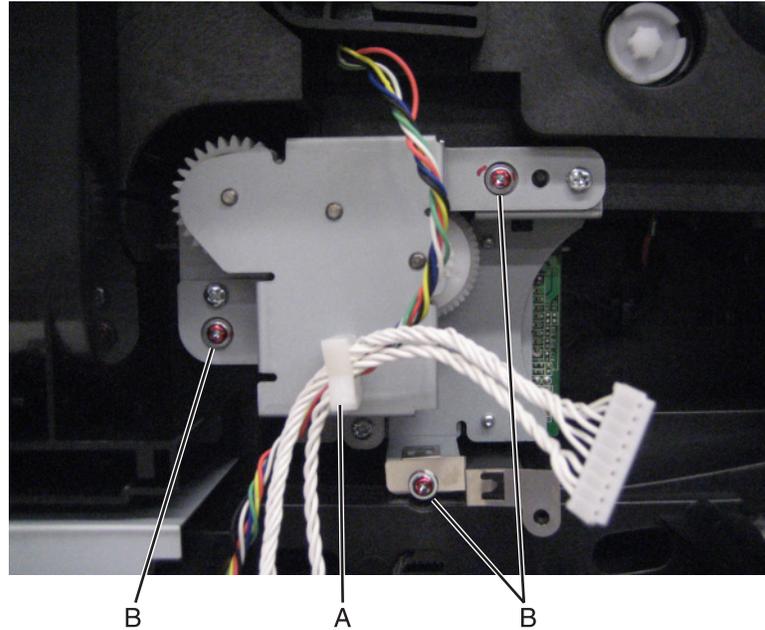
- 3 Move the controller board access shield toward the front of the machine to remove it.



## Fuser drive motor removal

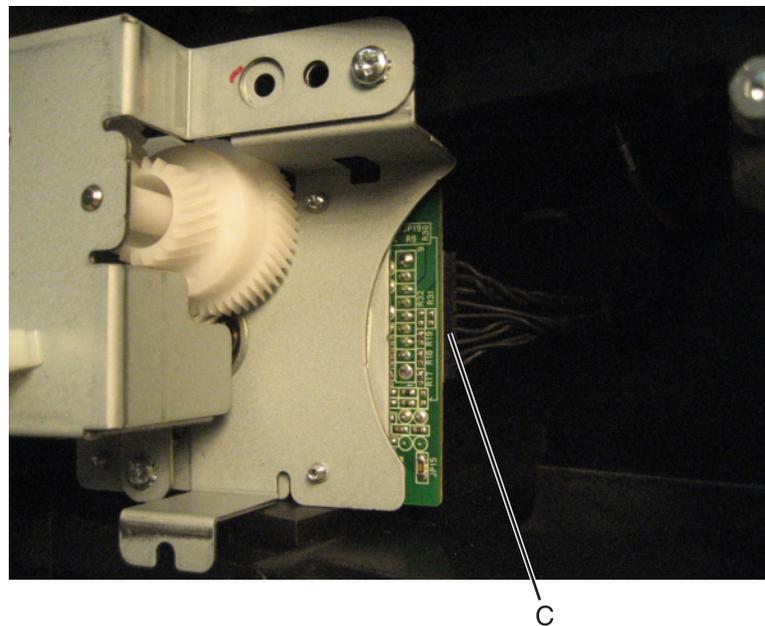
- 1 Remove the rear door. See **“Rear door removal”** on page 285.
- 2 Remove the fuser. See **“Fuser removal”** on page 322.
- 3 Remove the imaging unit from the machine.

- 4 Remove the LVPS. See **“LVPS removal”** on page 366.
- 5 Remove the left cover. See **“Left cover removal”** on page 277.
- 6 Remove the PCBA housing. See **“PCBA housing removal”** on page 357.
- 7 Remove the main drive motor. See **“Main drive motor removal”** on page 354.
- 8 Remove the harnesses from the clamp (A).
- 9 Remove the three screws (B) securing the fuser drive motor to the machine.

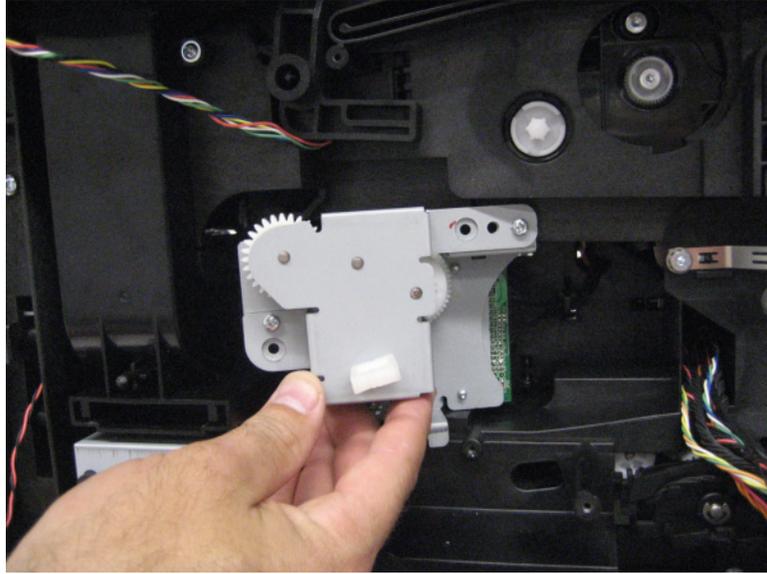


**Note:** When removing the lowermost screw, the grounding plate will become detached.

- 10 Disconnect the cable (C) from the fuser drive motor.



## 11 Remove the fuser drive motor.

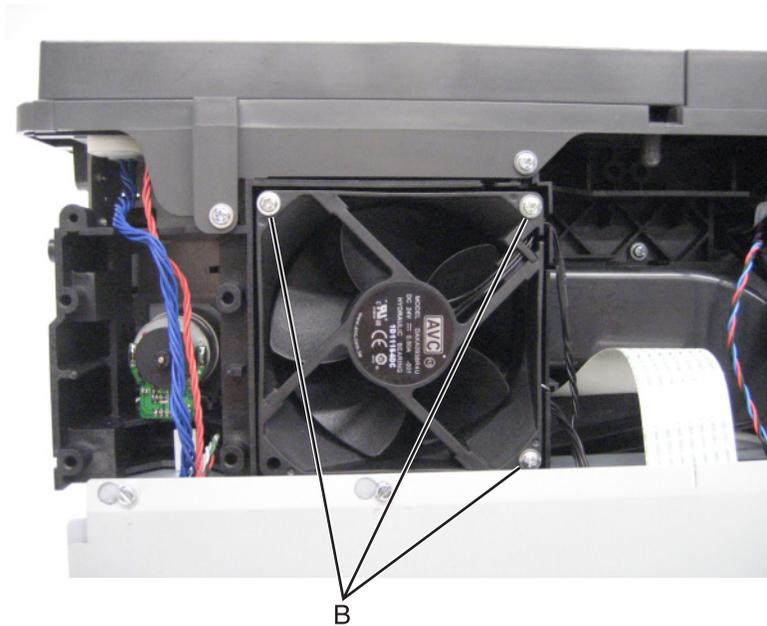


### Installation notes:

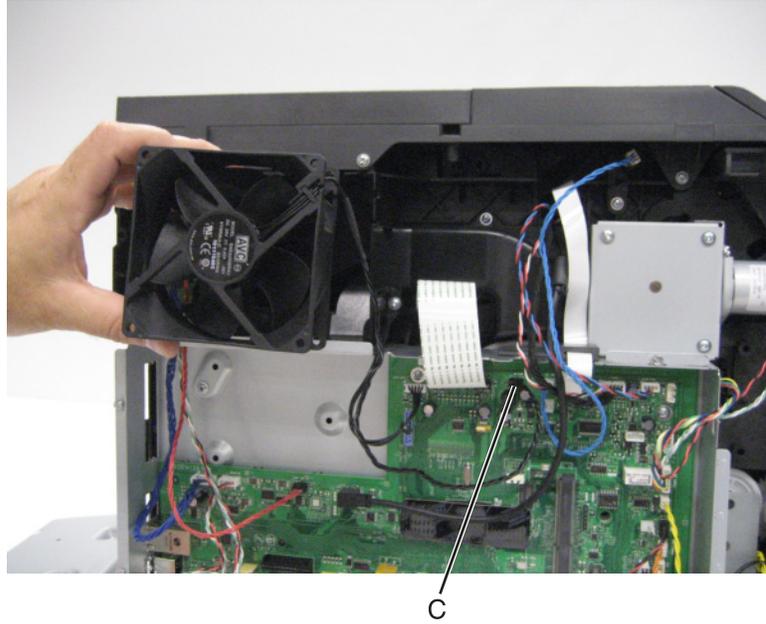
- When replacing the fuser drive motor, ensure that the grounding plate is properly reattached.
- When replacing the fuser drive motor, ensure that the cable is properly reconnected.

## Main cooling fan removal

- 1 Remove the left cover. See [“Left cover removal” on page 277.](#)
- 2 Remove the controller board access shield. See [“Controller board access shield removal” on page 351.](#)
- 3 Remove the three screws (B) securing the main cooling fan to the machine.



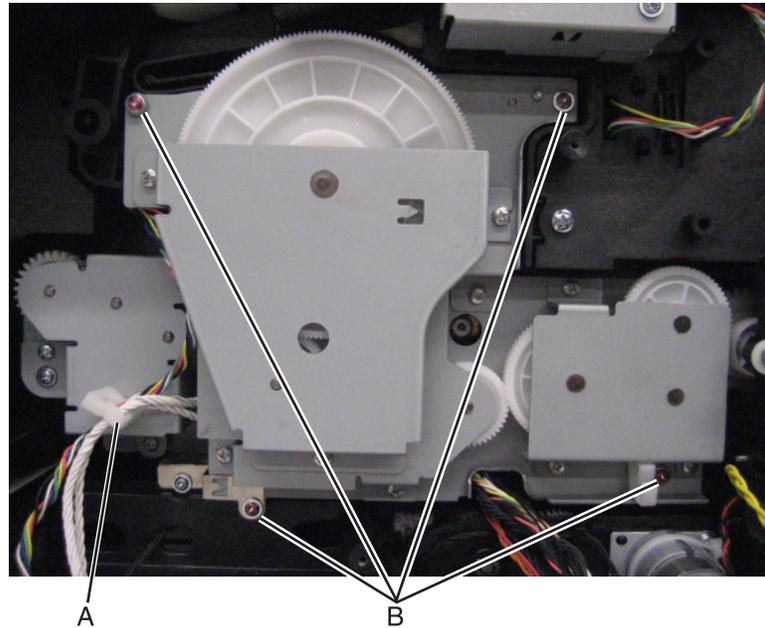
- 4 Disconnect the cable (C) from the controller board, and remove the main cooling fan.



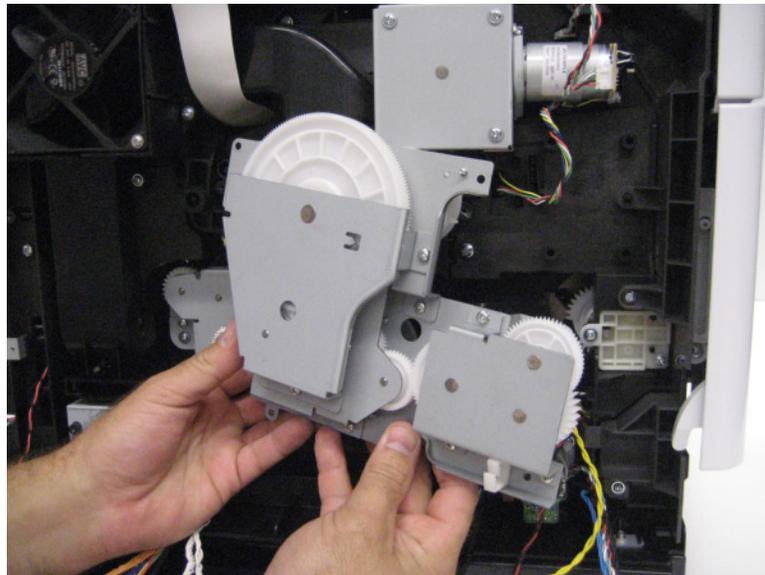
## Main drive motor removal

- 1 Remove the imaging unit from the machine.
- 2 Remove the right cover. See **“Right cover removal” on page 283.**
- 3 Remove the rear lower cover. See **“Rear lower cover removal” on page 280.**
- 4 Remove the LVPS. See **“LVPS removal” on page 366.**
- 5 Remove the left cover. See **“Left cover removal” on page 277.**
- 6 Remove the PCBA housing. See **“PCBA housing removal” on page 357.**
- 7 Remove the harnesses from the clamp (A).

**8** Remove the four screws (B) securing the main drive motor to the machine.



**9** Remove the main drive motor from the machine.



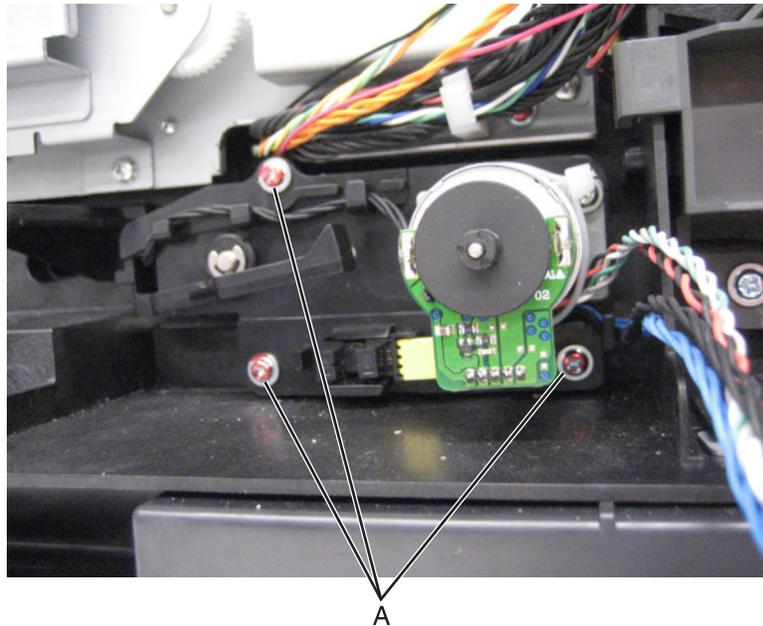
**10** Disconnect the cable from the main drive motor.

**Installation warning:** When replacing the main drive motor, make sure that the control panel door is in the closed position or the main drive motor will not align properly, and damage will occur.

**Installation warning:** When replacing the main drive motor, make sure that all gears and drive shafts are properly aligned, or damage will occur.

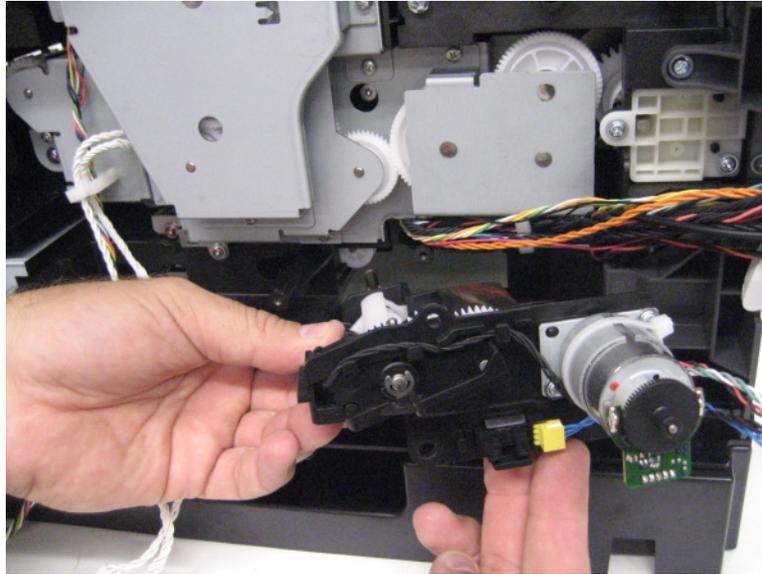
## Media feeder removal

- 1 Remove the right cover. See **“Right cover removal”** on page 283.
- 2 Remove the rear lower cover. See **“Rear lower cover removal”** on page 280.
- 3 Remove the LVPS. See **“LVPS removal”** on page 366.
- 4 Remove the left cover. See **“Left cover removal”** on page 277.
- 5 Remove the PCBA housing. See **“PCBA housing removal”** on page 357.
- 6 Remove the pick roller assembly. See **“Pick roller assembly removal”** on page 342.
- 7 Remove the three screws (A) securing the media feeder to the machine.



**Note:** Use care when removing the media feeder to avoid damage.

- 8 Remove the media feeder.

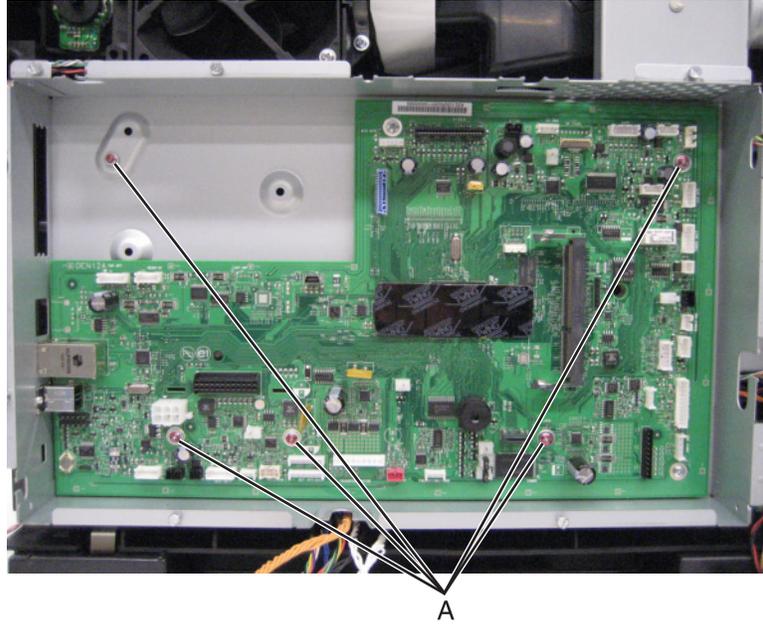


## PCBA housing removal

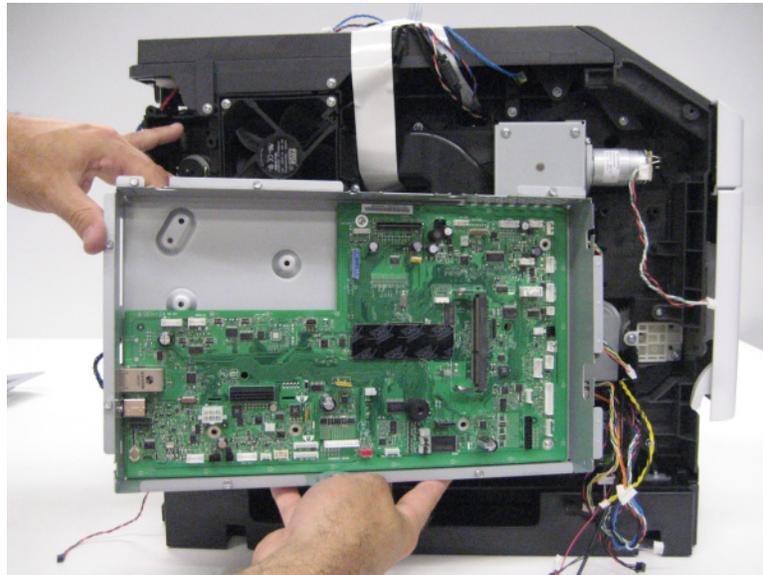
**Note:** When removing the PCBA housing, the controller board will remain attached to the PCBA housing.

- 1 Remove the right cover. See **"Right cover removal" on page 283.**
- 2 Remove the rear lower cover. See **"Rear lower cover removal" on page 280.**
- 3 Remove the LVPS. See **"LVPS removal" on page 366.**
- 4 Remove the left cover. See **"Left cover removal" on page 277.**
- 5 Disconnect all of the cables from the controller board.

6 Remove the five screws (A).

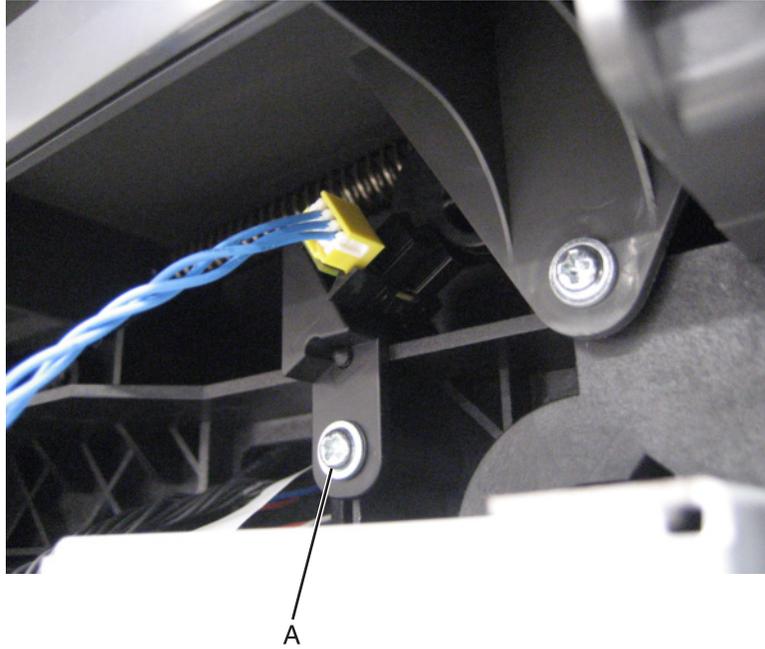


7 Remove the PCBA housing.

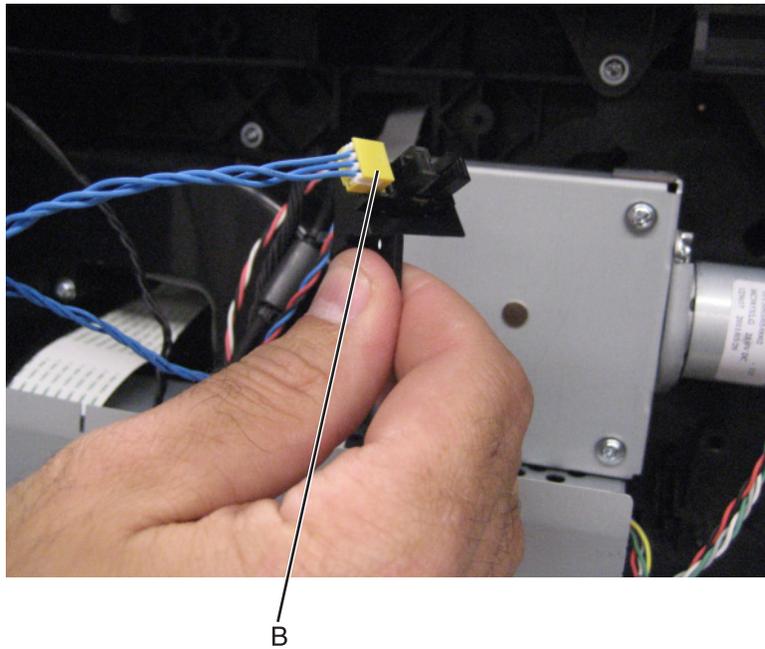


## Sensor (control panel interlock) removal

- 1 Remove the left cover. See **“Left cover removal”** on page 277.
- 2 Remove the screw (A) securing the bracket to the machine.

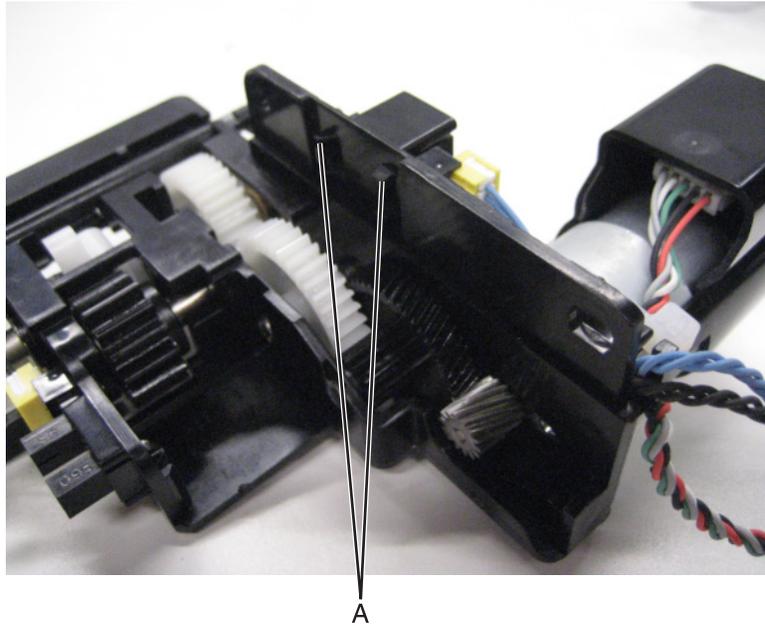


- 3 Remove the bracket from the machine.
- 4 Disconnect the cable (B) from the sensor (control panel interlock), and remove it.



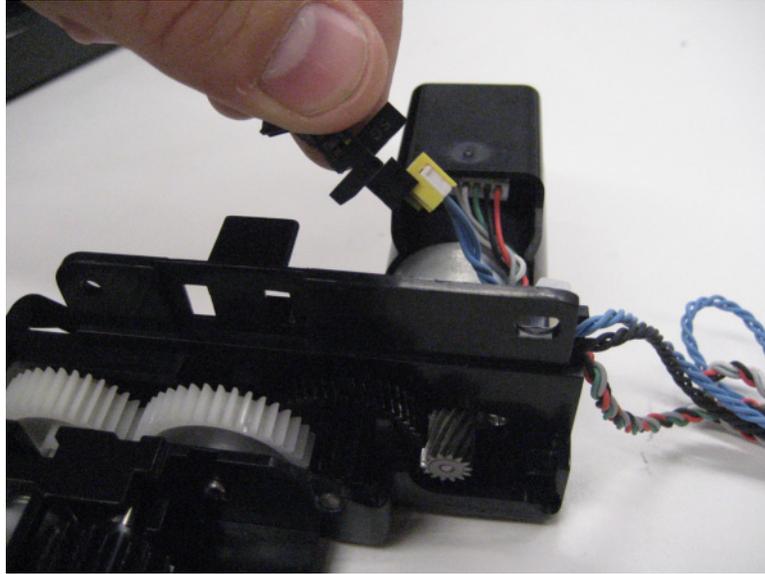
## Sensor (pick roller position) removal

- 1 Remove the right cover. See **“Right cover removal”** on page 283.
- 2 Remove the rear lower cover. See **“Rear lower cover removal”** on page 280.
- 3 Remove the LVPS. See **“LVPS removal”** on page 366.
- 4 Remove the left cover. See **“Left cover removal”** on page 277.
- 5 Remove the PCBA housing. See **“PCBA housing removal”** on page 357.
- 6 Remove the pick roller assembly. See **“Pick roller assembly removal”** on page 342.
- 7 Remove the media feeder. See **“Media feeder removal”** on page 356.
- 8 Release the hooks (A) securing the sensor (pick roller position) to the assembly.



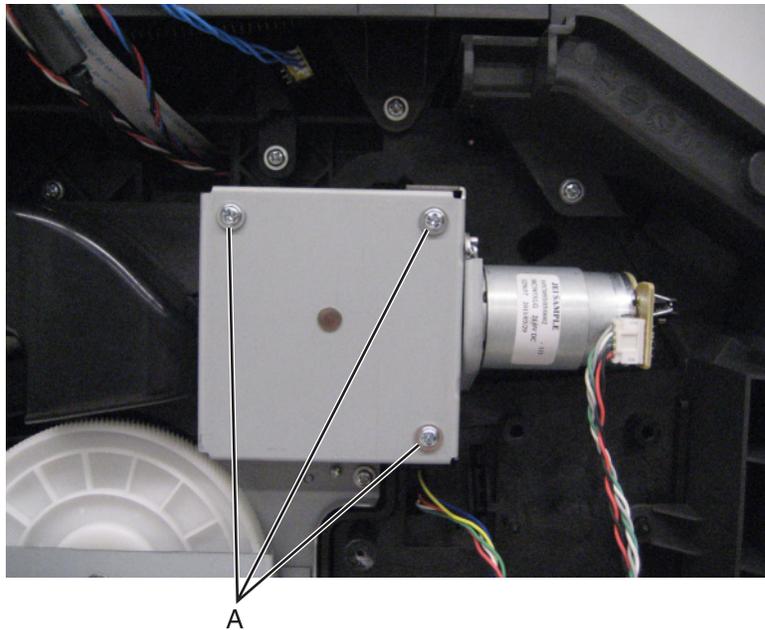
- 9 Remove the sensor (pick roller position).

**10** Disconnect the cable.



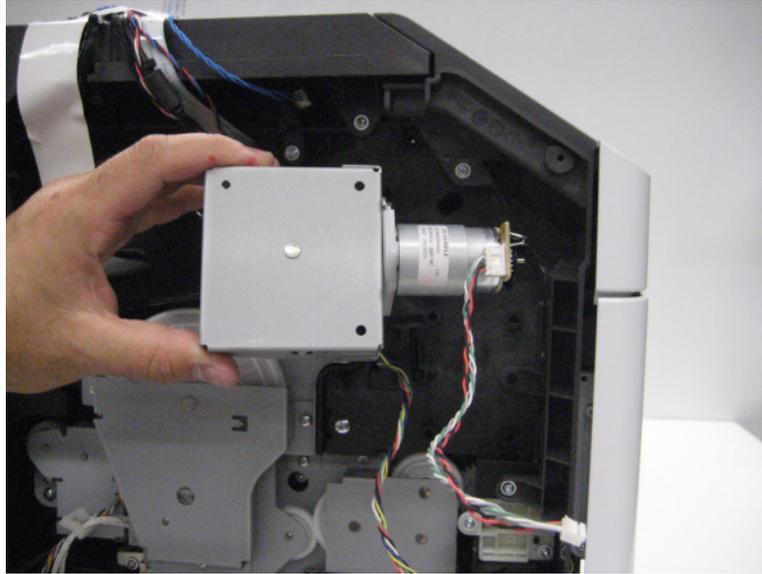
### Toner add motor removal

- 1** Remove the right cover. See **“Right cover removal”** on page 283.
- 2** Remove the rear lower cover. See **“Rear lower cover removal”** on page 280.
- 3** Remove the LVPS. See **“LVPS removal”** on page 366.
- 4** Remove the left cover. See **“Left cover removal”** on page 277.
- 5** Remove the PCBA housing. See **“PCBA housing removal”** on page 357.
- 6** Remove the three screws (A) securing the toner add motor to the machine.



Repair information

7 Remove the toner add motor.

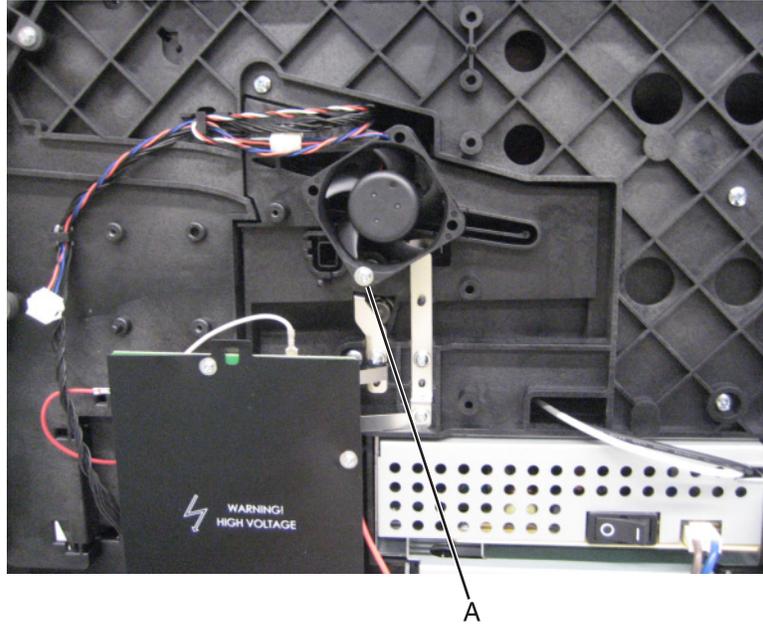


## Base printer - right removals

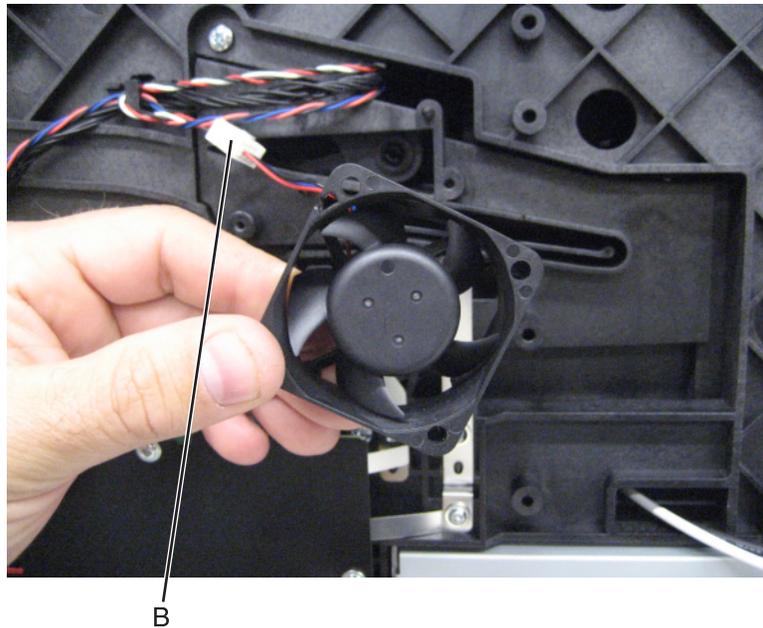
- [“Cartridge cooling fan removal” on page 363](#)
- [“Duplex cooling fan removal” on page 364](#)
- [“HVPS removal” on page 365](#)
- [“LVPS removal” on page 366](#)

## Cartridge cooling fan removal

- 1 Remove the right cover. See **“Right cover removal”** on page 283.
- 2 Remove the screw (A) securing the cartridge cooling fan to the machine.



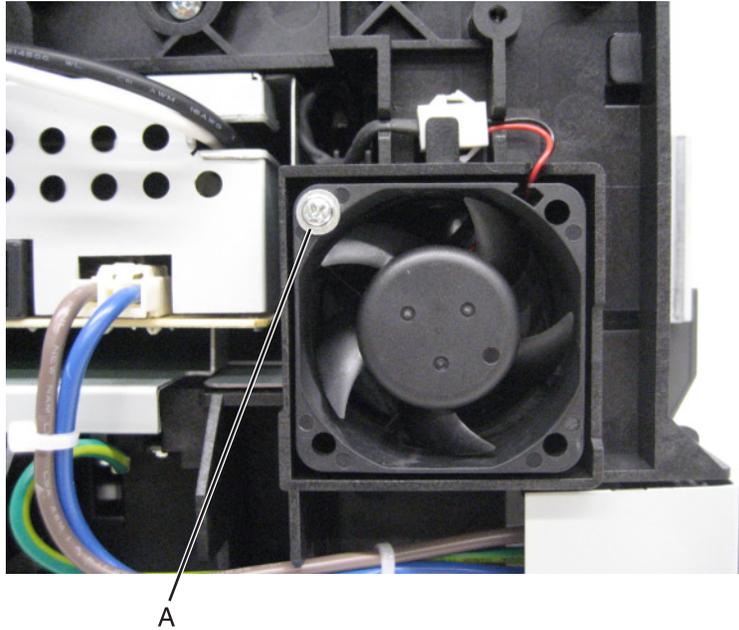
- 3 Remove the cartridge cooling fan.
- 4 Disconnect the cable (B).



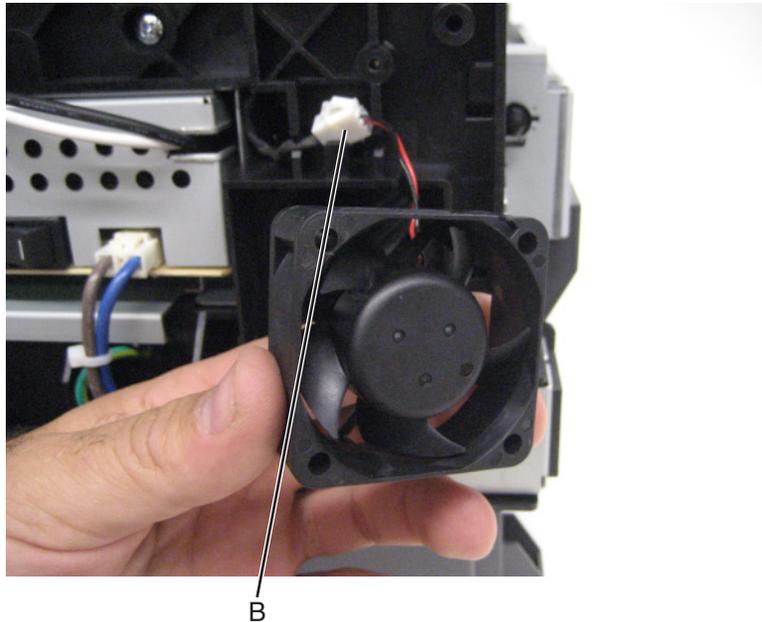
**Installation note:** When replacing the cartridge cooling fan, ensure that it is installed as shown in the picture.

## Duplex cooling fan removal

- 1 Remove the right cover. See **“Right cover removal”** on page 283.
- 2 Remove the screw (A) securing the duplex cooling fan from the machine.



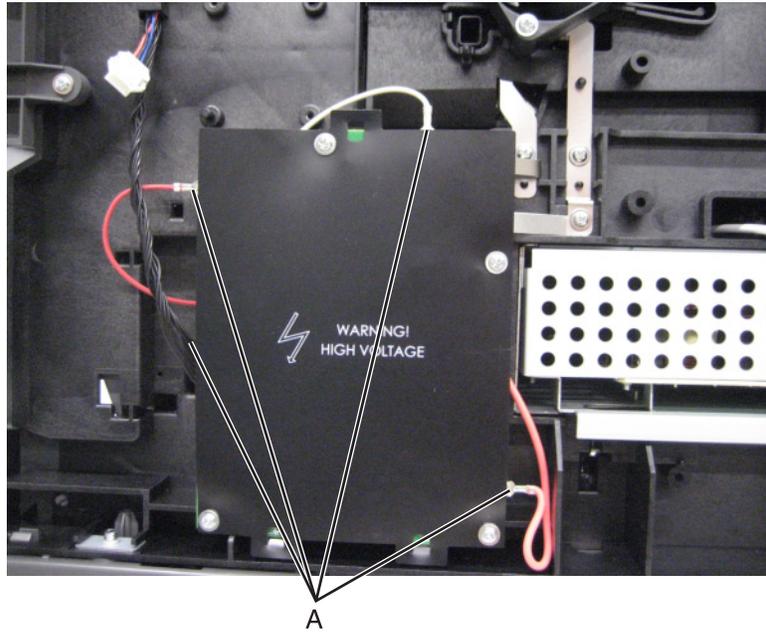
- 3 Remove the duplex cooling fan.
- 4 Disconnect the cable (B).



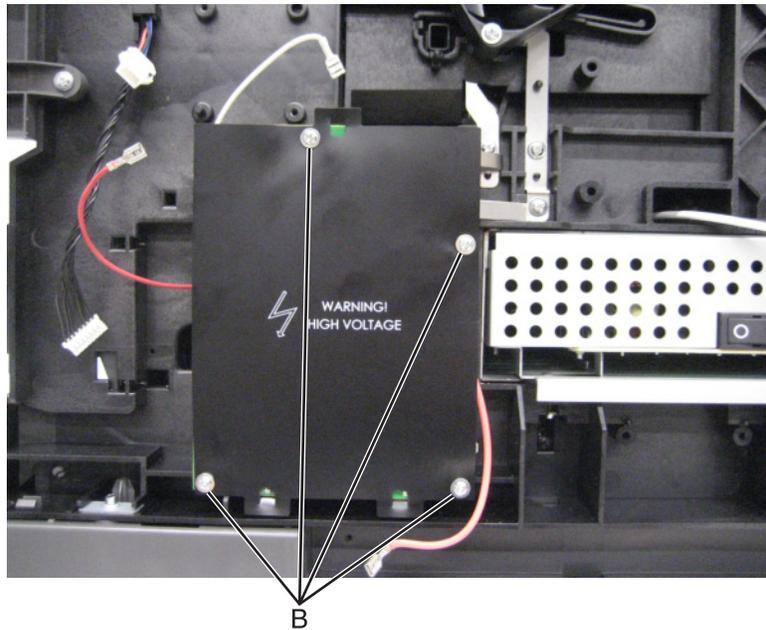
**Installation note:** When replacing the duplex cooling fan, ensure that it is installed as shown in the picture.

## HVPS removal

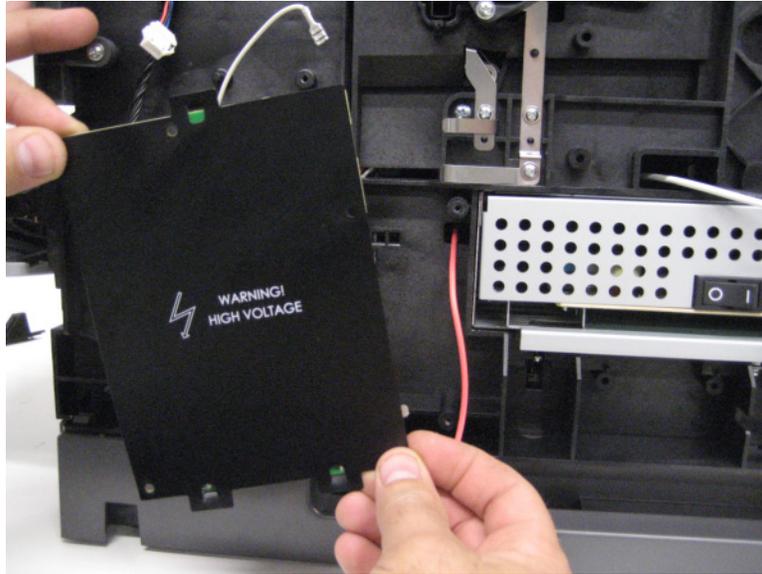
- 1 Remove the right cover. See **“Right cover removal”** on page 283.
- 2 Disconnect four cables (A) from the HVPS.



- 3 Remove the four screws (B) securing the HVPS to the machine.



#### 4 Remove the HVPS.

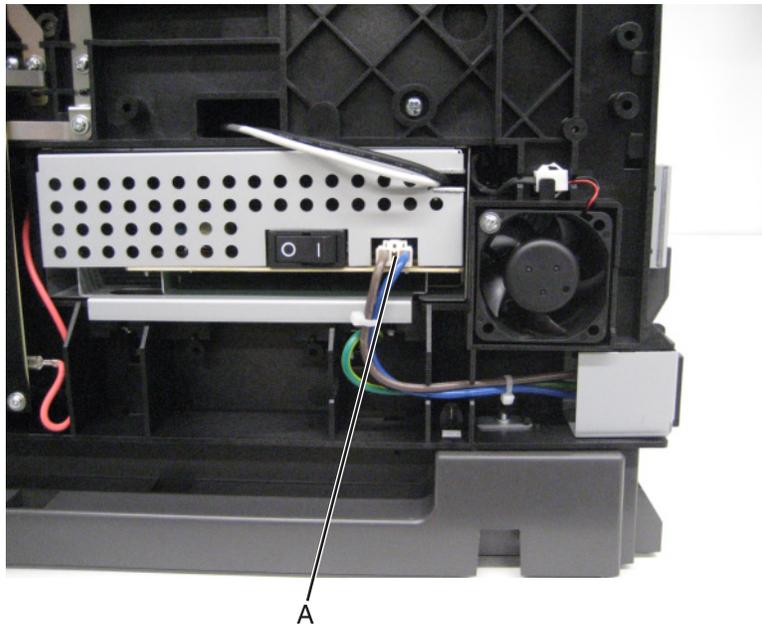


#### Installation notes:

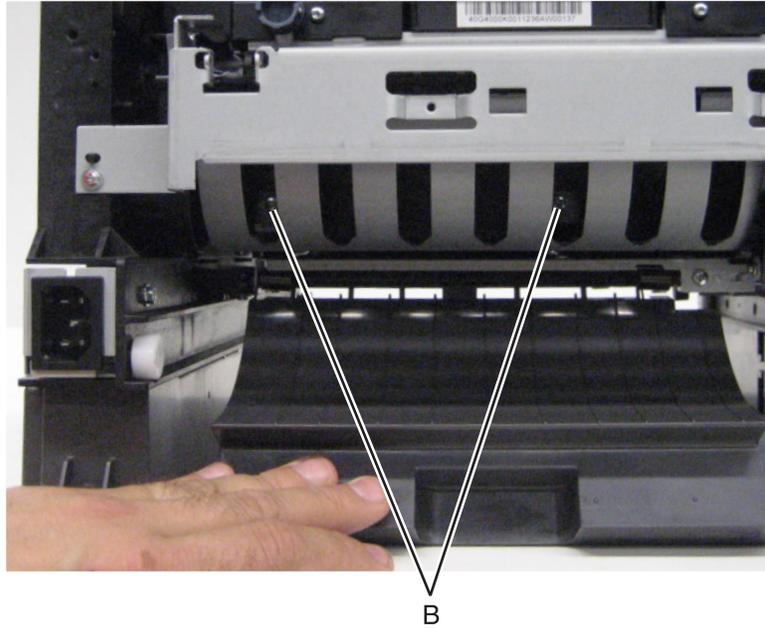
- When replacing the HVPS, make sure the plastic insulating shield is properly reattached.
- When replacing the HVPS, make sure the cables are properly reattached.

### LVPS removal

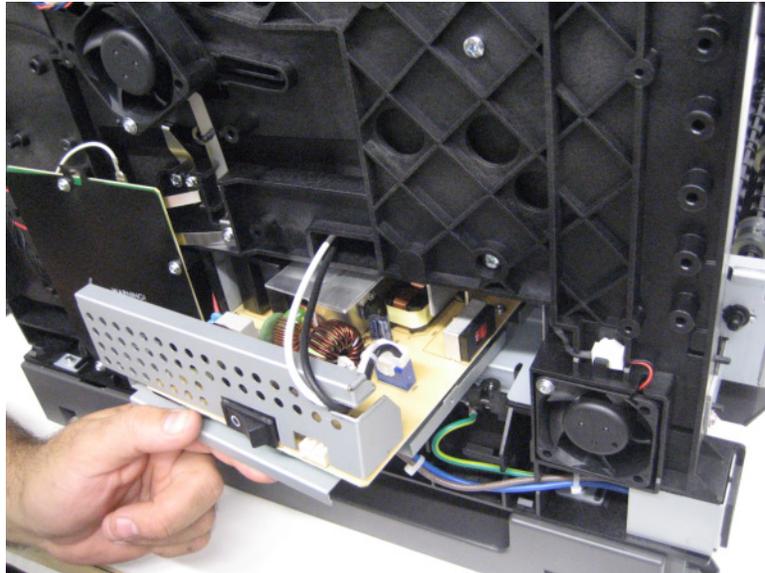
- 1 Remove the right cover. See **“Right cover removal” on page 283.**
- 2 Remove the rear lower cover. See **“Rear lower cover removal” on page 280.**
- 3 Disconnect the main power cable (A) from the LVPS.



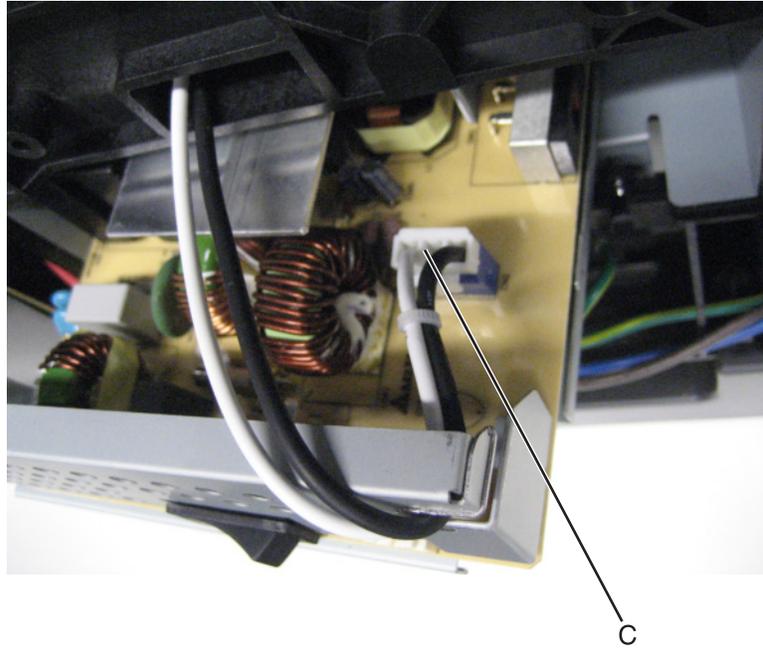
- 4 While holding down the duplex rear flap, remove the two screws (B) securing the LVPS to the machine.



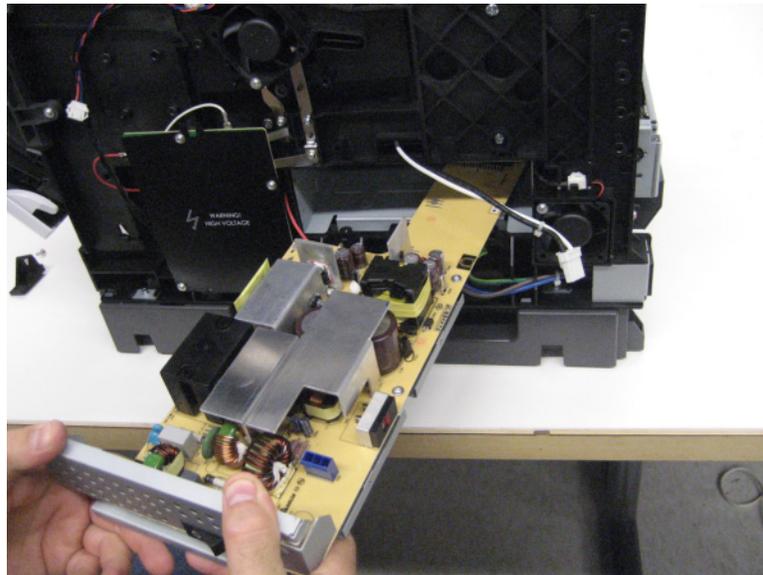
- 5 Gently but firmly pull the LVPS partially from the machine, as shown in the following image.



6 Disconnect the fuser power cable (C) from the LVPS.



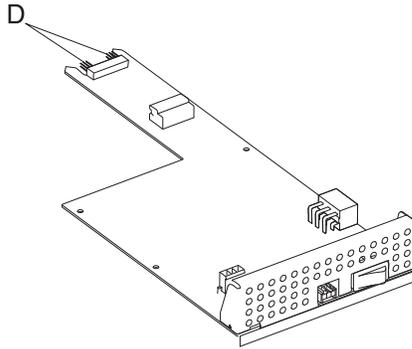
7 Remove the LVPS.



**Installation warning:** When replacing the LVPS, ensure that the LVPS is perfectly square to the printer, as opposed to replacing it at an angle. If you try to replace the LVPS at an angle, damage will occur to the controller board.

**Installation notes:**

- When replacing the LVPS, ensure that all connections are replaced.
- When replacing the LVPS, ensure that the connector pins (D) properly engage the controller board.



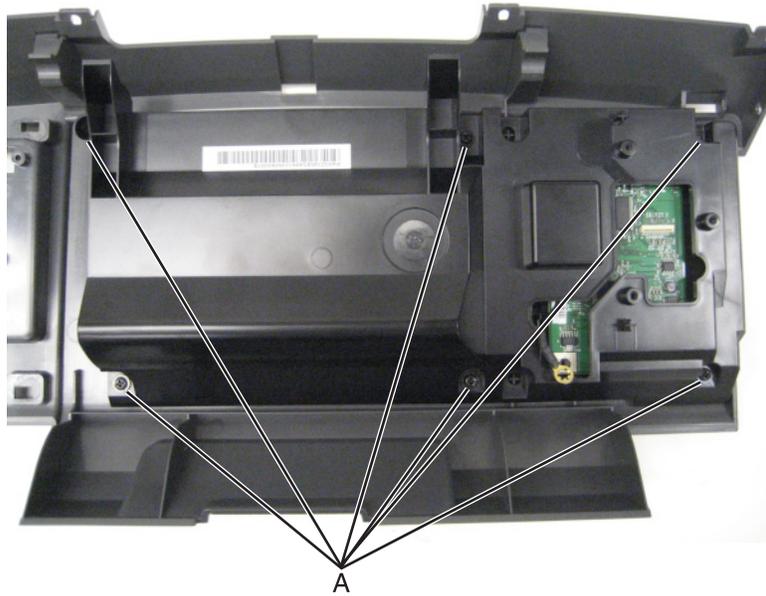
## Control panel removals

- [“4.3-inch tilting display removal” on page 369](#)
- [“7-inch tilting display removal” on page 372](#)
- [“Control panel removal \(2.4-inch screen\)” on page 375](#)
- [“Control panel removal \(4.3-inch screen, 7-inch screen\)” on page 381](#)
- [“Control panel board \(2.4-inch tilting display\) removal” on page 387](#)
- [“Control panel board \(4.3-inch tilting display\) removal” on page 390](#)
- [“Control panel board \(7-inch tilting display\) removal \(MS812de\)” on page 393](#)
- [“Control panel front cover removal” on page 396](#)
- [“Control panel latch removal” on page 398](#)
- [“Control panel left bezel removal” on page 399](#)
- [“Left control panel hinge removal” on page 400](#)
- [“Right control panel hinge removal” on page 403](#)

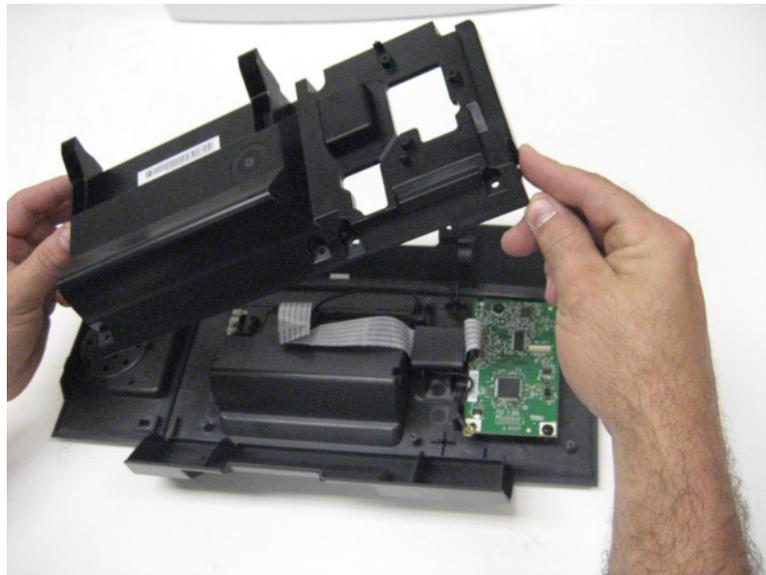
### 4.3-inch tilting display removal

- 1 Remove the control panel left bezel. See [“Control panel left bezel removal” on page 399](#).
- 2 Remove the control panel. See [“Control panel removal \(4.3-inch screen, 7-inch screen\)” on page 381](#).
- 3 Remove the control panel latch. See [“Control panel latch removal” on page 398](#).
- 4 Remove the control panel front cover. See [“Control panel front cover removal” on page 396](#).

5 Remove the six screws (A) securing the cover to the control panel.



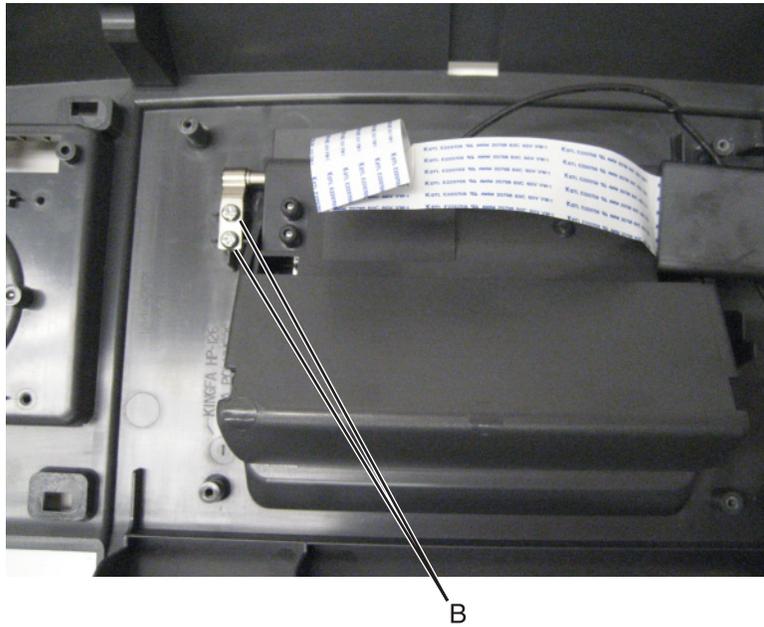
6 Detach the cover.



7 Disconnect the display ribbon cable from the control panel board.



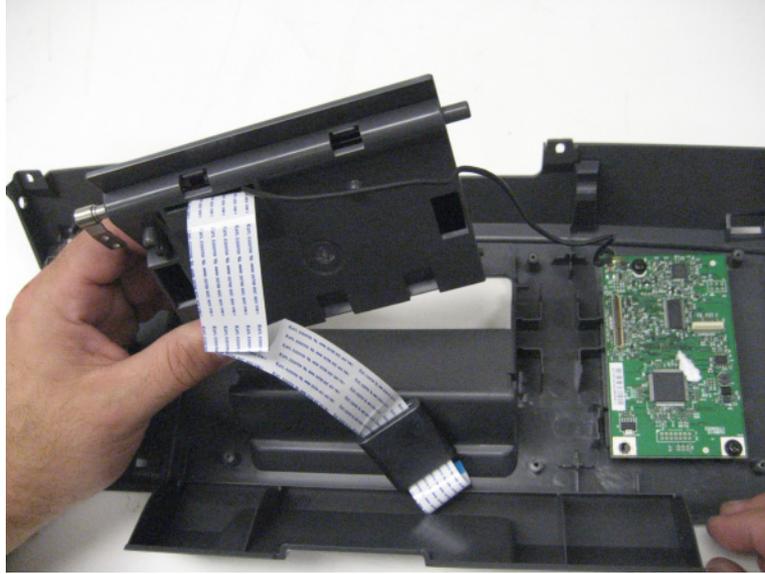
8 Remove the four screws (B) securing the 4.3" tilting display to the control panel.



Repair information

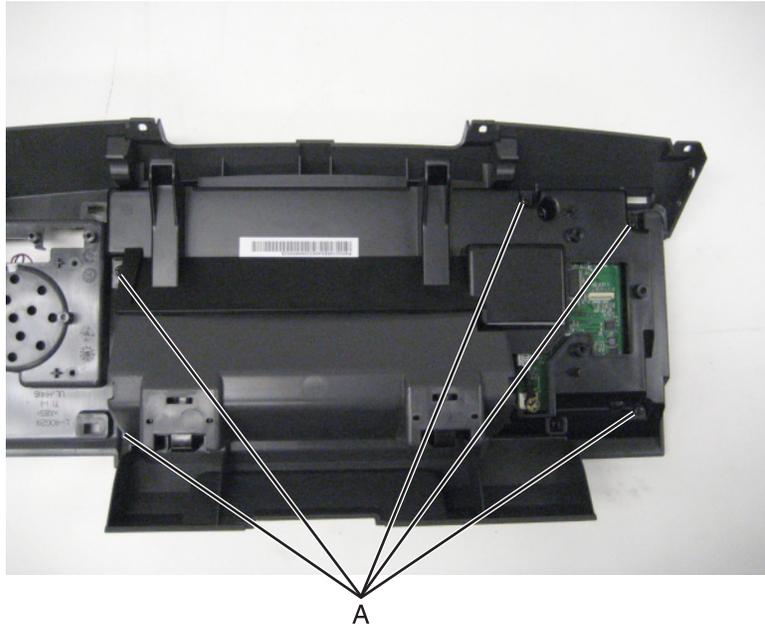
**371**

- 9 Remove the 4.3" tilting display from the control panel.

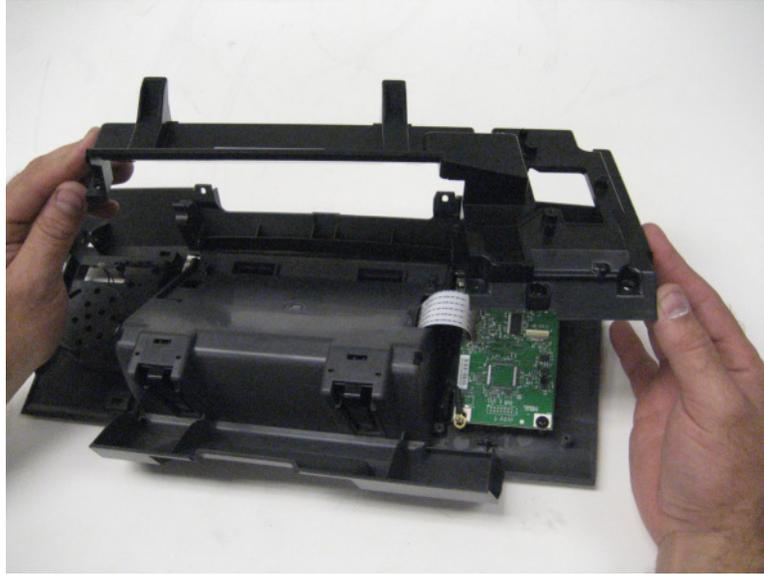


## 7-inch tilting display removal

- 1 Remove the control panel left bezel. See **"Control panel left bezel removal"** on page 399.
- 2 Remove the control panel. See **"Control panel removal (4.3-inch screen, 7-inch screen)"** on page 381.
- 3 Remove the control panel latch. See **"Control panel latch removal"** on page 398.
- 4 Remove the control panel front cover. See **"Control panel front cover removal"** on page 396.
- 5 Remove the five screws (A) securing the cover to the control panel.



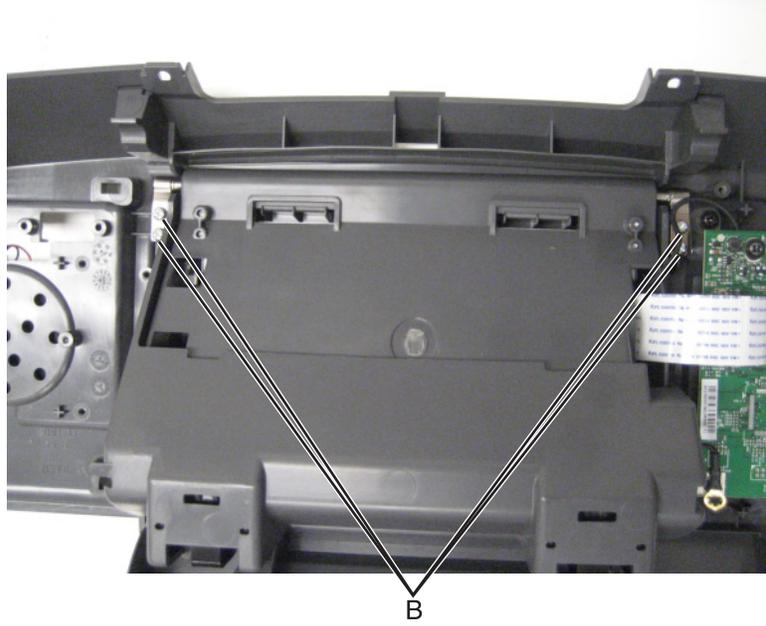
**6** Detach the cover.



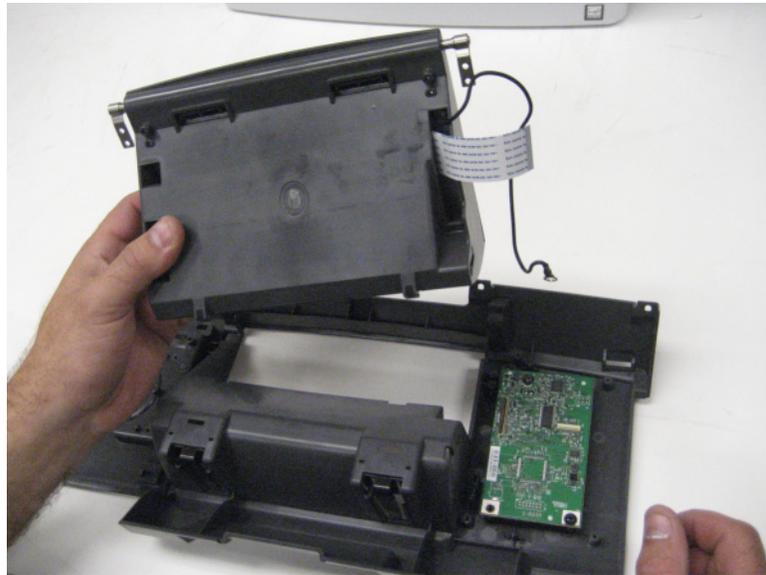
**7** Disconnect the display ribbon cable from the control panel board.



8 Remove the four screws (B) securing the 7" tilting display to the control panel.



9 Remove the 7" tilting display from the control panel.

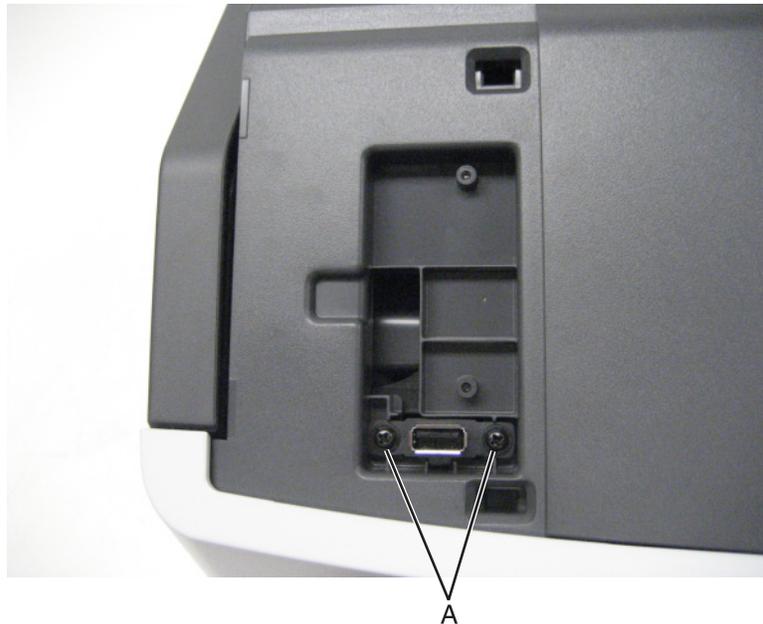


## Control panel removal (2.4-inch screen)

**Warning—Potential Damage:** When replacing the control panel, control panel board, or controller board, replace only one component at a time. Replace the required component and perform a POR before replacing a second component. If this procedure is not followed, the printer will be rendered inoperable. Never replace both the control panel and the controller board without a POR after installing each one or the printer will be rendered inoperable. Never install or remove these components as a method of troubleshooting while operating in normal user mode. See **“Controller board/control panel replacement” on page 256.**

**Warning—Potential Damage:** When a component has been installed in a machine and has been powered up in normal user mode, it cannot be used in another machine; it must be returned to the manufacturer. The machine must be powered up in Diagnostic mode or the controller board, control panel boards, or control panel will become locked.

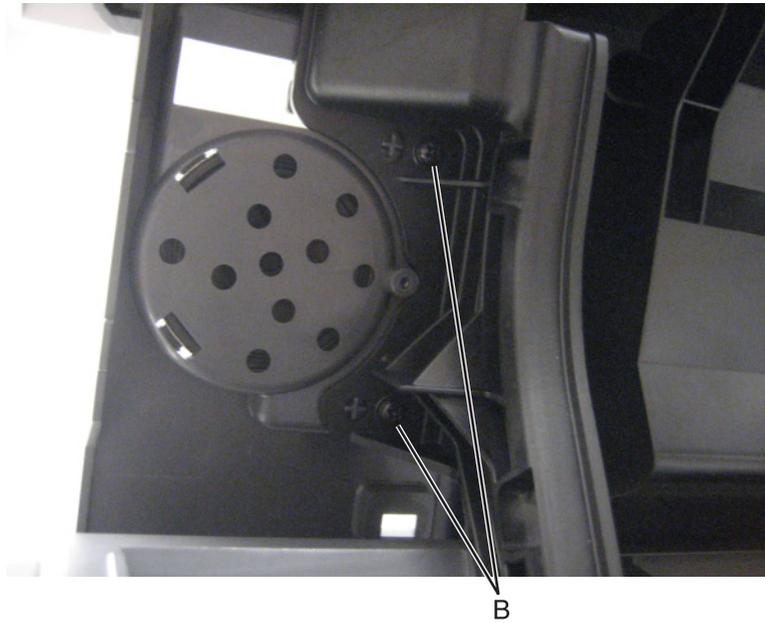
- 1 Raise the control panel to its uppermost position.
- 2 Remove the control panel left bezel. See the **“Control panel left bezel removal” on page 399.**
- 3 Remove the two screws (A) securing the USB cable to the control panel.



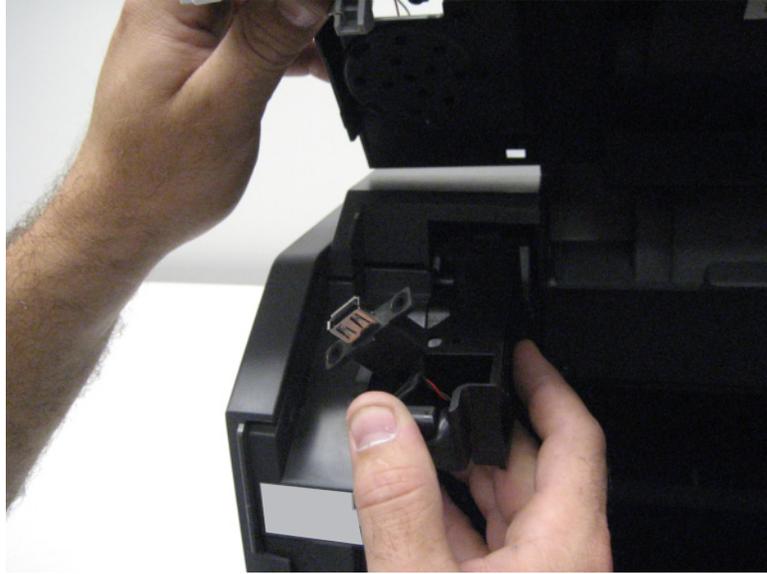
- 4 Release the USB cable from the control panel and pull it out and slightly away.



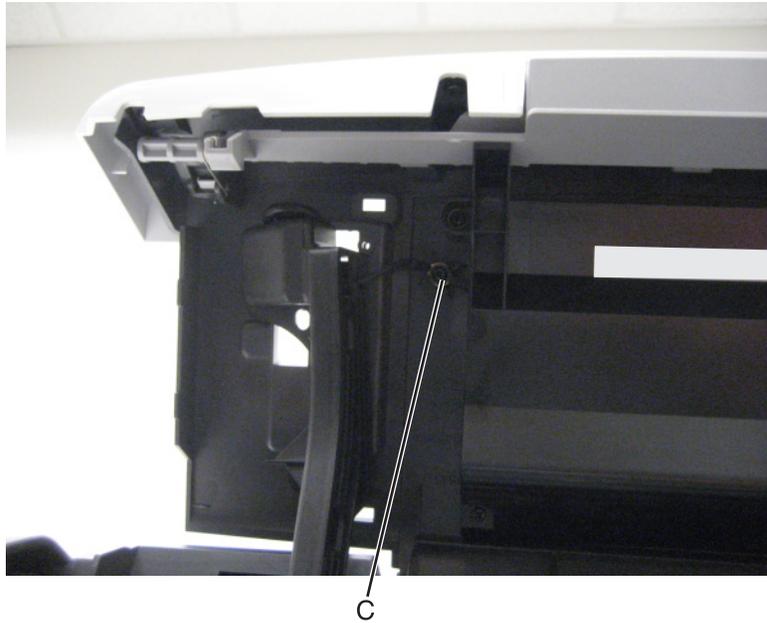
- 5 Remove the two screws (B) securing the left control panel hinge to the control panel.



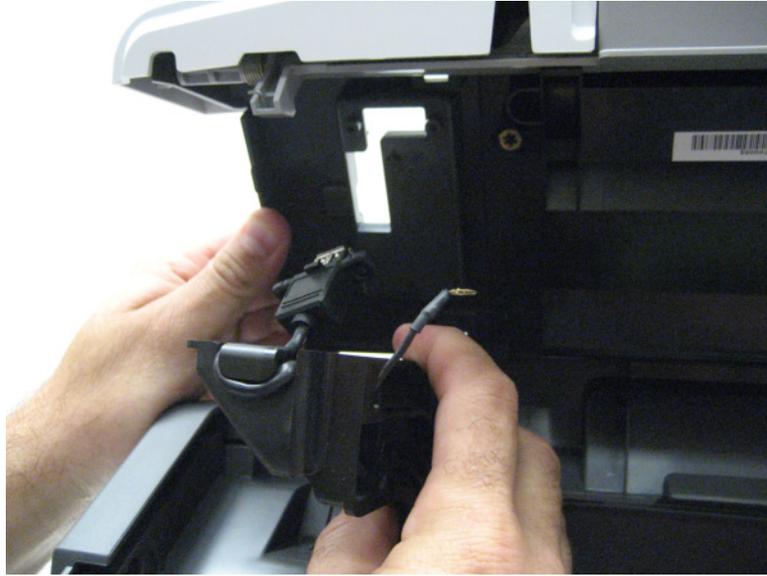
6 Disconnect the left control panel hinge, and remove the USB cable from the control panel.



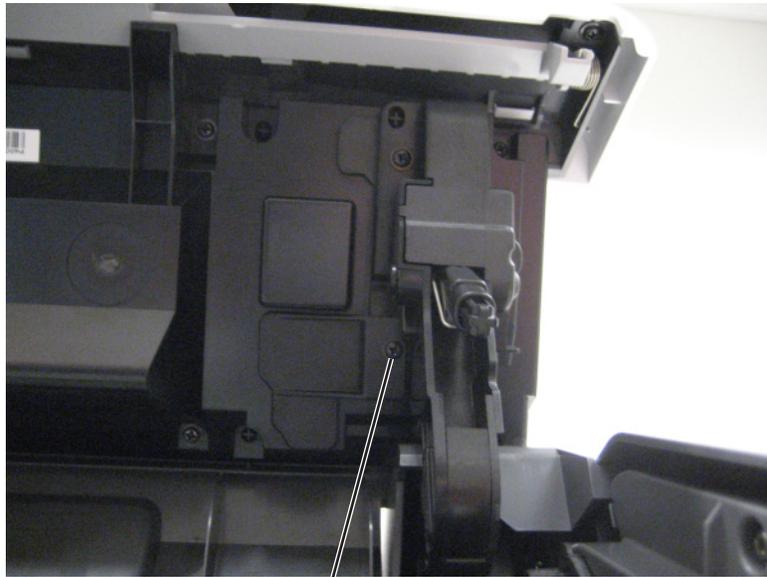
7 Remove the screw (C) securing the grounding cable to the machine.



- 8 Disconnect the left control panel hinge, and remove the USB cable from the control panel.

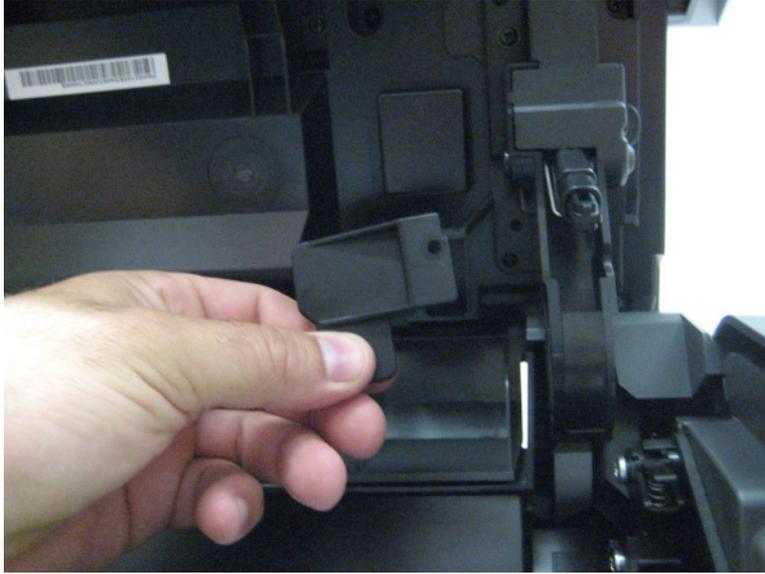


- 9 Remove the screw (D) securing the plastic cap to the machine.

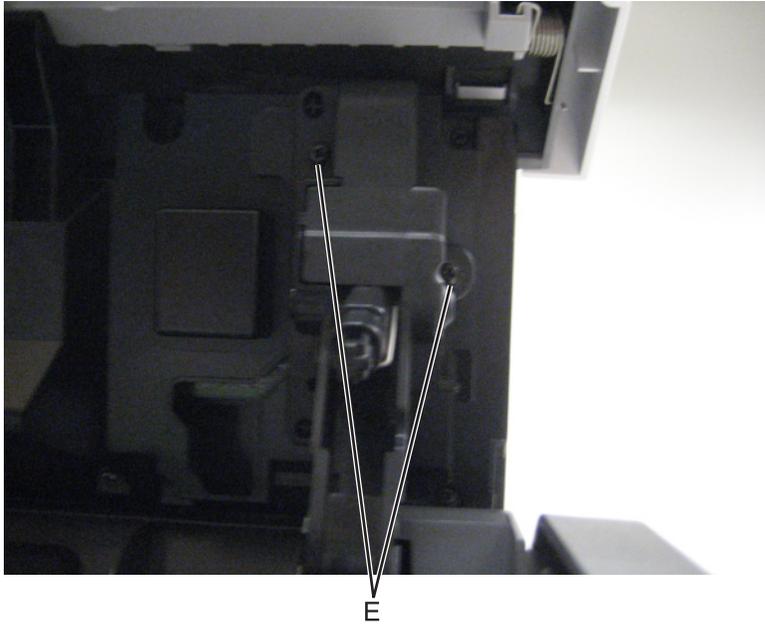


D

**10** Remove the plastic cap



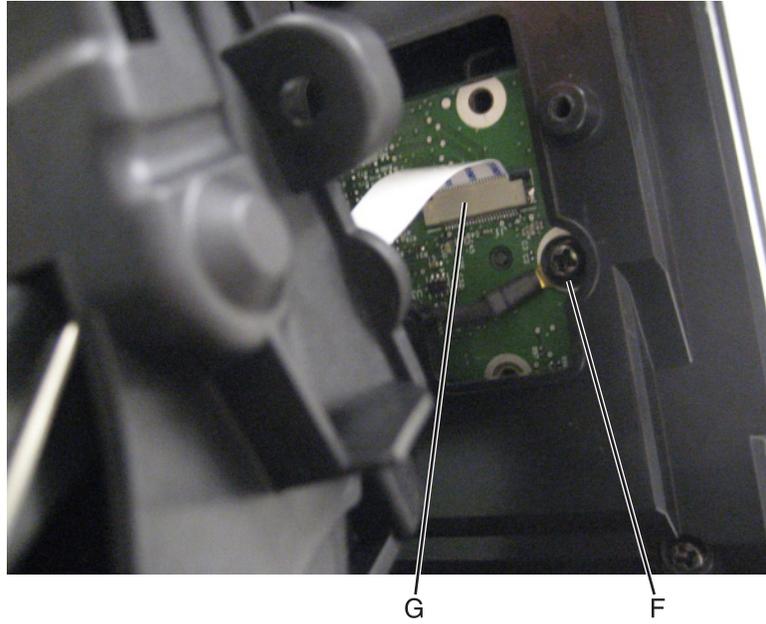
**11** Remove the two screws (E) securing the right control panel hinge to the control panel.



**12** Remove the right control panel hinge.

**13** Remove the screw (F) securing the ground cables to the machine.

**14** Disconnect the control panel ribbon cable (G) from the control panel.



**15** Remove the control panel.



**16** Remove the control panel front cover. See **“Control panel front cover removal”** on page 396.

## Control panel removal (4.3-inch screen, 7-inch screen)

**Warning—Potential Damage:** When replacing the control panel, control panel board, or controller board, replace only one component at a time. Replace the required component and perform a POR before replacing a second component. If this procedure is not followed, the printer will be rendered inoperable. Never replace both the control panel and the controller board without a POR after installing each one or the printer will be rendered inoperable. Never install or remove these components as a method of troubleshooting while operating in normal user mode. See **“Controller board/control panel replacement” on page 256.**

**Warning—Potential Damage:** When a component has been installed in a machine and has been powered up in normal user mode, it cannot be used in another machine; it must be returned to the manufacturer. The machine must be powered up in Diagnostic mode or the controller board, control panel boards, or control panel will become locked.

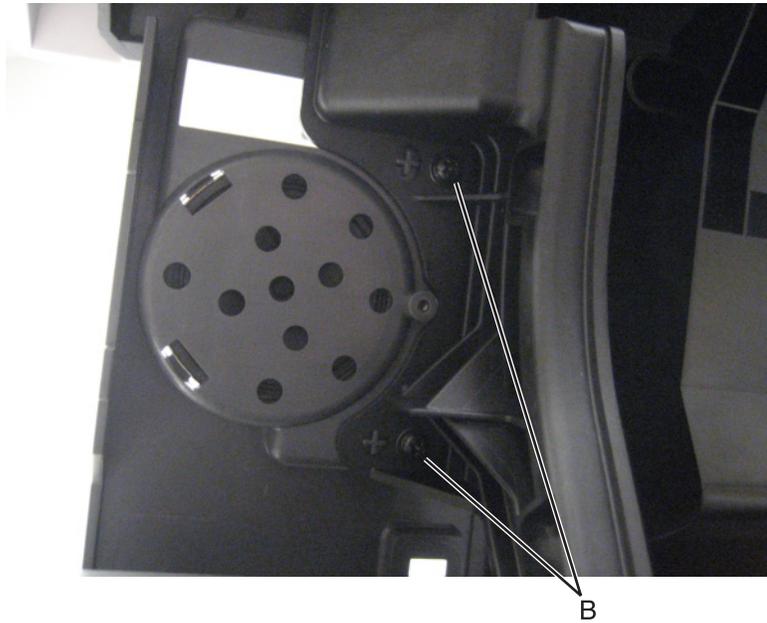
- 1 Raise the control panel to its uppermost position.
- 2 Remove the control panel left bezel. See the **“Control panel left bezel removal” on page 399.**
- 3 Remove the two screws (A) securing the USB cable to the control panel.



4 Release the USB cable from the control panel and pull it out and slightly away.



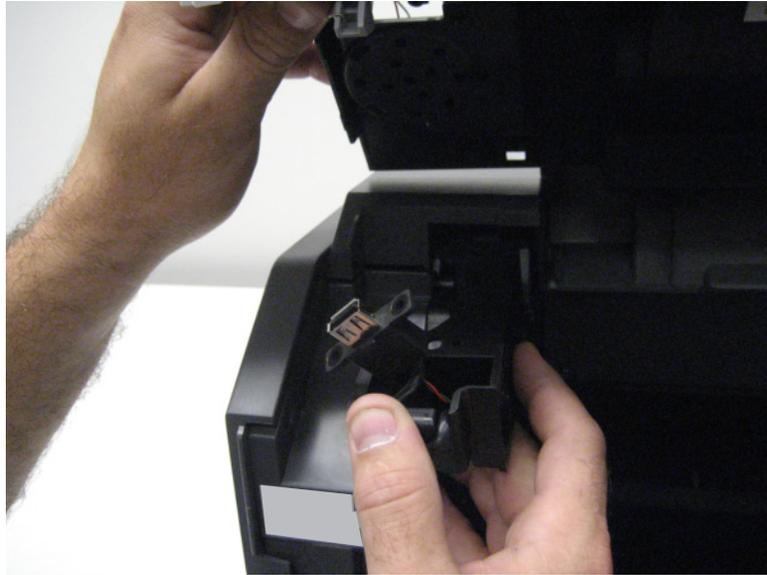
5 Remove the two screws (B) securing the left control panel hinge to the control panel.



**6** Disconnect the speaker cable.

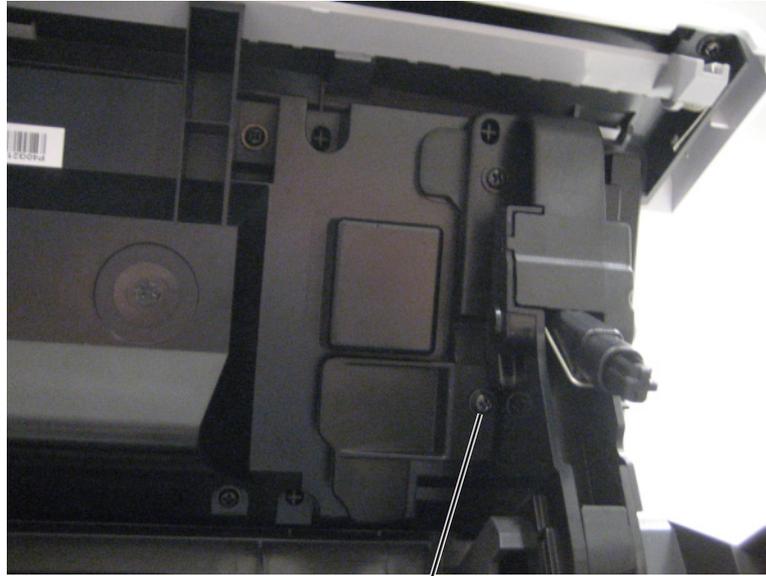


**7** Disconnect the left control panel hinge, and remove the USB cable from the control panel.



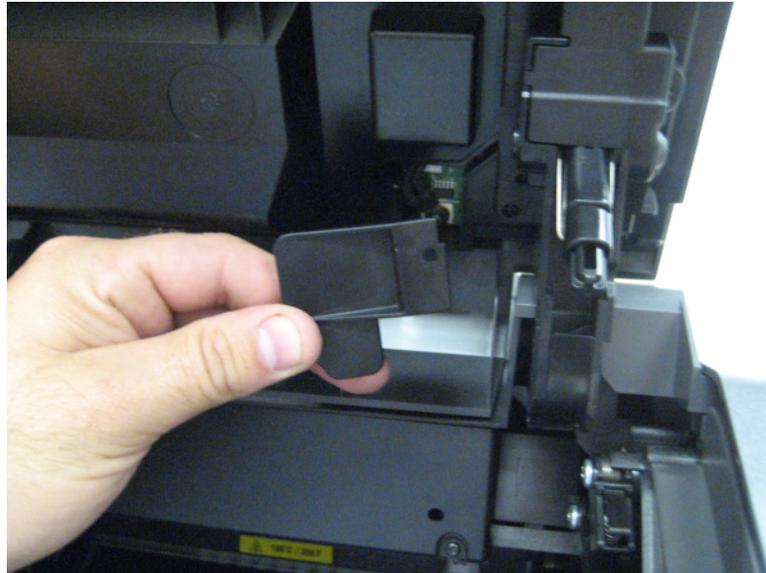
**8** Disconnect any remaining grounding cables in the area of the left control panel hinge.

**9** Remove the screw (C) securing the plastic cap to the machine.

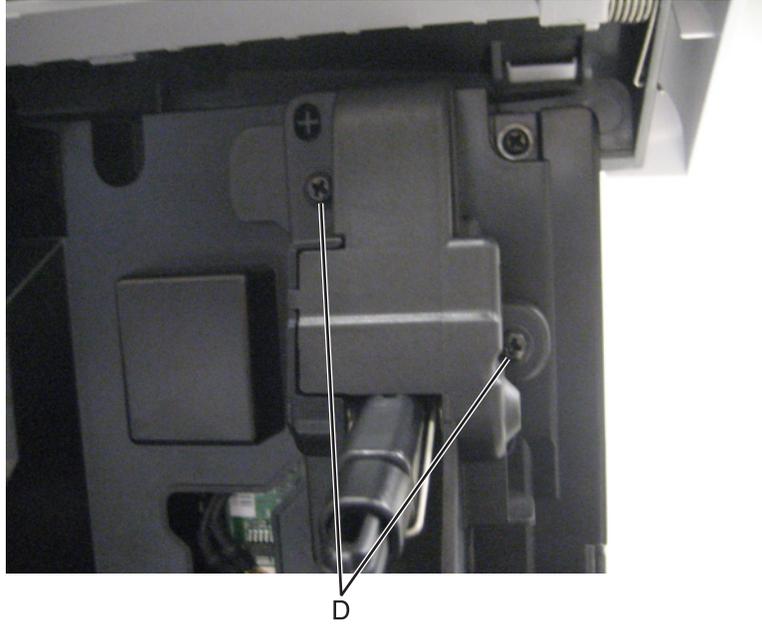


C

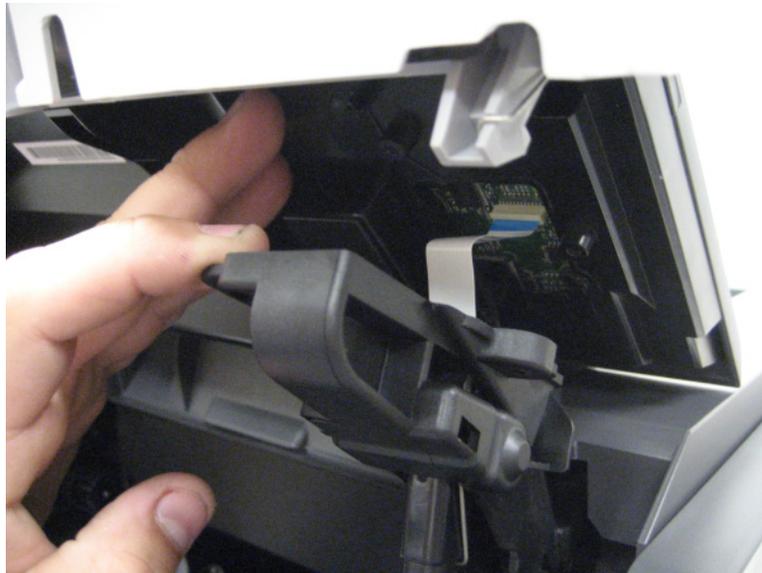
**10** Remove the plastic cap.



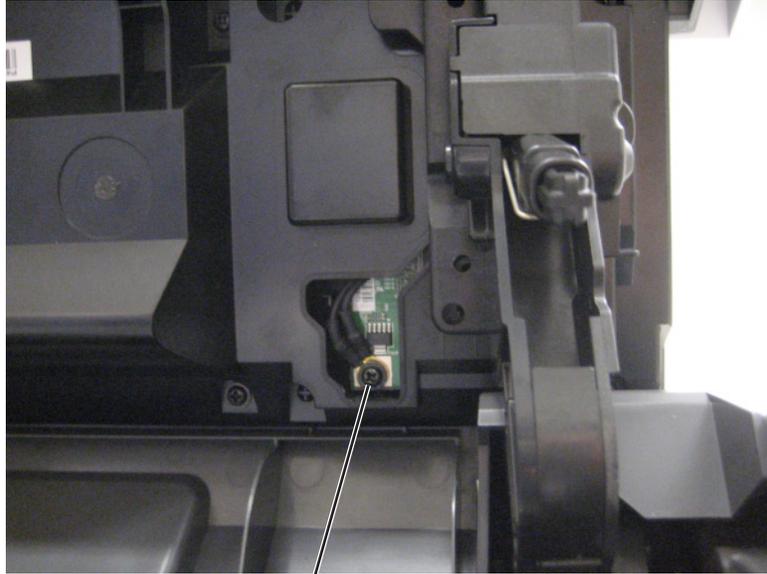
**11** Remove the two screws (D) securing the right control panel hinge to the control panel.



**12** Remove the right control panel hinge.



**13** Remove the screw (E) securing the ground cables to the machine.



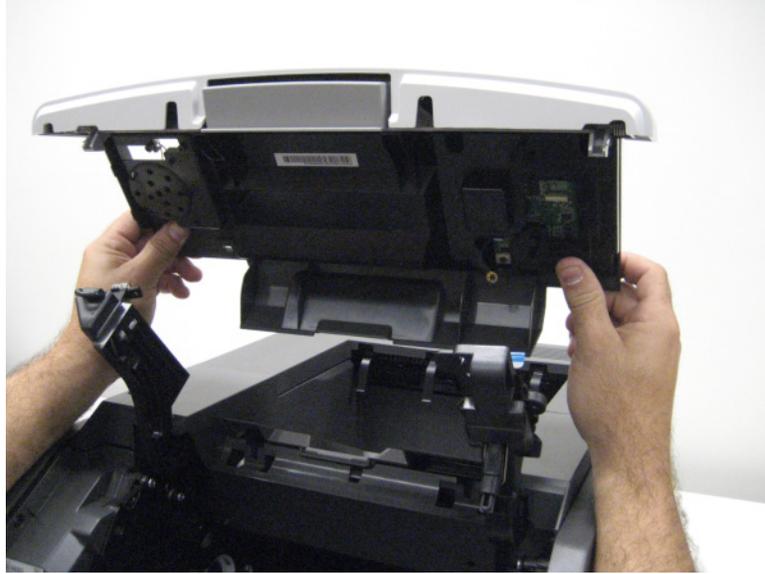
E

**14** Remove the grounding cables.

**15** Disconnect the control panel ribbon cable from the control panel.



## 16 Remove the control panel.



**Installation warning:** When replacing the control panel, ensure that all cables are properly reconnected.

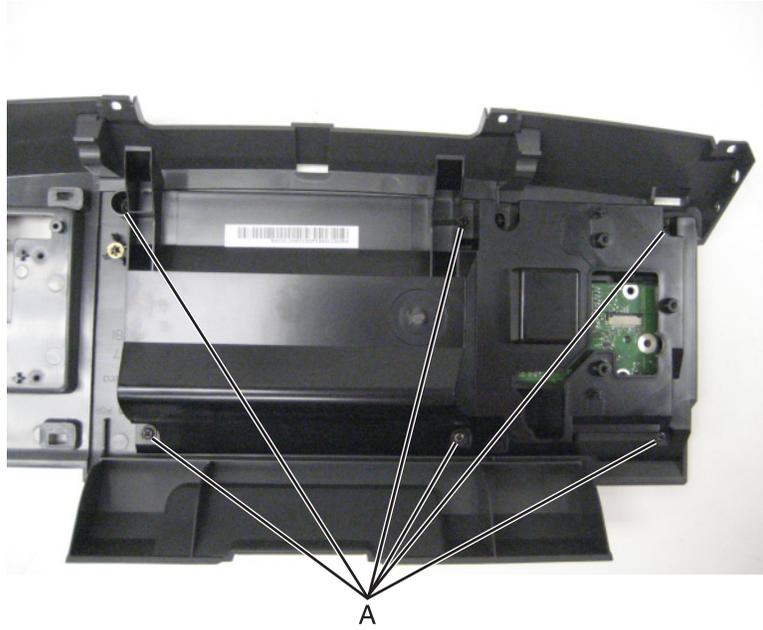
### Control panel board (2.4-inch tilting display) removal

**Warning—Potential Damage:** When replacing the control panel, control panel board, or controller board, replace only one component at a time. Replace the required component and perform a POR before replacing a second component. If this procedure is not followed, the printer will be rendered inoperable. Never replace both the control panel and the controller board without a POR after installing each one or the printer will be rendered inoperable. Never install or remove these components as a method of troubleshooting while operating in normal user mode. See **“Controller board/control panel replacement” on page 256.**

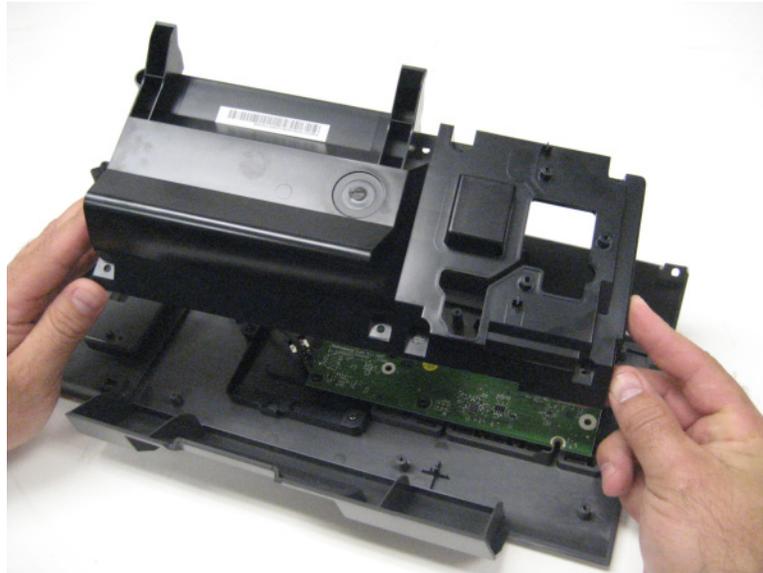
**Warning—Potential Damage:** When a component has been installed in a machine and has been powered up in normal user mode, it cannot be used in another machine; it must be returned to the manufacturer. The machine must be powered up in Diagnostic mode or the controller board, control panel boards, or control panel will become locked.

- 1 Remove the control panel left bezel. See **“Control panel left bezel removal” on page 399.**
- 2 Remove the control panel. See **“Control panel removal (2.4-inch screen)” on page 375.**
- 3 Remove the control panel latch. See **“Control panel latch removal” on page 398.**
- 4 Remove the control panel front cover. See **“Control panel front cover removal” on page 396.**

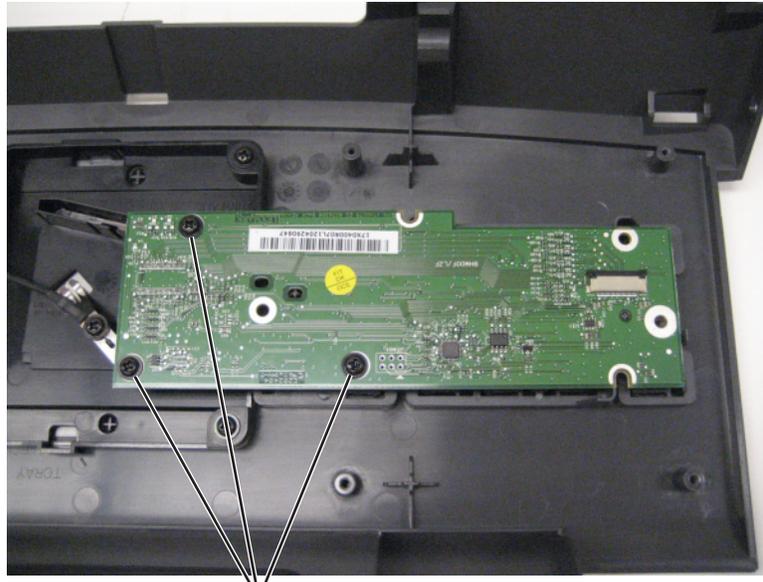
5 Remove the six screws (A) securing the cover to the control panel.



6 Detach the cover.



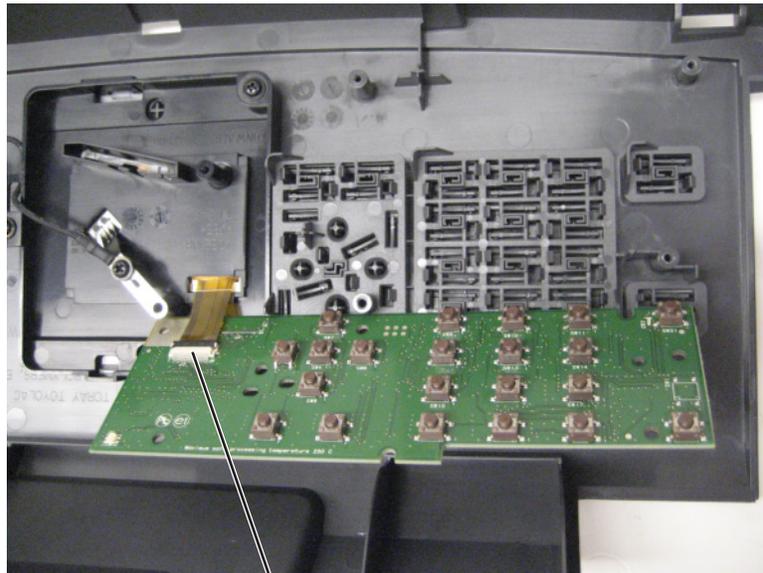
7 Remove the three screws (B) securing the control panel board (7" tilting display) to the control panel.



B

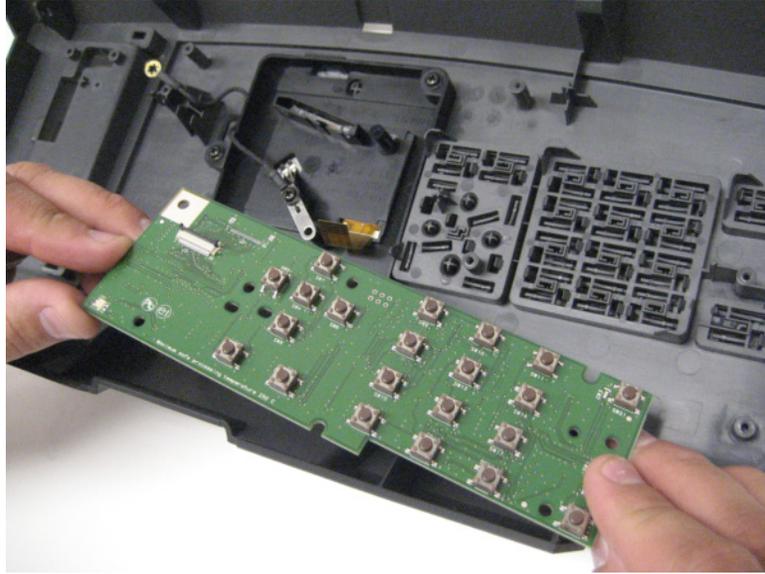
8 Gently detach the control panel board.

9 Disconnect the display ribbon cable (C) from the control panel board.



C

- 10 Remove the control panel board.



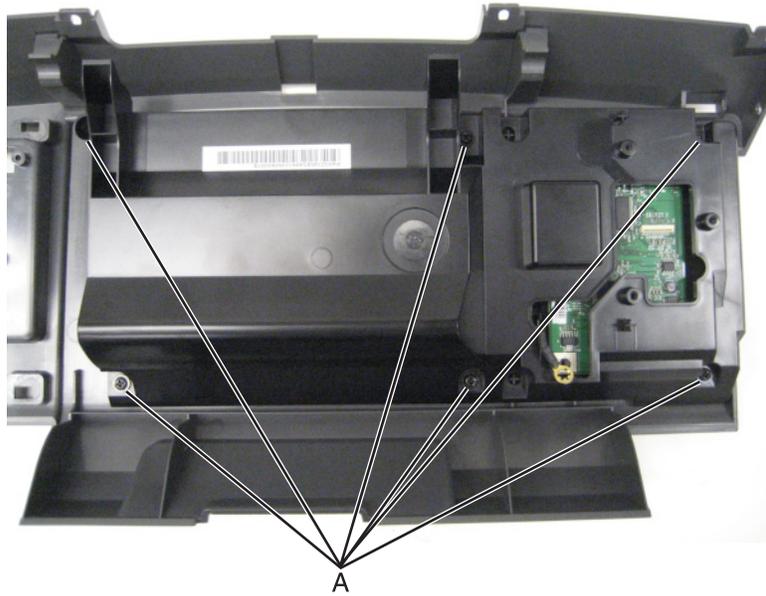
### Control panel board (4.3-inch tilting display) removal

**Warning—Potential Damage:** When replacing the control panel, control panel board, or controller board, replace only one component at a time. Replace the required component and perform a POR before replacing a second component. If this procedure is not followed, the printer will be rendered inoperable. Never replace both the control panel and the controller board without a POR after installing each one or the printer will be rendered inoperable. Never install or remove these components as a method of troubleshooting while operating in normal user mode. See **“Controller board/control panel replacement” on page 256.**

**Warning—Potential Damage:** When a component has been installed in a machine and has been powered up in normal user mode, it cannot be used in another machine; it must be returned to the manufacturer. The machine must be powered up in Diagnostic mode or the controller board, control panel boards, or control panel will become locked.

- 1 Remove the control panel left bezel. See **“Control panel left bezel removal” on page 399.**
- 2 Remove the control panel. See **“Control panel removal (4.3-inch screen, 7-inch screen)” on page 381.**
- 3 Remove the control panel latch. See **“Control panel latch removal” on page 398.**
- 4 Remove the control panel front cover. See **“Control panel front cover removal” on page 396.**

5 Remove the six screws (A) securing the cover to the control panel.



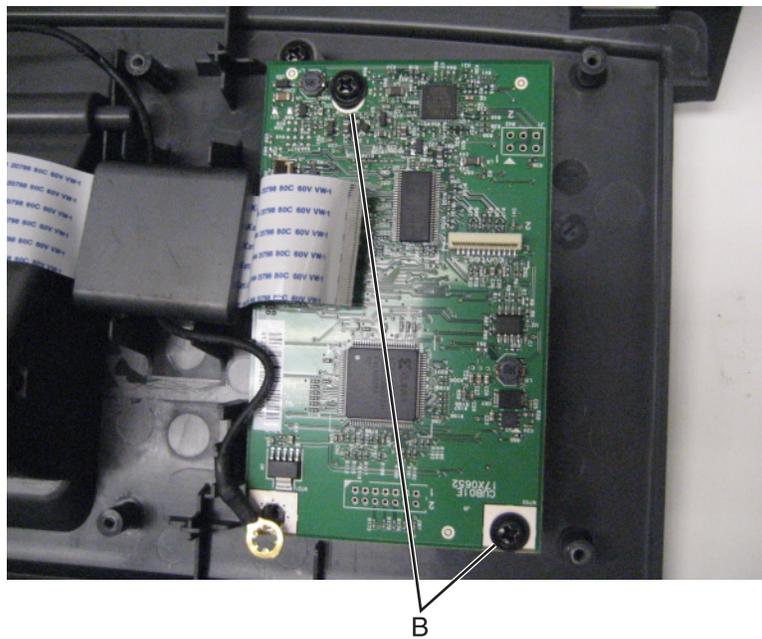
6 Detach the cover.



7 Disconnect the display ribbon cable from the control panel board.



8 Remove the four screws (B) securing the control panel board (7" tilting display) to the control panel.



## 9 Remove the control panel board.



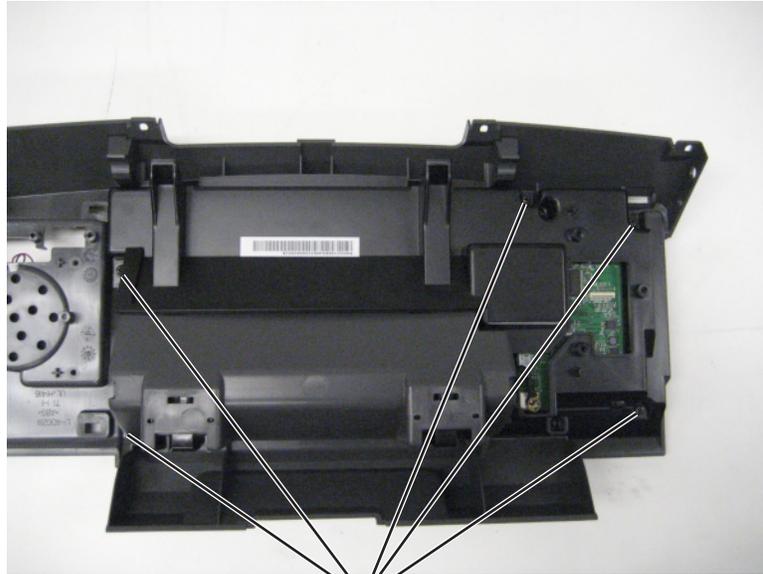
### Control panel board (7-inch tilting display) removal (MS812de)

**Warning—Potential Damage:** When replacing the control panel, control panel board, or controller board, replace only one component at a time. Replace the required component and perform a POR before replacing a second component. If this procedure is not followed, the printer will be rendered inoperable. Never replace both the control panel and the controller board without a POR after installing each one or the printer will be rendered inoperable. Never install or remove these components as a method of troubleshooting while operating in normal user mode. See **“Controller board/control panel replacement” on page 256.**

**Warning—Potential Damage:** When a component has been installed in a machine and has been powered up in normal user mode, it cannot be used in another machine; it must be returned to the manufacturer. The machine must be powered up in Diagnostic mode or the controller board, control panel boards, or control panel will become locked.

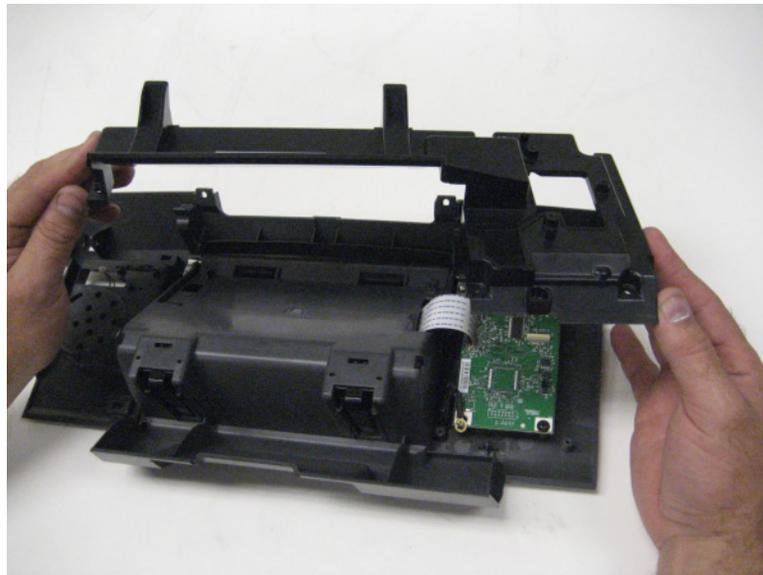
- 1 Remove the control panel left bezel. See **“Control panel left bezel removal” on page 399.**
- 2 Remove the control panel. See **“Control panel removal (4.3-inch screen, 7-inch screen)” on page 381.**
- 3 Remove the control panel latch. See **“Control panel latch removal” on page 398.**
- 4 Remove the control panel front cover. See **“Control panel front cover removal” on page 396.**

5 Remove the five screws (A) securing the cover to the control panel.



A

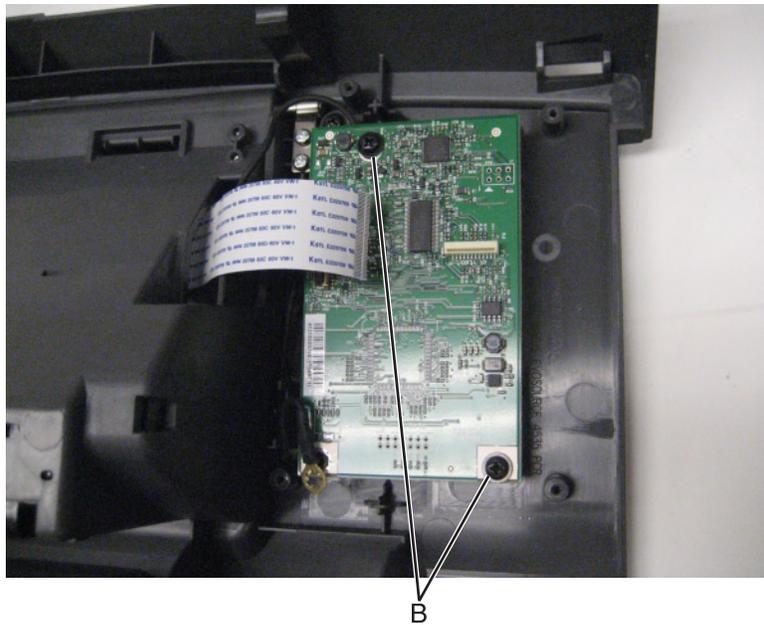
6 Detach the cover.



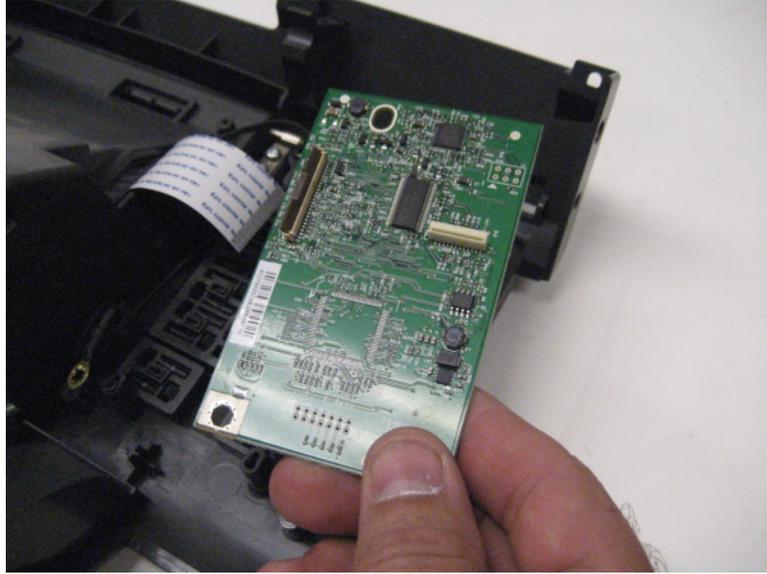
**7** Disconnect the display ribbon cable from the control panel board.



**8** Remove the four screws (B) securing the control panel board (7" tilting display) to the control panel.



9 Remove the control panel board.

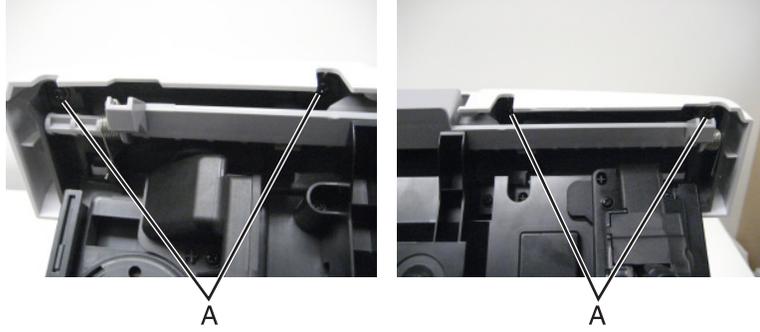


## Control panel front cover removal

1 Raise the control panel to its uppermost position.



**2** Remove the four screws (A) securing the control panel front cover to the machine.

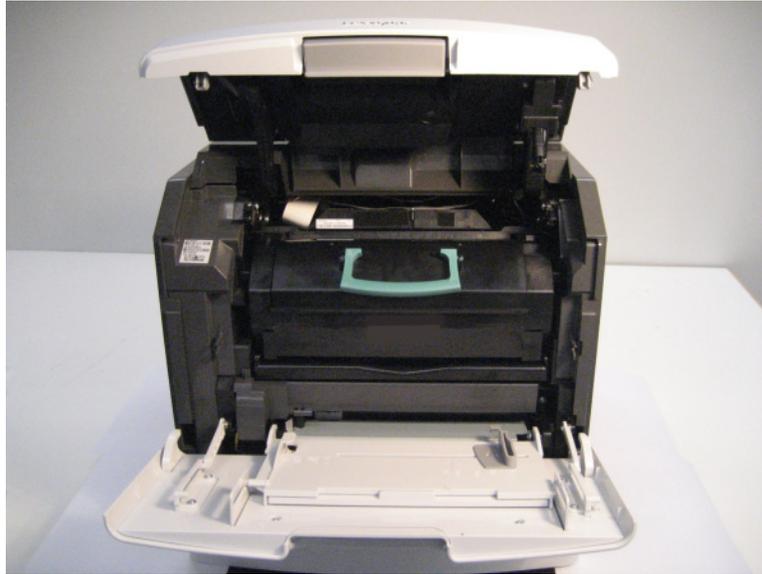


**3** Remove the control panel front cover.



## Control panel latch removal

- 1 Raise the control panel to its uppermost position.

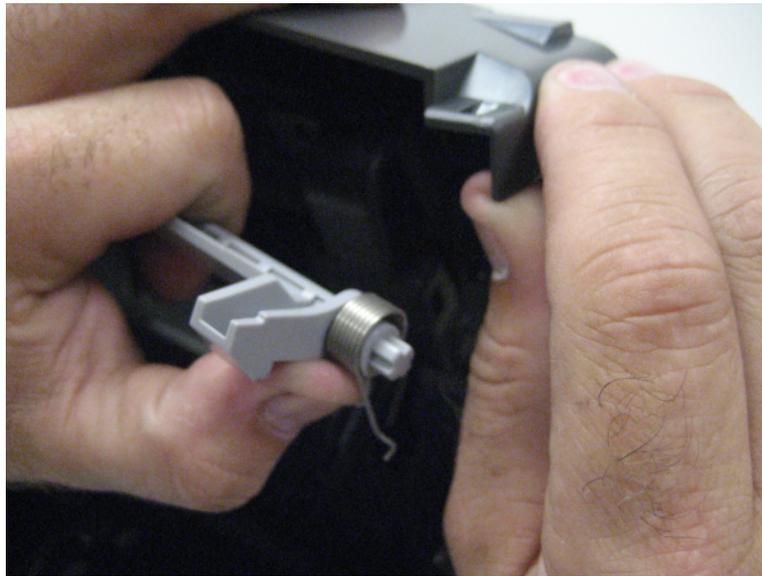


- 2 Remove the control panel front cover. See **“Control panel front cover removal”** on page 396.
- 3 Release the two springs from the control panel frame.

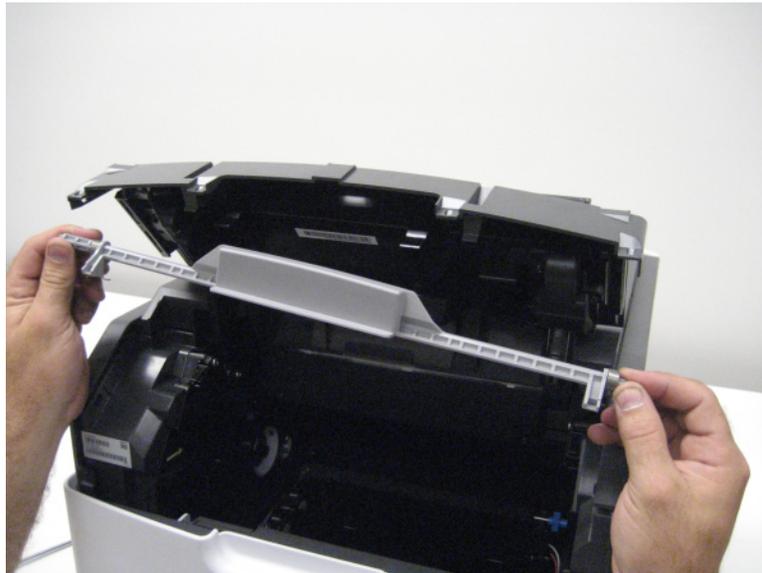


- 4 Carefully flex the corner of the control panel frame as shown in the following image.

**Note:** Force is needed to properly remove the part.



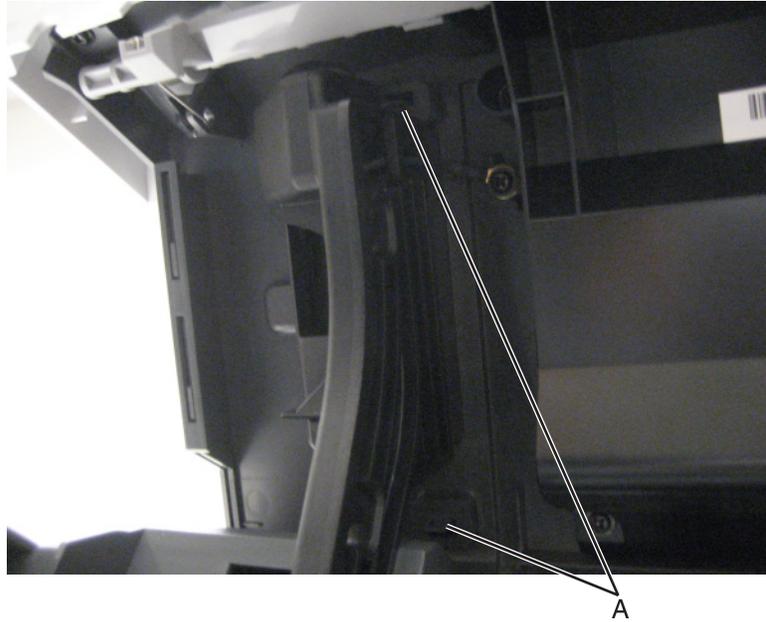
5 Carefully remove the control panel latch.



### Control panel left bezel removal

- 1 Remove the toner supply cartridge.
- 2 Remove the imaging unit.
- 3 Raise the control panel to its uppermost position.

- 4 Release the two hooks (A) securing the control panel left bezel to the machine.



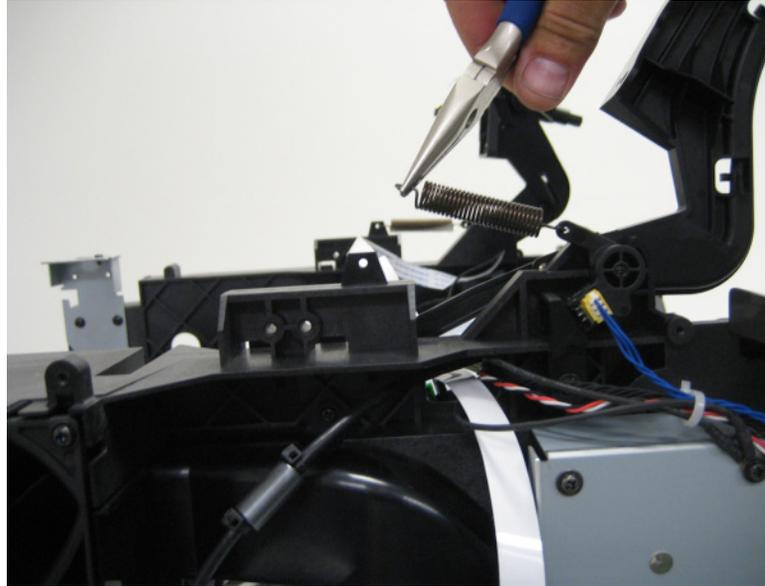
- 5 Remove the control panel left bezel.



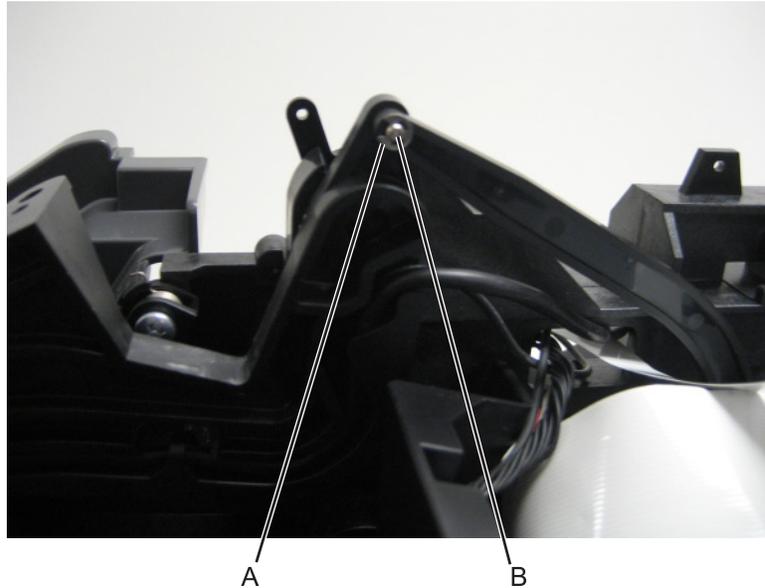
## Left control panel hinge removal

- 1 Remove the left cover. See **“Left cover removal” on page 277.**
- 2 Remove the right cover. See **“Right cover removal” on page 283.**
- 3 Open the rear door.
- 4 Remove the top cover. See **“Top cover removal” on page 282.**
- 5 Remove the upper redrive. See **“Upper redrive removal” on page 331.**

- 6 Remove the output bin sensor cover. See **“Output bin sensor cover removal”** on page 326.
- 7 Remove the sensor (standard bin full) with actuator. See **“Sensor (standard bin full) removal”** on page 329.
- 8 Remove the standard bin cover. See **“Standard bin cover removal”** on page 330.
- 9 Remove the control panel. See **“Control panel removal (2.4-inch screen)”** on page 375 or **“Control panel removal (4.3-inch screen, 7-inch screen)”** on page 381.
- 10 Disconnect the left recoil spring.

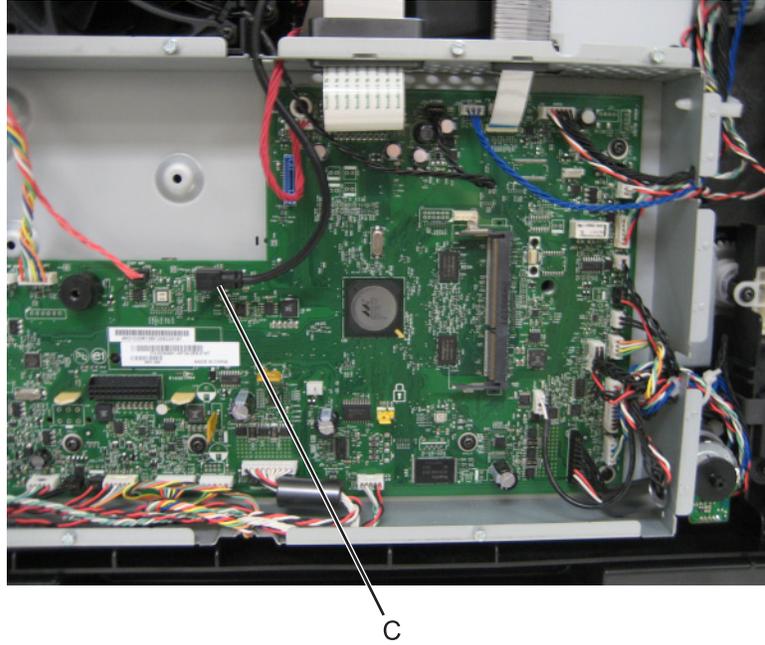


- 11 Remove the e-clip (A) securing the pin to the left control panel hinge.
- 12 Remove the pin (B).

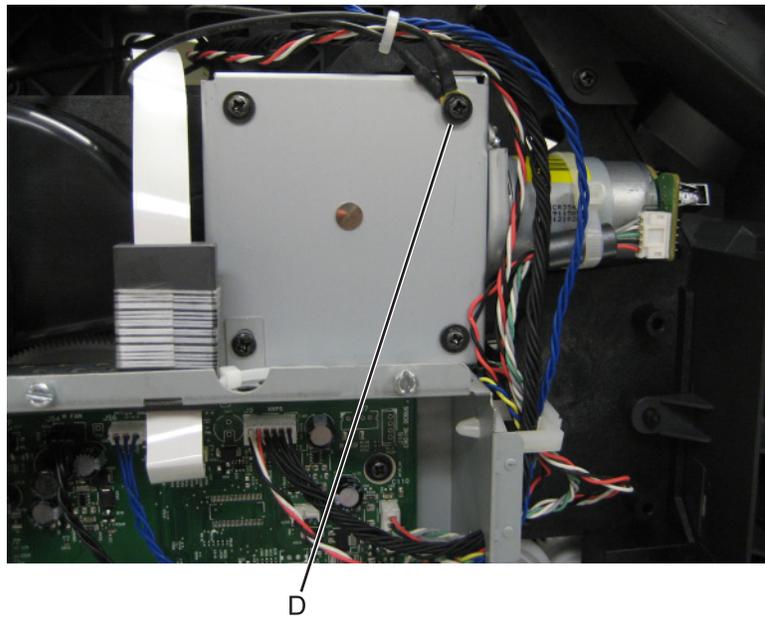


- 13 Remove the controller board access shield. See **“Controller board access shield removal”** on page 351.

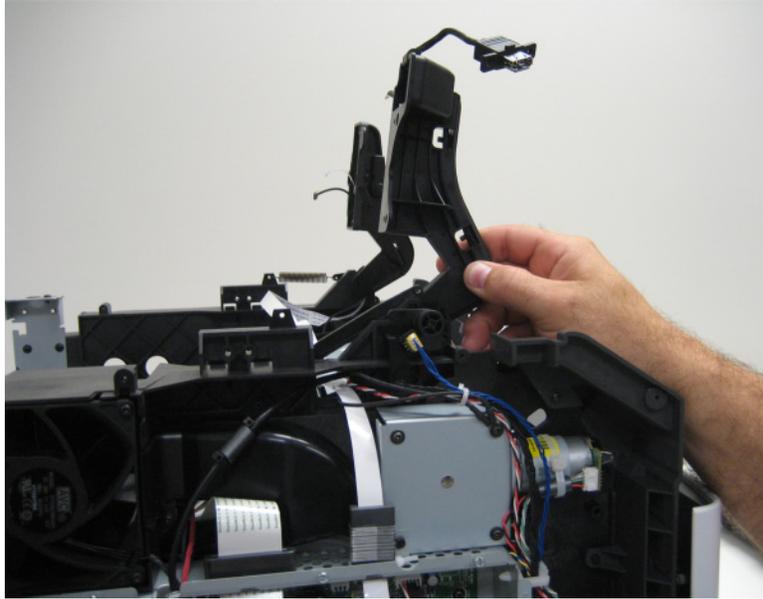
**14** Disconnect the USB cable (C) from the controller board.



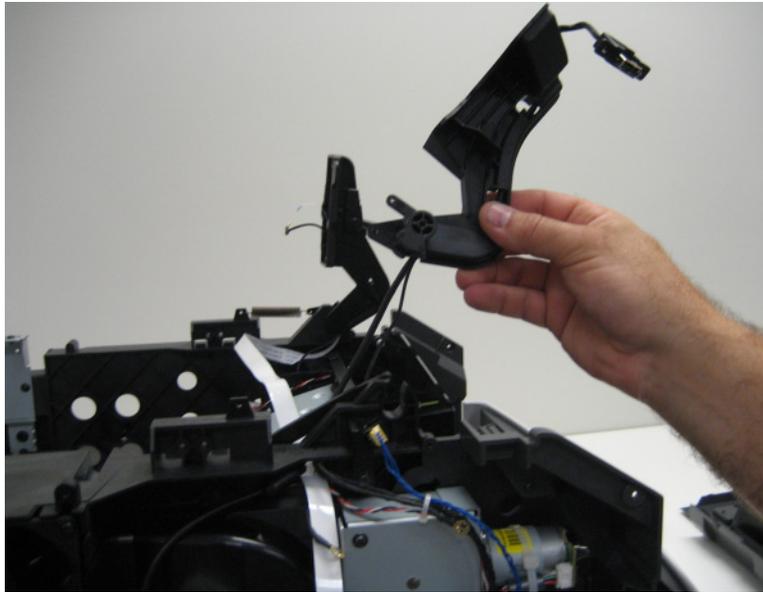
**15** Remove the screw (D) securing the ground wire.



**16** Position the left control panel hinge as shown in the following image.



**17** Remove the left control panel hinge.



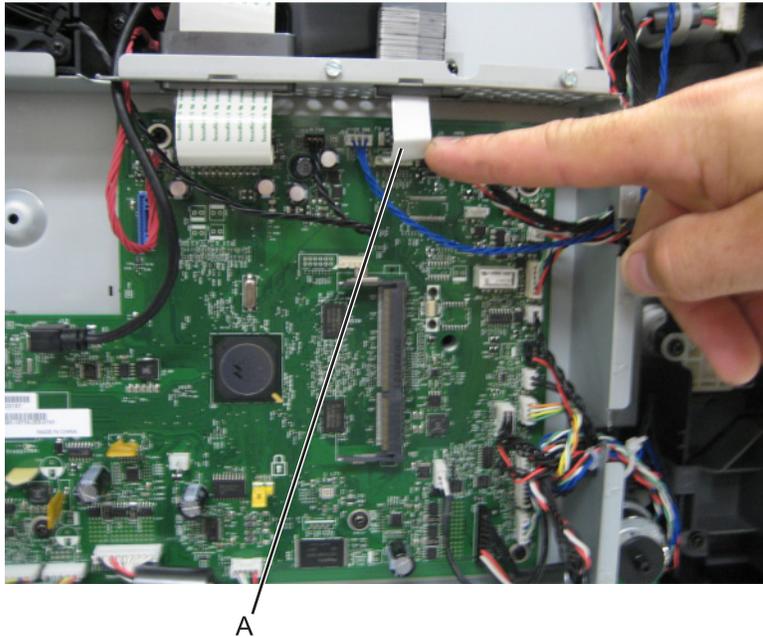
### Right control panel hinge removal

- 1** Remove the left cover. See **“Left cover removal” on page 277.**
- 2** Remove the right cover. See **“Right cover removal” on page 283.**
- 3** Open the rear door.
- 4** Remove the top cover. See **“Top cover removal” on page 282.**
- 5** Remove the upper redrive. See **“Upper redrive removal” on page 331.**

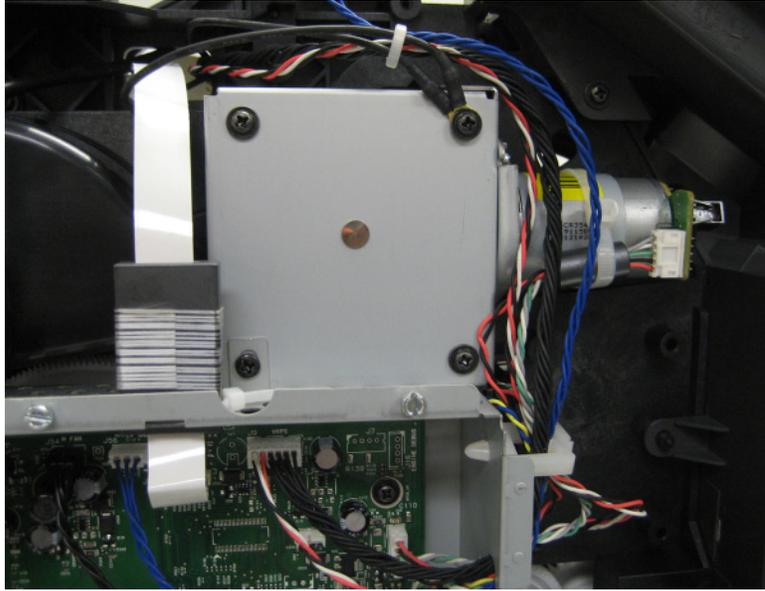
- 6 Remove the output bin sensor cover. See **“Output bin sensor cover removal”** on page 326.
- 7 Remove the sensor (standard bin full) with actuator. See **“Sensor (standard bin full) removal”** on page 329.
- 8 Remove the standard bin cover. See **“Standard bin cover removal”** on page 330.
- 9 Remove the control panel. See **“Control panel removal (2.4-inch screen)”** on page 375 or **“Control panel removal (4.3-inch screen, 7-inch screen)”** on page 381.
- 10 Disconnect the right recoil spring.



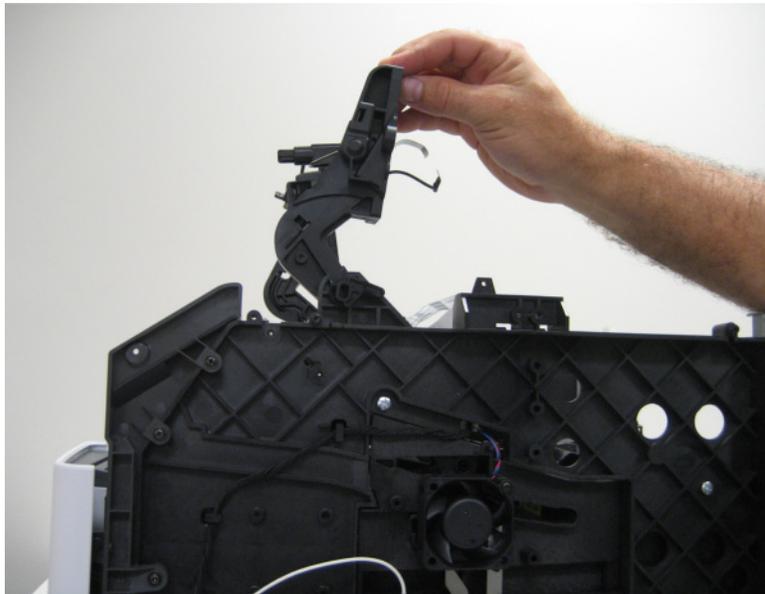
- 11 Remove the controller board access shield. See **“Controller board access shield removal”** on page 351.
- 12 Disconnect the control panel ribbon cable (A) from the controller board.



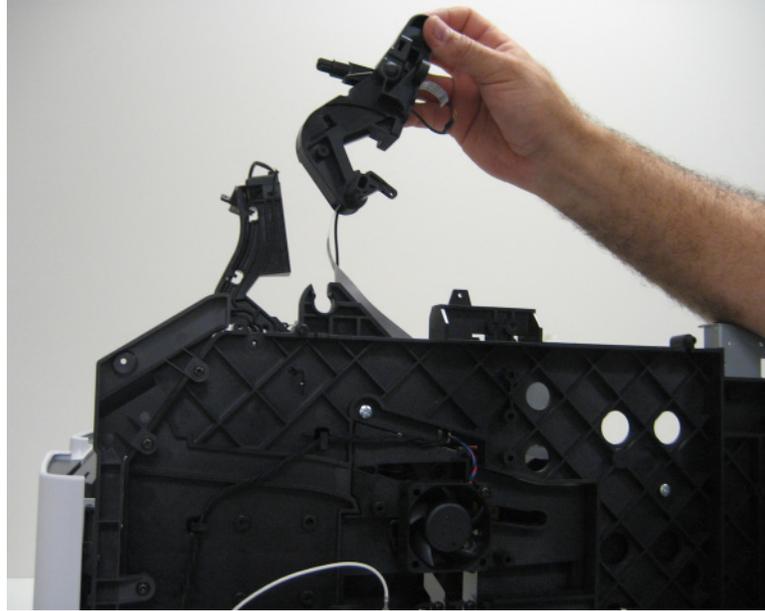
**13** Remove the screw (B) securing the ground wire.



**14** Position the right control panel hinge as shown in the following image.



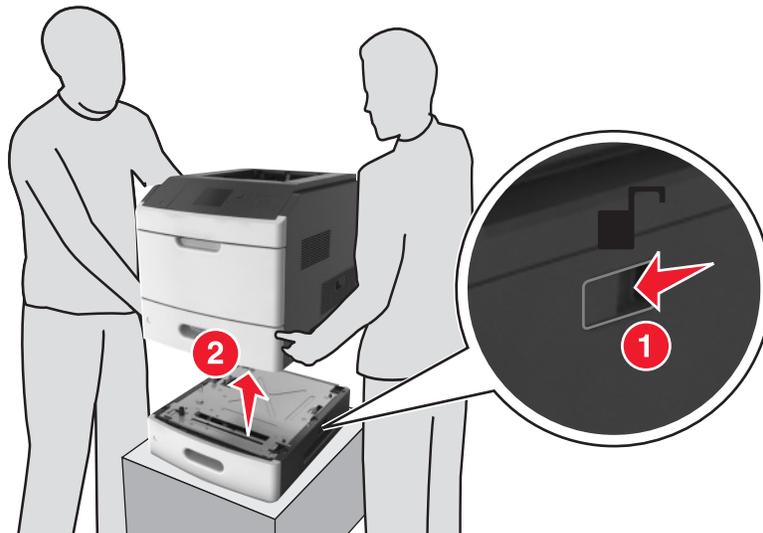
**15** Remove the right control panel hinge.



## 250/550-sheet media tray option removals

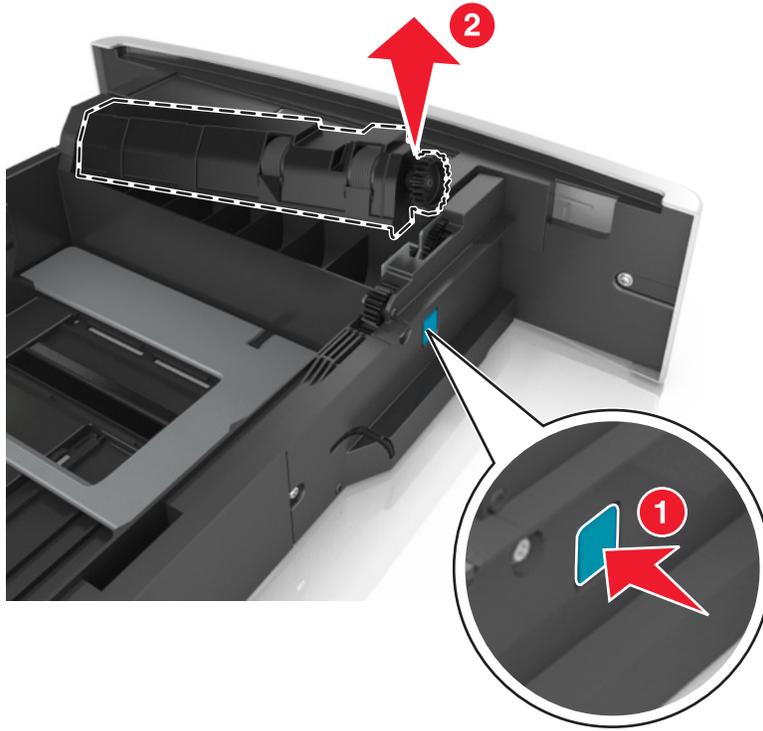
### 250/550-sheet media tray and drawer assembly removal

Push the latch to unlock the drawer (1), then lift the printer or drawer above it, and separate (2).



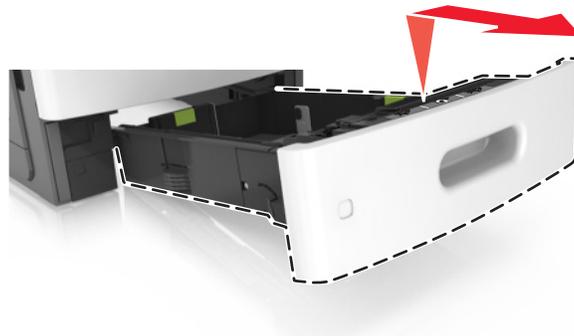
## Media tray separation roller removal

Press and hold the button (1), then pull the separation roller (2) and remove.



## Media tray assembly removal

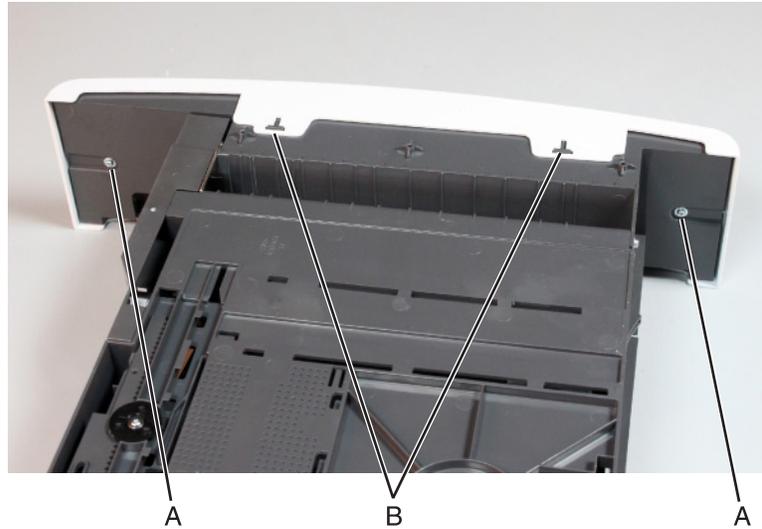
Fully extend the tray, then tilt it upward and remove.



## Media tray front cover removal

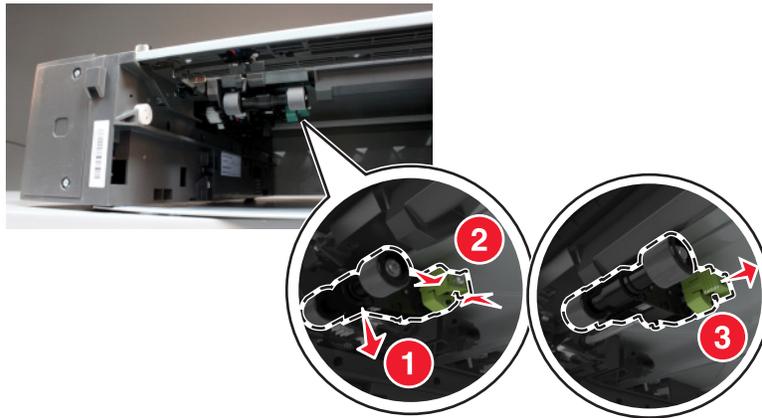
- 1 Remove the media tray. See **"250/550-sheet media tray and drawer assembly removal"** on page 406.
- 2 Remove the two screws (A) securing the front tray cover.

- 3 Release the tabs (B) at the bottom, then remove the front tray cover.



### Drawer pick roller removal

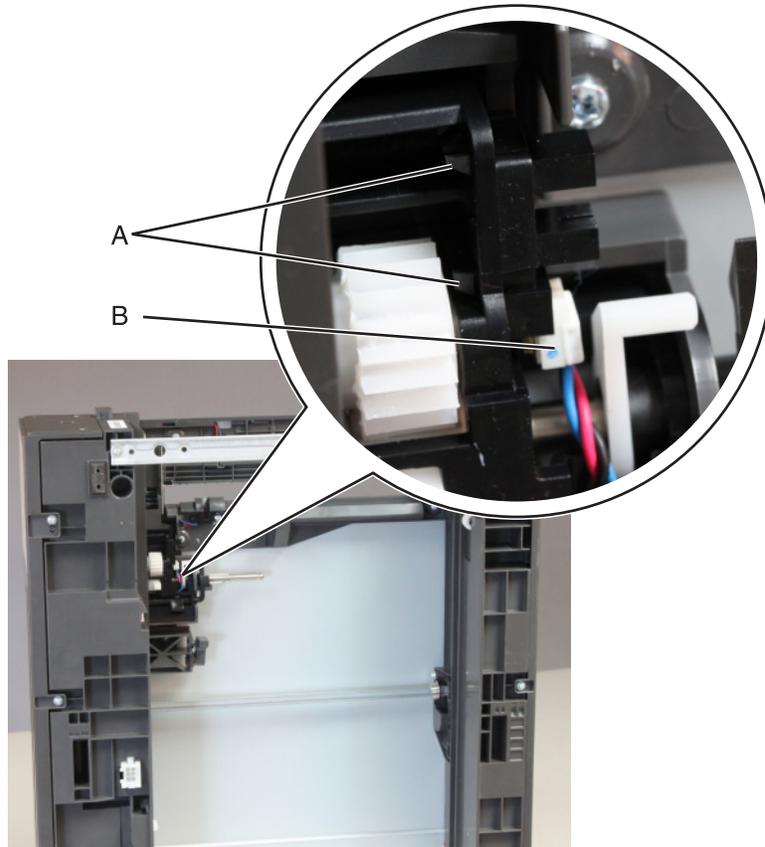
- 1 Remove the media tray. See **“250/550-sheet media tray and drawer assembly removal”** on page 406.
- 2 Move the rollers downward (1), then push the latches inward (2), and pull out the pick roller (3).



### Sensor (pick roll position) removal

- 1 Remove the media tray. See **“250/550-sheet media tray and drawer assembly removal”** on page 406.
- 2 Remove the pick roller. See **“Drawer pick roller removal”** on page 408.
- 3 Release the latches (A), then pull away the sensor.

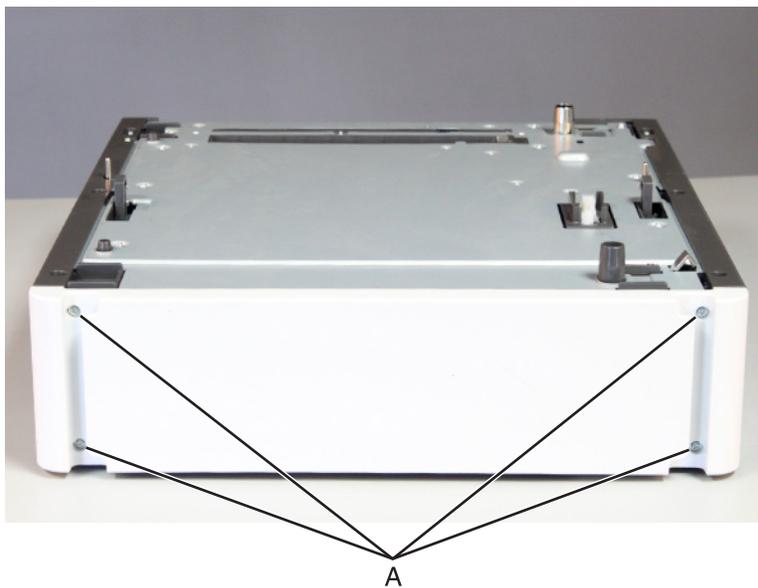
4 Disconnect the cable (B), and remove the sensor (pick roller position).



### Drawer assembly rear cover removal

**Note:** This is not a FRU.

Remove the four screws (A), then remove the rear cover.



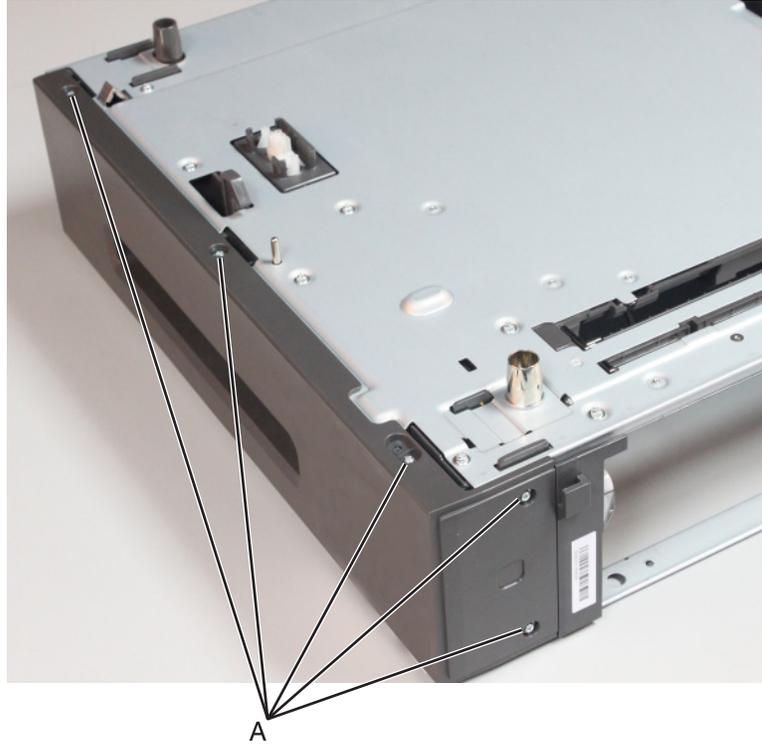
Repair information

**409**

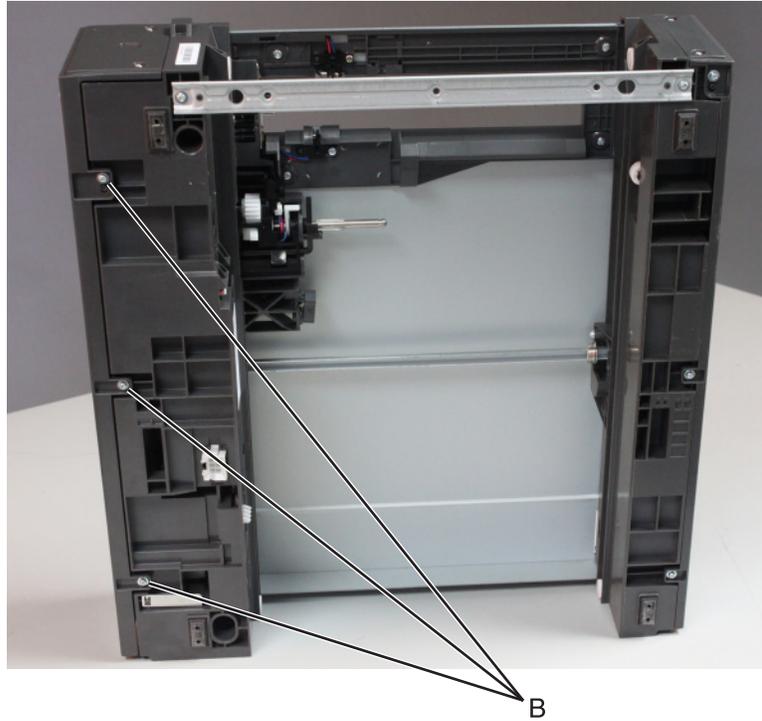
## Drawer assembly left cover removal

**Note:** This is not a FRU.

- 1 Remove the drawer assembly rear cover. See **“Drawer assembly rear cover removal”** on page 409.
- 2 Remove the five screws (A) from the left cover.



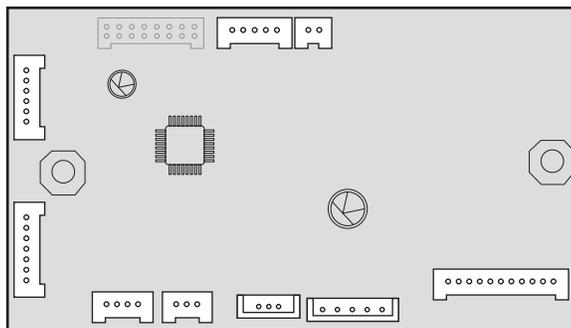
- 3 Remove the three screws (B) from the bottom of the left cover.

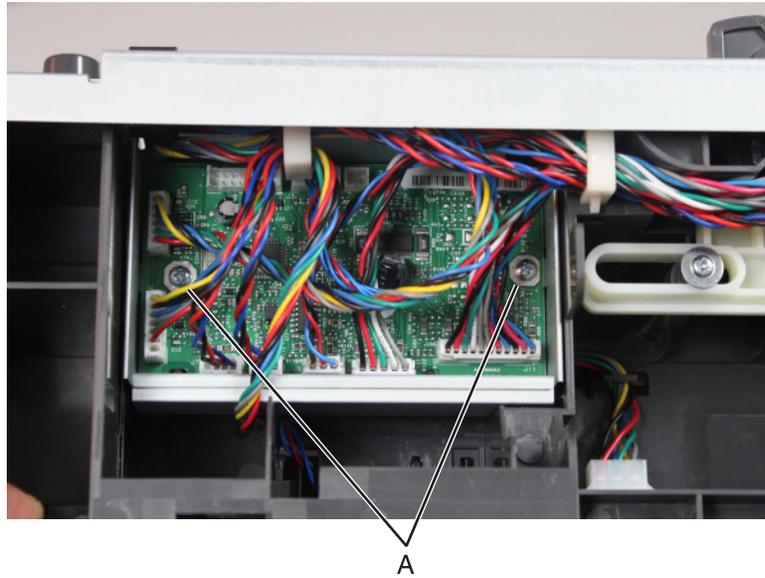


- 4 Pull the left cover, and remove.

### Drawer controller PCBA removal

- 1 Remove the drawer assembly rear cover. See **“Drawer assembly rear cover removal”** on page 409.
- 2 Remove the drawer assembly left cover. See **“Drawer assembly left cover removal”** on page 410.
- 3 Disconnect all cables (J3, J4, J11, J10, J9, J8, J7, J6, and J1) from the controller PCBA, then remove the two screws (A).

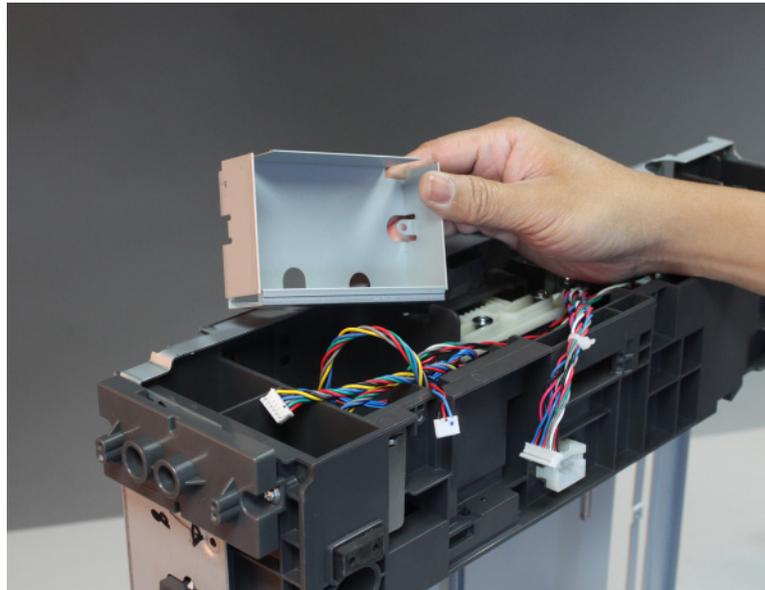




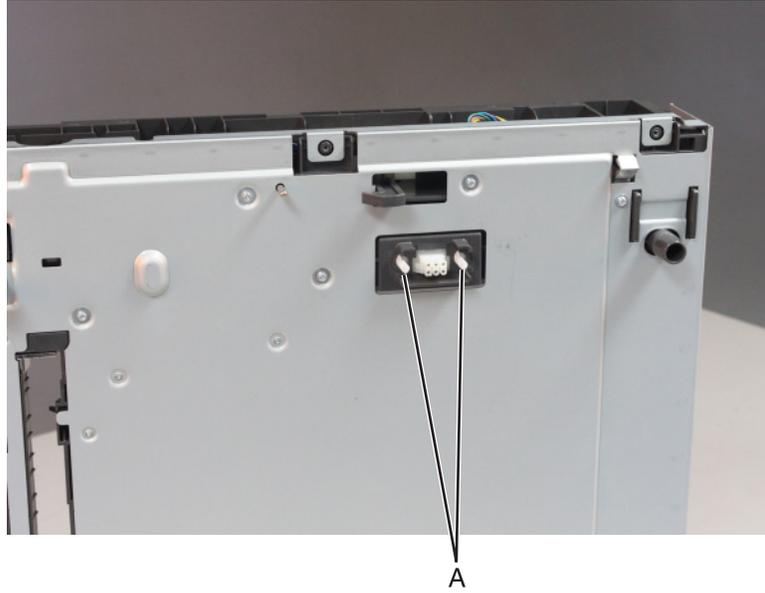
- 4 Remove the controller PCBA.

### Drawer upper interface cable removal

- 1 Remove the drawer assembly rear cover. See [“Drawer assembly rear cover removal” on page 409](#).
- 2 Remove the drawer assembly left cover. See [“Drawer assembly left cover removal” on page 410](#).
- 3 Remove the tray controller PCBA. See [“Drawer controller PCBA removal” on page 411](#).
- 4 Remove the controller PCBA shield.



- 5 Crimp both connector studs (A) using a pliers to make them fit to the holes. Push the connector off its slot.

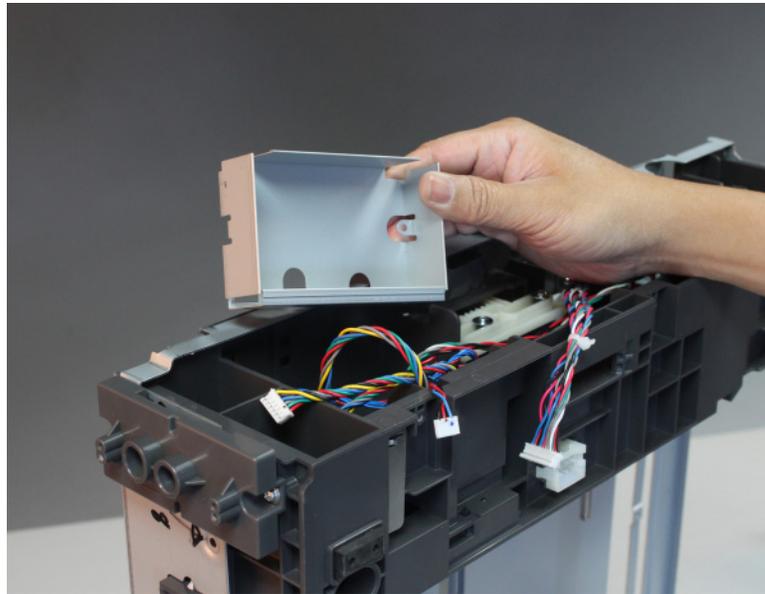


- 6 Route the upper interface cable off the drawer, and remove.

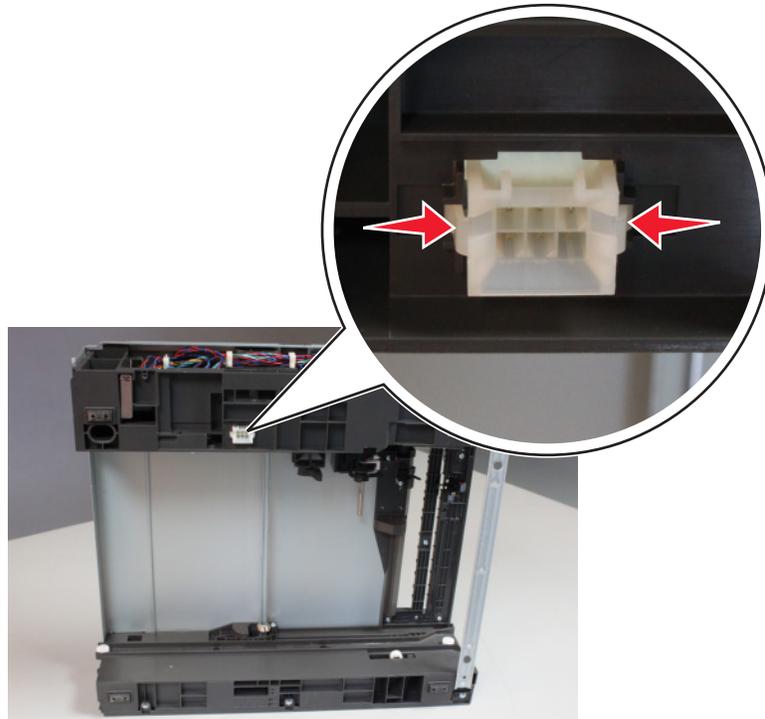
**Note:** Pay attention to the original routing of the cable.

## Drawer lower interface cable removal

- 1 Remove the drawer assembly rear cover. See **“Drawer assembly rear cover removal”** on page 409.
- 2 Remove the drawer assembly left cover. See **“Drawer assembly left cover removal”** on page 410.
- 3 Remove the drawer controller PCBA. See **“Drawer controller PCBA removal”** on page 411.
- 4 Remove the controller PCBA shield.



- 5 Push the tabs inward, then push the connector off its slot.

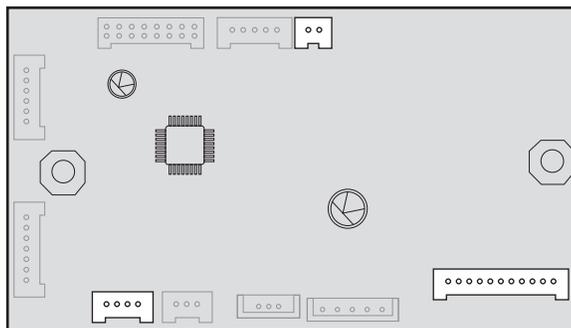


- 6 Route the interface cable off the drawer, and remove.

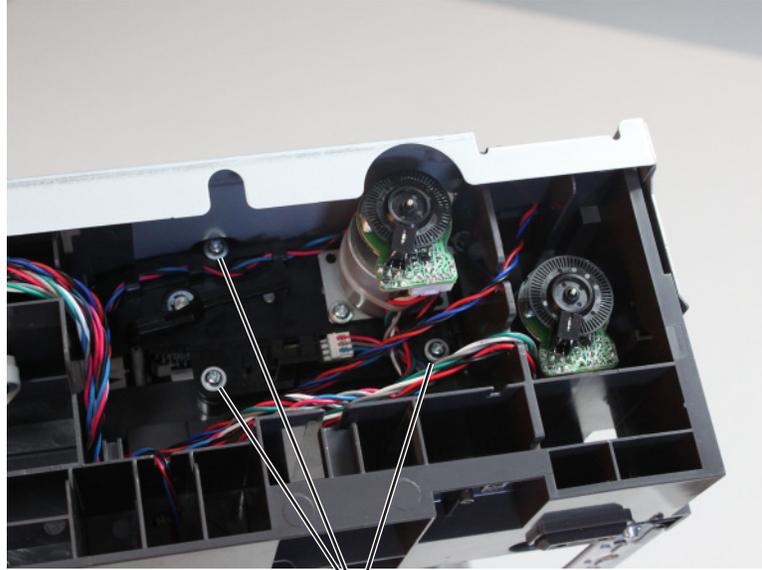
**Note:** Pay attention to the original routing of the cable.

## Drawer media feeder removal

- 1 Remove the drawer assembly rear cover. See **“Drawer assembly rear cover removal”** on page 409.
- 2 Remove the drawer assembly left cover. See **“Drawer assembly left cover removal”** on page 410.
- 3 Disconnect the three media feeder cables (J11, J4 and J7) from the controller PCBA.



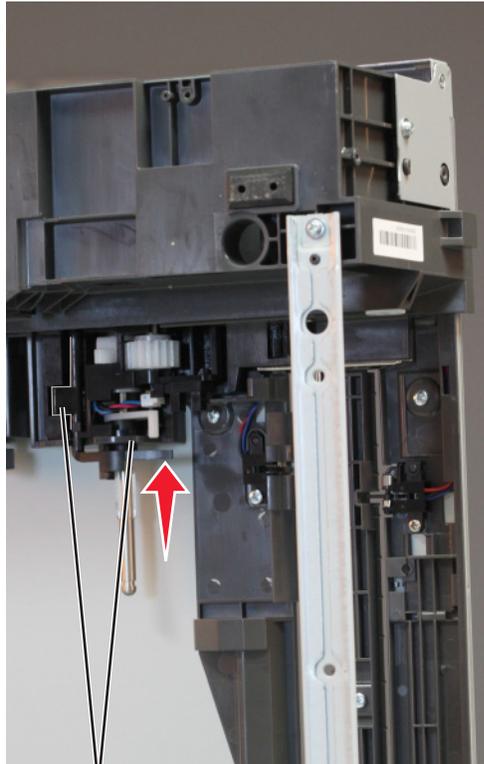
4 Remove the three screws from the media feeder using a #1 Phillips screwdriver.



A

5 To remove the media feeder, take note of the following:

- While pushing the media feeder upward, clear the obstacle points (B).

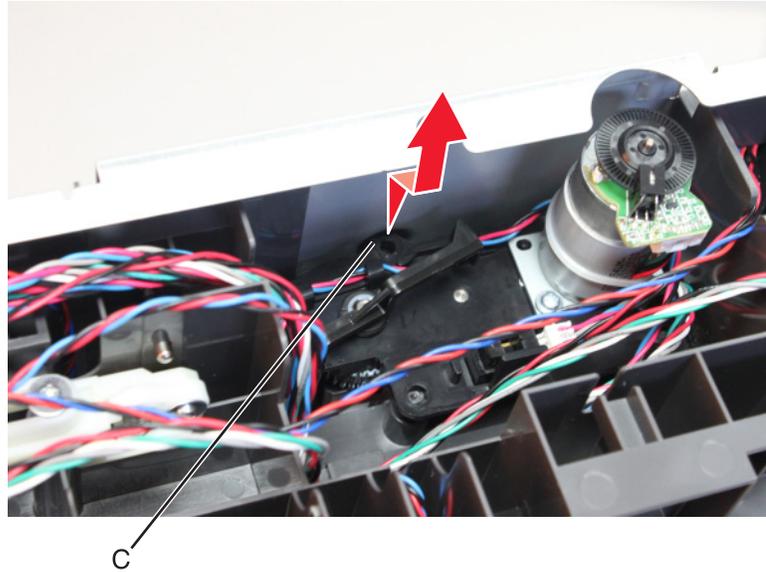


B

Repair information

415

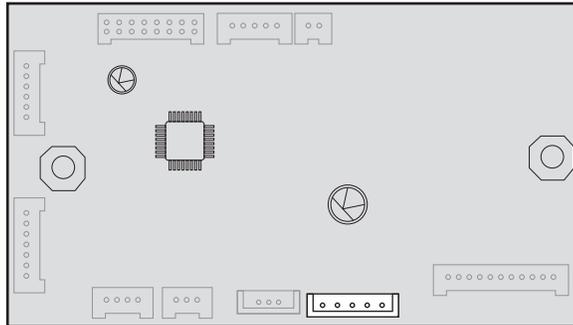
- While pushing the media feeder upward, release the tab (C) by pulling the feeder backward.



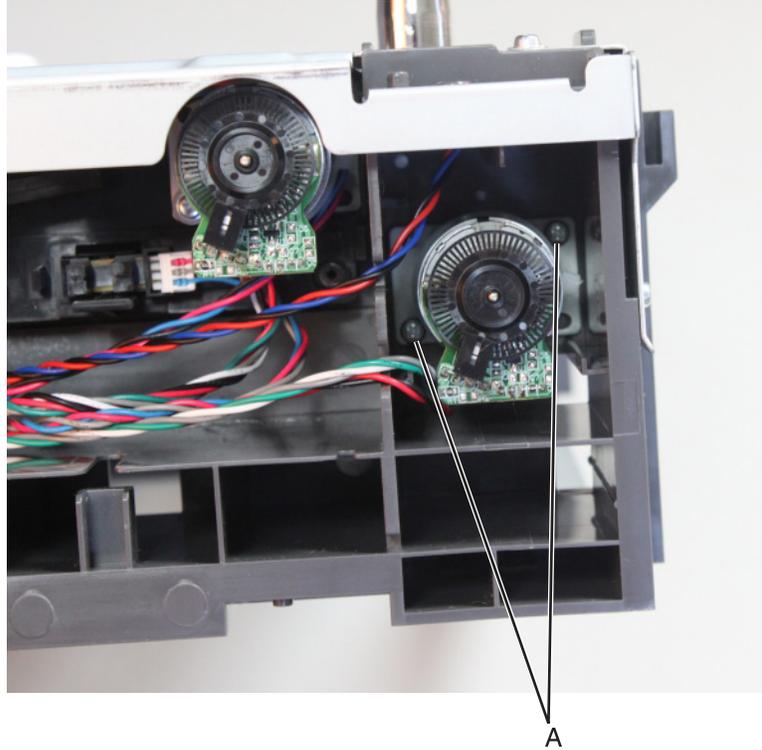
**Warning—Potential Damage:** Ease the media feeder off the drawer. Be careful not to damage the media feeder.

## Drawer transport motor removal

- 1 Remove the drawer assembly rear cover. See **“Drawer assembly rear cover removal” on page 409.**
- 2 Remove the drawer assembly left cover. See **“Drawer assembly left cover removal” on page 410.**
- 3 Disconnect the drive motor cable (J10) from the controller PCBA.



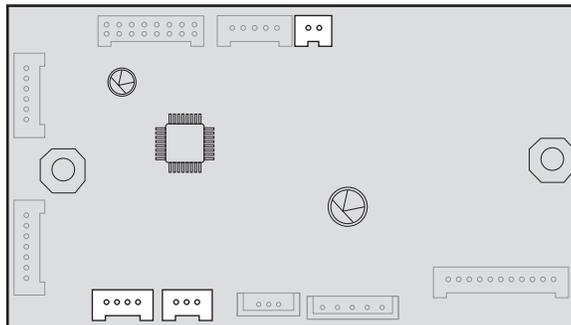
- 4 Remove the two screws (A) using a #1 Phillips screwdriver.



- 5 Route the cable off the drawer, then remove the transport motor.

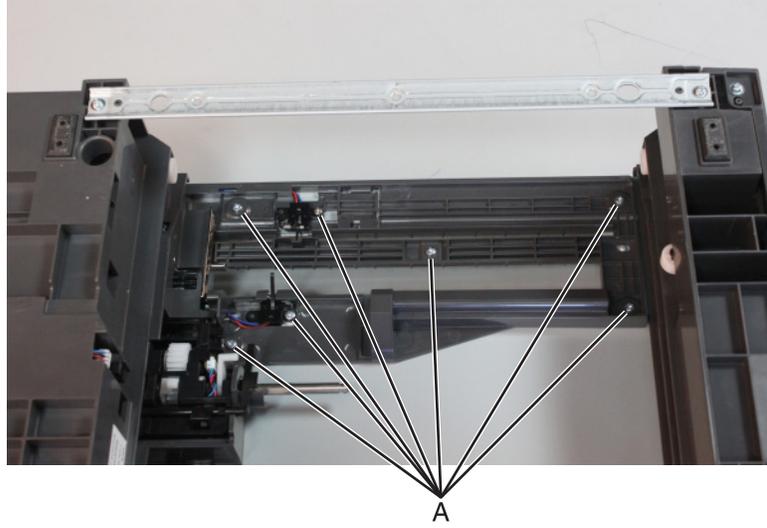
### Sensor (drawer pass through) removal

- 1 Remove the media tray. See [“250/550-sheet media tray and drawer assembly removal”](#) on page 406.
- 2 Remove the rear cover. See [“Drawer assembly rear cover removal”](#) on page 409.
- 3 Remove the left cover. See [“Drawer assembly left cover removal”](#) on page 410.
- 4 Disconnect and release the cables (J4, J8 and J7) from the controller PCBA.

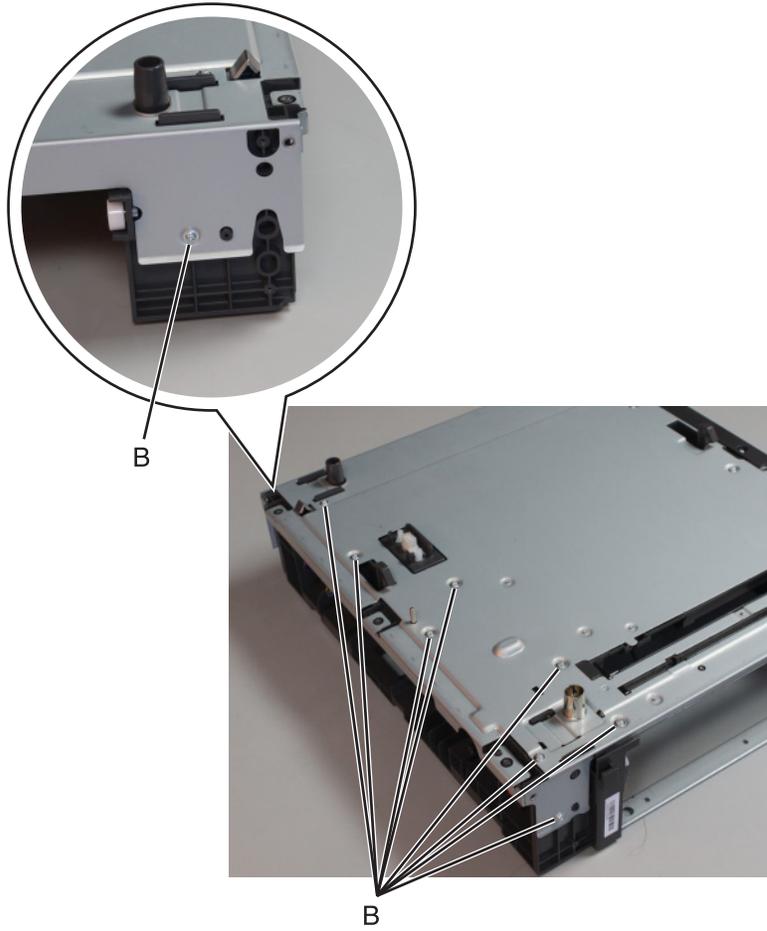


**Note:** Pay attention to the original position of the cables.

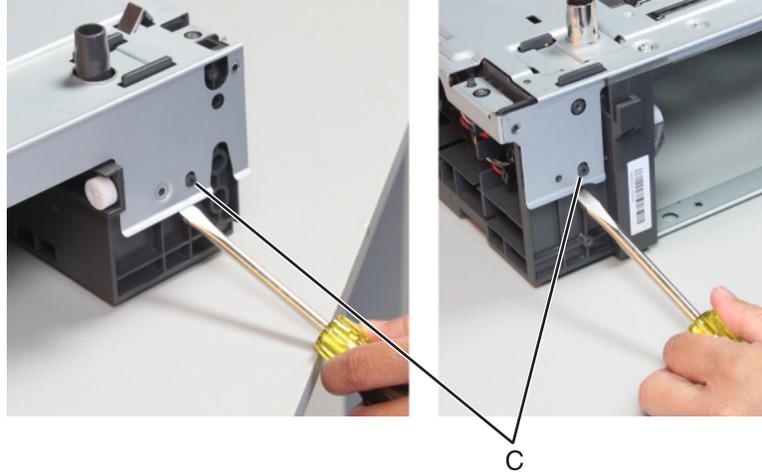
5 Remove the seven screws (A) under the drawer.



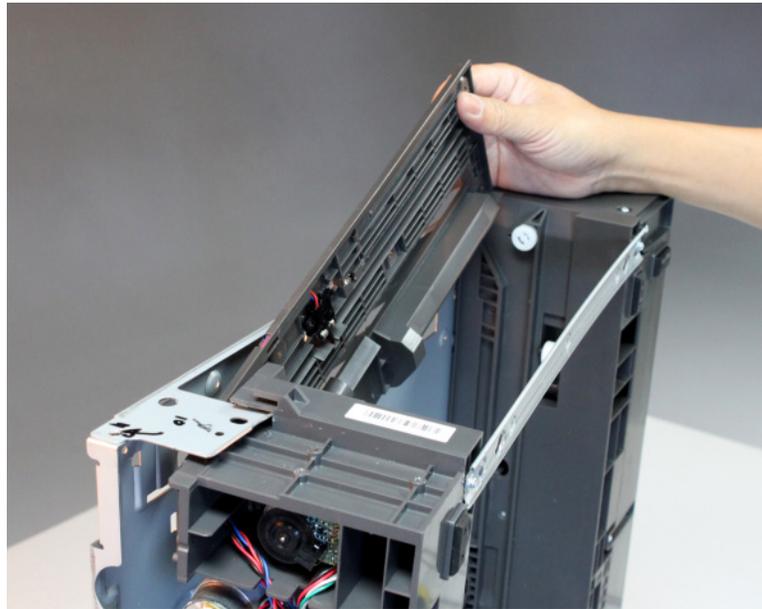
6 From the left side of the drawer, remove the nine screws (B).



7 Pry the frame loose to release the pins (C).



8 To access the cable, lift the left side of the top plate, and pull the sensor assembly away from the drawer.



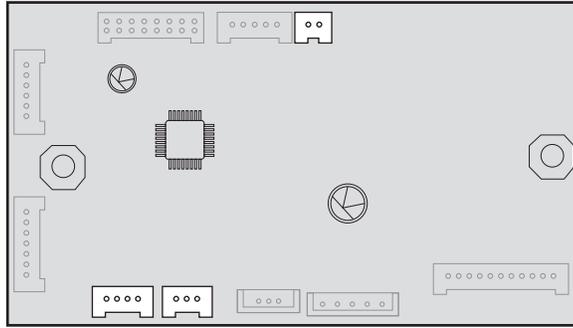
**Note:** Pay attention to the original routing of the cable.

9 Route the sensor cable off the drawer, and remove the sensor.

## Sensor (pick) removal

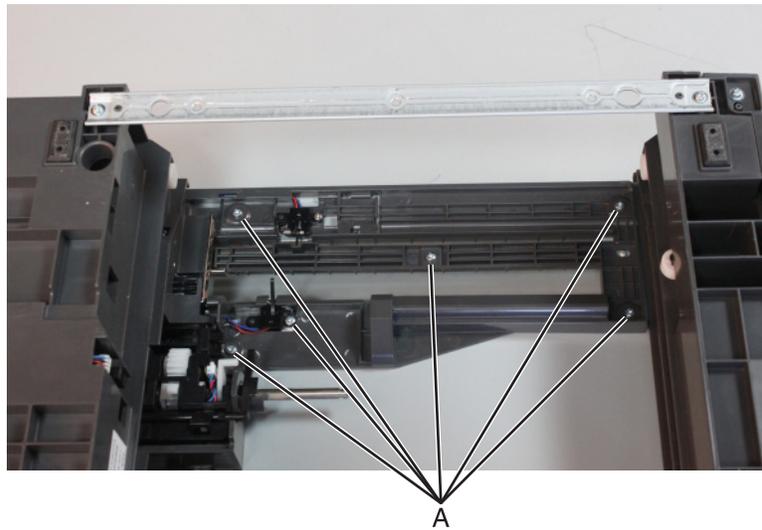
- 1 Remove the media tray. See **"250/550-sheet media tray and drawer assembly removal"** on page 406.
- 2 Remove the rear cover. See **"Drawer assembly rear cover removal"** on page 409.
- 3 Remove the left cover. See **"Drawer assembly left cover removal"** on page 410.

4 Disconnect and release the cables (J4, J8 and J7) from the controller PCBA.

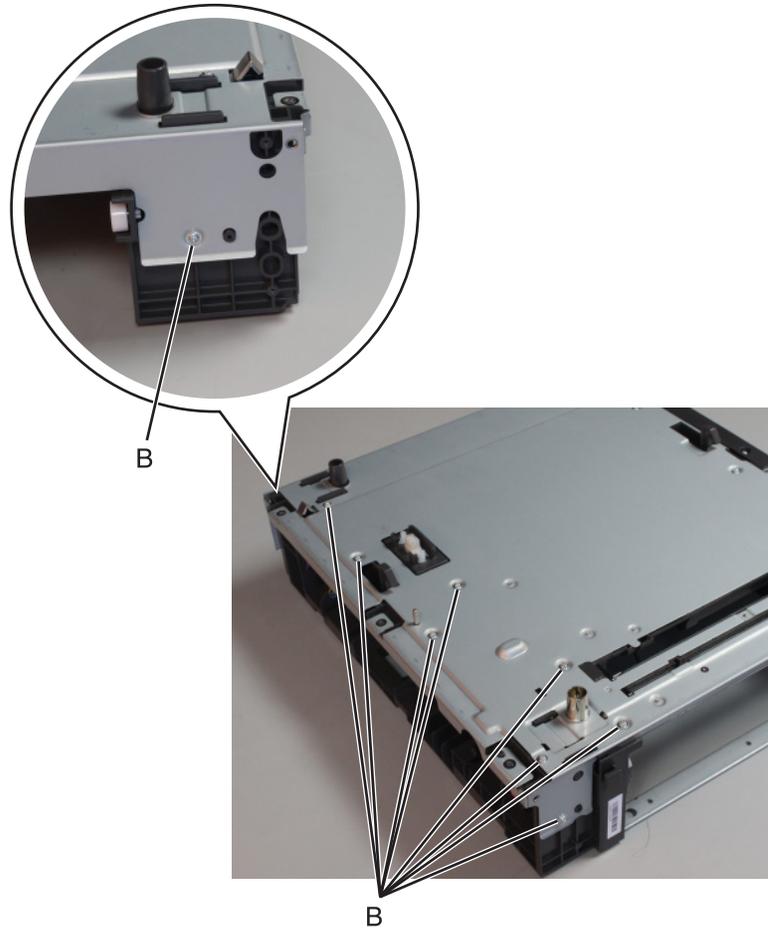


**Note:** Pay attention to the original position of the cables.

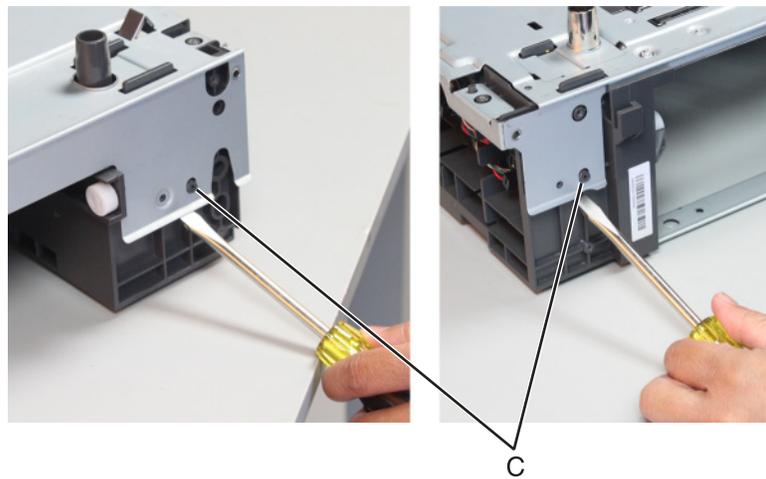
5 Remove the six screws (A) under the drawer.



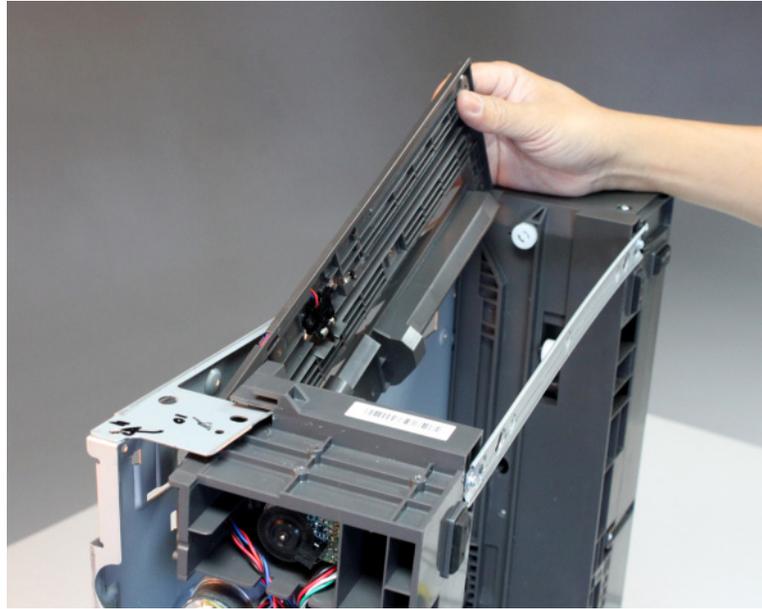
6 From the left side of the drawer, remove the nine screws (B).



7 Pry the frame loose to release the pins (C).



- 8 To access the cable, lift the left side of the top plate, and pull the sensor assembly away from the drawer.



**Note:** Pay attention to the original routing of the cable.

- 9 Route the sensor cable off the drawer, and remove the sensor.

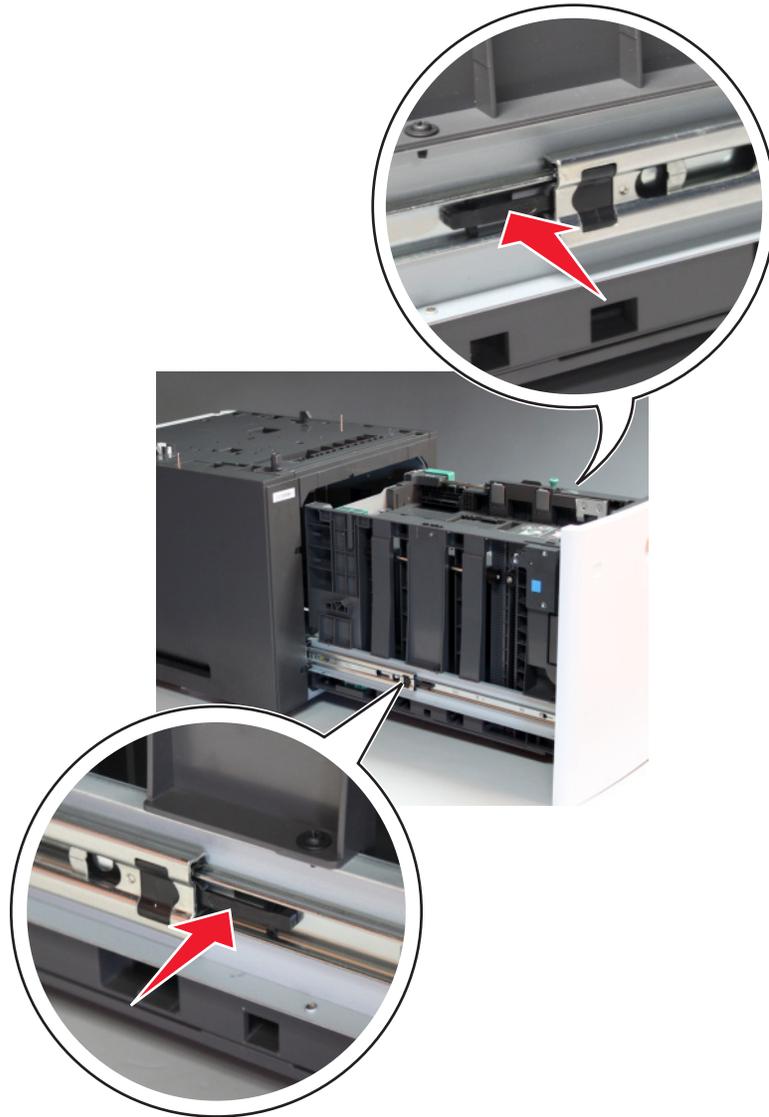
## High capacity input tray option removals

### HCIT and drawer assembly removal

- 1 Push the latch sideward until it locks.
- 2 Lift the printer or drawer above it, and separate.

## HCIT removal

- 1 Fully extend the tray, then press the left and right latches to release the tray.



- 2 Pull the media tray out of the drawer.

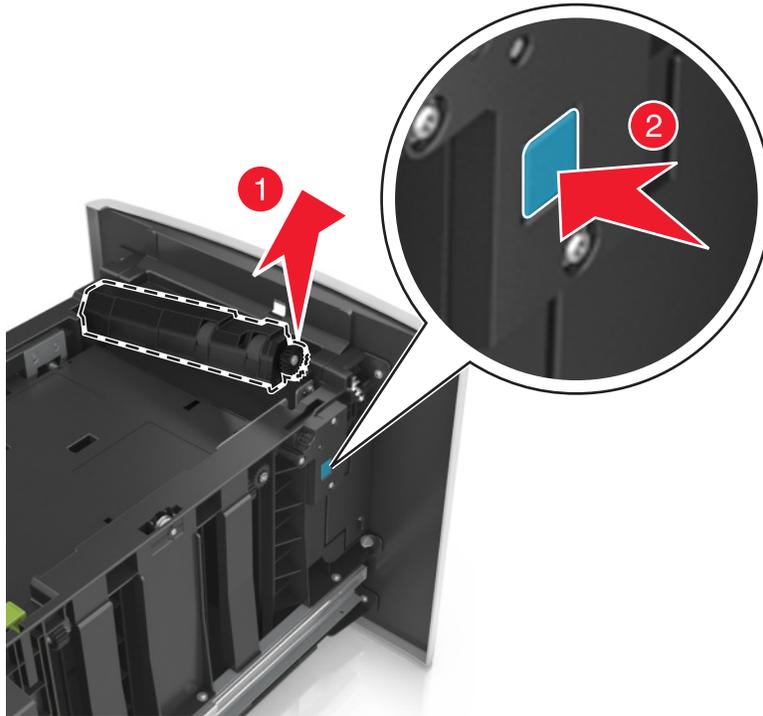
## HCIT drawer assembly removal

Remove the HCIT. See **"HCIT removal" on page 423**.

The drawer remains.

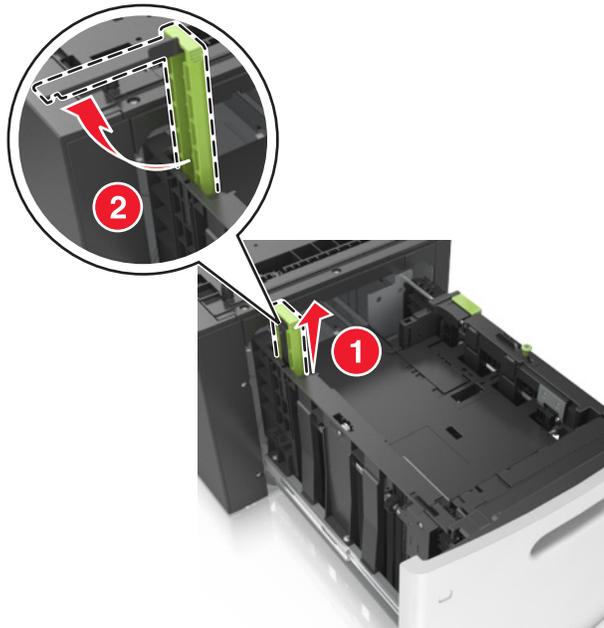
## HCIT separator roll assembly removal

Press and hold the button (1), then pull the separator roll assembly and remove (2).



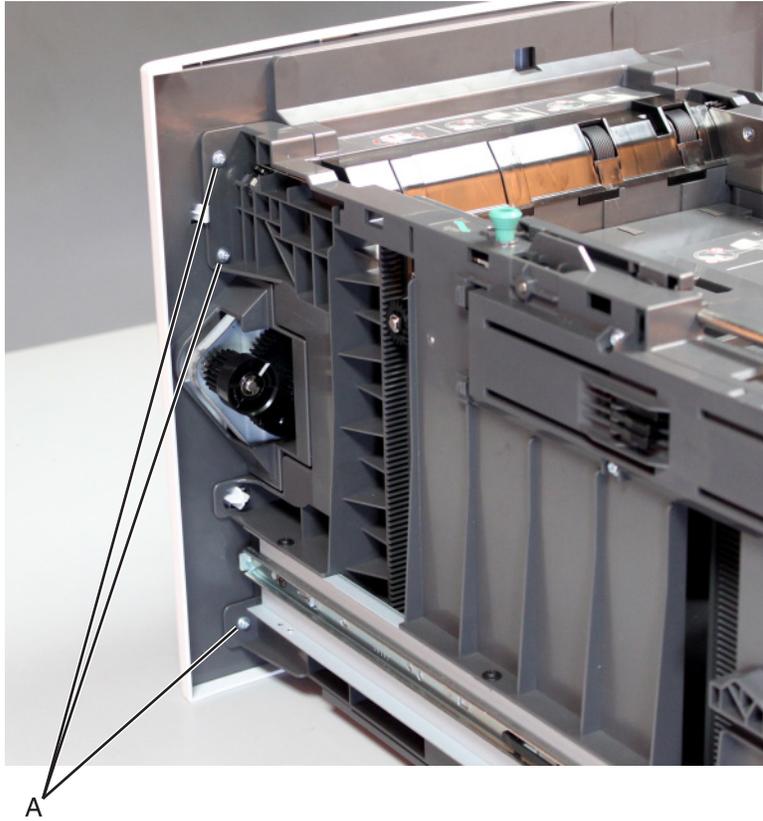
## HCIT media guide removal

Pull the media guide out of the tray, and remove.

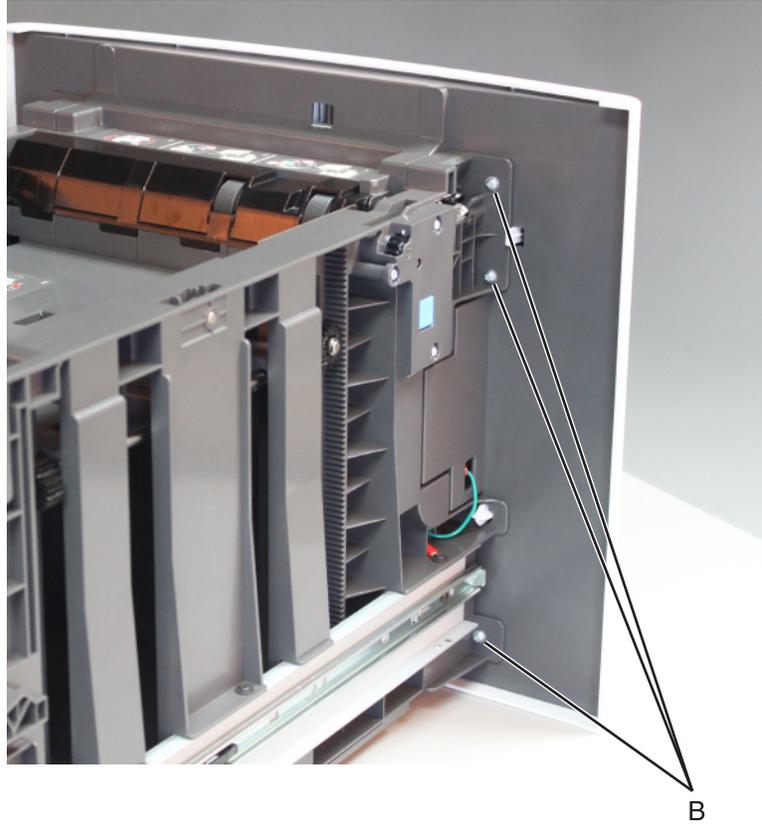


## HCIT front cover removal

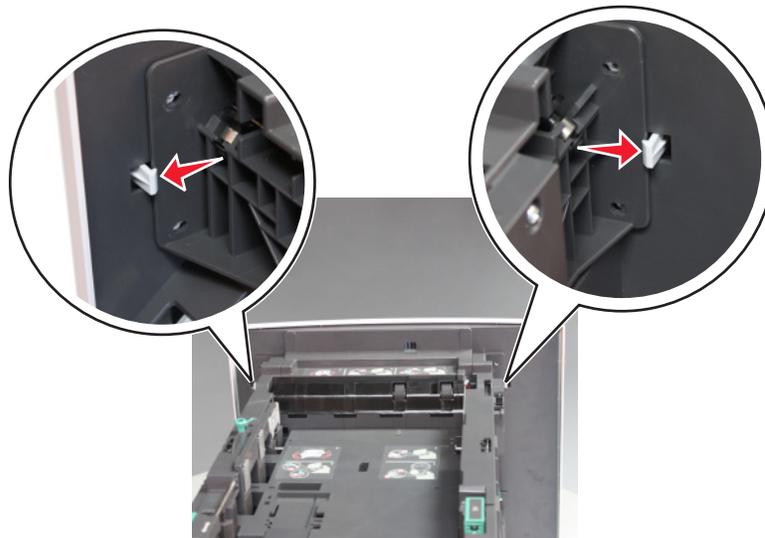
- 1 Remove the HCIT. See **“HCIT removal”** on page 423.
- 2 Remove the three screws (A) behind the media tray front cover.



**3** Remove the three screws (B) behind the cover at the other side.

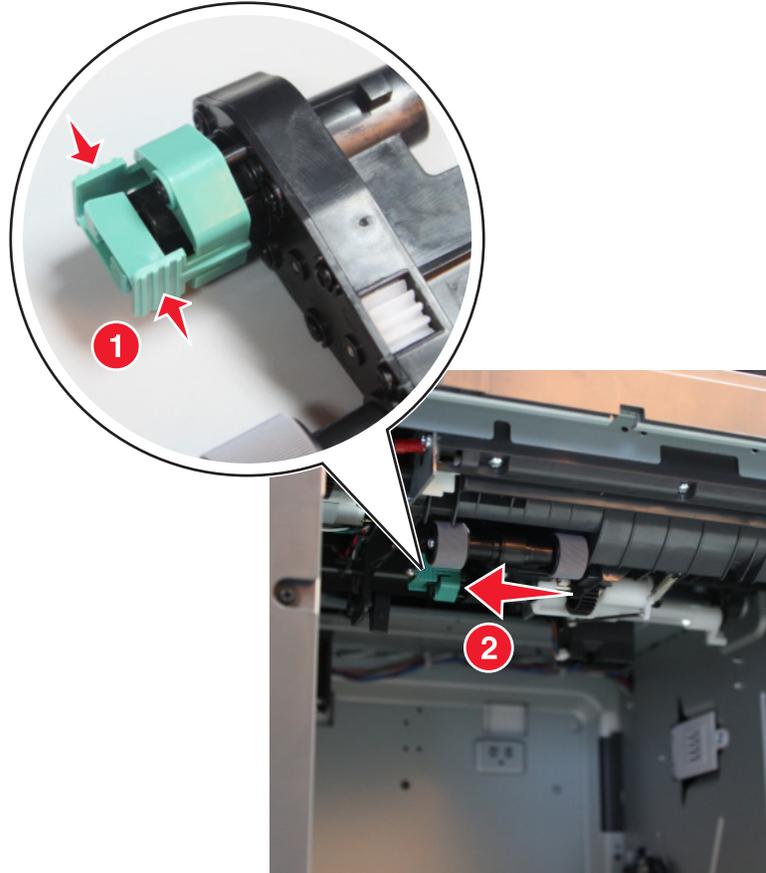


**4** Release the latches, and remove the media tray front cover.



## HCIT pick arm assembly removal

- 1 Remove the HCIT. See **“HCIT removal”** on page 423.
- 2 Push the latches inward (1), and pull out the pick arm assembly (2).



## HCIT drawer assembly rear cover removal

**Note:** This is not a FRU.

- 1 Remove the four screws (A) from the drawer rear cover.



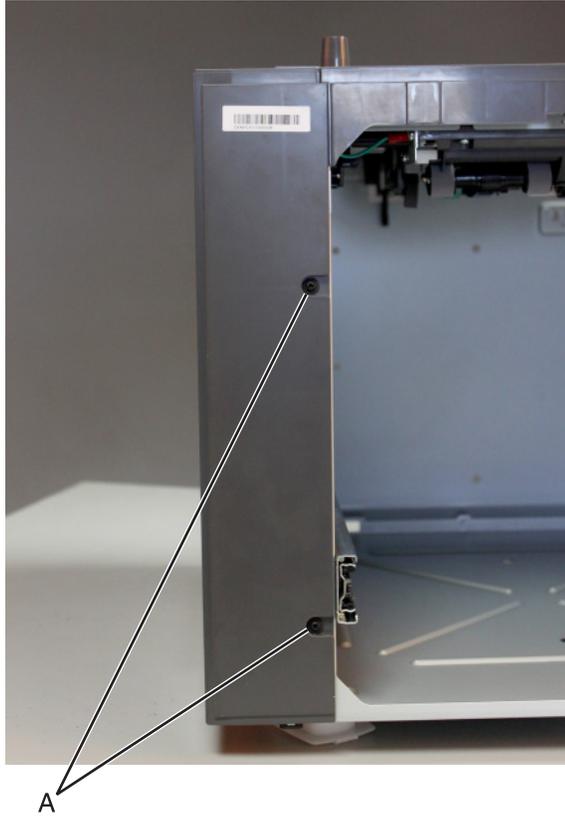
- 2 Flex the cover to release the tabs securing the upper portion.



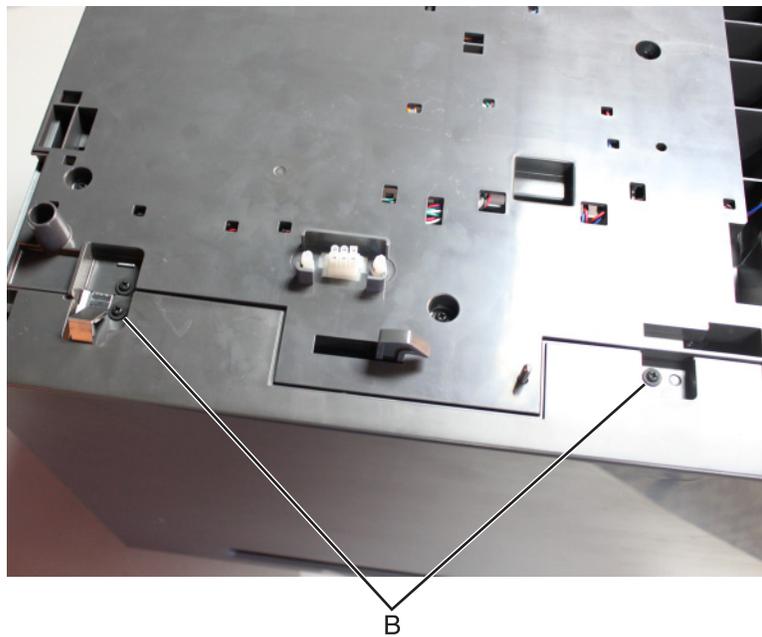
- 3 Ease the drawer assembly rear cover off the drawer, and remove.

## HCIT drawer assembly left cover removal

- 1 Remove the drawer assembly rear cover. See **“HCIT drawer assembly rear cover removal”** on page 428.
- 2 Remove the two screws (A) from the front side of the cover.



- 3 Remove the two screws (B) from the top side of the cover.



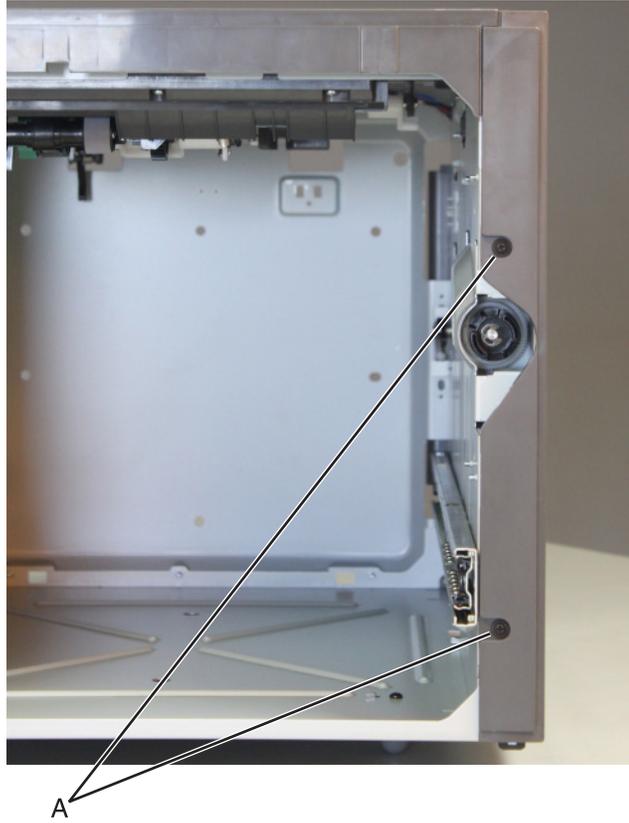
4 Remove the two screws (C) from the rear side of the cover.



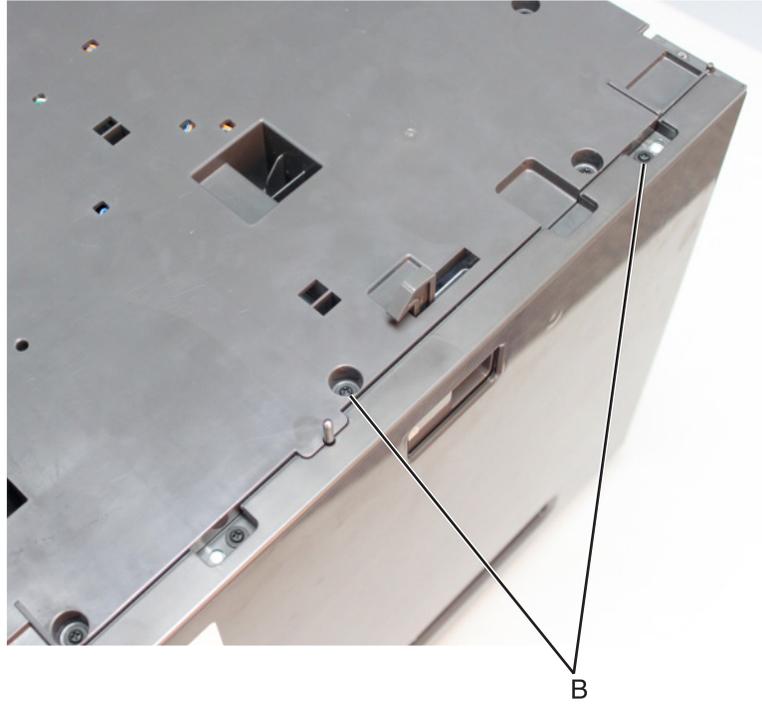
5 Remove the left cover.

## HCIT drawer assembly right cover removal

- 1 Remove the drawer assembly rear cover. See **“HCIT drawer assembly rear cover removal”** on page 428.
- 2 Remove the two screws (A) from the front side of the cover.



**3** Remove the two screws (B) from the top side of the cover.



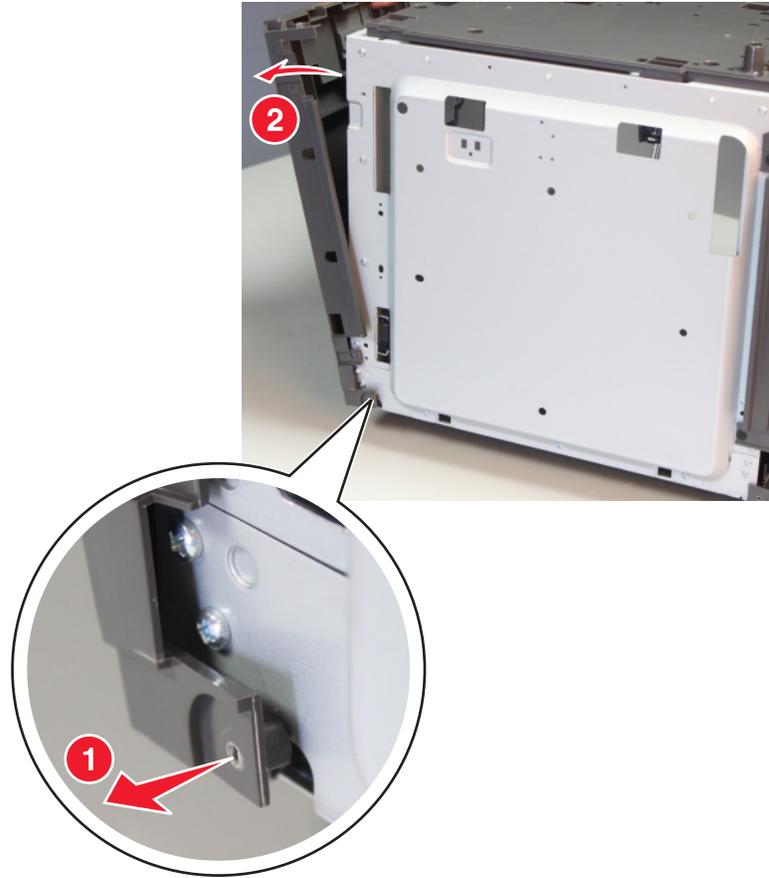
**4** Remove the two screws (C) from the rear side of the cover.



Repair information

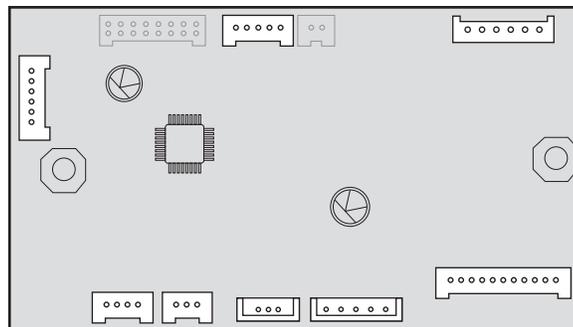
**432**

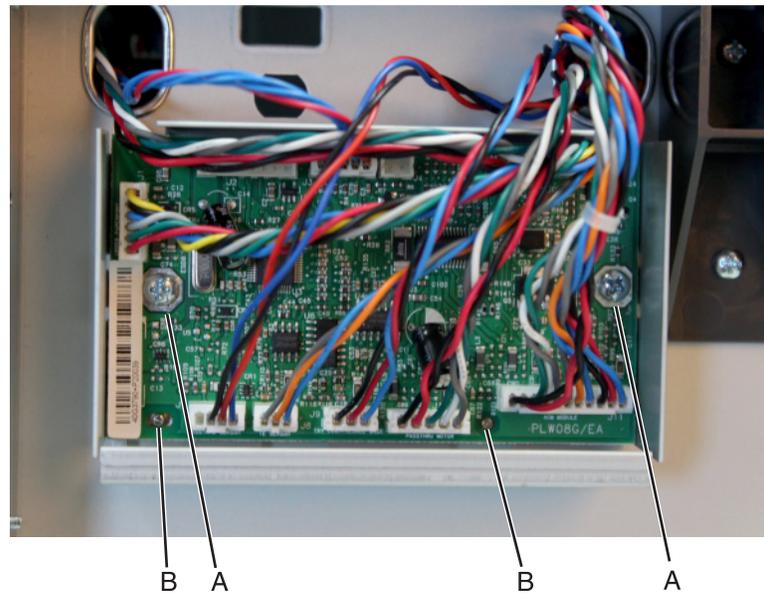
5 Pull the tab to release, then remove the right cover.



## HCIT controller PCBA removal

- 1 Remove the drawer assembly rear cover. See **“HCIT drawer assembly rear cover removal”** on page 428.
- 2 Remove the drawer assembly left cover. See **“HCIT drawer assembly left cover removal”** on page 429.
- 3 Disconnect all the cables (J3, J5, J11, J10, J9, J8, J7 and J1) from the controller PCBA, then remove the two screws (A).





4 Remove the controller PCBA.

**Installation note:** Make sure the controller PCBA is properly mounted by aligning the pins (B).

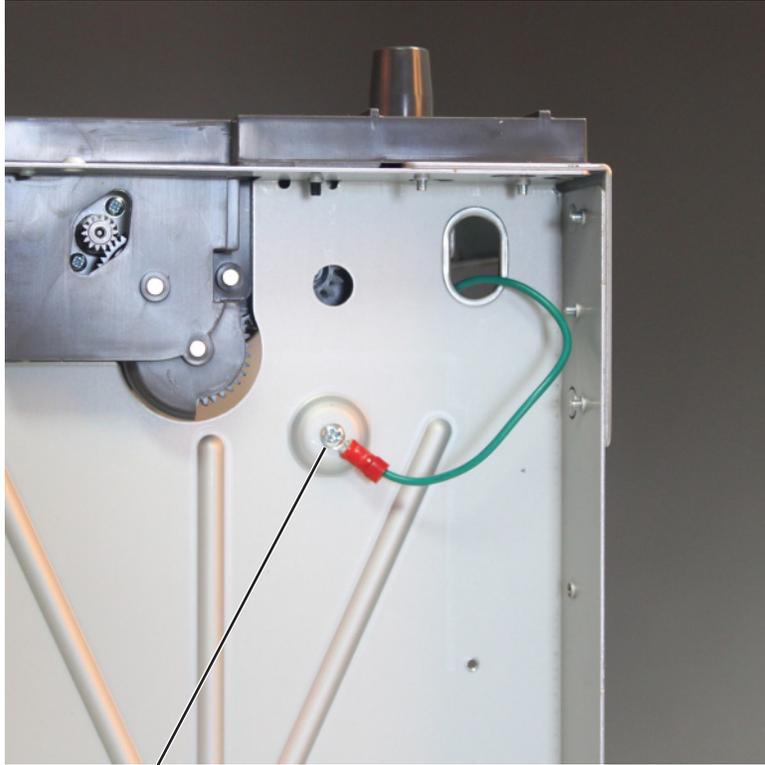
## HCIT top cover assembly removal

**Note:** This is not a FRU.

- 1 Remove the drawer assembly rear cover. See **“HCIT drawer assembly rear cover removal” on page 428.**
- 2 Remove the drawer assembly left cover. See **“HCIT drawer assembly left cover removal” on page 429.**
- 3 Disconnect all cables from the controller PCBA.

**Note:** Pay attention to the original routing of the cables. Make sure that the cables don't interfere with the drawer's moving parts. Use cable ties to keep the cables organized.

4 Remove the ground screw (A).



A

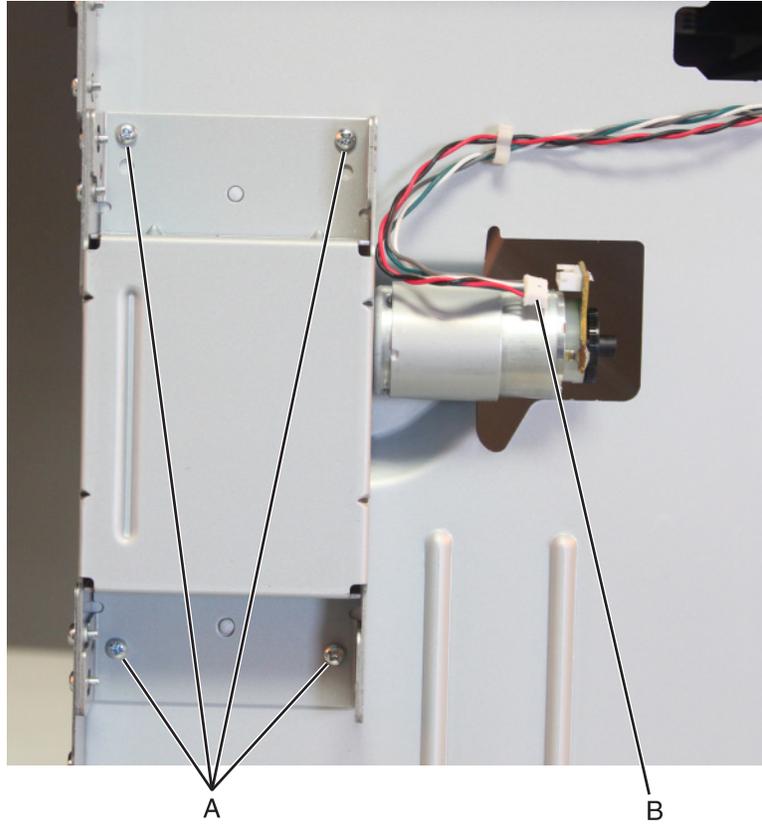
5 Remove the 11 screws (B), then remove the top cover.



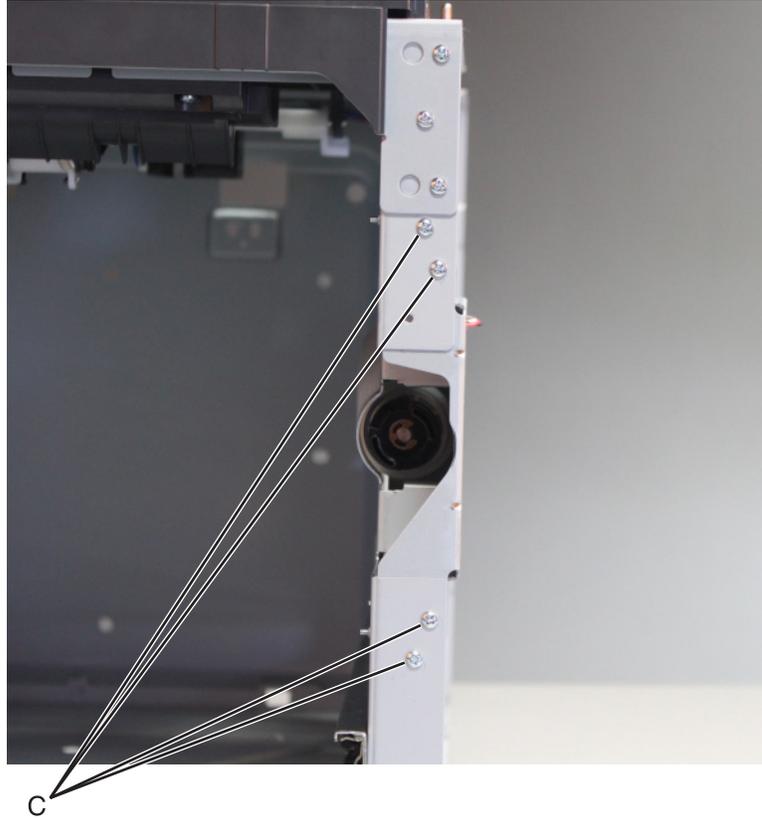
B

## HCIT lift drive motor removal

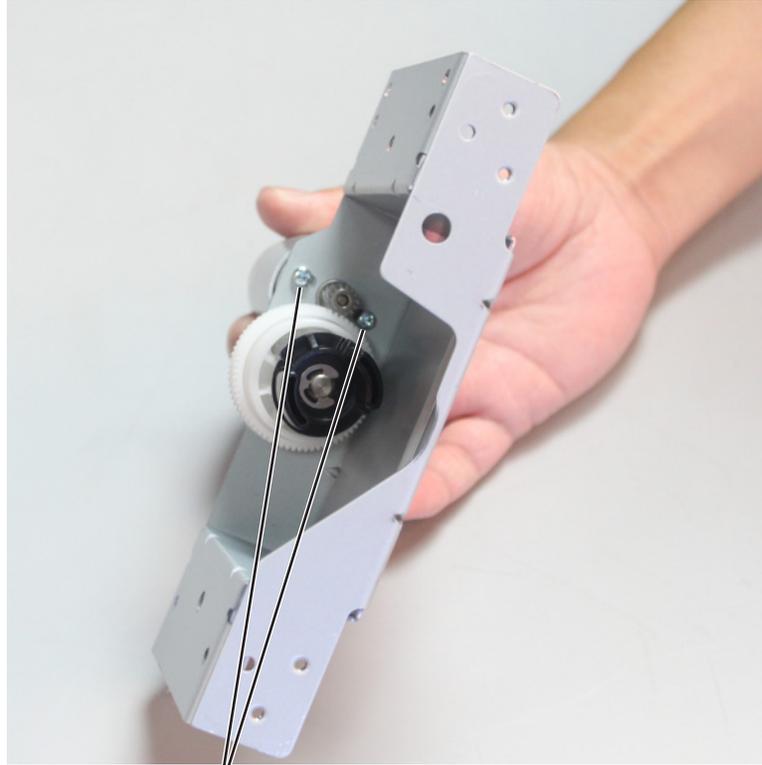
- 1 Remove the HCIT drawer assembly rear cover. See **“HCIT drawer assembly rear cover removal”** on page 428.
- 2 Remove the HCIT drawer assembly right cover. See **“HCIT drawer assembly right cover removal”** on page 431.
- 3 Disconnect the drive motor cable (B), then remove the four screws (A) from the drive motor frame.



4 Remove the other four screws (C) from the front side of the frame.



- 5 Lift the motor cover, and remove the two screws (D) using a #1 Phillips screwdriver.

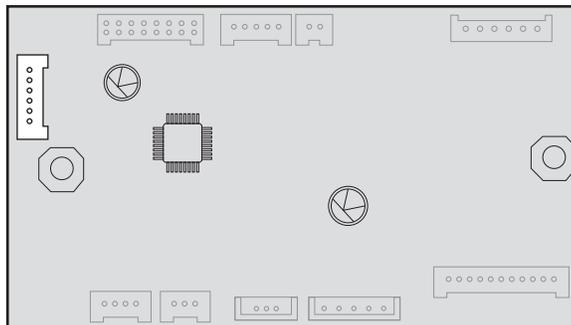


D

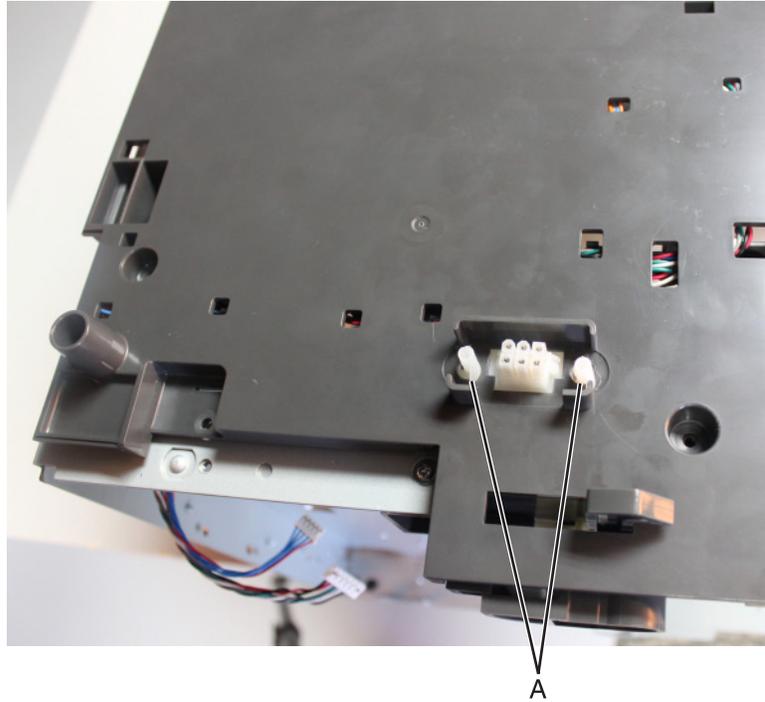
- 6 Remove the tray lift drive motor.

## HCIT drawer assembly interface cable removal

- 1 Remove the HCIT drawer assembly rear cover. See [“HCIT drawer assembly rear cover removal” on page 428.](#)
- 2 Remove the HCIT drawer assembly left cover. See [“HCIT drawer assembly left cover removal” on page 429.](#)
- 3 Disconnect the interface cable (J1) from the controller PCBA.



- 4 Crimp both connector pins (A) using pliers to make them fit through the pin holes. Push the connector off its slot.

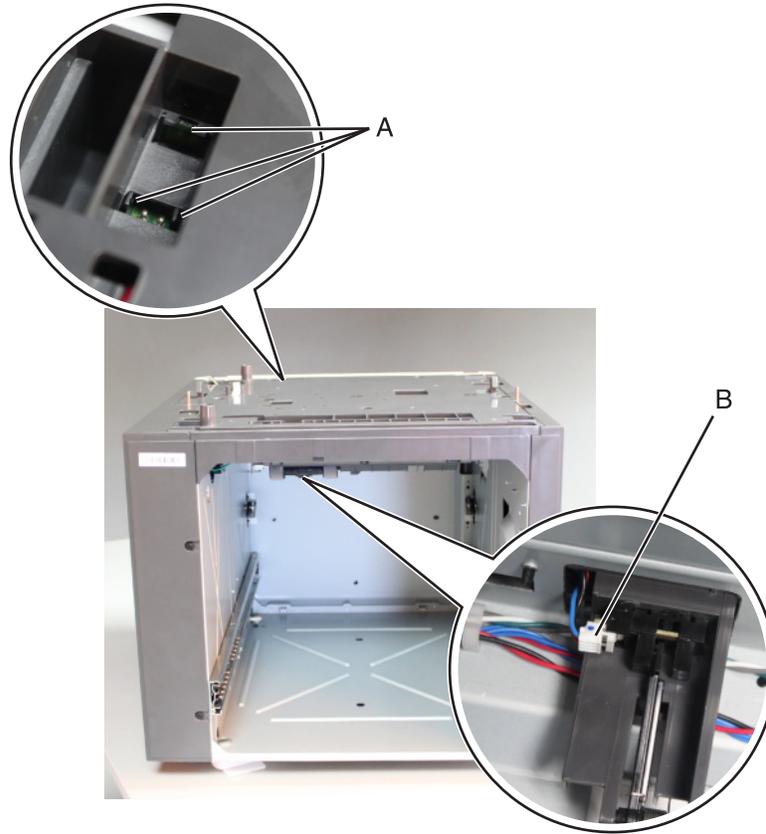


- 5 Route the interface cable off the drawer, and remove.  
**Note:** Pay attention to the original routing of the cable.

### Sensor (HCIT media low) with flag removal

- 1 Remove the HCIT. See **“HCIT removal” on page 423.**
- 2 Remove the drawer assembly rear cover. See **“HCIT drawer assembly rear cover removal” on page 428.**
- 3 Remove the drawer assembly left cover. See **“HCIT drawer assembly left cover removal” on page 429.**
- 4 Release the latches (A) securing the sensor to the drawer.

5 Disconnect the cable (B), and remove the sensor.

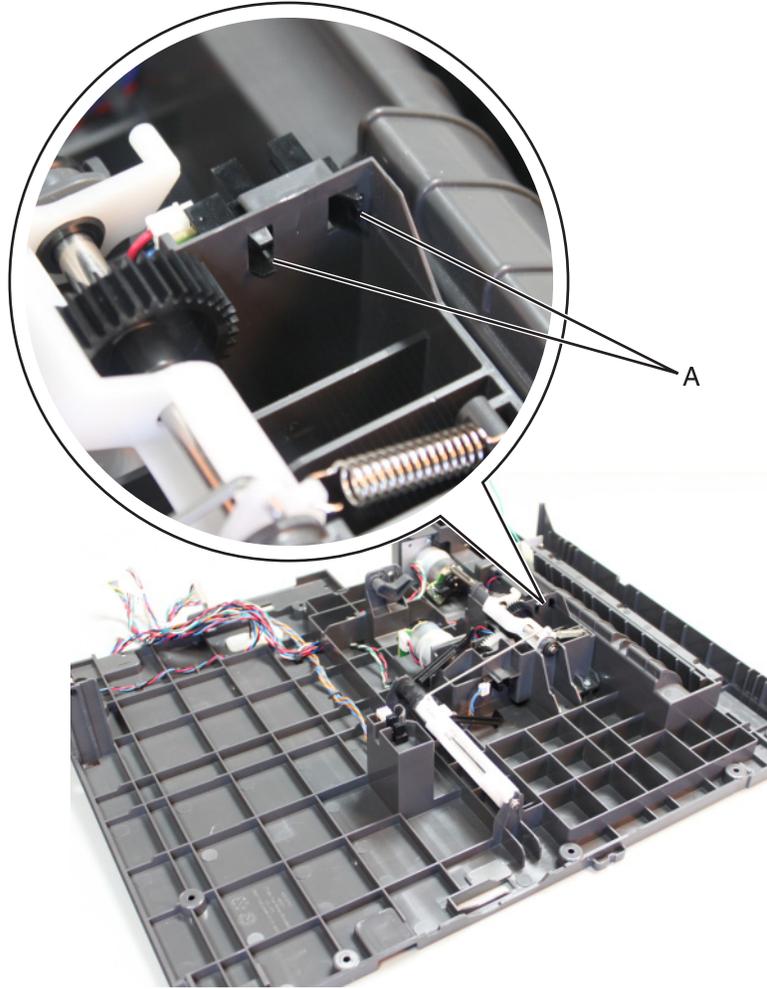


6 Flex the brace to release, then remove the flag.

### Sensor (pick roll position) removal

- 1 Remove the HCIT. See **"HCIT removal" on page 423.**
- 2 Remove the drawer assembly rear cover. See **"HCIT drawer assembly rear cover removal" on page 428.**
- 3 Remove the drawer assembly left cover. See **"HCIT drawer assembly left cover removal" on page 429.**
- 4 Remove the top cover assembly. See **"HCIT top cover assembly removal" on page 434.**

5 Release the latches (A) holding the sensor to the media feeder.



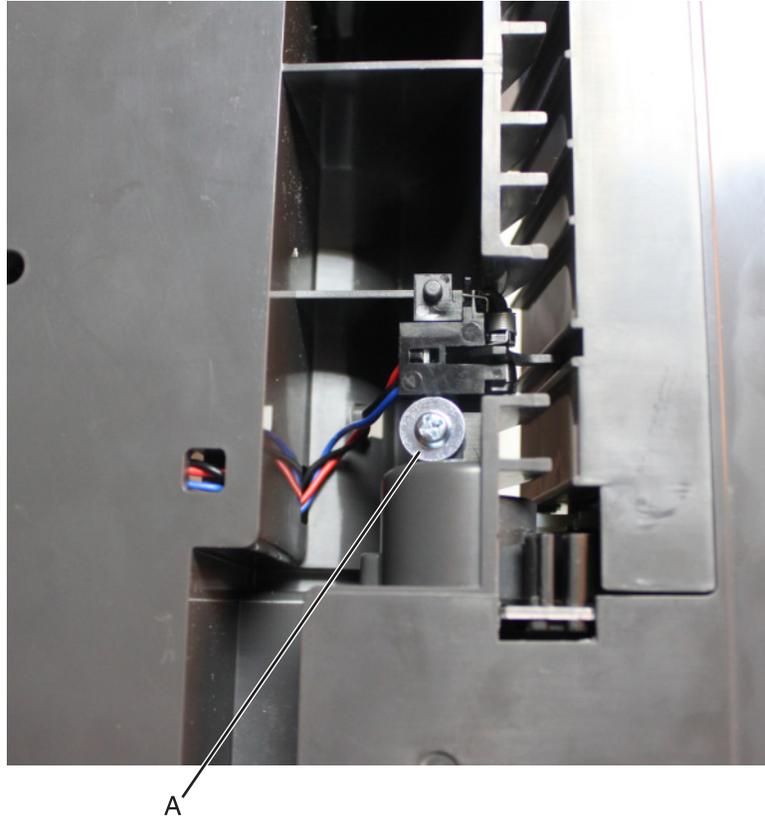
6 Disconnect the cable (B), and remove the sensor.



### Sensor (HCIT pick) removal

- 1 Remove the HCIT. See **“HCIT removal” on page 423.**
- 2 Remove the drawer assembly rear cover. See **“HCIT drawer assembly rear cover removal” on page 428.**
- 3 Remove the drawer assembly left cover. See **“HCIT drawer assembly left cover removal” on page 429.**
- 4 Remove the top cover assembly. See **“HCIT top cover assembly removal” on page 434.**

- 5 Remove the screw (A) securing the sensor.

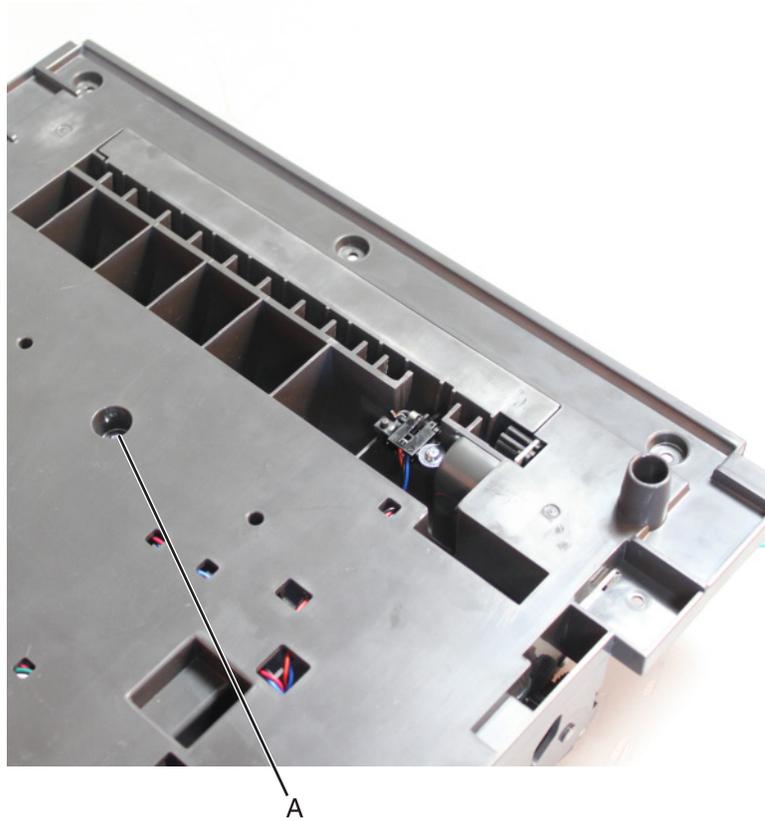


- 6 Release the cable from its cable holders, then remove the sensor (pass through).

## HCIT media feeder removal

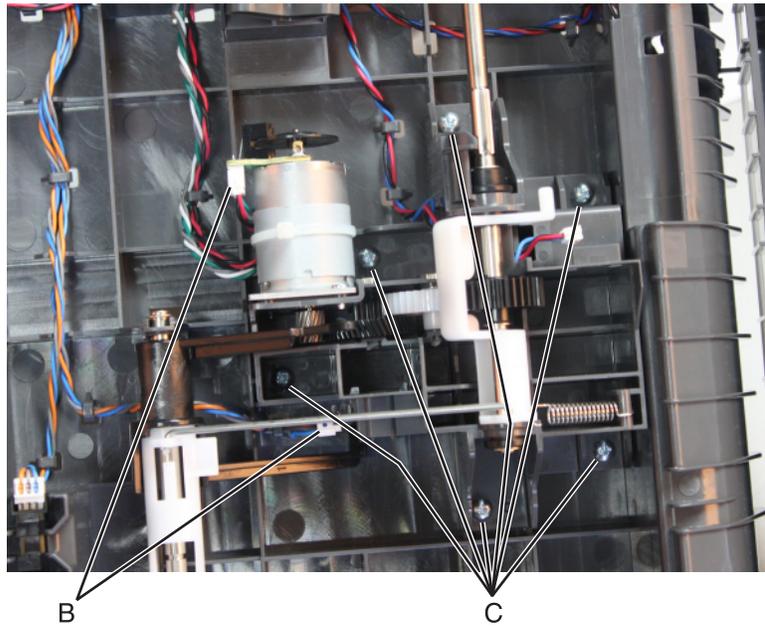
- 1 Remove the HCIT. See **“HCIT removal” on page 423.**
- 2 Remove the drawer assembly rear cover. See **“HCIT drawer assembly rear cover removal” on page 428.**
- 3 Remove the drawer assembly left cover. See **“HCIT drawer assembly left cover removal” on page 429.**
- 4 Remove the top cover assembly. See **“HCIT top cover assembly removal” on page 434.**
- 5 Remove the sensor (roller position). See **“Sensor (pick roll position) removal” on page 440.**

**6** Remove the screw (A) securing the feeder to the top.



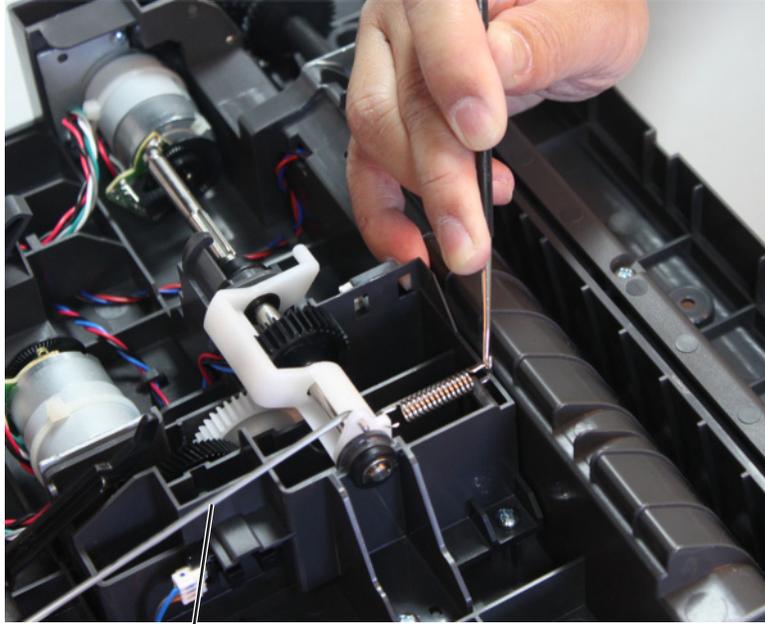
**7** Disconnect the two cables (B) from the media feeder.

**8** Remove the six screws (C) securing the media feeder.



Repair information

**9** With a prying tool, release the spring to loosen the link (D).



D

**10** Lift the media feeder and release the link holding the media feeder.

**11** Ease the media feeder off the drawer, and remove.

## Output expander option removals

### Output expander assembly removal

Press the latches to release, and lift the output expander assembly off the printer.

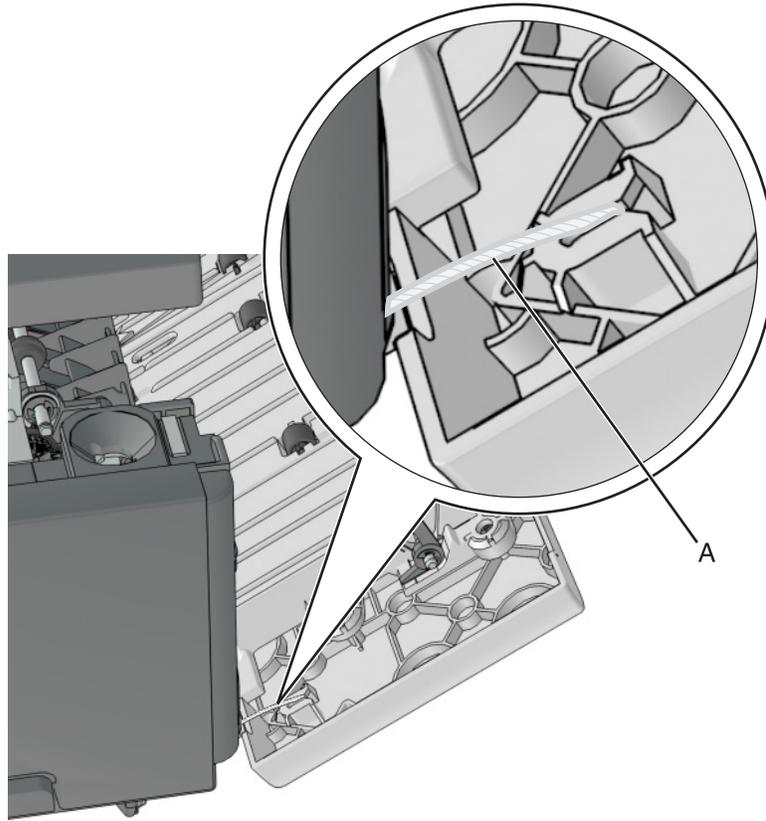


### Output expander top cover removal

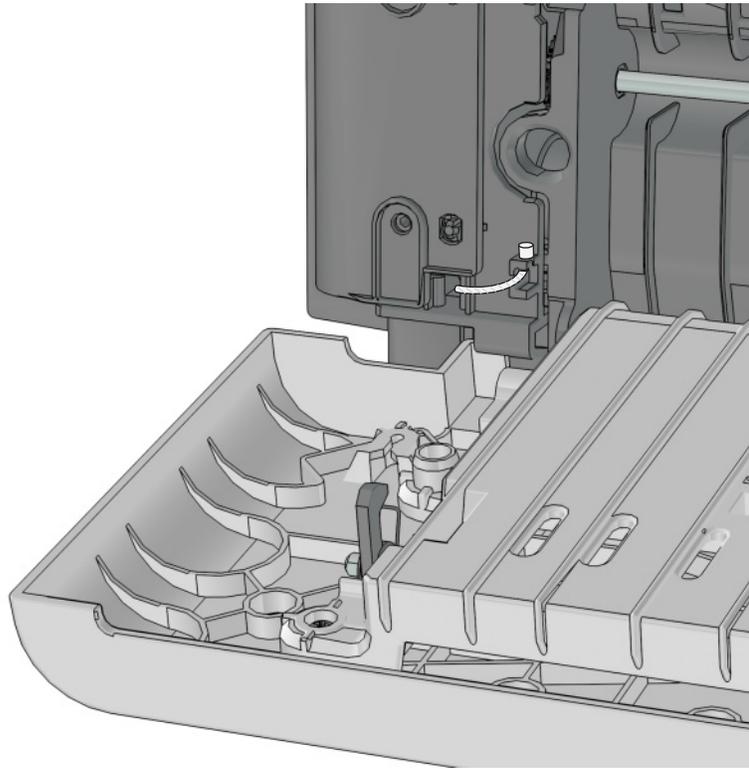
Lift the top cover off the expander, and remove.

## Output expander rear door removal

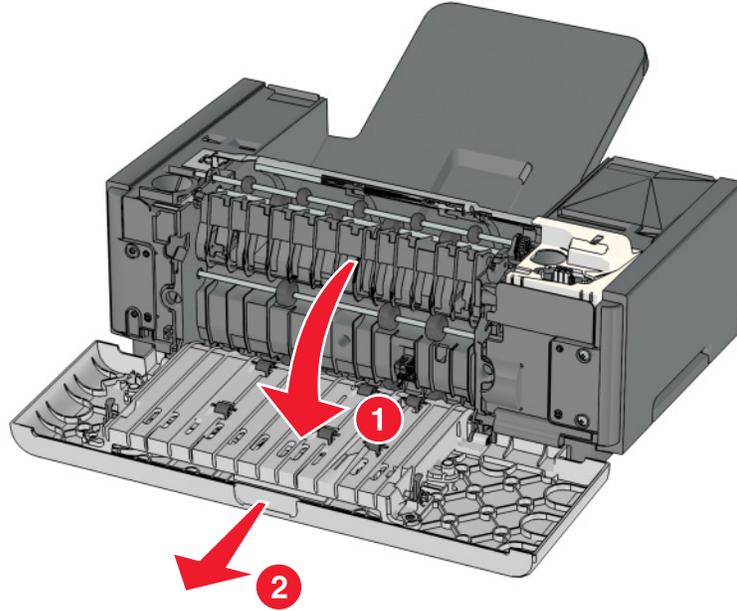
- 1 Open the rear door, and detach the string (A) from the door.



**Note:** Fasten the string to the rear side to prevent it from recoiling into the interior of the expander.



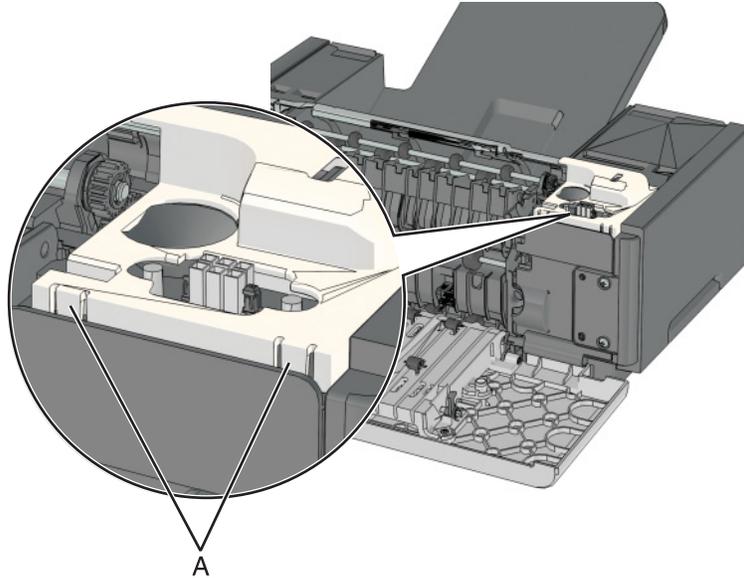
**2** Position the door at an angle approximately 90 degrees from the expander, then remove.



## Output expander sensor cover removal

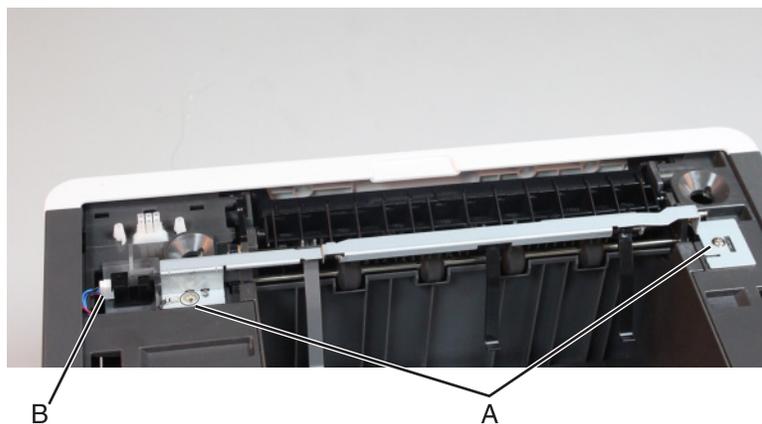
**Note:** This is not a FRU.

- 1 Remove the top cover. See **“Output expander top cover removal”** on page 446.
- 2 Push the latches (A) to release, then remove the sensor cover.



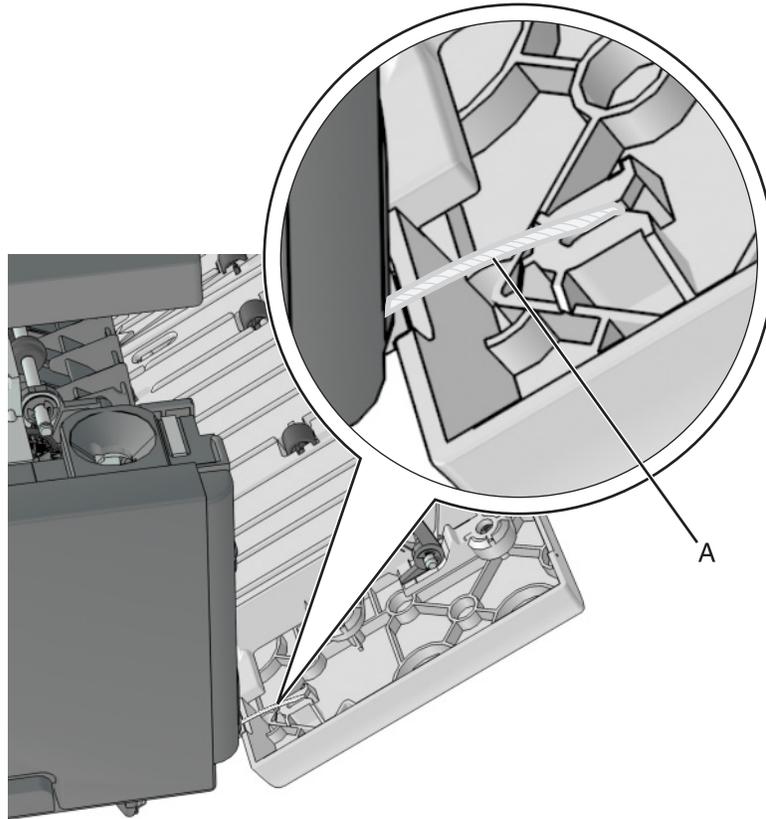
## Sensor (media bin full) with flag removal

- 1 Remove the top cover. See **“Output expander top cover removal”** on page 446.
- 2 Remove the sensor cover. See **“Output expander sensor cover removal”** on page 449.
- 3 Remove the two screws (A) securing the sensor brace.
- 4 Disconnect the cable (B), and remove the sensor (media bin full) with flag.

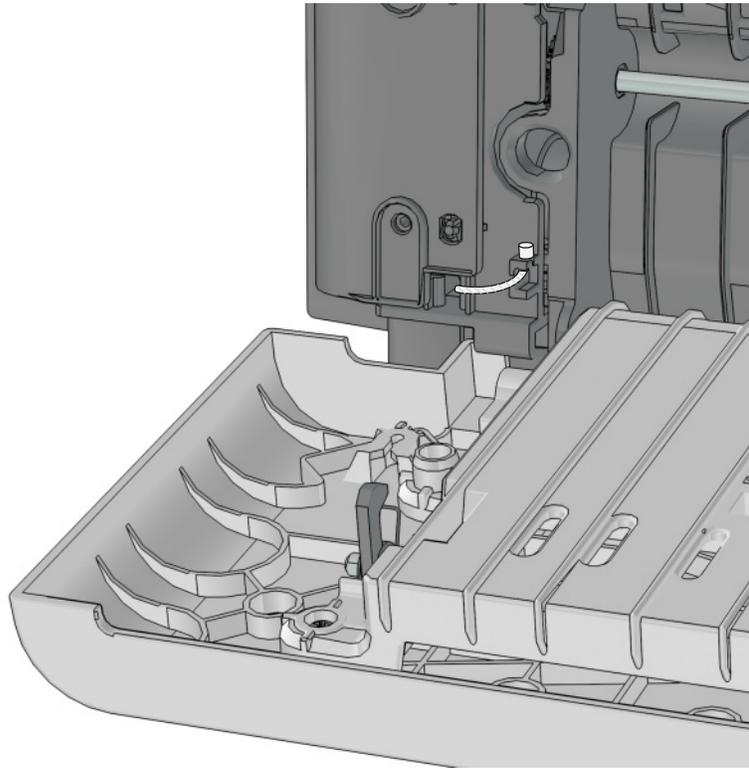


## Output expander right cover removal

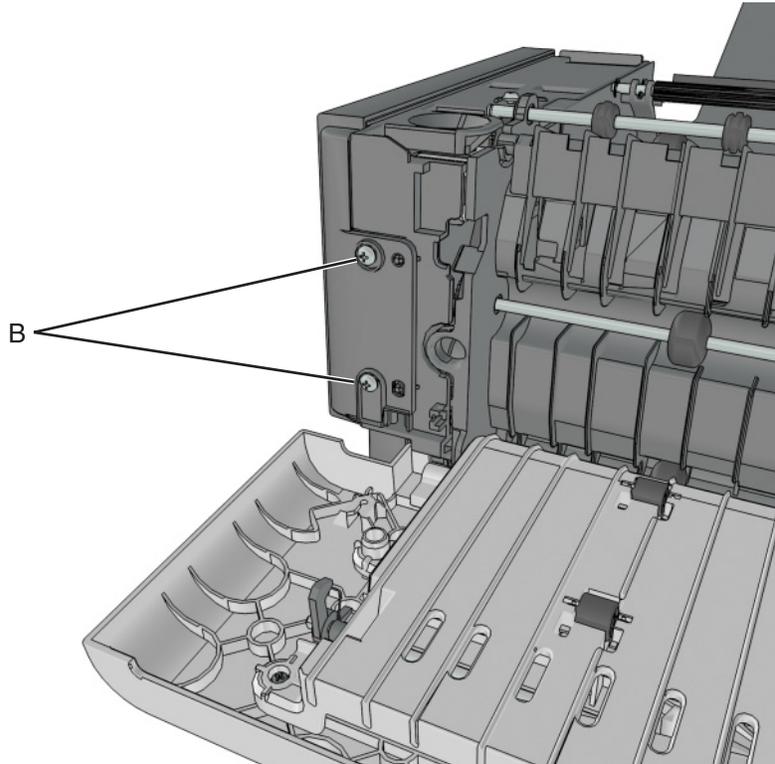
- 1 Open the rear door, then detach the string (A) from the rear door.



**Note:** Fasten the string to the rear side to prevent it from recoiling into the interior of the expander.

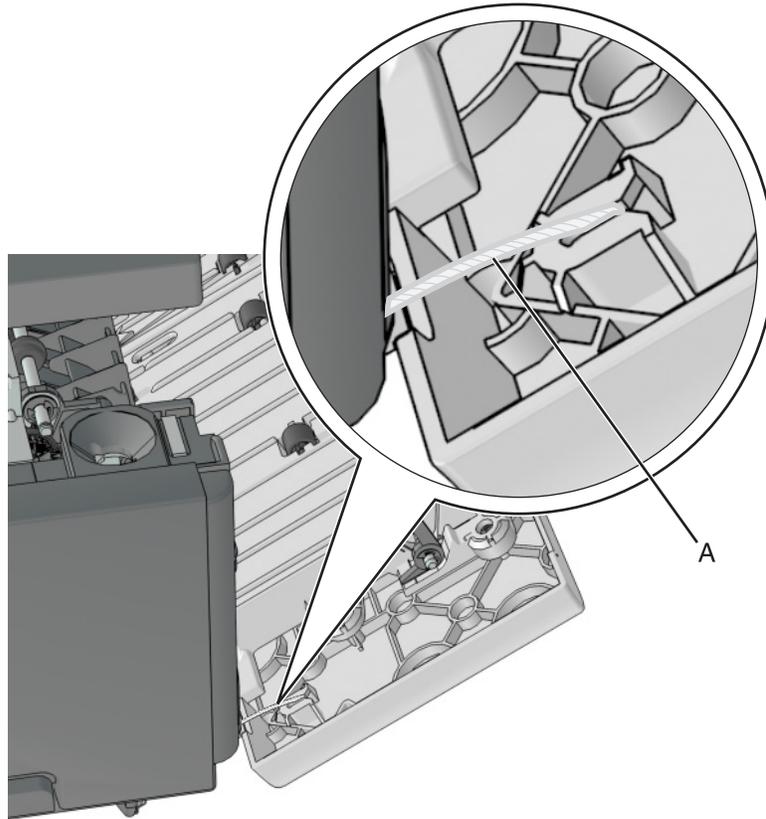


**2** Remove the two screws (B), then remove the right cover.

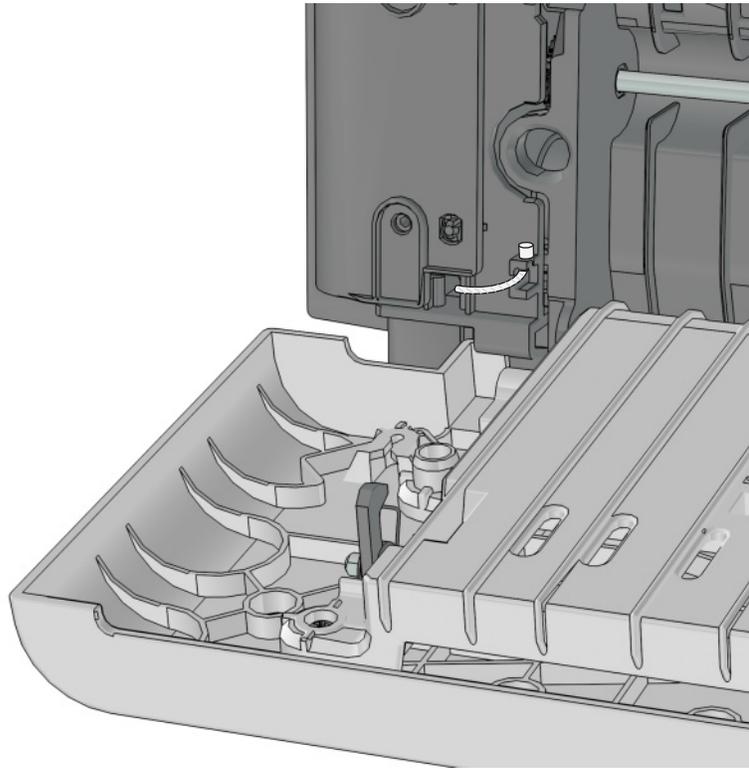


## Output expander left cover removal

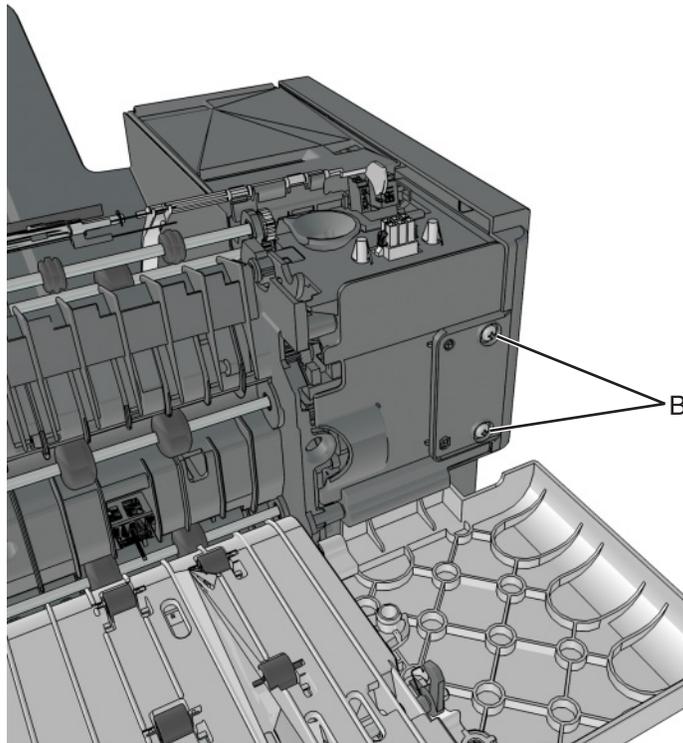
- 1 Open the rear door, then detach the string (A) from the rear door.



**Note:** Fasten the string to the rear side to prevent it from recoiling into the interior of the expander.

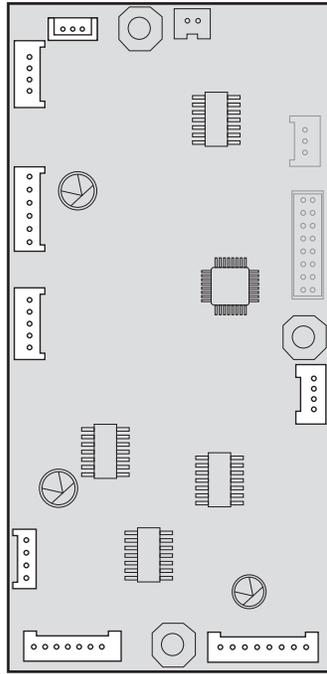


**2** Remove the two screws (B), then remove the left cover.

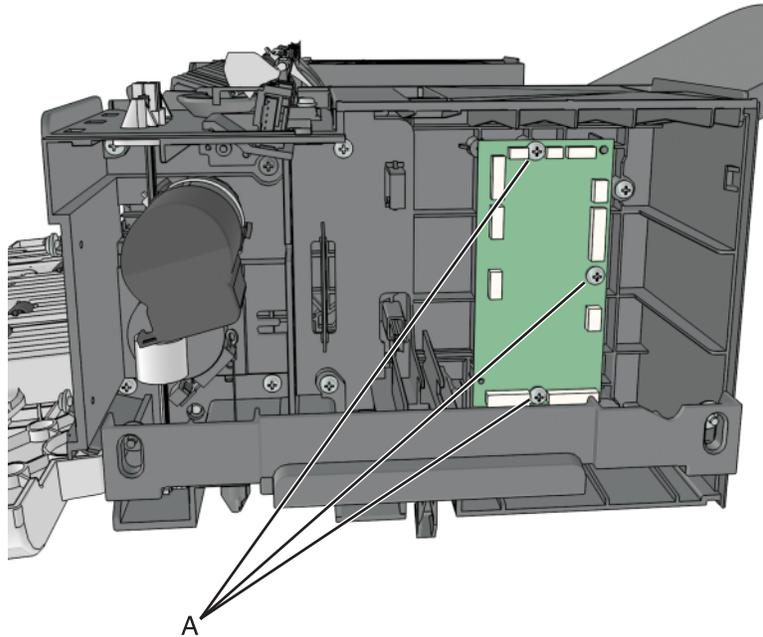


## Output expander controller PCBA removal

- 1 Remove the left cover. See **“Output expander left cover removal”** on page 452.
- 2 Disconnect all the cables (J7, J10, J3, J1, J2, J14, J6, J4 and J5) from the controller PCBA.

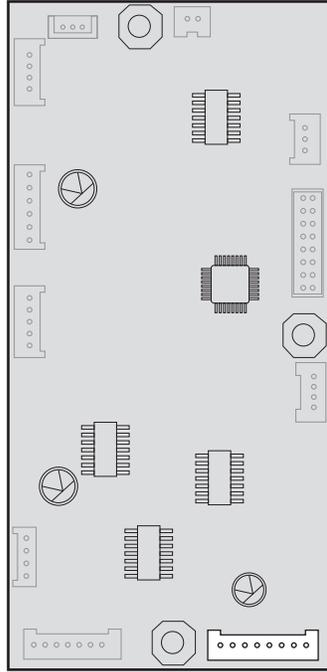


- 3 Remove the three screws (A), then remove the controller PCBA.

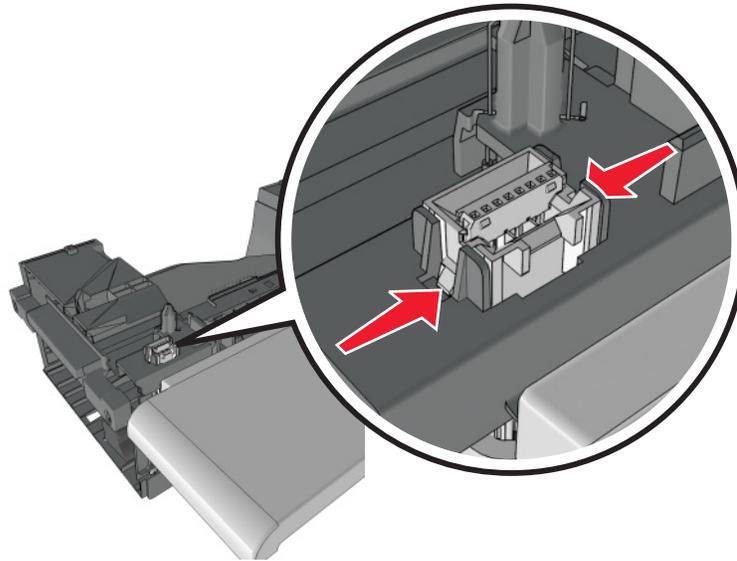


## Lower interface cable removal

- 1 Remove the left cover. See **“Output expander left cover removal”** on page 452.
- 2 Disconnect the lower interface cable (J1) from the controller PCBA.



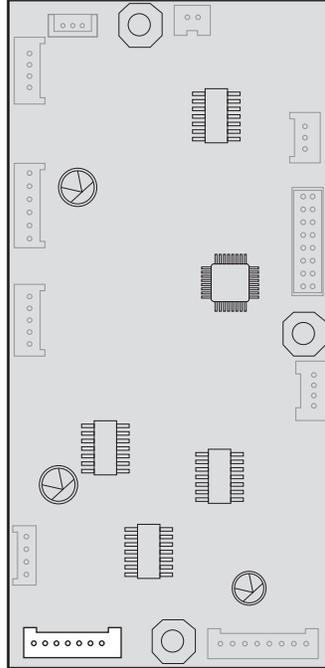
- 3 Push inward to release the latches, then push the connector out of its slot.



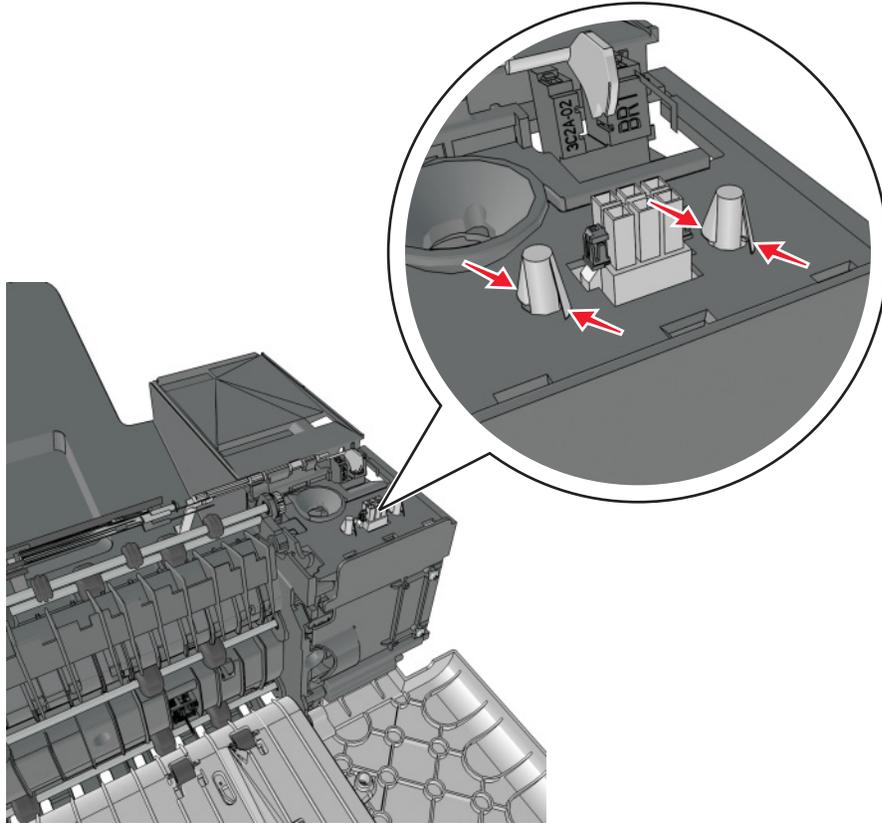
- 4 Remove the lower interface cable.

## Upper interface cable removal

- 1 Remove the sensor cover. See **“Output expander sensor cover removal”** on page 449.
- 2 Remove the left cover. See **“Output expander left cover removal”** on page 452.
- 3 Disconnect the upper interface cable (J2) from the controller PCBA.



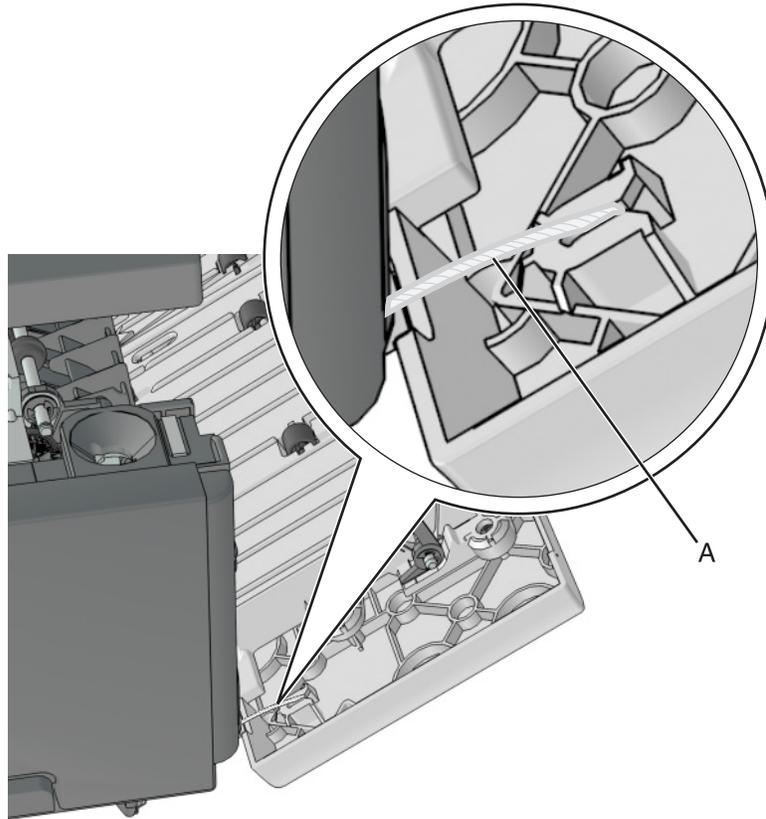
- 4 Crimp the two connector pins using pliers to make them fit through the pin holes. Push the connector out of its slot.



- 5 Remove the upper interface cable.

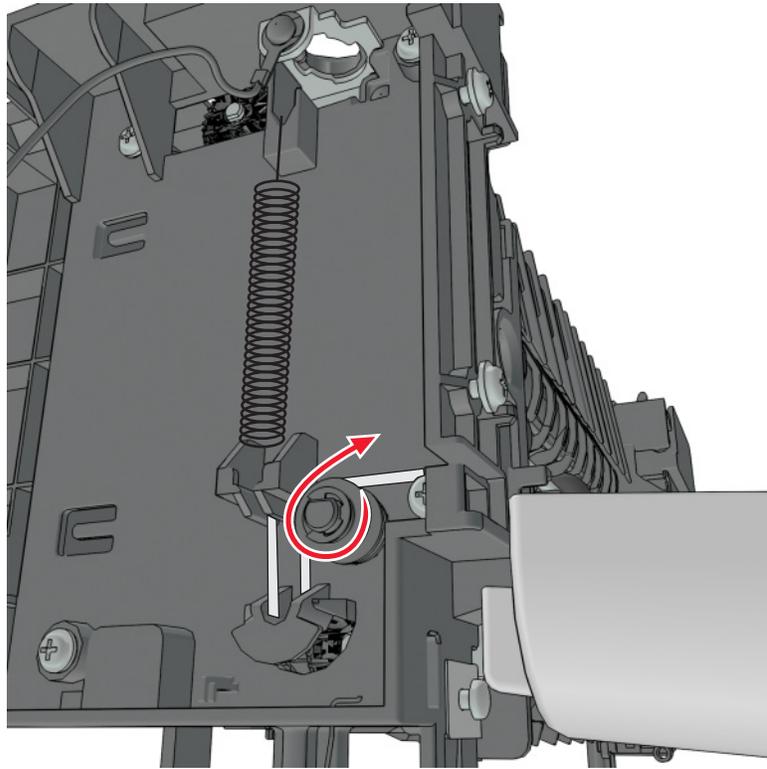
## Spring with string removal

- 1 Open the rear door, and detach the string (A).



- 2 Remove the right cover. See **“Output expander right cover removal”** on page 450.
- 3 Remove the spring with string.

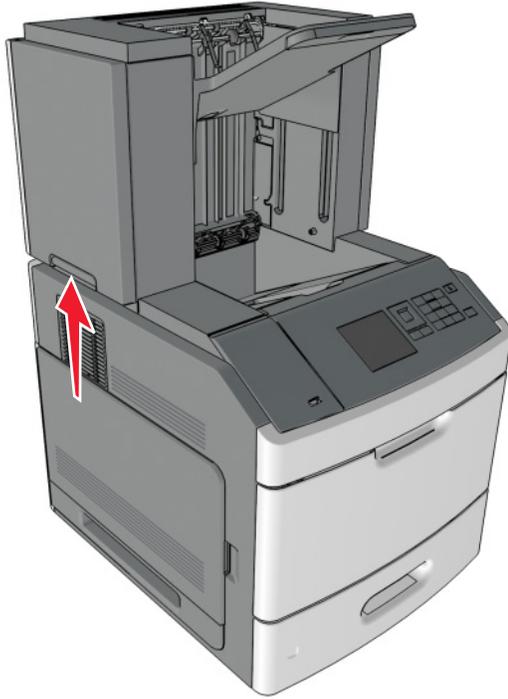
**Note:** Pay attention to the original position of the string. The string on the pulley is wound clockwise.



## High capacity output expander option removals

### High capacity output expander assembly removal

Press the latches to release, and lift the high capacity output expander off the printer.

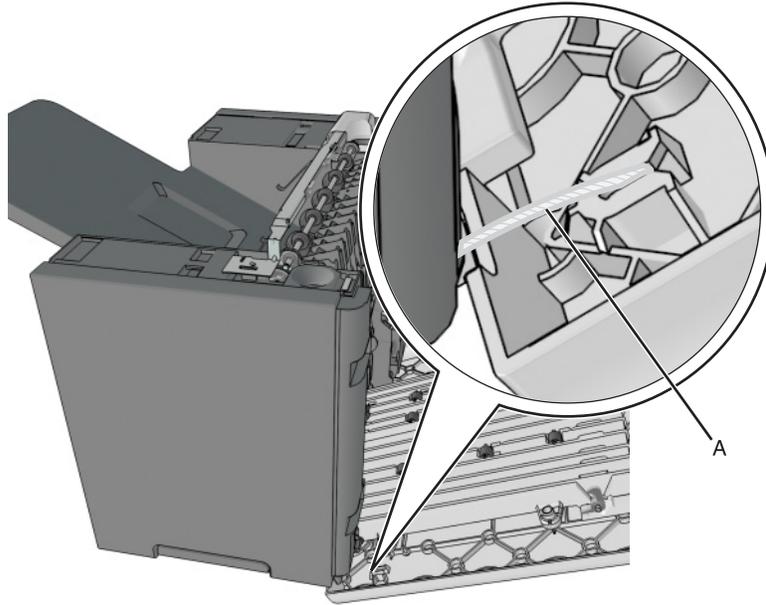


### HCOE top cover removal

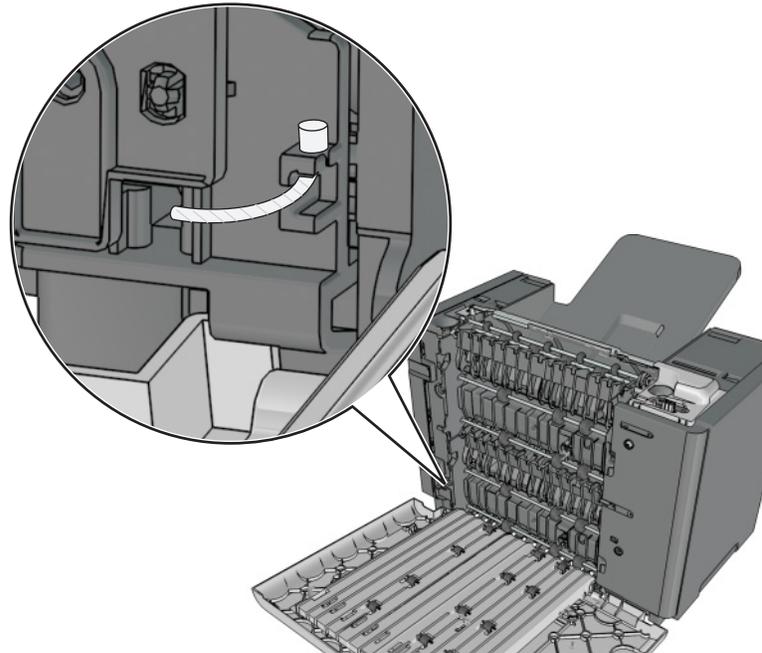
Lift the top cover off the HCOE, and remove.

## HCOE rear door removal

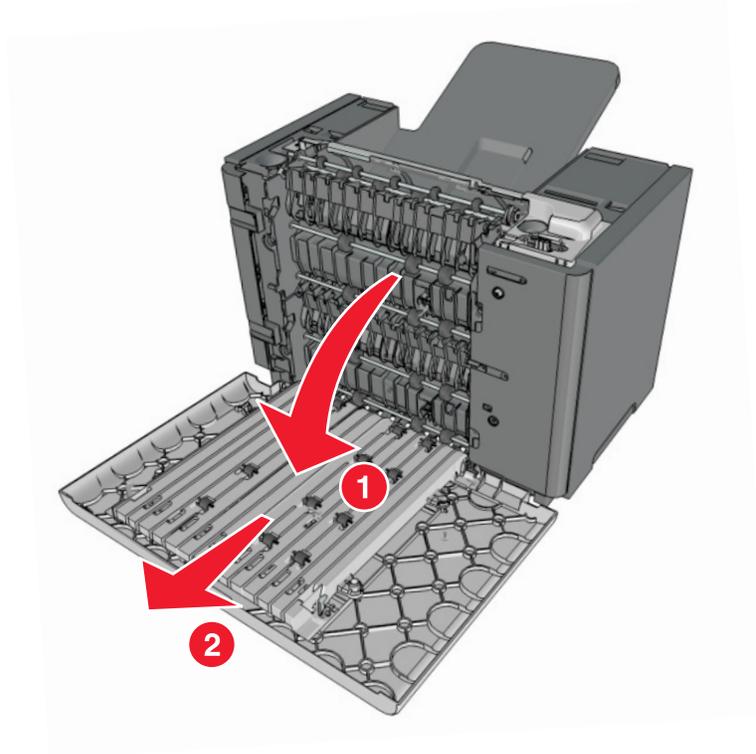
- 1 Open the rear door, and disconnect the string (A) from the door.



**Note:** Fasten the string to the rear side, to prevent it from recoiling into the interior of the HCOE.



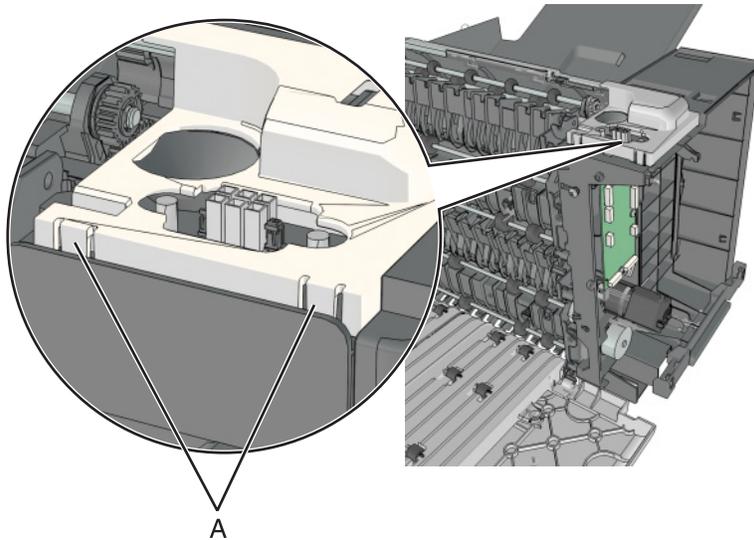
2 Position the door to an angle approximately 90 degrees from the expander, then remove.



## HCOE sensor cover removal

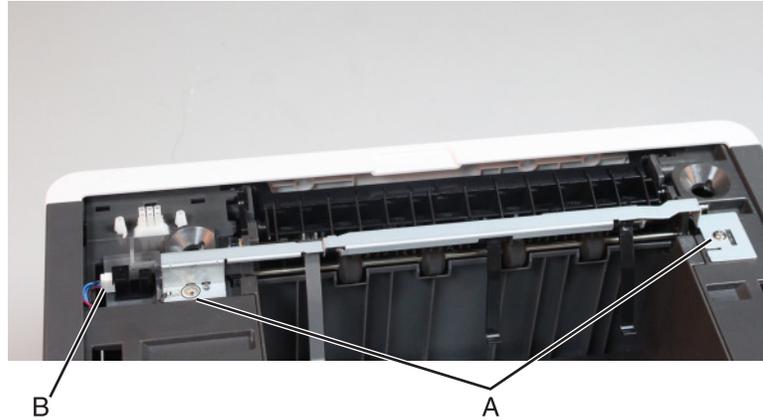
**Note:** This is not a FRU.

Push the latches (A) to release, then remove the sensor cover.



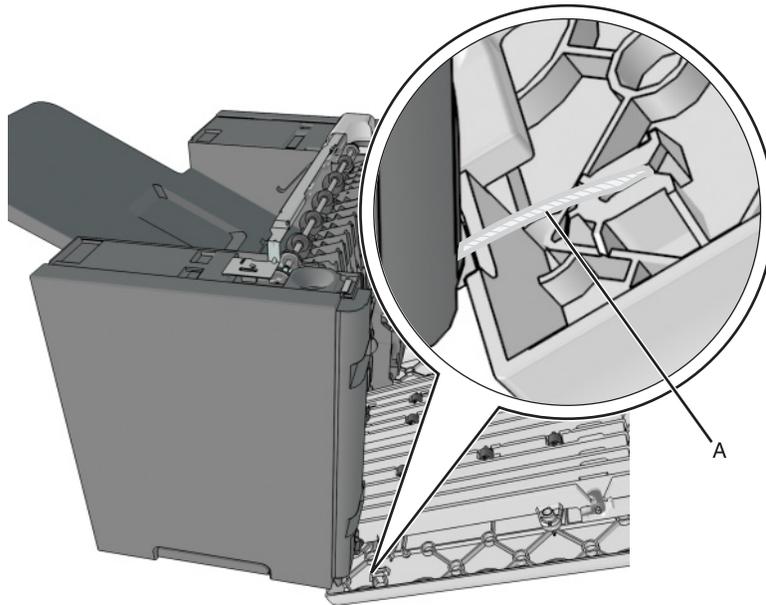
## Sensor (HCOE media bin full) with flag removal

- 1 Remove the sensor cover. See **“HCOE sensor cover removal”** on page 462.
- 2 Remove the two screws (A) securing the sensor brace.
- 3 Disconnect the cable (B), and remove the sensor (media bin full) with flag.

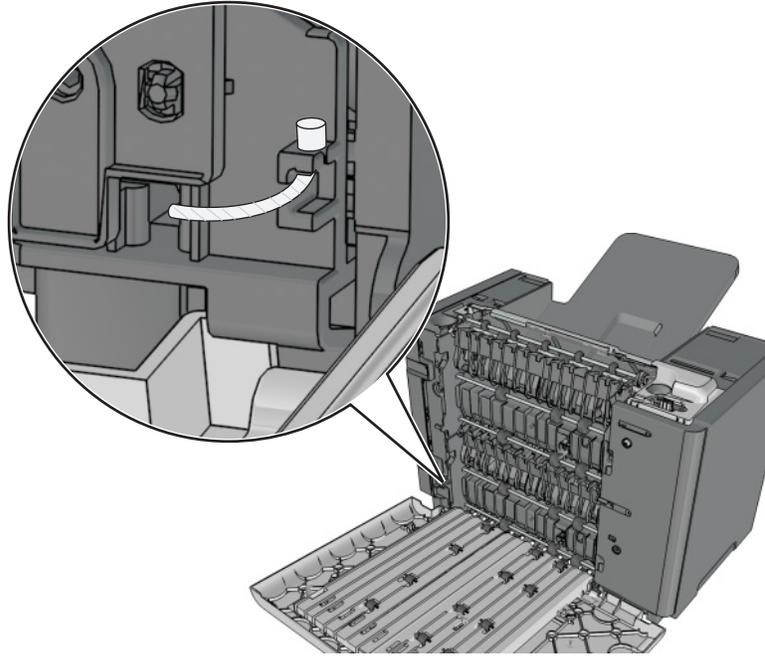


## HCOE right outer cover removal

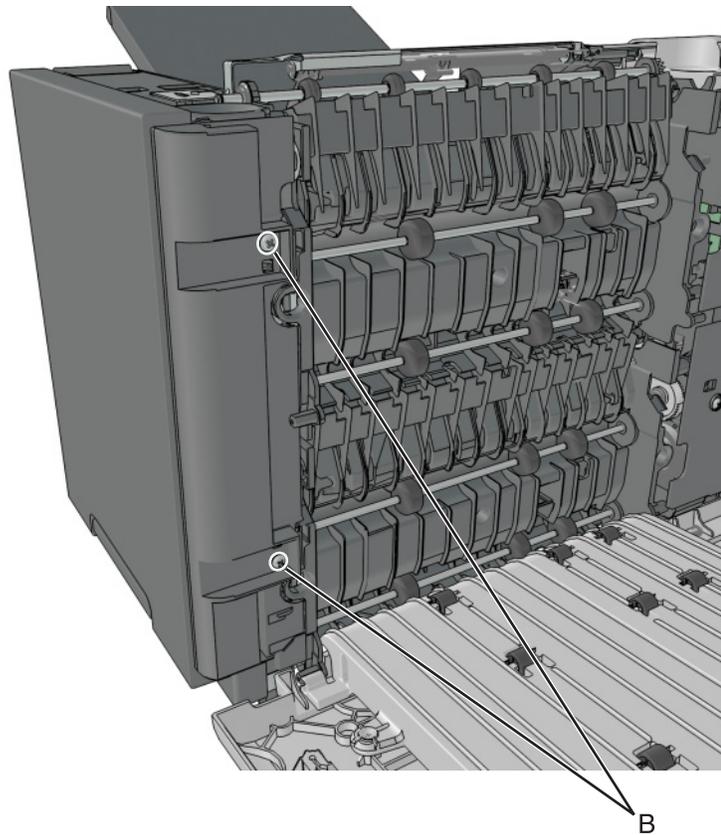
- 1 Open the rear door, then detach the string (A) from the rear door.



**Note:** Fasten the string to the rear side to prevent it from recoiling into the interior of the HCOE.



2 Remove the two screws (B), then remove the right outer cover.

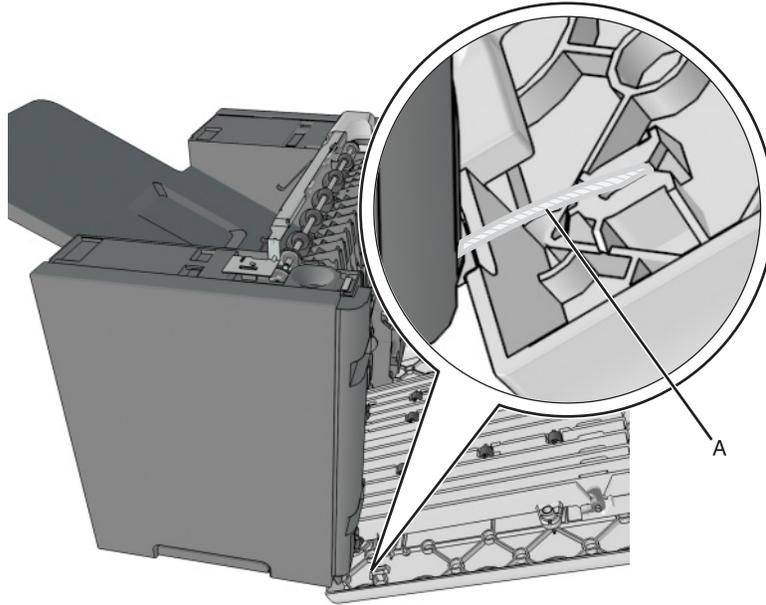


Repair information

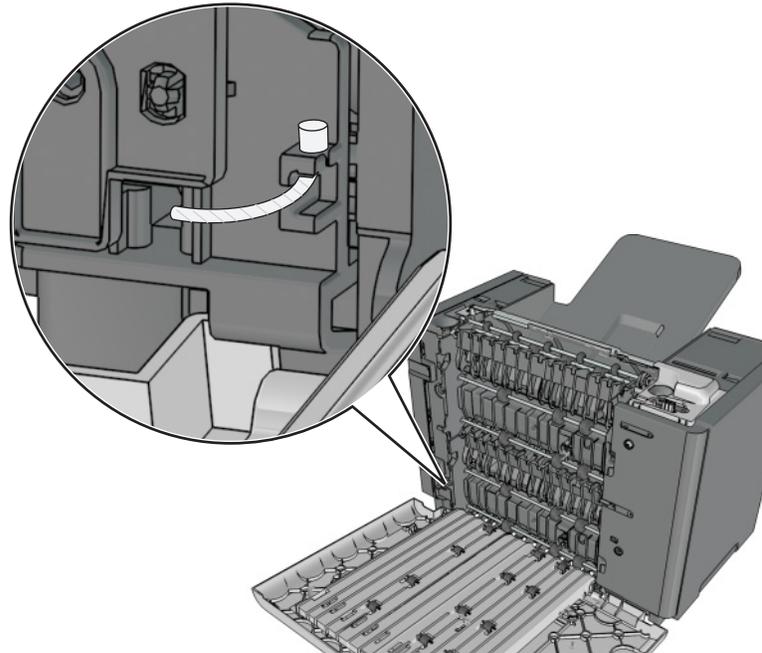
464

## HCOE left cover removal

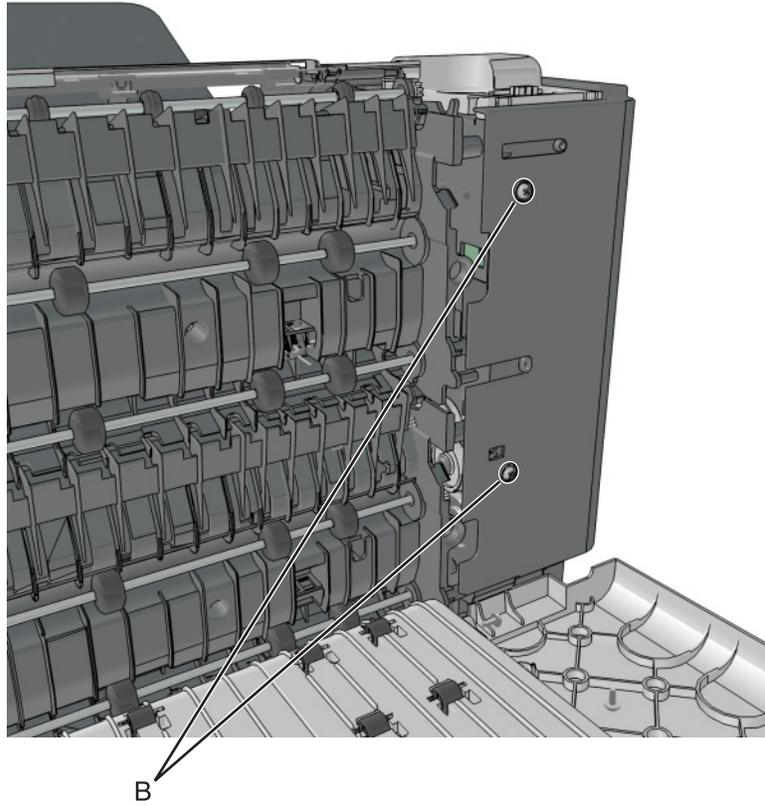
- 1 Open the rear door, then detach the string (A) from the rear door.



**Note:** Fasten the string to the rear side to prevent it from recoiling into the interior of the HCOE.

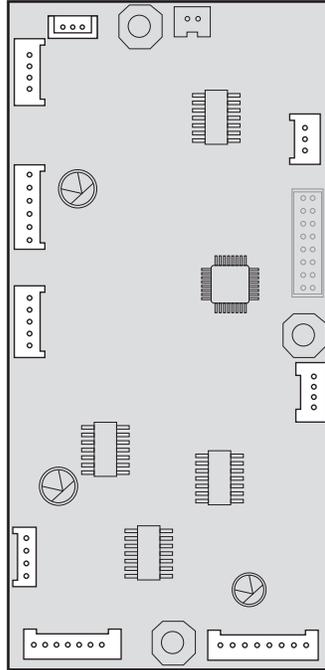


2 Remove the two screws (B), then remove the left cover.

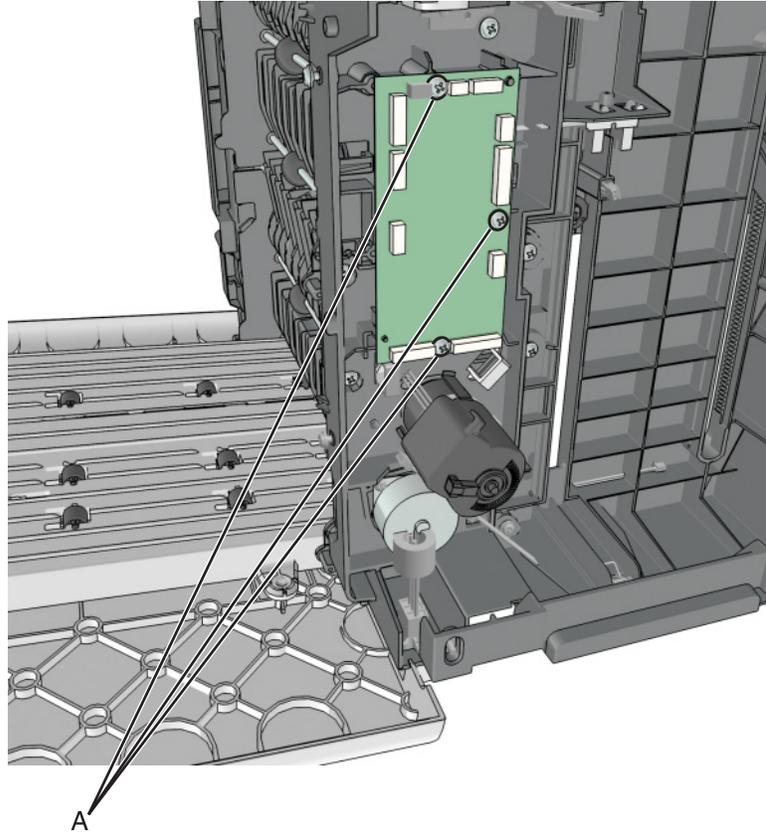


## HCOE controller PCBA removal

- 1 Remove the left cover. See **“HCOE left cover removal”** on page 465.
- 2 Disconnect all the cables (J7, J10, J3, J8, J1, J2, J14, J6, J4, and J5) from the controller PCBA.

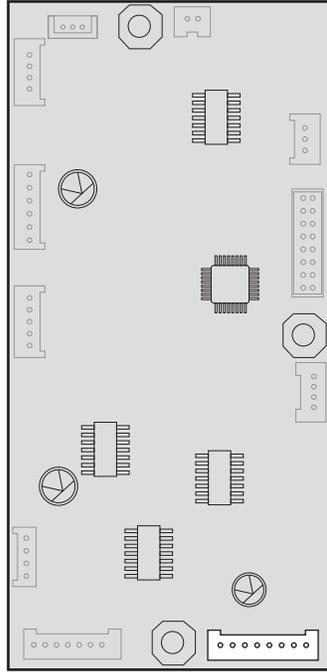


3 Remove the three screws (A), then remove the controller PCBA.

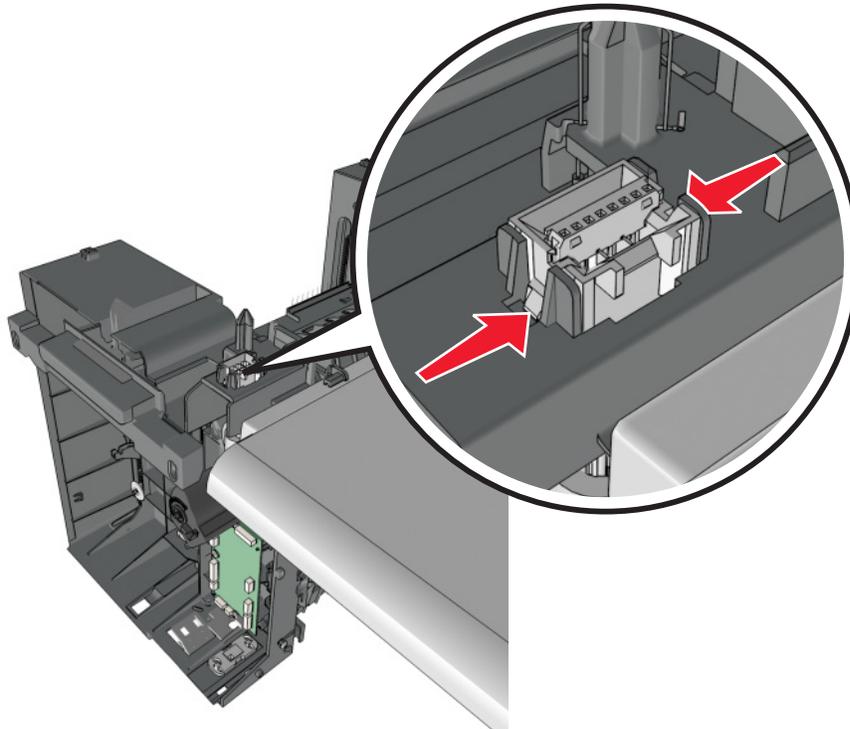


## HCOE lower interface cable removal

- 1 Remove the left cover. See **“HCOE left cover removal”** on page 465.
- 2 Disconnect the lower interface cable (J1) from the controller PCBA.



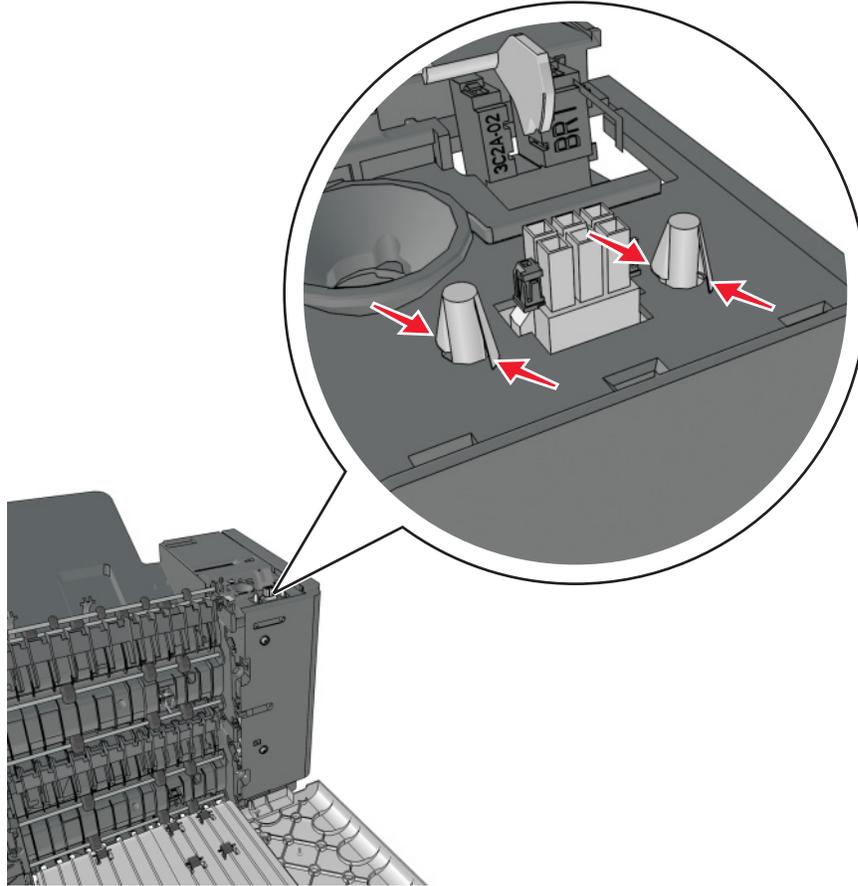
- 3 Push inward to release the latches, then push the connector out of its slot.



- 4 Remove the lower interface cable.

## HCOE upper interface cable removal

- 1 Remove the sensor cover. See **“HCOE sensor cover removal”** on page 462.
- 2 Remove the left cover. See **“HCOE left cover removal”** on page 465.
- 3 Disconnect the upper interface cable from the controller PCBA.
- 4 Crimp both connector pins using pliers to make them fit through the pin holes. Push the connector out of its slot.

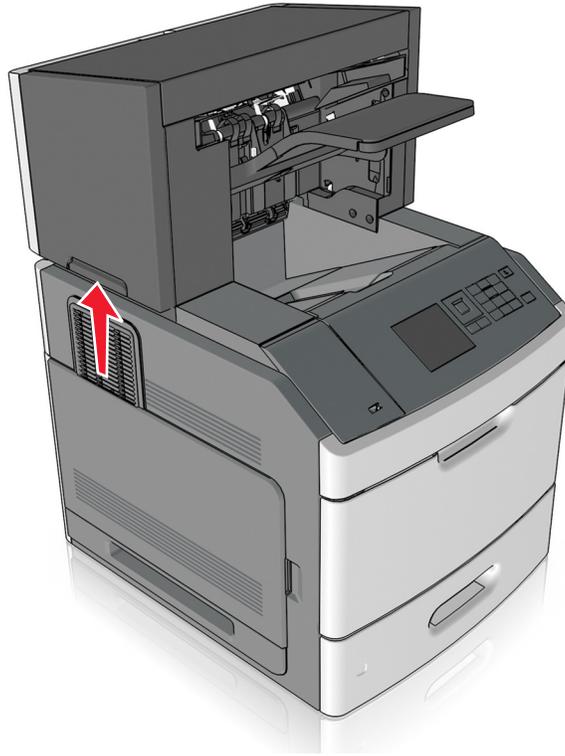


- 5 Remove the upper interface cable.

# Staple finisher option removals

## Staple finisher assembly removal

Press the latches to release, and lift the stapler assembly off the printer.



## Stapler rear door removal

- 1 Open the rear door, and detach the string (A) from the door.



**Note:** Fasten the string end (B) to the rear side to prevent it from recoiling into the interior of the finisher.



B

- 2** Position the door at an angle approximately 90 degrees from the stapler. Release the right hinge of the door first (1), then move the door to the right (2) to release the left hinge.



Repair information

473

3 Remove the rear door assembly.

### Stapler right cover removal

1 Open the rear door, then detach the string from the rear door.



**Note:** Fasten the string end (B) to the rear side to prevent it from recoiling into the interior of the finisher.



B

**2** Remove the two screws (C), then remove the right cover.



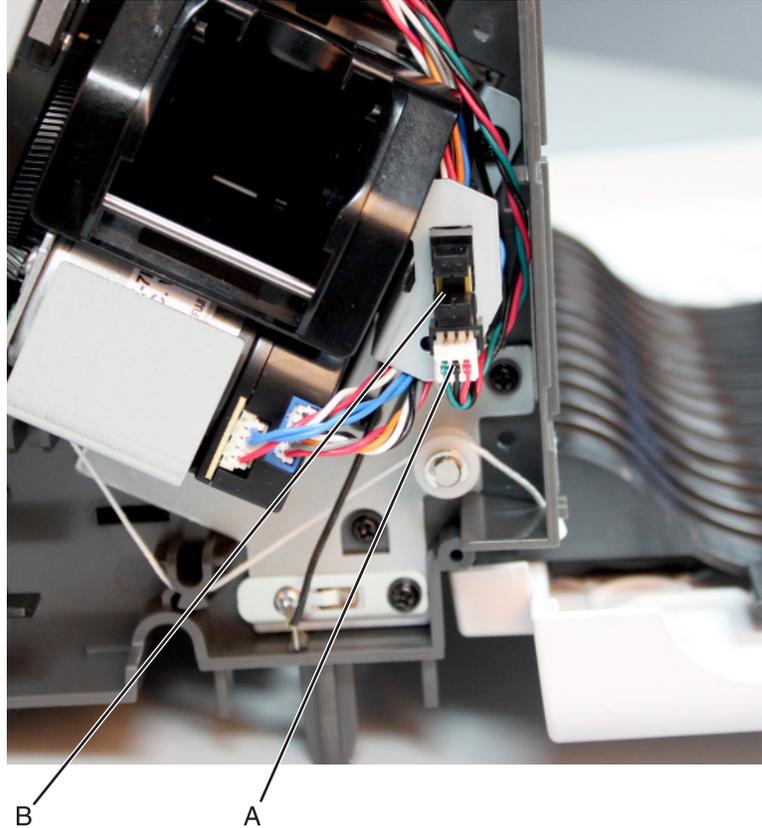
C

Repair information

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## Sensor (cartridge door interlock) removal

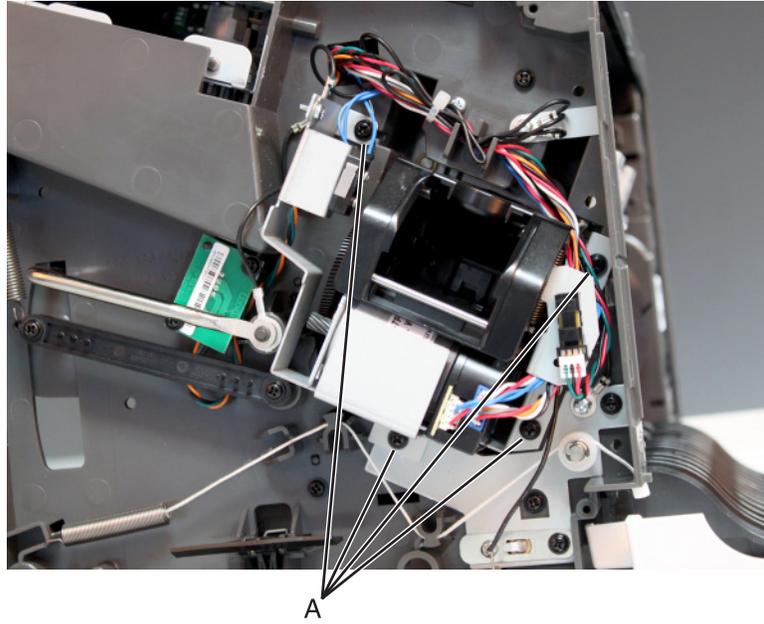
- 1 Remove the stapler right cover. See **“Stapler right cover removal” on page 474.**
- 2 Disconnect the cable (A) from the sensor.
- 3 Release the latches from the stapler assembly frame, then remove the sensor (B).



## Stapler door close limit switch removal

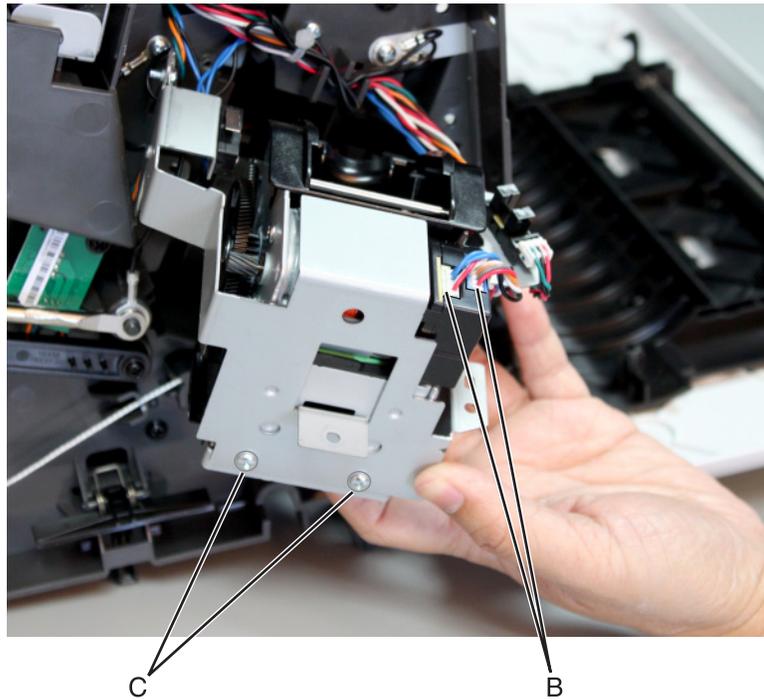
- 1 Remove the stapler left cover. See **“Stapler left cover removal” on page 480.**
- 2 Remove the stapler right cover. See **“Stapler right cover removal” on page 474.**
- 3 Remove the stapler top cover. See **“Stapler top cover removal” on page 482.**

**4** Remove the four screws (A) securing the stapler carriage frame.



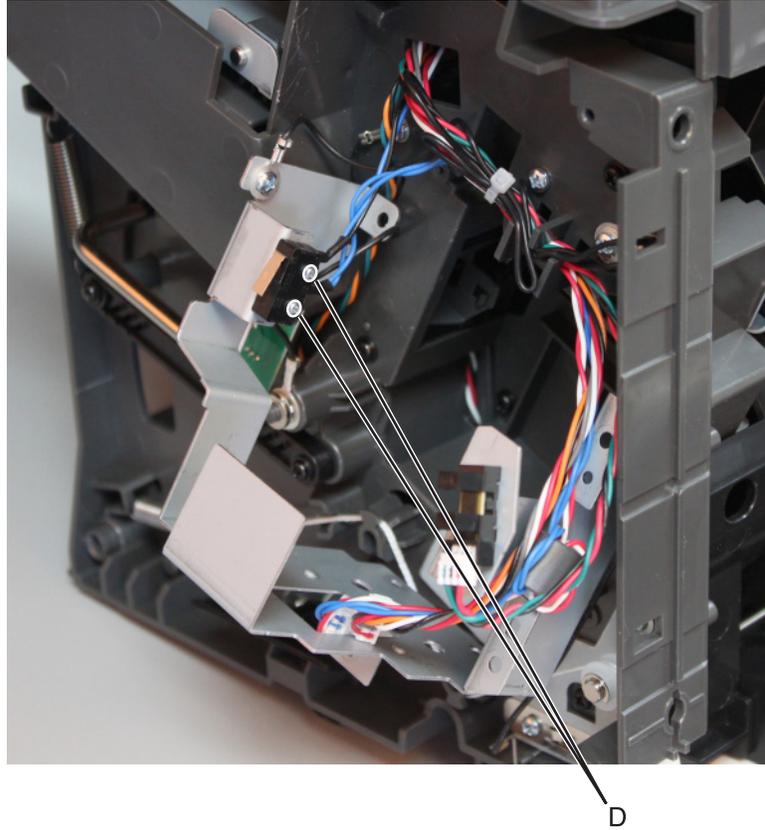
**5** Disconnect the cables (B) from the stapler carriage assembly.

**6** Lift the stapler carriage frame, then remove the two screws from the stapler carriage assembly (C).



**7** Lift the stapler carriage to access the screws securing the limit switch.

**8** Remove the two screws (D) securing the limit switch.



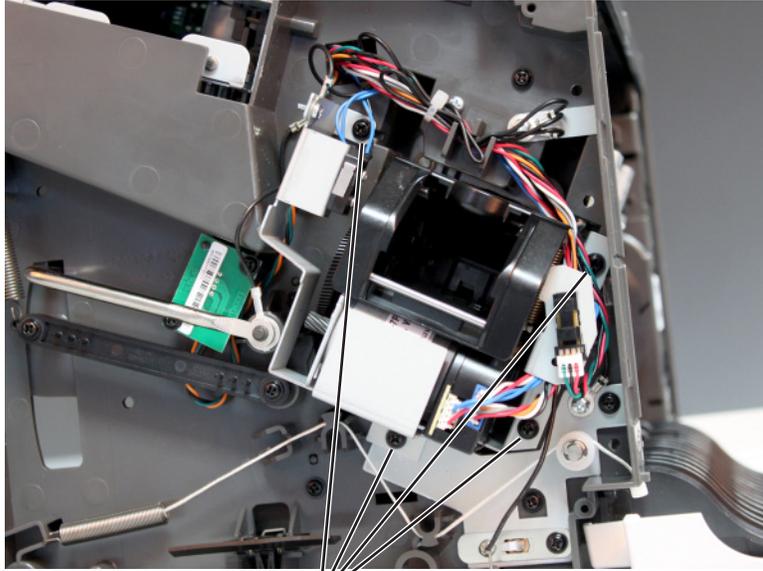
**9** Disconnect the cable (J7) from the controller PCBA.

**10** Route the cable off the stapler, and remove the stapler door close limit switch.

**Note:** Pay attention to the original routing of the cables.

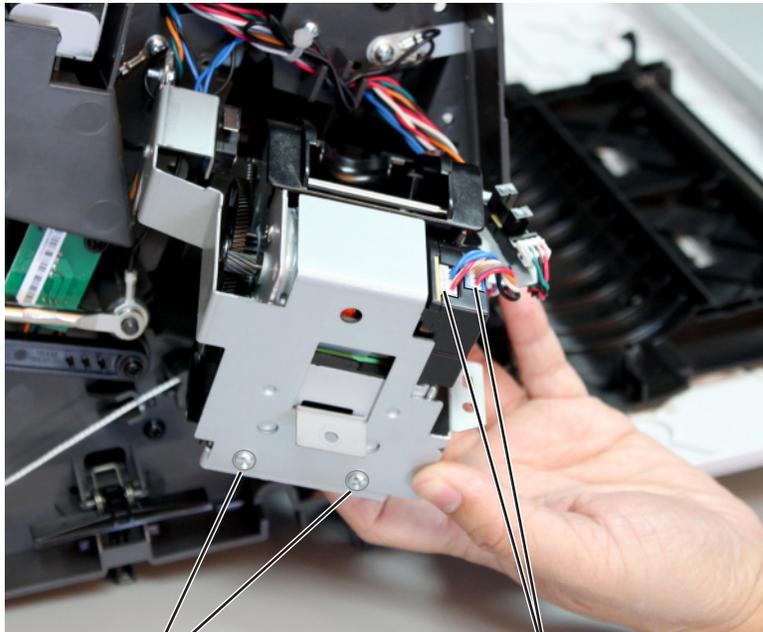
## Stapler carriage assembly removal

- 1 Remove the stapler right cover. See **“Stapler right cover removal”** on page 474.
- 2 Remove the four screws (A) securing the stapler carriage frame.



A

- 3 Disconnect the two cables (B) from the stapler carriage assembly.
- 4 Lift the stapler carriage frame, then remove the two screws (C) from the stapler carriage assembly.



C

B

- 5 Remove the stapler carriage assembly.

## Stapler left cover removal

**Note:** This is not a FRU.

- 1 Open the rear door, then detach the string (A) from the rear door.



**Installation note:** Fasten the string end (B) to the rear side to prevent it from recoiling into the interior of the finisher.



B

2 Remove the two screws (C), then remove the left cover.



C

Repair information

481

## Stapler cartridge access door removal

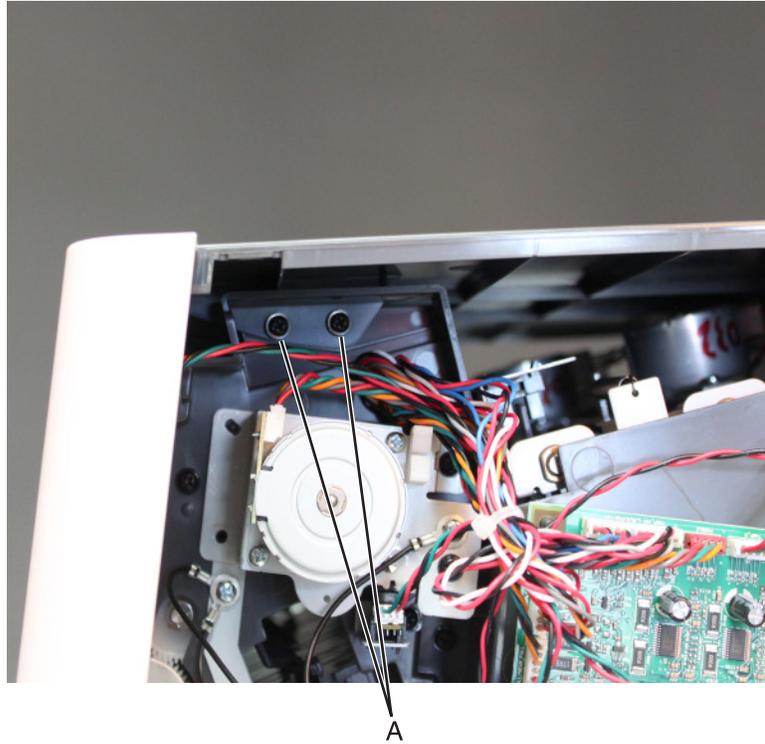
Open the access door, then pull it off the stapler right cover.



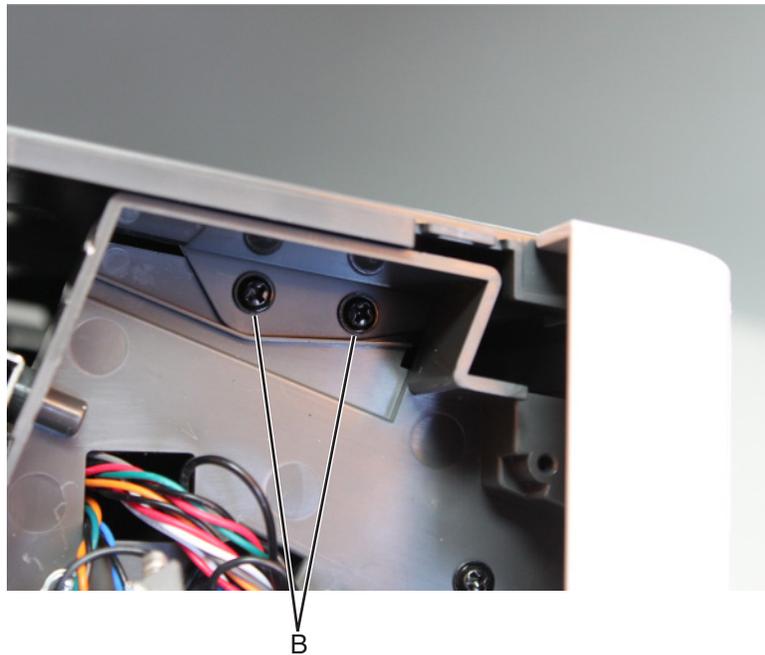
## Stapler top cover removal

- 1 Remove the left cover. See **“Stapler left cover removal”** on page 480.
- 2 Remove the right cover. See **“Stapler right cover removal”** on page 474.

- 3 Remove the two screws (A) from the left side of the stapler assembly.



- 4 Remove the two screws (B) from the right side of the stapler assembly.



- 5 Remove the stapler top cover.

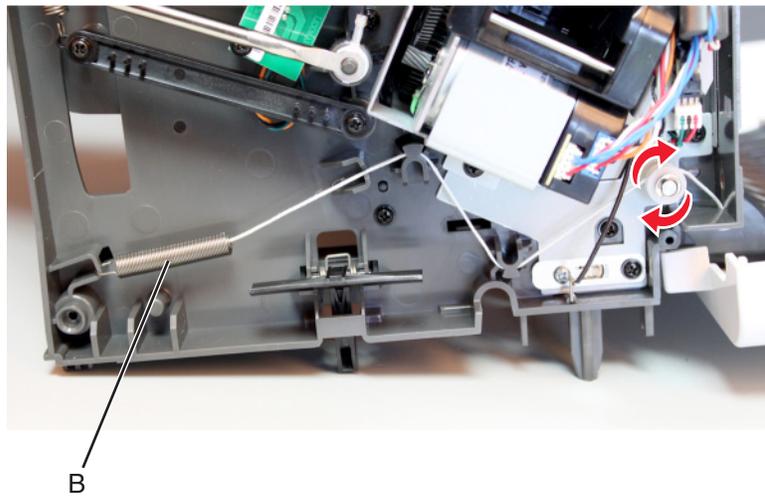
## Stapler spring with string removal

- 1 Open the rear door, and detach the string (A).



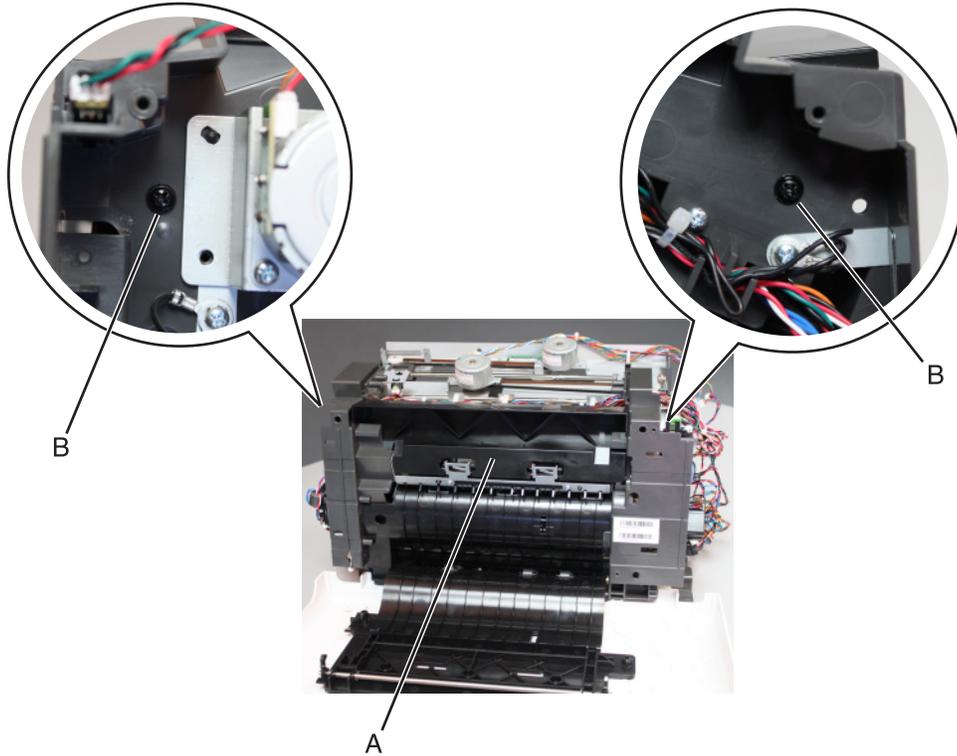
- 2 Remove the right cover. See **“Stapler right cover removal”** on page 474.
- 3 Remove the spring (B) with string.

**Installation note:** Pay attention to the original position of the string. The string on the pulley is wound clockwise.



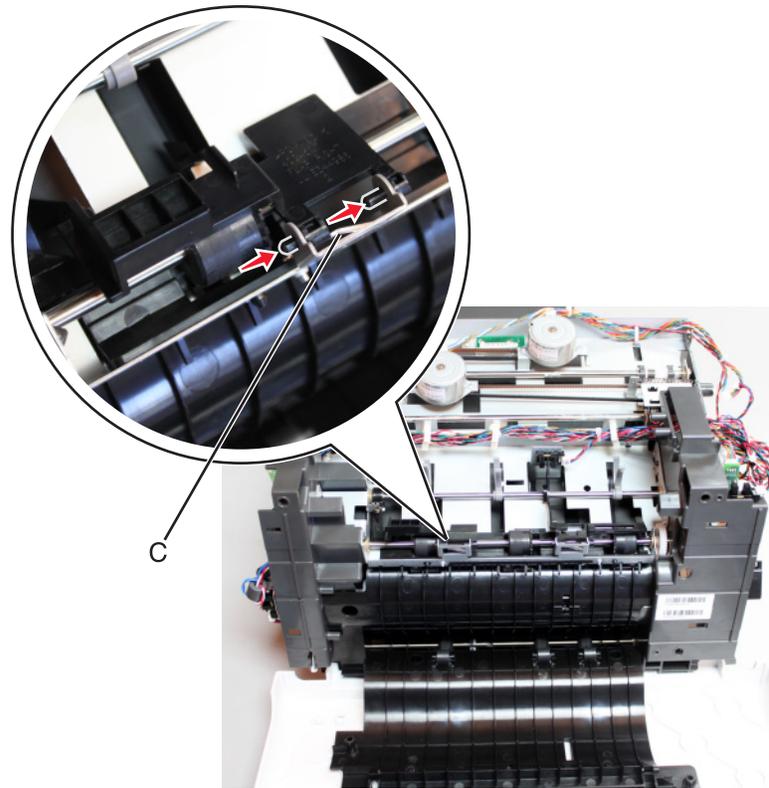
## Media stack flap (right) removal

- 1 Remove the left cover. See **“Stapler left cover removal”** on page 480.
- 2 Remove the right cover. See **“Stapler right cover removal”** on page 474.
- 3 Remove the top cover. See **“Stapler top cover removal”** on page 482.
- 4 Remove the two screws (B) from the cover (A).



- 5 Move the media stack flap to the right to release the pins from the holes.

**Note:** The metal latch (C) may need to be flexed to release the pins.

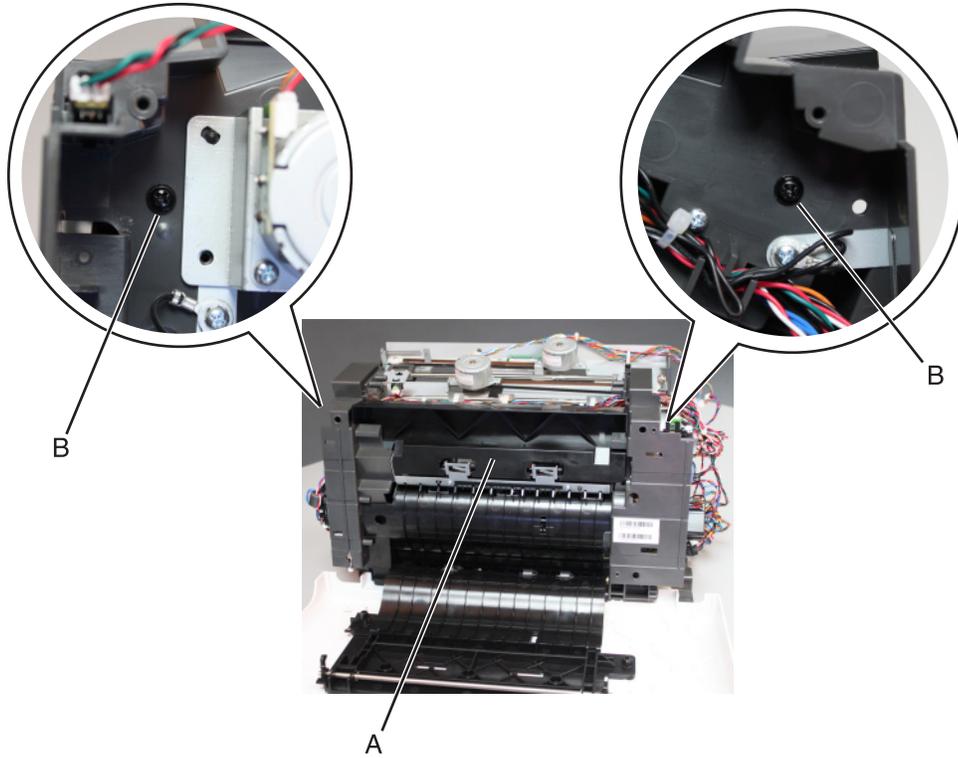


6 Ease the media stack flap off the stapler assembly.

### Media stack flap (left) removal

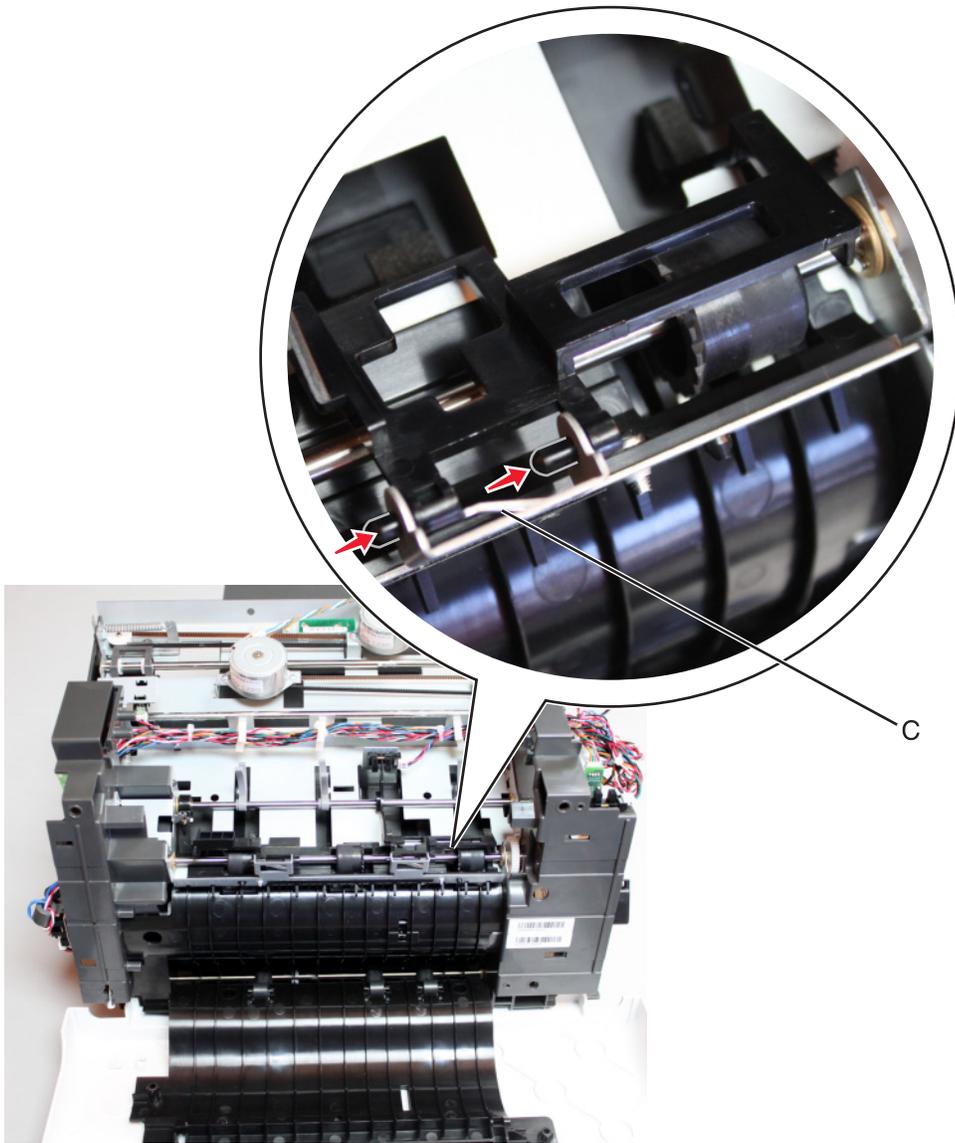
- 1 Remove the left cover. See **“Stapler left cover removal” on page 480.**
- 2 Remove the right cover. See **“Stapler right cover removal” on page 474.**
- 3 Remove the top cover. See **“Stapler top cover removal” on page 482.**

4 Remove the two screws (B) from the cover (A).



5 Move the media stack flap to the right to release the pins from the holes.

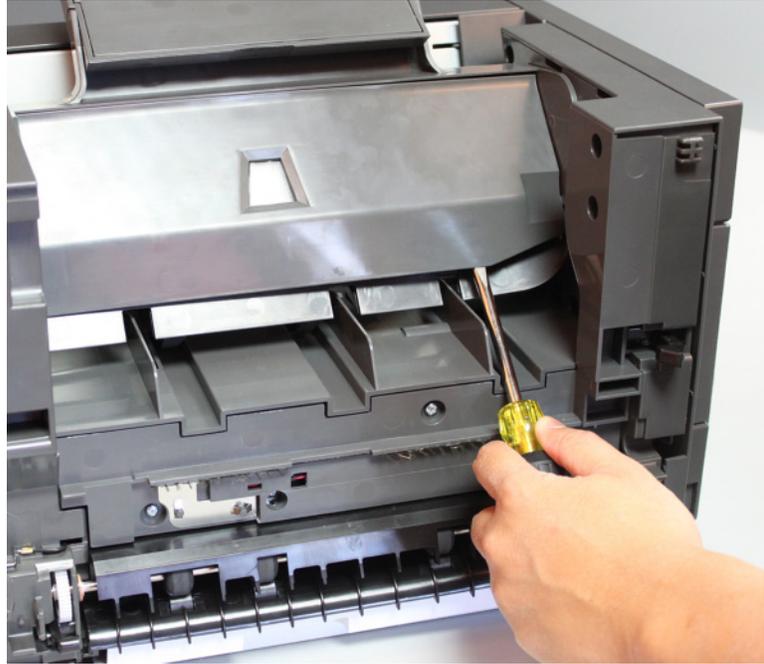
**Note:** The metal latch (C) may need to be flexed to release the pins.



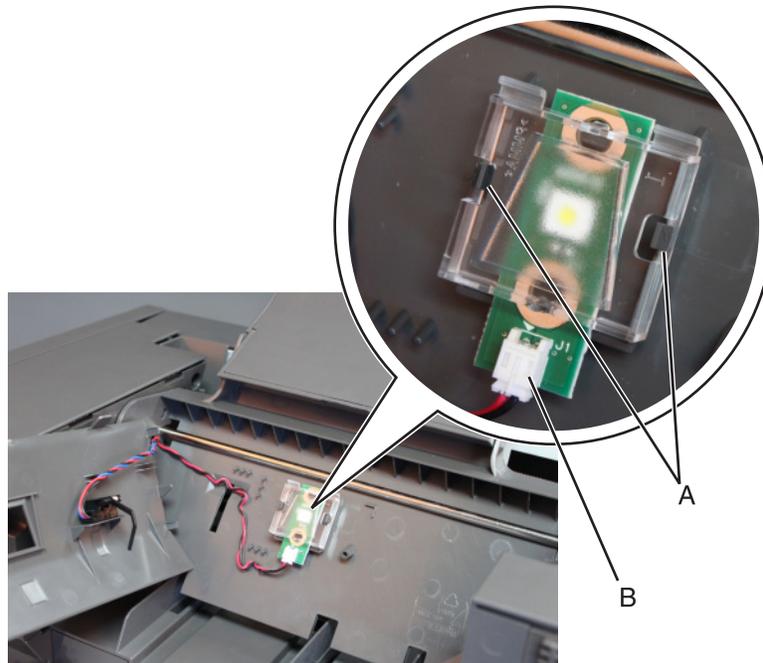
**6** Ease the media stack flap off the stapler assembly.

## Standard output bin LED removal

- 1 With a prying tool, open the LED sensor cover.

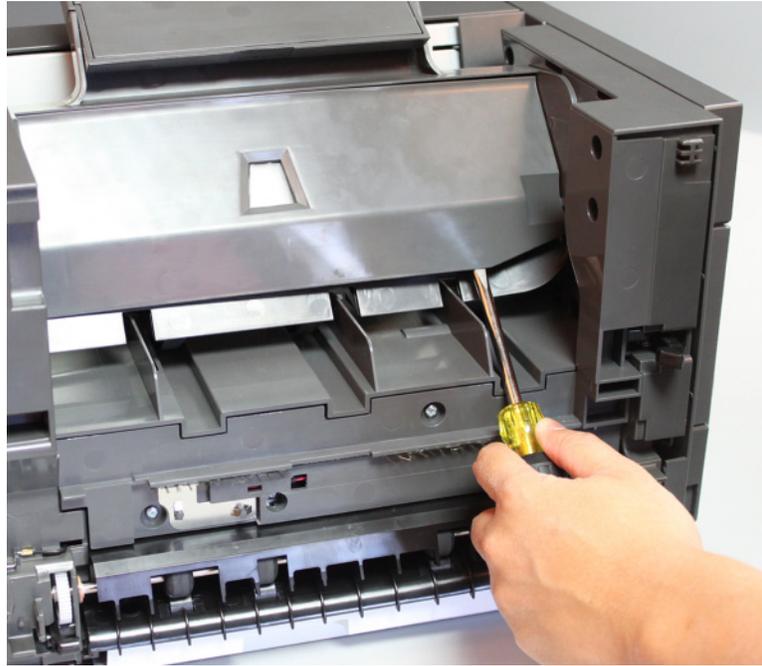


- 2 Release the latches (A) to remove the LED clear lens. Disconnect the cable (B), and remove the standard output bin LED.

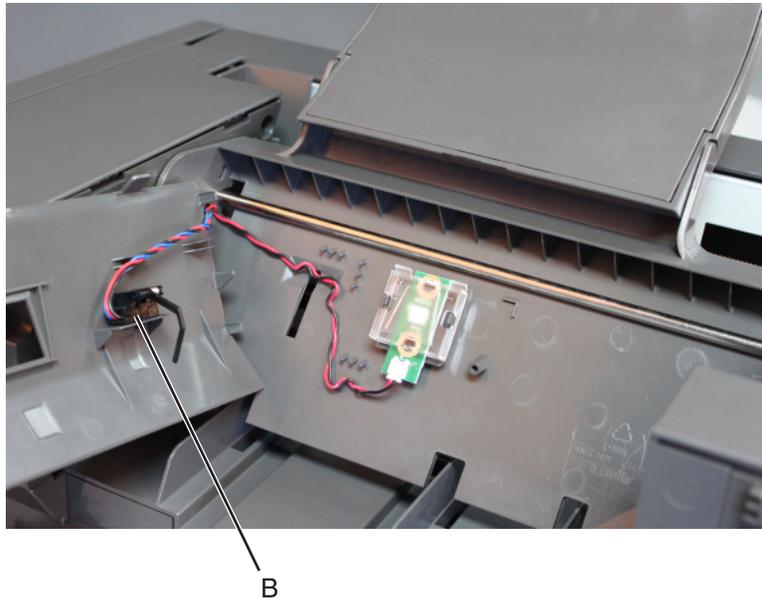


## Sensor (finisher bin media present) removal

- 1 Remove the left cover. See **“Stapler left cover removal”** on page 480.
- 2 With a prying tool, open the LED sensor cover.



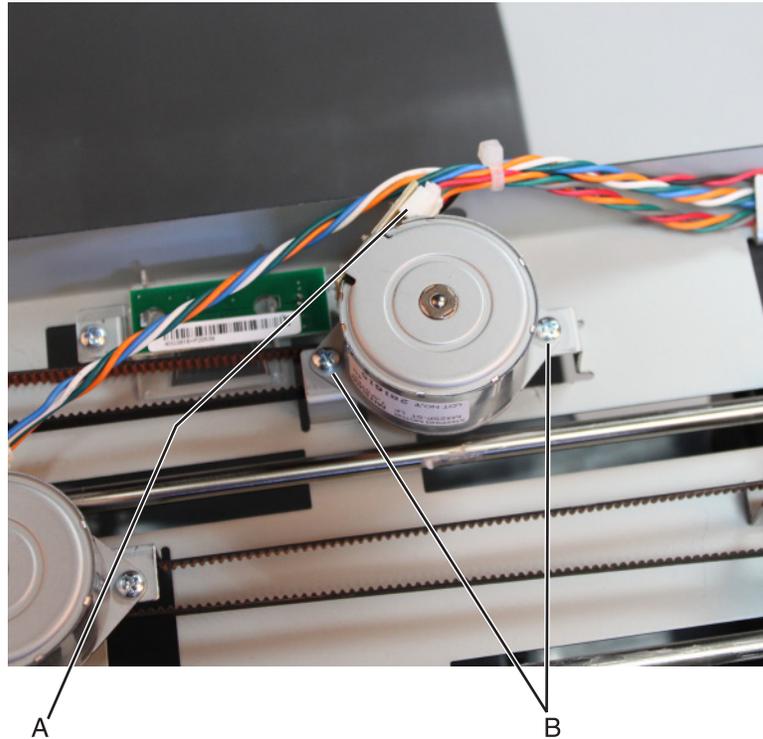
- 3 Release the latches holding the sensor (B) to the cover.



- 4 Disconnect the cable from the stapler controller PCBA, then remove the sensor (finisher bin media present).

## Tamper motor (right) removal

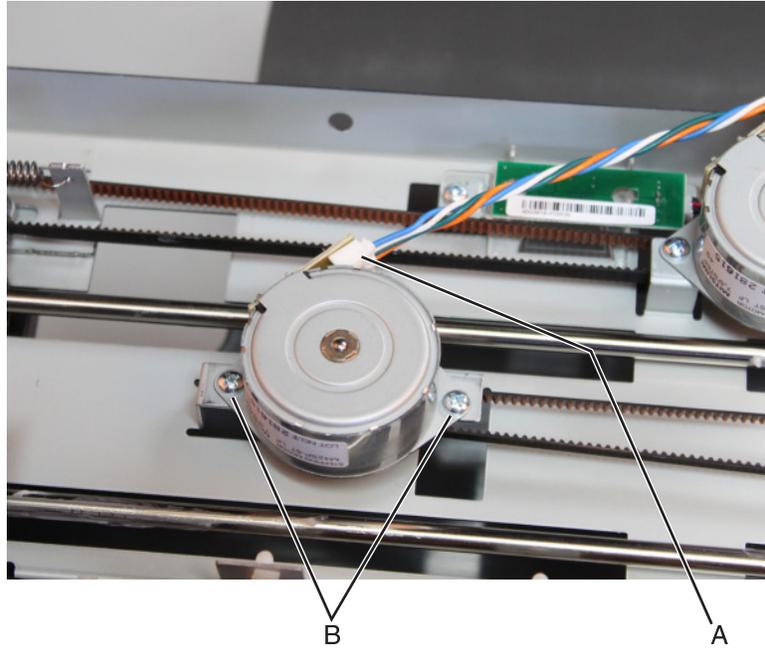
- 1 Remove the left cover. See **“Stapler left cover removal” on page 480.**
- 2 Remove the right cover. See **“Stapler right cover removal” on page 474.**
- 3 Remove the top cover. See **“Stapler top cover removal” on page 482.**
- 4 Disconnect the tamper motor cable (A).
- 5 Remove the two screws (B), then remove the right tamper motor.



## Tamper motor (left) removal

- 1 Remove the left cover. See **“Stapler left cover removal” on page 480.**
- 2 Remove the right cover. See **“Stapler right cover removal” on page 474.**
- 3 Remove the top cover. See **“Stapler top cover removal” on page 482.**
- 4 Disconnect the tamper motor cable (A).

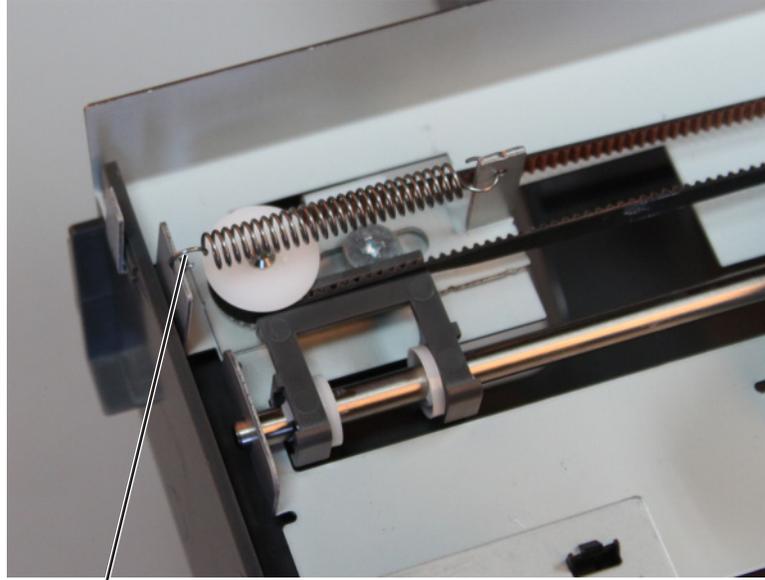
- 5 Remove the two screws (B), then remove the left tamper motor.



### Tamper drive belt removal

- 1 Remove the left cover. See **“Stapler left cover removal” on page 480.**
- 2 Remove the right cover. See **“Stapler right cover removal” on page 474.**
- 3 Remove the top cover. See **“Stapler top cover removal” on page 482.**
- 4 Remove the tamper motor assembly engaged to the belt. See **“Tamper motor (right) removal” on page 491** or **“Tamper motor (left) removal” on page 491.**

- 5 Unhook the spring (A) to loosen and release the belt.

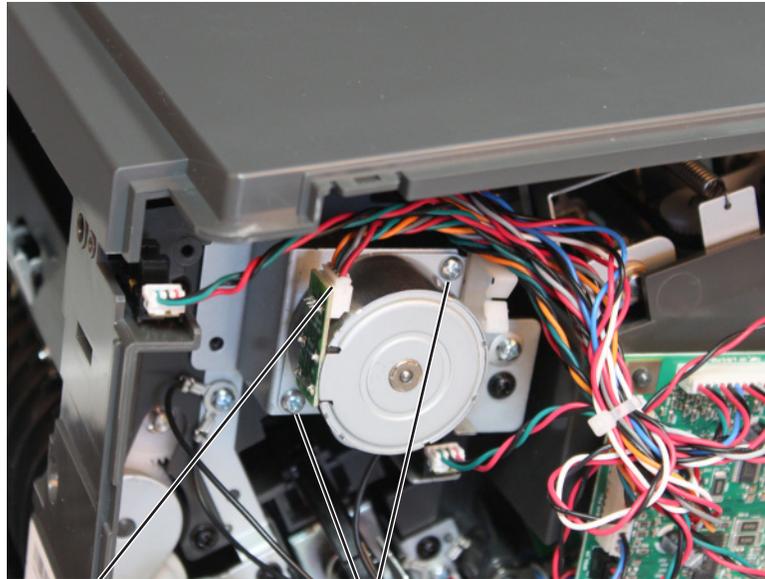


A

- 6 Remove the tamper drive belt.

### Paddle drive motor removal

- 1 Remove the left cover. See **“Stapler left cover removal”** on page 480.
- 2 Remove the right cover. See **“Stapler right cover removal”** on page 474.
- 3 Disconnect the cable (A) from the drive motor.
- 4 Remove the two screws (B), then remove the paddle drive motor.

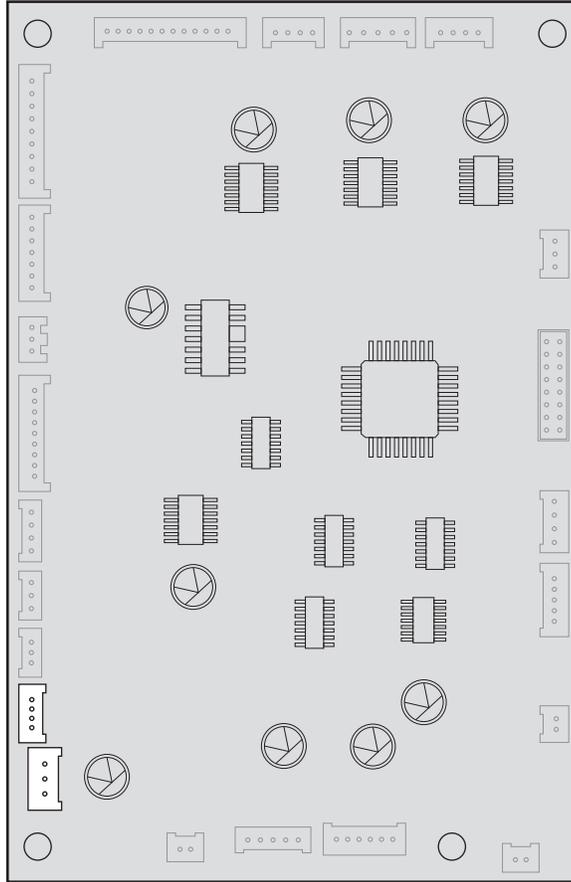


A

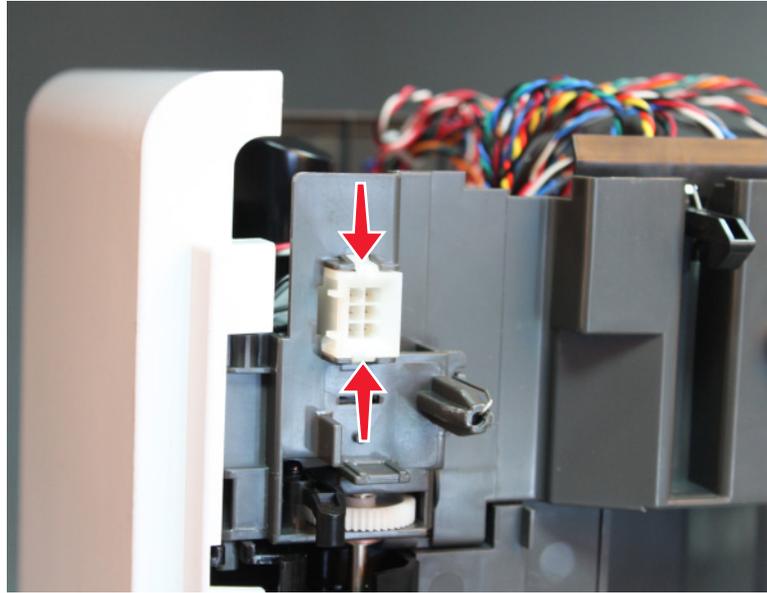
B

## Stapler lower interface cable removal

- 1 Remove the left cover. See **“Stapler left cover removal”** on page 480.
- 2 Unplug the two connectors (J18 and J15) from the controller PCBA.



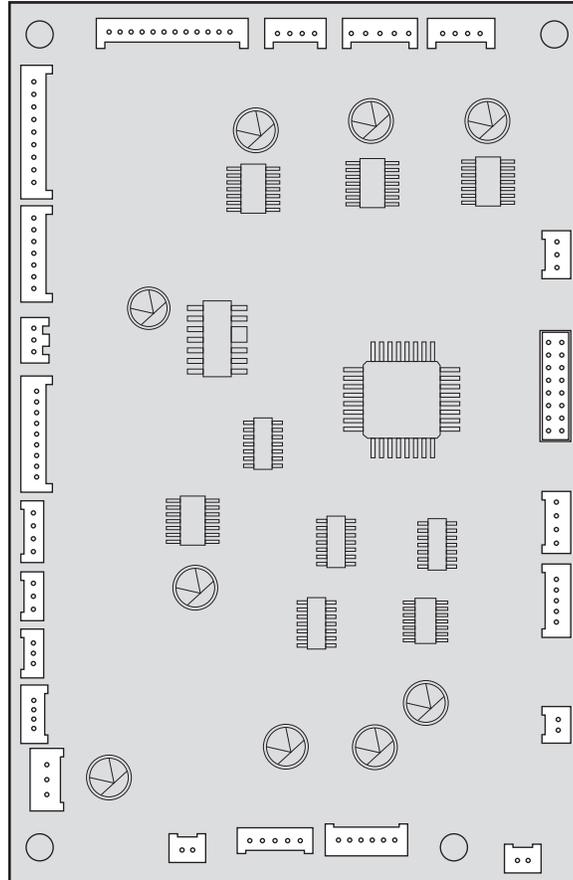
- 3 From the bottom of the stapler, release the latches, and push the connector off its slot.

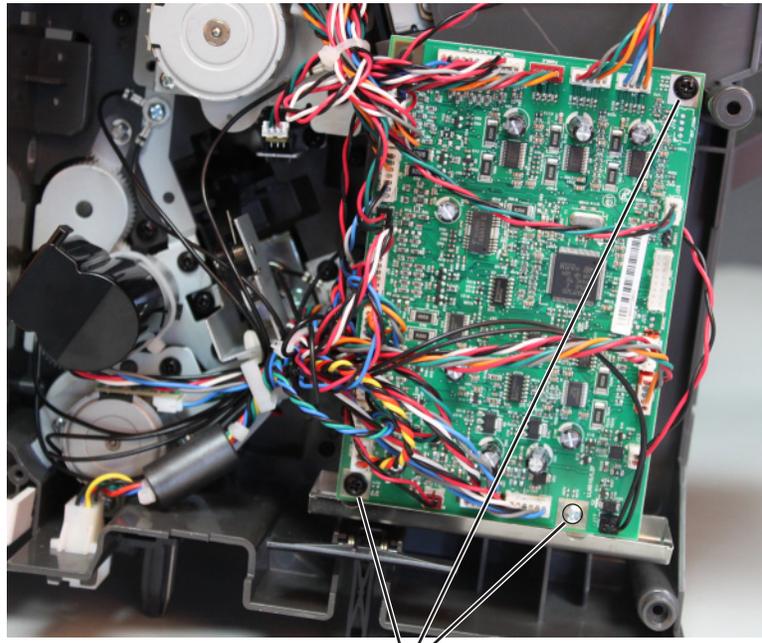


- 4 Remove the lower interface cable.

## Stapler controller PCBA removal

- 1 Remove the left cover. See **“Stapler left cover removal”** on page 480.
- 2 Disconnect all the cables (J11, J5, J6, J4, J26, J24, J22, J23, J17, J3, J2, J1, J18, J15, J1, J12, J14, J8, J20, J9, and J7), then remove the three screws (A) from the controller PCBA.



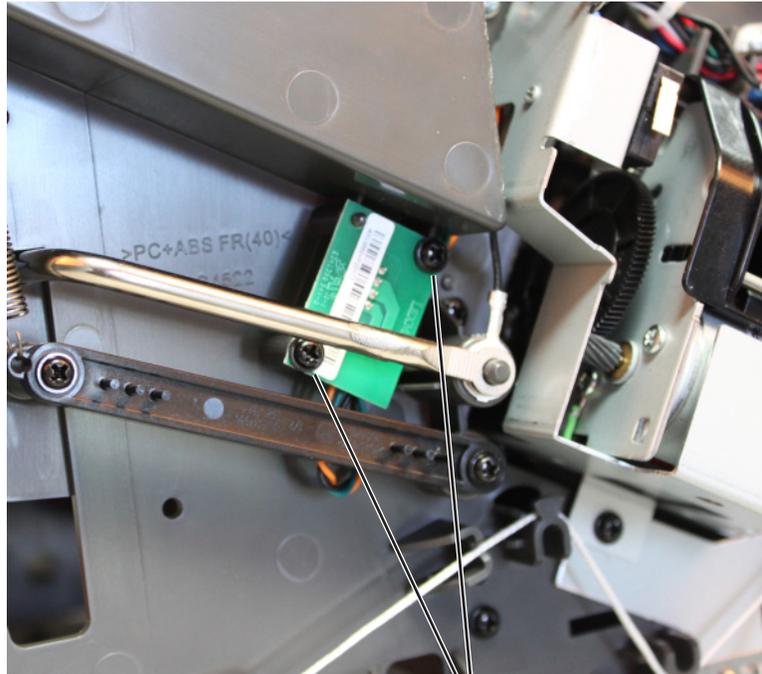


A

3 Remove the controller PCBA.

### Sensor (bin full send) removal

- 1 Remove the right cover. See **“Stapler right cover removal”** on page 474.
- 2 Remove the two screws (A) from the sensor.

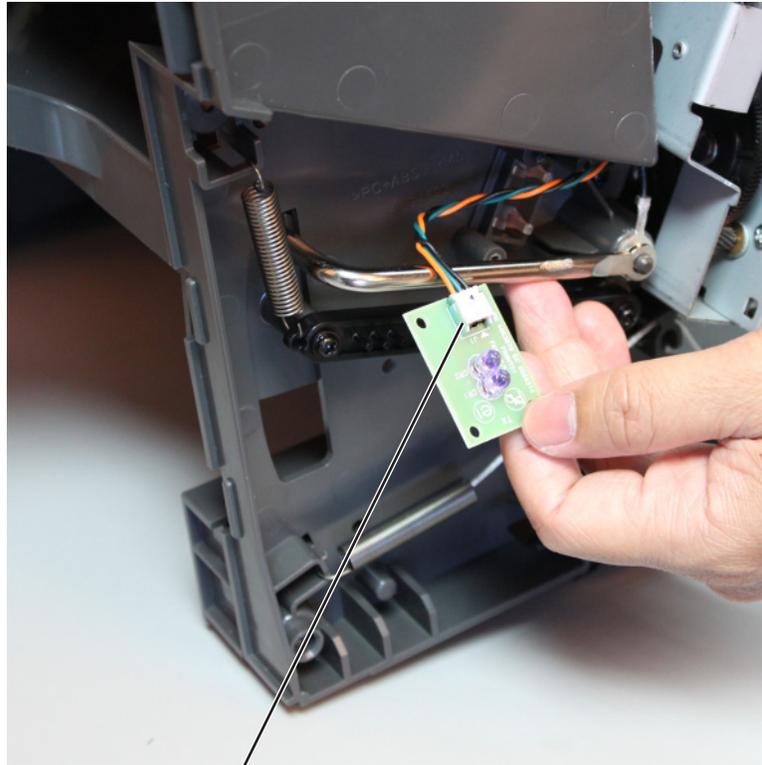


A

Repair information

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- 3 Disconnect the cable (B), and remove the sensor (bin full send).

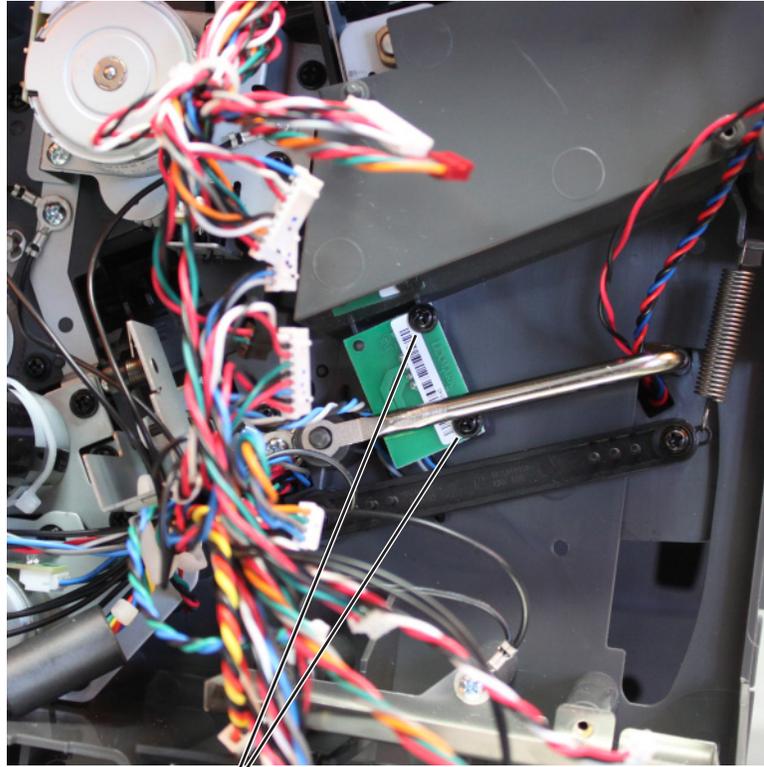


B

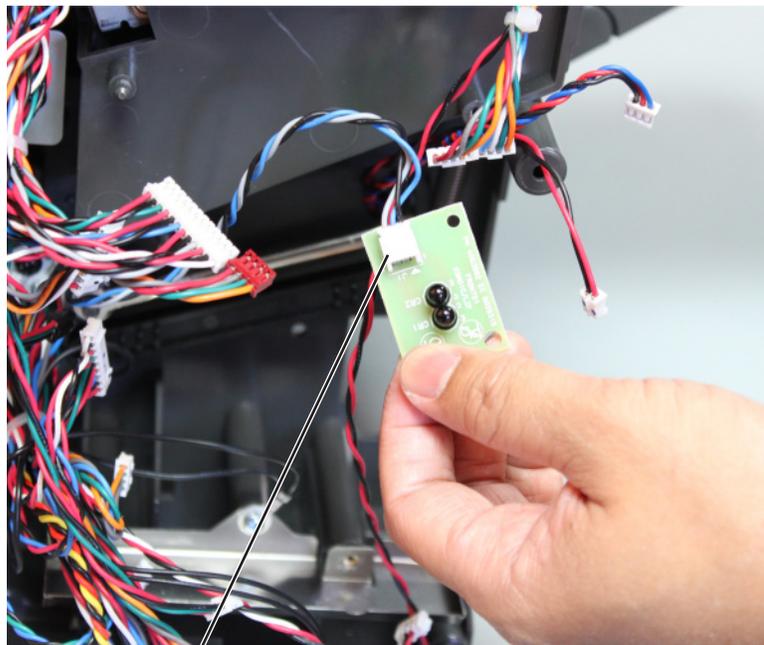
### Sensor (bin full receive) removal

- 1 Remove the left cover. See **“Stapler left cover removal”** on page 480.
- 2 Remove the stapler controller PCBA. See **“Stapler controller PCBA removal”** on page 496.

**3** Remove the two screws (A) from the sensor.



**4** Disconnect the cable (B), and remove the sensor (bin full receive).



Repair information

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# Mailbox option removals

## Mailbox assembly removal

Press the latches to release, and lift the mailbox assembly off the printer.

## Mailbox top cover removal

Lift the top cover, and remove from the mailbox assembly.

## Mailbox rear door removal

- 1 Open the rear door, and detach the string (A) from the door.



**Note:** Fasten the string end (B) to the rear side to prevent it from recoiling into the interior of the mailbox.



2 Position the rear door at the angle shown, and pull the door off the mailbox.

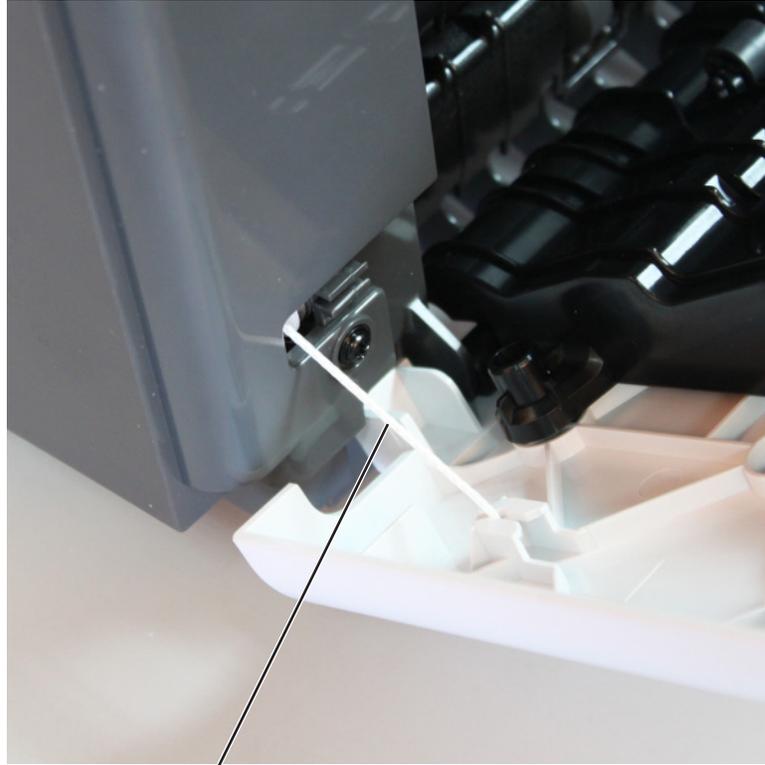


Repair information

**501**

## Mailbox right cover removal

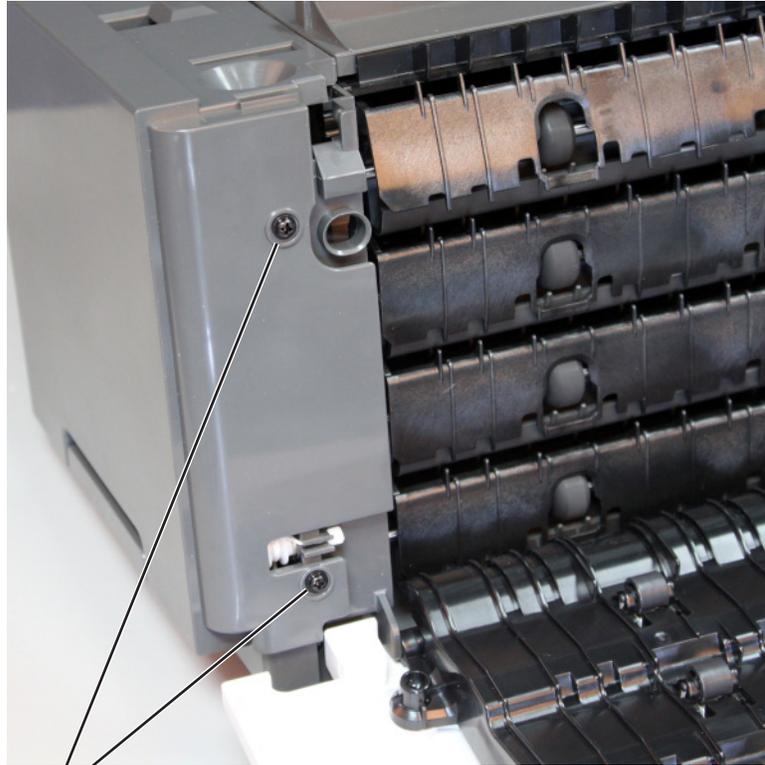
- 1 Open the rear door, and detach the string (A) from the door.



A

- 2 Remove the top cover. See **“Mailbox top cover removal” on page 500.**

- 3 Remove the two screws (B) from the mailbox, then remove the right cover.

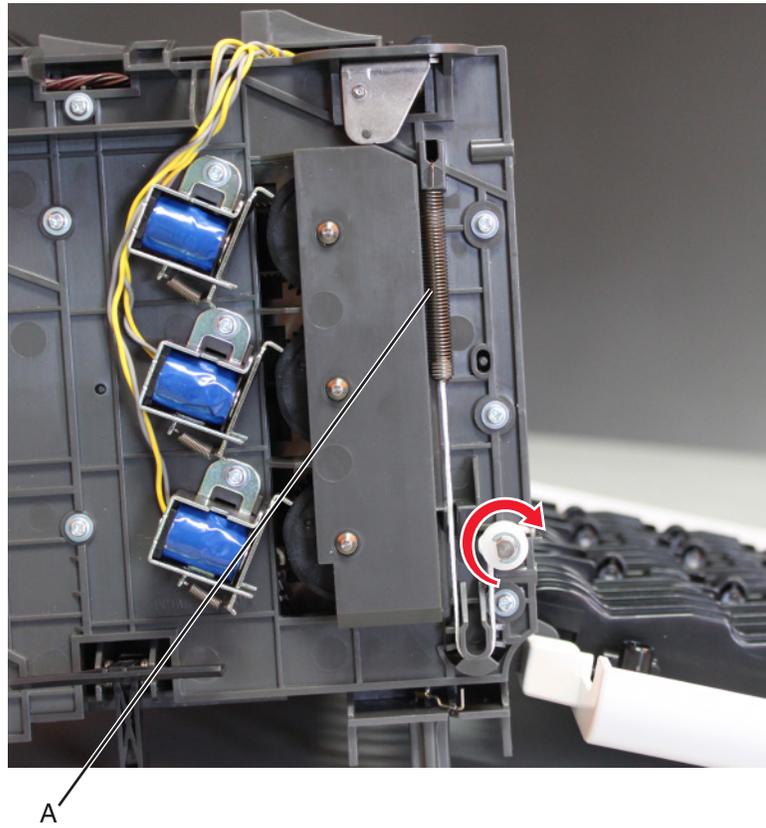


B

### Mailbox spring with string removal

- 1 Remove the top cover. See **“Mailbox top cover removal” on page 500.**
- 2 Remove the mailbox right cover. See **“Mailbox right cover removal” on page 502.**
- 3 Remove the spring (A) with string.

**Note:** Pay attention to the original position of the string. The string on the pulley is wound clockwise.



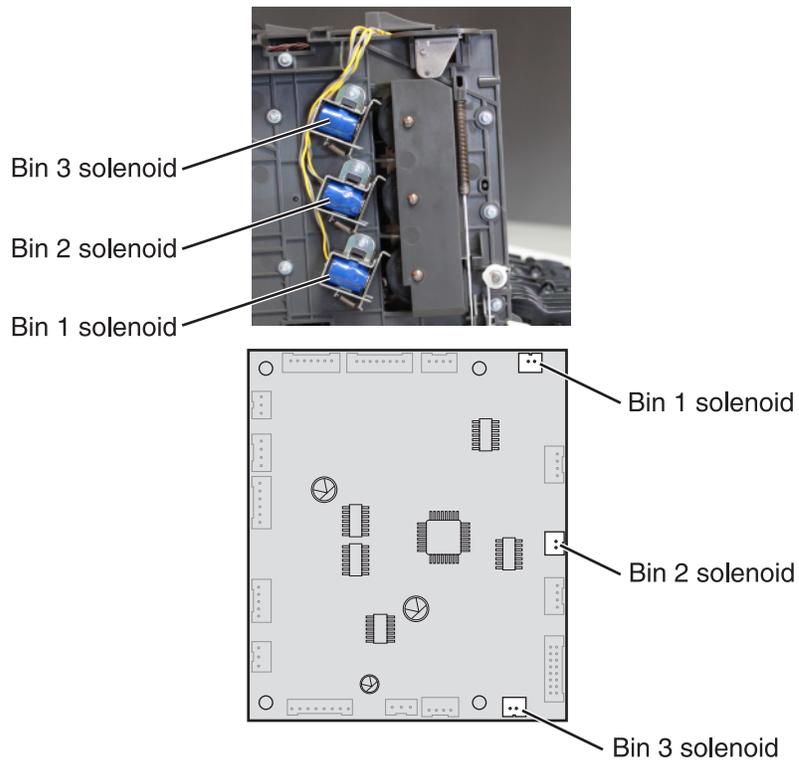
## Mailbox solenoid removal

- 1 Remove the mailbox top cover. See **“Mailbox top cover removal”** on page 500.
- 2 Remove the mailbox right cover. See **“Mailbox right cover removal”** on page 502.
- 3 Remove the mailbox left cover. See **“Mailbox left cover removal”** on page 506.

4 Lift the middle portion of the cover to release the tabs (A), then remove the cover.

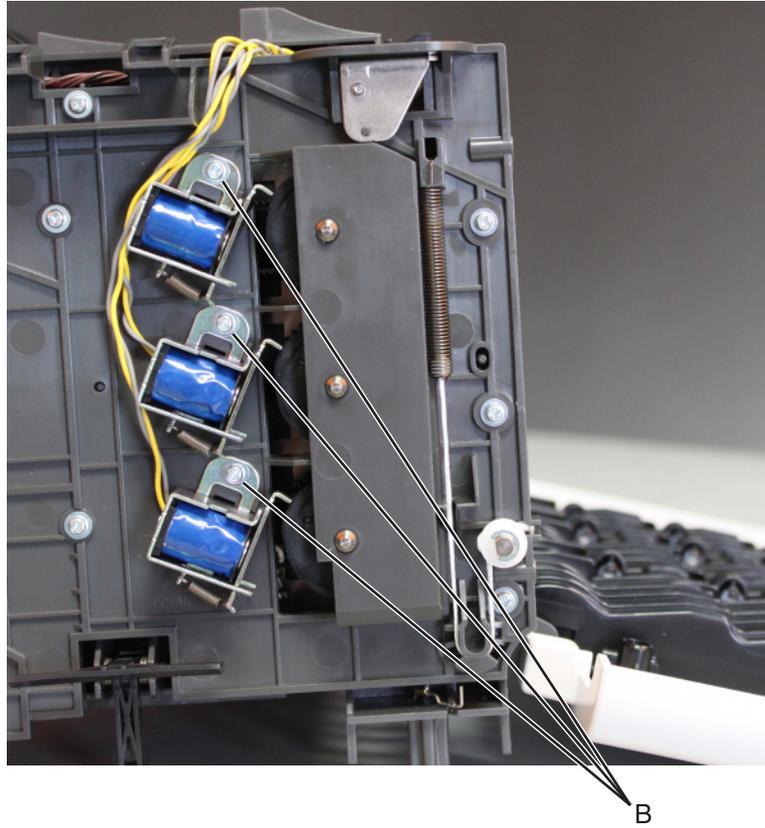


5 Disconnect the solenoid cable (J2A, J2B, or J2C) from the controller PCBA.



Repair information

6 Remove the screw (B) securing the solenoid.

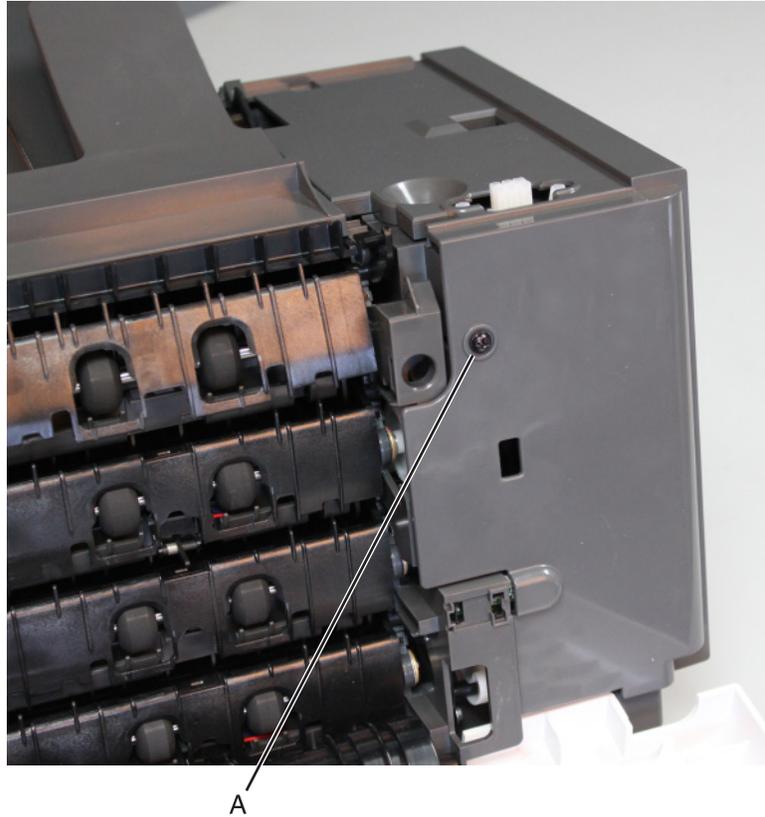


7 Route the cable off the mailbox, then remove the solenoid.

## Mailbox left cover removal

- 1 Open the rear door.
- 2 Remove the top cover. See **“Mailbox top cover removal” on page 500.**

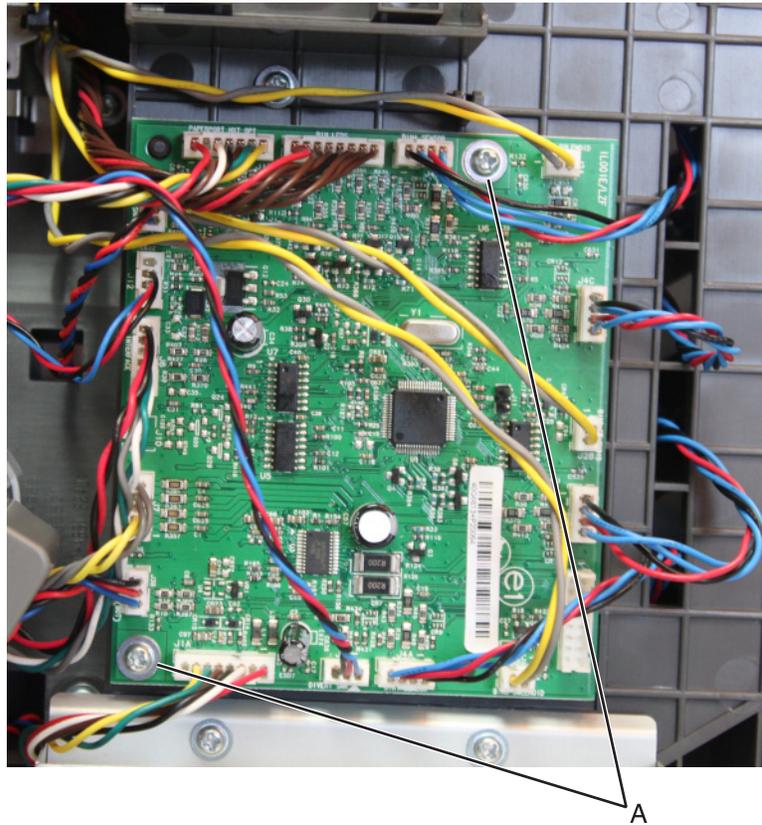
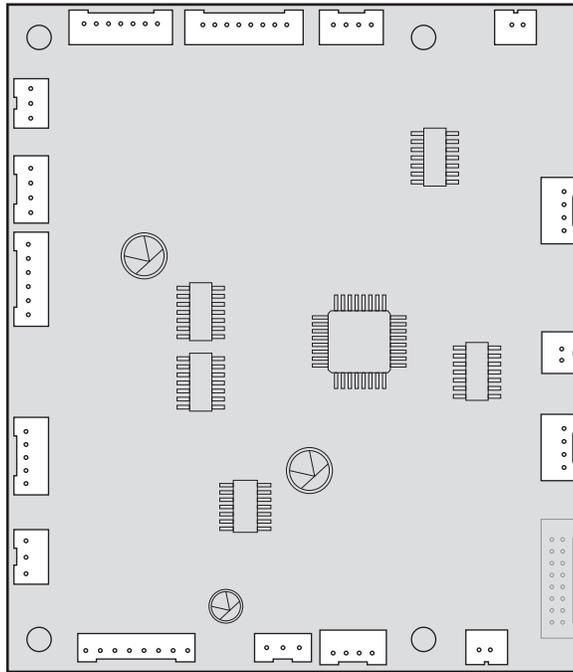
- 3 Remove the screw from the mailbox (A), then remove the left cover.



### Mailbox controller PCBA removal

- 1 Remove the top cover. See **“Mailbox top cover removal” on page 500.**
- 2 Remove the mailbox left cover. See **“Mailbox left cover removal” on page 506.**

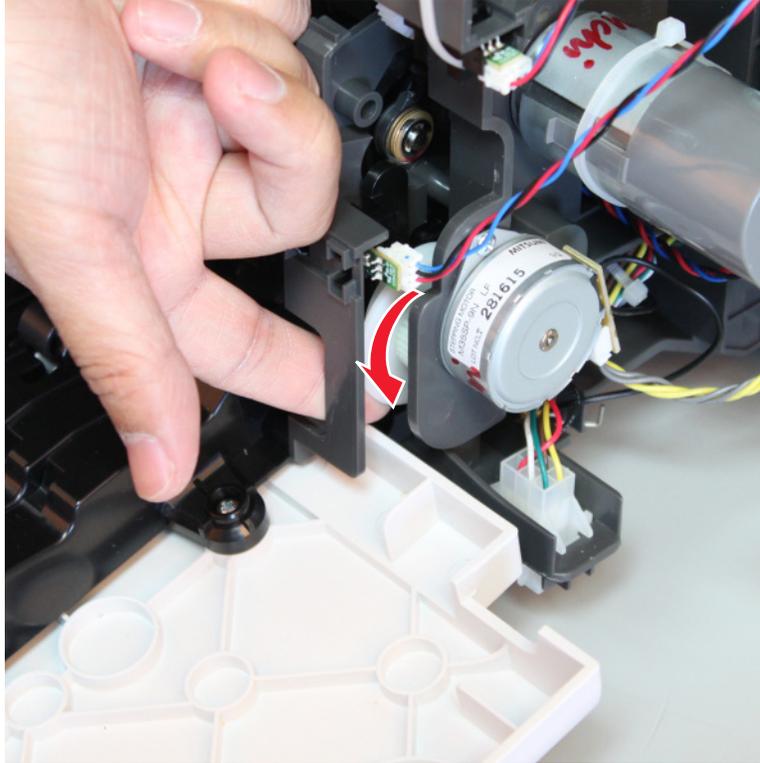
- 3** Disconnect all cables (J1B, J5, J4D, J2A, J4C, J2B, J4B, J2C, J4A, J8, J1A, J3B, J7, J6, J12, and J3T), and then remove the two screws (A) from the controller PCBA.



- 4** Remove the controller PCBA.

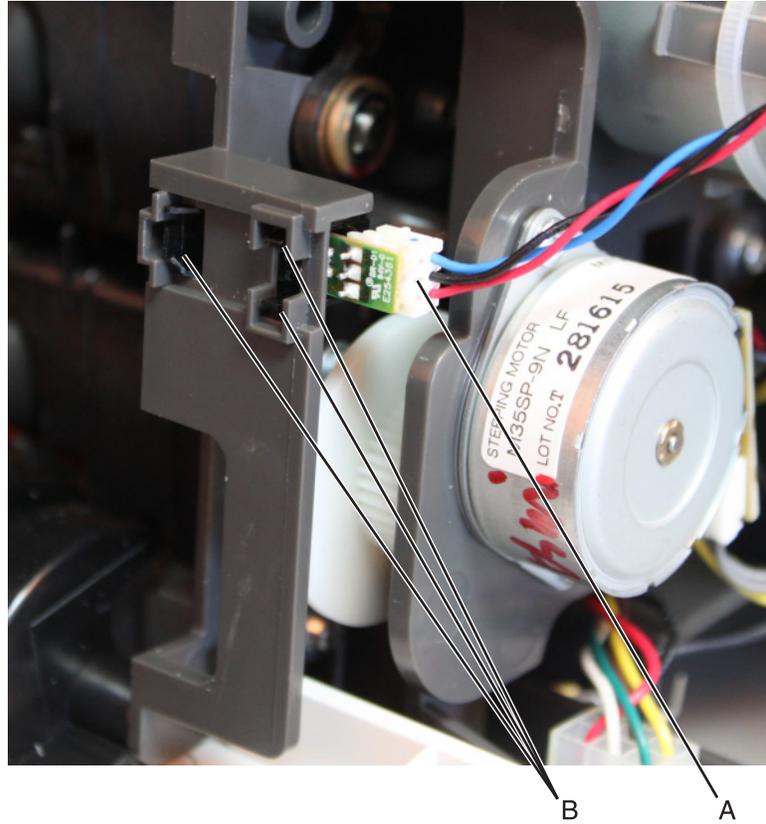
## Sensor (mailbox divert motor) removal

- 1 Remove the top cover. See **“Mailbox top cover removal”** on page 500.
- 2 Remove the mailbox left cover. See **“Mailbox left cover removal”** on page 506.
- 3 Rotate the cam to clear the obstacle blocking the sensor.



- 4 Disconnect the sensor cable (A).

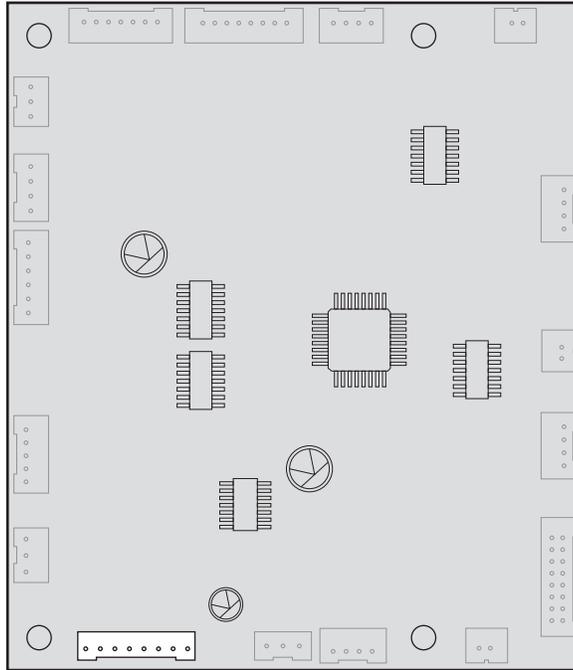
5 Release the latches (B), and remove the sensor (divert motor).



### Mailbox lower interface cable removal

- 1 Remove the top cover. See **“Mailbox top cover removal”** on page 500.
- 2 Remove the mailbox left cover. See **“Mailbox left cover removal”** on page 506.

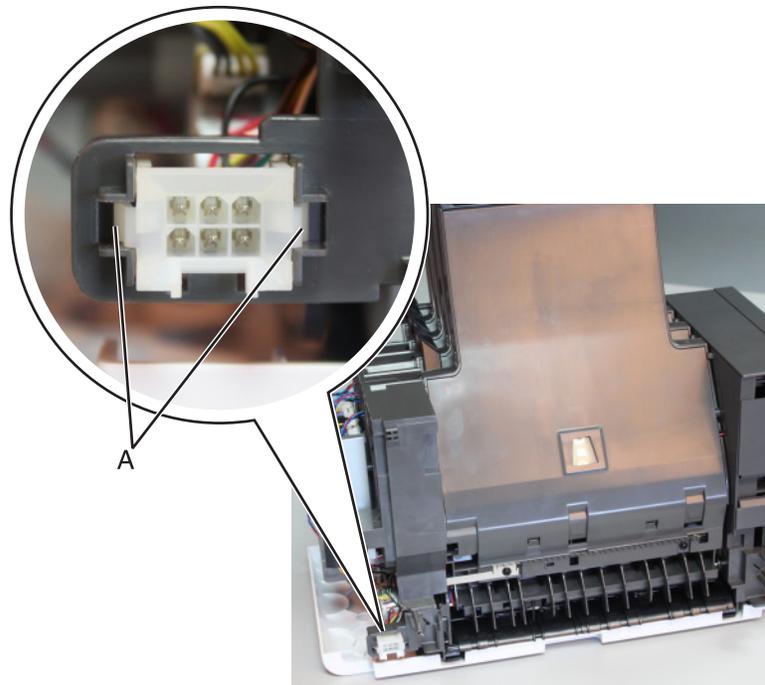
3 Disconnect the lower interface cable (J1A) from the controller PCBA.



4 Cut the cable tie holding the lower interface cable.

**Installation note:** Make sure the cables don't get in the way of moving parts.

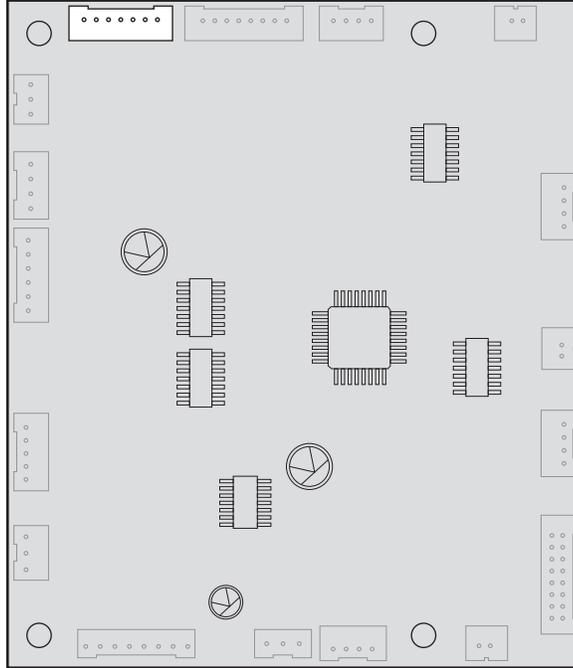
5 Push inward to release the latches (A), then push the connector off its slot.



6 Remove the lower interface cable.

## Mailbox upper interface cable removal

- 1 Remove the top cover. See **“Mailbox top cover removal”** on page 500,
- 2 Remove the mailbox left cover. See **“Mailbox left cover removal”** on page 506.
- 3 Disconnect the upper interface cable (J1B) from the controller PCBA.

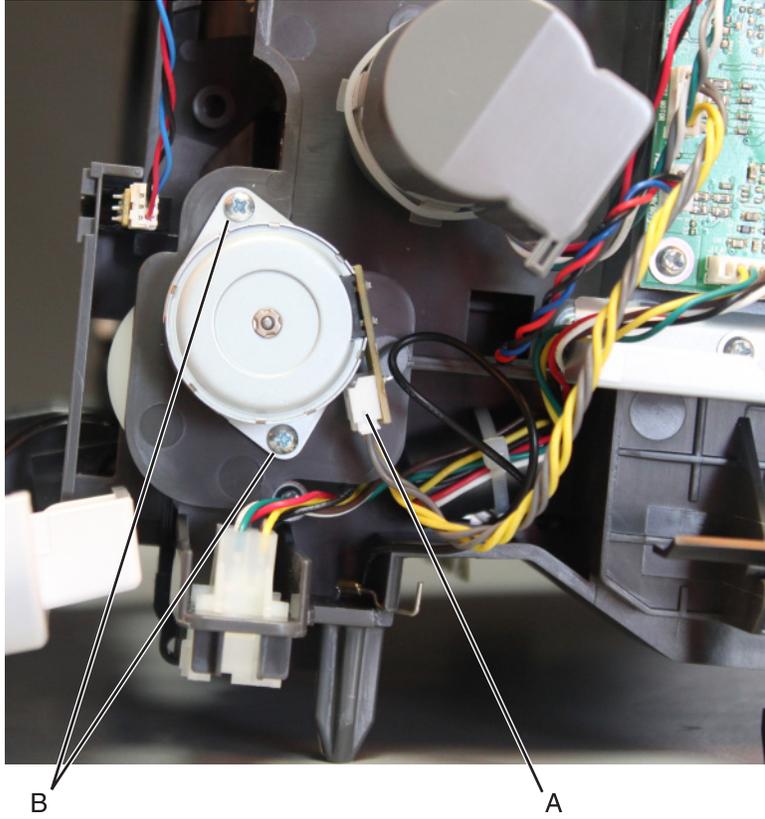


- 4 Crimp both connector pins, using pliers to make them fit the pin holes. Push the connector off its slot.
- 5 Remove the upper interface cable.

## Mailbox divert motor removal

- 1 Remove the top cover. See **“Mailbox top cover removal”** on page 500.
- 2 Remove the mailbox left cover. See **“Mailbox left cover removal”** on page 506.
- 3 Disconnect the cable (A) from the divert motor.

4 Remove the two screws (B) using a #1 Phillips screwdriver, then remove the divert motor.



## Mailbox media bin full flag removal

- 1 Pull the flag upwards to release the front pin.



- 2 Ease the media bin full flag off the mailbox.

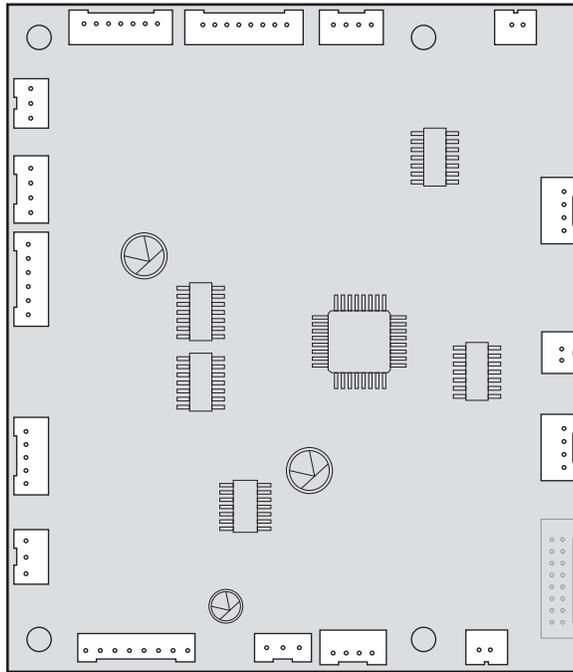
**Installation note:** Make sure the flag's front and rear pins are inserted into their respective slots.



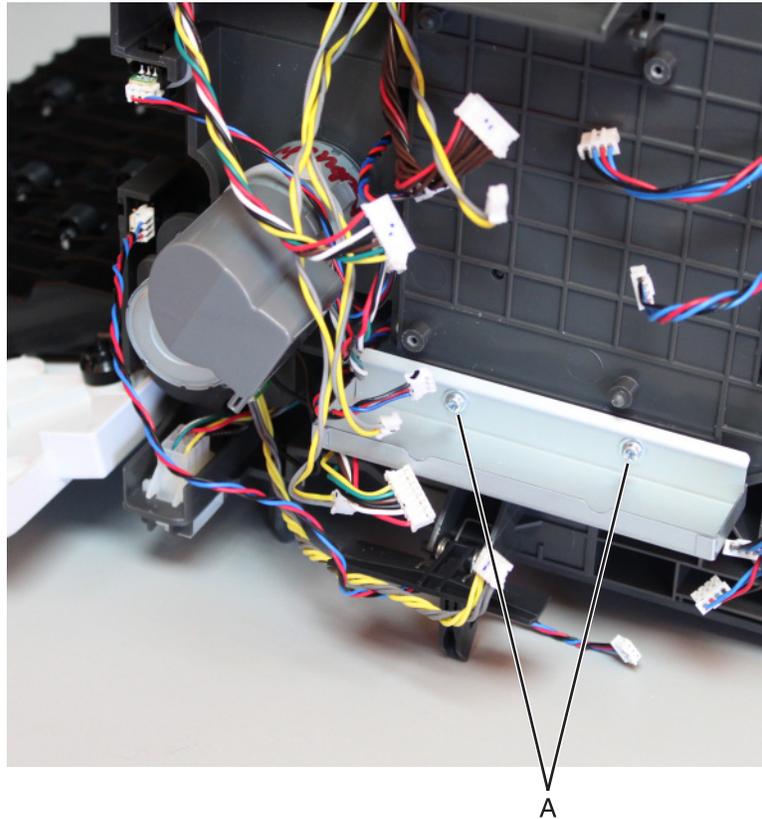
### Sensor (mailbox bin full receive) removal

- 1 Remove the top cover. See **“Mailbox top cover removal” on page 500.**
- 2 Remove the mailbox left cover. See **“Mailbox left cover removal” on page 506.**
- 3 Remove the diverter motor. See **“Mailbox divert motor removal” on page 512.**

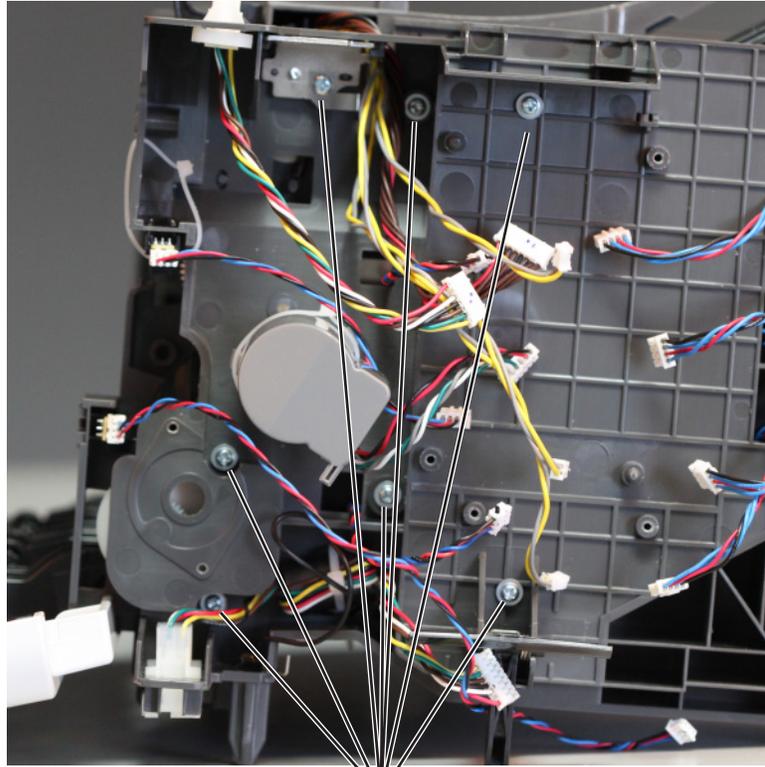
- 4 Disconnect all cables (J1B, J5, J4D, J2A, J4C, J2B, J4B, J2C, J4A, J8, J1A, J3B, J7, J6, J12, and J3T) from the controller PCBA.



- 5 Remove the two screws (A), then remove the shield.

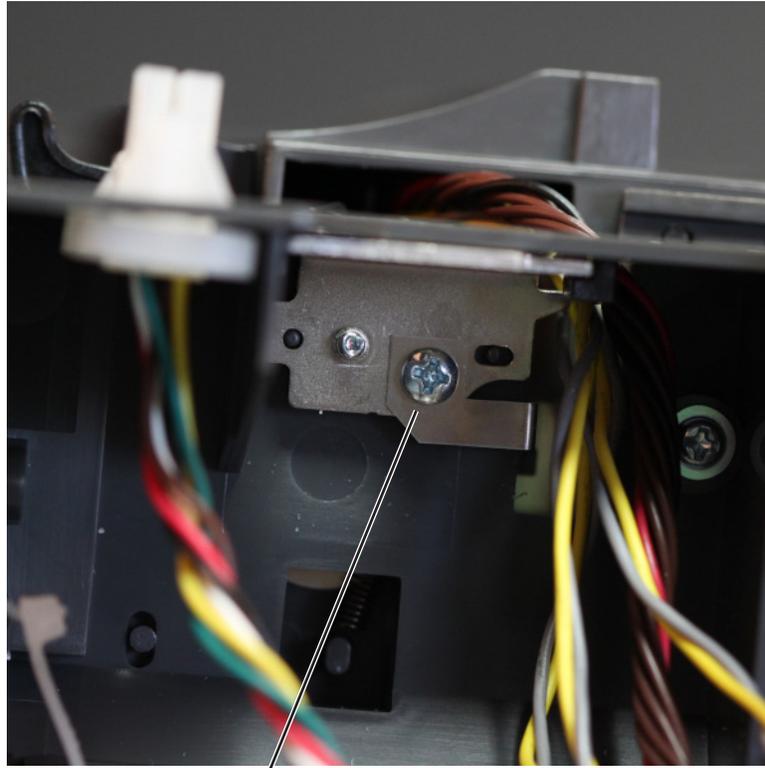


6 Remove the seven screws (B) from the inner left frame.



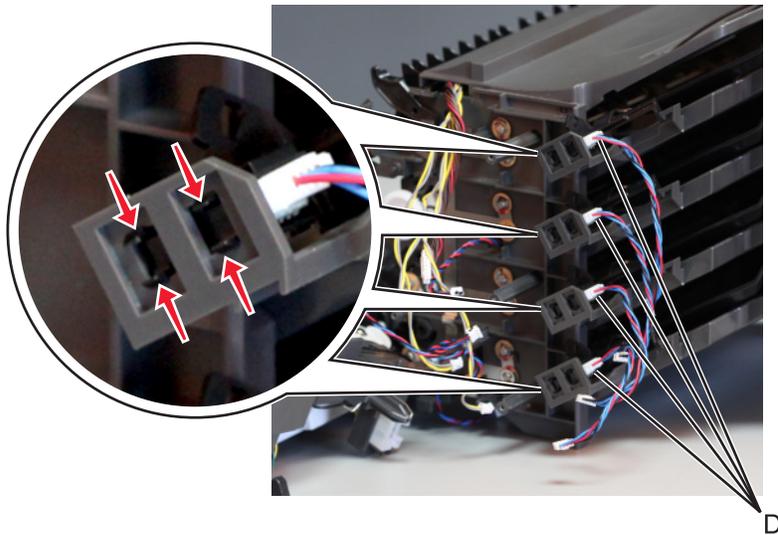
B

**Installation note:** Pay attention to the original position of the grounding plate (C).



C

- 7 Swing the inner left frame away from the mailbox to access the sensors.
- 8 Disconnect the cable (D) from the sensor.



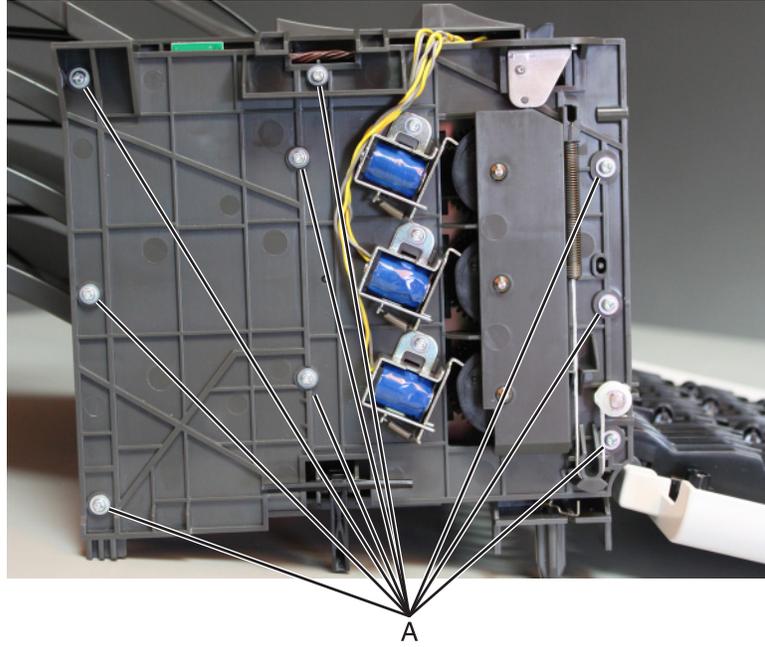
D

- 9 Release the latches, and remove the sensor (bin full receive).

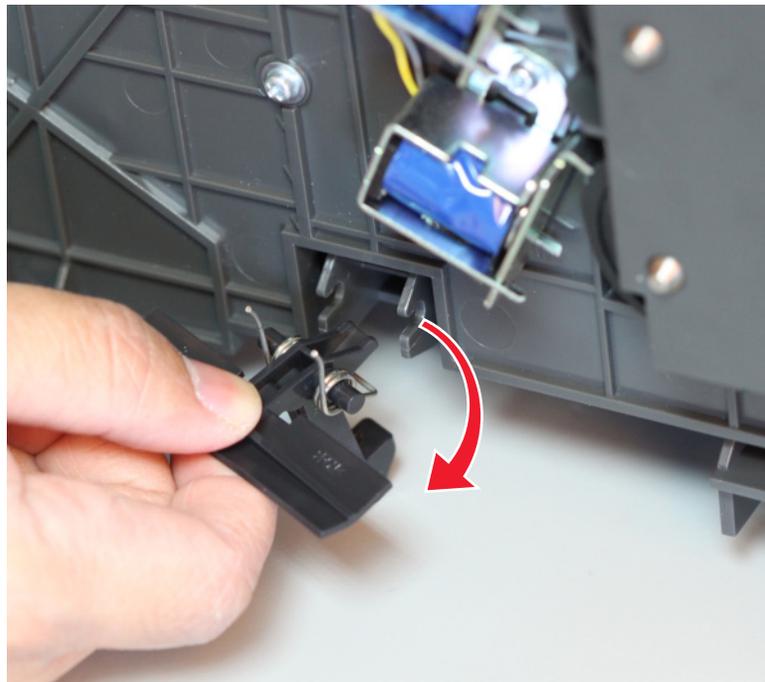
## Mailbox belt removal

- 1 Remove the top cover. See **“Mailbox top cover removal” on page 500.**
- 2 Remove the mailbox right cover. See **“Mailbox right cover removal” on page 502.**

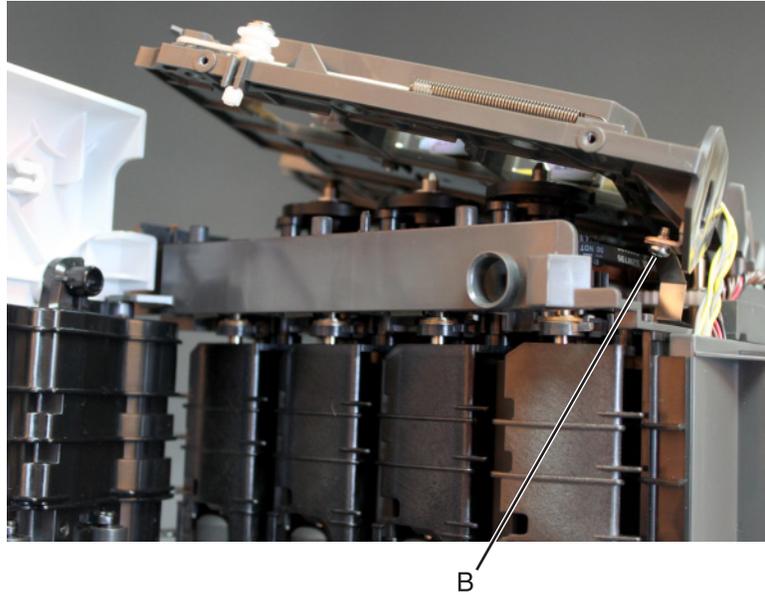
**3** Remove the nine screws (A) from the inner right frame.



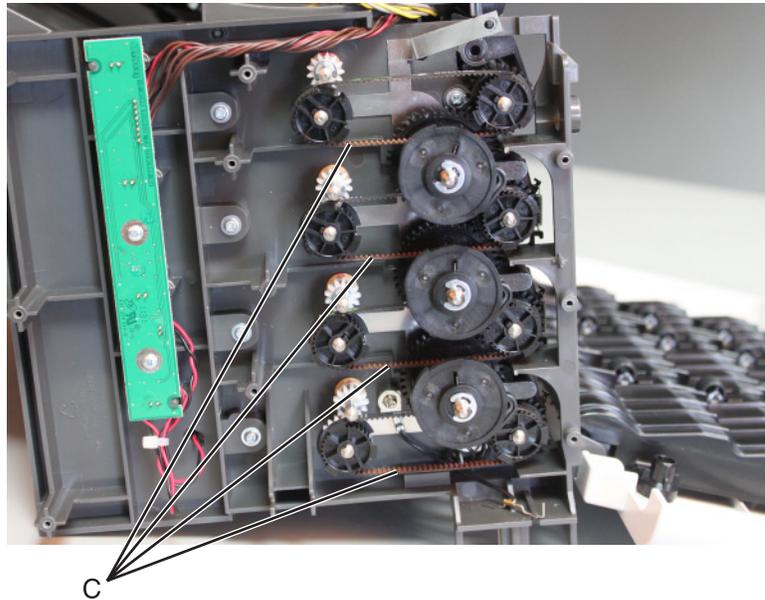
**4** Pull the latch to release, then remove.



- 5 Carefully lift the inner right frame, then remove the ground screw (B).



- 6 Swing away the inner right frame to access the belt (C).

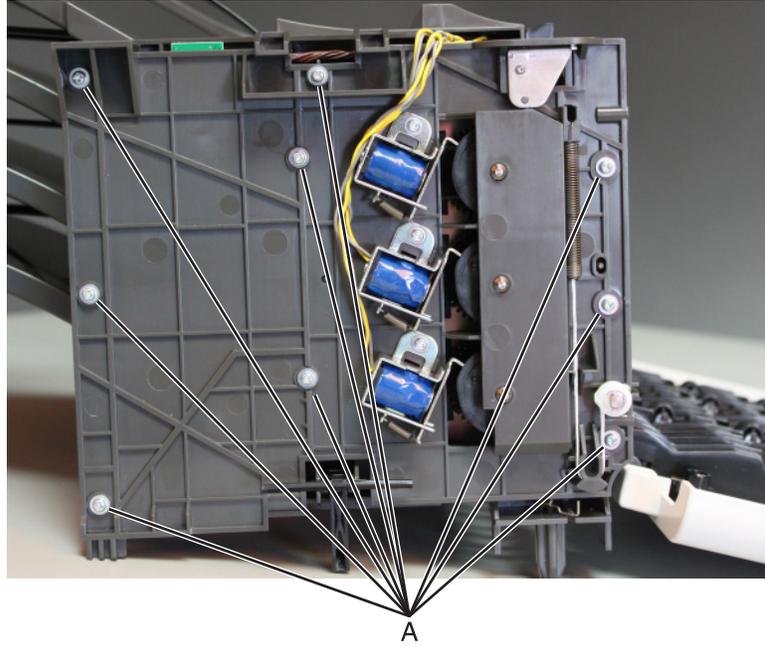


- 7 Remove the belt.

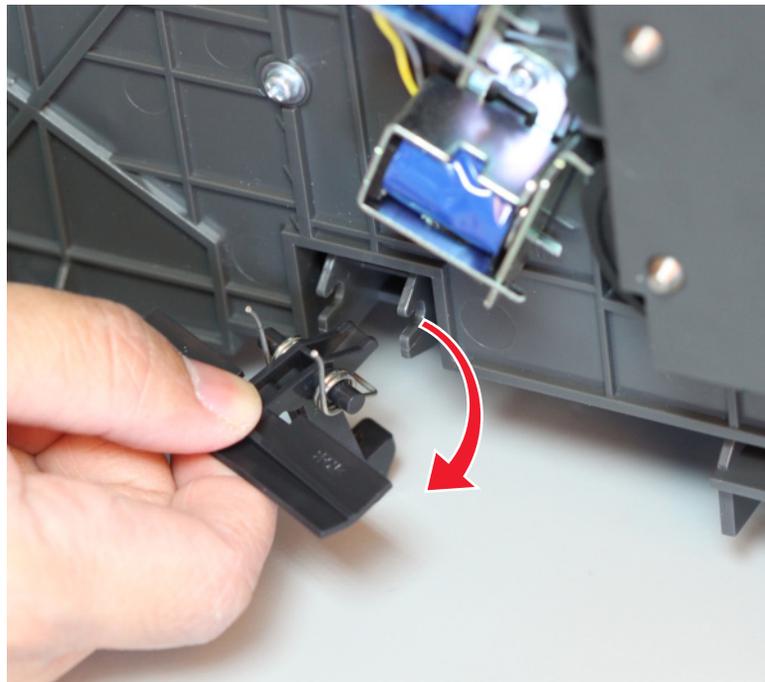
## Mailbox output bin LED assembly removal

- 1 Remove the top cover. See **“Mailbox top cover removal”** on page 500.
- 2 Remove the mailbox right cover. See **“Mailbox right cover removal”** on page 502.

**3** Remove the nine screws (A) from the inner right frame.



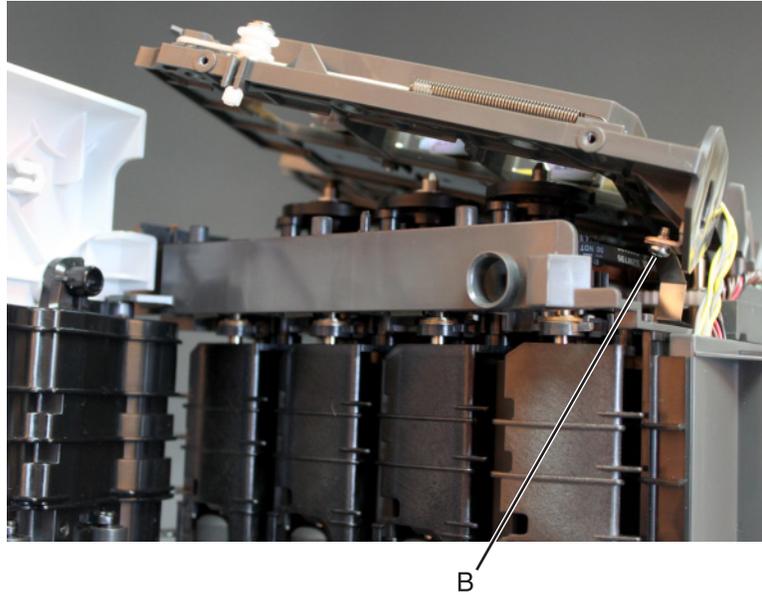
**4** Pull the latch to release, then remove.



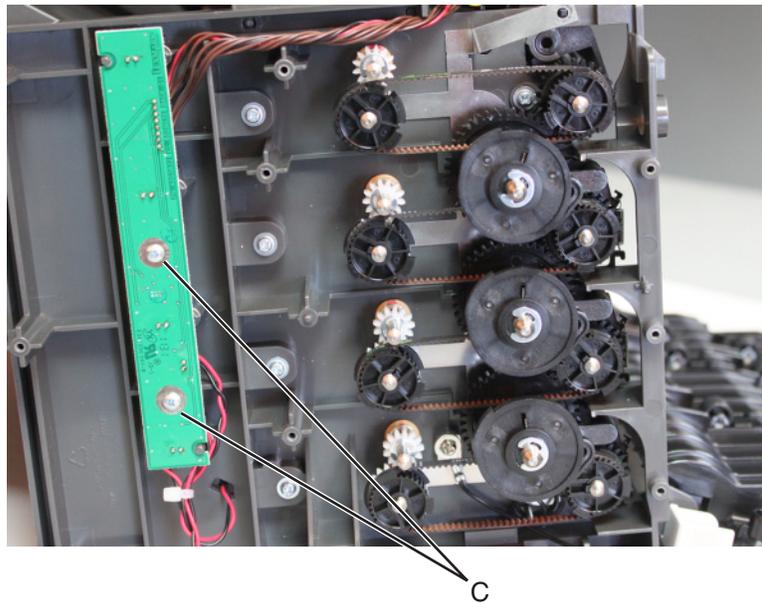
Repair information

**521**

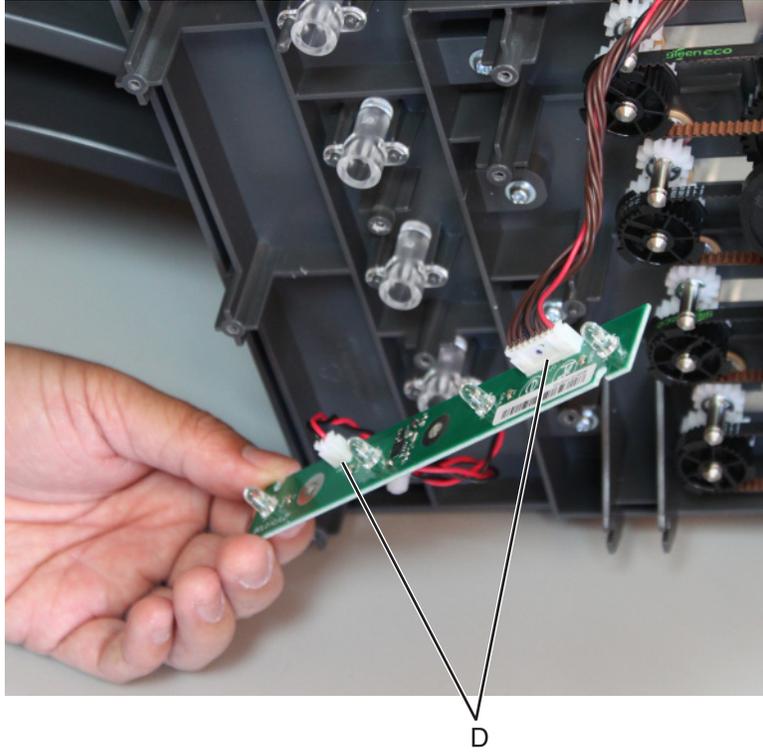
- 5 Carefully lift the inner right frame, then remove the ground screw (B).



- 6 Swing the inner right frame away to access the LED assembly.  
7 Using a #1 Phillips screwdriver, remove the two screws (C) from the LED assembly.



8 Disconnect the two cables (D), and remove the output bin LED assembly.





# Component locations

## Connectors

See the wiring diagram section at the end of this manual.

## Controller board

Connector	Connects to	Pin no.	Signal
J3	MPF pick solenoid	1	S_MPF_PWM*_C
		2	+24V_FUSE_A
J9	Cartridge cooling fan/HVPS	1	S_CART_FAN_ENC_C
		2	GND
		3	S_CART_FAN_C
		4	S_HVPS_SERVO_C
		5	S_HVPS_TX_ENB*_C
		6	S_HVPS_TX_PWM_C
		7	S_+24V_SW_C
		8	S_HVPS_CHG_C
		9	GND
		10	S_HVPS_DEV_C
		11	S_HVPS_ID_C
		12	not used
J13	Control panel USB interface	N/A	N/A
J18	Rear door interlock sensor	1	RR_DRV_SNS_OUT_C
		2	GND
		3	S_RR_DRV_LED_C
J20	Sensor (input)	1	S_INPUTSNS*_C
		2	GND
		3	S_INPUTSNS_LED_C
		4	not used

Connector	Connects to	Pin no.	Signal
J21	Main motor	1	XPORT_HALL_U_C
		2	XPORT_HALL_V_C
		3	XPORT_HALL_W_C
		4	XPORT_FG_C
		5	GND
		6	+5V_SW
		7	XPORT_WIND_U_C
		8	XPORT_WIND_V_C
		9	XPORT_WIND_W_C
J24	Fuser drive motor	1	FUSER_HALL_U_C
		2	FUSER_HALL_V_C
		3	FUSER_HALL_W_C
		4	FUSER_FG_C
		5	GND
		6	+5V_SW
		7	FUSER_WIND_U_C
		8	FUSER_WIND_V_C
		9	FUSER_WIND_W_C
J27	Fuser sensor/smart chip	1	S_NAR_MEDIA*_C
		2	GND
		3	A_SLAB_THERM1_C
		4	BELT*_C
		5	A_SLAB_THERM2_C
		6	+5V_SW
		7	A_BR_THERM_C
		8	S_EXITSNS*_C
		9	S_CART_3V
		10	S_FUSER_SCL_C
		11	S_FUSER_SDA_C
		12	not used

Connector	Connects to	Pin no.	Signal
J28	Duplex drive motor	1	S_DPX_ENC_LED_C
		2	S_DPX_ENC_C
		3	GND
		4	+24V_FUSE_A
		5	DPX_MOT-_C
J29	Duplex path sensor	1	S_DPXSNS_LED_C
		2	GND
		3	S_DPXSNS_C
J31B	Media size sensor	1	PSIZE0_C
		2	GND
		3	PSIZE1_C
		4	PSIZE2_C
		5	PSIZE3_C
J37	Duplex cooling fan	1	+24V_FUSE_A
		2	S_DPX_FAN*_C
J38	MPF media present sensor	1	S_MPF_POUT_C
		2	GND
		3	S_MPF_LED_C
J39	Standard bin full sensor	1	S_HOPPER*_C
		2	GND
		3	S_HOPPER_LED_C
J45	Imaging unit smart chip contact	1	S_IU_SDA_C
		2	V_IU_C
		3	S_IU_SCL_C
		4	GND
		5	S_FSR_RELAY_C
		6	+24F_IU
J48	Toner add motor	1	S_AUGER_LED_C
		2	S_AUGER_ENC_C
		3	GND
		4	S_AUG_MOT-_C
		5	S_AUG_MOT+_C

Connector	Connects to	Pin no.	Signal
J50	Media out sensor/media pick motor/pick roller position sensor	1	S_PAPER_INDEX_C
		2	GND
		3	S_PINDEX_LED_C
		4	S_PAPER_OUT_C
		5	GND
		6	S_POUT_LED_C
		7	S_PICK_LED_C
		8	S_PICK_ENC_C
		9	GND
		10	S_PICK_MOT-_C
		11	S_PICK_MOT+_C
J54	Main cooling fan	1	S_MAIN_FAN_ENC_C
		2	GND
		3	S_MAIN_FAN_C
J56	Control panel interlock sensor	1	S_COVER_CLOSED_C
		2	GND
		3	S_COVER_LED_C
J57	Printhead mirror motor	1	MM_REFCLK_C
		2	MM_LOCK*_C
		3	MM_START*_C
		4	GND
		5	+24V_FUSE_B
J58	Toner cartridge smart chip contact	1	S_CART_SDA_C
		2	V_CART
		3	S_CART_SCL_C
		4	GND
		5	S_LD_RELAY_HI_C
		6	S_LD_RELAY_RET_C
J73	Image density sensor	1	S_TDS_LED_PWM*_C
		2	S_A_TDS_C
		3	GND
		4	S_TDS+5V_C

Connector	Connects to	Pin no.	Signal
J80	Top option interface cable	1	+24V_TOP_OPT_C
		2	GND
		3	S_RXD_PP_TOP_C
		4	GND
		5	S_TXD_PP_TOP_C
		6	GND
J81	Lower option interface cable	1	+24V_BOT_OPT_C
		2	GND
		3	S_RXD_PP_BOT_C
		4	GND
		5	S_TXD_PP_BOT_C
		6	GND

Connector	Connects to	Pin no.	Signal
J101	Printhead laser control	1	GND
		2	L_ENB*_C
		3	S_LD_PWR_C
		4	S_LD_PWR_C
		5	S_HSYNC*_C
		6	GND
		7	BOOST_1_C
		8	BOOST_0_C
		9	GND
		10	DP_VID3+_C
		11	DP_VID3-_C
		12	GND
		13	DP_VID2+_C
		14	DP_VID2-_C
		15	GND
		16	DP_VID1+_C
		17	DP_VID1-_C
		18	GND
		19	DP_VID0+_C
		20	DP_VID0-_2
		21	GND
		22	GND
		23	L_ADJ_3*_C
		24	GND
		25	L_ADJ_2*_C
		26	L_SHADE_C
		27	L_ADJ_1*_C
		28	L_POW_A_C
		29	L_ADJ_0*_C
		30	GND

Connector	Connects to	Pin no.	Signal
J104	Upper redrive motor	1	S_RDRV_LED_C
		2	S_RDRV_ENC_C
		3	GND
		4	S_RDRV_MOT-_C
		5	S_RDRV_MOT+_C
JAUD1	Speaker	1	SPEAKER1
		2	SPEAKER2
JCTLS1	Toner level contact	1	CTLS_SNS
		2	CTLS_GUARD
		3	V20_GND
JUI2	Control panel board	1	+6.5V_UI
		2	OP_PAN_INT
		3	SLEEP_BUTTON
		4	LED_DRV_YLW1
		5	OP_I2C_CLK_1
		6	OP_I2C_DATA_1
		7	+5V_UI
		8	LVDS_CLK-
		9	LVDS_CLK+
		10	GND
		11	LVDS_D0-
		12	LVDS_D0+
		13	GND
		14	LVDS_D1-
		15	LVDS_D1+
		16	GND
		17	LVDS_D2-
		18	LVDS_D2+
		19	+5V_UI
		20	GND
		21	+5V_UI
		22	+5V_UI
		23	GND
		24	+5V_UI

Connector	Connects to	Pin no.	Signal
JUSBH1	USB interface (Den* only)	N/A	N/A
JW1	Temperature probe	1	A_WS_MACHINE_C
		2	GND

# Maintenance

- “Inspection guide” on page 533
- “Scheduled maintenance” on page 535
- “Preventive maintenance” on page 538
- “Lubrication specification” on page 538
- “Cleaning the printer” on page 538

## Inspection guide

The purpose of this Inspection guide is to aid you in identifying the intervals, based on page count, at which parts must be Inspected (for visible physical damage), cleaned, or replaced.

If any unsafe conditions exist, find out how serious the hazard could be and if you can continue before you correct the hazard.

As you service the machine, check for the following:

- 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-Lexmark attachments
- Printer and input options are sitting flat (for example, not sitting on cables or hanging over a ledge)
- Printer is properly set on any input options

Use the following tables to determine when specified parts should be inspected:

Lexmark MS81x	EVERY SERVICE CALL	EVERY 200K PAGES	NOTES
<b>Media tray—All</b>			
Media tray side guides	Inspect	Inspect	Check for correct positioning.
Media tray length guides	Inspect	Inspect	Check for correct positioning.
Separation roller	Inspect, clean if needed	Replace	Clean with damp cloth.
Tray lift gear assembly	Inspect	Inspect	Ensure correct operation.
<b>Transfer roller</b>	Inspect	Replace	Ensure correct installation.
<b>Fuser</b>	Inspect	Replace	Ensure correct installation.
<b>Media feeders—All</b>			
Media tray pick roller	Inspect, clean if needed	Replace	Clean with a damp cloth.
MPF pick roller	Inspect, clean if needed	Inspect, clean if needed	Clean with a damp cloth.
<b>Covers and doors</b>			

Lexmark MS81x	EVERY SERVICE CALL	EVERY 200K PAGES	NOTES
Rear door	Inspect	Inspect	Ensure correct operation and closure.
Fuser access door	Inspect	Inspect	Ensure correct operation and closure.
<b>Paper path</b>			
Duplex path	Inspect	Inspect	Check for media fragments and tears.
<b>Miscellaneous</b>			
Toner spillage	Clean	Clean	Remove all toner spillage from the printer.
Pick tires	Inspect, clean if needed	Inspect, clean if needed	Check for toner contamination.
Lexmark MS71x	EVERY SERVICE CALL	EVERY 200K PAGES	NOTES
<b>Media tray—All</b>			
Media tray side guides	Inspect	Inspect	Check for correct positioning.
Media tray length guides	Inspect	Inspect	Check for correct positioning.
Separation roller	Inspect, clean if needed	Replace	Clean with damp cloth.
Tray lift gear assembly	Inspect	Inspect	Ensure correct operation.
<b>Media feeders—All</b>			
Media tray pick roller	Inspect, clean if needed	Replace	Clean with damp cloth.
MPF pick roller	Inspect, clean if needed	Inspect, clean if needed	Clean with damp cloth.
<b>Transfer roller</b>			
	Inspect	Replace	Ensure correct installation.
<b>Fuser</b>			
Fuser wiper	Inspect	Inspect	Ensure correct operation.
<b>Covers and doors</b>			
Rear door	Inspect	Inspect	Ensure correct operation.
Fuser access door	Inspect	Inspect	Ensure correct operation and closure.
<b>Paper path</b>			
Duplex path	Inspect	Inspect	Ensure media fragments and tears are not present.
<b>Miscellaneous</b>			
Toner spillage	Clean	Clean	Remove all toner spillage from the printer.
Pick tires	Inspect, clean if needed	Inspect, clean if needed	Check for toner contamination.

## Scheduled maintenance

The operator panel displays the message *80* or *Scheduled Maintenance* when it reaches certain page counts. It is necessary to replace the appropriate maintenance kit at certain intervals to maintain the print quality and reliability of the printer. If needed, reset the maintenance counter after performing scheduled maintenance.

### Fuser maintenance kits

The printer stops printing when the fuser rated life is reached. At rated fuser life, a Fuser Maintenance Kit is required. You must install the correct Fuser Maintenance Kit for the type of fuser that is installed in the printer. See **“Identifying the type of fuser used in the printer” on page 536**.

There are multiple warnings to indicate that the fuser is nearing end of life and that a maintenance kit is required, including error codes **80.0x**, **80.1x**, and **80.2x**. If you receive error code **80.3x**, the fuser has reached its rated life. The printer will not continue until a maintenance kit is installed.

### Replacing fuser maintenance kits

The operator panel displays the message **80 “Replace maintenance kit”** at required maintenance intervals. You must replace the fuser, transfer roller, pick roller, and separation roller at this interval to maintain the print quality and reliability of the printer. The following fuser maintenance kits are available:

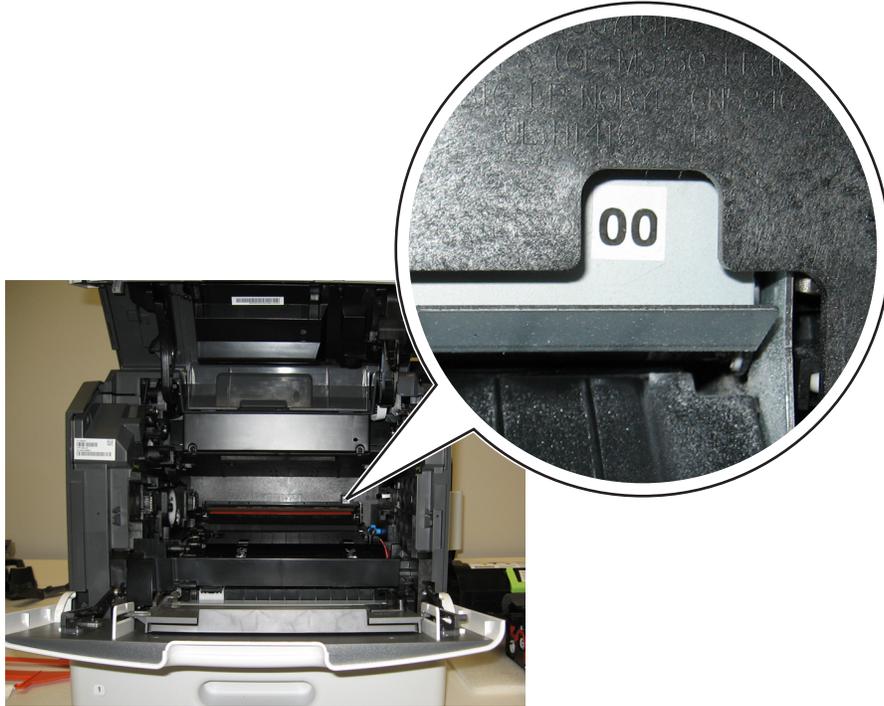
Description	Part number	Maintenance interval
MS81x Return Program Fuser Maintenance Kit Type 00, 110-120V Letter	40X8420	200K
MS81x Return Program Fuser Maintenance Kit Type 01, 220-240V A4	40X8421	200K
MS81x Return Program Fuser Maintenance Kit Type 02, 100V A4	40X8422	200K
MS81x Return Program Fuser Maintenance Kit Type 03, 110-120V A4	40X8423	200K
MS81x Return Program Fuser Maintenance Kit Type 04, 220-240V Letter	40X8424	200K
MS81x Fuser Maintenance Kit Type 05, 110-120V Letter	40X8425	200K
MS81x Fuser Maintenance Kit Type 06, 220-240V A4	40X8426	200K
MS81x Fuser Maintenance Kit Type 07, 100V A4	40X8427	200K
MS81x Fuser Maintenance Kit Type 08, 110-120V A4	40X8428	200K
MS81x Fuser Maintenance Kit Type 09, 220-240V Letter	40X8429	200K
MS71x Return Program Fuser Maintenance Kit Type 11, 110-120V	40X8530	200K
MS71x Return Program Fuser Maintenance Kit Type 13, 220-240V	40X8531	200K
MS71x Return Program Fuser Maintenance Kit Type 15, 100V	40X8532	200K
MS71x Fuser Maint. Kit Type 17, 110-120V	40X8533	200K
MS71x Fuser Maint. Kit Type 19, 220-240V	40X8534	200K
MS71x Fuser Maint. Kit Type 21, 100V	40X8535	200K

After replacing the maintenance kit, the maintenance count will automatically be reset to zero to clear the **80 “Replace maintenance kit”** message.

## Identifying the type of fuser used in the printer

From the front of the machine:

- 1 Open the front cover.
- 2 Remove the cartridge and imaging unit.
- 3 On the EP frame, see the number in the area, as shown in the following image:



From the rear of the machine:

- 1 Remove the rear upper cover.
- 2 Pull down the redrive.

3 See the number in the area, as shown in the following image:



## Resetting the Roller Kit counter

After replacing a roller kit, the roller kit counter must be reset to zero to clear the “81 Replace Roller kit” message.

To reset the maintenance count:

- 1 Turn off the printer.
- 2 Enter the Configuration Menu.
  - a Press and hold the **2** and **6** buttons simultaneously.
  - b Turn on the printer.
  - c Release the buttons after 10 seconds. The Configuration Menu appears on the LCD.
- 3 Touch **Reset Roller Kit Counter** from the Configuration Menu.
- 4 From the options displayed, select the roller kit to reset.
- 5 Touch **Yes** to reset the roller kit counter value. Touch **No** or **Back** to return to the previous menu.

The roller kit count resets to zero, and the LCD returns to the Configuration Menu.

## Preventive maintenance

Between scheduled maintenance intervals, paper feed, paper transport, and image quality problems can occur. Some preventive maintenance procedures can help prevent issues like these.

### Device-specific preventive maintenance

To clean the touchscreen and keypad, use the LCD cleaning cloth. A single two-step LCD cleaning cloth is stored in the compartment beneath the exit tray. Additional cleaning cloths are available.

The following table lists the parts needed to perform preventive maintenance:

Part number	Description	Maintenance interval
40X0392	LCD cleaning kit	As needed

## Lubrication specification

There are no lubrication requirements for this printer.

## Cleaning the printer

**Note:** You may need to perform this task after every few months.

**Warning—Potential Damage:** Damage to the printer caused by improper handling is not covered by the printer warranty.

- 1 Make sure that the printer is turned off and unplugged from the electrical outlet.



**CAUTION—SHOCK HAZARD:** To avoid the risk of electrical shock when cleaning the exterior of the printer, unplug the power cord from the electrical outlet and disconnect all cables from the printer before proceeding.

- 2 Remove paper from the standard bin and multipurpose feeder.
- 3 Remove any dust, lint, and pieces of paper around the printer using a soft brush or vacuum.
- 4 Dampen a clean, lint-free cloth with water, and use it to wipe the outside of the printer.

**Warning—Potential Damage:** Do not use household cleaners or detergents to prevent damage to the exterior of the printer.

- 5 Make sure all areas of the printer are dry before sending a new print job.



# Parts catalog

- “Legend” on page 540
- “Assembly 1: Covers” on page 543
- “Assembly 2: Paper path” on page 545
- “Assembly 3: Fusers” on page 547
- “Assembly 4: Electronics” on page 549
- “Assembly 5: Drive motors” on page 553
- “Assembly 6: Duplex” on page 555
- “Assembly 7: Frame” on page 557
- “Assembly 8: Control panel” on page 559
- “Assembly 9: Paper tray” on page 563
- “Assembly 10: Input options” on page 565
- “Assembly 11: 250-sheet tray option” on page 567
- “Assembly 12: 550-sheet tray option” on page 569
- “Assembly 13: High capacity input tray option 1” on page 571
- “Assembly 14: High capacity input tray option 2” on page 573
- “Assembly 15: Output options” on page 575
- “Assembly 16: Output expander option” on page 577
- “Assembly 17: High capacity output expander option” on page 579
- “Assembly 18: Staple finisher option 1” on page 581
- “Assembly 19: Staple finisher option 2” on page 583
- “Assembly 20: Mailbox option 1” on page 585
- “Assembly 21: Mailbox option 2” on page 587
- “Assembly 22: Miscellaneous” on page 589
- “Assembly 23: Power cords” on page 593

## Legend

The following column headings are used in the parts catalog:

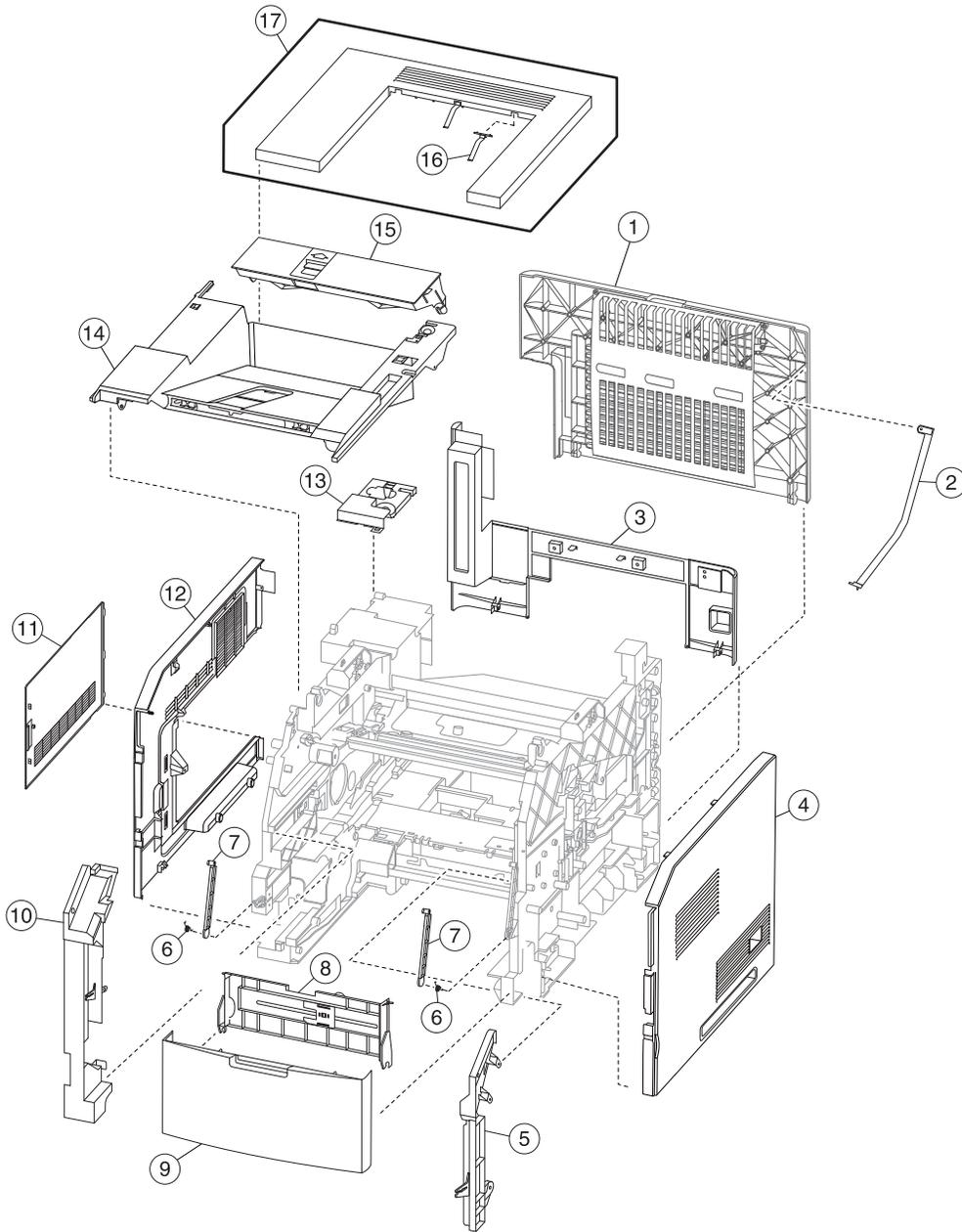
- **Asm-index**—Identifies the assembly and the item in the diagram. For example, 3-1 indicates Assembly 3 and item 1 in the table.
- **Part number**—Identifies the unique number that correlates with the part.
- **Units/mach**—Refers to the number of units actually used in the base machine or product.
- **Units/option**—Refers to the number of units in a particular option.
- **Units/FRU**—Refers to the number of units in a particular FRU.
- **Description**—A brief description of the part.

The following abbreviations are used in the parts catalog:

- **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 that the part is contained in a parts packet.



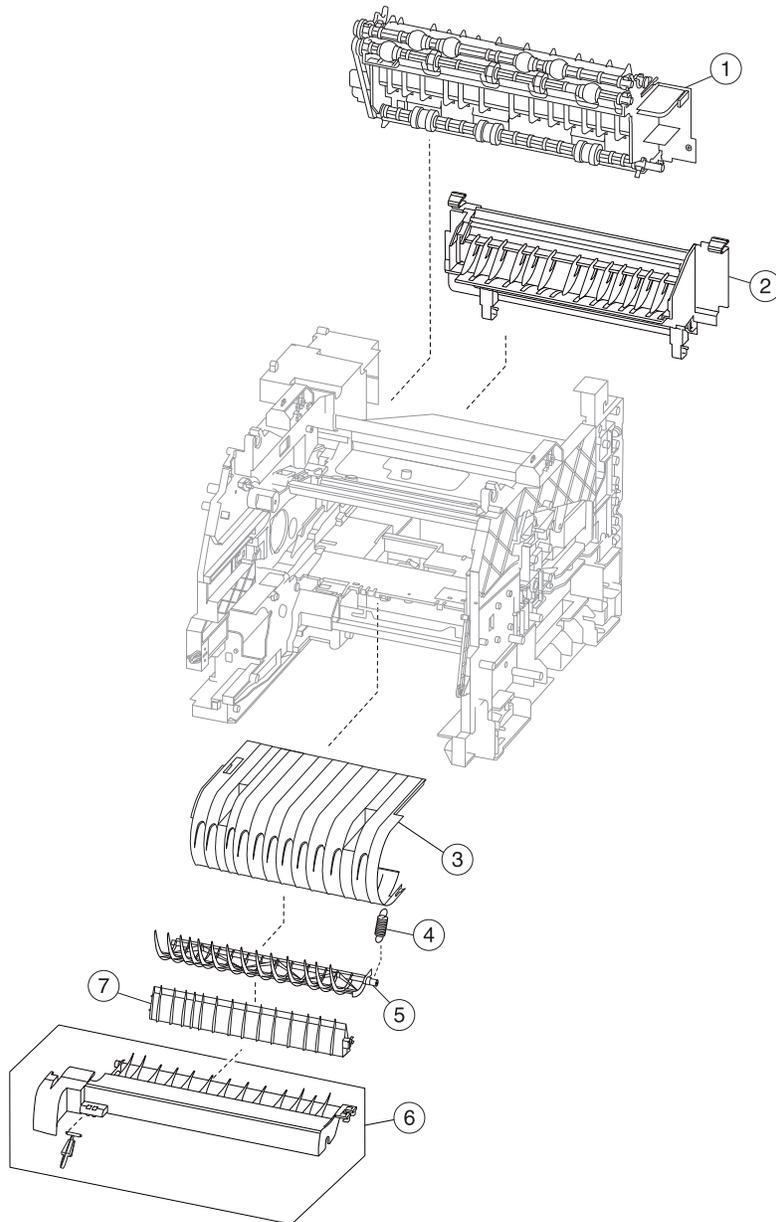
# Assembly 1: Covers



## Assembly 1: Covers

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X7678	1	1	Rear door	See <b>“Rear door removal” on page 285.</b>
2	40X7726	1	1	Rear door support	N/A
3	40X7671	1	1	Rear lower cover (integrated 550-sheet tray)	See <b>“Rear lower cover removal” on page 280.</b>
3	40X8404	1	1	Rear lower cover (integrated 250-sheet tray)	See <b>“Rear lower cover removal” on page 280.</b>
4	40X7680	1	1	Right cover (integrated 550-sheet tray)	See <b>“Right cover removal” on page 283.</b>
4	40X8403	1	1	Right cover (integrated 250-sheet tray)	See <b>“Right cover removal” on page 283.</b>
5	40X7670	1	1	Right inner cover	See <b>“Right inner cover removal” on page 309.</b>
6	40X7690	2	1	Torsion spring	N/A
7	40X7715	2	1	Front door support link	N/A
8	40X7725	1	1	MPF tray	See <b>“MPF tray removal” on page 308.</b>
9	40X7674	1	1	Front door	See <b>“Front door removal” on page 288.</b>
10	40X7669	1	1	Inner left cover	See <b>“Left inner cover removal” on page 295.</b>
11	40X7672	1	1	Controller board access cover	See <b>“Controller board access cover removal” on page 350.</b>
12	40X7679	1	1	Left cover (integrated 550-sheet tray)	See <b>“Left cover removal” on page 277.</b>
12	40X8402	1	1	Left cover (integrated 250-sheet tray)	See <b>“Left cover removal” on page 277.</b>
13	40X7677	1	1	Bin sensor cover	See <b>“Output bin sensor cover removal” on page 326.</b>
14	40X7675	1	1	Standard bin cover (integrated 550-sheet tray)	See <b>“Standard bin cover removal” on page 330.</b>
14	40X8397	1	1	Standard bin cover (integrated 250-sheet tray)	See <b>“Standard bin cover removal” on page 330.</b>
15	40X8398	1	1	Fuser wiper cover (hot roll fuser printer only)	N/A
16	40X7604	2	1	Output bin guide	N/A
17	40X7673	1	1	Top cover	See <b>“Top cover removal” on page 282.</b>

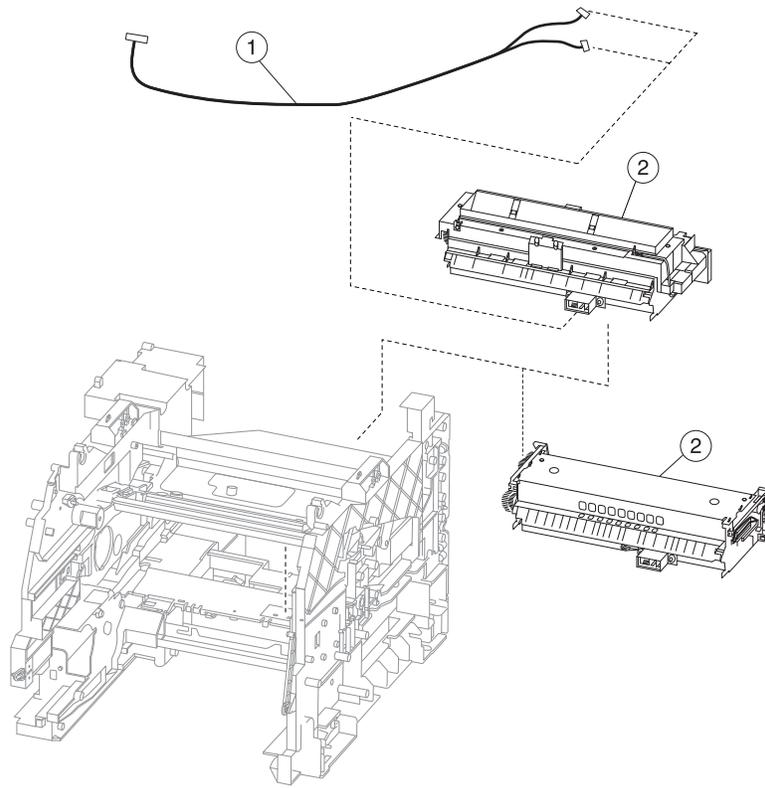
## Assembly 2: Paper path



## Assembly 2: Paper path

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X7602	1	1	Upper redrive	See <b>“Upper redrive removal”</b> on page 331.
2	40X7588	1	1	Fuser access door (belt fuser printers only)	See <b>“Fuser access door removal”</b> on page 324.
2	40X8399	1	1	Fuser access door (hot roll fuser printers only)	See <b>“Fuser access door removal”</b> on page 324.
3	40X7587	1	1	Inner guide deflector	See <b>“Inner guide deflector removal”</b> on page 289.
4	40X7585	1	1	Recoil spring	N/A
5	40X7584	1	1	Duplex exit diverter	See <b>“Duplex exit diverter removal”</b> on page 286.
6	40X7583	1	1	Media turn guide	See <b>“Media turn guide removal”</b> on page 299.
7	40X7586	1	1	Media vertical guide	See <b>“Media vertical guide removal”</b> on page 300.

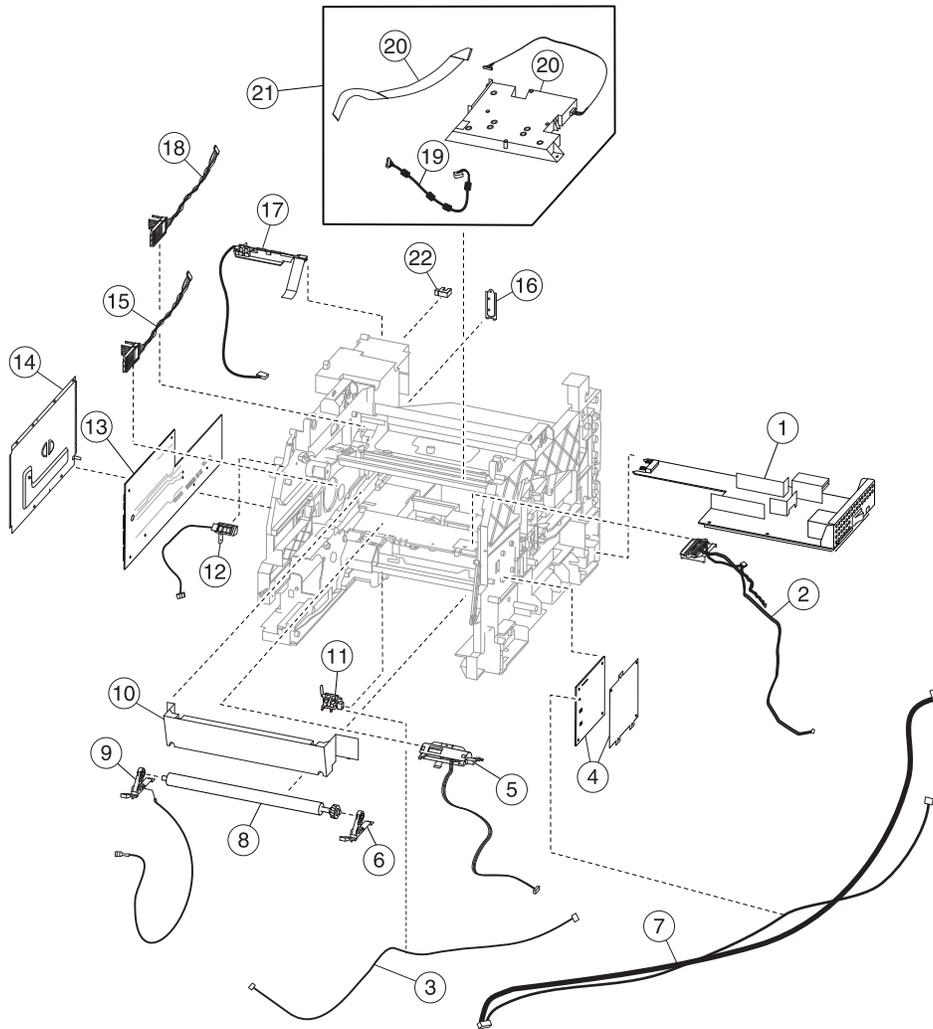
# Assembly 3: Fusers



## Assembly 3: Fusers

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X7577	1	1	Fuser data cable	N/A
2	40X7743	1	1	MS81x Return Program Fuser Type 00, 110-120V Letter	See <b>"Fuser removal"</b> on page 322.
2	40X7744	1	1	MS81x Return Program Fuser Type 01, 220-240V A4	See <b>"Fuser removal"</b> on page 322.
2	40X7745	1	1	MS81x Return Program Fuser Type 02, 100V A4	See <b>"Fuser removal"</b> on page 322.
2	40X7581	1	1	MS81x Return Program Fuser Type 03, 110-120V A4	See <b>"Fuser removal"</b> on page 322.
2	40X7734	1	1	MS81x Return Program Fuser Type 04, 220-240V Letter	See <b>"Fuser removal"</b> on page 322.
2	40X8016	1	1	MS81x Fuser Type 05, 110-120V Letter	See <b>"Fuser removal"</b> on page 322.
2	40X8017	1	1	MS81x Fuser Type 06, 220-240V A4	See <b>"Fuser removal"</b> on page 322.
2	40X8018	1	1	MS81x Fuser Type 07, 100V A4	See <b>"Fuser removal"</b> on page 322.
2	40X8019	1	1	MS81x Fuser Type 08, 110-120V A4	See <b>"Fuser removal"</b> on page 322.
2	40X8020	1	1	MS81x Fuser Type 09, 220-240V Letter	See <b>"Fuser removal"</b> on page 322.
2	40X8503	1	1	MS71x Return Program Fuser Type 11, 110-120V contact	See <b>"Fuser removal"</b> on page 322.
2	40X8504	1	1	MS71x Return Program Fuser Type 13, 220-240V contact	See <b>"Fuser removal"</b> on page 322.
2	40X8505	1	1	MS71x Return Program Fuser Type 15, 100V contact	See <b>"Fuser removal"</b> on page 322.
2	40X8506	1	1	MS71x Fuser Type 17, 110v contact	See <b>"Fuser removal"</b> on page 322.
2	40X8507	1	1	MS71x Fuser Type 19, 220v contact	See <b>"Fuser removal"</b> on page 322.
2	40X8508	1	1	MS71x Fuser Type 21, 100v contact	See <b>"Fuser removal"</b> on page 322.

# Assembly 4: Electronics



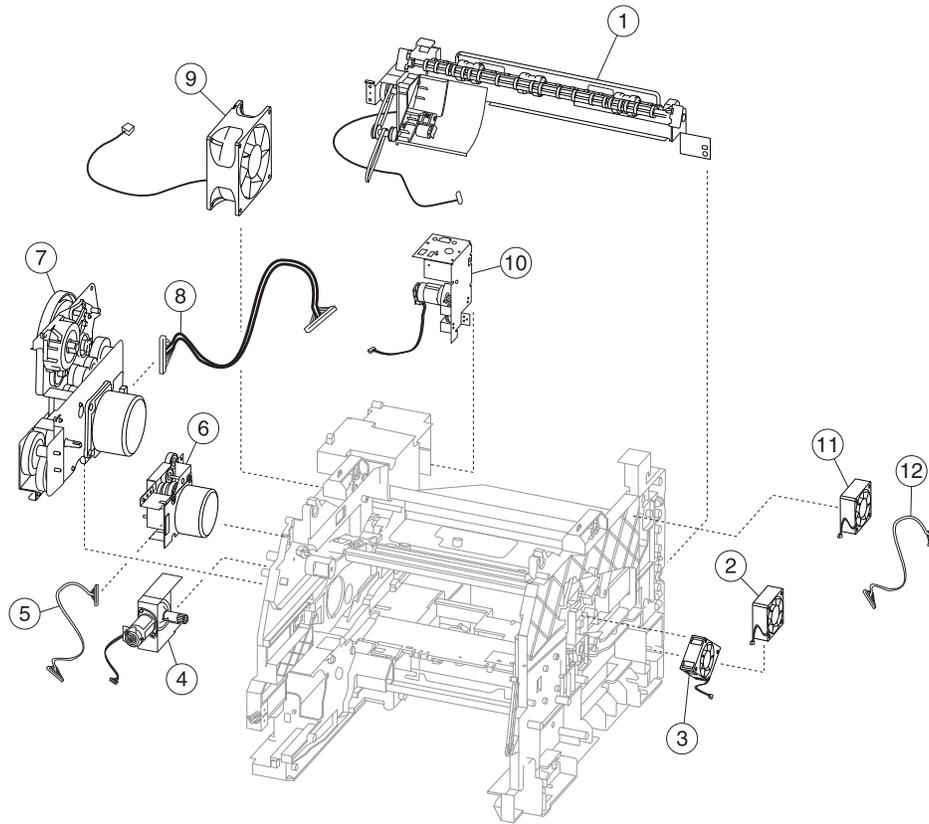
## Assembly 4: Electronics

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X7694	1	1	LVPS (universal)	See <b>“LVPS removal” on page 366.</b>
2	40X7685	1	1	Toner level / imaging unit high voltage contact	See <b>“HVPS removal” on page 365.</b>
3	40X7688	1	1	Input sensor cable	N/A
4	40X7578	1	1	HVPS	See <b>“HVPS removal” on page 365.</b>
5	40X7686	1	1	Sensor (toner density) Includes shutter and cable	See <b>“Transfer roller right arm removal” on page 314.</b>
6	40X7606	1	1	Transfer roller right arm	See <b>“Transfer roller right arm removal” on page 314.</b>
7	40X7699	1	1	HVPS/toner cartridge fan cable	N/A
8	40X7582	1	1	Transfer roller	See <b>“Transfer roller removal” on page 317.</b>
9	40X7605	1	1	Transfer roller left arm with cable	See <b>“Transfer roller left arm with cable removal” on page 313.</b>
10	40X8365	1	1	Printhead access cover	See <b>“Laser printhead removal” on page 291.</b>
11	40X7607	1	1	Sensor (input)	See <b>“Sensor (input) removal” on page 310.</b>
12	40X7693	1	1	Sensor (control panel interlock) Includes bracket and cable	See <b>“Sensor (control panel interlock) removal” on page 359.</b>
13	40X7570	1	1	Controller board (2.4” display printers only)	See <b>“Controller board removal” on page 349.</b>
13	40X7571	1	1	Controller board (4.3” tilting display printers only)	See <b>“Controller board removal” on page 349.</b>

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
13	40X7572	1	1	Controller board (7" tilting display printers only)	See <b>"Controller board removal"</b> on page 349.
14	40X7722	1	1	Controller board access shield	See <b>"Controller board access shield removal"</b> on page 351.
15	40X7692	1	1	Toner cartridge smart chip contact with cable	See <b>"Laser printhead removal"</b> on page 291.
16	40X8034	1	1	Option card cover plate	N/A
17	40X7691	1	1	Sensor (standard bin full) with output bin guide	See <b>"Sensor (standard bin full) removal"</b> on page 329.
18	40X7689	1	1	Imaging unit smart chip contact with cable	See <b>"Laser printhead removal"</b> on page 291.
19	40X7707	1	1	Printhead power cable	See <b>"Laser printhead removal"</b> on page 291.
20	40X7708	1	1	Printhead video cable	See <b>"Laser printhead removal"</b> on page 291.
21	40X7597	1	1	Laser printhead (quad diode) (belt fuser printers only) Includes data and power cables	See <b>"Laser printhead removal"</b> on page 291.
21	40X8481	1	1	Laser printhead (dual diode) (hot roller fuser printers only) Includes data and power cables	See <b>"Laser printhead removal"</b> on page 291.
22	40X7592	1	1	Interrupt sensor <ul style="list-style-type: none"> <li>• sensor (rear door interlock)</li> </ul>	See <b>"Sensor (rear door interlock) removal"</b> on page 328.



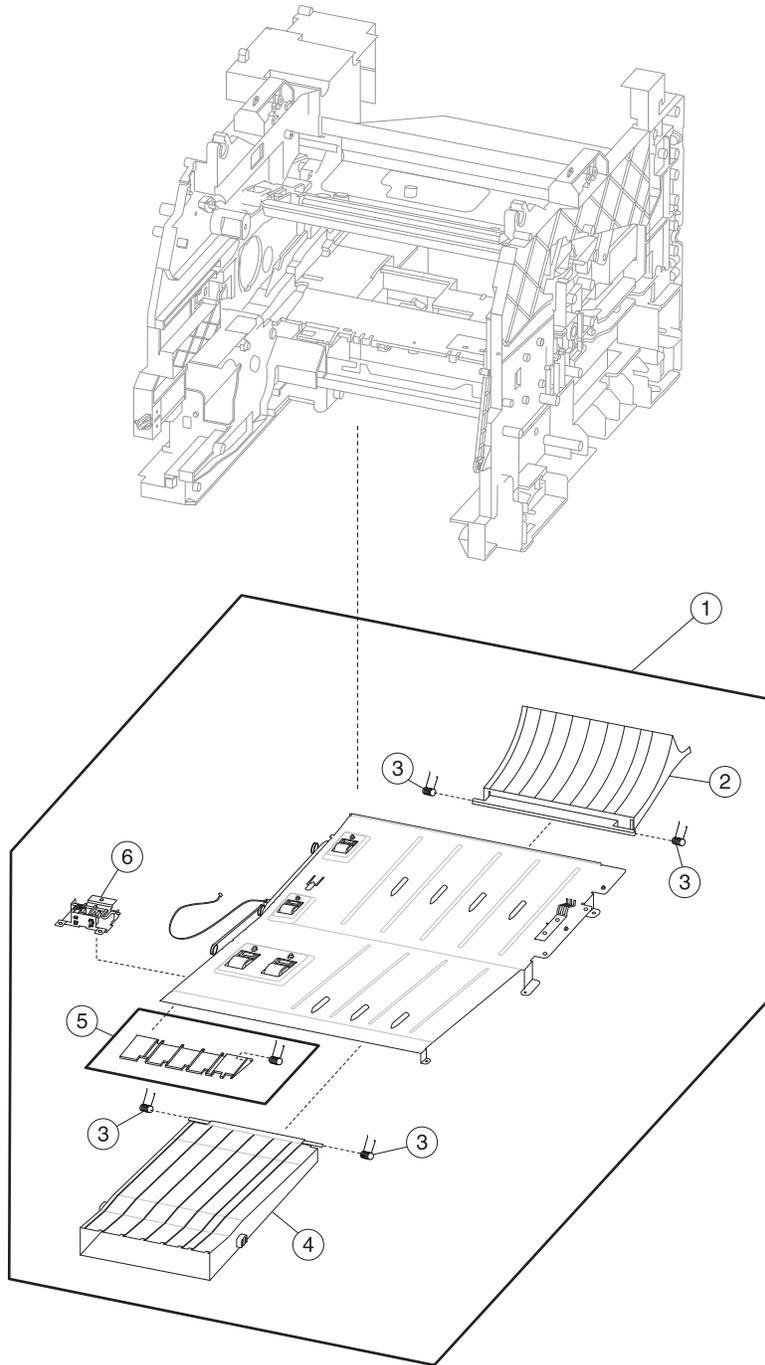
## Assembly 5: Drive motors



## Assembly 5: Drive motors

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X7684	1	1	Duplex motor with cable	See <b>“Duplex motor removal”</b> on page 320.
2	40X7695	1	1	Duplex cooling fan	See <b>“Duplex cooling fan removal”</b> on page 364.
3	40X7580	1	1	Cartridge cooling fan	See <b>“Cartridge cooling fan removal”</b> on page 363.
4	40X7596	1	1	Toner add motor with cable	See <b>“Toner add motor removal”</b> on page 361.
5	40X7576	1	1	Fuser drive motor cable	See <b>“Fuser drive motor removal”</b> on page 351.
6	40X7595	1	1	Fuser drive motor (belt fuser printers only)	See <b>“Fuser drive motor removal”</b> on page 351.
6	40X8401	1	1	Fuser drive motor (hot roll fuser printers only)	See <b>“Fuser drive motor removal”</b> on page 351.
7	40X7594	1	1	Main drive motor	See <b>“Main drive motor removal”</b> on page 354.
8	40X7574	1	1	Main motor cable	See <b>“Main cooling fan removal”</b> on page 353.
9	40X7579	1	1	Main cooling fan with cable	See <b>“Main cooling fan removal”</b> on page 353.
10	40X7682	1	1	Upper redrive motor with cable	See <b>“Upper redrive removal”</b> on page 331.
11	40X8483	1	1	Fuser cooling fan (hot roll fuser printers only)	N/A
12	40X8484	1	1	Fuser cooling fan cable (hot roll fuser printers only)	N/A

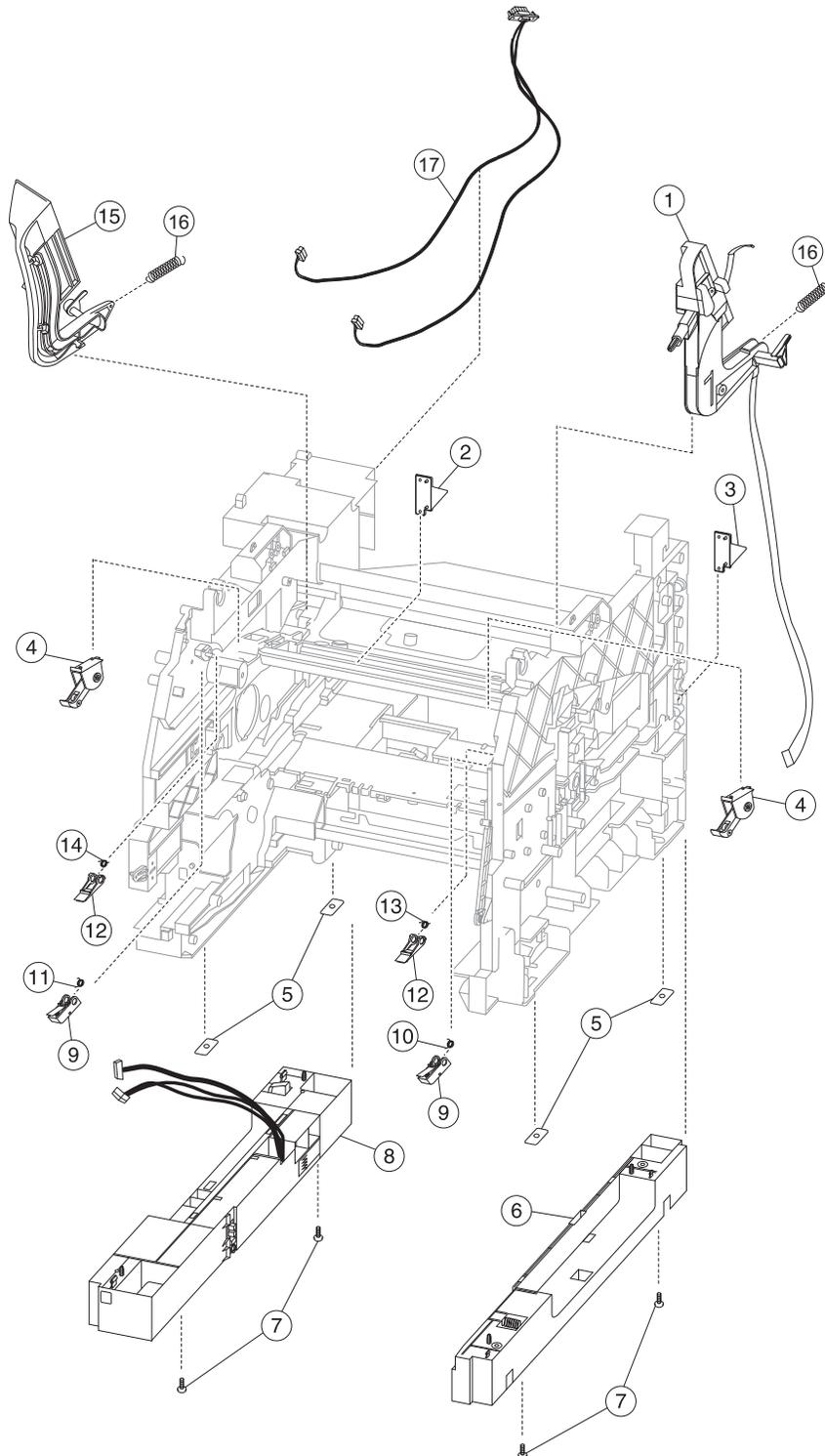
# Assembly 6: Duplex



## Assembly 6: Duplex

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X7683	1	1	Internal duplex with cable	N/A
2	40X7668	1	1	Duplex rear flap	See <b>“Duplex rear flap removal” on page 336.</b>
3	40X7723	4	1	Torsion spring	N/A
4	40X7667	1	1	Duplex front flap	See <b>“Duplex front flap removal” on page 335.</b>
5	40X7952	1	1	Duplex jam release guide	N/A
6	40X7697	1	1	Sensor (duplex path) with cable	See <b>“Sensor (duplex path) removal” on page 344.</b>

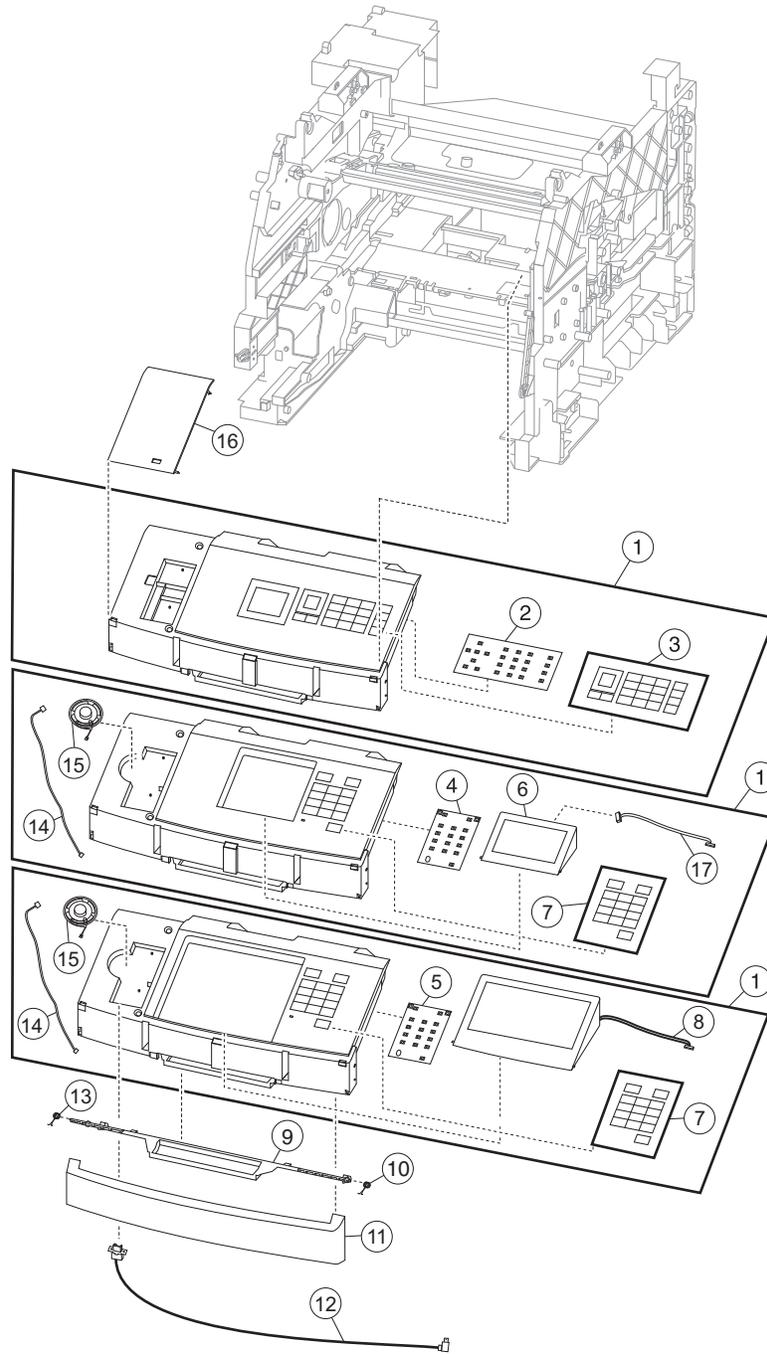
# Assembly 7: Frame



## Assembly 7: Frame

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8316	1	1	Right control panel hinge, with control panel cable	See <b>“Right control panel hinge removal” on page 403.</b>
2	40X7732	1	1	Left frame pivot	See <b>“Left frame pivot removal” on page 325.</b>
3	40X7733	1	1	Right frame pivot	See <b>“Right frame pivot removal” on page 327.</b>
4	40X7714	2	1	Imaging unit clamp	N/A
5	40X7589	4	1	Fastener plate	N/A
6	40X7728	1	1	Right frame extension with tray latch (integrated 550-sheet tray)	See <b>“Right frame extension” on page 343.</b>
6	40X8408	1	1	Right frame extension (integrated 250-sheet tray)	See <b>“Right frame extension” on page 343.</b>
7	40X7590	4	1	M5x12 screw	N/A
8	40X7727	1	1	Left frame extension (integrated 550-sheet tray) <ul style="list-style-type: none"> <li>• with media size sensor with cable</li> <li>• with input option interface cable</li> <li>• with sensor (media tray position) with cable</li> </ul>	See <b>“Left frame extension removal” on page 337.</b>
8	40X8407	1	1	Left frame extension (integrated 250-sheet tray) <ul style="list-style-type: none"> <li>• with media size sensor with cable</li> <li>• with input option interface cable</li> <li>• with sensor (media tray position) with cable</li> </ul>	See <b>“Left frame extension removal” on page 337.</b>
9	40X7716	2	1	Toner cartridge lock	N/A
10	40X7721	1	1	Torsion spring	N/A
11	40X7719	1	1	Torsion spring	N/A
12	40X7717	2	1	Toner cartridge clamp	N/A
13	40X7720	1	1	Torsion spring	N/A
14	40X7718	1	1	Torsion spring	N/A
15	40X8315	1	1	Left control panel hinge	See <b>“Left control panel hinge removal” on page 400.</b>
16	40X7724	2	1	Recoil spring	N/A
17	40X7575	1	1	Top option interface cable	N/A

# Assembly 8: Control panel



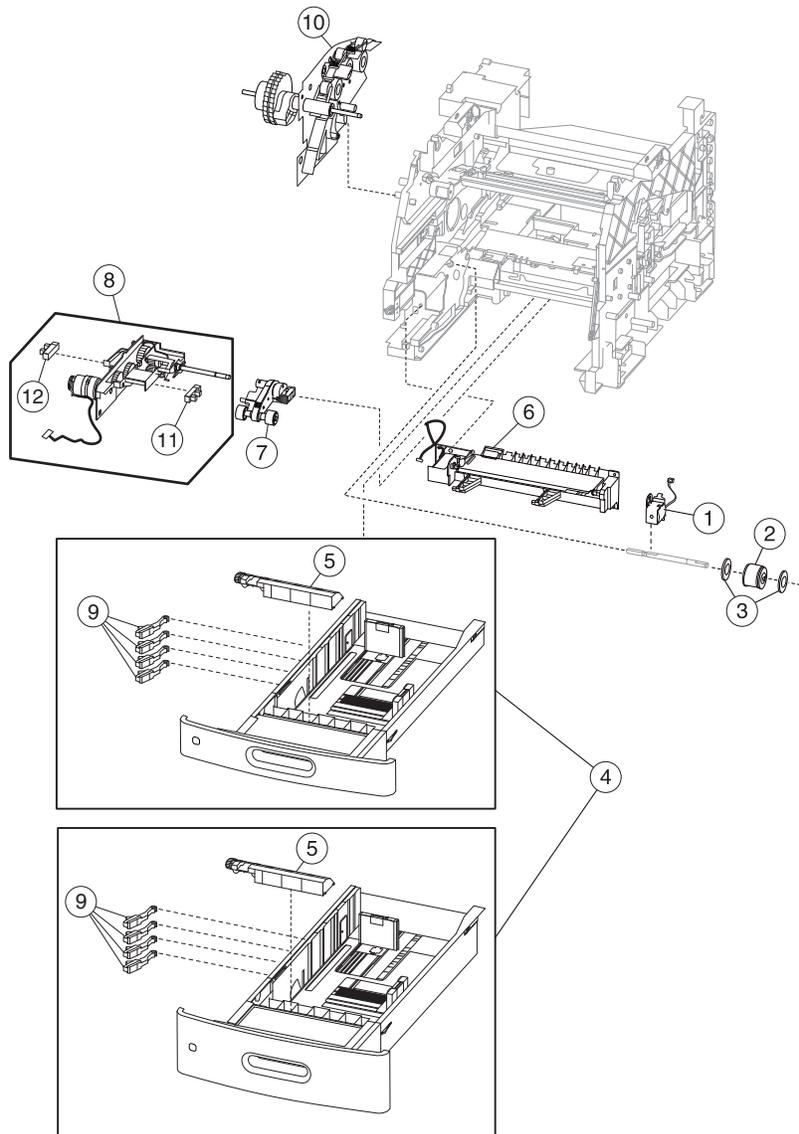
## Assembly 8: Control panel

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X7700	1	1	2.4" LCD control panel	N/A
1	40X7701	1	1	4.3" touch screen control panel	See <b>"Control panel removal (4.3-inch screen, 7-inch screen)"</b> on page 381.
1	40X7875	1	1	7" touch screen control panel	See <b>"Control panel removal (4.3-inch screen, 7-inch screen)"</b> on page 381.
2	40X7737	1	1	Control panel board (2.4" display only)	See <b>"Control panel board (2.4-inch tilting display) removal"</b> on page 387.
3	40X7741	1	1	Control panel buttons (2.4" display only)	N/A
4	40X7735	1	1	Control panel board (4.3" tilting display only)	See <b>"Control panel board (4.3-inch tilting display) removal"</b> on page 390.
5	40X8042	1	1	Control panel board (7" tilting display only)	See <b>"Control panel board (4.3-inch tilting display) removal"</b> on page 390.
6	40X8537	1	1	4.3" tilting display	See <b>"4.3-inch tilting display removal"</b> on page 369.
7	40X8661	1	1	Control panel buttons (4.3" and 7" tilting displays only)	N/A
8	40X8538	1	1	7" tilting display	See <b>"7-inch tilting display removal"</b> on page 372.
9	40X7729	1	1	Control panel latch	See <b>"Control panel latch removal"</b> on page 398.
10	40X7731	1	1	Torsion spring	N/A
11	40X7681	1	1	Control panel front cover	See <b>"Control panel front cover removal"</b> on page 396.
12	40X7704	1	1	USB cable	N/A
13	40X7730	1	1	Torsion spring	N/A
14	40X7702	1	1	Speaker cable	N/A
15	40X9079	1	1	Control panel speaker	N/A
16	40X8583	1	1	Control panel left bezel (M5155)	See <b>"Control panel left bezel removal"</b> on page 399.

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
16	40X8584	1	1	Control panel left bezel (M5163)	See <b>“Control panel left bezel removal” on page 399.</b>
16	40X8585	1	1	Control panel left bezel (M5170)	See <b>“Control panel left bezel removal” on page 399.</b>
16	40X8334	1	1	Control panel left bezel (MS810n)	See <b>“Control panel left bezel removal” on page 399.</b>
16	40X8335	1	1	Control panel left bezel (MS810dn)	See <b>“Control panel left bezel removal” on page 399.</b>
16	40X8336	1	1	Control panel left bezel (MS810de)	See <b>“Control panel left bezel removal” on page 399.</b>
16	40X8337	1	1	Control panel left bezel (MS811n)	See <b>“Control panel left bezel removal” on page 399.</b>
16	40X8338	1	1	Control panel left bezel (MS811dn)	See <b>“Control panel left bezel removal” on page 399.</b>
16	40X8339	1	1	Control panel left bezel (MS812dn)	See <b>“Control panel left bezel removal” on page 399.</b>
16	40X8340	1	1	Control panel left bezel (MS812de)	See <b>“Control panel left bezel removal” on page 399.</b>
16	40X8364	1	1	Control panel left USB delete cover	N/A
16	40X8362	1	1	Control panel left bezel (MS710)	See <b>“Control panel left bezel removal” on page 399.</b>
16	40X8363	1	1	Control panel left bezel (MS711)	See <b>“Control panel left bezel removal” on page 399.</b>
17	40X7705	1	1	Display to control panel board cable (4.3” tilting display only)	NA



# Assembly 9: Paper tray



## Assembly 9: Paper tray

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X7712	1	1	MPF feeder solenoid	N/A
2	40X7600	1	1	MPF pick roller	See <b>“MPF pick roller removal” on page 305.</b>
3	40X7601	2	1	MPF feed roller flange	N/A
4	40X7742	1	1	550-sheet tray	N/A
4	40X8153	1	1	250-sheet tray	N/A
5	40X7713	1	1	Separator roller assembly	See <b>“Separator roller assembly removal” on page 347.</b>
6	40X7598	1	1	MPF feeder lift plate with cable	See <b>“MPF feeder lift plate removal” on page 302.</b>
7	40X7593	1	1	Pick roller assembly	See <b>“Pick roller assembly removal” on page 342.</b>
8	40X7591	1	1	Media feeder	See <b>“Media feeder removal” on page 356.</b>
9	40X8541	4	1	Media size actuator	<b>“Media size actuator removal” on page 340</b>
10	40X7599	1	1	Media aligner roller with MPF pick roller	See <b>“Media aligner roller removal” on page 297.</b>
11	40X7592	1	1	Interrupt sensor <ul style="list-style-type: none"> <li>• Sensor (media empty)</li> </ul>	N/A
12	40X7592	1	1	Interrupt sensor <ul style="list-style-type: none"> <li>• Sensor (pick roller position)</li> </ul>	See <b>“Sensor (pick roller position) removal” on page 360.</b>

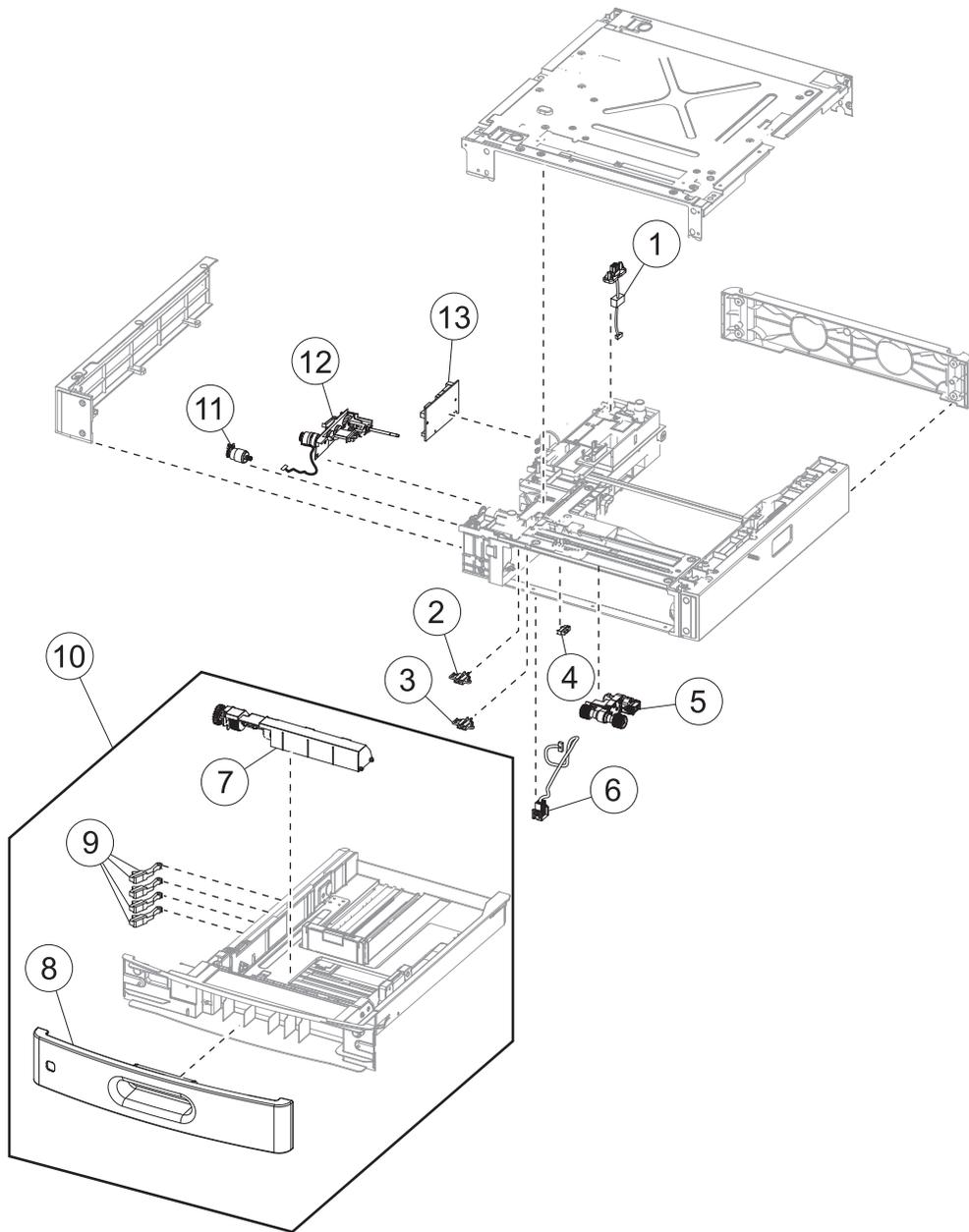
# Assembly 10: Input options



## Assembly 10: Input options

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8106	1	1	550-sheet tray option	<b>"250/550-sheet media tray and drawer assembly removal" on page 406</b>
1	40X8411	1	1	550-sheet tray option, lockable	<b>"250/550-sheet media tray and drawer assembly removal" on page 406</b>
2	40X8152	1	1	250-sheet tray option	<b>"250/550-sheet media tray and drawer assembly removal" on page 406</b>
2	40X8410	1	1	250-sheet tray option, lockable	<b>"250/550-sheet media tray and drawer assembly removal" on page 406</b>
3	40X8161	1	1	HCIT option	<b>"HCIT and drawer assembly removal" on page 422</b>
NS	40X8409	1	1	Spacer	N/A

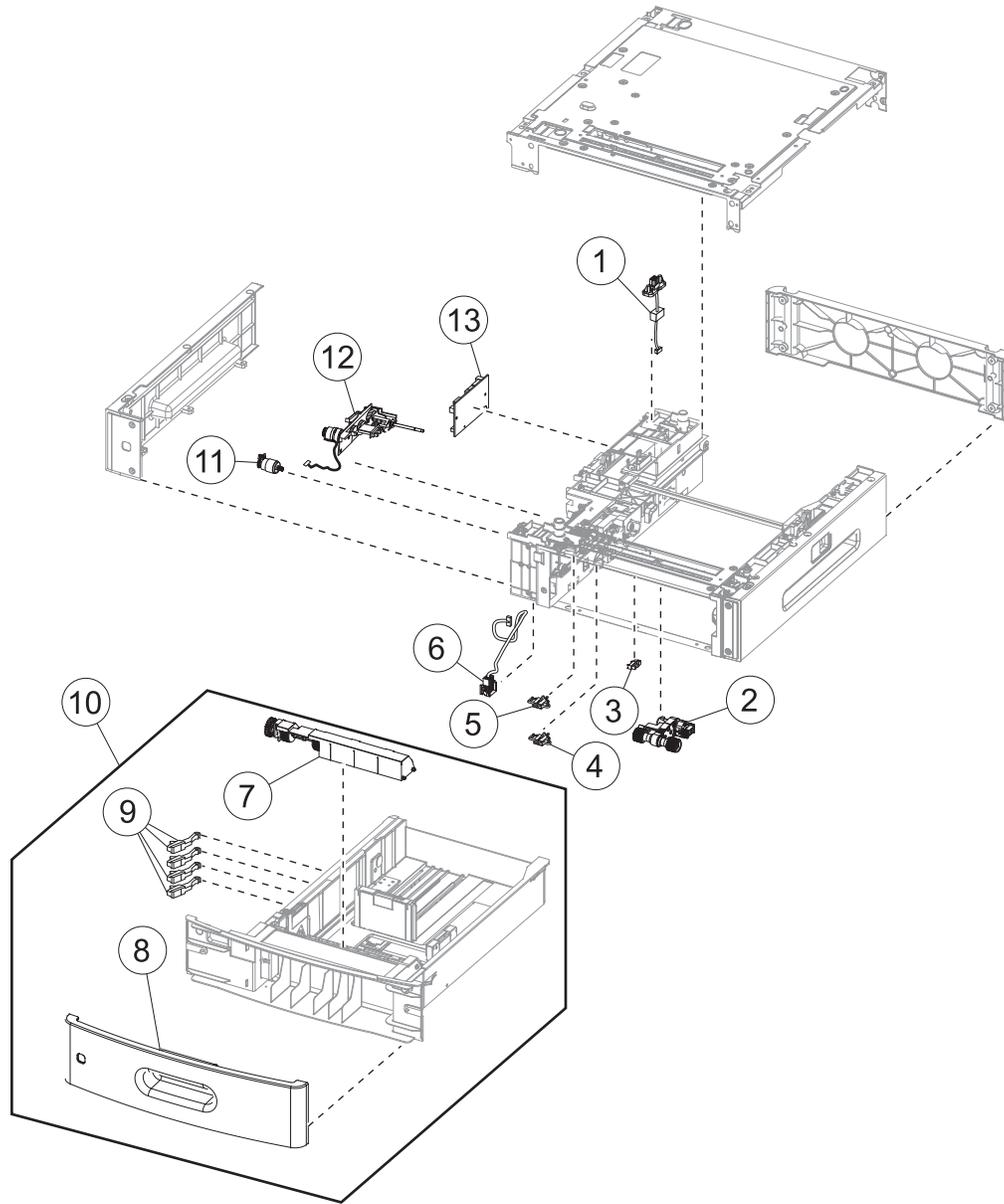
## Assembly 11: 250-sheet tray option



## Assembly 11: 250-sheet tray option

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8160	1	1	250-sheet tray option upper interface cable	<b>“Drawer upper interface cable removal” on page 412</b>
2	40X8156	1	1	Sensor (pass through)	<b>“Sensor (drawer pass through) removal” on page 417</b>
3	40X8158	1	1	Sensor (pick)	<b>“Sensor (pick) removal” on page 419</b>
4	40X7592	1	1	Sensor (pick roller position)	<b>“Sensor (pick roll position) removal” on page 408</b>
5	40X7593	1	1	Pick roller	<b>“Drawer pick roller removal” on page 408</b>
6	40X8159	1	1	250-sheet tray option lower interface cable	<b>“Drawer lower interface cable removal” on page 413</b>
7	40X7713	1	1	Separation roller	<b>“Media tray separation roller removal” on page 407</b>
8	40X8154	1	1	250-sheet tray front cover	<b>“Media tray front cover removal” on page 407</b>
9	40X8541	4	1	Media size actuator	<b>“Media size actuator removal” on page 340</b>
10	40X8153	1	1	250-sheet tray	<b>“Media tray assembly removal” on page 407</b>
11	40X8157	1	1	250-sheet tray option transport motor	<b>“Drawer transport motor removal” on page 416</b>
12	40X7591	1	1	Media feeder	<b>“Drawer media feeder removal” on page 414</b>
13	40X8672	1	1	250-sheet tray option controller PCBA	<b>“Drawer controller PCBA removal” on page 411</b>

## Assembly 12: 550-sheet tray option



## Assembly 12: 550-sheet tray option

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8160	1	1	550-sheet tray option upper interface cable	<b>“Drawer upper interface cable removal” on page 412</b>
2	40X7593	1	1	Pick roller	<b>“Drawer pick roller removal ” on page 408</b>
3	40X7592	1	1	Sensor (pick roller position)	<b>“Sensor (pick roll position) removal ” on page 408</b>
4	40X8158	1	1	Sensor (pick)	<b>“Sensor (pick) removal” on page 419</b>
5	40X8156	1	1	Sensor (pass through)	<b>“Sensor (drawer pass through) removal ” on page 417</b>
6	40X8159	1	1	550-sheet tray option lower interface cable	<b>“Drawer lower interface cable removal” on page 413</b>
7	40X7713	1	1	Separation roller	<b>“Media tray separation roller removal” on page 407</b>
8	40X8109	1	1	550-sheet tray front cover	<b>“Media tray front cover removal” on page 407</b>
9	40X8541	4	1	Media size actuator	<b>“Media size actuator removal” on page 340</b>
10	40X7742	1	1	550-sheet tray	<b>“Media tray assembly removal” on page 407</b>
11	40X8157	1	1	550-sheet tray option transport motor	<b>“Drawer transport motor removal” on page 416</b>
12	40X7591	1	1	Media feeder	<b>“Drawer media feeder removal ” on page 414</b>
13	40X8155	1	1	550-sheet tray option controller PCBA	<b>“Drawer controller PCBA removal” on page 411</b>

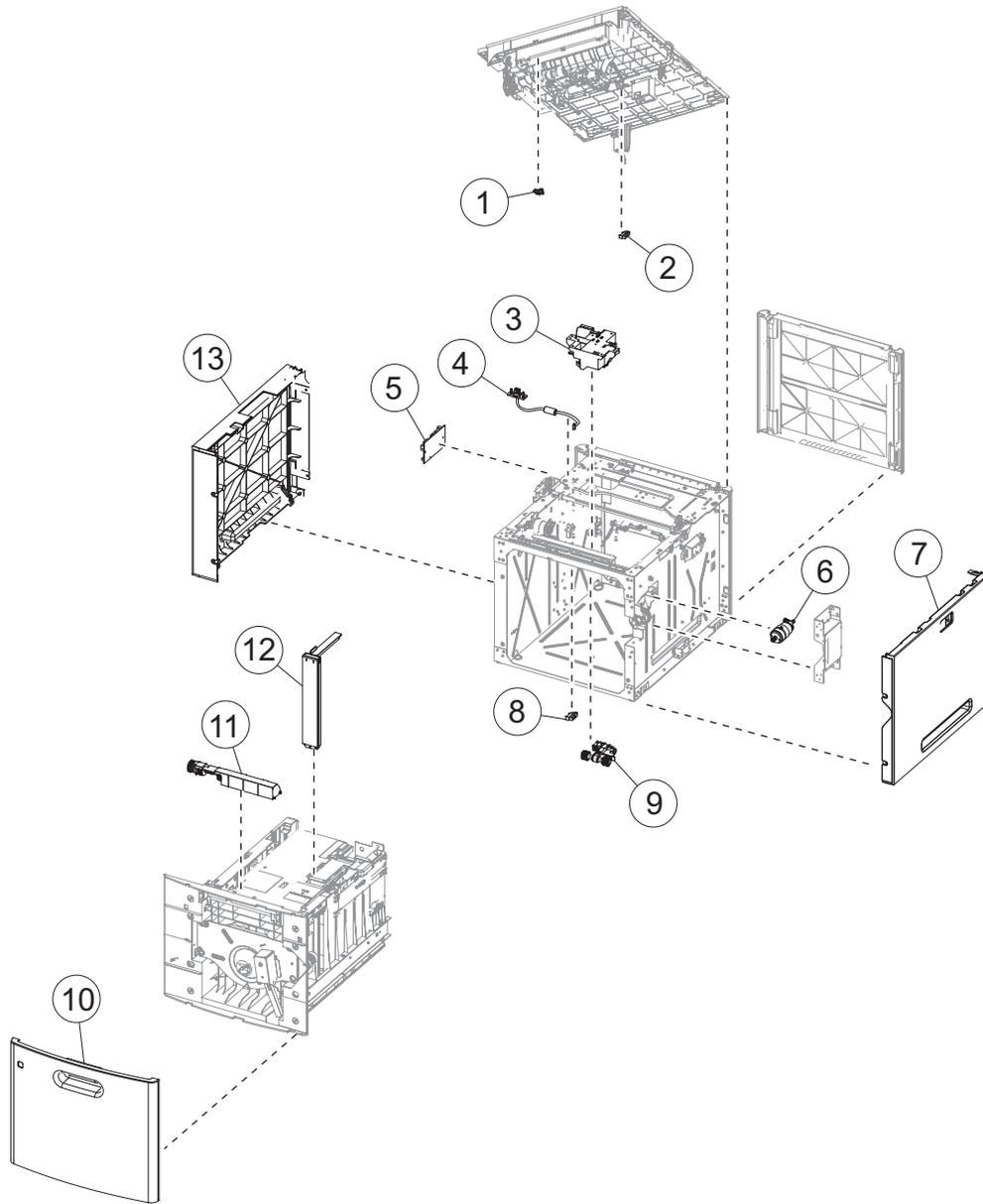
# Assembly 13: High capacity input tray option 1



## Assembly 13: High capacity input tray option 1

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8163	1	1	HCIT drawer assembly	See <b>"HCIT drawer assembly removal" on page 423</b>
2	40X8165	1	1	HCIT	See <b>"HCIT removal" on page 423</b>

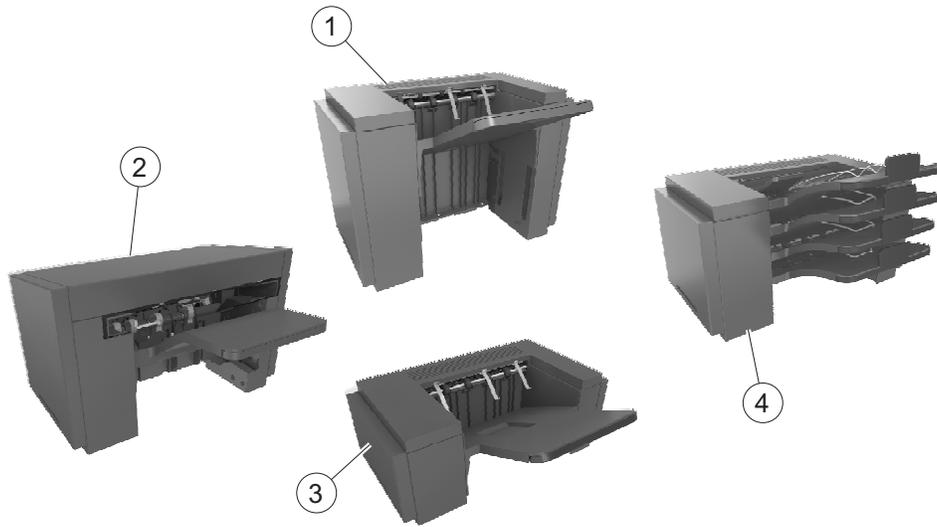
## Assembly 14: High capacity input tray option 2



## Assembly 14: High capacity input tray option 2

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8178	1	1	Sensor (HCIT pick) with cable	See <b>“Sensor (HCIT pick) removal” on page 442</b>
2	40X8177	1	1	Sensor (HCIT media low) with flag	See <b>“Sensor (HCIT media low) with flag removal” on page 439</b>
3	40X8174	1	1	HCIT option media feeder	See <b>“HCIT media feeder removal” on page 443</b>
4	40X8180	1	1	HCIT option interface cable	See <b>“HCIT drawer assembly interface cable removal” on page 438</b>
5	40X8173	1	1	HCIT option controller PCBA	See <b>“HCIT controller PCBA removal” on page 433</b>
6	40X8179	1	1	HCIT option lift drive motor	See <b>“HCIT lift drive motor removal” on page 436</b>
7	40X8169	1	1	HCIT option right cover	See <b>“HCIT drawer assembly right cover removal” on page 431</b>
8	40X7592	1	1	Sensor (HCIT pick roller position)	See <b>“Sensor (pick roll position) removal” on page 440</b>
9	40X7593	1	1	Pick roller	See <b>“HCIT pick arm assembly removal” on page 427</b>
10	40X8171	1	1	HCIT front cover	See <b>“HCIT front cover removal” on page 425</b>
11	40X7713	1	1	Separation roller	See <b>“HCIT separator roll assembly removal” on page 424</b>
12	40X8176	1	1	HCIT media guide	See <b>“HCIT media guide removal” on page 424</b>
13	40X8167	1	1	HCIT option left cover	See <b>“HCIT drawer assembly left cover removal” on page 429</b>

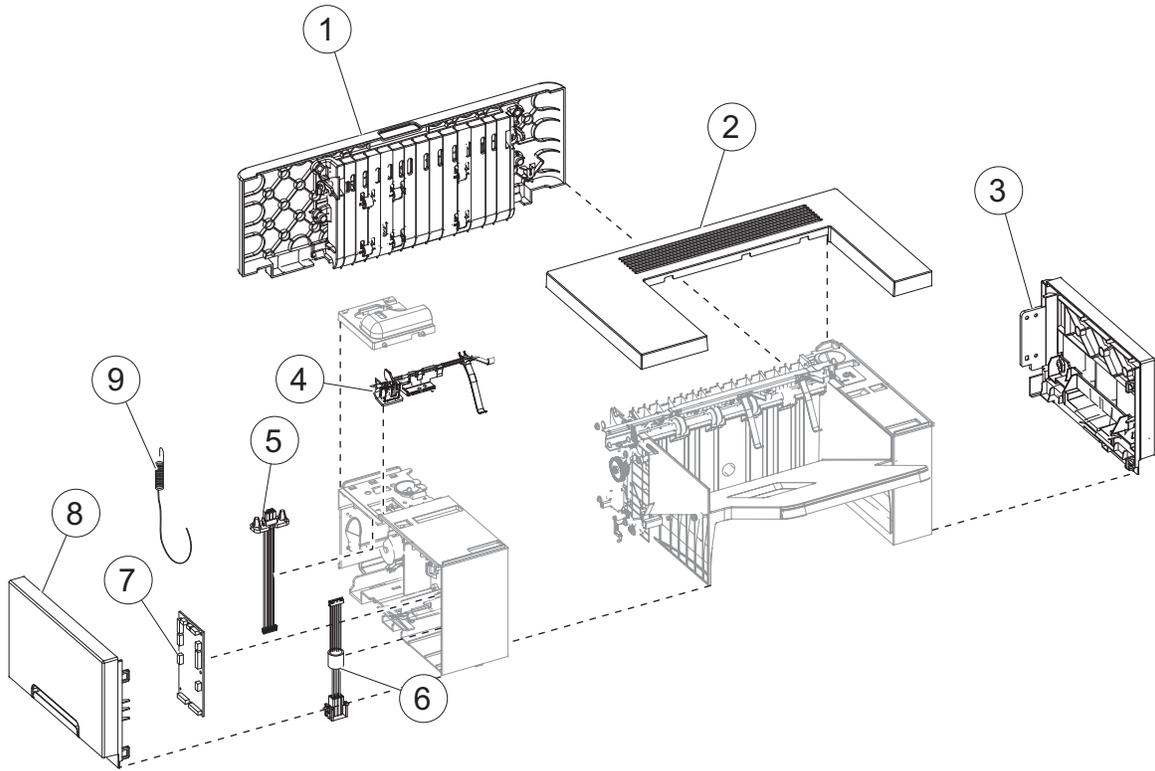
# Assembly 15: Output options



## Assembly 15: Output options

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8195	1	1	High capacity output expander option	<b>“High capacity output expander assembly removal” on page 460</b>
2	40X8207	1	1	Staple finisher option	<b>“Staple finisher assembly removal” on page 471</b>
3	40X8184	1	1	Output expander option	<b>“Output expander assembly removal” on page 446</b>
4	40X8241	1	1	Mailbox option	<b>“Mailbox assembly removal” on page 500</b>

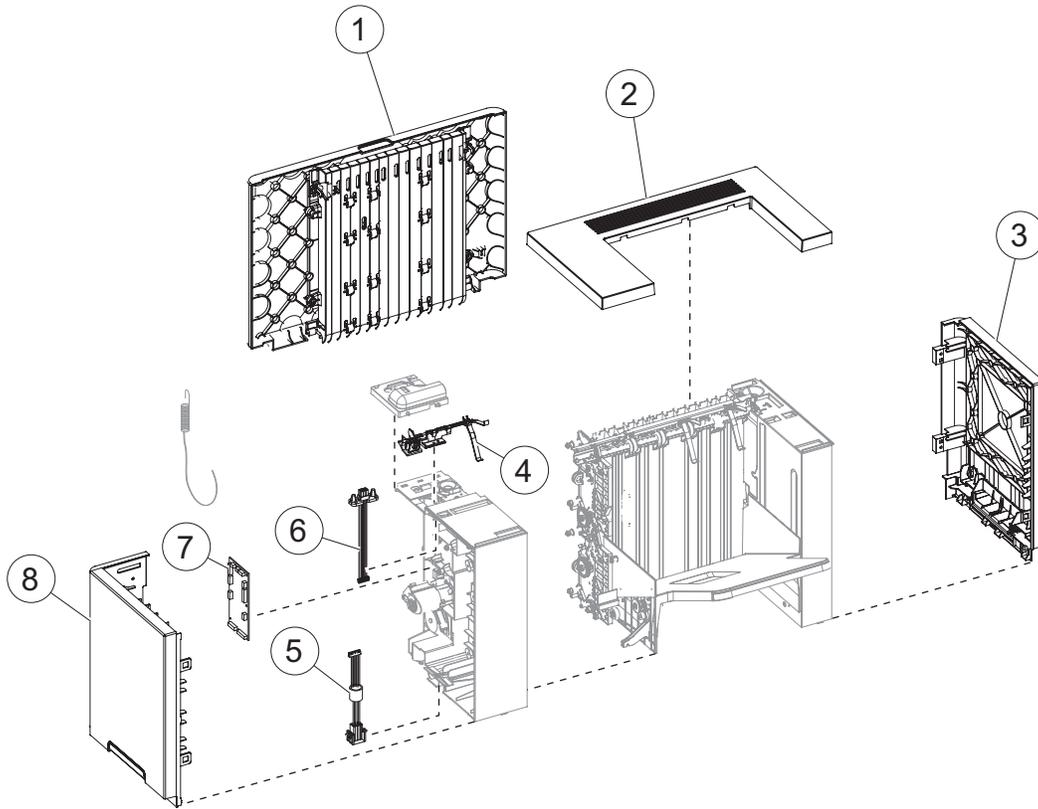
## Assembly 16: Output expander option



## Assembly 16: Output expander option

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8186	1	1	Output expander rear door	<b>"Output expander rear door removal" on page 447</b>
2	40X8196	1	1	Output expander top cover	<b>"Output expander top cover removal" on page 446</b>
3	40X8187	1	1	Output expander right cover	<b>"Output expander right cover removal" on page 450</b>
4	40X8191	1	1	Sensor (media bin full) with flag	<b>"Sensor (media bin full) with flag removal" on page 449</b>
5	40X8206	1	1	Upper interface cable	<b>"Upper interface cable removal" on page 456</b>
6	40X8205	1	1	Lower interface cable	<b>"Lower interface cable removal" on page 455</b>
7	40X8199	1	1	Output expander controller PCBA	<b>"Output expander controller PCBA removal" on page 454</b>
8	40X8190	1	1	Output expander left cover	<b>"Output expander left cover removal" on page 452</b>
9	40X8192	1	1	Spring with string	<b>"Spring with string removal" on page 458</b>
NS	40X8500	1	1	Actuator flag (media bin full)	N/A

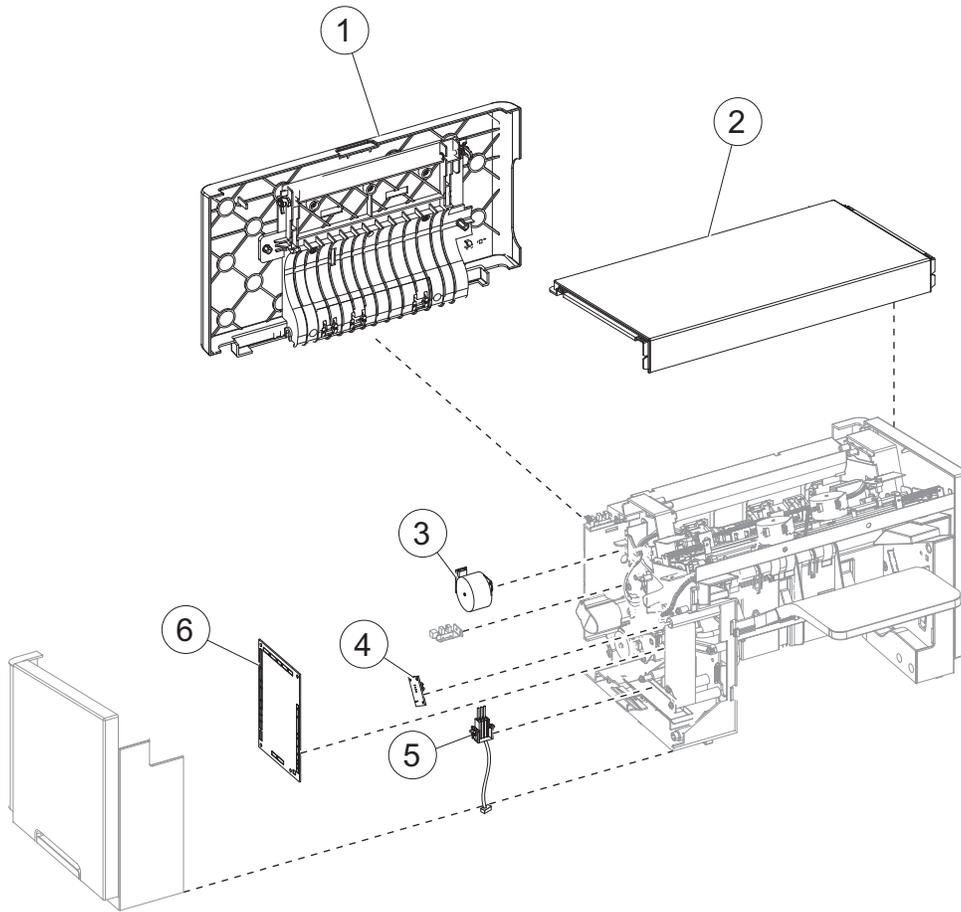
## Assembly 17: High capacity output expander option



## Assembly 17: High capacity output expander option

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8197	1	1	HCOE rear door	<b>"HCOE rear door removal" on page 461</b>
2	40X8196	1	1	HCOE top cover	<b>"HCOE top cover removal" on page 460</b>
3	40X8198	1	1	HCOE right cover	<b>"HCOE right outer cover removal" on page 463</b>
4	40X8191	1	1	Sensor (HCOE media bin full) with flag	<b>"Sensor (HCOE media bin full) with flag removal" on page 463</b>
5	40X8205	1	1	HCOE lower interface cable	<b>"HCOE lower interface cable removal" on page 469</b>
6	40X8206	1	1	HCOE upper interface cable	<b>"HCOE upper interface cable removal" on page 470</b>
7	40X8199	1	1	HCOE controller PCBA	<b>"HCOE controller PCBA removal" on page 467</b>
8	40X8202	1	1	HCOE left cover	<b>"HCOE left cover removal" on page 465</b>
NS	40X8500	1	1	Actuator flag (media bin full)	N/A

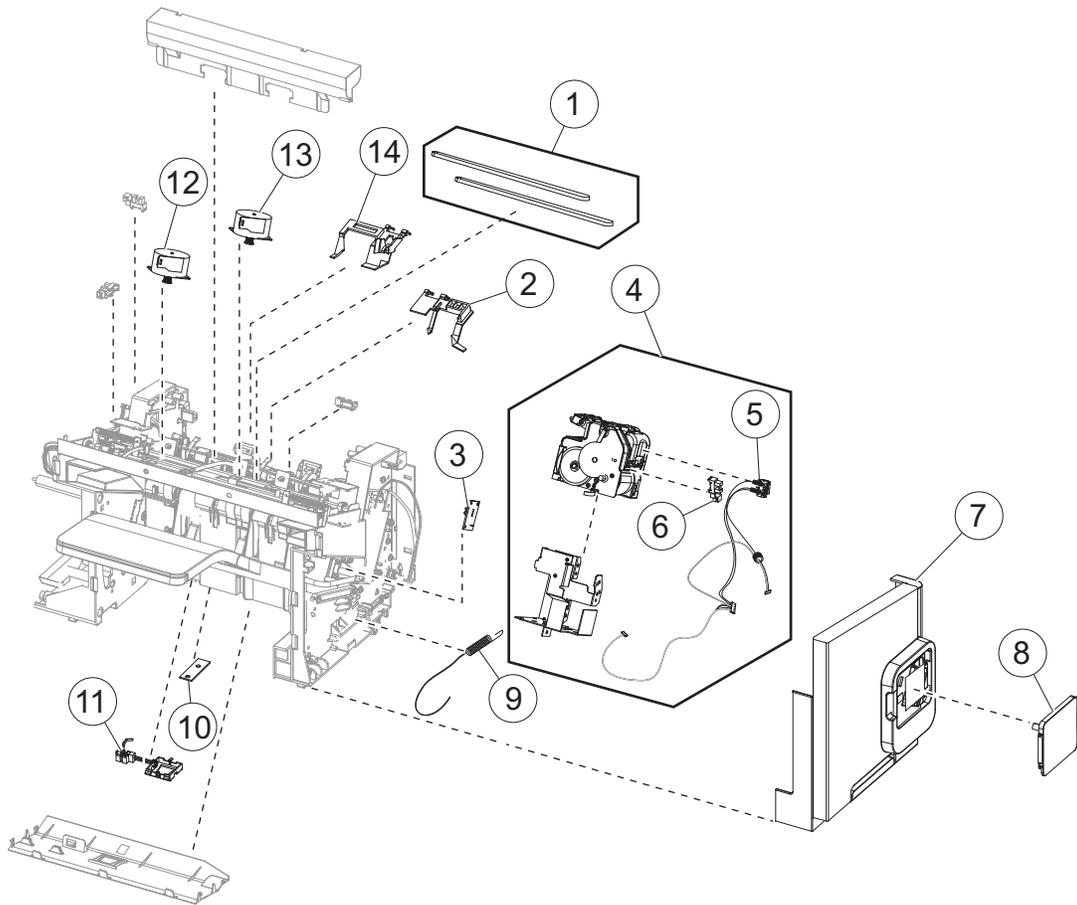
## Assembly 18: Staple finisher option 1



## Assembly 18: Staple finisher option 1

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8214	1	1	Stapler rear door	See <b>“Stapler rear door removal” on page 472</b>
2	40X8222	1	1	Stapler top cover	See <b>“Stapler top cover removal” on page 482</b>
3	40X8213	1	1	Stapler paddle drive motor	See <b>“Paddle drive motor removal” on page 493</b>
4	40X8220	1	1	Sensor (bin full receive)	See <b>“Sensor (bin full receive) removal” on page 498</b>
5	40X8224	1	1	Stapler lower interface cable	See <b>“Stapler lower interface cable removal” on page 494</b>
6	40X8221	1	1	Stapler controller PCBA	See <b>“Stapler controller PCBA removal” on page 496</b>

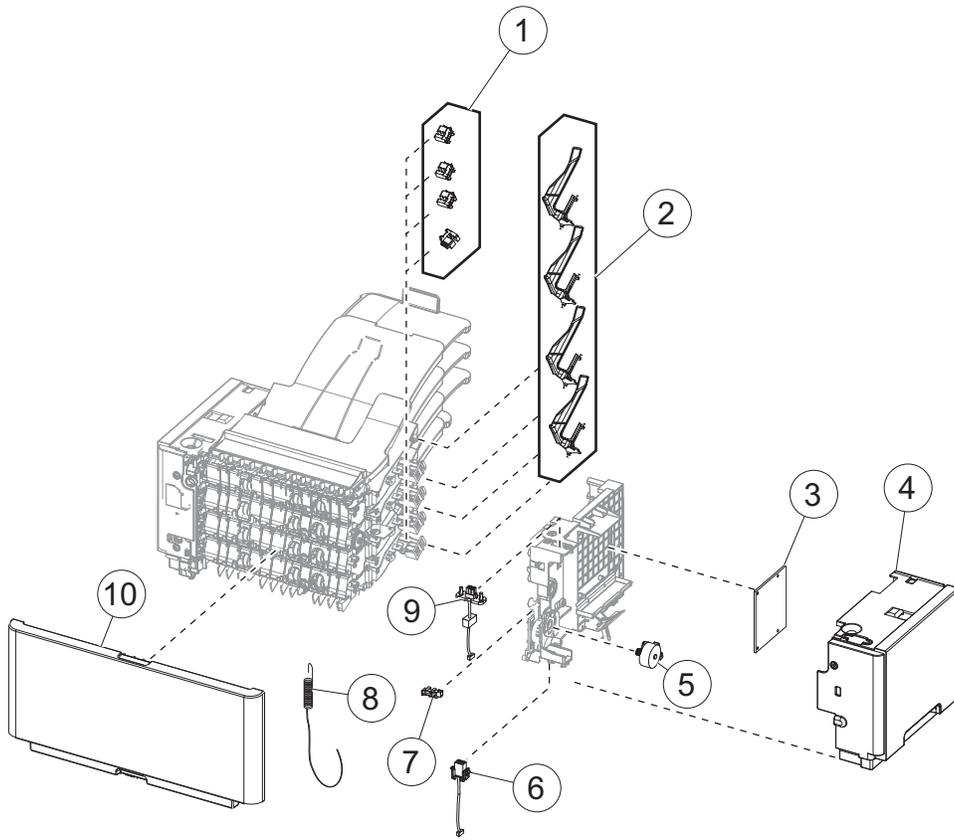
## Assembly 19: Staple finisher option 2



## Assembly 19: Staple finisher option 2

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8212	1	1	Tamper drive belt	<b>"Tamper drive belt removal" on page 492</b>
2	40X8209	1	1	Media stack flap (right)	<b>"Media stack flap (right) removal" on page 485</b>
3	40X8217	1	1	Sensor (bin full send)	<b>"Sensor (bin full send) removal" on page 497</b>
4	40X8223	1	1	Stapler carriage assembly	<b>"Stapler carriage assembly removal" on page 479</b>
5	40X8225	1	1	Stapler door close limit switch	<b>"Stapler door close limit switch removal" on page 476</b>
6	40X7592	1	1	Sensor (cartridge door interlock)	<b>"Sensor (cartridge door interlock) removal" on page 476</b>
7	40X8216	1	1	Stapler right cover	<b>"Stapler right cover removal" on page 474</b>
8	40X8215	1	1	Stapler cartridge access door	<b>"Stapler cartridge access door removal" on page 482</b>
9	40X8226	1	1	Stapler spring with string	<b>"Stapler spring with string removal" on page 484</b>
10	40X8218	1	1	Standard output bin LED	<b>"Standard output bin LED removal" on page 489</b>
11	40X8219	1	1	Sensor (finisher bin media present)	<b>"Sensor (finisher bin media present) removal" on page 490</b>
12	40X8211	1	1	Tamper motor (left)	<b>"Tamper motor (left) removal" on page 491</b>
13	40X8211	1	1	Tamper motor (right)	<b>"Tamper motor (right) removal" on page 491</b>
14	40X8210	1	1	Media stack flap (left)	<b>"Media stack flap (left) removal" on page 486</b>

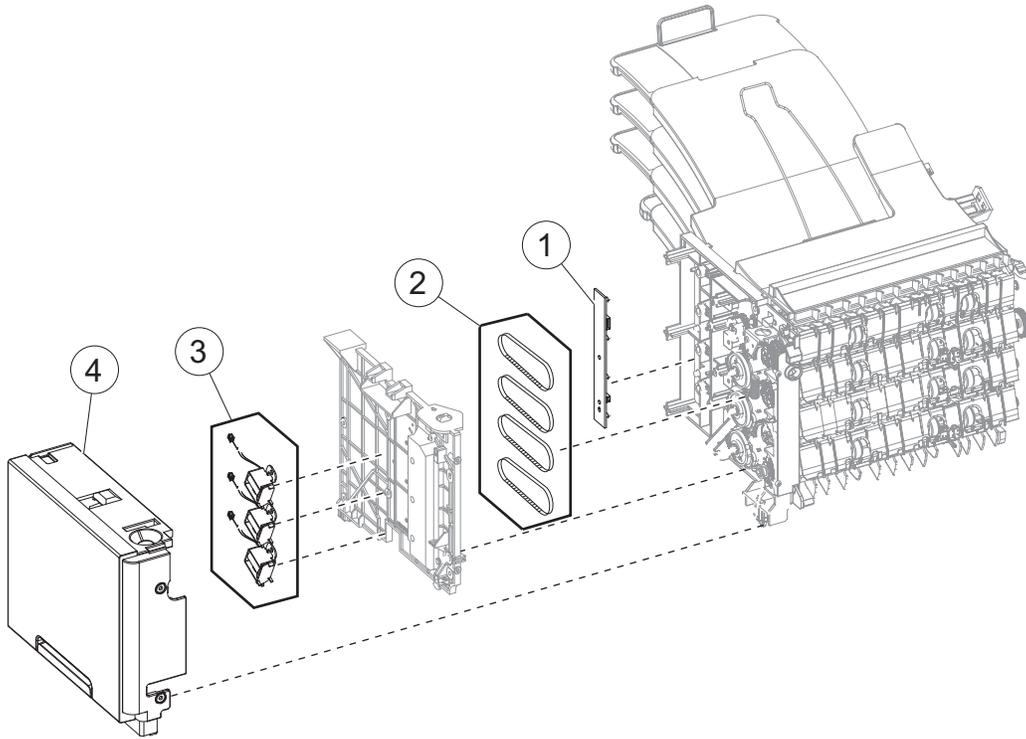
## Assembly 20: Mailbox option 1



## Assembly 20: Mailbox option 1

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8248	4	4	Sensor (bin full receive)	<b>“Sensor (mailbox bin full receive) removal” on page 515</b>
2	40X8247	4	4	Mailbox media bin full flag	<b>“Mailbox media bin full flag removal” on page 514</b>
3	40X8244	1	1	Mailbox controller PCBA	<b>“Mailbox controller PCBA removal” on page 507</b>
4	40X8246	1	1	Mailbox left cover	<b>“Mailbox left cover removal” on page 506</b>
5	40X8256	1	1	Mailbox divert motor	<b>“Mailbox divert motor removal” on page 512</b>
6	40X8253	1	1	Mailbox lower interface cable	<b>“Mailbox lower interface cable removal” on page 510</b>
7	40X7592	1	1	Mailbox sensor (divert motor)	<b>“Sensor (mailbox divert motor) removal” on page 509</b>
8	40X8252	1	1	Mailbox spring with string	<b>“Mailbox spring with string removal” on page 503</b>
9	40X8254	1	1	Mailbox upper interface cable	<b>“Mailbox upper interface cable removal” on page 512</b>
10	40X8242	1	1	Mailbox rear door	<b>“Mailbox rear door removal” on page 500</b>

## Assembly 21: Mailbox option 2



## Assembly 21: Mailbox option 2

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
1	40X8250	1	1	Mailbox output bin LED assembly	See <b>“Mailbox output bin LED assembly removal” on page 520</b>
2	40X8249	4	1	Mailbox belt	See <b>“Mailbox belt removal” on page 518</b>
3	40X8251	3	1	Mailbox solenoid	See <b>“Mailbox solenoid removal” on page 504</b>
4	40X8243	1	1	Mailbox right cover	See <b>“Mailbox right cover removal” on page 502</b>

## Assembly 22: Miscellaneous

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
NS	40X4819	1	1	RS232C serial adapter	N/A
NS	40X5315	1	1	SHIP-WITH ISP (2PER) screw	N/A
NS	40X5316	1	1	14 PIN JST-FOR ISP cable	N/A
NS	40X5317	1	1	Tee with thumbscrew standoff	N/A
NS	40X4826	1	1	N8120 GIGABIT INA adapter	N/A
NS	40X5315	1	1	SHIP-WITH ISP (2PER) screw	N/A
NS	40X5316	1	1	14 PIN JST-FOR ISP cable	N/A
NS	40X5317	1	1	Tee with thumbscrew standoff	N/A
NS	40X4823	1	1	Parallel 1284-B THCK adapter	N/A
NS	40X5315	1	1	SHIP-WITH ISP (2PER) screw	N/A
NS	40X5316	1	1	14 PIN JST-FOR ISP cable	N/A
NS	40X5317	1	1	Tee with thumbscrew standoff	N/A
NS	40X4827	1	1	N8130 10/100 fiber adapter	N/A
NS	40X5315	1	1	SHIP-WITH ISP (2PER) screw	N/A
NS	40X5316	1	1	14 PIN JST-FOR ISP cable	N/A
NS	40X5317	1	1	Tee with thumbscrew standoff	N/A
NS	40X6522	1	1	DDR3-512Mx16 1GB-400MHZ RAM card	N/A
NS	40X7445	1	1	DDR3-512Mx32 2GB RAM card	N/A
NS	40X7566	1	1	DDR3-256Mx16 512MB-400MHZ RAM card	N/A
NS	40X7567	1	1	DDR3-256Mx32 1GB-400MHZ RAM card	N/A
NS	40X8555	1	1	256MB user flash card	N/A
NS	40X8556	1	1	Traditional Chinese font card	N/A
NS	40X8557	1	1	Simplified Chinese font card	N/A
NS	40X8568	1	1	Korean font card	N/A
NS	40X8569	1	1	Japanese font card	N/A
NS	40X8594	1	1	MS810/1/2 forms and barcode card	N/A
NS	40X8597	1	1	MS810de forms and barcode card	N/A
NS	40X8600	1	1	MS812de forms and barcode card	N/A
NS	40X8596	1	1	MS81xn prescribe card	N/A
NS	40X8599	1	1	MS810de prescribe card	N/A
NS	40X8602	1	1	MS812de prescribe card	N/A
NS	40X8595	1	1	MS81xn IPDS card	N/A

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
NS	40X8598	1	1	MS810de IPDS card	N/A
NS	40X8601	1	1	MS812de IPDS card	N/A
NS	40X0387	1	1	USB-A interface device	N/A
NS	40X1593	1	1	Lexmark MarkNet N7000e (1 port USB) Ethernet 10Base/100BaseTX	N/A
NS	40X1594	1	1	Lexmark MarkNet N7002e (1 port Parallel) Ethernet 10BaseT/100BaseTX	N/A
NS	40X1592	1	1	Lexmark MarkNet N7020e (4 port USB) Ethernet 10BaseT/100BaseTX/1000BaseT	N/A
NS	40X7706	1	1	MS71x & MS81x Roller Kit	N/A
NS	40X8420	1	1	MS81x Return Program Fuser Maint. Kit Type 00, 110-120V Letter	N/A
NS	40X8421	1	1	MS81x Return Program Fuser Maint. Kit Type 01, 220-240V A5	N/A
NS	40X8422	1	1	MS81x Return Program Fuser Maint. Kit Type 02, 100V A5	N/A
NS	40X8423	1	1	MS81x Return Program Fuser Maint. Kit Type 03, 110-120V A5	N/A
NS	40X8424	1	1	MS81x Return Program Fuser Maint. Kit Type 04, 220-240V Letter	N/A
NS	40X8425	1	1	MS81x Fuser Maint. Kit Type 05, 110-120V Letter	N/A
NS	40X8426	1	1	MS81x Fuser Maint. Kit Type 06, 220-240V A4	N/A
NS	40X8427	1	1	MS81x Fuser Maint. Kit Type 07, 100V A4	N/A
NS	40X8428	1	1	MS81x Fuser Maint. Kit Type 08, 110-120V A4	N/A
NS	40X8429	1	1	MS81x Fuser Maint. Kit Type 09, 220-240V Letter	N/A
NS	40X8530	1	1	MS71x Return Program Fuser Maint. Kit Type 11, 110-120V	N/A
NS	40X8531	1	1	MS71x Return Program Fuser Maint. Kit Type 13, 220-240V	N/A
NS	40X8532	1	1	MS71x Return Program Fuser Maint. Kit Type 15, 100V	N/A
NS	40X8533	1	1	MS71x Fuser Maint. Kit Type 17, 110-120V	N/A
NS	40X8534	1	1	MS71x Fuser Maint. Kit Type 19, 220-240V	N/A
NS	40X8535	1	1	MS71x Fuser Maint. Kit Type 21, 100V	N/A
NS	40X8093	1	1	MS7xx, MS8xx, MX7xx caster base	N/A
NS	40X8359	1	1	Locking caster	N/A
NS	40X8579	1	1	Oil Wiper (MS7xx only)	N/A
NS	40X8581	1	1	Wax Wiper (MS7xx only)	N/A
NS	40X7854	1	1	Fax adapter	N/A
NS	40X7857	1	1	Hard disk drive	N/A

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
NS	40X7858	1	1	Network adapter 802.11 US	N/A
NS	40X8311	1	1	Case card reader—small stick-on	N/A
NS	40X8312	1	1	Case card reader—large stick-on	N/A
NS	40X8313	1	1	Case card reader—small snap-on	N/A



## Assembly 23: Power cords

Asm-index	P/N	Units/mach	Units/FRU	Description	Removal procedure
NS	40X0269	1	1	Power cord LV, USA & Canada, Latin America	N/A
NS	40X0288	1	1	Power cord HV, Argentina	N/A
NS	40X1766	1	1	Power cord HV, Bolivia & Peru	N/A
NS	40X0273	1	1	Power cord HV, Chile, Uruguay	N/A
NS	40X3141	1	1	Power cord HV, Paraguay, Austria, Belgium, France, Germany, Italy, Netherlands, Bluemark, Czech & Solvic countries, Greece, Hungary, Medmark 1, Medmark 2, Arabic, Poland, Russia, CIS, Spain, Portugal, & Ireland	N/A
NS	40X4596	1	1	Power cord LV, Brazil PPB kits	N/A
NS	40X0271	1	1	Power cord HV, United Kingdom, Asian, Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam, Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan, Sri Lanka, Tibet, & Hong Kong	N/A
NS	40X0301	1	1	Power cord HV, Australia & New Zealand	N/A
NS	40X3609	1	1	Power cord 100 V, Japan	N/A
NS	40X1792	1	1	Power cord, HV, Korea	N/A
NS	40X0303	1	1	Power cord, HV PRC	N/A
NS	40X1791	1	1	Power cord LV, Taiwan	N/A
NS	40X1774	1	1	Power cord HV, Denmark, Finland, Norway, Sweden	N/A
NS	40X0275	1	1	Power cord, HV, Israel	N/A
NS	40X1773	1	1	Power cord HV, South Africa, Namibia, Lesotho, Botswana & Pakistan	N/A
NS	40X1772	1	1	Power cord HV, Switzerland	N/A



## Appendix A: Printer specifications

- “Power specifications” on page 595
- “Operating clearances” on page 596
- “Acoustics” on page 596
- “Environment” on page 597
- “Processor” on page 597

### Power specifications

The average nominal power requirements for the base printer configuration are shown in the following table (power levels are shown in watts):

Printing States	MS710	MS711	MS810dn/de	MS811	MS812dn/de
Off		0.1 W	0.1 W	0.1 W	0.1 W
Hibernate		0.52 W	0.5 W	0.5 W	0.5 W
Sleep State		5.2 W	4.1 / 5.5W	4.1	4.1 / 7 W
Ready Mode					
Tier 1		110 W	55 W / 60 W	55 W	55 W / 60 W
Tier 2		75 W	30 W	30 W	30 W
Continuous printing					
1-sided		780 W	700 W	770 W	830 W
2-sided		575 W	500 W	560 W	630 W
Max. (Avg) current while printing:					
100 - 110 Volts		10.0 A		11.5 A	
115 - 127 Volts		9.0 A		10.0 A	
220 - 240 Volts		4.6 A		5.0 A	
Printer Fuser Ceramic Slab		925 W		1185 W	

Maximum current shown in amp ergs.

#### Notes:

- Using a power converter or inverter is not recommended.
- Only duplex models are Energy Star qualified
- All models ship with Sleep Mode set to On.
- The default time-out to Sleep mode is 30 minutes.

## Operating clearances

1	Top	115 mm (4.5 in.)
2	Right	305 mm (12 in.)
3	Front	508 mm (20 in.)
4	Left	305 mm (12 in.)
5	Rear	305 mm (12 in.)

Allow additional clearance around the printer for adding options, clearing misfeeds, and changing toner cartridges and imaging units.

## Acoustics

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

### Acoustic measurements

Status	1 Meter average sound pressure (dBA)	Declared sound power level (Bels)
MS810		
Idle (Standby mode)	32	4.8
Quiet mode	53	6.8
Simplex printing	53	6.8
Duplex printing	57	7.2
MS811		
Idle (Standby mode)	32	4.7
Quiet mode	53	6.8
Simplex printing	58	7.3
Duplex printing	57	7.2
MS812		
Idle (Standby mode)	32	4.7
Quiet mode	53	6.8
Simplex printing	58	7.3
Duplex printing	58	7.3

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

# Environment

## Printer Temperature and Humidity

- Operating
  - Temperature: 60 to 90° F (15.6 to 32.2° C)
  - Relative humidity: 8 to 80%
  - Maximum wet bulb temperature: 73° F (22.8° C)
  - Altitude: 9,500 ft. (0 to 2896 meters)
  - Atmospheric pressure: 74.6 kPa
- Power off
  - Temperature: 50 to 110° F (10 to 43.3° C)
  - Relative humidity: 8 to 80%
  - Maximum wet bulb temperature: 80.1° F (26.7° C)
  - Altitude: 9,500 ft. (0 to 2896 meters)
  - Atmospheric pressure: 74.6 kPa
- Ambient operating environment\*
  - Temperature: 60 to 90° F (15.6 to 32.2° C)
  - Relative humidity: 8 to 80%
- Storage and shipping (packaged printer) with or without print cartridge
  - Temperature: -40 to 110° F (-40 to 43.3° C)

\*In some cases, performance specifications (such as paper OCF, EP cartridge usage) are measured at an ambient condition.

# Processor

800 MHz, dual core



## Appendix B: Options and features

Lexmark C792 printers support only Lexmark C792 paper-handling options. These options are not compatible with any other Lexmark printer.

Some of the following options are not available in every country or region.

### Available internal options

- Memory card
  - DDR3 DIMM
  - Flash memory
    - Fonts
    - Firmware cards
      - Forms barcode
      - PRESCRIBE
      - IPDS
      - Printcryption
- Printer hard disk
- Lexmark Internal Solutions Ports (ISP)
  - Parallel 1284-B interface
  - MarkNet™ N8350 802.11 b/g/n wireless printer server
  - MarkNet N8130 10/100 fiber interface
  - RS-232-C serial interface

### Input options supported

- 550-sheet tray
- 550-sheet lockable tray
- 250-sheet tray
- 250-sheet lockable tray
- HCIT tray

### Output options supported

- Output expander
- High capacity output expander
- Mailbox
- Staple finisher

## Physical specifications (options)

Item	Height	Width	Depth	Weight
250-sheet tray	85 mm (3.3 in.)	421 mm (16.6 in.)	510 mm (20.1 in.)	5 kg (11.0 lb)
550-sheet tray	110 mm (4.3 in.)	421 mm (16.6 in.)	510 mm (20.1 in.)	5.8 kg (12.8 lb)
2100-sheet tray	350 mm (13.8 in.)	421 mm (16.6 in.)	510 mm (20.1 in.)	17.7 kg (39 lb)
Output expander	165 mm (6.5 in.)	423 mm (16.6 in.)	380 mm (14.9 in.)	2.6 kg (5.7 lb)
Mailbox	271 mm (10.7 in.)	421 mm (16.6 in.)	384 mm (15.1 in.)	6.3 kg (13.9 lb)
Stapler	320 mm (12.6 in.)	433 mm (17.1 in.)	403 mm (15.9 in.)	7.2 kg (15.8 lb)
Spacer	110 mm (4.3 in.)	421 mm (16.6 in.)	510 mm (20.1 in.)	3.4 kg (7.5 lb)

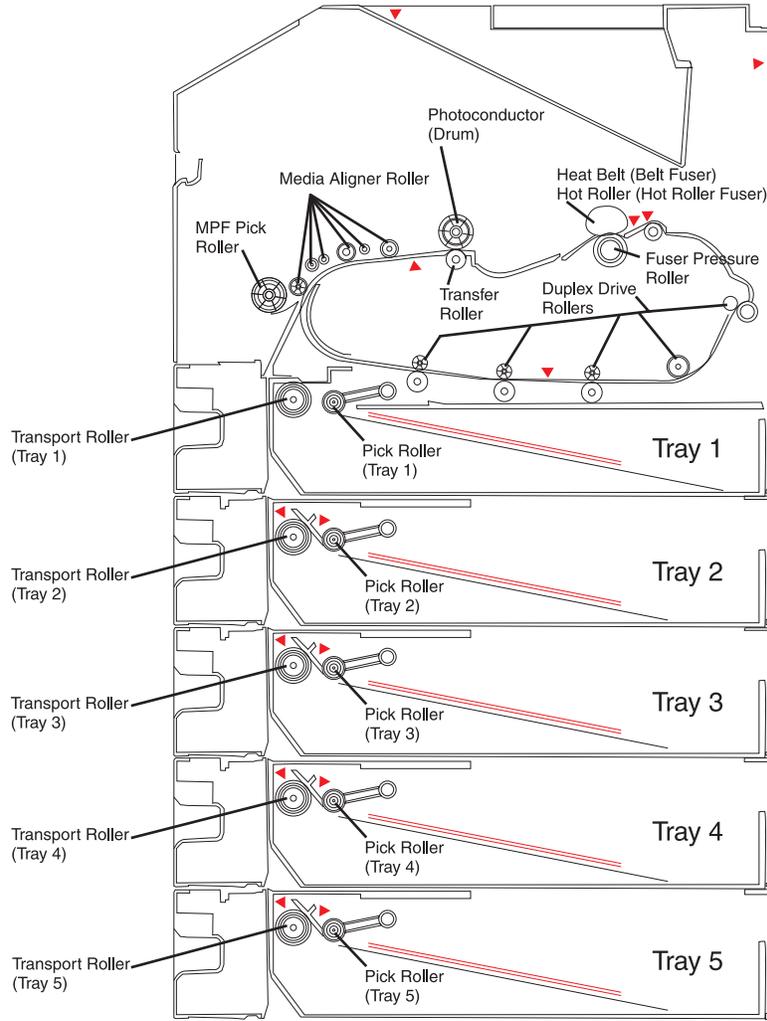
## Options configurations

Sources and Capacities	MS810n/dn/dtn/de	MS811n/dn/dtn	MS812dn/dtn/de
<b>Input sources:</b> number of optional Trays	4 (3 for dtn)	4 (3 for dtn)	4 (3 for dtn)
<b>Output sources</b>			
Output expander	up to 3	up to 3	up to 3
Mailbox	up to 3	up to 3	up to 3
Staple finisher	1	1	1
High capacity output expander	1	1	1
Output expander + mailbox	1 each	1 each	1 each
Output expander (on top) + high capacity output expander	1 each	1 each	1 each
Output expander + staple finisher (on top only)	1 each	1 each	1 each
Mailbox + staple finisher (on top only)	1 each	1 each	1 each
<b>Output capacity</b>			
Output expander	500	550	550
Mailbox	400	400	400
Staple finisher (unstapled)	500	500	500
High capacity output expander	1500	1850	1850

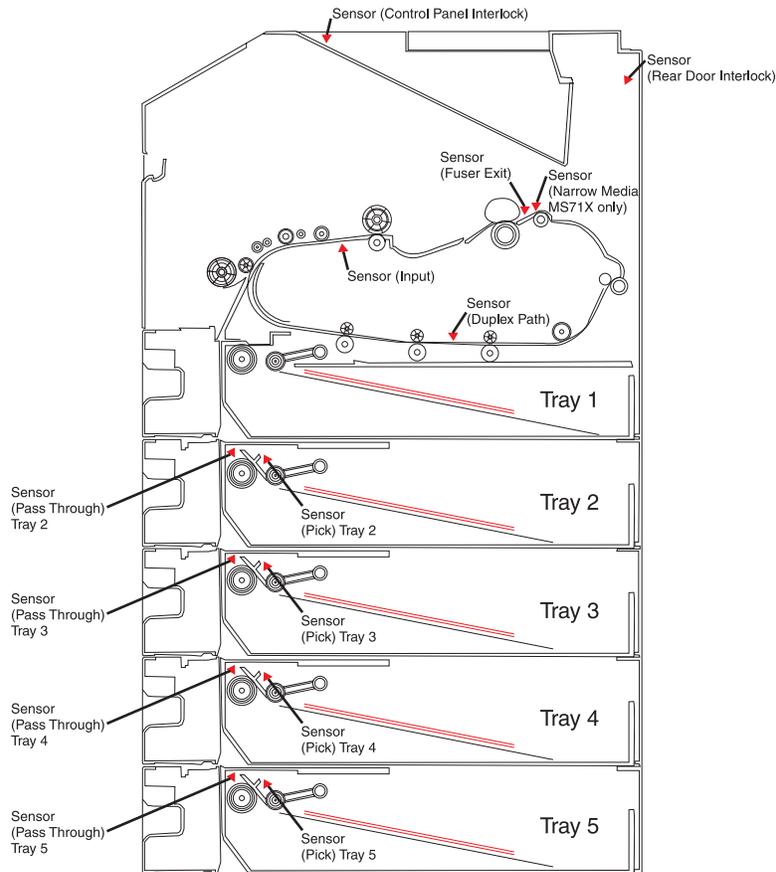
## Appendix C: Theory of operation

- “Models MS81x and MS71x paper path rollers and sensors” on page 602
- “Models MS81x and MS71x sensors” on page 603
- “Functions of main components - need a new title” on page 603
- “Media tray” on page 604
- “Multi-purpose feeder (MPF)” on page 604
- “Registration” on page 605
- “Duplex” on page 606
- “Transfer” on page 606
- “Printhead” on page 608
- “Fuser components” on page 609
- “Exit” on page 611
- “Drive” on page 612
- “Sensors” on page 614
- “Electrical components and controller” on page 614
- “Xerographic and print cartridge components” on page 616
- “Supported paper sizes, types, and weights” on page 620
- “Output options theory” on page 624

# Models MS81x and MS71x paper path rollers and sensors



## Models MS81x and MS71x sensors



## Functions of main components - need a new title

- **“Media tray assembly” on page 603**
- **“Rear media guide” on page 603**
- **“Side media guide” on page 603**

### Media tray assembly

The media tray is used to contain the media that will be printed on by the printer.

### Rear media guide

The rear media tray guide assembly can be adjusted to different media sizes by moving it to the front or rear and can be locked in position. The rear guide should come into contact with the media and hold it in position.

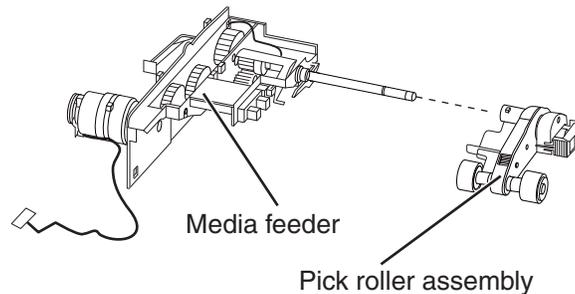
### Side media guide

The media tray assembly is designed so that it can adjust to the media width in the media feed direction by moving the side guide to the left or right.

## Media tray

- **“Media feeder” on page 604**
- **“Sensor (media size)” on page 604**
- **“Sensor (pick roller position)” on page 604**

## Media feeder



The pick roller assembly which is part of the media feeder, is a mechanical unit supplying media from the media tray to the paper path. The driving force from the media feeder drive motor, is transmitted to the two pick rollers to feed media from the tray and is also used to lift the tray plate that is used to lift the media stack into contact with the pick rollers.

## Sensor (media size)

The sensor (media size) detects the size of media supplied from each media tray assembly. A system of four switches is used to decode the media size, which is then sent to the controller board.

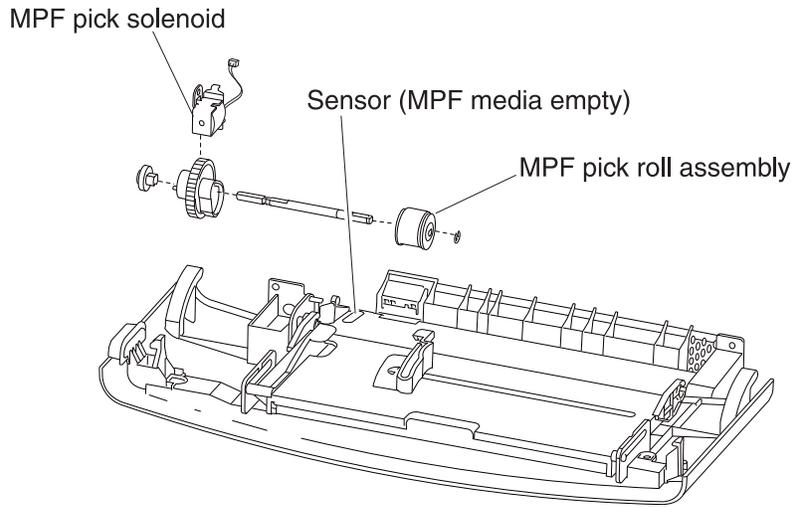
## Sensor (pick roller position)

This sensor is used to determine if the lift plate in the paper tray is at the optimum position for media to properly pick. As media is fed out, clearance will occur between the media and the pick rollers. When the specified amount of clearance is determined by the sensor, the lift plate will be raised to position the media in the optimum position to be properly picked.

## Multi-purpose feeder (MPF)

- **“MPF pick roller” on page 605**
- **“MPF pick solenoid” on page 605**

The MPF is a mechanical unit supplying media to the printer. The driving force from the main drive motor drive motor is transmitted to the MPF pick roller to feed media.



## MPF pick roller

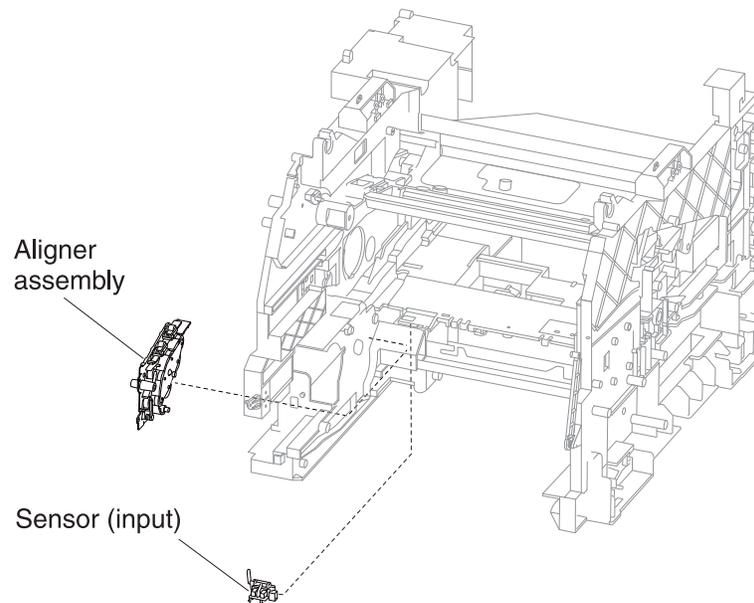
The MPF pick roller feeds the media placed in the MPF media tray into the printer.

## MPF pick solenoid

The MPF pick solenoid transmits the driving force from the main drive motor assembly to the MPF pick roller.

## Registration

- **“Sensor (input)” on page 606**



## Sensor (input)

The sensor (input) is located just before the print cartridge and can detect whether media exists in the input path. The sensor is used to detect jams and to set functional timing.

## Duplex

- **“Sensor (duplex path)” on page 606**

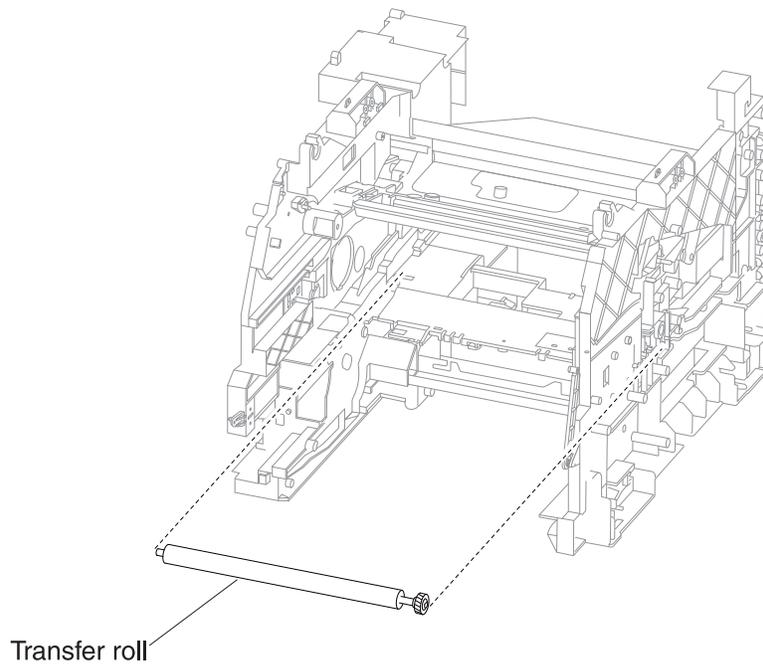
The printer has an integrated duplex that is used to provide two-sided printing. After the first side of the page is printed, the page enters the duplex path and then re-enters the primary paper path just before the input sensor. The second image is then printed on the reverse side of the paper.

## Sensor (duplex path)

The media aligner roller is used to feed the media through the input path and to ensure that media is fed straight (not skewed) through the machine. The media aligner roller can be adjusted to correct media skew issues and should always be adjusted when it is replaced or removed.

## Transfer

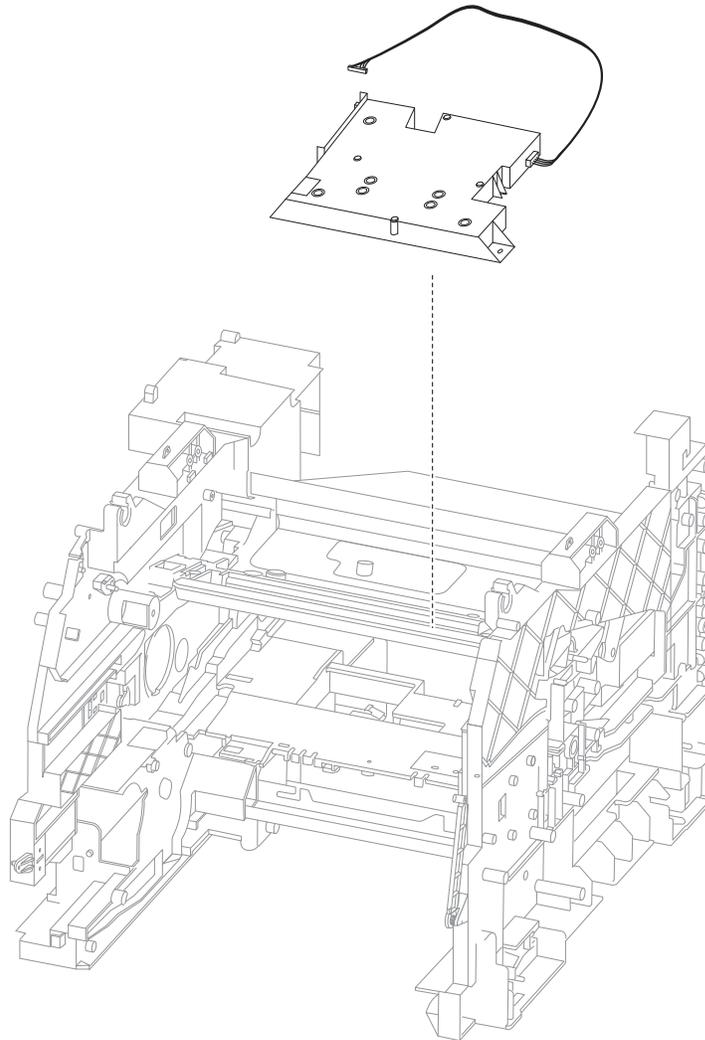
- **“Transfer roller” on page 607**



## Transfer roller

The transfer roller applies charge to the rear surface of the media when the media passes between the transfer roller and photo conductor (drum). The toner image is transferred from the photo conductor (drum) surface to the media surface.

# Printhead

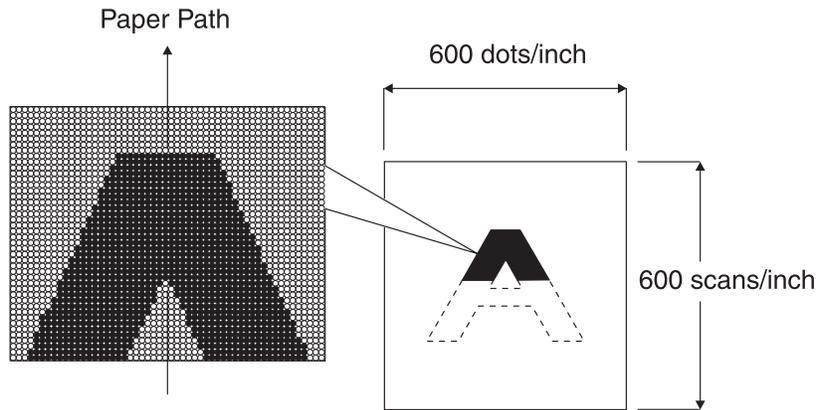


The printhead scans the photoconductor drum surface with a laser beam. It consists of four components: laser diode (LD) card assembly, printhead motor, polygon mirror, and the start of scan card assembly.

- 1 LD card assembly**—The LD card assembly generates the laser beam. The beam is turned on or off according to a print data signal coming from the controller board.
- 2 Printhead motor/polygon mirror**—The polygon mirror is mounted to the shaft of the printhead motor, and is rotated at a high speed by the printhead motor. The mirror rotation shifts the incidence and reflection angles of a laser beam to scan the photoconductor (drum) in a single direction. The laser beam reaches the polygon mirror as it passes through multiple lenses, mirrors, and windows. The laser beam then arrives at the photo conductor (drum) surface.
- 3 SOS card assembly**—When a laser beam hits the SOS sensor on the SOS card assembly, the beam is converted to an electrical signal (SOS signal), and detects the initial position where a scan starts on each line.

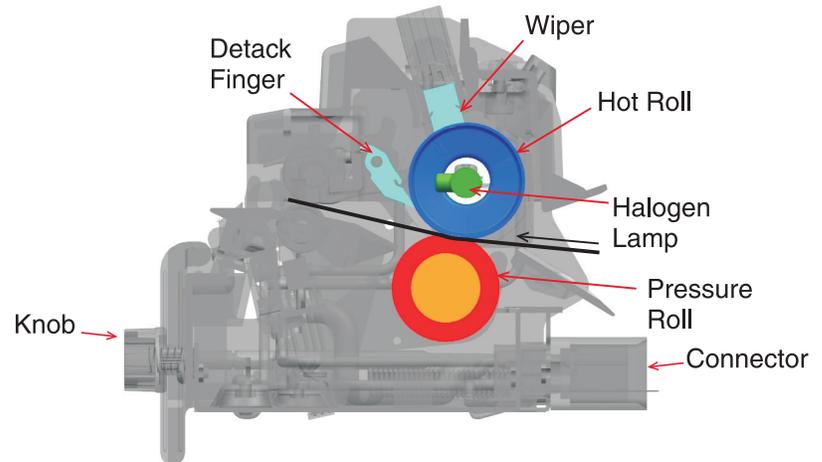
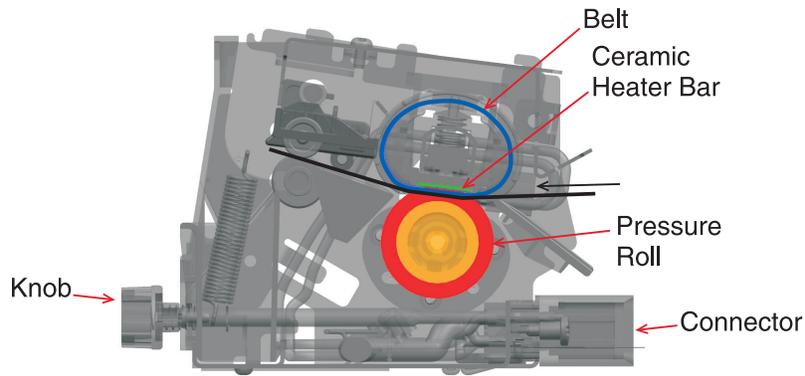
When a laser beam is scanned across the photoconductor (drum) surface from one end to the other while turning on and off the beam, one line of latent image is created. If the scanning by the laser beam is repeated while rotating the drum, a two-dimensional image is created. The resolution in the scanning direction (from right to left) is determined by the rotational speed of the printhead motor, depending on how quickly the laser is adjusted. The resolution in the process direction (from top to bottom) is determined by the rotational speed of the printhead motor. (The higher the scanning speed becomes, the sooner the scanning of the next row can be started.)

The following image is a conceptual diagram of an image created by scanning:



## Fuser components

- **“Heat belt (belt fuser)” on page 610**
- **“Heat belt (hot roll fuser)” on page 610**
- **“Pressure roll” on page 610**
- **“Heater lamp (hot roll fuser)” on page 611**
- **“Thermistor” on page 611**
- **“Sensor (fuser exit)” on page 611**
- **“Sensor (narrow media) (hot roll fuser only)” on page 611**



### Heat belt (belt fuser)

The heat belt is a thin metal belt with a coated surface. This belt is heated by a ceramic heater bar. The heat is applied to the media passing between the heat belt and pressure roll, fusing the toner on the media.

### Heat belt (hot roll fuser)

The heat roll is a hollow metal tube with a coated surface. This tube is heated by a halogen lamp. The heat is applied to the media passing between the heat roll and pressure roll, fusing the toner on the media.

### Pressure roll

The pressure roll is used to apply pressure to the media surface for fusing. Pressure is applied to the media between the pressure roll and heat roll (or heat belt) to aid in the fusing process.

## Heater lamp (hot roll fuser)

The heater lamp is a quartz glass tube containing a halogen heater coil. A terminal is mounted to the end of the heater rod using a harness.

## Thermistor

The thermistor monitors the surface temperature of the media-feed portion of the heat belt or heat roll to provide feedback to the controller board. This information is used to turn the ceramic heater or halogen lamp on and off to maintain the desired temperature.

## Sensor (fuser exit)

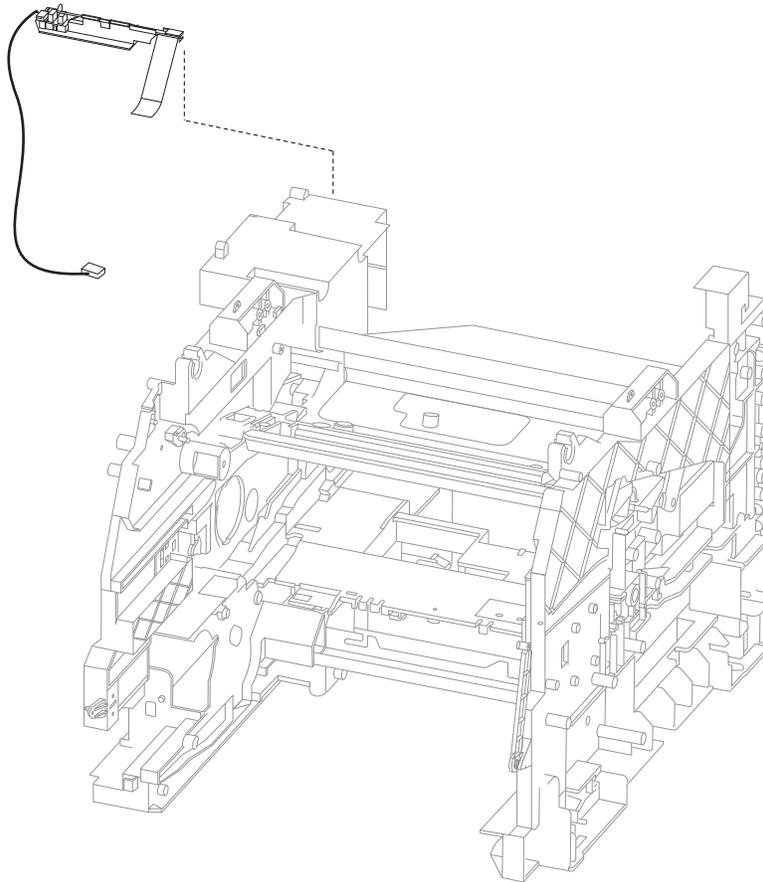
The sensor (fuser exit) detects the arrival and departure of media as it passes through the fuser.

## Sensor (narrow media) (hot roll fuser only)

The sensor (narrow media) detects the arrival and departure of media as it passes through the fuser. It also detects the width of the media.

## Exit

- **“Sensor (standard bin full)” on page 612**



The standard media exit ejects printed media from the printer to the standard bin .

### Sensor (standard bin full)

The sensor (standard bin full), along with the standard bin full flag, detects whether the standard bin is full and stops the printing process.

## Drive

- **“Main drive motor assembly” on page 612**
- **“Fuser drive motor assembly” on page 612**
- **“Toner add motor assembly” on page 613**
- **“Redrive motor assembly” on page 613**

### Main drive motor assembly

The main drive motor is a DC motor that drives the imaging unit, aligner, and MFP.

### Fuser drive motor assembly

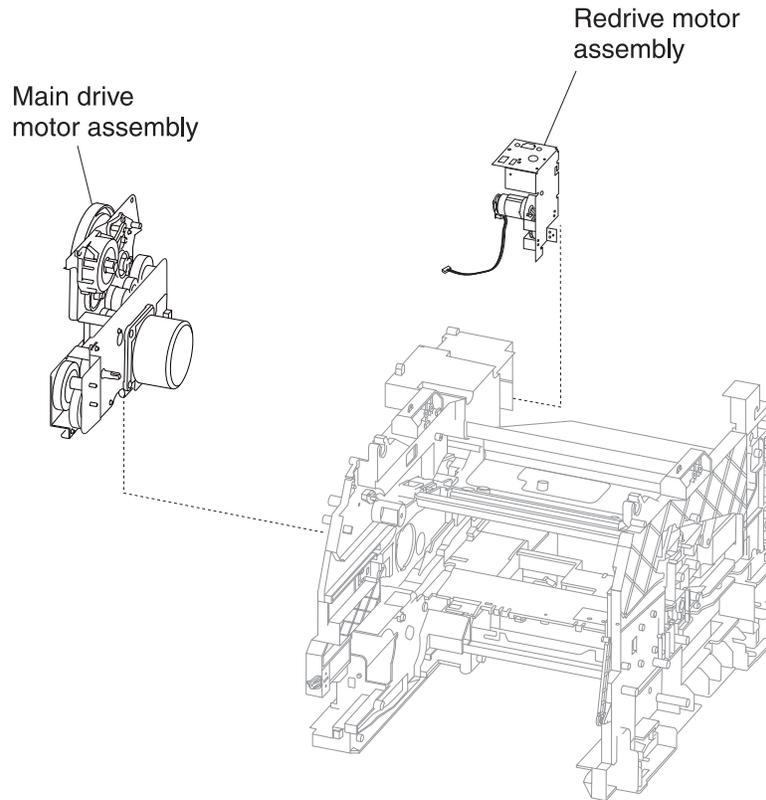
The fuser drive motor is a DC motor that drives the fuser.

## Toner add motor assembly

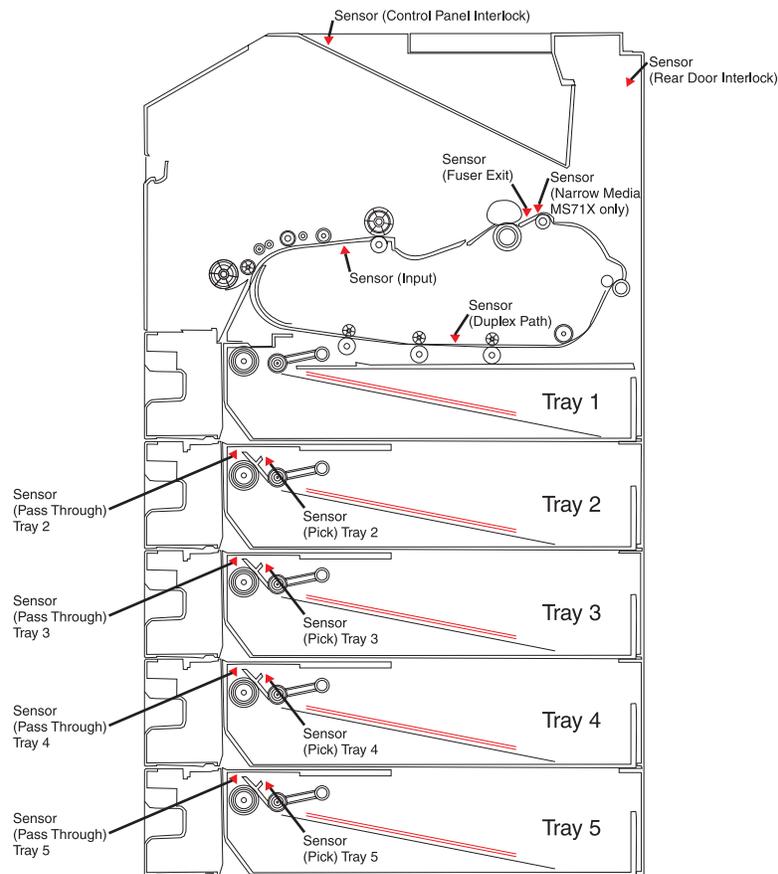
The toner add motor is a DC motor that drives the toner cartridge in order to provide new toner.

## Redrive motor assembly

The redrive motor assembly is a DC motor that drives the redrive assembly that transports the media into the duplex path entrance, standard bin, or output option.

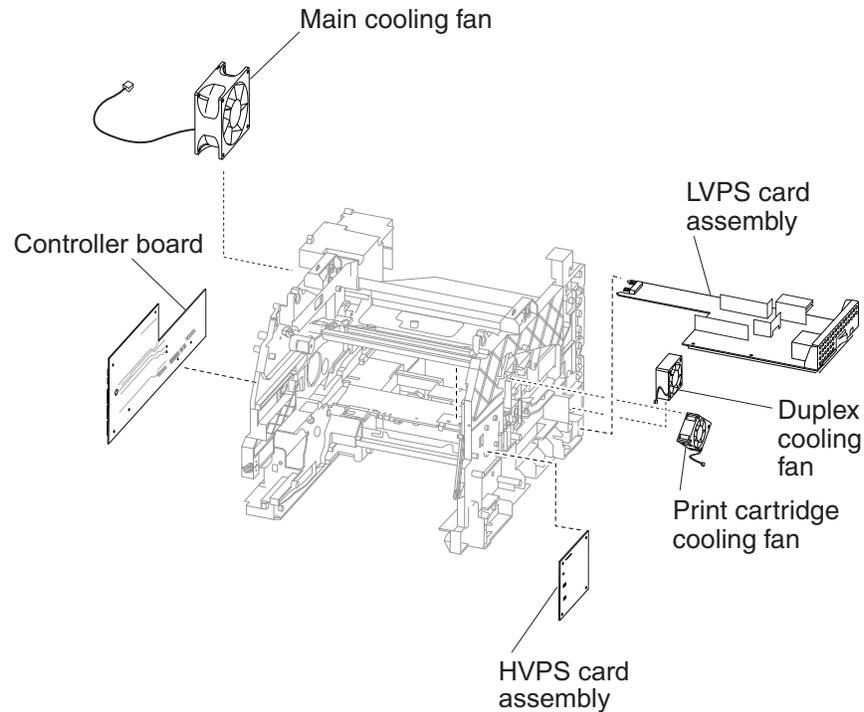


# Sensors



## Electrical components and controller

- **“Sensor (control panel door interlock)” on page 615**
- **“Sensor (rear door interlock)” on page 615**
- **“Main cooling fan” on page 615**
- **“Cartridge cooling fan” on page 615**
- **“Duplex cooling fan” on page 615**
- **“Fuser cooling fan (hot roll printer only)” on page 615**
- **“LVPS board assembly” on page 616**
- **“HVPS board assembly” on page 616**
- **“Controller board” on page 616**



### Sensor (control panel door interlock)

The sensor is a safety device to cut off a 24 VDC power supply from the LVPS to the high volt power supply (HVPS), controller board, and to the main drive motor assembly, while the control panel door is open.

### Sensor (rear door interlock)

The sensor is a safety device to cut off a 24 VDC power supply from the LVPS to the HVPS, controller board, and to the main drive motor assembly, while the printer rear door is open.

### Main cooling fan

The main cooling fan discharges air from the printer to provide cooling to this area of the printer.

### Cartridge cooling fan

The imaging unit cooling fan discharges air from the print cartridge area to provide cooling to this area of the printer.

### Duplex cooling fan

The Duplex cooling fan discharges air from the duplex drive motor area to provide cooling to this area of the printer.

### Fuser cooling fan (hot roll printer only)

The fuser cooling fan discharges air from the fuser area to provide cooling to this area of the printer.

## LVPS board assembly

The LVPS board assembly generates 6.5V and 25V DC voltages. The LVPS can be switched to work with 100V, 110, and 220V machines.

## HVPS board assembly

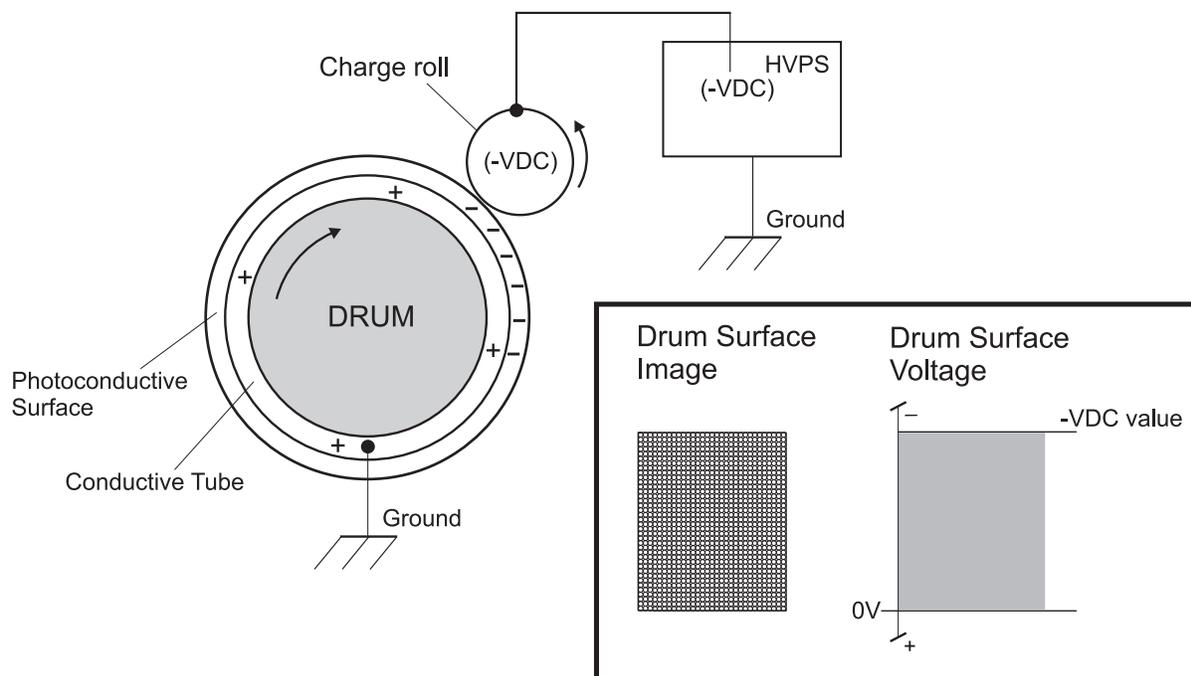
The HVPS board assembly generates and provides DC voltages to the developer roll, the transfer roller, and the charge roller (located in the imaging unit).

## Controller board

The controller board controls printing operation based on the communication with the RIP controller and optional peripherals. It also controls toner dispense, fuser control, sensor switch feedback, drive motors, clutches, and solenoids.

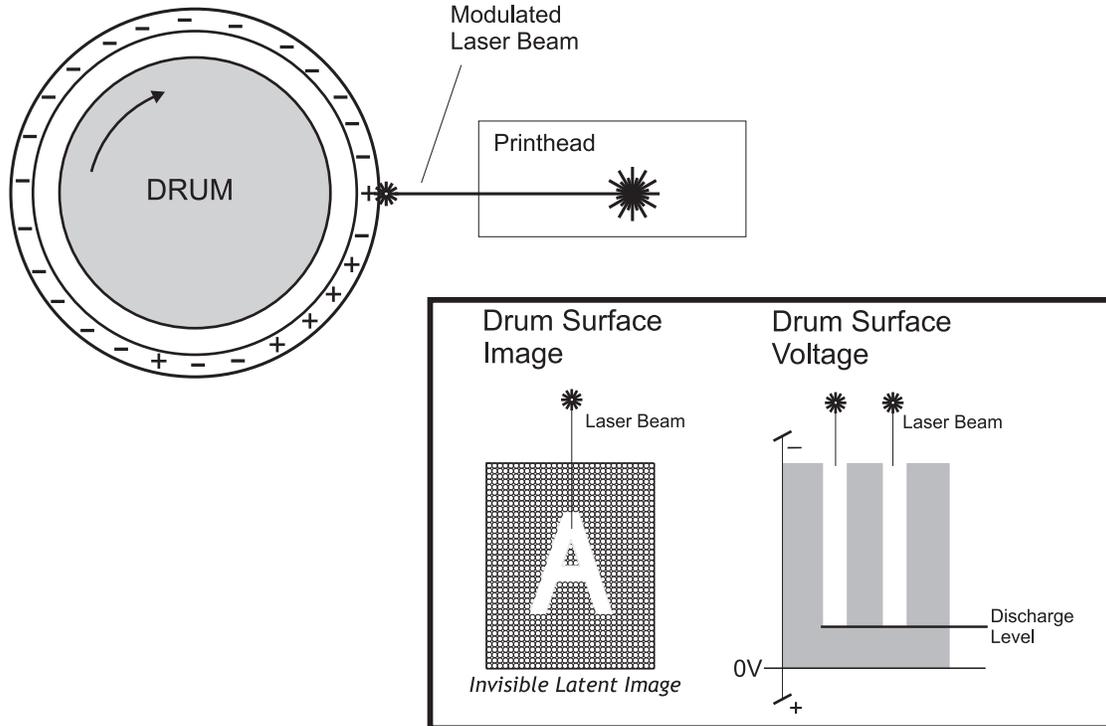
## Xerographic and print cartridge components

### Charge



The charge roller places a uniform negative electrostatic charge on the surface of the drum. The drum surface is made of a photoconductive material that holds an electrical charge as long as the drum remains in darkness. Light striking the drum discharges the surface charge.

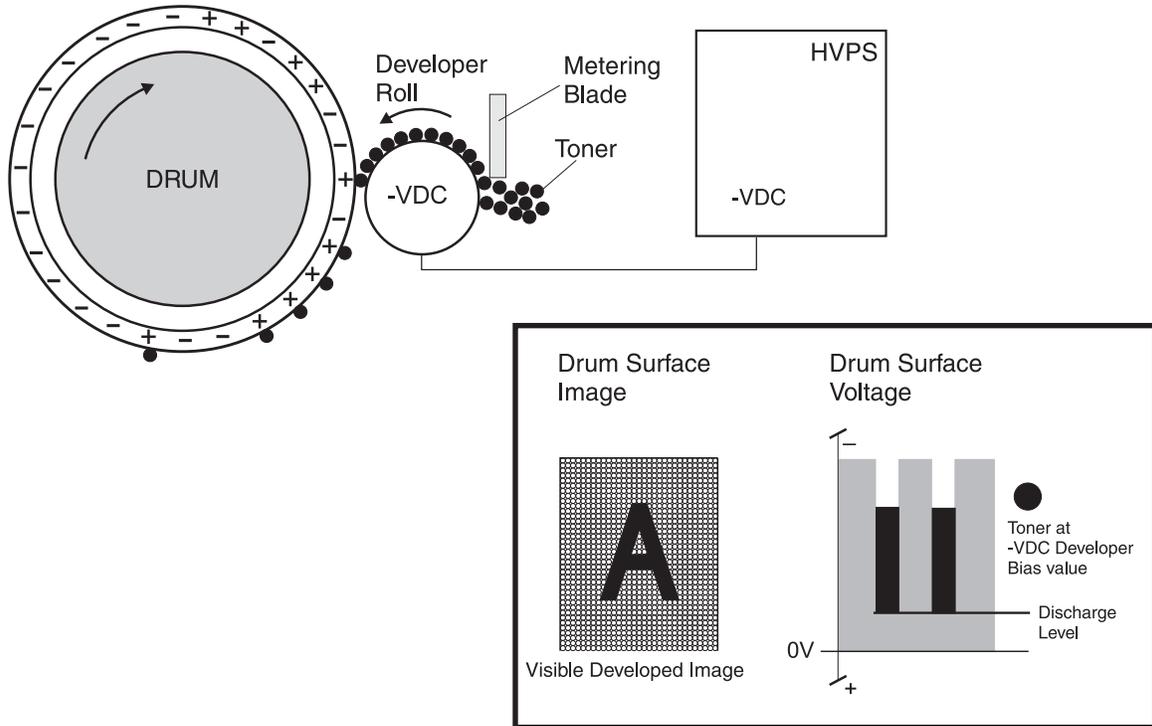
## Exposure



The Printhead generates a beam of laser light. Image data received from the controller board assembly modulates this beam, turning it on and off according to image information that is received from the host computer and software.

Through the use of a series of rotating and stationary mirrors within the Printhead, the beam scans the negative charged drum surface. Whenever the print controller sends a command to print a black pixel, the laser switches on long enough to shine onto the drum at a single pixel point. That point is now discharged and slightly less negative than the surrounding negative charge. The less negative areas are considered positive. This discharge/no discharge process creates an invisible, electrostatic image on the surface of the drum. This image is called a latent image.

## Development



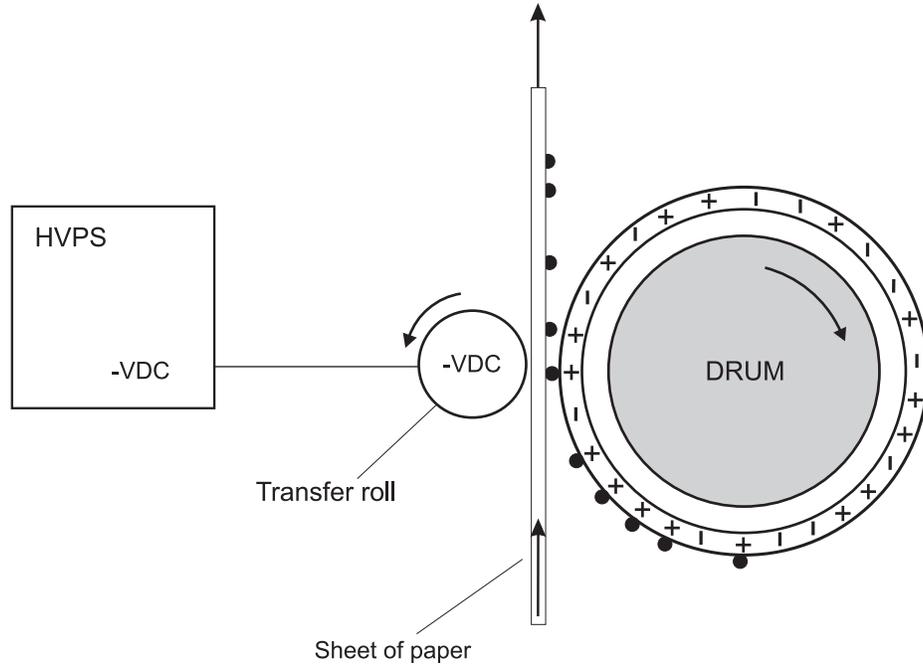
The toner contained within the PC cartridge has an electrical property that causes it to adhere to the development roller. The metering blade spreads the toner into a very thin layer on the development roller. Friction between the development roller and the CM blade development roller generates a small electrical charge that is transferred to the toner.

The surface of the developer roller is made up of a thin sheet of conductive material. The HVPS supplies the development roller with two voltages: a DC voltage and an AC voltage. The DC voltage is used to transfer toner from the development roller to the surface of the drum. The AC voltage agitates the toner on the development roller, making toner transfer easier.

The development roller maintains a negative DC electrical potential. Negative charged areas of the drum have a lower electrical potential, or higher relative negative value than the development roller. Discharged areas of the drum have a higher electrical potential, or lower relative negative value, than the development roller. A discharged point on the surface of the drum now appears less negative in relation to the negative charge on the development roller.

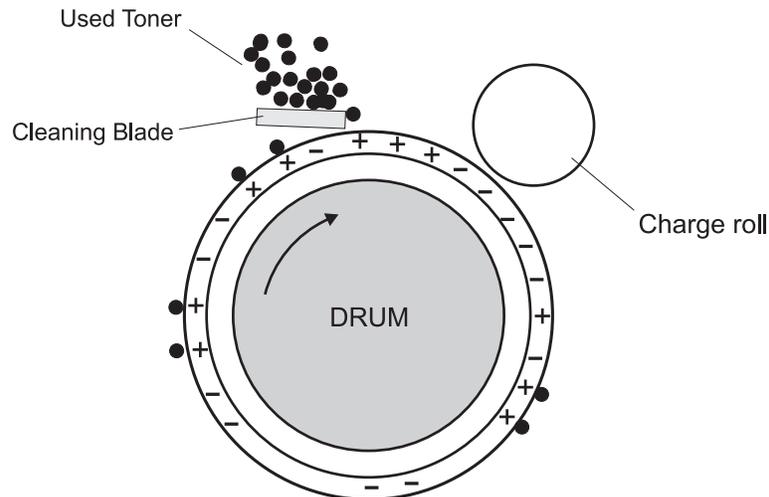
The toner adhering to the development roller is always in contact with the drum surface. When a less negative point on the drum (a discharged area) comes in contact with the more negative charged toner on the Magnet roller, toner transfers from the magnet roller to that point on the drum. There is now a visible toner image— developed image— on the drum surface.

## Transfer



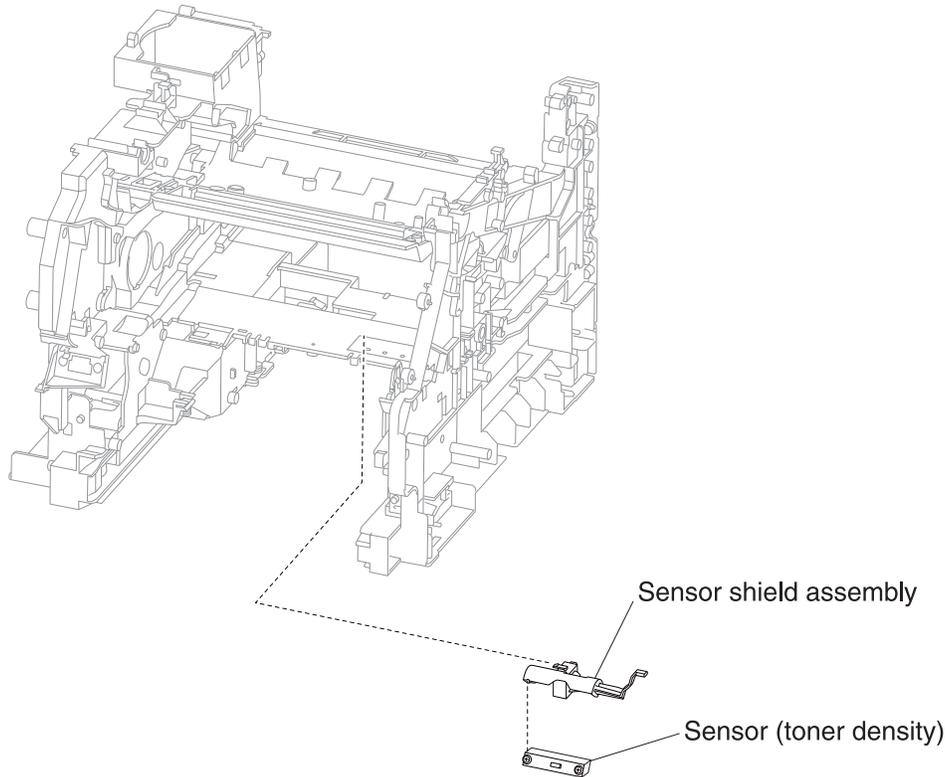
As the paper travels between the transfer roller and the photoconductor (drum), the Transfer roller applies a positive charge to the back of the printing paper. This positive charge transfers the negative charged toner image from the photoconductor (drum) to the top surface of the paper. The toner image is now on the paper and the paper is now stuck to the photoconductor (drum) due to the relative electrical differences between the negative electrical charge of the inner conductive layer of the drum and the positive electrical charge of the paper.

## Cleaning



The cleaning blade removes any toner that remains on the drum after the transfer process. The toner that the cleaning blade removes is collected inside the sealed PC cartridge.

## Auto density sensing



The image density sensor assembly uses a reflection type sensor that detects a pre-placed toner patch and image on the photoconductor (drum) and outputs pulses when the central line of the patch image aligns with the central line of the detector. The sensor outputs pulses at the timing the patch image passes the sensor. Therefore observing changes of intervals at which pulses are output leads to toner density detection.

## Supported paper sizes, types, and weights

The following tables provide information on standard and optional paper sources and the types of paper they support.

**Note:** For an unlisted paper size, select the closest *larger* listed size.

### Paper types and weights supported by the printer

The printer engine supports 60–176-g/m<sup>2</sup> (16–47-lb) paper weights.

Paper type	250- or 550-sheet trays	2100-sheet tray	Multipurpose feeder	Duplex
Paper	✓	✓	✓	✓
Card stock	✓	x	✓	✓
Paper labels	✓	x	✓	x
Vinyl Labels	✓	x	✓	x

Paper type	250- or 550-sheet trays	2100-sheet tray	Multipurpose feeder	Duplex
Pharmacy labels	✓	x	✓	✓
Transparencies	✓	x	✓	x

## Paper sizes supported by the printer

Paper size	Dimensions	Standard or optional 250- or 550-sheet trays	Optional 2100-sheet tray	Multipurpose feeder	Duplex
<b>A4</b>	210 x 297 mm (8.3 x 11.7 in.)	✓	✓	✓	✓
<b>A5</b>	148 x 210 mm (5.8 x 8.3 in.)	✓	✓	✓	✓
<b>A6</b>	105 x 148 mm (4.1 x 5.8 in.)	✓	x	✓	✓
<b>JIS B5</b>	182 x 257 mm (7.2 x 10.1 in.)	✓	x	✓	✓
<b>Letter</b>	216 x 279 mm (8.5 x 11 in.)	✓	✓	✓	✓
<b>Legal</b>	216 x 356 mm (8.5 x 14 in.)	✓	✓	✓	✓
<b>Executive</b>	184 x 267 mm (7.3 x 10.5 in.)	✓	x	✓	✓
<b>Oficio</b>	216 x 340 mm (8.5 x 13.4 in.)	✓	✓	✓	✓
<b>Folio</b>	216 x 330 mm (8.5 x 13 in.)	✓	✓	✓	✓
<b>Statement</b>	140 x 216 mm (5.5 x 8.5 in.)	✓	x	✓	✓
<b>Universal</b>	105 x 148 mm to 216 x 356 mm (4.13 x 5.83 in. to 8.5 x 14 in.)	✓	x	✓	✓
	70 x 127 mm to 216 x 356 mm (2.76 x 5 to 8.5 x 14 in.)	x	x	✓	x

## Paper sizes, types, and weights supported by the optional finishers

### Supported paper sizes

Paper size	4-bin mailbox	Offset stacker	Staple finisher	Staple, hole punch finisher
A6	✓	X	X	X
A5	✓	✓	✓ <sup>2</sup>	✓ <sup>2</sup>
JIS B5	✓	✓	✓ <sup>1</sup>	✓ <sup>1</sup>
Executive	✓	✓	✓ <sup>1</sup>	✓ <sup>1</sup>
Letter	✓	✓	✓	✓
A4	✓	✓	✓	✓
Legal	✓	✓	✓	✓ <sup>3</sup>
Folio	✓	✓	✓	✓ <sup>3</sup>
Statement	✓	✓	✓ <sup>1</sup>	✓ <sup>1</sup>
Universal	✓	X	✓ <sup>4</sup>	X

<sup>1</sup> The finisher stacks the paper but does not staple or punch holes in it.

<sup>2</sup> The finisher staples the paper if it is loaded long edge first.

<sup>3</sup> The finisher stacks and staples the paper but does not punch holes in it.

<sup>4</sup> The finisher staples the paper if its width is between 8.27 and 8.54 inches.

### Supported paper types and weights

Paper type	Paper weight	4-bin mailbox	Offset stacker	Staple finisher	Staple, hole punch finisher
Plain paper	90–176 g/m <sup>2</sup> (24–47 lb)	X	X	X	X
	60–90 g/m <sup>2</sup> (16–24 lb)	✓	✓	✓	✓
Card stock	163 g/m <sup>2</sup> (90 lb), grain long	X	✓	✓*	✓*
	199 g/m <sup>2</sup> (110 lb), grain short	X	X	X	X
Transparency	146 g/m <sup>2</sup> (39 lb)	X	✓	✓*	✓*

\* The finisher stacks the paper but does not staple or punch holes in it.

Paper type	Paper weight	4-bin mailbox	Offset stacker	Staple finisher	Staple, hole punch finisher
<b>Recycled</b>	90–176 g/m <sup>2</sup> (24–47 lb)	X	X	X	X
	60–90 g/m <sup>2</sup> (16–24 lb)	✓	✓	✓	✓
<b>Paper labels</b>	180 g/m <sup>2</sup> (48 lb)	X	X	X	X
<b>Vinyl labels</b>	300 g/m <sup>2</sup> (92 lb)	X	X	X	X
<b>Dual web and Integrated</b>	180 g/m <sup>2</sup> (48 lb)	X	X	X	X
<b>Polyester</b>	220 g/m <sup>2</sup> (59 lb)	X	X	X	X
<b>Bond</b>	90–176 g/m <sup>2</sup> (24–47 lb)	X	X	X	X
	60–90 g/m <sup>2</sup> (16–24 lb)	✓	✓	✓	✓
<b>Envelope</b>	105 g/m <sup>2</sup> (28 lb)	X	X	X	X
<b>Letterhead</b>	90–176 g/m <sup>2</sup> (24–47 lb)	X	X	X	X
	60–90 g/m <sup>2</sup> (16–24 lb)	✓	✓	✓	✓
<b>Preprinted</b>	90–176 g/m <sup>2</sup> (24–47 lb)	X	X	X	X
	60–90 g/m <sup>2</sup> (16–24 lb)	✓	✓	✓	✓
<b>Colored paper</b>	90–176 g/m <sup>2</sup> (24–47 lb)	X	X	X	X
	60–90 g/m <sup>2</sup> (16–24 lb)	✓	✓	✓	✓
<b>Light paper</b>	60–90 g/m <sup>2</sup> (16–24 lb)	✓	✓	✓	✓
<b>Heavy paper</b>	60–90 g/m <sup>2</sup> (16–24 lb)	✓	✓	✓	✓

\* The finisher stacks the paper but does not staple or punch holes in it.

Paper type	Paper weight	4-bin mailbox	Offset stacker	Staple finisher	Staple, hole punch finisher
Rough/cotton	60–90 g/m <sup>2</sup> (16–24 lb)	✓	✓	✓	✓
Custom type [x]	60–90 g/m <sup>2</sup> (16–24 lb)	✓	✓	✓	✓

\* The finisher stacks the paper but does not staple or punch holes in it.

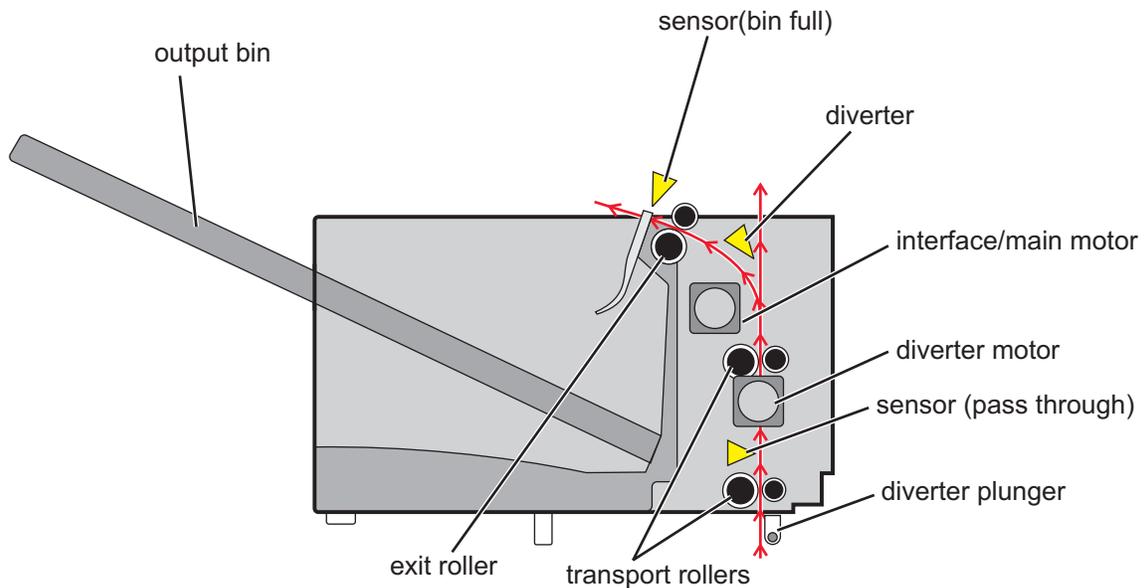
## Output options theory

- [“Output expander theory” on page 624](#)
- [“High capacity output expander theory” on page 625](#)
- [“Mailbox theory” on page 626](#)
- [“Staple finisher theory” on page 627](#)

## Output expander theory

The output expander enables the user to have additional output capacity. If the standard output bin of a printer is already full while printing, the media can be sent to the output expander. The output expander uses drive motors and a series of sensors to determine the media's location and position in the paper path.

### Output expander paper path



When the output expander is installed on top of the printer, the diverter plunger changes the position of the diverter below it. Since the diverter position of the printer below is opened, the printed paper will be re-routed. Instead of exiting the standard output bin, the media enters the output expander. The movement of the diverter plunger can be controlled by its diverter motor, depending on the printer's commands.

**Note:** The diverter motor controls the diverter below it. Another way of saying it is that the diverter is controlled by the diverter motor of the output option above it.

The main motor drives the transport rollers which move the media along the paper path. The sensor (pass through) detects if the media has entered the expander. The diverter of the expander controls which way the media will go. If the diverter is closed, then the media will exit into the output bin. If the diverter is opened, then media will pass through the output expander and enter the output option above it.

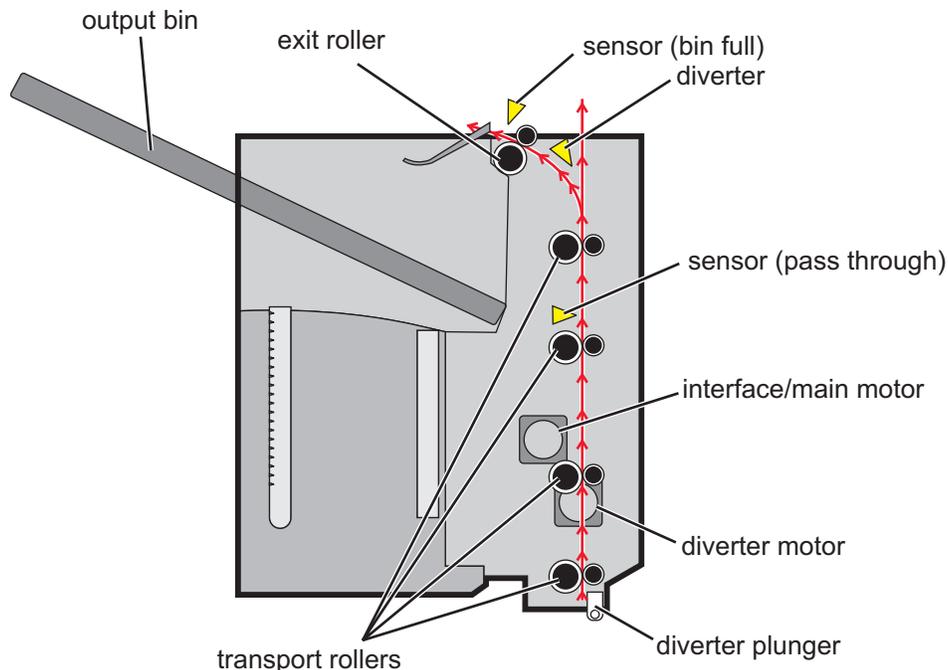
Upon exit, the media is fed out by the exit rollers towards the output bin. The sensor (bin full) verifies if the media has exited. The media level on the output bin is detected by the actuator flag. When the output bin is full, the actuator flag triggers the sensor (bin full). A signal will be sent to the printer:

- to prompt the user to clear the output bin
- to change the direction of the paper path, re-routing the media to the next output bin or output option above it

## High capacity output expander theory

The function of the HCOE, which is to allow extra capacity to a printer's output bin, is similar to the output expander. See **"Output expander theory" on page 624**. What differentiates the HCOE aside from its size, is its ability to adjust the position of its output bin to accommodate more media.

### HCOE paper path



When the HCOE is installed on top of the printer, the diverter plunger changes the position of the diverter below it. Since the diverter position of the printer below is opened, the printed paper will be re-routed. Instead of exiting the standard output bin, the media enters the HCOE. The movement of the diverter plunger can be controlled by its diverter motor, depending on the printer's commands.

**Note:** The diverter motor controls the diverter below it. Another way of saying it is that the diverter is controlled by the diverter motor of the output option above it.

The main motor drives the transport rollers which move the media along the paper path. The sensor (pass through) detects if the media has entered the HCOE. The diverter of the HCOE controls which way the media will go. If the diverter is closed, then the media will exit into the output bin. If the diverter is opened, then media will pass through the HCOE and enter the output option above it.

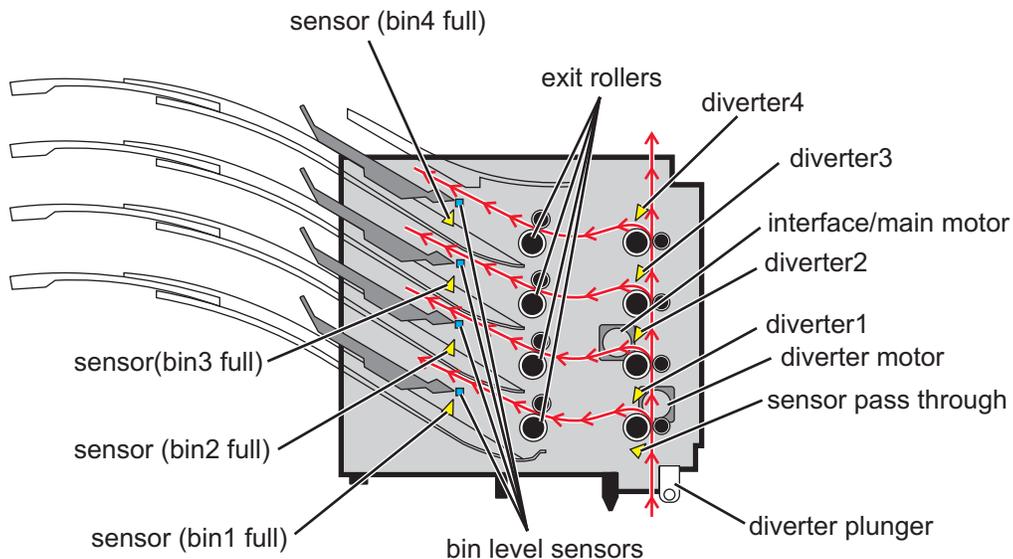
Upon exit, the media is fed out by the exit rollers towards the output bin. The sensor (bin full) verifies if the media has exited. The media level on the output bin is detected by the actuator flag. When the output bin is full, the actuator flag triggers the sensor (bin full). A signal will be sent to the printer:

- to prompt the user to clear the output bin
- to change the direction of the paper path, re-routing the media to the next output bin or output option above it

## Mailbox theory

The mailbox is capable of delivering printed media into multiple separate output destinations. This allows multiple users to automatically segregate the printed output. All of the user's printed outputs can be exited into the specific output bin assigned to him. The mechanism is controlled by a set of sensors that detect the media and drive motors that move the media along its paper path.

### Mailbox paper path



When the mailbox is installed on top of the printer, the diverter plunger changes the position of the diverter below it. Since the diverter position of the printer below is opened, the printed paper will be re-routed. Instead of exiting the standard output bin, the media enters the mailbox. The movement of the diverter plunger can be controlled by its diverter motor, depending on the printer's commands.

**Note:** The diverter motor controls the diverter below it. Another way of saying it is that the diverter is controlled by the diverter motor of the output option above it.

The main motor drives the transport rollers which move the media along the paper path. The sensor (pass through) detects if the media has entered the mailbox. Four diverters control which way the media will go. If a diverter is opened, then media will pass through it and go to the next diverter above it. The media finally exits when it encounters a closed diverter.

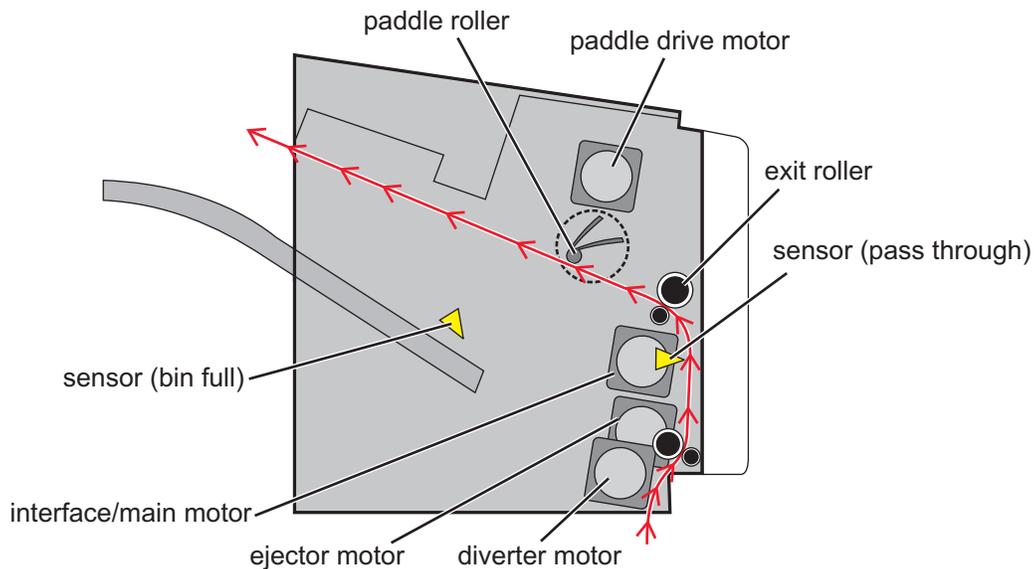
Upon exit, the media is fed out by the exit rollers towards the assigned output bin. The sensor (bin full) verifies if the media has exited. The media level on the output bin is detected by the actuator flag. When the output bin is full, the actuator flag triggers the sensor (bin full). A signal will be sent to the printer:

- to prompt the user to clear the output bin
- to change the direction of the paper path, re-routing it to another available output bin.

## Staple finisher theory

The staple finisher is capable of compiling multiple pages and stapling them into one document. Motors drive the stapling process and sensors detect the media's position and location.

### Staple finisher paper path



When the finisher is installed on top of the printer, the diverter plunger changes the position of the diverter below it. Since the diverter position of the printer below is opened, the printed paper will be re-routed. Instead of exiting the standard output bin, the media enters the staple finisher. The movement of the diverter plunger can be controlled by its diverter motor, depending on the printer's commands.

**Note:** The diverter motor controls the diverter below it. Another way of saying it is that the diverter is controlled by the diverter motor of the output option above it.

The main motor drives the rollers which move the media along the paper path. The sensor (pass through) detects if the media has entered the staple finisher.

## Stapling process

Exit rollers move the media to the tamper where it will be prepared for stapling. Multiple pages can be stacked on the tamper before the document is stapled. The paddle drive motor rotates the paddle rollers for aligning the trailing edge of the pages. The paddle rollers align the trailing edges by pushing each page towards a wall. The left and right tampers compress to align the left and right edges of the document to be stapled. The document is then moved towards the stapler cartridge for stapling. A corner of the trailing edge is held by a paper clamping mechanism controlled by a solenoid. The other corner of the trailing edge is positioned on the stapler throat where it is stapled. When the staple job is done, the ejector motor drives the ejector belts which push the stapled document into the top of the output bin. Then the tampers move to release the document into the bin. The sensor (bin full) on the left and right side of the stapler detects if the media stacked on the bin is already full.

# Appendix D: Acronyms

## Acronyms

ASIC	Application-Specific Integrated Circuit
BLDC	Brushless DC Motor
BOR	Black Only Retract
C	Cyan
CCD	Charge Coupled Device
CCP	Carbonless Copy Paper
CRC	Cyclic Redundancy Check
CSU	Customer Setup
CTLS	Capacitance Toner Level Sensing
DIMM	Dual Inline Memory Module
DRAM	Dynamic Random Access Memory
EDO	Enhanced Data Out
EP	Electrophotographic Process
EPROM	Erasable Programmable Read-Only Memory
ESD	Electrostatic Discharge
FRU	Field Replaceable Unit
GB	Gigabyte
HCF	High-Capacity Feeder
HCIT	High-Capacity Input Tray
HCOF	High-Capacity Output Finisher
HVPS	High Voltage Power Supply
ITU	Image Transfer Unit
K	Black
LCD	Liquid Crystal Display
LDAP	Lightweight Directory Access Protocol
LED	Light-Emitting Diode
LVPS	Low Voltage Power Supply
M	Magenta
MB	Megabyte
MFP	Multi-Function Printer
MPF	Multipurpose Feeder
MROM	Masked Read Only Memory

MS	Microswitch
NVM	Nonvolatile Memory
NVRAM	Nonvolatile Random Access Memory
OEM	Original Equipment Manufacturer
OPT	Optical Sensor
PC	Photoconductor
pel, pixel	Picture element
POR	Power-On Reset
POST	Power-On Self Test
PSD	Position Sensing Device
PWM	Pulse Width Modulation
RIP	Raster Imaging Processor
ROM	Read Only Memory
SDRAM	Synchronous Dual Random Access Memory
SIMM	Single Inline Memory Module
SRAM	Static Random Access Memory
TPS	Toner Patch Sensing
UPR	Used Parts Return
V ac	Volts alternating current
V dc	Volts direct current
VTB	Vacuum Transport Belt
Y	Yellow

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