Service Manual

Lexmark™ W840 Options

4024-XXX

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LEXMARK™

4024-XXX

P/N 12G9603

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Safety information

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

Consignes de sécurité

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

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:** Questo simbolo indica la presenza di tensione pericolosa nell'area del prodotto. Scollegare il prodotto prima di iniziare o usare cautela se il prodotto deve essere alimentato per eseguire l'intervento.

Sicherheitshinweise

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

Pautas de Seguridad

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

Informações de Segurança

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

Informació de Seguretat

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

안전 사항

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

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，并不打算让其他人使用。

- 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解，并采取必要的预防措施。

- **切记：** 当您看到此符号时，说明在您工作的产品区域有危险电压的存在。请在开始操作前拔掉产品的电源线，或者在产品必须使用电源来执行任务时，小心从事。

Preface

The service information for the Lexmark W840 is contained within three service manuals:

- *Printer Service Manual*—Contains the base printer service information including the options and finisher error codes and tests.
- *Options Service Manual*—Contains specific information for the 2 Tray Module, Tandem Tray Module, Duplex, High Capacity Feeder and Exit 2 options and a list of error codes and tests.
- *Finisher Service Manual*—Contains specific information for the Finisher option, list of error codes and tests.

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

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

Definitions

Note: A note provides additional information.

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

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

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

1. General information

Options and features

This chapter describes features for the tray 2, tandem tray, high capacity feeder, duplex, and exit 2 options for the Lexmark™ W840 printer.

Tray 2
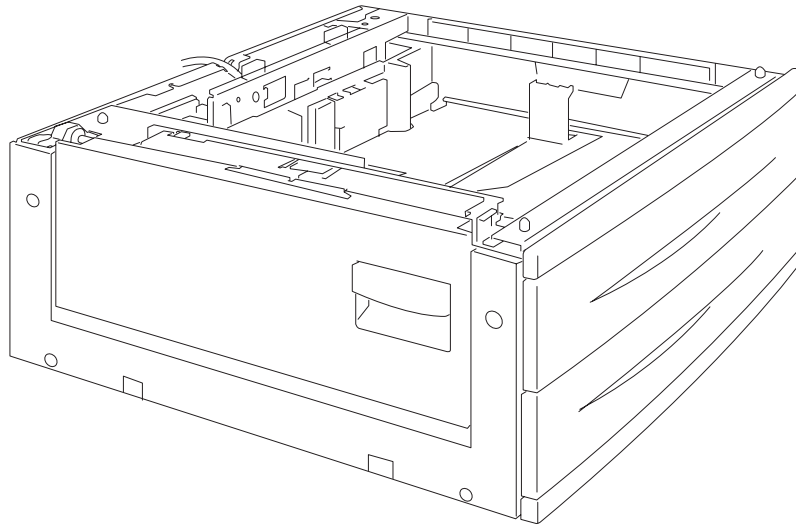
Driving force transmission path

The rotating force of the 2 tray/tandem tray drive motor is transmitted through the gears to components that need mechanical driving force as shown below.

```
┌─────────────────────────────────────────────────────────┐
│                   2TM/TTM Drive motor                     │
└─────────────────────────────────────────────────────────┘
              │
┌──────────────────────────────┐
│  2TM drive gear (22T/40T)     │
└──────────────────────────────┘
              │
┌──────────────────────────────┐        ┌──────────────────────────────┐
│      2TM/TTM Clutch           │        │    2TM drive gear (60T)       │
└──────────────────────────────┘        └──────────────────────────────┘
              │                                        │
┌──────────────────────────────┐        ┌──────────────────────────────┐
│   2TM drive gear (38T)        │        │    2TM drive gear (32T)       │
└──────────────────────────────┘        └──────────────────────────────┘
              │                                        │
┌──────────────────────────────┐        ┌──────────────────────────────┐
│   2TM drive gear (126T)       │        │    2TM drive gear (37T)       │
└──────────────────────────────┘        └──────────────────────────────┘
                                                       │
                                         ┌──────────────────────────────┐
                                         │  2TM/TTM Media transport roll │
                                         │             ASM               │
                                         └──────────────────────────────┘
```
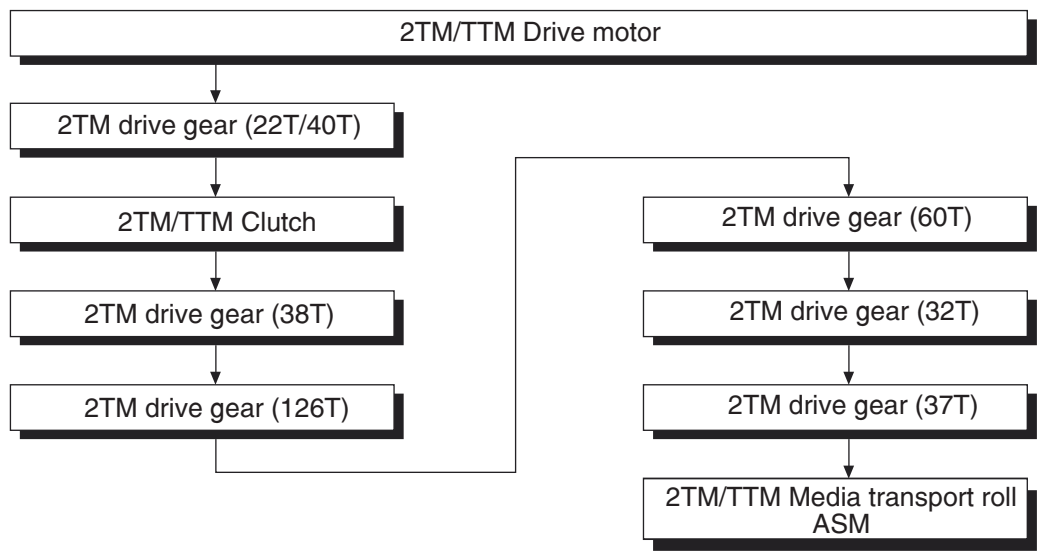
The driving force transmitted to the drive gear 22/40T drives the transport roll assembly through the clutch and gears.

Media transport

Media transport path

Media is supplied from tray 3 or tray 4, and is transported to the printer along the media transport path shown below.
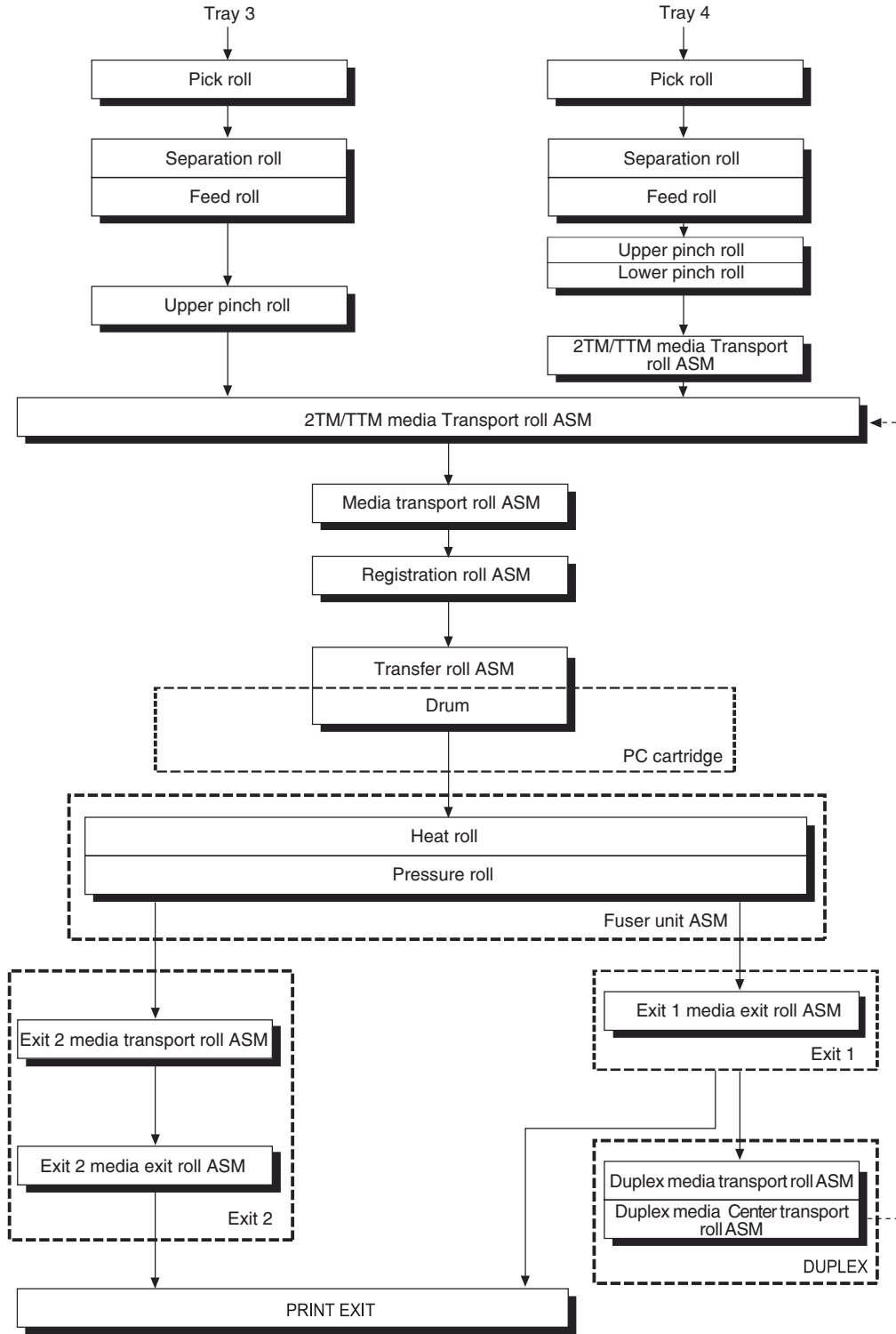
Layout of media transport path

The following is a cross section of the laser printer and the optional 2 tray module, showing main components directly associated with the media path and transport.

Main components associated with the media transport
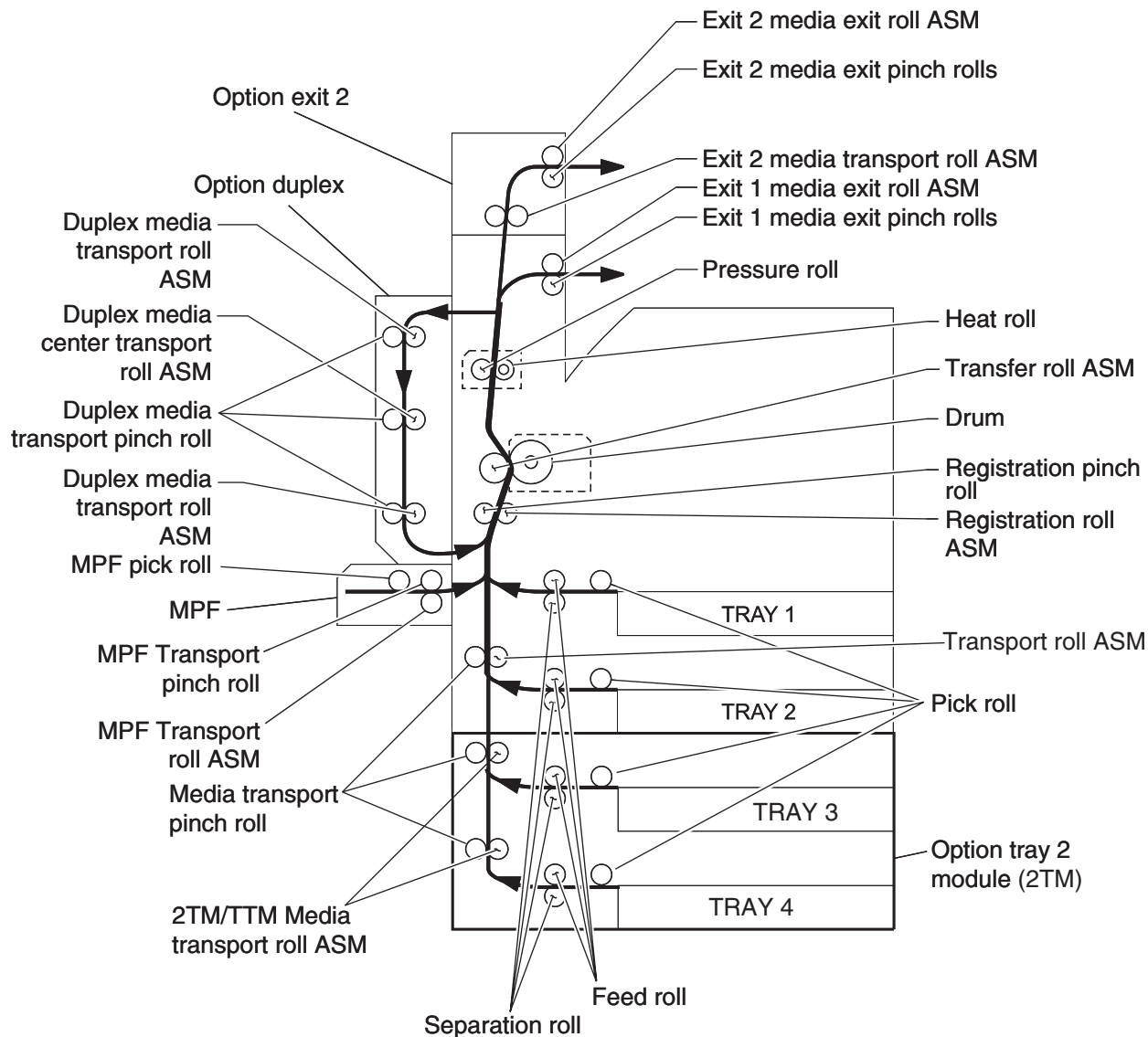
Functions of main components

When the optional 2 tray module is installed under the printer, additional trays are available.

The following chapters outline the functions of the main components of the 2 tray module.

Media tray assembly

It is necessary to adjust the front side guide, rear side guide and end guide on the media tray assembly to match the media size.

Front media tray guide and rear media tray guide

The front media tray guide can be adjusted to different media sizes by moving it to the front or rear. These guides come into contact with the front and rear edges of the media and hold it in position.

The rear side guide moves together with the front side guide.

Media tray end guide

The media tray end guide assembly is designed so that it can adapt to the media length in the media feed direction by moving the end guide to the left or right.

Bottom plate

The force pushing up the bottom plate is transmitted by the driving force of the media feed lift motor on the media feed unit assembly to the lift up shaft through the drive gear 13/60T and sector gear 12T. The bottom plate is pushed up by turning the lift up shaft, which causes the supplied media to get in contact with the pick roll assembly.

Media feed unit assembly

Since tray 3 and tray 4 are functionally equivalent in terms of the switch (media size), sensor (media out), sensor (media level) and sensor (pre-feed), only the components of one tray are described here.

The media feed unit assembly is a mechanical unit for supplying media from the media tray assembly to the printer. The driving force from the media feed lift motor on the media feed unit assembly is transmitted to the three roll assemblies to feed media.

When the pick roll picks up media and the remaining media decreases, the actuator of the sensor (media level) lowers accordingly. When the sensor (media level) detects the lowering, the media feed lift motor is activated to turn the lift up shaft and the bottom plate is lifted accordingly. The remaining media is ready to be fed out.

Media feed lift motor

This motor is activated to feed media and to lift the bottom plate. When feeding media, it rotates forward to drive the pick roll. When lifting the bottom plate, it rotates in reverse to drive the tray module gears to turn the lift up shaft.

Switch (media size)

This switch (media size) changes the setting of the size of media supplied from each media tray assembly. A signal indicating the set size is transmitted as voltage to the printer engine card assembly.

Sensor (media out)

If media runs out in the media tray assembly, the media out actuator lowers and the flag of the media out actuator that has stayed in the sensor (media out) sensing area leaves there. Thus, the sensor light is transmitted. When the sensing area is blocked (media is present), the signal is off.

Sensor (media level)

This sensor detects, by the actuator position, whether media in the media tray assembly, is lifted. When the flag of the actuator leaves the sensor (media level) sensing area, the sensor detects that the media has been lifted.

Sensor (pre-feed)

This sensor detects a media jam in the media tray assembly by the media position and sensor on/off time.

The sensor on/off state is monitored by media passing through the sensor (pre-feed) sensing area.
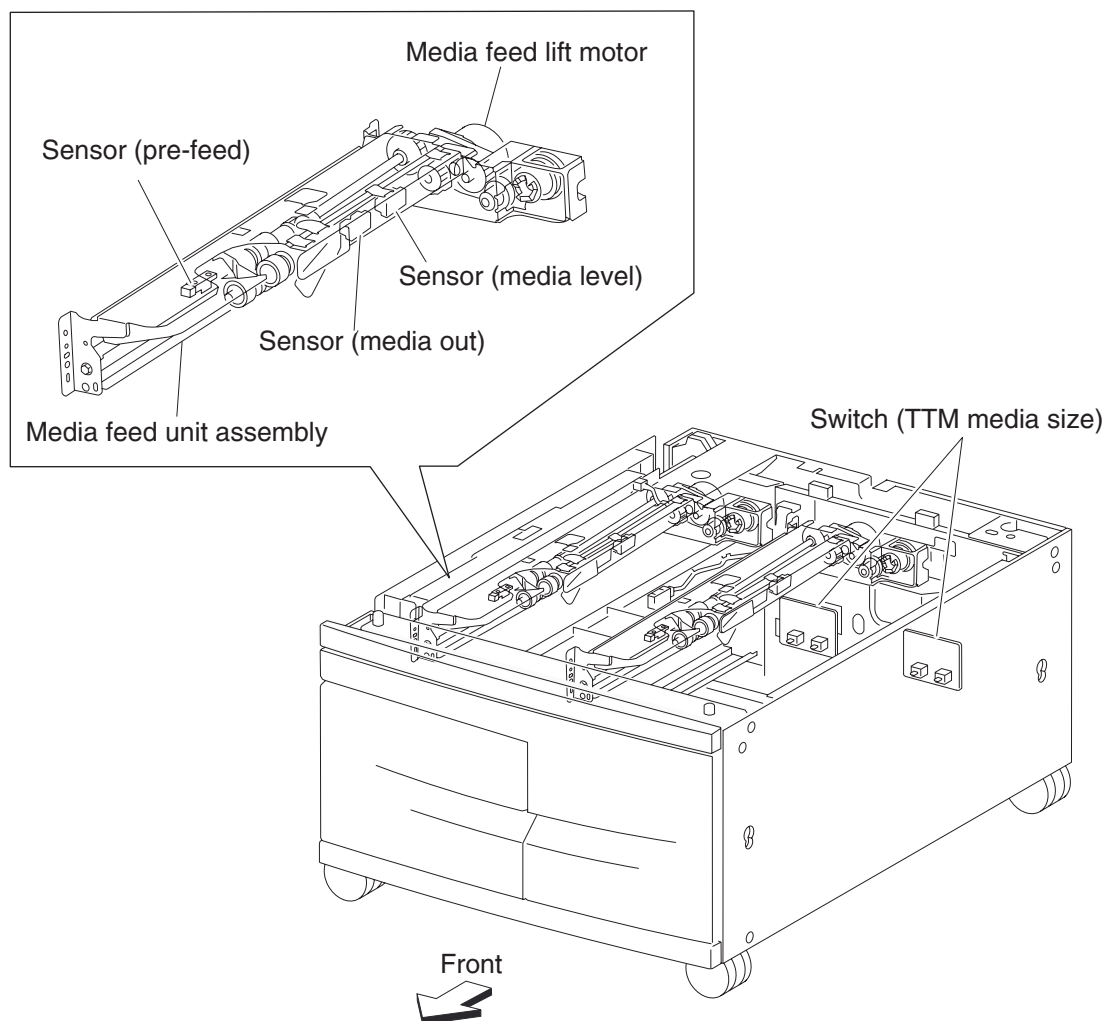
Main components

Switch (2TM/TTM left door interlock)

The left door interlock switch detects open/close of the left door assembly.

Sensor (tray 3 feed-out)

The sensor (tray 3 feed-out) detects media fed from tray 3 or tray 4.

Sensor (tray 4 feed-out)

The sensor (tray 4 feed-out) detects media fed from tray 4.

2TM/TTM Transport roll assembly

The 2TM/TTM transport roll assembly feeds media from the tray 3 or tray 4 to the printer.

2TM/TTM controller card assembly

The 2TM/TTM controller card assembly contains a CPU which controls media feed in the 2 tray module upon receiving a command from the printer engine card assembly and sensor/switch information.
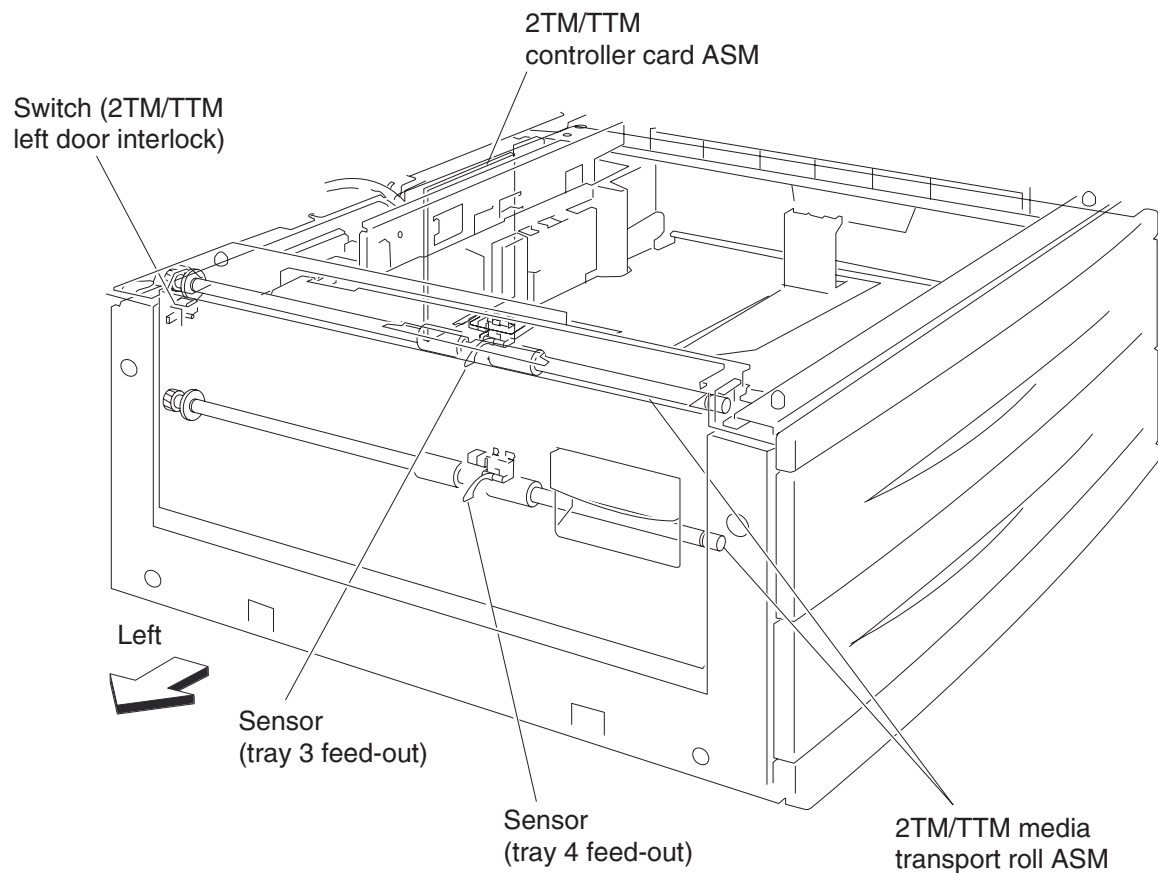
Switch (media size)

The following table gives on/off states for the switch (media size), corresponding to the media sizes on the media tray assembly.

Note: The switches (media size) are denoted by "S/W2", "S/W4", "S/W3", "S/W5", and "S/W1" respectively from the left side.

Media Size	Analog switch				Digital switch
	S/W1	S/W2	S/W3	S/W4	S/W5
No Tray	Off	Off	Off	Off	Off
5.5" x 8.5" SEF/A5 SEF	Off	Off	On	Off	Off
B5 SEF	Off	Off	On	On	On
8.5" x 13" SEF	Off	On	Off	On	Off
8.5" x 14" SEF	Off	On	Off	On	On
A4 SEF	Off	On	On	Off	Off
8.5" x 11" SEF	Off	On	On	Off	On
A4 LEF	On	Off	On	Off	Off
A3 SEF	On	Off	On	On	Off
B5 LEF/Executive LEF	On	On	Off	Off	On
8K SEF (TFX/GCO)	On	On	Off	On	Off
B4 SEF	On	On	Off	On	On
8.5" x 11" LEF	On	On	On	Off	Off
16K LEF (TFX/GCO)	On	On	On	Off	On
11" x 17" LEF	On	On	On	On	On

Tandem tray
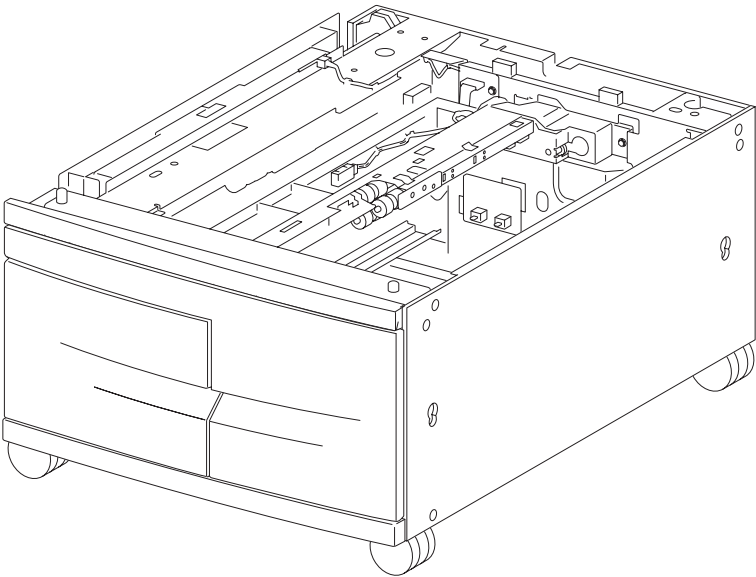
Driving force transmission path

2 tray / tandem tray drive motor assembly

The rotating force of the 2 tray / tandem tray motor is transmitted through the gears to components that require mechanical driving force as shown below.

```
                    ┌─────────────────────────────┐
                    │     2TM/TTM drive motor      │
                    └─────────────────────────────┘
                                  │
                    ┌─────────────────────────────┐
                    │    TTM drive gear (22/40)    │
                    └─────────────────────────────┘
                                  │
                    ┌─────────────────────────────┐
                    │       2TM/TTM clutch         │
                    └─────────────────────────────┘
                                  │
                    ┌─────────────────────────────┐
                    │     TTM drive gear (38T)     │
                    └─────────────────────────────┘
                                  │
                    ┌─────────────────────────────┐
                    │     TTM drive gear (60T)     │
                    └─────────────────────────────┘
                                  │
                    ┌─────────────────────────────┐
                    │     TTM drive gear (60T)     │
                    └─────────────────────────────┘
                          │                    │
         ┌──────────────────────────┐   ┌──────────────────────────┐
         │   TTM drive gear (60T)    │   │ TTM drive gear bracket ASM│
         └──────────────────────────┘   └──────────────────────────┘
                     │                              │
         ┌──────────────────────────┐   ┌──────────────────────────┐
         │   TTM drive gear (37T)    │   │  TTM tray 4 media transport│
         └──────────────────────────┘   │        roll ASM           │
                     │                   └──────────────────────────┘
         ┌──────────────────────────┐
         │   TTM drive gear (32T)    │
         └──────────────────────────┘
                     │
         ┌──────────────────────────┐
         │   TTM drive gear (37T)    │
         └──────────────────────────┘
                     │
         ┌──────────────────────────┐
         │  2TM/TTM media transport  │
         │        roll ASM           │
         └──────────────────────────┘
```
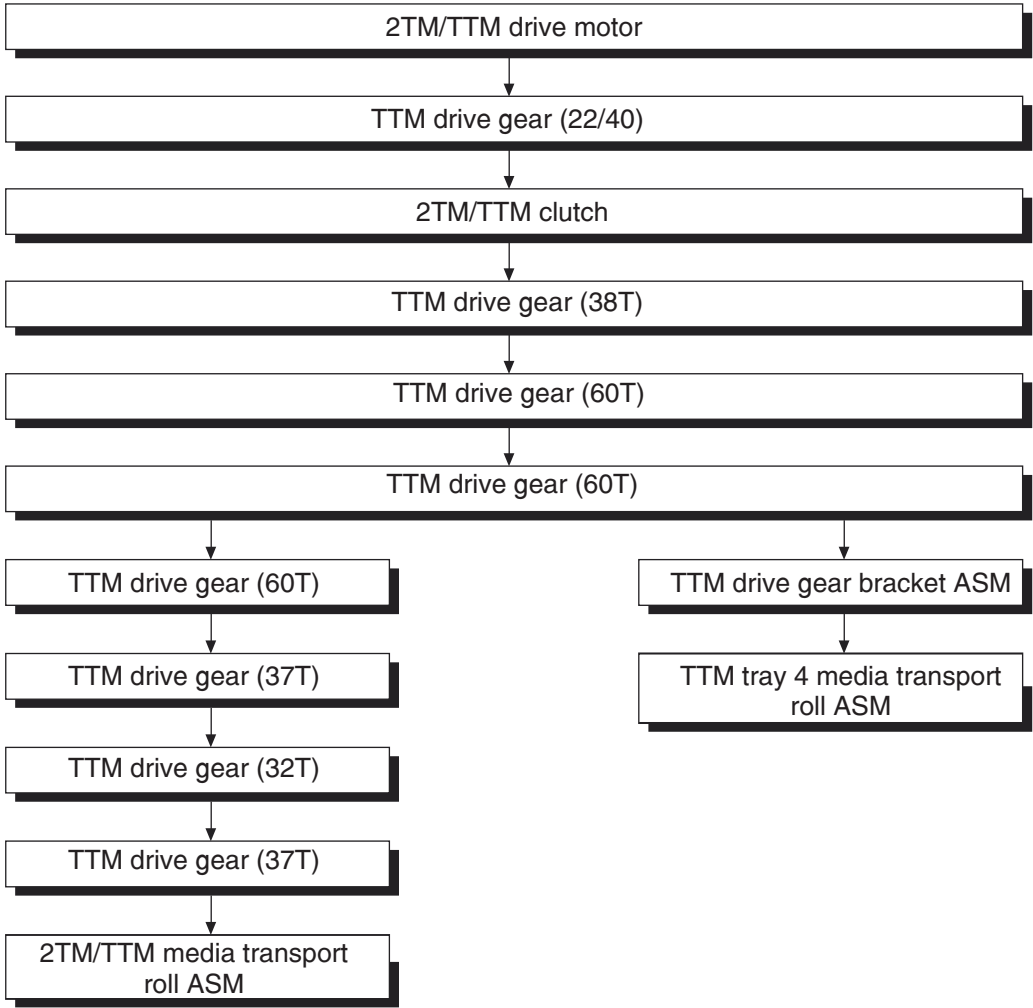
The driving force transmitted to the gear 22/40T drives the transport roll assembly through the clutch and gears.

Media transport

Media transport path

Media is supplied from tray 3 or tray 4, and is transported to the printer along the media transport path shown below.

Tray 3 — Pick roll → Separation roll / Feed roll → Upper pinch roll → 2TM/TTM media Transport roll ASM

Tray 4 — Pick roll → Separation roll / Feed roll → Upper pinch roll / Lower pinch roll → 2TM/TTM media Transport roll ASM → 2TM/TTM media Transport roll ASM

2TM/TTM media Transport roll ASM → Media transport roll ASM → Registration roll ASM → Transfer roll ASM / Drum (PC cartridge) → Heat roll / Pressure roll (Fuser unit ASM)

Exit 2: Exit 2 media transport roll ASM → Exit 2 media exit roll ASM → PRINT EXIT

Exit 1: Exit 1 media exit roll ASM

DUPLEX: Duplex media transport roll ASM / Duplex media Center transport roll ASM

Media transport path

The following is a cross section of the printer and the optional tandem tray module, showing the main components directly associated with the media path and transport.
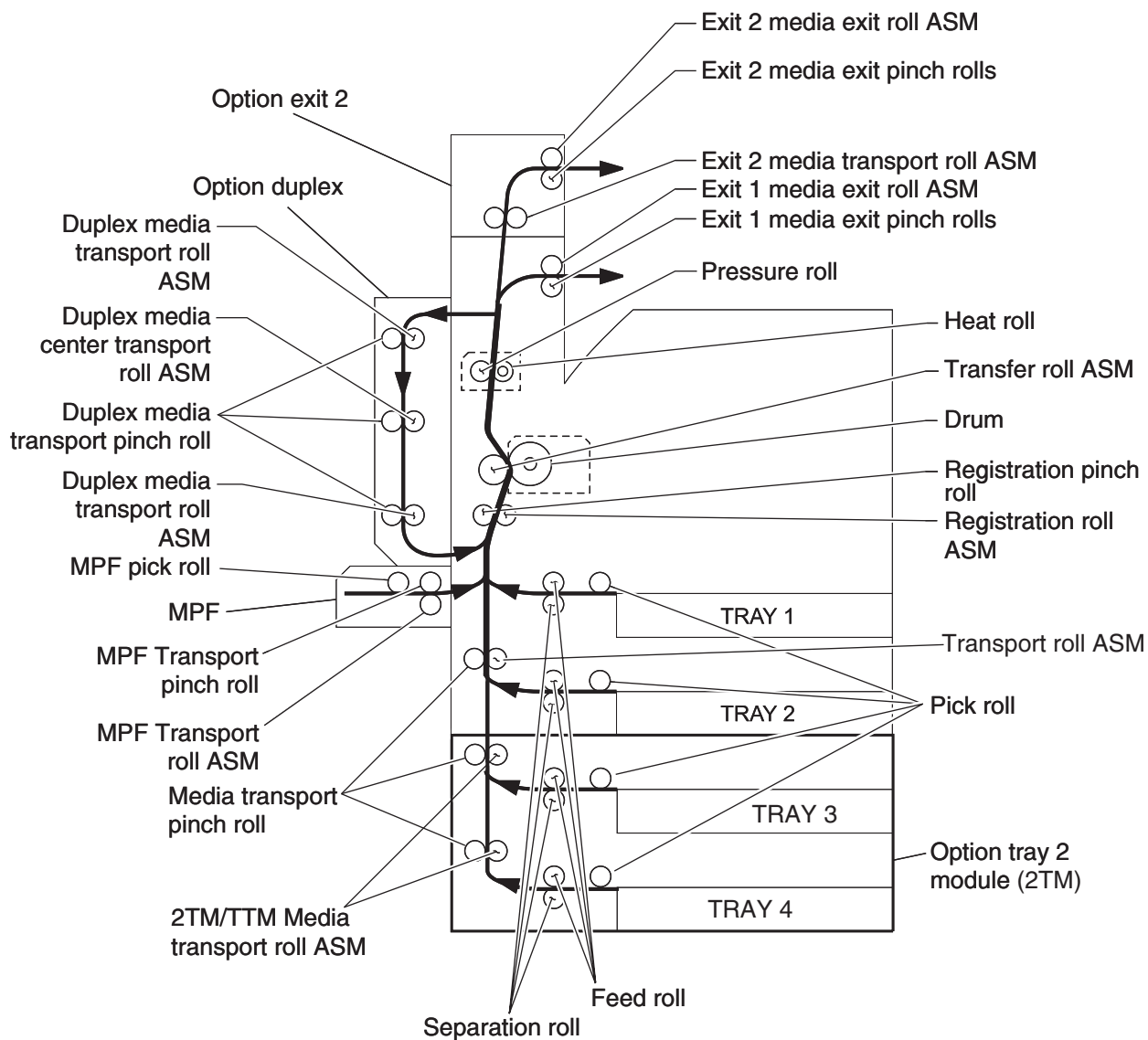
Functions of main components

When the optional tandem tray module is installed under the printer, additional trays are available.

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Media tray assembly

Media feed unit assembly

It is necessary to adjust the front and rear side guides in the media tray assembly to match the media size.

Front media guide / rear media guide

The front media guide can be adjusted to different media sizes by moving it to the front or rear. These guides come into contact with the front and rear edges of the media and hold it in position.

The rear side guide moves together with the front side guide.

Bottom plate

The force pushing up the bottom plate of tray 3 is transmitted by the driving force of the media feed lift motor on the media feed unit assembly to the media lift shaft assembly through the tray lift gear assembly 3. The bottom plate is lifted up via the rear tray cables, front right cable and front left cable by the rotation of the tray lift shaft assembly, which causes the supplied media to come into contact with the pick roll.

The force pushing up the bottom plate of tray 4 is transmitted to the tray lift shaft assembly through the tray lift gear assembly 4. The bottom plate is lifted up via the front tray cables and rear tray cables by the rotation of the tray lift shaft assembly, which causes the supplied media to contact the pick roll.

Tray 3 media tray assembly

Tray 4 media tray assembly

Rear lift cables

Rear media guide

Front media guide

Bottom plate

F/R lift cable

F/L lift cable
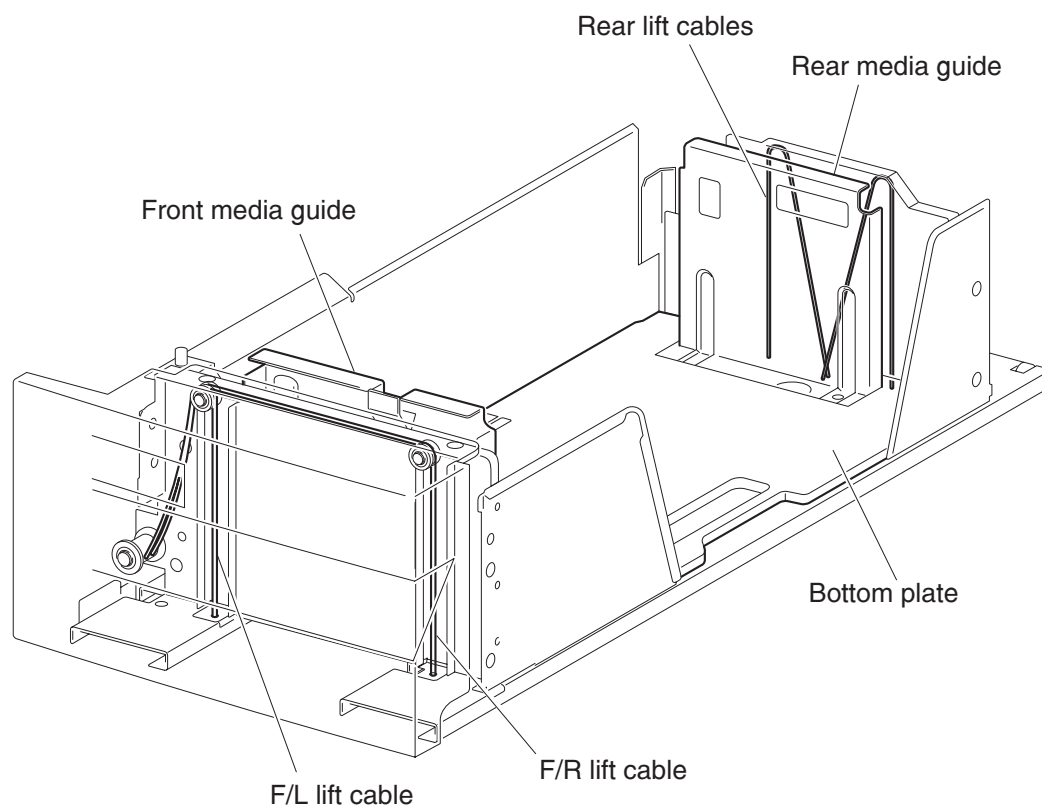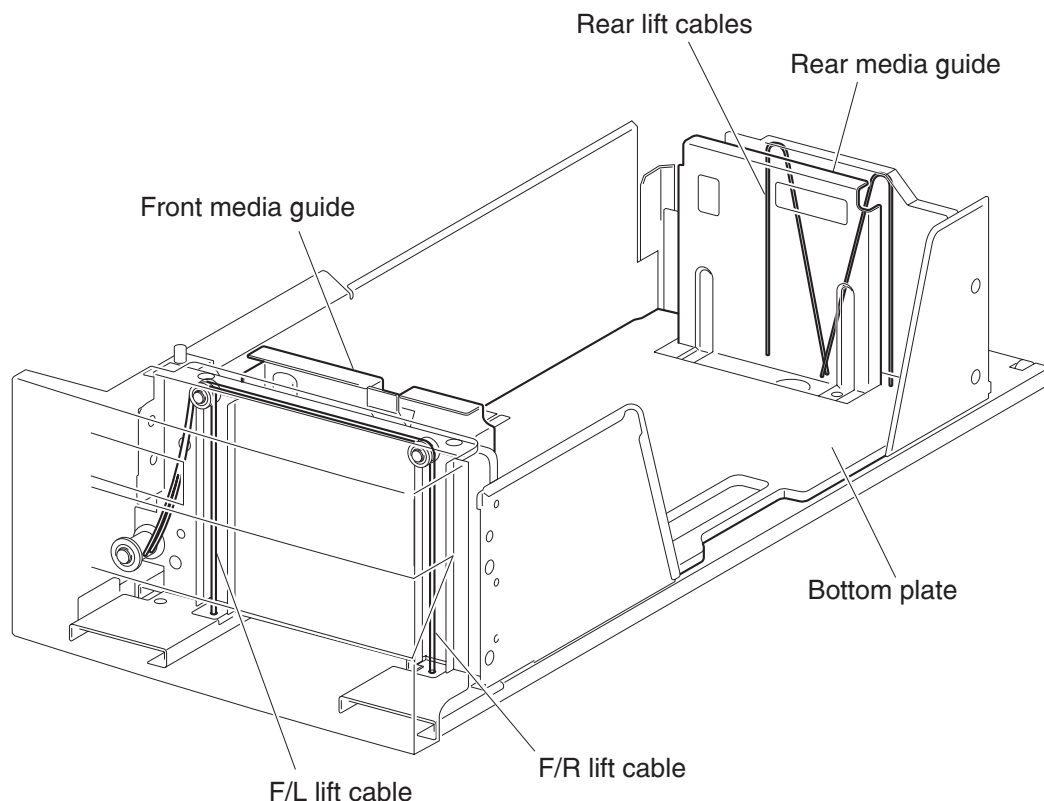
Media feed unit assembly

Since the tray 3 and tray 4 are functionally equivalent in terms of the switch (TTM media size), sensor (media out), sensor (media level) and sensor (pre-feed), only the components of one tray are described here.

The media feed unit assembly is a mechanical unit supplying media from the media tray assembly to the printer. The driving force from the media feed lift motor on the media feed unit assembly is transmitted to the three roll assemblies to feed media.

When the pick roll picks up sheets of media and the remaining media decreases, the media level actuator of the sensor (media level) lowers accordingly.

Media feed lift motor

The media feed lift motor is activated to feed media and to lift the bottom plate. While feeding media, it rotates forward to drive the pick roll. When lifting the bottom plate, it rotates in reverse to drive the tray module gears to turn the lift up shaft.

Switch (TTM media size)

The switch (TTM media size) switches the setting of the size of media supplied from each media tray assembly. A signal indicating the set size is transmitted as a voltage to the printer engine card assembly.

Sensor (media out)

If there is no media in the media tray assembly, the media out actuator lowers and the flag of the media out actuator that has stayed in the sensor (media out) sensing area leaves there. Thus, the light of the sensor is transmitted. When the sensing area is blocked (media is present), the signal turns off.

Sensor (media level)

This sensor detects by the actuator position whether media in the media tray assembly is lifted. When the flag of the actuator leaves the sensor (media level) sensing area, the sensor detects that the media has been lifted.

Sensor (pre-feed)

This sensor detects a media jam in the media tray assembly by the media position and sensor on/off time.

The sensor on/off states can be monitored by media passing through the sensor (pre-feed) sensing area.

Main components

Switch (2TM/TTM left door interlock)

The left door interlock switch detects open/close of the left door assembly.

Sensor (tray 3 feed-out)

The sensor (tray 3 feed-out) detects media fed from the tray 3 or tray 4.

Sensor (tray 4 feed-out)

The sensor (tray 4 feed-out) detects media fed from the tray 4.

2TM/TTM media transport roll assembly

The 2TM/TTM transport roll assembly feeds media from the tray 3 or tray 4 to the printer.

2TM/TTM controller card assembly

The 2TM/TTM controller card assembly, which contains a CPU, controls media feed in the tandem tray module upon receiving a command from the printer engine card assembly and sensor/switch information.
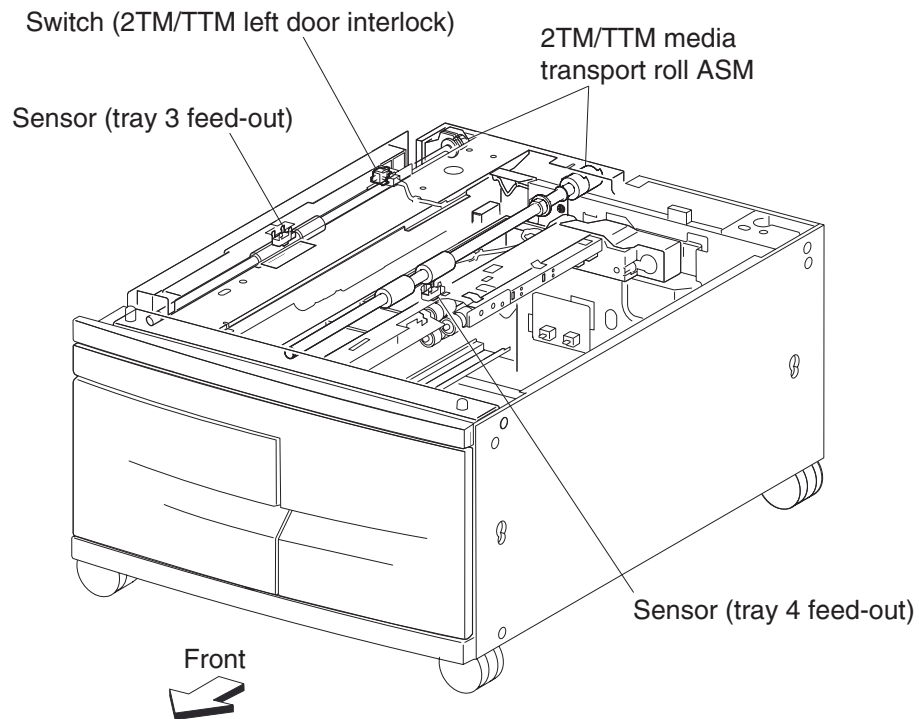
Switch (tandem tray media size)

The following table gives on/off states of the switches on the switch (TTM media size), corresponding to the media sizes of the media tray assembly.

Note: The switches (TTM media size) are denoted by "S/W1" and "S/W3" respectively from the left side.

Media Size	Analog switch	
	S/W1	S/W3
No Tray	Off	Off
B5L/7.25" x 10.5"L	Off	On
8.5" x 11"L	On	Off
A4L	On	On

High capacity feeder
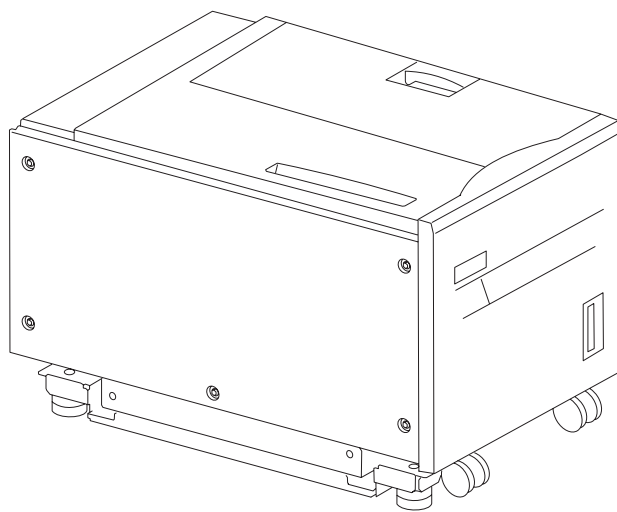
Media feeding

Outline

The HCF feeds media from the tray to the printer through the HCF media feed unit assembly and the HCF media transport roll assembly.

HCF media feed unit assembly

The pick roll feeds media from the tray, the feed roll, and separation roll feed media from the pick roll to the HCF media transport roll assembly.

Rollers are driven by the media feed lift motor on the media feed unit assembly at prescribed timings.

The media fed by the feed roll and separation roll passes through the sensor (pre-feed).

The sensor (pre-feed) detects the presence of media fed from the tray.

The sensor (pre-feed) controls the HCF media feed lift motor speed, and on/off operation of the HCF pick solenoid assembly.

HCF media transport roll assembly

This HCF media transport assembly roll transfers media fed from the HCF media feed unit assembly to the printer.

The HCF media transport roll assembly is driven by the transport motor installed on the rear side.

The media fed with the HCF media transport roll assembly passes through the sensor (tray 5 feed-out).

The sensor (tray 5 feed-out) detects the presence of media fed from the tray, and controls the media feed lift motor stop and the transport motor speed. It also detects media jams to identify media jam zone.
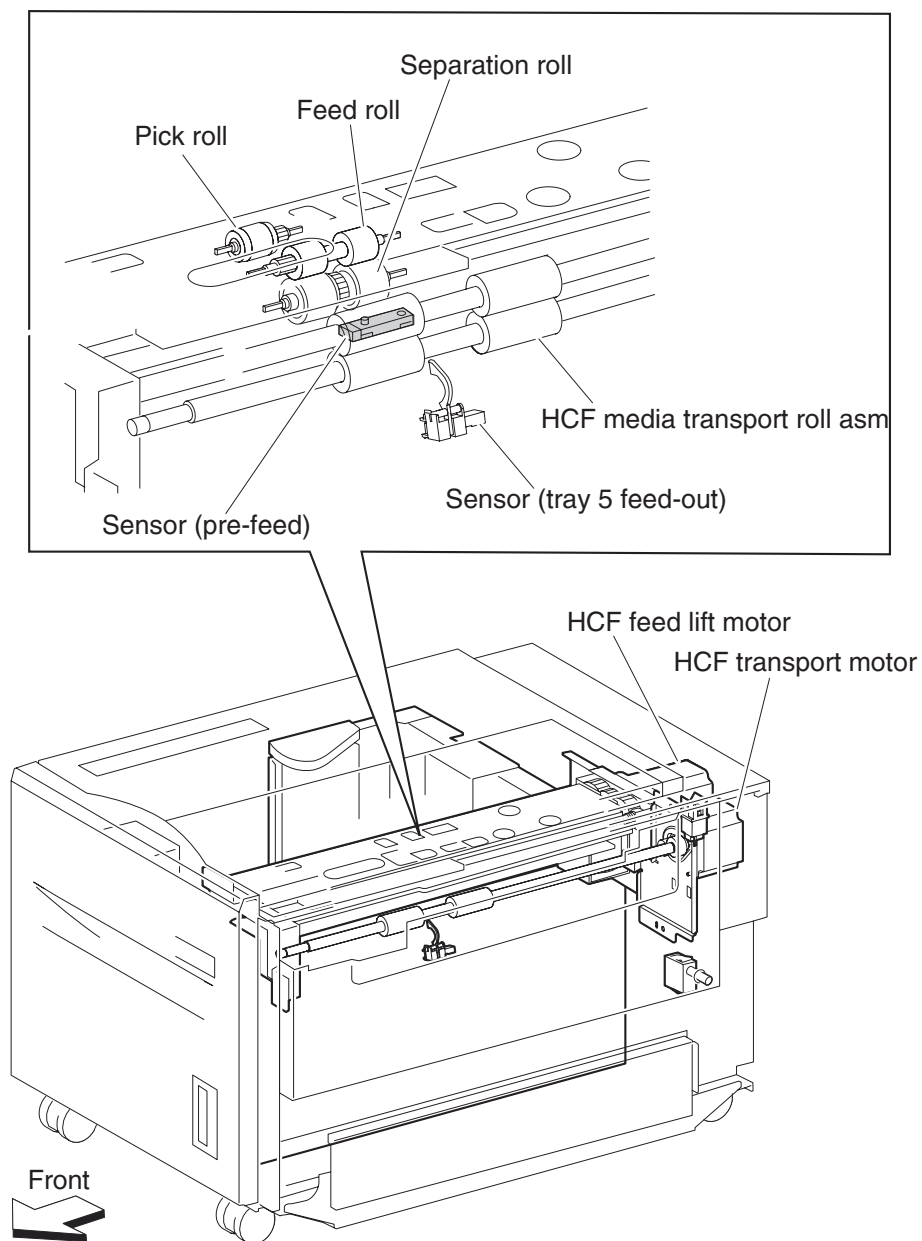
HCF media feed unit assembly operation

Upon receiving the feed start signal from the controller, the HCF activates the pick solenoid after a preset time has passed to press the pick roll against the media in the tray.

After a preset time has passed, after receiving the feed start signal, the HCF feed lift motor rotates forward to feed media from the tray to the feed roll side with the pick roll.

When the end of media reaches the sensor (pre-feed) and the sensor turns on, the pick solenoid is deactivated so that the pick roll separates from the media in the tray.

The pick solenoid keeps activated at high-voltage for a specified time from its actuation. After that, it is activated at low-voltage until it is deactivated. If the HCF receives the feed start signal for the next media while the solenoid is activated at low-voltage, it maintains the actuation state at the low-voltage, while pressing the pick roll against the media in the tray.

When the media is transferred to the printer and the sensor (tray 5 feed-out) turns on, the pick solenoid is re-activated for a preset time.

Media feed lift motor start/stop timing and revolutions are controlled based on the HCF feed lift motor start signal and the sensor (pre-feed) on timing.

Thus, media is fed from the tray to the HCF media transport roll assembly.
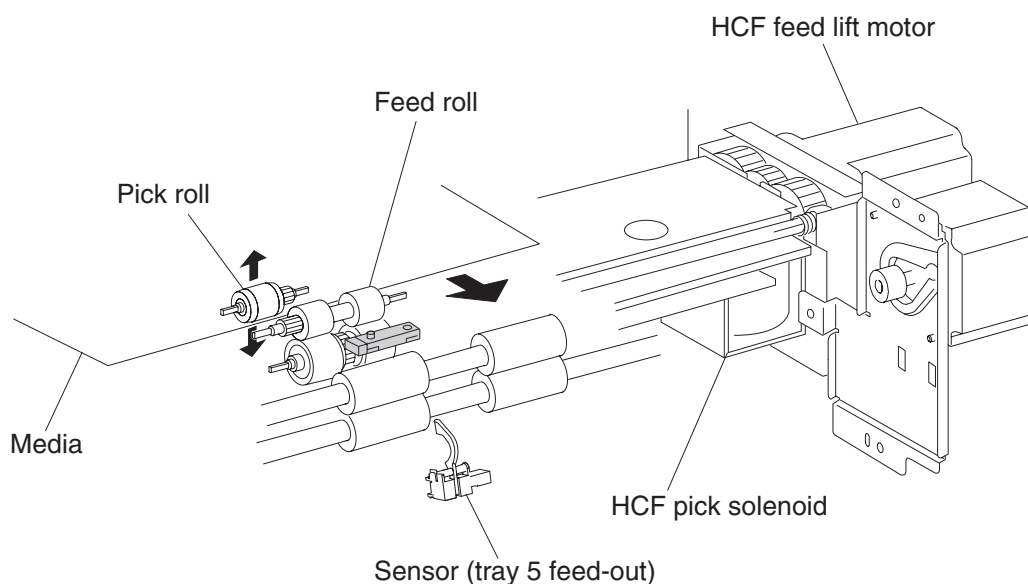
HCF media transport roll assembly operation

Upon receiving the feed start signal, from the controller, the HCF activates the HCF transport motor at a high speed after a preset time has passed. This rotating power of the HCF transport motor is transmitted to the HCF media transport roll assembly, and the media from the HCF media feed unit assembly is transferred to the printer.

When the sensor (tray 5 feed-out) is turned on by the media fed with the HCF media transport roll assembly, the HCF transport motor speed decreases after a preset time has passed.

When the sensor (registration) in the printer is turned on by the media fed from the HCF, the HCF transport motor starts stopping by the trigger of the sensor on.

When the next feed start signal is received, before the HCF transport motor is turned off, the transport motor continues to rotate.

Thus, media is transferred from the HCF media transport roll assembly to the laser printer.

HCF transport motor

Media

Sensor (tray 5 feed-out)

HCF media transport roll asm
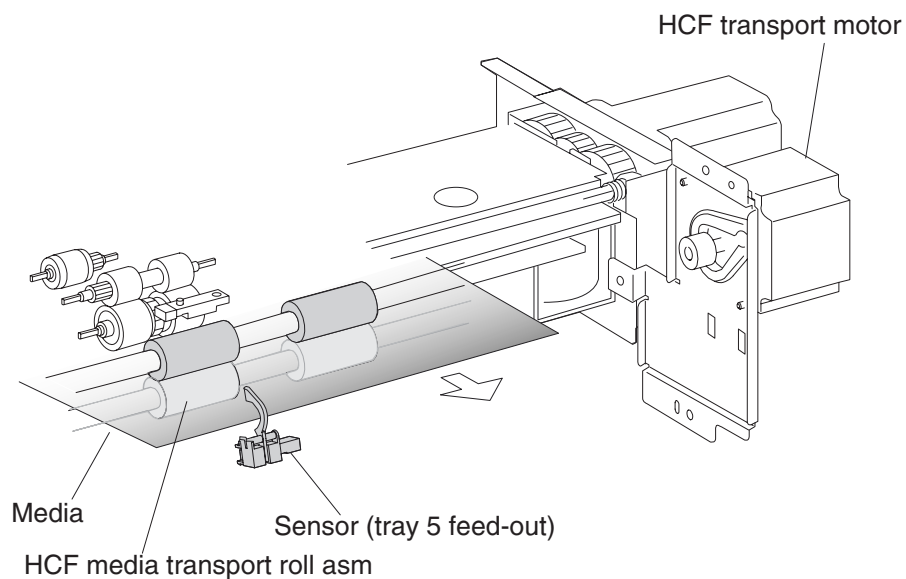
HCF media feed unit assembly sensor/motor functions

Functions of the sensors and motors of the media feed unit assembly are outlined below.

1. HCF media feed lift motor—is a stepping motor that rotates (forward) the pick roll and feed roll to send media from the tray to the HCF media transport roll assembly. The motor also lifts the tray by reverse rotation.
2. HCF pick solenoid—raises or lowers the pick roll. The HCF pick solenoid stays activated from the beginning of media feed until the sensor (pre-feed) turns on. The HCF pick solenoid is activated when the tray is inserted and when the power is turned on to check the presence of media in the tray.
3. Sensor (pre-feed — detects whether media has been fed from the tray, and controls the HCF feed lift motor speed. The sensor also becomes a trigger to deactivate the HCF pick solenoid. The sensor turns on upon detecting media, and determines that media is present.
4. HCF transport motor—is a stepping motor that rotates the HCF media transport roll assembly to feed media to the printer.
5. Sensor (tray 5 feed-out)—detects whether media has been fed from the tray, and becomes a trigger to stop the HCF feed lift motor as well as controlling the HCF transport motor speed.

The sensor turns on (light receiving) upon detecting media, and determines that media is present.
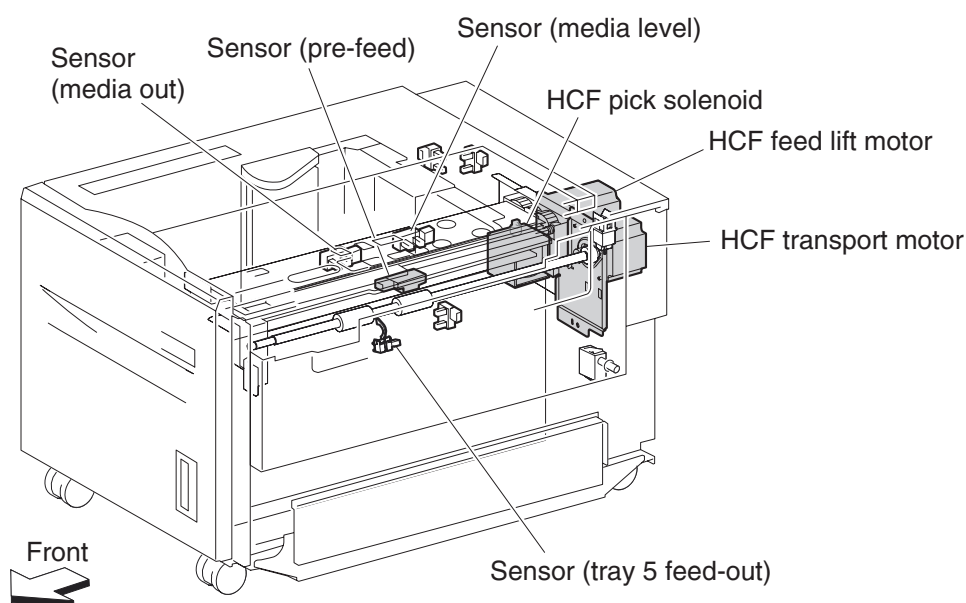
Status monitoring

This function includes detection of static media jams, interlocking, and insertion of the HCF media tray assembly.

Static media jam detection

Checks the status of all relevant sensors on the media path to detect media jams. When media is present on the sensor, it is treated as a static jam. This detection of media jam is carried out during the startup procedure and at every jam/fail detection. The status of all relevant sensors are checked during the startup procedure. In addition, the sensor states are always checked at every constant time for the jam/fail detection in order to monitor the variation in sensor levels.

Interlock detection

Checks the "open" state of the switch (top door interlock) and the switch (HCF unit docking interlock). This detection is constant while the power is on.

When "open", the switch (top door interlock) is detected, printing operation is inhibited, and the 24 V supply to the media feed lift motor and the transport motor is shut off. When "open", the switch (HCF unit docking interlock) is detected, and transfer of media from the HCF is inhibited.

Switch (HCF top door interlock)

Switch (HCF unit docking interlock)
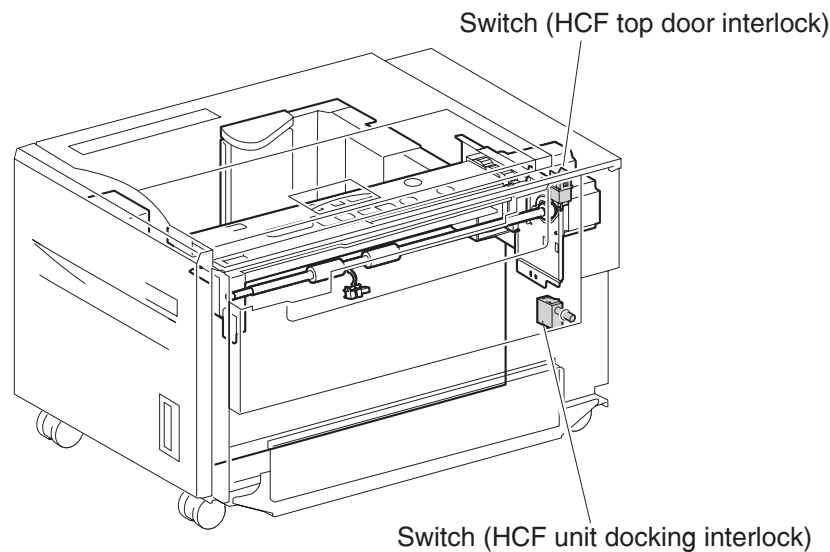
Tray insertion detection

The sensor (HCF media tray set) checks whether the tray is properly set. This check is constant while the power is on. Printing operation is inhibited if the sensor (HCF media tray set) off (tray is not present) is detected before starting printing.

Sensor (HCF media tray set)

HCF media tray
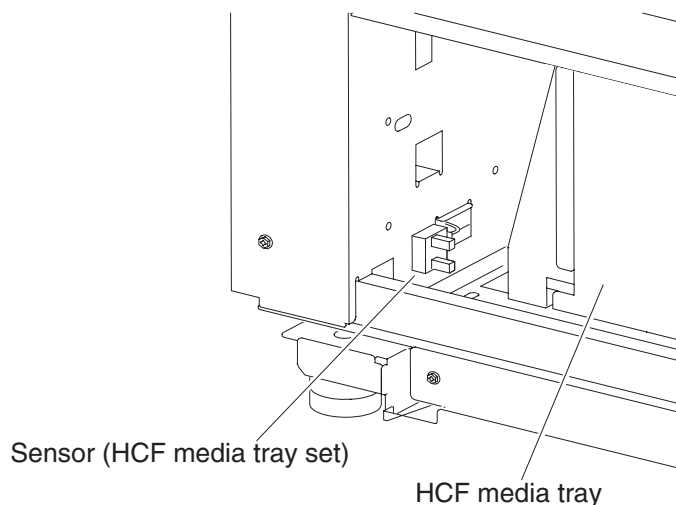
Functions of sensors used for status monitoring

1. Switch (HCF top door interlock)—detects open/close of the HCF top door. The on state of this switch indicates the top door is closed.
2. Switch (HCF unit docking interlock—detects the docking of the HCF with the printer. The off state of this switch indicates that the HCF is separated from the printer. In this case, transfer of media is inhibited.
3. Sensor (HCF media tray set—detects insertion of the HCF media tray into the HCF. The sensor turns on when the HCF media tray is properly inserted. While it is off, media fed from the HCF medial tray is inhibited.

Media size detection

Media size is automatically detected by loading media in the tray and by the rear media edge guide that is attached to the media tray assembly and aligned with the side of the media. The position of the rear media edge guide is detected by the sensor (HCF media size L) and the sensor (HCF media size R).

Media size	Sensor (HCF media size R)	Sensor (HCF media size L)
B5L	off	off
7.25" x 10.5" L		
8.5" x 11" L	on	off
A4L	off	on

Note: B5L and 7.25" x 10.5" L can be switched by the NVM.

Sensor (HCF media size R)   Sensor (HCF media size L)

HCF rear media guide
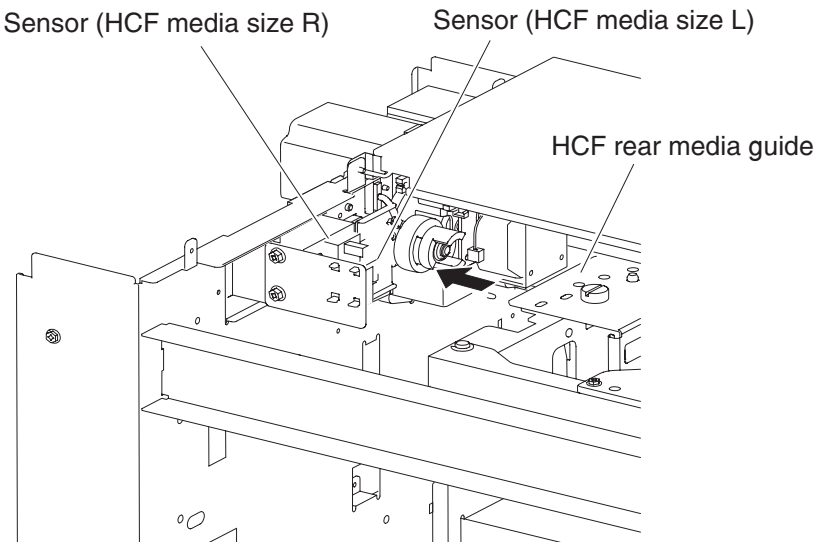
Detection of media size is carried out during the startup procedure and when a specified time has passed from the sensor (HCF media tray set) level change "off to on" with the tray inserted. Media size is also detected at every constant time. When the same size has been detected at specified times consecutively, the size of media loaded in the tray is determined.

If a sensor level pattern does not match the above table, media size cannot be determined. In this case, though the tray is lifted, print start by feeding media from the tray is inhibited.

Sensor for media size detection

Size sensors

There are two size sensors: sensor (HCF media size R) and sensor (HCF media size L).

By moving the HCF rear media edge guide to turn on/off these sensors and by using the sensor level patterns, media size can be determined.

Tray lifting

Tray lift operation starts automatically when the HCF media tray is inserted with media loaded.

Media is lifted and stops at the feeding position. At the same time, detection of no media and remaining media volume becomes available.

HCF feed lift motor

Feed lift gear bracket asm

Bottom plate
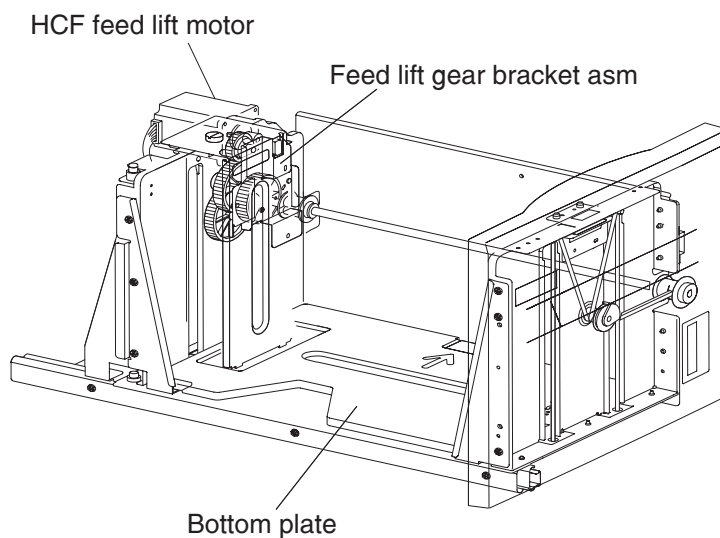
Media out detection

This function checks whether media is loaded in the HCF media tray.

When media is present, the media out actuator in the middle of the HCF is raised by the lifting of media and leaves the sensing area of the sensor (media out), which makes the sensor light-receivable. Presence of media is detected.

On the other hand, if media end occurs when the HCF media tray is at the feeding position, the media out actuator comes inside the sensing area of the sensor (media out), which blocks the light transmission of the sensor (media out). Media out is detected.

If the HCF media tray is not lifted, the media out actuator remains in the sensing area of the sensor (media out), while blocking the light transmission of the sensor (media out). Media out is detected regardless of the presence of media in the tray.

Media out actuator

Sensor (media out)
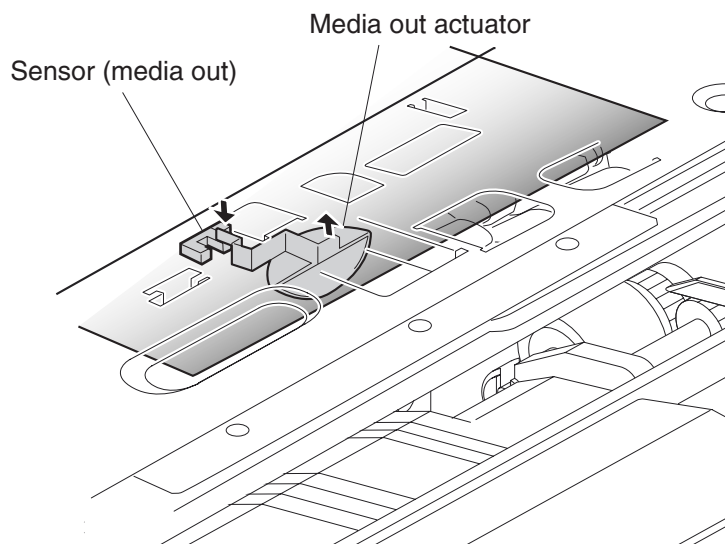
Detection of media out is carried out at every constant period after the lifting operation is completed.

When media out is detected, media transfer from the HCF is inhibited.

If media out is detected during printing, print operation of the next media is stopped. However, when the printer is operating in the Auto Tray Select mode and there is media of the same size in another tray, media is automatically fed out of the tray.

Sensor (media out)

Detects whether media is present in the HCF media tray.

When this sensor (media out) is off while the tray is at the feeding position, the presence of media is detected.

Remaining media volume detection

This function determines the media volume remaining in the HCF media tray by using the HCF feed lift motor rotation time and the sensor (media level) on timing during the tray lifting time. The printer notifies operators of remaining media volume as 25%, 50%, 75%, full, or 0 (zero).

If the remaining media volume becomes zero before no media is detected, the indication remains at (25%).

When the sensor (media level) detects no media, the indication becomes (0) (zero).

When a fault occurs, determination of remaining media volume is carried out as shown below.

- When the interlock is open during lifting operation, the remaining media volume is determined based on the total of the time until Interlock open + the time from the media feed lift motor forward/reverse rotation until the sensor (media level) comes on.
- When the power is turned off and on during lifting operation the remaining media volume is determined by the lifting time after power on. (The actual volume of media in the tray may differ from the indication.)
- When the power is turned off and on while the tray is at the feeding position, the level sensor is on when the power is turned on, and the remaining media volume before the previous power off is regarded as the remaining media volume at that time.
- If the sensor (media level) is off when the power is turned on, the HCF regards the HCF media tray as having been removed, and determines the remaining media volume based on the time from the media feed lift motor forward/reverse rotation until the sensor (media level) comes on.

Sensor (media level)

Detects the media feeding position in the tray to control the media position.

While this sensor (media level) is off, lifting the tray is continued until the sensor (media level) turns on.

Sensor (media level)   HCF pick solenoid

HCF feed lift motor

Front
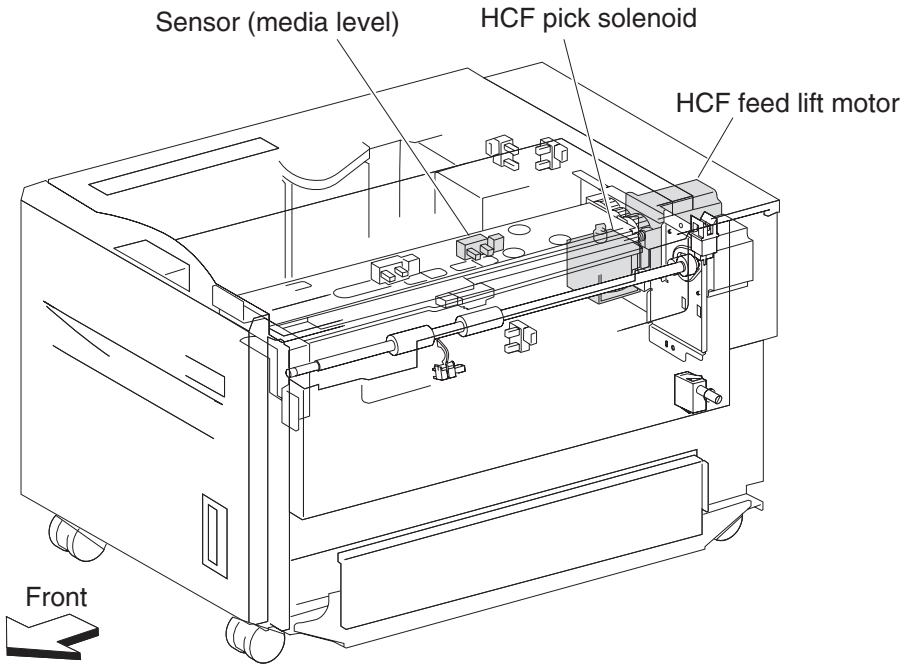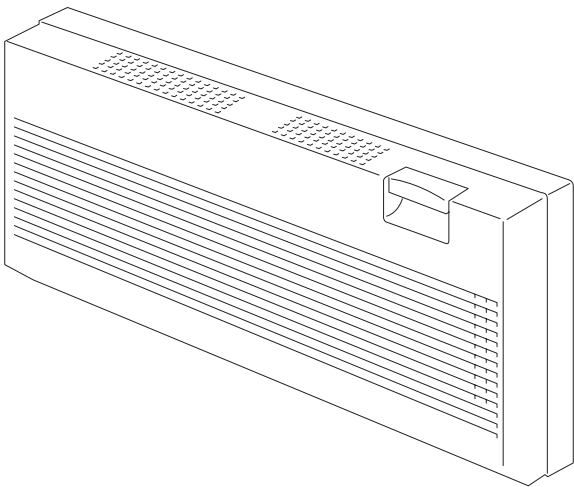
Duplex

Duplex drive motor

The rotating force of the drive motor is transmitted through the gears to components that need mechanical driving force as shown below.
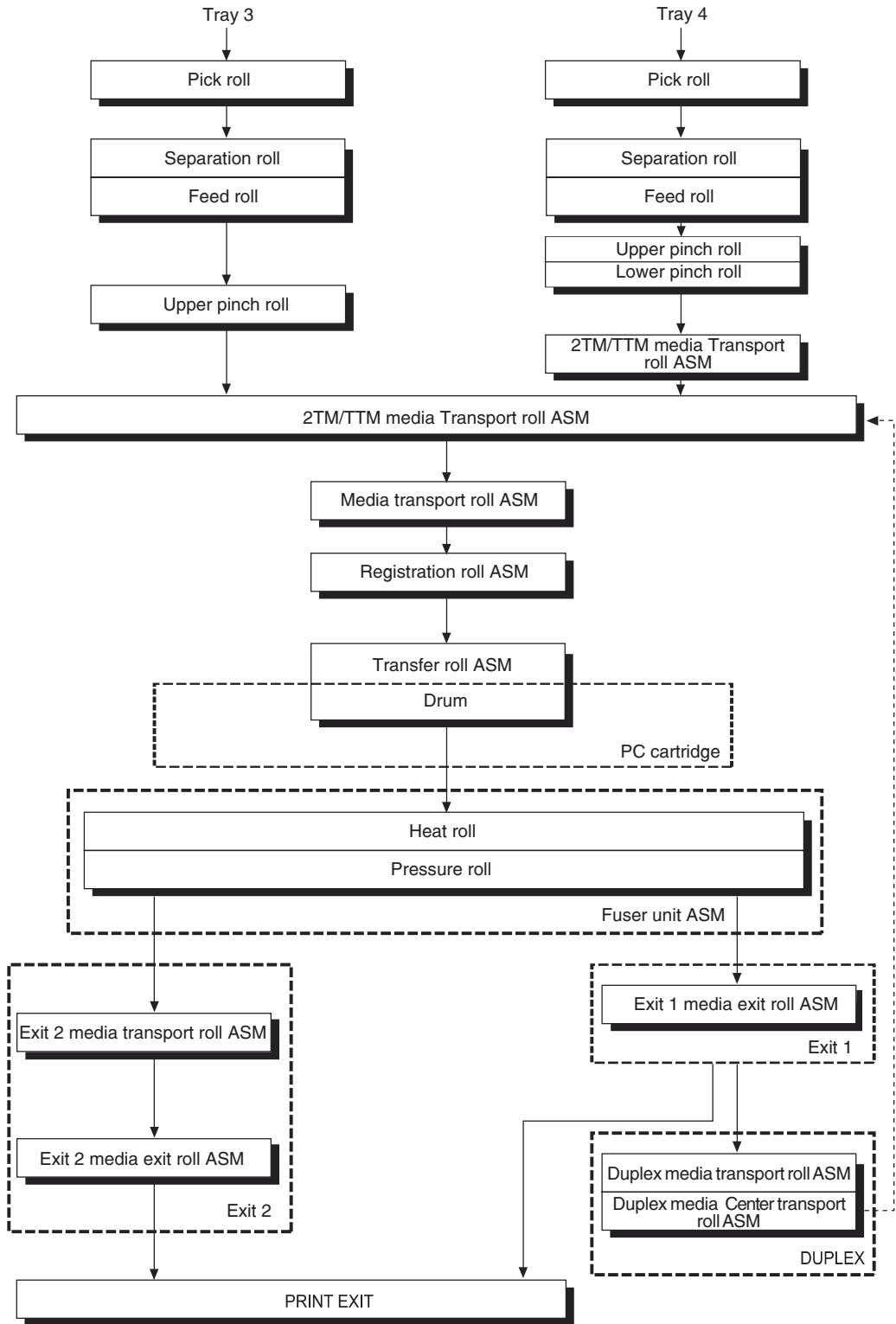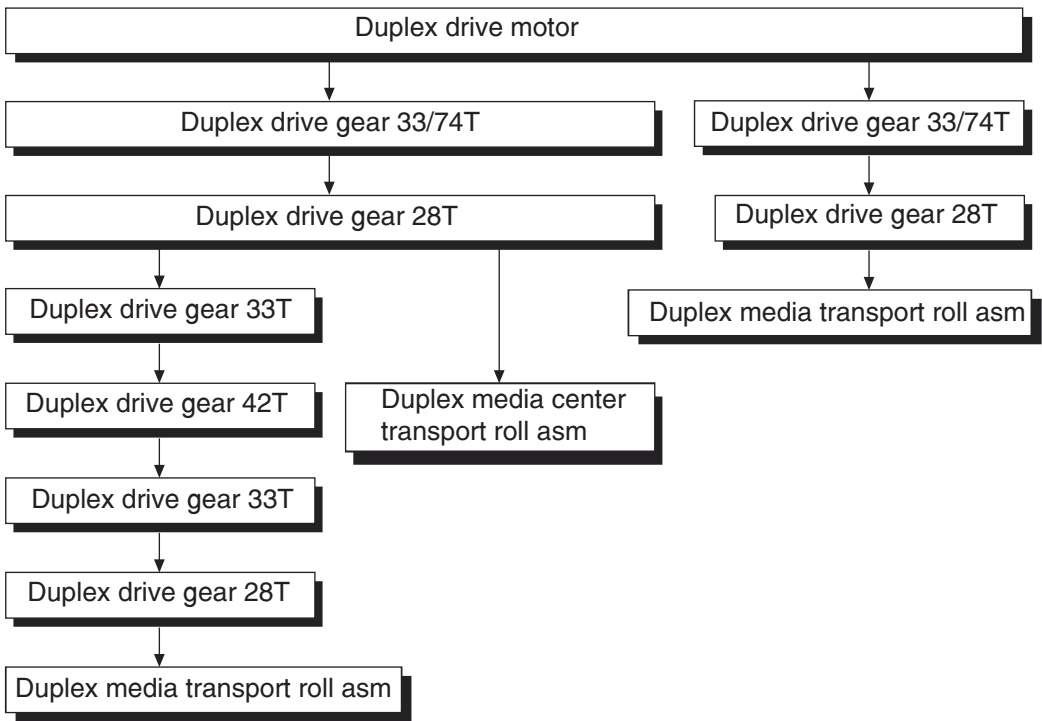

The transmitted driving force drives the two duplex media transport roll assemblies, and the (duplex media center transport roll assembly) through the gears.

Media transport

Media transport path

With the optional duplex installed, media is supplied from the MPF, tray 1 or tray 2, and is transported to the printer along the media transport path shown below.

```
        MPF                      Tray 1                    Tray 2
  ┌ ─ ─ ─ ─ ─ ─ ┐        ┌ ─ ─ ─ ─ ─ ─ ┐          ┌ ─ ─ ─ ─ ─ ─ ┐
  |  MPF pick roll |     |   Pick roll   |          |   Pick roll   |
  |      ↓      |        |      ↓      |            |      ↓      |
  | MPF Transport |      | Separation roll |        | Separation roll |
  |   Roll ASM  |        |   Feed roll   |          |   Feed roll   |
  |             |        |               |          |               |
  |     MPF ASM |        |  Media feed   |          |  Media feed   |
  └ ─ ─ ─ ─ ─ ─ ┘        |   unit ASM  |            |   unit ASM  |
                         └ ─ ─ ─ ─ ─ ─ ┘          └ ─ ─ ─ ─ ─ ─ ┘
                                                  Media transport roll ASM

       Registration roll ASM   ◀ ─ ─ ─ ─ ─ ─ ─

           Transfer roll ASM
               Drum
                                 PC cartridge

             Heat roll
            Pressure roll
                            Fuser unit ASM

  ┌ ─ ─ ─ ─ ─ ─ ┐                         ┌ ─ ─ ─ ─ ─ ─ ┐
  | Exit 2 media transport roll ASM |     | Exit 1 media exit roll ASM |
  |             |                         |        Exit 1 |
  | Exit 2 media exit roll ASM |          └ ─ ─ ─ ─ ─ ─ ┘
  |      Exit 2 |                         ┌ ─ ─ ─ ─ ─ ─ ┐
  └ ─ ─ ─ ─ ─ ─ ┘                         | Duplex media transport roll ASM |
                                          | Duplex media Center transport roll ASM |
              PRINT EXIT                  |        DUPLEX |
                                          └ ─ ─ ─ ─ ─ ─ ┘
```
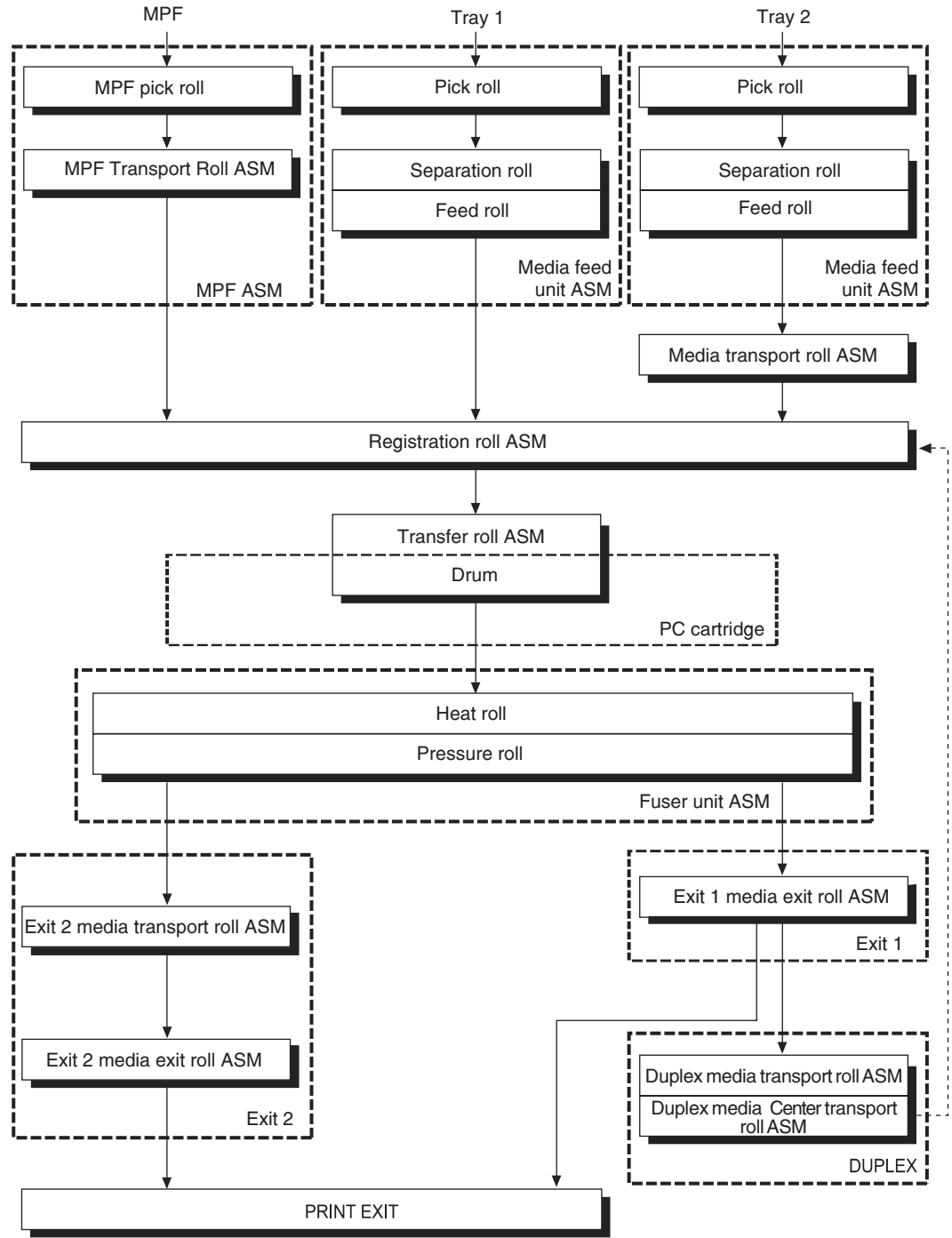
Layout of media transport path

The main components associated with the media path and transport with the optional duplex installed.
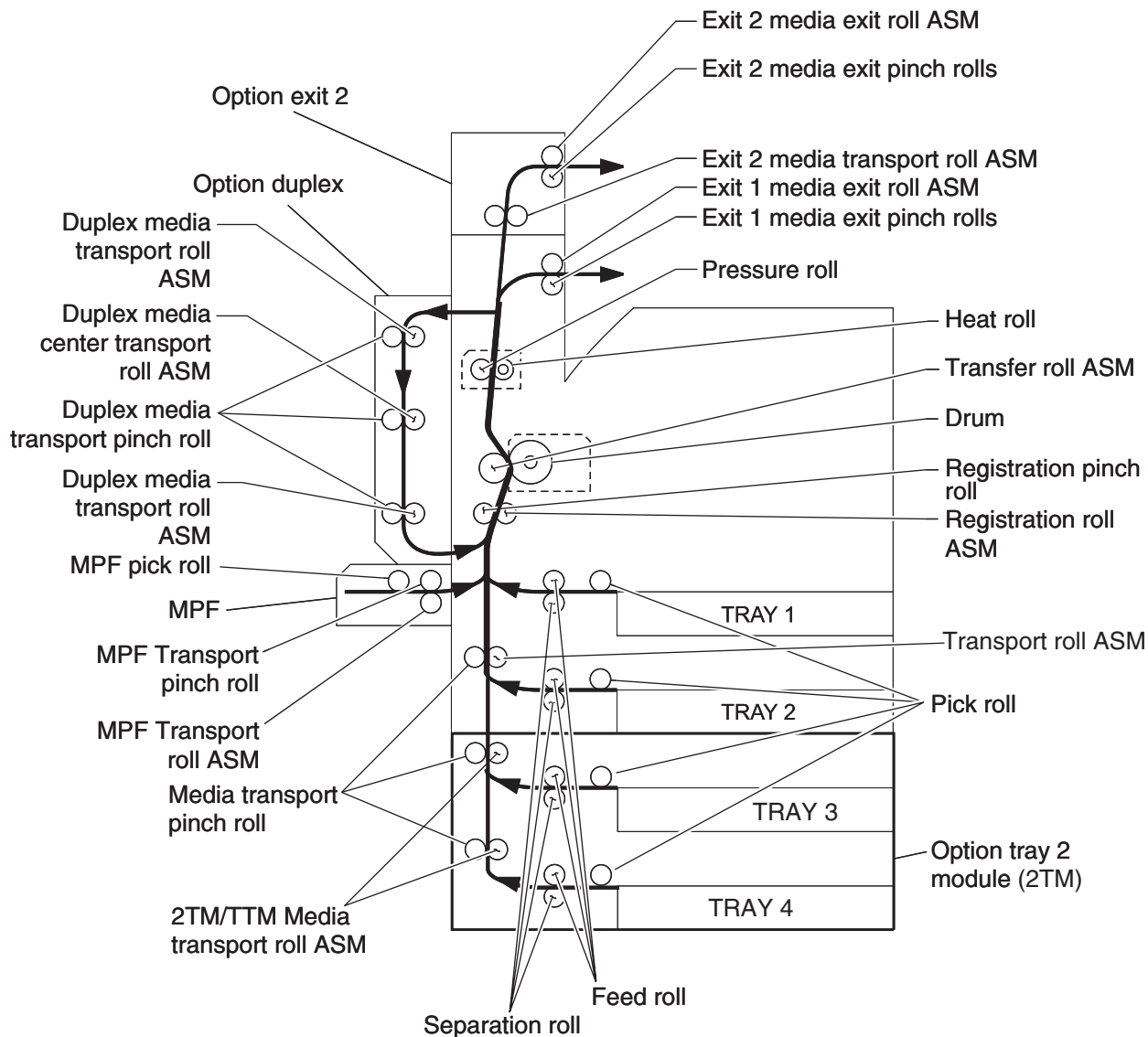
Functions of main components

When the optional duplex is installed to the left of the printer, duplex (double-sided) printing is available with the printer.

The following outlines the functions of the main components of the duplex.

Switch (duplex left door interlock)

The switch (left door interlock) detects open/close of the left door.

Sensor (duplex wait)

The sensor (duplex wait) detects whether media is remaining in the duplex.

Duplex media transport roll assembly

The two duplex media transport roll assemblies and the duplex media center transport roll assembly re-feeds the media printed on the front side through the duplex to print on the rear side.

Duplex controller card assembly

The duplex controller card assembly that contains a CPU controls media feed in the duplex upon receiving a command from the printer engine card assembly and sensor/switch information.

Duplex drive motor

The duplex drive motor transmits driving force to the two duplex media transport roll assemblies and the duplex media center transport roll assembly middle that feeds media.

Duplex media transport roll asm

Sensor (duplex wait)

Duplex controller card asm

Duplex media center transport roll asm

Duplex drive motor

Duplex media transport roll asm
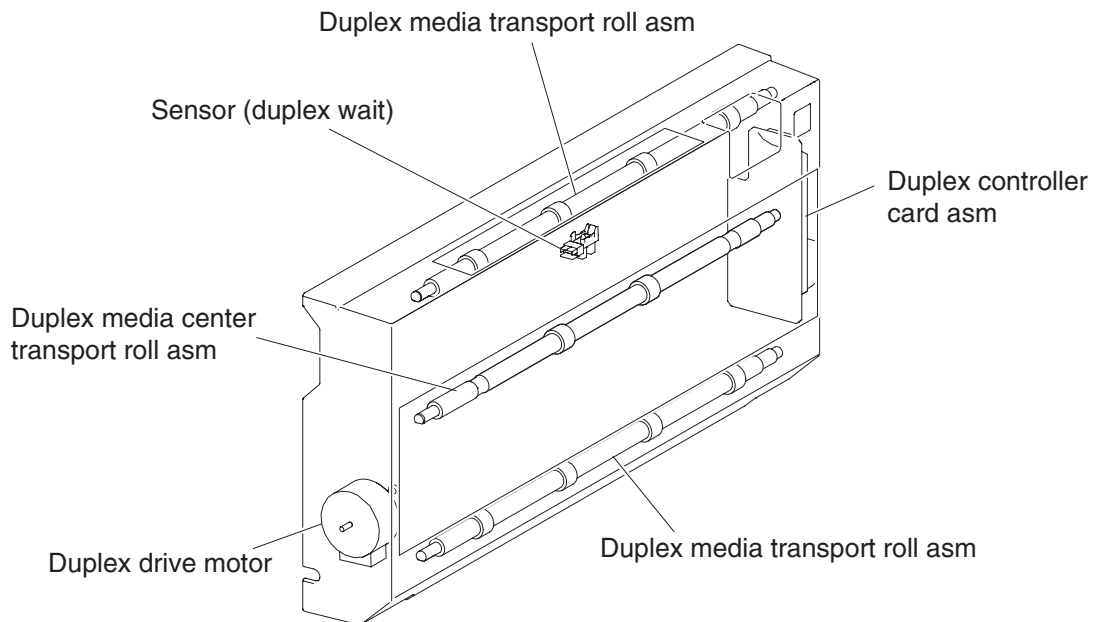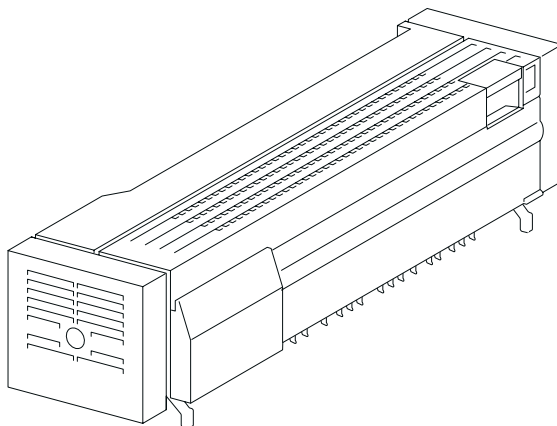
Exit 2

Exit 2 drive motor

The rotating force of the exit 2 drive motor is transmitted through the gears to components that need mechanical driving force as shown below.
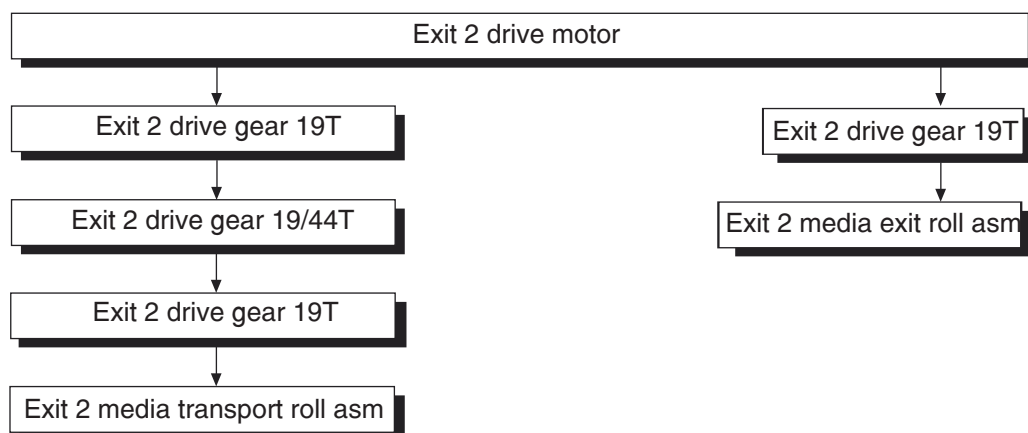
The transmitted driving force drives the exit 2 media transport roll assembly and the exit 2 media exit roll assembly through the gears.

Media transport

Media transport path

With the optional exit 2 installed, media is supplied from the MPF, tray 1, or tray 2 and is transported to the printer along the media transport path shown below.

4024-XXX
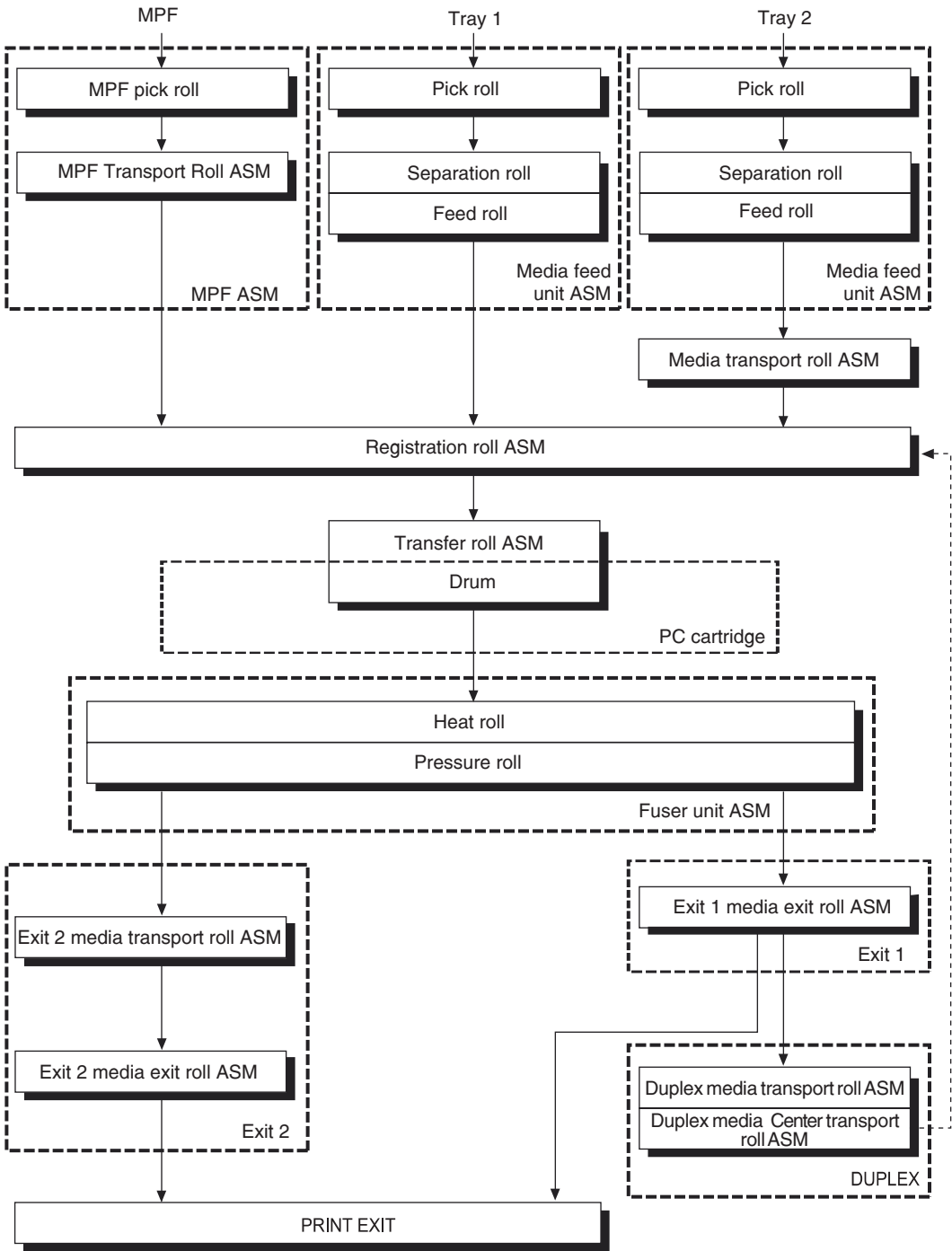
Layout of media transport path

The following figure illustrates the main components directly associated with the media path and transport with the optional exit 2 installed.

Exit 2 media exit roll ASM
Exit 2 media exit pinch rolls
Exit 2 media transport roll ASM
Exit 1 media exit roll ASM
Exit 1 media exit pinch rolls
Pressure roll
Heat roll
Transfer roll ASM
Drum
Registration pinch roll
Registration roll ASM
Transport roll ASM
Pick roll
Option tray 2 module (2TM)
TRAY 1
TRAY 2
TRAY 3
TRAY 4
Feed roll
Separation roll
Option exit 2
Option duplex
Duplex media transport roll ASM
Duplex media center transport roll ASM
Duplex media transport pinch roll
Duplex media transport roll ASM
MPF pick roll
MPF
MPF Transport pinch roll
MPF Transport roll ASM
Media transport pinch roll
2TM/TTM Media transport roll ASM

Functions of Main Components

When the optional exit 2 is installed on the top of the printer, offset stocking of media is available with the printer.

Drive motor

The drive motor is a stepping motor driving the transport roll assembly and media exit roll assembly. Forward rotation of this motor drives these rollers to feed media to the exit 2 standard bin. Reverse rotation of this motor drives the transport roll assembly to feed media to the optional duplex.

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Media shift motor

The media shift motor is a stepping motor moving the media exit roll assembly frontward or rearward. Forward rotation of this motor moves the media exit roll assembly to the front side. Reverse rotation of this motor moves it to the rear side.

Exit interface card assembly (located in the printer)

The exit interface card assembly contains a CPU and controls media feed in the exit 2 upon receiving a command from the printer engine card assembly and sensor/switch information.

Exit 2 left door assembly

The left door assembly detects open/close of the exit 2.

Sensor (exit 2)

The sensor (exit 2) detects whether media is remaining in the exit 2.

Sensor (Standard bin full exit 2)

The sensor (exit 2 standard bin full) detects whether the standard bin is full.

Sensor (exit 2 media shift HP)

The sensor (exit 2 media shift HP) detects the media exit roll assembly position.

Exit 2 transport roll assembly and media exit roll assembly

The exit 2 transport roll assembly and exit 2 media exit roll assembly are rollers used to eject media to the exit 2 standard bin or to feed media to the optional duplex.

Sensor (exit 2 media shift HP)

Exit 2 media exit roll asm

Sensor (standard bin full exit 2)

Exit interface
card asm

Sensor (exit 2)

Switch (exit 2 left
door interlock)

Media shift motor

Rear

Exit 2 drive motor

Exit 2 media transport roll asm
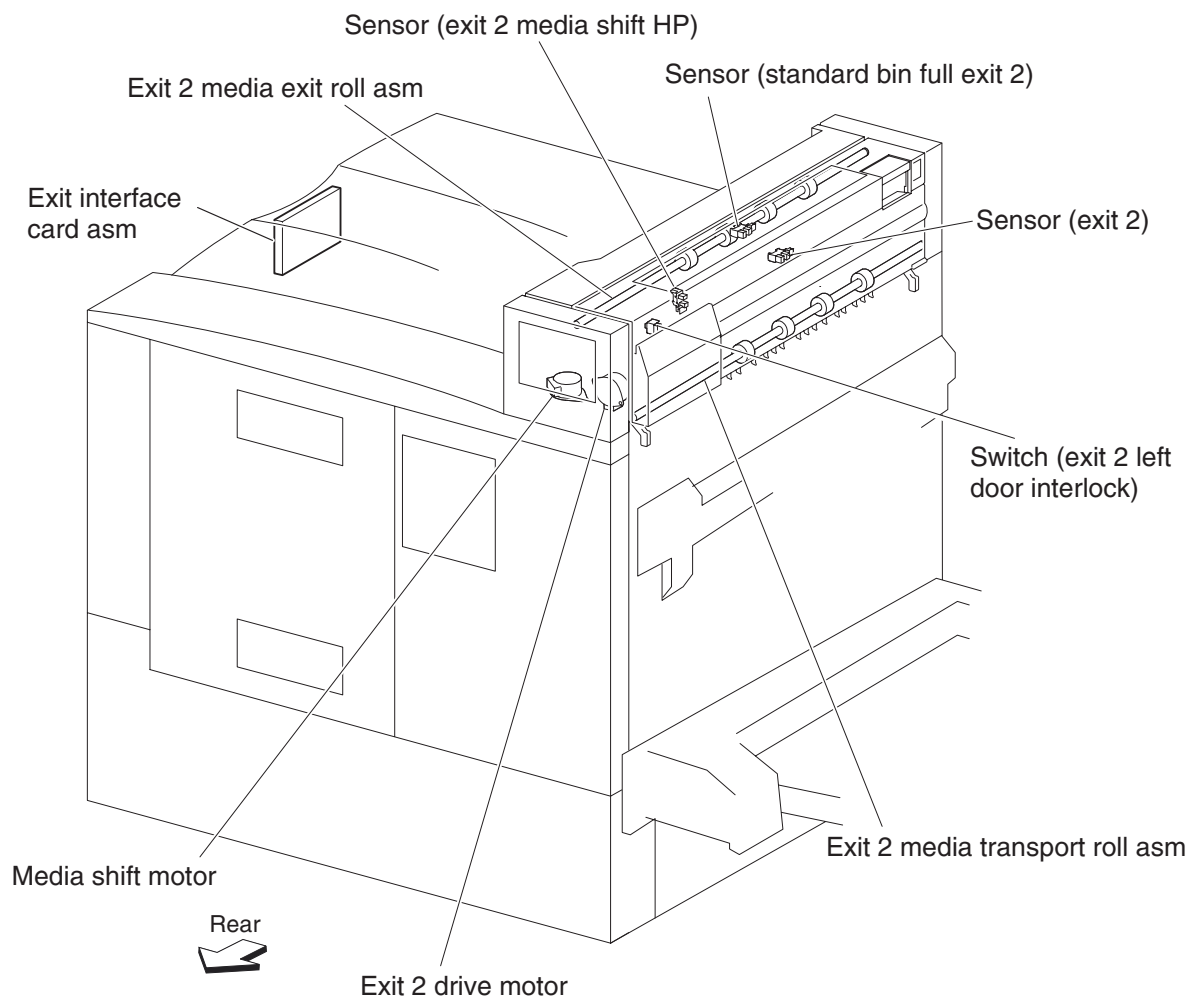
Tools required for service

Flat-blade screwdriver
#1 Phillips screwdriver, magnetic
#2 Phillips screwdriver, magnetic
#2 Phillips screwdriver, magnetic short-blade
Needle nose pliers
Diagonal side cutters
Spring hook
5.5 mm hex driver, magnetic
Analog or digital multi meter
Parallel wrap plug 1319128
Twinax/serial debug cable 1381963
Coax/serial debug cable 1381964

Acronyms

2TM	2 Tray Module
AC	Alternate Current
ASIC	Application Specific Intergrated Circuit
CRU	Customer Replaceable Unit
CSU	Customer Setup
DC	Direct Current
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
GFI	Ground Fault Interrupter
HCF	High-Capacity Feeder
HVPS	High Voltage Power Supply
LASER	Light Amplification by Stimulated Emission of Radiation
LCD	Liquid Crystal Display
LD	Laser Diode
LED	Light-Emitting Diode
LEF	Long Edge Fed
LVPS	Low Voltage Power Supply
MPF	Multi-Purpose Feeder
MS	Microswitch
NVM	Nonvolatile Memory
NVRAM	Nonvolatile Random Access Memory
OEM	Original Equipment Manufacturer
OPT	Optical Sensor
PC	Photoconductor
pel	Picture element
POR	Power-on Reset
POST	Power-on Self Test
PPM	Pages Per Minute
PSC	Parallel Synchronous Communications

PSD	Position Sensing Device
PWM	Pulse Width Modulation
RFID	Radio Frequency Identification
RIP	Raster Imaging Processor
ROM	Read only Memory
RPM	Revolutions Per Minute
SDRAM	Synchronous Dual Random Access Memory
SEF	Short Edge Fed
SIMM	Single Inline Memory Module
SOS	Start of scan
SRAM	Static Random Access Memory
TTM	Tandem Tray Module
UPR	Used Parts Return
V	Volts
V ac	Volts alternating current
V dc	Volts direct current

2. Diagnostic information

Start

⚠ **CAUTION:** Unplug the power cord from the electrical outlet before you connect or disconnect any cable or electronic board or assembly for personal safety and to prevent damage to the printer. Disconnect any connections between the printer and PCs/peripherals.

CAUTION: The printer weighs 47.7 kg (105 lb.) and requires at least two people to lift it safely. Make sure your fingers are not under the printer when you lift or set the printer down.

CAUTION: If the printer is kept on, never touch the conductive parts while it is not specifically required. The power switch and inlet of the low voltage power supply card (LVPS card) assembly is live even while the power supply is cut off. Never touch the live parts.

Warning: When operating the driving units using the diagnostics or other tools, be sure to keep them covered unless otherwise specified.

Warning: When operating the driving units using the diagnostics or other tools, never touch the driving units. When operating the driving units using diagnostics or other tools, be sure to follow the procedures in this manual.

CAUTION: Be careful to avoid burns by safely handling hot parts.

Warning: Servicers should wear a wrist band or the like to remove static electricity from their body, grounding their body while working. See **"Handling ESD-sensitive parts" on page 4-1**.

Using service checks

- Verify the installation status. See **"Confirm the installation status" on page 2-2**.
- Does POR (power on reset) stop? Check the POR sequence. See **"POR (Power-On Reset) sequence" on page 2-2**.

To determine the corrective action necessary to repair the options, use the following table:

If the error code or message appears in the	Go to	For additional information, see
2X 500-Sheet Drawer (2TM)	**"Error code messages - 2X 500-sheet drawer (2TM)" on page 2-3**	**"Service checks - 2X 500-sheet drawer (2TM)" on page 2-5**
2000-Sheet Dual Input (TTM)	**"Error code messages - 2000-sheet dual input (TTM)" on page 2-36**	**"Service checks - 2000-sheet dual input (TTM)" on page 2-38**
High Capacity Feeder (HCF)	**"Error code messages - HCF" on page 2-68**	**"Service checks - HCF" on page 2-69**
Duplex (DUP)	**"Error code messages - DUP" on page 2-82**	**"Service checks - DUP" on page 2-83**
Exit 2 (EX2)	**"Error code messages - EX2" on page 2-91**	**"Service checks - EX2" on page 2-92**

User attendance messages are in the *User's Guide*.

Note: There may be printer error code messages that are not contained in this service manual. A more complete list appears in the *Printer Service Manual*.

Confirm the installation status

Be sure to check the following items before starting the troubleshooting procedures.

- The power cord is free from breakage, short-circuit, disconnected wire, or incorrect connection in the power cord.
- The printer is properly grounded. Check the power cord ground terminal.
- The printer is not installed at a place subjected to extreme temperature or extreme humidity or rapid changes in temperature.
- The printer is not installed close to water service, humidifier, heat generating unit, or fire, in a very dusty place, or a place exposed to air flow from the air conditioning system.
- The printer is not installed in a place where volatile gas or inflammable gas is generated.
- The printer is not installed in direct sun.
- The printer is installed on a stout and stable surface.
- Media meets specifications and is installed properly.
- Customer maintenance parts have been replaced at the specified intervals.
- Check all attached options for proper attachment and electrical connection.
- Refer to the *User's Guide* for proper installation.

POR (Power-On Reset) sequence

The following is an example of the events that occur during the POR sequence, for the base machine with no media handling options installed.

1. Power the machine on.
2. The RIP card assembly cooling fan turns on.
3. Operator panel LED becomes solid.
4. While loading code, a series of dots scroll across the screen.
5. The transport motor turns on.
6. The fuser unit assembly lamps turn on.
7. The fuser cooling fan turns on.
8. The following is an example of the screen that displays after the code is loaded.

256MB	**625Mhz**
256MB = Amount of Memory	**625Mhz = Processor Speed**

9. An animated stopwatch appears on the screen.
10. `Ready` appears on the screen.

Error code messages - 2X 500-sheet drawer (2TM)

Error code or message	Error contents	Description/Action
243.00 Paper jam Check tray 3	Sensor (pre-feed) on jam (tray 3 media feed)	The pre-feed sensor 3 is not turned on within the specified time after the tray 3 feed lift motor is turned on. Go to **"243.00 Sensor (pre-feed) on jam (tray 3 media feed)" on page 2-5**.
243.01 Paper jam Check areas C, tray 3	Sensor (tray 3 feed-out) on jam (tray 3 media feed)	The sensor (tray 3 feed-out) is not turned on within the specified time after the sensor (pre-feed) is turned on. Go to **"243.01 Sensor (tray 3 feed-out) on jam (tray 3 media feed)" on page 2-6**.
243.02 Paper jam Check areas A, B	Sensor (tray 2 feed-out) on jam (tray 3 media feed)	The sensor (tray 2 feed-out) is not turned on within the specified time after the sensor (tray 3 feed-out) is turned on. Go to **"243.02 Sensor (tray 2 feed-out) on jam (tray 3 media feed)" on page 2-8**.
243.03 Paper jam Check area B	Sensor (registration) on jam (tray 3 media feed)	The sensor (registration) is not turned on within the specified time after the sensor (tray 3 feed-out) is turned on. Go to **"243.03 Sensor (registration) on jam (tray 3 media feed)" on page 2-10**.
243.04 Paper jam Check area C	Sensor (tray 3 feed-out) static jam	Media remains on the sensor (tray 3 feed-out). Go to **"243.04 Sensor (tray 3 feed-out) static jam" on page 2-12**.
244.00 Paper jam Check areas C, tray 4	Sensor (tray 4 feed-out) on jam (tray 4 media feed)	The sensor (tray 4 feed-out) is not turned on within the specified time after the sensor (pre-feed) is turned on. Go to **"243.04 Sensor (tray 3 feed-out) static jam" on page 2-12**.
244.01 Paper jam Check areas C, tray 4	Sensor (tray 3 feed-out) on jam (tray 4 media feed)	The sensor (tray 3 feed-out) is not turned on within the specified time after the sensor (tray 4 feed-out) is turned on. Go to **"244.01 Sensor (tray 3 feed-out) on jam (tray 4 media feed)" on page 2-14**.
244.02 Paper jam Check areas B, C	Sensor (tray 2 feed-out) on jam (tray 4 media feed)	The sensor (tray 2 feed-out) is not turned on within the specified time after the sensor (tray 4 feed-out) is turned on. Go to **"244.02 Sensor (tray 2 feed-out) on jam (tray 4 media feed)" on page 2-16**.
244.03 Paper jam Check area B	Sensor (registration) on jam (tray 4 media feed)	The sensor (registration) is not turned on within the specified time after the sensor (tray 4 feed-out) is turned on. Go to **"244.03 Sensor (registration) on jam (tray 4 media feed)" on page 2-18**.
244.04 Paper jam Check area tray 4	Sensor (pre-feed) on jam (tray 4 media feed)	The sensor (pre-feed) is not turned on within the specified time after the tray 4 feed lift motor is turned on. Go to **"244.04 Sensor (pre-feed) on jam (tray 4 media feed)" on page 2-20**.

Error code or message	Error contents	Description/Action
244.05 Paper jam Check areas C, tray 4	Sensor (tray 4 feed-out) static jam	Media remains on the sensor (tray 4 feed-out). Go to **"244.05 Sensor (tray 4 feed-out) static jam" on page 2-22**.
34 Incorrect media Check tray 3 guides	Tray 3 media size mismatch in length	The media length detected by the sensor (registration) after the media is fed from tray 3 does not match the length detected by the tray 3 switch (media size). Go to **"Tray 3 media size mismatch in length" on page 2-31**.
34 Incorrect media Check tray 4 guides	Tray 4 media size mismatch in length	The media length detected by the sensor (registration) after the media is fed from tray 4 does not match the length detected by the tray 4 switch (media size). Go to **"Tray 4 media size mismatch in length" on page 2-33**.
943.00 Service tray 3 failure	Tray 3 lift up / no tray failure	The tray 3 sensor (media level) is not turned on within the specified time after the feed lift motor is turned on. The 2TM-tray 3 switch (media size) detected no tray. Go to **"943.00 Tray 3 lift up / no tray failure" on page 2-23**.
944.00 Service tray 4 failure	Tray 4 lift up / no tray failure	The tray 4 sensor (media level) is not turned on within the specified time after the feed lift motor is turned on. The 2TM-tray 4 switch (media size) detected no tray. Go to **"944.00 Tray 4 lift up / no tray failure" on page 2-24**.
980.00 Service tray 3 comm.	2TM/TTM controller card assembly communication failure	A communication error occurred between the printer engine card assembly and the 2TM/TTM controller card assembly. Go to **"980.00 2TM/TTM controller card assembly communication failure" on page 2-26**.
Check tray 3 tray Guides	Tray 3 media size failure	Although the tray 3 is set in the 2TM, the media size is not detected correctly. Go to **"Tray 3 media size failure" on page 2-26**.
Check tray 3 or Check tray 4 tray guides	Media size mismatch in width	The media width is incorrect. Go to **"Media size mismatch in width" on page 2-30**.
Check tray 4 tray guides	Tray 4 media size failure	Although the tray 4 is set in the 2TM, the media size is not detected correctly. Go to **"Tray 4 media size failure" on page 2-27**.
Close door C	2TM/TTM left door assembly open.	The 2TM/TTM left door is open. Go to **"2TM/TTM left door assembly open" on page 2-28**.
Load tray 3 or Load tray 4 with <media>	No media in the select media tray	Media is not loaded in the tray. Go to **"No media in the select media tray" on page 2-29**.

Service checks - 2X 500-sheet drawer (2TM)

243.00 Sensor (pre-feed) on jam (tray 3 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.
2	Check the media size setup. Does the media size in use match the size set for tray 3?	Go to step 3.	Replace the media, or change the media size setup.
3	Check the tray 3 rolls. Pull out tray 3, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2X 500-sheet drawer (2TM)—feed roll removal" on page 4-28**, **"2X 500-sheet drawer (2TM)—separation roll removal" on page 4-32**, and **"2X 500-sheet drawer (2TM)—pick roll removal" on page 4-34**.
4	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the sensor (pre-feed) of the tray 3 media feed unit assembly?	Remove the media.	Go to step 5.
5	Check the sensor (pre-feed) for tray 3 for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Pre-feed**. Remove the media tray assembly. Does the display on the operator panel change every time a white piece of paper is placed over the sensing area of the above sensor?	Ensure the feed unit front guide is properly installed. Go to step 7.	Go to step 6.
6	Check the sensor (pre-feed) connection on tray 3. Is the above sensor connected properly?	Replace the sensor (pre-feed). Go to **"2X 500-sheet drawer (2TM)—sensor (pre-feed) removal" on page 4-25**.	Replace the connection.
7	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 8.	Replace the connection.

Step	Check	Yes	No
8	Check the tray 3 media feed lift motor for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Tray 3 feed mtr**. Does the above media feed lift motor rotate normally?	Go to step 11.	Go to step 9.
9	Check the tray 3 media feed lift motor for proper connection. Is the above media feed lift motor connected properly?	Replace the media feed lift motor. Go to **"2X 500-sheet drawer (2TM)—media feed lift motor removal" on page 4-17**.	Replace the connection.
10	Check the tray 3 media feed lift motor for proper operation. Replace the media feed lift motor for tray 3 with that for tray 4. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Tray 3 feed mtr**. Does the above media feed lift motor rotate normally?	Reinstall the media feed lift motor for tray 4 as it previously was, and replace the media feed lift motor for tray 3 with a new one. Go to **"2X 500-sheet drawer (2TM)—media feed lift motor removal" on page 4-17**.	Go to step 11.
11	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 12.	Replace the connection.
12	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 13.	Problem solved.
13	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual*.	Problem solved.

243.01 Sensor (tray 3 feed-out) on jam (tray 3 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.

Step	Check	Yes	No
2	Check the media size setup. Does the size of media in use match the size set for tray 3?	Go to step 3.	Replace the media or change the media size setup.
3	Check the tray 3 rolls. Pull out tray 3, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2X 500-sheet drawer (2TM)—feed roll removal" on page 4-28**, **"2X 500-sheet drawer (2TM)—separation roll removal" on page 4-32**, and **"2X 500-sheet drawer (2TM)—pick roll removal" on page 4-34**.
4	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the sensor (pre-feed) or the sensor (tray 3 feed-out) of the tray 3 media feed unit assembly?	Remove the media.	Go to step 5.
5	Check the sensor (tray 3 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Feed-out.** Open the 2TM/TTM left door assembly, and check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 7.	Go to step 6.
6	Check the sensor (tray 3 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 3 feed-out). Go to **"2X 500-sheet drawer (2TM)—sensor (tray 3 feed-out) removal" on page 4-37**.	Replace the connection.
7	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 8.	Replace the connection.

Step	Check	Yes	No
8	Check the tray 3 sensor (pre-feed) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Pre-feed**. Remove the media tray assembly. Does the display on the operator panel change every time a white piece of paper is placed over the sensing area of the above sensor?	Go to step 10.	Go to step 9.
9	Check the tray 3 sensor (pre-feed) for proper connection. Is the above sensor connected properly?	Replace the sensor (pre-feed). Go to **"2X 500-sheet drawer (2TM)—sensor (pre-feed) removal" on page 4-25**.	Replace the connection.
10	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 11.	Problem solved.
11	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

243.02 Sensor (tray 2 feed-out) on jam (tray 3 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.
2	Check the media size setup. Does the media size in use match the size set for tray 3?	Go to step 3.	Replace the media or change the media size setup.

Step	Check	Yes	No
3	Check the tray 3 rolls. Pull out tray 3, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2X 500-sheet drawer (2TM)—feed roll removal" on page 4-28**, **"2X 500-sheet drawer (2TM)—separation roll removal" on page 4-32**, and **"2X 500-sheet drawer (2TM)—pick roll removal" on page 4-34**.
4	Check the media position. Open the printer left lower door assembly, and visually check it. Does the media touch the sensor (tray 2 feed-out)?	Remove the media.	Go to step 5.
5	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the sensor (tray 3 feed-out)?	Remove the media.	Go to step 6.
6	Check the sensor (tray 2 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 2.** **5.** Select **Feed-out.** Open the printer left lower door assembly, and visually check it. Does the display on the operator panel change every time a piece of white paper is placed over the sensing area of the above sensor?	Go to step 8.	Go to step 7.
7	Check the sensor (tray 2 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 2 feed-out). Refer to the *Printer Service Manual.*	Replace the connection.
8	Check the sensor (tray 3 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Feed-out**. Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 10.	Go to step 9.

Step	Check	Yes	No
9	Check the sensor (tray 3 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 3 feed-out). Go to **"2X 500-sheet drawer (2TM)—sensor (tray 3 feed-out) removal" on page 4-37**.	Replace the connection.
10	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 11.	Replace the connection.
11	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 12.	Problem solved.
12	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

243.03 Sensor (registration) on jam (tray 3 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.
2	Check the media size setup. Does the media size in use match the size set for tray 3?	Go to step 3.	Replace the media or change the media size setup.
3	Check the tray 3 rolls. Pull out tray 3, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2X 500-sheet drawer (2TM)—feed roll removal" on page 4-28**, **"2X 500-sheet drawer (2TM)—separation roll removal" on page 4-32**, and **"2X 500-sheet drawer (2TM)—pick roll removal" on page 4-34**.

Step	Check	Yes	No
4	Check the media position. Open the printer left door assembly, and visually check it. Does the media touch the sensor (registration)?	Remove the media.	Go to step 5.
5	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the sensor (tray 3 feed-out)?	Remove the media.	Go to step 6.
6	Check the sensor (registration) for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Media Path.** 4. Select **Registration**. Open the printer left door assembly, and visually check it. Does the display on the operator panel change every time the actuator for the above sensor operates?	Go to step 8.	Go to step 7.
7	Check the sensor (registration) for proper connection. Is the above sensor connected properly?	Replace the sensor (registration). Refer to the *Printer Service Manual.*	Replace the connection.
8	Check the sensor (tray 3 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Feed-out**. Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator for the above sensor operates?	Go to step 10.	Go to step 9.
9	Check the sensor (tray 3 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 3 feed-out). Go to **"2X 500-sheet drawer (2TM)—sensor (tray 3 feed-out) removal" on page 4-37**.	Replace the connection.
10	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 11.	Replace the connection.

Step	Check	Yes	No
11	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 12.	Problem solved.
12	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

243.04 Sensor (tray 3 feed-out) static jam

Step	Check	Yes	No
1	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the tray 3 feed-out sensor?	Remove the media.	Go to step 2.
2	Check the sensor (tray 3 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Feed-out**. Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator for the above sensor operates?	Go to step 4.	Go to step 3.
3	Check the sensor (tray 3 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 3 feed-out). Go to **"2X 500-sheet drawer (2TM)—sensor (tray 3 feed-out) removal" on page 4-37**.	Replace the connection.
4	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 5.	Problem solved.

Step	Check	Yes	No
5	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

244.00 Sensor (tray 4 feed-out) on jam (tray 4 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.
2	Check the media size setup. Pull out tray 4, and check it. Does the media size in use match the size set for tray 4?	Go to step 3.	Replace the media or change the media size setup.
3	Check the tray 4 rolls. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2X 500-sheet drawer (2TM)—feed roll removal" on page 4-28**, **"2X 500-sheet drawer (2TM)—separation roll removal" on page 4-32**, and **"2X 500-sheet drawer (2TM)—pick roll removal" on page 4-34**.
4	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the sensor (pre-feed) of the tray 4 media feed unit assembly or the sensor (tray 4 feed-out)?	Remove the media.	Go to step 5.
5	Check the tray 4 pre-feed sensor for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 4.** 5. Select **Pre-feed.** Remove the media tray assembly. Does the display on the operator panel change every time a white piece of paper is placed over the sensing area of the above sensor?	Go to step 7.	Go to step 6.

Step	Check	Yes	No
6	Check the tray 4 pre-feed sensor for proper connection. Is the above sensor connected properly?	Replace the sensor (pre-feed). Go to **"2X 500-sheet drawer (2TM)—sensor (pre-feed) removal" on page 4-25**.	Replace the connection.
7	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 8.	Replace the connection.
8	Check the sensor (tray 4 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 4.** 5. Select **Pre-feed.** Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 10.	Go to step 9.
9	Check the sensor (tray 4 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 4 feed-out). Go to **"2X 500-sheet drawer (2TM)—sensor (tray 4 feed-out) removal" on page 4-38**.	Replace the connection.
10	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 11.	Problem solved.
11	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

244.01 Sensor (tray 3 feed-out) on jam (tray 4 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.

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Step	Check	Yes	No
2	Check the media size setup. Does the media size in use match the size set for tray 4?	Go to step 3.	Replace the media or change the media size setup.
3	Check the tray 4 rolls. Pull out tray 4, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2X 500-sheet drawer (2TM)—feed roll removal" on page 4-28**, **"2X 500-sheet drawer (2TM)—separation roll removal" on page 4-32**, and **"2X 500-sheet drawer (2TM)—pick roll removal" on page 4-34**.
4	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch tray 3 feed-out sensor or tray 4 feed-out sensor?	Remove the media.	Go to step 5.
5	Check the sensor (tray 4 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 4.** 5. Select **Pre-feed.** Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator for the above sensor operates?	Go to step 7.	Go to step 6.
6	Check the sensor (tray 4 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 4 feed-out). Go to **"2X 500-sheet drawer (2TM)—sensor (tray 4 feed-out) removal" on page 4-38**.	Replace the connection.
7	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 10.	Replace the connection.

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Step	Check	Yes	No
8	Check the sensor (tray 3 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Pre-feed.** Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator for the above sensor operates?	Replace the sensor (tray 3 feed-out). Go to **"2X 500-sheet drawer (2TM)—sensor (tray 3 feed-out) removal" on page 4-37**.	Go to step 9.
9	Check the sensor (tray 3 feed-out) for proper connection. Is the above sensor connected properly?	Go to step 10.	Replace the connection.
10	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 11.	Problem solved.
11	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual*.	Problem solved.

244.02 Sensor (tray 2 feed-out) on jam (tray 4 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.
2	Check the media size setup. Does the media size in use match the size set for tray 4?	Go to step 3.	Replace the media or change the media size setup.

Step	Check	Yes	No
3	Check the tray 4 rolls. Pull out tray 4, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2X 500-sheet drawer (2TM)—feed roll removal" on page 4-28**, **"2X 500-sheet drawer (2TM)—separation roll removal" on page 4-32**, and **"2X 500-sheet drawer (2TM)—pick roll removal" on page 4-34**.
4	Check the media position. Open the printer left lower door assembly, and visually check it. Does the media touch the sensor (tray 2 feed-out)?	Remove the media.	Go to step 5.
5	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the sensor (tray 4 feed-out)?	Remove the media.	Go to step 6.
6	Check the sensor (tray 2 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 2.** 5. Select **Feed-out.** Open the printer left lower door assembly, and visually check it. Does the display on the operator panel change every time a piece of white paper is placed over the sensing area of the above sensor?	Go to step 8.	Go to step 7.
7	Check the sensor (tray 2 feed-out) for proper connection. Is the above sensor connected properly?	Go to step 8.	Replace the connection.
8	Check the sensor (tray 4 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 4.** 5. Select **Pre-feed.** Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator for the above sensor operates?	Go to step 10.	Go to step 9.

Step	Check	Yes	No
9	Check the sensor (tray 4 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 3 feed-out). Go to **"2X 500-sheet drawer (2TM)—sensor (tray 3 feed-out) removal" on page 4-37**.	Replace the connection.
10	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 11.	Replace the connection.
11	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 12.	Problem solved.
12	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

244.03 Sensor (registration) on jam (tray 4 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.
2	Check the media size setup. Does the media size in use match the size set for tray 4?	Go to step 3.	Replace the media or change the media size setup.
3	Check the tray 4 rolls. Pull out tray 4, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2X 500-sheet drawer (2TM)—feed roll removal" on page 4-28**, **"2X 500-sheet drawer (2TM)—separation roll removal" on page 4-32**, and **"2X 500-sheet drawer (2TM)—pick roll removal" on page 4-34**.

Step	Check	Yes	No
4	Check the media position. Open the printer left door assembly, and visually check it. Does the media touch the sensor (registration)?	Remove the media.	Go to step 5.
5	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the tray 4 feed-out sensor?	Remove the media.	Go to step 6.
6	Check the sensor (registration) for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Media Path.** 4. Select **Registration**. Open the printer left door assembly, and visually check it. Does the display on the operator panel change every time the actuator for the above sensor operates?	Go to step 8.	Go to step 7.
7	Check the sensor (registration) for proper connection. Is the above sensor connected properly?	Replace the sensor (registration). Refer to the *Printer Service Manual.*	Replace the connection.
8	Check the sensor (tray 3 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Pre-feed.** Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator for the above sensor operates?	Go to step 10.	Go to step 9.
9	Check the sensor (tray 4 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 4 feed-out). Go to **"2X 500-sheet drawer (2TM)—sensor (tray 4 feed-out) removal" on page 4-38**.	Replace the connection.
10	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 11.	Replace the connection.

Step	Check	Yes	No
11	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 12.	Problem solved.
12	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual*.	Problem solved.

244.04 Sensor (pre-feed) on jam (tray 4 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.
2	Check the media size setup. Does the media size in use match the size set for tray 4?	Go to step 3.	Replace the media or change the media size setup.
3	Check the tray 4 rolls. Pull out tray 4, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2X 500-sheet drawer (2TM)—feed roll removal" on page 4-28**, **"2X 500-sheet drawer (2TM)—separation roll removal" on page 4-32**, and **"2X 500-sheet drawer (2TM)—pick roll removal" on page 4-34**.
4	Check the media position. Does the media touch the tray 4 pre-feed media feed unit sensor?	Remove the media.	Go to step 5.

Step	Check	Yes	No
5	Check the tray 4 pre-feed sensor for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 4.** 5. Select **Pre-feed**. Remove the media tray assembly. Does the display on the operator panel change every time a white piece of paper is placed over the sensing area of the above sensor?	Ensure the Feed unit front guide is properly installed. Go to step 7.	Go to step 6.
6	Check the tray 4 pre-feed sensor for proper connection. Is the above sensor connected properly?	Replace the sensor (pre-feed). Go to **"2X 500-sheet drawer (2TM)—sensor (pre-feed) removal" on page 4-25**.	Replace the connection.
7	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 10.	Replace the connection.
8	Check the tray 4 media feed lift motor for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Tray 4 feed mtr**. Does the above media feed lift motor rotate properly?	Go to step 11.	Go to step 9.
9	Check the tray 4 media feed lift motor for proper connection. Is the above media feed lift motor connected properly?	Go to step 10.	Replace the connection.
10	Check the tray 4 media feed lift motor for proper operation. Replace the media feed lift motor for tray 4 with that for tray 3. Does the replaced media feed lift motor operate properly? 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Tray 4 feed mtr**. Does the above media feed lift motor rotate properly?	Reinstall the media feed lift motor for tray 3 as it previously was, and then replace the media feed lift motor for tray 4 with a new one. Go to **"2X 500-sheet drawer (2TM)—media feed lift motor removal" on page 4-17**.	Go to step 11.
11	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 12.	Replace the connection.

Step	Check	Yes	No
12	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 13.	Problem solved.
13	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual*.	Problem solved.

244.05 Sensor (tray 4 feed-out) static jam

Step	Check	Yes	No
1	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the tray 4 feed-out sensor?	Remove the media.	Go to step 2.
2	Check the sensor (tray 4 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 4.** 5. Select **Feed-out**. Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator for the above sensor operates?	Go to step 4.	Go to step 3.
3	Check the sensor (tray 4 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 4 feed-out). Go to **"2X 500-sheet drawer (2TM)—sensor (tray 4 feed-out) removal" on page 4-38**.	Replace the connection.
4	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 5.	Problem solved.

Step	Check	Yes	No
5	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

943.00 Tray 3 lift up / no tray failure

Step	Check	Yes	No
1	Check the media. Pull out tray 3, and visually check it. Is any media loaded in tray 3?	Go to step 2.	Load media.
2	Check the tray. Is the tray 3 lift sector gear 12T damaged or any of the tray 3 surrounding parts.	Go to step 3.	Replace the tray lift sector gear 12T or any other damaged components. Go to **"2X 500-sheet drawer (2TM)—tray lift gear group removal" on page 4-16**.
3	Check the tray 3 media feed lift motor for proper operation. Pull out the media tray, then push it back in. Does the tray lift up properly?	Go to step 7.	Go to step 4.
4	Check the tray 3 media feed lift motor for proper connection. Is the above motor connected properly?	Go to step 5.	Replace the connection.
5	Check the tray 3 media feed lift motor for proper operation. Replace the media feed lift motor for tray 3 with that for tray 4. Pull out the media tray, then push it back in. Does the tray lift up properly?	Go to step 8.	Go to step 6.
6	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 7.	Replace the connection.

Step	Check	Yes	No
7	Check the tray 3 sensor (media level) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Media level**. Remove the media tray assembly, and move the pick roll with your finger in an up and down motion. Avoid touching the rubber roll surface. Does the operator panel change every time the sensing area is blocked on the above sensor?	Go to step 9.	Go to step 8.
8	Check the tray 3 sensor (media level) for proper connection. Is the above sensor connected properly?	Replace the sensor (media level). Go to **"2X 500-sheet drawer (2TM)—sensor (media level) removal" on page 4-23**.	Replace the connection.
9	Check the tray 3 switch (media size) for proper connection. Is the above switch connected properly?	Replace the switch (media size). Go to **"2X 500-sheet drawer (2TM)—switch (media size) assembly removal" on page 4-8**.	Replace the connection.
10	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 11.	Problem solved.
11	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

944.00 Tray 4 lift up / no tray failure

Step	Check	Yes	No
1	Check the media. Pull out tray 4, and visually check it. Is any media loaded in tray 4?	Go to step 2.	Load media.

Step	Check	Yes	No
2	Check the tray. Are the tray lift sector gear 12T of tray 4 or the surrounding parts of it damaged?	Go to step 3.	Replace the tray lift sector gear 12T or any other damaged components.
3	Check the tray 4 media feed lift motor for proper operation. Pull out the media tray, then push it back in. Does the tray lift up properly?	Go to step 7.	Go to step 4.
4	Check the tray 4 media feed lift motor for proper connection. Is the above motor connect properly?	Go to step 5.	Replace the connection.
5	Check the tray 4 media feed lift motor for proper operation. Replace the media feed lift motor for tray 4 with that for tray 3. Pull out the media tray, then push it back in. Does the tray lift up properly?	Reinstall the media feed lift motor for tray 3 as it previously was, and then replace the motor for tray 4 with a new one. Go to **"2X 500-sheet drawer (2TM)—media feed lift motor removal" on page 4-17**.	Go to step 6.
6	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 7.	Replace the connection.
7	Check the tray 4 sensor (media level) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 4.** 5. Select **Media level**. Remove the media tray assembly, and move the pick roll with your finger in an up and down motion. Avoid touching the rubber roll surface. Does the operator panel change every time the sensing area is blocked on the above sensor?	Go to step 9.	Go to step 8.
8	Check the tray 4 sensor (media level) for proper connection. Is the above sensor connected properly?	Replace the sensor (media level). Go to **"2X 500-sheet drawer (2TM)—sensor (media level) removal" on page 4-23**.	Replace the connection.
9	Check the tray 4 switch (media size) for proper connection. Is the above switch connected properly?	Replace the switch (media size). Go to **"2X 500-sheet drawer (2TM)—switch (media size) assembly removal" on page 4-8**.	Replace the connection.

Step	Check	Yes	No
10	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 11.	Problem solved.
11	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

980.00 2TM/TTM controller card assembly communication failure

Step	Check	Yes	No
1	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Problem solved.	Replace the connection.
2	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 3.	Problem solved.
3	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

Tray 3 media size failure

Step	Check	Yes	No
1	Check the media. Pull out tray 3, and visually check it. Is the media loaded in tray 3 properly?	Go to step 2.	Load media properly.
2	Check the media. Pull out tray 3, and visually check it. Are the front media tray guide assembly and rear media tray guide on tray 3 set correctly?	Go to step 3.	Set the parts properly.

Step	Check	Yes	No
3	Check the tray 3 switch (media size) for proper operation. Pull out tray 3, and visually check it. Is the switch (media size) for tray 3 installed properly?	Go to step 4.	Install the switch (media size) for tray 3 correctly. Go to **"2X 500-sheet drawer (2TM)—switch (media size) assembly removal" on page 4-8**.
4	Check the switch (media size) for proper connection. Is the above switch connected properly?	Replace the switch (media size). Go to **"2X 500-sheet drawer (2TM)—switch (media size) assembly removal" on page 4-8**.	Replace the connection.
5	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 6.	Replace the connection.
6	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 7.	Problem solved.
7	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

Tray 4 media size failure

Step	Check	Yes	No
1	Check the media. Pull out tray 4, and visually check it. Is the media loaded in tray 3 properly?	Go to step 2.	Load media properly.
2	Check the media. Pull out tray 4, and visually check it. Are the front media tray guide assembly and rear media tray guide on tray 4 set correctly?	Go to step 3.	Set the parts properly.

Step	Check	Yes	No
3	Check the tray 4 switch (media size) for proper operation. Pull out tray 4, and visually check it. Is the tray 4 switch (media size) installed properly?	Go to step 4.	Install the switch (media size) for tray 4 correctly. Go to **"2X 500-sheet drawer (2TM)—switch (media size) assembly removal" on page 4-8**.
4	Check the switch (media size) for proper connection. Is the above switch connected properly?	Replace the switch (media size). Go to **"2X 500-sheet drawer (2TM)—switch (media size) assembly removal" on page 4-8**.	Replace the connection.
5	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 6.	Replace the connection.
6	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 7.	Problem solved.
7	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

2TM/TTM left door assembly open

Step	Check	Yes	No
1	Check the 2TM/TTM left door assembly for opening and closing. Does the 2TM/TTM left door assembly open or close normally?	Go to step 2.	Check the 2TM/TTM left door assembly for deformation, and reinstall it. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM left door assembly removal" on page 4-6**.

Step	Check	Yes	No
2	Check the switch (2TM/TTM left door interlock) for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Cover and Door.** 4. Select **Door C 2TM/TTM**. Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above switch operates?	Go to step 4.	Go to step 3.
3	Check switch (2TM/TTM left door interlock) for proper connection. Is the above switch connected properly?	Replace the switch (2TM/TTM left door interlock). Go to **"2X 500-sheet drawer (2TM)—switch (2TM/TTM left door interlock) removal" on page 4-42**.	Replace the connection.
4	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 3.	Problem solved.
5	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

No media in the select media tray

Step	Check	Yes	No
1	Check the media. Is the media loaded in the selected tray?	Go to step 2.	Load media.

Step	Check	Yes	No
2	Check the sensor (media out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Media out**. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 4.** 5. Select **Media out**. Remove the appropriate media tray assembly. Does the display on the operator panel change every time the sensing area on the above sensor is blocked by the media out actuator?	Go to step 4.	Go to step 3.
3	Check the sensor (media out) for proper connection. Check tray 3 or tray 4. Is the above sensor connected properly?	Replace the appropriate sensor (media out). Go to **"2X 500-sheet drawer (2TM)—sensor (media out) removal" on page 4-24**.	Replace the connection.
4	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 5.	Replace the connection.
5	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 6.	Problem solved.
6	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual*.	Problem solved.

Media size mismatch in width

Step	Check	Yes	No
1	Check the media. Is the media loaded in tray properly? Pull out the tray, and visually check it.	Go to step 2.	Load media properly.

Step	Check	Yes	No
2	Check the media. Pull out each tray, and visually check it. Are the front media tray guide assembly and rear media tray guide on tray 3 and tray 4 set correctly?	Go to step 3.	Set the parts properly.
3	Check the switch (media size) for proper installation. Pull out each tray, and visually check it. Are the switch (media size) for tray 3 and tray 4 installed properly?	Go to step 4.	Install the switch (media size) for each tray correctly. Go to **"2X 500-sheet drawer (2TM)—switch (media size) assembly removal" on page 4-8**.
4	Check the switch (media size) for proper connection. Is the above switch for tray 3 and 4 connected properly?	Go to step 6.	Connect the connectors properly.
5	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 9.	Replace the connection.
6	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 7.	Problem solved.
7	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

Tray 3 media size mismatch in length

Step	Check	Yes	No
1	Check the media. Pull out tray 3, and visually check it. Is the media loaded in tray 3 properly?	Go to step 2.	Load media properly.
2	Check the media. Pull out tray 3, and visually check it. Are the front media tray guide assembly and rear media tray guide on tray 3 set correctly?	Go to step 3.	Set the parts properly.

Step	Check	Yes	No
3	Check the tray 3 switch (media size) for proper installation. Pull out tray 3, and visually check it. Is the switch (media size) for tray 3 installed properly?	Go to step 5.	Install the switch (media size) for tray 3 correctly. Go to **"2X 500-sheet drawer (2TM)—switch (media size) assembly removal" on page 4-8**.
4	Check the switch (media size) for proper connection. Is the above switch connected properly?	Replace the switch (media size). Go to **"2X 500-sheet drawer (2TM)—switch (media size) assembly removal" on page 4-8**.	Replace the connection.
5	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 6.	Replace the connection.
6	Check the tray 3 rolls. Pull out tray 3, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 7.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2X 500-sheet drawer (2TM)—feed roll removal" on page 4-28**, **"2X 500-sheet drawer (2TM)—separation roll removal" on page 4-32**, and **"2X 500-sheet drawer (2TM)—pick roll removal" on page 4-34**.
7	Check the media position. Open the printer left door assembly, and visually check it. Does the media touch the sensor (registration)?	Remove the media.	Go to step 8.
8	Check the roll. Open the printer left door assembly, and visually check it. Is the media transport roll assembly for transport free of excess wear and contamination?	Go to step 9.	Clean or replace the media transport roll assembly.
9	Check the roll. Open the printer left door assembly, and visually check it. Is the registration roll assembly for transport free of excess wear and contamination?	Go to step 10.	Clean or replace the registration roll assembly.

Step	Check	Yes	No
10	Check the sensor (registration) for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Media Path.** 4. Select **Registration**. Open the printer left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 12.	Go to step 11.
11	Check the sensor (registration) for proper connection. Is the above sensor connected properly?	Replace the sensor (registration). Refer to the *Printer Service Manual.*	Replace the connection.
12	Check the registration clutch for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Registrat clutch**. Does the above component make an audible clicking sound every time it is activated?	Go to step 14	Go to step 13.
13	Check the registration clutch for proper connection. Is the above component connected properly?	Replace the registration clutch.	Replace the connection.
14	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 15.	Problem solved.
15	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

Tray 4 media size mismatch in length

Step	Check	Yes	No
1	Check the media. Pull out tray 4, and visually check it. Is the media loaded in tray 4 properly?	Go to step 2.	Load media properly.
2	Check the media. Are the front media tray guide assembly and rear media tray guide on tray 4 set correctly? Pull out tray 4, and visually check it.	Go to step 3.	Set the parts properly.

Step	Check	Yes	No
3	Check the tray 4 switch (media size) for proper installation. Pull out tray 4, and visually check it. Is the tray 4 switch (media size) installed properly?	Go to step 5.	Install the switch (media size) for tray 4 correctly.
4	Check the tray 4 switch (media size) for proper connection. Is the above switch connected properly?	Replace the switch (media size). Go to **"2X 500-sheet drawer (2TM)—switch (media size) assembly removal"** on page 4-8.	Replace the connection.
5	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 6.	Replace the connection.
6	Check the tray 4 rolls. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination? Pull out tray 4, and check it.	Go to step 7.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2X 500-sheet drawer (2TM)—feed roll removal" on page 4-28**, **"2X 500-sheet drawer (2TM)—separation roll removal" on page 4-32**, and **"2X 500-sheet drawer (2TM)—pick roll removal" on page 4-34**.
7	Check the media position. Does the media touch the sensor (registration)? Open the printer left door assembly and check it (visual check).	Remove the media.	Go to step 8.
8	Check the roll. Open the printer left door assembly, and visually check it. Is the media transport roll assembly for transport free of excess wear and contamination?	Go to step 9.	Clean or replace the media transport roll assembly.
9	Check the roll. Open the printer left door assembly, and visually check it. Is the registration roll assembly for transport free of excess wear and contamination?	Go to step 10.	Clean or replace the registration roll assembly.

Step	Check	Yes	No
10	Check the sensor (registration) for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Media Path.** 4. Select **Registration**. Open the printer left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 12.	Go to step 11.
11	Check the sensor (registration) for proper connection. Is the above sensor connected properly?	Replace the sensor (registration). Refer to the *Printer Service Manual.*	Replace the connection.
12	Check the registration clutch for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Registrat clutch.** Does the above component make an audible clicking sound every time it is activated?	Go to step 14.	Go to step 13.
13	Check the registration clutch for proper connection. Is the above component connected properly?	Replace the registration clutch. Refer to the *Printer Service Manual.*	Replace the connection.
14	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal" on page 4-43**. Go to step 15.	Problem solved.
15	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

Error code messages - 2000-sheet dual input (TTM)

Error code or message	Error Contents	Description\Action
243.00 Paper jam Check tray 3	Sensor (pre-feed) on jam (tray 3 media feed)	The sensor (pre-feed) is not turned on within the specified time after the tray 3 feed lift motor is turned on. Go to **"243.00 Sensor (pre-feed) on jam (tray 3 media feed)" on page 2-38**.
243.01 Paper jam Check areas C, tray 3	Sensor (tray 3 feed-out) on jam (tray 3 media feed)	The sensor (tray 3 feed-out) is not turned on within the specified time after the sensor (pre-feed) is turned on. Go to **"243.01 Sensor (tray 3 feed-out) on jam (tray 3 media feed)" on page 2-39**.
243.02 Paper jam Check areas A, B	Sensor (tray 2 feed-out) on jam (tray 3 media feed)	The sensor (tray 2 feed-out) is not turned on within the specified time after the sensor (tray 3 feed-out) is turned on. Go to **"243.02 Sensor (tray 2 feed-out) on jam (tray 3 media feed)" on page 2-41**.
243.03 Paper jam Check area B	Sensor (registration) on jam (tray 3 media feed)	The sensor (registration) is not turned on within the specified time after the sensor (tray 3 feed-out) is turned on. Go to **"243.03 Sensor (registration) on jam (tray 3 media feed)" on page 2-43**.
243.04 Paper jam Check area C	Sensor (tray 3 feed-out) static jam	Media remains on the sensor (tray 3 feed-out). Go to **"243.04 Sensor (tray 3 feed-out) static jam" on page 2-44**.
244.00 Paper jam Check areas C, tray 4	Sensor (tray 4 feed-out) on jam (tray 4 media feed)	The sensor (tray 4 feed-out) is not turned on within the specified time after the sensor (pre-feed) is turned on. Go to **"244.00 Sensor (tray 4 feed-out) on jam (tray 4 media feed)" on page 2-45**.
244.01 Paper jam Check areas C, tray 4	Sensor (tray 3 feed-out) on jam (tray 4 media feed)	The sensor (tray 3 feed-out) is not turned on within the specified time after the sensor (tray 4 feed-out) is turned on. Go to **"244.01 Sensor (tray 3 feed-out) on jam (tray 4 media feed)" on page 2-47**.
244.02 Paper jam Check areas B, C	Sensor (tray 2 feed-out) on jam (tray 4 media feed)	The sensor (tray 2 feed-out) is not turned on within the specified time after the sensor (tray 4 feed-out) is turned on. Go to **"244.02 Sensor (tray 2 feed-out) on jam (tray 4 media feed)" on page 2-49**.
244.03 Paper jam Check area B	Sensor (registration) on jam (tray 4 media feed)	The sensor (registration) is not turned on within the specified time after the sensor (tray 4 feed-out) is turned on. Go to **"244.03 Sensor (registration) on jam (tray 4 media feed)" on page 2-50**.
244.04 Paper jam Check area tray 4	Sensor (pre-feed) on jam (tray 4 media feed)	The sensor (pre-feed) is not turned on within the specified time after the tray 4 feed lift motor is turned on. Go to **"244.04 Sensor (pre-feed) on jam (tray 4 media feed)" on page 2-52**.

Error code or message	Error Contents	Description\Action
244.05 Paper jam Check areas C, tray 4	Sensor (tray 4 feed-out) static jam	Media remains on the sensor (tray 4 feed-out). Go to **"244.05 Sensor (tray 4 feed-out) static jam" on page 2-54**.
34 Incorrect media Check tray 3 guides	Tray 3 media size mismatch in length	The media length detected by the sensor (registration) after the media is fed from the tray 3 does not match the length detected by the tray 3 size switch. Go to **"Tray 3 media size mismatch in length" on page 2-63**.
34 Incorrect media Check tray 4 guides	Tray 4 media size mismatch in length	The media length detected by the sensor (registration) after the media is fed from the tray 4 does not match the length detected by the tray 4 size switch. Go to **"Tray 4 media size mismatch in length" on page 2-65**.
943.00 Service tray 3 failure	Tray 3 lift up / no tray failure	The TTM-tray 3 sensor (media level) is not turned on within the specified time after the TTM-tray 3 media feed lift motor is turned on. The TTM-tray 3 switch (media size) detected no tray. Go to **"943.00 Tray 3 lift up / no tray failure" on page 2-55**.
944.00 Service tray 4 failure	Tray 4 lift up / no tray failure	The TTM-tray 4 sensor (media level) is not turned on within the specified time after the TTM-tray 4 media feed lift motor is turned on. The TTM-tray 4 switch (media size) detected no tray. Go to **"944.00 Tray 4 lift up / no tray failure" on page 2-56**.
980.00 Service tray 3 comm.	2TM/TTM controller card assembly communication failure	A communication error occurred between the printer engine card assembly and the 2TM/TTM controller card assembly. Go to **"980.00 2TM/TTM controller card assembly communication failure" on page 2-58**.
Check tray 3 or Check tray 4 tray guides	Media size mismatch in width	The media width is incorrect. Go to **"Media size mismatch in width" on page 2-62**.
Check tray 3 tray guides	Tray 3 media size failure	Although the tray 3 is set in the TTM, the media size is not detected correctly. Go to **"Tray 3 media size failure" on page 2-58**.
Check tray 4 tray guides	Tray 4 media size failure	Although the tray 4 is set in the TTM, the media size is not detected correctly. Go to **"Tray 4 media size failure" on page 2-59**.
Close door C	2TM/TTM left door open	The 2TM/TTM left door is open. Go to **"2TM/TTM left door assembly open" on page 2-60**.
Load tray 3 or Load tray 4 with <media>	No media in the select media tray	Media is not loaded in the tray. Go to **"No media in the select media tray" on page 2-61**.

Service checks - 2000-sheet dual input (TTM)

243.00 Sensor (pre-feed) on jam (tray 3 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.
2	Check the media size setup. Does the media size in use match the size set for tray 3?	Go to step 3.	Replace the media, or change the media size setup.
3	Check the tray 3 rolls. Pull out tray 3, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2000-sheet dual input (TTM)— feed roll removal" on page 4-102**, **"2000-sheet dual input (TTM)— separation roll removal" on page 4-106**, and **"2000-sheet dual input (TTM)—pick roll removal" on page 4-109**.
4	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the sensor (pre-feed) of the tray 3 media feed unit assembly?	Remove the media.	Go to step 5.
5	Check the tray 3 sensor (pre-feed) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Feed-out**. Remove the media tray assembly. Does the display on the operator panel change every time a white piece of paper is placed over the sensing area of the above sensor?	Go to step 7.	Go to step 6.
6	Check the tray 3 sensor (pre-feed) for proper connection. Is the above sensor connected properly?	Replace the sensor (pre-feed). Go to **"2000-sheet dual input (TTM)— sensor (media out) removal" on page 4-98**.	Replace the connection.
7	Check the connection between the 2TM/TTM controller card assembly and the printer engine card assembly. Are the above cards connected properly?	Go to step 8.	Replace the connection.

Step	Check	Yes	No
8	Check the tray 3 media feed lift motor for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Tray 3 feed mtr**. Does the above motor rotate normally?	Go to step 11.	Go to step 9.
9	Check the tray 3 media feed lift motor for proper connection. Is the above motor connected properly?	Go to step 10.	Replace the connection.
10	Check the tray 3 media feed lift motor for proper operation. Replace the media feed lift motor for tray 3 with that from tray 4. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Tray 3 feed mtr**. Does the above motor rotate normally?	Reinstall the media feed lift motor for tray 4 as it previously was, and replace the media feed lift motor for tray 3 with a new one. Go to **"2000-sheet dual input (TTM)— media feed lift motor removal" on page 4-91**.	Replace the 2TM/TTM controller card assembly.
11	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)— 2TM/TTM controller card assembly removal" on page 4-117**. Go to step 12.	Problem solved.
12	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

243.01 Sensor (tray 3 feed-out) on jam (tray 3 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.
2	Check the media size setup. Does the media size in use match the size set for tray 3?	Go to step 3.	Replace the media, or change the media size setup.

Step	Check	Yes	No
3	Check the tray 3 rolls. Pull out tray 3, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2000-sheet dual input (TTM)— feed roll removal" on page 4-102**, **"2000-sheet dual input (TTM)— separation roll removal" on page 4-106**, and **"2000-sheet dual input (TTM)—pick roll removal" on page 4-109**.
4	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the tray 3 feed-out sensor or the sensor (pre-feed) of the tray 3 media feed unit assembly?	Remove the media.	Go to step 5.
5	Check the sensor (tray 3 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Feed-out.** Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 7.	Go to step 6.
6	Check the sensor (tray 3 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 3 feed-out). Go to **"2000-sheet dual input (TTM)— sensor (tray 3 feed-out) removal" on page 4-90**.	Replace the connection.
7	Check the connection between the 2TM/TTM controller card assembly and the printer engine card assembly. Are the above cards connected properly?	Go to step 8.	Replace the connection.
8	Check the tray 3 sensor (pre-feed) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Feed-out.** Remove the media tray assembly. Does the display on the operator panel change every time a white piece of paper is placed over the sensing area of the above sensor?	Go to step 10.	Go to step 9.

Step	Check	Yes	No
9	Check the tray 3 sensor (pre-feed) for proper connection. Is the above sensor connected properly?	Replace the sensor (pre-feed). Go to **"2000-sheet dual input (TTM)— sensor (media out) removal" on page 4-98**.	Replace the connection.
10	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)— 2TM/TTM controller card assembly removal" on page 4-117**. Go to step 11.	Problem solved.
11	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

243.02 Sensor (tray 2 feed-out) on jam (tray 3 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.
2	Check the media size setup. Does the media size in use match the size set for tray 3?	Go to step 3.	Replace the media or change the media size setup.
3	Check the tray 3 rolls. Pull out tray 3, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2000-sheet dual input (TTM)— feed roll removal" on page 4-102**, **"2000-sheet dual input (TTM)— separation roll removal" on page 4-106**, and **"2000-sheet dual input (TTM)—pick roll removal" on page 4-109**.
4	Check the media position. Open the printer left lower door assembly, and visually check it. Does the media touch the sensor (tray 2 feed-out)?	Remove the media.	Go to step 5.

Step	Check	Yes	No
5	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the sensor (tray 3 feed-out)?	Remove the media.	Go to step 6.
6	Check the sensor (tray 2 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 2.** 5. Select **Feed-out.** Open the printer left lower door assembly, and visually check it. Does the display on the operator panel change every time a white piece of paper is placed over the sensing area of the above sensor?	Go to step 8.	Go to step 7.
7	Check the sensor (tray 2 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 2 feed-out). Refer to the *Printer Service Manual.*	Replace the connection.
8	Check the sensor (tray 3 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Feed-out.** Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 10.	Go to step 9.
9	Check the sensor (tray 3 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 3 feed-out). Go to **"2000-sheet dual input (TTM)— sensor (tray 3 feed-out) removal" on page 4-90**.	Replace the connection.
10	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 11.	Replace the connection.
11	Perform a print test. Does the error still occur?	Replace the 2TM/ TTM controller card assembly. Go to **"2000-sheet dual input (TTM)— 2TM/TTM controller card assembly removal" on page 4-117**. Go to step 11.	Problem solved.

Step	Check	Yes	No
12	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

243.03 Sensor (registration) on jam (tray 3 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.
2	Check the media size setup. Does the media size in use match the size set for tray 3?	Go to step 3.	Replace the media or change the media size setup.
3	Check the tray 3 rolls. Pull out tray 3, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2000-sheet dual input (TTM)— feed roll removal" on page 4-102**, **"2000-sheet dual input (TTM)— separation roll removal" on page 4-106**, and **"2000-sheet dual input (TTM)—pick roll removal" on page 4-109**.
4	Check the media position. Open the printer left door assembly, and visually check it. Does the media touch the sensor (registration)?	Remove the media.	Go to step 5.
5	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the sensor (tray 3 feed-out)?	Remove the media.	Go to step 6.
6	Check the sensor (registration) for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Media Path.** 4. Select **Registration.** Open the printer left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 8.	Go to step 7.

Step	Check	Yes	No
7	Check the sensor (registration) for proper connection. Is the above sensor connected properly?	Replace the sensor (registration). Refer to the *Printer Service Manual.*	Replace the connection.
8	Check the sensor (tray 3 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Feed-out.** Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 10.	Go to step 9.
9	Check the sensor (tray 3 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 3 feed-out). Go to **"2000-sheet dual input (TTM)— sensor (tray 3 feed-out) removal" on page 4-90**.	Replace the connection.
10	Check the connection between the 2TM/TTM controller card assembly and the printer engine card assembly. Are the above boards connected properly?	Go to step 11.	Replace the connection.
11	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)— 2TM/TTM controller card assembly removal" on page 4-117**. Go to step 12.	Problem solved.
12	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

243.04 Sensor (tray 3 feed-out) static jam

Step	Check	Yes	No
1	Check the media position. Does the media touch the sensor (tray 3 feed-out)? Open the 2TM/TTM left door assembly, and visually check it.	Remove the media.	Go to step 2.

Step	Check	Yes	No
2	Check the sensor (tray 3 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Feed-out.** Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 4.	Go to step 3.
3	Check the sensor (tray 3 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 3 feed-out). Go to **"2000-sheet dual input (TTM)—sensor (tray 3 feed-out) removal" on page 4-90**.	Replace the connection.
4	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)—2TM/TTM controller card assembly removal" on page 4-117**. Go to step 5.	Problem solved.
5	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

244.00 Sensor (tray 4 feed-out) on jam (tray 4 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.
2	Check the media size setup. Does the media size in use match the size set for tray 4?	Go to step 3.	Replace the media or change the media size setup.

Step	Check	Yes	No
3	Check the tray 4 rolls. Pull out tray 4, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2000-sheet dual input (TTM)— feed roll removal" on page 4-102**, **"2000-sheet dual input (TTM)— separation roll removal" on page 4-106**, and **"2000-sheet dual input (TTM)—pick roll removal" on page 4-109**.
4	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the sensor (pre-feed) of the tray 4 media feed unit assembly or the sensor (tray 4 feed-out)?	Remove the media.	Go to step 5.
5	Check the tray 4 sensor (pre-feed) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 4.** 5. Select **Feed-out.** Remove the media tray assembly. Does the display on the operator panel change every time a white piece of paper is placed over the sensing area of the above sensor?	Go to step 7.	Go to step 6.
6	Check the tray 4 sensor (pre-feed) for proper connection. Is the above sensor connected properly?	Replace the sensor (pre-feed). Go to **"2000-sheet dual input (TTM)— sensor (media out) removal" on page 4-98**.	Replace the connection.
7	Check the connection between the 2TM/TTM controller card assembly and the printer engine card assembly. Are the above cards connected properly?	Go to step 8.	Replace the connection.
8	Check the sensor (tray 4 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 4.** 5. Select **Feed-out.** Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 10.	Go to step 9.

Step	Check	Yes	No
9	Check the sensor (tray 4 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 4 feed-out). Go to **"2000-sheet dual input (TTM)—sensor (tray 4 feed-out) removal" on page 4-84**.	Replace the connection.
10	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)—2TM/TTM controller card assembly removal" on page 4-117**. Go to step 11.	Problem solved.
11	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

244.01 Sensor (tray 3 feed-out) on jam (tray 4 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.
2	Check the media size setup. Does the media size in use match the size set for tray 4?	Go to step 3.	Replace the media or change the media size setup.
3	Check the tray 4 rolls. Pull out tray 4, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2000-sheet dual input (TTM)—feed roll removal" on page 4-102**, **"2000-sheet dual input (TTM)—separation roll removal" on page 4-106**, and **"2000-sheet dual input (TTM)—pick roll removal" on page 4-109**.
4	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the sensor (tray 3 feed-out) or the sensor (tray 4 feed-out)?	Remove the media.	Go to step 5.

Step	Check	Yes	No
5	Check the sensor (tray 4 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 4.** 5. Select **Feed-out.** Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 7.	Go to step 6.
6	Check the sensor (tray 4 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 4 feed-out). Go to **"2000-sheet dual input (TTM)— sensor (tray 4 feed-out) removal" on page 4-84**.	Replace the connection.
7	Check the connection between the 2TM/TTM controller card assembly and the printer engine card assembly. Are the above cards connected properly?	Go to step 8.	Replace the connection.
8	Check the sensor (tray 3 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Feed-out.** Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 10.	Go to step 9.
9	Check the sensor (tray 3 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 3 feed-out). Go to **"2000-sheet dual input (TTM)— sensor (tray 3 feed-out) removal" on page 4-90**.	Replace the connection.
10	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)— 2TM/TTM controller card assembly removal" on page 4-117**. Go to step 11.	Problem solved.
11	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

244.02 Sensor (tray 2 feed-out) on jam (tray 4 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.
2	Check the media size setup. Does the media size in use match the size set for tray 4?	Go to step 3.	Replace the media or change the media size setup.
3	Check the tray 4 rolls. Pull out tray 4, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. **Go to "2000-sheet dual input (TTM)— feed roll removal" on page 4-102, "2000-sheet dual input (TTM)— separation roll removal" on page 4-106, and "2000-sheet dual input (TTM)—pick roll removal" on page 4-109.**
4	Check the media position. Open the printer left lower door assembly, and visually check it. Does the media touch the sensor (tray 2 feed-out)?	Remove the media.	Go to step 5.
5	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the sensor (tray 4 feed-out)?	Remove the media.	Go to step 6.
6	Check the sensor (tray 2 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 2.** 5. Select **Feed-out.** Open the printer left lower door assembly, and visually check it. Does the display on the operator panel change every time a white piece of paper is placed over the sensing area of the above sensor?	Go to step 8.	Go to step 7.
7	Check the sensor (tray 2 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 2 feed-out). Refer to the *Printer Service Manual.*	Replace the connection.

Step	Check	Yes	No
8	Check the sensor (tray 4 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 4.** 5. Select **Feed-out.** Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 10.	Go to step 9.
9	Check the sensor (tray 4 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 3 feed-out). Go to **"2000-sheet dual input (TTM)—sensor (tray 3 feed-out) removal" on page 4-90**.	Replace the connection.
10	Check the connection between the 2TM/TTM controller card assembly and the printer engine card assembly. Are the above cards connected properly?	Go to step 11.	Replace the connection.
11	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)—2TM/TTM controller card assembly removal" on page 4-117**. Go to step 12.	Problem solved.
12	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

244.03 Sensor (registration) on jam (tray 4 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.
2	Check the media size setup. Does the media size in use match the size set for tray 4?	Go to step 3.	Replace the media or change the media size setup.

Step	Check	Yes	No
3	Check the tray 4 rolls. Pull out tray 4, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2000-sheet dual input (TTM)— feed roll removal" on page 4-102**, **"2000-sheet dual input (TTM)— separation roll removal" on page 4-106**, and **"2000-sheet dual input (TTM)—pick roll removal" on page 4-109**.
4	Check the media position (1). Open the printer left door assembly, and visually check it. Does the media touch the sensor (registration)?	Remove the media.	Go to step 5.
5	Check the media position (2). Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the sensor (tray 4 feed-out)?	Remove the media.	Go to step 6.
6	Check the sensor (registration) for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Media Path.** 4. Select **Registration.** Open the printer left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 8.	Go to step 7.
7	Check the sensor (registration) for proper connection. Is the above sensor connected properly?	Replace the sensor (registration). Refer to the *Printer Service Manual.*	Replace the connection.
8	Check the sensor (tray 4 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 4.** 5. Select **Feed-out.** Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 10.	Go to step 9.

Step	Check	Yes	No
9	Check the sensor (tray 4 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 4 feed-out). Go to **"2000-sheet dual input (TTM)— sensor (tray 4 feed-out) removal" on page 4-84**.	Replace the connection.
10	Check the connection between the 2TM/TTM controller card assembly and the printer engine card assembly. Are the above cards connected properly?	Go to step 11.	Replace the connection.
11	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)— 2TM/TTM controller card assembly removal" on page 4-117**. Go to step 12.	Problem solved.
12	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

244.04 Sensor (pre-feed) on jam (tray 4 media feed)

Step	Check	Yes	No
1	Check the media condition. Is the media in the tray crumpled or damaged?	Replace the media.	Go to step 2.
2	Check the media size setup. Does the media size in use match the size set for tray 4?	Go to step 3.	Replace the media or change the media size setup.
3	Check the tray 4 rolls. Pull out tray 4, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 4.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2000-sheet dual input (TTM)— feed roll removal" on page 4-102**, **"2000-sheet dual input (TTM)— separation roll removal" on page 4-106**, and **"2000-sheet dual input (TTM)—pick roll removal" on page 4-109**.
4	Check the media position. Does the media touch the sensor (pre-feed) of the tray 4 media feed unit assembly?	Remove the media.	Go to step 5.

Step	Check	Yes	No
5	Check the tray 4 sensor (pre-feed) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 4.** 5. Select **Pre-feed.** Remove the media tray assembly. Does the display on the operator panel change every time a white piece of paper is placed over the sensing area of the above sensor?	Go to step 7.	Go to step 6.
6	Check the tray 4 sensor (pre-feed) for proper connection. Is the above sensor connected properly?	Replace the sensor (pre-feed). Go to **"2000-sheet dual input (TTM)— sensor (media out) removal" on page 4-98**.	Replace the connection.
7	Check the connection between the 2TM/TTM controller card assembly and the printer engine card assembly. Are the above cards connected properly?	Go to step 8.	Replace the connection.
8	Check the tray 4 media feed lift motor for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Tray 4 feed mtr**. Does the above motor rotate normally?	Go to step 11.	Go to step 9.
9	Check the tray 4 media feed lift motor for proper connection. Is the above motor connected properly?	Go to step 10.	Replace the connection.
10	Check the tray 4 media feed lift motor for proper operation. Replace the media feed lift motor for tray 4 with that for tray 3. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Tray 4 feed mtr**. Does the above motor rotate normally?	Reinstall the media feed lift motor for tray 3 as it previously was, and then replace the media feed lift motor for tray 4 with a new one. Go to **"2000-sheet dual input (TTM)— media feed lift motor removal" on page 4-91**.	Replace the 2TM/ TTM controller card assembly.
11	Perform a print test. Does the error still occur?	Replace the 2TM/ TTM controller card assembly. Go to **"2000-sheet dual input (TTM)— 2TM/TTM controller card assembly removal" on page 4-117**. Go to step 12.	Problem solved.

Step	Check	Yes	No
12	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

244.05 Sensor (tray 4 feed-out) static jam

Step	Check	Yes	No
1	Check the media position. Open the 2TM/TTM left door assembly, and visually check it. Does the media touch the sensor (tray 4 feed-out)?	Remove the media.	Go to step 2.
2	Check the sensor (tray 4 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 4.** 5. Select **Feed-out.** Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 4.	Go to step 3.
3	Check the sensor (tray 4 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 4 feed-out). Go to **"2000-sheet dual input (TTM)—sensor (tray 4 feed-out) removal" on page 4-84**.	Replace the connection.
4	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)—2TM/TTM controller card assembly removal" on page 4-117**. Go to step 5.	Problem solved.
5	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

943.00 Tray 3 lift up / no tray failure

Step	Check	Yes	No
1	Check the media. Pull out tray 3, and visually check it. Is any media loaded in tray 3?	Go to step 2.	Load media.
2	Check the tray. Is the tray 3 lift gear assembly or the surrounding parts of it damaged?	Go to step 3.	Replace the tray 3 lift gear assembly or any other damaged parts. Go to **"2000-sheet dual input (TTM)— tray 3 lift gear assembly removal" on page 4-114**.
3	Check the tray 3 media feed lift motor for proper operation. Pull out the media tray, then push it back in. Does the tray lift up properly?	Go to step 6.	Go to step 4.
4	Check the tray 3 media feed lift motor for proper connection. Is the above motor connected properly?	Go to step 5.	Replace the connection.
5	Check the tray 3 media feed lift motor for proper operation. Replace the media feed lift motor for tray 3 with that for tray 4. Pull out the media tray, then push it back in. Does the tray lift up properly?	Reinstall the media feed lift motor for tray 4 as it previously was, and replace the media feed lift motor for tray 3 with a new one. Go to **"2000-sheet dual input (TTM)— media feed lift motor removal" on page 4-91**.	Go to step 6.
6	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 7.	Replace the connection.
7	Check the tray 3 sensor (media level) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Media level.** Remove the media tray assembly, and move the pick roll with your finger in an up and down motion. Avoid touching the rubber roll surface. Does the display on the operator panel change every time the sensing area of the above sensor is blocked?	Go to step 9.	Go to step 8.

Step	Check	Yes	No
8	Check the sensor (media level) for proper connection. Is the above sensor connected properly?	Replace the sensor (media level). Go to **"2000-sheet dual input (TTM)— sensor (media level) removal" on page 4-97**.	Replace the connection.
9	Check the switch (TTM media size) for proper connection. Is the above switch connected properly?	Replace the switch (TTM media size). Go to **"2000-sheet dual input (TTM)— switch (TTM media size) removal" on page 4-85**.	Replace the connection.
10	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)— 2TM/TTM controller card assembly removal" on page 4-117**. Go to step 11.	Problem solved.
11	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

944.00 Tray 4 lift up / no tray failure

Step	Check	Yes	No
1	Check the media. Pull out tray 4, and visually check it. Is any media loaded in tray 4?	Go to step 2.	Load media.
2	Check the tray. Are the tray 4 lift gear assembly or the surrounding parts of it damaged?	Go to step 3.	Replace the tray 4 lift gear assembly or the obstacles. Go to **"2000-sheet dual input (TTM)— tray 4 lift gear assembly removal" on page 4-115**.
3	Check the tray 4 media feed lift motor for proper operation. Pull out the media tray, then push it back in. Does the tray lift up properly?	Go to step 6.	Go to step 4.
4	Check the tray 4 media feed lift motor for proper connection. Is the above motor connected properly?	Go to step 5.	Replace the connection.

Step	Check	Yes	No
5	Check the tray 4 media feed lift motor for proper operation. Replace the media feed lift motor for tray 4 with that for tray 3. Pull out the media tray, then push it back in. Does the tray lift up properly?	Reinstall the media feed lift motor for tray 3 as it previously was, and then replace the motor for tray 4 with a new one. Go to **"2000-sheet dual input (TTM)— media feed lift motor removal" on page 4-91**.	Go to step 6.
6	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 7.	Replace the connection.
7	Check the tray 3 sensor (media level) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Media level.** Remove the media tray assembly, and move the pick roll with your finger in an up and down motion. Avoid touching the rubber roll surface. Does the display on the operator panel change every time the sensing area of the above sensor is blocked?	Go to step 9.	Go to step 8.
8	Check the sensor (media level) for proper connection. Is the above sensor connected properly?	Replace the sensor (media level). Go to **"2000-sheet dual input (TTM)— sensor (media level) removal" on page 4-97**.	Replace the connection.
9	Check the tray 4 switch (TTM media size) for proper connection. Is the above switch connected properly?	Replace the switch (TTM media size). Go to **"2000-sheet dual input (TTM)— switch (TTM media size) removal" on page 4-85**	Replace the connection.
10	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)— 2TM/TTM controller card assembly removal" on page 4-117**. Go to step 11.	Problem solved.

Step	Check	Yes	No
11	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

980.00 2TM/TTM controller card assembly communication failure

Step	Check	Yes	No
1	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Problem solved.	Replace the connection.
2	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)—2TM/TTM controller card assembly removal" on page 4-117**. Go to step 3.	Problem solved.
3	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

Tray 3 media size failure

Step	Check	Yes	No
1	Check the media. Pull out tray 3, and visually check it. Is the media loaded in tray 3 properly?	Go to step 2.	Load media properly.
2	Check the media. Pull out tray 3, and visually check it. Are the front media guide and rear media guide on tray 3 set correctly?	Go to step 3.	Set the parts properly.
3	Check the switch (TTM media size) for proper installation. Pull out tray 3, and visually check it. Is the switch (TTM media size) installed properly?	Go to step 4.	Install the switch (TTM media size) correctly. Go to **"2000-sheet dual input (TTM)—switch (TTM media size) removal" on page 4-85**.

Step	Check	Yes	No
4	Check the switch (TTM media size) for proper connection. Is the above switch installed correctly?	Replace the switch (TTM media size). Go to **"2000-sheet dual input (TTM)— switch (TTM media size) removal" on page 4-85**.	Replace the connection.
5	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 6.	Replace the connection.
6	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)— 2TM/TTM controller card assembly removal" on page 4-117**. Go to step 7.	Problem solved.
7	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

Tray 4 media size failure

Step	Check	Yes	No
1	Check the media. Pull out tray 4, and visually check it. Is the media loaded in tray 4 properly?	Go to step 2.	Load media properly.
2	Check the media. Pull out tray 4, and visually check it. Are the front media guide and rear media guide on tray 4 set correctly?	Go to step 3.	Set the parts properly.
3	Check the switch (TTM media size) for proper installation. Pull out tray 4, and visually check it. Is the switch (TTM media size) for tray 4 installed properly?	Go to step 4.	Install the switch (TTM media size) correctly. Go to **"2000-sheet dual input (TTM)— switch (TTM media size) removal" on page 4-85**.
4	Check the switch (TTM media size) for proper connection. Is the above switch connected correctly?	Replace the switch (TTM media size). Go to **"2000-sheet dual input (TTM)— switch (TTM media size) removal" on page 4-85**.	Replace the connection.

Step	Check	Yes	No
5	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 6.	Replace the connection.
6	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)—2TM/TTM controller card assembly removal" on page 4-117**. Go to step 7.	Problem solved.
7	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

2TM/TTM left door assembly open

Step	Check	Yes	No
1	Check the 2TM/TTM left door assembly for opening and closing. Does the 2TM/TTM left door assembly open or close normally?	Go to step 2.	Check the 2TM/TTM left door assembly for deformation, and reinstall it. Go to **"2000-sheet dual input (TTM)—2TM/TTM left door assembly removal" on page 4-112**
2	Check the switch (2TM/TTM left door interlock) for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Cover** and **Door.** 4. Select **Door C 2TM/TTM.** Open the 2TM/TTM left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above switch operates?	Go to step 4.	Go to step 3.
3	Check the switch (2TM/TTM left door interlock) for proper connection. Is the above switch connected properly?	Replace the switch (2TM/TTM left door interlock). Go to **"2000-sheet dual input (TTM)—switch (2TM/TTM left door interlock) removal" on page 4-113**.	Replace the connection.

Step	Check	Yes	No
4	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 5.	Replace the connection.
5	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)—2TM/TTM controller card assembly removal" on page 4-117**. Go to step 6.	Problem solved.
6	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

No media in the select media tray

Step	Check	Yes	No
1	Check the media. Is the media loaded in the selected tray?	Go to step 2.	Load media.
2	Check the sensor (media out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 3.** 5. Select **Media out**. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 4.** 5. Select **Media out**. Remove the appropriate media tray assembly. Does the display on the operator panel change every time the sensing area on the above sensor is blocked by the media out actuator.	Go to step 4.	Go to step 3.
3	Check the sensor (media out) for proper connection. Check tray 3 and tray 4. Is the above sensor connected properly?	Replace the appropriate sensor (media out). Go to **"2000-sheet dual input (TTM)—sensor (media level) removal" on page 4-97**.	Replace the connection.

Step	Check	Yes	No
4	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 5.	Replace the connection.
5	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)— 2TM/TTM controller card assembly removal" on page 4-117**. Go to step 6.	Problem solved.
6	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

Media size mismatch in width

Step	Check	Yes	No
1	Check the media. Pull out the tray, and visually check it. Is the media loaded in tray properly?	Go to step 2.	Load media properly.
2	Check the media. Pull out the tray, and visually check it. Are the front media guide and rear media guide on tray 3 or tray 4 set correctly?	Go to step 3.	Set the parts correctly.
3	Check the switch (TTM media size) for installation. Pull out the tray, and visually check it. Is the switch (TTM media size) for tray 3 or tray 4 installed properly?	Go to step 4.	Install the switch (TTM media size) correctly. Go to **"2000-sheet dual input (TTM)— switch (TTM media size) removal" on page 4-85**.
4	Check the switch (TTM media size) for proper connection. Check tray 3 and tray 4. Are the above sensors connected properly?	Replace the appropriate switch (TTM media size). Go to **"2000-sheet dual input (TTM)— switch (TTM media size) removal" on page 4-85**.	Replace the connection.
5	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 6.	Replace the connection.

Step	Check	Yes	No
6	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)—2TM/TTM controller card assembly removal" on page 4-117**. Go to step 7.	Problem solved.
7	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

Tray 3 media size mismatch in length

Step	Check	Yes	No
1	Check the media. Pull out tray 3, and visually check it. Is the media loaded in tray 3 properly?	Go to step 2.	Load media properly.
2	Check the media. Pull out tray 3, and visually check it. Are the front media guide and rear media guide on tray 3 set correctly?	Go to step 3.	Set the parts properly.
3	Check the switch (TTM media size) for proper operation. Pull out tray 3, and visually check it. Is the switch (TTM media size) for tray 3 installed properly?	Go to step 4.	Install the switch (TTM media size) correctly. Go to **"2000-sheet dual input (TTM)—switch (TTM media size) removal" on page 4-85**.
4	Check the switch (TTM media size) for proper connection. Is the above switch connected properly?	Replace the switch (TTM media size). Go to **"2000-sheet dual input (TTM)—switch (TTM media size) removal" on page 4-85**.	Replace the connection.
5	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 6.	Replace the connection.

Step	Check	Yes	No
6	Check the tray 3 rolls. Pull out tray 3, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 7.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2000-sheet dual input (TTM)— feed roll removal" on page 4-102**, **"2000-sheet dual input (TTM)— separation roll removal" on page 4-106**, and **"2000-sheet dual input (TTM)—pick roll removal" on page 4-109**.
7	Check the media position. Open the printer left door assembly, and visually check it. Does the media touch the sensor (registration)?	Remove the media.	Go to step 8.
8	Check the roll. Open the printer left door assembly, and visually check it. Is the transport roll assembly for transport free of excess wear and contamination?	Go to step 9.	Clean or replace the transport roll assembly.
9	Check the roll. Open the printer left door assembly, and visually check it. Is the registration roll assembly for transport free of excess wear and contamination?	Go to step 10.	Clean or replace the registration roll assembly. Refer to the *Printer Service Manual.*
10	Check the sensor (registration) for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Media Path.** 4. Select **Registration.** Open the printer left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 12.	Go to step 11.
11	Check the sensor (registration) for proper connection. Is the above sensor connected properly?	Replace the sensor (registration). Refer to the *Printer Service Manual.*	Replace the connection.
12	Check the registration clutch for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Registrat clutch**. Does the above component make an audible clicking sound every time it operates?	Go to step 14.	Go to step 13.

Step	Check	Yes	No
13	Check the registration clutch for proper connection. Is the above component connected properly?	Replace the registration clutch. Refer to the *Printer Service Manual.*	Replace the connection.
14	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)— 2TM/TTM controller card assembly removal" on page 4-117**. Go to step 15.	Problem solved.
15	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

Tray 4 media size mismatch in length

Step	Check	Yes	No
1	Check the media. Pull out tray 4, and visually check it. Is the media loaded in tray 4 properly?	Go to step 2.	Load media properly.
2	Check the media. Pull out tray 4, and visually check it. Are the front media guide and rear media guide on tray 4 set correctly?	Go to step 3.	Set the parts properly.
3	Check the switch (TTM media size) for proper installation. Pull out tray 4, and visually check it. Is the switch (TTM media size) for tray 4 installed properly?	Go to step 4.	Install the switch (TTM media size) correctly. Go to **"2000-sheet dual input (TTM)— switch (TTM media size) removal" on page 4-85**.
4	Check the switch (TTM media size) for proper connection. Is the above switch connected properly?	Replace the switch (TTM media size). Go to **"2000-sheet dual input (TTM)— switch (TTM media size) removal" on page 4-85**.	Replace the connection.
5	Check the 2TM/TTM controller card assembly and the printer engine card assembly for proper connection. Are connectors P541 and P413 on the above cards connected properly?	Go to step 9.	Replace the connection.

Step	Check	Yes	No
6	Check the tray 4 rolls. Pull out tray 4, and check it. Are the feed roll, separation roll, and pick roll for transport free of excess wear and contamination?	Go to step 7.	Clean or replace the feed roll, separation roll, and pick roll. Go to **"2000-sheet dual input (TTM)— feed roll removal" on page 4-102**, **"2000-sheet dual input (TTM)— separation roll removal" on page 4-106**, and **"2000-sheet dual input (TTM)—pick roll removal" on page 4-109**.
7	Check the media position. Open the printer left door assembly, and visually check it. Does the media touch the sensor (registration)?	Remove the media.	Go to step 8.
8	Check the roll. Open the printer left door assembly, and visually check it. Is the media transport roll assembly for transport free of excess wear and contamination?	Go to step 9.	Clean or replace the media transport roll assembly. Go to **"2000-sheet dual input (TTM)— media transport roll assembly removal" on page 4-89**.
9	Check the roll. Open the printer left door assembly, and visually check it. Is the registration roll assembly for transport free of excess wear and contamination?	Go to step 10.	Clean or replace the registration roll assembly. Refer to the *Printer Service Manual.*
10	Check the sensor (registration) for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Media Path.** 4. Select **Registration.** Open the printer left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 12.	Go to step 11.
11	Check the sensor (registration) for proper connection. Is the above sensor connected properly?	Replace the sensor (registration). Refer to the *Printer Service Manual.*	Replace the connection.
12	Check the registration clutch for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Registrat clutch**. Does the above component make an audible clicking sound every time it operates?	Go to step 14.	Go to step 13.

Step	Check	Yes	No
13	Check the registration clutch for proper connection. Is the above component connected properly?	Replace the registration clutch. Refer to the *Printer Service Manual.*	Replace the connection.
14	Perform a print test. Does the error still occur?	Replace the 2TM/TTM controller card assembly. Go to **"2000-sheet dual input (TTM)—2TM/TTM controller card assembly removal" on page 4-117**. Go to step 15.	Problem solved.
15	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

Error code messages - HCF

Error code or message	Error Contents	Description/Action
245.00 Paper jam Check areas K, tray 5	Sensor (tray 5 feed-out) on jam	The sensor (tray 5 feed-out) is not turned on within the specified time after the HCF feed lift motor is turned on. Go to **"245.00 Sensor (tray 5 feed-out) on jam" on page 2-69**.
245.01 Paper jam Check area K	Sensor (tray 2 feed-out) on jam	The sensor (tray 2 feed-out) on the printer is not turned on within the specified time after the HCF feed lift motor is turned on. Go to **"245.01 Sensor (tray 2 feed-out) on jam" on page 2-71**.
245.02 Paper jam Check area B	Sensor (registration) on jam	The sensor (registration) on the printer is not turned on within the specified time after the sensor (tray 2 feed-out) on the printer comes on. Go to **"245.02 Sensor (registration) on jam" on page 2-72**.
245.03 Paper jam Check area K	Sensor (tray 5 feed-out) static jam	Paper remains on the sensor (tray 5 feed-out). Go to **"245.03 Sensor (tray 5 feed-out) static jam" on page 2-74**.
945.00 Service tray 5 failure	Media tray 5 lift up / no tray failure	The sensor (HCF media level) is not turned on within the specified time after the HCF feed lift motor is turned on. Go to **"945.00 HCF unit media tray lift failure" on page 2-76**.
945.01 Service tray 5 failure	Tray 5 HCF unit NVM R/W failure	A read/write error has occurred on the NVM of the tray 5 HCF controller card assembly. Go to **"945.01 HCF unit NVM R/W failure" on page 2-77**.
980.01 Service tray 5 comm.	Tray 5 HCF communication failure	A communication error occurred between the printer engine card assembly and the HCF controller card assembly. Go to **"980.01 Tray 5 HCF communication failure" on page 2-77**.
Close cover K	HCF top door assembly open	The tray 5 HCF top door is open. Go to **"HCF top door assembly open" on page 2-78**.
Load tray 5 with <media>	No media in the selected media tray.	Media is not loaded in the tray. Go to **"No media in the select media tray" on page 2-80**.
Tray 5 missing	HCF unit docking failure or HCF tray 5 set failure	The tray 5 HCF unit is not properly docked with the printer, or the HCF tray 5 is not set. Go to **"HCF unit docking failure or tray 5 set failure" on page 2-79**.

Service checks - HCF

245.00 Sensor (tray 5 feed-out) on jam

Step	Check	Yes	No
1	Check the paper path. Open the HCF top door assembly Open the HCF media feed unit assembly. Check these items by turning them with your fingers. Are the pick roll, feed roll, separation roll, HCF media transport roll assembly, and roll attached on the HCF top door assembly installed correctly?	Go to step 2.	Clean or replace the appropriate roll, and clean the paper path. Go to **"HCF pick roll assembly removal" on page 4-143**, **"HCF feed roll assembly removal" on page 4-144**, **"HCF separation roll assembly removal" on page 4-146**, and **"HCF media transport roll assembly removal" on page 4-150**.
2	Are the pick roll, feed roll, separation roll, HCF media transport roll assembly, and roll attached on the HCF top door assembly free of excess wear and contamination?	Go to step 3.	Clean or replace the appropriate roll, and clean the paper path. Go to **"HCF pick roll assembly removal" on page 4-143**, **"HCF feed roll assembly removal" on page 4-144**, **"HCF separation roll assembly removal" on page 4-146**, and **"HCF media transport roll assembly removal" on page 4-150**.
3	Check the sensor (pre-feed) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 5.** 5. Select **Pre-feed**. Pull the HCF unit assembly from the printer. Open the HCF top door assembly. Open the HCF media feed unit assembly. Does the display on the screen change every time a piece of white paper is placed over the sensing area of the above sensor?	Go to step 5.	Go to step 4.

Step	Check	Yes	No
4	Check the sensor (pre-feed) for proper connection. Is the above sensor connected properly?	Replace the sensor (pre-feed). Go to **"HCF sensor (pre-feed) removal" on page 4-138**.	Replace the connection.
5	Check the HCF feed unit cable assembly for proper connection. Is the above cable assembly connected properly?	Go to step 6.	Replace the connection.
6	Check the sensor (tray 5 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 5.** 5. Select **Feed-out**. Pull the HCF unit assembly from the printer. Open the HCF top door assembly. Does the display on the screen change every time the actuator on the above sensor operates?	Go to step 8.	Go to step 7.
7	Check the sensor (tray 5 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 5 feed-out). Go to **"HCF sensor (tray 5 feed-out) removal" on page 4-149**.	Replace the connection.
8	Check the HCF feed lift motor for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Tray 5 feed mtr**. Does the above motor rotate normally?	Go to step 10.	Go to step 9.
9	Check the HCF feed lift motor for proper connection. Is the above motor connected properly?	Replace the HCF media feed lift motor.	Replace the connection.
10	Check the HCF pick solenoid assembly for proper operation. Perform a print test from tray 5. Does the HCF pick solenoid operate properly?	Go to step 12.	Go to step 11.
11	Check the HCF pick solenoid assembly for proper connection. Is the above component connected properly?	Replace the HCF pick solenoid. Go to **"HCF pick solenoid assembly removal" on page 4-137**.	Replace the connection.
12	Perform a print test. Does the error still occur?	Replace the HCF controller card assembly. Go to **"HCF controller card assembly removal" on page 4-153**. Go to step 13.	Problem solved.

Step	Check	Yes	No
13	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

245.01 Sensor (tray 2 feed-out) on jam

Step	Check	Yes	No
1	Check the paper path. Open the HCF top door assembly Open the HCF media feed unit assembly. Check these items by turning them with your fingers. Are the pick roll, feed roll, separation roll, HCF media transport roll assembly, and roll attached on the HCF top door assembly installed correctly?	Go to step 2.	Clean or replace the appropriate roll, and clean the paper path. Go to **"HCF pick roll assembly removal" on page 4-143**, **"HCF feed roll assembly removal" on page 4-144**, **"HCF separation roll assembly removal" on page 4-146**, and **"HCF media transport roll assembly removal" on page 4-150**.
2	Are the pick roll, feed roll, separation roll, HCF media transport roll assembly, and roll attached on the HCF top door assembly free of excess wear and contamination?	Go to step 3.	Clean or replace the appropriate roll, and clean the paper path. Go to **"HCF pick roll assembly removal" on page 4-143**, **"HCF feed roll assembly removal" on page 4-144**, **"HCF separation roll assembly removal" on page 4-146**, and **"HCF media transport roll assembly removal" on page 4-150**.
3	Check the sensor (tray 2 feed-out) on the printer for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 2.** 5. Select **Feed-out**. Open the printer left lower door assembly. Does the display on the operator panel change, every time a piece of white paper is placed over the sensing area of the above sensor?	Go to step 5.	Go to step 4.

Step	Check	Yes	No
4	Check the sensor (tray 2 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 2 feed-out). Refer to the *Printer Service Manual.*	Replace the connection.
5	Check the media transport motor for proper operation. Perform a print test from tray 5. Does the above motor rotate normally?	Go to step 7.	Go to step 6.
6	Check the media transport motor for proper connection. Is the above motor connected properly?	Replace the media transport motor. Go to:**"HCF media transport motor assembly removal" on page 4-151**	Replace the connection.
7	Perform a print test. Does the error still occur?	Replace the HCF controller card assembly. Go to **"HCF controller card assembly removal" on page 4-153**. Go to step 8.	Problem solved.
8	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

245.02 Sensor (registration) on jam

Step	Check	Yes	No
1	Check the paper path. Open the HCF top door assembly. Check these items by turning them with your fingers. Are the HCF media transport roll assembly and roll attached on the HCF top door assembly installed correctly?	Go to step 2.	Clean or replace the appropriate roll, and clean the paper path. Go to **"HCF media transport roll assembly removal" on page 4-150**.
2	Are the HCF media transport roll assembly and roll attached on the HCF top door assembly free of excess wear and contamination?	Go to step 3.	Clean or replace the appropriate roll, and clean the paper path. Go to **"HCF media transport roll assembly removal" on page 4-150**.

Step	Check	Yes	No
3	Check the sensor (registration) in the printer for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Media Path.** 4. Select **Registration**. Open the printer left door assembly. Does the display on the screen change every time the actuator on the above sensor operates?	Go to step 5.	Go to step 4.
4	Check the sensor (registration) for proper connection. Is the above sensor connected properly?	Replace the sensor (registration). Refer to the *Printer Service Manual.*	Replace the connection.
5	Check the media transport motor for proper operation. Perform a print test from tray 5. Does the above motor rotate normally?	Go to step 7.	Go to step 6.
6	Check the HCF media transport motor for proper connection. Is the above motor connected properly?	Replace the HCF media transport motor. Go to **"HCF media transport motor assembly removal" on page 4-151**.	Replace the connection.
7	Perform a print test. Does the error still occur?	Replace the HCF controller card assembly. Go to **"HCF controller card assembly removal" on page 4-153**. Go to step 8.	Problem solved.
8	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

245.03 Sensor (tray 5 feed-out) static jam

Step	Check	Yes	No
1	Check the paper path. Open the HCF top door assembly Open the HCF media feed unit assembly. Check these items by turning them with your fingers. Are the pick roll, feed roll, separation roll, HCF media transport roll assembly, and roll attached on the HCF top door assembly installed correctly?	Go to step 2.	Clean or replace the appropriate roll, and clean the paper path. Go to **"HCF pick roll assembly removal" on page 4-143**, **"HCF feed roll assembly removal" on page 4-144**, **"HCF separation roll assembly removal" on page 4-146**, and **"HCF media transport roll assembly removal" on page 4-150**.
2	Are the pick roll, feed roll, separation roll, HCF media transport roll assembly, and roll attached on the HCF top door assembly free of excess wear and contamination?	Go to step 3.	Clean or replace the appropriate roll, and clean the paper path. Go to **"HCF pick roll assembly removal" on page 4-143**, **"HCF feed roll assembly removal" on page 4-144**, **"HCF separation roll assembly removal" on page 4-146**, and **"HCF media transport roll assembly removal" on page 4-150**.
3	Check the sensor (tray 5 feed-out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 5.** 5. Select **Feed-out**. Pull the HCF unit assembly from the printer. Open the HCF top door assembly. Does the display on the screen change every time the actuator on the above sensor operates?	Go to step 5.	Go to step 4.
4	Check the sensor (tray 5 feed-out) for proper connection. Is the above sensor connected properly?	Replace the sensor (tray 5 feed-out). Go to **"HCF sensor (tray 5 feed-out) removal" on page 4-149**.	Replace the connection.
5	Check the HCF feed unit cable assembly for proper connection. Is the above cable assembly connected properly?	Go to step 6.	Replace the connection.

Step	Check	Yes	No
6	Check the HCF feed lift motor for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Tray 5 feed mtr**. Does the above motor rotate normally?	Go to step 8.	Go to step 7.
7	Check the HCF feed lift motor for proper connection. Is the above motor connected properly?	Replace the HCF feed lift motor. Go to **"HCF feed lift motor removal" on page 4-133**.	Replace the connection.
8	Check the HCF media transport motor for proper operation. Perform a print test from tray 5. Does the above motor rotate normally?	Go to step 10.	Go to step 9.
9	Check the HCF media transport motor for proper connection. Is the above motor connected properly?	Replace the HCF media transport motor. Go to **"HCF media transport motor assembly removal" on page 4-151**.	Replace the connection.
10	Perform a print test. Does the error still occur?	Replace the HCF controller card assembly. Go to **"HCF controller card assembly removal" on page 4-153**. Go to step 11.	Problem solved.
11	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

945.00 HCF unit media tray lift failure

Step	Check	Yes	No
1	Check sensor (HCF media level) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 5.** 5. Select **Media level**. Pull the HCF unit from the printer. Open the HCF top door assembly. Open the HCF feed unit assembly, and move the pick roll in an up and down motion. Avoid touching the rubber roll surface. Does the display on the operator panel change every time the sensing area is blocked on the above sensor?	Go to step 9.	Go to step 2.
2	Check the sensor (HCF media level) for proper connection. Is the above sensor connected properly? Does the display on the operator panel change every time the sensing area is blocked on the above sensor?	Replace the sensor (media level). Go to **"HCF sensor (media level) removal" on page 4-140**.	Replace the connection.
3	Check the HCF pick solenoid for proper operation. Perform a print test from tray 5. Does the HCF pick solenoid operate properly?	Go to step 5.	Go to step 4.
4	Check the HCF pick solenoid for proper connection. Is the above component connected properly?	Replace the HCF pick solenoid. Go to **"HCF pick solenoid assembly removal" on page 4-137**.	Replace the connection.
5	Check the HCF feed unit cable assembly for proper connection. Is the above cable assembly connected properly?	Go to step 6.	Replace the connection.
6	Check the HCF feed lift motor for proper operation. Pull out the media tray, then push it back in. Does the tray lift properly?	Go to step 8.	Go to step 7.
7	Check the HCF feed lift motor for proper connection. Is the above motor connected properly?	Replace the HCF feed lift motor. Go to **"HCF feed lift motor removal" on page 4-133**.	Replace the connection.
8	Perform a print test. Does the error still occur?	Replace the HCF controller card assembly. Go to **"HCF controller card assembly removal" on page 4-153**. Go to step 9.	Problem solved.

Step	Check	Yes	No
9	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

945.01 HCF unit NVM R/W failure

Step	Check	Yes	No
1	Turn the main switch off and on several times. Does the error still occur when the power is on?	Go to step 2.	Problem solved.
2	Check the HCF controller card assembly and printer engine card assembly for proper connection. Are the connectors connected to the HCF controller card assembly and connectors P414 and P415 on the printer engine card assembly connected properly?	Go to step 3.	Replace the connection.
3	Perform a print test. Does the error still occur?	Replace the HCF controller card assembly. Go to **"HCF controller card assembly removal" on page 4-153**. Go to step 4.	Problem solved.
4	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

980.01 Tray 5 HCF communication failure

Step	Check	Yes	No
1	Turn the main switch off and on several times. Does the error still occur when the power is on?	Go to step 2.	Problem solved.
2	Check the HCF controller card assembly and printer engine card assembly for proper connection. Are the connectors connected to the HCF controller card assembly and connectors P414 and P415 on the printer engine card assembly connected properly?	Go to step 3.	Replace the connection.
3	Perform a print test. Does the error still occur?	Replace the HCF controller card assembly. Go to **"HCF controller card assembly removal" on page 4-153**. Go to step 4.	Problem solved.

Step	Check	Yes	No
4	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

HCF top door assembly open

Step	Check	Yes	No
1	Check the HCF top door assembly for deformation. Does the actuator on the HCF top door assembly operate the actuator on the HCF top door interlock switch?	Go to step 2.	Replace the HCF top door assembly. Go to **"HCF top door assembly removal" on page 4-147**.
2	Check the switch (HCF top door interlock) for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Cover and Door.** 4. Select **Door K HCF top**. Open the HCF top door assembly. Does the display on the operator panel change every time the actuator on the above switch operates?	Go to step 9.	Go to step 3.
3	Check the switch (HCF top door interlock) for proper connection. Is the above switch connected properly?	Replace the switch (HCF top door interlock). Go to **"HCF switch (top door interlock) removal" on page 4-148**.	Replace the connection.
4	Perform a print test. Does the error still occur?	Replace the HCF controller card assembly. Go to **"HCF controller card assembly removal" on page 4-153**. Go to step 5.	Problem solved.
5	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

HCF unit docking failure or tray 5 set failure

Step	Check	Yes	No
1	Check the HCF unit for proper installation. Is the HCF unit installed to the printer correctly?	Go to step 2.	After reinstalling, go to step 2.
2	Check the switch (HCF unit docking interlock) for damage. Is the switch (HCF unit docking interlock) damaged?	Go to step 3.	Replace the switch (HCF unit docking interlock). Go to **"HCF switch (unit docking interlock) removal" on page 4-152**.
3	Check the switch (HCF unit docking interlock) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 5.** 5. Select **HCF unit docking**. Pull the HCF unit from the printer. Does the display on the screen change every time the actuator on the above switch operates?	Go to step 5.	Go to step 4.
4	Check the switch (HCF unit docking interlock) for proper connection. Is the above switch connected properly?	Replace the switch (HCF unit docking interlock). Go to **"HCF switch (unit docking interlock) removal" on page 4-152**.	Replace the connection.
5	Check the sensor (HCF media tray set) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 5.** 5. Select **Tray set**. Pull the HCF media tray assembly out. Does the display on the screen change every time the actuator on the above switch operates?	Go to step 7.	Go to step 6.
6	Check the sensor (HCF media tray set) for proper connection. Is the above sensor connected properly.	Replace the sensor (HCF media tray set). Go to **"HCF sensor (HCF media tray set) removal" on page 4-122**.	Replace the connection.

Step	Check	Yes	No
7	Perform a print test. Does the error still occur?	Replace the HCF controller card assembly. Go to **"HCF controller card assembly removal" on page 4-153**. Go to step 8.	Problem solved.
8	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

No media in the select media tray

Step	Check	Yes	No
1	Check the media. Is the media loaded in the selected tray?	Go to step 2.	Load media.
2	Check the sensor (media out) for proper operation. 1. Enter Diagnostics mode. 2. Select **INPUT TRAY TESTS**. 3. Select **Sensor Tests.** 4. Select **Tray 5.** 5. Select **Media out**. Pull the HCF unit away from the printer, open the HCF top door, and open the HCF feed unit. Does the display on the operator panel change every time the sensing area on the above sensor is blocked by the media out actuator.	Go to step 4.	Go to step 3.
3	Check the sensor (media out) for proper connection. Is the above sensor connected properly?	Replace the sensor (media out). Go to **"HCF sensor (media out) removal" on page 4-141**.	Replace the connection.
4	Check the HCF controller card connection PF103 and the HCF hookup connection on the rear of the printer. Are the connections listed above connected properly?	Go to step 5.	Replace the connection.
5	Perform a print test. Does the error still occur?	Replace the HCF controller card assembly. Go to **"HCF controller card assembly removal" on page 4-153**. Go to step 6.	Problem solved.

Step	Check	Yes	No
6	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

Error code messages - DUP

Error code or message	Error Contents	Description/Action
230.00 Paper jam Check areas A, E	Sensor (duplex wait) on jam	The sensor (duplex wait) is not turned on within the specified time after the exit 2 drive motor is turned on. Go to **"230.00 Sensor (duplex wait) on jam" on page 2-83**.
230.01 Paper jam Check area D	Sensor (duplex wait) static jam	Paper remains on the sensor (duplex wait). Go to **"230.01 Sensor (duplex wait) static jam" on page 2-84**.
231.00 Paper jam Jam in A, D	Sensor (registration) on jam (duplex paper feed)	Sensor (registration) is not turned on within the specified time after the duplex drive motor is on. Go to **"231.00 Sensor (registration) on jam (duplex paper feed)" on page 2-85**.
231.01 Check areas A, D	Sensor (registration) on jam (duplex paper feed)	Sensor (registration) is not turned on within the specified time after the sensor (duplex wait) is turned on. Go to **"231.01 Sensor (registration) on jam (duplex paper feed)" on page 2-86**.
980.04 Service duplex comm.	Duplex controller card assembly communication failure.	A communication error occurred between the printer engine card assembly and the duplex controller card assembly. Go to **"980.04 Duplex controller card assembly communication failure" on page 2-88**.
997.00 Service wrong duplex	Duplex controller card assembly type failure	A duplex controller card assembly of a different specification is installed. Go to **"997.00 Duplex controller card assembly type failure" on page 2-89**.
Close door D	Duplex left door assembly open	The duplex left door is open. Go to **"Duplex left door assembly open" on page 2-89**.

Service checks - DUP

230.00 Sensor (duplex wait) on jam

Step	Check	Yes	No
1	Check the paper position. Open the exit 2 left door assembly, and visually check it. Does the paper remain in the exit 2?	Remove the paper.	Go to step 2.
2	Check the roll. Open exit 2 left door assembly. Is the exit 2 media transport roll assembly free of excess wear and contamination?	Go to step 3.	Clean or replace the exit 2 unit assembly. Go to **"Exit 2 unit assembly removal" on page 4-193**.
3	Check the drive power transmission. Do the exit 2 media transport roll assembly and the other gears rotate smoothly?	Go to step 4.	Replace damaged components or the exit 2 unit assembly. Go to **"Exit 2 unit assembly removal" on page 4-193**.
4	Check the roll. Open exit 2 left door assembly. Is the exit 2 media exit roll assembly free of excess wear and contamination?	Go to step 5.	Clean or replace the exit 2 unit assembly. Go to **"Exit 2 unit assembly removal" on page 4-193**.
5	Check the drive power transmission. Do the exit 2 media exit roll assembly and the other gears rotate smoothly?	Go to step 6.	Replace damaged components. Go to **"Exit 2 unit assembly removal" on page 4-193**.
6	Check the exit 2 drive motor for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Exit2 drive mtr**. Does the above motor rotate normally?	Go to step 8.	Go to step 7.
7	Check the exit 2 drive motor for proper connection. Is the above motor connected properly?	Replace the exit 2 unit assembly. Go to **"Exit 2 unit assembly removal" on page 4-193**.	Replace the connection.
8	Check the connection between the exit interface card assembly and the printer engine card assembly. Are connectors P431 and P421 connected properly?	Go to step 9.	Replace the connection.

Step	Check	Yes	No
9	Check the sensor (duplex wait) for proper operation. 1. Enter Diagnostics mode. 2. Select **DUPLEX TESTS**. 3. Select **Sensor Tests.** 4. Select **Duplex wait**. Open the duplex left door assembly. Does the display on the operator panel change every time the sensing area of the above sensor is blocked by the duplex wait actuator?	Go to step 11.	Go to step 10.
10	Check the sensor (duplex wait) for proper connection. Is the above sensor connected properly?	Replace the sensor (duplex wait). Go to **"Duplex sensor (duplex wait) removal" on page 4-185**.	Replace the connection.
11	Perform a 2 sided print test. Does the error still occur?	Replace the duplex controller card assembly. Go to **"Duplex controller card assembly removal" on page 4-182**. Go to step 12.	Problem solved.
12	Perform a 2 sided print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

230.01 Sensor (duplex wait) static jam

Step	Check	Yes	No
1	Check the paper position. Open the duplex left door assembly, and visually check it. Does the paper touch the duplex wait actuator?	Remove the paper.	Go to step 2.
2	Check the sensor (duplex wait) for proper operation. 1. Enter Diagnostics mode. 2. Select **DUPLEX TESTS**. 3. Select **Sensor Tests.** 4. Select **Duplex wait**. Open the duplex left door assembly. Does the display on the operator panel change every time the sensing area of the above sensor is blocked by the duplex wait actuator?	Go to step 4.	Go to step 3.

Step	Check	Yes	No
3	Check the sensor (duplex wait) for proper connection. Is the above sensor connected properly?	Replace the sensor (duplex wait). Go to **"Duplex sensor (duplex wait) removal" on page 4-185**.	Replace the connection.
4	Perform a 2 sided print test. Does the error still occur?	Replace the duplex controller card assembly. Go to **"Duplex controller card assembly removal" on page 4-182**. Go to step 5.	Problem solved.
5	Perform a 2 sided print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

231.00 Sensor (registration) on jam (duplex paper feed)

Step	Check	Yes	No
1	Check the paper position. Open the printer left door assembly and visually check it. Does the paper touch the sensor (registration)?	Remove the paper.	Go to step 2.
2	Check the Duplex for proper installation. Remove duplex unit assembly and reinstall it. Perform a two sided print test. Does the error still occur?	Go to step 3.	Problem solved
3	Check the roll. Open the duplex left door assembly. Is the duplex media transport roll assembly free of excess wear and contamination?	Go to step 4.	Clean or replace the duplex media transport roll assembly. Go to **"Duplex media transport rolls removal" on page 4-191**.
4	Check the drive power transmission. Open the duplex left door assembly. Do the duplex media transport roll assembly and the other gears rotate smoothly?	Go to step 5.	Replace damaged components. Go to **"Duplex media transport rolls removal" on page 4-191**.

Step	Check	Yes	No
5	Check the roll. Open the duplex left door assembly. Is the duplex media transport center roll assembly free of excess wear and contamination?	Go to step 6.	Clean or replace the duplex media transport center roll assembly. Go to **"Duplex media center transport roll removal" on page 4-192**.
6	Check the drive power transmission. Open the duplex left door assembly. Do the duplex media transport center roll assembly and the other gears rotate smoothly?	Go to step 7.	Replace damaged components. Go to **"Duplex media center transport roll removal" on page 4-192**.
7	Check the duplex drive motor for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Duplex drv mtr**. Open the duplex left cover assembly. Does the above motor rotate properly?	Go to step 9.	Go to step 8.
8	Check the duplex drive motor for proper connection. Is the above motor connected properly?	Go to step 9.	Replace the connection.
9	Check the duplex controller card assembly and printer engine card assembly for proper connection. Are the connections on the duplex controller card assembly and the connector P417 on the printer engine card assembly connected?	Go to step 10.	Replace the connection.
10	Perform a 2 sided print test. Does the error still occur?	Replace the duplex controller card assembly. Go to **"Duplex controller card assembly removal" on page 4-182**. Go to step 14	Problem solved.
14	Perform a 2 sided print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

231.01 Sensor (registration) on jam (duplex paper feed)

Step	Check	Yes	No
1	Check the paper position. Open the printer left door assembly, and visually check it. Does the paper touch the sensor (registration)?	Remove the paper.	Go to step 2.

Step	Check	Yes	No
2	Check the paper position. Open the duplex left door assembly and visually check it. Does the paper touch the duplex wait actuator?	Remove the paper.	Go to step 3.
3	Check the duplex unit for proper installation. Remove the duplex unit assembly and reinstall it. Perform a two sided print test. Does the error still occur?	Go to step 4.	Problem solved.
4	Check the roll. Open the duplex left door assembly. Is the roll of the duplex media transport roll assembly free of excess wear and contamination?	Go to step 5.	Clean or replace the duplex media transport roll assembly. Go to **"Duplex media transport rolls removal" on page 4-191**.
5	Check the drive power transmission. Open the duplex left door assembly. Do the duplex media transport roll assembly and the other gears rotate smoothly?	Go to step 6.	Replace damaged components. Go to **"Duplex media transport rolls removal" on page 4-191**.
6	Check the roll. Open the duplex left door assembly. Is the roll of the duplex media center transport roll assembly free of excess wear and contamination?	Go to step 7.	Clean or replace the duplex media center transport roll assembly. Go to **"Duplex media center transport roll removal" on page 4-192**.
7	Check the drive power transmission. Open the duplex left door assembly. Do the duplex media center transport roll assembly and the other gears rotate smoothly?	Go to step 8.	Replace damaged components. Go to **"Duplex media center transport roll removal" on page 4-192**.
8	Check the sensor (duplex wait) for proper operation. 1. Enter Diagnostics mode. 2. Select **DUPLEX TESTS**. 3. Select **Sensor Tests.** 4. Select **Duplex wait**. Open the duplex left door assembly. Does the display on the operator panel change every time the sensing area of the above sensor is blocked by the duplex wait actuator?	Go to step 10.	Go to step 9.
9	Check the sensor (duplex wait) for proper connection. Is the above sensor connected properly?	Go to step 10.	Replace the connection.

Step	Check	Yes	No
10	Check the duplex drive motor for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Duplex drv mtr**. Open the duplex left cover assembly. Does the above motor rotate properly?	Go to step 12.	Go to step 11.
11	Check the duplex drive motor assembly for proper connection. Is the above motor connected properly?	Replace the duplex drive motor. Go to **"Duplex drive motor assembly removal" on page 4-179**.	Replace the connection.
12	Check the duplex controller card assembly and printer engine card assembly for proper connection. Are the connections on the duplex controller card assembly and the connector P417 on the printer engine card assembly connected?	Go to step 13.	Replace the connection.
13	Perform a 2 sided print test. Does the error still occur?	Replace the duplex controller card assembly. Go to **"Duplex controller card assembly removal" on page 4-182**. Go to step 14.	Problem solved.
14	Perform a 2 sided print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

980.04 Duplex controller card assembly communication failure

Step	Check	Yes	No
1	Check the duplex unit for proper installation. Remove duplex unit assembly, and reinstall it. Perform a two sided print test. Does the error still occur?	Go to step 2.	Problem solved.
2	Check the duplex controller card assembly and printer engine card assembly for proper connection. Are the connections on the duplex controller card assembly and the connector P417 on the printer engine card assembly connected?	Go to step 3.	Replace the connection.

Step	Check	Yes	No
3	Perform a 2 sided print test. Does the error still occur?	Replace the duplex controller card assembly. Go to **"Duplex controller card assembly removal" on page 4-182**. Go to step 4.	Problem solved.
4	Perform a 2 sided print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

997.00 Duplex controller card assembly type failure

Step	Check	Yes	No
1	Check the duplex unit for proper installation. Remove duplex unit assembly, and reinstall it. Perform a two sided print test. Does the error still occur?	Go to step 2.	Problem solved.
2	Perform a 2 sided print test. Does the error still occur?	Replace the duplex controller card assembly. Go to **"Duplex controller card assembly removal" on page 4-182**. Go to step 3.	Problem solved.
3	Perform a 2 sided print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

Duplex left door assembly open

Step	Check	Yes	No
1	Check the duplex left door assembly for opening and closing. Does the duplex left door assembly open or close normally?	Go to step 2.	Check the duplex left cover assembly for deformation and reinstall it.

Step	Check	Yes	No
2	Check the switch (duplex left door interlock) for proper operation. 1. Enter Diagnostics mode. 2. Select **DUPLEX TESTS**. 3. Select **Sensor Tests.** 4. Select **Door D duplex left**. Open the duplex left door assembly, and visually check it. Does the operator panel change every time the actuator on the above switch operates?	Reconnect the connector on the printer engine card assembly.	Go to step 3.
3	Check the switch (duplex left door interlock) for proper connection. Is the above switch connected properly?	Go to step 4.	Replace the connection.
4	Check the duplex controller card assembly and printer engine card assembly for proper connection. Are the connections on the duplex controller card assembly and the connector P417 on the printer engine card assembly connected?	Go to step 5.	Replace the connection.
5	Perform a 2 sided print test. Does the error still occur?	Replace the duplex controller card assembly. Go to **"Duplex controller card assembly removal" on page 4-182**. Go to step 6.	Problem solved.
6	Perform a 2 sided print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

Error code messages - EX2

Error code or message	Error Contents	Description/Action
203.00 Paper jam Check area A	Sensor (exit 2) on jam	The sensor (exit 2) is not turned on within the specified time after the sensor (fuser exit) is turned on. Go to **"203.00 Sensor (exit 2) on jam" on page 2-92**.
203.01 Paper jam Check areas A, E	Sensor (exit 2) off jam	The sensor (exit 2) is not turned off within the specified time after the sensor (exit 2) is turned on. Go to **"203.01 Sensor (exit 2) off jam" on page 2-93**.
203.02 Paper jam Check area A	Sensor (exit 2) on jam in standard bin or simplex finisher	The sensor (exit 2) was turned on when the media is delivered to the exit 1 standard bin or simplex finisher. Go to **"203.02 Sensor (exit 2) on jam in standard bin or finisher" on page 2-95**.
203.03 Paper jam Check areas A, E	Sensor (exit 2) static jam	Media remains on the sensor (exit 2). Go to **"203.03 Sensor (exit 2) static jam" on page 2-96**.
230.00 Paper jam Check areas A, E	Sensor (duplex wait) on jam	The sensor (duplex wait) is not turned on within the specified time after the exit 2 drive motor is turned on. Go to **"230.00 Sensor (duplex wait) on jam" on page 2-97**.
919.00 Service std bin 2	Sensor (exit 2 media shift HP) failure	The sensor (exit 2 media shift HP) is not turned on within the specified time after the media shift motor is turned on. Go to **"919.00 Sensor (exit 2 media shift HP) failure" on page 2-98**.
919.01 Service std bin 2	Exit 2 unit assembly connection failure	Exit 2 unit assembly connection is missing or damaged. Go to **"919.01 Exit 2 unit assembly connection failure" on page 2-99**.
Close door E	Exit 2 left door assembly open	The exit 2 left door is open. Go to **"Exit 2 left door assembly open" on page 2-100**.

Service checks - EX2

203.00 Sensor (exit 2) on jam

Step	Check	Yes	No
1	Check the media position. Open the printer left door assembly, and visually check it. Does the media touch the sensor (fuser exit)?	Remove the media.	Go to step 2.
2	Check the media position. Open the exit 2 left door assembly, and visually check it. Does the media touch the sensor (exit 2)?	Remove the media.	Go to step 3.
3	Check the roll. Open printer left door assembly. Is the exit 1 media exit roll assembly free of excess wear and contamination?	Go to step 4.	Clean or replace the exit 1 media shift assembly. Refer to the *Printer Service Manual.*
4	Check the drive power transmission. Does the exit 1 media exit roll assembly and the other gears rotate smoothly?	Go to step 5.	Replace damaged components. Refer to the *Printer Service Manual.*
5	Check the sensor (fuser exit) for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Media Path.** 4. Select **Fuser exit**. Open the printer left door assembly, and visually check it. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 7.	Go to step 6.
6	Check the sensor (fuser exit). Is the above sensor connected properly?	Replace the sensor (fuser exit). Refer to the *Printer Service Manual.*	Replace the connection.
7	Check the exit 2 drive motor for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Exit2 drive mtr**. Does the above motor rotate normally?	Go to step 9.	Go to step 8.
8	Check the exit 2 drive motor for proper operation. Is the above motor connected properly?	Replace the exit 2 unit assembly. Go to **"Exit 2 unit assembly removal" on page 4-193**.	Replace the connection.

Step	Check	Yes	No
9	Check the sensor (exit 2) for proper operation. Open the printer left door assembly and the exit 2 left door assembly. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Media Path.** 4. Select **Exit2**. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 11.	Go to step 10.
10	Check the sensor (exit 2) for proper connection. Is the above sensor connected properly?	Replace the sensor (exit 2). Go to **"Exit 2 sensor (exit 2) removal" on page 4-207**.	Replace the connection.
11	Check the media diverter solenoid for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Diverter solenoid.** Does the above component operate normally?	Go to step 13.	Go to step 12.
12	Check the media diverter solenoid for proper connection. Is the above component connect properly?	Replace the media diverter solenoid. Go to **"Exit 2 media diverter solenoid removal" on page 4-206**.	Replace the connection.
13	Perform a print test. Does the error still occur?	Replace the exit interface card assembly. Refer to the *Printer Service Manual.* Go to step 14.	Problem solved.
14	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

203.01 Sensor (exit 2) off jam

Step	Check	Yes	No
1	Check the media position. Open the exit 2 left door assembly, and visually check it. Does the media touch the sensor (exit 2)?	Remove the media.	Go to step 2.

Step	Check	Yes	No
2	Check the roll. Open the exit 2 left door assembly. Is the exit 2 media transport roll assembly free of excess wear and contamination?	Go to step 3.	Clean or replace the exit 2 unit assembly. Go to **"Exit 2 unit assembly removal" on page 4-193**.
3	Check the drive power transmission. Do the exit 2 media transport roll assembly and the other gears rotate smoothly?	Go to step 4.	Replace damaged parts. Go to **"Exit 2 unit assembly removal" on page 4-193**.
4	Check the roll. Open exit 2 left door assembly. Is the exit 2 media exit roll assembly free of excess wear and contamination?	Go to step 5.	Clean or replace the exit 2 unit assembly. Go to **"Exit 2 unit assembly removal" on page 4-193**.
5	Check the drive power transmission. Do the exit 2 media exit roll assembly and the other gears rotate smoothly?	Go to step 6.	Replace damaged parts. Go to **"Exit 2 unit assembly removal" on page 4-193**.
6	Check the sensor (exit 2) for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Media Path.** 4. Select **Exit2**. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 8.	Go to step 7.
7	Check the sensor (exit 2) for proper connection. Is the above sensor connected properly?	Replace the sensor (exit 2). Go to **"Exit 2 sensor (exit 2) removal" on page 4-207**.	Replace the connection.
8	Check the exit 2 drive motor for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Exit2 drive mtr**. Does the above motor rotate normally?	Go to step 10.	Go to step 9.
9	Check the exit 2 drive motor for proper connection. Is the above motor connected properly?	Replace the exit 2 unit assembly. Go to **"Exit 2 unit assembly removal" on page 4-193**.	Replace the connection.
10	Perform a print test. Does the error still occur?	Replace the exit interface card assembly. Refer to the *Printer Service Manual.* Go to step 11.	Problem solved.

Step	Check	Yes	No
11	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

203.02 Sensor (exit 2) on jam in standard bin or finisher

Step	Check	Yes	No
1	Check the position of the media diverter solenoid. Is the media diverter gate facing toward exit 1?	Go to step 2.	Go to step 3.
2	Check the media diverter gate for an obstruction. Is the media diverter gate free of any debris or obstructions?	Remove any obstructions.	Go to step 3.
3	Check the diverter solenoid for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Diverter solenoid.** Does the above component operate normally?	Go to step 5.	Go to step 3.
4	Check the media diverter solenoid for proper connection. Is the above component connected properly?	Replace the exit 2 unit assembly. Go to **"Exit 2 unit assembly removal" on page 4-193**.	Replace the connection.
5	Check the media position. Open the exit 2 left door assembly, and visually check it. Does the media touch the sensor (exit 2)?	Remove the media.	Go to step 6.
6	Check the sensor (exit 2) for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Media Path.** 4. Select **Exit2**. Open the printer left door assembly and the exit 2 left door assembly. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 8.	Go to step 7.
7	Check the sensor (exit 2) for proper connection. Is the above sensor connected properly?	Replace the sensor (exit 2). Go to **"Exit 2 sensor (exit 2) removal" on page 4-207**.	Replace the connection.

Step	Check	Yes	No
8	Perform a print test. Does the error still occur?	Replace the exit interface card assembly. Refer to the *Printer Service Manual.* Go to step 9.	Problem solved.
9	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

203.03 Sensor (exit 2) static jam

Step	Check	Yes	No
1	Check the media position. Open the exit 2 left door assembly, and visually check it. Does the media touch the sensor (exit 2)?	Remove the media.	Go to step 2.
2	Check the sensor (exit 2) for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Media Path.** 4. Select **Exit2**. Open the printer left door assembly and the exit 2 left door assembly. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 4.	Go to step 3.
3	Check the sensor (exit 2) for proper connection. Is the above sensor connected properly?	Replace the sensor (exit 2). Go to **"Exit 2 sensor (exit 2) removal" on page 4-207**.	Replace the connection.
4	Perform a print test. Does the error still occur?	Replace the exit interface card assembly. Refer to the *Printer Service Manual.* Go to step 5.	Problem solved.
5	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

230.00 Sensor (duplex wait) on jam

Step	Check	Yes	No
1	Check the media position. Does the media remain in the exit 2? Open the exit 2 left door assembly, and visually check it.	Remove the media.	Go to step 2.
2	Check the roll. Open exit 2 left door assembly. Is the exit 2 media transport roll assembly free of excess wear and contamination?	Go to step 3.	Clean or replace the exit 2 unit assembly. Go to **"Exit 2 unit assembly removal" on page 4-193**.
3	Check the drive power transmission. Does the exit 2 media transport roll assembly and the other gears rotate smoothly?	Go to step 4.	Replace damaged parts. Go to **"Exit 2 unit assembly removal" on page 4-193**.
4	Check the roll. Open exit 2 left door assembly. Is the exit 2 media exit roll assembly free of excess wear and contamination?	Go to step 5.	Clean or replace the exit 2 unit assembly. Go to **"Exit 2 unit assembly removal" on page 4-193**.
5	Check the drive power transmission. Does the exit 2 media exit roll assembly and the other gears rotate smoothly?	Go to step 6.	Replace damaged parts. Go to **"Exit 2 unit assembly removal" on page 4-193**.
6	Check the exit 2 drive motor for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Exit2 drive mtr**. Does the above motor rotate normally?	Go to step 9.	Go to step 7.
7	Check the exit 2 drive motor for proper connection. Is the above motor connected properly?	Replace the exit 2 unit assembly. Go to **"Exit 2 unit assembly removal" on page 4-193**.	Replace the connection.
8	Check the connection between the exit interface card assembly and the printer engine card assembly. Are connectors PJ431 and PJ421 connected properly?	Go to step 9.	Replace the connection.
9	Check the sensor (duplex wait) for proper operation. 1. Enter Diagnostics mode. 2. Select **DUPLEX TESTS**. 3. Select **Sensor Tests.** 4. Select **Duplex wait**. Open the duplex left door assembly. Does the display on the operator panel change every time the actuator on the above sensor operates?	Go to step 11.	Go to step 10.

Step	Check	Yes	No
10	Check the sensor (duplex wait) for proper connection. Is the above sensor connected properly?	Replace the sensor (duplex wait). Go to **"Duplex sensor (duplex wait) removal" on page 4-185**.	Replace the connection.
11	Perform a print test. Does the error still occur?	Replace the exit interface card assembly. Refer to the *Printer Service Manual.* Go to step 11.	Problem solved.
12	Perform a print test. Does the error still occur?	Replace the duplex controller card assembly. Go to **"Duplex controller card assembly removal" on page 4-182**. Go to step 13.	Problem solved.
13	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	problem solved.

919.00 Sensor (exit 2 media shift HP) failure

Step	Check	Yes	No
1	Check the sensor (exit 2 media shift HP) for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Media Path.** 4. Select **Exit2 shift HP**. Move the shift assembly with your finger in a side to side motion. Does the display on the operator panel change every time the sensing area of the above sensor is blocked?	Go to step 3.	Go to step 2.
2	Check the sensor (exit 2 media shift HP) for proper connection. Is the above sensor connected properly?	Replace the sensor (exit 2 media shift HP). Go to **"Exit 2 sensor (exit 2 media shift HP) removal" on page 4-208**.	Replace the connection.

Step	Check	Yes	No
3	Check the media shift motor for proper operation. 1. Enter Diagnostics mode. 2. Select **MOTOR TESTS**. 3. Select **Exit2 shift mtr**. Does the above motor rotate properly?	Go to step 5.	Go to step 4.
4	Check the media shift motor for proper connection. Is the above motor connected properly?	Replace the media shift motor. Go to **"Exit 2 unit assembly removal" on page 4-193**.	Replace the connection.
5	Perform a print test. Does the error still occur?	Replace the exit interface card assembly. Refer to the *Printer Service Manual.* Go to step 6.	Problem solved.
6	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

919.01 Exit 2 unit assembly connection failure

Step	Check	Yes	No
1	Check the exit 2 unit assembly for proper installation. Is the exit 2 unit assembly installed properly?	Go to step 2.	Reinstall the exit 2 unit assembly, and POR. Go to Go to **"Exit 2 unit assembly removal" on page 4-193**.
2	Check the exit 2 unit assembly connector. Is the exit 2 unit assembly connector or the connector attached to the printer damaged?	Replace the exit 2 unit assembly or damaged connector. Go to Go to **"Exit 2 unit assembly removal" on page 4-193**.	Go to step 3.
3	Perform a print test. Does the error still occur?	Replace the exit interface card assembly. Refer to the *Printer Service Manual.* Go to step 4.	Problem solved.
4	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	Problem solved.

Exit 2 left door assembly open

Step	Check	Yes	No
1	Check the exit 2 left door assembly for opening and closing. Does the exit 2 left door assembly open or close normally?	Go to step 2.	Check the exit 2 left door assembly for deformation, and then reinstall it. Go to **"Exit 2 left cover removal" on page 4-198**.
2	Check the switch (exit 2 left door interlock) for proper operation. 1. Enter Diagnostics mode. 2. Select **BASE SENSOR TESTS**. 3. Select **Cover and Door.** 4. Select **Door E exit2 left**. Does the display change on the operator panel every time the actuator for the above switch operates?	Reconnect the connector of the printer engine card assembly.	Go to step 3.
3	Check the switch (exit 2 left door interlock) for proper connection. Is the above switch connected properly?	Replace the switch (exit 2 left door interlock). Go to **"Exit 2 switch (exit 2 left door interlock) removal" on page 4-203**.	Replace the connection.
4	Perform a print test. Does the error still occur?	Replace the exit interface card assembly. Refer to the *Printer Service Manual.* Go to step 5.	Problem solved.
5	Perform a print test. Does the error still occur?	Replace the printer engine card assembly. Refer to the *Printer Service Manual.*	problem solved.
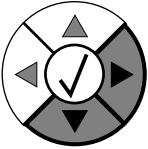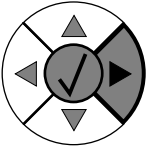
3. Diagnostic aids

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

Diagnostics are built into the printer RIP card assembly and can be accessed from the printer operator panel.

Accessing service menus

There are different test menus that can be accessed during POR to identify problems with the printer.

Diagnostics Mode	1. Turn off the printer 2. Press and hold ▼ and ▶. 3. Turn on the printer. 4. Release the buttons when `Performing Self Test` displays.	The Diagnostics Mode group contains the settings and operations used while manufacturing and servicing the printer. See **"Diagnostics mode" on page 3-2** for more information.
Configuration Menu	1. Turn off the printer. 2. Press and hold ✓ and ▶. 3. Turn on the printer. 4. Release the buttons when `Performing Self Test` displays.	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. See **"Configuration menu (CONFIG MENU)" on page 3-20** for more information.
Flash system code mode	1. Turn off the printer. 2. Press and hold ◀, ✓, and ▶. 3. Turn on the printer. 4. Release the buttons when `Performing Self Test` displays.	

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

Diagnostics mode

Entering Diagnostics mode:

1. Press and hold ▼ and ▶.
2. Turn on the printer.
3. Release the buttons when `Performing Self Test` displays.

Available tests

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

Diagnostics mode tests

MOTOR TESTS	See **"MOTOR TESTS" on page 3-5**
Transport mtr	
Fuser cooling fan	
PC unit cooling fan	
Toner add mtr	
Drum unit mtr	
Registrat clutch	
Tray 1 feed mtr	
Tray 2 feed mtr	
Tray 3 feed mtr	
Tray 4 feed mtr	
Tray 5 feed mtr	
MPF pick solenoid	
Transport clutch	
Duplex drv mtr	
Diverter solenoid	
Exit2 cooling fan	
Exit1 shift mtr	
Exit2 shift mtr	
Exit2 drive mtr	
PRINT TESTS	
Tray 1	See **"Input source tests" on page 3-5**
Tray 2	
Tray 3 (if installed)	
Tray 4 (if installed)	
Tray 5 (if installed)	
MP Feeder	
Prt Quality Pgs	See **"Print quality pages (Prt Quality Pgs)" on page 3-6**

Diagnostics mode tests (continued)

HARDWARE TESTS	
Panel Test	See **"Panel Test" on page 3-6**
Button Test	See **"Button Test" on page 3-6**
DRAM Test	See **"DRAM Test" on page 3-7**
CACHE Test	
Parallel Wrap	See **"Parallel Wrap tests" on page 3-8**
Parallel 1 Wrap (if installed)	
Parallel 2 Wrap (if installed)	
Serial 1 Wrap (if installed)	See **"Serial Wrap tests" on page 3-8**
Serial 2 Wrap (if installed)	
DUPLEX TESTS (if installed)	
Quick Test	See **"Quick Test (duplex)" on page 3-9**
Sensor Test	See **"Sensor Test (duplex)" on page 3-9**
INPUT TRAY TESTS	
Feed Tests	See **"Feed Tests (input tray)" on page 3-10**
Sensor Test	See **"Sensor Test (input tray)" on page 3-10**
OUTPUT BIN TESTS	
Feed Tests	See **"Feed Tests (output bins)" on page 3-11**
Feed To All Bins	See **"Feed To All Bins" on page 3-11**
Sensor Test	See **"Sensor Test (output bin)" on page 3-11**
FINISHER TESTS (if installed)	
Staple Test	See **"Staple Test" on page 3-12**
Feed Tests	See **"Feed Tests" on page 3-12**
Sensor Test	See **"Sensor Test (finisher)" on page 3-13**
BASE SENSOR TEST	See **"BASE SENSOR TEST" on page 3-14**
Toner	
Input	
Output	
DEVICE TESTS	
Quick Disk Test (if installed)	See **"Quick Disk Test" on page 3-15**
Disk Test/Clean (if installed)	See **"Disk Test/Clean" on page 3-15**
Flash Test (if installed)	See **"Flash Test" on page 3-16**
PRINTER SETUP	
Defaults	See **"Defaults" on page 3-16**
Page Count	See **"Page Count" on page 3-16**
Perm Page Count	See **"Perm Page Count (permanent page count)" on page 3-16**
Serial Number	See **"Serial Number" on page 3-17**
Engine Setting 1 through 4	See **"Engine Setting 1 through 4" on page 3-17**
Model Name	See **"Model Name" on page 3-17**
Configuration ID	See **"Configuration ID" on page 3-17**
Edge to Edge	See **"Edge to Edge" on page 3-17**

Diagnostics mode tests (continued)

Par *S* Strobe Adj	See **"Parallel strobe adjustment (Par x Strobe Adj)" on page 3-18**
Par *x* Strobe Adj (if additional parallel options are installed)	
EVENT LOG	
Display Log	See **"Display Log" on page 3-18**
Print Log	See **"Print Log" on page 3-18**
Clear Log	See **"Clear Log" on page 3-19**
EXIT DIAGNOSTICS	

Exiting Diagnostics mode

Select **Exit Diagnostics** to exit the Diagnostics mode. `Resetting the Printer` displays, the printer performs a POR, and returns to normal mode.

MOTOR TESTS

The tests in this group allow you to test specific motors, and on some motors run them forward or reverse.

To run the MOTOR TESTS:

1. Select **MOTOR TESTS** from DIAGNOSTICS.
2. Select the test to run. The following tests are available:

- Transport mtr
- Fuser cooling fan
- PC unit cooling fan
- Toner add mtr
- Drum unit mtr
- Registrat clutch
- Tray 1 feed mtr
- Tray 2 feed mtr
- Tray 3 feed mtr
- Tray 4 feed mtr
- Tray 5 feed mtr

- MPF pick solenoid
- Transport clutch
- Duplex drv mtr
- Diverter solenoid
- Exit2 cooling fan
- Exit1 shift mtr
- Exit2 shift mtr
- Exit2 drive mtr

Once selected the name of the selected test appears on the operator panel.
3. If available, **Forward** and **Reverse** appear for selected tests.

To stop the test, press **Back** (🔄) or **Stop** (❌).

PRINT TESTS

Input source tests

The purpose of the diagnostic Print Tests is to verify that the printer can print on media from each of the installed input options. The content of the Print Test Page varies depending on the media installed in the selected input source.

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

To run the Print Test Page:

1. Select **PRINT TESTS** from DIAGNOSTICS.
2. Select the media source.
   Tray 1
   Tray 2
   Tray 3 (if installed)
   Tray 4 (if installed)
   Tray 5 (if installed)
   Multipurpose Feeder
3. Select **Single** or **Continuous**.
   - If **Single** is selected, a single page is printed.
   - If **Continuous** is selected, printing continues until **Stop** (❌) is pressed to cancel the test.
     If a source is selected that contains envelopes, an envelope test pattern is printed. If Continuous is selected, the test pattern is printed only on the first envelope.
   Note: The Print Test Page always prints on one side of the paper, regardless of the duplex setting or the presence of a duplex option.

Press **Back** (🔄) to return to PRINT TESTS.

Print quality pages (Prt Quality Pgs)

The purpose of this diagnostic function is to allow printing of the print quality test pages with the toner cartridge lockout function disabled. The print quality pages consists of four pages. Page one contains a mixture of graphics and text. Page two is gray with black boxes. Page three is solid black. The last page is blank. If duplex is turned on, the pages are duplexed. The Print Quality Test pages are printed in English and print on the media available in Tray 1.

To run the Print Quality Test Pages:

1. Select **PRINT TESTS** from DIAGNOSTICS.
2. Select **Prt Quality Pgs** from PRINT TESTS. The message `Printing Quality Test Pages` is displayed.

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

The following is included in the DIAGNOSTICS version of the print quality pages:

* Values from EP SETUP in DIAGNOSTICS, including:
  Fuser temperature, warm up time, transfer, print contrast, and charge roll settings.
* Contents of the EVENT LOG from DIAGNOSTICS.
* Configuration information, including printer serial number, controller code level, engine code level, operator panel code level, font versions, and cartridge information.
* Default values for the QUALITY MENU settings used to print the pages.

HARDWARE TESTS

Select the following Hardware Tests from this menu:

* Panel Test
* Button Test
* DRAM Test
* CACHE Test
* Parallel Wrap (if available)
* Serial Wrap (if available)

Panel Test

This test automatically toggles all pixels of the operator panel through every contrast level beginning with the darkest and on to the brightest. This test continues until you press **Stop** (❌).

Button Test

The Button Test verifies the operation of the buttons on the operator panel. When you select Button Test, a diagram of the operator panel appears on the panel. When you press a button on the operator panel, the "X" appears on the corresponding diagram. When you release the button, the "X" disappears. Pressing **Back** (↺) or **Stop** (❌) cancels the test.

DRAM Test

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

To run the DRAM Test:

1. Select **HARDWARE TESTS** from DIAGNOSTICS.
2. Select **DRAM Test** from HARDWARE TESTS.
   The message `DRAM Test Testing…` displays. Then the message `Resetting Printer` appears, and the power indicator light *blinks* red.
3. The printer automatically performs a Power On Reset (POR). While the DRAM test executes, the power indicator *blinks* green.
   The following type of message appears:

```
DRAM Test        xxx MB
P:######         F:####
```

- *xxx* represents the installed DRAM size.
- P:###### represents the number of times the memory test has passed and finished successfully. Initially 000000 displays with the maximum pass count being 999,999.
- F:##### represents the number of times the memory test has failed and finished with errors. Initially 0000 displays with the maximum fail count being 99,999. Initially only four digits appear, but additional digits appear as needed.

Each time a test is completed, the number of passes and failures is incremented. If the test fails, the message `Failure` displays for approximately three seconds, and the failure count increases by one.

The test continues until all standard and optional DRAM is tested. Once the maximum pass count or fail count is reached, the test is stopped, the power indicator is turned on solid, and the final results display. To stop the test before completion, turn the printer off.

CACHE Test

This test is used to verify the printer processor cache.

To run the CACHE Test:

1. Select **HARDWARE TESTS** from DIAGNOSTICS.
2. Select **CACHE TEST** from HARDWARE TESTS.
   The message `CACHE Test Testing…` displays. Then the message `Resetting Printer` appears.
3. The printer automatically performs a Power On Reset (POR). While the CACHE test executes, the power indicator *blinks* green.
   The following type of message appears:

```
CACHE Test x100
P:######         F:####
```

- P:###### represents the number of times the cache has passed and finished successfully. Initially 000000 displays with the maximum pass count being 999,999.
- F:##### represents the number of times the cache has failed and finished with errors. Initially 0000 displays with the maximum fail count being 99,999. Initially only four digits appear, but additional digits appear as needed.

Each time a test is completed, the number of passes and failures is incremented. If the test fails, the message `Failure` displays for approximately three seconds, and the failure count increases by one.

The test continues until all of the printer processor's cache has been tested. Once the maximum pass count or fail count is reached, the test is stopped, the power indicator is turned on solid, and the final results display.

To stop this test before completion, turn the printer off.

Parallel Wrap tests

This test is used with a wrap plug to check operation of the parallel port hardware. Each parallel signal is tested. Use **Parallel Wrap** for the standard parallel port or **Parallel 1 Wrap** if a parallel port is available by PCI slot 1.

To run the Parallel Wrap tests:

1. Disconnect the parallel interface cable, and install the wrap plug (P/N 1319128).
2. Select **HARDWARE TESTS** from DIAGNOSTICS.
3. Select **Parallel Wrap** or **Parallel 1 Wrap,** from the HARDWARE TESTS menu.

   The power indicator *blinks* green indicating the test is in progress. The test runs continuously until a maximum number of tests is reached.

   ```
   Parallel Wrap
   P:######        F:####
   ```

   - P:###### represents the number of times the memory test has passed and finished successfully. Initially 000000 displays with the maximum pass count being 999,999.
   - F:#### represents the number of times the memory test has failed and finished with errors. Initially 0000 displays with the maximum fail count being 999,999. Initially only four digits appear, but additional digits appear as needed.

   Each time the test finishes, the screen updates. If the test passes, the pass counter increases by 1, however if the test fails, a message displays for approximately three seconds. Once the maximum count is reached, the test stops. The power indicator goes on solid, and the final results display.

To stop the test before completion, press **Stop** (❌).

Serial Wrap tests

The serial wrap tests are used to check the operation of the serial port hardware using a wrap plug.

To perform the Serial Wrap tests:

1. Disconnect the serial interface cable, and install the serial wrap plug
2. Select **HARDWARE TESTS** from DIAGNOSTICS.
3. Select **Serial 1 Wrap** or **Serial 2 Wrap** from HARDWARE TESTS.

   The power indicator *blinks* green indicating the test is in progress. The test runs continuously until a maximum number of tests is reached.

   ```
   Serial Wrap…
   P:######        F:####
   ```

   - P:###### represents the number of times the memory test has passed and finished successfully. Initially 000000 displays with the maximum pass count being 999,999.
   - F:#### represents the number of times the memory test has failed and finished with errors. Initially 0000 displays with the maximum fail count being 999,999. Initially only four digits appear, but additional digits appear as needed.

   Each time the test finishes, the screen updates. If the test passes, the pass counter increases by 1, however if the test fails, a message displays for approximately three seconds. Once the maximum count is reached, the test stops. The power indicator goes on solid, and the final results display.

To stop the test before completion, press **Stop** (❌). The message `Serial Wrap x Test Canceled,` and the display returns to the HARDWARE TESTS menu.

DUPLEX TESTS

Only displayed if a duplex option is installed.

Quick Test (duplex)

This test prints a duplex version of the Quick Test that can be used to verify that the correct placement of the top margin on the back side of a duplex page. You can run one duplexed page (**Single**), or continue printing duplexed pages (**Continuous**) until **Stop** (✖) is pressed.

Make sure either Letter or A4 is loaded in the default paper source. If the default source only supports envelopes, then the Quick Test will be printed from Tray 1.

To run the Quick Test (duplex):

1. Select **DUPLEX TESTS** from DIAGNOSTICS.
2. Select **Quick Test** from DUPLEX TESTS.
3. Select **Single** or **Continuous**.
   - The single Duplex Quick test cannot be canceled.
   - The printer attempts to print the Quick Test Page from the default paper source. If the default paper source only supports envelopes, then the page is printed from Tray 1.
   - Check the Quick Test Page for the correct offset between the placement of the first scan line on the front and back side of a duplexed sheet.

The single test stops automatically when a single duplex sheet is printed, and the continuous test continues until you press **Stop** (✖).

Sensor Test (duplex)

This test is used to determine whether or not the duplex sensors and switches are working correctly. The test allows you to actuate the duplex input sensor located in the back part of the duplex unit and the duplex exit sensor located in the return paper path.

1. Select **DUPLEX TESTS** from DIAGNOSTICS.
2. Select **Sensor Test** from DUPLEX TESTS.
   The message `Sensor Test Testing` displays.
3. Select **Duplex wait** from the Sensor Test menu.
4. Manually actuate each of the duplex wait sensors. When the sensor is closed, `Closed` displays; when the sensor is open, `Open` displays.

Press **Back** (↺) or **Stop** (✖) to exit the test.

INPUT TRAY TESTS

Feed Tests (input tray)

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

To run the Input Tray Feed Tests:

1. Select **INPUT TRAY TESTS** from DIAGNOSTICS.
2. Select **Feed Tests** from INPUT TRAY TESTS.
3. Select the input source from the sources displayed on the Feed Tests menu. All installed sources are listed.
   - Tray 1
   - Tray 2
   - Tray 3
   - Tray 4
   - Tray 5
   - MP Feeder
4. Select either **Single** or **Continuous**.
   - **Single**—feeds one sheet of media from the selected source.
   - **Continuous**—media continues feeding from the selected source until **Stop** (❌) is pressed.

Sensor Test (input tray)

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

1. Select **INPUT TRAY TESTS** from DIAGNOSTICS.
1. Select the **Sensor Test** from INPUT TRAY TESTS.
2. Select the input source from the sources displayed on the Sensor Test menu. All installed sources are listed.
3. Select the sensor to test. Various menus have different listings of sensors, depending on the input source or tray selected. See the table below:

Tray sensors support by source

Input source	Sensor							
	Pre-feed	Feed-out	Media out	Media level	HCF unit docking	HCF tray set	Media size L	Media size R
Tray 1	✓		✓	✓				
Tray 2	✓	✓	✓	✓				
Tray 3	✓	✓	✓	✓				
Tray 4	✓	✓	✓	✓				
Tray 5	✓	✓	✓	✓	✓	✓	✓	✓
Multipurpose tray			✓					

4. The servicer can manually actuate the selected sensor, and `Open` or `Closed` displays.

Press **Back** (↩) or **Stop** (❌) to exit the test.

OUTPUT BIN TESTS

Feed Tests (output bins)

Use these tests to verify that media can be fed to a specific output bin. Media is fed from the default input source to the selected output bin. No information is printed on the media fed to the output bin because the printhead is not engaged during this test. These tests can use any media size or envelope supported by the printer.

To run the Feed Tests for the output bins:

1. Select **OUTPUT BIN TESTS** from DIAGNOSTICS.
2. Select **Feed Tests** from the OUTPUT BIN TESTS.
3. Select the output bin you want the paper to exit into. The standard bin as well as any output option bin installed on the printer is shown on the menu. (The output bins are displayed in the order installed on the printer.)
   - Standard Bin
   - Output Bin 1
   - Output Bin 2
4. Select either **Single** or **Continuous**.
   - **Single**—feeds one sheet of media from the selected source.
   - **Continuous**—media continues feeding from the selected source until **Stop** (❌) is pressed.

Press **Back** (↺) to return to OUTPUT BIN TESTS.

Feed To All Bins

This test can be used to verify that the printer can feed media to the standard bin or any installed output options. No information will be printed on the test pages, as the printhead is not engaged during the feed test. The media feeds from the default paper source.

To run the Feed To All Bins Test:

1. Select **OUTPUT BIN TESTS** from DIAGNOSTICS.
2. Select **Feed To All Bins** from OUTPUT BIN TESTS.
   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.

The test is continuous until **Stop** (❌) is pressed. Press **Back** (↺) to return to OUTPUT BIN TESTS.

Sensor Test (output bin)

These tests are used to determine if the output tray sensors are working correctly.

To run the Output Bin Sensor Test

1. Select **OUTPUT BIN TESTS** from DIAGNOSTICS.
2. Select the **Sensor Test** from OUTPUT BIN TESTS.
3. Select the output bin from the bins displayed on the Sensor Test menu. All installed bins are listed.
   - **Standard Bin**
   - **Output Bin 1**
   - **Output Bin 2**

4. Each of the tests categories includes the individual sensors that can be manually actuated, and the display shows `Open` or `Closed`.

- **Standard Bin**

  Std bin full exit1

  Std bin full exit2

- **Output Bin 1**

  Fin upper bin full

- **Output Bin 2**

  Stacker bin level1

  Stacker bin level2

5. Manually actuate the selected sensor, and `Open` or `Closed` displays.

Press **Back** ( ) or **Stop** ( ) to exit the test.

FINISHER TESTS

Staple Test

This test verifies the staple mechanism by sending eight sheets of media from the printer's default paper source and stapling the sheets.

To run the Staple Test:

1. Select **FINISHER TESTS** from DIAGNOSTICS.

2. Select **Staple Test** from FINISHER TESTS.

3. Select the output bin, and press .

While the test runs the power indicator *blinks* and the message `Staple Test Running…` displays. Select **Stop** ( ) to exit the test before it completes.

Hole Punch Test

This test is used to verify whether or not media can be fed to a finisher output bin and punched. Eight sheets of blank paper are fed from the default paper source and fed to the finisher output bins. Letter size paper is used for the 3 hole test, and A4 media is used for the 4 hole test. Media is selected from the default tray.

To run the Feed Test:

1. Select **FINISHER TESTS** from DIAGNOSTICS.

2. Select **Feed Tests** from FINISHER TESTS.

While the feed test runs, the power indicator *blinks,* and the message `Feed Test Running…` displays.

During the test, no buttons are active, and the test cannot be stopped until the test is completed.

Feed Tests

This test is used to verify whether or not media can be fed to a finisher output bin. Eight sheets of blank paper are fed from the default paper source and fed to the finisher output bins.

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

To run the Feed Test:

1. Select FINISHER TESTS from DIAGNOSTICS.

2. Select **Feed Tests** from FINISHER TESTS.

While the feed test runs the power indicator *blinks* and the message `Feed Test Running…` displays.

During the test, no buttons are active and the test cannot be stopped until the test is completed.

Sensor Test (finisher)

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

To run the finisher Sensor Test:

1. Select **FINISHER TESTS** from DIAGNOSTICS.
2. Select **Sensor Test** from FINISHER TESTS.
3. Select one of the test categories:
   - **Cover and Door**
   - **Bin Level**
   - **Media Path1**
   - **Media Path2**
   - **Punch and Staple**
4. Select the actual test to perform.
   Each of the tests categories includes the individual sensors that can be manually actuated, and the display shows Open or Closed.
   - **Cover and Door**

     Cover F bridge top
     Door G fin front
     Surface H fin eject
   - **Bin Level**

     Fin upper bin full
     Stacker bin level1
     Stacker bin level2
     Stacker bin upper limit
     Stacker bin no media
     Stacker bin level encod
   - **Media Path1**
     Fuser exit
     Bridge media ent
     Bridge media exit
     Fin media enter
     Buffer path
     Upper media exit
     Lower media exit
     Compiler media in
   - **Media Path2**
     Diverter gate
     Front tamper hp
     Rear tamper hp
     Eject clamp hp
     Media eject shaft hp

- **Punch and Staple**
  Punch side reg1
  Punch side reg2
  Punch box set
  Punch waste full
  Low staple
  Punch carriage shift hp
  Punch unit hp
  Stapler carriage shift hp
  Punch cam front
  Punch hole select

Press **Back** (🔄) or **Stop** (❌) to exit the test.

BASE SENSOR TEST

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

To run the Base Sensor Test:

1. Select **BASE SENSOR TEST** from DIAGNOSTICS.
2. Select one of the test categories:
   - **Cover and Door**
   - **Devices**
   - **Exit level**
   - **Media Path**
3. Select the actual test to perform.
   Each of the tests categories includes the individual sensors that can be manually actuated, and the display shows `Open` or `Closed`.
   - **Cover and Door**
     Door A left side
     Door B left/lower
     Door C 2tm/ttm
     Door D duplex left
     Door E exit2 left
     Door J front
     Door K hcf top
   - **Devices**
     PC unit present
     Exit2 present
   - **Exit level**
     Std bin full exit1
     Std bin full exit2
   - **Media Path**
     Registration
     Fuser exit
     Exit1 shift hp
     Exit2
     Exit2 shift hp
   Manually actuate the sensors to verify that each sensor switches from `Open` to `Closed`.

Press **Back** (🔄) or **Stop** (❌) to exit the test.

DEVICE TESTS

Quick Disk Test

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

To run the Quick Disk Test:

1. Select **DEVICE TESTS** from DIAGNOSTICS.
2. Select **Quick Disk Test** from DEVICE TESTS.
   The power indicator blinks while the test is in progress and quick `Disk Test Testing…` displays.
   - `Quick Disk Test/Test Passed` displays if the test passes and the power indicator turns on solid.
   - `Quick Disk Test/Test Failed` displays if the test failed and the power indicator turns on solid.

Press **Back** (🔄) or **Stop** (❌) to return to the Device Tests menu.

Disk Test/Clean

Warning: This test destroys all data on the disk and should not be attempted on a good disk. Also note that this test may run approximately 1½ hours depending on the disk size.

To run the Disk Test/Clean Test:

1. Select **DEVICE TESTS** from DIAGNOSTICS.
2. Select **Disk Test/Clean** from DEVICE TESTS.

   `Files will be lost/Go or Stop?` displays to warn the user that all contents on the disk will be lost.

3. To exit the test immediately and return to the Device Tests menu, press **Back** (🔄) or **Stop** (❌). To continue with the test, press ✅.

   If ✅ is selected, the following screen displays and updates periodically indicating the percentage of test completed.

   ```
   Formatting Disk
   1/1          0%

   DO NOT POWER OFF
   ```

   The power indicator blinks during the test.

   Note: The test can NOT be canceled.

4. Once the test is complete, the power indicator turns on solid, and either the message `Disk Test/Clean Test Passed` or `Disk Test/Clean Failed` appears. If the message indicates failure, the disk is unusable.

Flash Test

This test verifies the functioning of the flash device by writing and reading data on the flash to test the flash.

Warning: This test destroys all data on the flash, because the flash is unformatted at the end of the test. To reformat the flash, the servicer or the user must use FORMAT FLASH from the UTILITIES MENU.

To run the Flash Test:

1. Select **DEVICE TESTS** from DIAGNOSTICS.

2. Select **Flash Test** from DEVICE TESTS.

    The message `Files will be lost/Go or Stop?` displays to warn the user that all contents on the flash device will be lost.

3. To exit the test immediately and return to the Device Tests menu, press **Back** (🔄) or **Stop** (❌). To continue with the test, press ✅.

    The power indicator blinks while the test is running, and the message `Flash Test Testing...` displays.

    Once the test is complete, the power indicator turns on solid, and either the message `Flash Test Test Passed` or `Flash Test Test Failed` displays.

Press **Back** (🔄) or **Stop** (❌) to return to DEVICE TESTS.

PRINTER SETUP

Defaults

US/Non-US defaults changes whether the printer uses the US factory defaults or the non-US factory defaults. The settings affected include paper size, envelope size, PCL symbol set, code pages, and units of measure.

Warning: Changing this setting resets the printer to factory defaults, and data may be lost. It cannot be undone.

Page Count

The page count can only be viewed and cannot be changed

To view the page count:

1. Select **PRINTER SETUP** from DIAGNOSTICS.
2. Select **Page Count** from PRINTER SETUP.
3. Press **Back** (🔄) to return to PRINTER SETUP.

Perm Page Count (permanent page count)

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

To view the permanent page count:

1. Select **PRINTER SETUP** from DIAGNOSTICS.
2. Select **Perm Page Count** from PRINTER SETUP.
3. Press **Back** (🔄) to return to PRINTER SETUP.

Serial Number

The serial number can only be viewed and cannot be changed.

To view the serial number:

1. Select **PRINTER SETUP** from DIAGNOSTICS.
2. Select **Serial number** from PRINTER SETUP.
3. Press **Back** (↺) to return to PRINTER SETUP.

Engine Setting 1 through 4

Warning: Do not change these settings unless requested to do so by your next level of support.

Model Name

The model name can only be viewed and cannot be changed.

Configuration ID

The two configuration IDs are used to communicate information about certain areas of the printer that cannot be determined using hardware sensors. The configuration IDs are originally set at the factory when the printer is manufactured, however the servicer may need to reset Configuration ID 1 or Configuration ID 2 whenever the system board is replaced. The IDs consist of eight hexadecimal characters, including 0 through 9 and A through F.

Note: When the printer detects a Configuration ID that is not define or invalid, the following occurs:

- The default standard model Configuration ID is used instead.
- Configuration ID is the only function available in DIAGNOSTICS.
- Unless the menu is in DIAGNOSTICS, `Check Config ID` displays.

To set the configuration ID:

1. Select **PRINTER SETUP** from DIAGNOSTICS.
2. Select **Configuration ID** from PRINTER SETUP.
   `Submitting Selection` displays, followed by the value for Configuration ID 1.
3. Enter the Configuration ID 1.
   - To select a digit or character to change, press ◀ or ▶ until the digit or character is underlined.
   - To change a digit or character, press ▲ to increase or ▼ to decrease the value.
   - When the last digit is changed, press ⊘ to validate the Configuration ID 1.
     If `Invalid ID` appears, the entry is discarded and the previous Configuration ID 1 is displayed on the screen.
     If the process is successful, `Submitting Selection` appears on the display, followed by the current value for Configuration ID 2.
4. Repeat the steps for entering the Configuration ID, and press ⊘.
   If the Configuration ID 2 is validated, `Submitting Selection` appears, and a check (✔) appears next to **Printer Setup**.
5. Restart the printer.

Edge to Edge

When this setting is On, the text and graphics are shifted to the physical edges of the paper for all margins. When the setting is Off, the normal margins are restored.

Parallel strobe adjustment (Par x Strobe Adj)

This setting adjusts the amount of time the strobe is sampled in order to determine if the valid data is available on the parallel port. The range of values are from -4 to 6, and the default is 0 for **Par S Strobe Adj**, **Par 1 Strobe Adj**, and **Par 2 Strobe Adj**. After adjustment of 1 increment, the strobe samples 50 ns longer.

EVENT LOG

Display Log

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

To view the event log:

1. Select **EVENT LOG** from DIAGNOSTICS.
2. Select **Display Log** from EVENT LOG.
   Up to three error codes display at a time. Press ▲ or ▼ to view additional error codes.
3. Press **Back** (⟳) to return to the EVENT LOG menu.

Print Log

Additional diagnostic information is available when you print the event log from DIAGNOSTICS rather than CONFIG MENU.

The Event Log printed from DIAGNOSTICS includes:

- Detailed printer information, including code versions
- Time and date stamps
- Page counts for most errors
- Additional debug information in some cases

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

To print the event log:

1. Select **EVENT LOG** from DIAGNOSTICS.
2. Select **Print Log** from EVENT LOG.

Press **Back** (🔄) to return to EVENT LOG.

Clear Log

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

1. Select **EVENT LOG** from DIAGNOSTICS.
1. Select **Clear Log** from EVENT LOG.
2. Select **YES** to clear the Event Log or **NO** to exit the Clear Log menu. If **YES** is selected, `Deleting EVENT LOG` displays on the screen.

Press **Back** (🔄) to return to EVENT LOG.

EXIT DIAGNOSTICS

This selection exits Diagnostics mode, and `Resetting the Printer` displays. The printer performs a POR, and the printer returns to normal mode.

Configuration menu (CONFIG MENU)

Entering Configuration Menu

1. Turn off the printer.
2. Press and hold ⊘ and ▶ .
3. Turn on the printer.
4. Release the buttons when `Performing Self Test` displays.
The message `CONFIG MENU` displays on the top line of the operator panel.

Available menus

Configuration Menu

Maint Cnt Value		See **"Maintenance page count (Maint Cnt Value)" on page 3-21**
Reset Maint Cnt		See **"Maintenance page counter reset (Reset Maint Cnt)" on page 3-21**
REGISTRATION		**"REGISTRATION" on page 3-22**
	Top Margin	See **"Top Margin" on page 3-22**
	Tray 1 Left Mar	See **"Tray 1–5 Left Margin" on page 3-22**
	Tray 2 Left Mar	
	Tray 3 Left Mar (if installed)	
	Tray 4 Left Mar (if installed)	
	Tray 5 Left Mar (if installed)	
	Quick Test	See **"Quick Test" on page 3-23**
Prt Quality Pgs		See **"Print quality pages (Prt Quality Pgs)" on page 3-23**
SIZE SENSING		See **"SIZE SENSING" on page 3-24**
	Tray 1 Sensing	
	Tray 2 Sensing	
	Tray 3 Sensing (if installed)	
	Tray 4 Sensing (if installed)	
	Tray 5 Sensing (if installed)	
	Statement/A5	See **"Statement/A5" on page 3-24**
	Executive/B5	See **"Executive/B5" on page 3-24**
Panel Menus		See **"Panel Menus" on page 3-24**
PPDS Emulation		See **"PPDS Emulation" on page 3-25**
Demo Mode		See **"Demo Mode" on page 3-25**
Factory Defaults		See **"Factory Defaults" on page 3-25**
Energy Conserve		See **"Energy Conserve" on page 3-25**
EVENT LOG (print log only)		See **"EVENT LOG" on page 3-25**
Paper Prompts		See **"Paper Prompts" on page 3-25**
Env Prompts		See **"Env Prompts" on page 3-26**
Jobs On Disk (if hard disk is installed)		See **"Jobs On Disk" on page 3-26**
Disk Encryption (only if hard disk is installed and feature is set up)		See **"Disk Encryption" on page 3-26**
Font Sharpening		See **"Font Sharpening" on page 3-26**
Short-edge Printing		See **"Short Edge Printing" on page 3-26**

Configuration Menu (continued)

Tray Low Message	See **"Tray Low Message" on page 3-26**
Exit Config Menu	See **"Exit Config Menu" on page 3-26**

Some menus are not available, depending on the configuration of the printer.

Maintenance page count (Maint Cnt Value)

The current value for the maintenance page counter is displayed. This counter tracks printer usage. A print job containing a single page increments the counter by one and a duplex page by two. At 300,000, the customer is reminded that the printer requires scheduled maintenance.This counter is reset by the servicer after a 80 Scheduled Maintenance message displays and a maintenance kit is installed. For further maintenance information, see **"Maintenance recommendations" on page 6-1**.

To view the maintenance page count:

1. Select **Maint Cnt Value** from CONFIG MENU.
2. Press ⊘ to view the value.

Press **Back** (↺) to return to the main Configuration menu.

Maintenance page counter reset (Reset Maint Cnt)

After scheduled maintenance, the servicer needs to reset the page counter.

To reset the maintenance page count to zero:

1. Select **Reset Maint Cnt** from CONFIG MENU.
   The message ✔ Reset displays.
2. Press ⊘ to confirm the selection.
   Press **Back** (↺) to return to the main Configuration menu without resetting the page counter.
   When the reset operation is complete, the menu returns to the Printer Setup Reset Maintenance Count screen.

REGISTRATION

Print registration makes sure the printing is properly aligned on the page. This setting allows separate Left Margin settings for each media tray. (The Top Margin setting is the same for all trays.)
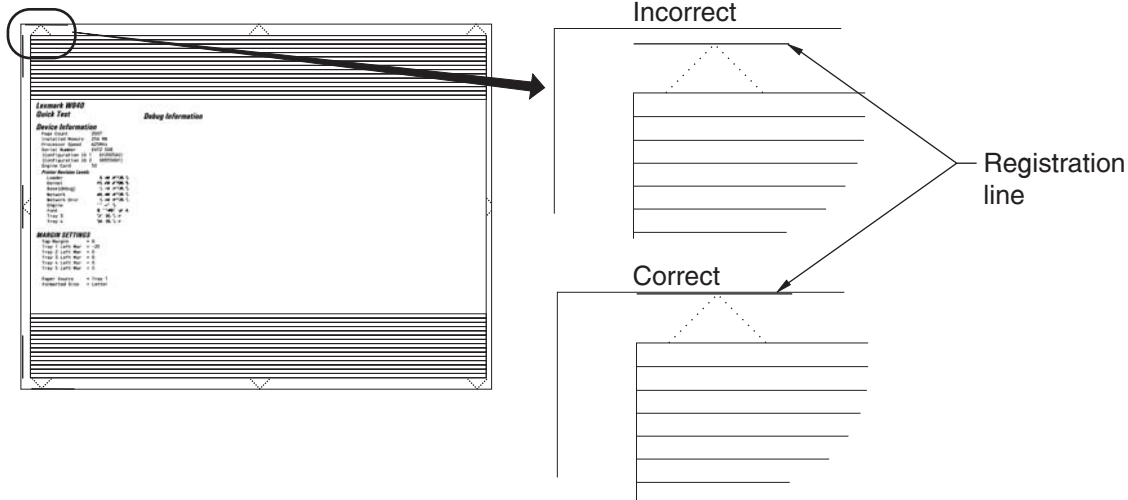
Top Margin

To set the top margin for all trays:

1. Select **REGISTRATION** from CONFIG MENU.
2. Select **Top Margin** from REGISTRATION. The current setting is displayed.
3. Check the Quick Test, and adjust the value. The range of valid settings for the top margin is 0 to +50.
   Increasing the value by one increment moves the image on the page down by one pixel (1/300 inch) and widens the top margin. Decreasing the value by one increment moves the image up the page by one pixel (1/300 inch) and narrows the top margin.
   When you select a value, the Quick Test prints so you can verify the value is correct.
4. Continue until the top margin is adjusted.

Tray 1–5 Left Margin

To set the left margin for an individual tray:

1. Select **REGISTRATION** from CONFIG MENU.
2. Select one of the following from the REGISTRATION menu. The current setting is displayed.
   - Tray 1 Left Margin
   - Tray 2 Left Margin
   - Tray 3 Left Margin (if installed)
   - Tray 4 Left Margin (if installed)
   - Tray 5 Left Margin (if installed)
3. Check the Quick Test, and adjust the value. The range of valid settings for each Left margin is -50 to +50. Each unit represents 1/300 of an inch.
   Increasing the value by one moves the image on the page to the right by one pixel (1/300 inch) widens the left margin, and narrows the right margin. Decreasing the value by one moves the image on the page to the left by one pixel (1/300 inch), narrows the left margin, and widens the right margin.
   When you select a value, the Quick Test prints so you can verify the value is correct.
4. Continue until the Left Margin value is properly adjusted.
5. If you need to adjust the Left Margin on another tray, select that tray.

Note: The printer attempts to print the Quick Test page from the media source for which the registration adjustments are currently being made.

Quick Test

The Quick Test contains the following information:

- Print registration settings
- Alignment diamonds at the top and bottom
- Horizontal lines to check for skew
- General printer information, including current page count, installed memory, serial number, and code level.

To print the Quick Test page:

Note: Print the Quick Test Page on letter or A4 paper.

1. Select **REGISTRATION** from CONFIG MENU.
2. Select **Quick Test** from REGISTRATION.
   The message `Quick Test Printing…` appears on the display.
   Once the Quick Test Page completes printing, the Registration screen displays again.

Print quality pages (Prt Quality Pgs)

The print quality test pages can be printed from either the Diagnostics mode or Configuration Menu (CONFIG MENU). When printed from the Diagnostic mode, additional information is included, and the print cartridge lockout is bypassed. See **"Print quality pages (Prt Quality Pgs)" on page 3-6**. Additional configuration information may be included on the print quality pages which is not included on the print menu page.

To print the Print Quality Test Page, select **Prt Quality Pgs** from CONFIG MENU. The message `Printing Quality Test Pages` is displayed.

The following is printed:

- Settings from EP SETUP from DIAGNOSTICS:
  Fuser temperature, warm up time, transfer, print contrast, and charge roll settings.
- Contents of the EVENT LOG from DIAGNOSTICS.
- Printer configuration information:
  Printer serial number, controller code level, engine code level, operator panel code level, smart option code levels, font versions, and so on.
  Values for the QUALITY MENU settings used to print the pages.

The print quality test consists of four pages. Page one contains a mixture of graphics and text. Pages two and three only contain graphics. Page four is blank. If duplex is turned on, the pages are duplexed. The Print Quality Test pages are printed in English and must always be printed on letter, legal, or A4 paper.

The value of the <media width> field is displayed once the printer narrow media sensor has determined whether the media used for the Quick Test is narrow or wide. An **N** indicates the media sensed is narrow, and a **W** indicates the media sensed is wide.

SIZE SENSING

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

Paper source	Size sensing	
	Length	**Width**
Multipurpose feeder (integrated MPF)		✔
Tray 1 (integrated 500-sheet drawer)	✔	✔
Tray 2 (integrated 500-sheet drawer)	✔	✔
Tray 3 (optional 2TM 500-sheet drawer)	✔	✔
Tray 4 (optional 2TM 500-sheet drawer)	✔	✔
Tray 3 (optional TTM 850-sheet drawer)		✔
Tray 4 (optional TTM 1150-sheet drawer)		✔
Tray 5 (optional HCF 2000-sheet drawer)		✔

When the setting is Auto, every input option equipped with size sensing hardware automatically registers what size media it contains. When the setting is off, the media size detected by hardware is ignored. The media size can be set by the operator panel or the data stream.

To change the size sensing setting:

1. Select **SIZE SENSING** from CONFIG MENU.
2. Select which tray to set.
   • Tray 1 Sensing
   • Tray 2 Sensing
   • Tray 3 Sensing
   • Tray 4 Sensing
   • Tray 5 Sensing
3. Select **Auto** or **Off,** and press ⊘.

Press **Back** (↺) to exit.

Statement/A5

Trays 1 through 4 cannot simultaneously sense A5 and Statement-sized paper. Select either **Sense Statement** (default) or **Sense A5** to determine which of the two paper sizes these trays sense automatically. The MP Feeder can support these paper sizes regardless of the value of this setting.

Executive/B5

Trays 1 through 4 cannot simultaneously sense Executive- and JIS-B5-sized paper. Select either **Sense Executive** (default) or **Sense JIS-B5** to determine which of the two paper sizes these trays sense automatically. The MP Feeder can support these paper sizes regardless of the value of this setting.

Panel Menus

Selections are to **Disable** or **Enable** (default) operator panel menus.

PPDS Emulation

This menu item allows the user to enable or disable PPDS emulation datastream. When this setting is enabled, the following settings are also changed:

- SmartSwitch settings for each port are turned off.
- The printer language is changed to PPDS Emulation.

Users can still switch languages on the operator panel and through the PJL datastream.

Demo Mode

There is a built-in demonstration mode. The settings allow you to **Deactivate** to turn off the demo mode and **Activate** to turn it on. While Demo Mode is set, the printer will start in Demo Mode until you change the setting.

Warning: While Demo Mode is set to **Activate**, only demonstration files can print and files received across the network or from the host computer are ignored.

Factory Defaults

This setting enables a user to restore all the printer settings to the original factory settings. Selections are **Restore Base** and **Restore Network**. Network does not appear unless you have a network printer. The following settings are not changed:

- Display language
- Settings in the NETWORK/PORTS MENU group

Warning: Selecting to restore factory defaults may change personalized settings, and some saved data may be lost.

Energy Conserve

This menu controls what values appear on the Power Saver menu. If **Off** is selected in Energy Conserve menu, then Disabled appears in the Power Saver menu, and Power Saver can be turned off. If **On** is set in Energy Conserve, the Power Saver feature cannot be disabled.

EVENT LOG

The event log provides a history of printer errors. The event log can only be printed in CONFIG MENU. Additional options are available in DIAGNOSTICS. See .

To print the event log:

1. Select **EVENT LOG** from CONFIG MENU.
2. Select **Print Log** from EVENT LOG.

Press **Back** ( ) or **Stop** ( ) to return to EVENT LOG.

Note: An event log printed from the CONFIG MENU will not contain debug information or secondary codes for 900 service errors. However, the event log printed from DIAGNOSTICS mode does include this information.

Paper Prompts

When a tray is out of the indicated paper size, a prompt is sent to the user to load paper in a tray. This setting controls the tray the user is directed to fill. Selections are **Auto** (default), **MP Feeder**, and **Manual Paper**.

Env Prompts

This setting controls the tray the user is directed to refill when specific envelope size is out. The selections are **Auto** (default), **MP Feeder**, and **Manual Env**.

Jobs On Disk

If the hard disk is installed, Jobs On Disk allows the user to delete buffered jobs saved on the disk. The values are **Delete** and **Do Not Delete**.

Disk Encryption

If a hard disk is installed, Disk Encryption selects whether the data on the disk is encrypted or not. The values are **Disable** and **Enable**.

Warning: Whenever this value is changed, data on the hard disk is erased.

Font Sharpening

This setting allows a user to set a text point size below which the high frequency screens are used when printing font data. For example, at the default 24, all text in font sizes 24 and less will use the high frequency screens. The values for this setting range from 0 to 150, and the default value is 24. This setting affects PostScript, PDF, PCL, and XL emulations.

To change the value:

1. Select **Font Sharpening** from the CONFIG MENU.
2. Use ◀ to decrease the value and ▶ to increase the value.
3. Select ⊘ to accept the value.

Short Edge Printing

The default printing orientation is long edge. This setting allows a user to enable or prohibit short-edge fed paper. If the setting **Disabled** (default) is selected, letter and A4 paper can only be fed long edge. If they are fed short edge, a prompt will ask the user to use the correct paper size. When the setting is **Enabled**, the user can feed paper either long edge or short edge.

Tray Low Message

Selecting **Disabled** turns off the tray low prompts. The default is **Enabled**.

Exit Config Menu

Press ⊘ to exit the CONFIG MENU. The message `Resetting the Printer` displays, and the printer performs a POR and restarts in normal mode.

Analyzing the Print Test

Print Tests provide several uses in troubleshooting the printer problems.

- Isolating problems to either the print engine (printer engine card assembly) or to the RIP card assembly and host software.
- Locating feed and media transport problems.
- Detecting print quality and image registration problems.

Using print test to locate a feed or media transport problem

Use Print Tests to locate a problem with media feed or with media transportation along the media path.

1. Enter Printer Diagnostics and generate a Print Test.
2. Follow the media along the media path until the problem occurs.

Using print test to analyze a print quality problem

Due to the method used to generate Print Tests, grid lines may display a noticeable amount of jitter or unevenness. This is normal for Print Tests.

1. Print a sample image from the host computer.
2. Enter Printer Diagnostics and generate a Print Test.
3. If the print quality problem occurs when you print from the host computer but does not occur when you print from Diagnostics, the problem may be in the RIP card assembly, in the print driver software, or in the application software on the host computer.
4. If the print quality problem occurs on the Print Test, then the problem is caused by the print engine.
5. If the print quality problem is an image registration problem, go to "Setting Printer Registration" on page 3-31.

Driving force transmission path

Transport motor

The rotating force of the transport motor is transmitted through the gear and the pulley (25 tooth) to components that need mechanical driving force as shown in the following diagram.

```
┌─────────────────────────────────────────────────────────────────────┐
│                        Media transport motor                          │
└─────────────────────────────────────────────────────────────────────┘
              │                                          │
┌──────────────────────────────────────────┐    ┌──────────────┐
│     Transport/MPF idler gear 21T/21T       │    │  Pulley25T    │
└──────────────────────────────────────────┘    └──────────────┘
              │                                          │
┌──────────────────────────────┐                 ┌──────────────┐
│      Transport Clutch          │                │  Gear exit    │
└──────────────────────────────┘                 └──────────────┘
              │                                          │
┌──────────────────────────┐                     ┌──────────────┐
│   Vertical gear drive ASM  │                    │   Gear19T     │
└──────────────────────────┘                     └──────────────┘
     │              │              │           │          │
┌─────────┐  ┌──────────┐  ┌──────────┐  ┌──────────┐  ┌──────────┐
│ Gear18T │  │ MPF feed │  │Registration│ │Fuser unit│  │Exit1 media│
└─────────┘  │ roll ASM │  │ roll ASM  │  │   ASM    │  │ exit roll │
     │       └──────────┘  └──────────┘  └──────────┘  │    ASM    │
┌──────────┐                                            └──────────┘
│Transport │
│ roll ASM │
└──────────┘
```
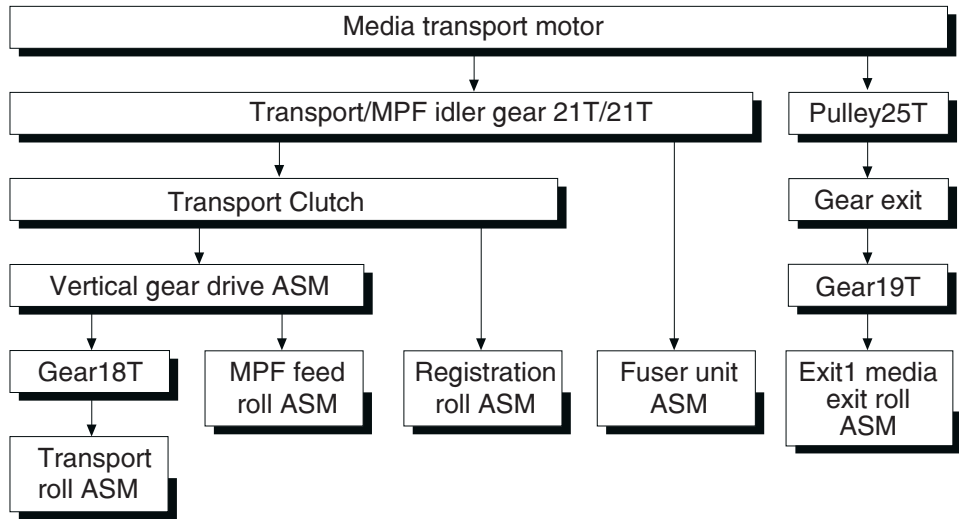
The driving force transmitted to the gear drives the transport roll assembly, multipurpose feeder (MPF) feed roll, registration roll assembly, fuser assembly, and exit 1 media exit roll assembly through the clutch and gears.

The driving force transmitted to the pulley (25 tooth) drives the exit 1 media exit roll assembly through the gears.

The driving force transmitted to the fuser assembly drives the heat roll.

PC cartridge motor

The rotating force of the PC cartridge motor is transmitted through the gears to components that need a mechanical driving force as shown in the following diagram.

```
┌─────────────────────────────────────────────────────────────────────┐
│                         PC cartridge motor                            │
└─────────────────────────────────────────────────────────────────────┘
              │                                          │
┌──────────────────────────────┐            ┌──────────────────────────┐
│            Drum                │            │      Magnetic Roll        │
└──────────────────────────────┘            └──────────────────────────┘
              │
┌──────────────────────────────┐
│         Transfer roll          │
└──────────────────────────────┘
```
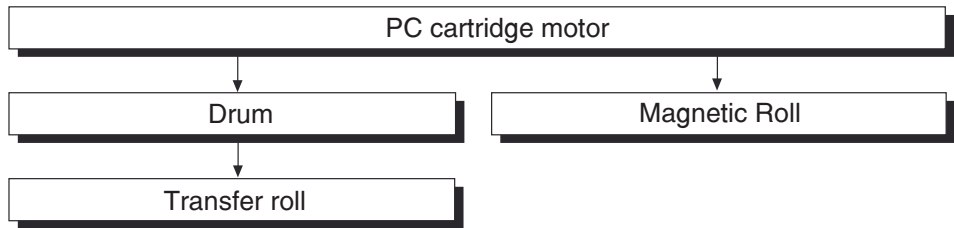
The driving force transmitted to the PC cartridge drives the drum. The driving force is then transmitted to the transfer roll assembly by direct contact with the drum.

Media transport

Media transport path

Media is supplied from the MPF, tray 1 or tray 2, and is transported to the printer along the media transport path shown below.
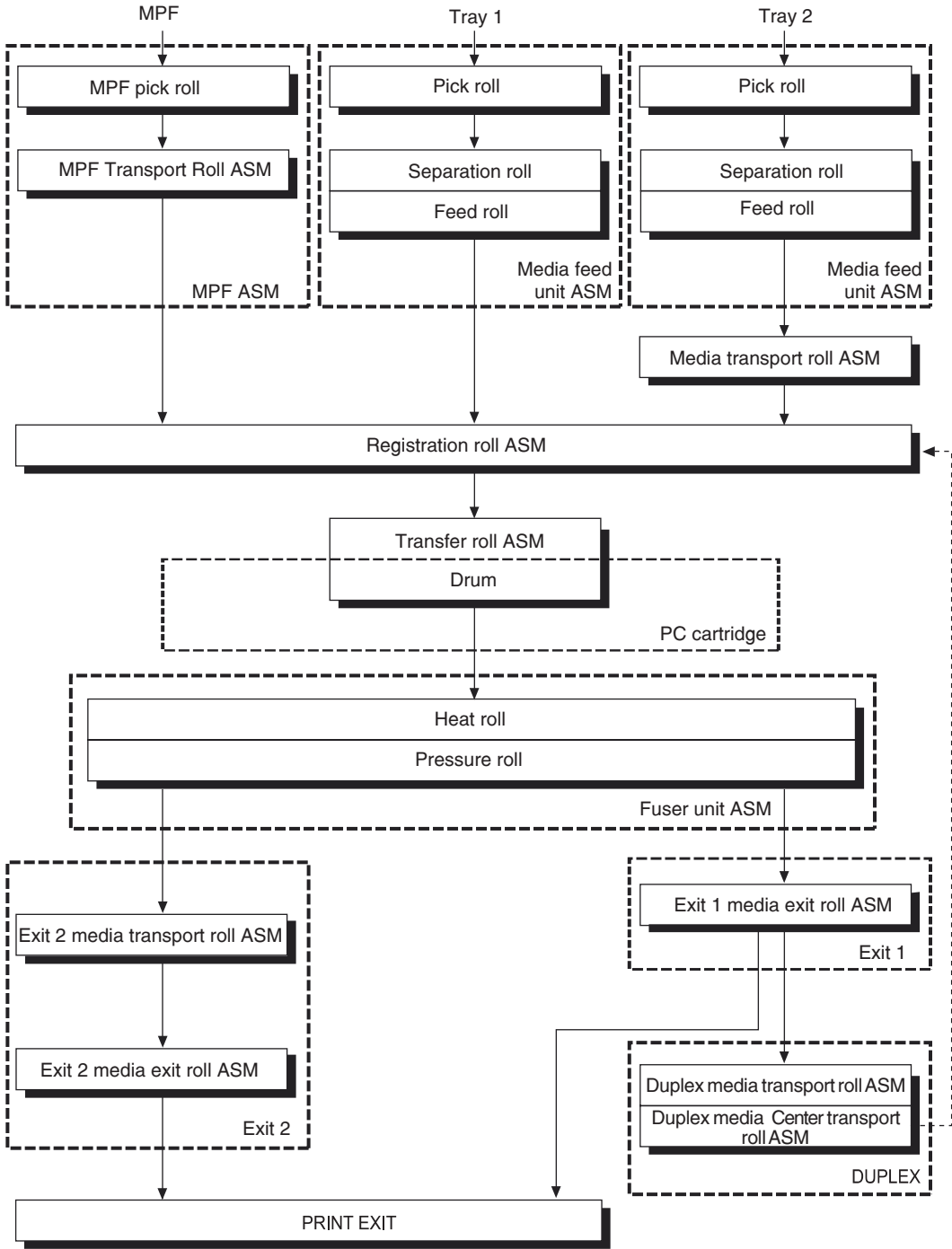
Media transport path layout

The following is a cross section of the laser printer, showing main components directly associated with the media path and transport.

Main components associated with transport of media
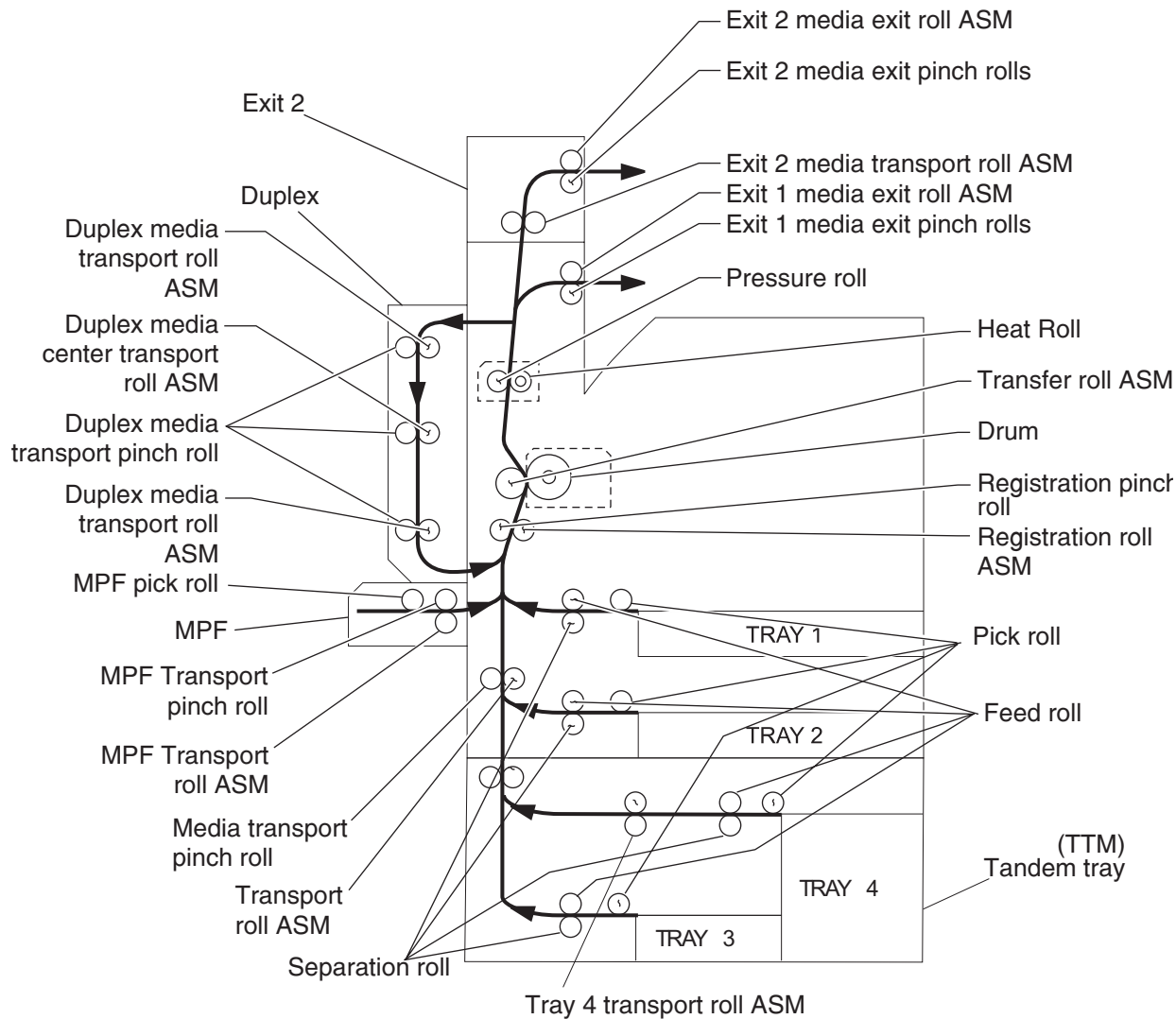
Functions of main components

- Media tray assembly
- Media feed unit assembly
- MPF
- Xerographics
- Fuser
- Drive
- Electrical components and rolls

Media tray assembly

It is necessary to adjust the front media tray guide assembly, rear media tray guide and media tray end guide of the media tray assembly to match the media size.

Front media tray guide assembly and rear media guide

The front media tray guide assembly can be adjusted to different media sizes by moving the guides to the front or rear. These guides come into contact with the media and hold it in position.

The rear media tray guide moves together with the front media tray guide assembly.

Media tray end guide

The media tray assembly is designed so it can adapt to the media length in the media feed direction by moving the media tray end guide to the left or right.

Bottom plate

The force pushing up the bottom plate is transmitted by the driving force of the motor on the media feed unit assembly to the lift up shaft through the gear (13/60 tooth) and sector gear (12 tooth). The bottom plate is pushed up by the rotation of the lift up shaft, which causes the supplied media to come in contact with the pick roll.

Media tray assembly
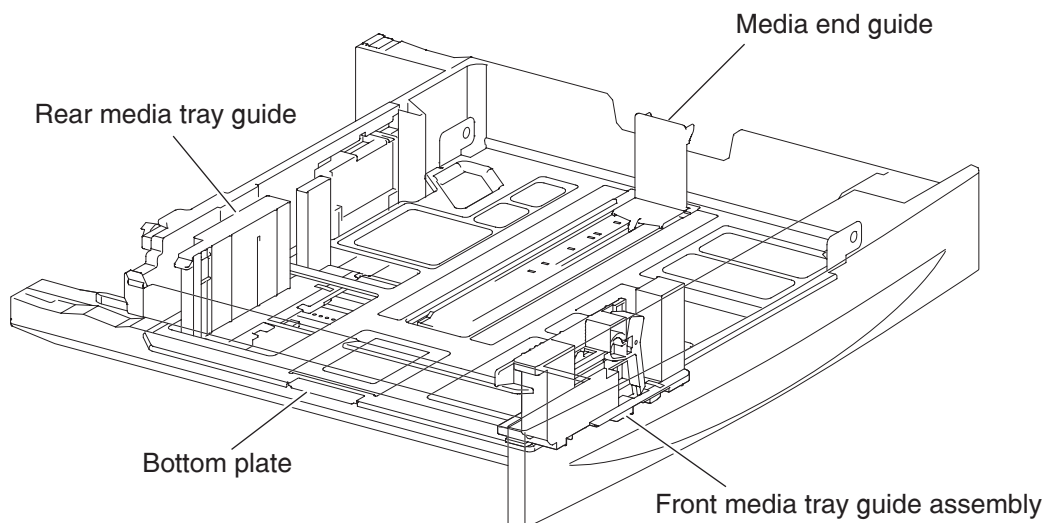
Detection of media size

The media size set for the media tray assembly is transmitted to the switch (media size) by moving these guides. The media size is detected by the on/off information of these switches.

Media feed unit assembly

Since tray 1 and tray 2 are functionally equivalent in terms of the switch (media size), sensor (media out), sensor (media level) and sensor (pre-feed), only the components of one tray are described here.

The media feed unit assembly is a mechanical unit supplying media from the media tray assembly to the printer. The driving force, from the media feed lift motor on the media feed unit assembly, is transmitted to the three media feed rolls to feed media.

When the pick roll picks up media, the remaining media decreases, and the actuator of the sensor (media level) lowers accordingly. When the sensor (media level) detects the lowering, the media feed lift motor is activated to lift the lift up shaft and the bottom plate accordingly. Thus, the remaining media is ready to be fed.

Media feed lift motor

This motor is activated to feed media and to lift the bottom plate. When feeding media, it rotates forward to drive the pick roll. When lifting the bottom plate, it rotates reversely to drive the tray module gears to lift the lift up shaft.

Switch (media size)

This switch (media size) sets the size of media supplied from each media tray assembly. A signal indicating the media size is transmitted as a voltage to the printer engine card assembly.

Sensor (media out)

If media runs out in a media tray assembly, the actuator lowers and the actuator flag, unlocks the sensing area of the sensor (media out). The sensor light is transmitted. When the sensing area is blocked (media is present), the signal is off.

Sensor (media level)

This sensor detects by the actuator position whether media in the media tray assembly is lifted. When the flag of the actuator unblocks the sensing area of the sensor (media level), the sensor detects that the media has been lifted.

Sensor (pre-feed)

This sensor detects a media jam in the media tray assembly by the media position and sensor on/off time.

The sensor on/off states can be monitored by media passing through the sensor (pre-feed) sensing area.
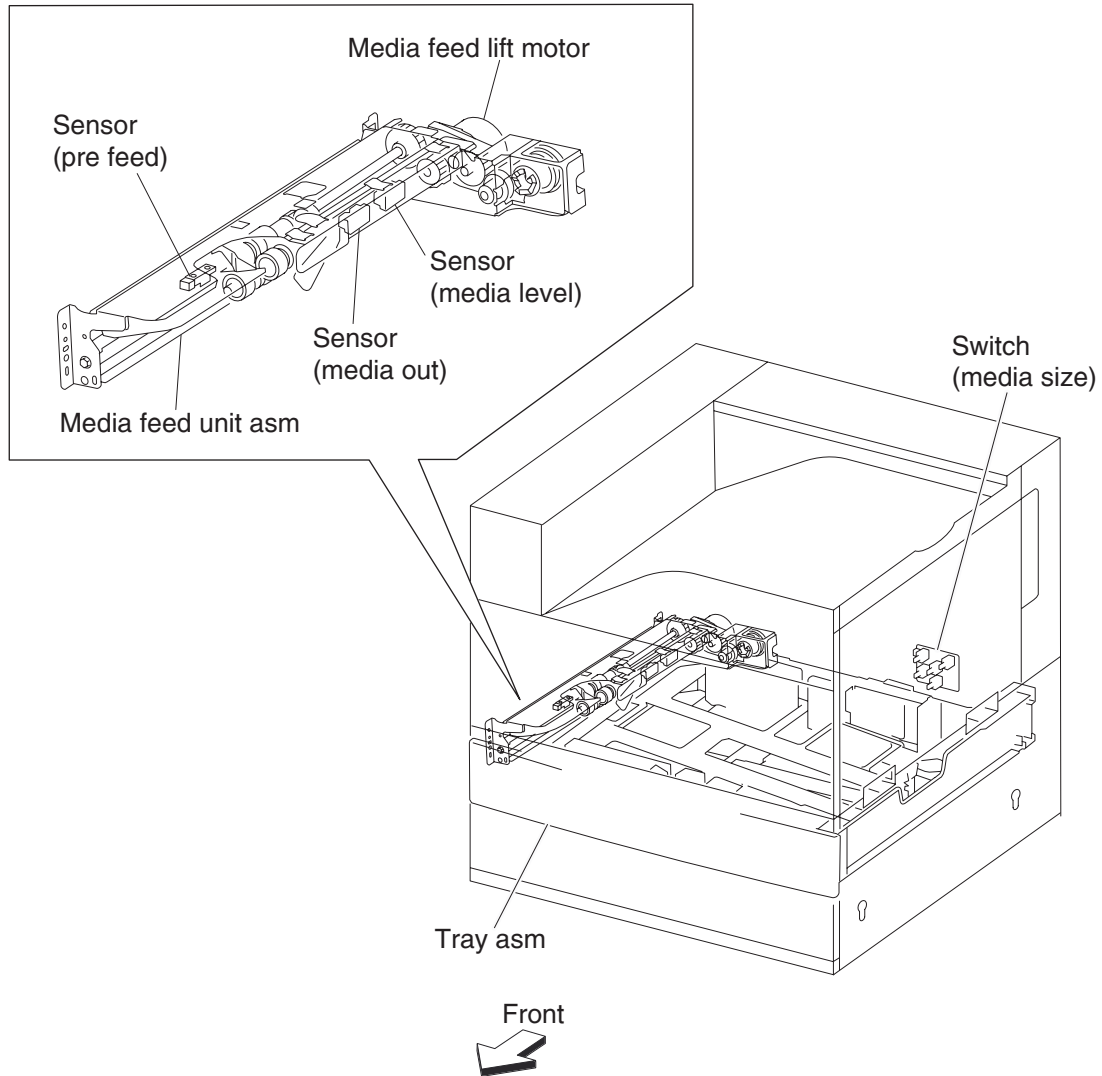
Multi-Function Peripheral (MPF)

The MPF is a mechanical unit suppling media to the printer. The driving force from the transport motor of the dual drive motor assembly is transmitted to the MPF feed roll to feed media.

MPF pick roll

The MPF feed roll feeds media set on the MPF.

MPF pick roll

The MPF feed roll feeds media into the printer.

MPF pick solenoid

The MPF feed solenoid transmits the driving force from the main motor to the MPF feed roll.

Sensor (MPF media out)

The sensor (MPF media in) detects whether media is present on the MPF.

Sensor (MPF media width)

The MPF side guides detects the width (length in the main scanning direction) of media on the MPF.

MPF media transport roll ASM

Sensor (MPF media out)

MPF pick rc!!

MPF pick solenoid

Sensor (MPF media width)

Left
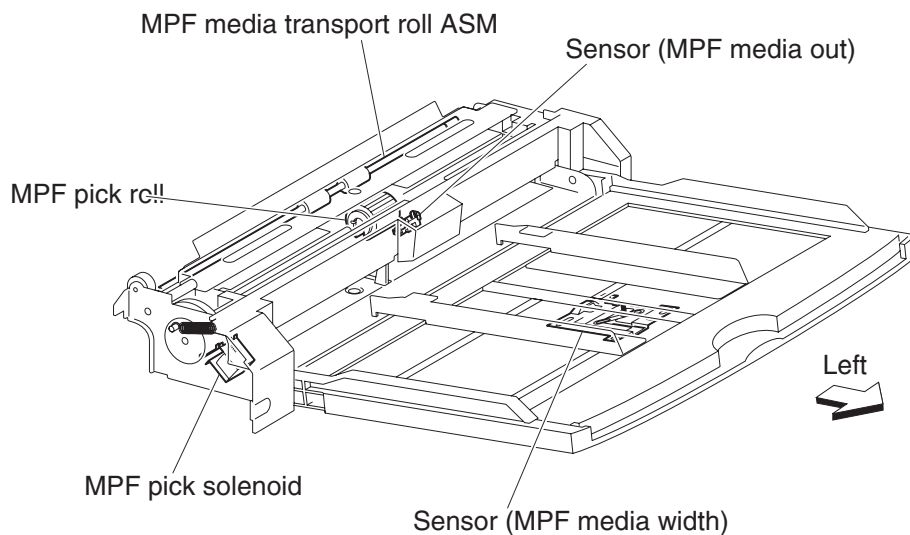
Detecting media size

The size of media on the MPF is transmitted by moving the MPF side guide, and is determined by the printer engine card assembly.

Media sizes that can be automatically detected are as follows:

Media size	Width (mm)	Feed length (mm)
Side-guide stopper (min.)	84	-
Media detection area (min.)	88.2	-
3.5" x 8.5"SEF	88.9	215.9
Postcard SEF	101.6	152.4
5.5" x 8.5" SEF	139.7	215.9
Postcard LEF	148	100
A6 LEF	148	105
A5 SEF	148	210
Postcard LEF	152.4	101.6
B6 LEF	182	128.5
B5 SEF	182	257
Monarch LEF	190.5	98.4
A5 LEF	210	148
A4 SEF	210	297
5.5" x 8.5" LEF	215.9	139.7
5.5" x 11" SEF(Letter)	215.9	279.4
5.5" x 13" SEF(Legal)	215.9	330.2
5.5" x 14" SEF(Legal)	215.9	355.6
DL LEF	220	110
C5 LEF	229	162
C4 SEF	229	324
Rectangular LEF	235	120
Com10 LEF	241.3	104.8
B5 LEF	257	182
B4 SEF	257	364
Executive LEF	266.7	184.2
16K LEF TFX(PRC)	267(270)	194(195)
8K SEF TFX(PRC)	267(270)	389(390)
8.5" x 11" SEF(Letter)	279.4	215.9
11" x 17" LEF	279.4	431.8
A4 LEF	297	210
A3 SEF	297	420
Stopper (max.)	303	-

Transfer roll assembly

The transfer roll assembly is driven by direct contact with the drum of the PC cartridge.

The transfer roll assembly applies positive charges to the rear surface of the media when the media passes between the transfer roll assembly and the drum. The negatively charged toner image is attracted by positive charges on the rear surface of the media. Thus, the toner image is transferred from the drum surface to the media surface.

PC cartridge
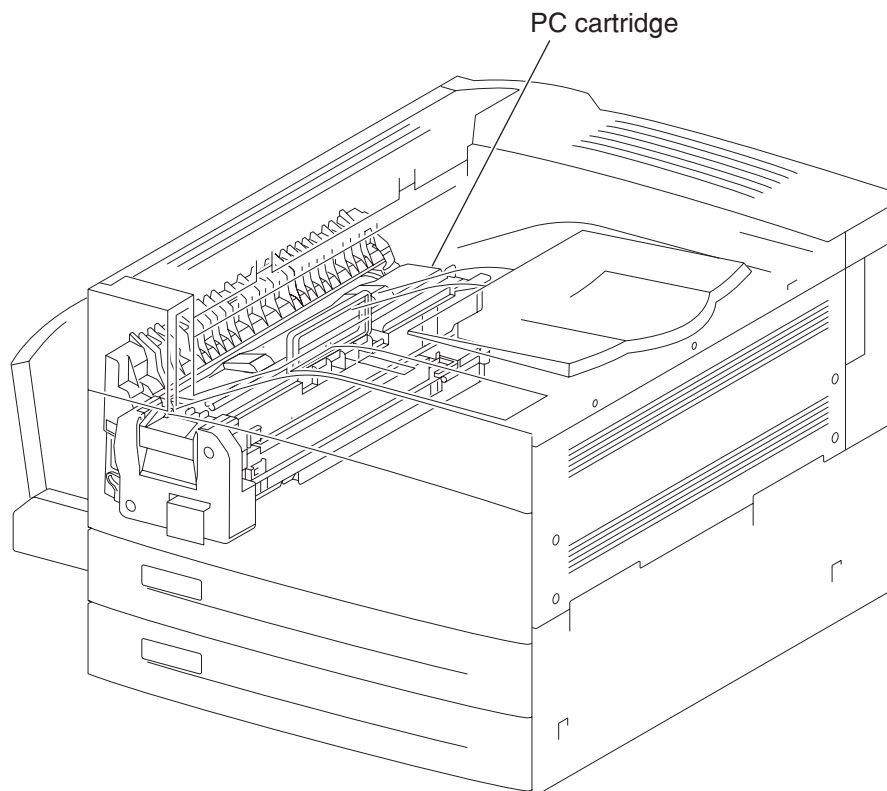
Printhead assembly

The printhead scans the drum surface with a laser beam. It consists of four components: laser diode (LD) card assembly, printhead motor, polygon mirror, and start of scan card assembly.

1. LD card assembly — generates a laser beam with the two LDs of LD1 and LD2. The beam is turned on or off according to a print data signal.
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 laser beam in the drum axial direction. The laser beam reaches the polygon mirror as it passes through the lens (L1), lens (L2), and window. The laser beam then arrives at the 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 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.)

Conceptual diagram of an image created by scanning

Paper Path

600 dots/inch

600 scans/inch

SOS card ASM

LD card ASM

Polygon mirror

Printhead motor
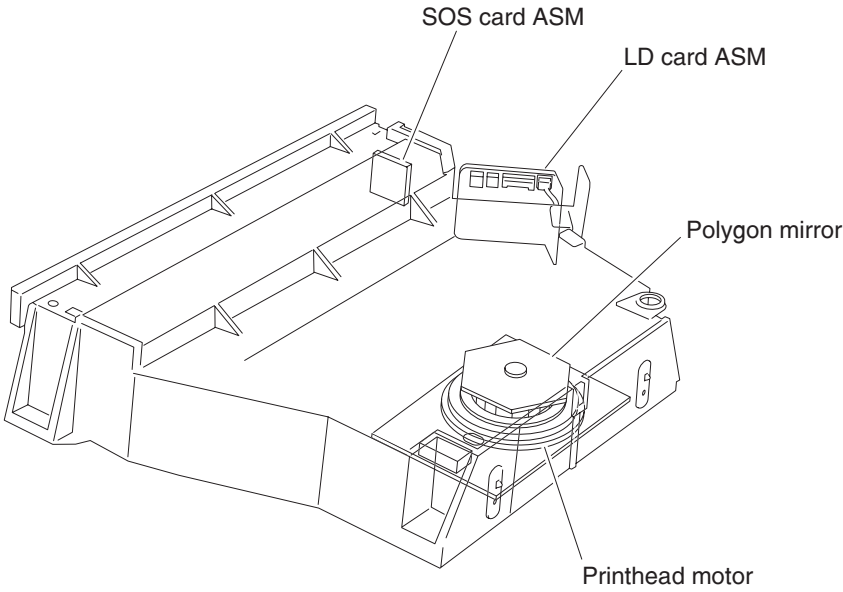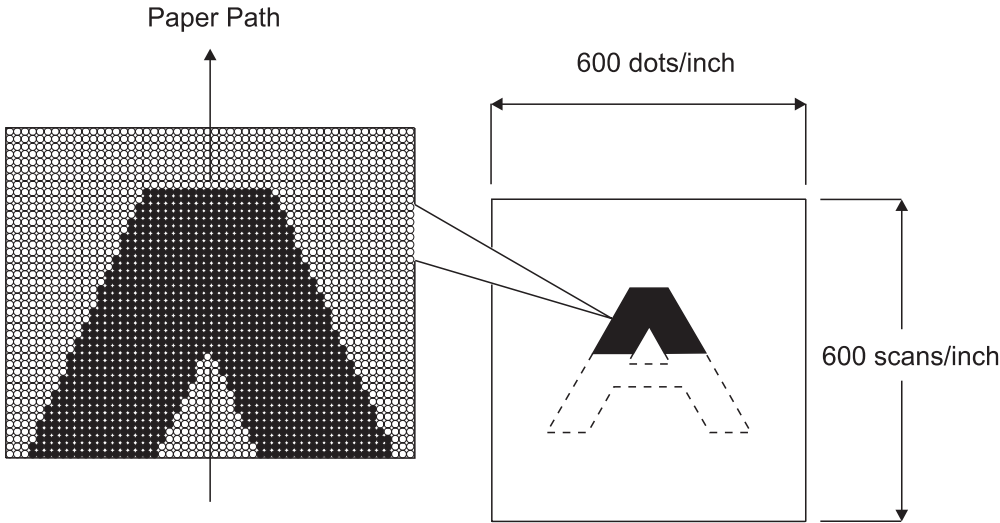
Fuser

Heat roll

The heat roll is a hollow metal tube with a coated surface. This tube is heated by the inner heater rod. 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 a metal shaft coated with sponge rubber. Pressure is applied to the media between the pressure roll and heat roll, pressing the melted toner against the media.

Heater lamp

The heater rod of the lamp is compressed of a quartz glass tube containing a heater coil. A terminal is mounted to the end of the heater rod via a harness. Three heater lamps are provided: the main heater rod to heat entire heat roll, and the sub heater lamp 1 and 2 to heat the central portion of the heat roll.

Thermostat

If the heat roll temperature exceeds the preset temperature, the thermostat cuts off the circuits of the main heater rod and sub heater rods 1 and 2.

Center thermistor

The center thermistor monitors the surface temperature of the media-feed portion of the heat roll to control on/off of the main heater rod and sub heater rods 1 and 2.

Rear thermistor

The rear thermistor monitors the surface temperature at the rear side of the heat roll to switch the heater rod to use.

Pressure roll thermistor

The pressure roll thermistor monitors the temperature of the pressure roll to control the idling time for fuser warm-up before printing.

Fuser exit sensor

The fuser exit sensor detects the arrival of media at the detection point in the exit area of the fuser, and also detects the ejection of media from this point.
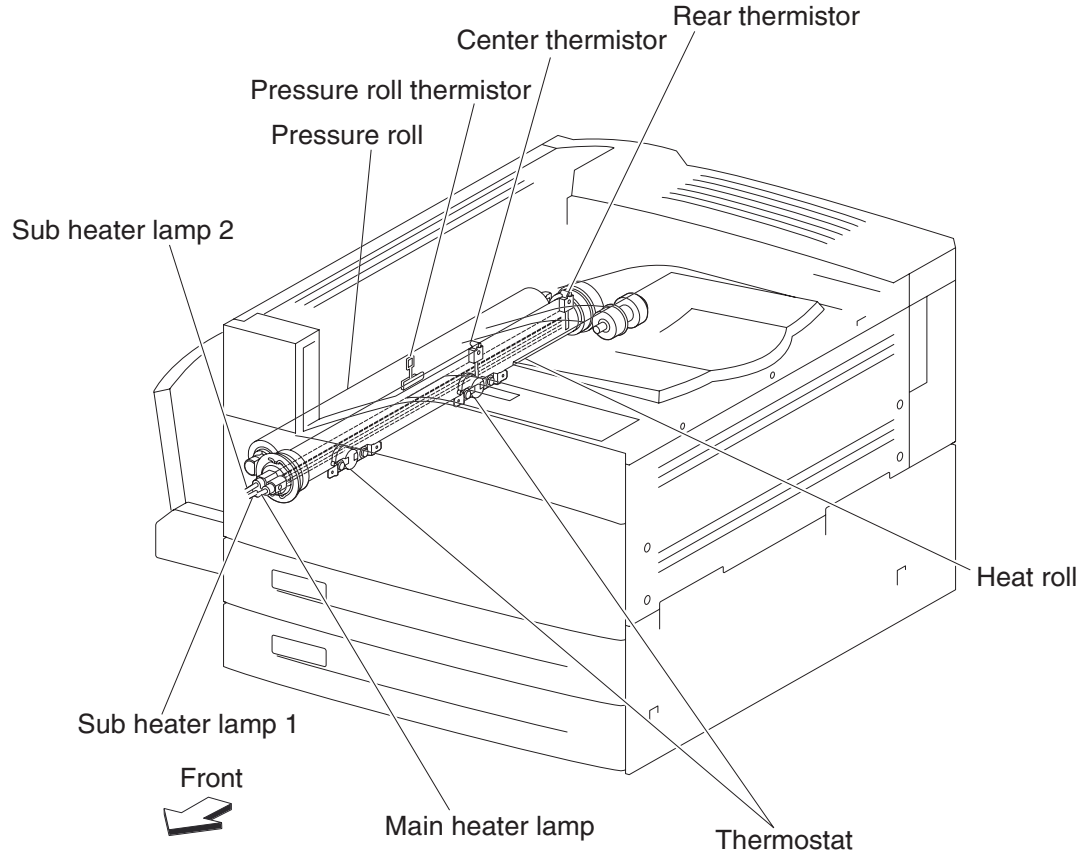
Exit

Exit 1 ejects printed media from the printer to the standard bin 1. With the optional exit 2 installed, it is also possible to eject media to the standard bin 2 by changing the orientation of the diverter gate on the exit 1.

Dual drive motor assembly

Drives the exit 1 media exit roll assembly that feeds media to each bin. With the optional duplex installed, this motor also functions to reversely feed media to the duplex.

Exit 1 media exit roll assembly

The exit 1 media exit roll assembly feeds printed media from the fuser to the standard bins.

Sensor (standard bin full exit 1)

The sensor (standard bin 1 full) detects whether the exit 1 face down tray is full by moving the actuator up and down.

Media diverter gate

The media diverter gate switches the media transport path. When the media diverter gate is lifted, media is fed to the standard bin exit 1. When it is lowered, media is fed to the standard bin exit 2.
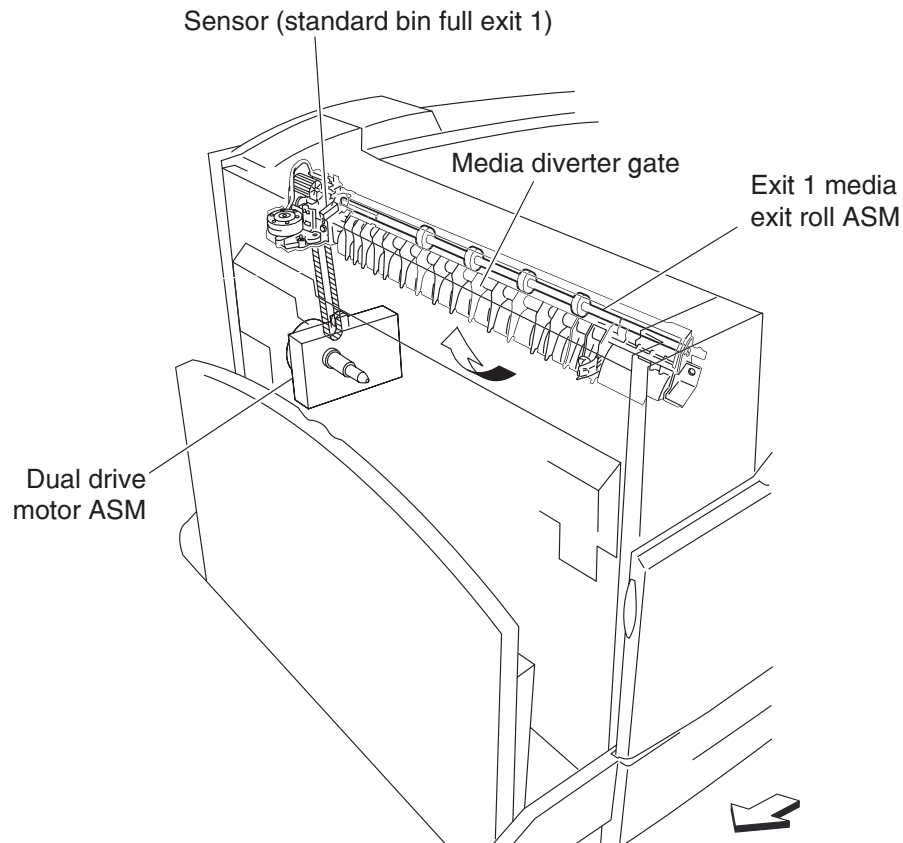
Drive

Media transport motor

The media transport motor is a DC brushless motor that drives the exit 1 media exit shaft assembly, fuser assembly, registration roll assembly.

PC cartridge motor

The PC cartridge motor is a DC brushless motor that drives the PC cartridge, mag roll and transfer roll assembly.

Media transport motor

PC cartridge motor

Dual drive motor ASM

Rear
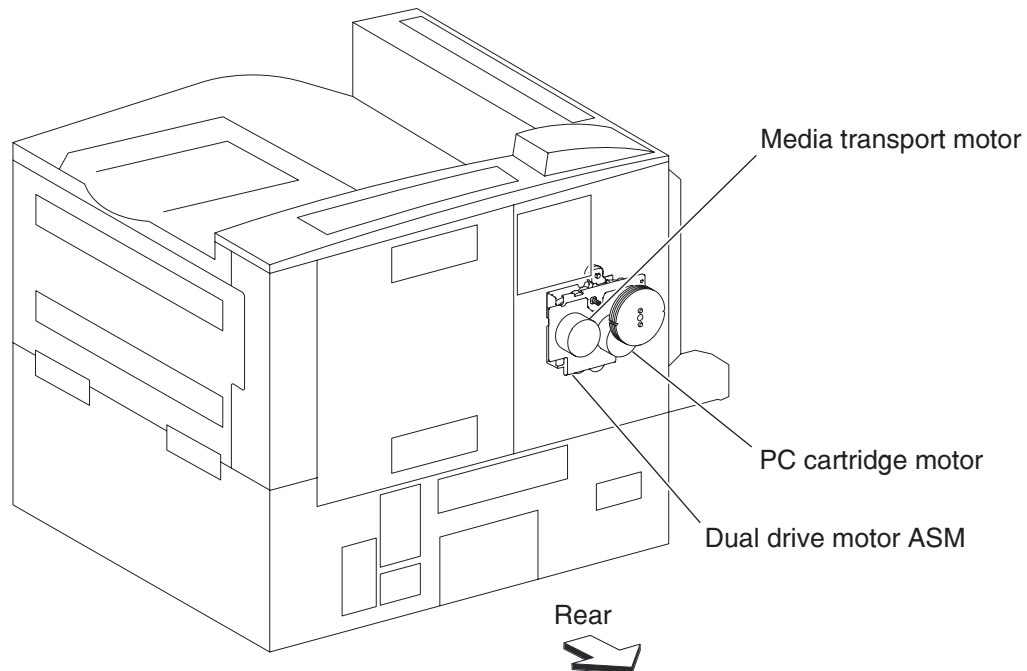
Electrical components and controller

Switch (main power)

Turning on/off the switch, power supplies/cuts off the main power of the printer.

Finisher AC output

Supplies power to the finisher from the main LVPS (low voltage power supply) card assembly.

Switch (printer front door interlock) and switch (printer left door interlock)

The switch is a safety switch to cut off a 24 VDC power supply from the LVPS card assembly to the high volt power supply (HVPS) card assembly, printer engine card assembly and to the dual motor assembly, while the printer front door assembly and the printer left door assembly are open.

Switch (PC Cartridge interlock)

The switch (PC interlock) 5 V interlock is a safety switch to cut off a 5 VDC power supply from the LVPS card assembly to the printhead while the PC cartridge is removed.

Switch (printer left lower door interlock)

The switch (left lower door interlock) detects open or close of the printer left lower door assembly.

Fuser cooling fan

The fuser cooling fan discharges air from the printer to prevent excessive temperature increase.

LVPS card assembly

The LVPS card assembly generates low voltages (5 V and 3.3 V for logic circuits, 5 V for laser diodes, and 24 V for motors/clutches) from AC power. It also contains the fuser relay to feed/cut off AC power to the heater rod of the fuser assembly.

HVPS card assembly

The HVPS card assembly generates AC power, a high DC voltage, and feeds them to the charge roll, development (magnet roll), transfer roll assembly.

Printer engine card assembly

The printer engine card assembly controls printing operation based on the communication with the RIP card assembly and on sensor/switch information. It also controls optional module boards.

RIP card assembly

The RIP card assembly connected to the printer engine card assembly controls the entire system.

Transport roll assembly

The transport roll assembly feeds media from tray 2 or an optional tray to the registration roll assembly.

Registration roll assembly

The registration roll assembly feeds media from all trays to the PC cartridge or fuser.

Switch (PC cartridge interlock)

Switch (main power)

Switch (printer front door interlock)

Switch (printer left door interlock)

Fuser cooling fan

RIP card ASM

Switch (printer left lower door interlock)

Printer engine card ASM

LVPS

HVPS

Rear

AC power input socket
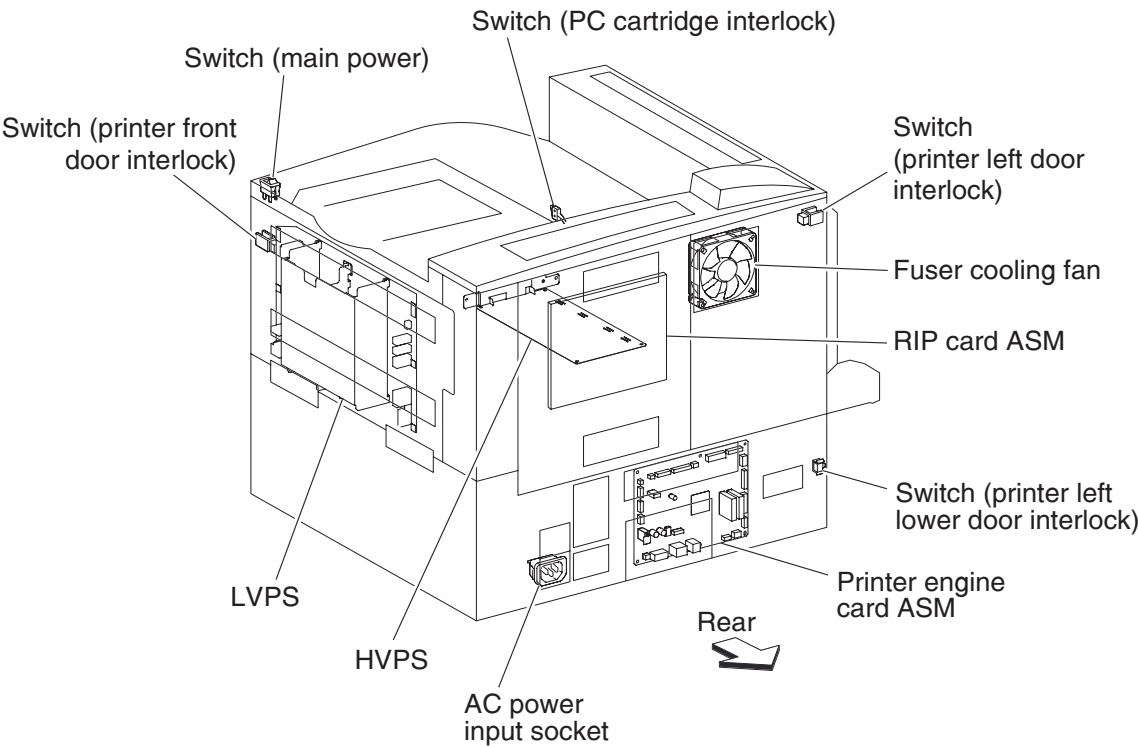
Control

Media size control

Media tray assembly feeding

The following table gives the states (on/off) of the switches on the switch (media size), corresponding to the media sizes of the media tray assembly.

Note: The switches on the switch (media size) are denoted by "S/W2", "S/W4", "S/W3", "S/W5", and "S/W1" respectively from the left side.

Media size	Analog switch				Digital switch
	S/W1	**S/W2**	**S/W3**	**S/W4**	**S/W5**
No media tray assembly	off	off	off	off	off
5.5" x 8.5"SEF/A5 SEF	off	off	on	off	off
B5 SEF	off	off	on	on	on
8.5" x 13"SEF	off	on	off	on	off
8.5" x 14"SEF	off	on	off	on	on
A4 SEF	off	on	on	off	off
8.5" x 11"SEF	off	on	on	off	on
A4 LEF	on	off	on	off	off
A3 SEF	on	off	on	on	off
B5 LEF/executive LEF	on	on	off	off	on
8K SEF(TFX/GCO)	on	on	off	on	off
B4 SEF	on	on	off	on	on
8.5" x 11"LEF	on	on	on	off	off
16K LEF(TFX/GCO)	on	on	on	off	on
11" x 17"LEF	on	on	on	on	on

Printhead control

Rotation of printhead motor

The on/off control of the printhead motor is performed according to the mode of operation as shown below.

Operation mode	PRINTHEAD motor on/off
Standby mode	Always off
Print mode	Turns on upon receiving the signal from the controller, and turns off after a preset time has passed from the end of printing. Also turns off if a print command is not received within 30 seconds from the reception of the signal.
Sleep mode	Always off

Determination of printhead ready

The printhead goes into ready state after the specified period passes since the reception of the printhead MPA start signal and the SOS cycle exceeds the reference value.

Printhead reference value

Printhead reference value	Description
Ready reference value	SOS signal interval (equivalent to 98% or more of the rated RPM of the printhead motor)
Fail reference value	SOS signal interval (less than 98% of the rated rpm of the printhead motor)

Fuser control

Fuser control method

The on/off control of the main/sub heater lamps is performed based on the fuser control temperature. The fuser transmits between the five states (warm up, ready, standby, print, and low power) depending on the heat roll surface temperature or printer conditions.

The fuser temperature control starts when the fuser ready in the LVPS card assembly is turned on after a preset time period has passed from power on. If a failure occurs, the heater lamps are turned off, the fuser ready is turned off, and then the fuser temperature control is stopped.

Main/sub heater lamps on/off control

The center and rear thermistors detect the heat roll surface temperature (fuser temperature) to regulate the temperature at the target control temperature by turning on or off the main/sub heater lamps.

Fuser warm-up

The fuser warm-up starts at the time of power on, interlock open or close, jam reset, or return from the low power mode, and ends when the ready temperature is attained, when a failure occurs, or when executing diagnosis.

Xerographic Process During a Print Cycle

Pressure roll

Heat roll

Fuser ASM

Cleaning blade

Charger roll

Drum

Laser beam

Transfer roll

PC cartridge

Magnetic roll

Paper
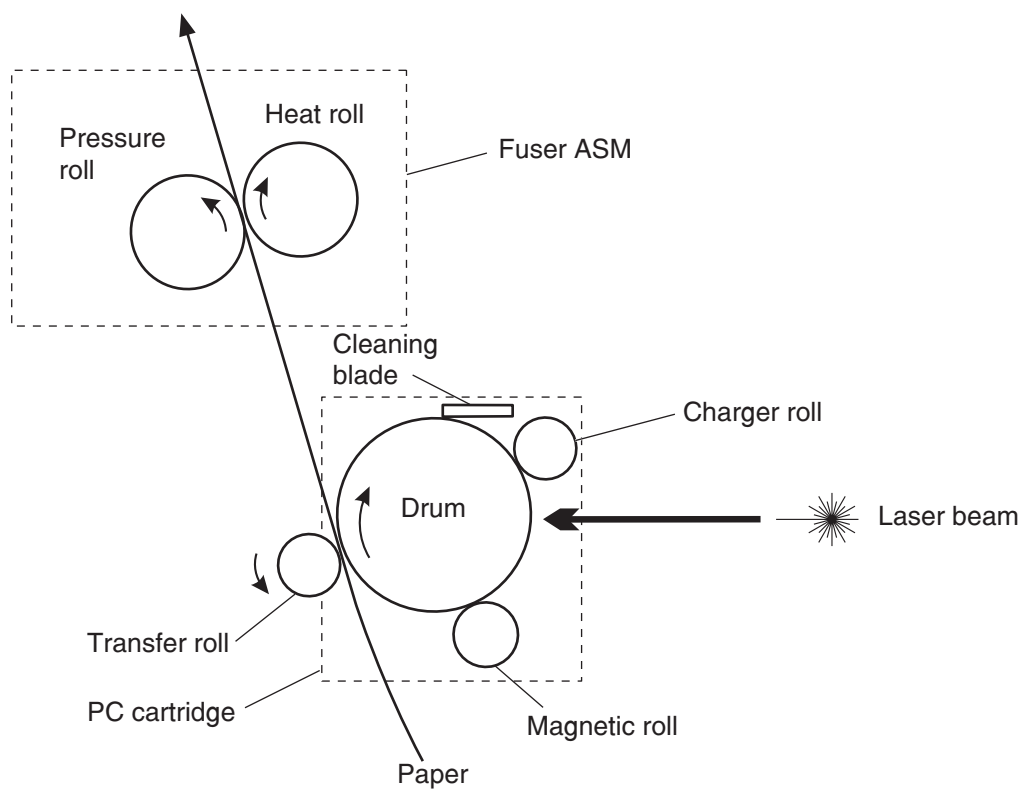
Charge

The Charge Roll 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.
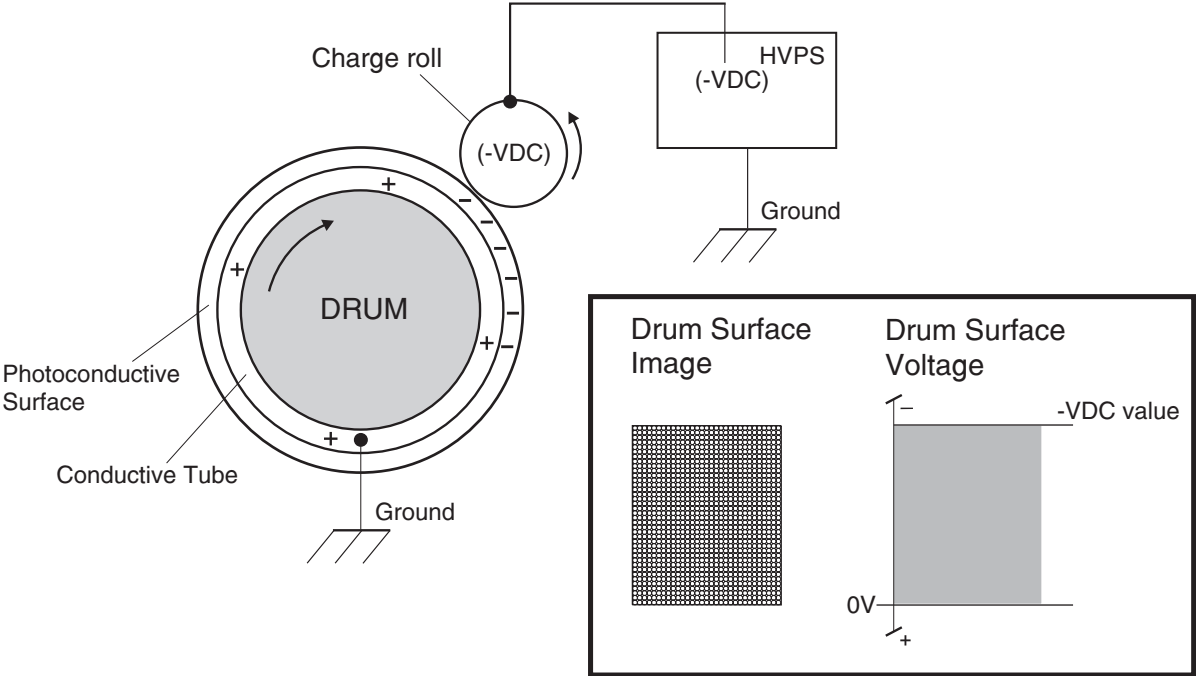
The charge roll is a conductive roll that is positioned slightly above the surface of the drum. The HVPS supplies the charge roll with two voltages; a negative DC charge voltage and an AC discharge voltage that is used for electrically cleaning the drum (discussed in *Step 6. Clean*).
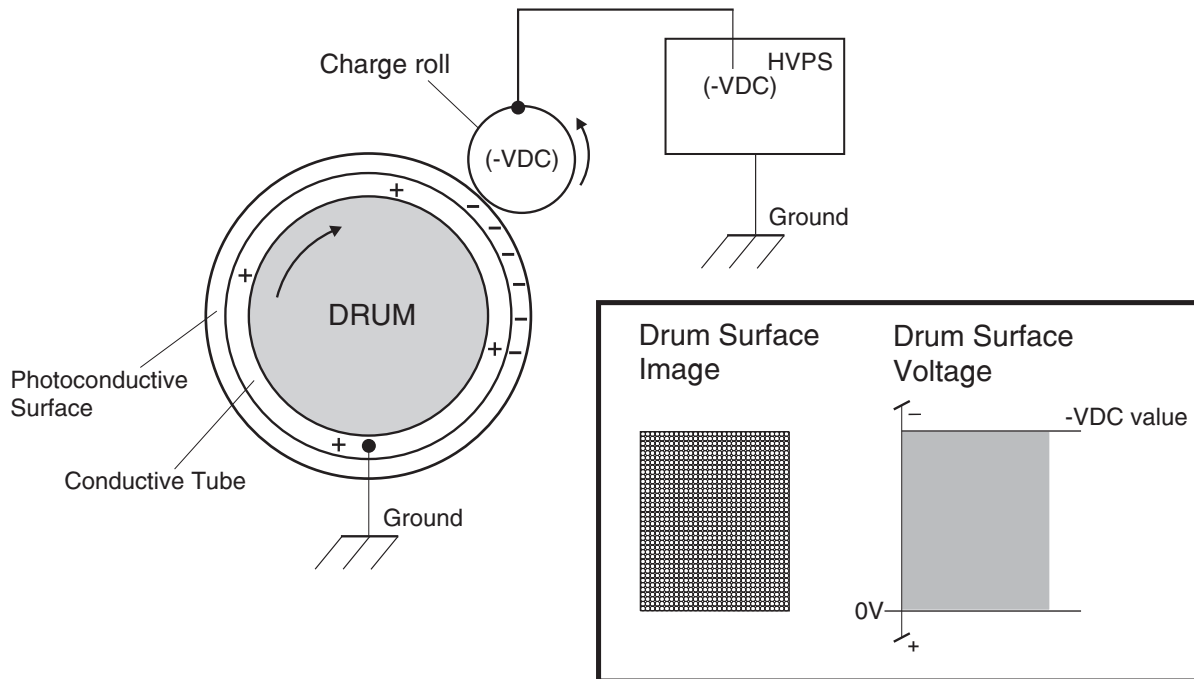
Exposure

The Printhead generates a beam of laser light. Image data received from the RIP card 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.

The Printhead also helps to clean and prepare the drum by scanning the surface of the drum at the beginning of each individual printer cycle. This action discharges a residual DC charge that may still remain on the Drum from the last print cycle.
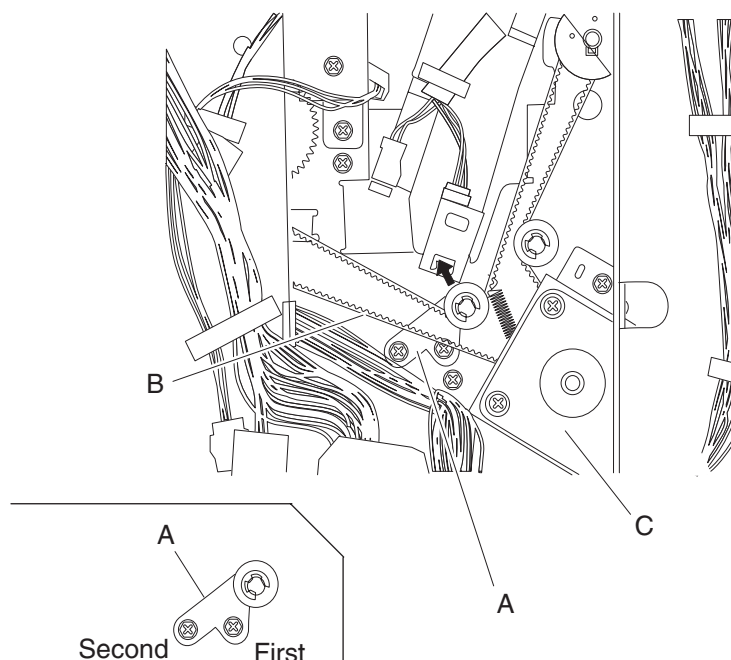
Development

The toner contained within the PC Cartridge has a magnetic property that causes it to adhere to the Magnetic Roll. The Metering Blade spreads the toner into a very thin layer on the Magnetic Roll. Friction between the Magnetic Roll and the CM Blade generates a small electrical charge that is transferred to the toner.

The surface of the Magnetic Roll is made up of a thin sheet of conductive material. The HVPS supplies the Magnetic Roll with two voltages; a DC voltage and an AC voltage. The DC voltage is used to transfer toner from the Magnetic Roll to the surface of the drum. The AC voltage agitates the toner on the Magnetic Roll, making toner transfer easier.

The Magnetic Roll maintains a negative DC electrical potential. Negative charged areas of the drum have a lower electrical potential, or higher relative negative value than the Magnetic Roll. Discharged areas of the drum have a higher electrical potential, or lower relative negative value, than the Magnetic Roll. A discharged point on the surface of the drum now appears less negative in relation to the negative charge on the Magnetic Roll.

The toner adhering to the Magnet Roll 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 Roll, toner transfers from the Magnet Roll to that point on the drum. There is now a visible toner image on the drum surface. The image is called a *developed* image.

Magnetic Roll

Metering Blade

Toner

HVPS

DRUM

-VDC

-VDC

Drum Surface Image

Drum Surface Voltage

Visible Developed Image

Toner at -VDC Developer Bias value

Discharge Level

0V
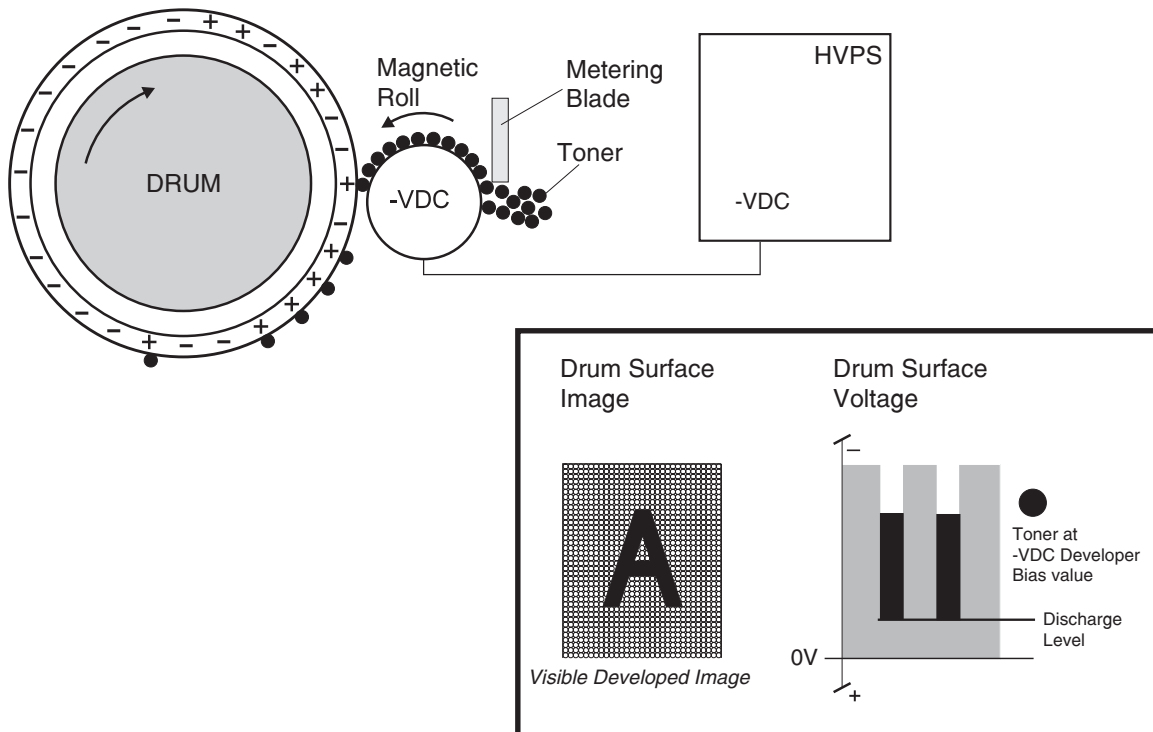
Transfer

As the paper travels between the Transfer Roll and the drum surface, the Transfer Roll applies a positive charge to the back of the printing paper. This positive charge transfers the negative charged toner image from the drum surface to the top surface of the paper. The toner image is now on the paper and the paper is now stuck to the drum surface 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.

HVPS

-VDC

-VDC

DRUM

Transfer roll

Sheet of paper
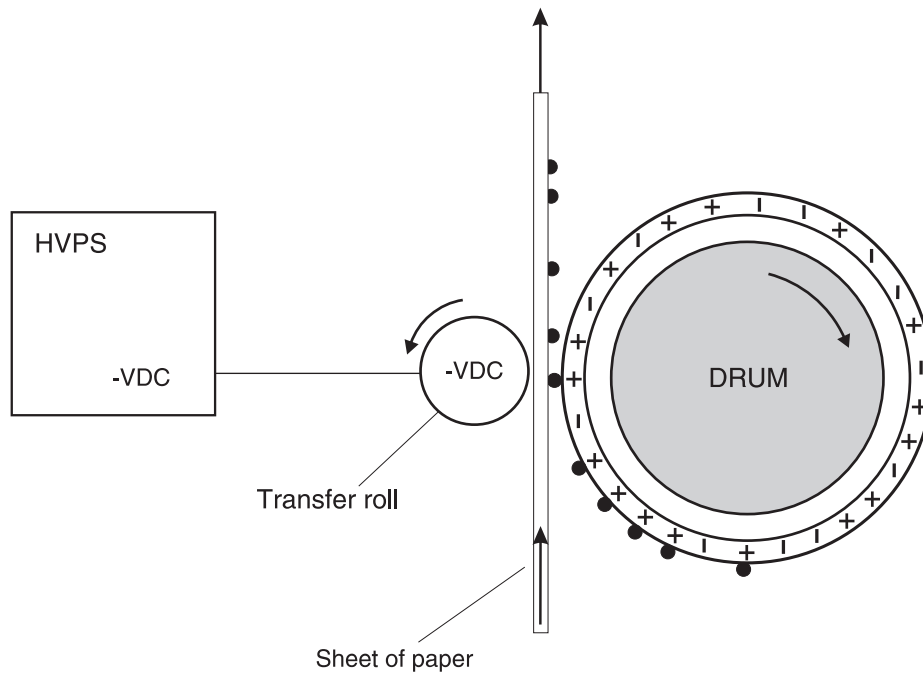
Cleaning

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 and reused.
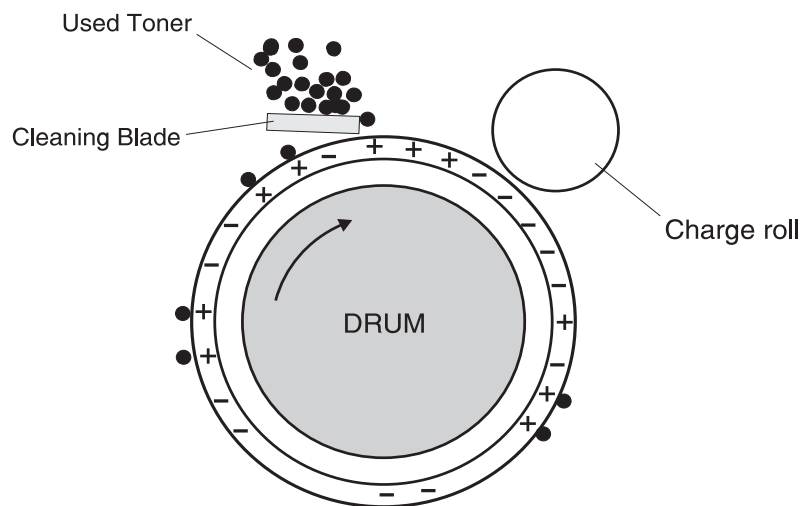
Discharge

At both the start and the end of each individual printer cycle, the HVPS supplies the charge roll with an AC voltage that is used to electrically clean the drum. The AC voltage removes any residual DC charge that was left from the previous print cycle.

At the beginning of each individual printer cycle, the Printhead scans the surface of the drum, further discharging any residual DC charge that may be left on the drum.
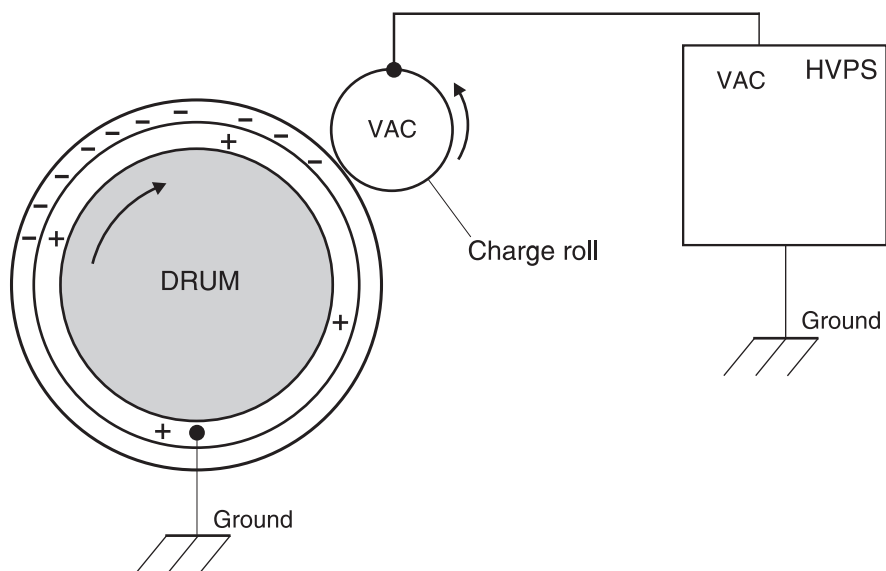
Safety system diagram

4024-XXX
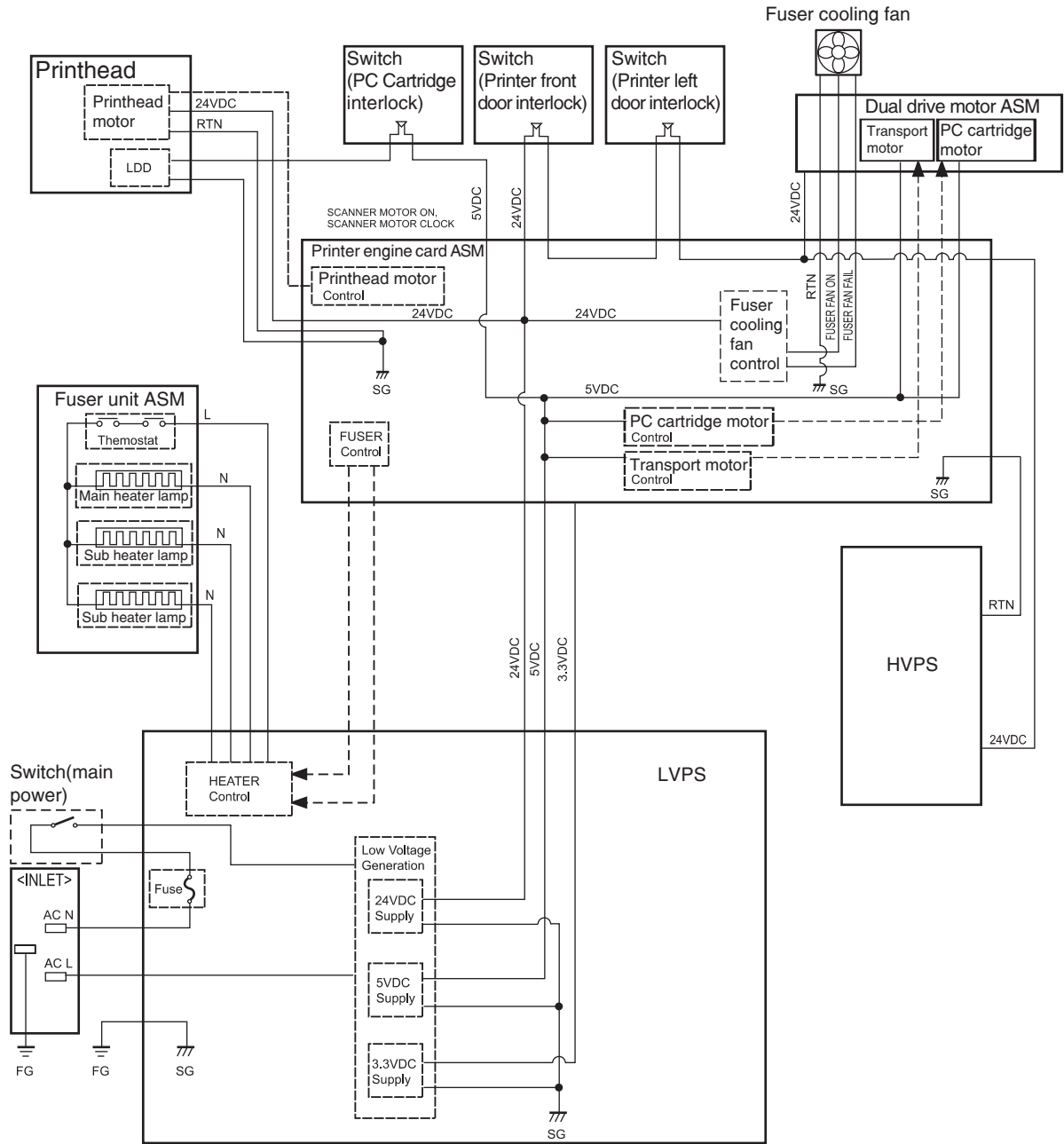
4. Repair information

Warning: Read the following before handling electronic parts.

Handling ESD-sensitive parts

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

Removal procedures

CAUTION: Remove the power cord from the printer or electrical outlet before you connect or disconnect any cable or electronic board or assembly for personal safety and to prevent damage to the printer. Disconnect any connections between the printer and PCs/peripherals.

CAUTION: The printer weighs approximately 47.7 kg (105 lb) and requires at least two people to lift it safely. Make sure your fingers are not under the printer when you lift or set the printer down.

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

Optional parts removal and replacement procedures are described in the following order:

- 2 Tray—See **"2X 500-sheet drawer (2TM) removals" on page 4-3**.
- Tandem tray—See **"2000-sheet dual input (TTM) removals" on page 4-46**.
- High capacity feeder—See **"High capacity feeder (HCF) removals" on page 4-120**.
- Duplex—See **"Duplex unit removals" on page 4-154**.
- Exit 2—See **"Exit 2 removals" on page 4-193**.

Note: Parts are controlled as spare parts. When servicing parts for which no procedure is described, observe the assembly before starting the service.

Note: Though the optional parts are assumed to be removed, they may not be removed if not required for the purpose of service.

Before starting service work

- Turn the power off and remove the power cord from the outlet.
- While performing service around the fuser assembly, ensure the fuser area has cooled down.
- Do not use excessive force to remove parts. Damage to the parts or function of the machine may occur.
- A wide variety of screws are used, make note of their positions during service.
- Wear a wrist band to remove the risk of static electricity.

2X 500-sheet drawer (2TM) removals
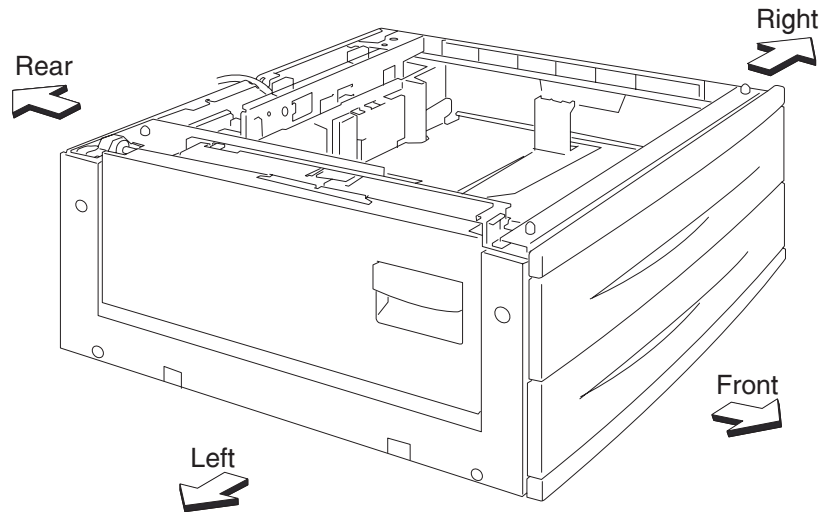
2X 500-sheet drawer (2TM)—top cover removal

1. Remove tray 3.
2. Remove one screw securing the top cover (A).
3. Remove the top cover (A).
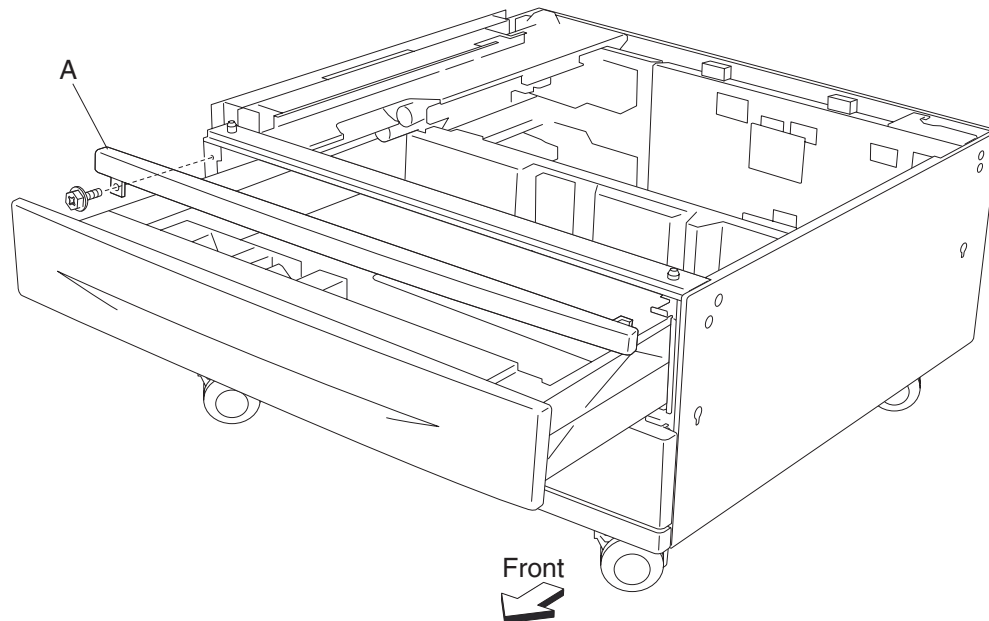
2X 500-sheet drawer (2TM)—foot cover removal

1. Remove tray 4.
2. Remove the right cover. See **"2X 500-sheet drawer (2TM)—right cover removal" on page 4-4**.
3. Remove the two screws securing the foot cover (A).
4. Remove the foot cover (A).
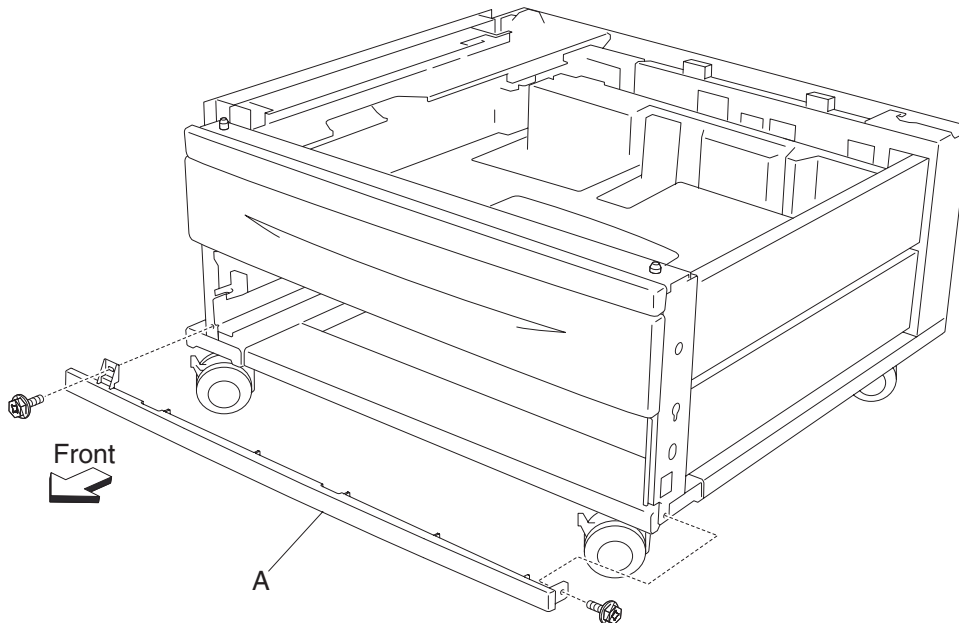
2X 500-sheet drawer (2TM)—right cover removal

1. Remove the three screws securing the right cover (A).
2. Remove the right cover (A) by lifting upward and outward in the direction of the arrow.
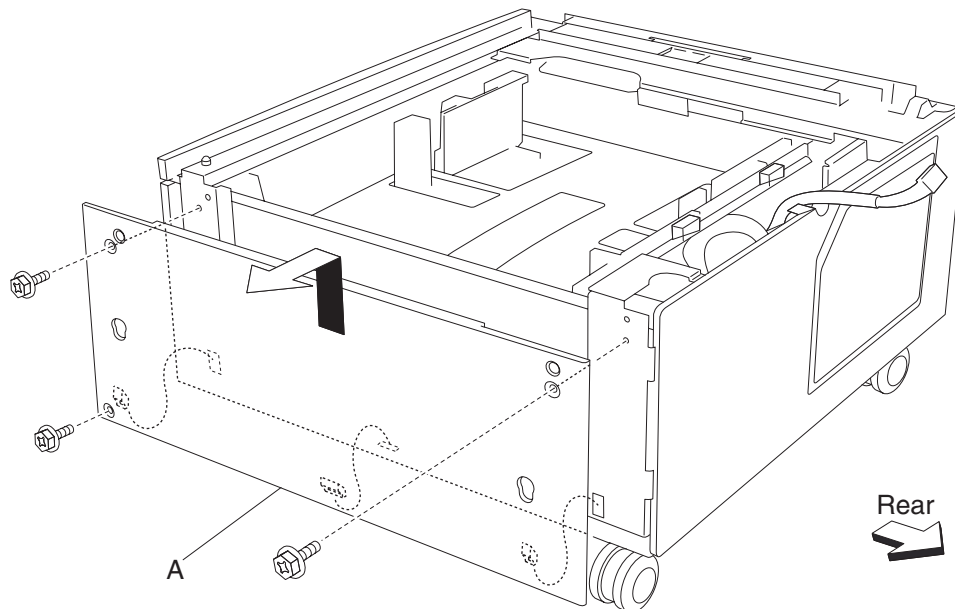
2X 500-sheet drawer (2TM)—left cover removal

1. Remove the two screws securing the left cover (A).
2. Remove the left cover (A).
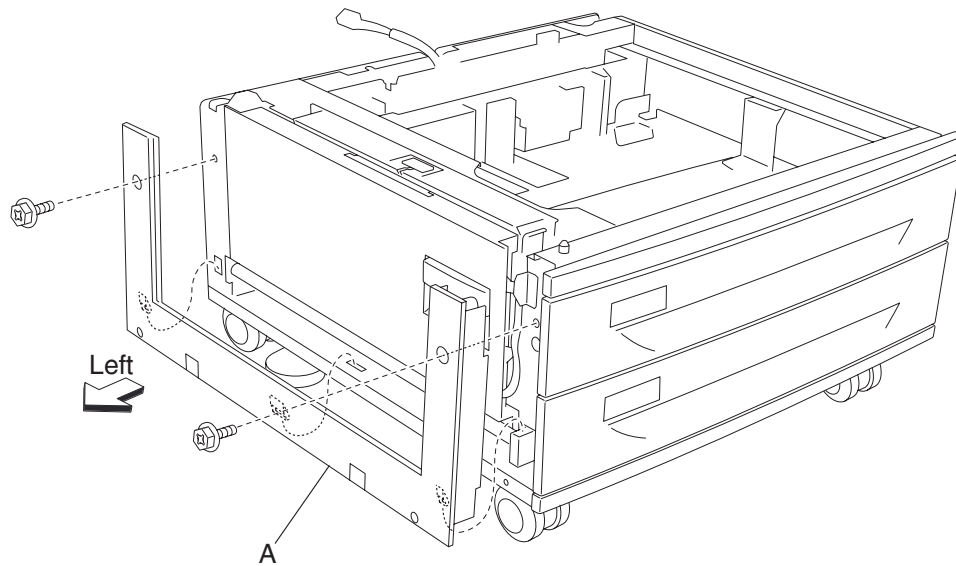
2X 500-sheet drawer (2TM)—rear cover removal

1. Remove the four screws securing the rear cover (A).
2. Remove the rear cover (A).
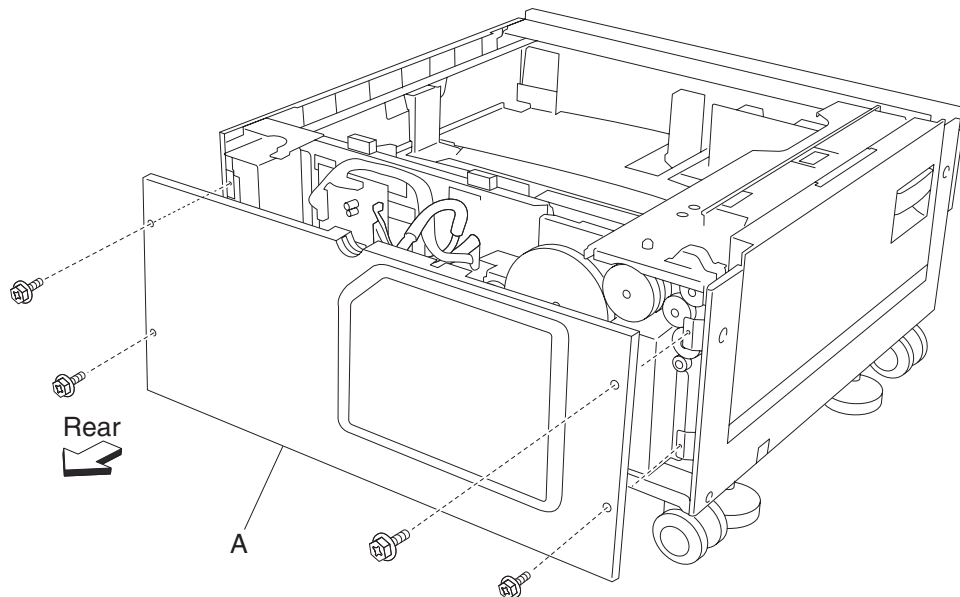
2X 500-sheet drawer (2TM)—2TM/TTM left door assembly removal

1. Remove the left cover. See **"2X 500-sheet drawer (2TM)—left cover removal" on page 4-5**.
2. Open the 2TM/TTM left door assembly.
3. Remove the one screw securing the 2TM/TTM left door support strap (A) to the unit.
4. Remove the screw securing the bracket (B) to the unit.
5. Remove the bracket (B).
6. Remove the 2TM/TTM left door assembly.
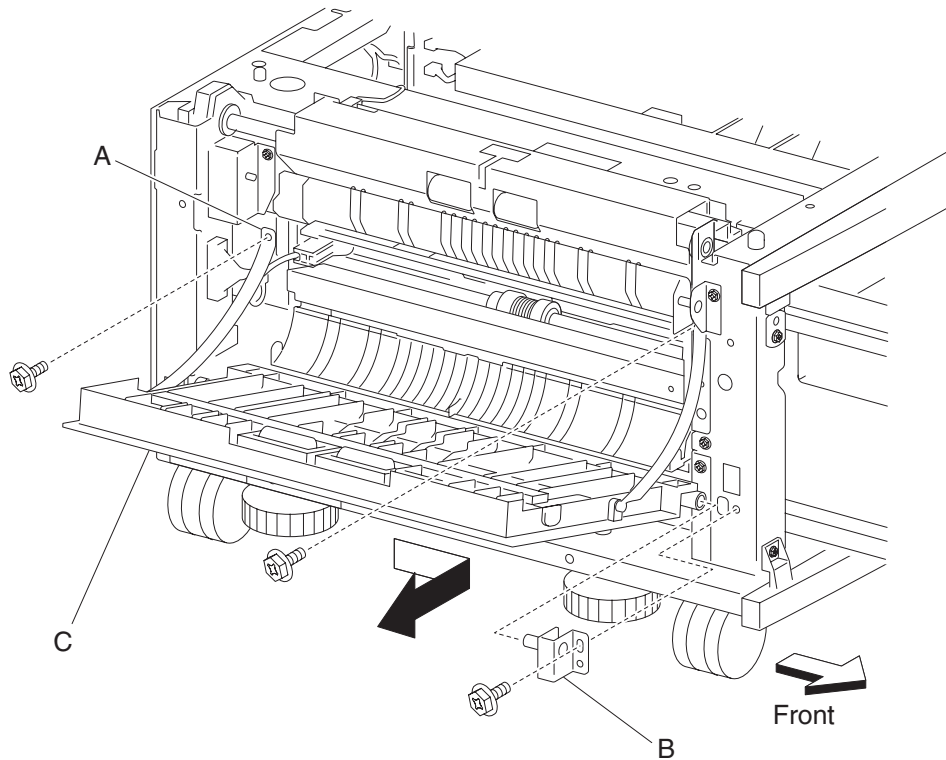
2X 500-sheet drawer (2TM)—caster removal

1. Remove tray 3.
2. Remove tray 4.
3. Place the right side down.
4. Remove the three screws securing the caster (A).
5. Remove the caster (A).

Front

A
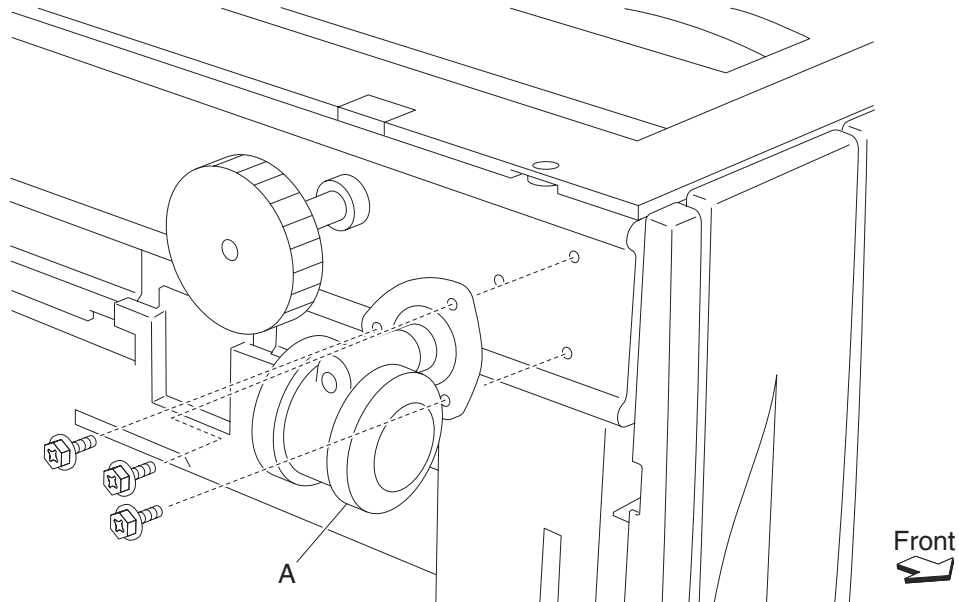
2X 500-sheet drawer (2TM)—switch (media size) assembly removal

Note: This removal procedure applies to both tray 3 and tray 4.

1. Remove tray 3.
2. Remove tray 4.
3. Disconnect the switch (media size) selector (A).
4. Remove one screw securing the switch (media size) selector (A).
5. Remove the switch (media size) selector (A).
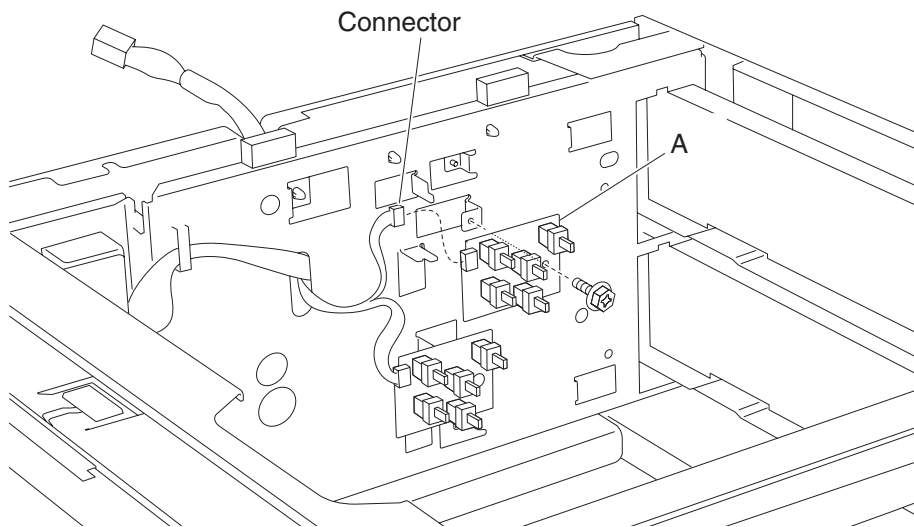
Note: Before re-installing, ensure the boss is placed into the hole on the switch (media size) selector (A).

2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 3)

1. Remove tray 3.
2. Remove the left cover. See **"2X 500-sheet drawer (2TM)—left cover removal" on page 4-5**.
3. Open the 2TM/TTM left door assembly (A).
4. Remove one screw securing the 2TM/TTM left door support strap (B).
5. Release the plastic bosses on both ends of the vertical turn guide (C).
6. Remove the vertical turn guide (C).

Boss

Left

C

A

Boss   B
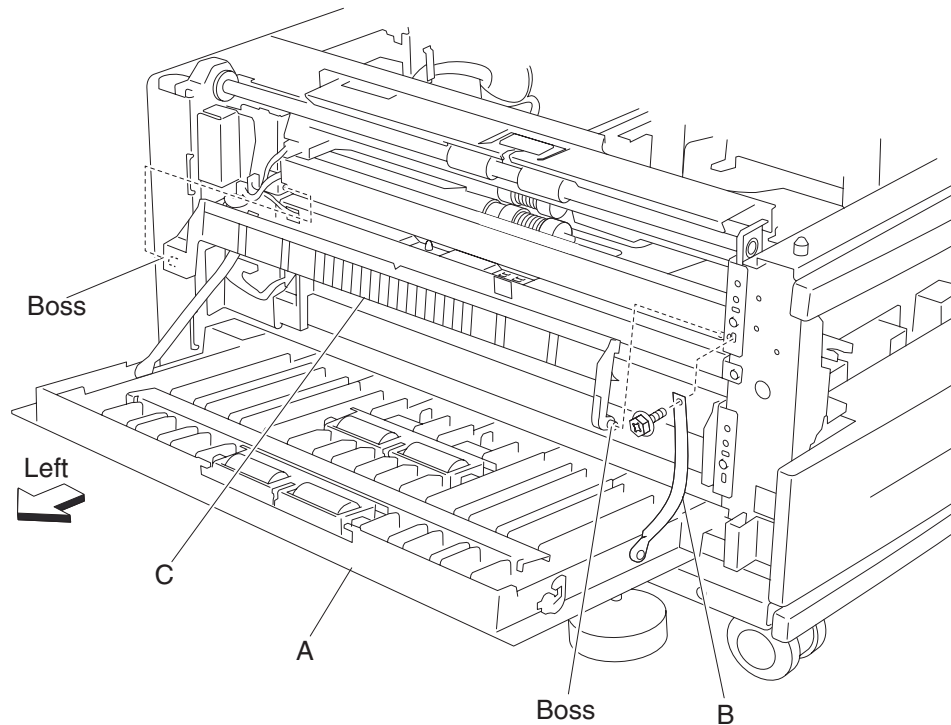
7. Remove one screw securing the bracket (D).
8. Remove the bracket (D).
9. Release the harness from the clamp.
10. Disconnect the connector from the machine.
11. Remove the two screws securing the media feed unit assembly (E).

12. Remove the media feed unit assembly (E) in the direction of the arrow.
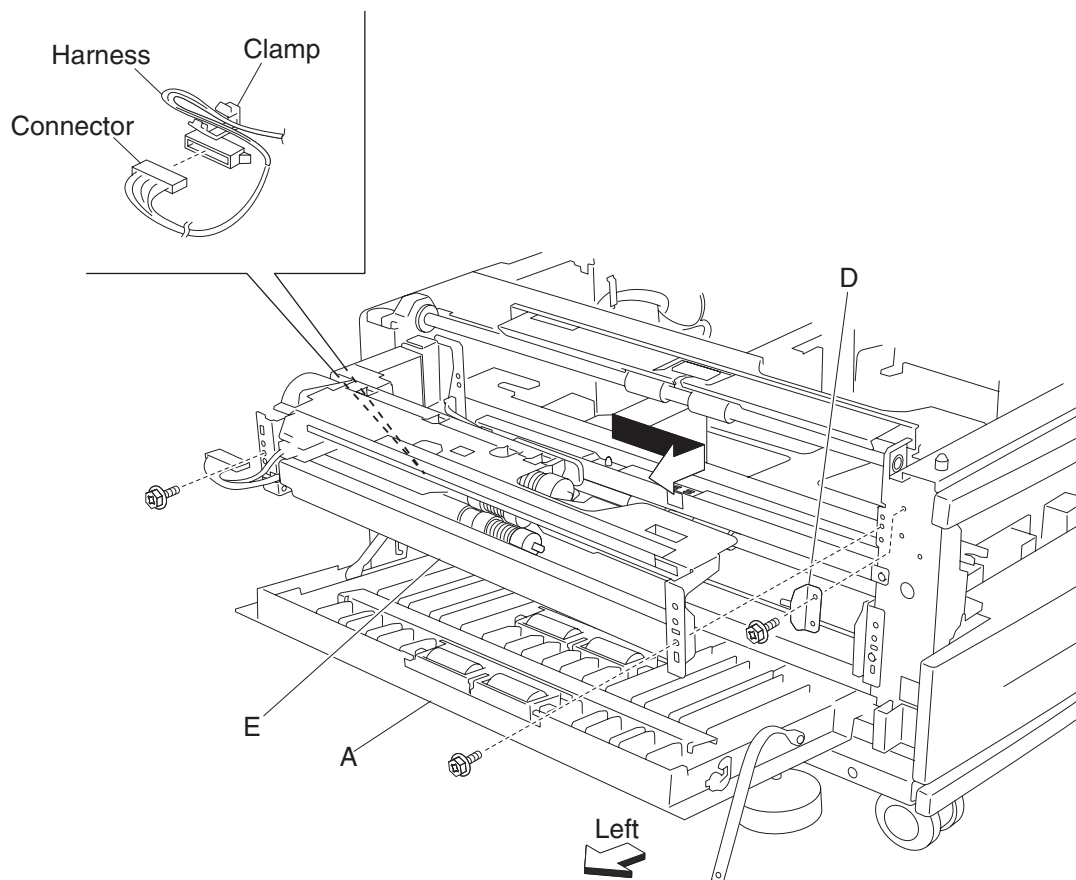
2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 4)

1. Remove tray 4.
2. Open the 2TM/TTM left door assembly (A).
3. Remove one screw securing the 2TM/TTM left door support strap (B).
4. Remove the plastic bosses on both ends of the vertical turn guide (C).
5. Remove the vertical turn guide (C).
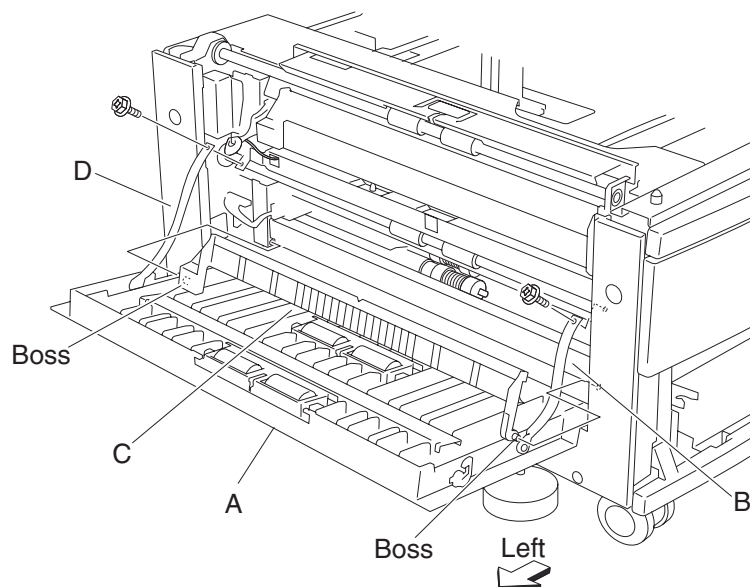
6. Release the harness from the clamp.
7. Disconnect the connector from the machine.
8. Remove the two screws securing the media feed unit assembly (D).
9. Remove the media feed unit assembly (D) in the direction of the arrow.
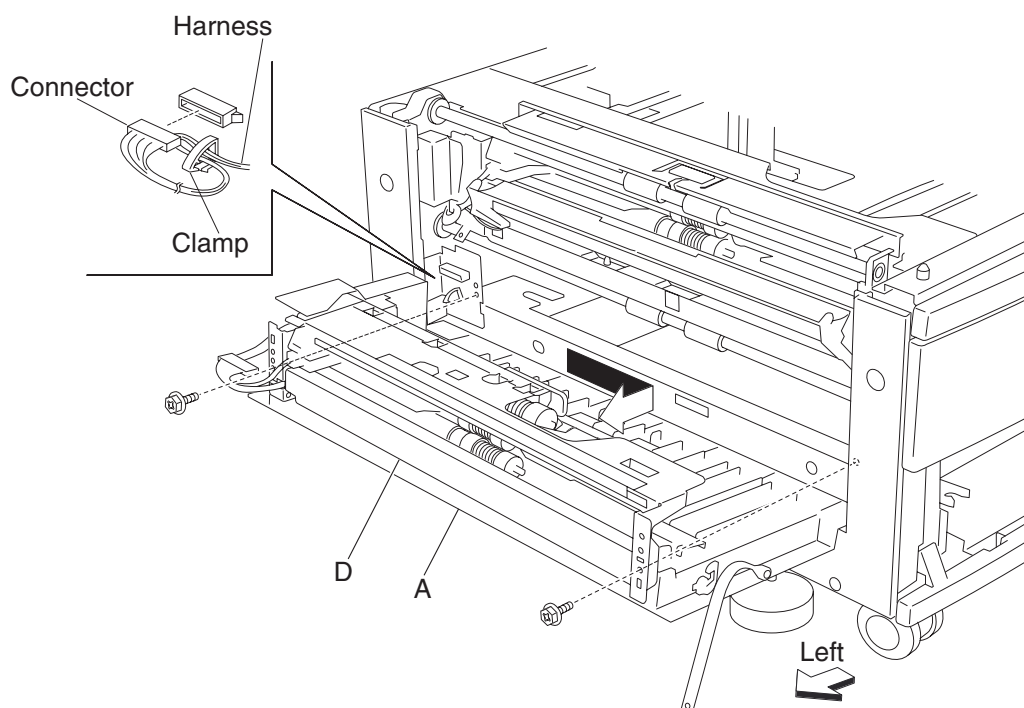
2X 500-sheet drawer (2TM)—media tray guides removal

1. Remove the media tray.
2. Remove the two e-rings securing the metal bottom plate (A) to the media tray using a small prying tool.
3. Push the front hinge point (B) in the direction of the arrow to release the front boss from the metal bottom plate (A).
4. Remove the metal bottom plate (A) by sliding it off the rear boss.
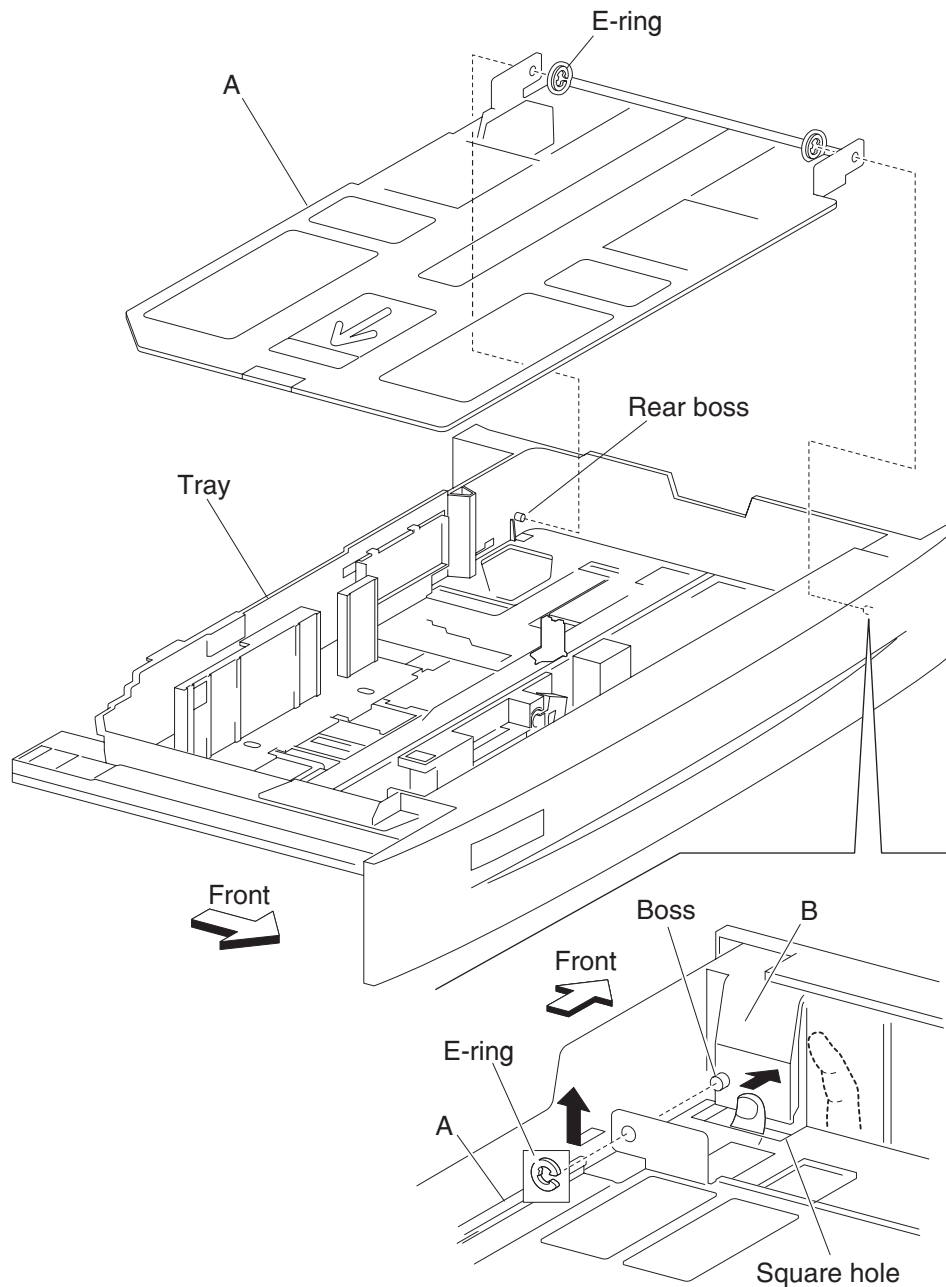
5. Remove the two screws securing the two pinion gears (C) to the media tray.

6. Remove the pinion gears (C).

7. Remove the front media guide assembly (D) and the rear media guide (E).
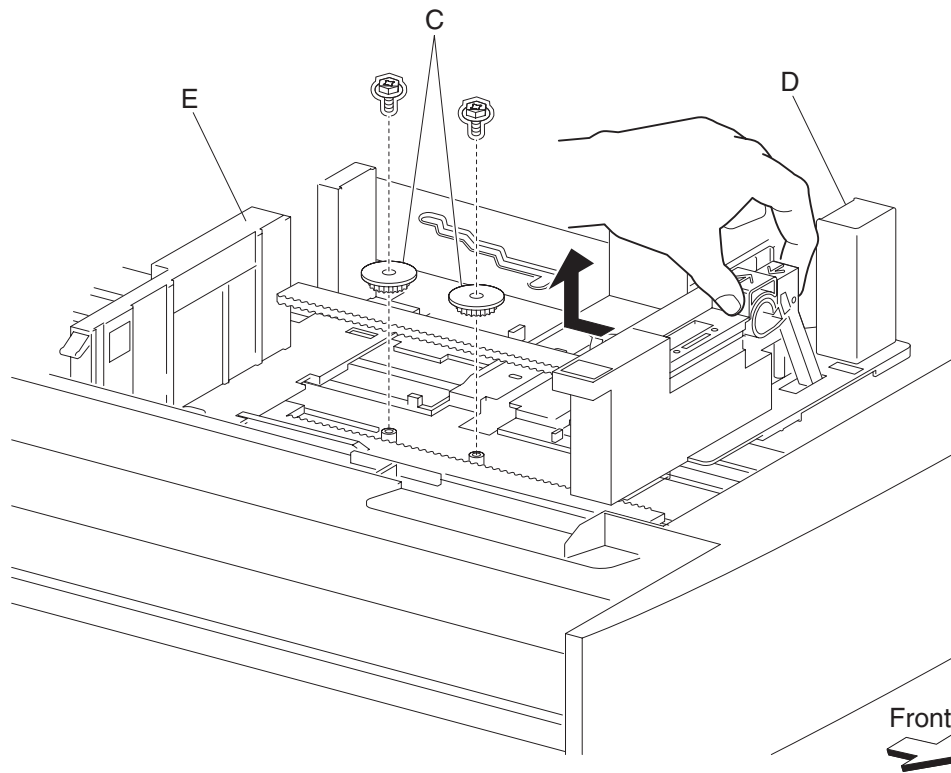
Note: Before re-installing the pinion gears (C), slide the front media tray guide (D) and the rear media tray guide (E) to their outward most positions. Ensure the media side guides slide smoothly.

2X 500-sheet drawer (2TM)—media tray end guide removal

1. Remove the media tray.

2. Remove the media tray guides. See **"2X 500-sheet drawer (2TM)—media tray guides removal" on page 4-12**.

3. Remove the media side guide actuator (A).

4. Turn the media tray upside down, and remove the two hooks securing the actuator link (B) to the media tray.

5. Release the screw and hook on the media end size actuator (C) from the hole in the actuator link (B) by moving the link in the direction of the arrow.

6. Remove the media end guide actuator (C).
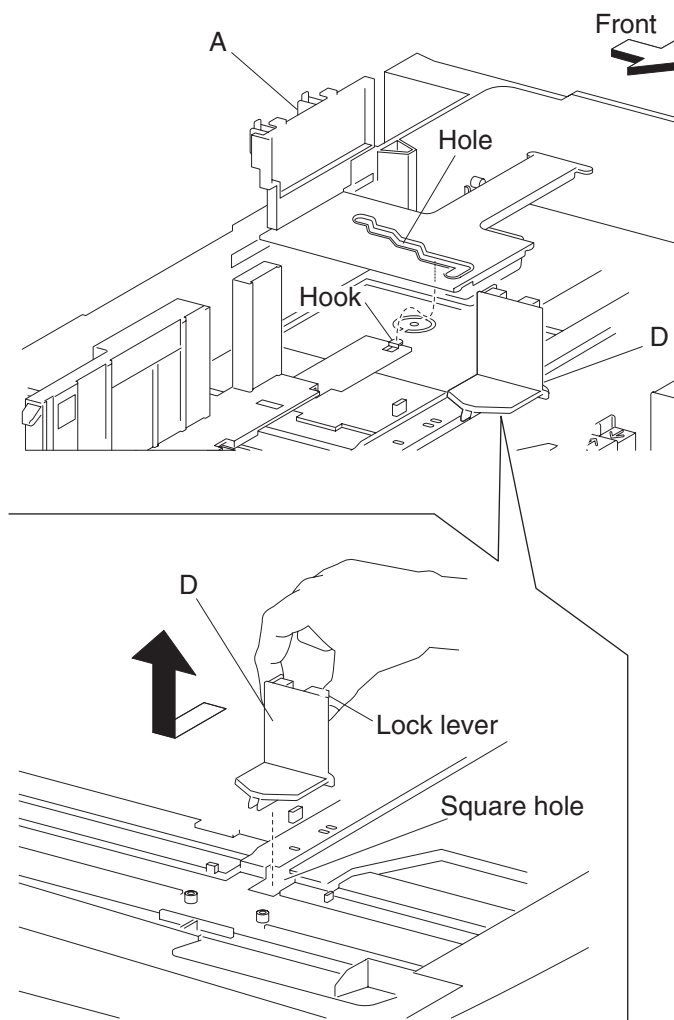
7. Turn the media tray right side up, and slide the media end guides (D) toward the center of the media tray to remove.

B

Hook

C

End guide

Front
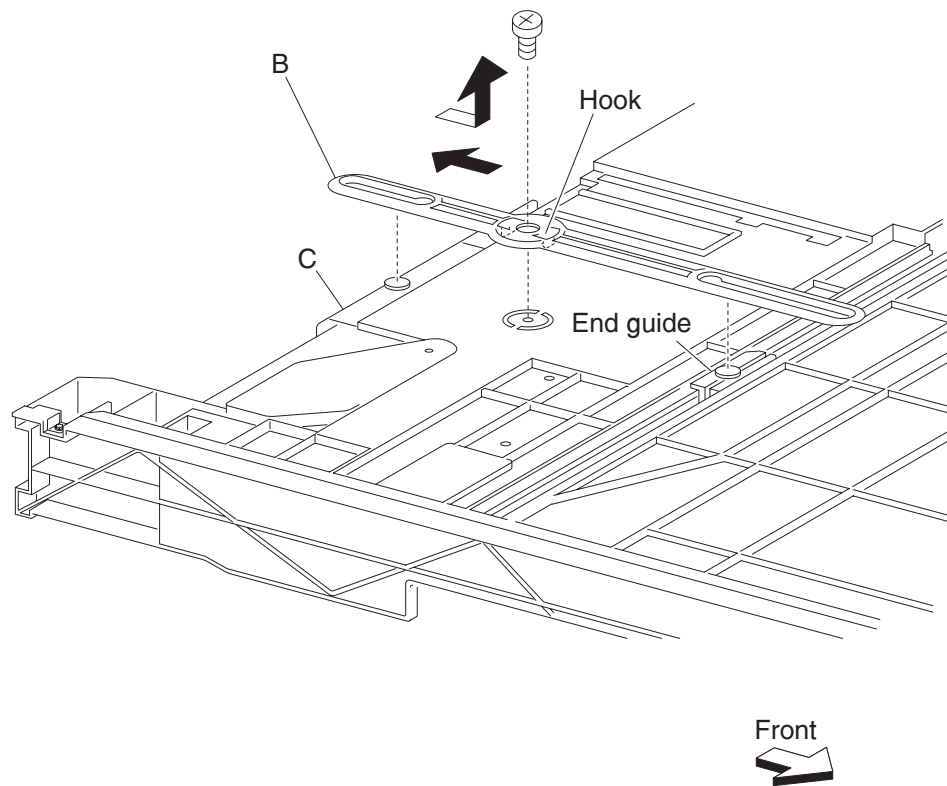
2X 500-sheet drawer (2TM)—tray lift gear group removal

1. Remove the media tray from the machine.
2. Remove the two screws securing bracket (A).
3. Remove the tray lift sector gear 12 tooth (B).
4. Remove the tray lift gear 13 tooth (C) from bracket (A).
5. Remove the tray lift gear 13/60 tooth (D) from bracket (A).
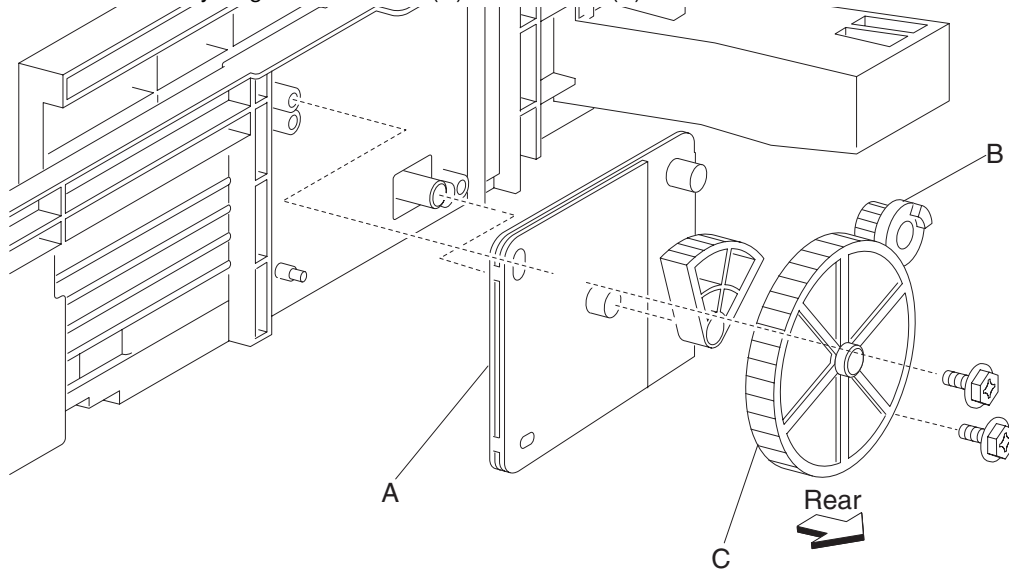
Note: Extra force is required to pull the tray lift gear 13 tooth (C) and the tray lift gear 13/60 tooth (D) from bracket (A).

2X 500-sheet drawer (2TM)—media feed lift motor removal

1. Remove the media feed unit assembly. See **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 3)" on page 4-9** or **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 4)" on page 4-11**.

2. Disconnect the harness from the media feed lift motor (A).

3. Remove the two screws securing the media feed lift motor to the media feed unit assembly (B).

4. Remove the media feed lift motor (B).

Connector

Rear
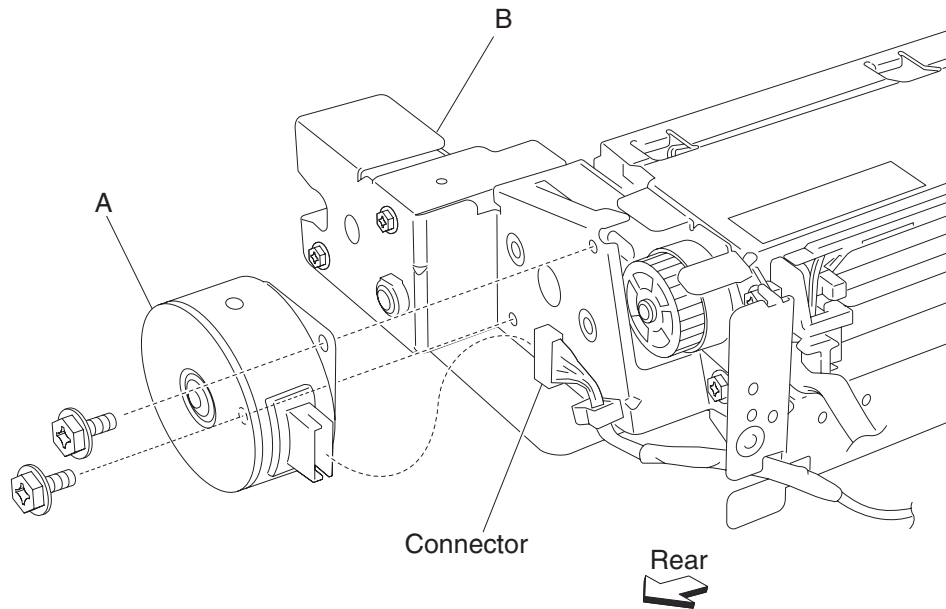
2X 500-sheet drawer (2TM)—lift coupling assembly removal

1. Remove the media feed unit assembly. See **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 3)" on page 4-9** or **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 4)" on page 4-11**.

2. Remove the harness from bracket (A).

3. Remove three screws securing bracket (A) to the media feed unit assembly.

4. Remove bracket (A).

   Note: The gears may become detached from bracket (A).

5. Remove the e-ring with a prying tool securing the tray lift coupling (B) to bracket (A).

6. Remove the tray lift coupling gear 31 tooth (C).

7. Remove the spring (D).

Note: Before re-installing, ensure all gears and washers attached to bracket (A) are securely installed.

2X 500-sheet drawer (2TM)—tray lift one-way gear clutch assembly removal

1. Remove the media feed unit assembly. See **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 3)" on page 4-9** or **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 4)" on page 4-11**.

2. Remove the harness from the bracket (A).

3. Remove the three screws securing the bracket (A) to the media feed unit assembly.

4. Remove the bracket (A).
   Note: The gears may become detached from the bracket (A).

5. Remove the tray lift one-way clutch (B).

6. Remove the tray lift one-way gear 24 tooth (C).

Harness

Washer

C

A

Rear

Note: Before re-installing, ensure all gears and washers are securely attached to the bracket (A).

2X 500-sheet drawer (2TM)—media feed unit drive gear - 13 tooth removal

1. Remove the media feed unit assembly. See **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 3)" on page 4-9** or **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 4)" on page 4-11**.

2. Remove the harness from the bracket (A).

3. Remove the three screws securing the bracket (A) to the media feed unit assembly.

4. Remove the bracket (A).

   Note: Gears may become detached from the bracket (A).

5. Remove the tray lift one-way clutch assembly. See **"2X 500-sheet drawer (2TM)—tray lift one-way gear clutch assembly removal" on page 4-19**.

6. Remove the media feed unit drive gear - 13 tooth (B).
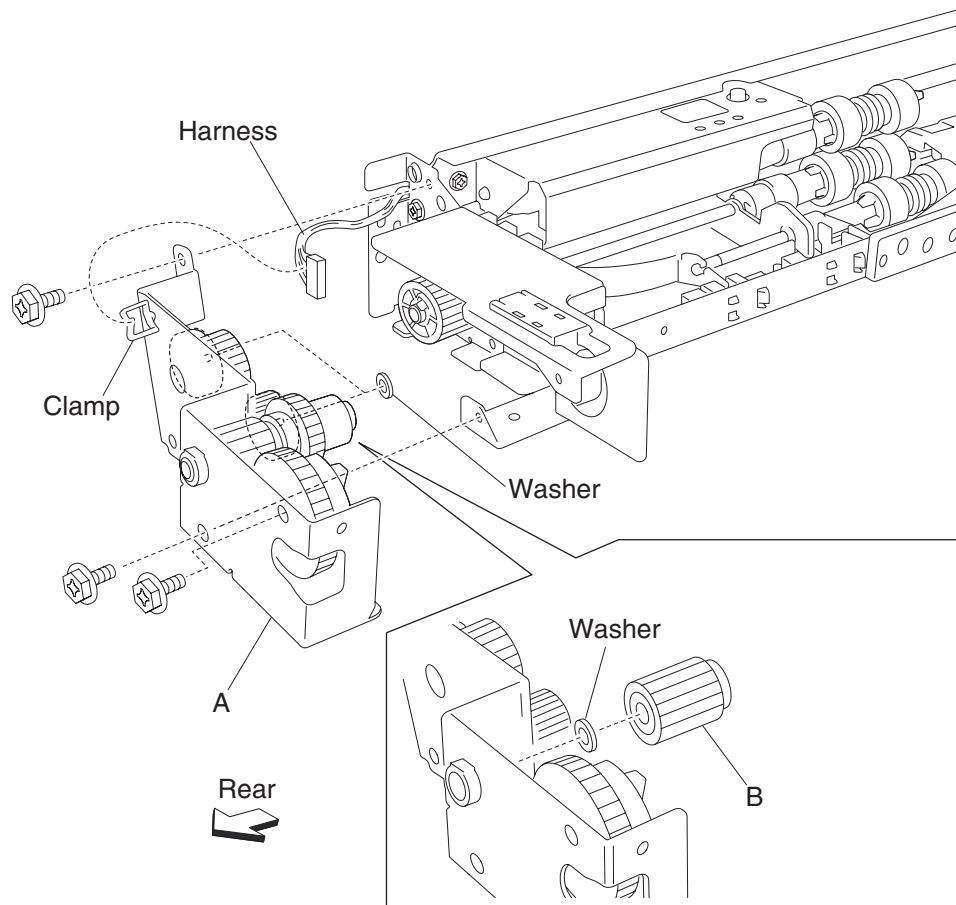
Note: Before re-installing, ensure all gears and washers are securely attached to the bracket (A).

2X 500-sheet drawer (2TM)—media out actuator removal

1. Remove the media feed unit assembly. See **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 3)" on page 4-9** or **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 4)" on page 4-11**.

2. Remove the two bosses on the media out actuator (A) to the media feed unit assembly.

3. Remove the media out actuator (A).

Front

Bosses

A

Lower view

2X 500-sheet drawer (2TM)—sensor (media level) removal

1. Remove the media feed unit assembly. See **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 3)" on page 4-9** or **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 4)" on page 4-11**.

2. Disconnect the connector from the sensor (media level) (A).

3. Release the hooks securing the sensor (media level) (A) to the media feed unit assembly.

4. Remove the sensor (media level) (A).

Front

A

Harness

Hooks

Lower view

2X 500-sheet drawer (2TM)—sensor (media out) removal

1. Remove the media feed unit assembly. See **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 3)" on page 4-9** or **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 4)" on page 4-11**.

2. Remove the media out actuator. See **"2X 500-sheet drawer (2TM)—media out actuator removal" on page 4-22**.

3. Disconnect the connector from the sensor (media out) (A).

4. Release the hooks securing the sensor (media out) (A) to the media feed unit assembly.

5. Remove the sensor (media out) (A).

Front

Harness A

Hook

Hooks

Lower view

2X 500-sheet drawer (2TM)—sensor (pre-feed) removal

1. Remove the media feed unit assembly. See **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 3)" on page 4-9** or **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 4)" on page 4-11**.

2. Remove the sensor (pre-feed) (A) from the feed unit front guide (B).

3. Disconnect the connector from the sensor (pre-feed) (A).

Hook

Front

A

B

2X 500-sheet drawer (2TM)—media feed unit drive gear - 28 / 21 tooth removal

1. Remove the media feed unit assembly. See **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 3)" on page 4-9** or **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 4)" on page 4-11**.

2. Remove the harness from the bracket (A).

3. Remove the three screws securing the bracket (A) to the media feed unit assembly.

4. Remove the bracket (A).
   Note: The gears may become detached from the bracket (A).

5. Remove the feed unit drive gear - 28 tooth / 21 tooth (B).

Note: Before re-installing, ensure all gears and washers are securely attached to the bracket (A).

2X 500-sheet drawer (2TM)—media feed unit drive gear - 29 tooth removal

1. Remove the media feed unit assembly. See **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 3)" on page 4-9** or **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 4)" on page 4-11**.

2. Remove the harness from the bracket (A).

3. Remove the three screws securing the bracket (A) to the media feed unit assembly.

4. Remove the bracket (A).

   Note: The gears may become detached from the bracket (A).

5. Remove the feed unit drive gear - 29 tooth (B).

Note: Before re-installing, ensure all gears and washers are securely attached to the bracket (A).

2X 500-sheet drawer (2TM)—feed roll removal

1. Remove the media tray assembly.
2. Move the feed unit front guide (A) in the direction of the arrow.
3. Release the hook securing the feed roll (B) to the shaft (C).
4. Remove the feed roll (B).
   Note: Do not touch the rubber surface of the feed roll (B).
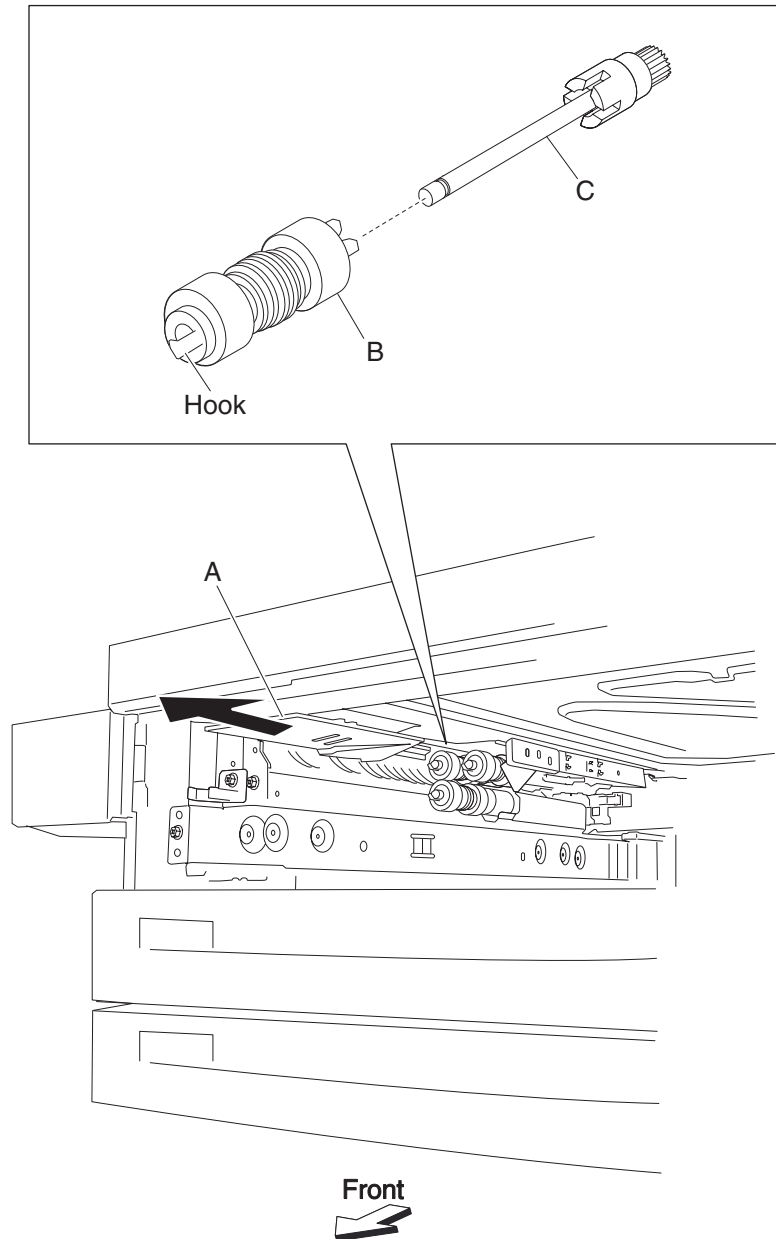
Note: Before re-installing, do not touch the rubber surface of the feed roll (B).

2X 500-sheet drawer (2TM)—feed roll one-way clutch removal

1. Remove the media tray assembly.
2. Remove the feed roll. See **"2X 500-sheet drawer (2TM)—feed roll removal" on page 4-28**.
3. Remove the feed roll one-way clutch (A) from the shaft (B).

Front
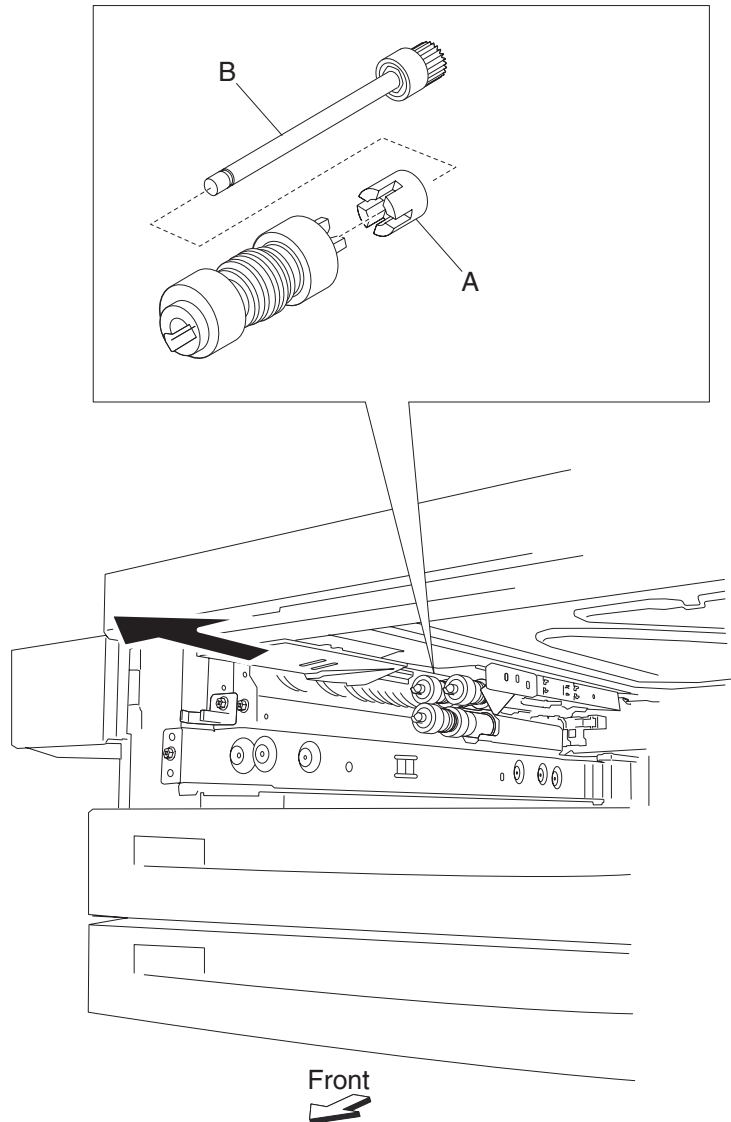
2X 500-sheet drawer (2TM)—feed roll one-way gear 22 tooth removal

1. Remove the media tray assembly.
2. Remove the feed roll. See **"2X 500-sheet drawer (2TM)—feed roll removal" on page 4-28**.
3. Remove the feed roll one-way clutch. See **"2X 500-sheet drawer (2TM)—feed roll one-way clutch removal" on page 4-29**.
4. Remove the feed roll one-way gear 22 tooth (A) from the shaft (B).
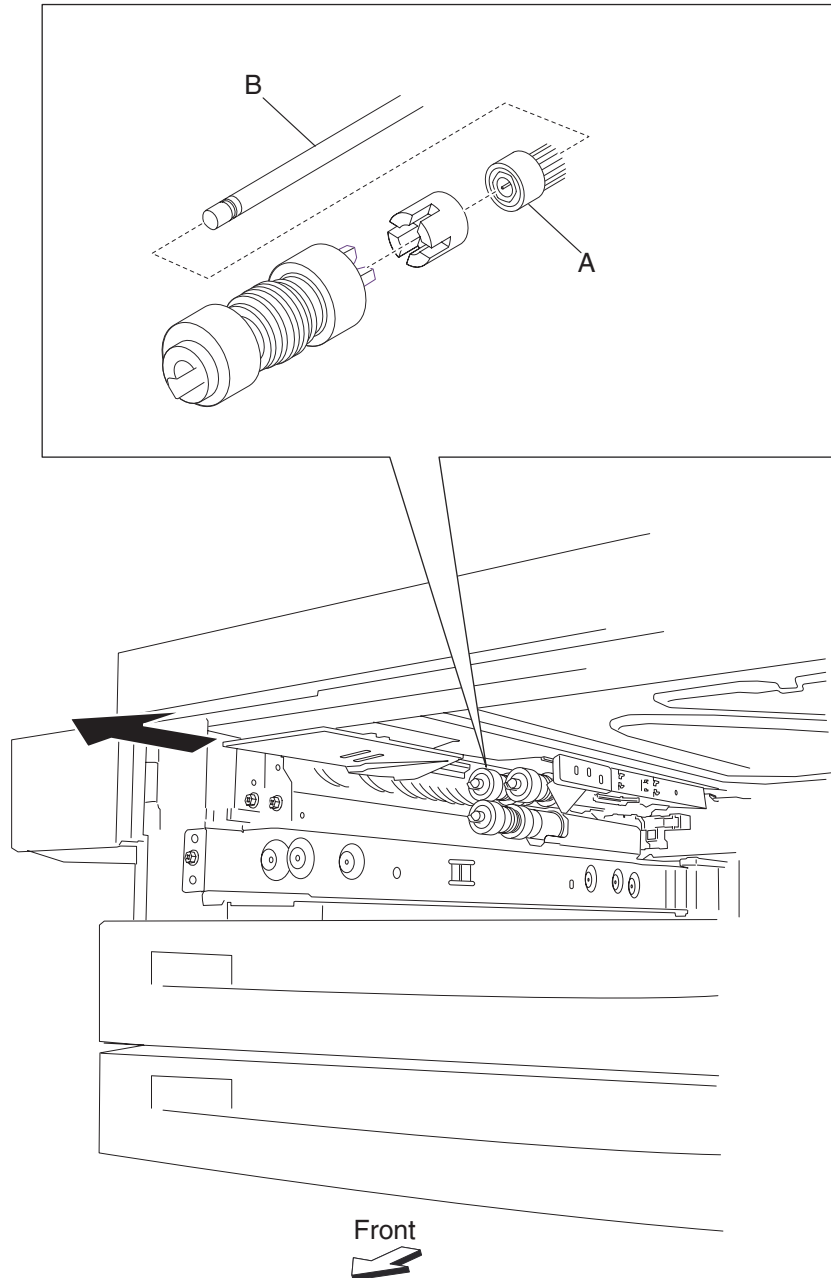
Front

2X 500-sheet drawer (2TM)—separation roll one-way friction clutch removal

1. Remove the media tray assembly.
2. Remove the separation roll. See **"2X 500-sheet drawer (2TM)—separation roll removal" on page 4-32**.
3. Remove the separation roll spacer (A) from the shaft (B).
4. Remove the separation roll one-way friction clutch (C).
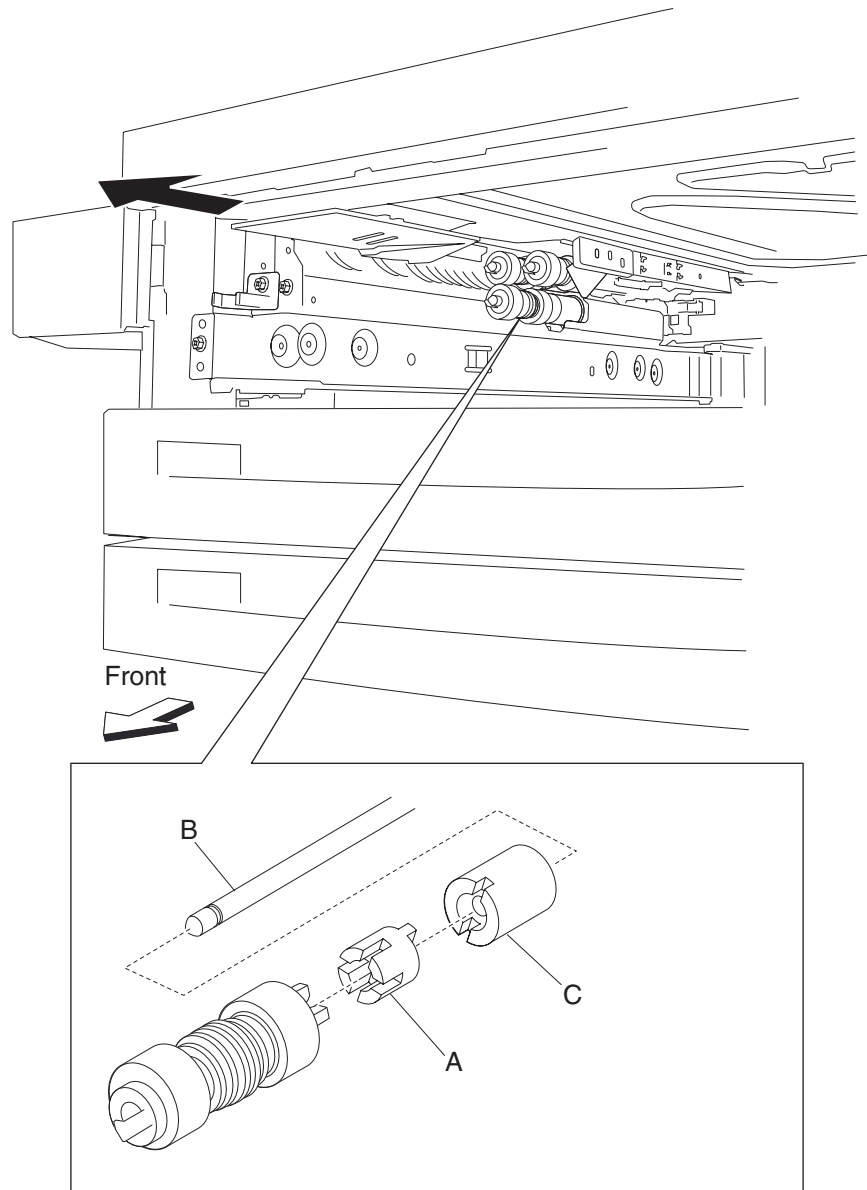
Front

2X 500-sheet drawer (2TM)—separation roll removal

1. Remove the media tray assembly.
2. Move the feed unit front guide (A) in the direction of the arrow.
3. Release the hook securing the separation roll (B) to the shaft (C).
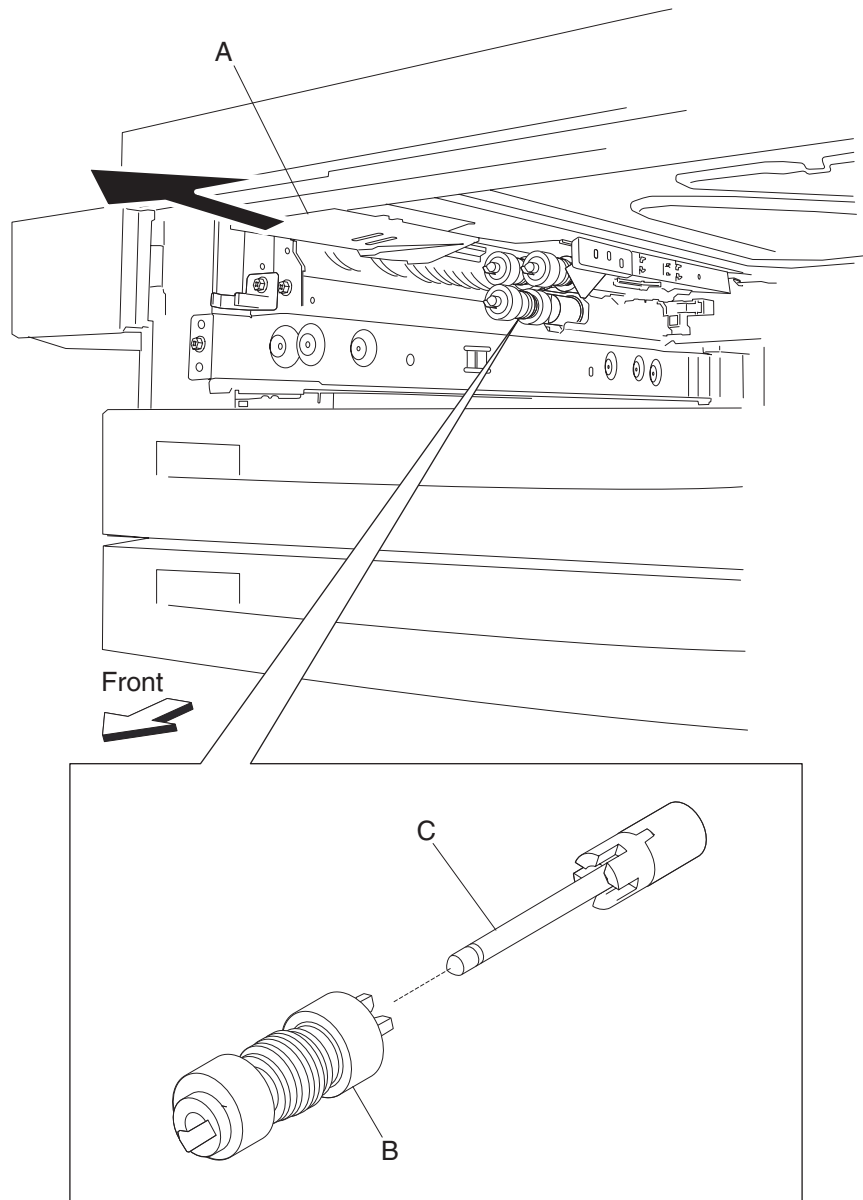
4. Remove the separation roll (B).
   Note: Do not touch the rubber surface of the feed roll (B).

Note: Before re-installing, do not touch the rubber surface of the separation roll (B).

2X 500-sheet drawer (2TM)—pick roll idler gear - 33 tooth removal

1. Remove the media tray assembly.
2. Remove the pick roll. See **"2X 500-sheet drawer (2TM)—pick roll removal" on page 4-34**.
3. Remove the pick roll drive gear - 25 tooth. See **"2X 500-sheet drawer (2TM)—pick roll drive gear 25 tooth removal" on page 4-35**.
4. Remove the pick roll idler gear - 33 tooth (A).
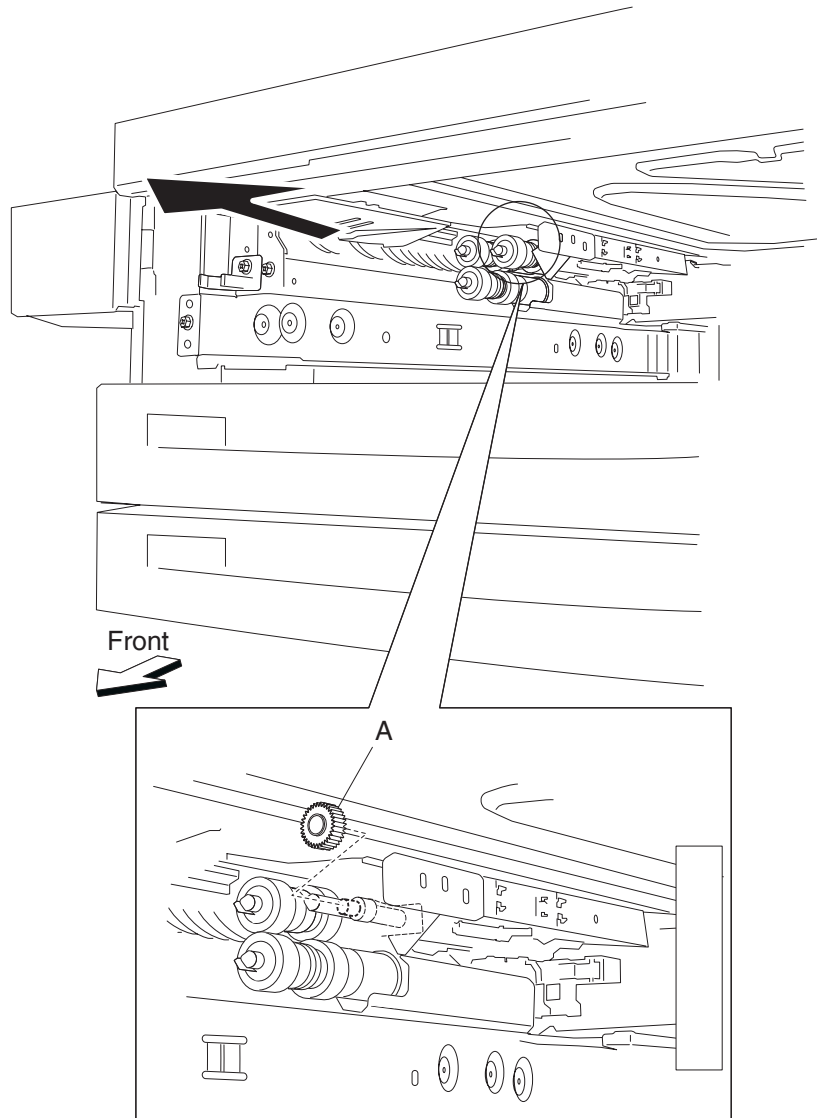
2X 500-sheet drawer (2TM)—pick roll removal

1. Remove the media tray assembly.
2. Move the front guide (A) in the direction of the arrow.
3. Release the hook securing the pick roll (B) to the shaft (C).
4. Remove the pick roll (B).
   Note: Do not touch the rubber surface of the feed roll (B).
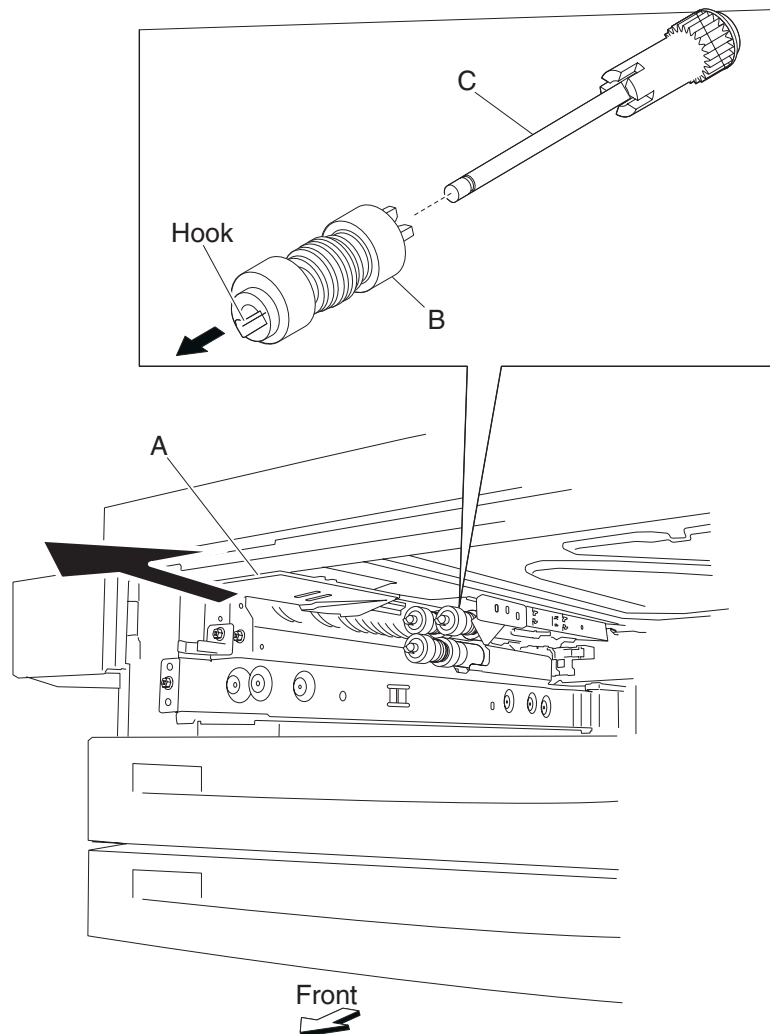
Note: Before re-installing, do not touch the rubber surface of the pick roll (B).

2X 500-sheet drawer (2TM)—pick roll drive gear 25 tooth removal

1. Remove the media tray assembly.
2. Remove the pick roll. See **"2X 500-sheet drawer (2TM)—pick roll removal" on page 4-34**.
3. Remove the pick roll drive gear 25 tooth (A) from shaft (B).

Front
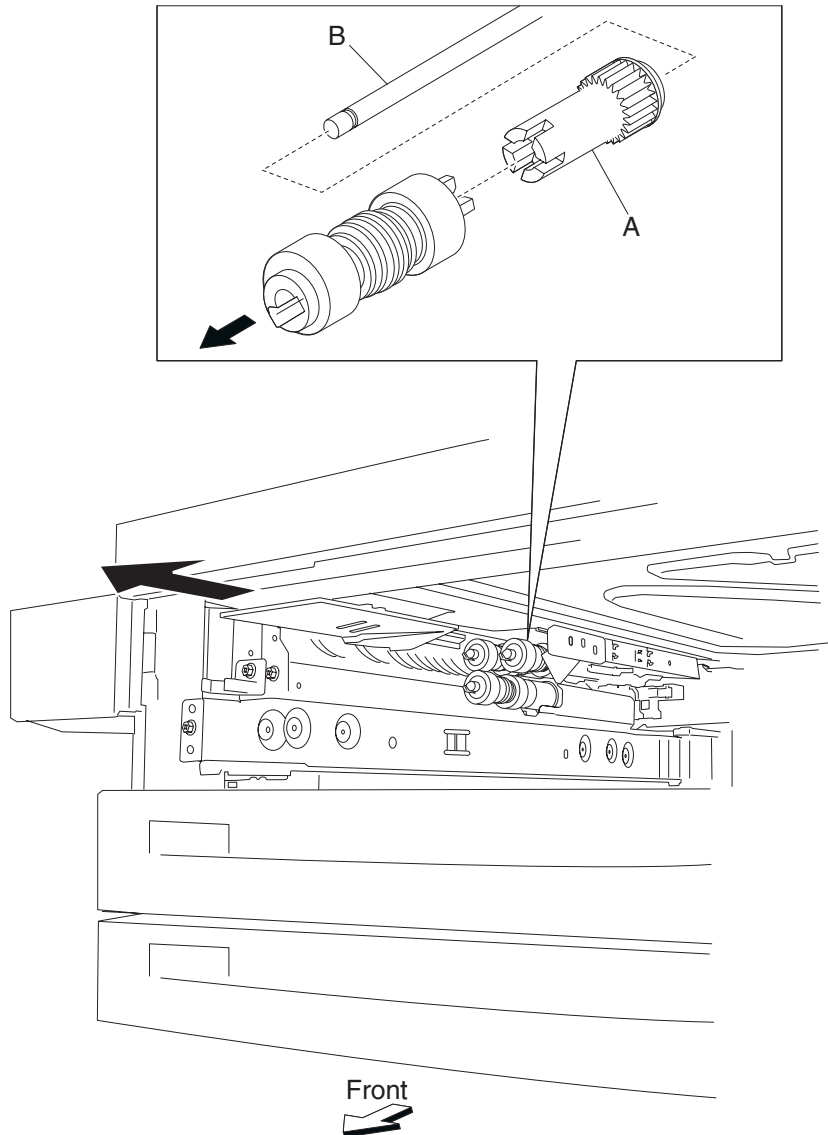
2X 500-sheet drawer (2TM)—feed unit drive gear - 27 tooth removal

1. Remove the media feed unit assembly. See **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 3)" on page 4-9** or **"2X 500-sheet drawer (2TM)—media feed unit assembly removal (tray 4)" on page 4-11**.
2. Remove the harness from the bracket (A).
3. Remove the three screws securing the bracket (A) to the media feed unit assembly.
4. Remove the bracket (A).
   Note: The gears may become detached from the bracket (A).

5. Remove the hook securing the feed unit drive gear - 27 tooth (B) to the shaft (C).
6. Remove the feed unit drive gear - 27 tooth (B).

Note: Before re-installing, ensure all gears and washers are securely attached to the bracket (A).

2X 500-sheet drawer (2TM)—sensor (tray 3 feed-out) removal

1. Open the 2TM/TTM left door assembly.
2. Remove the two screws securing the upper bracket (A).
3. Disconnect the connector from the sensor (tray 3 feed-out) (B).
4. Release the hooks securing the sensor (tray 3 feed-out) (B) to the upper bracket (A).
5. Remove the sensor (tray 3 feed-out) (B).
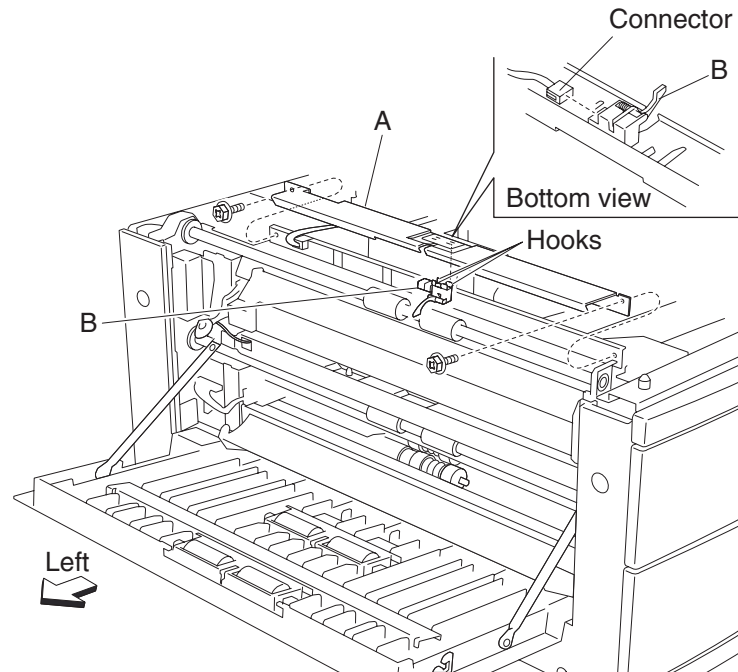
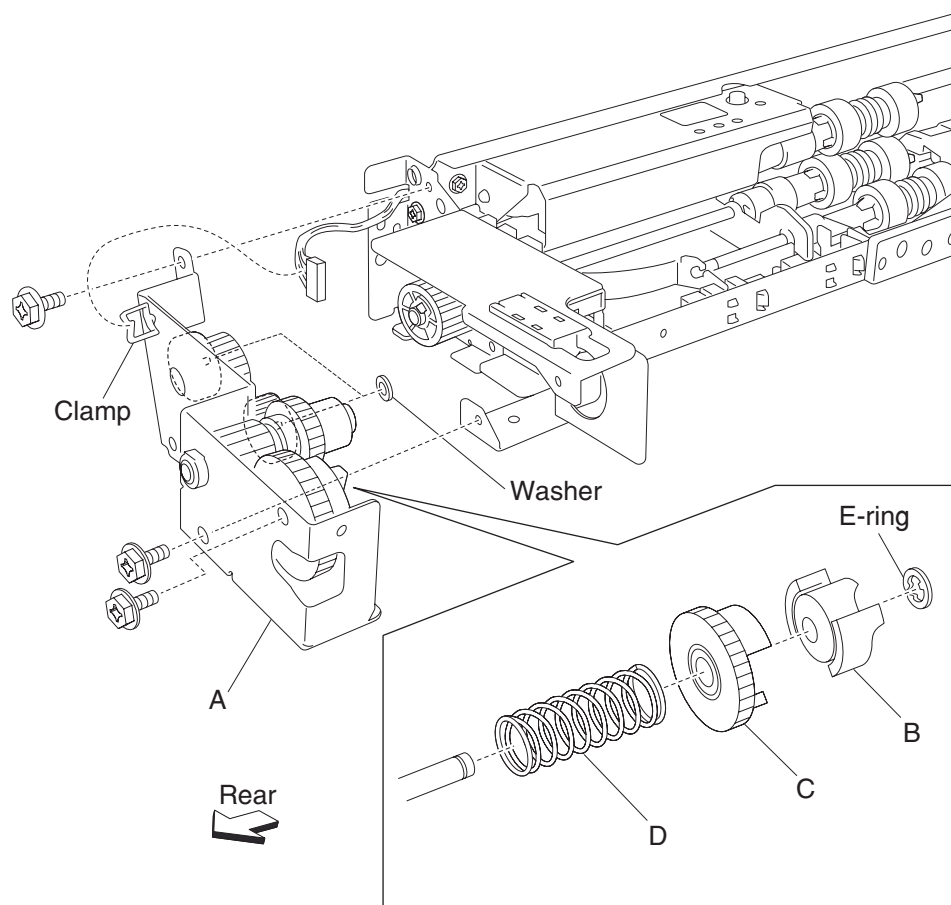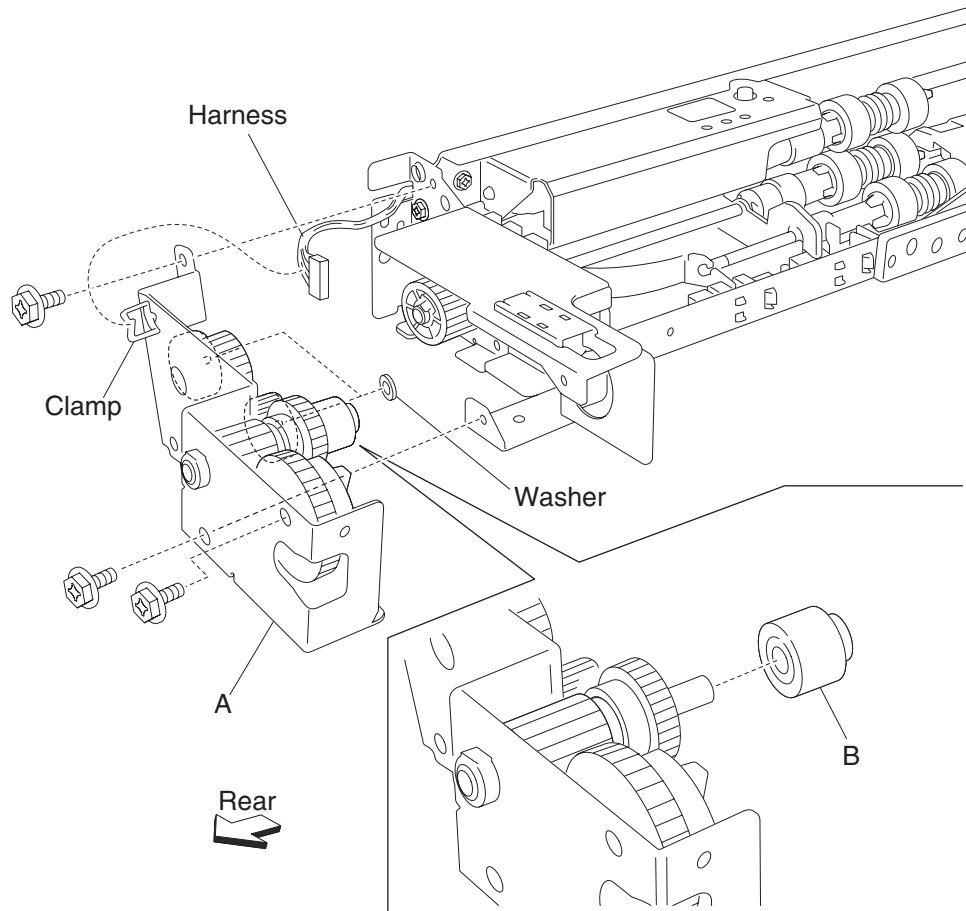## 2X 500-sheet drawer (2TM)—sensor (tray 4 feed-out) removal

1. Open the 2TM/TTM left door assembly.

2. Remove the screw securing the 2TM/TTM left door support strap (A).

3. Remove the two screws securing the lower bracket (B).

4. Disconnect the connector from the sensor (tray 4 feed-out) (C).

5. Release the hooks securing the sensor (tray 3 feed-out) (C) to the lower bracket (B).

6. Remove the sensor (tray 3 feed-out) (C).
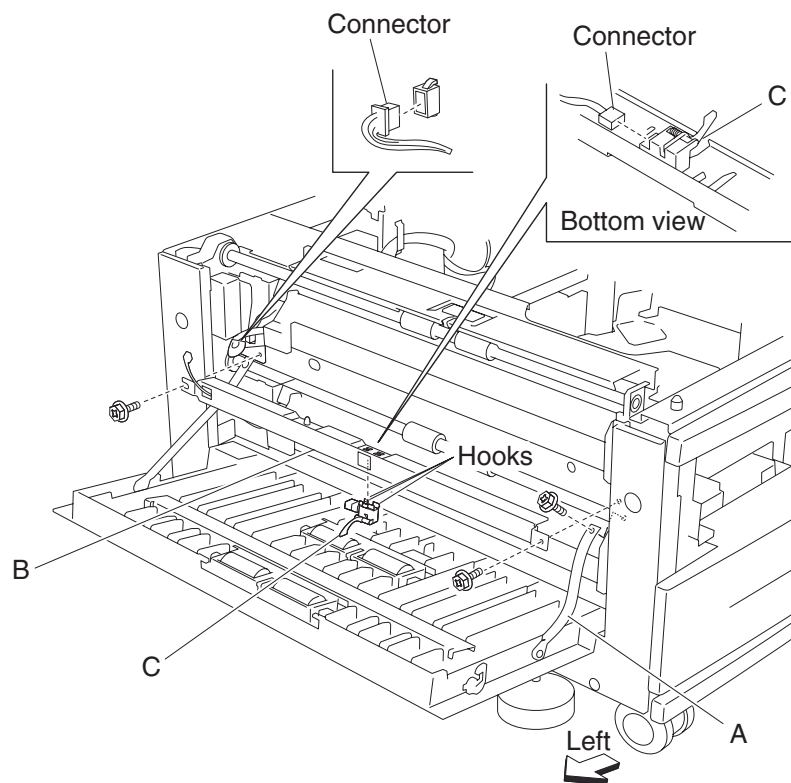
2X 500-sheet drawer (2TM)—upper media transport roll removal

1. Open the 2TM/TTM left door assembly.
2. Remove the two screws securing the upper bracket (A).
3. Disconnect the connector from the upper bracket (A).
4. Remove the large e-clip securing the 2TM/TTM media transport roll assembly (B).
5. Remove the bearing (C).
6. Move the 2TM/TTM media transport roll assembly (B) to the right and outward in the direction of the arrow.
7. Remove the 2TM/TTM media transport roll assembly (B).
   Note: One of the bearings may become detached.

8. Remove the two e-clips with a prying tool on the 2TM/TTM media transport roll assembly (B), the gear (D), and the bearing (C).
   Note: When removing the 2TM/TTM media transport roll assembly (B), do not touch the rubber surface.
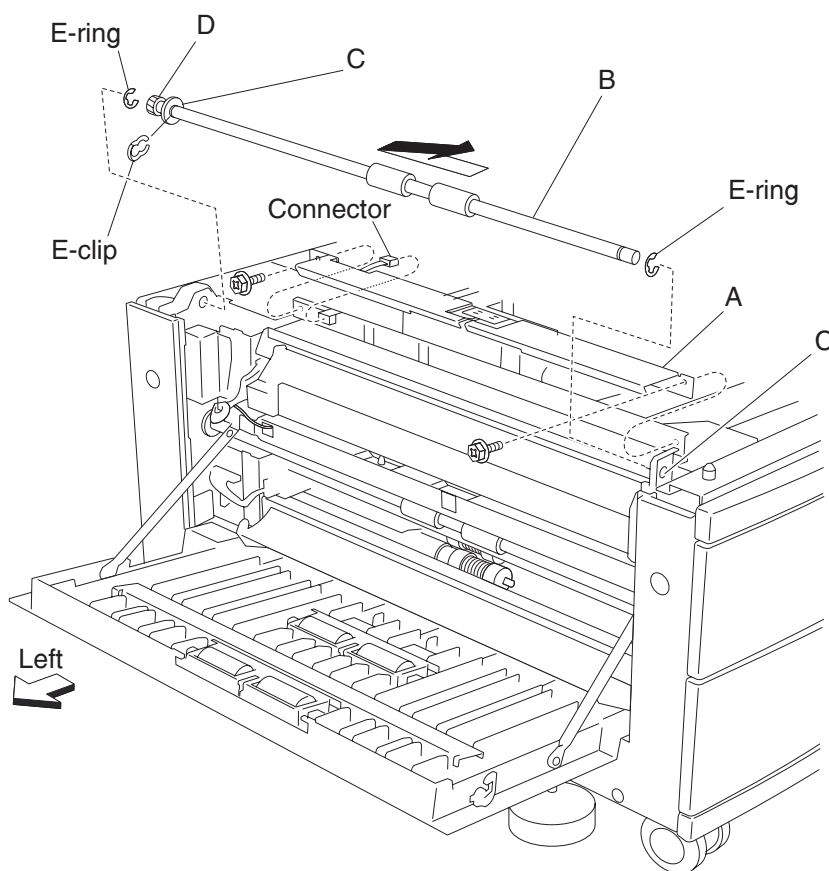
Note: Before reinstalling the 2TM/TTM media transport roll assembly (B), do not touch the rubber surface.

2X 500-sheet drawer (2TM)—lower media transport roll assembly removal

1. Open the 2TM/TTM left door assembly.
2. Remove the two screws securing the lower bracket (A).
3. Disconnect the connector from the lower bracket (A).
4. Remove the large e-clip securing the 2TM/TTM media transport roll assembly (B).
5. Remove the bearing (C).
6. Move the 2TM/TTM media transport roll assembly (B) to the right and outward in the direction of the arrow to remove.
7. Remove the 2TM/TTM media transport roll assembly (B).
   Note: One of the bearings may become detached.

8. Remove the two e-clips with a prying tool on the 2TM/TTM media transport roll assembly (B), the gear (D), and the bearing (C).
   Note: When removing the 2TM/TTM media transport roll assembly (B), do not touch the rubber surface.
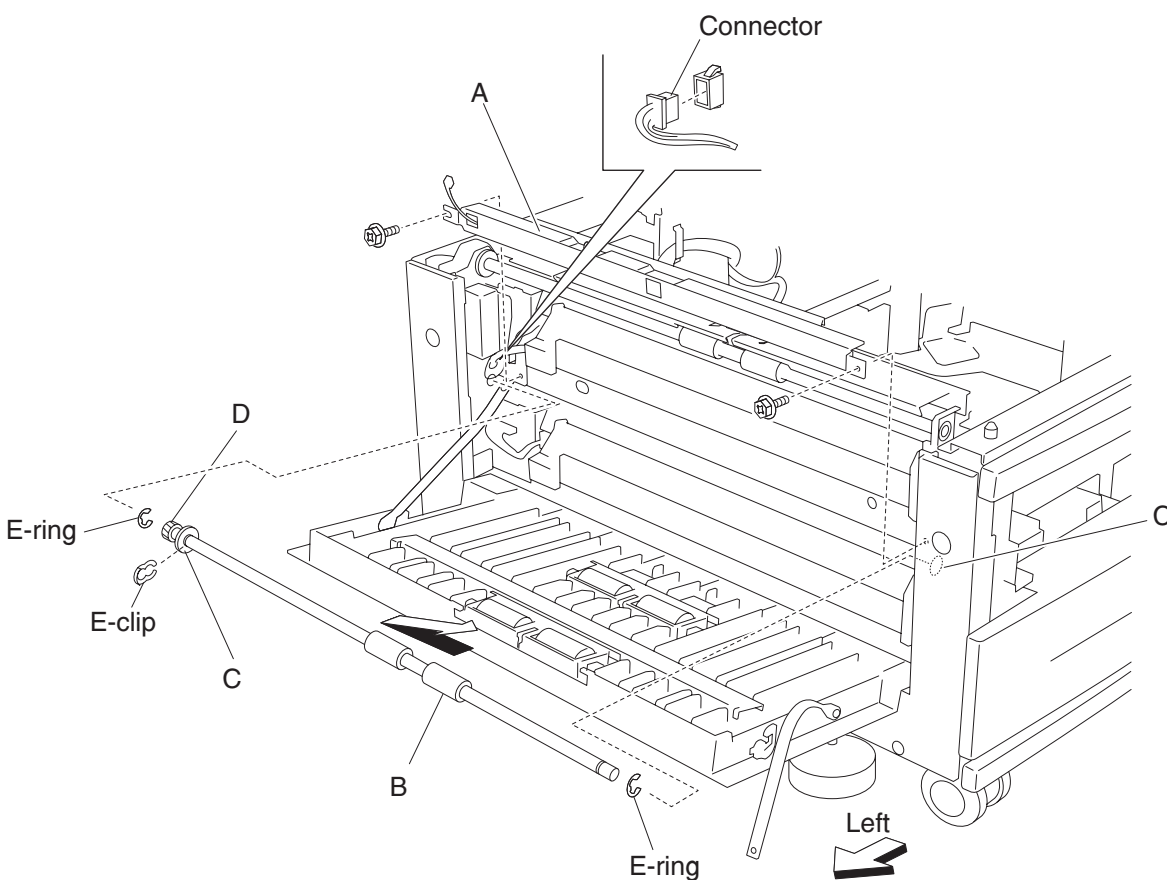
Note: Before re-installing the 2TM/TTM media transport roll assembly (B), do not touch the rubber surface.

2X 500-sheet drawer (2TM)—left door pinch roll assembly removal

Note: This procedure can be used for both the upper and left lower door pinch roll assembly (C).

1. Open the 2TM/TTM left door assembly.
2. Remove the four screws securing the bracket (A) to the left door assembly (A).
3. Remove the bracket (A).
4. Remove the two screws securing the left door pinch roll assembly (B).
5. Remove the left door pinch roll assembly (B).
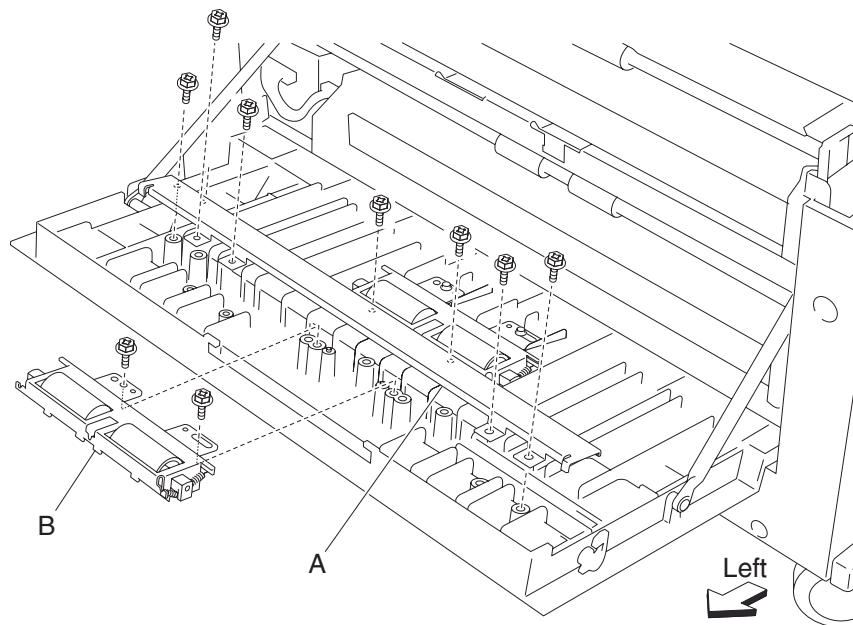
2X 500-sheet drawer (2TM)—switch (2TM/TTM left door interlock) removal

1. Open the 2TM/TTM left door assembly.
2. Remove the one screw securing the bracket (A).
3. Disconnect the connector from the switch (2TM/TTM left door interlock) (B).
4. Release the hooks securing the switch (2TM/TTM left door interlock) (B) to the bracket (A).
5. Remove the switch (2TM/TTM left door interlock) (B).
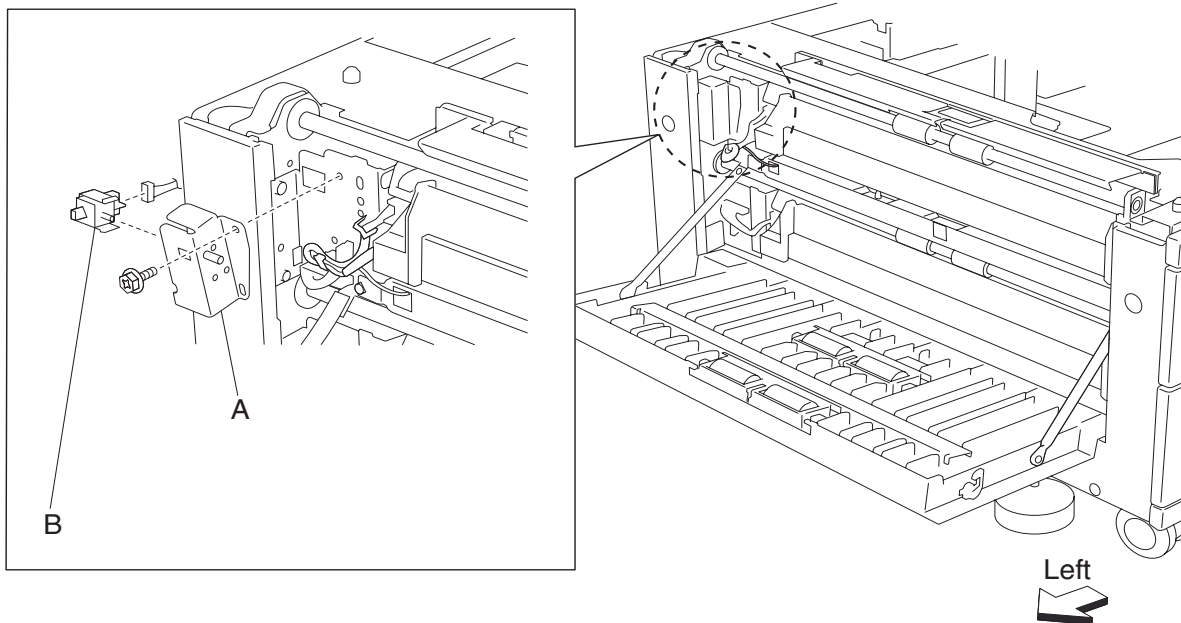
Left

2X 500-sheet drawer (2TM)—2TM/TTM controller card assembly removal

1. Remove the rear cover. See **"2X 500-sheet drawer (2TM)—rear cover removal" on page 4-5**.
2. Disconnect all the connectors from the 2TM/TTM controller card assembly (A).
3. Remove the four screws securing the 2TM/TTM controller card assembly (A).
4. Remove the 2TM/TTM controller card assembly (A).

A

Rear

P541

P548

DIP switch

P554

P552

DIP switch settings, 2TM

On

1 2 3 4

P649

2TM/TTM control card
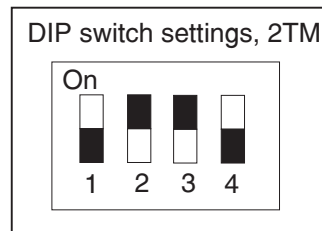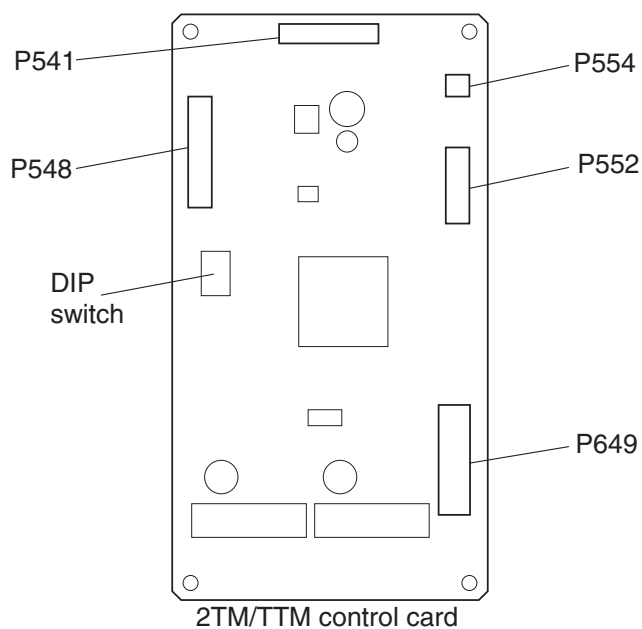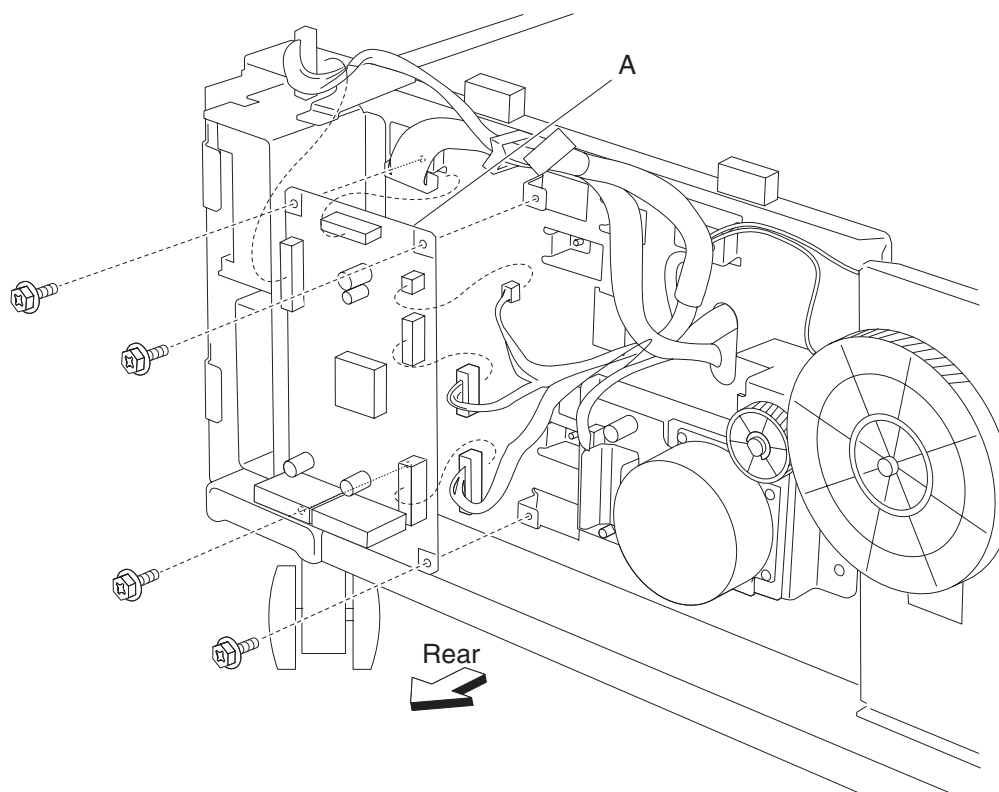
2X 500-sheet drawer (2TM)—transport clutch removal

1. Remove the rear cover. See **"2X 500-sheet drawer (2TM)—rear cover removal" on page 4-5**.
2. Disconnect the connector from the machine to the bracket (A).
3. Remove the two screws securing the bracket (A) to the frame assembly.
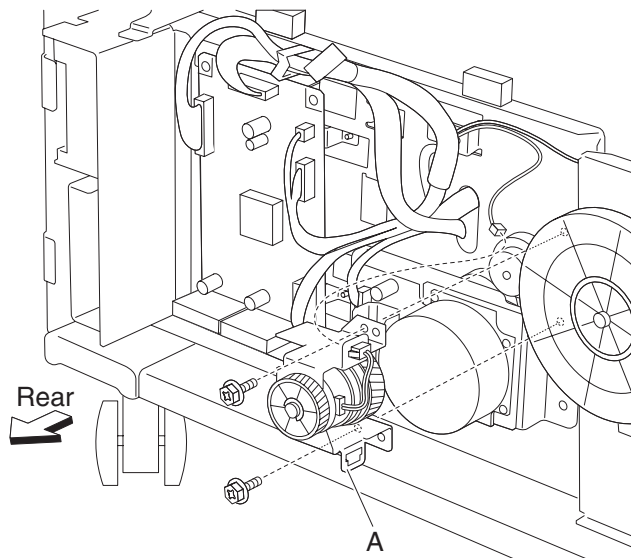
Rear

A

4. Remove the bracket (A).
   Note: The bushing (B) and washer (C) may become detached from the shaft (D).

5. Remove the e-clip using a prying tool securing the clutch gear 38 tooth (E) to the shaft (D), and remove the clutch gear - 38 tooth (E).
6. Disconnect the connector of the transport clutch (F) from the bracket (A).
7. Remove the transport clutch (F).

B

C

B

A

D

E

F

E-ring
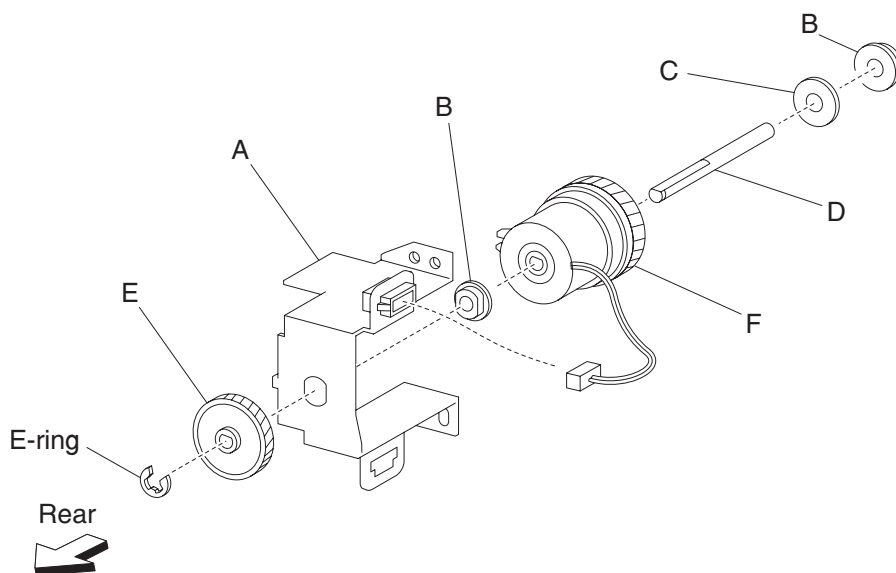
Rear

Note: Before re-installing, ensure the notch on the transport clutch (F) is placed over the boss of the bracket (A). Ensure the harness does not contact the gears.

2X 500-sheet drawer (2TM)—drive motor assembly removal

1. Remove the rear cover. See **"2X 500-sheet drawer (2TM)—rear cover removal" on page 4-5**.
2. Disconnect the connector harness from the 2TM/TTM drive motor assembly (A).
3. Remove two screws securing the 2TM/TTM drive motor assembly (A) to the machine.
4. Remove the 2TM/TTM drive motor assembly (A).

2000-sheet dual input (TTM) removals

Rear

Left

Right

Front
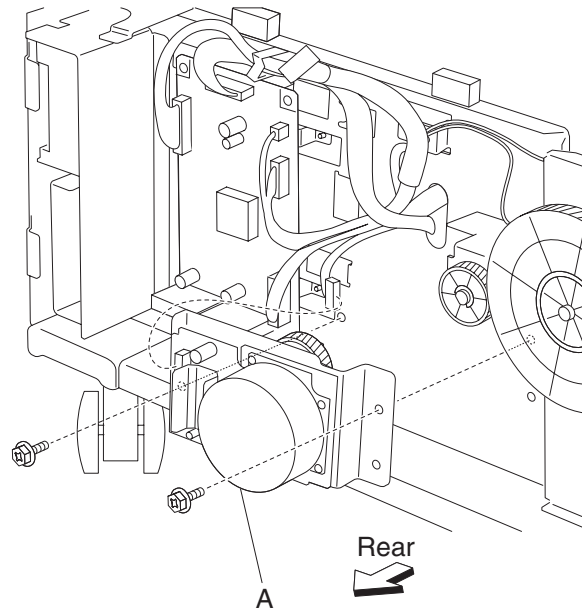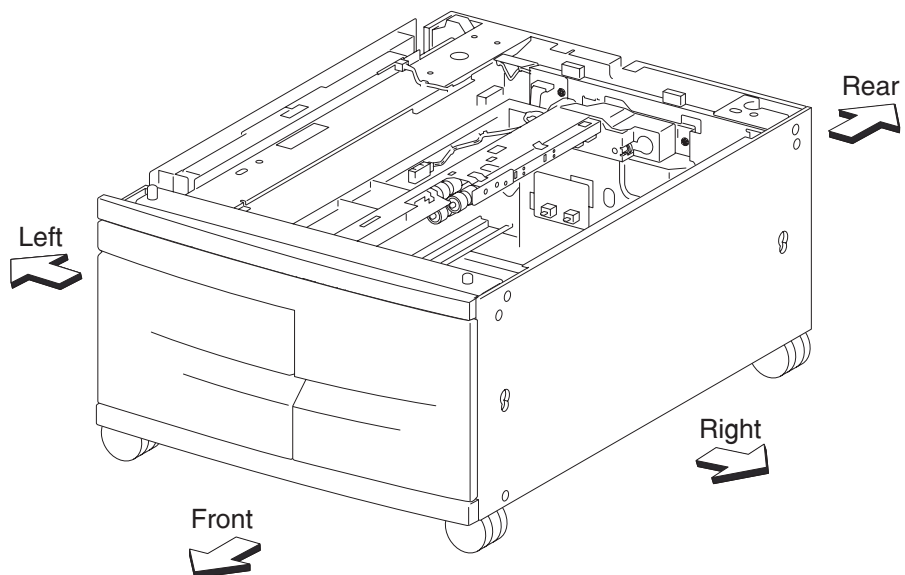
2000-sheet dual input (TTM)—top cover removal

1. Pull out tray 3 (A) and tray 4 (B).

2. Remove one screw securing the top cover (C).

3. Remove the top cover (C).
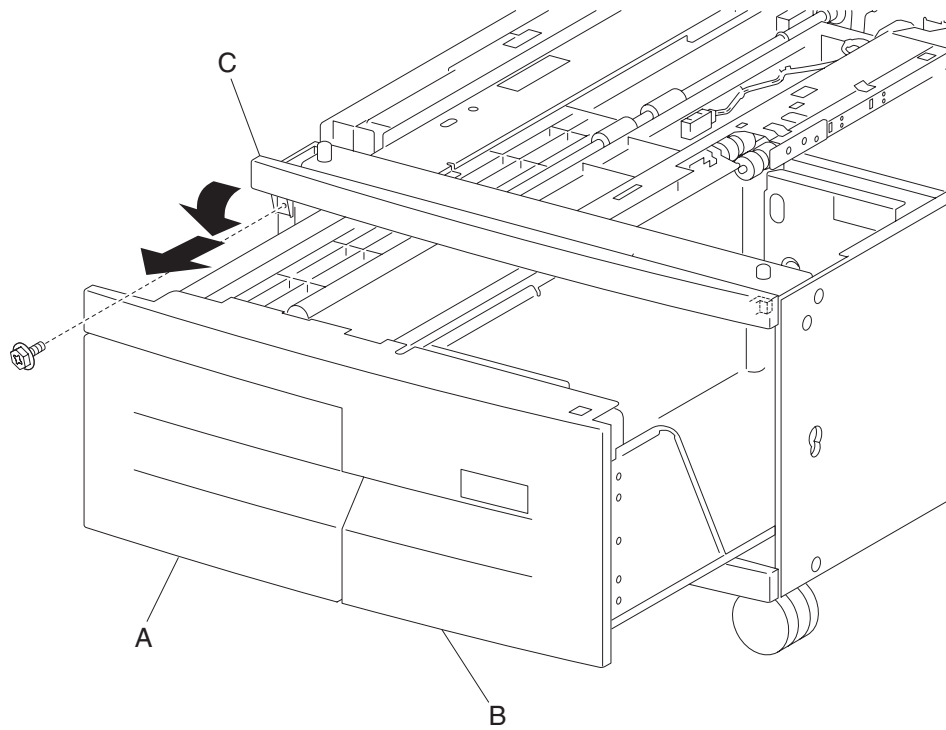
2000-sheet dual input (TTM)—foot cover removal

1. Remove tray 3 assembly. See **"2000-sheet dual input (TTM)—tray 3 assembly removal" on page 4-56**.
2. Remove tray 4 assembly. See **"2000-sheet dual input (TTM)—tray 4 assembly removal" on page 4-55**.
3. Remove the right cover. See **"2000-sheet dual input (TTM)—right cover removal" on page 4-49**.
4. Remove two screws securing the foot cover (A).
5. Remove the foot cover (A).
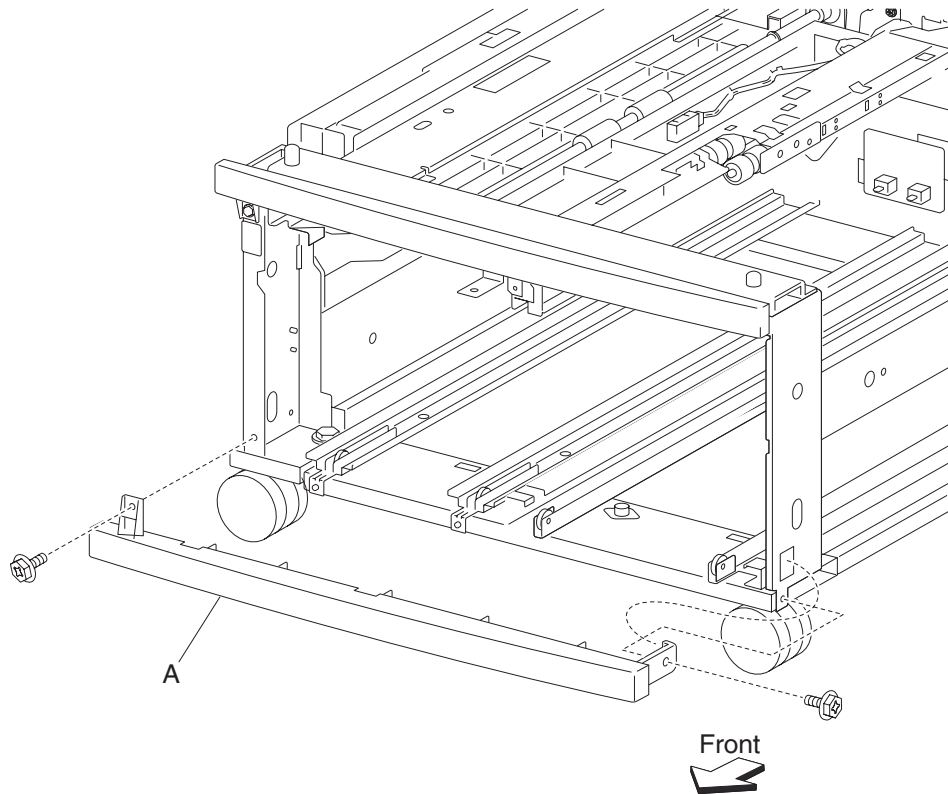
A

Front

2000-sheet dual input (TTM)—right cover removal

1. Remove two screws securing the right cover (A).
2. Remove the right cover (A) by lifting upward and outward in the direction of the arrow.
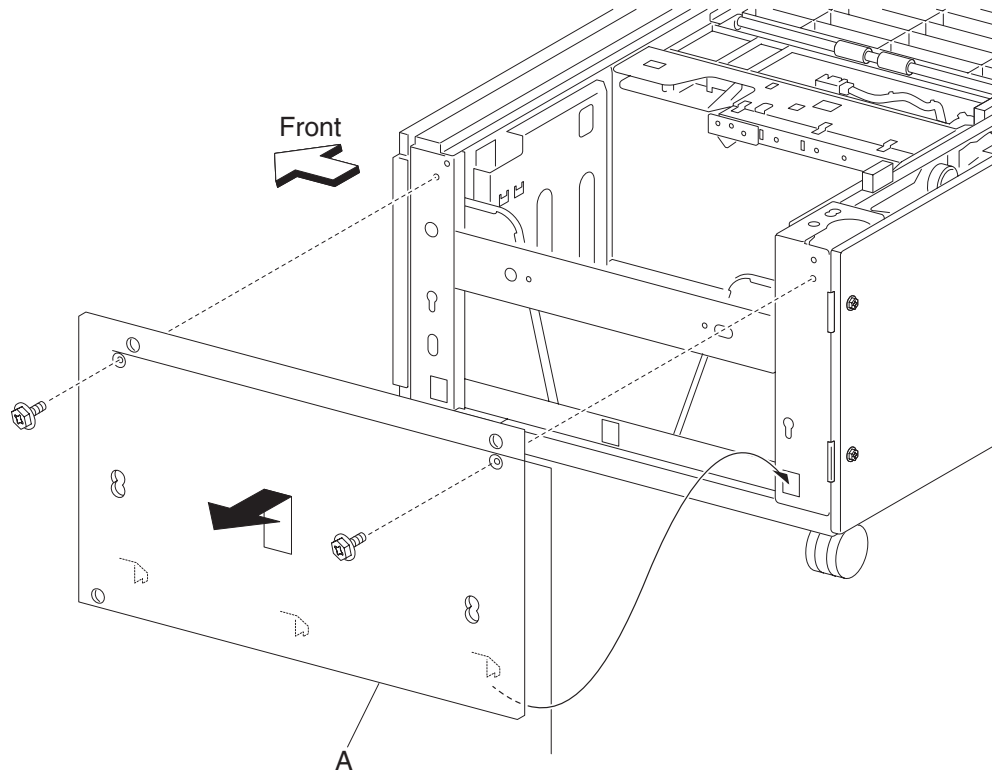
2000-sheet dual input (TTM)—left cover removal

1. Remove two screws securing the left cover (A).
2. Remove the left cover (A).
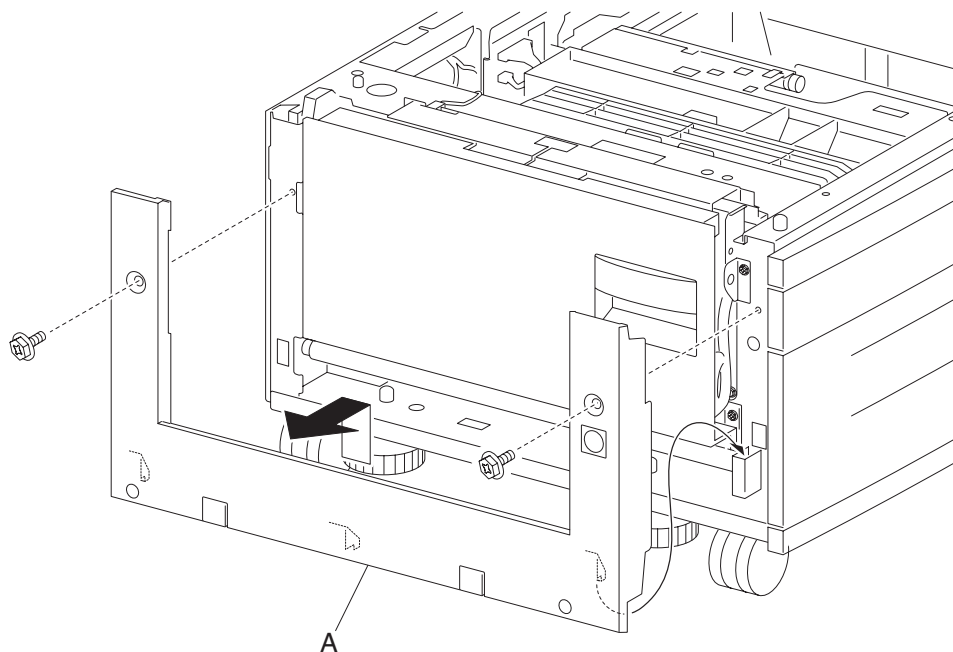
2000-sheet dual input (TTM)—rear cover removal

1. Remove four screws securing the rear cover (A).
2. Remove the rear cover (A).

Rear

A
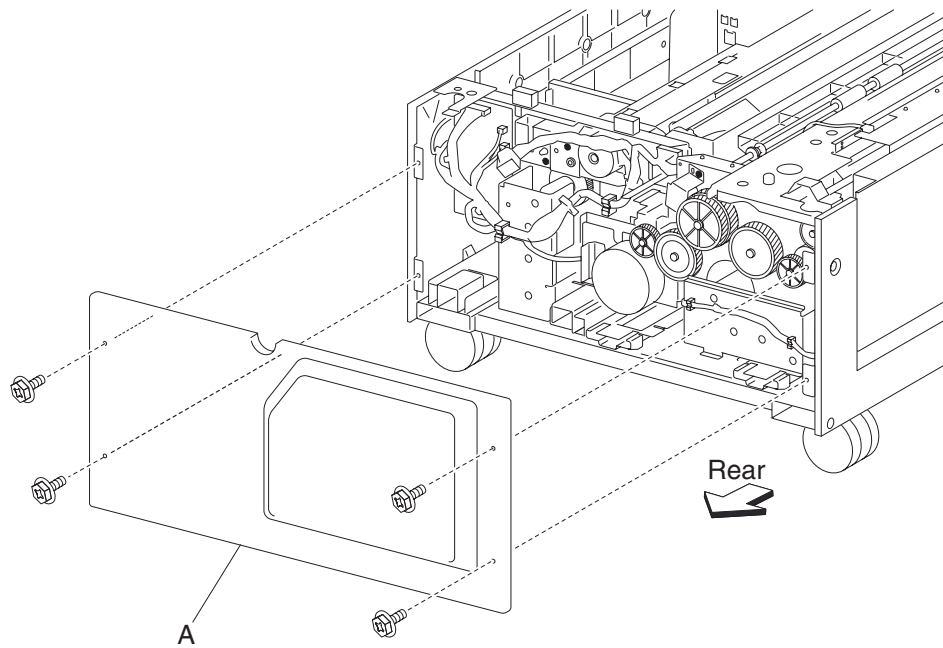
2000-sheet dual input (TTM)—caster removal

1. Remove tray 3.
2. Remove tray 4.
3. Place the right side down.
4. Remove three screws securing the caster (A).
5. Remove the caster (A).

A
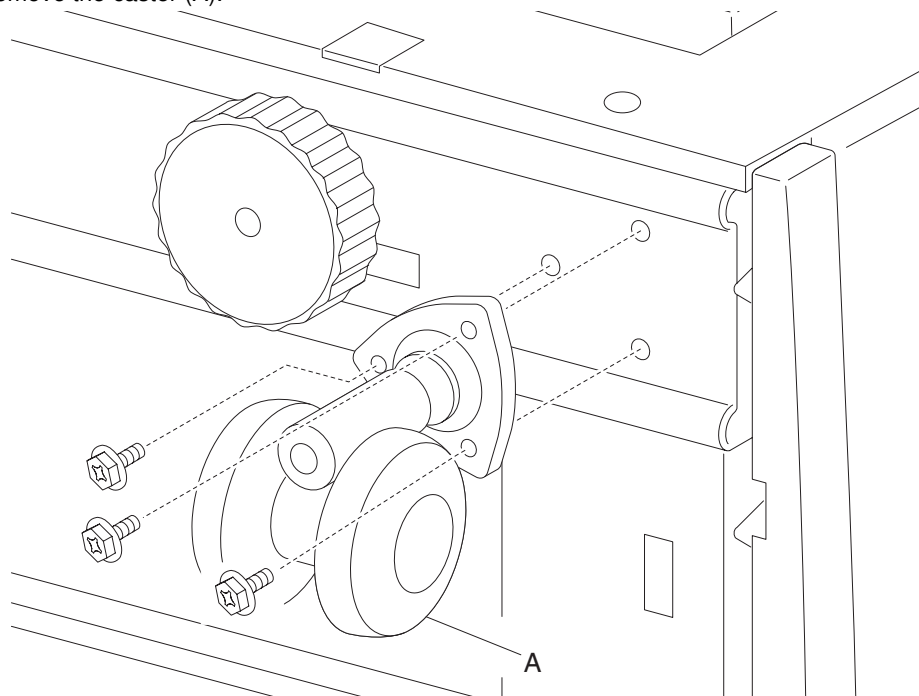
2000-sheet dual input (TTM)—tray support roll removal

1. Remove tray 3 assembly. See **"2000-sheet dual input (TTM)—tray 3 assembly removal" on page 4-56**.

2. Remove tray 4 assembly. See **"2000-sheet dual input (TTM)—tray 4 assembly removal" on page 4-55**.

3. Remove the foot cover. See **"2000-sheet dual input (TTM)—foot cover removal" on page 4-48**.

4. Remove two screws securing the two brackets (A).

5. Remove the two e-clips securing the tray support rolls (B) to the two brackets (A) using a prying tool.

6. Remove the two e-clips securing the tray support rolls (B) to the main frame.
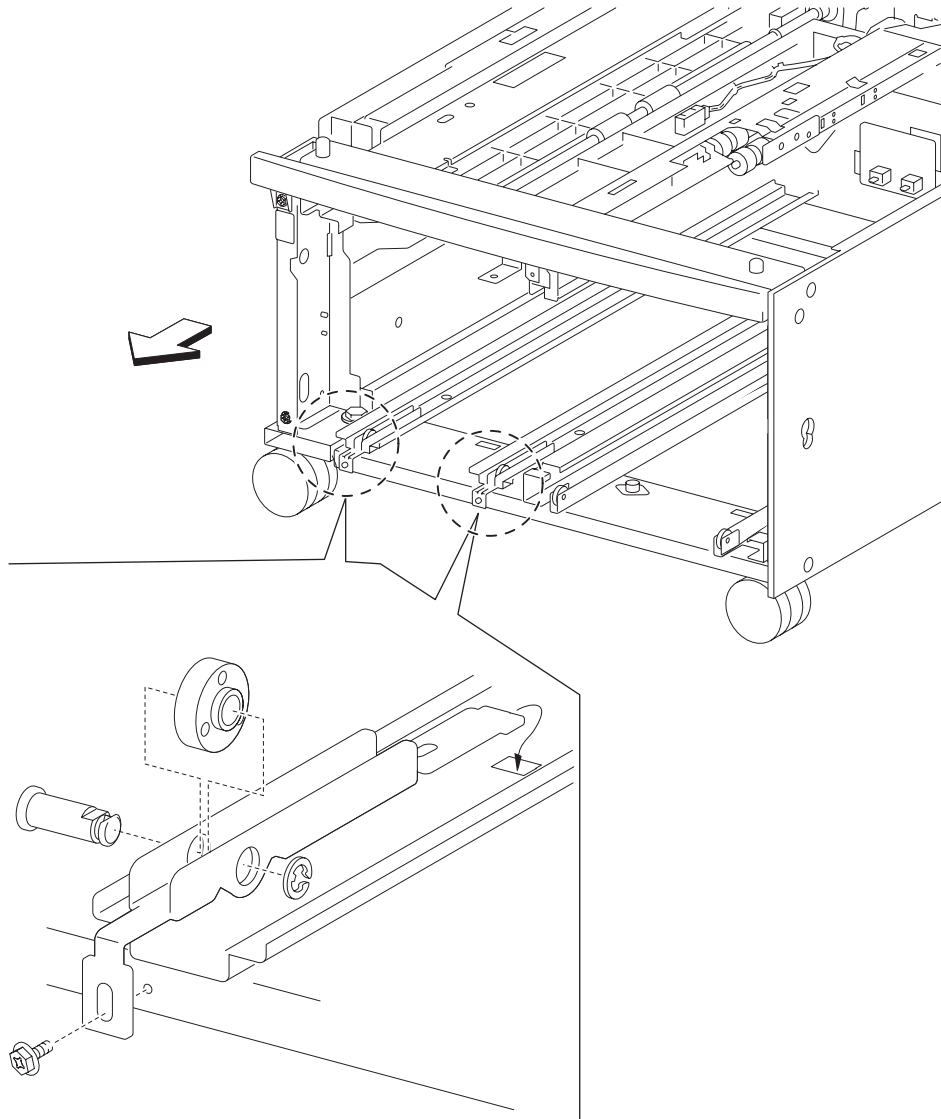
7. Remove the shafts (D).
8. Remove the tray support rolls (B).
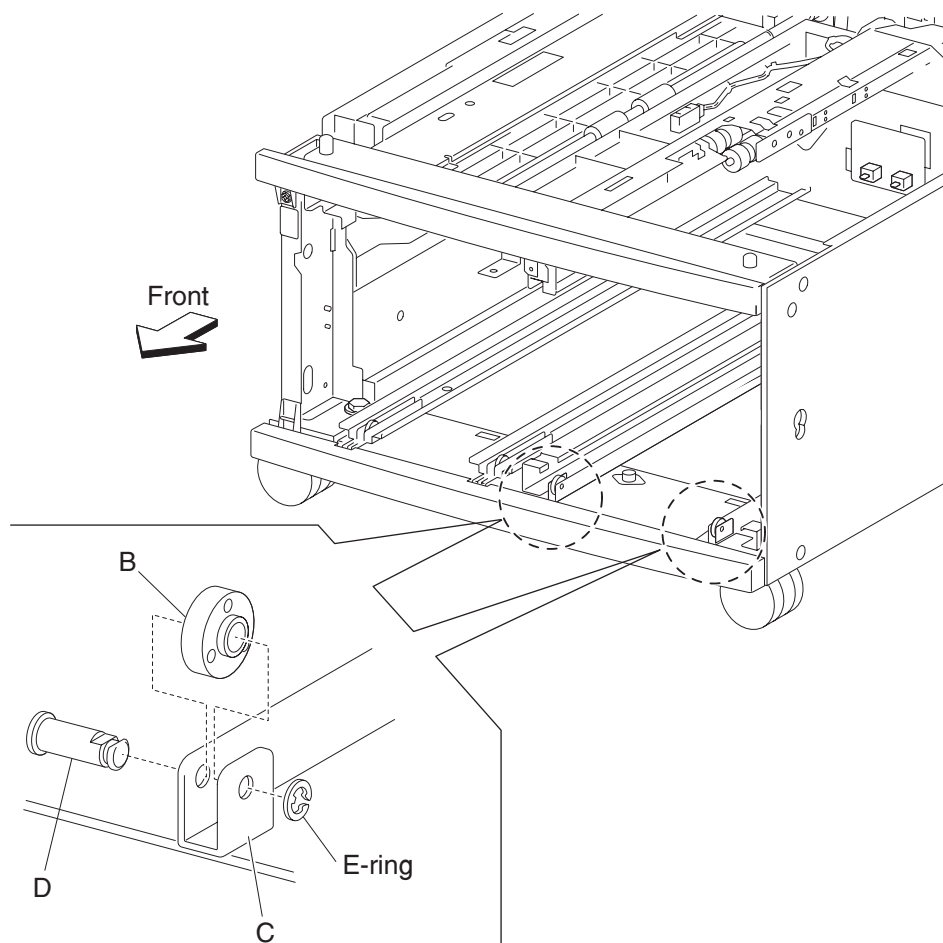
2000-sheet dual input (TTM)—tray 4 assembly removal

1. Pull out the tray 4 assembly.
2. Remove two screws securing the tray 4 transport assembly (A).
3. Push the tray 4 transport assembly (A) into the machine in the direction of the arrow.
4. Remove two screws securing the tray 4 stopper (B) to the lower part of tray 4 assembly (C).
5. Remove the tray 4 stopper (B).
6. Remove the tray 4 assembly (C).
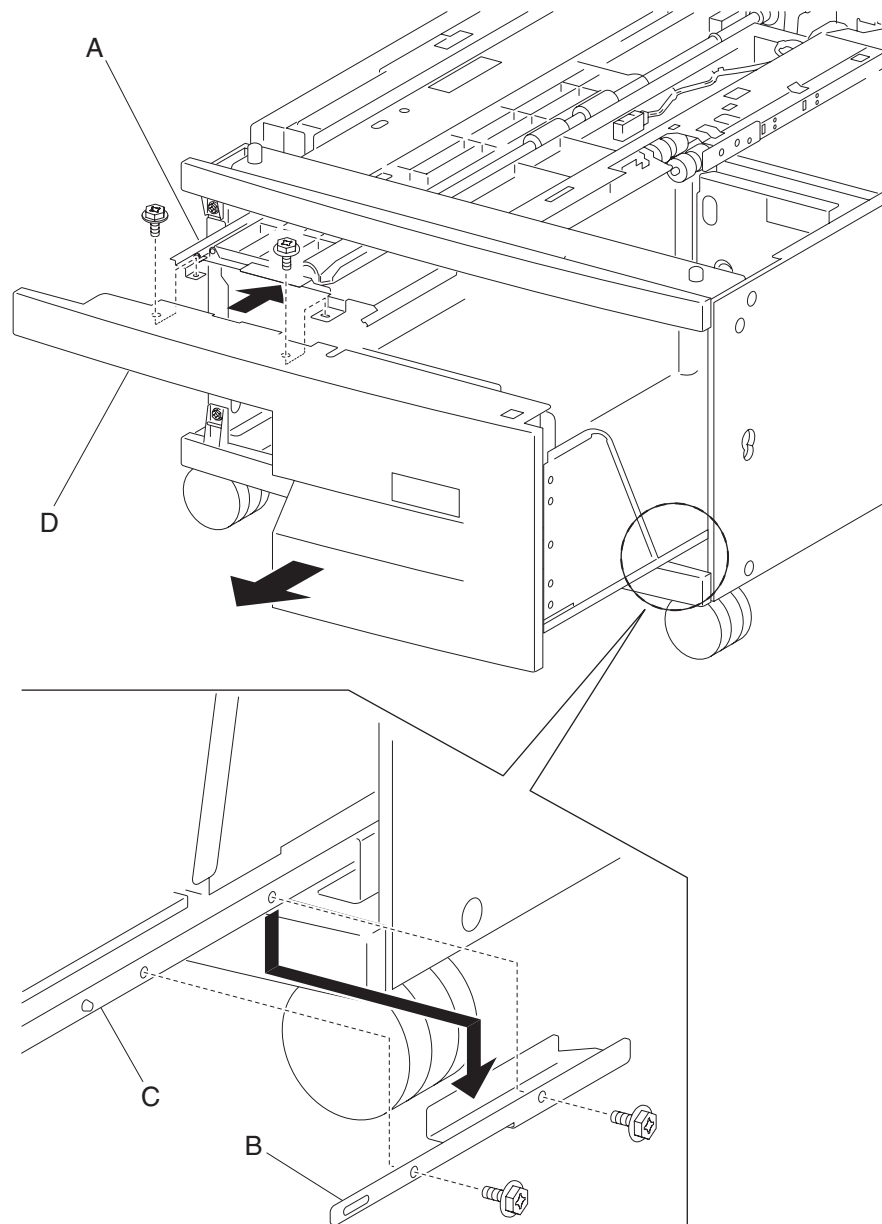
2000-sheet dual input (TTM)—tray 3 assembly removal

1. Remove the left cover. See **"2000-sheet dual input (TTM)—left cover removal" on page 4-50**.
2. Remove the left door assembly. See **"2000-sheet dual input (TTM)—2TM/TTM left door assembly removal" on page 4-112**.
3. Loosen the screw securing the tray 3 stopper (A).
4. Move the tray 3 stopper (A) outward in the direction of the arrow while pulling out the tray 3 assembly (B).
5. Remove the tray 3 assembly (B).
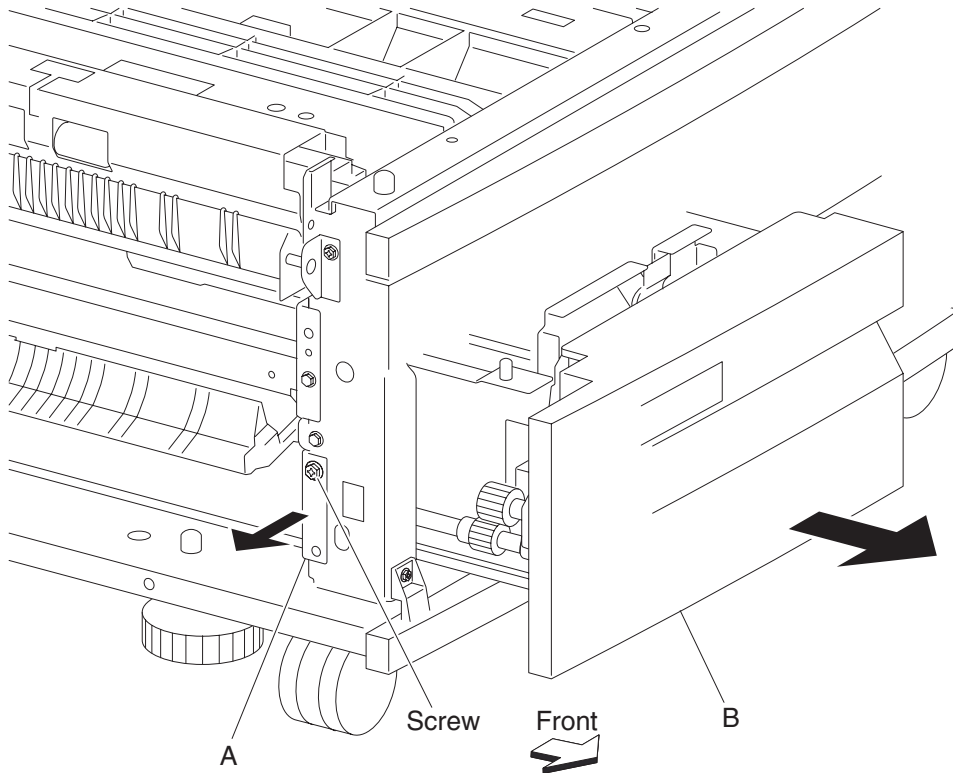
2000-sheet dual input (TTM)—tray 3 front cover removal

1. Pull out the tray 3 assembly.

2. Remove two screws securing the tray 3 front cover (A) to tray 3 assembly (B).

3. Remove the tray 3 front cover (A).
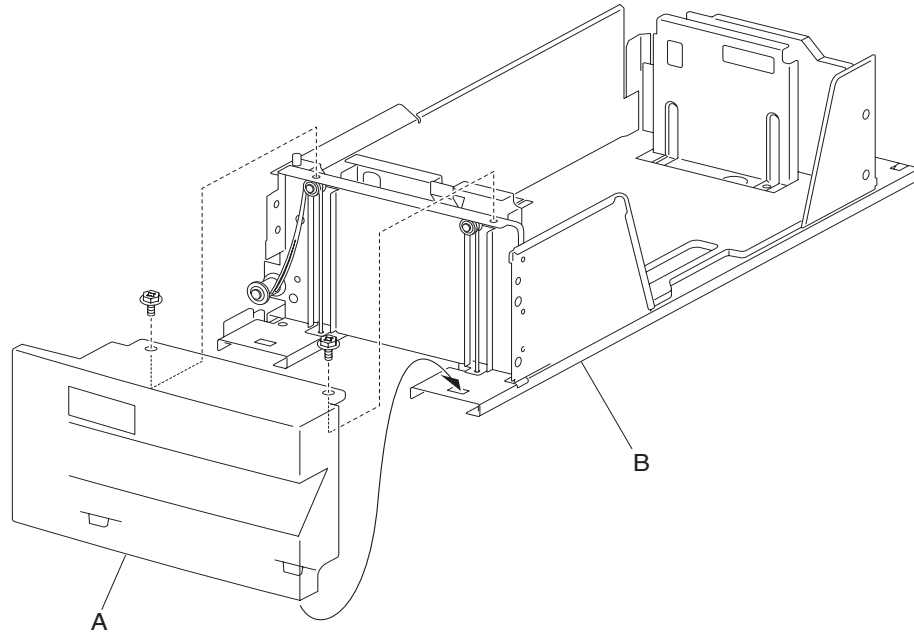
2000-sheet dual input (TTM)—tray 3 rear cable assembly removal

1. Remove the left cover. See **"2000-sheet dual input (TTM)—left cover removal" on page 4-50**.
2. Remove the left door assembly. See **"2000-sheet dual input (TTM)—2TM/TTM left door assembly removal" on page 4-112**.
3. Remove the tray 3 assembly. See **"2000-sheet dual input (TTM)—tray 3 assembly removal" on page 4-56**.
4. Remove the tray 3 front cover. See **"2000-sheet dual input (TTM)—tray 3 front cover removal" on page 4-57**.
5. Remove two e-clips with a prying tool securing the #3 tray lift shaft assembly (A) to the frame assembly (B).
6. Remove the lift cable pulley (C).
   Note: The front lift cables (D) become detached.
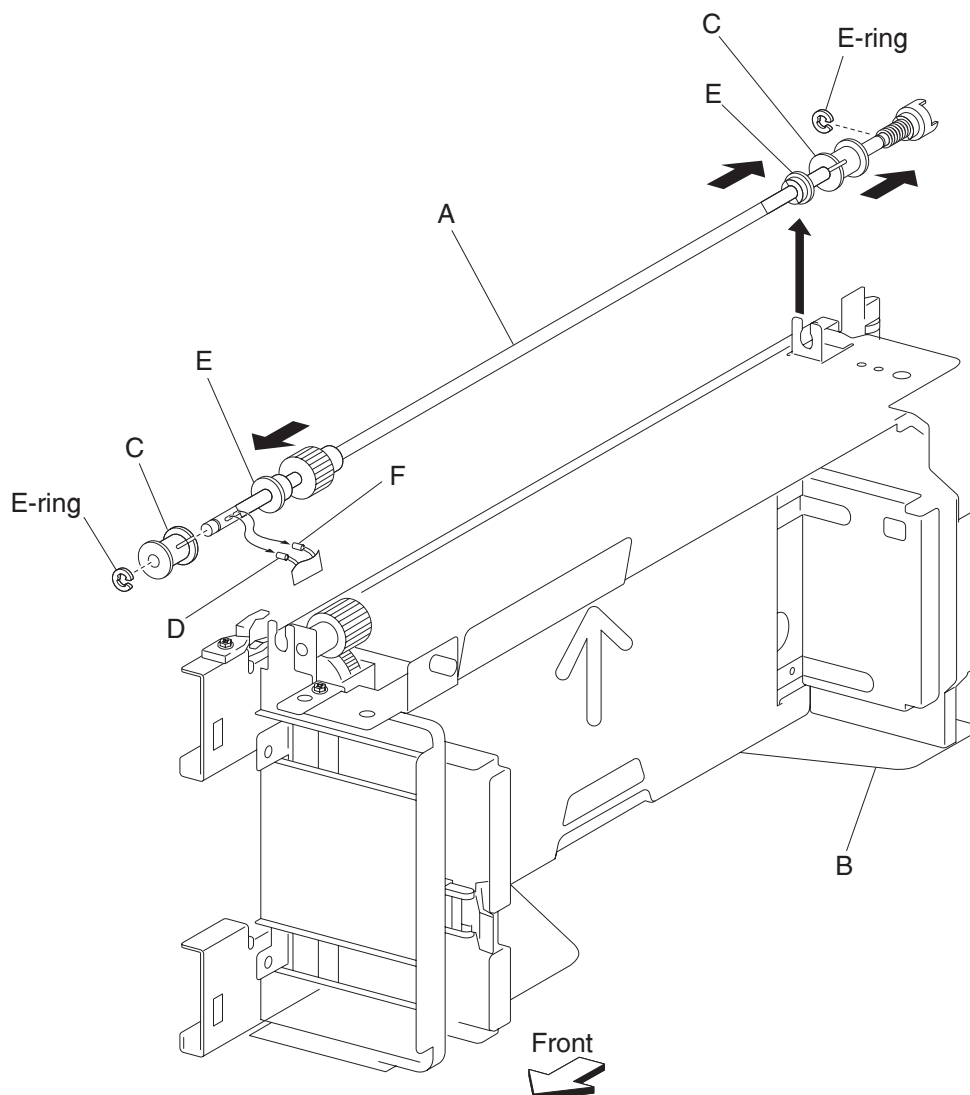
7. Move the left and right bushings (E) outward in the direction of the arrows, and remove the tray lift shaft assembly (A).

8. Remove the two tray 3 rear cables (F) from the tray lift shaft assembly (A).

   Note: Removing the tray 3 rear cables (F) is easier by sliding the lift cable pulley (C) to the front of the tray lift shaft assembly (A).
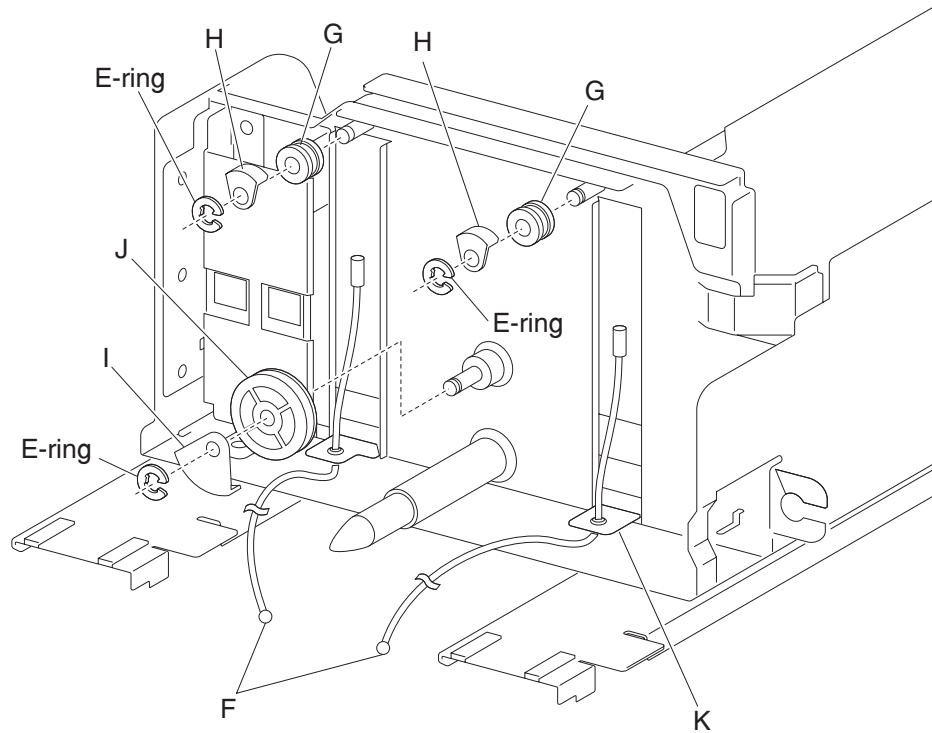
9. Remove two e-clips with a prying tool securing the two pulleys (G) on the rear of the frame assembly (B).

10. Remove the two small guides (H) and the two small pulleys (G).

11. Remove the e-clip with a prying tool securing the large guide (I) and the large pulley (J) to the frame assembly (B).

12. Remove the large guide (I) and the large pulley (J).

13. Remove the tray 3 rear cables (F) from the bottom plate (K).
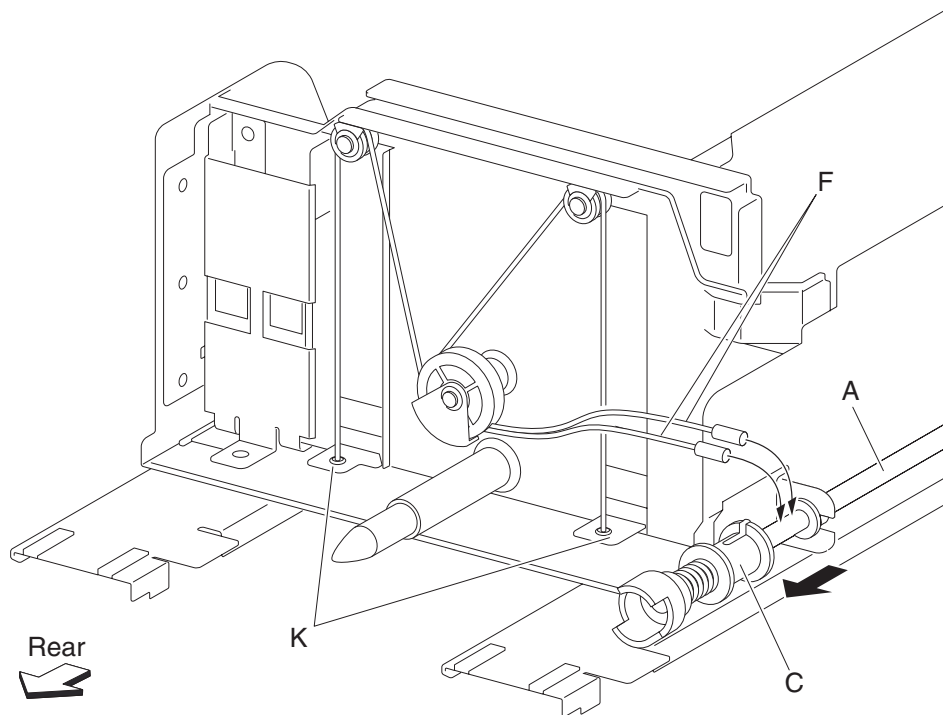
Note: Before re-installing:

— Ensure tray 3 rear cables (F) are not twisted or kinked.
— Route the cables properly as shown in the figure.
— Replace the cables by setting the frame assembly (B) on its side as shown in the figure.

2000-sheet dual input (TTM)—front cable assembly removal

1. Remove the left cover. See **"2000-sheet dual input (TTM)—left cover removal" on page 4-50**.
2. Remove the left door assembly. See **"2000-sheet dual input (TTM)—2TM/TTM left door assembly removal" on page 4-112**.
3. Remove the tray 3 assembly. See **"2000-sheet dual input (TTM)—tray 3 assembly removal" on page 4-56**.
4. Remove the tray 3 front cover. See **"2000-sheet dual input (TTM)—tray 3 front cover removal" on page 4-57**.
5. Remove two e-clips with a prying tool securing the tray lift shaft assembly (A) to the frame assembly (B).
6. Remove the lift cable pulley (C).
   Note: The tray 3 front left cable (D) becomes detached.
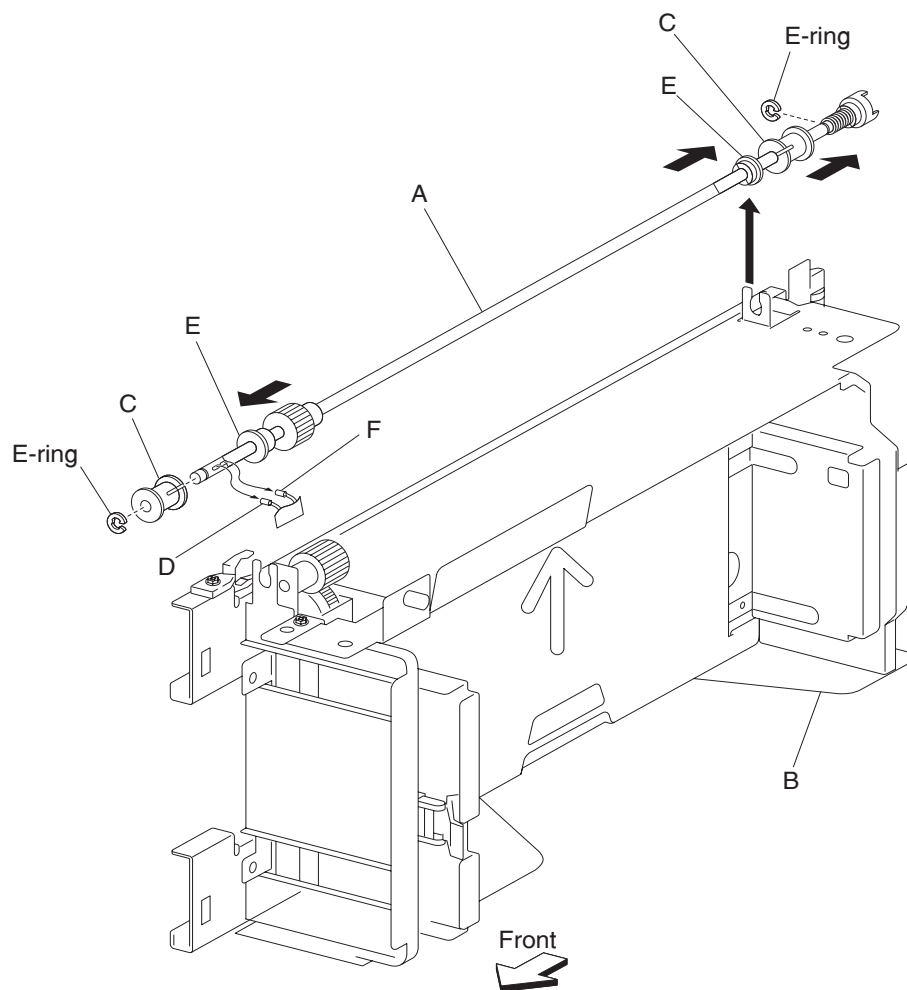
7. Move the left and right bushings (E) inward in the directions of the arrows and remove the tray lift shaft assembly (A).

8. Remove the tray 3 front right cable (F) from the tray lift shaft assembly (A).
Note: Removing the tray 3 front right cable (F) is easier by moving the tray lift shaft assembly (A).
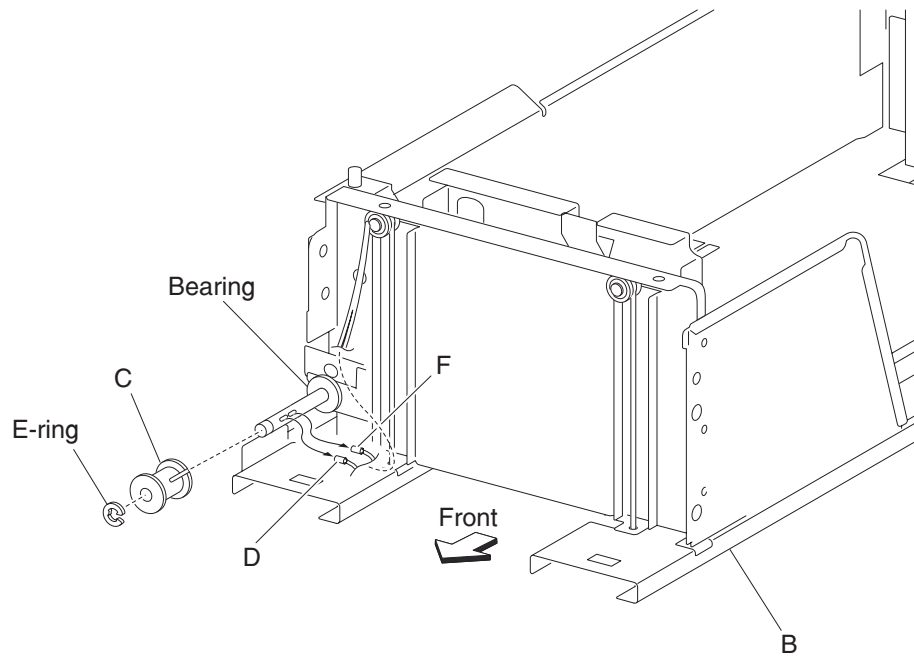
9. Remove two e-clips with a prying tool securing the two small pulleys (G) on the front of the frame assembly (B).
10. Remove two small guides (H) and the two small pulleys (G).
11. Remove the tray 3 front left cable (D) and the tray 3 front right cable (F) from the bottom plate (I).
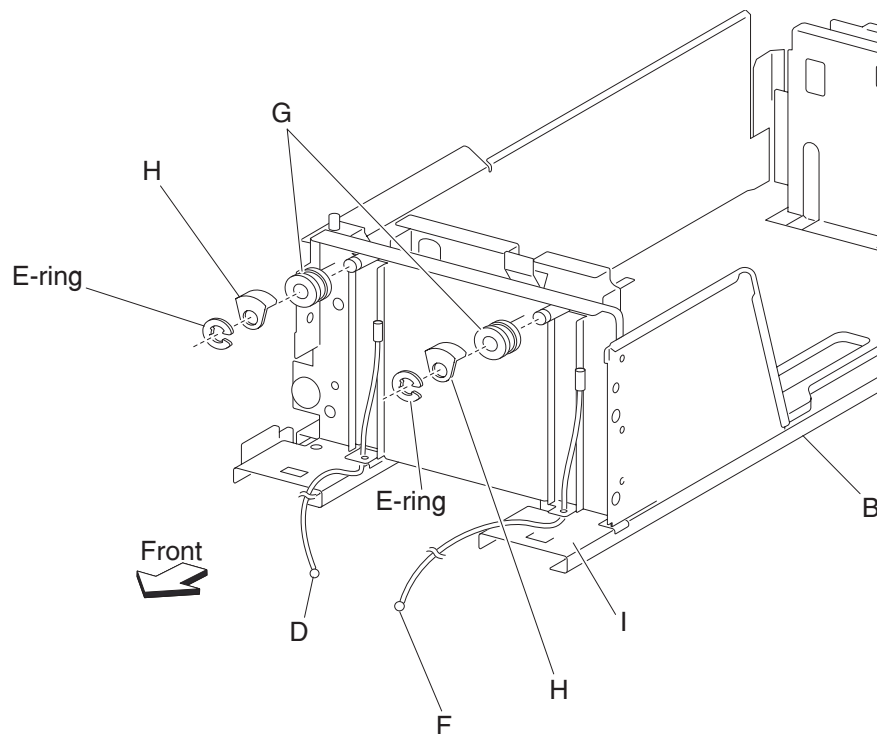
Note: Before re-installing:

— It is recommended that all four cables be replaced.

— Ensure tray 3 front cables (D and F) are not twisted or kinked.
— Route the cables properly as shown in the figure.
— Replace the cables by setting the frame assembly (B) on its side as shown in the figure.

2000-sheet dual input (TTM)—media guide rack and pinion removal

1. Remove the tray 3 assembly. See **"2000-sheet dual input (TTM)—tray 3 assembly removal" on page 4-56**.

2. Place the tray 3 assembly on its right side.

3. Remove two e-clips securing the two pinion gears (A) to the frame assembly (B).

4. Remove the two pinion gears (A).

5. Remove the four screws securing the two rack gears (C) to the frame assembly (B).

6. Remove the rack gears (C).
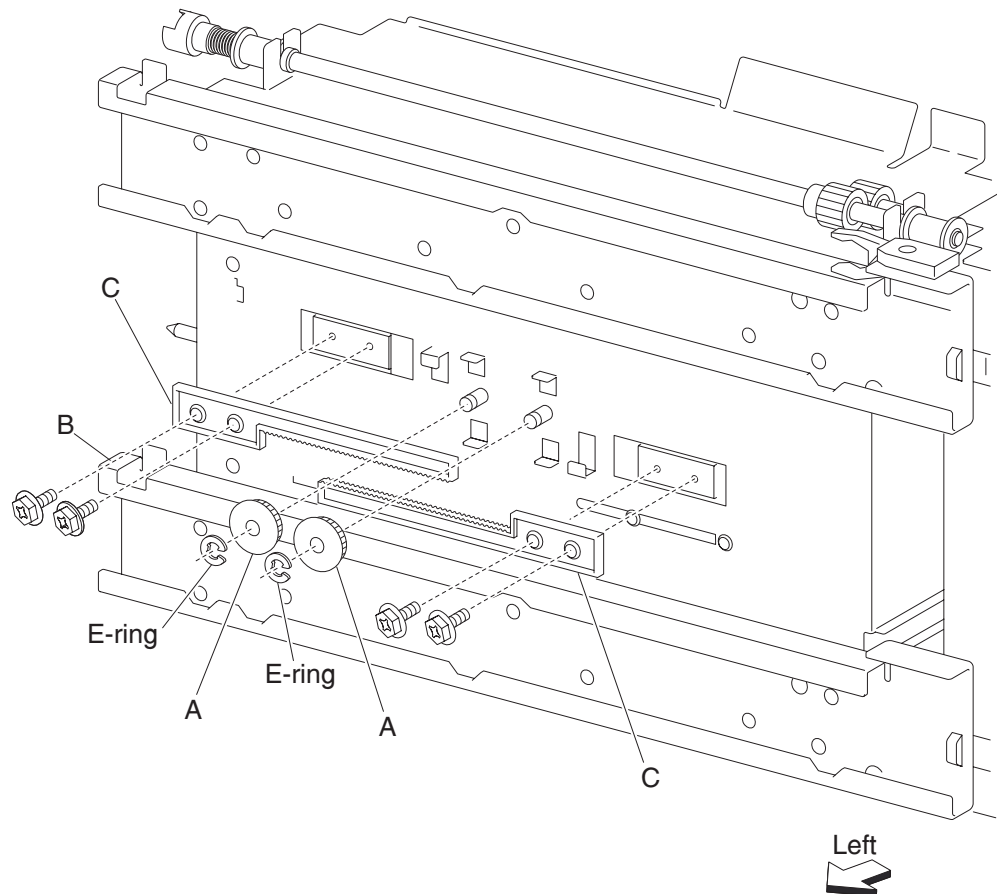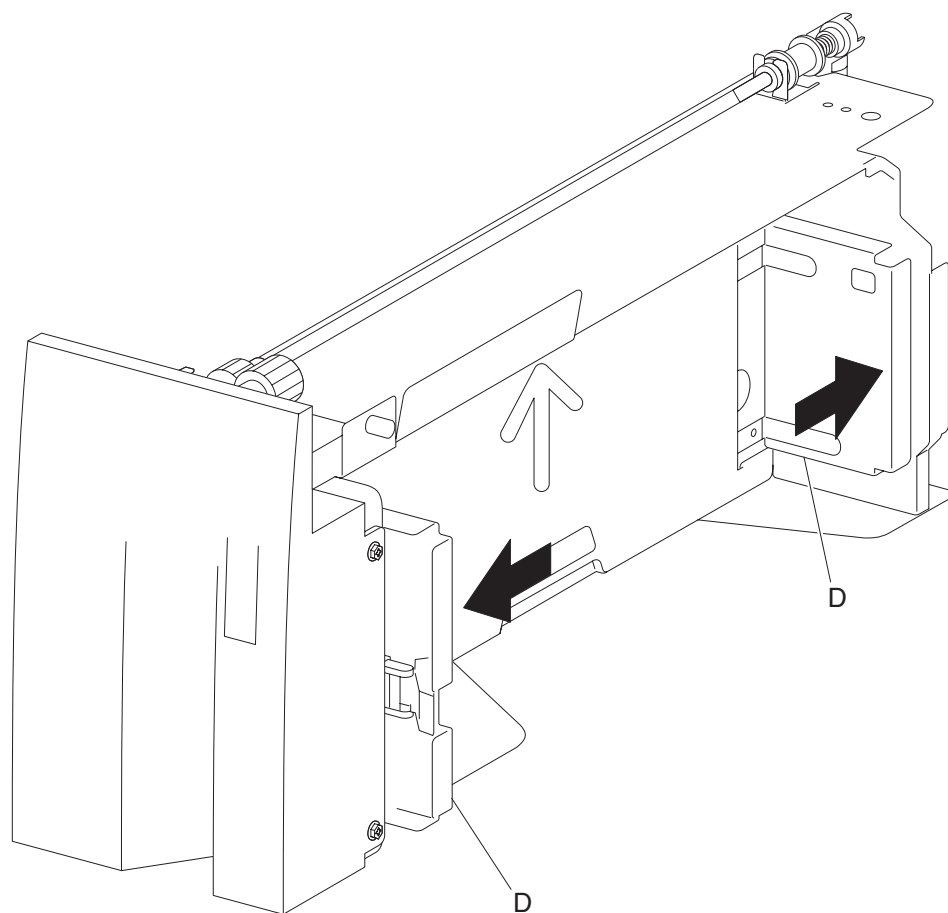
Note: Before re-installing, move the two side guides (D) of the frame assembly (B) fully outward before installing the two pinion gears (A).

2000-sheet dual input (TTM)—tray 3 media guide lock assembly removal

1. Remove the tray 3 assembly. See **"2000-sheet dual input (TTM)—tray 3 assembly removal" on page 4-56**.

2. Remove the tray 3 front cover. See **"2000-sheet dual input (TTM)—tray 3 front cover removal" on page 4-57**.

3. Remove the tray 3 rear cable assembly. See **"2000-sheet dual input (TTM)—tray 3 rear cable assembly removal" on page 4-58**.

4. Remove the tray 3 front cable assembly. See **"2000-sheet dual input (TTM)—front cable assembly removal" on page 4-61**.

5. Remove the media guide rack and pinion. See **"2000-sheet dual input (TTM)—media guide rack and pinion removal" on page 4-63**.

6. Move both media guides fully inward.

7. Lift the front edge of the bottom plate from the tray.

8. Remove the bottom plate (A) from the tray.

9. Remove the two screws securing the bracket (B) to the tray.

10. Remove the front media guide (C).

11. Remove the e-clip securing the tray 3 media guide lock (D) to the front media guide (C).

12. Remove the tray 3 media guide lock (D).

13. Remove the spring (E).

14. Remove the tray 3 media guide lock button (F) from the tray 3 media guide lock (D).

Note: Before re-installing, ensure the tray 3 media guide lock (D) and the tray 3 media guide lock button (F) are properly installed as shown in the figure.
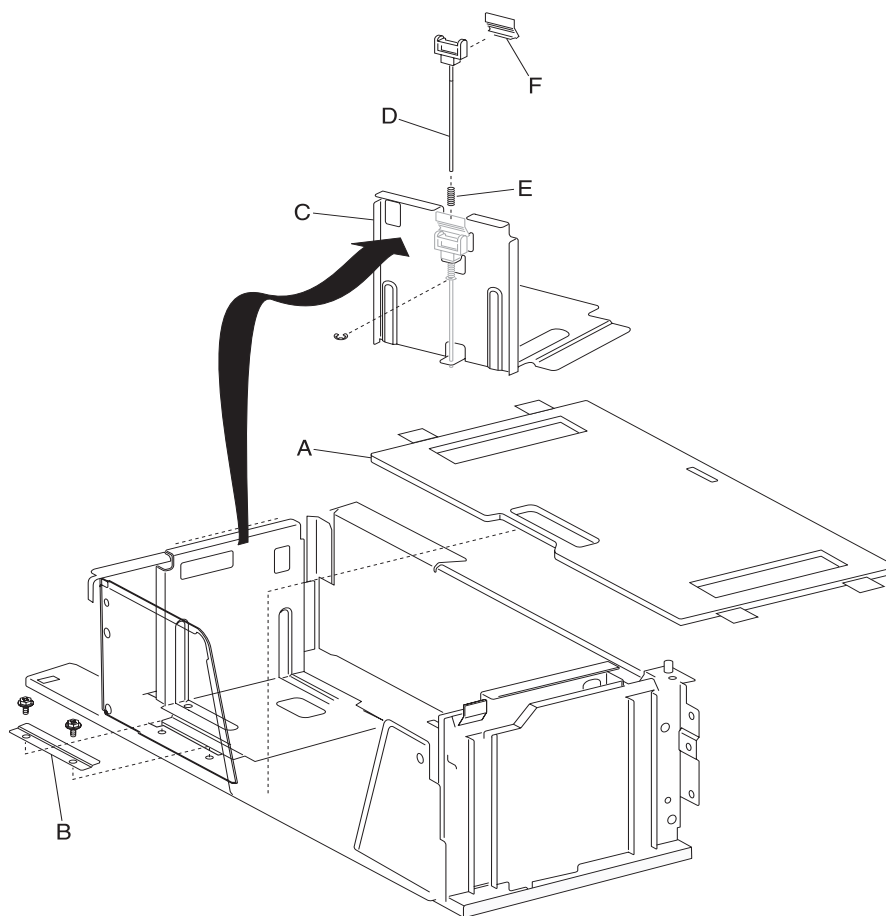
2000-sheet dual input (TTM)—tray 3 mylar actuator removal

1. Remove the tray 3 assembly. See **"2000-sheet dual input (TTM)—tray 3 assembly removal" on page 4-56**.

2. Remove the tray 3 front cover. See **"2000-sheet dual input (TTM)—tray 3 front cover removal" on page 4-57**.

3. Remove the tray 3 rear cable assembly. See **"2000-sheet dual input (TTM)—tray 3 rear cable assembly removal" on page 4-58**.

4. Remove the tray 3 front cable assembly. See **"2000-sheet dual input (TTM)—front cable assembly removal" on page 4-61**.

5. Remove the media guide rack and pinion. See **"2000-sheet dual input (TTM)—media guide rack and pinion removal" on page 4-63**.

6. Move both media guides fully inward.

7. Lift the front edge of the bottom plate (A) from the tray.

8. Remove the bottom plate (A) from the tray.

9. Remove the two screws securing the bracket (B) to the tray.

10. Remove the rear media guide (C).

11. Remove the mylar actuator (D) by sliding it out of the tray in the direction of the arrow.

Note: Before re-installing, ensure the bosses on the rear media guide (C) are fitted into the slots on the mylar actuator (D) as shown in the figure.

2000-sheet dual input (TTM)—tray 4 front cover removal

1. Remove the tray 4 assembly. See **"2000-sheet dual input (TTM)—tray 4 assembly removal" on page 4-55**.
2. Remove two screws securing the tray 4 front cover (A).
3. Remove the tray 4 front cover (A) by moving it upward in the direction of the arrow.
4. Remove the four screws securing the bracket (B) to the tray.
5. Remove the bracket (B).
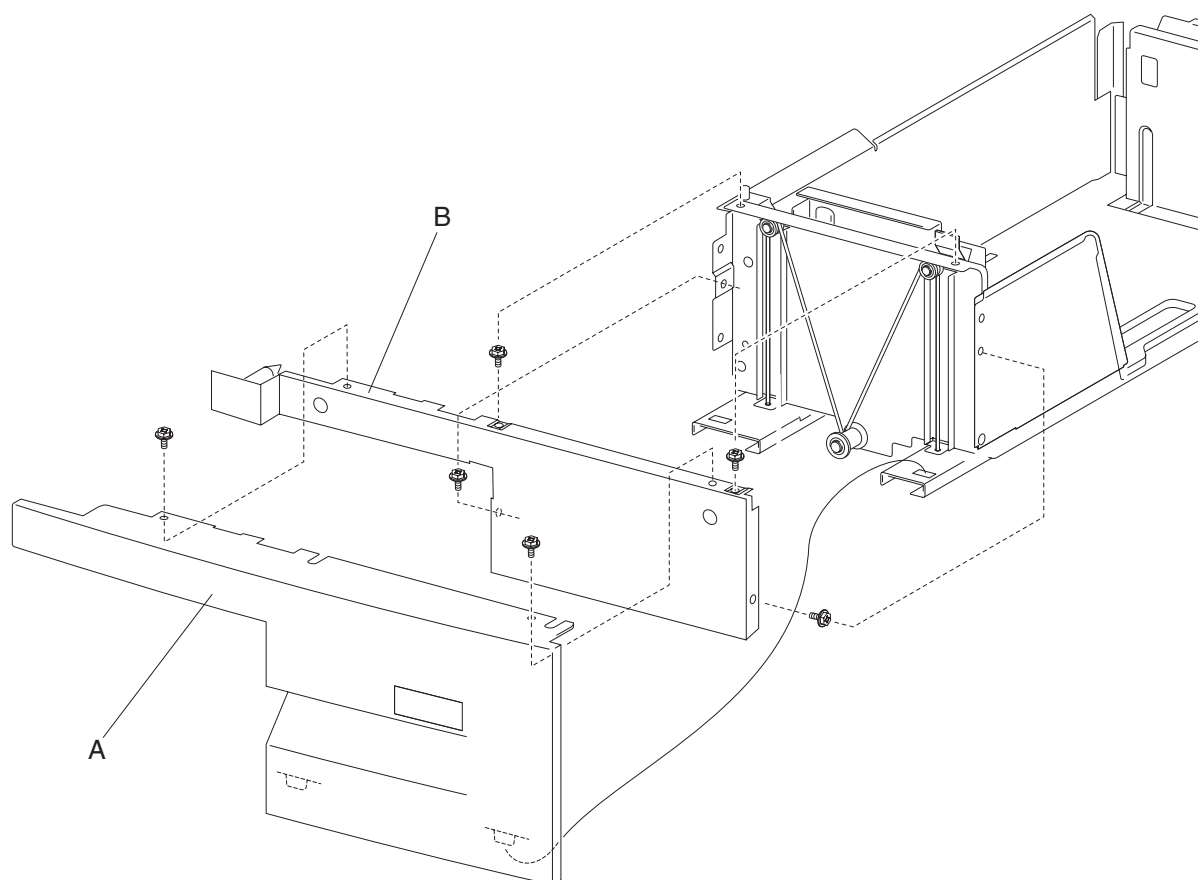
2000-sheet dual input (TTM)—tray 4 transport assembly removal

1. Remove the tray 4 assembly. See **"2000-sheet dual input (TTM)—tray 4 assembly removal" on page 4-55**.

2. Remove the tray 4 transport assembly (A).

Note: Before re-installing, insert the tray 4 transport assembly (A) into the rails of the frame assembly (B).
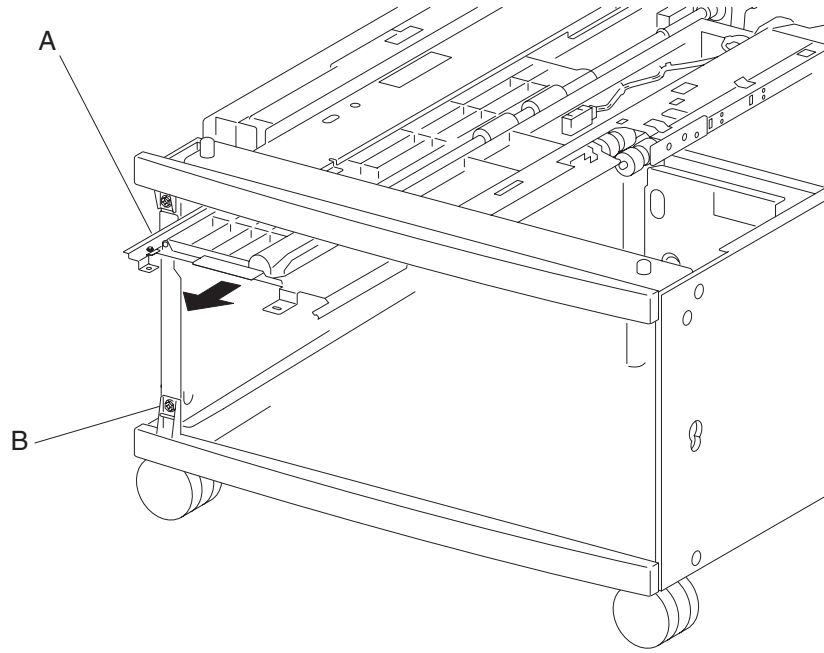
2000-sheet dual input (TTM)—tray 4 rear cables removal

1. Remove the tray 4 assembly. See **"2000-sheet dual input (TTM)—tray 4 assembly removal" on page 4-55**.

2. Remove the tray 4 front cover. See **"2000-sheet dual input (TTM)—tray 4 front cover removal" on page 4-68**.

3. Place the tray 4 assembly on its right side as shown in the figure.

4. Remove two e-clips with a prying tool securing the tray lift shaft assembly (A) to the frame assembly (B).

5. Remove the lift cable pulley (C).
   Note: The front lift cables (D) become detached.
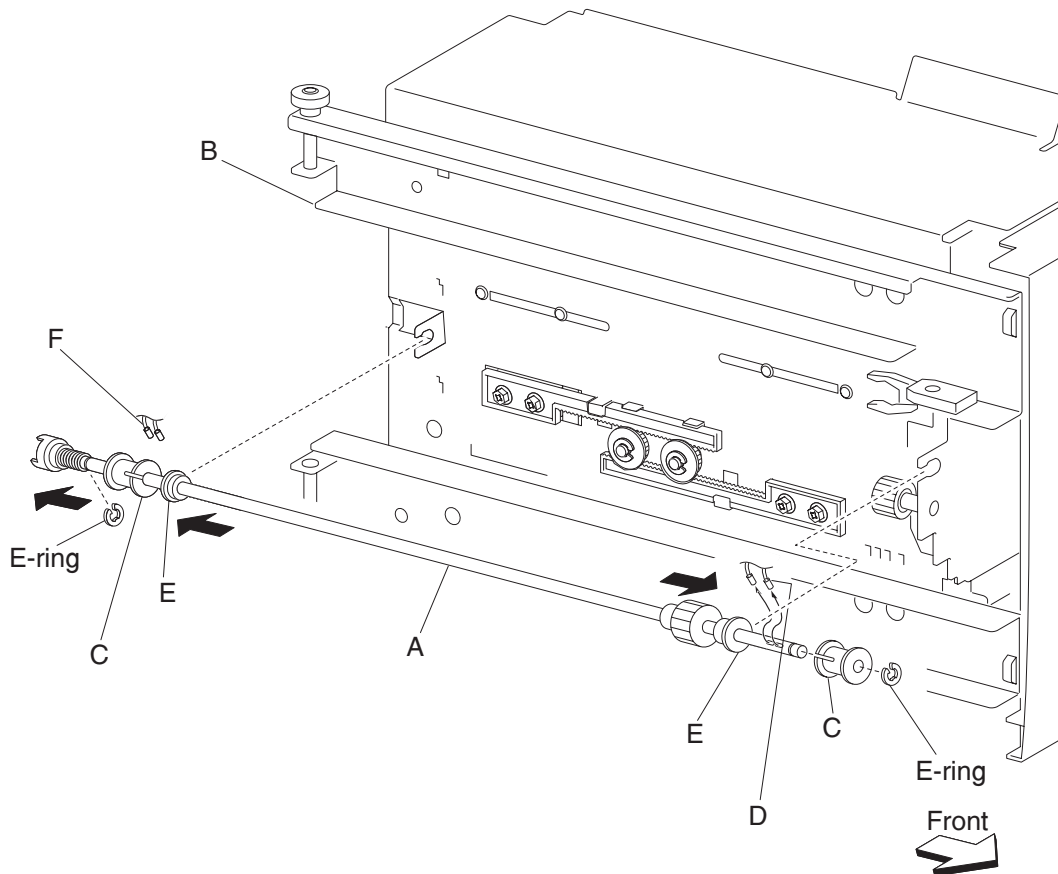
6. Move the left and right bushings (E) outward in the directions of the arrows to remove the tray 4 lift shaft assembly (A).

7. Remove the tray lift shaft assembly (A).

8. Remove the two tray 4 rear cables (F) from the tray lift shaft assembly (A).

Note: Removing the tray rear cables (F) is easier by sliding the lift cable pulley (C) to the rear of the tray lift shaft assembly (A).
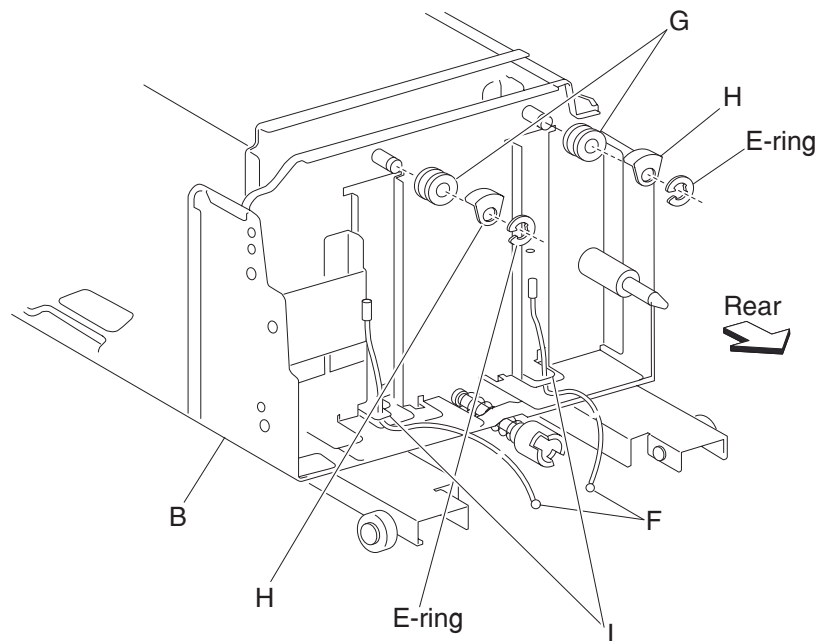
9. Place the tray 4 assembly back to its original position.

10. Remove two e-clips with a prying tool securing the two small pulleys (G) on the rear of the frame assembly (B).

11. Remove two small guides (H) and two small pulleys (G).

12. Remove the tray 4 rear cables (F) from the bottom plate (I).
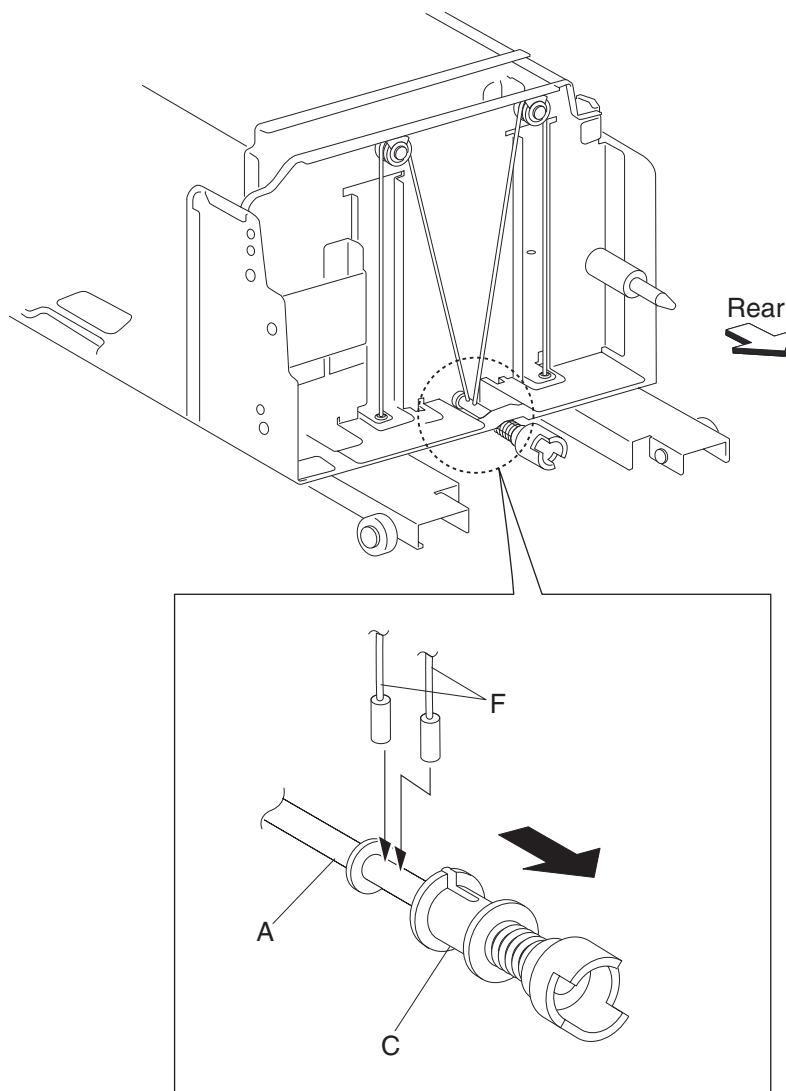
Rear

Note: Before re-installing:

— It is recommended that all four cables be replaced.
— Ensure tray 4 rear cables (F) are not twisted or kinked.
— Route the cables properly as shown in the figure.
— Replace the cables by setting the frame assembly (B) on its side as shown in the figure.

2000-sheet dual input (TTM)—tray 4 front cables removal

1. Remove the tray 4 assembly. See **"2000-sheet dual input (TTM)—tray 4 assembly removal" on page 4-55**.

2. Remove the tray 4 front cover. See **"2000-sheet dual input (TTM)—tray 4 front cover removal" on page 4-68**

3. Place the tray 4 assembly on its right side, as shown in the figure.

4. Remove two e-clips with a prying tool securing the tray lift shaft assembly (A) to the frame assembly (B).

5. Remove the lift cable pulley (C).

   Note: The tray 4 front cables (D) become detached.
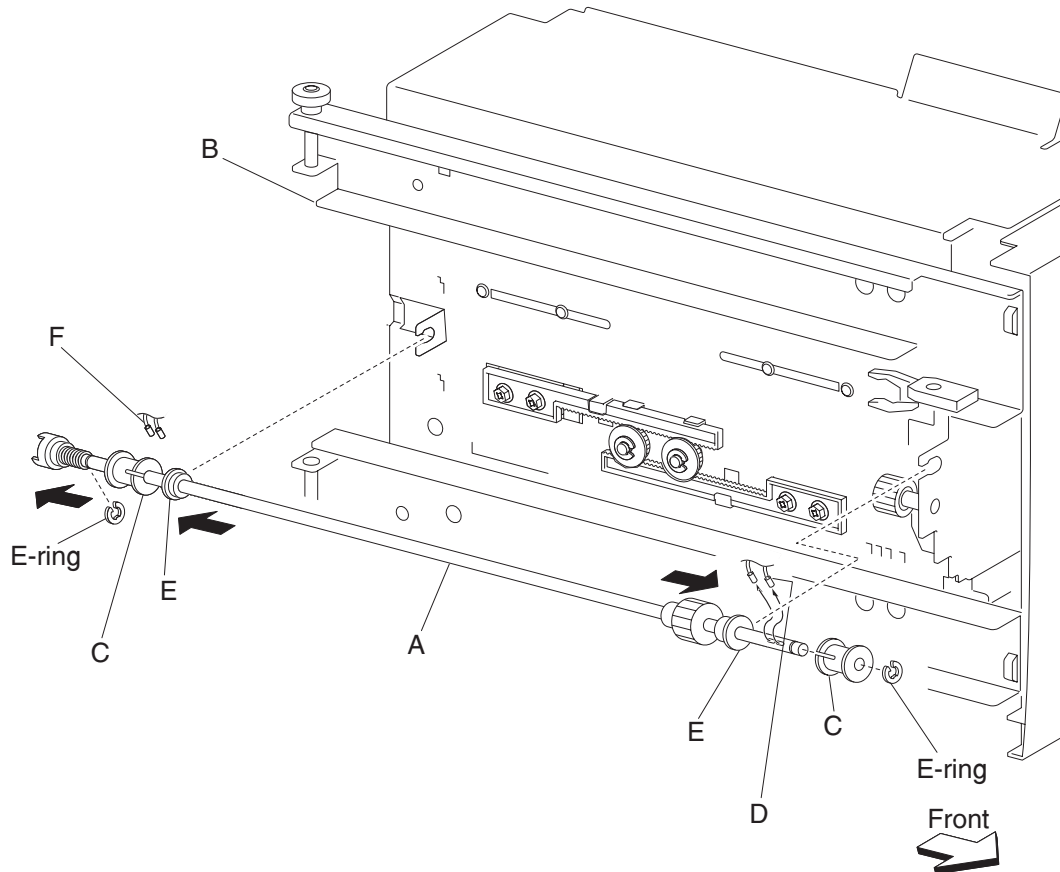
6. Move the left and right bushings (E) inward in the directions of the arrows, and remove the tray lift shaft assembly (A).

7. Remove the tray 4 front cables (D) from the tray lift shaft assembly (A).

   Note: Removing the tray 4 front cables (D) is easier by moving the tray lift shaft assembly (A).
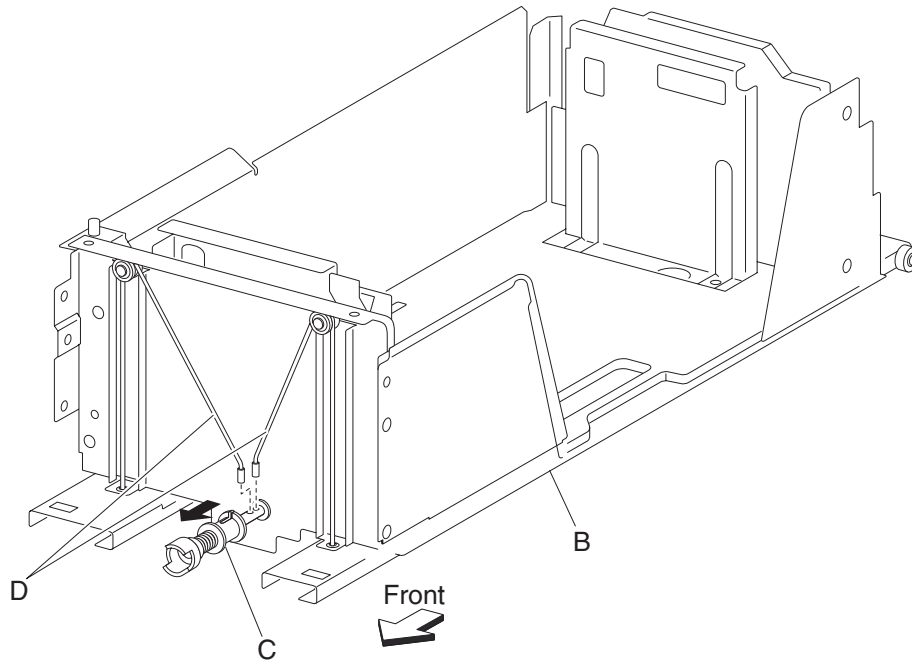
8. Place the tray 4 assembly back in its original position.

9. Remove two e-clips with a prying tool securing the two small pulleys (F) on the front of the frame assembly (B).

10. Remove the two small guides (G) and the two small pulleys (F).

11. Remove the tray 4 front cables (D) from the bottom plate (H).
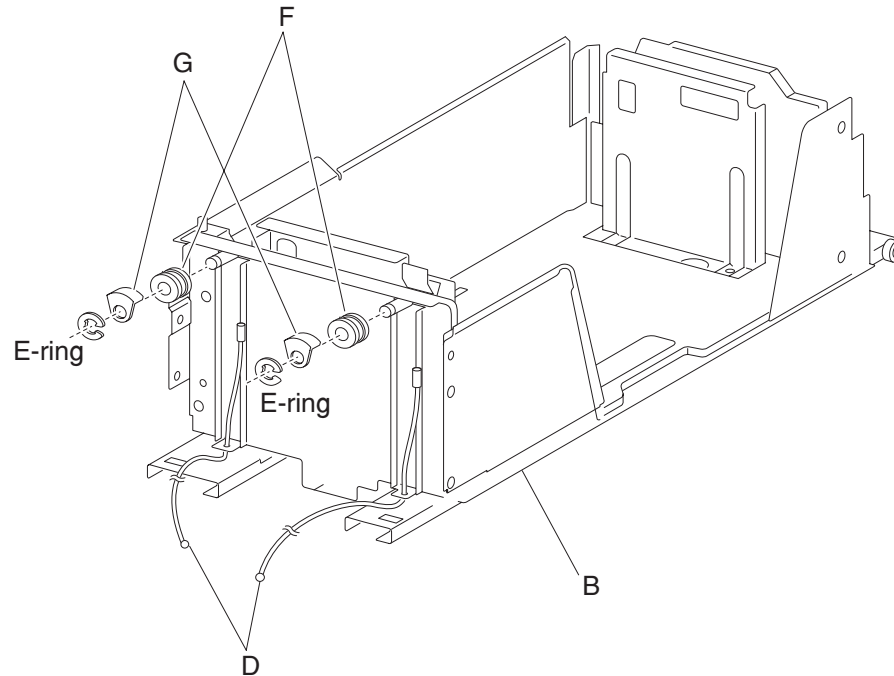
Note: Before re-installing:

— It is recommended that all four cables be replaced.

— Ensure tray 4 front cables (D) are not twisted or kinked.

— Route the cables properly as shown in the figure.

— Replace the cables by setting the frame assembly (B) on its side as shown in the figure.

2000-sheet dual input (TTM)—tray 4 media guide rack and pinion removal

1. Remove the tray 4 assembly. See **"2000-sheet dual input (TTM)—tray 4 assembly removal" on page 4-55**.
2. Place the tray 4 assembly on its right side, as shown in the figure.
3. Remove two e-clips securing the two pinion gears (A) to the frame assembly (B).
4. Remove two pinion gears (A).

5. Remove four screws securing the two rack gears (C) to the frame assembly (B).

6. Remove the rack gears (C).

Note: Before re-installing, move the two side guides (D) of the frame assembly (B) fully outward before installing the two pinion gears (A).

2000-sheet dual input (TTM)—tray 4 media guide lock assembly removal

1. Remove the tray 4 assembly. See **"2000-sheet dual input (TTM)—tray 4 assembly removal" on page 4-55**.

2. Remove the tray 4 front cover. See **"2000-sheet dual input (TTM)—tray 4 front cover removal" on page 4-68**.

3. Remove the tray 4 rear cable assembly. See **"2000-sheet dual input (TTM)—tray 4 rear cables removal" on page 4-70**.

4. Remove the tray 4 front cable assembly. See **"2000-sheet dual input (TTM)—tray 4 front cables removal" on page 4-73**.

5. Remove the media guide rack and pinion. See **"2000-sheet dual input (TTM)—media guide rack and pinion removal" on page 4-63**.

6. Move both media guides inward.

7. Lift the front edge of the bottom plate from the tray.

8. Remove the bottom plate (A) from the tray.

9. Remove two screws securing the bracket (B) to the tray.

10. Remove the front media guide (C).

11. Remove the e-clip securing the tray 4 media guide lock (D) to the front media guide (C).

12. Remove the tray 4 media guide lock (D).

13. Remove the spring (E).

14. Remove the tray 4 media guide lock button (F) from the tray 4 media guide lock (D).

Note: Before re-installing, ensure the tray 4 media guide lock (D) and the tray 4 media guide lock button (F) are properly installed as shown in the figure.
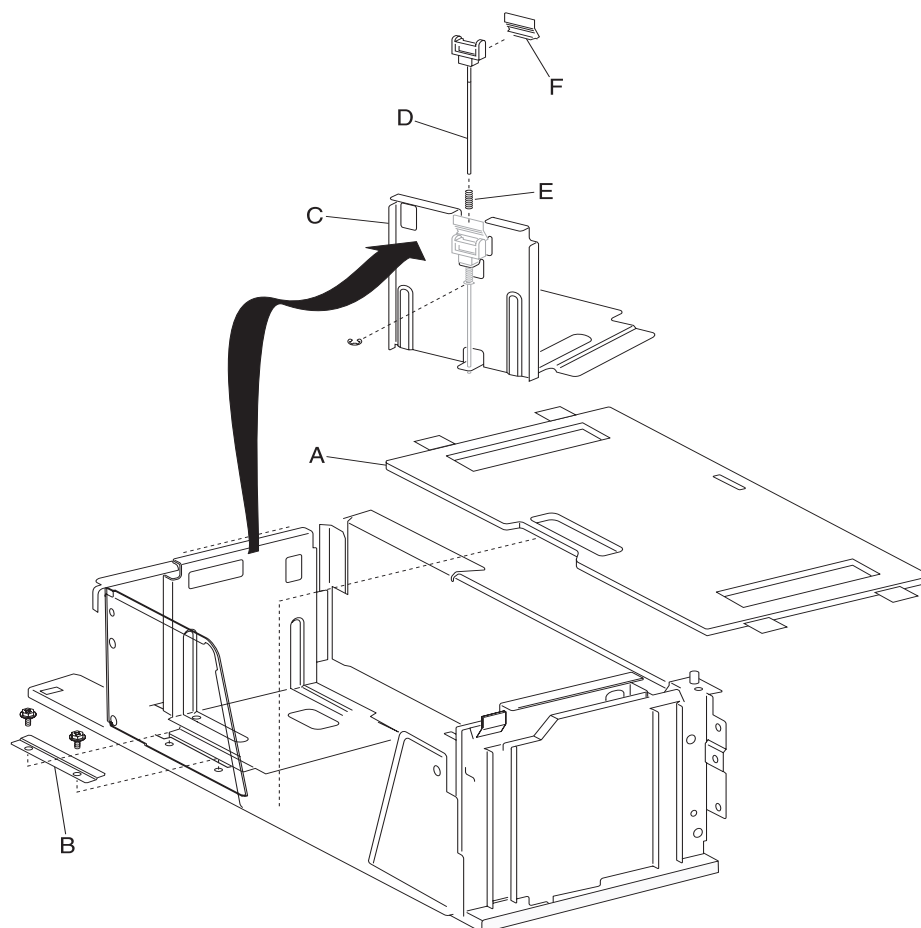
2000-sheet dual input (TTM)—tray 4 mylar actuator removal

1. Remove the tray 4 assembly. See **"2000-sheet dual input (TTM)—tray 4 assembly removal" on page 4-55**.

2. Remove the tray 4 front cover. See **"2000-sheet dual input (TTM)—tray 4 front cover removal" on page 4-68**.

3. Remove the tray 4 rear cable assembly. See **"2000-sheet dual input (TTM)—tray 4 rear cables removal" on page 4-70**.

4. Remove the tray 4 front cable assembly. See **"2000-sheet dual input (TTM)—tray 4 front cables removal" on page 4-73**.

5. Remove the media guide rack and pinion. See **"2000-sheet dual input (TTM)—media guide rack and pinion removal" on page 4-63**.

6. Move both media guides inward.

7. Lift the front edge of the bottom plate (A) from the tray.

8. Remove the bottom plate (A) from the tray.

9. Remove two screws securing the bracket (B) to the tray.

10. Remove the rear media guide (C).

11. Remove the mylar actuator (D) by sliding it out of the tray in the direction of the arrow.

Note: Before re-installing, ensure the bosses on the rear media guide (C) are fitted into the slots on the mylar actuator (D) as shown in the figure.

2000-sheet dual input (TTM)—media feed unit assembly removal (tray 4)

1. Remove the tray 3 assembly. See **"2000-sheet dual input (TTM)—tray 3 assembly removal" on page 4-56**.

2. Remove the tray 4 assembly. See **"2000-sheet dual input (TTM)—tray 4 assembly removal" on page 4-55**.

3. Remove the tray 4 transport assembly. See **"2000-sheet dual input (TTM)—tray 4 transport assembly removal" on page 4-69**.

4. Disconnect the two connectors from the media feed unit assembly (A).

5. Remove two screws securing the media feed unit assembly (A).

Note: Removing the media tray 1 and media tray 2 in the printer makes removing the media feed unit assembly (A) rear screws easier.

Connectors

A

Front

A

B
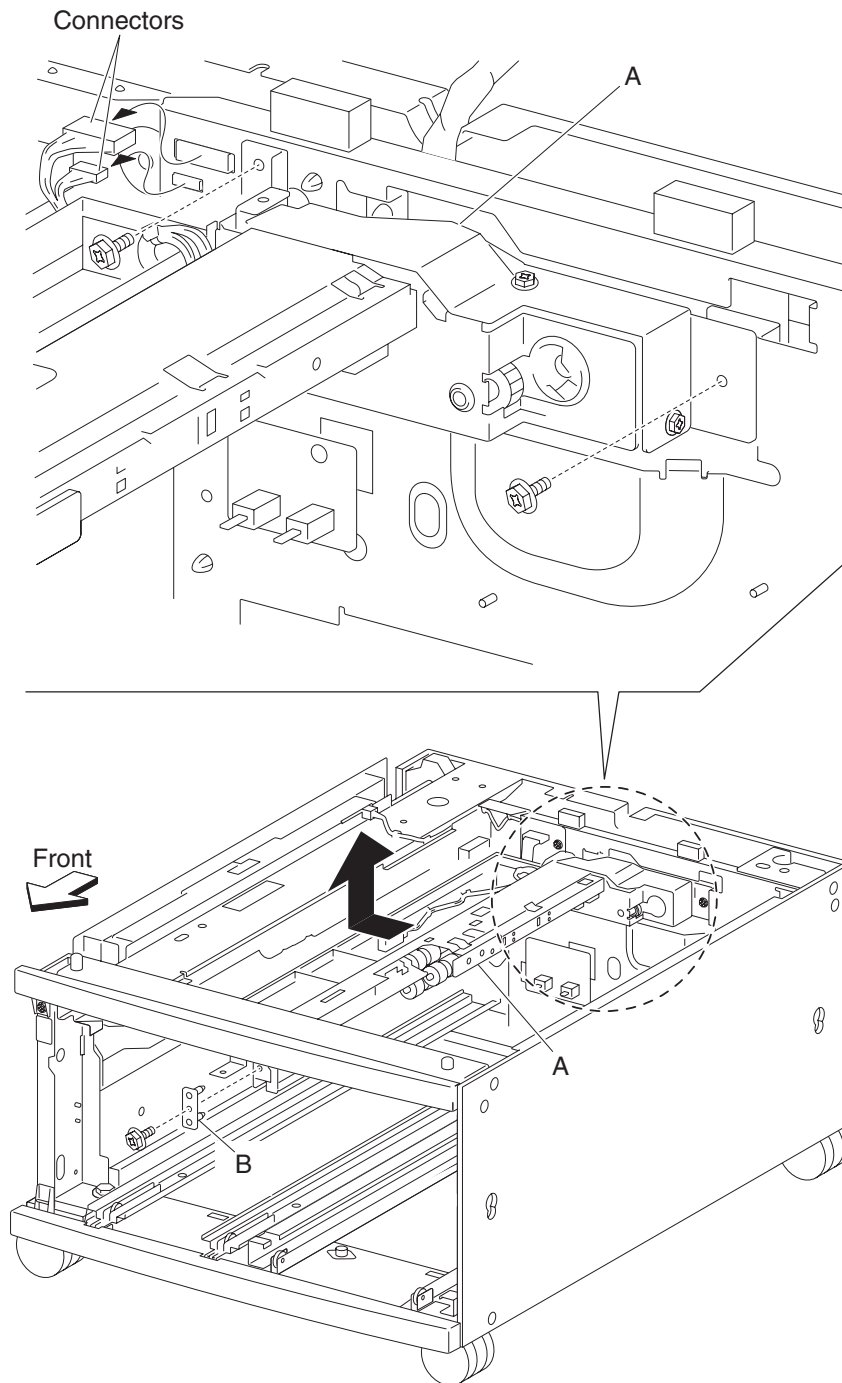
6. Remove one screw securing the front bracket (B).

7. Remove the front bracket (B).

8. Move the media feed unit assembly (A) leftward and upward in the direction of the arrow to remove it.

9. Remove the two screws securing the lower guide (C) to the media feed unit assembly (A).
10. Remove the lower guide (C).
11. Remove two screws securing the upper guide (D) to the media feed unit assembly (A).
12. Remove the upper guide (D).
13. Remove two screws securing the rear bracket (E) to the media feed unit assembly (A).
14. Remove the rear bracket (E).
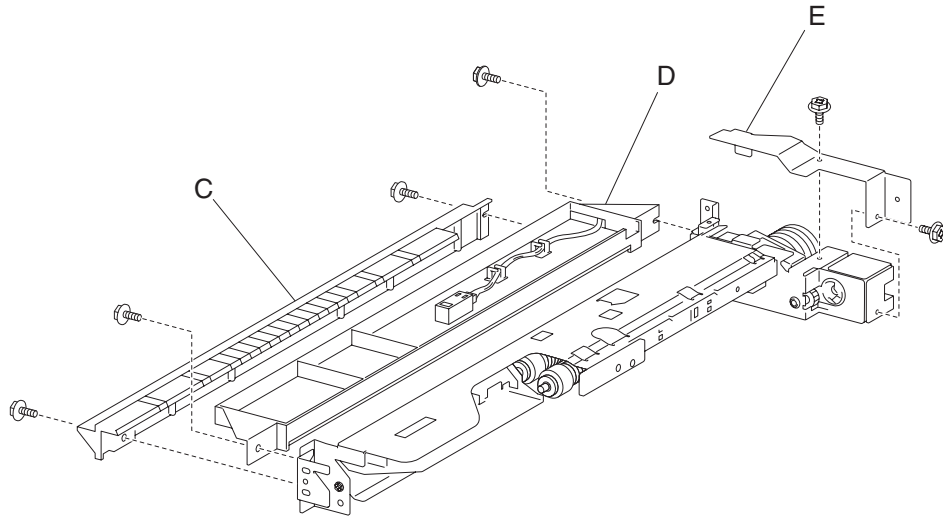
2000-sheet dual input (TTM)—sensor (tray 4 feed-out) removal

1. Remove the tray 3 assembly. See **"2000-sheet dual input (TTM)—tray 3 assembly removal" on page 4-56**.
2. Remove the tray 4 assembly. See **"2000-sheet dual input (TTM)—tray 4 assembly removal" on page 4-55**.
3. Disconnect the connector from the sensor (tray 4 feed-out) (A).
4. Release the hooks securing the sensor (tray 4 feed-out) (A) to the upper guide (B).
5. Remove the sensor (tray 4 feed-out) (A).
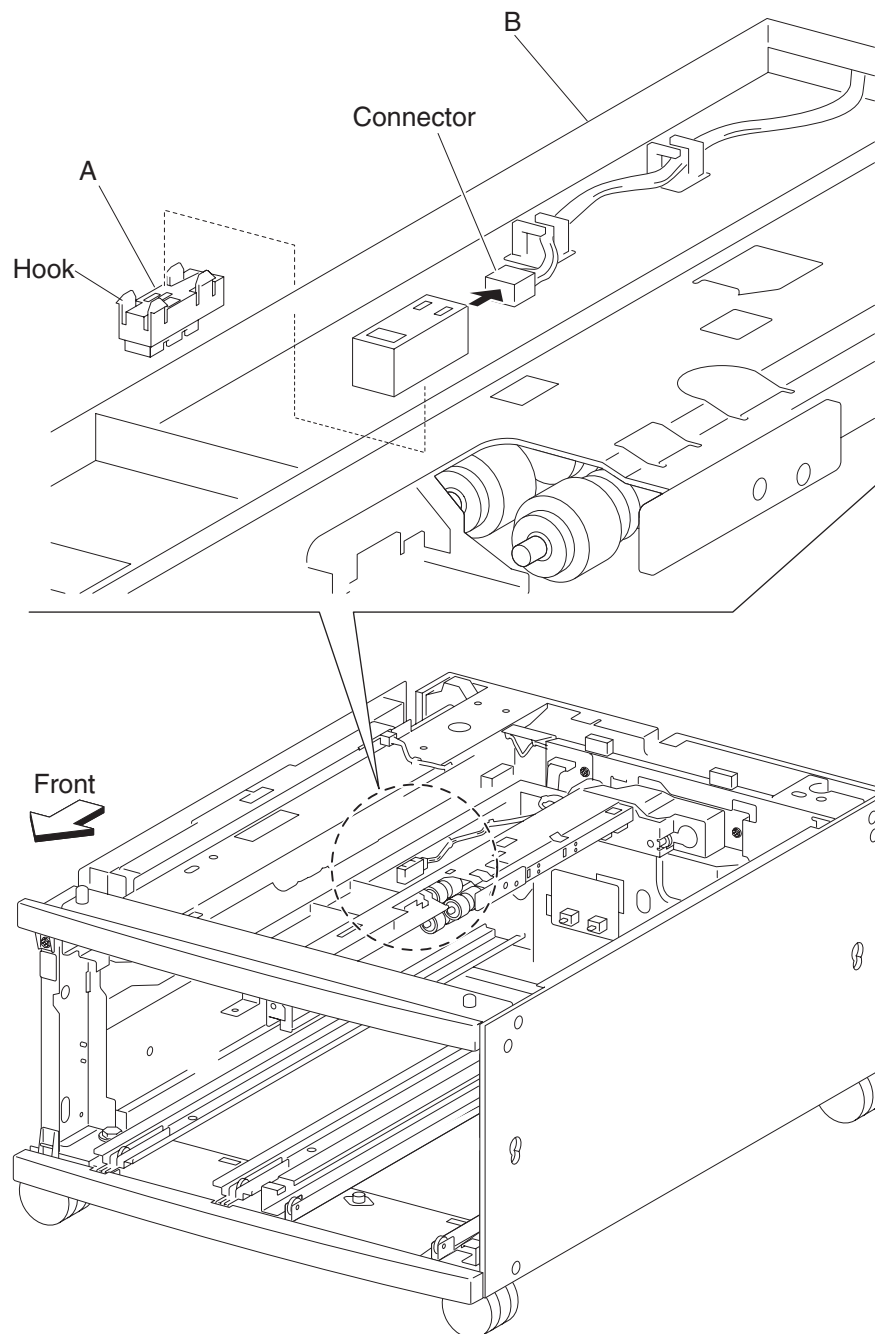
2000-sheet dual input (TTM)—switch (TTM media size) removal

Note: This removal procedure may be applied to tray 3 and tray 4.

1. Remove the tray 3 assembly **"2000-sheet dual input (TTM)—tray 3 assembly removal" on page 4-56** or tray 4 assembly **"2000-sheet dual input (TTM)—tray 4 assembly removal" on page 4-55**.
2. Disconnect the connector from the switch (TTM media size) (A).
3. Remove one screw securing the switch (TTM media size) (A).
4. Remove the switch (TTM media size) (A).
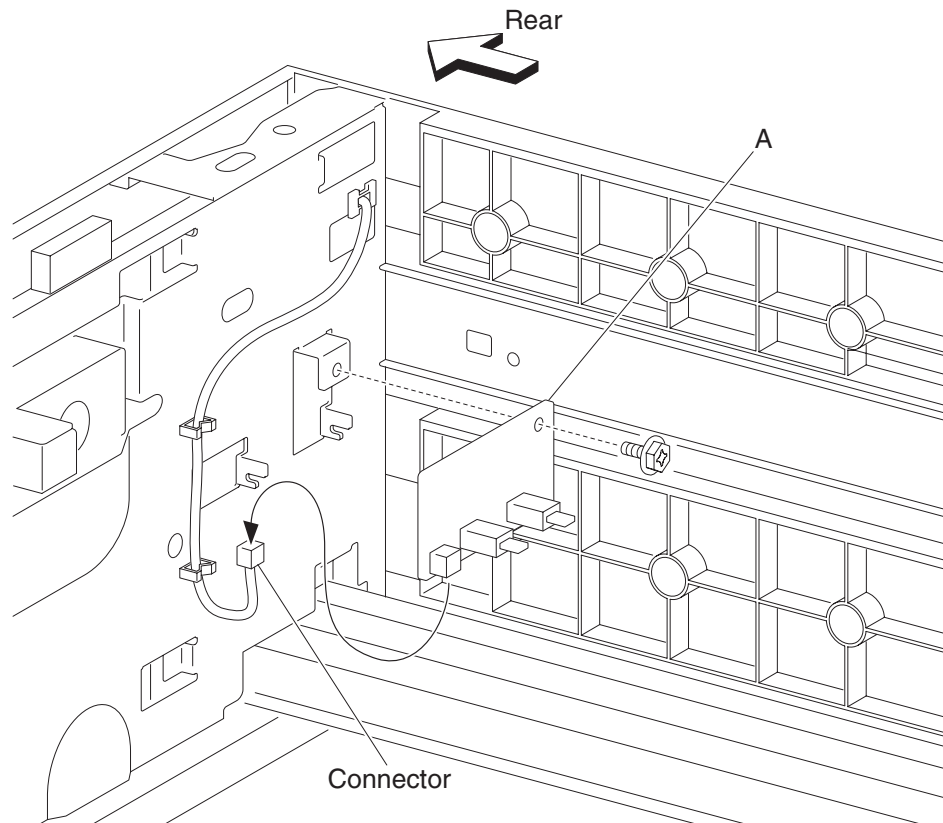
2000-sheet dual input (TTM)—media feed unit assembly removal (tray 3)

1. Pull out the tray 3 assembly.
2. Pull out the tray 4 assembly.
3. Open the 2TM/TTM left door assembly.
4. Remove one screw securing the 2TM/TTM left door support strap (A).
5. Release the bosses on both sides securing the vertical turn guide (B).
6. Remove the vertical turn guide (B).
7. Release the bosses on both sides securing the upper vertical turn guide (C).
8. Remove the upper vertical turn guide (C).
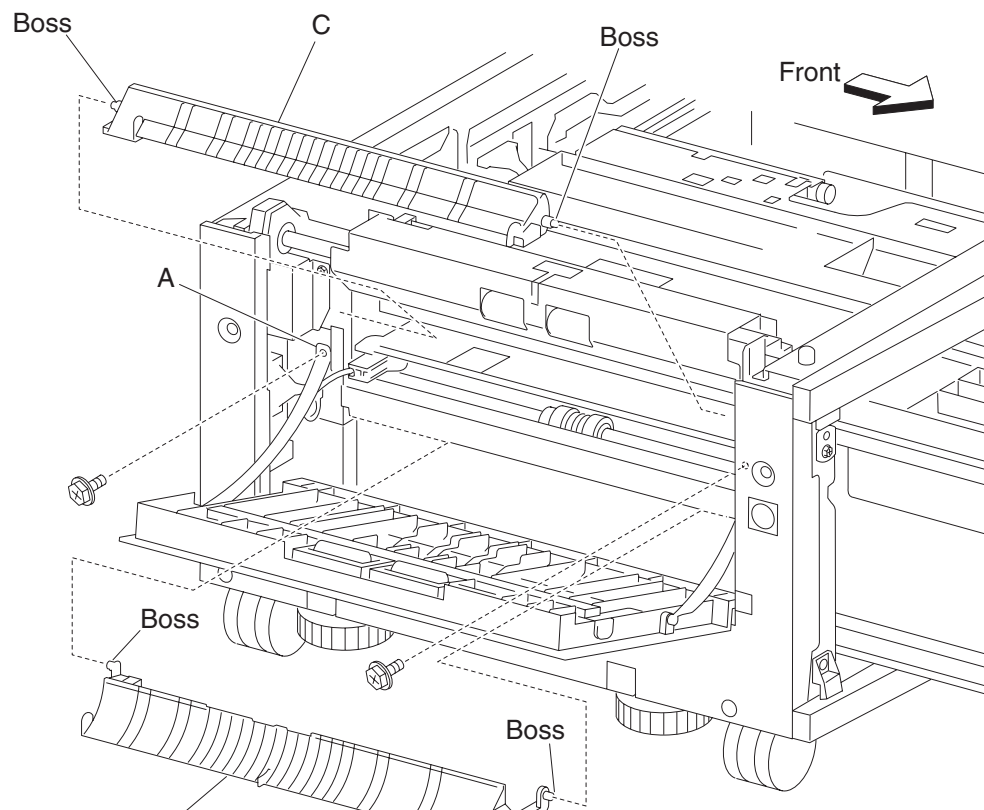
9. Release the harness from the clamp.

10. Disconnect the connector from the machine.

Front

Connector   Clamps
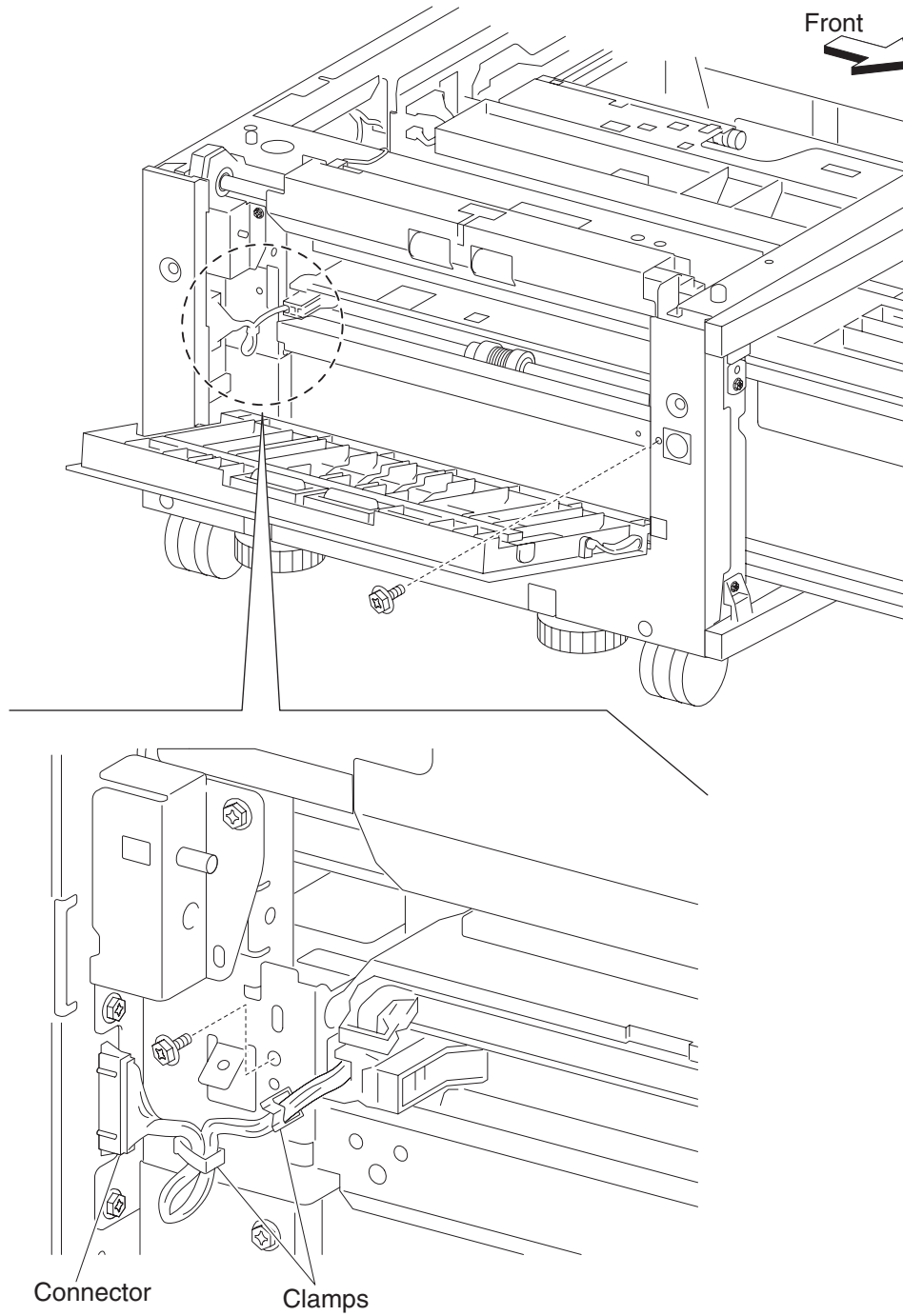
11. Remove three screws securing the media feed unit assembly (D).
12. Remove the media feed unit assembly (D) by pulling outward.
13. Remove two screws securing the rear bracket (E) to the media feed unit assembly (D).
14. Remove the rear bracket (E).
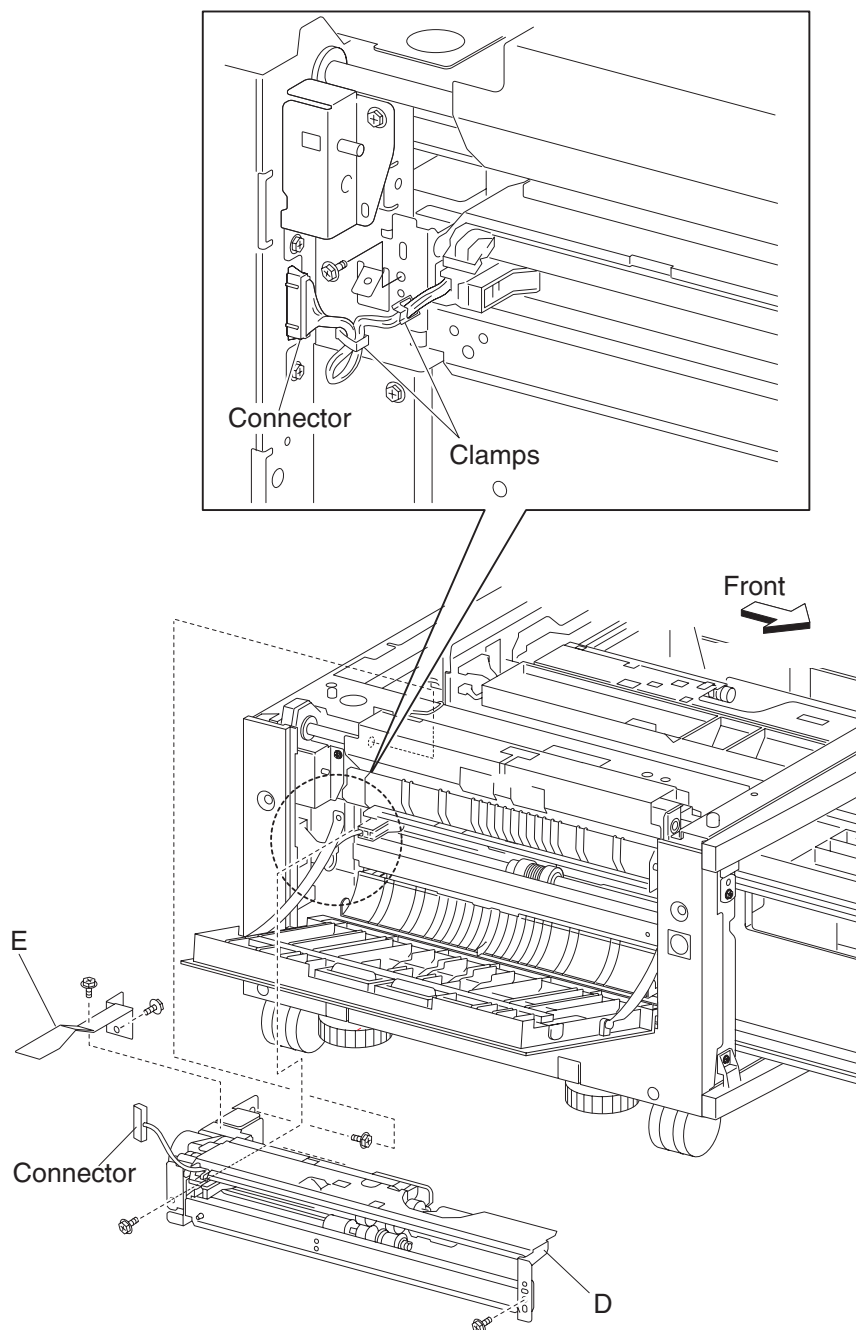
Connector

Clamps

Front

E

Connector

D

2000-sheet dual input (TTM)—media transport roll assembly removal

1. Open the left door assembly.
2. Remove two screws securing the bracket (A).
3. Disconnect the connector to the sensor (tray 3 feed-out) (B).
4. Remove the bracket (A).
5. Remove the large e-clip on the left securing the 2TM/TTM media transport roll assembly (C).
6. Slide the bushing (D) to the right.
7. Move the 2TM/TTM media transport roll assembly (C) leftward and outward in the direction of the arrow to remove.
8. Remove the 2TM/TTM media transport roll assembly (C).

Note: One of the bushings may become detached.

Note: When removing the 2TM/TTM media transport roll assembly (C), do not touch the rubber surface.
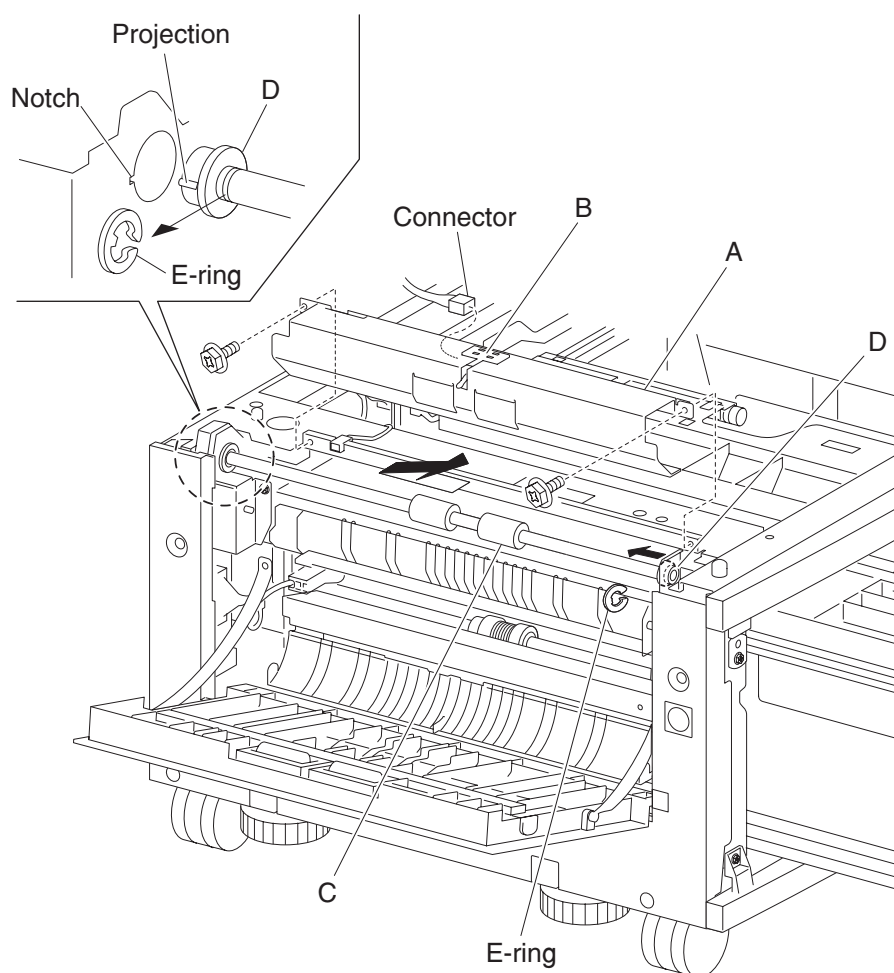
Note: Before re-installing the 2TM/TTM media transport roll assembly (C), do not touch the rubber surface.

2000-sheet dual input (TTM)—sensor (tray 3 feed-out) removal

1. Open the left door assembly.
2. Remove two screws securing the bracket (A).
3. Disconnect the connector to the sensor (tray 3 feed-out) (B).
4. Remove the bracket (A).
5. Release the hooks securing the sensor (tray 3 feed-out) (B) to the bracket (A)
6. Remove the sensor (tray 3 feed-out) (B).
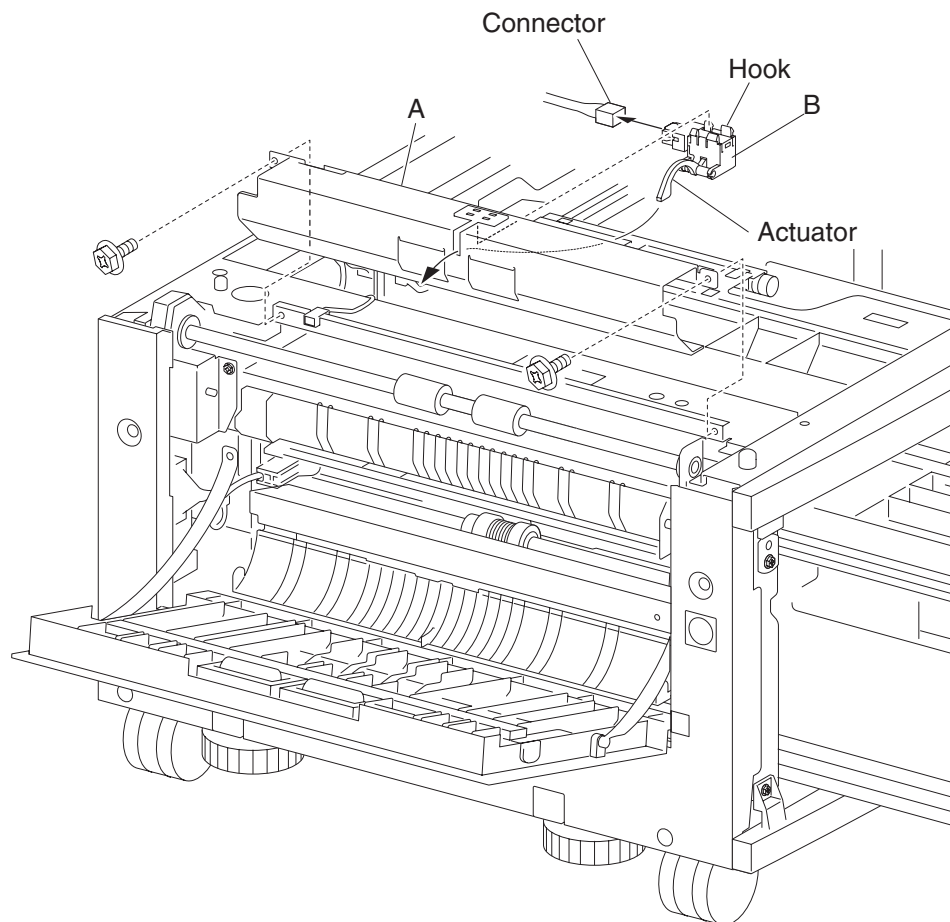
2000-sheet dual input (TTM)—media feed lift motor removal

1. Remove the media feed unit assembly. See **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 3)" on page 4-86** or **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 4)" on page 4-81**.

2. Disconnect the harness from the media feed lift motor (A).

3. Remove the two screws securing the media feed lift motor to the media feed unit assembly (B).

4. Remove the media feed lift motor (B).
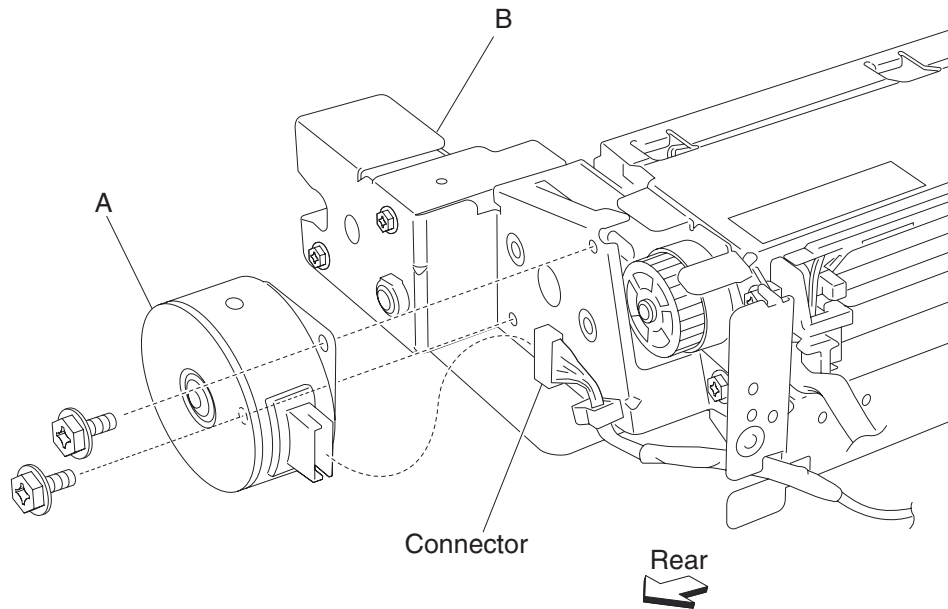
2000-sheet dual input (TTM)—lift coupling assembly removal

1. Remove the media feed unit assembly. See **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 3)" on page 4-86** or **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 4)" on page 4-81**.

2. Remove the harness from bracket (A).

3. Remove three screws securing bracket (A) to the media feed unit assembly.

4. Remove bracket (A).
   Note: The gears may become detached from bracket (A).

5. Remove the e-ring with a prying tool securing the tray lift coupling (B) to bracket (A).

6. Remove the tray lift coupling gear 31 tooth (C).

7. Remove the spring (D).

Note: Before re-installing, ensure all gears and washers attached to bracket (A) are securely installed.

2000-sheet dual input (TTM)—one-way clutch / gear assembly removal

1. Remove the media feed unit assembly. See **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 3)" on page 4-86** or **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 4)" on page 4-81**.

2. Remove the harness from the bracket (A).

3. Remove the three screws securing the bracket (A) to the media feed unit assembly.

4. Remove the bracket (A).

   Note: The gears may become detached from the bracket (A).

5. Remove the tray lift one-way clutch (B).

6. Remove the tray lift one-way gear 24 tooth (C).

Harness

Washer

C

A

Rear

Note: Before re-installing, ensure all gears and washers are securely attached to the bracket (A).

2000-sheet dual input (TTM)—media feed unit drive gear 13 tooth removal

1. Remove the media feed unit assembly. See **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 3)" on page 4-86** or **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 4)" on page 4-81**.

2. Remove the harness from the bracket (A).

3. Remove the three screws securing the bracket (A) to the media feed unit assembly.

4. Remove the bracket (A).

   Note: Gears may become detached from the bracket (A).

5. Remove the tray lift one-way clutch. See **"2000-sheet dual input (TTM)—feed roll one-way clutch removal" on page 4-103**.

6. Remove the tray lift one-way gear 24 tooth. See **"2000-sheet dual input (TTM)—one-way 22 tooth removal" on page 4-104**.

7. Remove the media feed unit drive gear - 13 tooth (B).
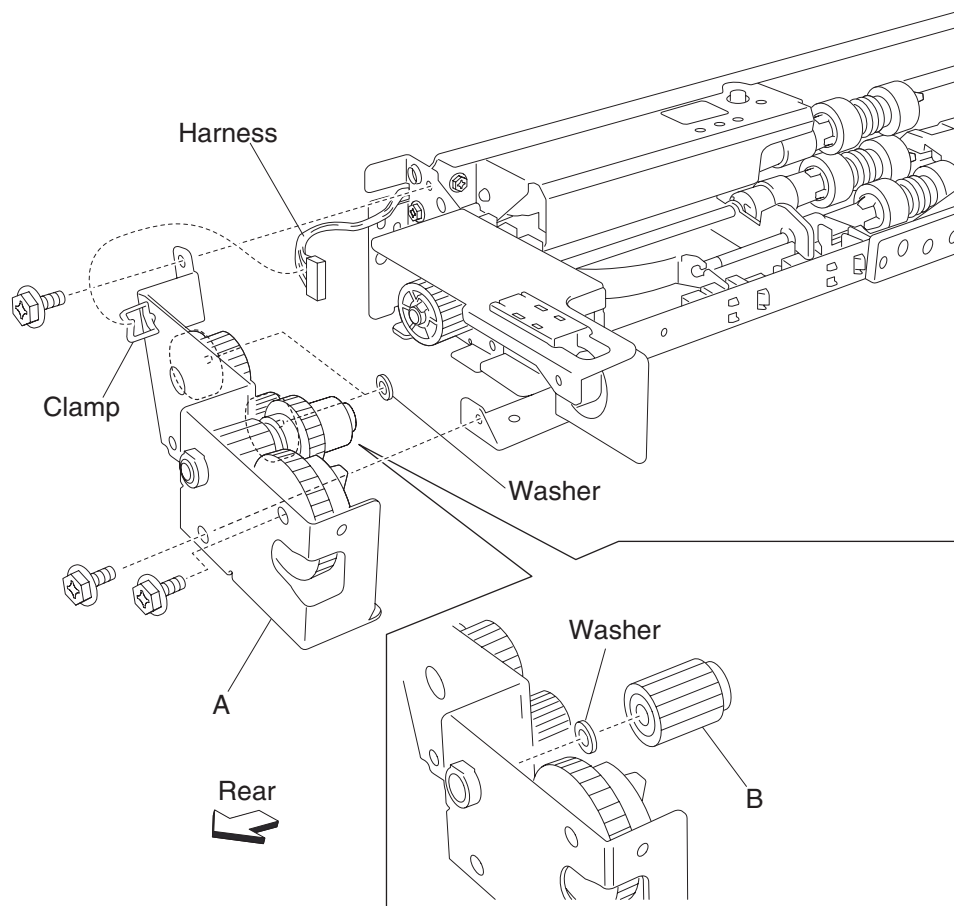
Note: Before re-installing, ensure all gears and washers are securely attached to the bracket (A).

2000-sheet dual input (TTM)—media out actuator removal

1. Remove the media feed unit assembly. See **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 3)" on page 4-86** or **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 4)" on page 4-81**.

2. Remove the two bosses on the media out actuator (A) from the media feed unit assembly.
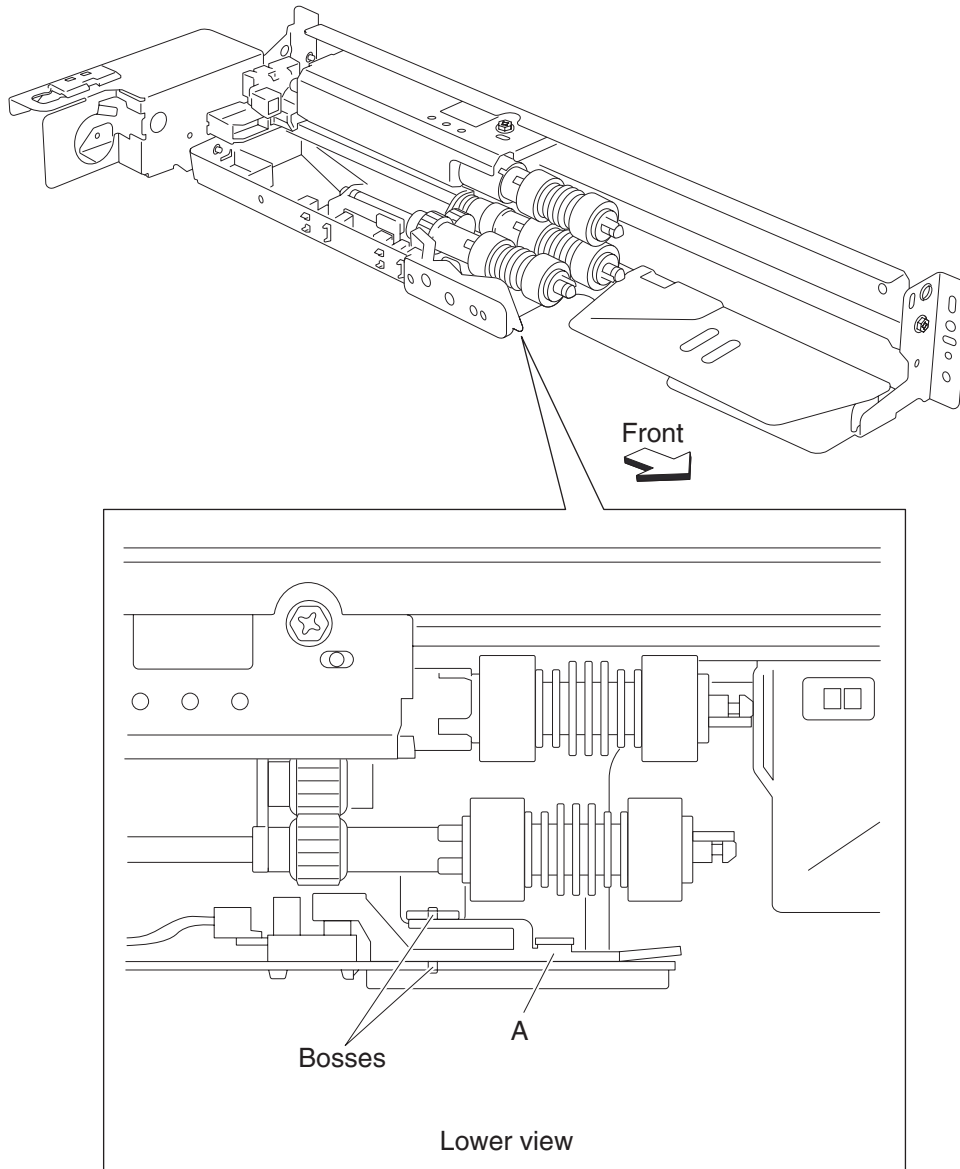
3. Remove the media out actuator (A).

Front

A

Bosses

Lower view

2000-sheet dual input (TTM)—sensor (media level) removal

1. Remove the media feed unit assembly. See **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 3)" on page 4-86** or **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 4)" on page 4-81**.

2. Disconnect the connector from the sensor (media level) (A).

3. Release the hooks securing the sensor (media level) (A) to the media feed unit assembly.

4. Remove the sensor (media level) (A).

2000-sheet dual input (TTM)—sensor (media out) removal

1. Remove the media feed unit assembly. See **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 3)" on page 4-86** or **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 4)" on page 4-81**.

2. Remove the media out actuator. See **"2000-sheet dual input (TTM)—media out actuator removal" on page 4-96**.

3. Disconnect the connector from the sensor (media out) (A).

4. Release the hooks securing the sensor (media out) (A) to the media feed unit assembly.

5. Remove the sensor (media out) (A).

Front

Harness   A

Hook

Hooks

Lower view
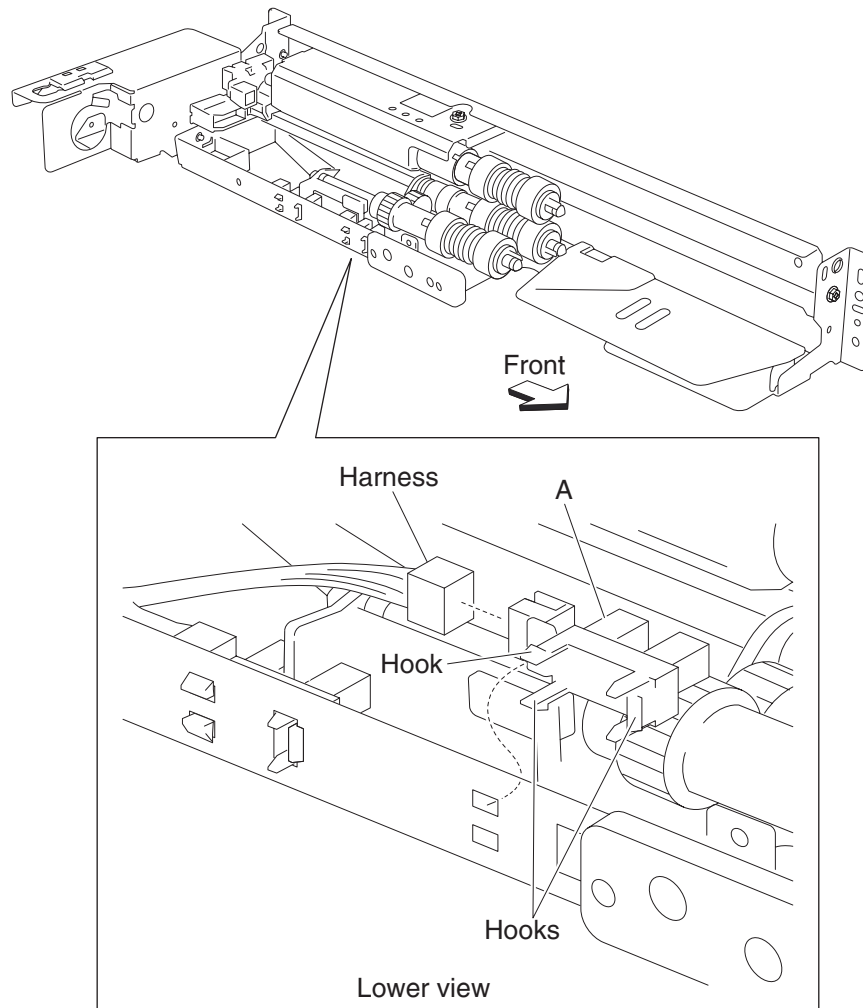
2000-sheet dual input (TTM)—sensor (pre-feed) removal

1. Remove the media feed unit assembly. See **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 3)" on page 4-86** or **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 4)" on page 4-81**.

2. Remove the sensor (pre-feed) (A) from the feed unit front guide (B).

3. Disconnect the connector from the sensor (pre-feed) (A).

2000-sheet dual input (TTM)—media feed unit drive gear 28 / 21 tooth removal

1. Remove the media feed unit assembly. See **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 3)" on page 4-86** or **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 4)" on page 4-81**.

2. Remove the harness from the bracket (A).

3. Remove the three screws securing the bracket (A) to the media feed unit assembly.

4. Remove the bracket (A).
   Note: The gears may become detached from the bracket (A).

5. Remove the feed unit drive gear - 28 tooth / 21 tooth (B).

Note: Before re-installing, ensure all gears and washers are securely attached to the bracket (A).

2000-sheet dual input (TTM)—media feed unit drive gear 29 tooth removal

1. Remove the media feed unit assembly. See **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 3)" on page 4-86** or **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 4)" on page 4-81**.

2. Remove the harness from the bracket (A).

3. Remove the three screws securing the bracket (A) to the media feed unit assembly.

4. Remove the bracket (A).

   Note: The gears may become detached from the bracket (A).

5. Remove the feed unit drive gear - 28 tooth / 21 tooth (B).

Note: Before re-installing, ensure all gears and washers are securely attached to the bracket (A).

2000-sheet dual input (TTM)—feed roll removal

1. Remove the media tray assembly.
2. Move the feed unit front guide (A) in the direction of the arrow.
3. Release the hook securing the feed roll (B) to the shaft (C).
4. Remove the feed roll (B).
   Note: Do not touch the rubber surface of the feed roll (B).

Note: Before re-installing, do not touch the rubber surface of the feed roll (B).

2000-sheet dual input (TTM)—feed roll one-way clutch removal

1. Remove the media tray assembly.
2. Remove the feed roll. See **"2000-sheet dual input (TTM)—feed roll removal" on page 4-102**.
3. Remove the feed roll one-way clutch (A) from the shaft (B).

Front
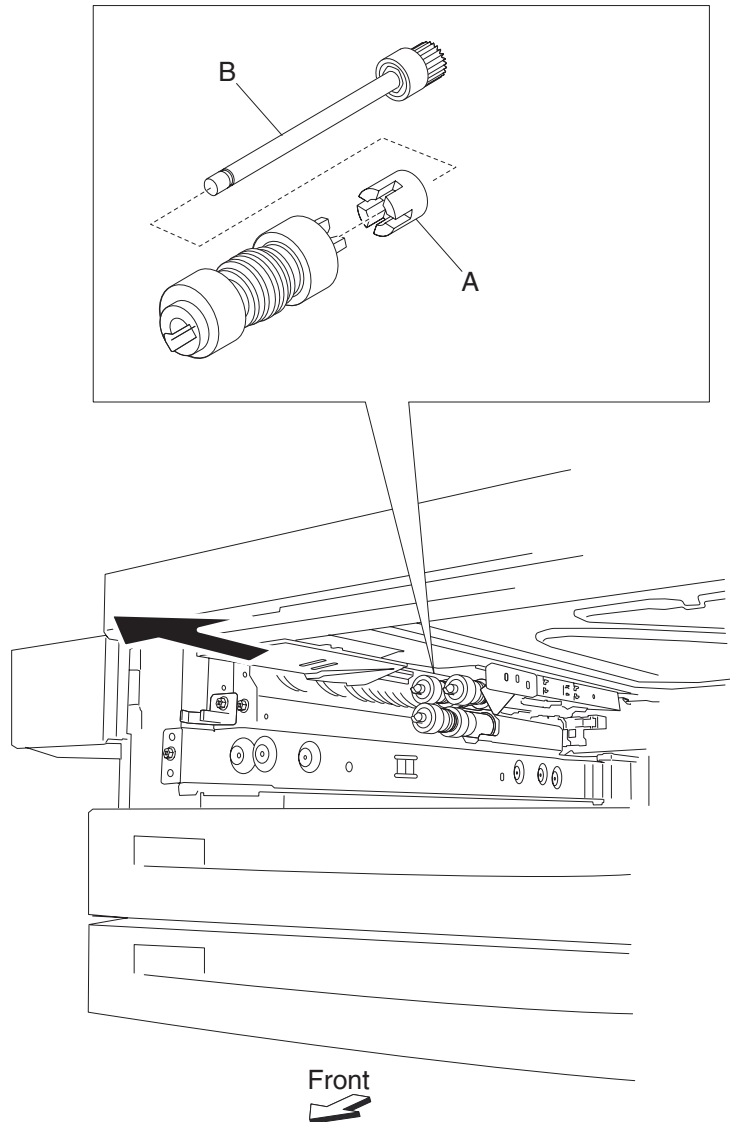
2000-sheet dual input (TTM)—one-way 22 tooth removal

1. Remove the media tray assembly.
2. Remove the feed roll. See **"2000-sheet dual input (TTM)—feed roll removal" on page 4-102**.
3. Remove the feed roll one-way clutch. See **"2000-sheet dual input (TTM)—feed roll one-way clutch removal" on page 4-103**.
4. Remove the feed roll one-way gear 22 tooth (A).
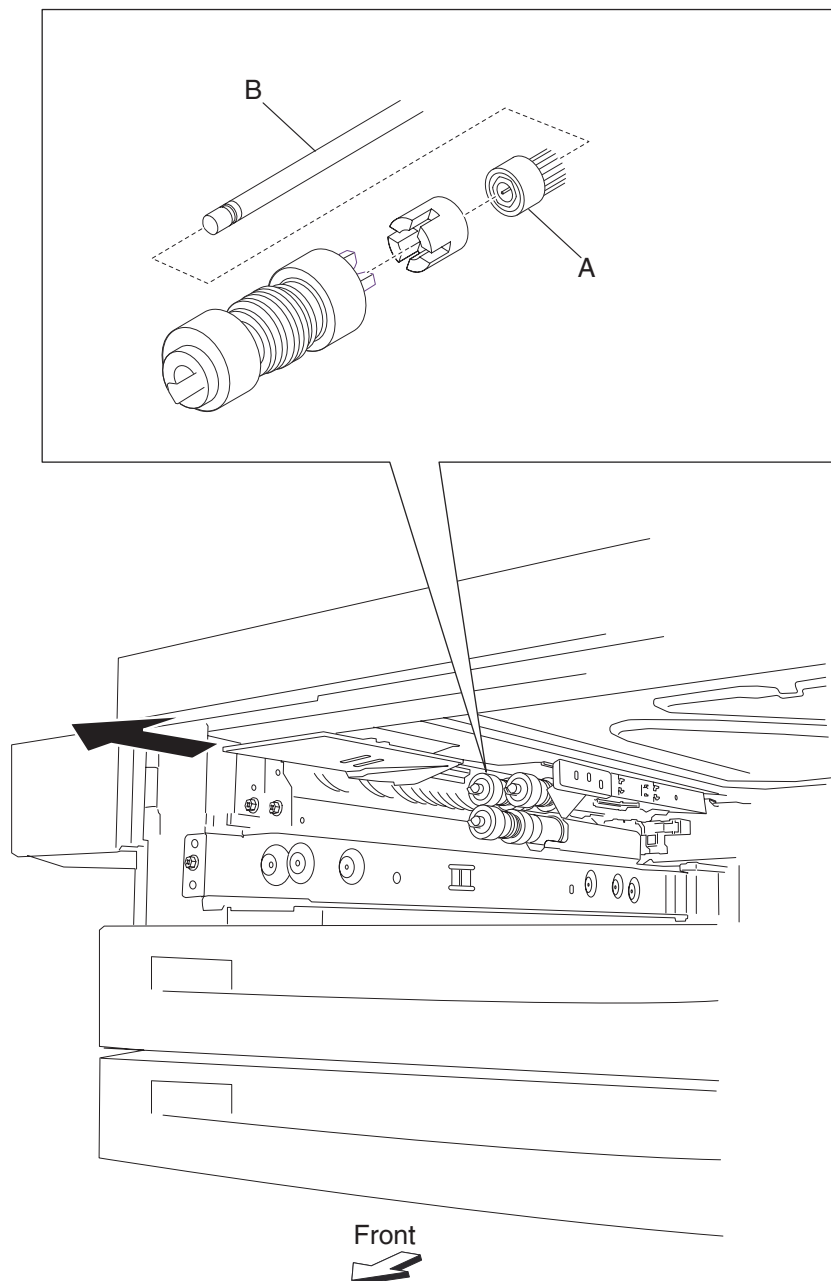
2000-sheet dual input (TTM)—separation roll one-way friction clutch removal

1. Remove the media tray assembly.
2. Remove the separation roll. See **"2000-sheet dual input (TTM)—separation roll removal" on page 4-106**.
3. Remove the separation roll spacer (A).
4. Remove the separation roll one-way friction clutch (B).
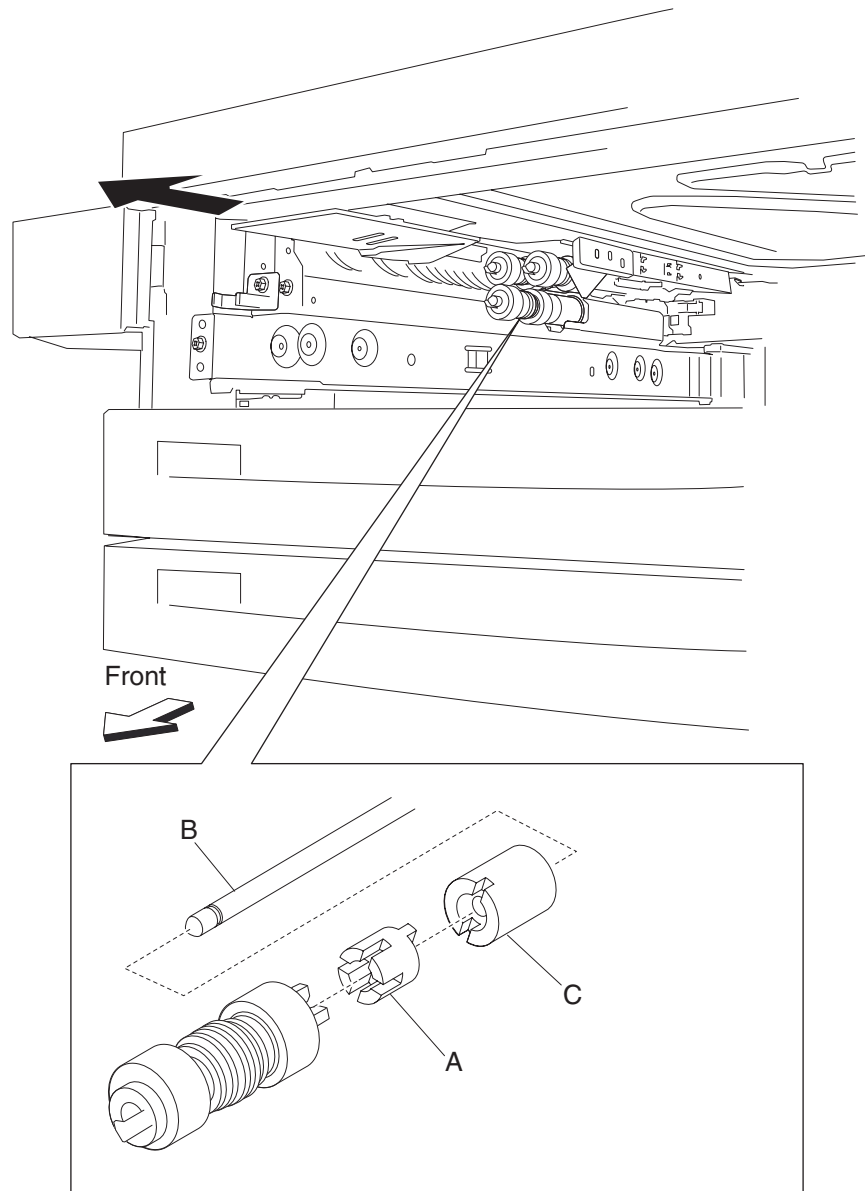
2000-sheet dual input (TTM)—separation roll removal

1. Remove the media tray assembly.
2. Move the feed unit front guide (A) in the direction of the arrow.
3. Release the hook securing the separation roll (B) to the shaft (C).
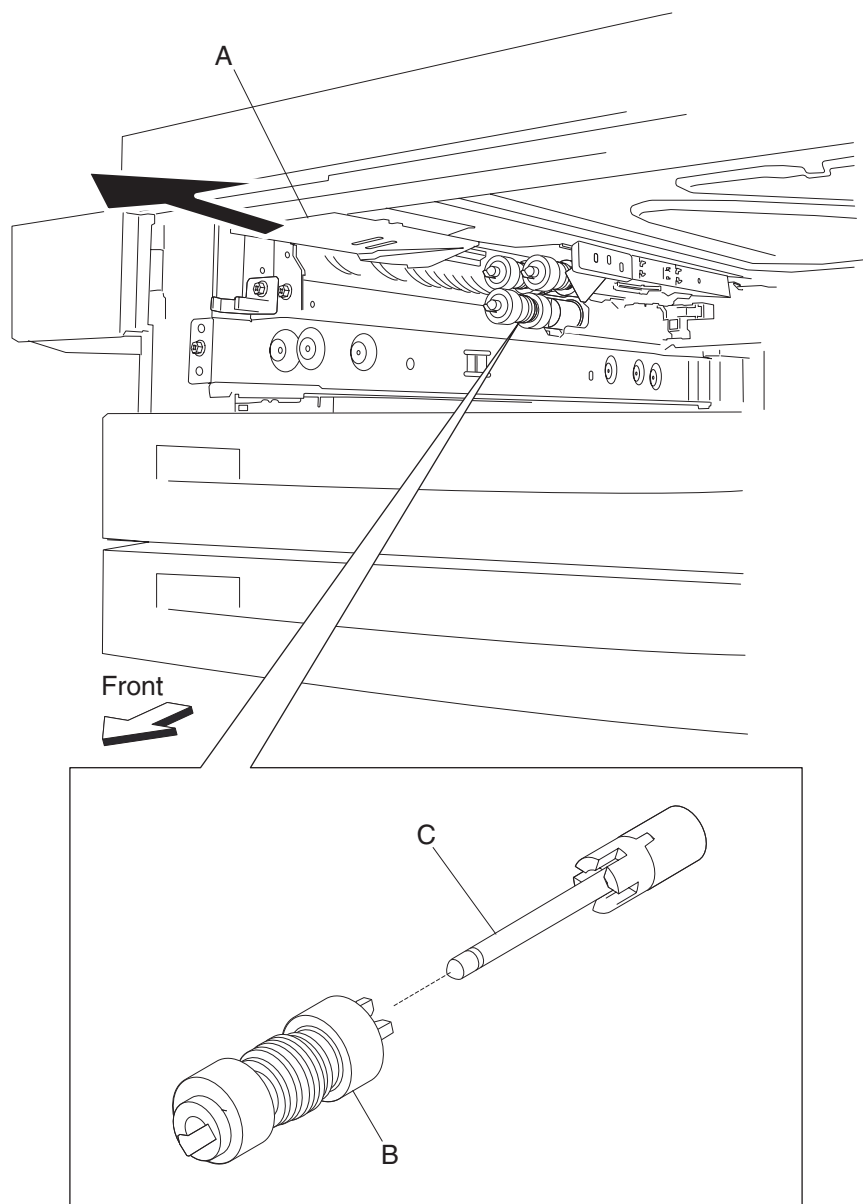
4. Remove the separation roll (B).

    Note: Do not touch the rubber surface of the feed roll (B).
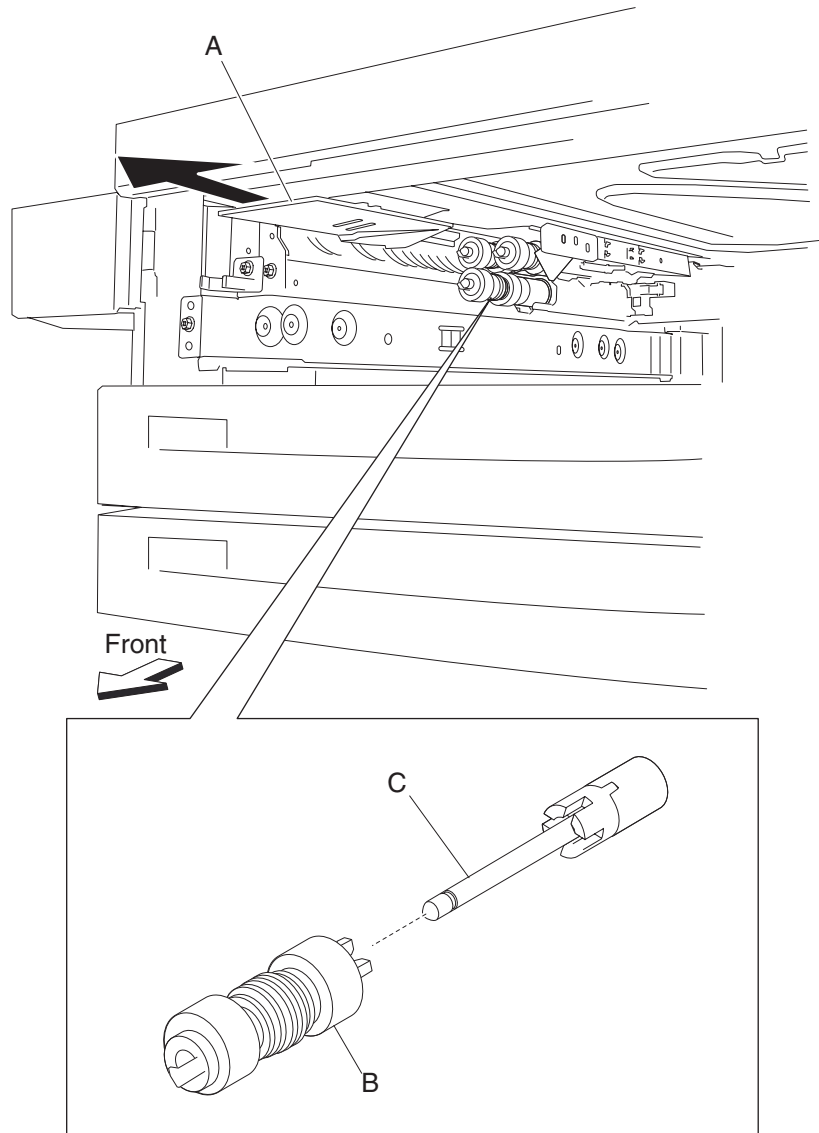
Note: Before re-installing, do not touch the rubber surface of the separation roll (B).

2000-sheet dual input (TTM)—pick roll idler gear 33 tooth removal

1. Remove the media tray assembly.
2. Remove the pick roll. See **"2000-sheet dual input (TTM)—pick roll removal" on page 4-109**.
3. Remove the pick roll drive gear 25 tooth. See **"2000-sheet dual input (TTM)—pick roll drive gear 25 tooth removal" on page 4-110**.
4. Remove the pick roll idler gear 33 tooth (A).
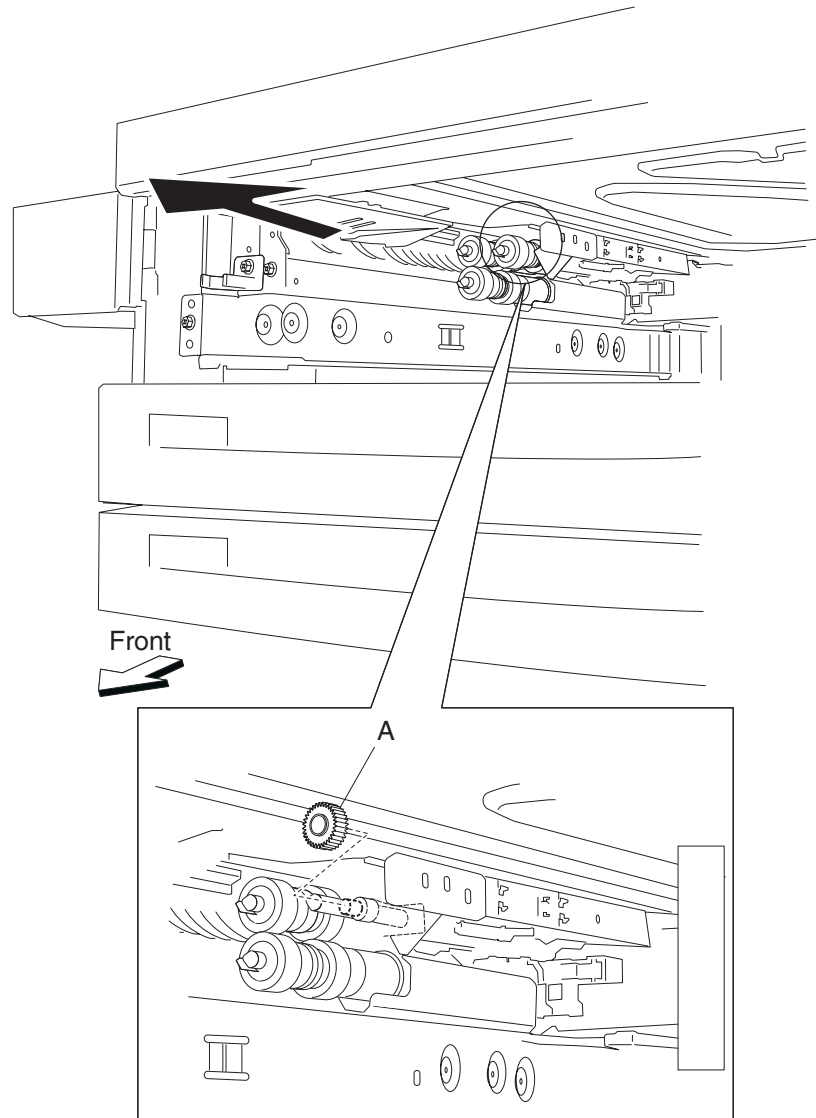
Front

A

2000-sheet dual input (TTM)—pick roll removal

1. Remove the media tray assembly.
2. Move the front guide (A) in the direction of the arrow.
3. Release the hook securing the pick roll (B) to the shaft (C).
4. Remove the pick roll (B).
   Note: Do not touch the rubber surface of the feed roll (B).
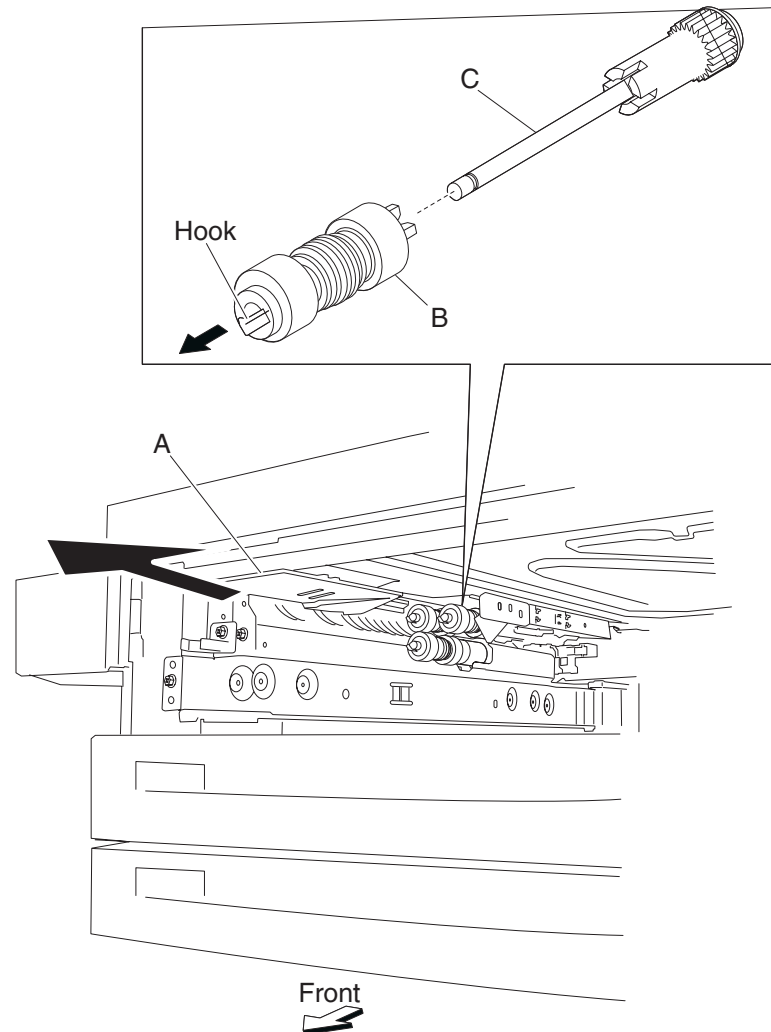
Note: Before re-installing, do not touch the rubber surface of the pick roll (B).

2000-sheet dual input (TTM)—pick roll drive gear 25 tooth removal

1. Remove the media tray assembly.
2. Remove the pick roll. See **"2000-sheet dual input (TTM)—pick roll removal" on page 4-109**.
3. Remove the pick roll drive gear 25 tooth (A).

Front
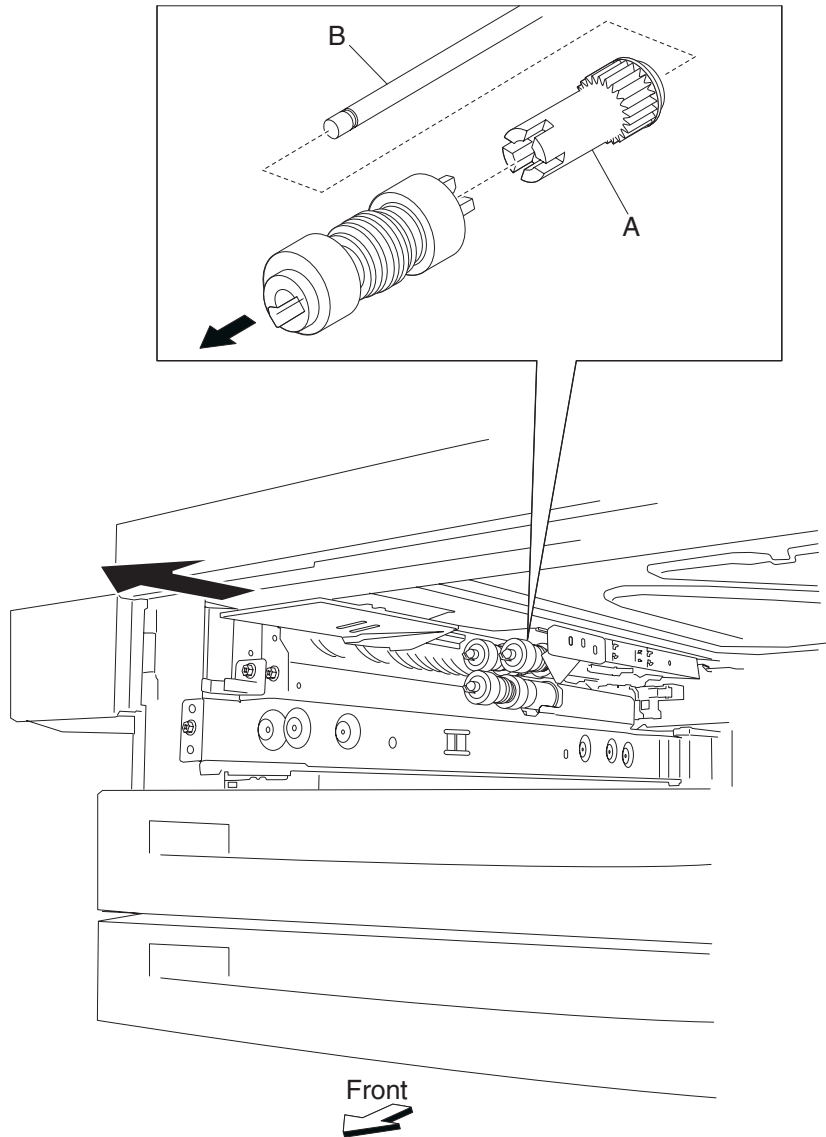
2000-sheet dual input (TTM)—feed unit drive gear 27 tooth removal

1. Remove the media feed unit assembly. See **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 3)" on page 4-86** or **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 4)" on page 4-81**.

2. Remove the harness from the bracket (A).

3. Remove the three screws securing the bracket (A) to the media feed unit assembly.

4. Remove the bracket (A).
   Note: The gears may become detached from the bracket (A).

5. Remove the hook securing the feed unit drive gear - 27 tooth (B) to the shaft (C).

6. Remove the feed unit drive gear - 27 tooth (B).

Note: Before re-installing, ensure all gears and washers are securely attached to the bracket (A).

2000-sheet dual input (TTM)—2TM/TTM left door assembly removal

1. Open the 2TM/TMM left door assembly.
2. Remove one screw securing the 2TM/TTM left door support strap (A).
3. Remove one screw securing the bracket (B).
4. Remove the bracket (B).
5. Move the 2TM/TTM left door assembly (C) toward the right and outward in the direction of the arrow.
6. Remove the 2TM/TTM left door assembly (C).
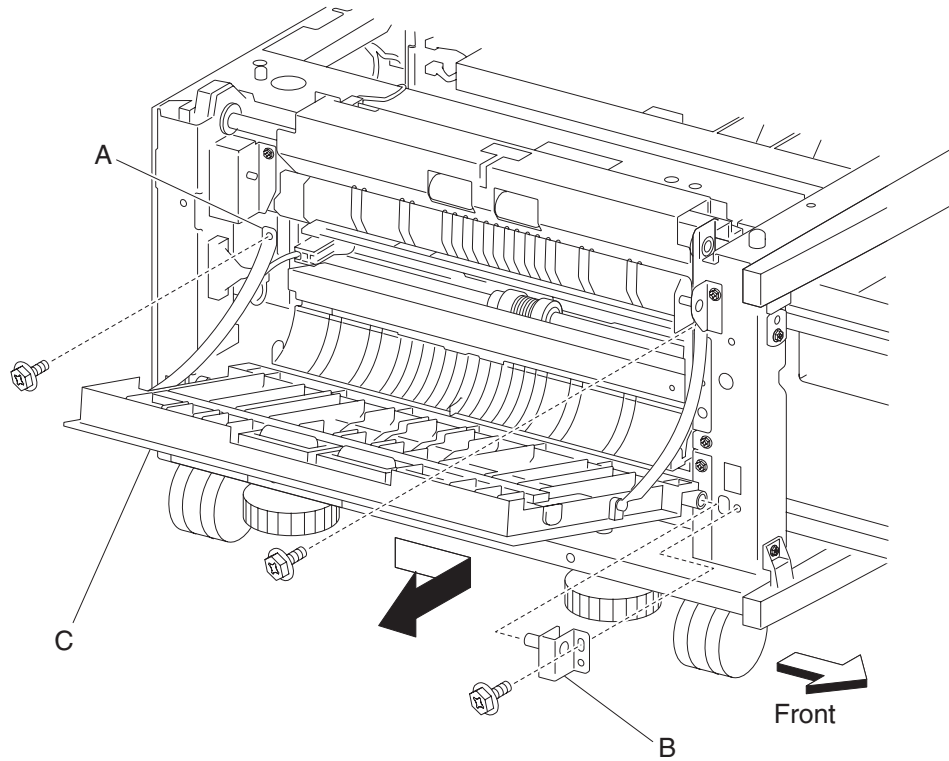
2000-sheet dual input (TTM)—switch (2TM/TTM left door interlock) removal

1. Open the left door assembly.
2. Remove the screw securing the bracket (A).
3. Remove the bracket (A).
4. Disconnect the connector from the switch (2TM/TTM left door interlock) (B).
5. Release the hooks securing the switch (2TM/TTM left door interlock) (B) to the bracket (A).
6. Remove the switch (2TM/TTM left door interlock) (B).
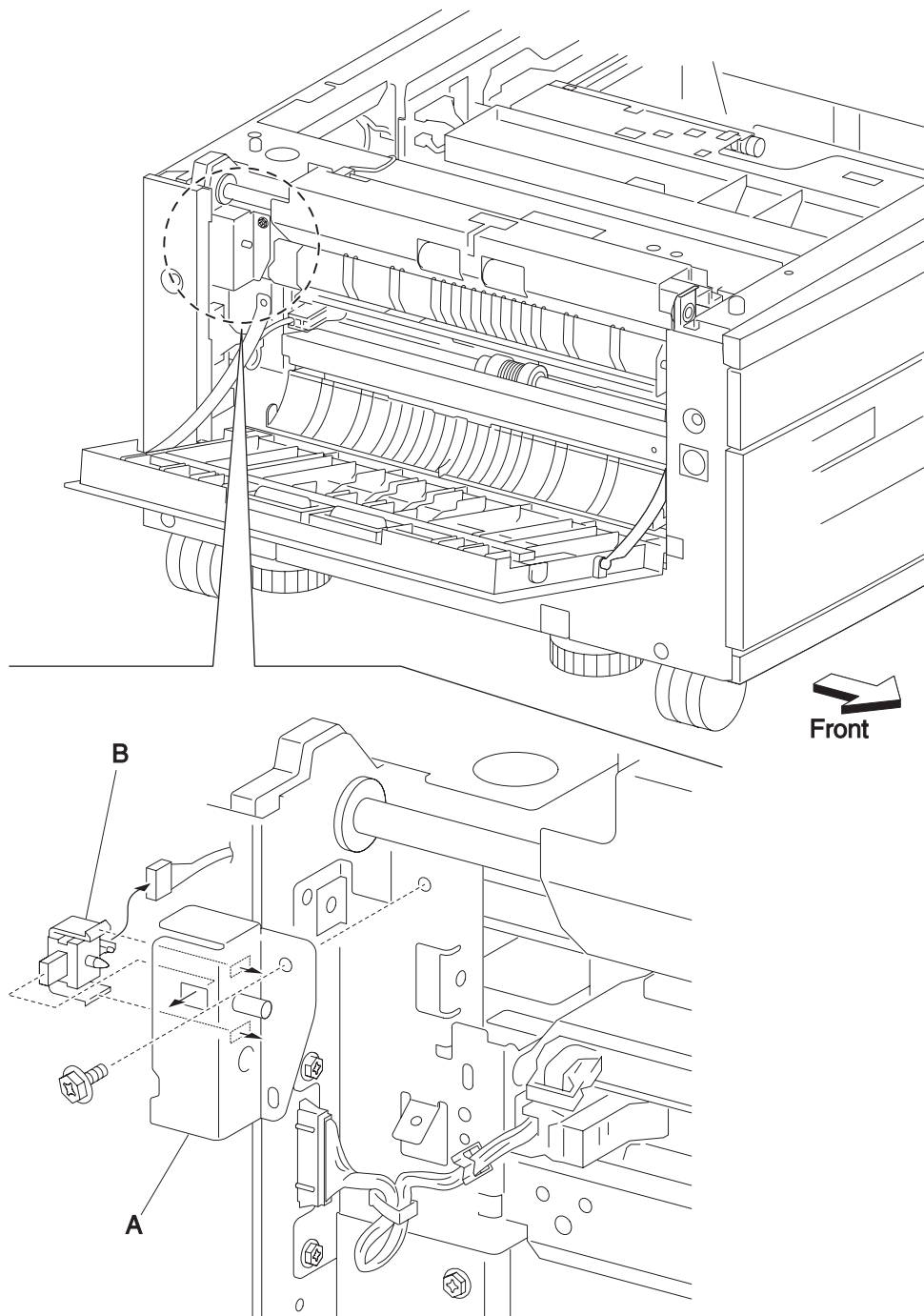
2000-sheet dual input (TTM)—tray 3 lift gear assembly removal

1. Remove the rear cover. See **"2000-sheet dual input (TTM)—rear cover removal" on page 4-51**.
2. Remove the media feed unit 3 assembly. See **"2000-sheet dual input (TTM)—media feed unit assembly removal (tray 3)" on page 4-86**.
3. Release the harness from the clamp of the tray 3 lift gear assembly (A).
4. Remove two screws securing the tray 3 lift gear assembly (A).
5. Remove the tray 3 lift gear assembly (A).
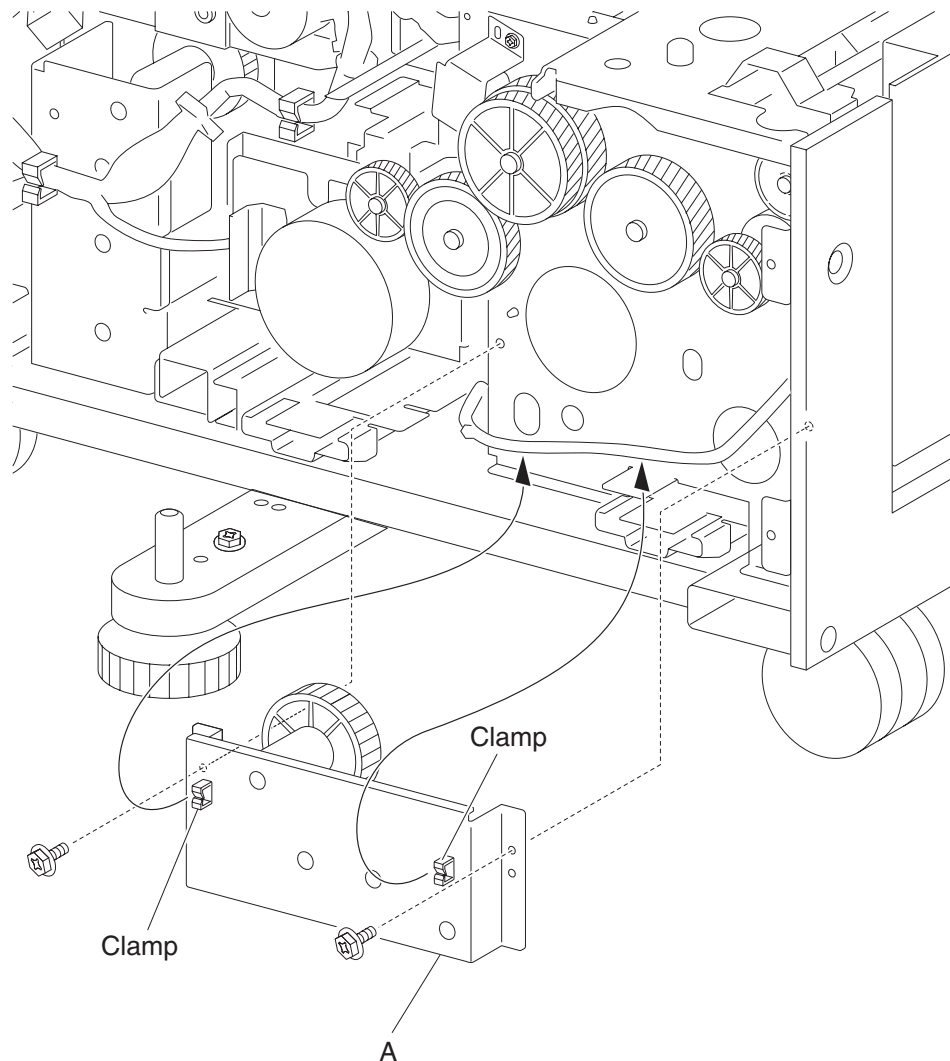
Clamp

Clamp

A

2000-sheet dual input (TTM)—tray 4 lift gear assembly removal

1. Remove the rear cover. See **"2000-sheet dual input (TTM)—rear cover removal" on page 4-51**.
2. Remove the controller card assembly. See **"2000-sheet dual input (TTM)—2TM/TTM controller card assembly removal" on page 4-117**.
3. Release the two harnesses from the clamp of the tray 4 lift gear assembly (A).
4. Remove two screws securing the tray 4 lift gear assembly (A).
5. Remove the tray 4 lift gear assembly (A).
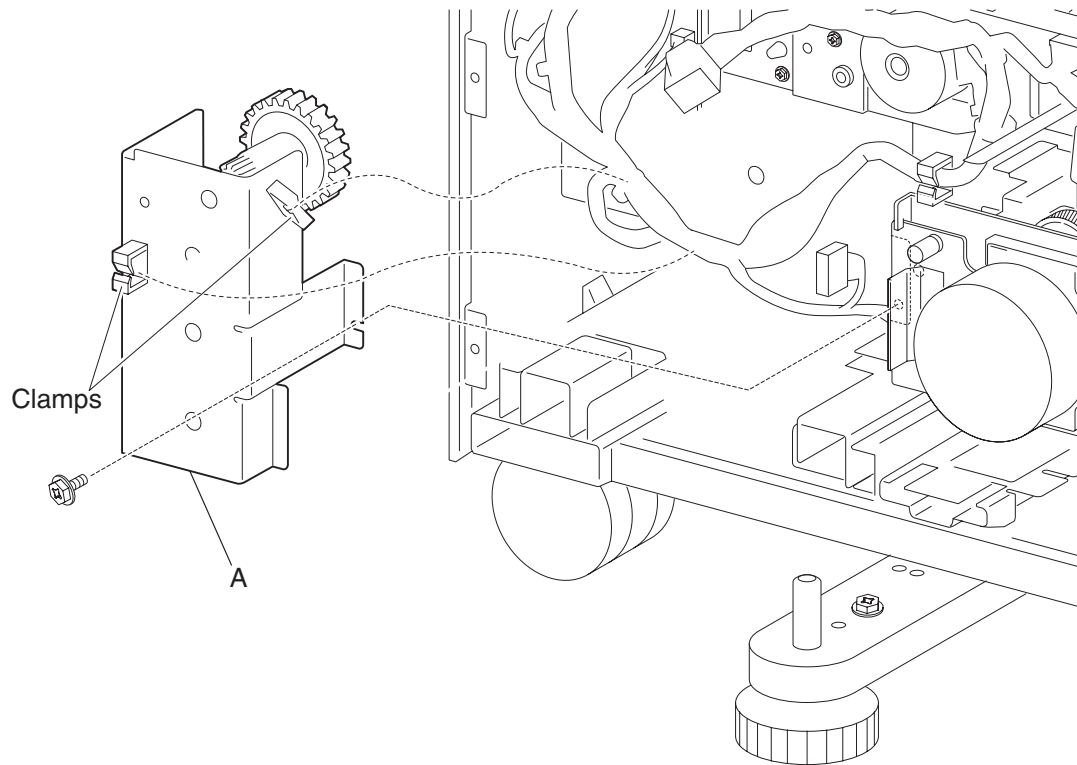
2000-sheet dual input (TTM)—drive motor assembly removal

1. Remove the rear cover. See **"2000-sheet dual input (TTM)—rear cover removal" on page 4-51**.
2. Disconnect the connector from the 2TM/TTM drive motor (A).
3. Remove two screws securing the 2TM/TTM drive motor (A).
4. Remove the 2TM/TTM drive motor (A).
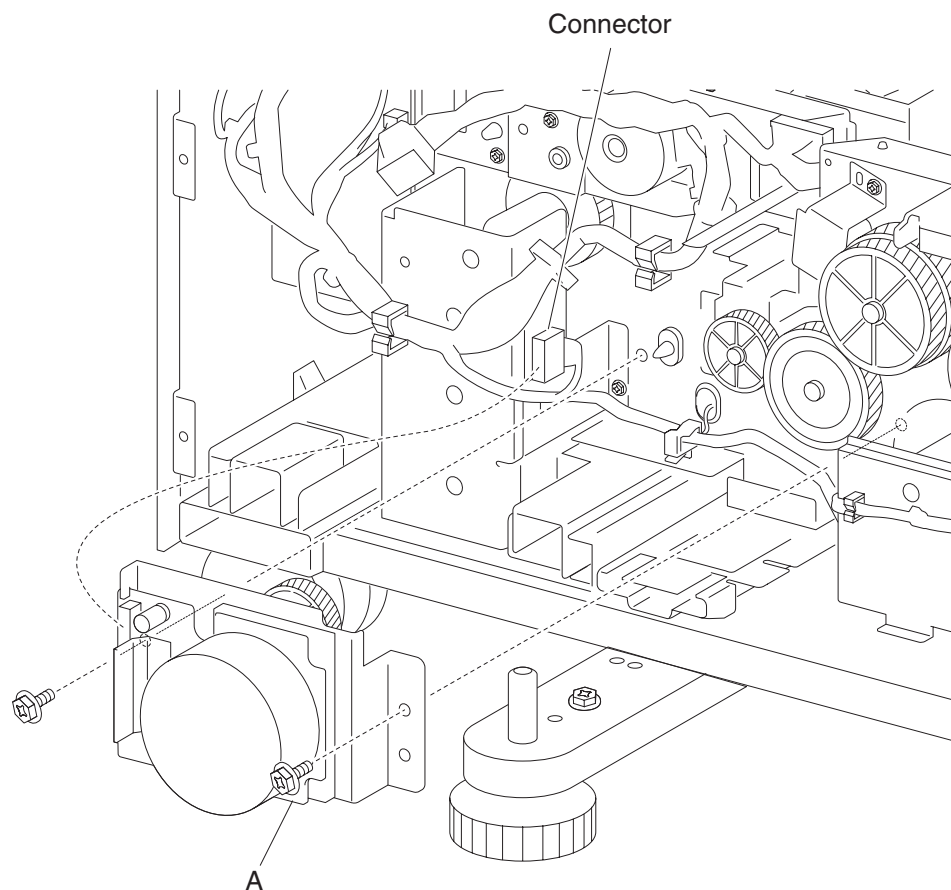
Connector

A

2000-sheet dual input (TTM)—2TM/TTM controller card assembly removal

1. Remove the rear cover. See **"2000-sheet dual input (TTM)—rear cover removal" on page 4-51**.

2. Disconnect all the connectors from the 2TM/TTM controller card assembly (A).

Connector

Connectors

DIP switch

Connectors

A
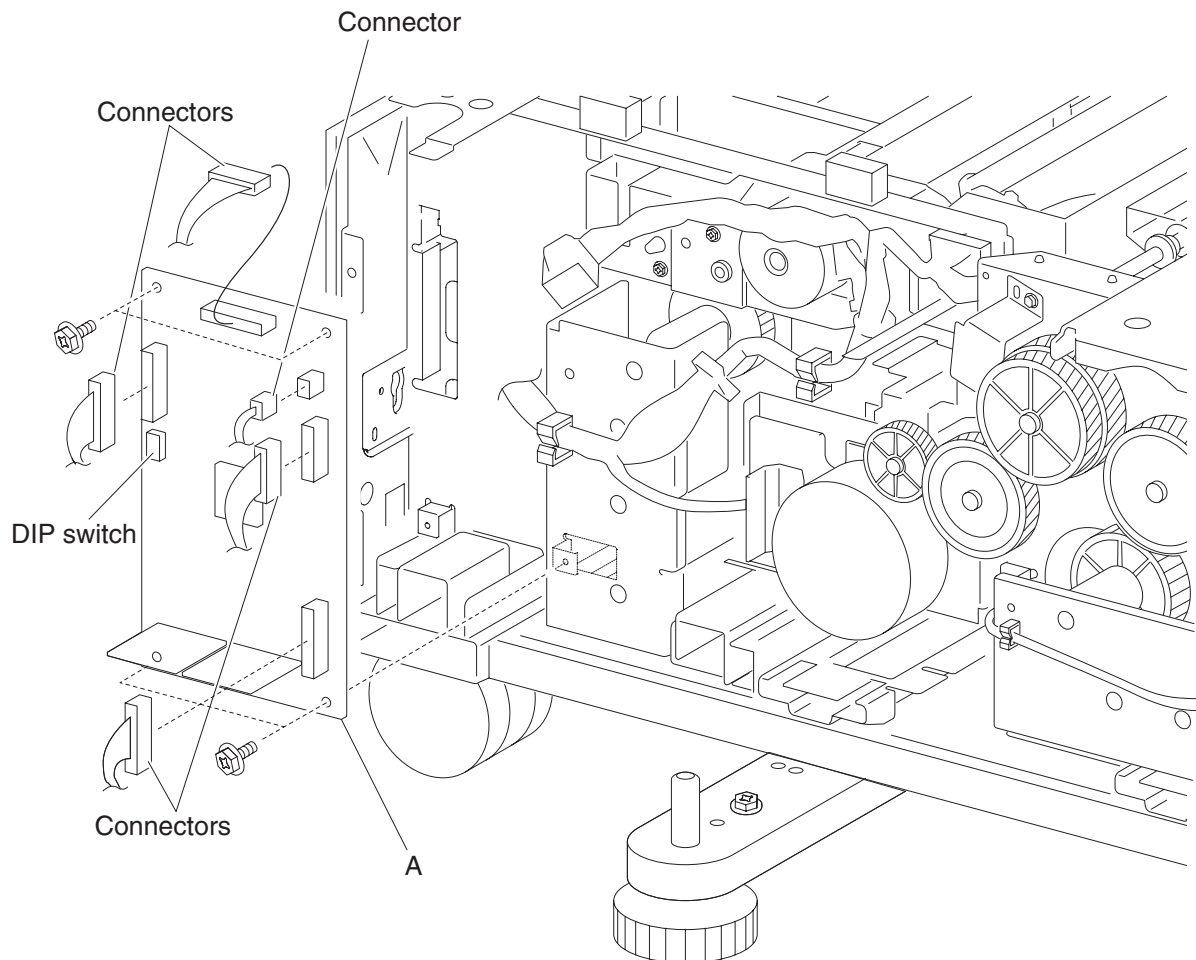
3. Remove four screws securing the 2 tray/tandem controller card assembly (A).

4. Remove the controller card assembly (A).

P541

P554

P548

P552

DIP
switch

DIP switch settings, TTM

On

1 2 3 4

P649

Tray Module PWB
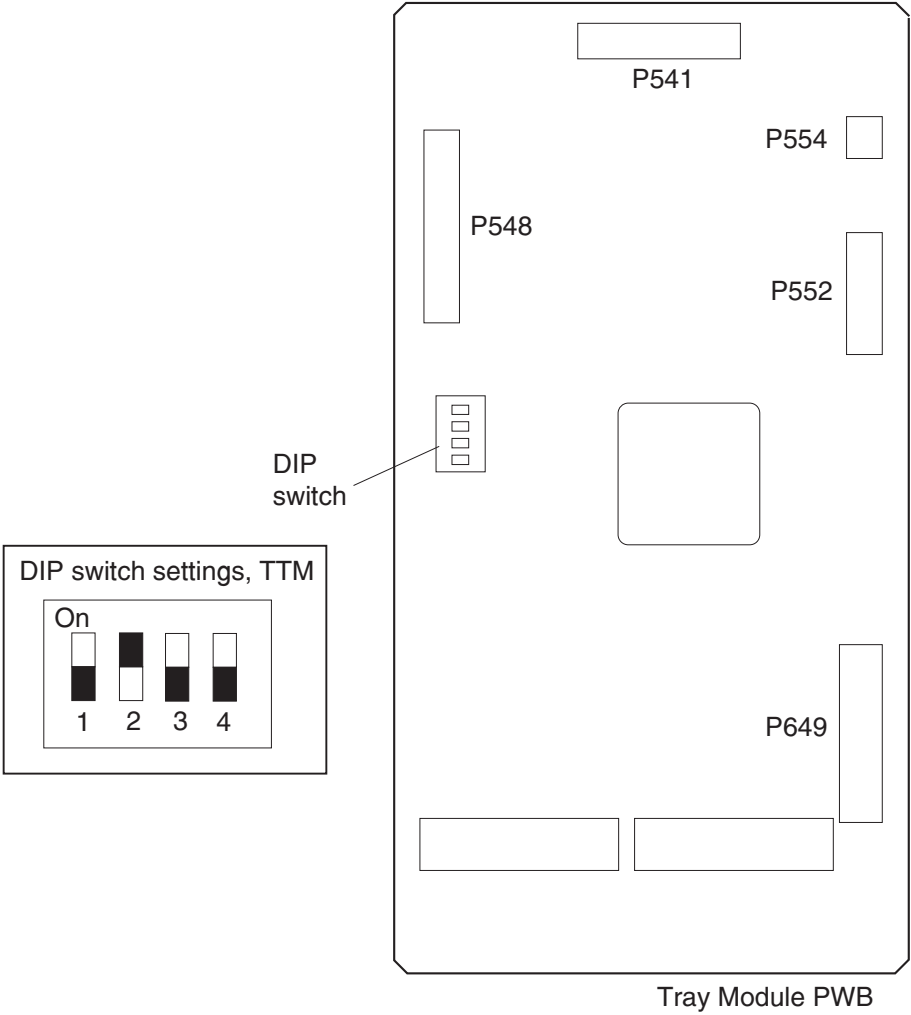
2000-sheet dual input (TTM)—clutch removal

1. Remove the rear cover. See **"2000-sheet dual input (TTM)—rear cover removal" on page 4-51**.

2. Disconnect the connector from the machine to the bracket (A).

3. Remove two screws securing the bracket (A) to the frame assembly.

4. Remove the bracket (A).
   Note: The bushing (B) and washer (C) may become detached from the shaft (D).

5. Remove the e-clip securing the clutch gear - 38 tooth (E) to the shaft (D) using a prying tool, and remove the clutch gear - 38 tooth (E).

6. Disconnect the harness connector to the 2TM/TTM clutch (F) from the bracket (A).

7. Remove the 2TM/TTM clutch (F).
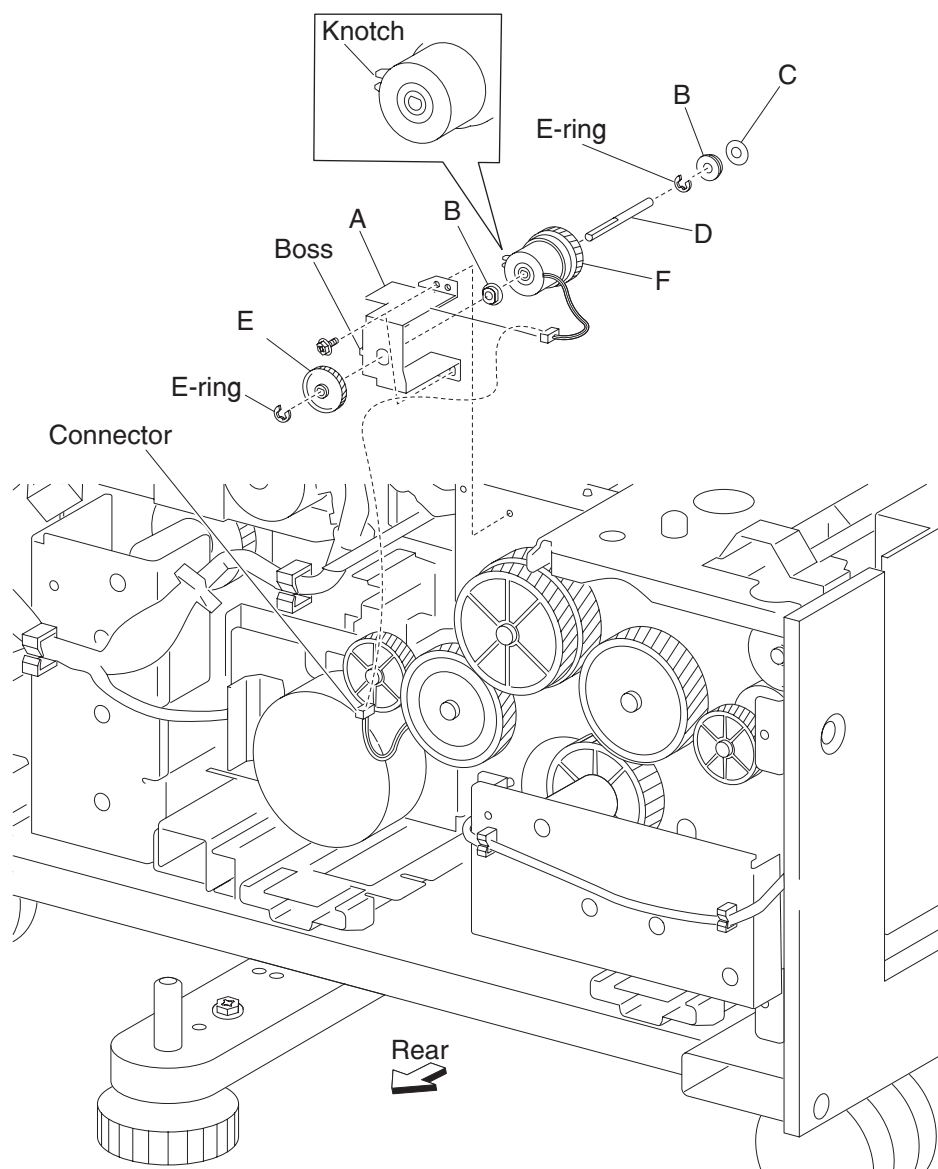
Note: Before re-installing:

— The notch on the 2TM/TTM clutch (F) must be placed over the boss of the bracket (A), as shown in the figure.

— Ensure the harness does not come in contact with the gears.

High capacity feeder (HCF) removals
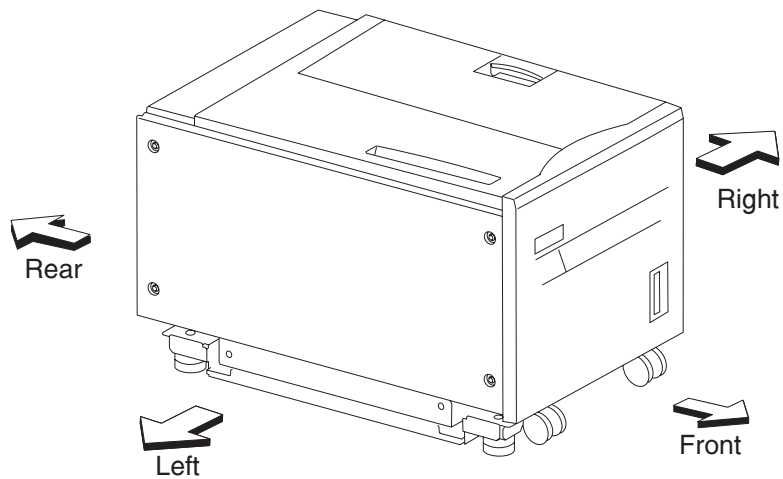
HCF top cover removal

1. Pull out the HCF media tray.
2. Remove the four screws securing the HCF top cover (B).
3. Remove the HCF top cover (B).
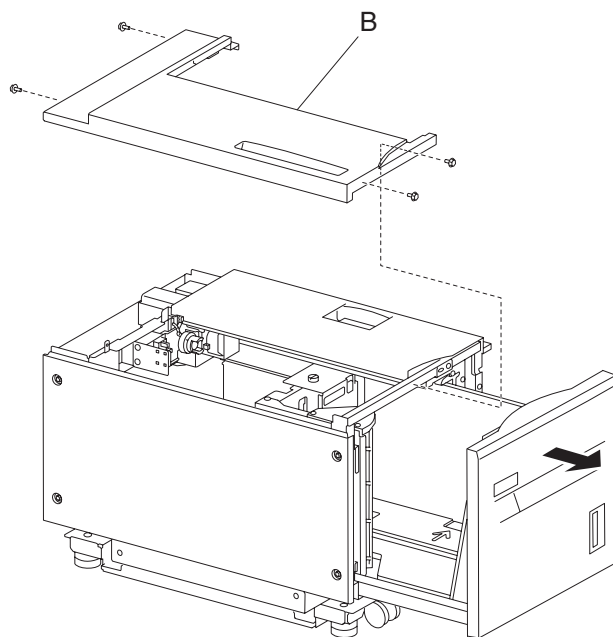
HCF right cover removal

1. Pull out the HCF media tray.
2. Remove the four screws securing the HCF right cover (A).
3. Remove the HCF right cover (A).

A
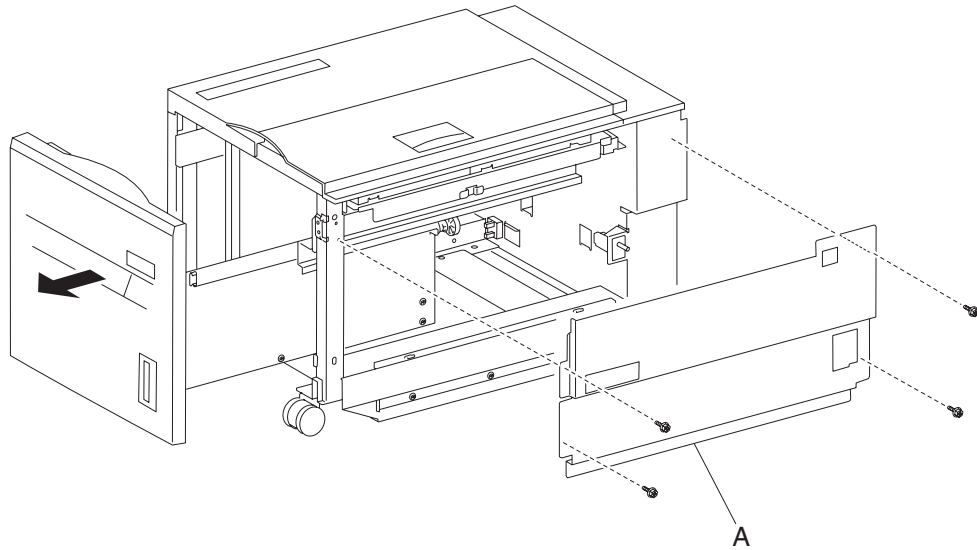
HCF sensor (HCF media tray set) removal

1. Pull out the HCF media tray.
2. Remove the HCF left cover. See **"HCF left cover removal" on page 4-125**.
3. Remove the HCF rear cover. See **"HCF rear cover removal" on page 4-125**.
4. Disconnect the connector from the sensor (HCF media tray set) (A).
5. Release the hooks securing the sensor (HCF media tray set) (A) to the unit.
6. Remove the sensor (HCF media tray set) (A).

Connector

Front

A
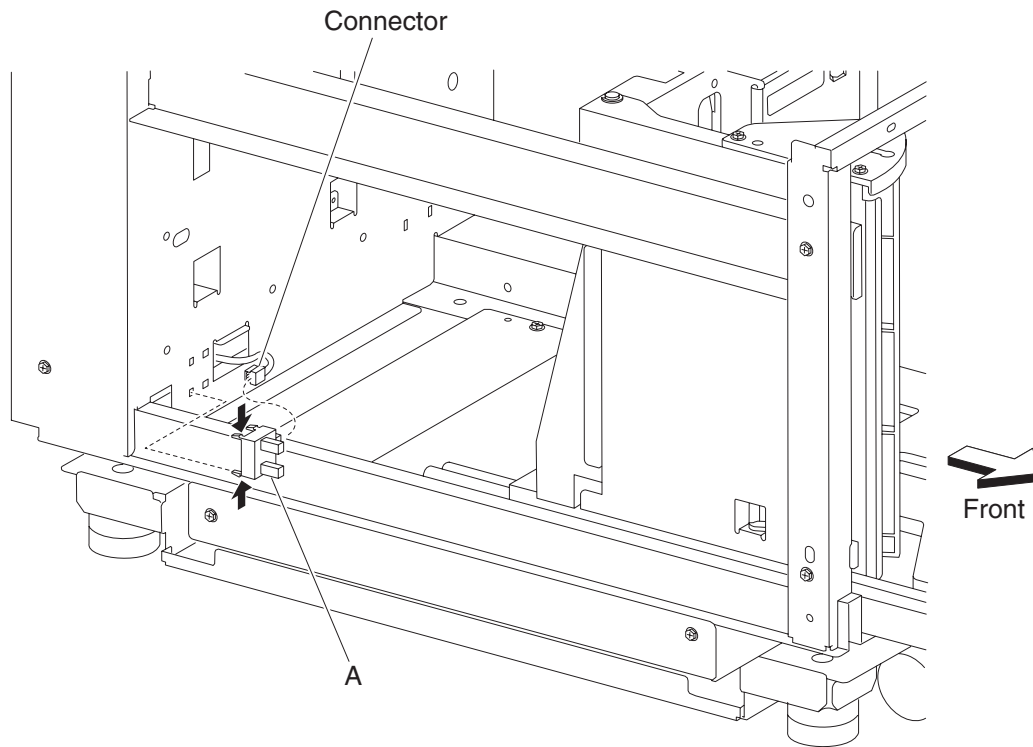
HCF sensor (HCF media size) removal

Note: This procedure can be applied to HCF sensor (media size L) and the HCF sensor (media size R).

1. Remove the HCF media tray. See **"HCF media tray assembly removal" on page 4-128**.
2. Remove the HCF top cover. See **"HCF top cover removal" on page 4-120**.
3. Remove the HCF rear cover. See **"HCF rear cover removal" on page 4-125**.
4. Disconnect the connector from the sensor (HCF media size R) (A) or the sensor (HCF media size L) (B).
5. Release the hooks securing the sensor (HCF media size R) (A) or the sensor (HCF media size L) (B) to the unit.
6. Remove the sensor (HCF media size R) (A) or the sensor (HCF media size L) (B).
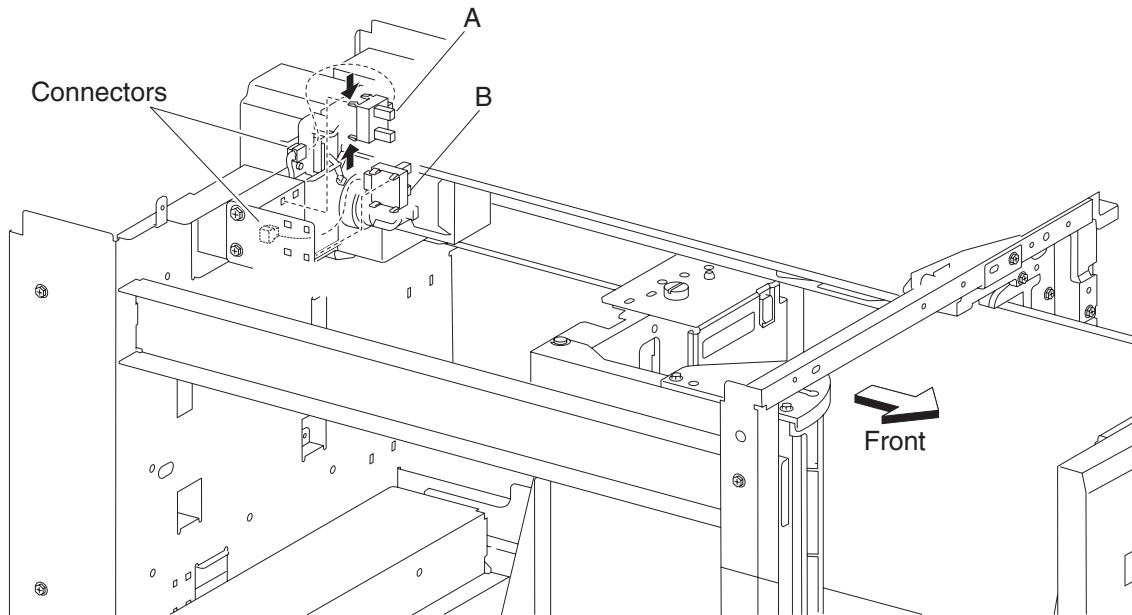
HCF caster removal

1. Remove the HCF unit from the printer.
2. Place the machine so the HCF left cover faces down.
3. Remove the three screws securing the HCF caster (A) to the unit.
4. Remove the HCF caster (A).

A
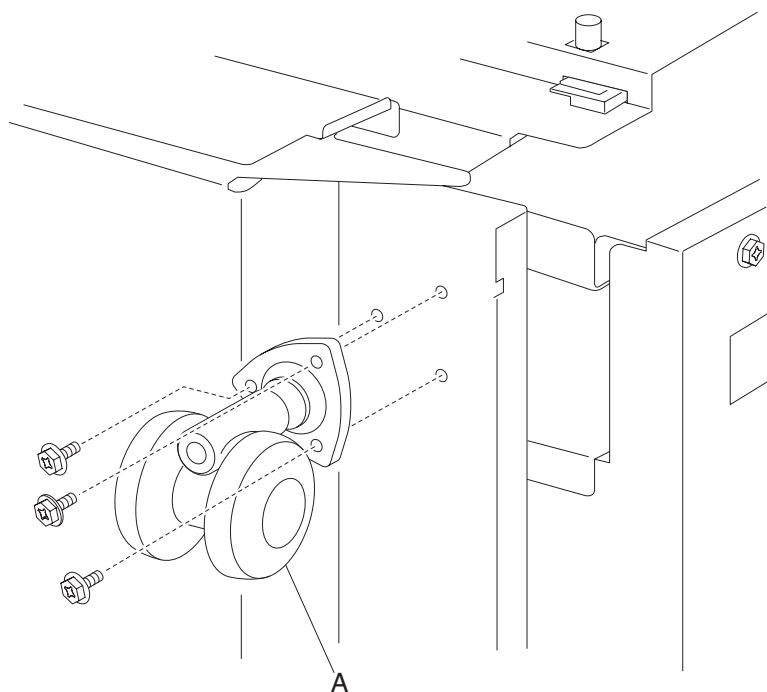
HCF left cover removal

1. Remove the five screws securing the HCF left cover (A) to the unit.
2. Remove the HCF left cover (A).

A
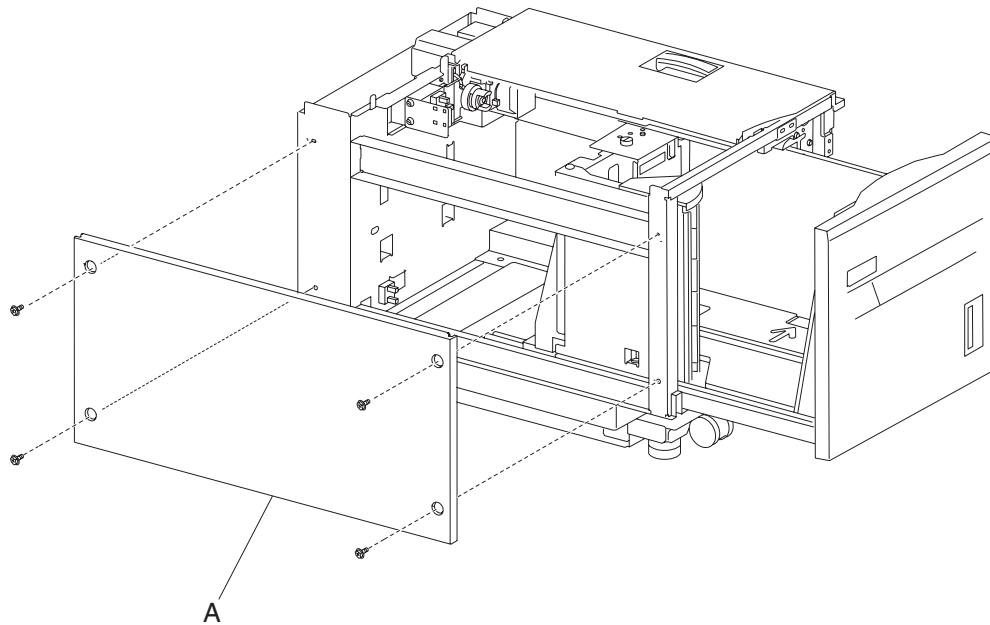
HCF rear cover removal

1. Remove the four screws securing the HCF rear cover (A) to the unit.
2. Remove the HCF rear cover (A).

A
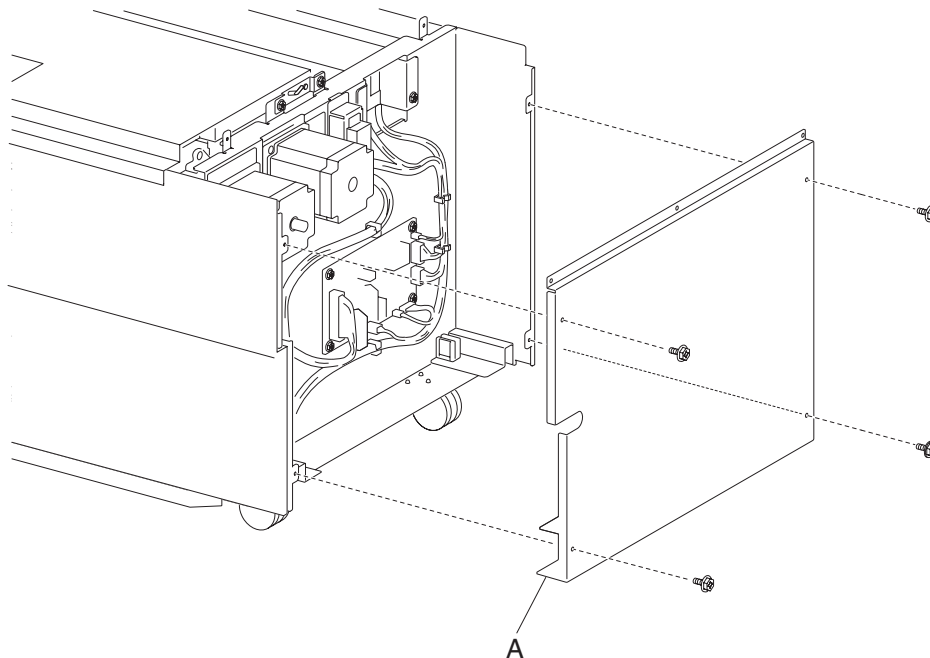
HCF media tray front cover removal

1. Pull out the HCF media tray.
2. Remove the five screws securing the HCF media tray front cover (A) to the HCF media tray.
3. Remove the HCF media tray front cover (A).
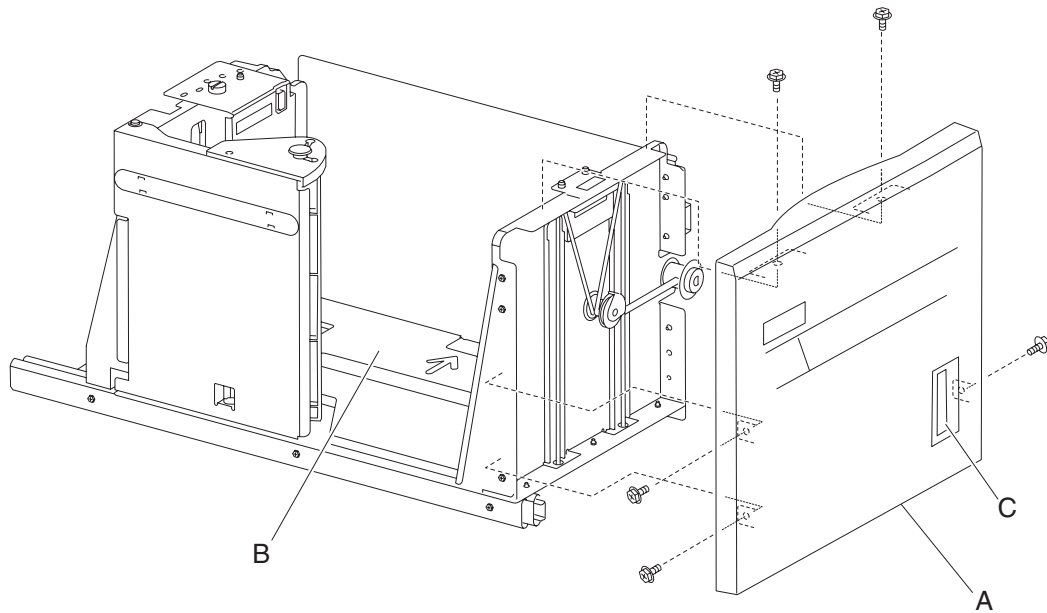
Note: Ensure that the HCF media tray assembly contains no media when the bottom plate (B) is raised after replacing the HCF media tray front cover (A). A series of clicking sounds will be produced during the calibrating process of the media level indicator (C).

HCF media long edge guide assembly removal

1. Pull out the HCF media tray.
2. Remove the e-clip securing the media long edge guide assembly (A) to the HCF media tray.
3. Lift the media long edge guide assembly (A) upward to release it from the hinges on the HCF media tray.
4. Remove the media long edge guide assembly (A).
   Note: With the media long edge guide assembly (A) removed, the wave washer (B) becomes detached.

E-ring

B

A
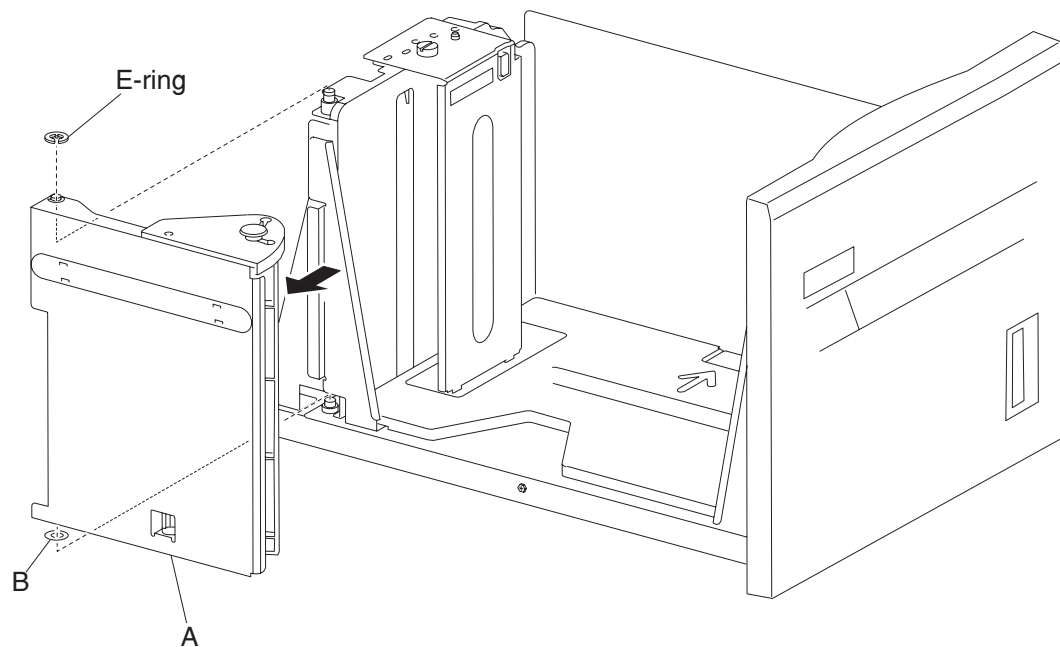
HCF media tray assembly removal

1. Pull out the HCF media tray assembly (A) from the unit.
2. Release the two bearing slides (B) by inserting a prying tool into the two holes while pulling the HCF media tray (A) from the frame assembly (B).
3. Remove the HCF media tray (A) from the frame assembly.
   Note: A little force is required to remove the HCF media tray (A) from the unit.

Note: Before re-installing the HCF media tray (A), ensure the two bearing slides (B) are properly installed into the frame assembly.

Note: Extra force is required to re-install the HCF media tray (A) to the unit.
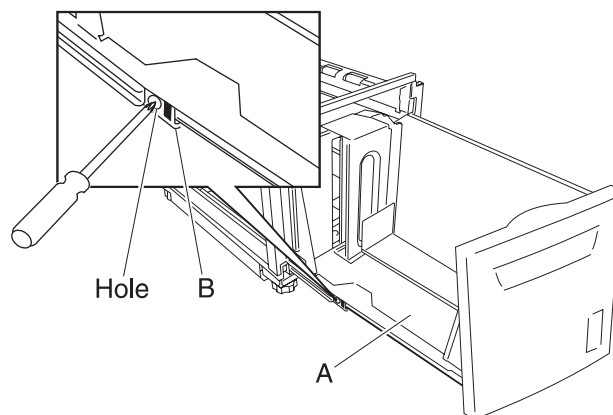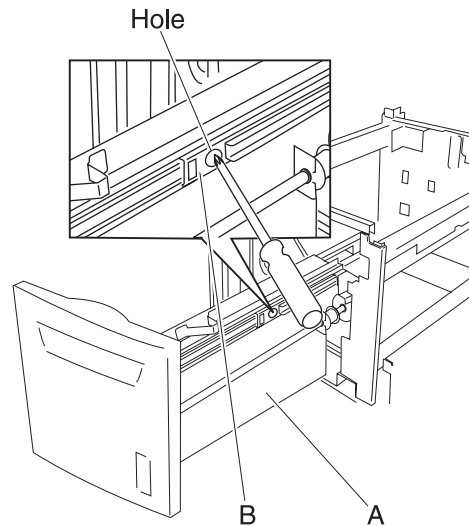
HCF lift cables removal

1. Remove the HCF media tray assembly. See **"HCF media tray assembly removal" on page 4-128**.
2. Remove the tray lift gear bracket. See **"HCF tray lift gear bracket removal" on page 4-132**.
3. Remove the HCF media tray front cover. See **"HCF media tray front cover removal" on page 4-126**.
4. Remove the e-clip securing the bushing (A) to the tray lift shaft assembly (B) at the rear on the right side of the HCF media tray.
5. Move the bushing (A) inward in the direction of the arrow (1) to remove it from the tray.
6. Move the tray lift shaft assembly (B) outward in the direction of the arrow (2) to remove it from the tray.
7. Move the tray lift shaft pulley (C) inward in the direction of the arrow (3) to detach the rear cables (D}.
8. Detach the rear cables (D) from the tray lift shaft assembly (B).
9. Remove the two e-clips securing the small cable pulleys (E) on the top rear of the HCF media tray.
10. Remove the two small guides (F) and the two small pulleys (E).
11. Remove the e-clip securing the large pulley (G) to the tray.
12. Remove the large guide (H) and the large pulley (G).

13. Remove the two rear cables (D) from the bottom plate (I).

Rear side
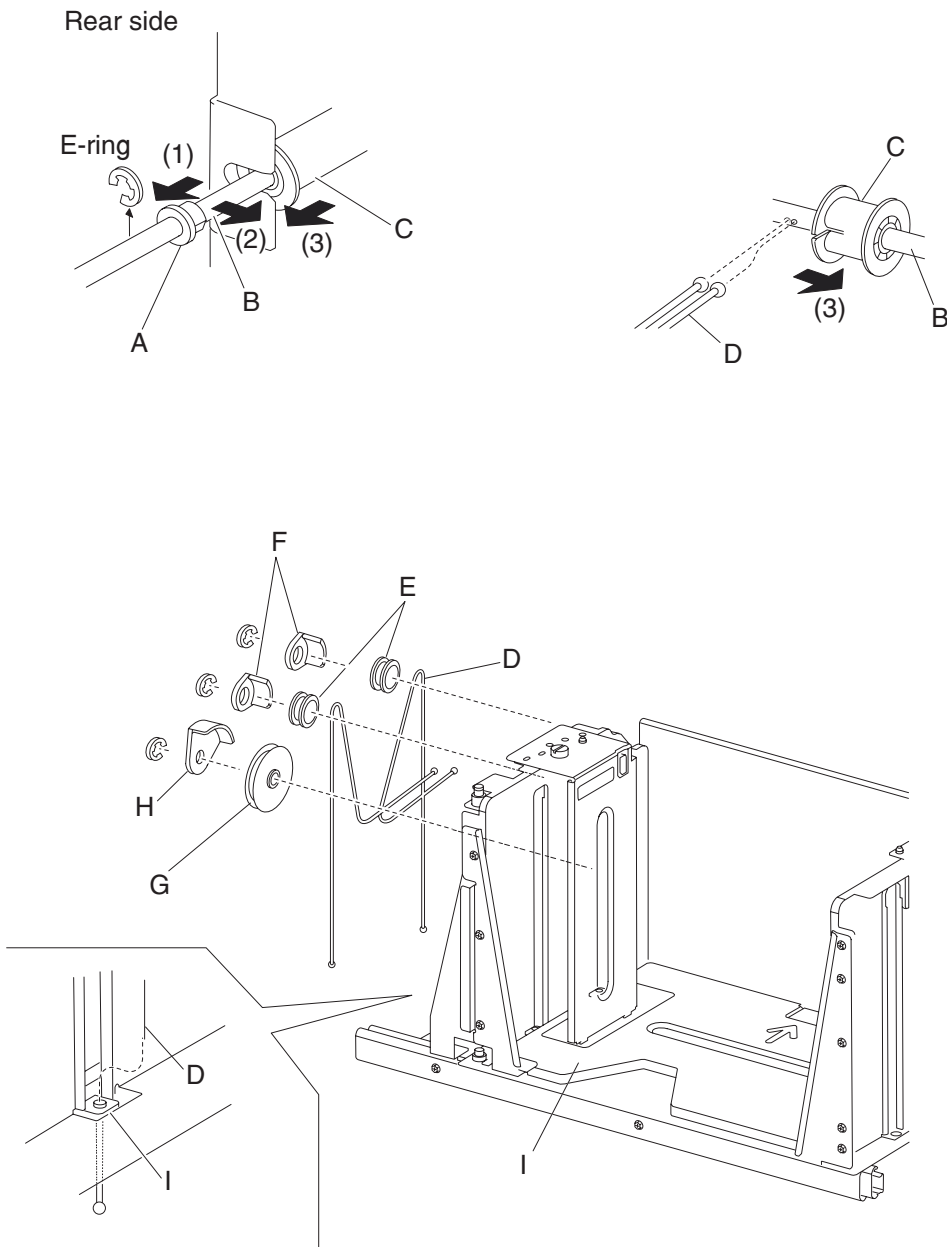
14. Remove the e-clip securing the bushing (J) to the tray lift shaft assembly (B).
15. Move the bushing (J) inward in the direction of the arrow (4) to remove it from the tray.
16. Move the tray lift shaft assembly (B) outward in the direction of the arrow (5) to remove it from the tray.

17. Move the tray lift shaft pulley (C) inward in the direction of arrow (6) to detach the front cables (K).

18. Remove the two e-clips securing the small cable pulleys (E) on the top front of the HCF media tray.

19. Remove the two small guides (F) and the two small pulleys (E).
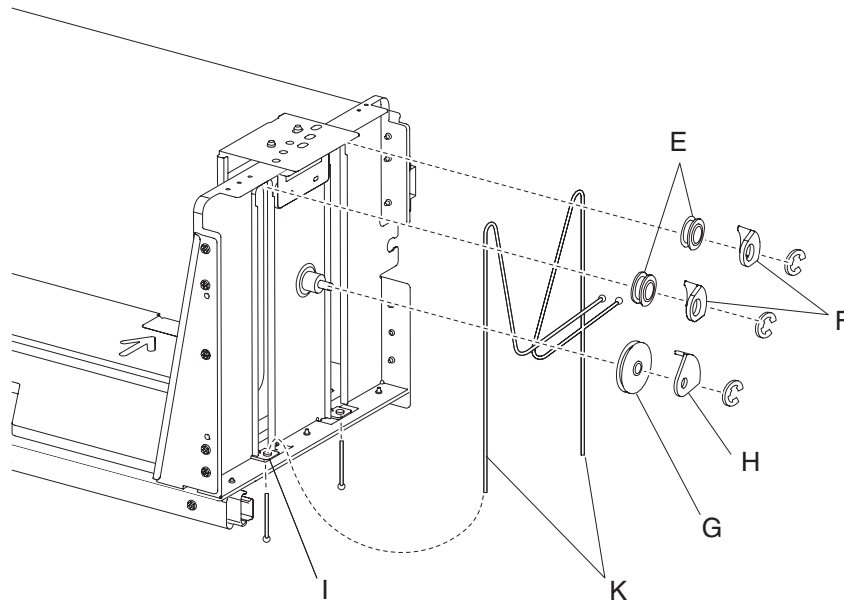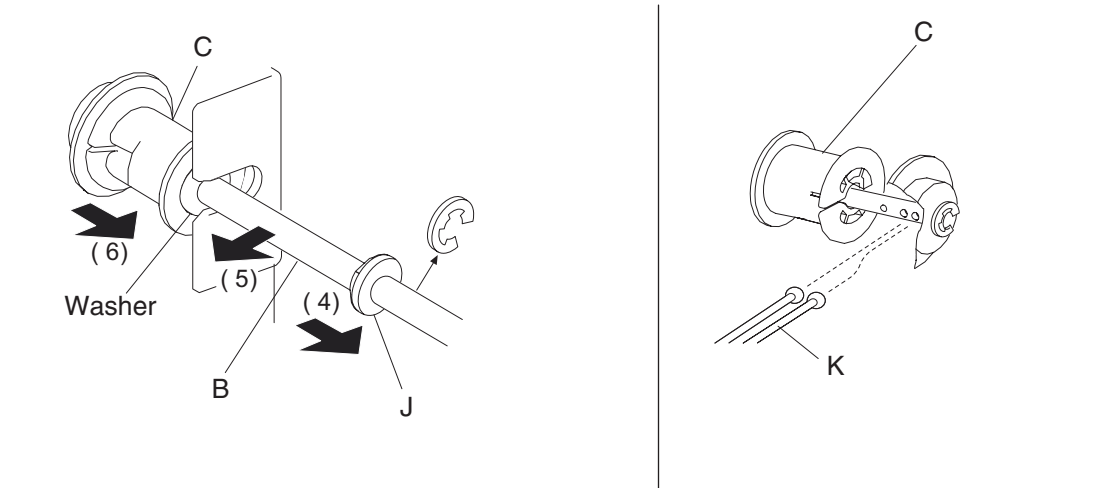
20. Remove the e-clip securing the large pulley (G) to the frame assembly.

21. Remove the large guide (H) and the large pulley (G).

22. Remove the two front cables (K) from the bottom plate (I).

  Note: Before re-installing:

  — It is recommended that all four cables be replaced together.

  — When fitting the cables (D) and (K), ensure they are not twisted or kinked.

  — Route the cables properly, as shown.

  — Be sure to replace the washer on the front of the tray lift shaft assembly.

HCF tray lift gear bracket removal

1. Remove the HCF media tray assembly. See **"HCF media tray assembly removal" on page 4-128**.
2. Remove the two e-clips with a prying tool securing the plastic retainer (A).
3. Remove the plastic retainer (A).
4. Remove the media tray lift shaft gear 51T (B).
5. Remove the media tray lift gear 25/40/14T (C).
6. Remove the three screws securing the HCF tray lift gear bracket (D) from the media tray.
7. Remove the HCF tray lift gear bracket (D).

Note: Ensure that all gears rotate smoothly without binding. If necessary, loosen the three screws and adjust the HCF tray lift gear bracket (D).
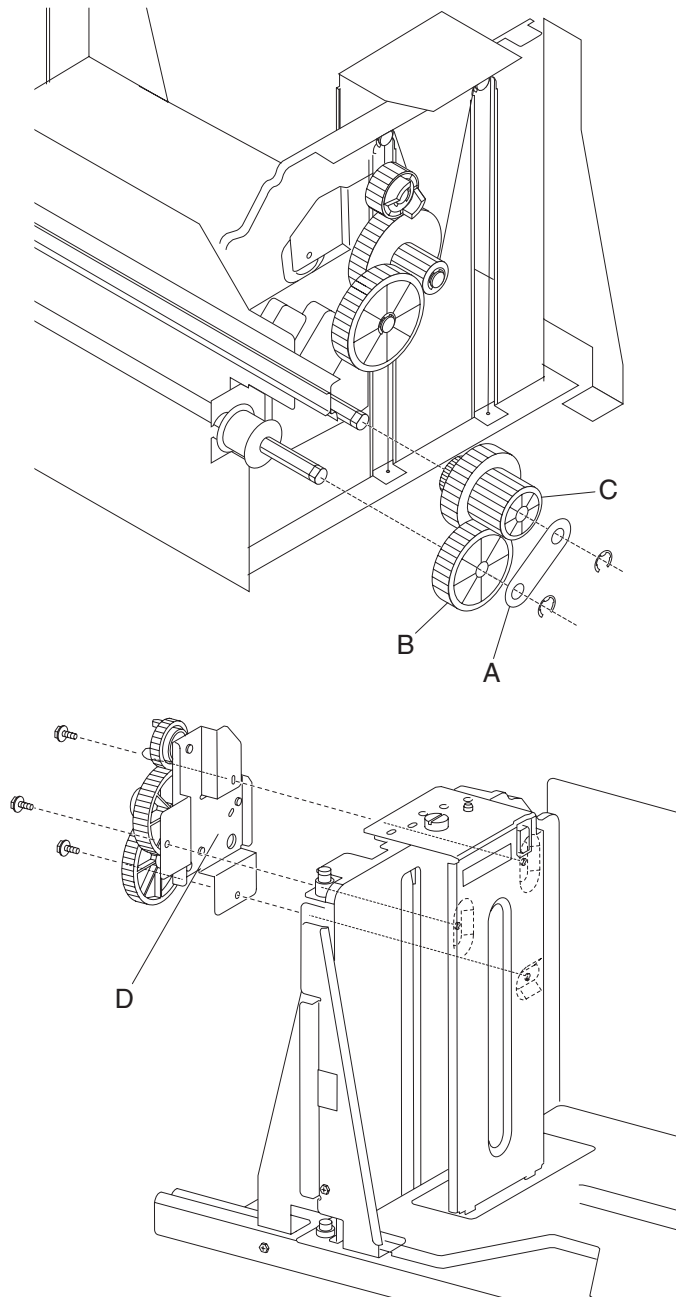
HCF media feed unit assembly removal

1. Remove the HCF media tray assembly from the printer. See **"HCF media tray assembly removal" on page 4-128**.

2. Remove the two screws securing the media feed unit assembly (A) on the front side.

3. Pull the media feed unit assembly (A) out of the machine in the direction of the arrow.
   Note: More force to remove the media feed unit (A) may be required due to the electrical connector inside the machine.
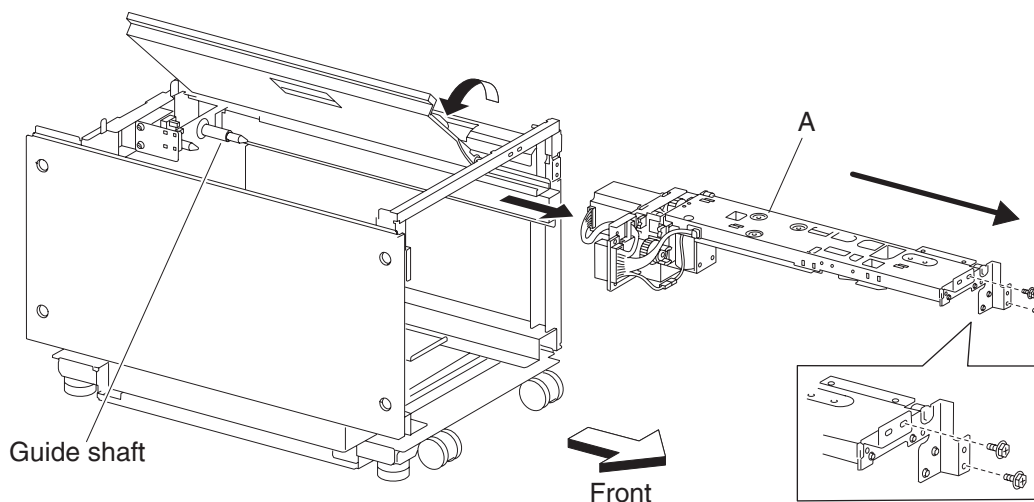
Guide shaft

Front

A

HCF feed lift motor removal

1. Remove the HCF media tray assembly. See **"HCF media tray assembly removal" on page 4-128**.

2. Remove the HCF media feed unit assembly. See **"HCF media feed unit assembly removal" on page 4-133**.

3. Disconnect the connector from the HCF feed lift motor assembly (A).

4. Remove the four screws securing the HCF feed lift motor (A) to the HCF media feed unit assembly (B).

5. Remove the HCF media feed lift motor (A).
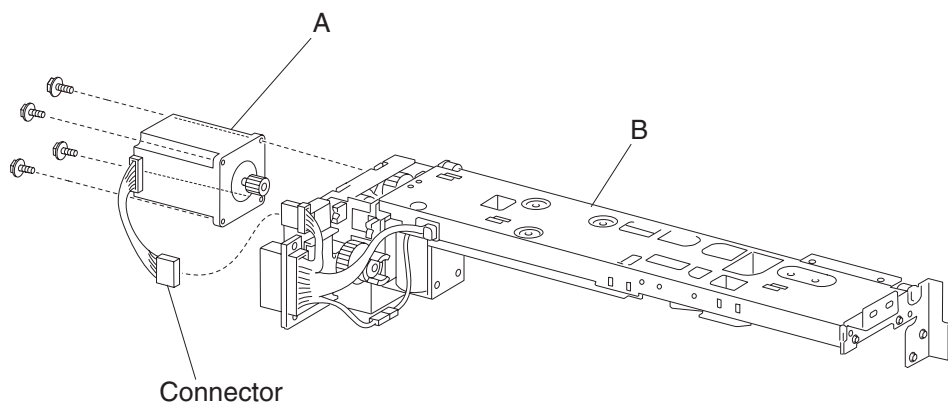
A

B

Connector

HCF feed lift gear bracket removal

1. Remove the HCF media tray assembly from the printer. See **"HCF media tray assembly removal" on page 4-128**.

2. Remove the HCF media feed unit assembly. See **"HCF media feed unit assembly removal" on page 4-133**.

3. Remove the HCF feed lift motor. See **"HCF feed lift motor removal" on page 4-133**.

4. Remove the three screws securing the HCF feed lift gear bracket (A) to the media feed unit assembly (B).

5. Remove the HCF feed lift gear bracket (A).

6. Remove the gear lift gear 24T (C) from the HCF media feed unit assembly.
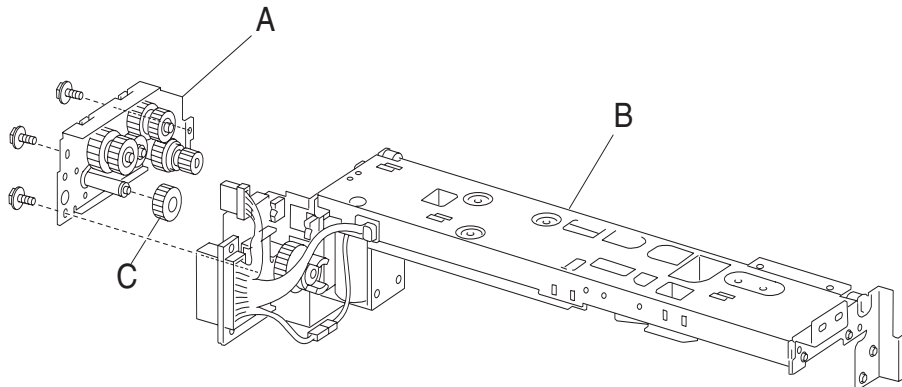
HCF separation gear group removal

1. Remove the HCF media tray assembly from the printer. See **"HCF media tray assembly removal" on page 4-128**.
2. Remove the HCF media feed unit assembly. See **"HCF media feed unit assembly removal" on page 4-133**.
3. Remove the HCF feed lift motor. See **"HCF feed lift motor removal" on page 4-133**.
4. Remove the HCF lift feed gear bracket. See **"HCF feed lift gear bracket removal" on page 4-134**.
5. Remove the shaft (A) from the HCF lift feed gear bracket (B).
   Note: Bearing (C) may become detached.

6. Remove the e-clip with a prying tool securing the separation gear -19 tooth (D) to shaft (A).
7. Remove the separation gear - 19 tooth (D).
8. Remove the bushing (E).
9. Remove the separation gear - 25 tooth (F).
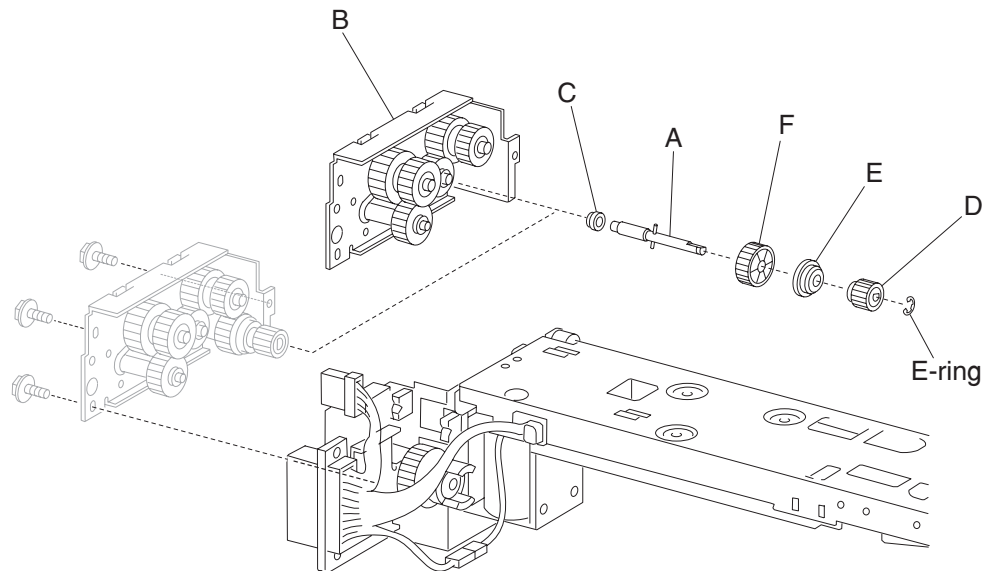
HCF media tray lift coupling assembly removal

1. Remove the HCF media tray assembly from the printer. See **"HCF media tray assembly removal" on page 4-128**.
2. Remove the HCF media feed unit assembly. See **"HCF media feed unit assembly removal" on page 4-133**.
3. Remove the HCF feed lift motor. See **"HCF feed lift motor removal" on page 4-133**.
4. Remove the e-clip with a prying tool securing the HCF tray lift coupling (D) to the HCF media feed unit assembly.
5. Remove the HCF tray lift coupling (A).
6. Remove the spring (B).
7. Remove the HCF tray lift gear - 40 tooth (C).
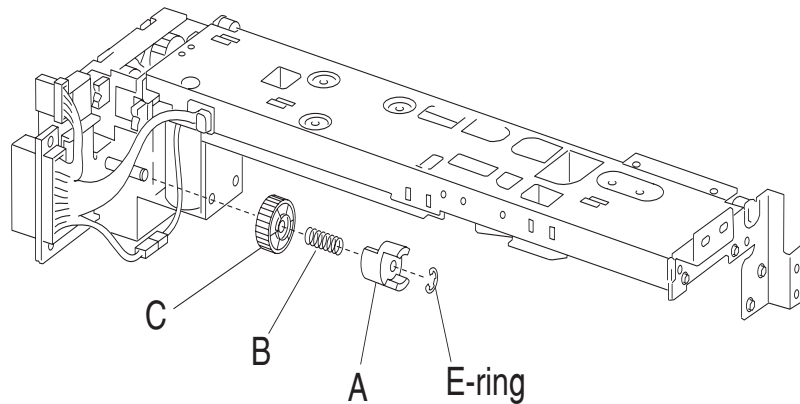
HCF pick solenoid assembly removal

1. Remove the HCF media tray assembly from the printer. See **"HCF media tray assembly removal" on page 4-128**.
2. Remove the HCF media feed unit assembly. See **"HCF media feed unit assembly removal" on page 4-133**.
3. Remove the HCF feed lift motor. See **"HCF feed lift motor removal" on page 4-133**
4. Remove the HCF feed lift gear bracket. See **"HCF feed lift gear bracket removal" on page 4-134**.
5. Remove the two screws securing the HCF solenoid bracket (A) to the HCF media feed unit assembly (B).
6. Remove the HCF solenoid bracket (A).
7. Disconnect the connector of the harness from the HCF solenoid (C) to the HCF media feed unit assembly (B).
8. Release the harness from the clamp.
9. Remove the HCF media tray lift coupling assembly. See **"HCF media tray lift coupling assembly removal" on page 4-136**.
10. Remove the two screws securing the bracket (D).
11. Remove the bracket (D).
12. Remove the two screws securing the main HCF connector (E) to the HCF solenoid bracket (A).
13. Remove the HCF main connector (E).
14. Remove the two connectors from the HCF main connector (E).
15. Release the hooks securing the connector (F) to the HCF solenoid bracket (A).
16. Remove the connector (F).
17. Remove the two screws securing the HCF solenoid (C) to the HCF solenoid bracket (A).
18. Remove the HCF solenoid (C).
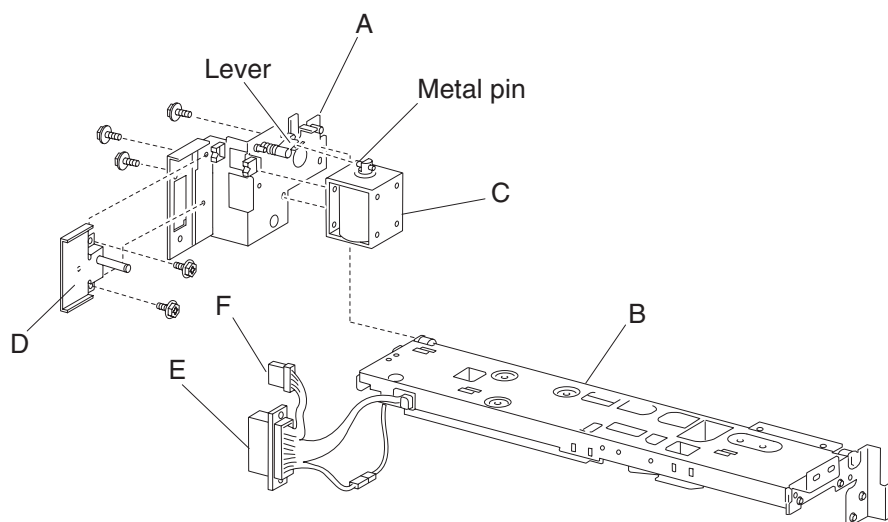
Note: When replacing the solenoid, make sure to insert the metal pin of the HCF solenoid (C) into the lever.

HCF sensor (pre-feed) removal

1. Open the HCF top door.
2. Open the HCF feed unit assembly.
3. Remove the three screws securing the upper guide (A) to the HCF feed unit assembly (B).
4. Remove the upper guide (A).
5. Remove the connector from the sensor (pre-feed) (C).
6. Remove the one screw securing the sensor (pre-feed) (C) to the HCF feed unit assembly (B).
7. Remove sensor (pre-feed) (C).
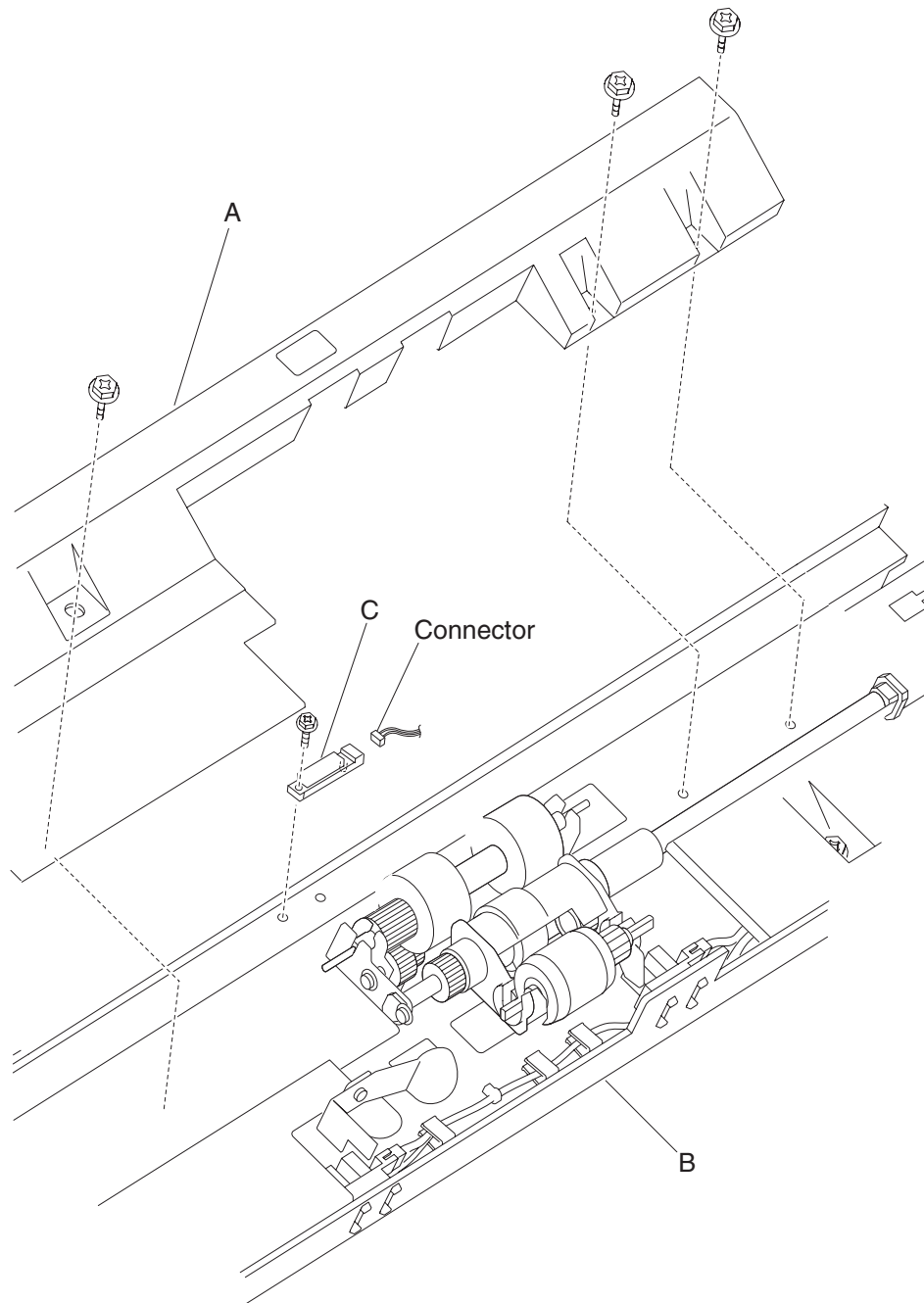
HCF media out actuator removal

1. Open the HCF top door.
2. Open the HCF feed unit assembly.
3. Remove the e-clip securing the media out actuator (A) to the HCF media feed unit assembly (B).
4. Remove the media out actuator (A).

A

E-ring

B
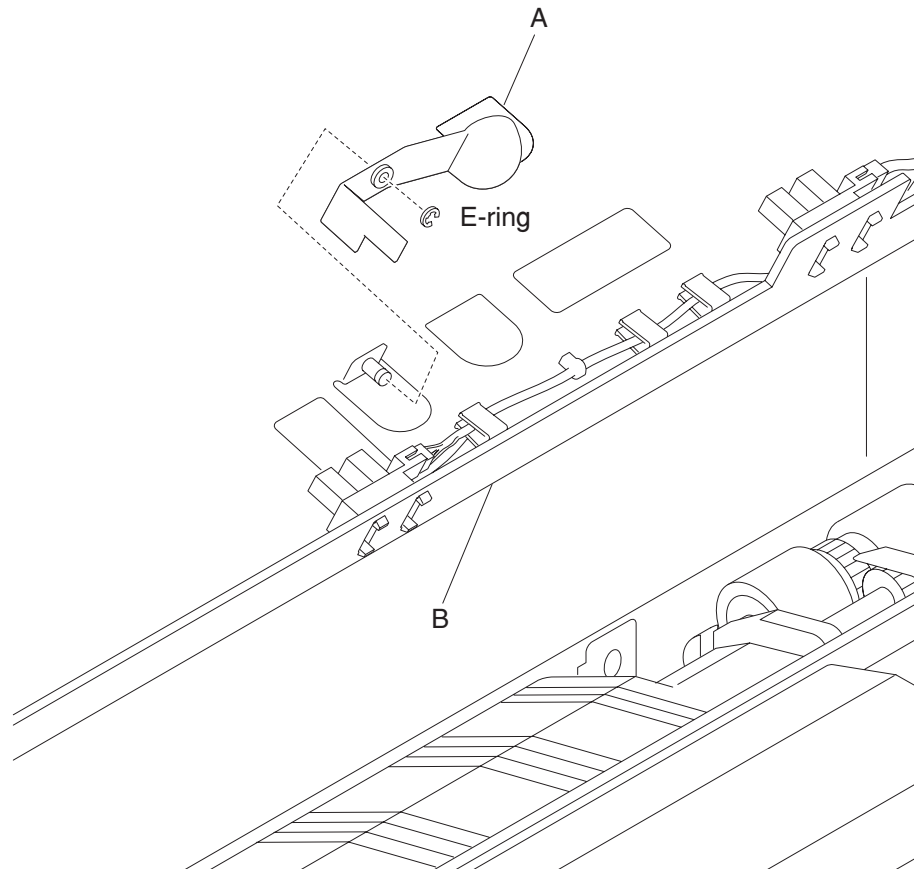
HCF sensor (media level) removal

1. Open the HCF top door.
2. Open the HCF feed unit assembly.
3. Disconnect the connector from the sensor (HCF media level) (A).
4. Release the hooks securing the sensor (HCF media level) (A) from the HCF feed unit assembly (B).
5. Remove the sensor (HCF media level) (A).
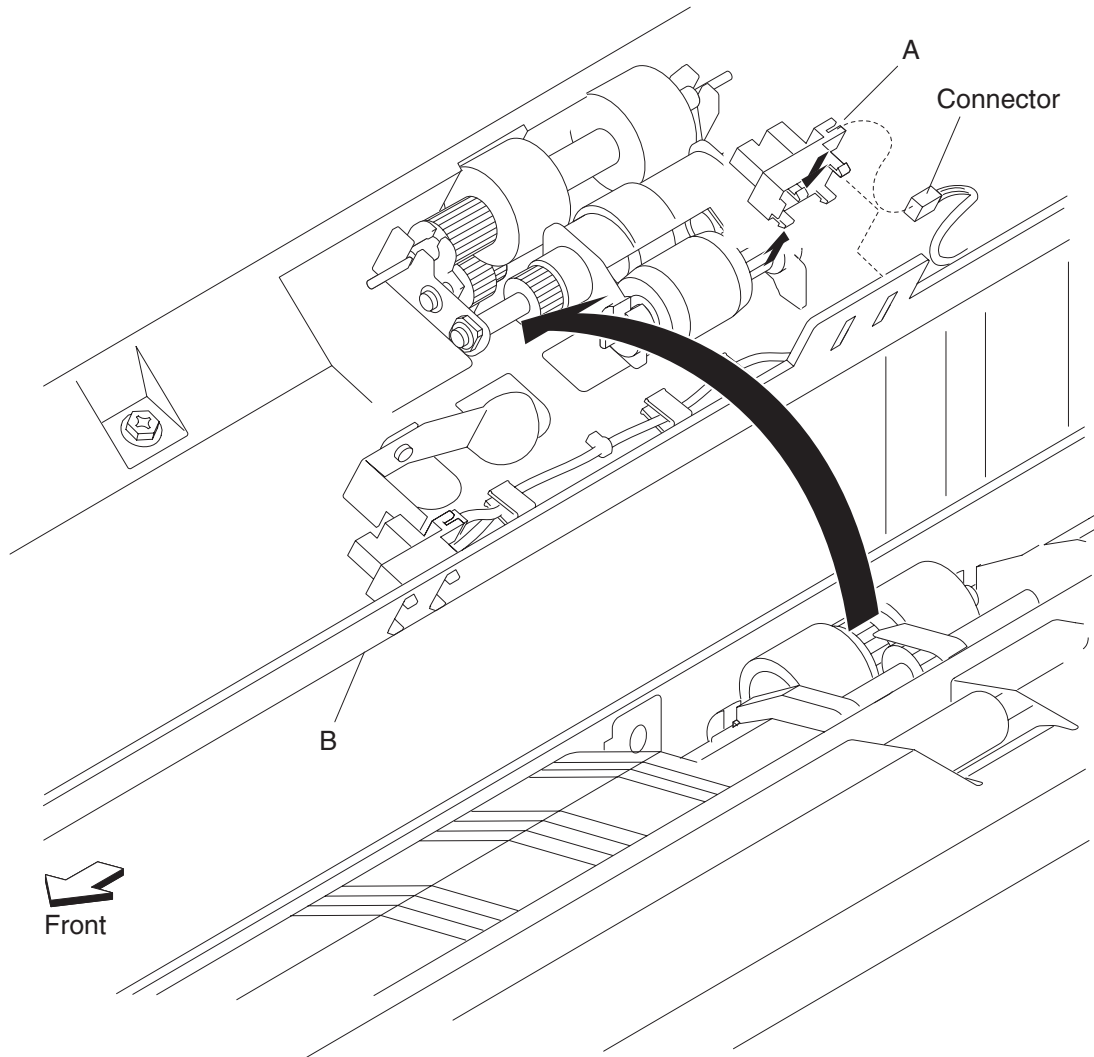
HCF sensor (media out) removal

1. Open the HCF top door.
2. Open the HCF feed unit assembly.
3. Remove the connector from the sensor (HCF media out) (A).
4. Release the hooks securing the sensor (HCF media out) (A) to the HCF feed unit assembly (B).
5. Remove the sensor (HCF media out) (A).

   Note: The sensor (HCF media out) (A) may be easier to replace if the upper guide (C) is removed to provide access.
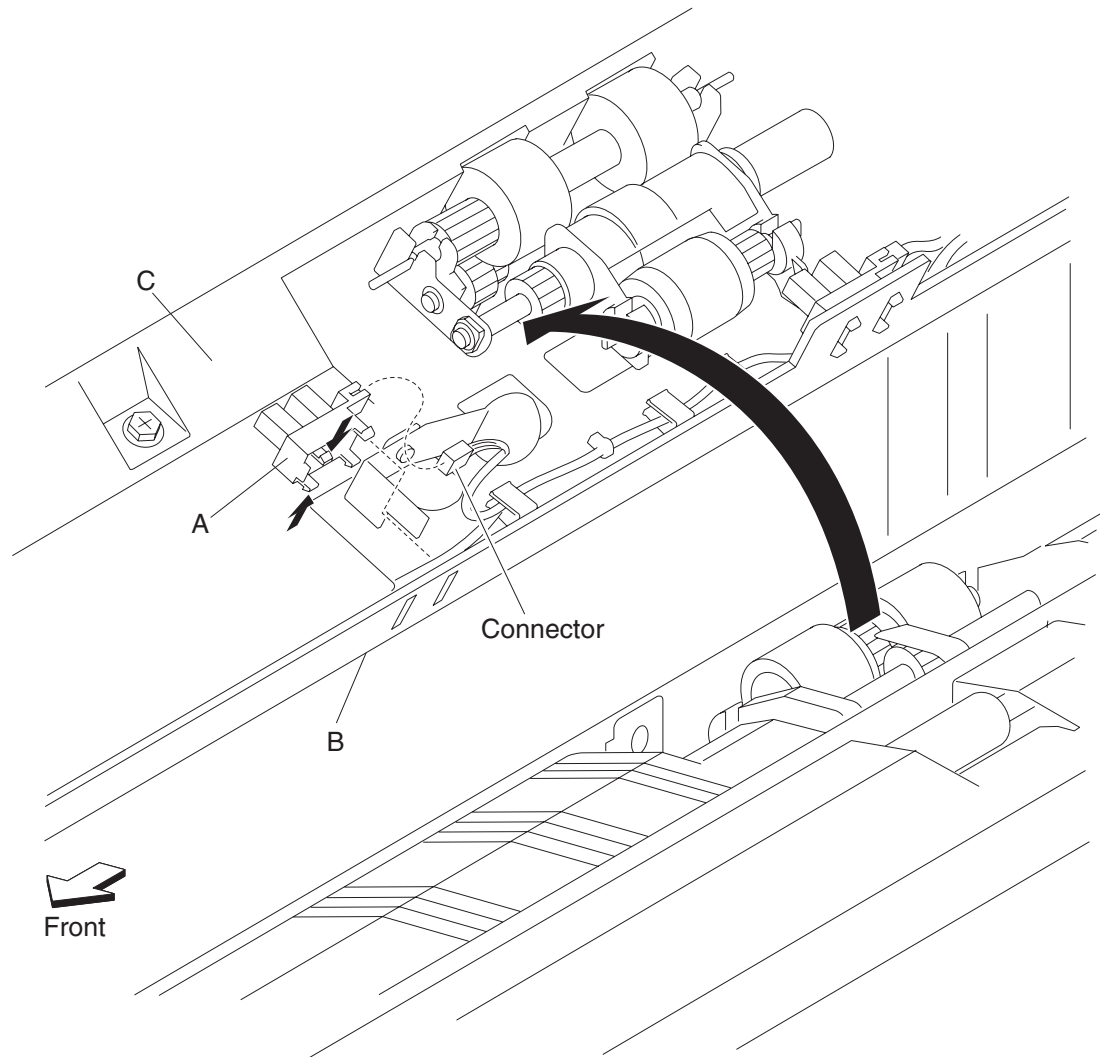
HCF pick roll shaft assembly removal

1. Open the HCF top door.
2. Open the HCF feed unit assembly.
3. Remove the HCF pick roll assembly. See **"HCF pick roll assembly removal" on page 4-143**.
4. Remove the e-clip with a prying tool securing the HCF pick roll shaft assembly (A) to the HCF media feed unit assembly (B).
5. Remove the bushing (C) from the HCF media feed unit assembly (B).
6. Remove the bearing (D) from the HCF media feed unit assembly (B).
7. Remove the HCF pick roll shaft assembly (A).
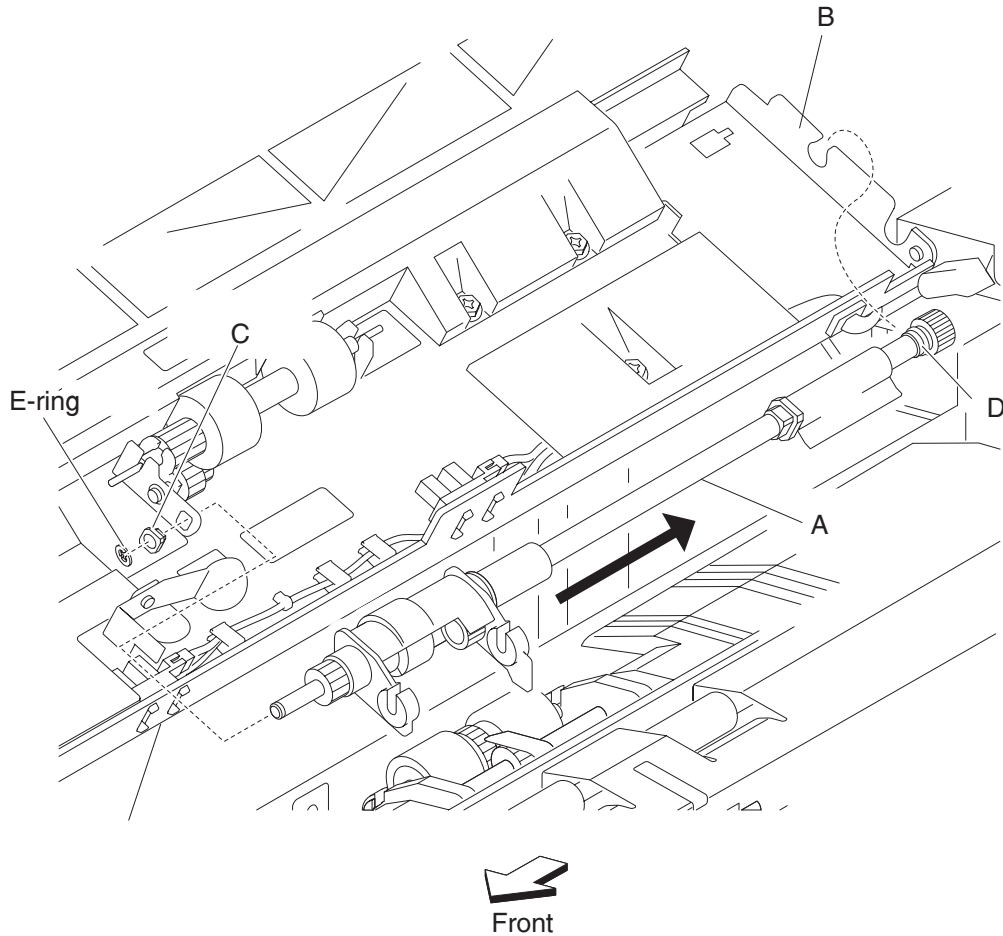
Front

HCF pick roll assembly removal

1. Open the HCF top door.
2. Open the HCF feed unit assembly.
3. Push the two ends of the HCF pick roll assembly (A) inward, and move it upward in the direction of the arrow to release it from the HCF media feed unit assembly (B).
4. Remove the HCF pick roll assembly (A).

   Note: When removing the HCF pick roll assembly (A), do not touch the rubber surface.

Front

B
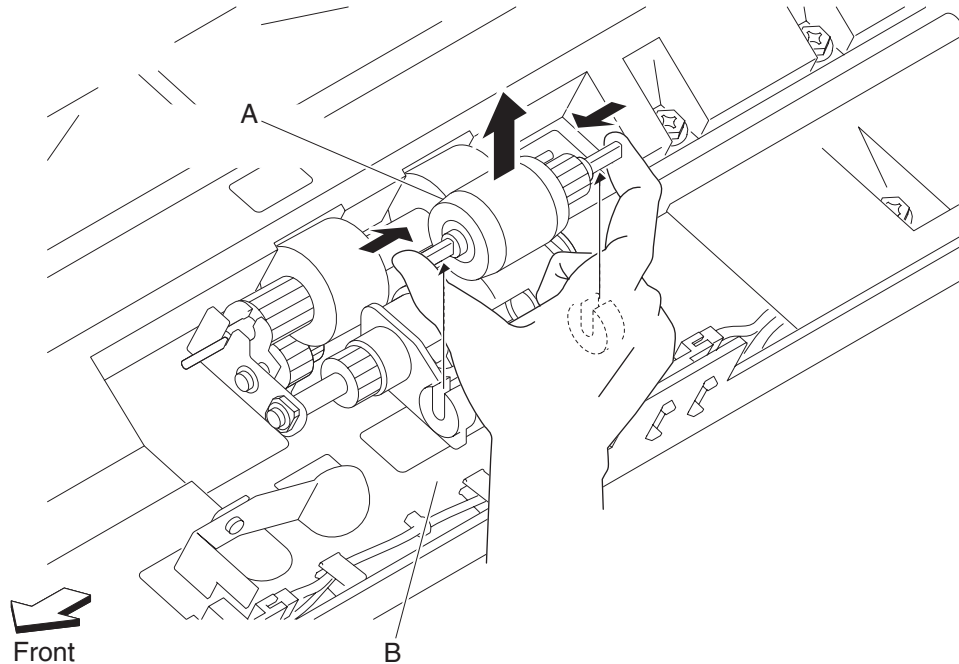
Note: Before re-installing the HCF pick roll assembly (A), do not touch the rubber surface.

HCF feed roll assembly removal

1. Open the HCF top door.
2. Open the HCF feed unit assembly.
3. Push the two ends of the HCF feed roll assembly (A) inward, and move it upward in the direction of the arrow to release it from the HCF media feed unit assembly (B).
4. Remove the HCF feed roll assembly (A).

   Note: When removing the HCF feed roll assembly (A), do not touch the rubber surface.

A

B

Front
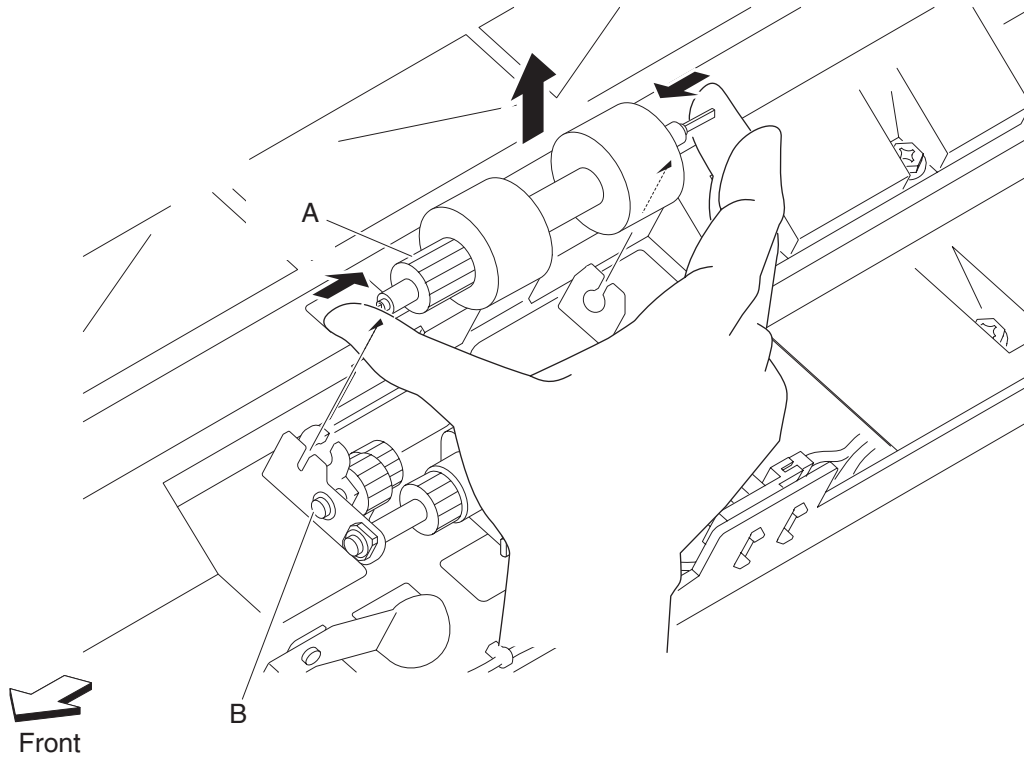
Note: Before re-installing the HCF feed roll assembly (A), do not touch the rubber surface.

HCF separation roll shaft assembly removal

1. Remove the HCF media tray assembly. See **"HCF media tray assembly removal" on page 4-128**.
2. Remove the HCF media feed unit assembly. See **"HCF media feed unit assembly removal" on page 4-133**.
3. Remove the HCF feed lift motor. See **"HCF feed lift motor removal" on page 4-133**.
4. Remove the HCF feed lift gear bracket. See **"HCF feed lift gear bracket removal" on page 4-134**.
5. Remove the HCF separation roll assembly. See **"HCF separation roll assembly removal" on page 4-146**.
6. Remove the four screws securing the separation roll shaft assembly (A) to the media feed unit assembly (B).
7. Remove the separation roll shaft assembly (A).

   Note: The HCF media feed unit assembly (B) becomes detached from the separation roll shaft assembly (A) at the hinge point.
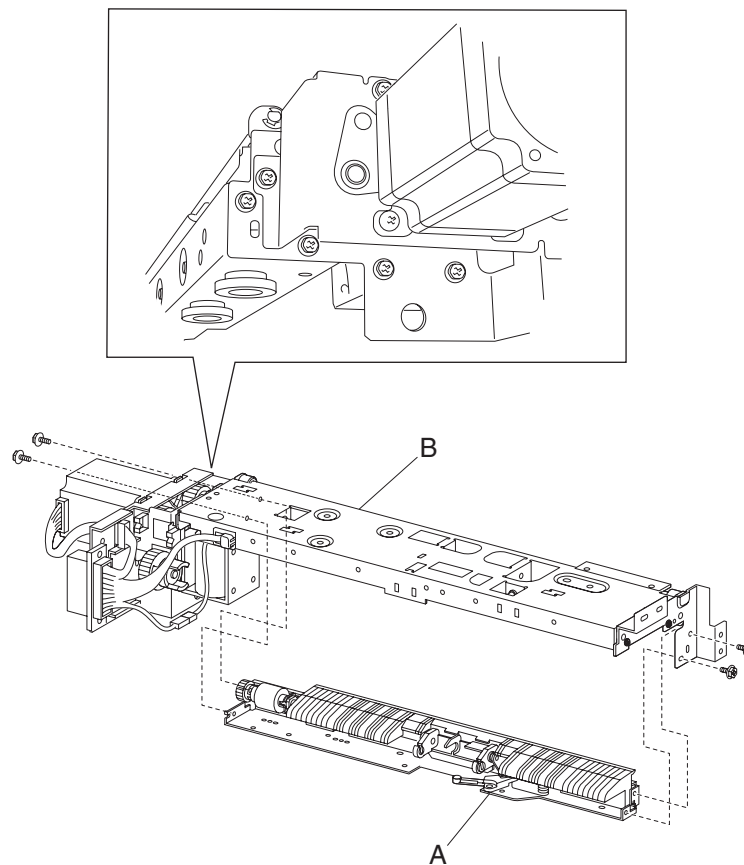
Note: Before re-installing the separation roll shaft assembly (A), ensure the HCF media feed unit assembly (B) is re-attached at the two hinge points.

HCF separation roll assembly removal

1. Open the HCF top door.
2. Open the HCF feed unit assembly.
3. Push the two ends of the HCF separation roll assembly (A) inward, and move it upward in the direction of the arrow to release it from the HCF media feed unit assembly (B).
4. Remove the HCF separation roll assembly (A).

   Note: When removing the HCF separation roll assembly (A), do not touch the rubber surface.
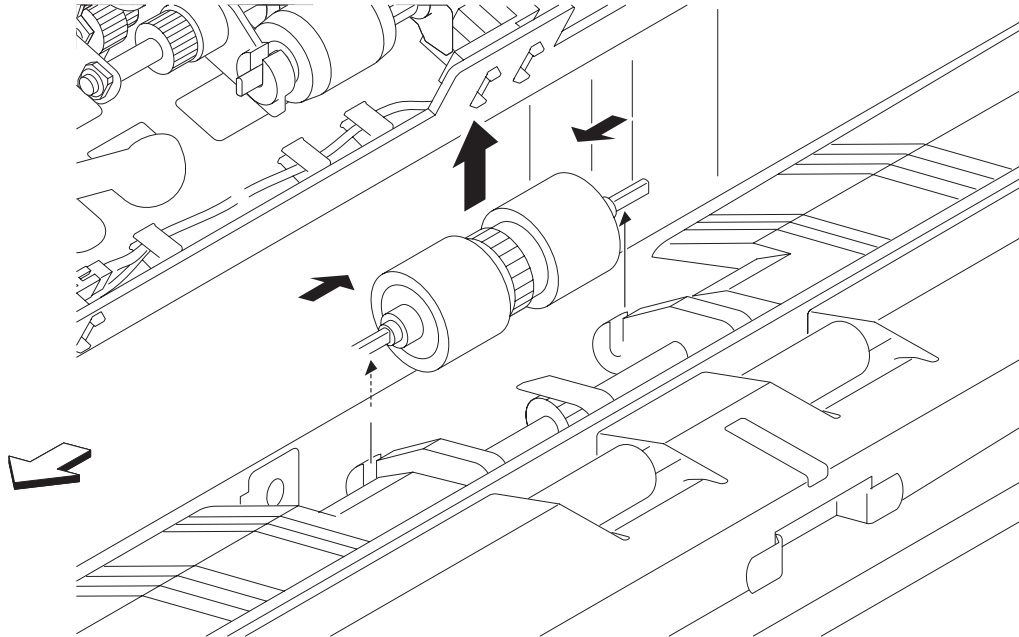
Note: Before re-installing the HCF separation roll assembly (A), do not touch the rubber surface.

HCF top door assembly removal

1. Remove the HCF unit from the printer.
2. Remove the HCF top cover. See **"HCF top cover removal" on page 4-120**.
3. Remove the HCF rear cover. See **"HCF rear cover removal" on page 4-125**.
4. Open the HCF top door assembly.
5. Remove the two screws securing the bracket (A) to the frame assembly (B).
6. Remove the bracket (A).

   Note: When removing the bracket (A), leave the shaft (C) and the HCF top door spring R (D) attached to the top door assembly.
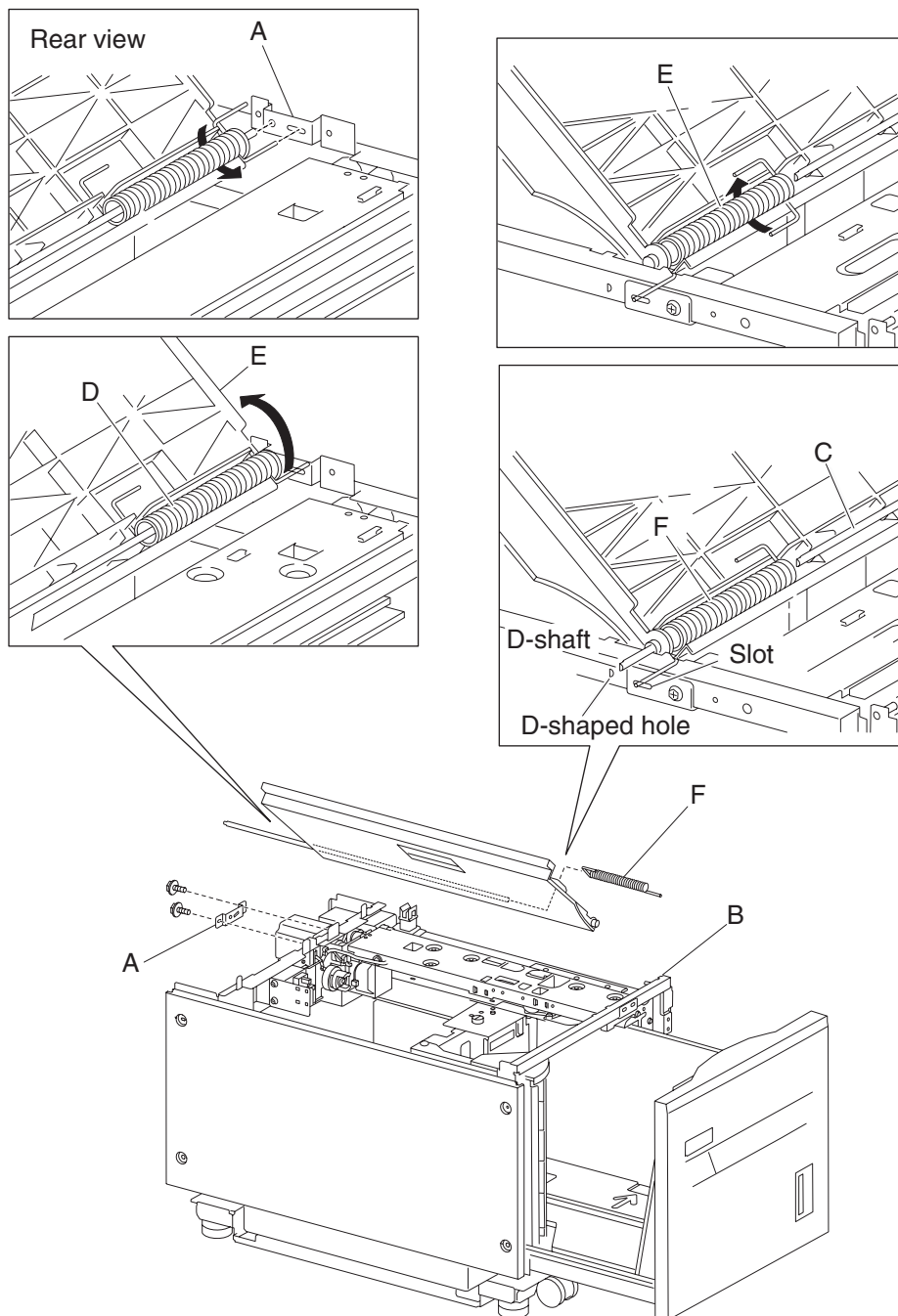
7. Lift the HCF top door (E) and remove the shaft (C) from the hole in the frame assembly (B).

8. Remove the HCF top door spring L (F) from the slot in the frame assembly (B).

9. Remove the HCF top door assembly.

10. Remove the shaft (C).

11. Remove the top door spring R (D).

12. Remove the top door spring L (F).

HCF switch (top door interlock) removal

1. Remove the HCF unit to the printer.

2. Remove the HCF right cover. See **"HCF right cover removal" on page 4-121**.

3. Open the HCF top door assembly.

4. Disconnect the connector from the switch (top door interlock) (A).

5. Remove the two screws securing the bracket (B) to the unit.

6. Remove the bracket (B).

7. Release the hooks securing the switch (top door interlock) (A) to the bracket (B).

8. Remove the switch (top door interlock) (A).
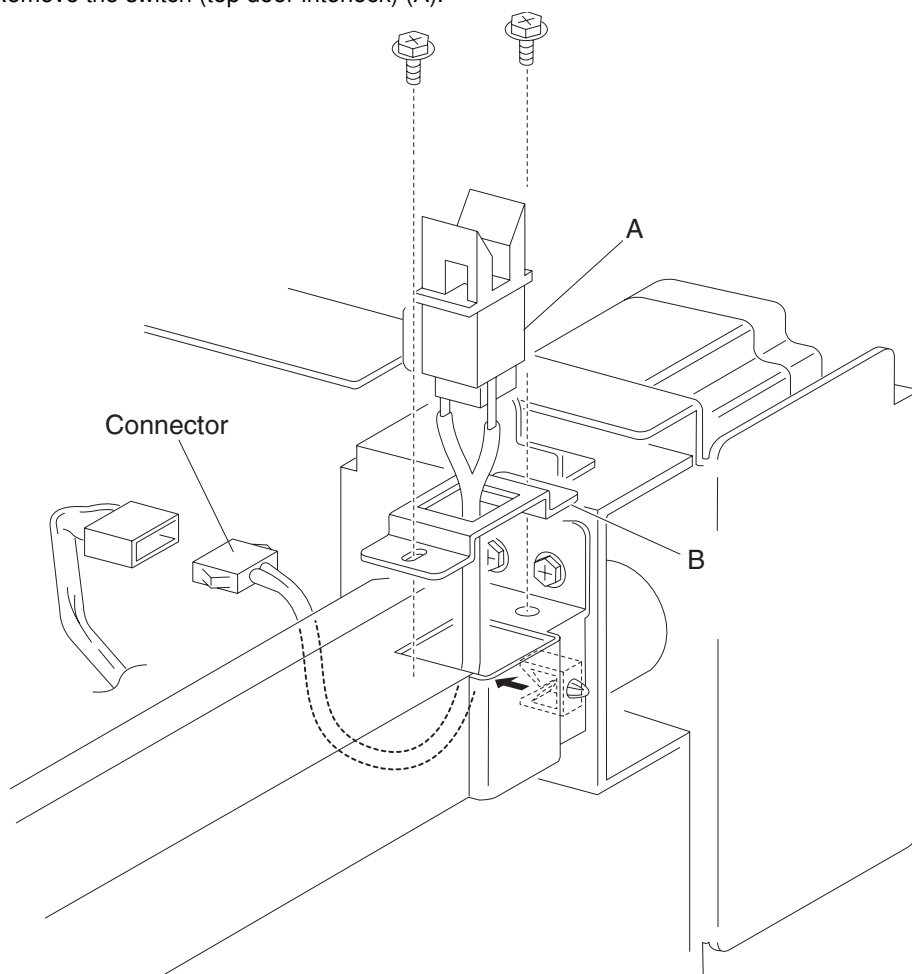
HCF sensor (tray 5 feed-out) removal

1. Remove the HCF unit from the printer.
2. Remove the HCF right cover. See **"HCF right cover removal" on page 4-121**.
3. Open the HCF top door assembly.
4. Remove the two screws securing the bracket (B) to the unit.
5. Remove the bracket (B).
6. Disconnect the connector from the sensor (tray 5 feed-out) (A).
7. Release the hooks securing the sensor (tray 5 feed-out) (A) to the bracket (B).
8. Remove the sensor (tray 5 feed-out) (A).
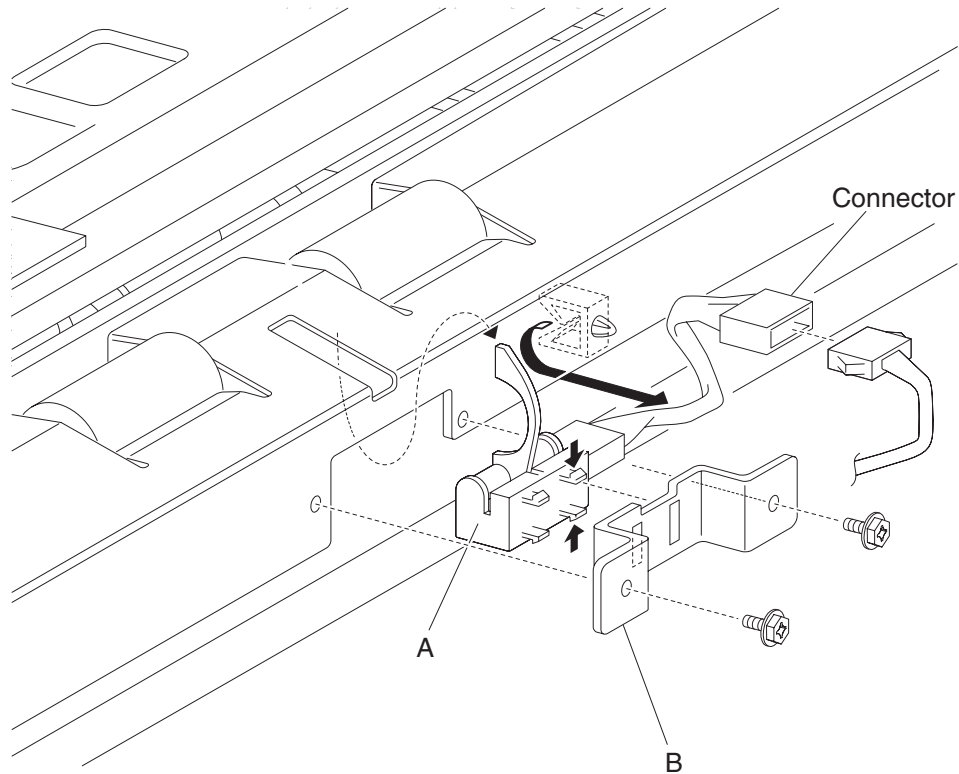
HCF media transport roll assembly removal

1. Remove the HCF unit from the printer.
2. Remove the HCF right cover. See **"HCF right cover removal" on page 4-121**.
3. Remove the e-clip with needle nose pliers on the front side securing the HCF media transport roll assembly (A) to the unit.
4. Move the HCF transport shaft assembly (A) toward the rear in the direction of the arrow to remove it from the bearing (B).
   Note: The bearing (B) may become detached.

   Note: When removing the HCF media transport roll assembly (A), do not touch the rubber surface.
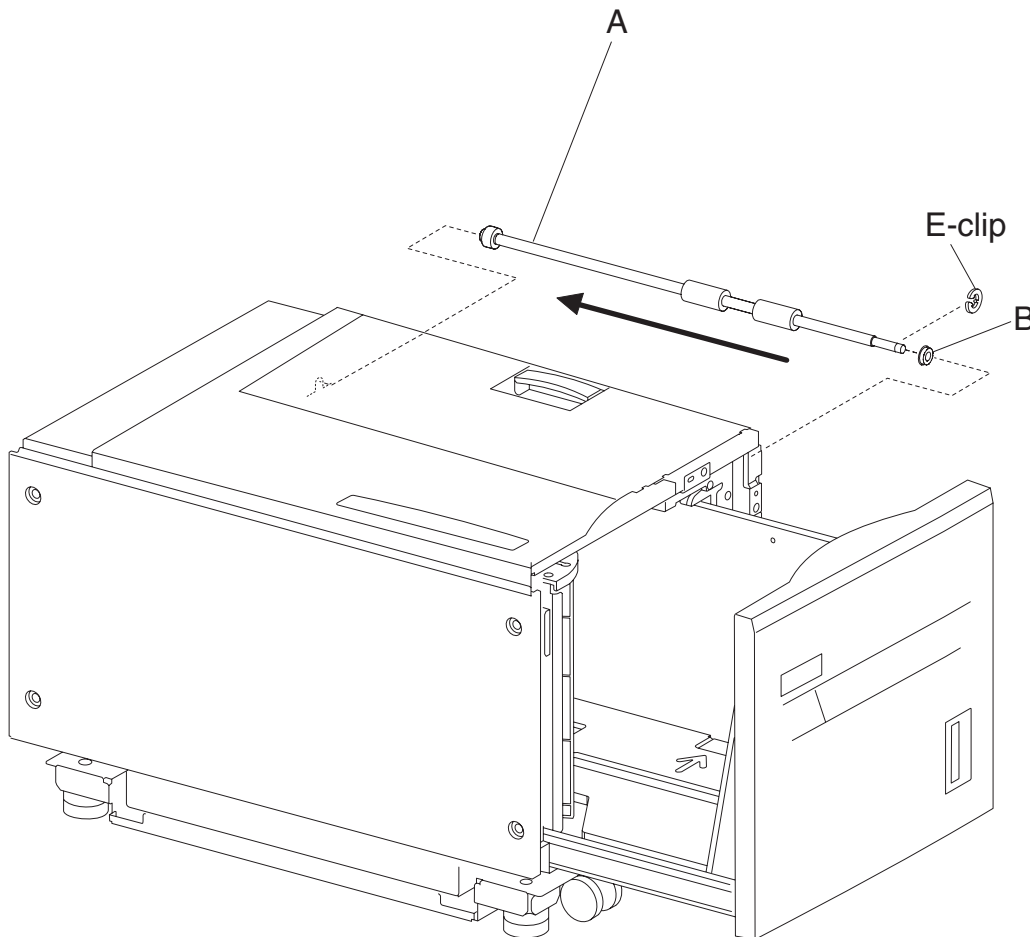
Note: Before re-installing the HCF media transport roll assembly (A), do not touch the rubber surface.

HCF media transport motor assembly removal

1. Remove the HCF unit from the printer.
2. Remove the HCF rear cover. See **"HCF rear cover removal" on page 4-125**.
3. Disconnect the connector from the HCF transport motor (A).
4. Release the harness from the clamp.
5. Remove the three screws securing the HCF transport motor (A) to the unit.
6. Remove the HCF transport motor (A).

A

Harness clamp
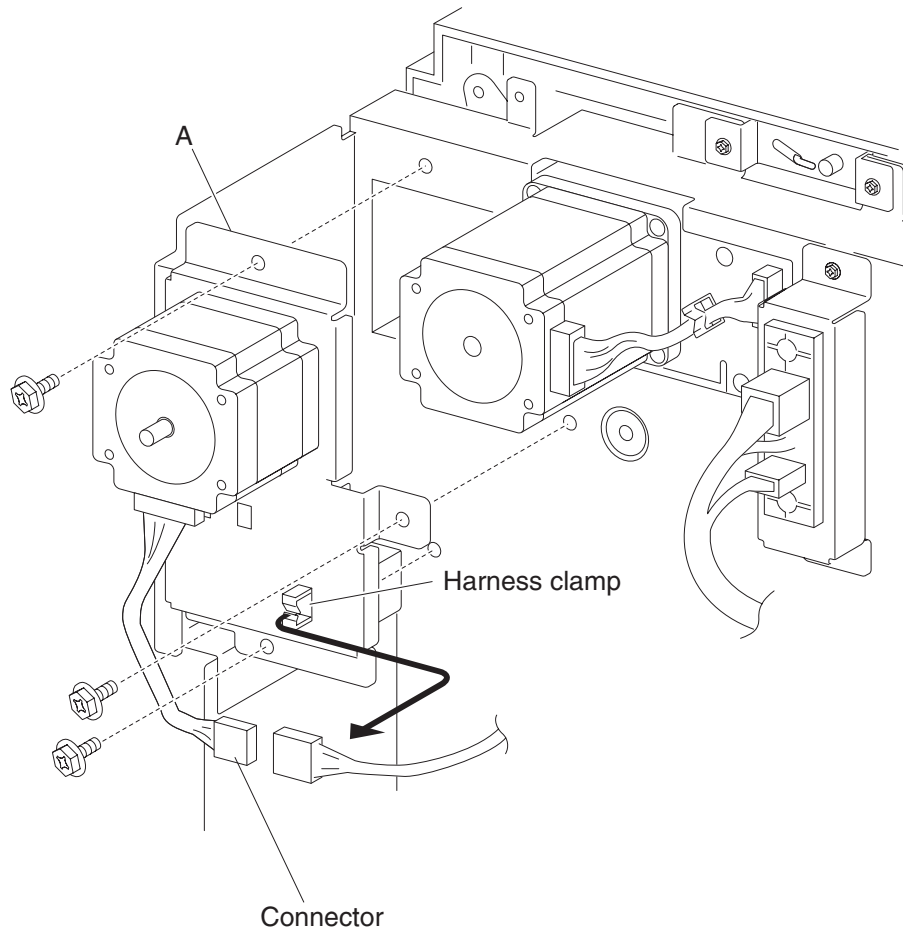
Connector

HCF switch (unit docking interlock) removal

1. Remove the HCF right cover. See **"HCF right cover removal" on page 4-121**.
2. Remove the HCF media tray.
3. Disconnect the connector from the HCF switch (HCF unit docking interlock) (A).
4. Release the hooks securing the HCF switch (HCF unit docking interlock) (A) to the unit.
5. Remove the HCF switch (HCF unit docking interlock) (A).
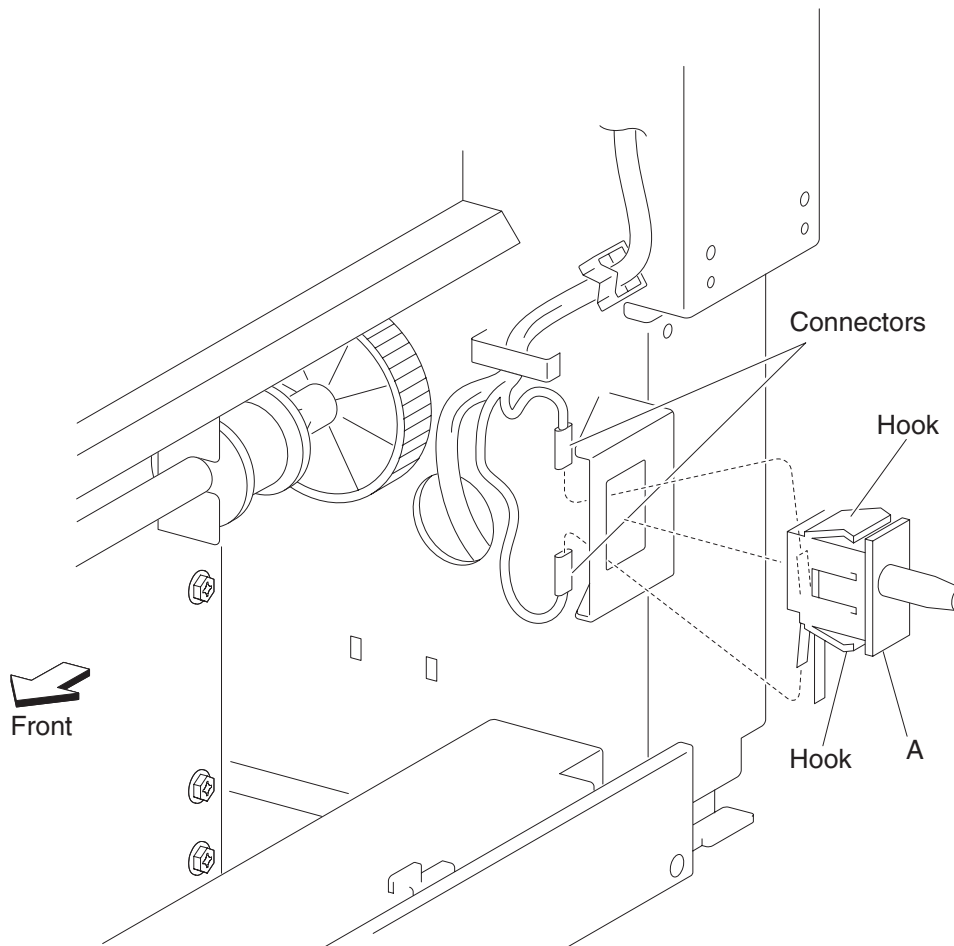
HCF controller card assembly removal

1. Remove the HCF rear cover. See **"HCF rear cover removal" on page 4-125**.
2. Disconnect all connectors from the HCF controller card assembly (A).
3. Remove the four screws securing the HCF controller card assembly (A) to the unit.
4. Remove the HCF controller card assembly (A).

Duplex unit removals

Right

Rear

Left

Front
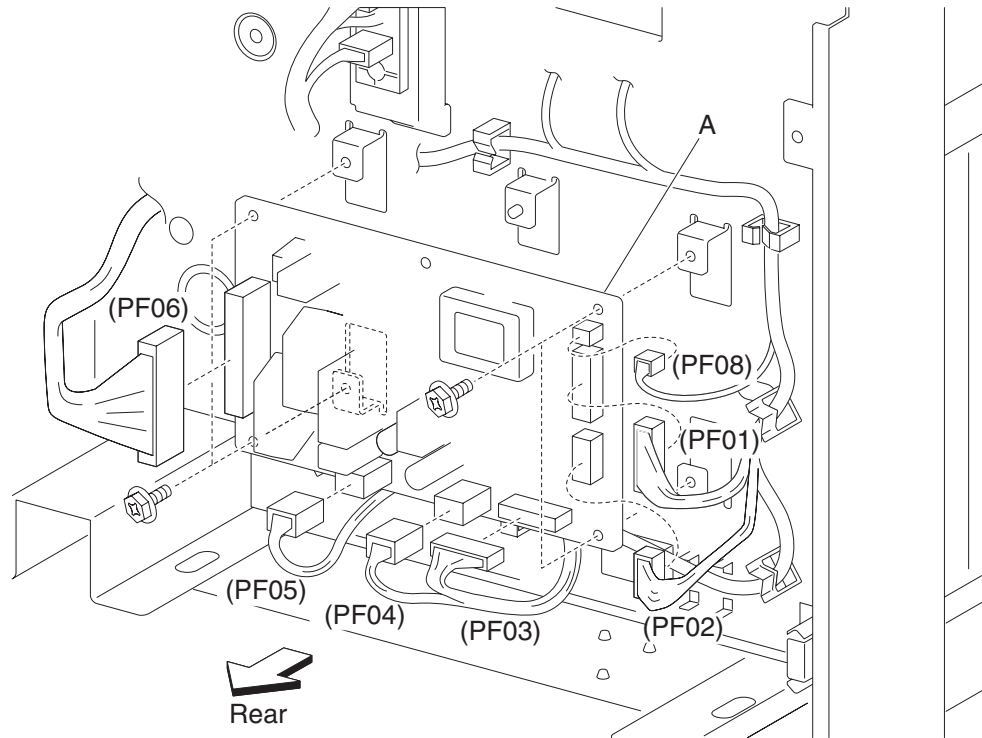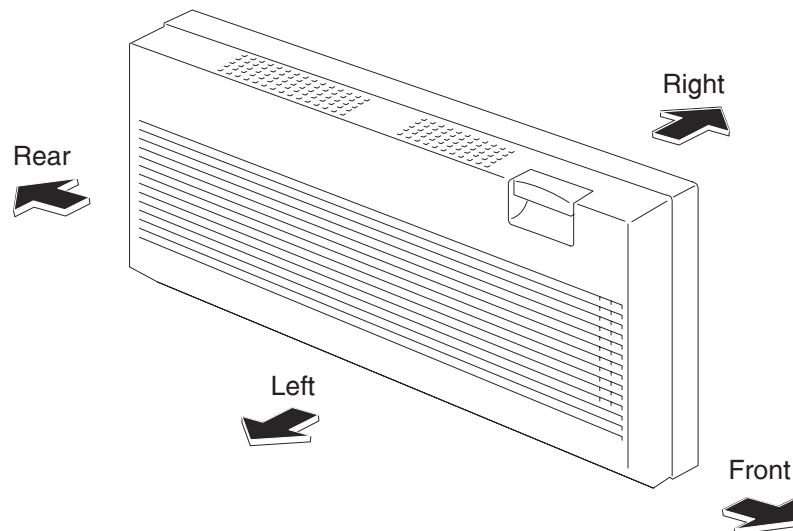
Duplex unit assembly removal

1. Pull the option hookup cover (A) outward in the direction of the arrow to remove.
2. Disconnect the connector of the duplex unit assembly harness from the machine.
3. Release the duplex unit assembly harness clamp from the machine.
4. Open the duplex unit assembly.

Clamp

Clamp

Connector

Clamp

Rear

A
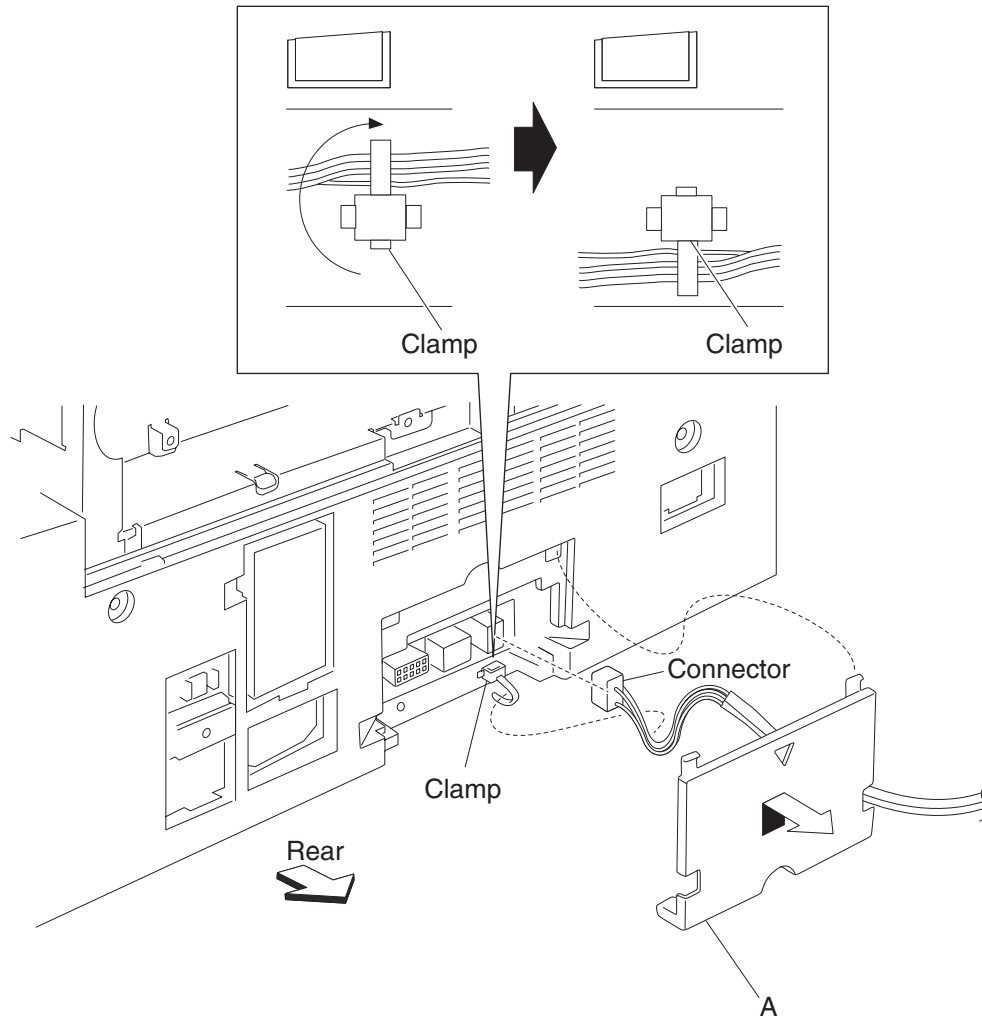
5. Turn the two duplex docking locks (B) on the duplex unit assembly by 90 degrees counterclockwise to release the duplex unit assembly from the machine.

6. Remove the duplex unit assembly.

Release

B

Hook

B

Hook

Hole

Hole

Front
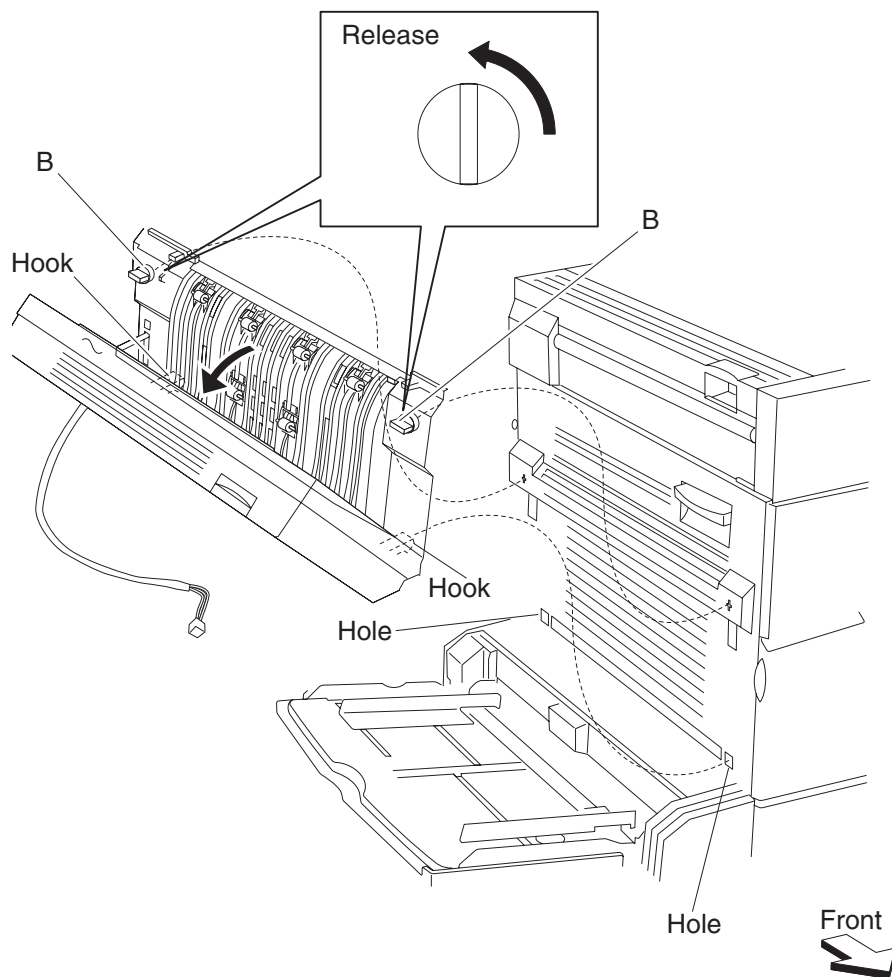
Duplex docking locks removal

1. Remove the duplex unit assembly. See **"Duplex unit assembly removal" on page 4-155**.
2. Open the duplex unit assembly.
3. Turn the two duplex docking locks (A) 45 degrees, and release the hooks with needle nose pliers on the back side securing them to the duplex.
4. Remove the two duplex docking locks (A).
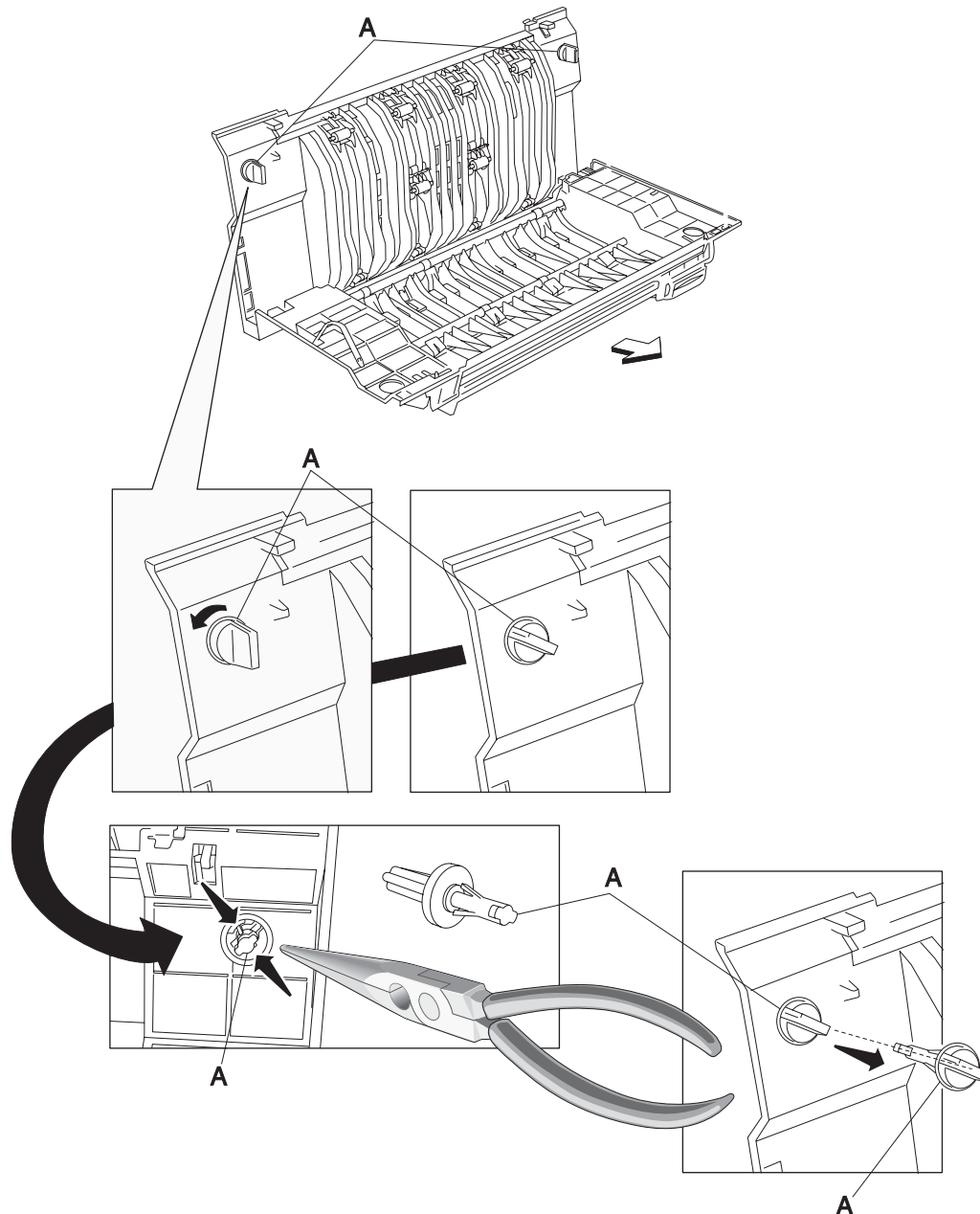
Duplex support strap removal

1. Remove the duplex unit assembly. See **"Duplex unit assembly removal" on page 4-155**.
2. Remove the two screws securing the duplex lower guide (A) to the duplex unit assembly.
3. Remove the duplex lower guide (A).

A

Right
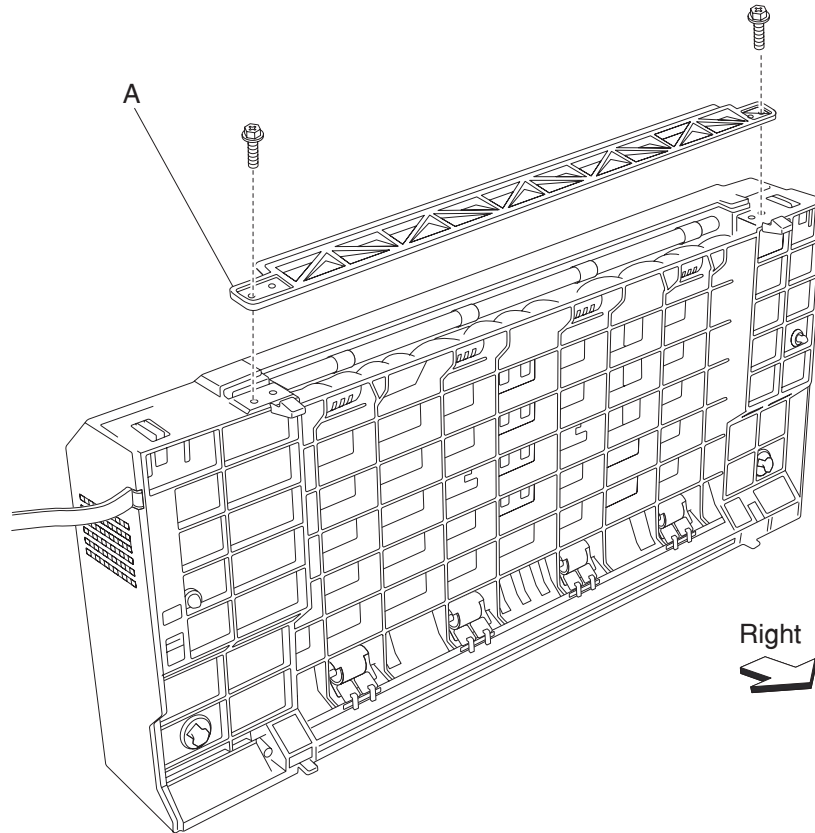
4. Open the duplex unit assembly.

5. Release the hook of the duplex left door support strap (B) securing the duplex left cover (C) to the duplex unit assembly.
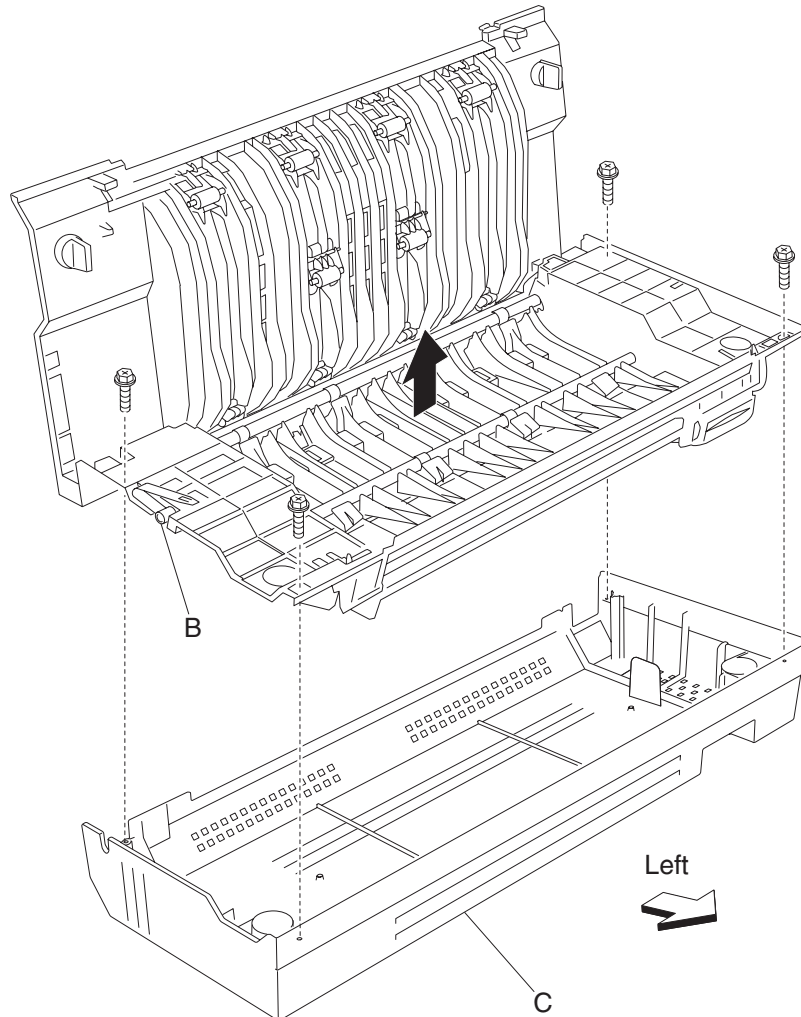
6. Remove the four screws securing the duplex left cover (C) to the duplex unit assembly.

7. Remove the duplex left cover (C).

8. Remove the duplex left door support strap (B) from the duplex unit assembly.

Duplex drive gear 28 tooth removal

1. Remove the duplex unit assembly. See **"Duplex unit assembly removal" on page 4-155**.
2. Remove the two screws securing the duplex lower guide (A) to the duplex unit assembly.
3. Remove the duplex lower guide (A).

4. Open the duplex unit assembly.
5. Release the hook of the duplex left door support strap (B) securing the duplex left cover (C) to the duplex unit assembly.
6. Remove the four screws securing the duplex left cover (C) to the duplex unit assembly.
7. Remove the duplex left cover (C).

8. Disconnect the connector of the harness from duplex drive motor assembly (D) to the duplex main cable assembly.
9. Release the harness from the clamps of the duplex unit assembly.
10. Remove the three screws securing the bracket (E) to the duplex unit assembly.
11. Remove the bracket (E).
12. Remove the two duplex drive gears 33/74T (G).
13. Release the hooks securing the three duplex drive gears 28T (F) to the duplex unit assembly.
14. Remove the three duplex drive gears 28T (F).
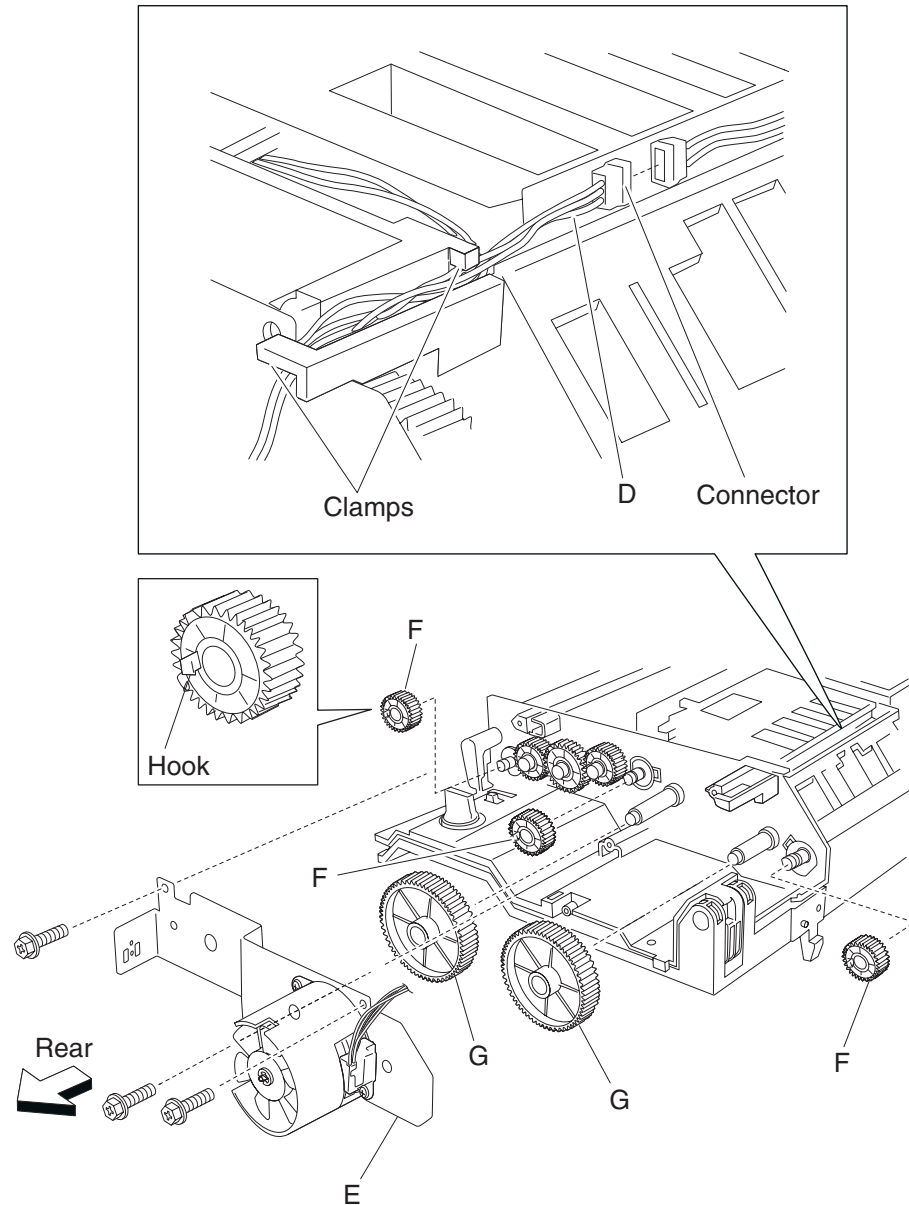
Duplex drive gear 33 / 74 tooth removal

1. Remove the duplex unit assembly. See **"Duplex unit assembly removal" on page 4-155**.
2. Remove the two screws securing the duplex lower guide (A) to the duplex unit assembly.
3. Remove the duplex lower guide (A).

A

Right

4. Open the duplex unit assembly.

5. Release the hook of the duplex left door support strap (B) securing the duplex left cover (C) to the duplex unit assembly.

6. Remove the four screws securing the duplex left cover (C) to the duplex unit assembly.

7. Remove the duplex left cover (C).

8. Disconnect the connector of the harness from duplex drive motor assembly (D) to the duplex main cable assembly.
9. Release the harness from the clamps of the duplex unit assembly.
10. Remove the three screws securing the bracket (E) to the duplex unit assembly.
11. Remove the bracket (E).
12. Remove the two duplex drive gears 33/74T (F).

Duplex drive gear 33 tooth removal

1. Remove the duplex unit assembly. See **"Duplex unit assembly removal" on page 4-155**.
2. Remove the two screws securing the duplex lower guide (A) to the duplex unit assembly.
3. Remove the duplex lower guide (A).

4. Open the duplex unit assembly.
5. Release the hook of the duplex left door support strap (B) securing the duplex left cover (C) to the duplex unit assembly.
6. Remove the four screws securing the duplex left cover (C) to the duplex unit assembly.
7. Remove the duplex left cover (C).

8. Disconnect the connector of the harness from duplex drive motor assembly (D) to the duplex main cable assembly.

9. Release the harness from the clamps of the duplex unit assembly.

10. Remove the three screws securing the bracket (E) to the duplex unit assembly.

11. Remove the bracket (E).

12. Remove the two duplex drive gears 33T (F).

Duplex drive gear 42 tooth removal

1. Remove the duplex unit assembly. See **"Duplex unit assembly removal" on page 4-155**.
2. Remove the two screws securing the duplex lower guide (A) to the duplex unit assembly.
3. Remove the duplex lower guide (A).

A

Right

4. Open the duplex unit assembly.

5. Release the hook of the duplex left door support strap (B) securing the duplex left cover (C) to the duplex unit assembly.

6. Remove the four screws securing the duplex left cover (C) to the duplex unit assembly.

7. Remove the duplex left cover (C).

8. Disconnect the connector of the harness from duplex drive motor assembly (D) to the duplex main cable assembly.
9. Release the harness from the clamps of the duplex unit assembly.
10. Remove the three screws securing the bracket (E) to the duplex unit assembly.
11. Remove the bracket (E).
12. Remove the duplex drive gear 42T (F).

Clamps   D   Connector

F

Rear

E

Duplex switch (left cover interlock) removal

1. Remove the duplex unit assembly. See **"Duplex unit assembly removal" on page 4-155**.
2. Remove the two screws securing the duplex lower guide (A) to the duplex unit assembly.
3. Remove the duplex lower guide (A).

A

Right

4. Open the duplex unit assembly.
5. Release the hook of the duplex left door support strap (B) securing the duplex left cover (C) to the duplex unit assembly.
6. Remove the four screws securing the duplex left cover (C) to the duplex unit assembly.
7. Remove the duplex left cover (C).

B

Hook

B

C
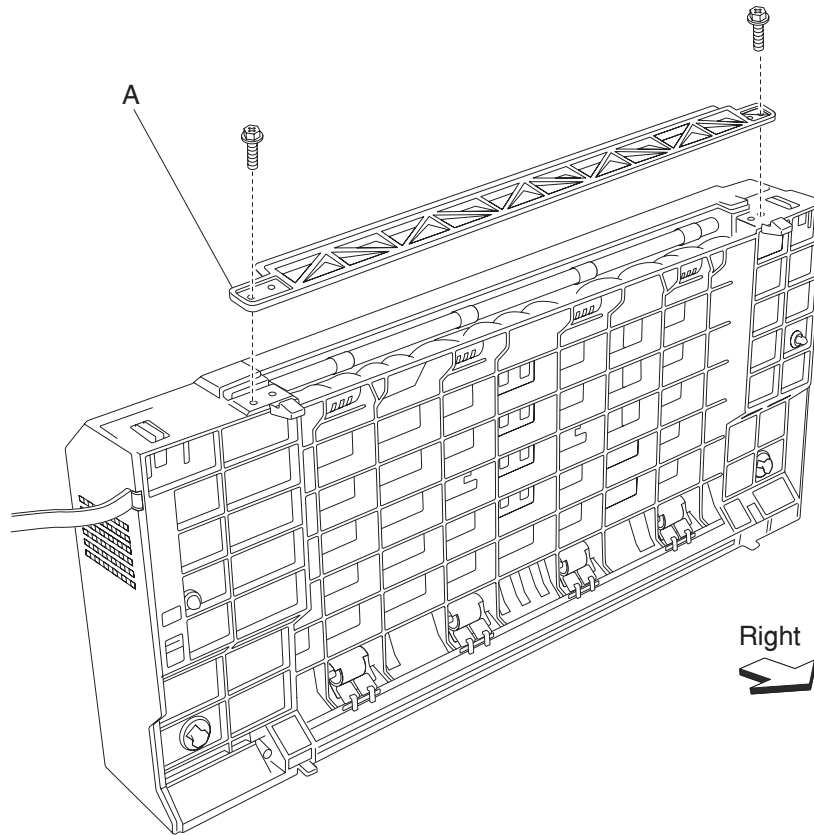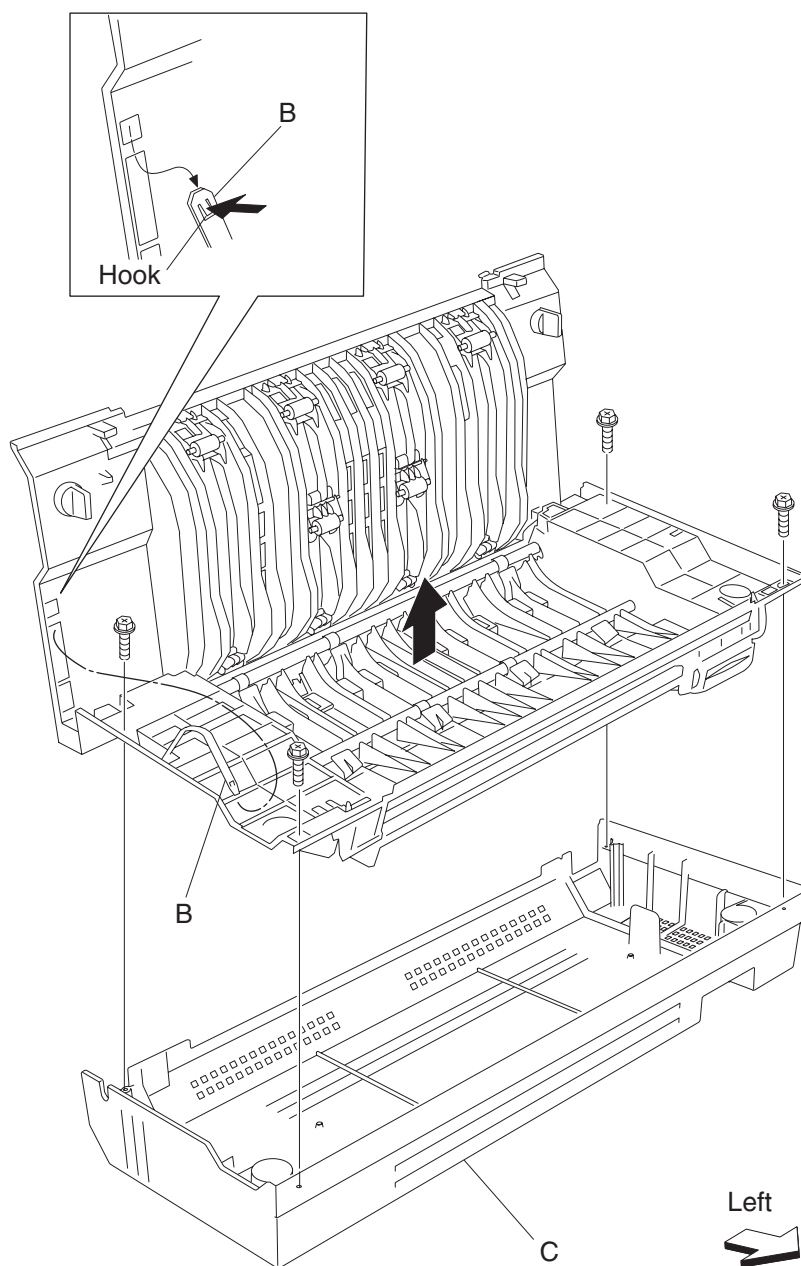
Left

8. Disconnect the connector from the switch (duplex left door interlock) (D).

9. Release the hooks securing the switch (duplex cover interlock) (D) to the bracket (E).

10. Remove the switch (duplex left door interlock) (D).
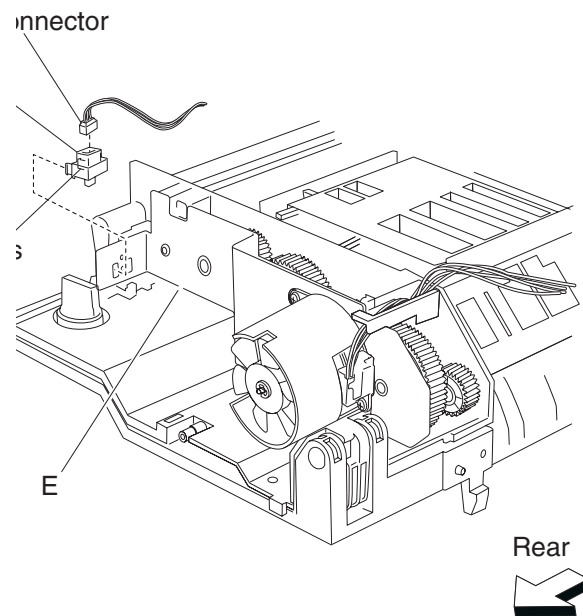
Duplex media in actuator removal

1. Remove the duplex unit assembly. See **"Duplex unit assembly removal" on page 4-155**.
2. Remove the two screws securing the duplex lower guide (A) to the duplex unit assembly.
3. Remove the duplex lower guide (A).

A

Right
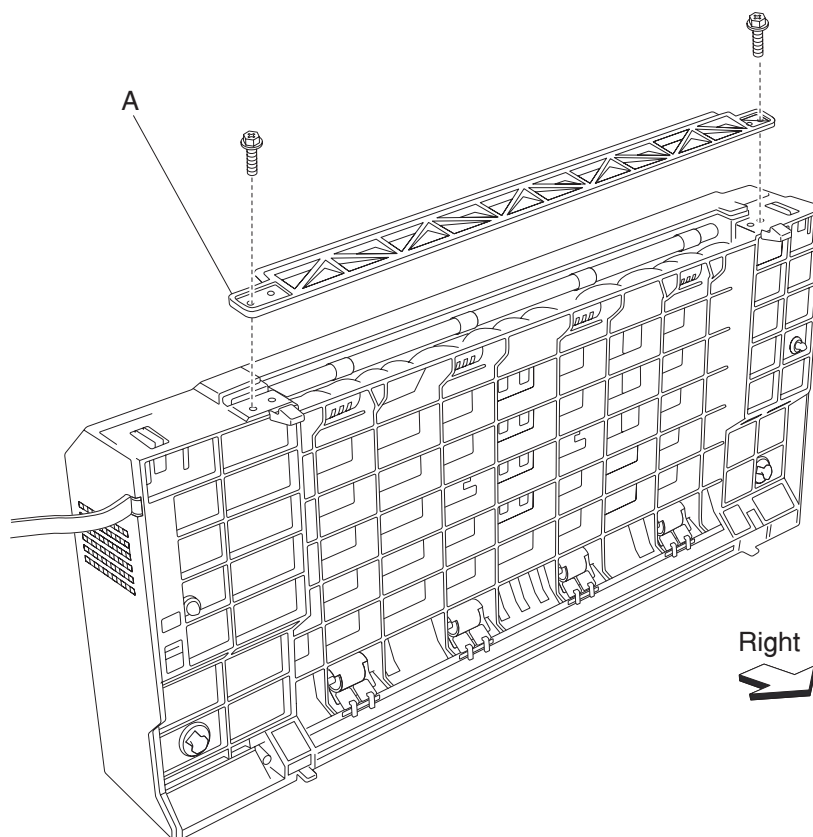
4. Open the duplex unit assembly.

5. Release the hook of the duplex left door support strap (B) securing the duplex left cover (C) to the duplex unit assembly.

6. Remove the four screws securing the duplex left cover (C) to the duplex unit assembly.

7. Remove the duplex left cover (C).
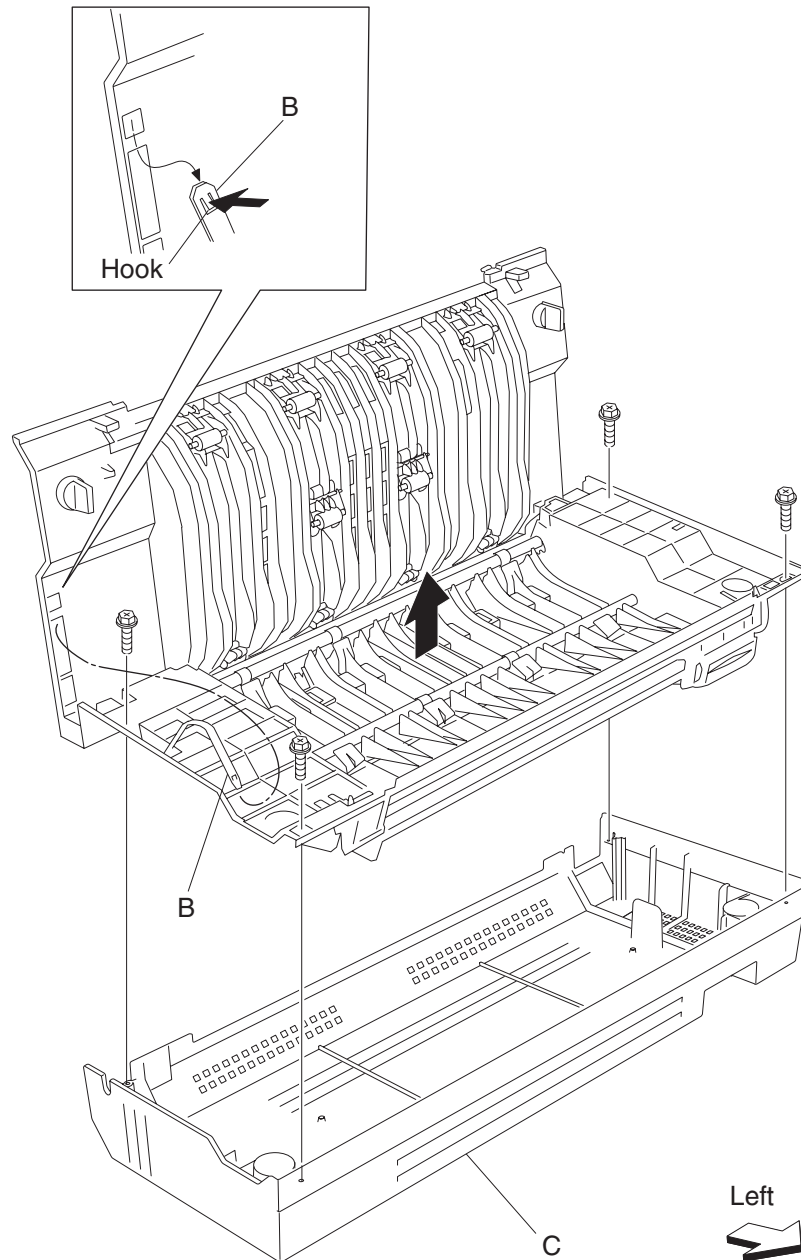
8. Remove the spring (D) from the duplex wait actuator (E).
9. Turn the duplex wait in actuator (E) 180 degrees, and move it rightward and upward in the direction of the arrow.
10. Remove the duplex wait actuator (E).
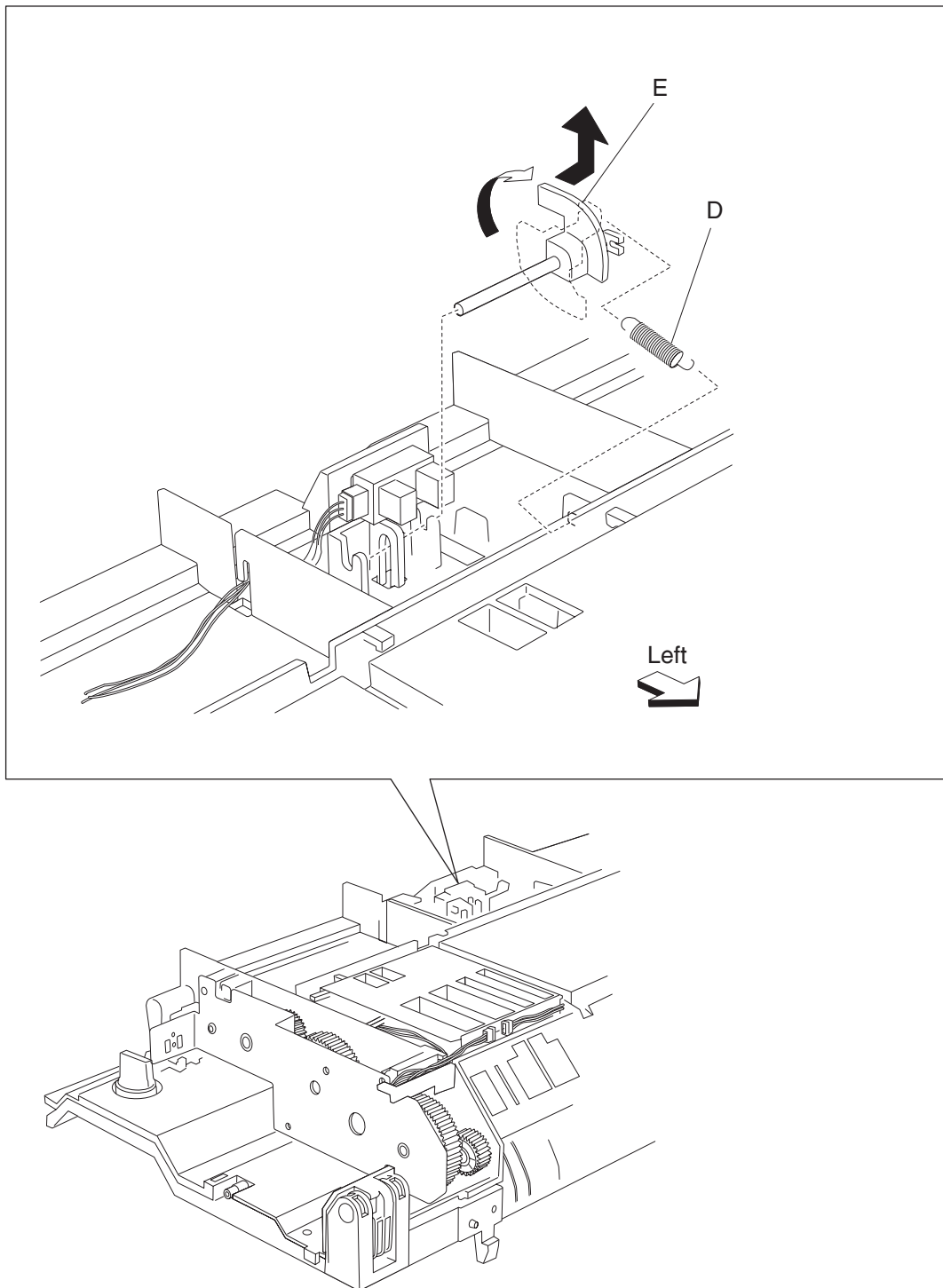
Duplex drive motor assembly removal

1. Remove the duplex unit assembly. See **"Duplex unit assembly removal" on page 4-155**.
2. Remove the two screws securing the duplex lower guide (A) to the duplex unit assembly.
3. Remove the duplex lower guide (A).

Right
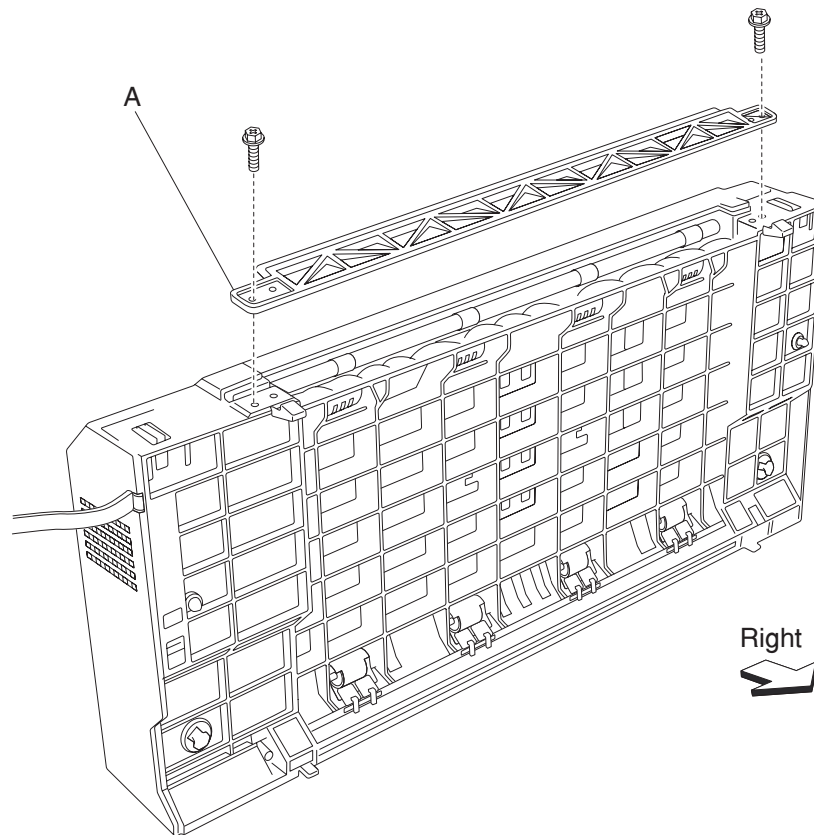
4. Open the duplex unit assembly.
5. Release the hook of the duplex left door support strap (B) securing the duplex left cover (C) to the duplex unit assembly.
6. Remove the four screws securing the duplex left cover (C) to the duplex unit assembly.
7. Remove the duplex left cover (C).
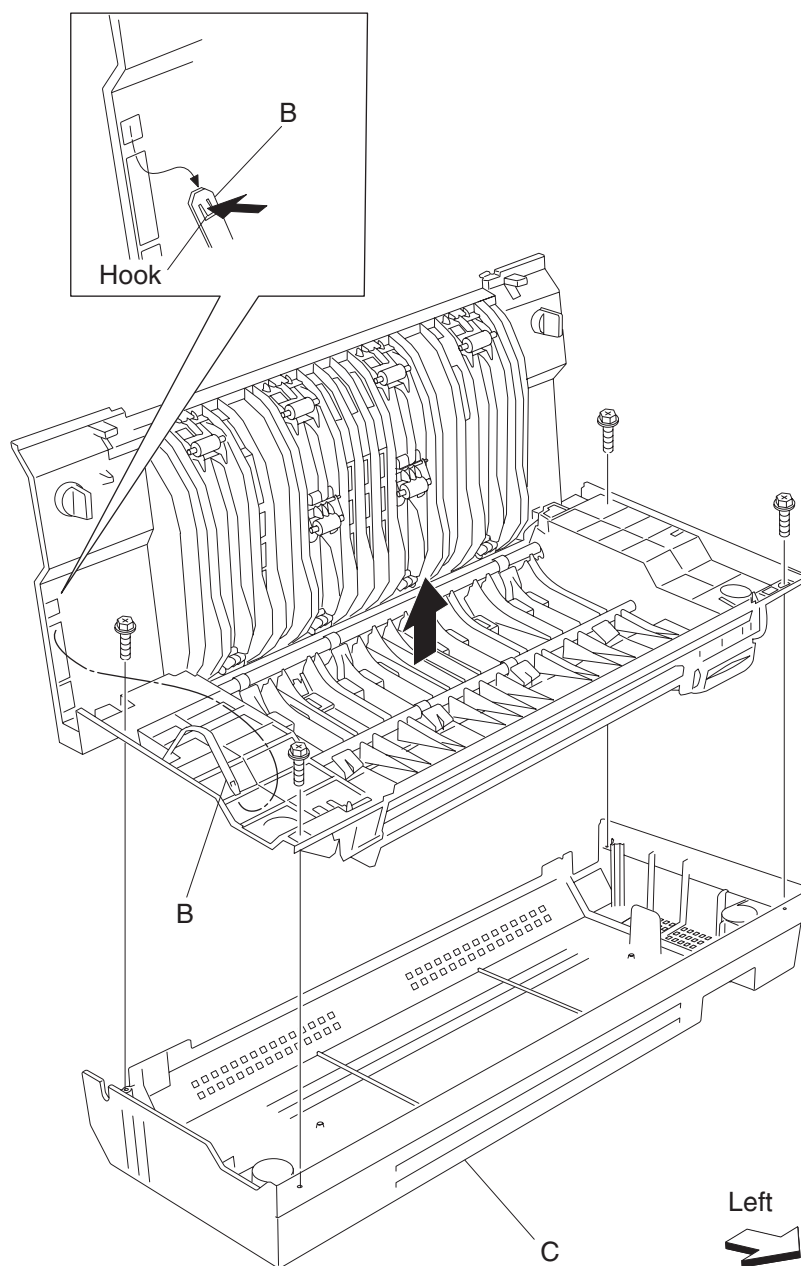
8. Disconnect the connector of the harness from duplex motor assembly (D) to the duplex main cable assembly.

9. Release the harness from the clamps of the duplex unit assembly.

10. Remove the two screws securing the duplex drive motor assembly (E) to the duplex unit assembly.

11. Remove the duplex drive motor assembly (E).

12. Remove the duplex drive motor duct (F) from the duplex drive motor assembly (E).

13. Remove the e-clip with a prying tool securing the duplex drive motor fan (G) to the duplex drive motor assembly (E).

14. Remove the duplex drive motor fan (G).
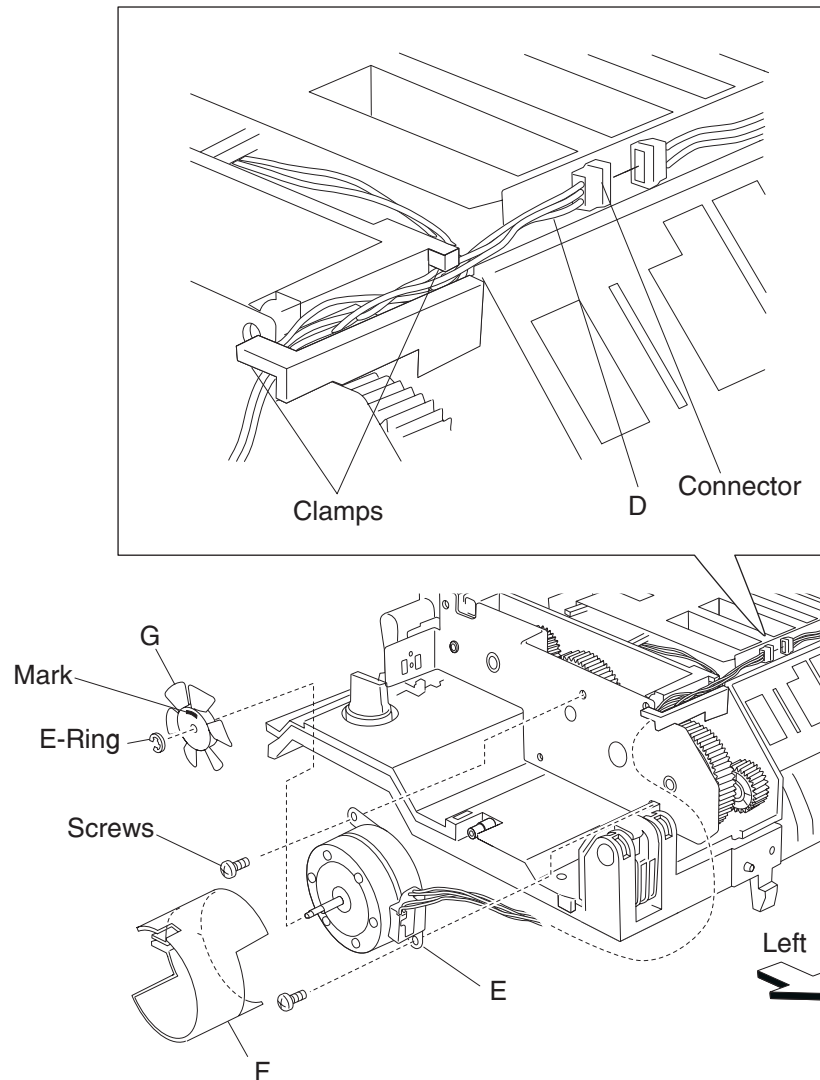
Duplex controller card assembly removal

1. Remove the duplex unit assembly. See **"Duplex unit assembly removal" on page 4-155**.
2. Remove the two screws securing the duplex lower guide (A) to the duplex unit assembly.
3. Remove the duplex lower guide (A).

A

Right
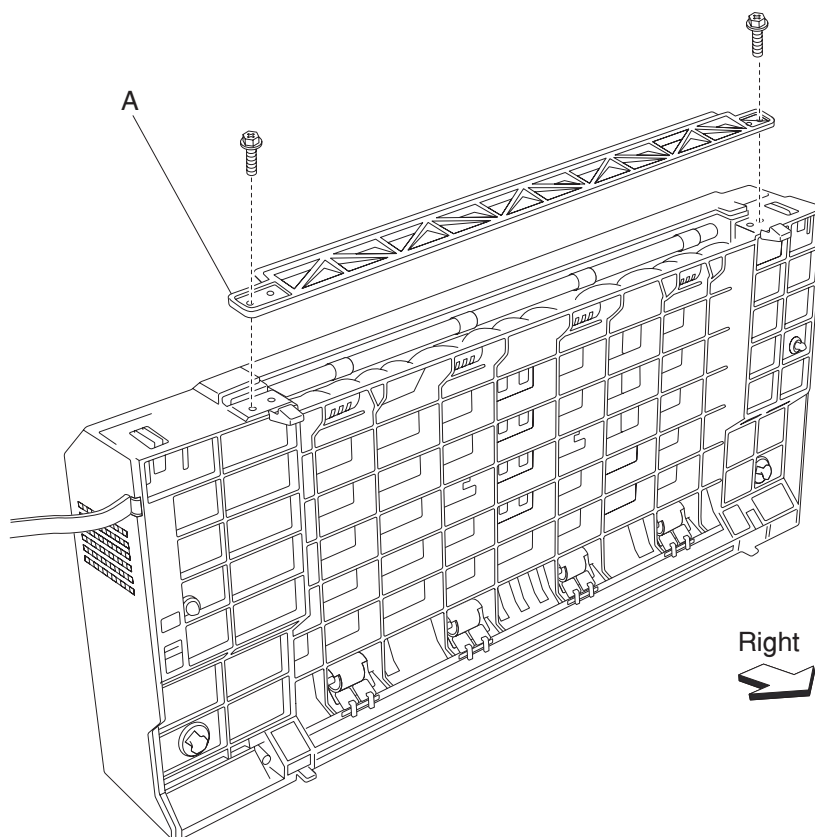
4. Open the duplex unit assembly.

5. Release the hook of the duplex left door support strap (B) securing the duplex left cover (C) to the duplex unit assembly.

6. Remove the four screws securing the duplex left cover (C) to the duplex unit assembly.

7. Remove the duplex left cover (C).
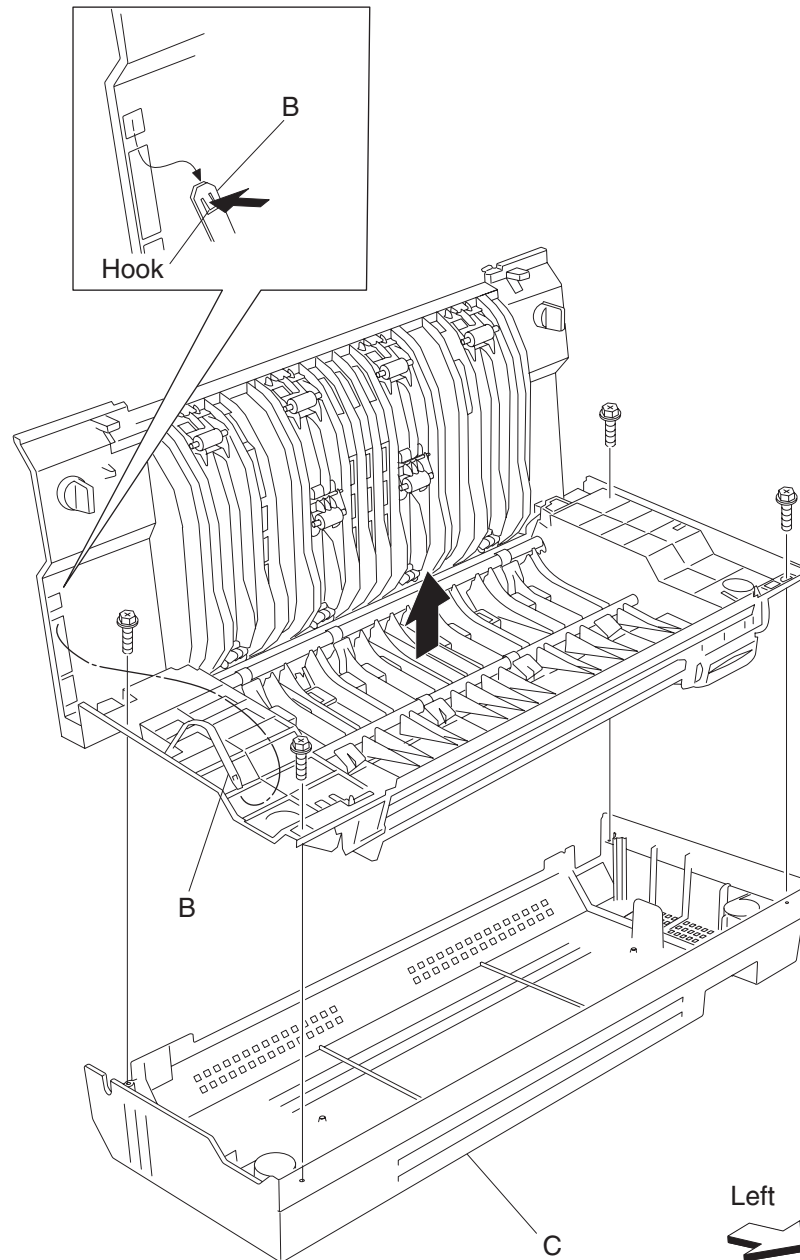
8. Disconnect all the connectors to the duplex controller card assembly (D).

9. Remove the two screws securing the duplex controller card assembly (D) to the duplex unit assembly.

10. Remove the duplex controller card assembly (D).

D

Connectors

Right
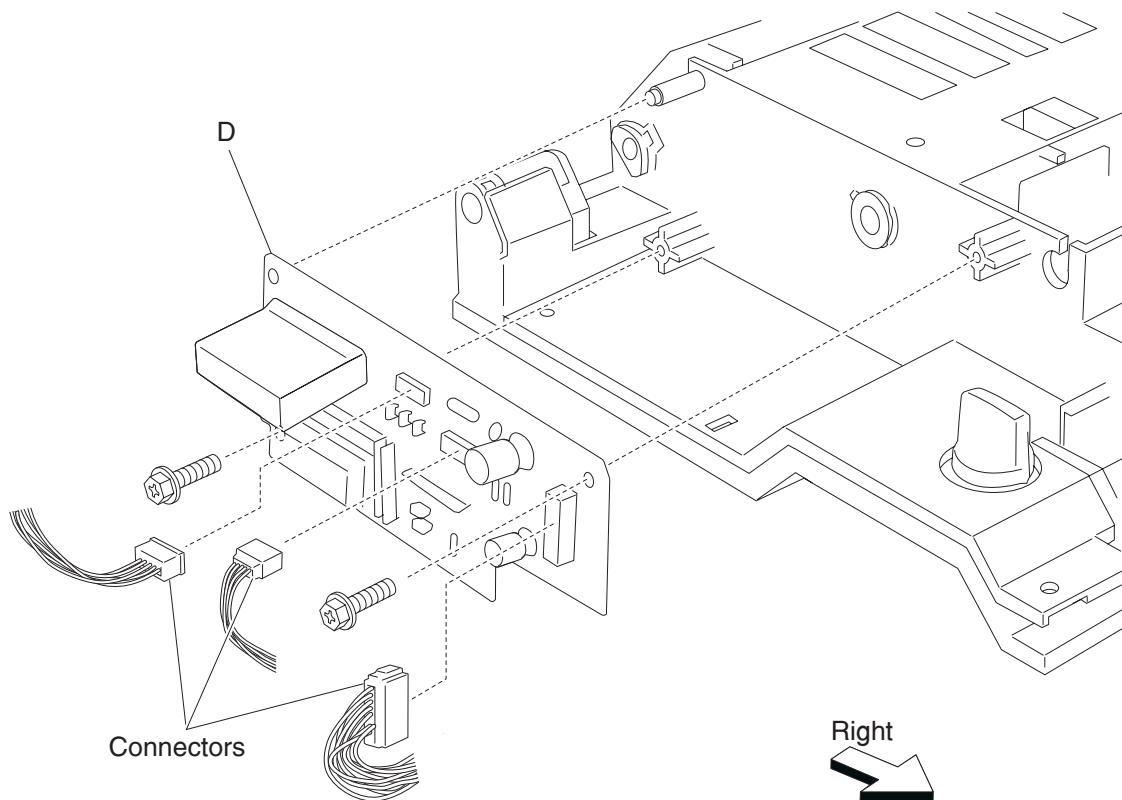
Duplex sensor (duplex wait) removal

1. Remove the duplex unit assembly. See **"Duplex unit assembly removal" on page 4-155**.
2. Remove the two screws securing the duplex lower guide (A) to the duplex unit assembly.
3. Remove the duplex lower guide (A).
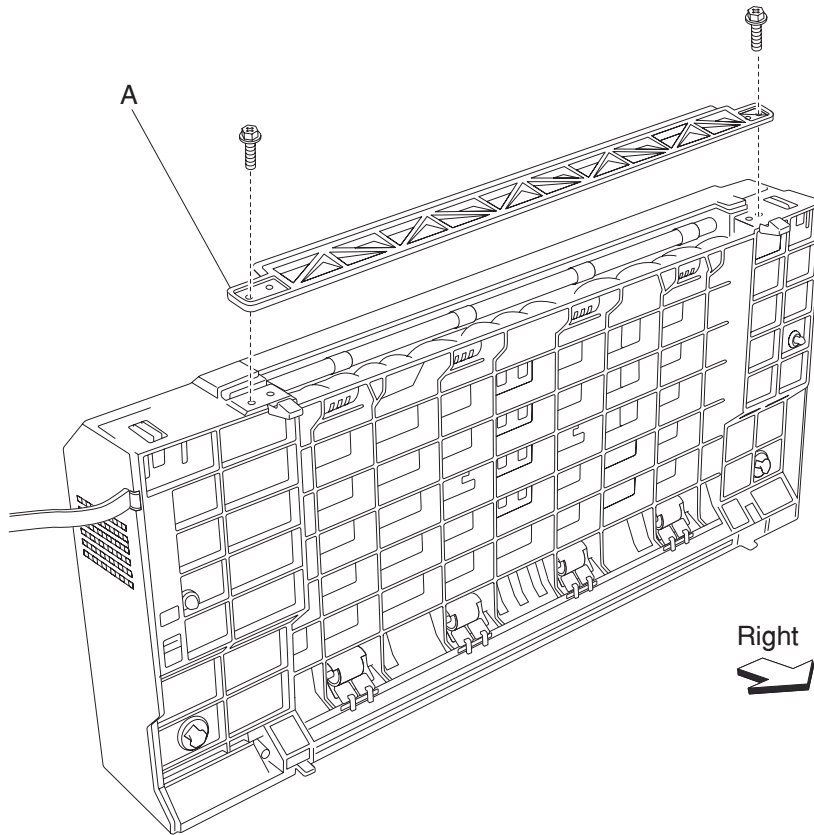
4. Open the duplex unit assembly.
5. Release the hook of the duplex left door support strap (B) securing the duplex left cover (C) to the duplex unit assembly.
6. Remove the four screws securing the duplex left cover (C) to the duplex unit assembly.
7. Remove the duplex left cover (C).
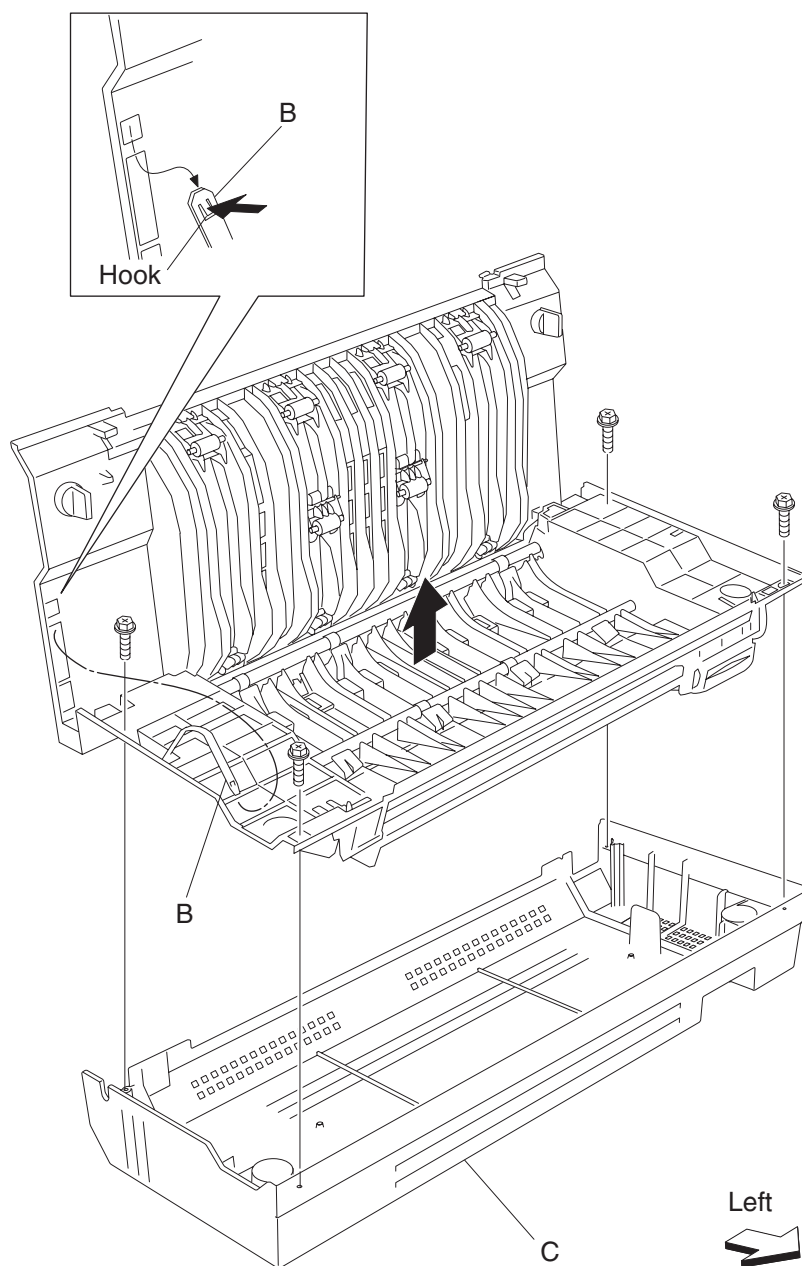
8. Disconnect the connector of the harness from the sensor (duplex wait) (D).

9. Release the hooks securing the sensor (duplex wait) (D) to the duplex unit assembly.

10. Remove the sensor (duplex wait) (D).
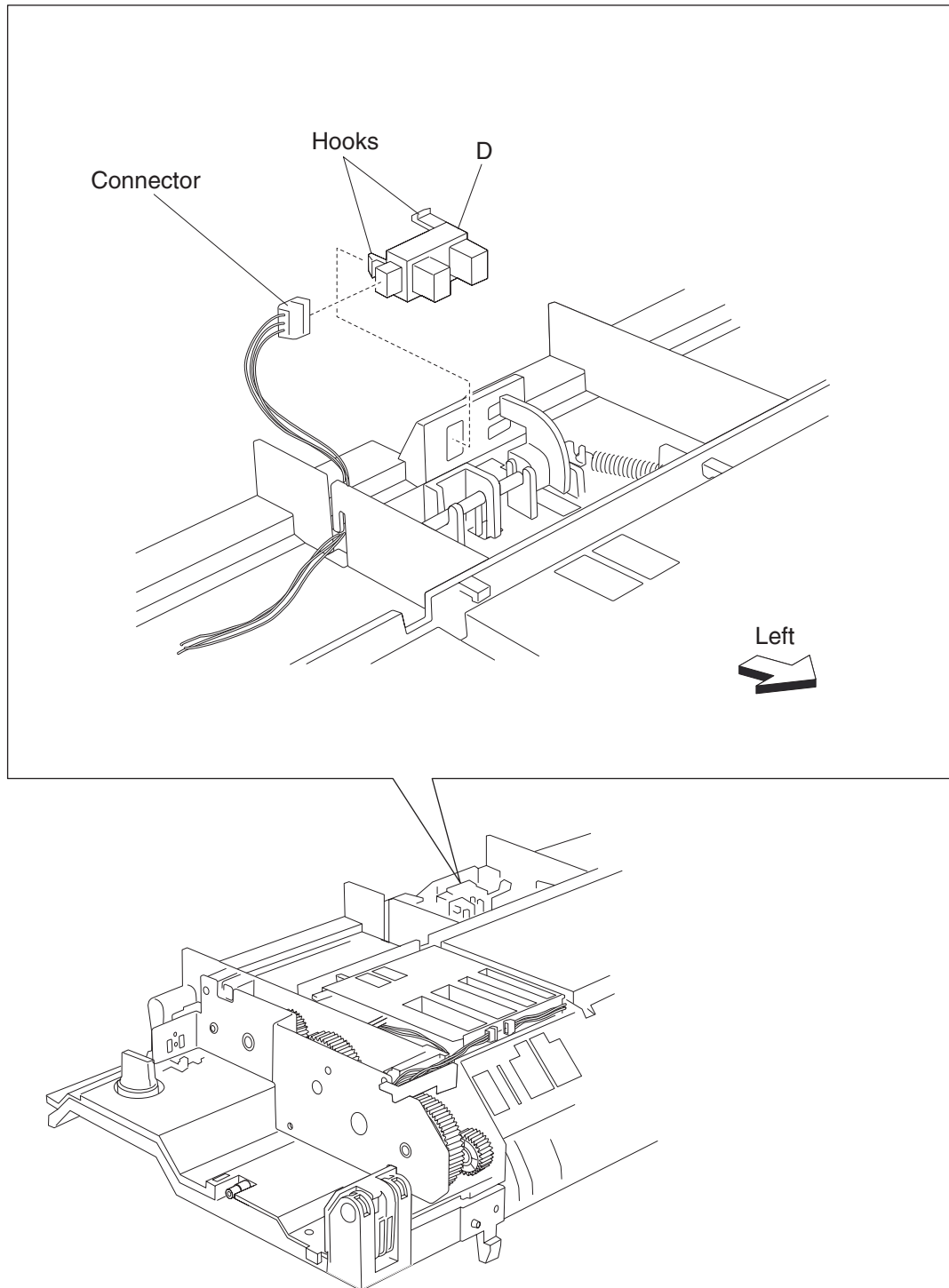
Duplex access handle removal

1. Remove the duplex unit assembly. See **"Duplex unit assembly removal" on page 4-155**.
2. Remove the two screws securing the duplex lower guide (A) to the duplex unit assembly.
3. Remove the duplex lower guide (A).
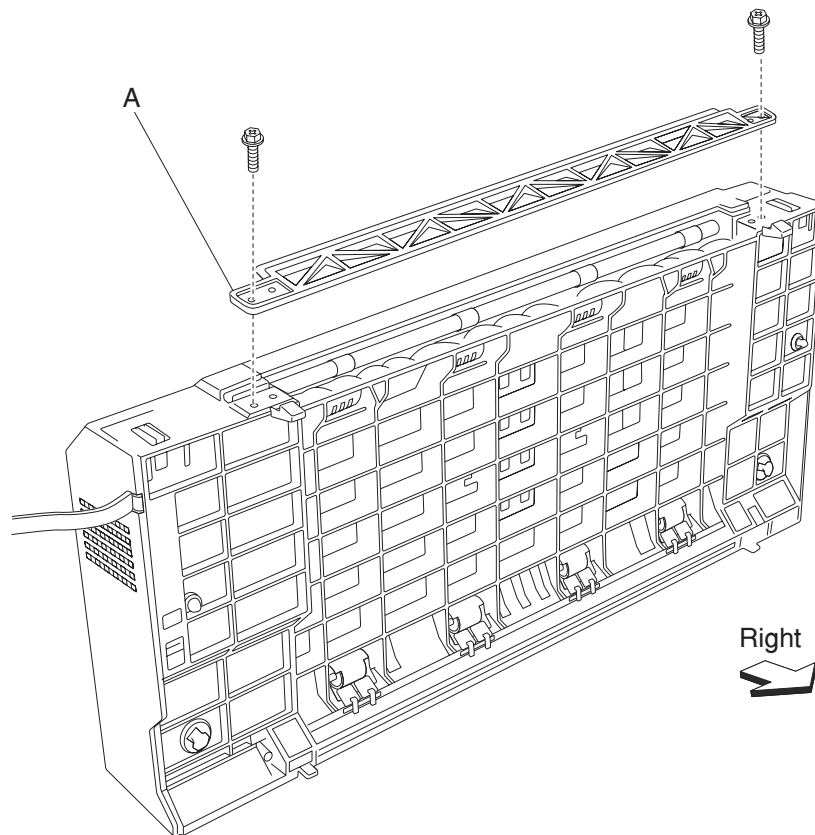
4. Open the duplex unit assembly.

5. Release the hook of the duplex left door support strap (B) securing the duplex left cover (C) to the duplex unit assembly.

6. Remove the four screws securing the duplex left cover (C) to the duplex unit assembly.

7. Remove the duplex left cover (C).
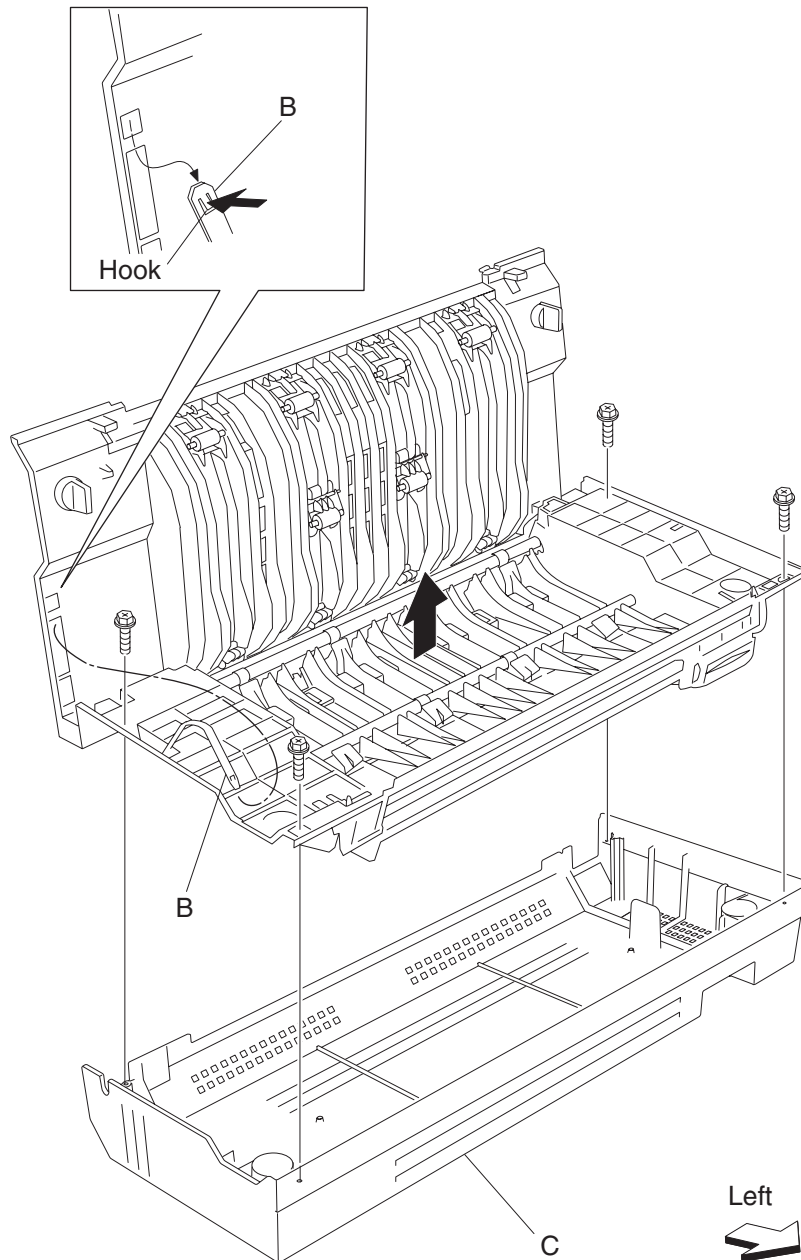
8. Remove the three screws securing the bracket (E) to the duplex unit assembly.
9. Remove the bracket (E).
10. Remove the spring (F).
11. Rotate the duplex left door handle (G) upward, and move in the direction of the arrow.
    Note: The metal shaft (H) may become detached.

12. Remove the duplex left door handle (G).
13. Rotate the duplex left door handle latch (I) upward, and move in the direction of the arrow.
14. Remove the duplex left door handle latch (I).
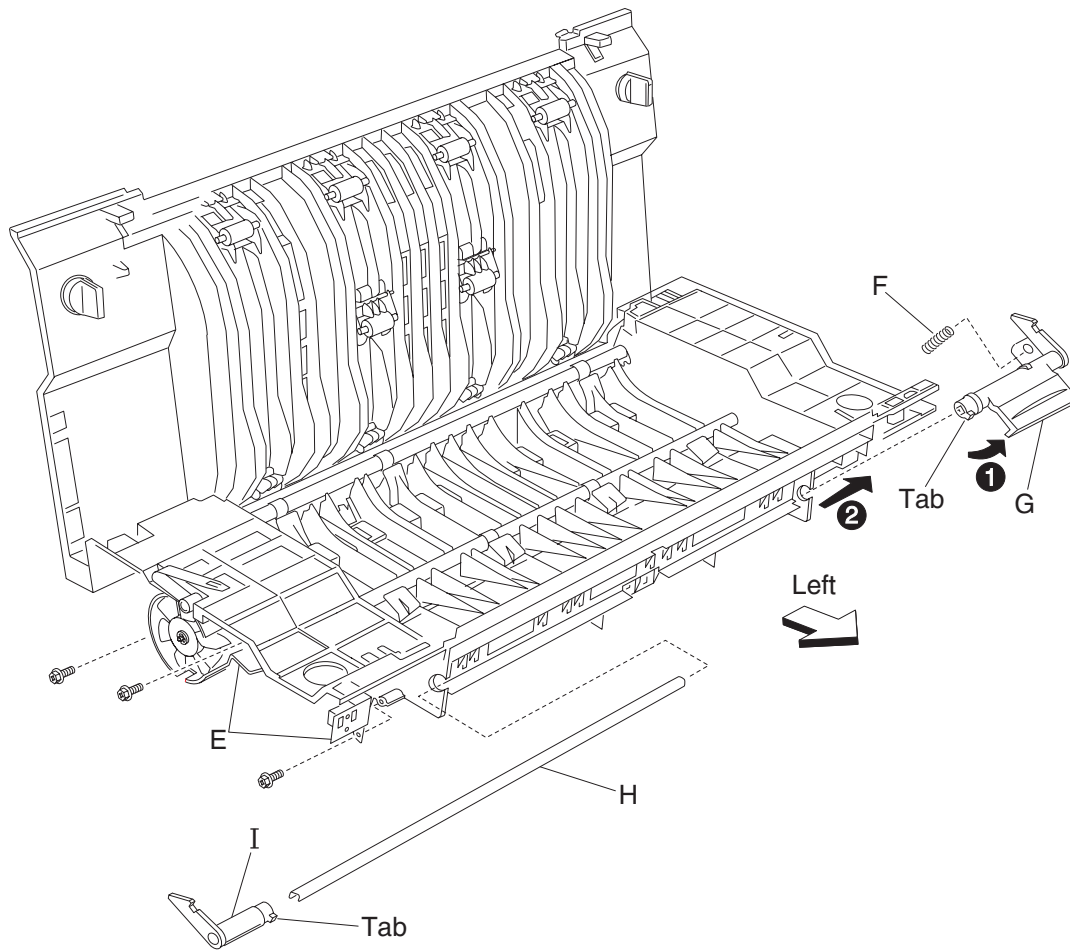
Duplex media transport rolls removal

1. Remove the duplex unit assembly. See **"Duplex unit assembly removal" on page 4-155**.
2. Remove the duplex controller card assembly. See **"HCF controller card assembly removal" on page 4-153**.
3. Remove the duplex drive gears 28T. See **"Duplex drive gear 28 tooth removal" on page 4-161**.
4. Remove the hooks of the four bushings (A) securing the two duplex media transport rolls (B) to the duplex unit assembly.
5. Remove the two duplex media transport rolls (B).

   Note: When removing the two duplex media transport rolls (B), do not touch the rubber surface.
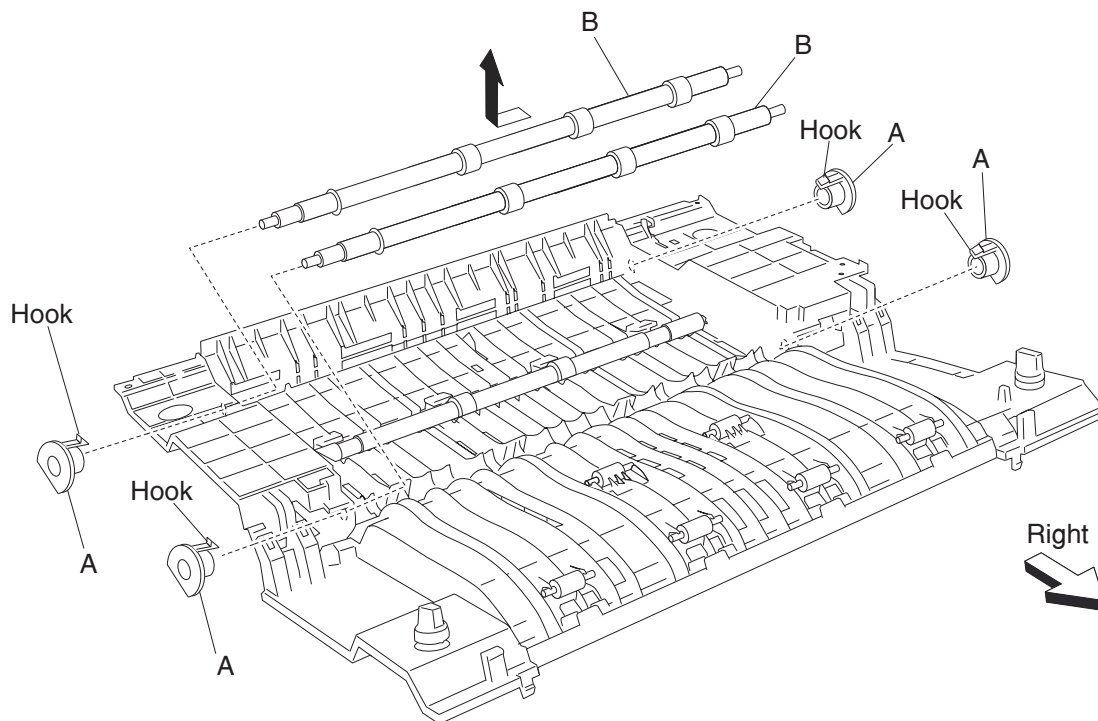
Note: When replacing the two duplex media transport rolls (B), do not touch the rubber surface.

Duplex media center transport roll removal

1. Remove the duplex unit assembly. See **"Duplex unit assembly removal" on page 4-155**.
2. Remove the duplex controller card assembly. See **"Duplex controller card assembly removal" on page 4-182**.
3. Remove the hooks of the two bushings (A) securing the duplex media transport center roll (B) to the duplex unit assembly.
4. Remove the duplex media center transport roll (B).
   Note: When removing the duplex media center transport roll (B), do not touch the rubber surface.
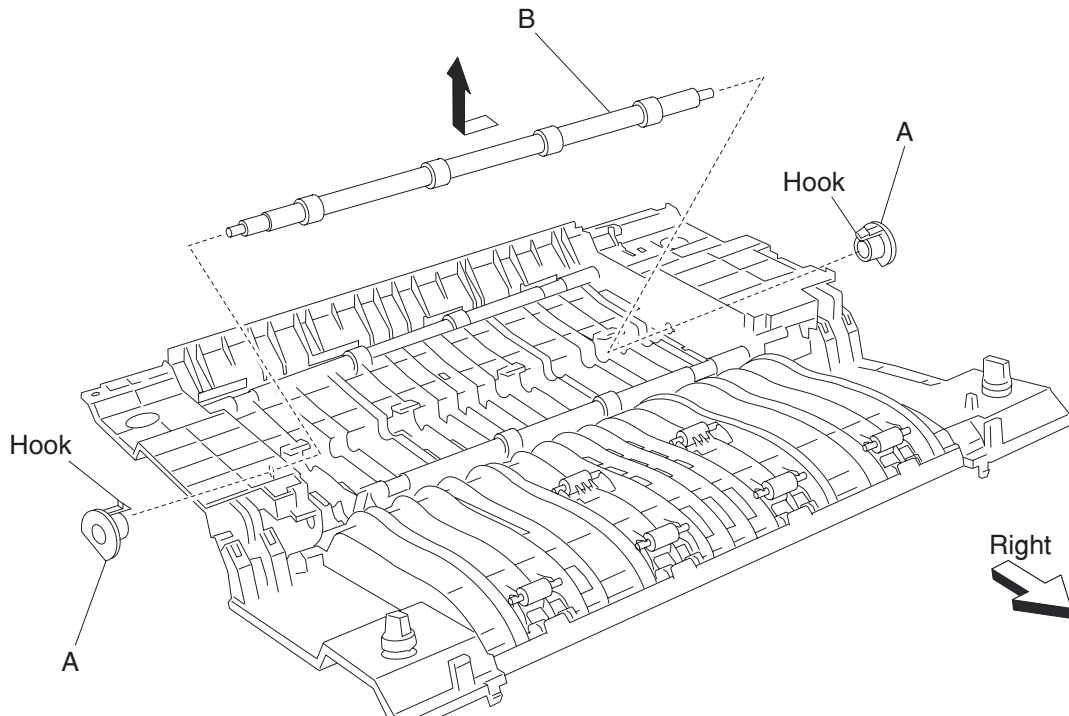
Note: When replacing the duplex media center transport roll (B), do not touch the rubber surface.

Exit 2 removals

Exit 2 unit assembly removal

1. Open the printer left door assembly (A).
2. Lift the two levers (B) while pulling the exit 2 unit (C) outward in the direction of the arrow.
3. Remove the exit 2 unit (C).
   Note: The left side of the exit 2 unit (C) may require some force to disengage the electrical connector.
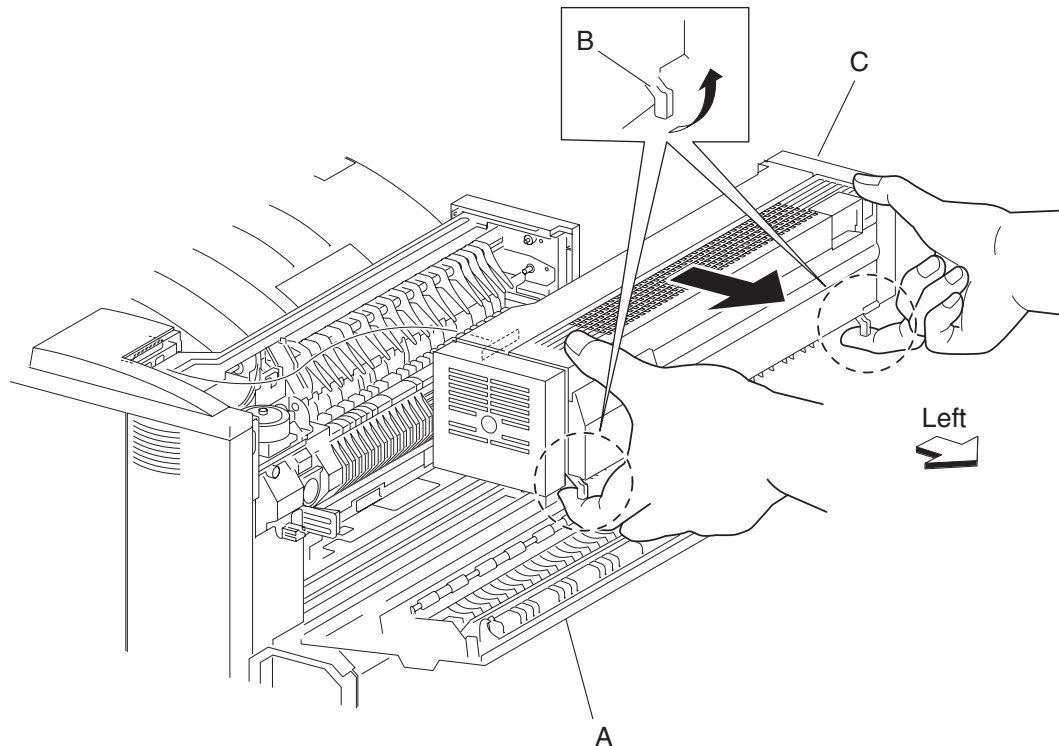
Note: Before reinstalling, ensure the exit 2 (C) unit is properly aligned and the electrical connector is properly connected.

Exit 2 unit docking lever removal

1. Remove the exit 2 unit assembly. See **"Exit 2 unit assembly removal" on page 4-193**.
2. Remove the two exit 2 unit docking levers (A) with a prying tool from the brackets (B).
   Note: When removing the two exit 2 docking levers, ensure the brackets (B) are not bent or deformed.

3. Remove the springs (C) from the brackets (B).
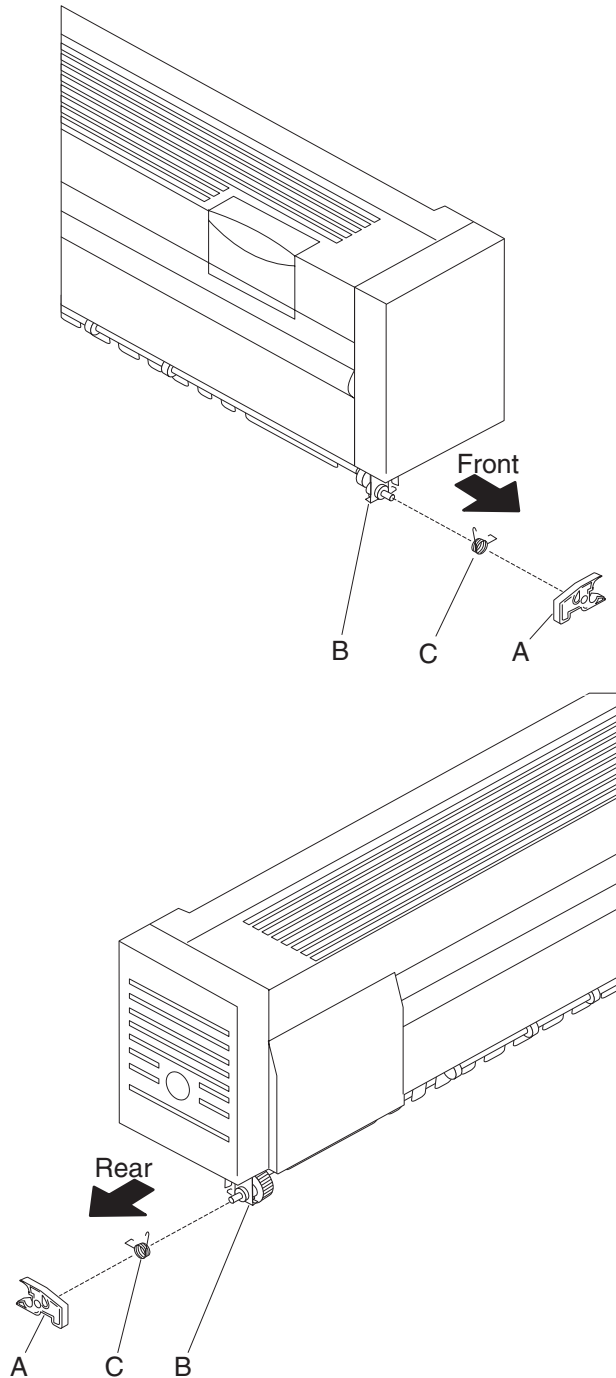
Exit 2 left door handle removal

1. Remove the exit 2 unit assembly. See **"Exit 2 unit assembly removal" on page 4-193**.
2. Open the exit 2 unit assembly.
3. Remove two screws securing the upper guide assembly (A) to the exit 2 unit assembly.
4. Remove the upper guide assembly (A).

Note: The exit 2 left door handle (B) may become detached.

5. Remove the exit 2 left door handle (B) from the upper guide assembly (A).
6. Remove the spring (C) from the upper guide assembly (A).

Note: After reinstalling the upper guide assembly (A), ensure the exit 2 left door handle (B) operates freely.
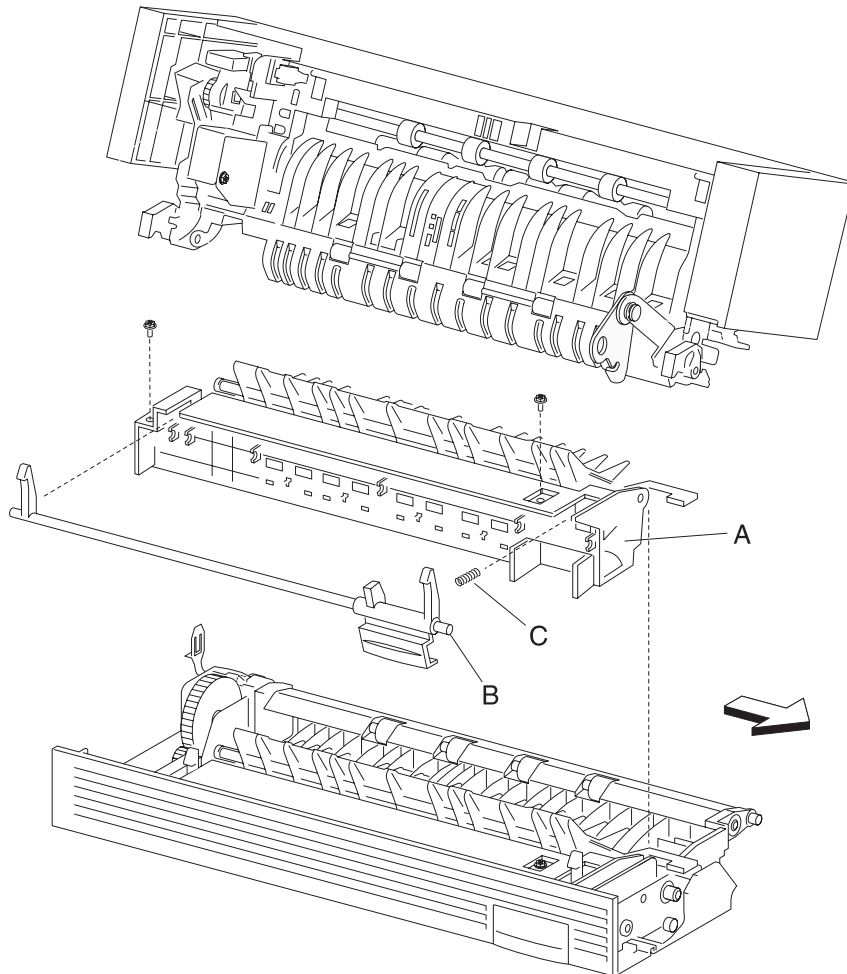
Exit 2 diverter gate removal

1. Remove the exit 2 unit assembly. See **"Exit 2 unit assembly removal" on page 4-193**.
2. Open the exit 2 unit assembly.
3. Remove two screws securing the upper guide assembly (A) to the exit 2 unit assembly.
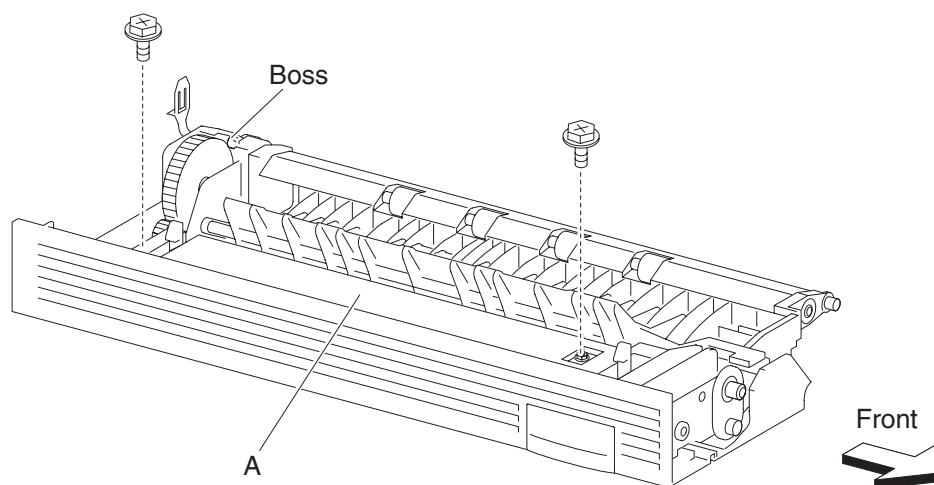
4. Remove the upper guide assembly (A).

Note: The exit 2 access handle (B) may become detached.

5. Remove the spring (C) connecting the exit 2 diverter gate (D) to the upper guide assembly (A).

6. Gently flex the mounting points securing the exit 2 diverter gate (D) to the upper guide assembly (A).

7. Remove the exit 2 diverter gate (D)
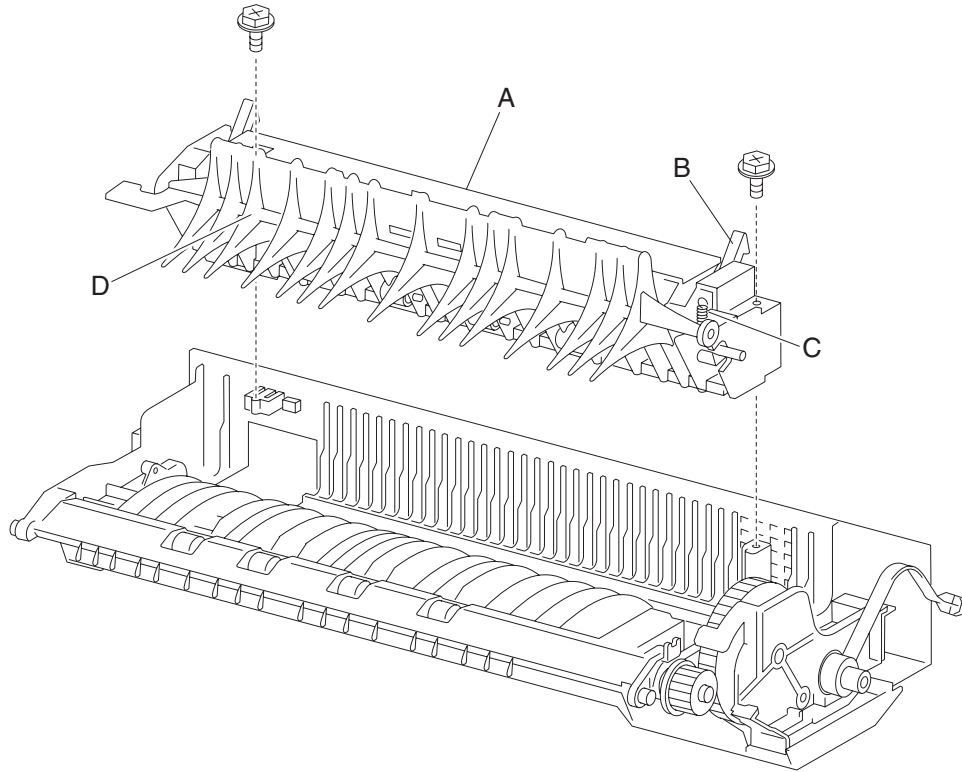
Note: After reinstalling the upper guide assembly (A), ensure the exit 2 access handle (B) operates freely.

Exit 2 left cover removal

1. Remove the exit 2 unit assembly. See **"Exit 2 unit assembly removal" on page 4-193**.
2. Open the exit 2 unit assembly.
3. Release two hooks securing the exit 2 left cover (A) to the exit 2 unit assembly.
4. Move the exit 2 left cover (A) downward and outward in the direction of the arrow.
5. Remove the exit 2 left cover (A).

Note: Extra force is required on the rear of the exit 2 left cover to break the seal of the double stick tape.
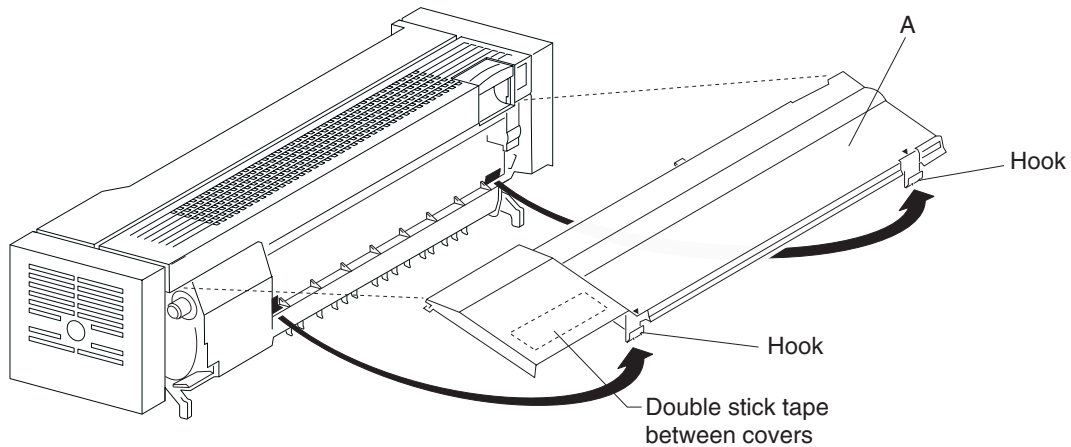
Exit 2 right cover removal

1. Remove the exit 2 unit assembly. See **"Exit 2 unit assembly removal" on page 4-193**.
2. Open the exit 2 unit assembly.
3. Remove the exit 2 left cover. See **"Exit 2 left cover removal" on page 4-198**.
4. Remove the one screw securing the exit 2 front cover (A) to the exit 2 unit assembly.
5. Remove the exit 2 front cover (A).
6. Remove one screw securing the exit 2 rear cover (B).
7. Move the exit 2 rear cover (B) upward and outward in the direction of the arrow.
8. Remove the exit 2 rear cover (B).
9. Release the hook of the exit 2 support strap (C).
10. Gently remove the link (D) from the bracket (E).
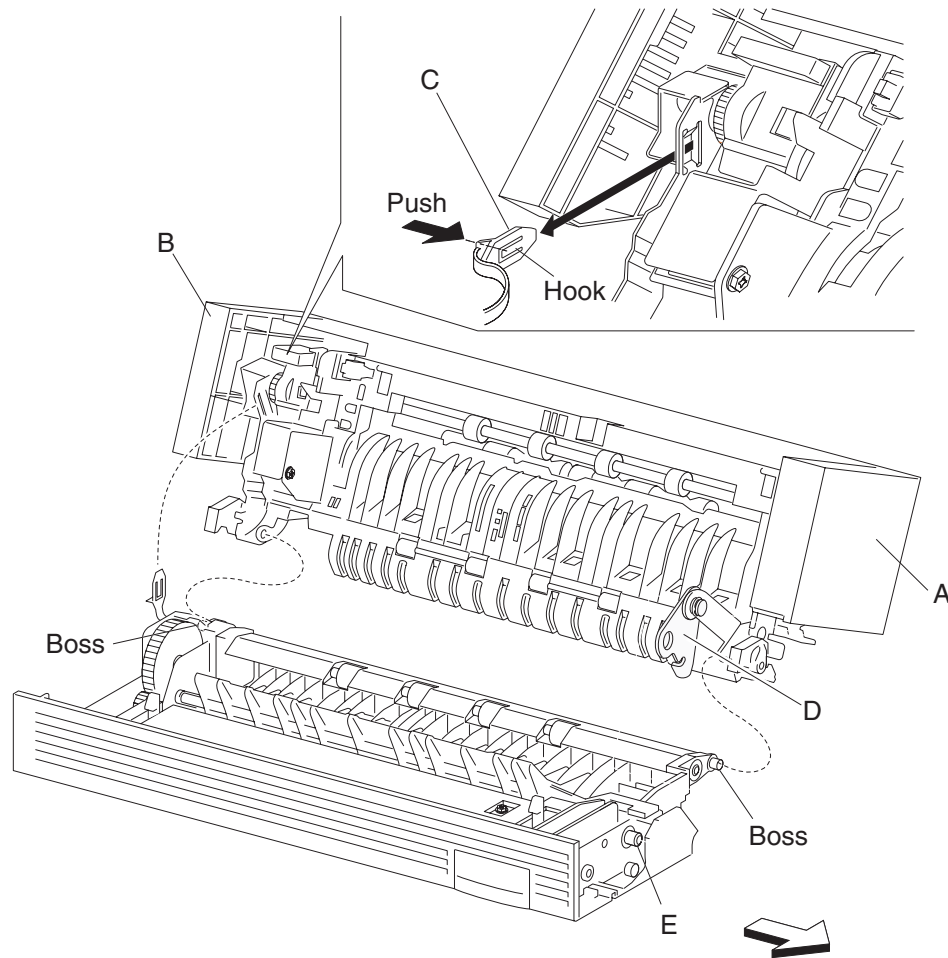
11. Gently pry apart, with a flat tip screwdriver, the boss on the right then the one on the left to separate the exit 2 unit assembly into two pieces.
Note: The exit 2 unit assembly should be in two pieces.

12. Remove the four screws securing the exit 2 right cover assembly (F) to the exit 2 unit assembly.
13. Release two hooks securing the exit 2 right cover assembly (F) to the exit 2 unit assembly.
14. Remove the exit 2 right cover assembly (F).
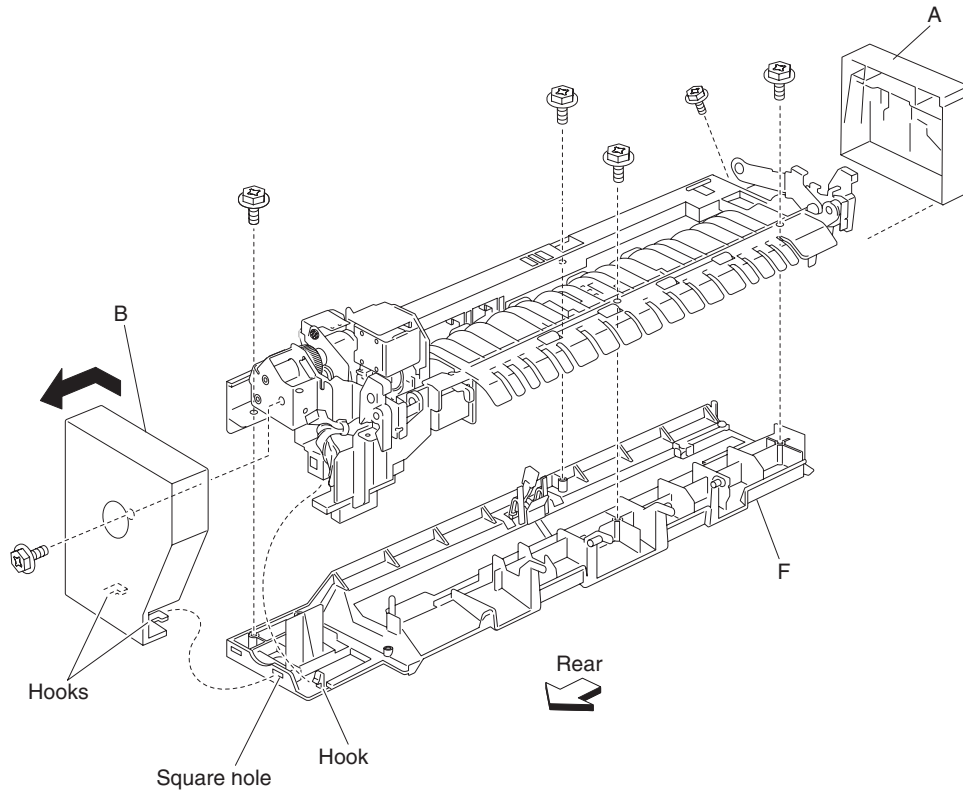
Exit 2 bin full actuator removal

1. Remove the exit 2 unit assembly. See **"Exit 2 unit assembly removal" on page 4-193**.
2. Open the exit 2 unit assembly (A).
3. Remove the exit 2 left cover. See **"Exit 2 left cover removal" on page 4-198**.
4. Remove the exit 2 right cover. See **"Exit 2 right cover removal" on page 4-199**.
5. Remove the bin full outer actuator (A) from the spring (B).
6. Release the hooks securing the bin full inner actuator (C) to the right cover (D).
7. Release the spring (B) from the hook of the bin full inner actuator (C).
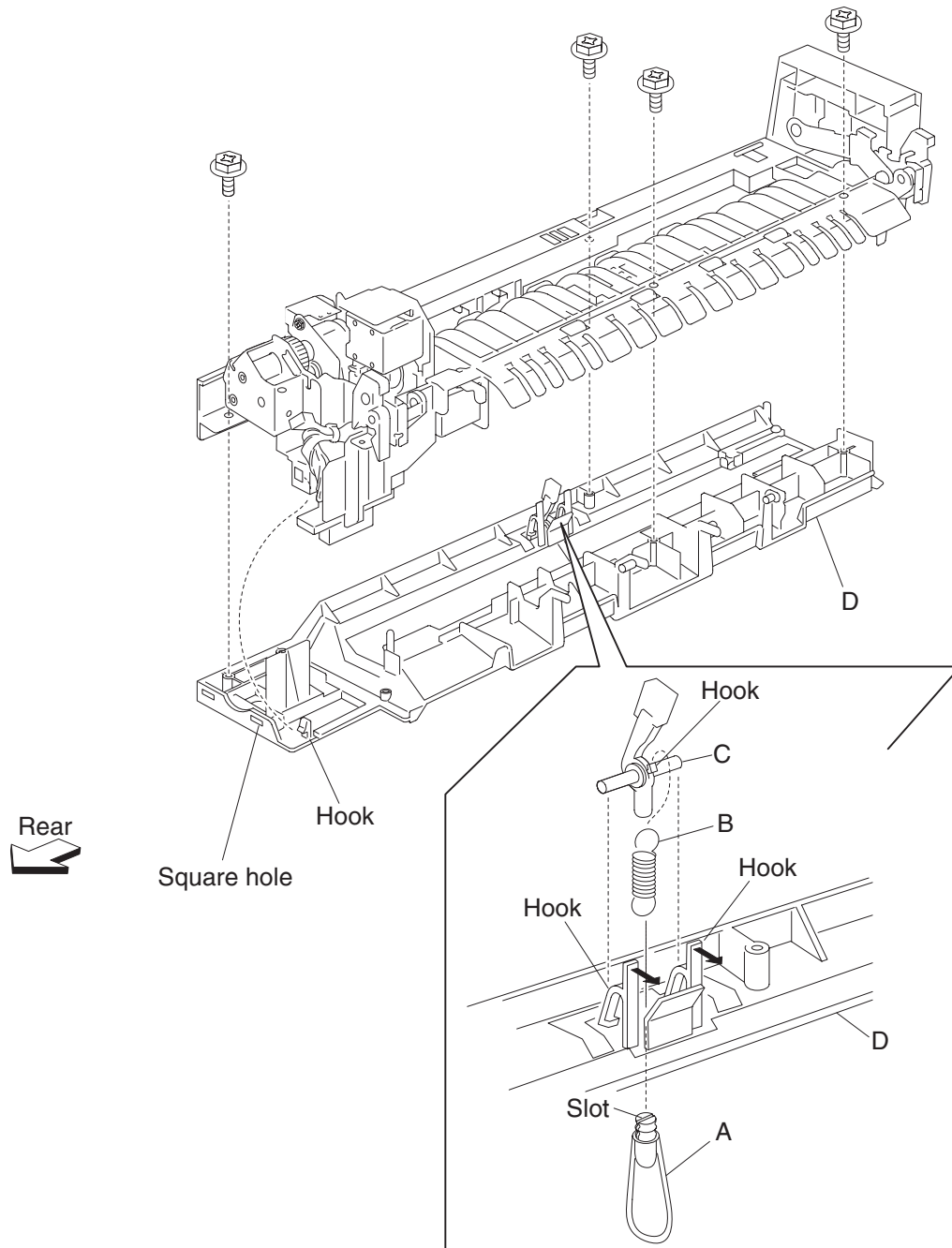
Exit 2 actuator removal

1. Remove the exit 2 unit assembly. See **"Exit 2 unit assembly removal" on page 4-193**.
2. Open the exit 2 unit assembly.
3. Remove the exit 2 left cover. See **"Exit 2 left cover removal" on page 4-198**.
4. Remove the exit 2 right cover. See **"Exit 2 right cover removal" on page 4-199**.
5. Release the spring (A) on the exit 2 actuator (B).
6. Move the exit 2 actuator (B) to the right in the direction of the arrow to release two hooks.
7. Remove the exit 2 actuator (B).
8. Remove the spring (A) from the exit 2 actuator (B).

Front
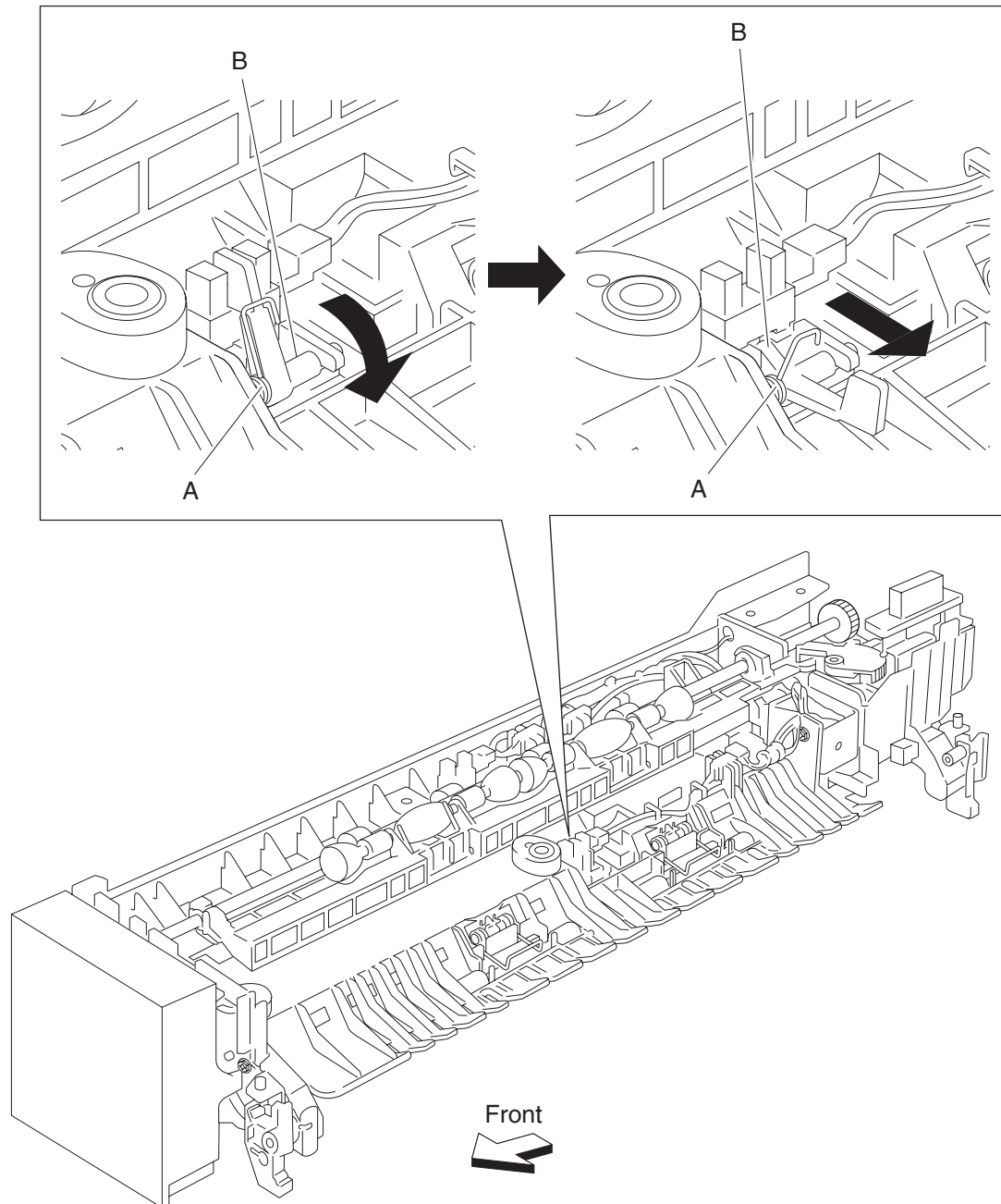
Note: Before reinstalling the exit 2 actuator (B), ensure the spring (A) is properly installed.

Exit 2 switch (exit 2 left door interlock) removal

1. Remove the exit 2 unit assembly. See **"Exit 2 unit assembly removal" on page 4-193**.
2. Open the exit 2 unit assembly.
3. Remove the exit 2 left cover. See **"Exit 2 left cover removal" on page 4-198**.
4. Remove the exit 2 right cover. See **"Exit 2 right cover removal" on page 4-199**.
5. Release the hooks securing the switch (exit 2 left door interlock) (A) to the exit 2 unit assembly.
6. Remove the switch (exit 2 door interlock) (A).
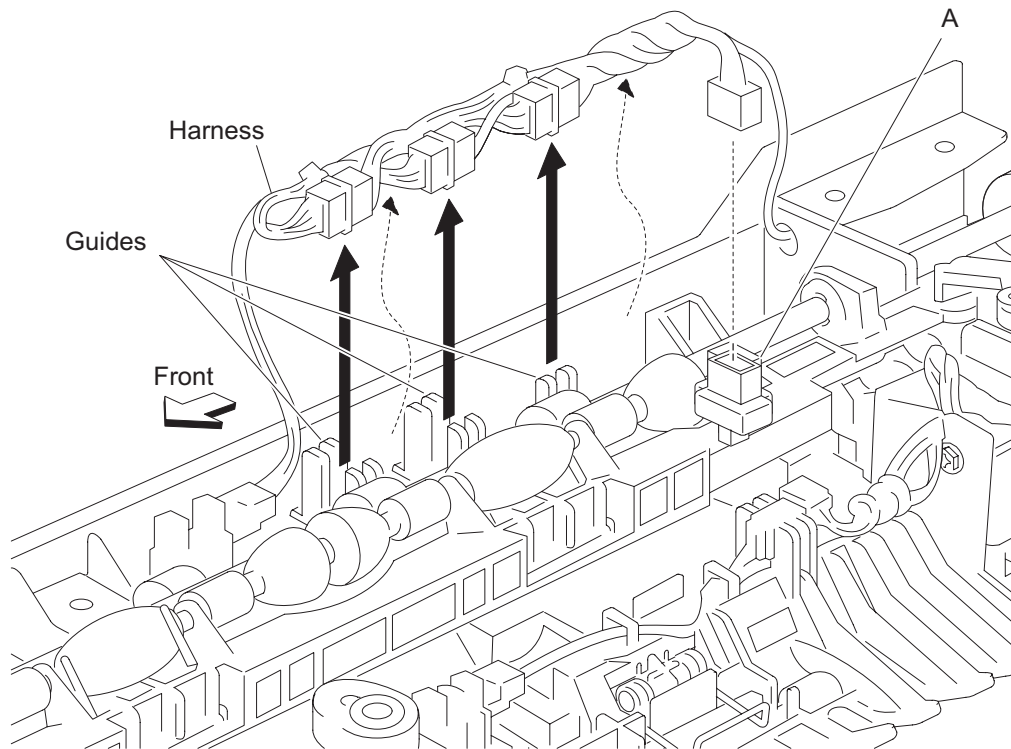
7. Remove the connector from the exit 2 switch (exit 2 left door interlock) (A).
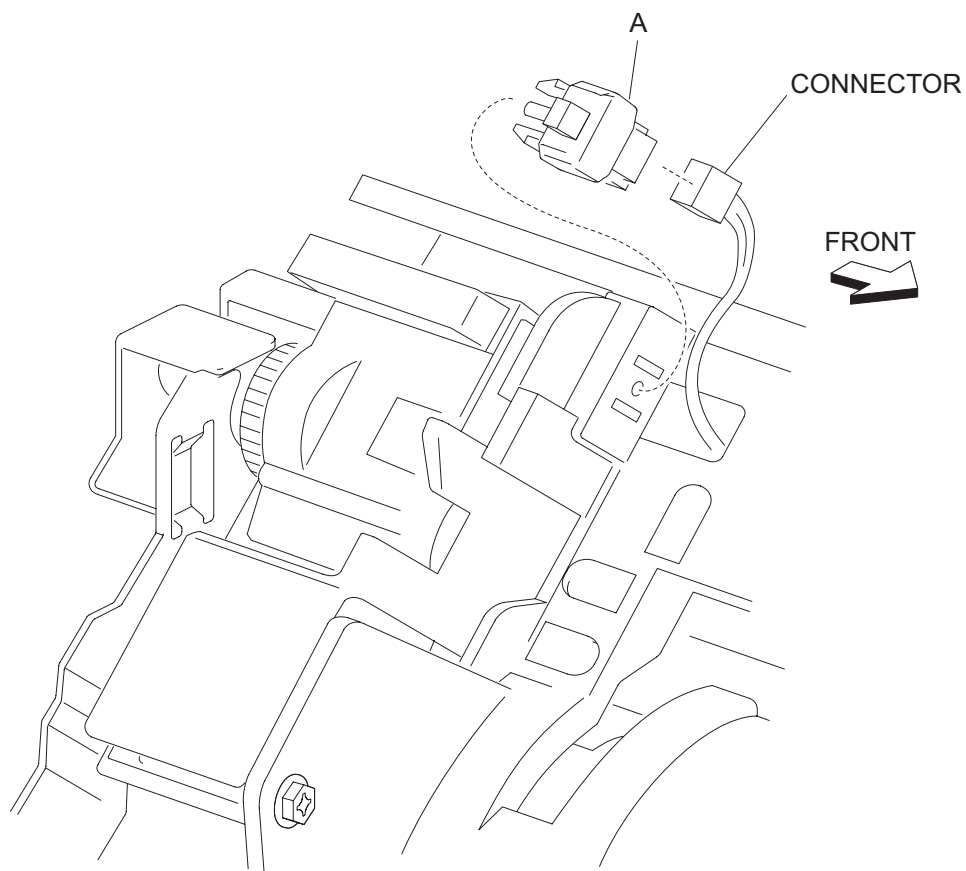
Note: Before reinstalling the switch (exit 2 left door interlock) (A), ensure all the harnesses and connectors are properly installed.

Exit 2 media shift gear removal

1. Remove the exit 2 unit assembly. See **"Exit 2 unit assembly removal" on page 4-193**.
2. Open the exit 2 unit assembly.
3. Remove the exit 2 left cover. See **"Exit 2 left cover removal" on page 4-198**.
4. Remove the exit 2 right cover. See **"Exit 2 right cover removal" on page 4-199**.
5. Move the roll assembly (A) fully to the right (front).
6. Lift the exit 2 media shift gear (B) upward to release it from the exit 2 unit assembly.
7. Release the hook on the exit 2 media shift gear (B) from the hole in the roll assembly (A).
8. Remove the exit 2 media shift gear (B).
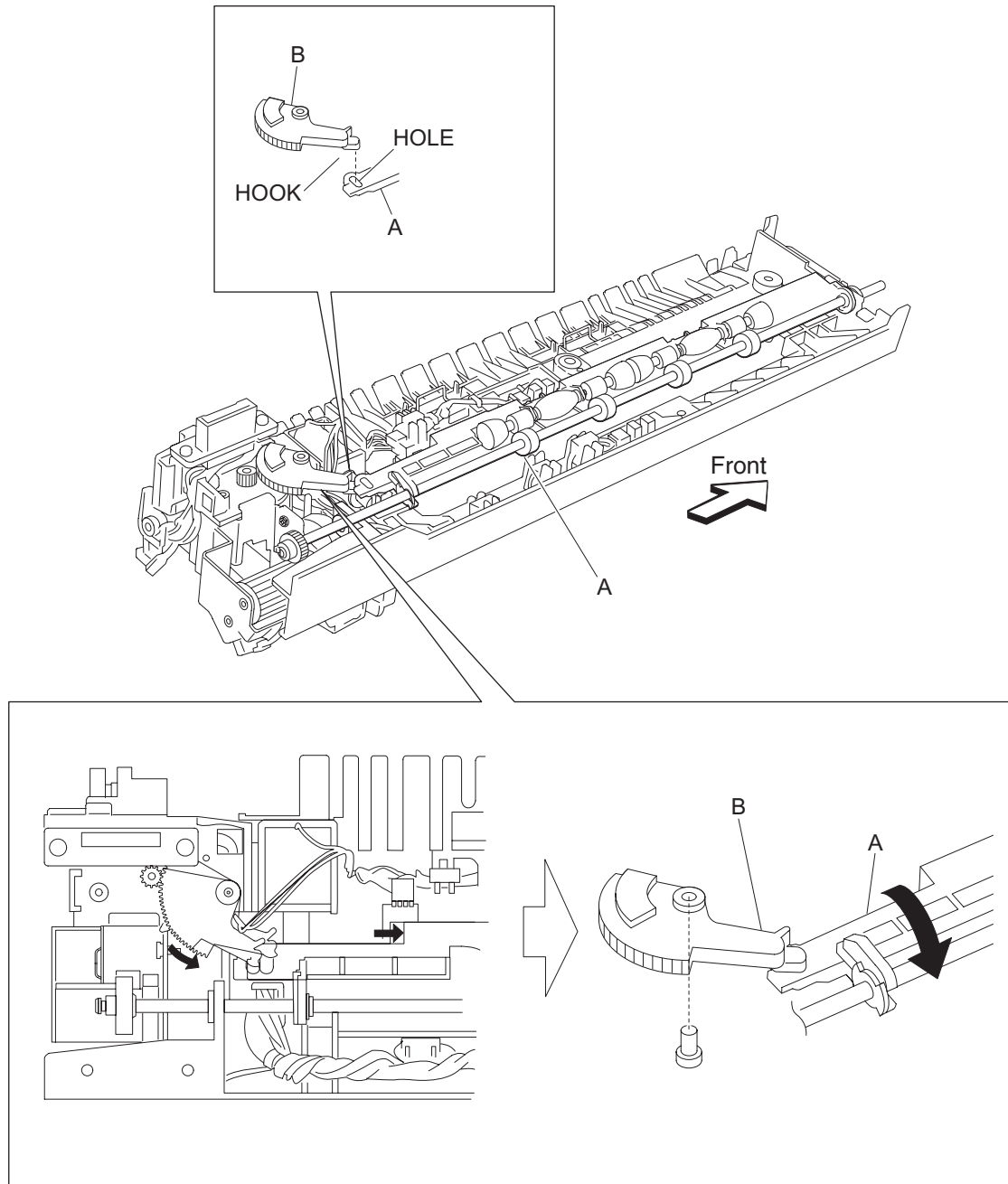
Exit 2 media diverter solenoid removal

1. Remove the exit 2 unit assembly. See **"Exit 2 unit assembly removal" on page 4-193**.
2. Open the exit 2 unit assembly.
3. Remove the exit 2 left cover. See **"Exit 2 left cover removal" on page 4-198**.
4. Remove the exit 2 right cover. See **"Exit 2 right cover removal" on page 4-199**.
5. Disconnect the media diverter solenoid (A).
6. Release the harness from the clamp.
7. Remove the screw securing the media diverter solenoid (A) to the exit 2 unit assembly.
8. Remove the media diverter solenoid (A).
9. Move the media diverter link (B) toward the top of the exit 2 unit assembly in the direction of the arrow.
10. Remove the media diverter link (B) from the media diverter solenoid (A).
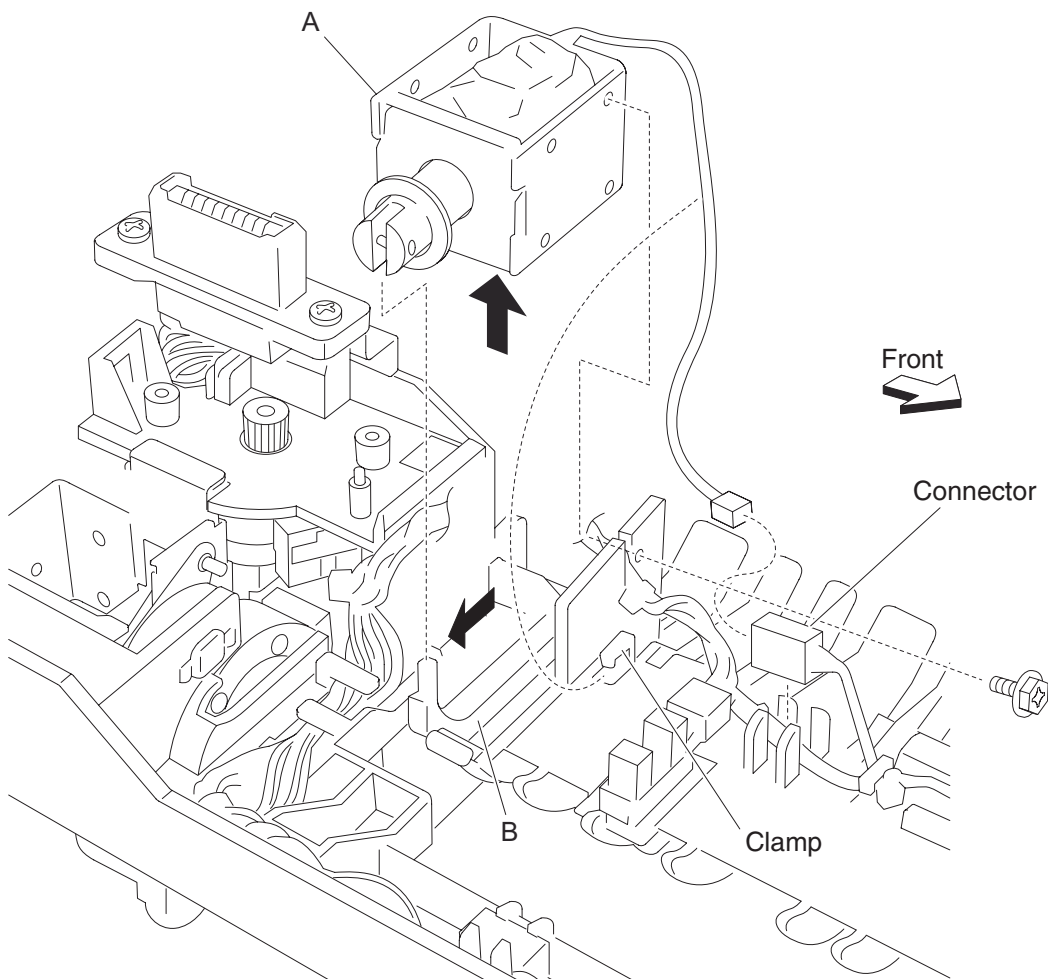
Exit 2 sensor (exit 2) removal

1. Remove the exit 2 unit assembly. See **"Exit 2 unit assembly removal" on page 4-193**.
2. Open the exit 2 unit assembly.
3. Remove the exit 2 left cover. See **"Exit 2 left cover removal" on page 4-198**.
4. Remove the exit 2 right cover. See **"Exit 2 right cover removal" on page 4-199**.
5. Disconnect the connector from the sensor (exit 2) (A).
6. Pull the exit 2 sensor (actuator) (B) back in the direction of the arrow.
7. Release the hooks securing the sensor (exit 2) (A) to the exit 2 unit assembly.
8. Remove the sensor (exit 2) (A).
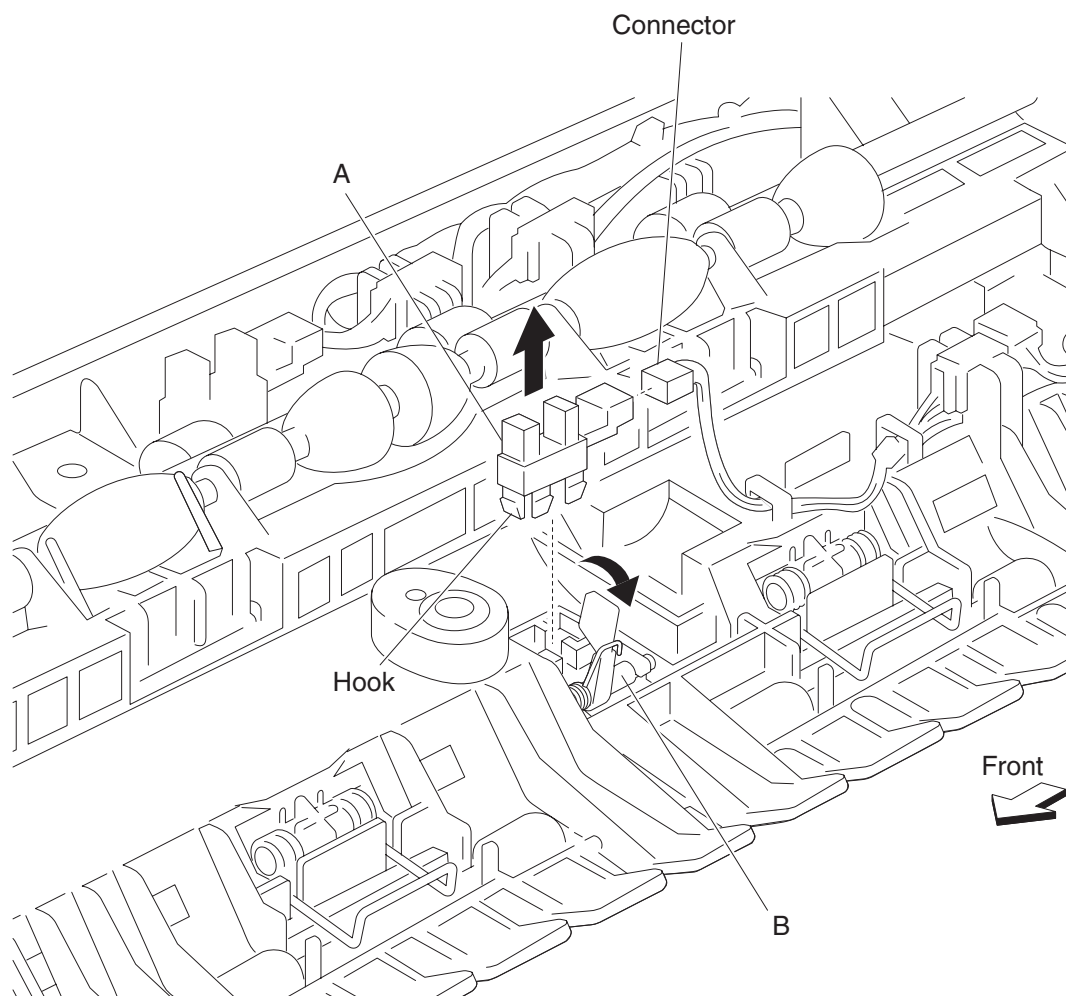
Exit 2 sensor (exit 2 media shift HP) removal

1. Remove the exit 2 unit assembly. See **"Exit 2 unit assembly removal" on page 4-193**.
2. Open the exit 2 unit assembly.
3. Remove the exit 2 left cover. See **"Exit 2 left cover removal" on page 4-198**.
4. Remove the exit 2 right cover. See **"Exit 2 right cover removal" on page 4-199**.
5. Remove the exit 2 media shift gear. See **"Exit 2 right cover removal" on page 4-199**.
6. Rotate the shift assembly (A) upward in the direction of the arrow.
7. Disconnect the connector from the sensor (exit 2 media shift HP) (B).
8. Release the hooks securing the sensor (exit 2 media shift HP) (B) to the exit 2 unit assembly.
9. Remove the sensor (exit 2 media shift HP) (B).
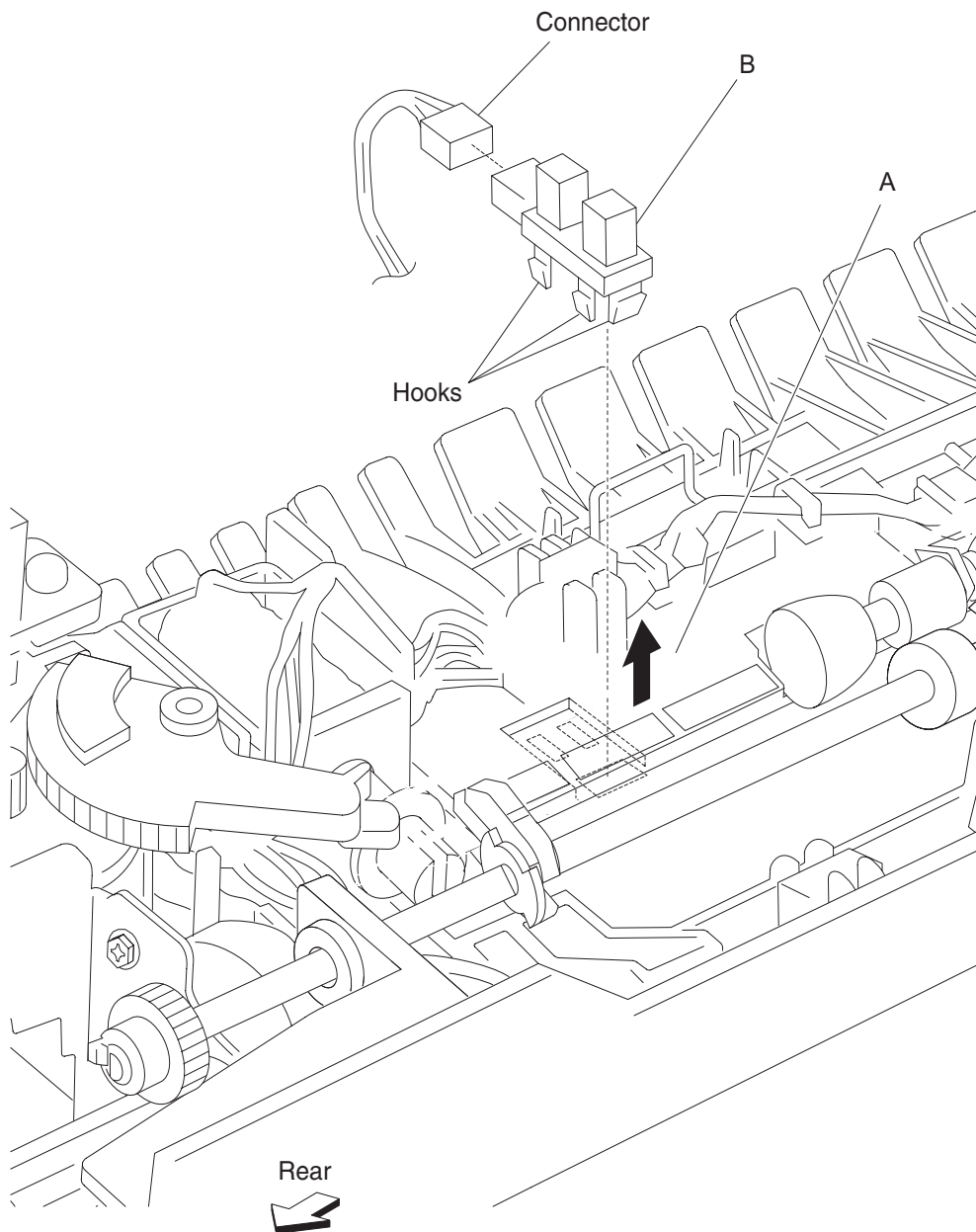
Exit 2 sensor (standard bin full exit 2) removal

1. Remove the exit 2 unit assembly. See **"Exit 2 unit assembly removal" on page 4-193**.
2. Open the exit 2 unit assembly.
3. Remove the exit 2 left cover. See **"Exit 2 left cover removal" on page 4-198**.
4. Remove the exit 2 right cover. See **"Exit 2 right cover removal" on page 4-199**.
5. Disconnect the sensor (standard bin full exit 2) (A).
6. Release the hooks to the sensor (standard bin full exit 2) (A) from the exit 2 unit assembly.
7. Remove the sensor (standard bin full exit 2) (A).
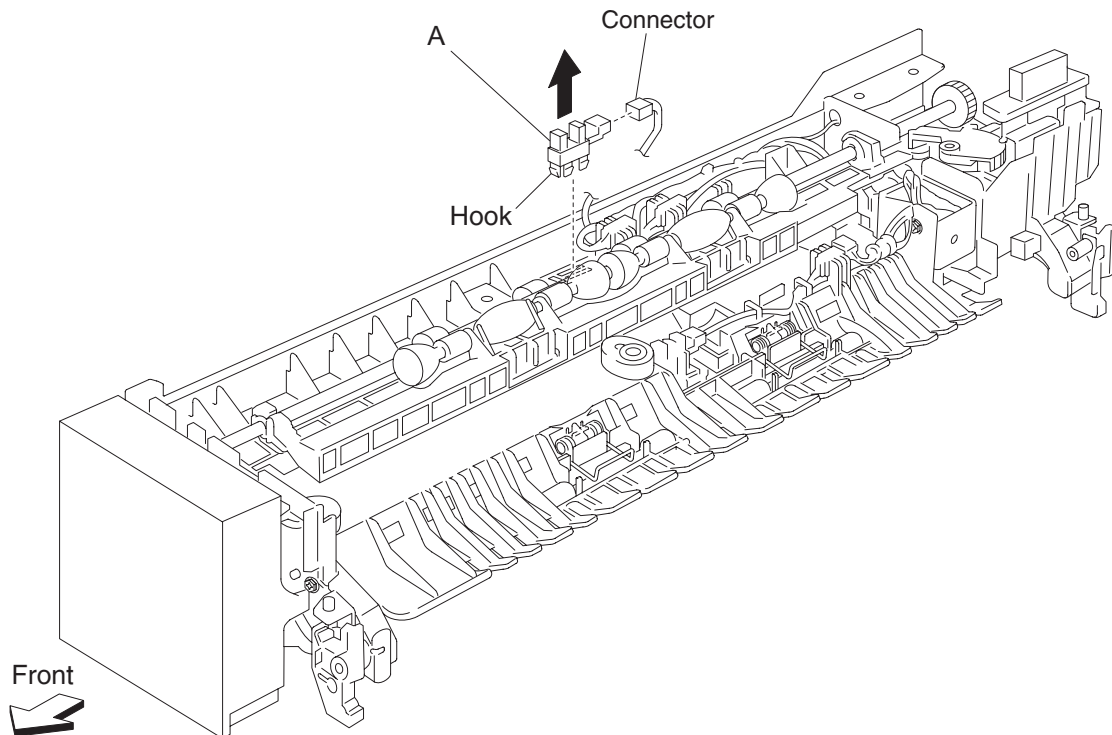
Exit 2 cooling fan removal

1. Remove the exit 2 unit assembly. See **"Exit 2 unit assembly removal" on page 4-193**.
2. Open the exit 2 unit assembly.
3. Remove the exit 2 left cover. See **"Exit 2 left cover removal" on page 4-198**.
4. Remove the exit 2 right cover. See **"Exit 2 right cover removal" on page 4-199**.
5. Disconnect the connector from the exit 2 cooling fan (A).
6. Remove the harness from the hole in the exit 2 unit assembly.
7. Remove the screw securing the exit 2 cooling fan (A) to the exit 2 unit assembly.
8. Remove the exit 2 cooling fan (A).
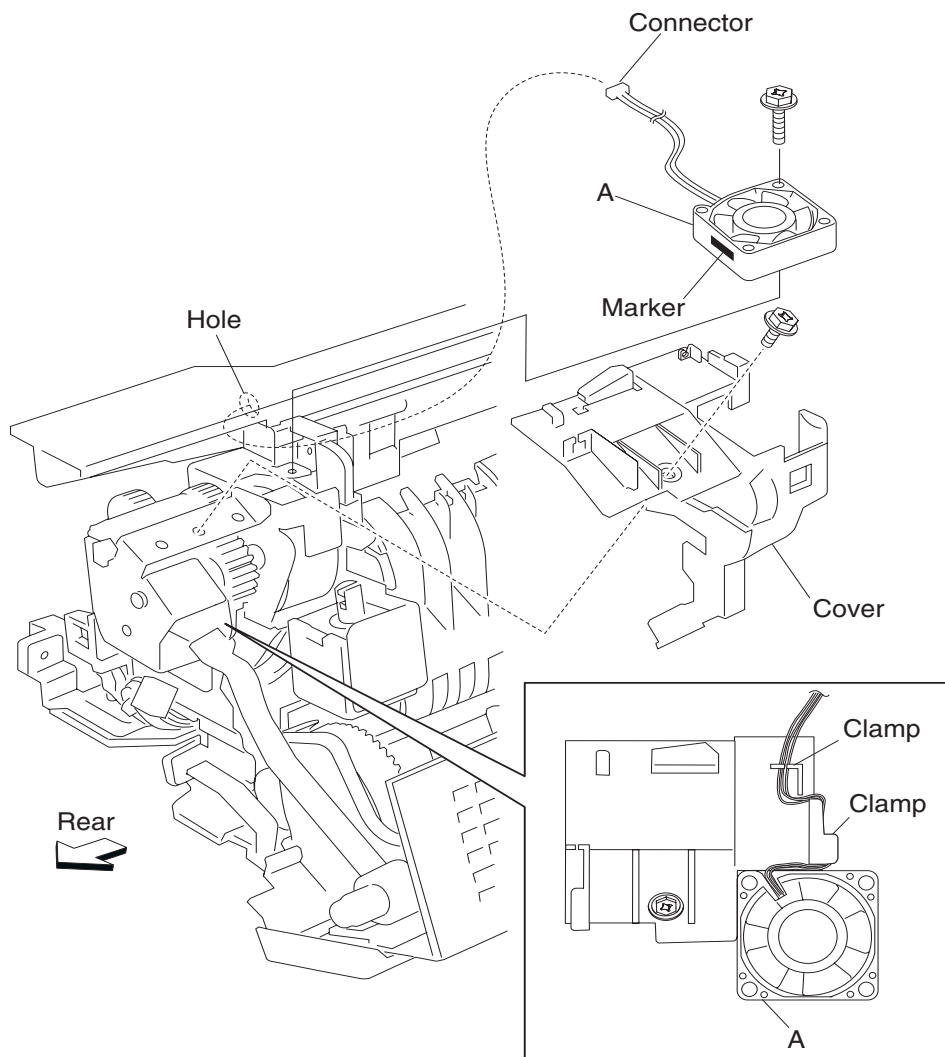
5. Component locations

2TM components

2TM/TTM controller
card assembly

2TM/TTM drive motor

2TM/TTM clutch

Sensor (media level)

Sensor (media out)

Sensor (pre-feed)

Switch (2TM/TTM
left door interlock)

Switch (media size)

Sensor (tray 3 feed out)

Sensor (tray 4 feed out)

TTM components

2TM/TTM clutch assembly

2TM/TTM controller
card assembly

2TM/TTM drive motor

Sensor (media level)

Sensor (media out)

Sensor (pre-feed)

Sensor (tray 4 feed out

witch (2TM/TTM left
or interlock)

Sensor (tray 3 feed out)

Switch (TTM media si:

HCF components

Switch (HCF top door interlock)

HCF main connector

Sensor (media level)

Sensor (tray 5 feed out)

Sensor (media out)

Switch (HCF unit docking)

Sensor (HCF media size L)

Sensor (HCF media size R)

HCF transport motor

HCF feed lift motor

HCF controller card asm

Sensor (HCF media tray set)

Duplex components

Switch (duplex left door interlock)   Sensor (duplex wait)

Duplex controller
card assembly

Duplex drive motor

Exit 2 components

Switch (exit 2 left door interlock)

Exit 2 drive motor

Sensor (exit 2 media shift HP)

Sensor (standard bin full exit 2)

Sensor (exit 2)

Not used

Media shift motor

Media diverter solenoid

Electronic component diagram
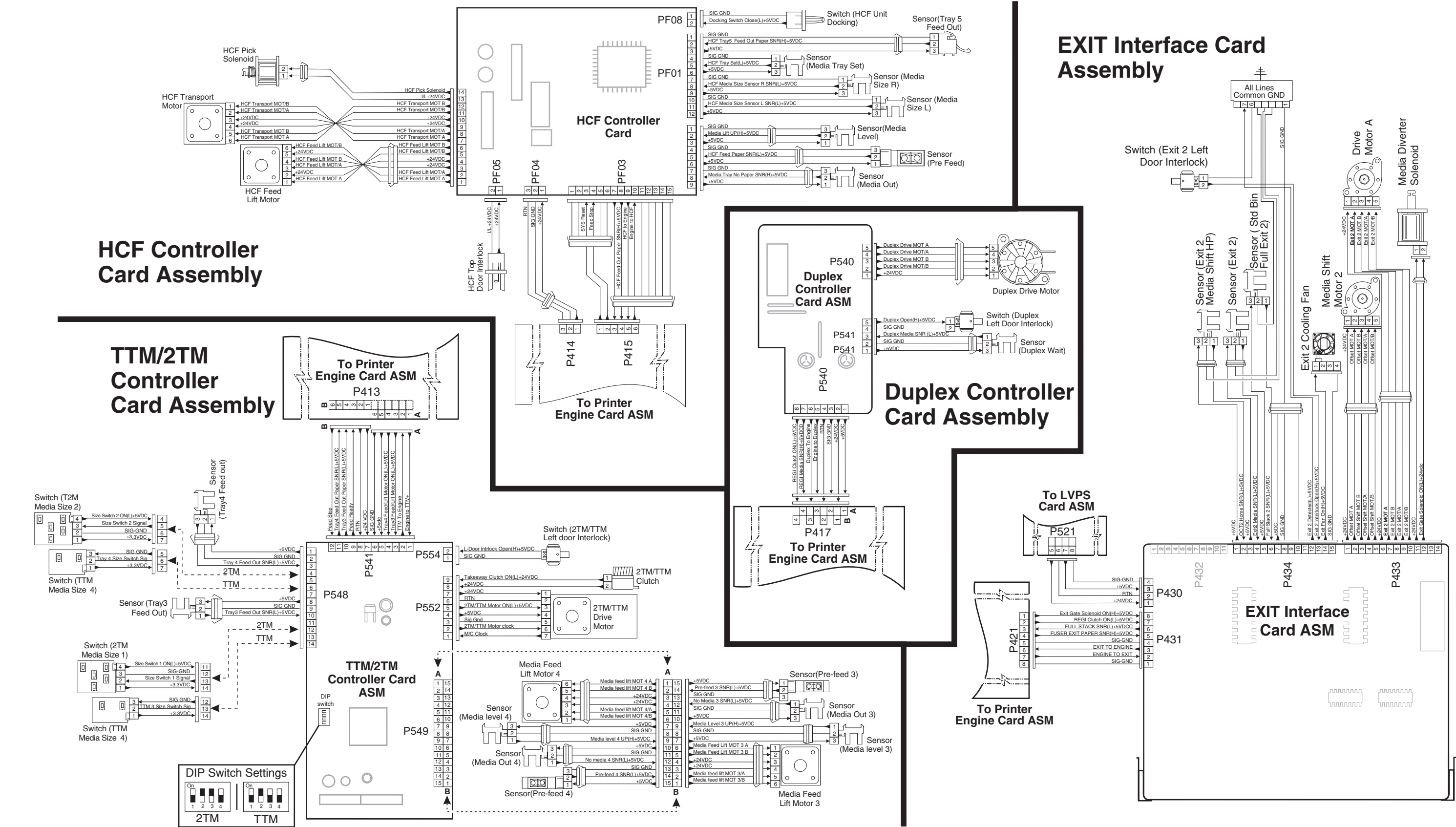
6. Preventive maintenance

This chapter describes procedures for printer preventive maintenance. Follow these recommendations to help prevent problems and maintain optimum performance.

Safety inspection guide

The purpose of this inspection guide is to aid you in identifying unsafe conditions.

If any unsafe conditions exist, find out how serious the hazard could be and if you can continue before you correct the hazard.

Check the following items:

- Damaged, missing, or altered parts, especially in the area of the on/off switch and the power supply
- Damaged, missing, or altered covers, especially in the area of the top cover and the power supply cover
- Possible safety exposure from any non-Lexmark attachments

Lubrication specifications

Lubricate only when parts are replaced or as needed, not on a scheduled basis. Use of lubricants other than those specified can cause premature failure. Some unauthorized lubricants may chemically attack polycarbonate parts. Use IBM no. 10 oil, P/N 1280443 (Approved equivalents: Mobil DTE27, Shell Tellus 100, Fuchs Renolin MR30), IBM no. 23 grease (Approved equivalent Shell Darina 1), and grease, P/N 99A0394 to lubricate appropriate areas.

Maintenance recommendations

	Every service call	Every 300,000 pages
Feed rolls	Clean with water or alcohol	Replace
Pick rolls	Clean with water or alcohol	Replace
Separation rolls	Clean with water of alcohol	Replace

7. Parts catalog

How to use this parts catalog

The following legend is used in the parts catalog:

Asm-Index	Part number	Units/option	Units/FRU	Description

- **Asm-index**: Identifies the assembly and the item in the diagram. For example 3-1 indicates Assembly 3 and item number 1 in the table.
- **Part number**: Identifies the unique number that identifies this FRU.
- **Units/option**: Refers to the number of units in a particular option. It does not include the rest of the base machine.
- **Units/FRU**: Refers to the number of units packaged together and identified by the part number.
- **NS**: (Not shown) in the Assembly-Index column indicates that the part is procurable but is not pictured in the illustration.
- **PP**: (Parts Packet) in the parts description column indicates the part is contained in a parts packet.

Assembly 1: 2X 500-sheet drawer (2TM)—covers
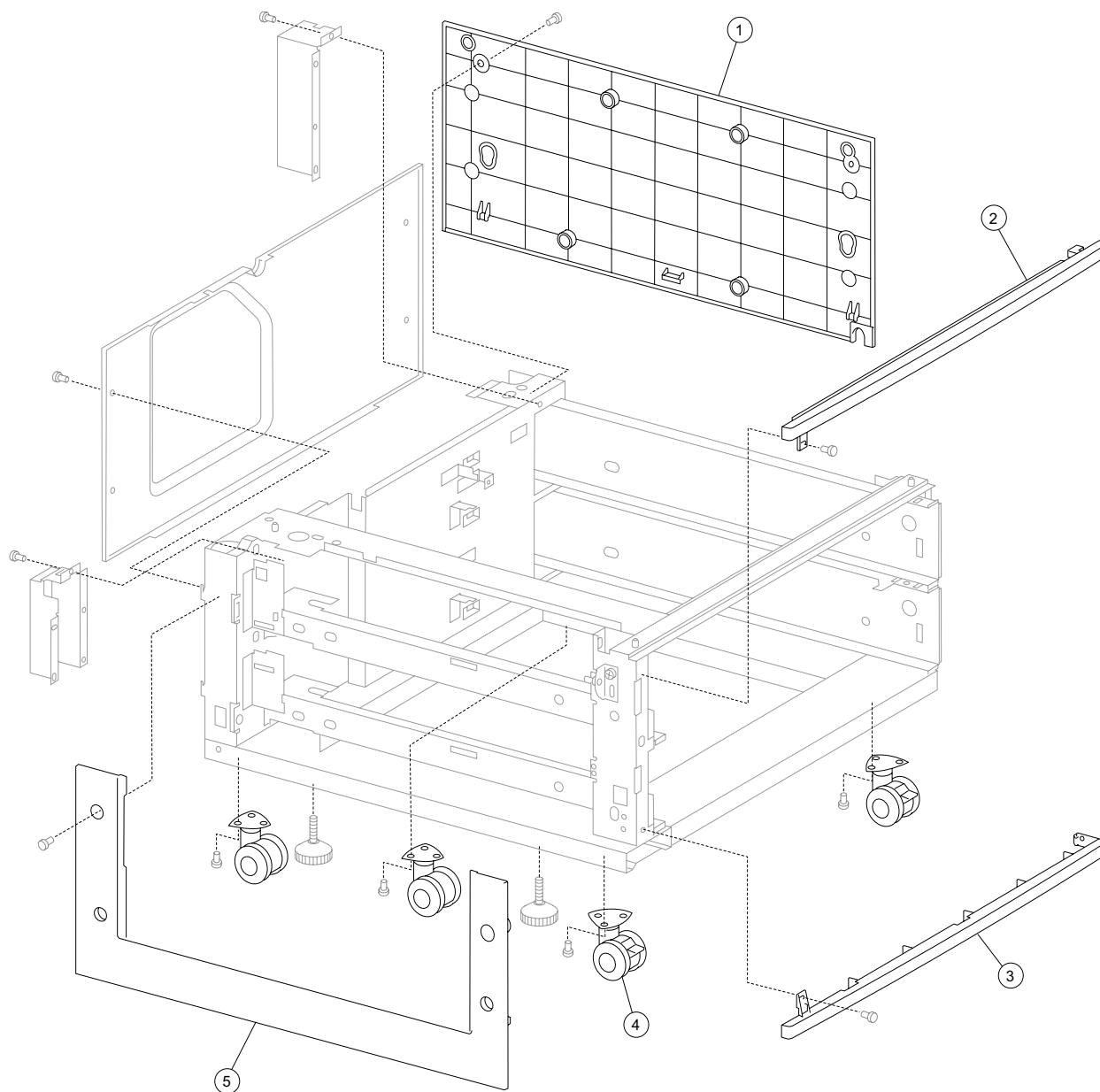
Assembly 1: 2X 500-sheet drawer (2TM)—covers

Asm-Index	Part number	Units/ option	Units/ FRU	Description
1—1	40X0689	1	1	Right cover
2	40X0687	1	1	Top cover
3	40X0688	1	1	Foot cover
4	40X0691	4	1	Locking caster
5	40X0690	1	1	Left cover

Assembly 2: 2X 500-sheet drawer (2TM)—media tray and media feed units
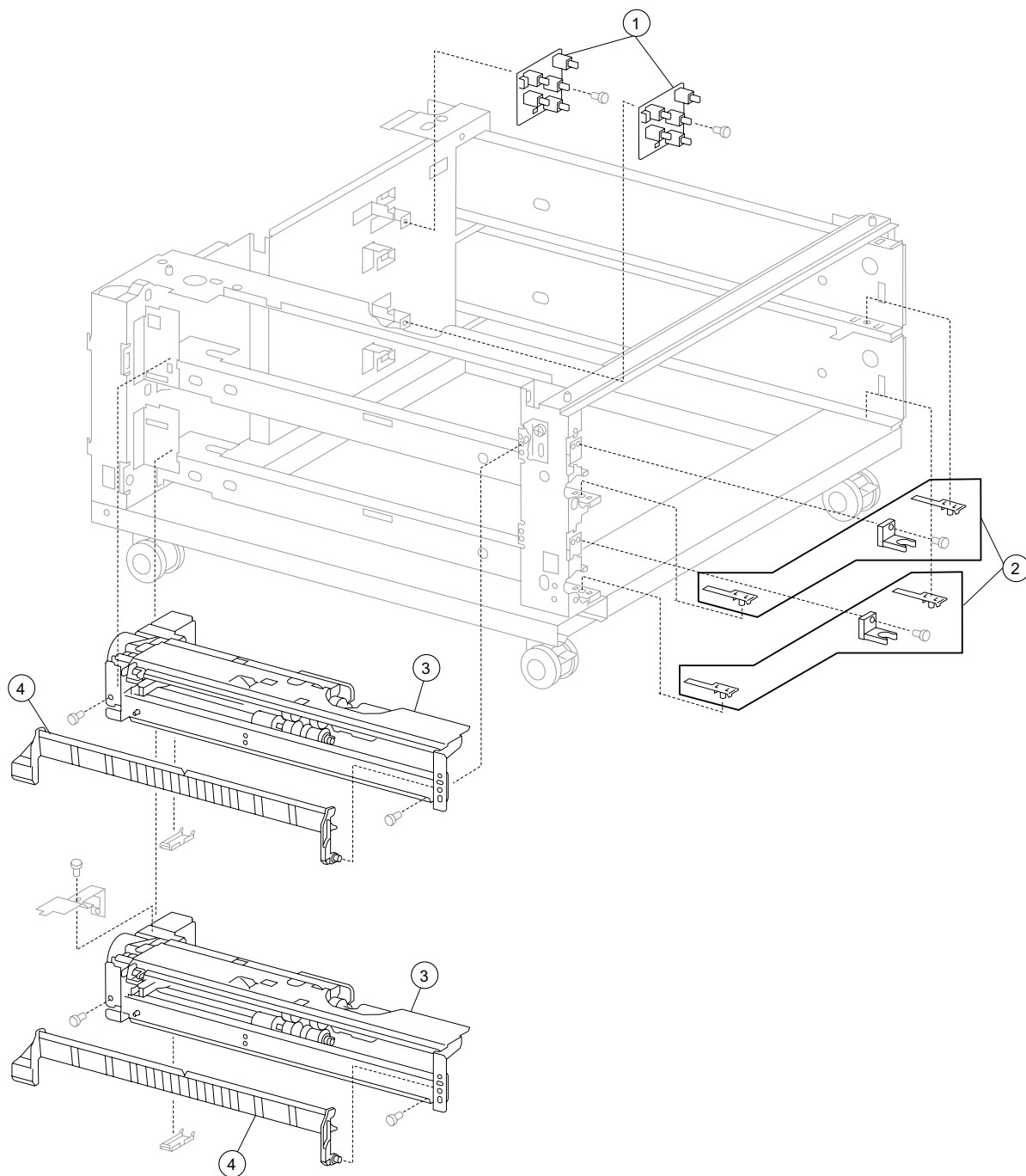
Assembly 2: 2X 500-sheet drawer (2TM)—media tray and media feed units

Asm-Index	Part number	Units/ option	Units/ FRU	Description
2—1	40X0570	2	1	Switch (media size)
2	40X0569	2	3	Media tray catch kit includes:
				• Media tray catch • Media tray slide (2)
3	40X0581	2	1	Media feed unit assembly (this comes assembled)
4	40X0572	2	1	Vertical turn guide

Assembly 3: 2X 500-sheet drawer (2TM)—media tray

Assembly 3: 2X 500-sheet drawer (2TM)—media tray

Asm-Index	Part number	Units/ option	Units/ FRU	Description
3–1	40X0573	2	3	Media tray assembly (this comes assembled) • Media tray assembly • Labels (2)
2	40X0578	2	2	Media tray end guide kit includes: • Media tray end guide • Spring
3	40X0577	2	4	Media tray side guide actuator kit includes: • Media tray side guide actuator • Media tray side guide slide (2) • Spring
4	40X0576	2	5	Media tray side guide kit includes: • Media max label • Front media tray guide assembly • Rear media tray guide • Pinion gear (2)
5	40X0966	4	1	Media tray separation brush
6	40X0574	2	1	Media tray front cover
7	40X0579	2	2	Media tray end guide actuator kit includes: • Media end guide actuator • Actuator link **Note:** The graphic on the previous page, shows two #7 callouts. These callouts are the two items that make up the media tray end guide actuator kit.
8	40X0580	2	3	Media tray lift gear kit includes: • Tray lift coupling gear 13T • Tray lift gear 13/60T • Tray lift sector gear 12T
9	40X0965	2	1	Media tray separation pad

Assembly 4: 2X 500-sheet drawer (2TM)—media feed unit

Note: Applies to tray 3 and tray 4

Assembly 4: 2X 500-sheet drawer (2TM)—media feed unit

Asm-Index	Part number	Units/ option	Units/ FRU	Description
4–1	40X0581	2	1	Media feed unit assembly (this comes assembled)
2	40X0582	2	1	Media feed lift motor
3	40X0585	2	6	Media feed drive gear kit includes: • Media feed unit drive gear 13T • Media feed unit drive gear 28/21T • Media feed unit drive gear 29T • Media feed unit drive gear 27T • 2 mm washer (2) **Note:** The graphic on the previous page, shows two #3 callouts. These callouts are the items that make up the media feed drive gear kit.
4	40X0880	2	1	Bushing 6 mm
5	40X0967	2	2	Media tray lift one-way clutch/gear kit includes: • Media tray lift one-way clutch • Media tray lift one-way gear
6	40X0968	2	1	Media tray lift one-way shaft
7	40X0583	2	3	Tray lift coupling kit includes: • Tray lift coupling • Tray lift coupling gear 31T • Spring
8	40X0590	2	1	Pick roll assembly spring
9	40X0593	2	2	Separation roll friction clutch kit includes: • Separation roll one-way friction clutch • Separation roll spacer
10	40X0594	1	6	Feed unit roll kit includes: • Feed roll (2) • Pick roll (2) • Separation roll (2)
11	40X0970	2	1	Pick roll drive gear
12	40X0969	2	1	Pick roll idler gear
13	40X0591	2	2	Feed roll one-way clutch kit includes: • Feed roll one-way clutch • Feed roll one-way gear 22T
14	40X0952	2	1	Bushing 6 mm
15	40X0586	2	2	Media feed unit front guide kit includes: • Media feed unit front guide • Media feed unit front guide rail
16	40X0587	2	1	Media out actuator
17	40X0588	2	1	Sensor (media out)
18	40X0588	2	1	Sensor (media level)
19	40X0589	2	1	Sensor (pre-feed)

Note: Assembly index items 17 and 18 are identical sensors with different functions; therefore, are the same part number with different descriptions.

Assembly 5: 2X 500-sheet drawer (2TM)—left door
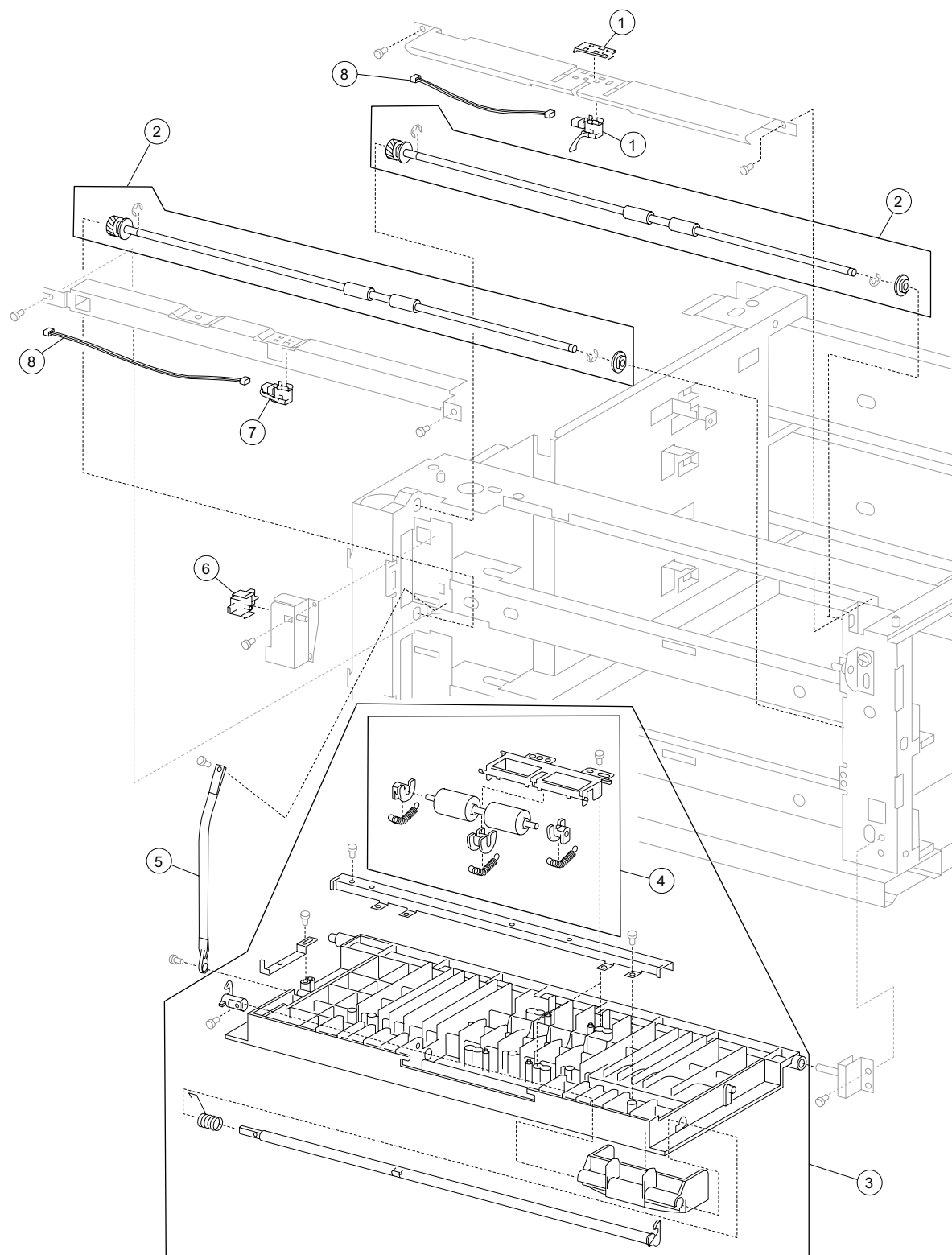
Assembly 5: 2X 500-sheet drawer (2TM)—left door

Asm-Index	Part number	Units/ option	Units/ FRU	Description
5—1	40X0692	1	2	Sensor (tray 3 feed-out) kit includes: • Sensor (tray 3 feed-out) • Sensor protector
2	40X0695	2	2	2TM/TTM media transport roll assembly includes: • 2TM/TTM media transport roll assembly • Bushing 8 mm
3	40X0733	1	1	2TM/TTM left door assembly (this comes assembled)
4	40X0696	1	1	2TM/TTM left door pinch roll assembly (this comes assembled)
5	40X0697	1	1	2TM/TTM left door support strap
6	40X0610	1	1	Switch (2TM/TTM left door interlock)
7	40X0694	1	1	Sensor (tray 4 feed-out)
8	40X0693	1	2	Sensor cable kit includes: • Tray 3 feed-out sensor cable • Tray 4 feed-out sensor cable

Assembly 6: 2X 500-sheet drawer (2TM)—drive and electrical
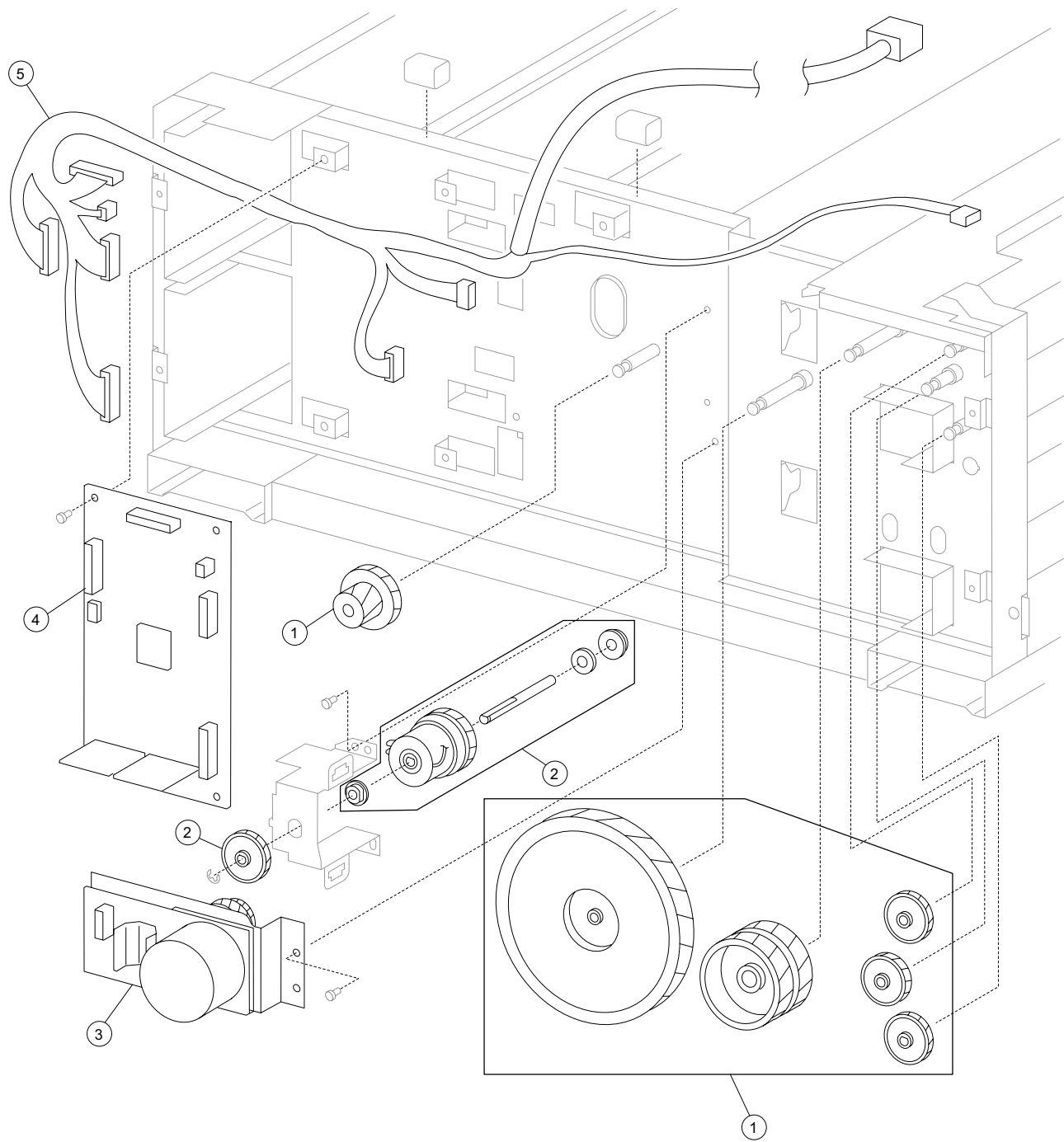
Assembly 6: 2X 500-sheet drawer (2TM)—drive and electrical

Asm-Index	Part number	Units/ option	Units/ FRU	Description
6—1	40X0701	1	6	2TM drive gear kit includes: • 2TM drive gear 22T/40T • 2TM drive gear 126T • 2TM drive gear 60T • 2TM drive gear 37T (2) • 2TM drive gear 32T
2	40X0699	1	6	2TM/TTM clutch kit includes: • 2TM/TTM clutch assembly • Shaft • Bushing 8 mm • Clutch gear 38T • Bushing 8 mm • Washer
3	40X0700	1	1	2TM/TTM drive motor
4	40X0698	1	1	2TM/TTM controller card assembly
5	40X0702	1	1	2TM main cable assembly

Assembly 7: 2000-sheet dual input (TTM)—covers
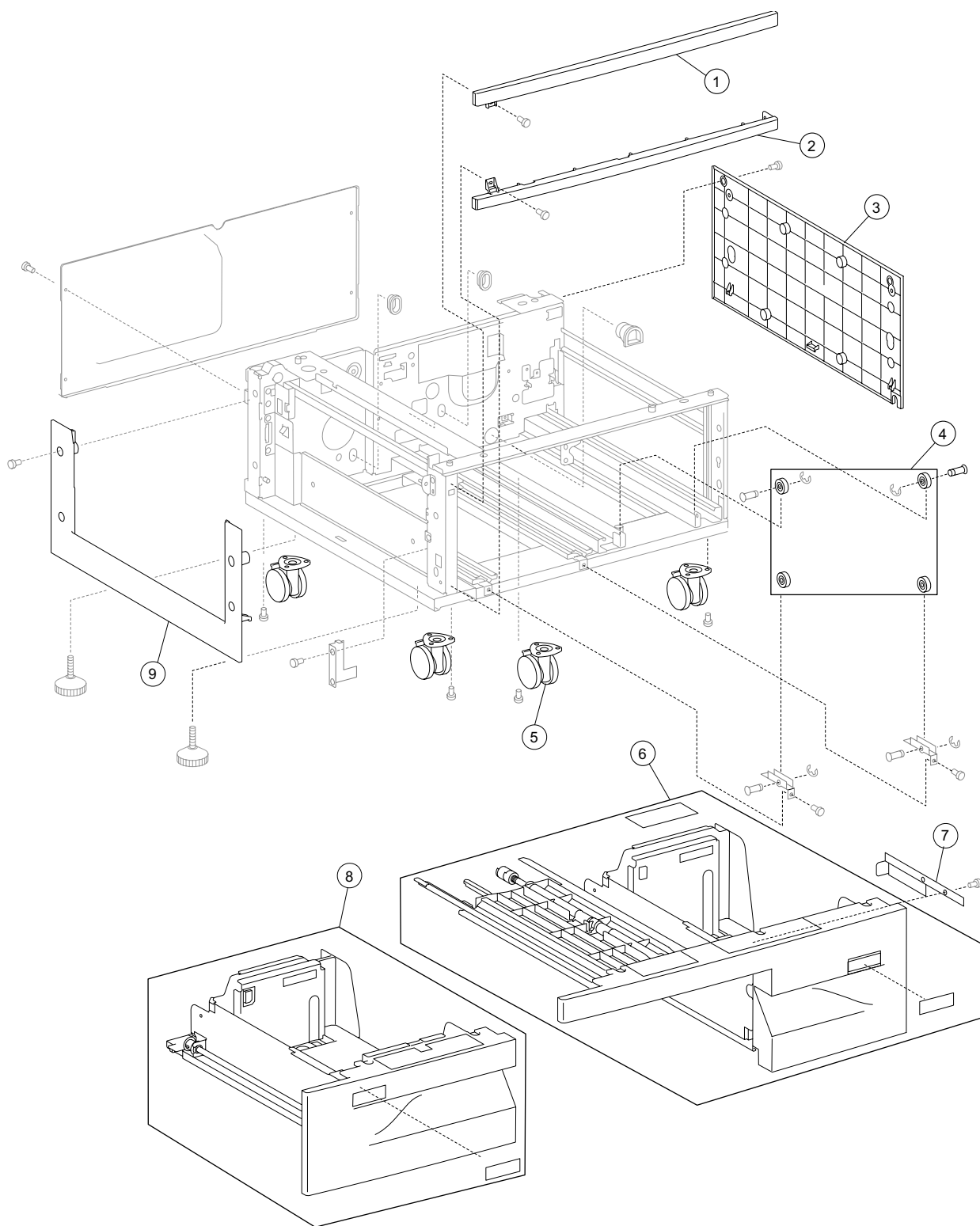
Assembly 7: 2000-sheet dual input (TTM)—covers

Asm-Index	Part number	Units/option	Units/FRU	Description
7—1	40X0687	1	1	Top cover
2	40X0688	1	1	Foot cover
3	40X0689	1	1	Right cover
4	40X0703	1	4	Tray support roll (4)
5	40X0691	4	1	Locking caster
6	40X0963	1	3	TTM media tray 4 assembly (this comes assembled) • TTM media tray 4 assembly • Label (2)
7	40X0704	1	1	Tray 4 stopper
8	40X0962	1	2	TTM media tray 3 assembly (this comes assembled) • TTM media tray 3 assembly • Label
9	40X0690	1	1	Left cover

Assembly 8: 2000-sheet dual input (TTM)—tray 3
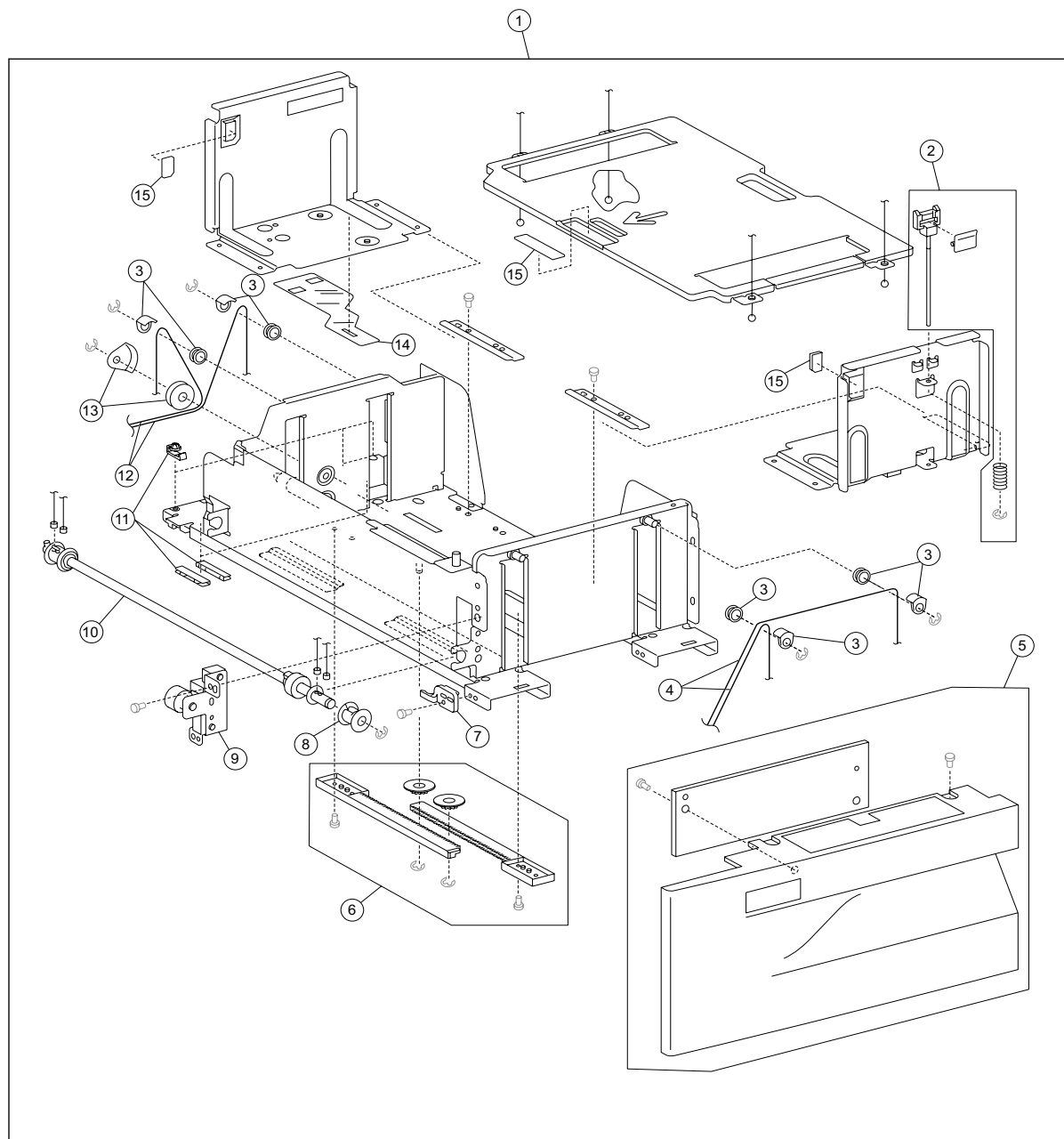
Assembly 8: 2000-sheet dual input (TTM)—tray 3

Asm-Index	Part number	Units/ option	Units/ FRU	Description
8—1	40X0962	1	3	TTM media tray 3 assembly (this comes assembled) • TTM media tray 3 assembly • Label (2)
2	40X0712	1	3	Tray 3 media guide lock kit includes: • Tray 3 media guide lock button • Tray 3 media guide lock shaft • Spring
3	40X0953	2	8	TTM tray lift pulley kit includes: • TTM tray lift pulley (4) • Pulley guide (4)
4	40X0710	1	2	Tray 3 front cable (2)
5	40X0705	1	2	Tray 3 front cover kit includes: • Tray 3 front cover • Tray 3 tray handle
6	40X0713	2	4	Media guide rack and pinion kit includes: • Media guide rack gear (2) • Media guide pinion gear (2)
7	40X0714	2	1	TTM media tray catch
8	40X0706	2	1	Lift cable pulley
9	40X0715	1	1	Tray 3 brake assembly
10	40X0707	2	1	Tray lift shaft assembly
11	40X0716	1	4	Tray 3 slide kit includes: • Tray 3 slide strip (2) • Tray 3 slide button (2)
12	40X0709	1	2	Tray 3 rear cable (2)
13	40X0708	2	2	Large idler pulley kit includes: • Large idler pulley • Large idler guide
14	40X0717	2	1	Mylar actuator
15	40X0711	2	3	TTM tray separator kit includes: • TTM tray separation pad • TTM tray brush (2)

Assembly 9: 2000-sheet dual input (TTM)—tray 4
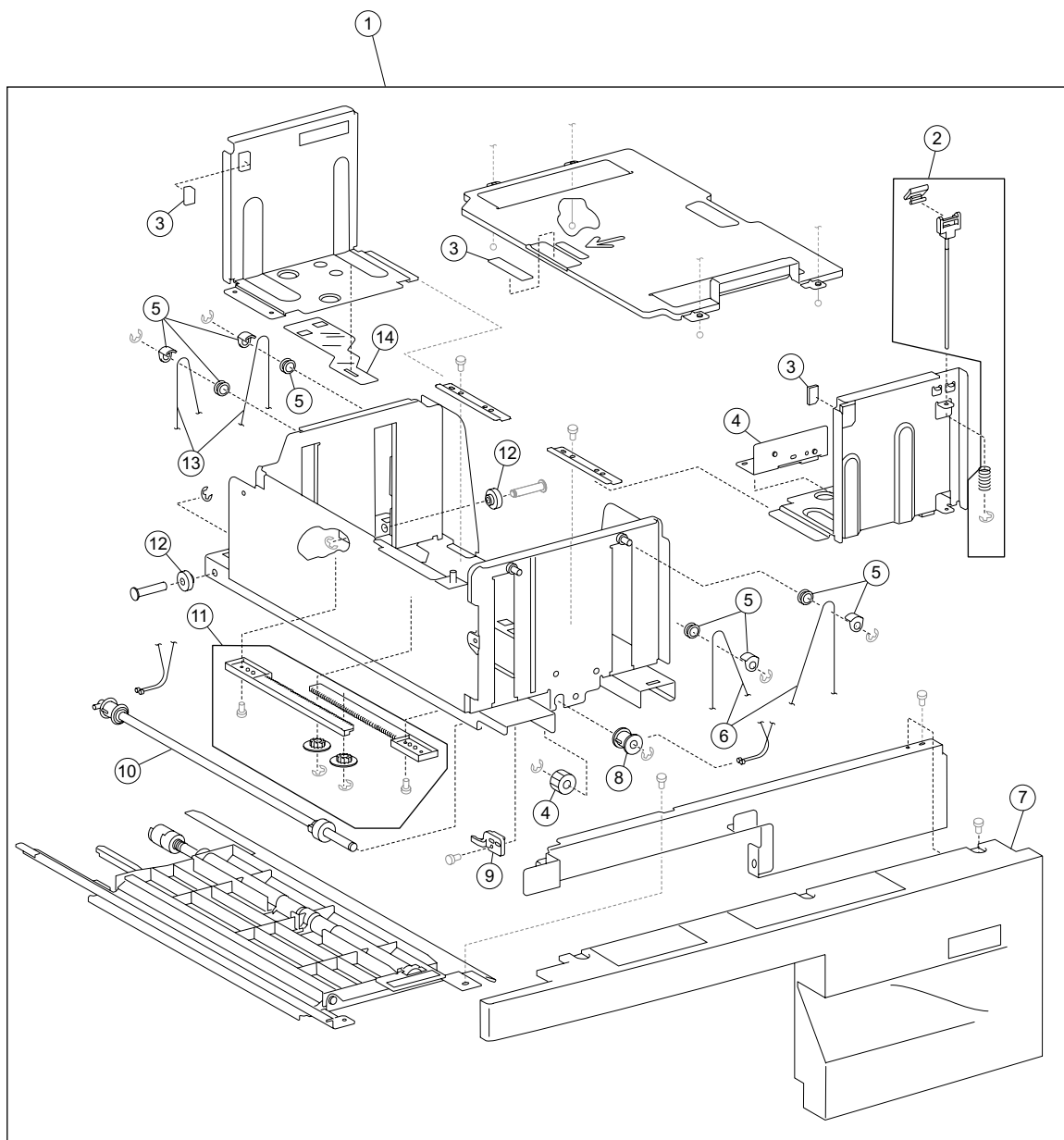
Assembly 9: 2000-sheet dual input (TTM)—tray 4

Asm-Index	Part number	Units/ option	Units/ FRU	Description
9—1	40X0963	1	2	TTM media tray 4 assembly (this comes assembled) • TTM media tray 4 assembly • Label
2	40X0721	1	3	Tray 4 media guide lock kit includes: • Tray 4 media guide lock button • Tray 4 media guide lock shaft • Spring
3	40X0711	2	3	TTM tray separator kit includes: • TTM tray separation pad • TTM tray brush (2)
4	40X0722	1	2	Tray 4 brake kit includes: • Tray 4 brake assembly • Tray 4 brake gear 18T
5	40X0953	2	8	TTM tray lift pulley kit includes: • TTM tray lift pulley (4) • Pulley guide (4)
6	40X0720	1	2	Tray 4 front cable (2)
7	40X0718	1	1	Tray 4 front cover
8	40X0706	2	1	Lift cable pulley
9	40X0714	2	1	TTM media tray catch
10	40X0707	2	1	Tray lift shaft assembly
11	40X0713	2	4	Media guide rack and pinion kit includes: • Media guide rack gear (2) • Media guide pinion gear (2)
12	40X0723	1	2	Tray 4 rear support roll (2)
13	40X0719	1	2	Tray 4 rear cable (2)
14	40X0717	2	1	Mylar actuator

Assembly 10: 2000-sheet dual input (TTM)—feed and transport
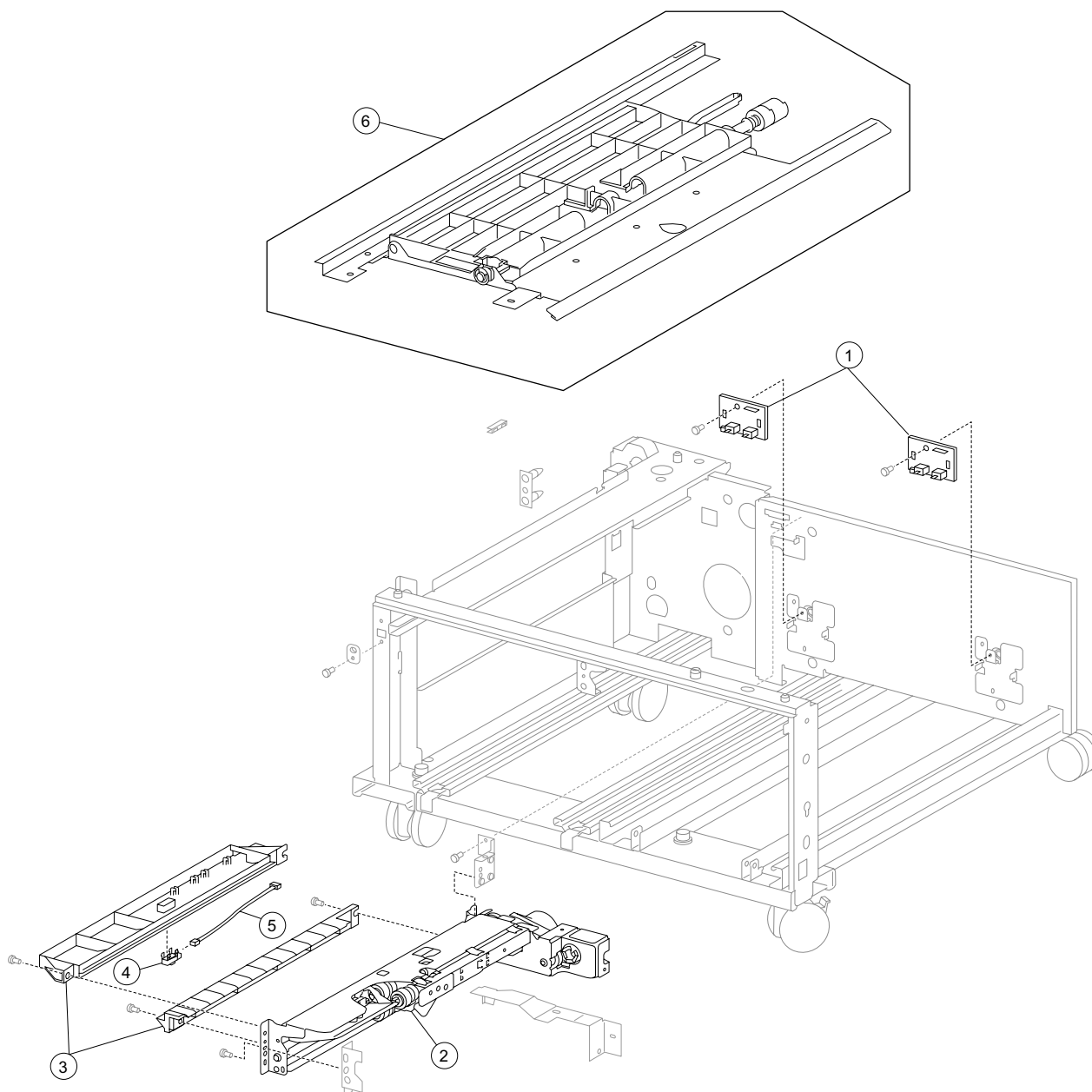
Assembly 10: 2000-sheet dual input (TTM)—feed and transport

Asm-Index	Part number	Units/ option	Units/ FRU	Description
10—1	40X0729	2	1	Switch (TTM media size switch)
2	40X0581	2	1	Media feed unit assembly (this comes assembled)
3	40X0728	1	2	Tray 4 media guide kit includes: • Tray 4 upper media guide • Tray 4 lower media guide
4	40X0727	1	1	Sensor (tray 4 feed-out)
5	40X0730	1	1	Tray 4 feed-out sensor cable assembly
6	40X0724	1	1	Tray 4 media transport assembly

Assembly 11: 2000-sheet dual input (TTM)—feed and transport
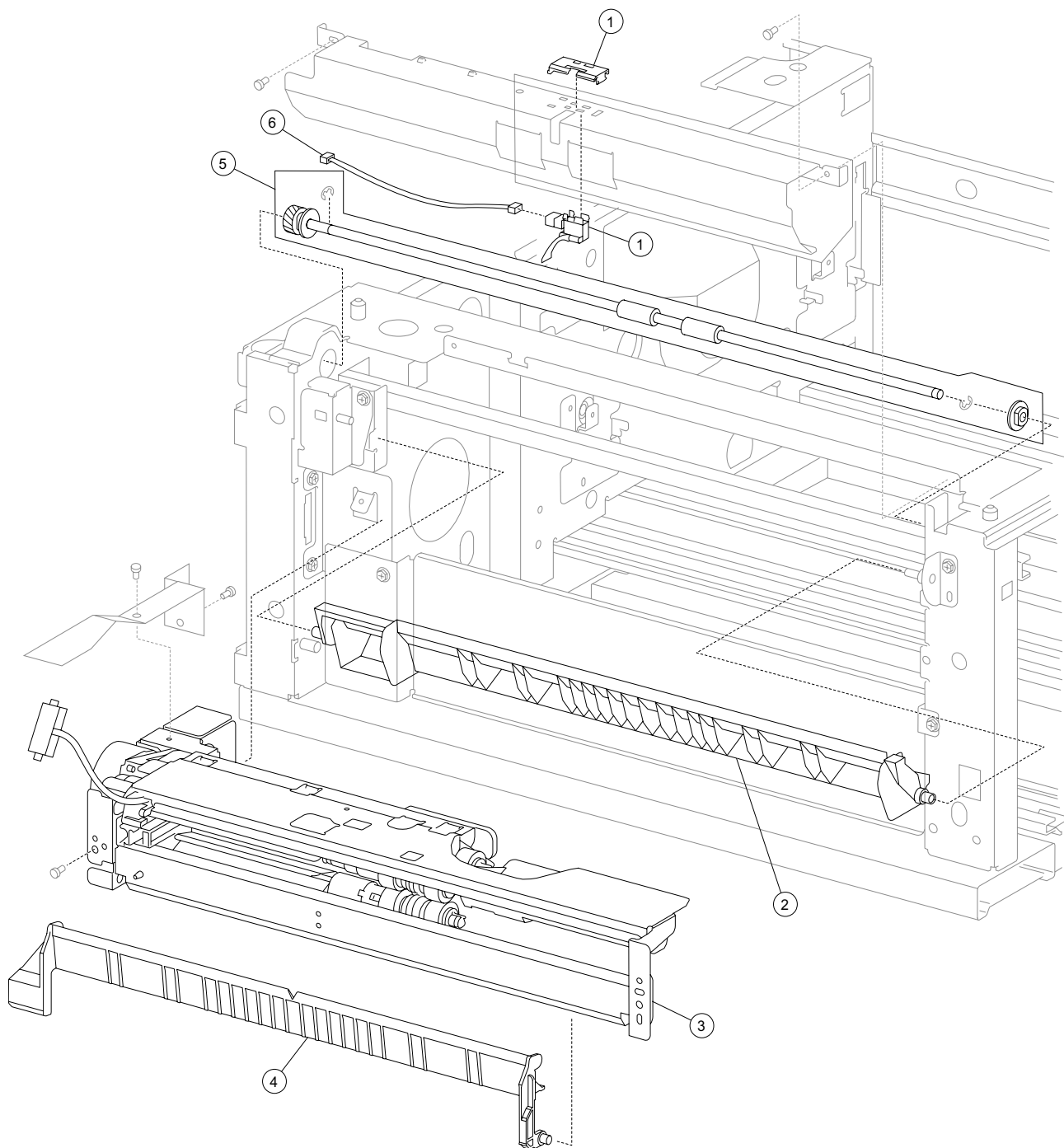
Assembly 11: 2000-sheet dual input (TTM)—feed and transport

Asm-Index	Part number	Units/option	Units/FRU	Description
11—1	40X0692	1	2	Sensor (tray 3 feed-out) kit includes: • Sensor (tray 3 feed-out) • Sensor protector
2	40X0732	1	1	Upper vertical turn guide
3	40X0581	2	1	Media feed unit assembly (this comes assembled)
4	40X0572	1	1	Vertical turn guide
5	40X0695	1	2	2TM/TTM media transport roll assembly kit includes: • 2TM/TTM media transport roll assembly • Bushing 8 mm
6	40X0693	1	2	Sensor cable kit includes: • Tray 3 feed-out sensor cable • Tray 4 feed-out sensor cable

Assembly 12: 2000-sheet dual input (TTM)—media feed unit

Note: Applies to tray 3 and tray 4

Assembly 12: 2000-sheet dual input (TTM)—media feed unit

Asm-Index	Part number	Units/ option	Units/ FRU	Description
12–1	40X0581	2	1	Media feed unit assembly (this comes assembled)
2	40X0582	2	1	Media feed lift motor
3	40X0585	2	6	Media feed drive gear kit includes: • Media feed unit drive gear 13T • Media feed unit drive gear 28/21T • Media feed unit drive gear 29T • Media feed unit drive gear 27T • 2 mm washer (2) **Note:** The graphic on the previous page, shows two #3 callouts. These callouts are the items that make up the media feed drive gear kit.
4	40X0880	2	1	Bushing 6 mm
5	40X0967	2	2	Media tray lift one-way clutch/gear kit includes: • Media tray lift one-way clutch • Media tray lift one-way gear
6	40X0968	2	1	Media tray lift one-way shaft
7	40X0583	2	3	Tray lift coupling kit includes: • Tray lift coupling • Tray lift coupling gear 31T • Spring
8	40X0590	2	1	Pick roll assembly spring
9	40X0593	2	2	Separation roll friction clutch kit includes: • Separation roll one-way friction clutch • Separation roll spacer
10	40X0594	1	6	Feed unit roll kit includes: • Feed roll (2) • Pick roll (2) • Separation roll (2)
11	40X0970	2	1	Pick roll drive gear
12	40X0969	2	1	Pick roll idler gear
13	40X0591	2	2	Feed roll one-way clutch kit includes: • Feed roll one-way clutch • Feed roll one-way gear 22T
14	40X0952	2	1	Bushing 6 mm
15	40X0586	2	2	Media feed unit front guide kit includes: • Media feed unit front guide • Media feed unit front guide rail
16	40X0587	2	1	Media out actuator
17	40X0588	2	1	Sensor (media out)
18	40X0588	2	1	Sensor (media level)
19	40X0589	2	1	Sensor (pre-feed)

Note: Assembly index items 17 and 18 are identical sensors with different functions; therefore, are the same part number with different descriptions.

Assembly 13: 2000-sheet dual input (TTM)—left door
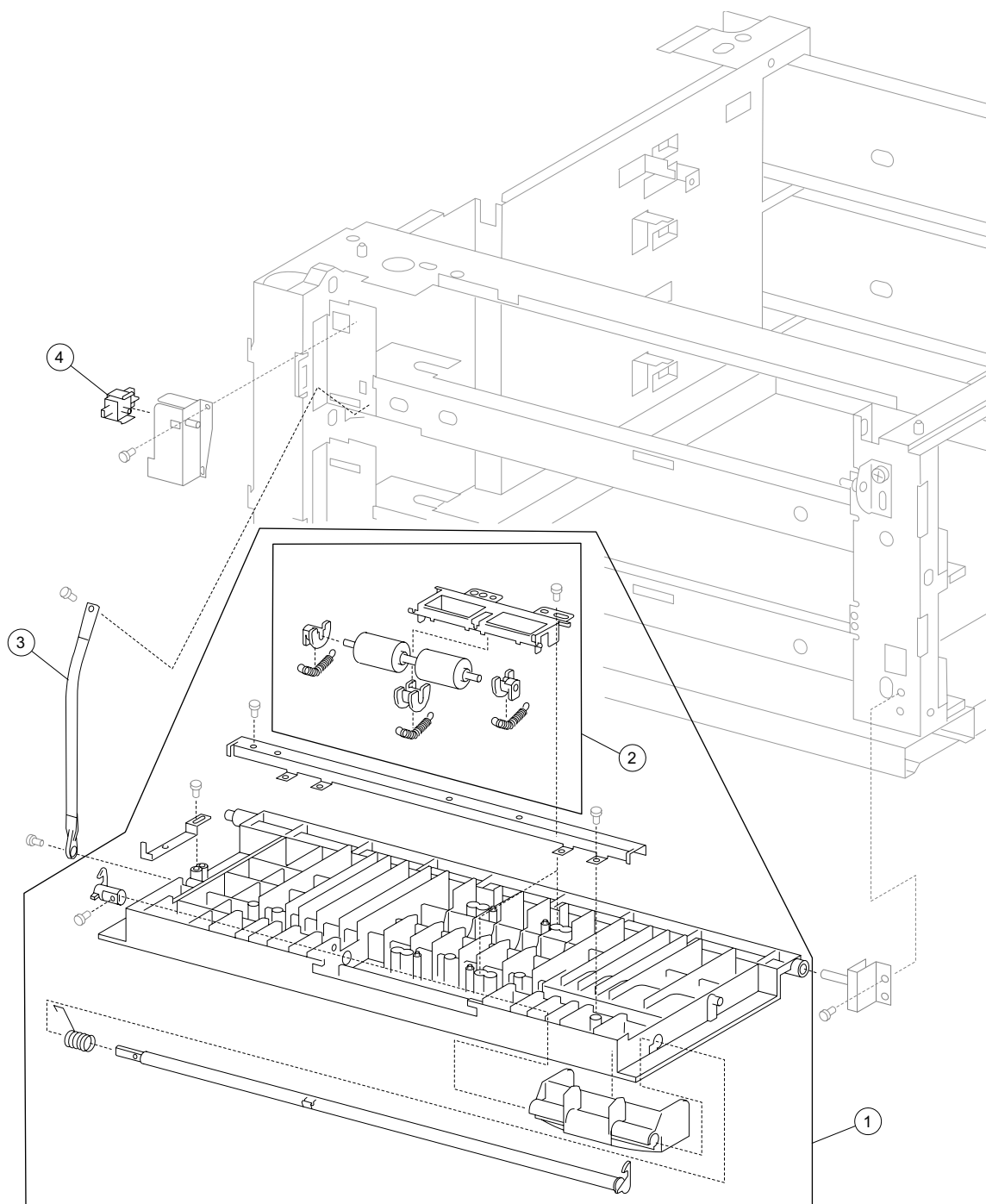
Assembly 13: 2000-sheet dual input (TTM)—left door

Asm-Index	Part number	Units/ option	Units/ FRU	Description
13—1	40X0733	1	1	2TM/TTM left door assembly (this comes assembled)
2	40X0696	1	1	2TM/TTM left door pinch assembly (this comes assembled)
3	40X0697	1	1	2TM/TTM left door support strap
4	40X0610	1	1	Switch (2TM/TTM left door interlock)

Assembly 14: 2000-sheet dual input (TTM)—drive and electrical

Assembly 14: 2000-sheet dual input (TTM)—drive and electrical

Asm-Index	Part number	Units/ option	Units/ FRU	Description
14—1	40X0736	1	8	TTM drive gear kit includes: • TTM drive gear 22/40T • TTM drive gear 37T (2) • TTM drive gear 32T • TTM drive gear 60T (2) • TTM drive gear 60T • TTM drive gear bracket assembly
2	40X0734	1	1	Tray 3 lift gear assembly
3	40X0699	1	6	2TM/TTM clutch kit includes: • 2TM/TTM clutch assembly • Shaft • Bushing 8 mm • Clutch gear 38T • Bushing 8 mm • Washer
4	40X0700	1	1	2TM/TTM drive motor
5	40X0735	1	1	Tray 4 lift gear assembly
6	40X0737	1	1	TTM main cable assembly
7	40X0698	1	1	2TM/TTM controller card assembly

Assembly 15: High capacity feed (HCF)—covers and media tray
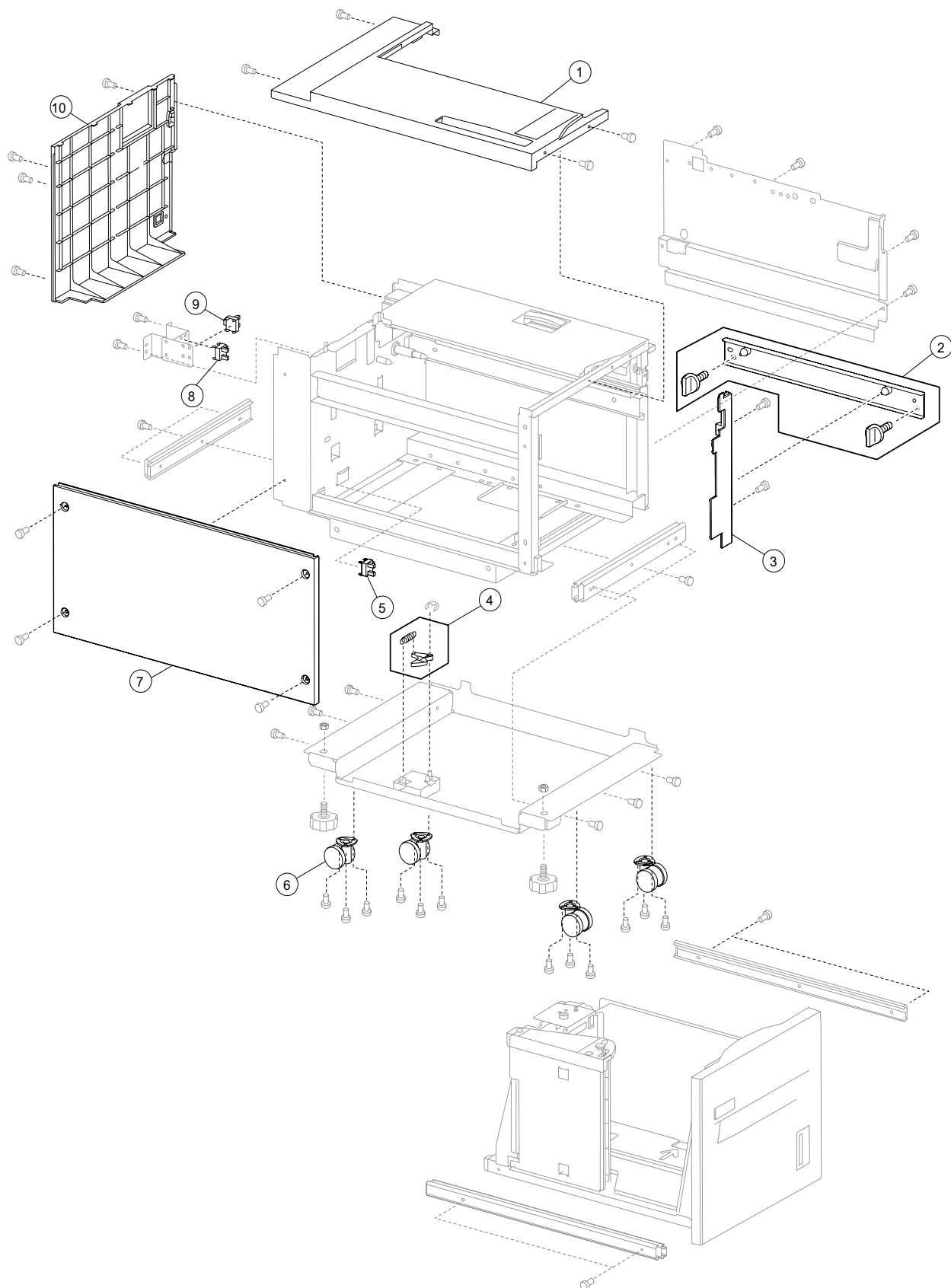
Assembly 15: High capacity feed (HCF)—covers and media tray

Asm-Index	Part number	Units/ option	Units/ FRU	Description
15—1	40X0738	1	1	Top cover
2	40X0745	1	3	HCF docking bracket kit
				• HCF docking bracket • HCF docking bracket screw (2)
3	40X0746	1	1	Inner front cover
4	40X0740	2	2	HCF docking latch kit includes:
				• HCF docking latch • Spring
5	40X0739	1	1	Sensor (HCF media tray set)
6	40X0741	4	1	Caster
7	40X0742	1	1	Left cover
8	40X0739	1	1	Sensor (HCF media size L)
9	40X0739	1	1	Sensor (HCF media size R)
10	40X0743	1	1	Rear cover

Assembly 16: High capacity feed (HCF)—media tray
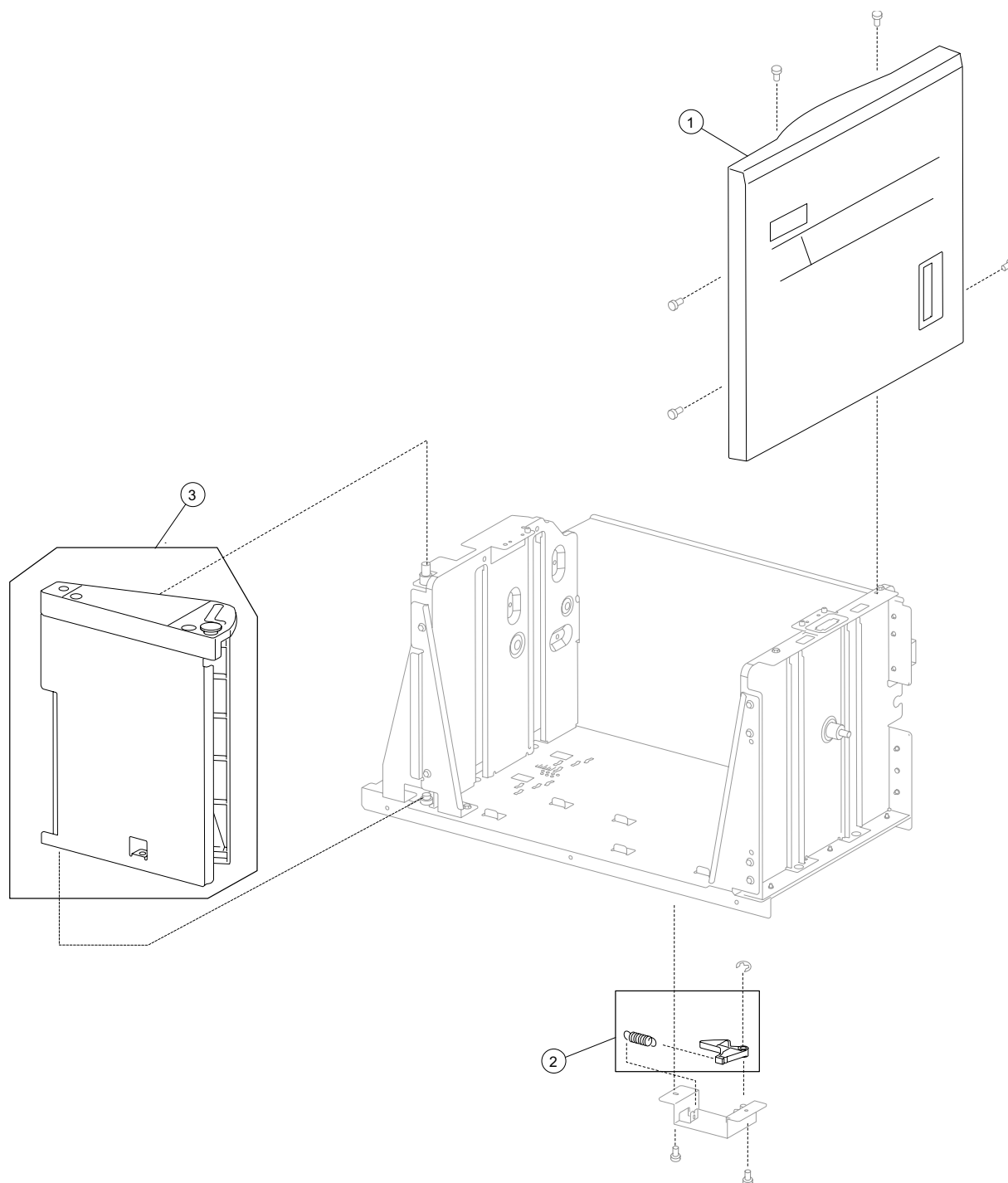
Assembly 16: High capacity feed (HCF)—media tray

Asm-Index	Part number	Units/ option	Units/ FRU	Description
16—1	40X0747	1	1	HCF media tray front cover assembly (this comes assembled)
2	40X0740	2	2	HCF docking latch kit includes: • HCF docking latch • Spring
3	40X0749	1	2	HCF media long edge guide kit includes: (this comes assembled) • HCF media long edge guide assembly • Wave washer

Assembly 17: High capacity feed (HCF)—media tray lift
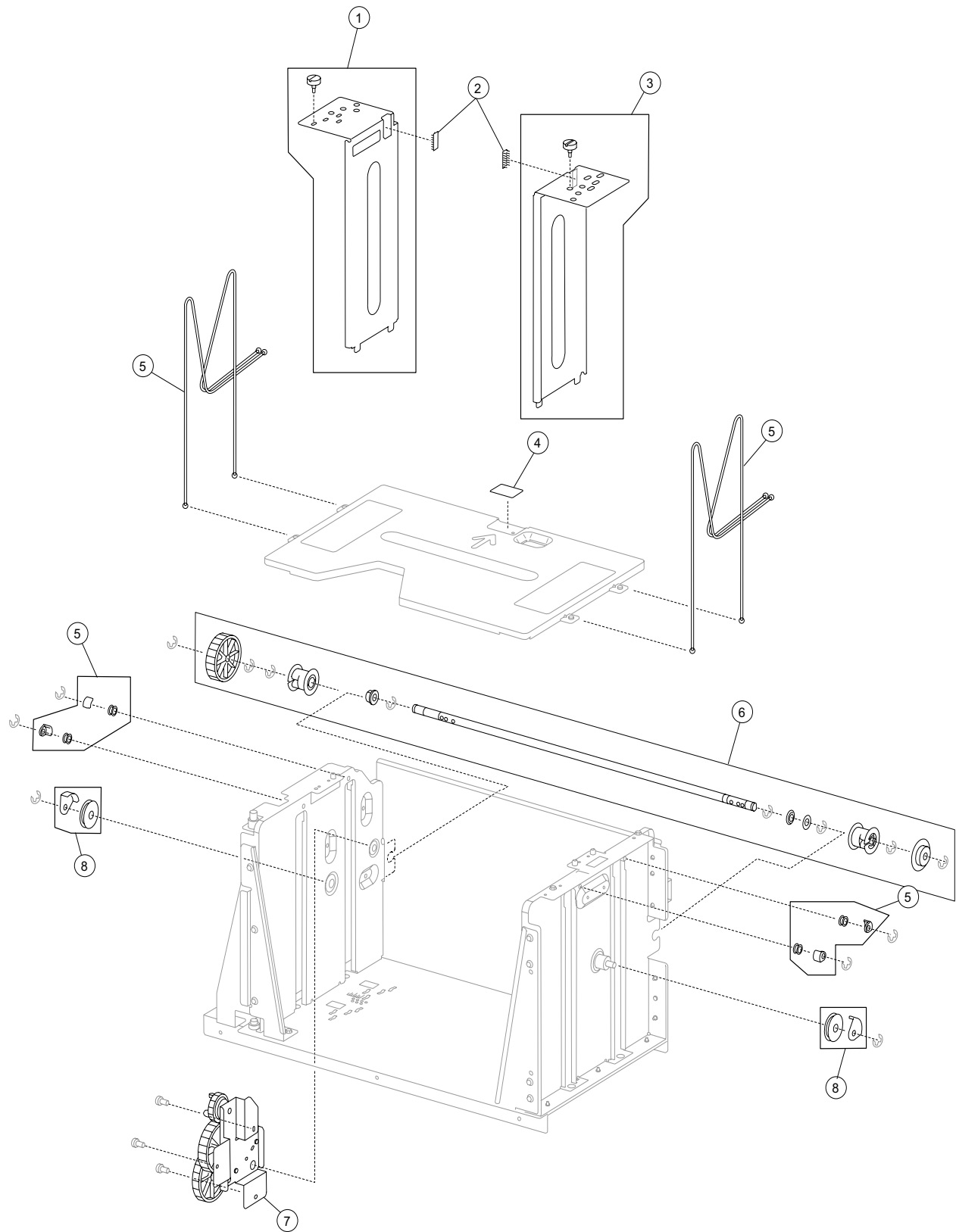
Assembly 17: High capacity feed (HCF)—media tray lift

Asm-Index	Part number	Units/option	Units/FRU	Description
17—1	40X0750	1	2	HCF rear media guide kit includes: • HCF rear media guide • Screw
2	40X0966	2	1	HCF media tray separation brush
3	40X0751	1	2	HCF front media guide kit includes: • HCF front media guide • Screw
4	40X0752	1	1	HCF separation pad
5	40X0757	1	12	HCF lift cable kit includes: • HCF lift cable (4) • HCF lift cable pulley (4) • HCF lift cable guide (4)
6	40X0754	1	7	HCF media tray lift shaft kit includes: • Bushing 8 mm front • HCF media tray lift shaft • Bushing 8 mm rear • Washer • HCF media tray lift shaft cable pulley • HCF media tray lift shaft gear 10T • HCF media tray lift shaft gear 51T
7	40X0753	1	1	HCF media tray lift gear bracket assembly (this comes assembled)
8	40X0756	2	2	HCF lift cable large pulley kit includes: • HCF lift cable large pulley • HCF lift cable large guide

Assembly 18: High capacity feed (HCF)—media feed unit
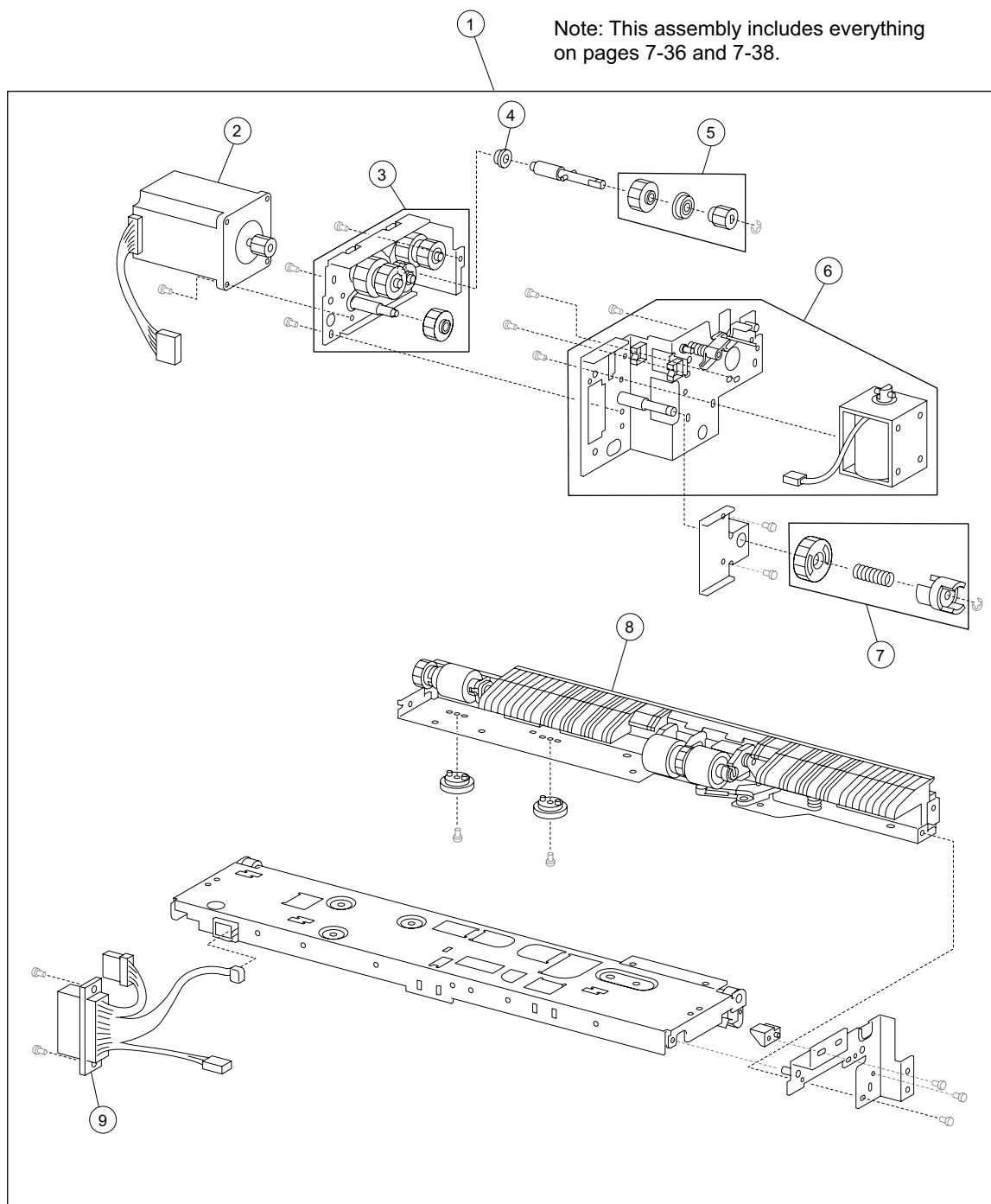
Note: This assembly includes everything on pages 7-36 and 7-38.

Assembly 18: High capacity feed (HCF)—media feed unit

Asm-Index	Part number	Units/option	Units/FRU	Description
18—1	40X0758	1	1	HCF feed unit assembly (this comes assembled)
2	40X0759	1	1	HCF feed lift motor
3	40X0760	1	1	HCF feed lift gear bracket assembly
4	40X0913	1	1	Ball bearing 6 mm
5	40X0761	1	3	HCF separation drive gear kit includes: • HCF separation drive gear 25T • Bushing 6 mm • HCF separation drive gear 19T
6	40X0762	1	1	HCF pick solenoid assembly
7	40X0763	1	3	HCF media tray lift coupling kit includes: • HCF media tray lift coupling gear 40T • Spring • HCF media tray lift coupling
8	40X0771	1	1	HCF separation roll shaft assembly (this comes assembled)
9	40X0766	1	1	HCF feed unit cable assembly

Assembly 19: High capacity feed (HCF)—media feed unit

Note: This assembly includes everything on pages 7-36 and 7-38.
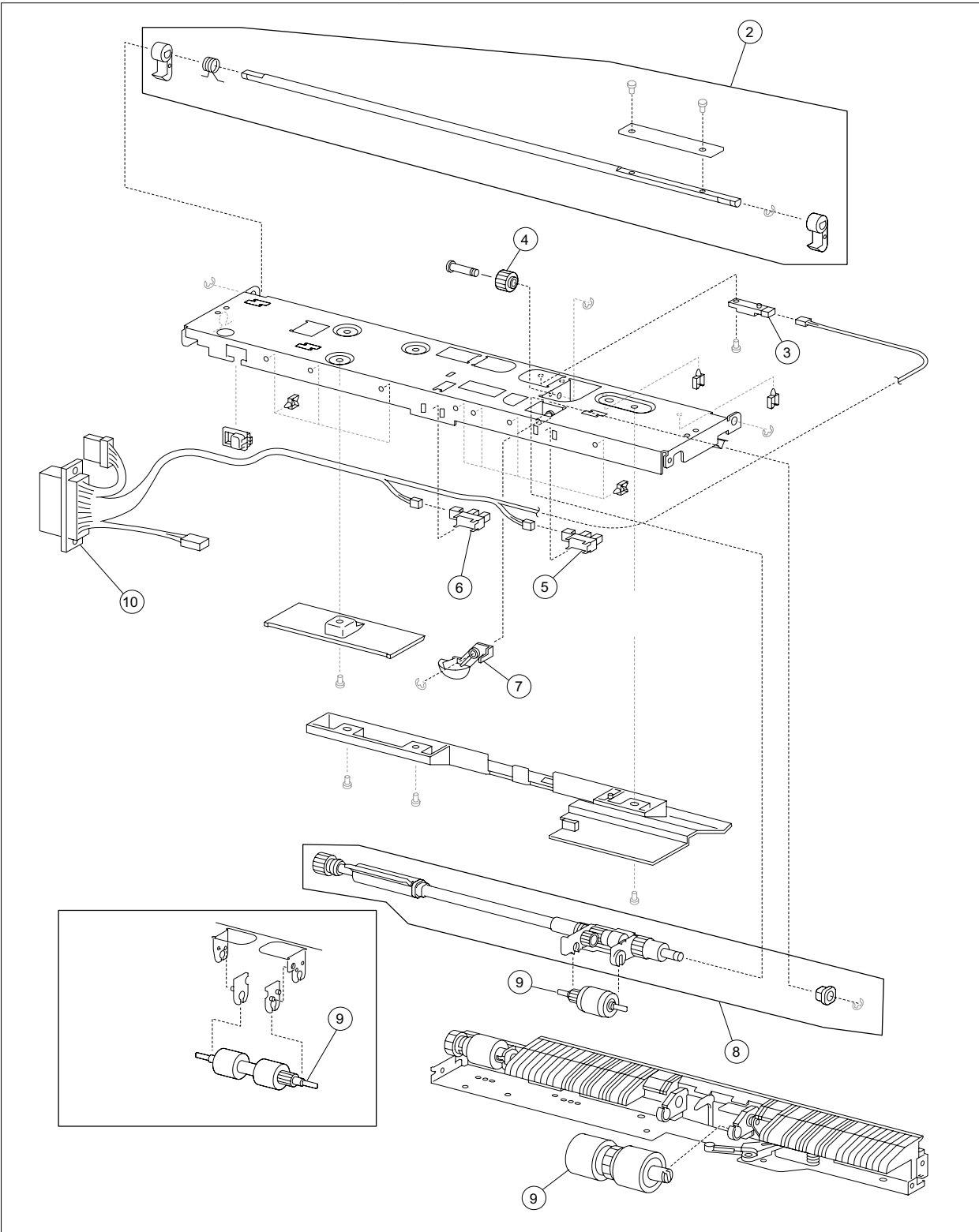
Assembly 19: High capacity feed (HCF)—media feed unit

Asm-Index	Part number	Units/ option	Units/ FRU	Description
19—1	40X0758	1	1	HCF feed unit assembly (this comes assembled)
2	40X0764	1	5	HCF feed unit latch kit includes:
				• HCF feed unit latch (2) • Spring • HCF feed unit latch shaft • HCF feed unit latch cover
3	40X0589	1	1	Sensor (pre-feed)
4	40X0765	1	1	HCF pick roll idler gear
5	40X0768	1	1	Sensor (media out)
6	40X0768	1	1	Sensor (media level)
7	40X0767	1	1	HCF media out actuator
8	40X0769	1	2	HCF pick roll shaft kit includes:
				• HCF pick roll shaft assembly • Bushing 6 mm
9	40X0770	1	3	HCF feed unit roll kit includes:
				• HCF feed roll • HCF pick roll • HCF separation roll
10	40X0766	1	1	HCF feed unit cable assembly

Assembly 20: High capacity feed (HCF)—top door and transport
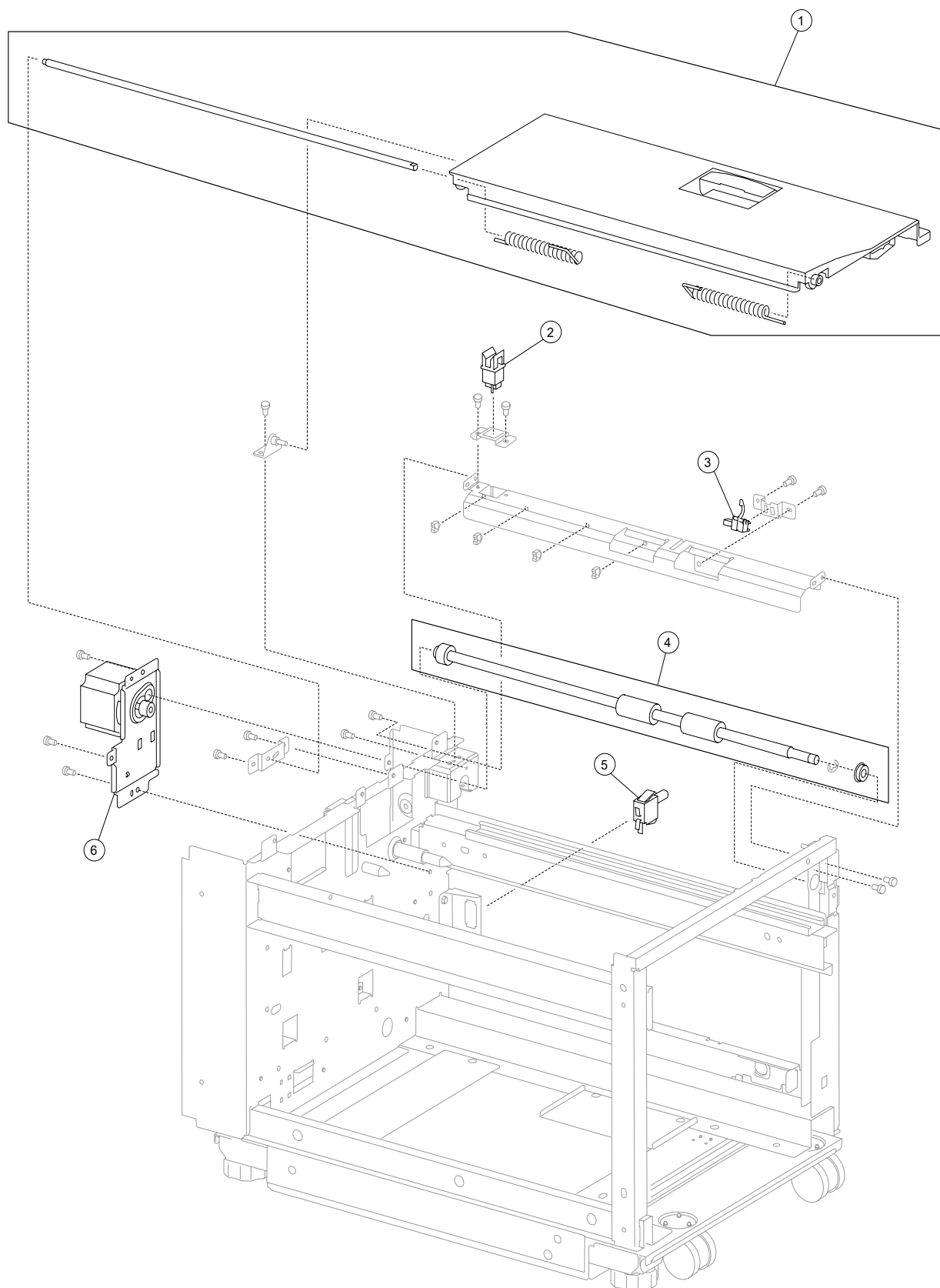
Assembly 20: High capacity feed (HCF)—top door and transport

Asm-Index	Part number	Units/ option	Units/ FRU	Description
20—1	40X0773	1	4	HCF top door kit includes: • HCF top door • HCF top door shaft • HCF top door spring R • HCF top door spring L
2	40X0553	1	1	Switch (HCF top door interlock)
3	40X0774	1	1	Sensor (tray 5 feed-out)
4	40X0775	1	2	HCF media transport roll kit includes: • HCF media transport roll assembly • Ball bearing 8 mm
5	40X0777	1	1	Switch (HCF unit docking interlock)
6	40X0776	1	1	HCF transport motor

Assembly 21: High capacity feed (HCF)—electrical
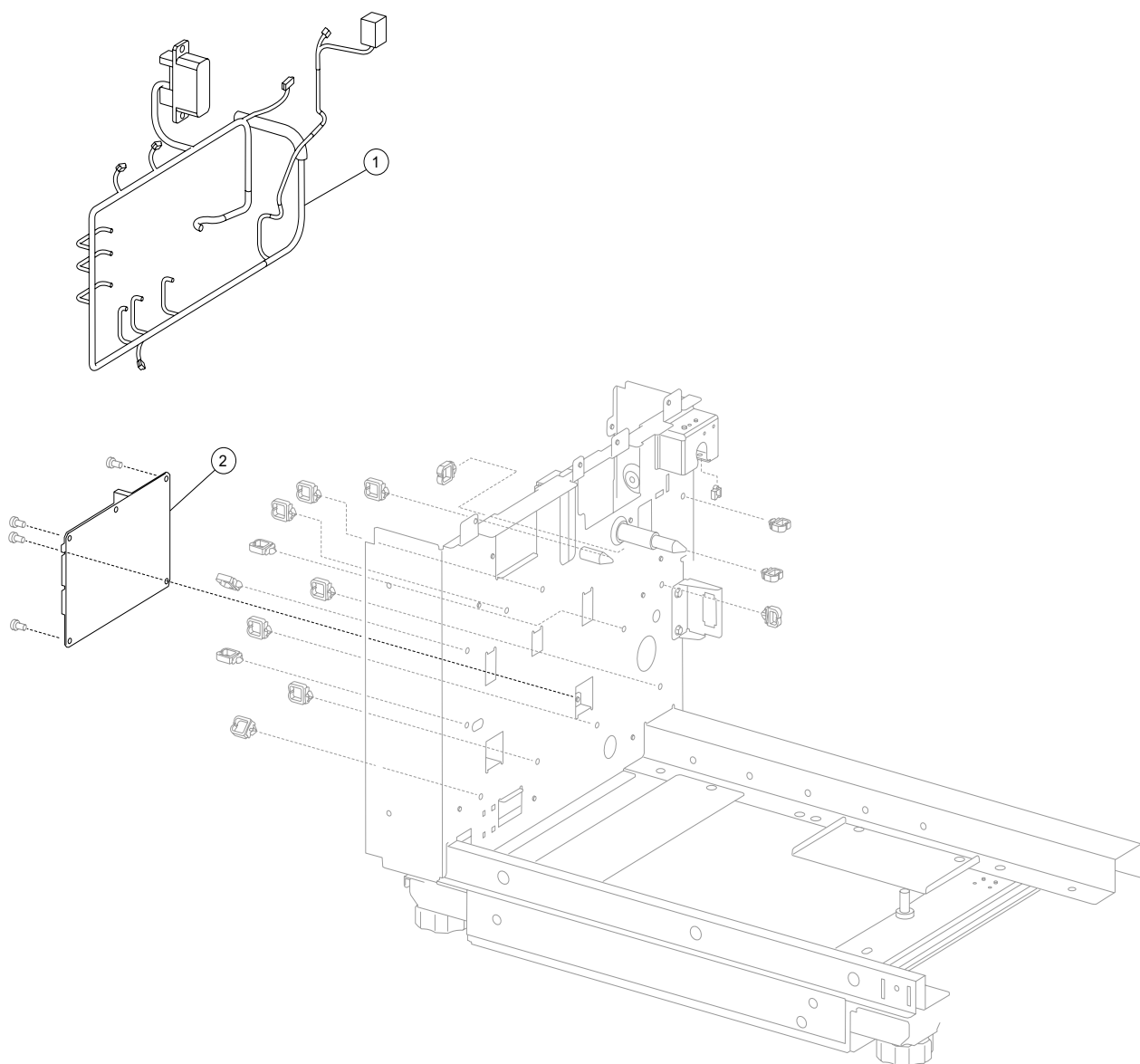
Assembly 21: High capacity feed (HCF)—electrical

Asm-Index	Part number	Units/ option	Units/ FRU	Description
21—1	40X0779	1	1	HCF main cable assembly
2	40X0778	1	1	HCF controller card assembly

Assembly 22: Duplex outer

Note: This assembly includes everything on pages 7-44 and 7-46.
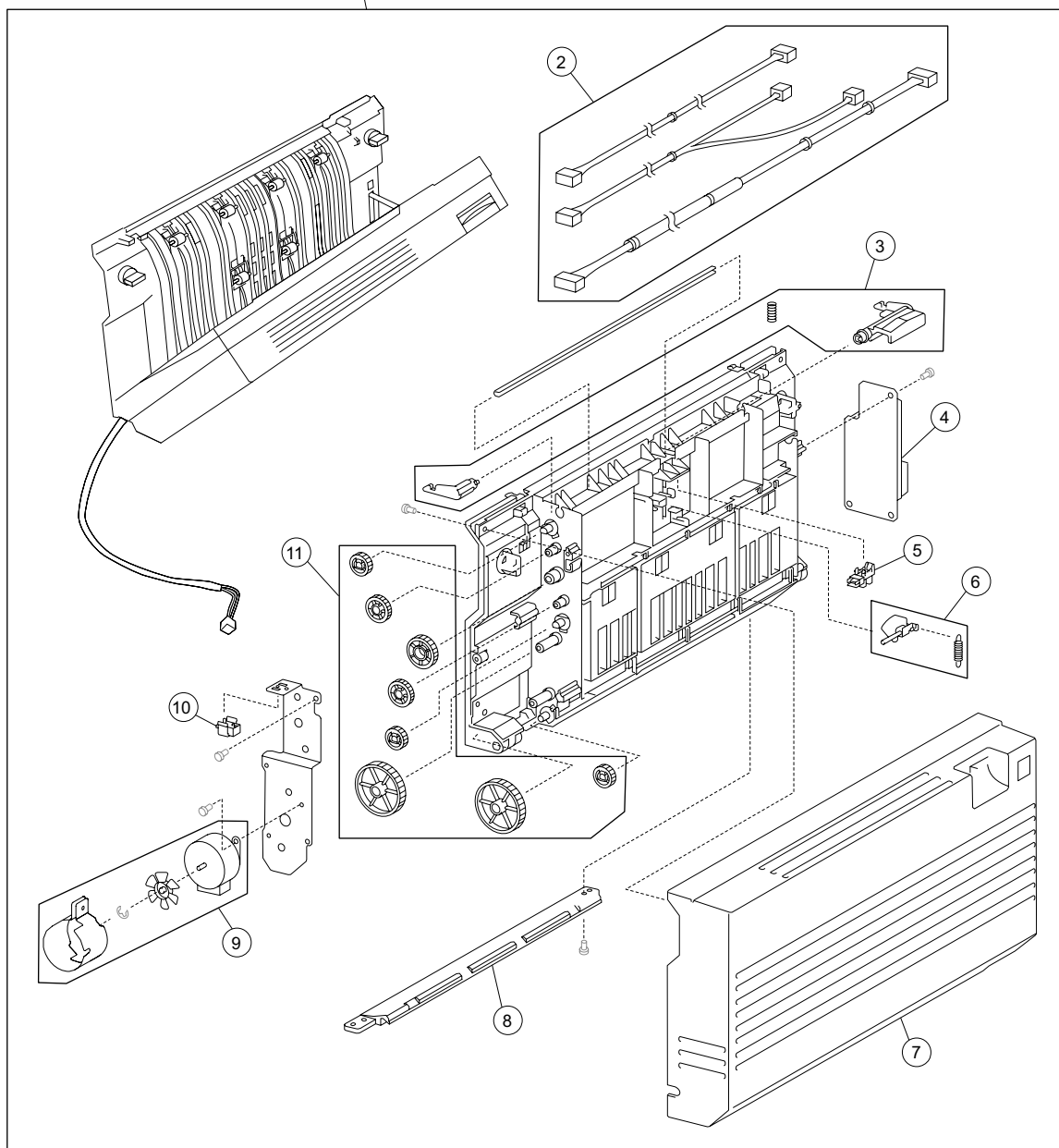
Assembly 22: Duplex outer

Asm-Index	Part number	Units/ option	Units/ FRU	Description
22—1	40X0780	1	1	Duplex unit assembly (this comes assembled)
2	40X0788	1	3	Duplex cable kit includes: • Duplex sensor cable assembly • Duplex motor cable assembly • Duplex main cable assembly
3	40X0782	1	3	Duplex left door handle kit includes: • Duplex left door handle latch • Duplex left door handle • Spring
4	40X0786	1	1	Duplex controller card assembly
5	40X0588	1	1	Sensor (duplex wait)
6	40X0784	1	2	Duplex wait actuator kit includes: • Duplex wait actuator • Spring
7	40X0787	1	1	Duplex left cover
8	40X0783	1	1	Duplex lower guide
9	40X0785	1	3	Duplex drive motor kit includes: • Duplex drive motor • Duplex drive motor cooling fan • Duplex drive motor cooling fan shroud
10	40X0610	1	1	Switch (duplex left door interlock)
11	40X0781	1	8	Duplex drive gear kit includes: • Duplex drive gear 28T (3) • Duplex drive gear 33/74T (2) • Duplex drive gear 33T (2) • Duplex drive gear 42T

Assembly 23: Duplex inner

Note: This assembly includes everything on pages 7-44 and 7-46.
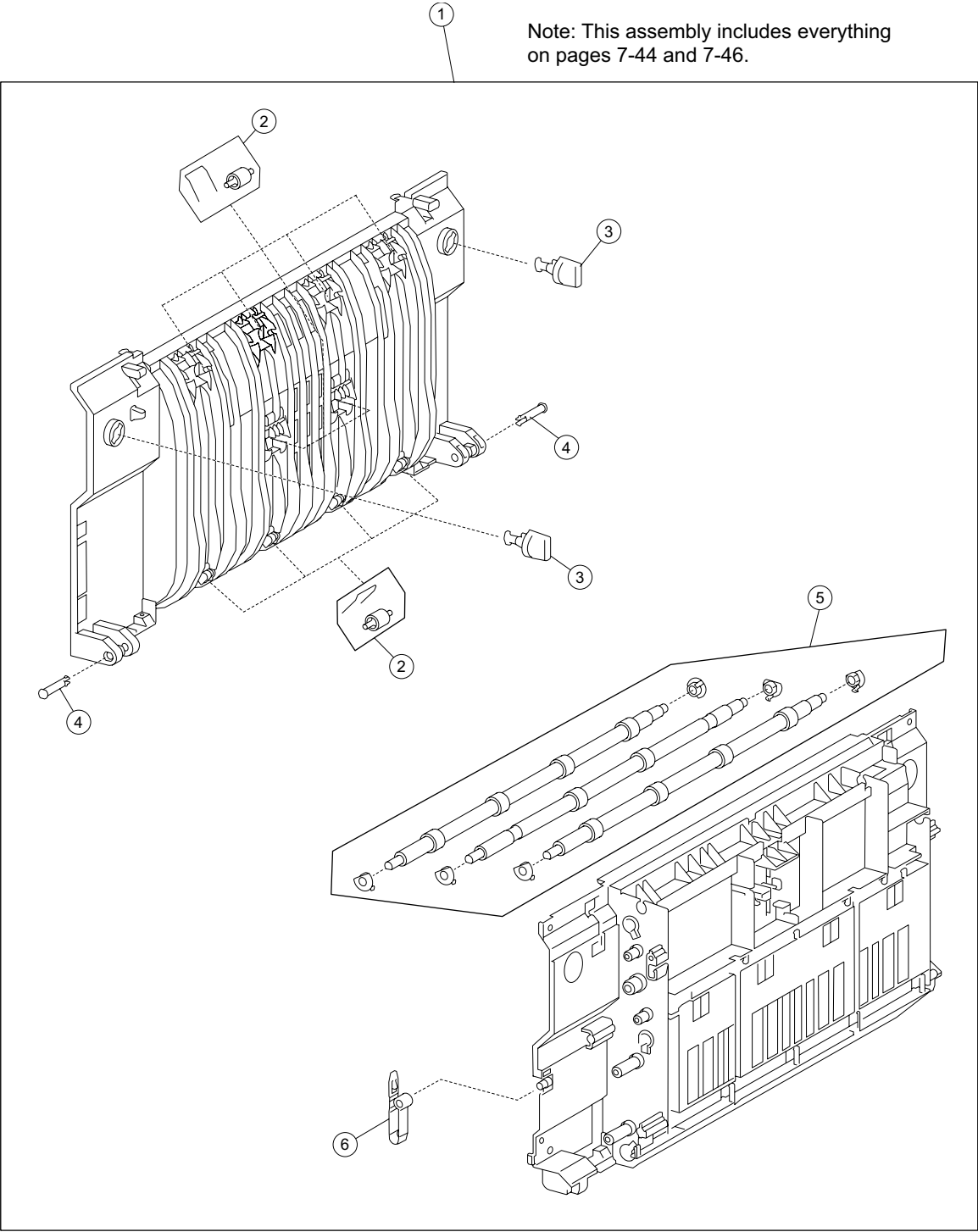
Assembly 23: Duplex inner

Asm-Index	Part number	Units/ option	Units/ FRU	Description
23—1	40X0780	1	1	Duplex unit assembly (this comes assembled)
2	40X0792	1	20	Duplex media transport pinch roll kit includes: • Duplex media transport pinch roll (10) • Spring (10)
3	40X0790	1	2	Duplex docking lock (2)
4	40X0791	1	2	Hinge pin (2)
5	40X0793	1	9	Duplex media transport roll kit includes: • Bushing 6 mm (6) • Duplex media transport roll (2) • Duplex media center transport roll
6	40X0789	1	1	Duplex left door support strap

Assembly 24: Exit 2 outer

Note: This assembly includes everything
on pages 7-48 and 7-50.
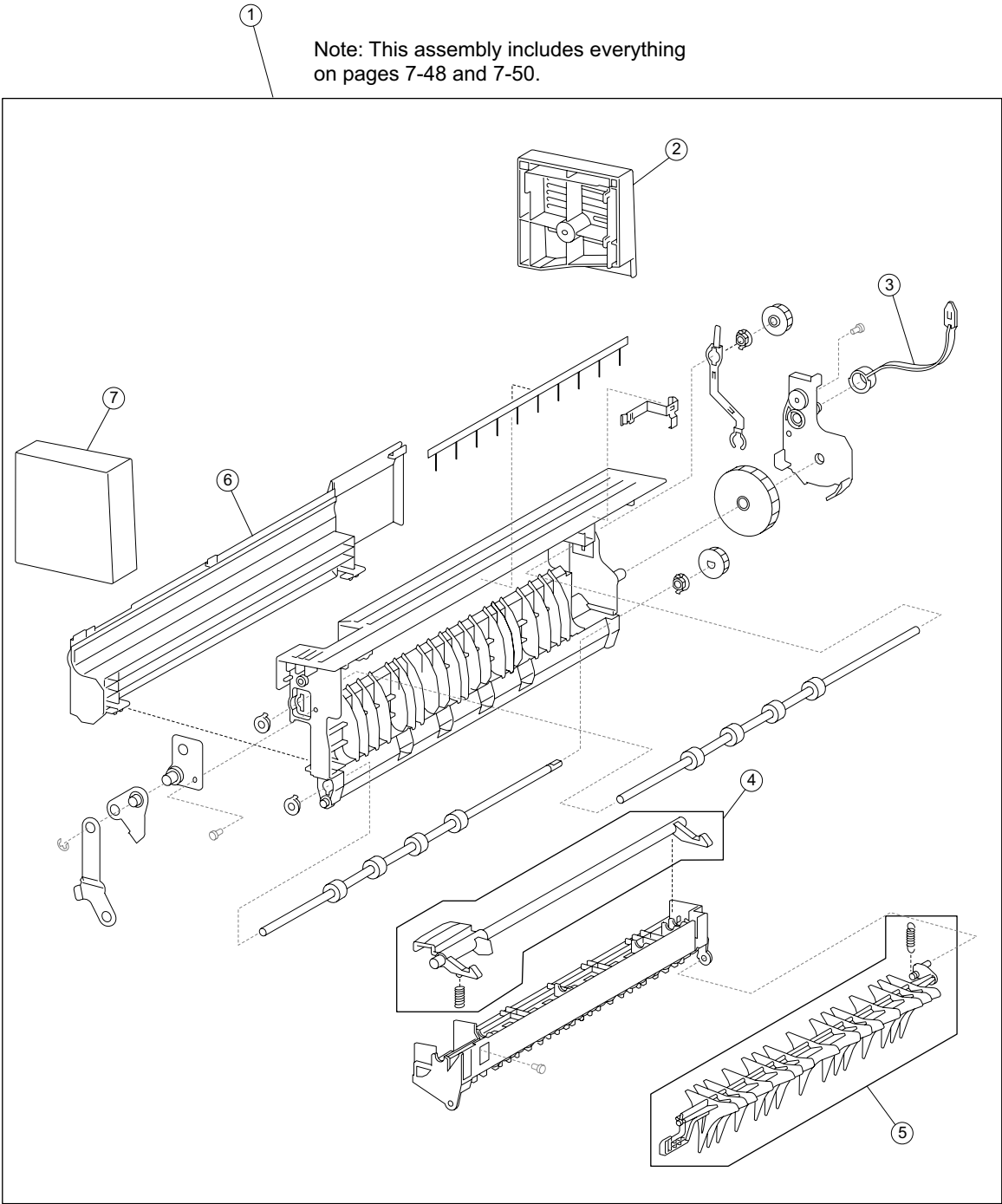
Assembly 24: Exit 2 outer

Asm-Index	Part number	Units/ option	Units/ FRU	Description
24—1	40X0794	1	1	Exit 2 unit assembly (this comes assembled)
2	40X0800	1	1	Rear cover
3	40X0797	1	1	Exit 2 left door support strap
4	40X0795	1	2	Exit 2 left door handle kit includes: • Exit 2 left door handle • Spring
5	40X0796	1	2	Media diverter gate kit includes: • Media diverter gate • Spring
6	40X0798	1	1	Left cover
7	40X0799	1	1	Front cover

Assembly 25: Exit 2 inner

Note: This assembly includes everything on pages 7-48 and 7-50.
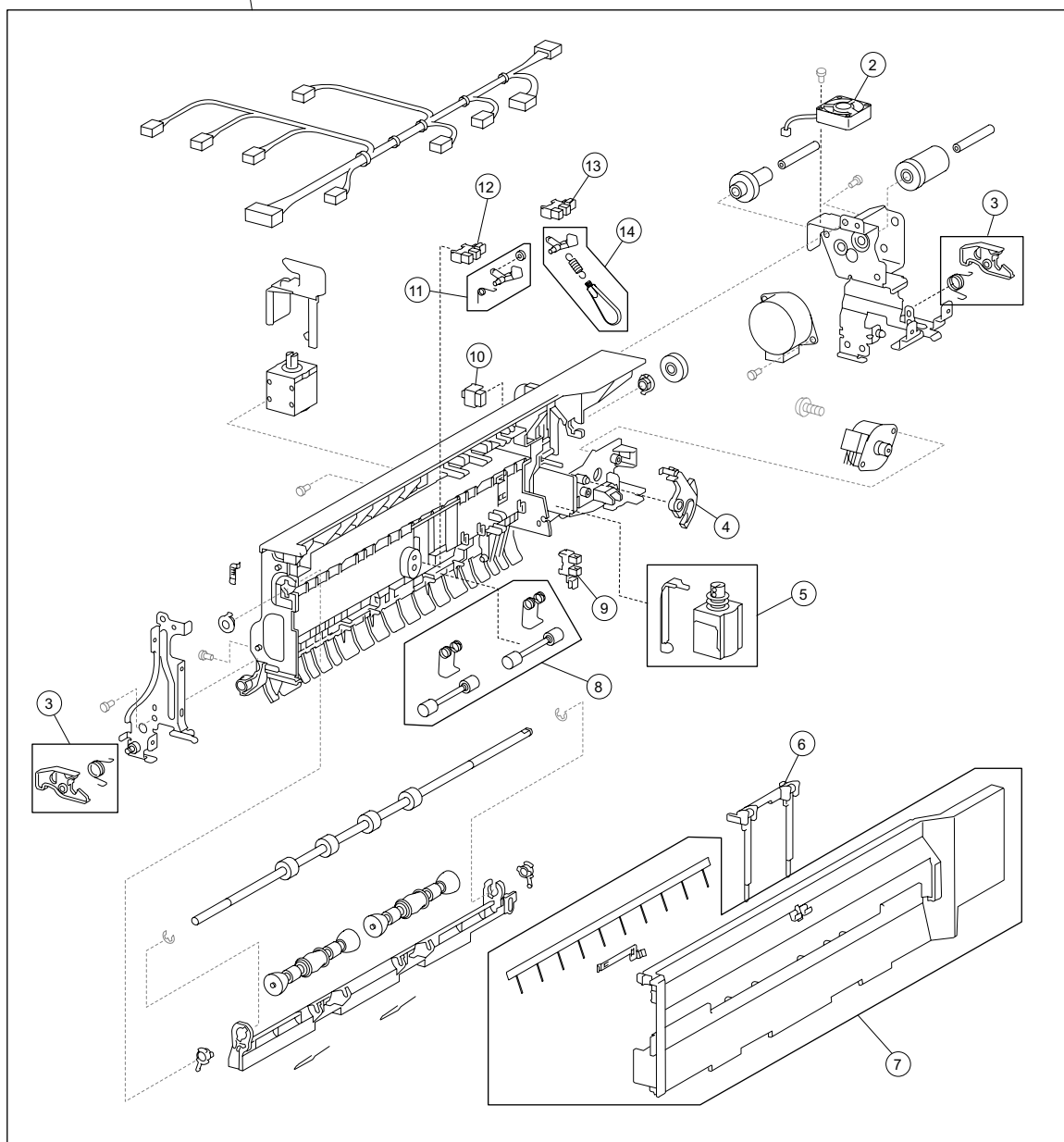
Assembly 25: Exit 2 inner

Asm-Index	Part number	Units/option	Units/FRU	Description
25—1	40X0794	1	1	Exit 2 unit assembly (this comes assembled)
2	40X0807	1	1	Exit 2 cooling fan
3	40X0802	1	4	Exit 2 docking latch kit includes: • Exit 2 docking latch (2) • Exit 2 docking latch spring front • Exit 2 docking latch spring rear
4	40X0803	1	1	Exit 2 media shift gear
5	40X0805	1	2	Media diverter solenoid kit includes: • Media diverter solenoid • Media diverter link
6	40X2389	1	1	Output guide
7	40X0801	1	3	Right cover kit includes: • Right cover • Right cover anti static brush • Right cover grounding plate
8	40X0806	1	4	Exit 2 pinch roll kit includes: • Spring (2) • Exit 2 pinch roll (2)
9	40X0588	1	1	Sensor (exit 2 media shift HP)
10	40X0610	1	1	Switch (exit 2 left door interlock)
11	40X0809	1	3	Exit 2 actuator kit includes: • Exit 2 actuator • Roller • Spring
12	40X0588	1	1	Sensor (exit 2)
13	40X0588	1	1	Sensor (standard bin full exit 2)
14	40X0808	1	3	Exit 2 bin full actuator kit includes: • Exit 2 bin full actuator inner • Exit 2 bin full actuator outer • Spring

Note: Assembly index items 12 and 13 are identical sensors with different functions; therefore, are the same part number with different descriptions.

Index

Part number index

4024 Options Service Manual

EXIT Interface Card Assembly

HCF Controller Card Assembly

HCF Controller Card

TTM/2TM Controller Card Assembly

Duplex Controller Card ASM

Duplex Controller Card Assembly

EXIT Interface Card ASM

TTM/2TM Controller Card ASM

HCF Pick Solenoid

HCF Transport Motor

HCF Feed Lift Motor

To Printer Engine Card ASM

To Printer Engine Card ASM

To Printer Engine Card ASM

To LVPS Card ASM

To Printer Engine Card ASM

PF08
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HCF Top Door Interlock

Switch (HCF Unit Docking)

Sensor (Tray 5 Feed Out)

Sensor (Media Tray Set)

Sensor (Media Size R)

Sensor (Media Size L)

Sensor (Media Level)

Sensor (Pre Feed)

Sensor (Media Out)

Duplex Drive Motor

Switch (Duplex Left Door Interlock)

Sensor (Duplex Wait)

Drive Motor A

Media Diverter Solenoid

Media Shift Motor 2

Exit 2 Cooling Fan

Sensor (Std Bin Full Exit 2)

Sensor (Exit 2)

Sensor (Exit 2 Media Shift HP)

Switch (Exit 2 Left Door Interlock)

Sensor (Tray4 Feed out)

Sensor (Tray3 Feed Out)

Switch (T2M Media Size 2)

Switch (TTM Media Size 4)

Switch (2TM Media Size 1)

Switch (TTM Media Size 4)

Switch (2TM/TTM Left door Interlock)

2TM/TTM Clutch

2TM/TTM Drive Motor

Media Feed Lift Motor 4

Media Feed Lift Motor 3

Sensor (Media level 4)

Sensor (Media Out 4)

Sensor (Pre-feed 4)

Sensor (Pre-feed 3)

Sensor (Media Out 3)

Sensor (Media level 3)

DIP Switch Settings

On 1 2 3 4   2TM
On 1 2 3 4   TTM

DIP switch

All Lines Common GND