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## **FACSIMILE EQUIPMENT SERVICE MANUAL**

**MODEL: FAX750/FAX770/FAX870MC  
FAX-910/FAX-920/FAX-921/FAX-930/FAX-931  
MFC-925/MFC970MC**

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## **PREFACE**

This publication is a Service Manual covering the specifications, construction, theory of operation, and maintenance of the Brother facsimile equipment. It includes information required for field troubleshooting and repair--disassembly, reassembly, and lubrication--so that service personnel will be able to understand equipment function, to rapidly repair the equipment and order any necessary spare parts.

To perform appropriate maintenance so that the facsimile equipment is always in best condition for the customer, the service personnel must adequately understand and apply this manual.

This manual is made up of six chapters and appendices.

<b>CHAPTER I.</b>	<b>GENERAL DESCRIPTION</b>
<b>CHAPTER II.</b>	<b>INSTALLATION</b>
<b>CHAPTER III.</b>	<b>THEORY OF OPERATION</b>
<b>CHAPTER IV.</b>	<b>DISASSEMBLY/REASSEMBLY AND LUBRICATION</b>
<b>CHAPTER V.</b>	<b>MAINTENANCE MODE</b>
<b>CHAPTER VI.</b>	<b>ERROR INDICATION AND TROUBLESHOOTING</b>
<b>Appendix 1.</b>	<b>EEPROM Customizing Codes</b>
<b>Appendix 2.</b>	<b>Circuit Diagrams</b>

This manual describes the models and their versions to be destined for major countries. The specifications and functions are subject to change depending upon each destination.

# **CHAPTER I.**

## **GENERAL DESCRIPTION**

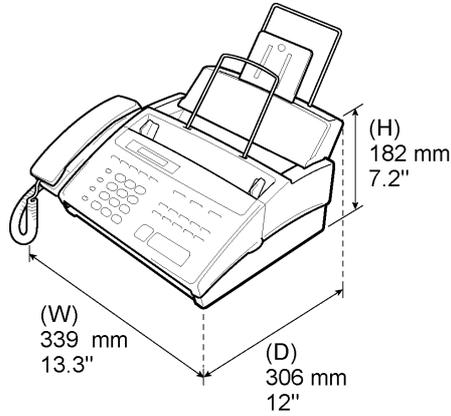
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  - 1.1 External Appearance and Weight ..... I-1
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# 1. EQUIPMENT OUTLINE

## 1.1 External Appearance and Weight

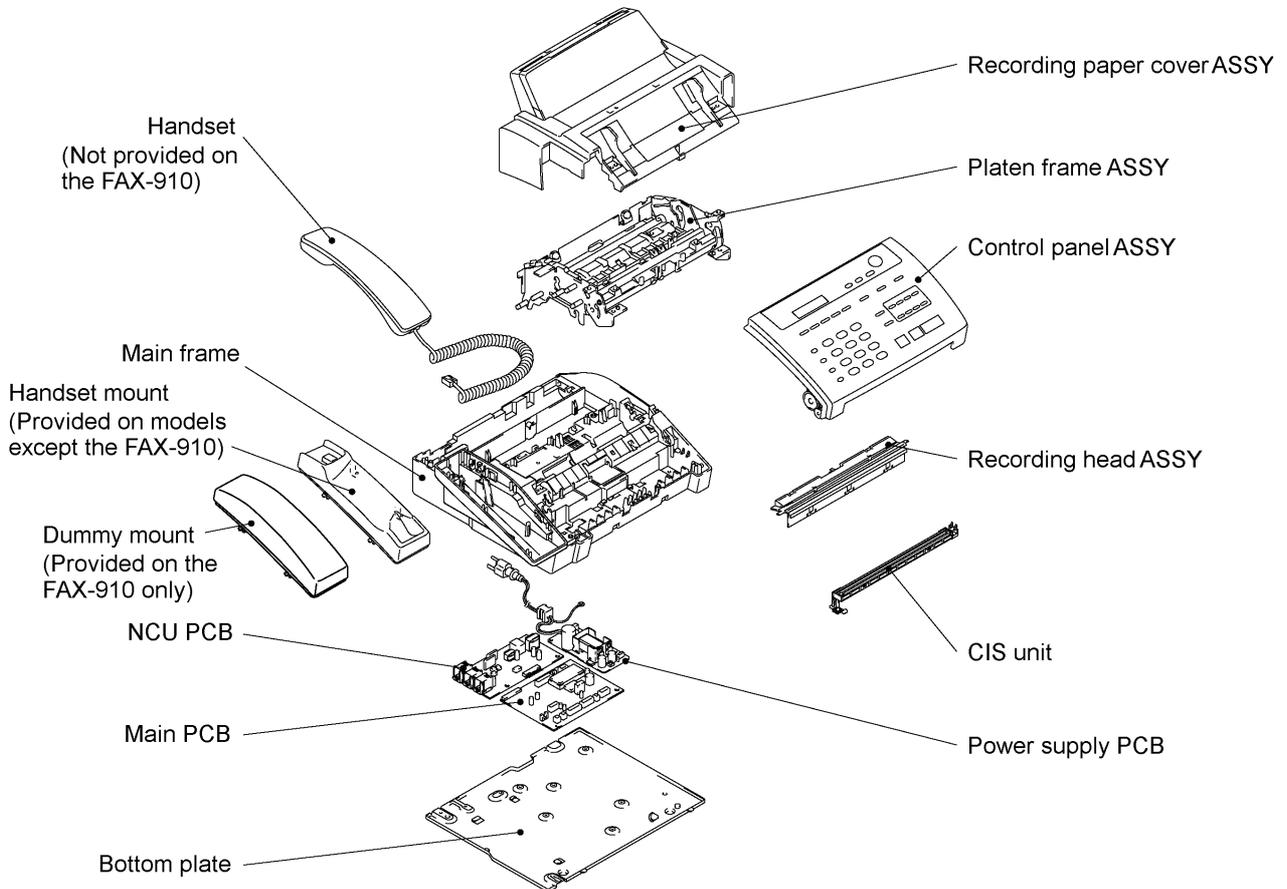
The figure below shows the equipment appearance and approximate dimensions.



Weight:	Machine proper (excluding a ribbon cartridge)	Approx. 4 kg (8.82 lbs.)
	In package	Approx. 6 kg (13.23 lbs.)

## 1.2 Components

The equipment consists of the following major components:



## 2. SPECIFICATIONS

Model Name	FAX750	FAX770
Engine	Thermal transfer	Thermal transfer
Color	Black (1395)	White (1397)
Transmission Speed (sec)	15	15
Modem Speed (bps)	9600	9600
Group Compatibility	G3	G3
Input/Output Width	8.5"/8.5"	8.5"/8.5"
ADF (pages)	10	10
Recording Paper Loadable	100 sheets	100 sheets
Ribbon Life (Letter-size print)	250 pages (77 m)	250 pages (77 m)
Starter Ribbon Life (Letter-size print)	100 pages (30 m)	100 pages (30 m)
LCD Size	16 x 1	16 x 1
On-Screen Programming	Yes	Yes
Super Fine	Yes	Yes
Smoothing	Yes	Yes
Gray Scale (levels)	64 by Dithered	64 by Dithered
One Touch	8	8
Speed Dial	40	40
Telephone Index	Yes	Yes
Speaker Phone	Monitor	Monitor
Handset	Yes	Yes
FAX/TEL Switch	Yes	Yes
Distinctive Ring Detection*	Yes	Yes
Caller ID*	Yes	Yes
Call Waiting Caller ID*	Yes	Yes
TAD Interface	Yes	Yes
Enhanced Remote Activation	Yes	Yes
Automatic Redial	Yes	Yes
Next-FAX Reservation	Yes	Yes
Multi-Resolution Transmission	Yes	Yes
Polling Type	Std/Seq	Std/Seq
Delayed Transmission	1-timer	1-timer
Call Reservation	Yes	Yes
Electronic Coverpage	Yes - Super	Yes - Super
Call Back Message	Yes	Yes
Activity Report	Yes	Yes
TX Verification Report	Yes	Yes
Memory Capacity (pages)	512 KB (20 pages)	512 KB (20 pages)
ECM	Yes	Yes
Broadcasting	Yes	Yes
Quick-Scan	Yes	Yes
Out-of-Paper Reception	Yes	Yes
Multi-Copying w/ Sorting	Yes	Yes
Enlargement/Reduction Ratio	Yes (50-150%)	Yes (50-150%)
Multi-Transmission	No	No
Confidential Mailbox	No	No
Auto Reduction	Yes	Yes
Message Center	No	No
TAD Recording Time	No	No
Fax Forwarding/Paging	No	Yes
Fax Retrieval	No	Yes
Fax-/Voice-on-demand	No	No
Fax & Voice Mailbox	No	No
Help List	Yes	Yes
Missing Link/Multifunction Link	Ready	Ready
Optional Memory	No	No
Voice Alarm	No	No
Others		

\* Check your local telephone company for availability of this service.

<b>Model Name</b>	<b>FAX870MC</b>	<b>MFC970MC</b>
Engine	Thermal transfer	Thermal transfer
Color	White (1397)	White (1138)
Transmission Speed (sec)	9	9
Modem Speed (bps)	14,400	14,400
Group Compatibility	G3	G3
Input/Output Width	8.5"/8.5"	8.5"/8.5"
ADF (pages)	10	10
Recording Paper Loadable	100 sheets	100 sheets
Ribbon Life (Letter-size print)	250 pages (77 m)	250 pages (77 m)
Starter Ribbon Life (Letter-size print)	100 pages (30 m)	100 pages (30 m)
LCD Size	16 x 1	16 x 1
On-Screen Programming	Yes	Yes
Super Fine	Yes	Yes
Smoothing	Yes	Yes
Gray Scale (levels)	64 by Dithered	64 by Dithered
One Touch	8	8
Speed Dial	40	40
Telephone Index	Yes	Yes
Speaker Phone	Full duplex (digital)	Full duplex (digital)
Handset	Yes	Yes
FAX/TEL Switch	Yes	Yes
Distinctive Ring Detection*	Yes	Yes
Caller ID*	Yes	Yes
Call Waiting Caller ID*	Yes	Yes
TAD Interface	Yes	Yes
Enhanced Remote Activation	Yes	Yes
Automatic Redial	Yes	Yes
Next-FAX Reservation	Yes	Yes
Multi-Resolution Transmission	Yes	Yes
Polling Type	Std/Seq	Std/Seq
Delayed Transmission	1-timer	1-timer
Call Reservation	Yes	Yes
Electronic Coverpage	Yes - Super	Yes - Super
Call Back Message	Yes	Yes
Activity Report	Yes	Yes
TX Verification Report	Yes	Yes
Memory Capacity (pages)	512 KB (20 pages)	512 KB (20 pages)
ECM	Yes	Yes
Broadcasting	Yes	Yes
Quick-Scan	Yes	Yes
Out-of-Paper Reception	Yes	Yes
Multi-Copying w/ Sorting	Yes	Yes
Enlargement/Reduction Ratio	Yes (50-150%)	Yes (50-150%)
Multi-Transmission	No	No
Confidential Mailbox	No	No
Auto Reduction	Yes	Yes
Message Center	Yes	Yes
TAD Recording Time	15 minutes	15 minutes
Fax Forwarding/Paging	Yes	Yes
Fax Retrieval	Yes	Yes
Fax-/Voice-on-demand	Voice-on-demand	Voice-on-demand
Fax & Voice Mailbox	Yes	Yes
Help List	Yes	Yes
Missing Link/Multifunction Link	Ready	Included
Optional Memory	No	No
Voice Alarm	No	No
Others		

\* Check your local telephone company for availability of this service.

<b>Model Name</b>	<b>FAX-910</b>	<b>FAX-920/921</b>
Engine	Thermal Transfer	Thermal Transfer
Color	Black(1395)	Black(1395)/White(1397/1138)
Transmission Speed (sec)	15	15
Modem Speed (bps)	9600	9600
Group Compatibility	G3	G3
Input/Output Width	8.5"/8.5"	8.5"/8.5"
ADF (pages)	10	10
Recording Paper Loadable	100 sheets	100 sheets
Ribbon Life (A4-size print)	235 pages	235 pages
Starter Ribbon Life (A4-size print)	90 pages (30 m)	90 pages (30 m)
LCD Size	16 X 1	16 X 1
On-Screen Programming	Yes	Yes
Super Fine	Yes	Yes
Smoothing	Yes	Yes
Gray Scale (levels)	64 by Dithered	64 by Dithered
One Touch	16 w/SHIFT KEY	16 w/SHIFT KEY
Speed Dial	32	32
Telephone Index	Yes	Yes
Speaker Phone	Monitor	Monitor
Handset	No	Yes
FAX/TEL Switch	Yes	Yes
Caller ID	Yes HOL/SWE/UK/FRA/NOR	Yes HOL/SWE/UK/FRA/NOR
Call Waiting Caller ID	No	No
Distinctive Ringing	No	No
TAD Interface	Yes	Yes
Enhanced Remote Activation	Yes	Yes
Automatic Redial	Yes	Yes
Next-FAX Reservation	Yes	Yes
Multi-Resolution Transmission	Yes	Yes
Polling Type	Sim/Sec/Del/Seq	Sim/Sec/Del/Seq
Delayed Transmission	3-timer	3-timer
Call Reservation	Yes	Yes
Electronic Coverpage	Yes - Super	Yes - Super
Call Back Message	Yes	Yes
Journal Report	Yes	Yes
TX Verification Report	Yes	Yes
Memory Capacity (pages)	512KB (20 pages)	512KB (20 pages)
ECM	Yes	Yes
Broadcasting	Yes	Yes
Quick-Scan	Yes	Yes
Out-of-Paper Reception	Yes	Yes
Multi-Copying w/Sorting	Yes	Yes
Enlargement/Reduction Ratio	Yes (50-150%)	Yes (50-150%)
Multi-Transmission	Yes	Yes
Confidential Mailbox	No	No
Auto Reduction	Yes	Yes
Message Manager	No	No
TAD Recording Time	No	No
Fax Forwarding/Paging	Yes - Only Fax forwarding	Yes - Only Fax forwarding
Fax Retrieval	Yes	Yes
Fax-/Voice-on-demand	No	No
Fax & Voice Mailbox	No	No
Help List	Yes	Yes
MFL PRO for Fax	Ready	Ready
Optional Memory	No	No
Memo Manager	No	No
Mute Key	No	Yes-music on hold; Green Sleeves
Backup for Clock	9 hours	9 hours
Output Tray	Option (CT70)	Option (CT70)
Backup for Page Memory	6 hours	6 hours

<b>Model Name</b>	<b>FAX-930/931</b>	<b>MFC-925</b>
Engine	Thermal Transfer	Thermal Transfer
Color	Black(1395)/White(1397/1138)	White(1138)
Transmission Speed (sec)	9	15
Modem Speed (bps)	14,400	9600
Group Compatibility	G3	G3
Input/Output Width	8.5"/8.5"	8.5"/8.5"
ADF (pages)	10	10
Recording Paper Loadable	100 sheets	100 sheets
Ribbon Life (A4-size print)	235 pages	235 pages
Starter Ribbon Life (A4-size print)	90 pages (30 m)	90 pages (30 m)
LCD Size	16X1	16X1
On-Screen Programming	Yes	Yes
Super Fine	Yes	Yes
Smoothing	Yes	Yes
Gray Scale (levels)	64 by Dithered	64 by Dithered
One Touch	16 w/SHIFT KEY	16 w/SHIFT KEY
Speed Dial	32	32
Telephone Index	Yes	Yes
Speaker Phone	Full duplex (digital)	Monitor
Handset	Yes	Yes
FAX/TEL Switch	Yes	Yes
Caller ID	Yes HOL/SWE/UK/FRA/NOR	Yes HOL/SWE/UK/FRA/NOR
Call Waiting Caller ID	No	No
Distinctive Ringing	No	No
TAD Interface	Yes	Yes
Enhanced Remote Activation	Yes	Yes
Automatic Redial	Yes	Yes
Next-FAX Reservation	Yes	Yes
Multi-Resolution Transmission	Yes	Yes
Polling Type	Sim/Sec/Del/Seq	Sim/Sec/Del/Seq
Delayed Transmission	3-timer	3-timer
Call Reservation	Yes	Yes
Electronic Coverpage	Yes - Super	Yes - Super
Call Back Message	Yes	Yes
Journal Report	Yes	Yes
TX Verification Report	Yes	Yes
Memory Capacity (pages)	512KB (20 pages)	512KB (20 pages)
ECM	Yes	Yes
Broadcasting	Yes	Yes
Quick-Scan	Yes	Yes
Out-of-Paper Reception	Yes	Yes
Multi-Copying w/Sorting	Yes	Yes
Enlargement/Reduction Ratio	Yes (50-150%)	Yes (50-150%)
Multi-Transmission	Yes	Yes
Confidential Mailbox	No	No
Auto Reduction	Yes	Yes
Message Manager	Yes	No
TAD Recording Time	15 minutes	No
Fax Forwarding/Paging	Yes - both	Yes - Only Fax forwarding
Fax Retrieval	Yes	Yes
Fax-/Voice-on-demand	Voice-on-demand	No
Fax & Voice Mailbox	Yes	No
Help List	Yes	Yes
MFL PRO for Fax	Ready	Included
Optional Memory	No	No
Memo Manager	No	No
Mute Key	Yes-music on hold; Green Sleeves	Yes-music on hold; Green Sleeves
Backup for Clock	15 hours	9 hours
Output Tray	Option (CT70)	Option (CT70)
Backup for Page Memory	6 hours	6 hours

# **CHAPTER II.**

## **INSTALLATION**

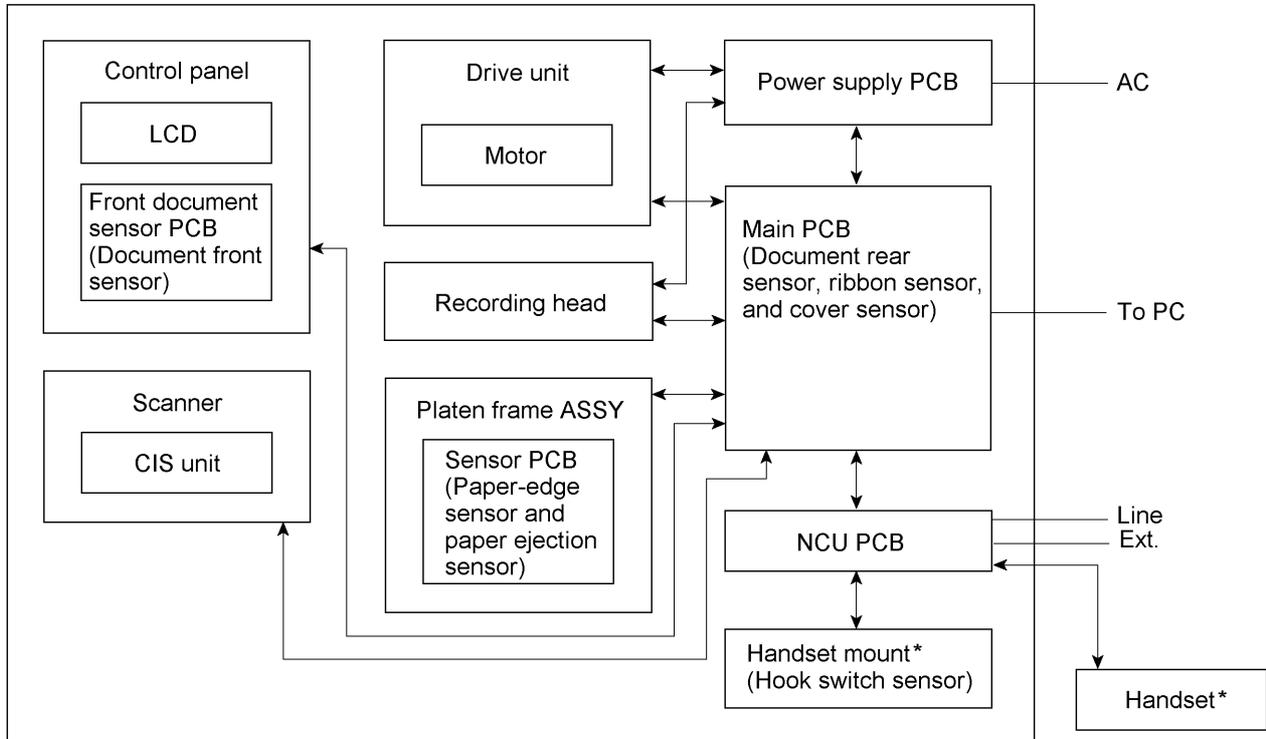
# **CHAPTER III.**

## **THEORY OF OPERATION**

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# 1. OVERVIEW



\*Not provided on the FAX-910.

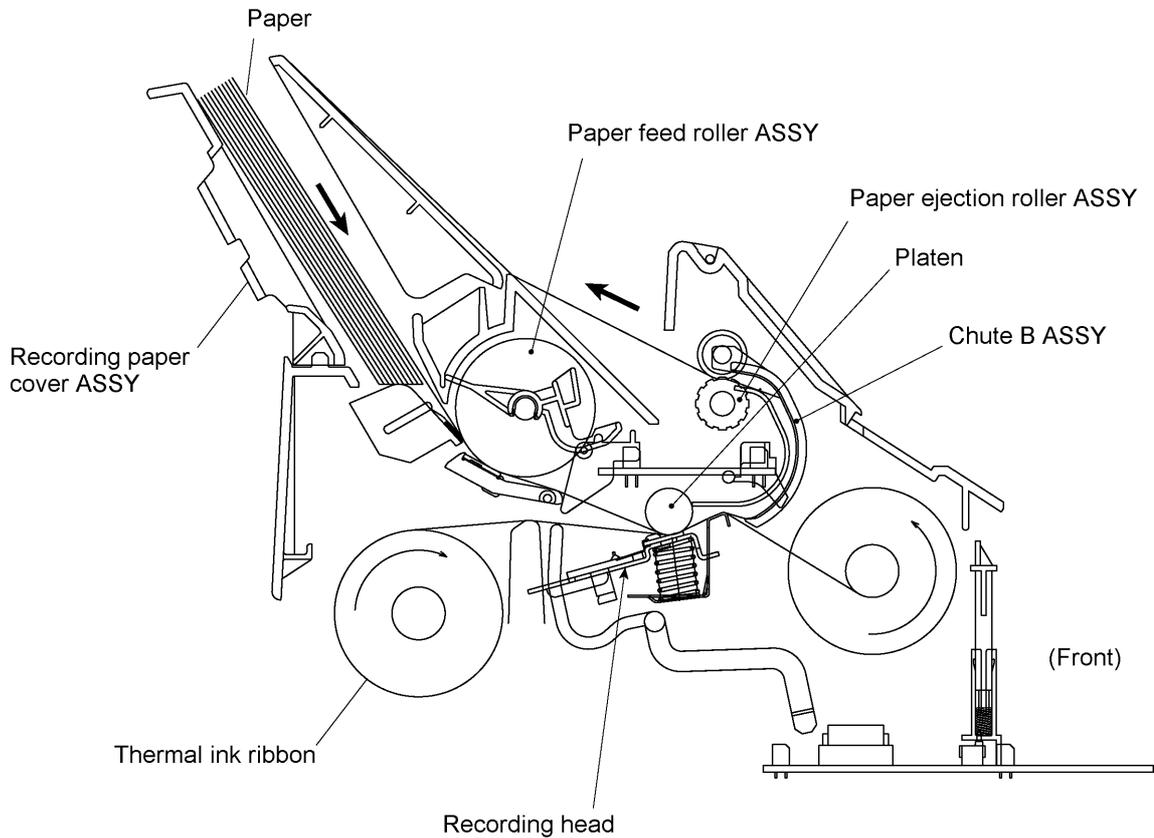


### **2.1.2 Scanner**

The scanner uses a contact image sensor (CIS) unit which consists of an LED array illuminating documents, a self-focus lens array collecting the reflected light, a CIS PCB carrying out photoelectric conversion to output picture element data, and a cover glass on which a document advances. When the document passes between the document pressure bar and the cover glass, it is scanned.

## 2.2 Receiving Mechanism (Feeding paper and printing data)

The receiving mechanism consists of the recording paper cover ASSY, paper feed roller ASSY, platen, thermal recording head, paper ejection roller, and sensors. (For details about the sensors, refer to Section 2.4.)



### STEP 1: In the paper feeding mode

If the equipment receives data, the control electronics activates the solenoid and rotates the motor counterclockwise to drive the paper feed roller (and paper ejection roller). This pulls in a sheet of paper and feeds it until its leading edge reaches the point just before the printing position.

### STEP 2: In the recording (platen drive & ribbon take-up) mode

The control electronics deactivates the solenoid and rotates the motor clockwise to drive the platen gear and the ribbon take-up gear as well as the paper ejection roller. This feeds the paper up to the printing position where the thermal recording head prints, as well as feeding the thermal ink ribbon.

### STEP 3: In the paper ejection mode

The same operation as for STEP 1 takes place so as to eject the paper.

## 2.3 Power Transmission Mechanism

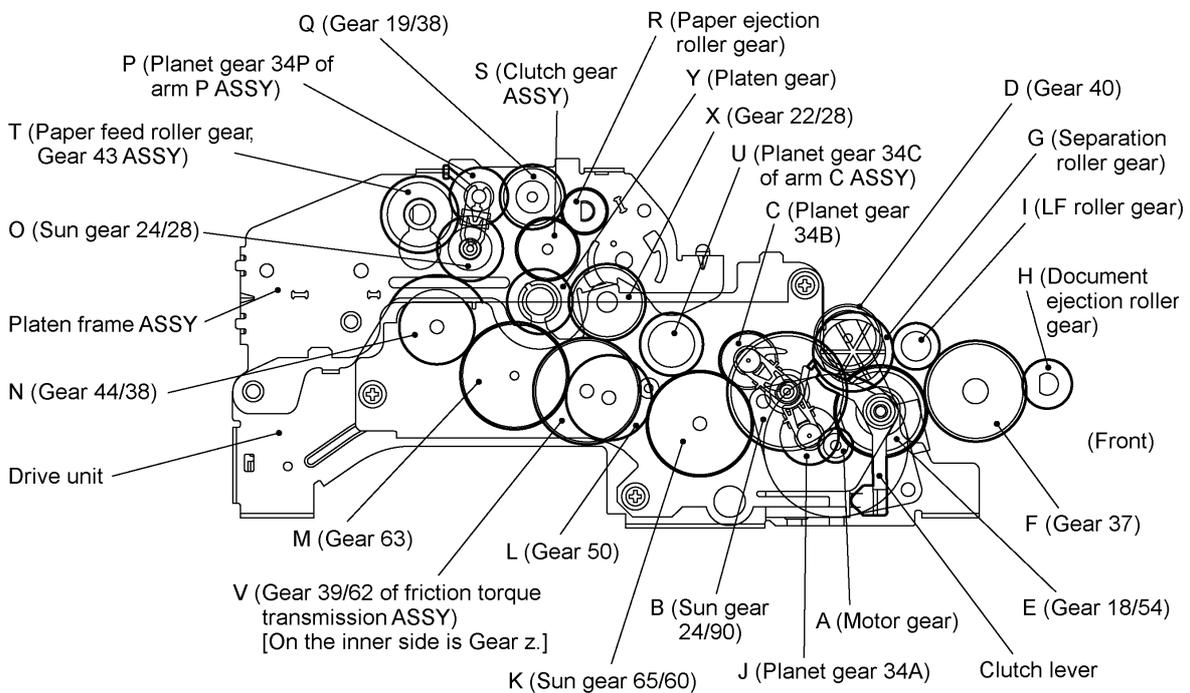
The equipment has a single drive motor whose power transmission route can be switched by the planetary gear systems and the solenoid. This switching allows the equipment to function in four operation modes (scanning, paper feeding/ejecting, recording, and copying modes). For the details about the planetary gear systems, refer to Subsection 2.3.2.

### 2.3.1 Structure of the gear train

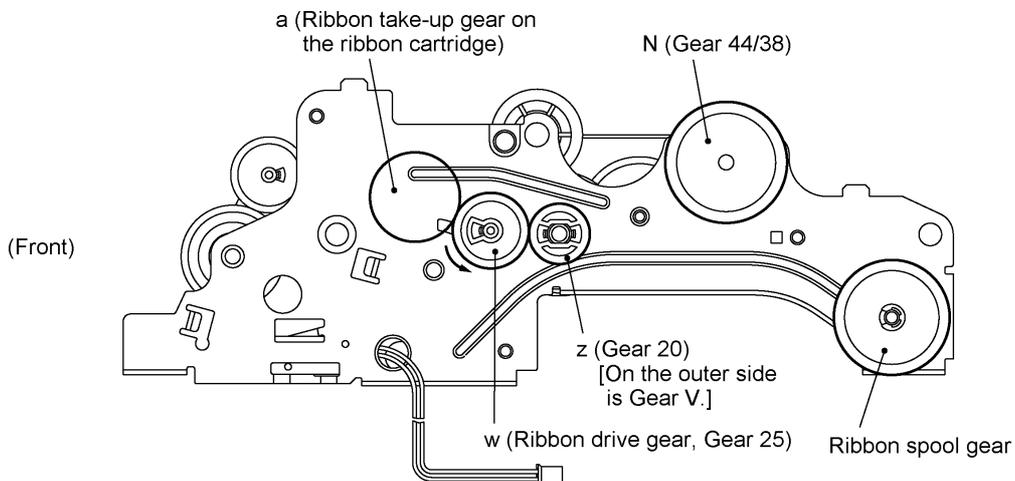
All of the motor and gears are located at the left side of the equipment. As illustrated in the figure below (On the outer side of the drive unit), the rotational torque of the motor on the drive unit is transmitted via the gears on the drive unit to the gears on the main frame, to those on the control panel ASSY, and to those on the platen frame.

If gear 39/62 of the friction torque transmission ASSY ("V" in the figure below) rotates, gear 20 ("z") on the inner side of the drive unit also rotates. The rotational torque is further transmitted to the ribbon drive gear ("w") which drives the ribbon take-up gear ("a") on the ribbon cartridge, as shown in the figure below (On the inner side of the drive unit).

On the outer side of the drive unit and on the left sides of the platen frame, main frame and control panel ASSY



On the inner side of the drive unit



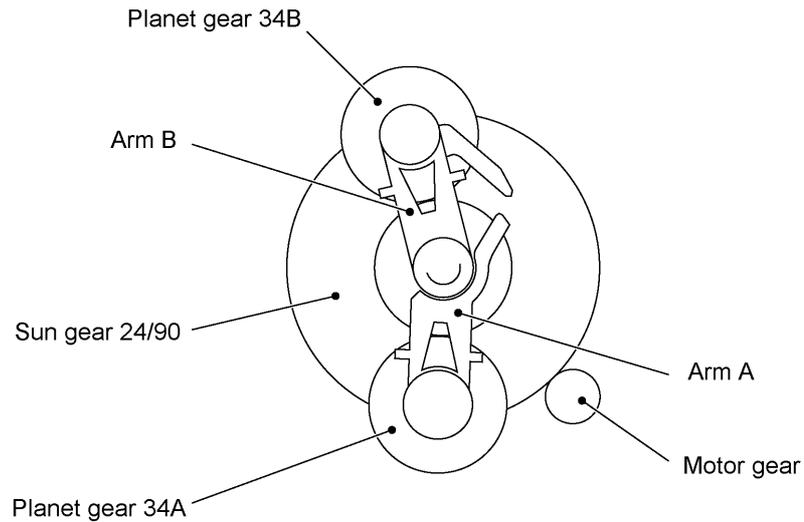
**Gear Train**

### 2.3.2 Description of planetary gear system

The equipment uses the following three planetary gear systems:

- Sun gear 24/90 ("B" in the figure given on the previous page) and its planet gears
- Sun gear 65/60 ("K") and its planet gear
- Sun gear 24/28 ("O") and its planet gear

This section describes the planetary gear system of sun gear 24/90 ("B"). It consists of sun gear 24/90, two planet gears 34, arm A, and arm B as shown below.



**Planetary Gear System**

If the motor rotates, sun gear 24/90 rotates so that the rotational torque is transmitted to the engagement between the sun gear and planet gears 34. Since the arms and planet gears are so designed that the moment of the arms is less than that of the planet gears, the arms turn around the center shaft in the same direction as sun gear 24/90.

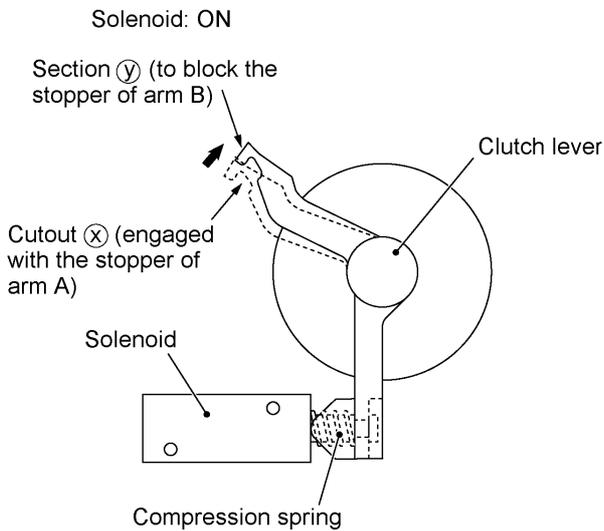
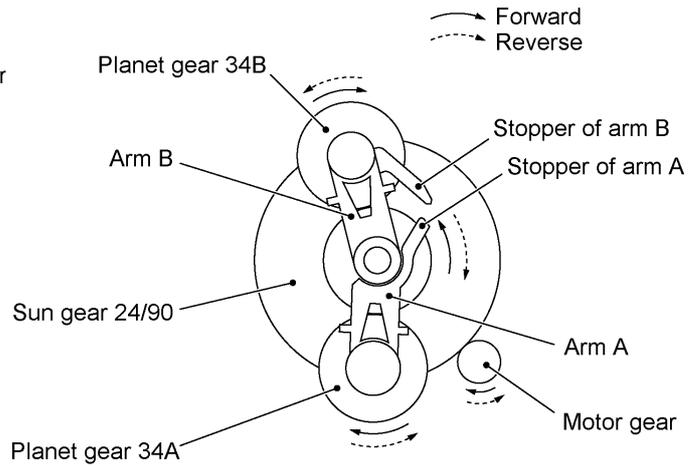
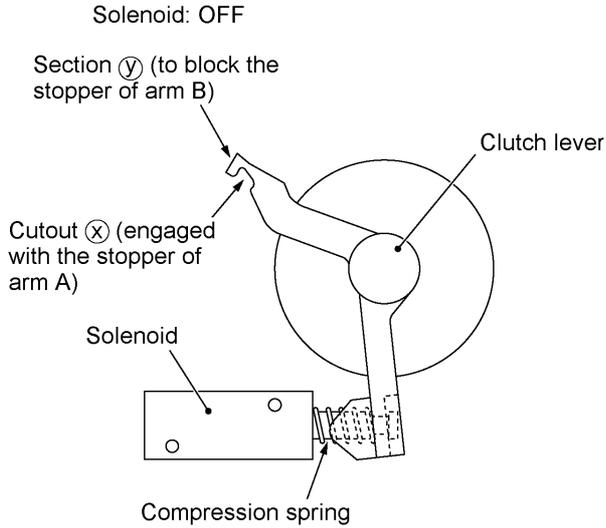
If the planet gear(s) becomes engaged with any other gear so that the arm cannot turn furthermore, the rotational torque of sun gear 24/90 is transmitted to that planet gear. Accordingly, the planet gear starts rotation in the opposite direction of sun gear 24/90.

### 2.3.3 Power transmission for four operation modes

Depending upon the solenoid ON/OFF state and the motor rotation direction, the planetary gear train switches the power transmission route for the four operation modes.

#### Solenoid ON/OFF state

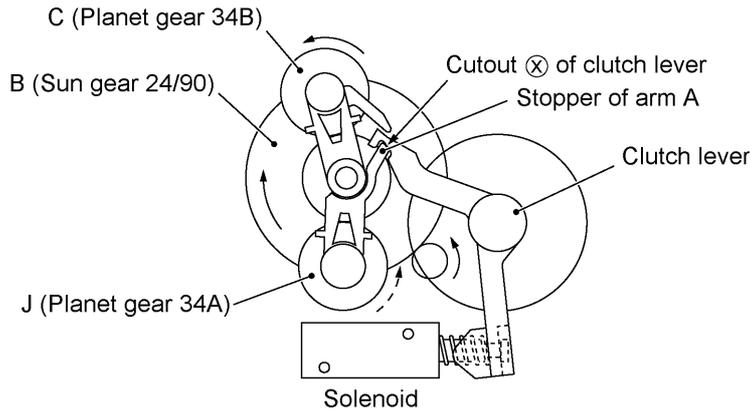
#### Motor rotation direction



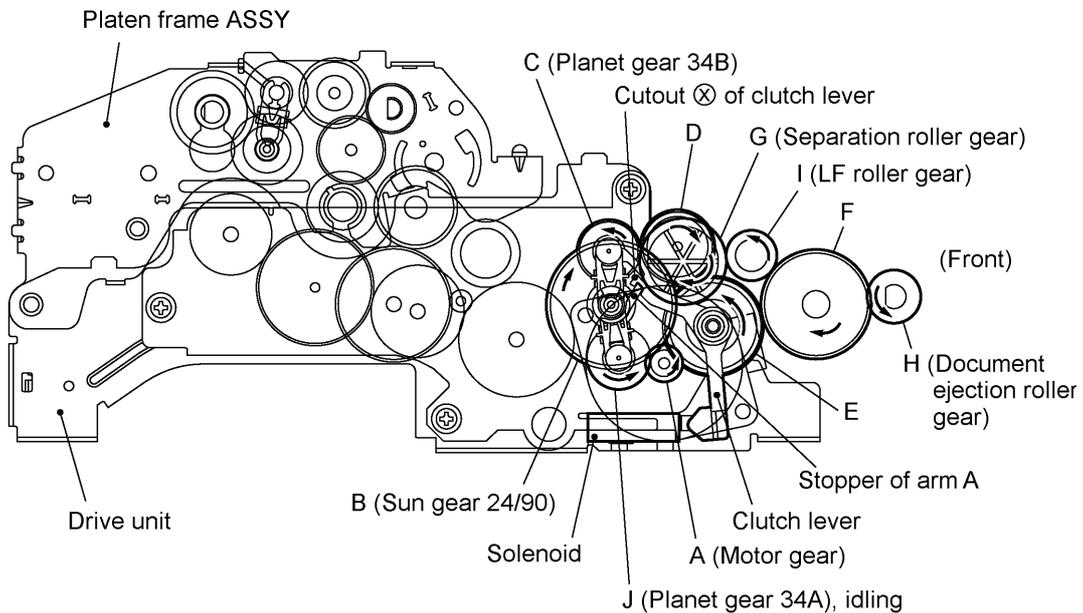
**[ 1 ] Scanning mode (Solenoid: OFF, Motor rotation: Reverse)**

In the scanning mode, the control electronics deactivates the solenoid. When the motor rotates in the reverse direction, the clutch lever turns counterclockwise with the compression spring so that its cutout ⊗ becomes engaged with the stopper of arm A. Once arm A is locked, planet gear 34A ("J") will not be engaged with any other gear but simply idle.

The motor's rotational torque turns sun gear 24/90 ("B") clockwise so that planet gear 34B ("C") transmits the torque via gear "D" to gear "E" which drives the separation roller gear ("G") and gear "F." As gear "F" rotates, the LF roller gear ("I") and document ejection roller gear ("H") also rotate.



**Arm A Locked by Cutout ⊗ of Clutch Lever**



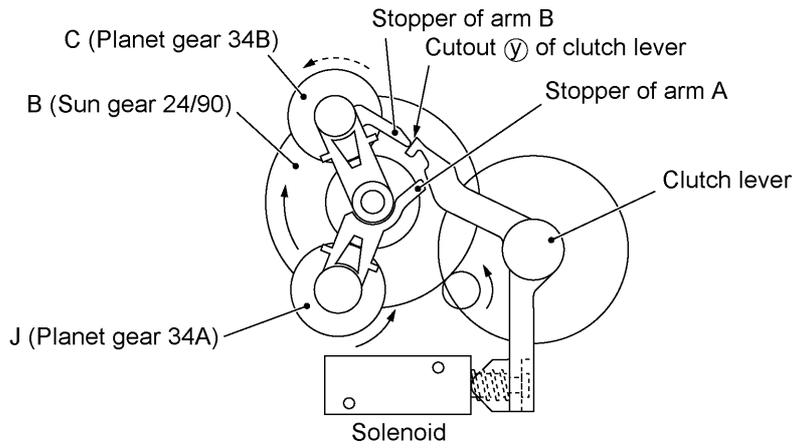
**Active Gears**

**[ 2 ] Paper feeding/ejecting mode (Solenoid: ON, Motor rotation: Reverse)**

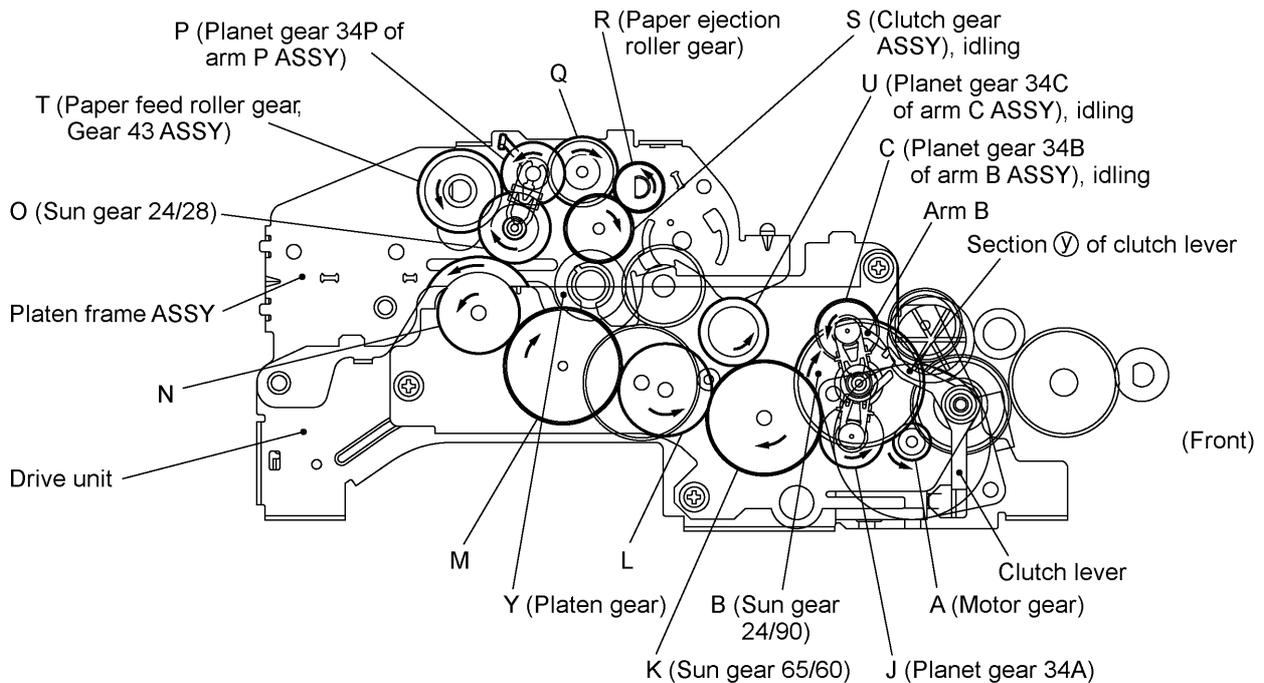
In the paper feeding/ejecting mode, the control electronics activates the solenoid to release the stopper of arm A. When the motor rotates in the reverse direction, sun gear 24/90 ("B") rotates clockwise so that planet gear 34A ("J") transmits the torque via sun gear 65/60 ("K") and other gears to the paper feed roller gear ("T") and paper ejection roller gear ("R").

Since the stopper of arm B is blocked by section ⑤ of the clutch lever, the planet gear 34B ("C") is merely idle without engaging with any other gear.

The rotational torque of the paper ejection roller gear ("R") is transmitted to the inner gear of the clutch gear ASSY ("S"). However, the outer gear does not rotate since it is engaged with the platen gear ("Y") that undergoes the heavy frictional torque of the platen. (This clutch gear ASSY works as a one-way clutch. If the outer gear is driven by the platen gear ("Y"), the inner gear also rotates. Refer to [ 3 ] Recording mode.)



**Arm B Blocked by Section ⑤ of Clutch Lever**



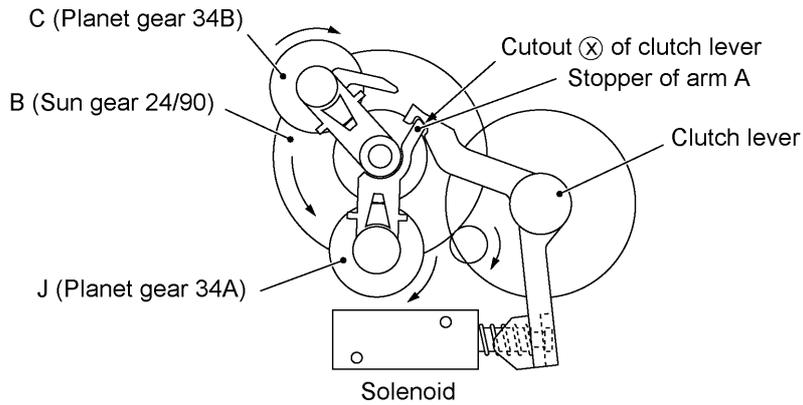
**Active Gears**

**[ 3 ] Recording mode (Solenoid: OFF, Motor rotation: Forward)**

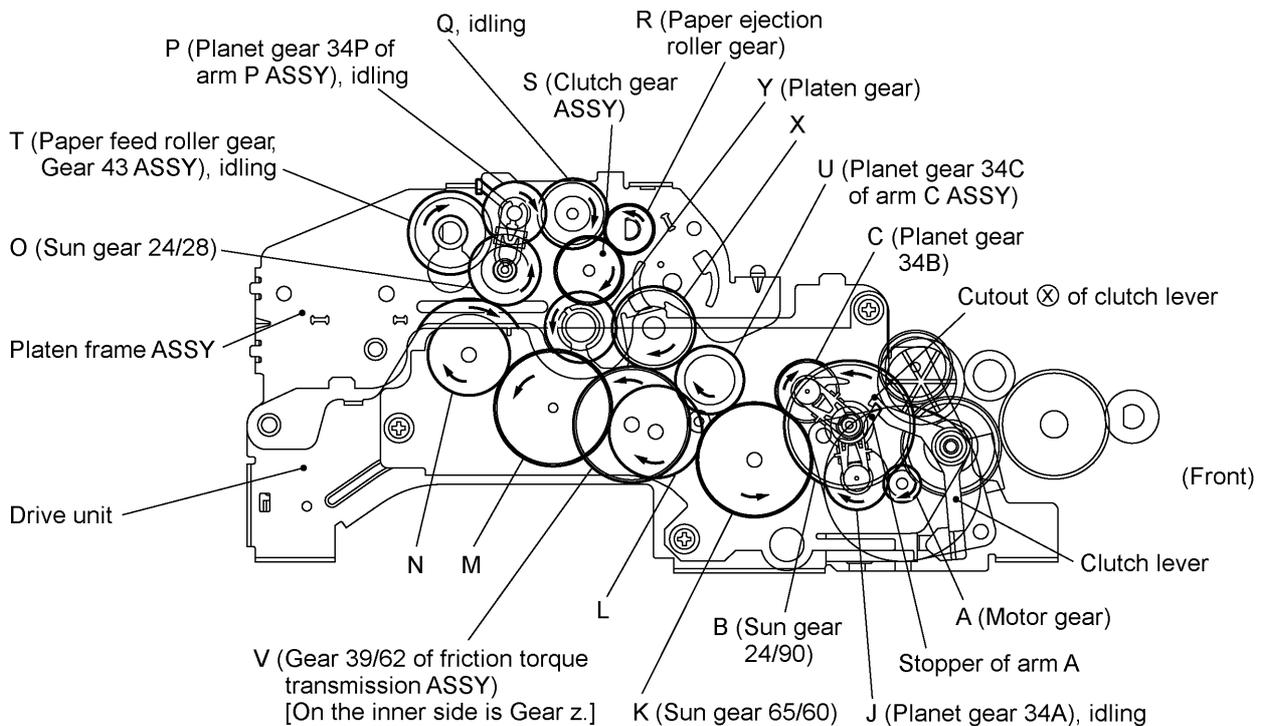
In the recording mode, the control electronics deactivates the solenoid. When the motor rotates in the forward direction, the clutch lever turns counterclockwise with the compression spring so that its cutout ⊗ becomes engaged with the stopper of arm A. Once arm A is locked, planet gear 34A ("J") will not be engaged with any other gear but simply idle.

The motor's rotational torque turns sun gear 24/90 ("B") counterclockwise so that planet gear 34B ("C") transmits the torque via sun gear 65/60 ("K") and other gears to the platen gear ("Y") and the paper ejection roller gear ("R").

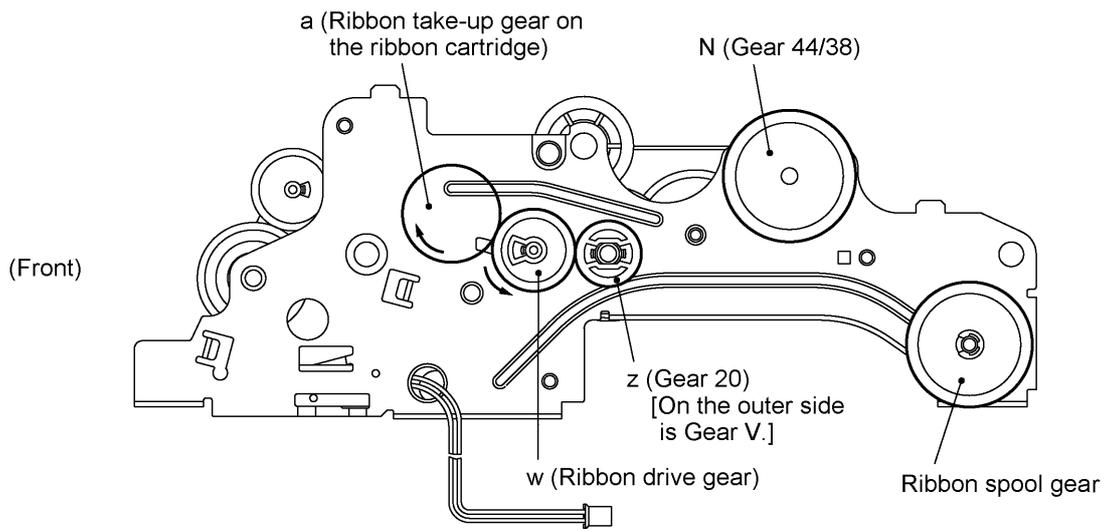
If gear 39/62 ("V") of the friction torque transmission ASSY rotates, gear 20 ("z") on the inner side of the drive unit also rotates so as to drive the ribbon drive gear ("w") that rotates the ribbon take-up gear ("a") on the ribbon cartridge, as shown on the next page.



**Arm A Locked by Cutout ⊗ of Clutch Lever**



**Active Gears on the Outer Side of the Drive Unit and Left Side of the Platen Frame**

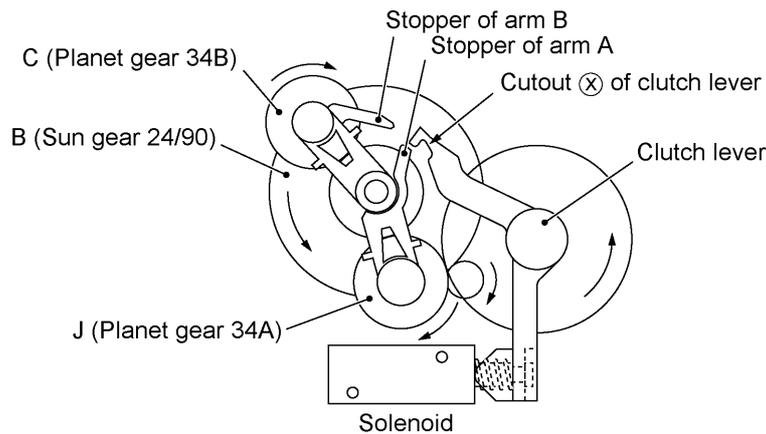


**Active Gears on the Inner Side of the Drive Unit**

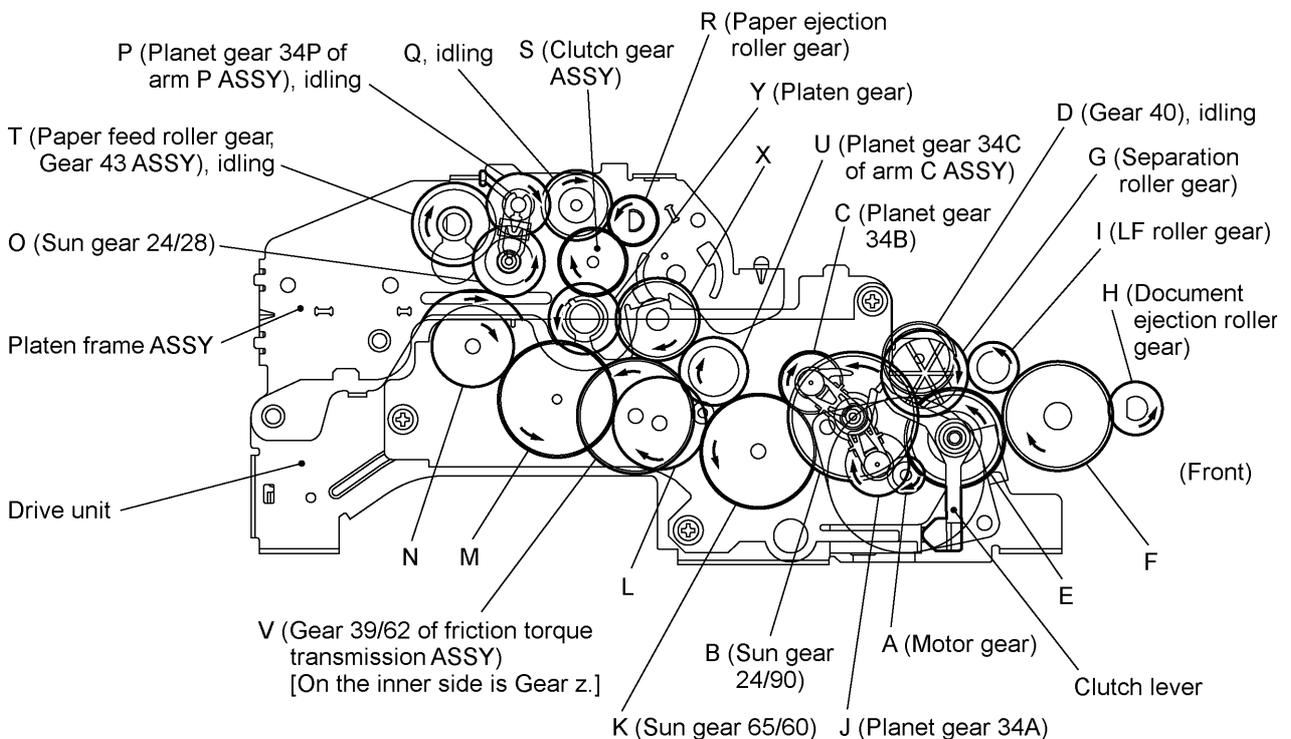
**[ 4 ] Copying mode (Solenoid: ON, Motor rotation: Forward)**

In the copying mode, the control electronics activates the solenoid to release the stopper of arm A from the clutch lever. When the motor rotates in the forward direction, sun gear 24/90 ("B") rotates counterclockwise so that planet gear 34A ("J") transmits the torque to the document scanner mechanism (e.g., the separation roller gear ("G"), LF roller gear ("I") and document ejection roller gear ("H")) and planet gear 34B ("C") transmits the torque to the recording mechanism (e.g., platen gear ("Y") and paper ejection roller gear ("R")).

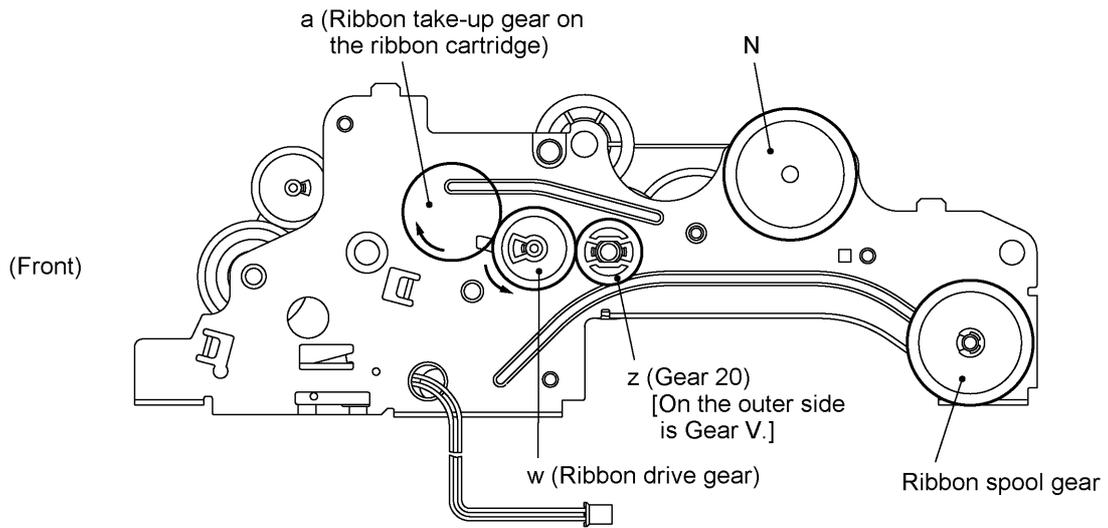
If gear 39/62 ("V") rotates, gear 20 ("z") on the inner side of the drive unit also rotates so as to drive the friction torque transmission ASSY and ribbon drive gear ("w") that rotates ribbon take-up gear ("a") on the ribbon cartridge, as shown on the next page.



**Arm A Released from Cutout (X) of Clutch Lever**



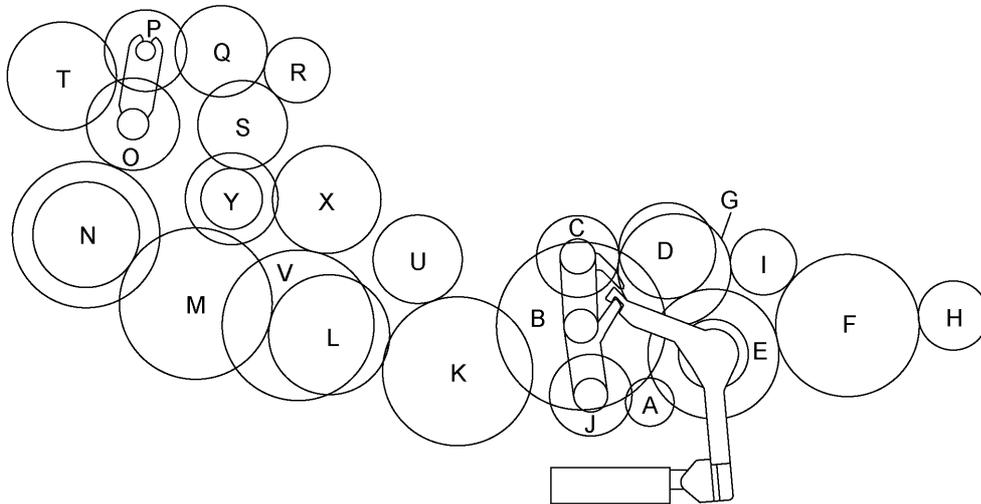
**Active Gears on the Outer Side of the Drive Unit and on the Left Sides of the Platen Frame, Main Frame and Control Panel ASSY**



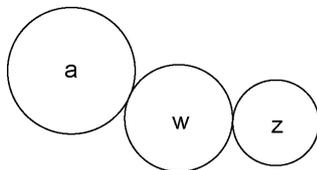
**Active Gears on the Inner Side of the Drive Unit**

### 2.3.4 Power transmission route

Rotation of the motor gear is transmitted as shown below.



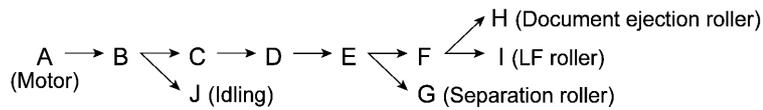
Gears on the outer side of the drive unit and on the left sides of the platen frame, main frame and control panel ASSY



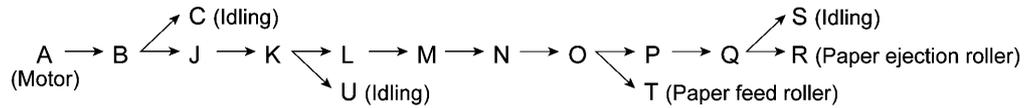
Gears on the inner side of the drive unit

- |                                  |   |
|----------------------------------|---|
| A: Motor gear                    | O: Sun gear 24/28                                 |
| B: Sun gear 24/90                | P: Planet gear 34P                                |
| C: Planet gear 34B               | Q: Gear 19/38                                     |
| D: Gear 40                       | R: Paper ejection roller gear                     |
| E: Gear 18/54                    | S: Clutch gear ASSY                               |
| F: Gear 37                       | T: Paper feed roller gear, Gear 43 ASSY           |
| G: Separation roller gear        | U: Planet gear 34C                                |
| H: Document ejection roller gear | V: Friction torque transmission ASSY (Gear 39/62) |
| I: LF roller gear                | w: Ribbon drive gear (Gear 25)                    |
| J: Planet gear 34A               | X: Gear 22/28                                     |
| K: Gear 65/60                    | Y: Platen gear (Gear 25/27)                       |
| L: Gear 50                       | z: Gear 20  |
| M: Gear 63                       | a: Ribbon take-up gear on the ribbon cartridge    |
| N: Gear 44/38                    |   |

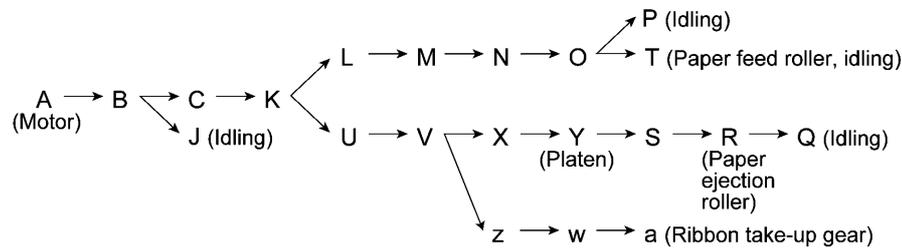
**[ 1 ] Scanning Mode (Solenoid: OFF, Motor rotation: reverse)**



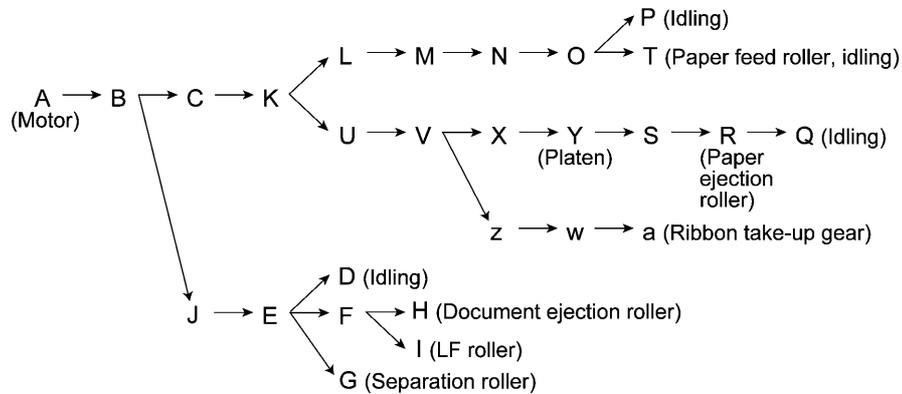
**[ 2 ] Paper Feeding/Ejecting Mode (Solenoid: ON, Motor rotation: reverse)**



**[ 3 ] Recording Mode (Solenoid: OFF, Motor rotation: forward)**



**[ 4 ] Copying Mode (Solenoid: ON, Motor rotation: forward)**



## 2.4 Sensors and Actuators

This equipment has five photosensors and two mechanical switches as described below.

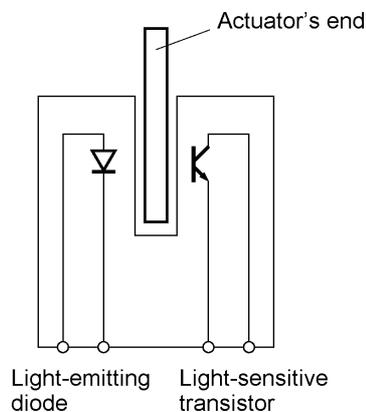
Sensor name	Type	Located on
Document front sensor	Photosensor	Control panel PCB ASSY
Document rear sensor	Photosensor (PI2)	Main PCB
Paper-edge sensor	Photosensor (PH1)	Sensor PCB
Paper ejection sensor	Photosensor (PH2)	Sensor PCB
Ribbon sensor	Photosensor (PI1)	Main PCB
Cover sensor	Mechanical switch (SW1)	Main PCB
Hook switch sensor*	Mechanical switch (SW1)	Hook switch PCB

- Document front sensor which detects the presence of documents.
- Document rear sensor which detects the leading and trailing edges of pages to tell the control circuitry when the leading edge of a new page has reached the starting position and when the scan for that page is over.
- Paper-edge sensor which detects the leading and trailing edges of paper and the presence of paper as well as detecting whether the paper front cover is closed.
- Paper ejection sensor which detects whether a paper jam has occurred.
- Ribbon sensor which detects whether the ink ribbon is loaded.

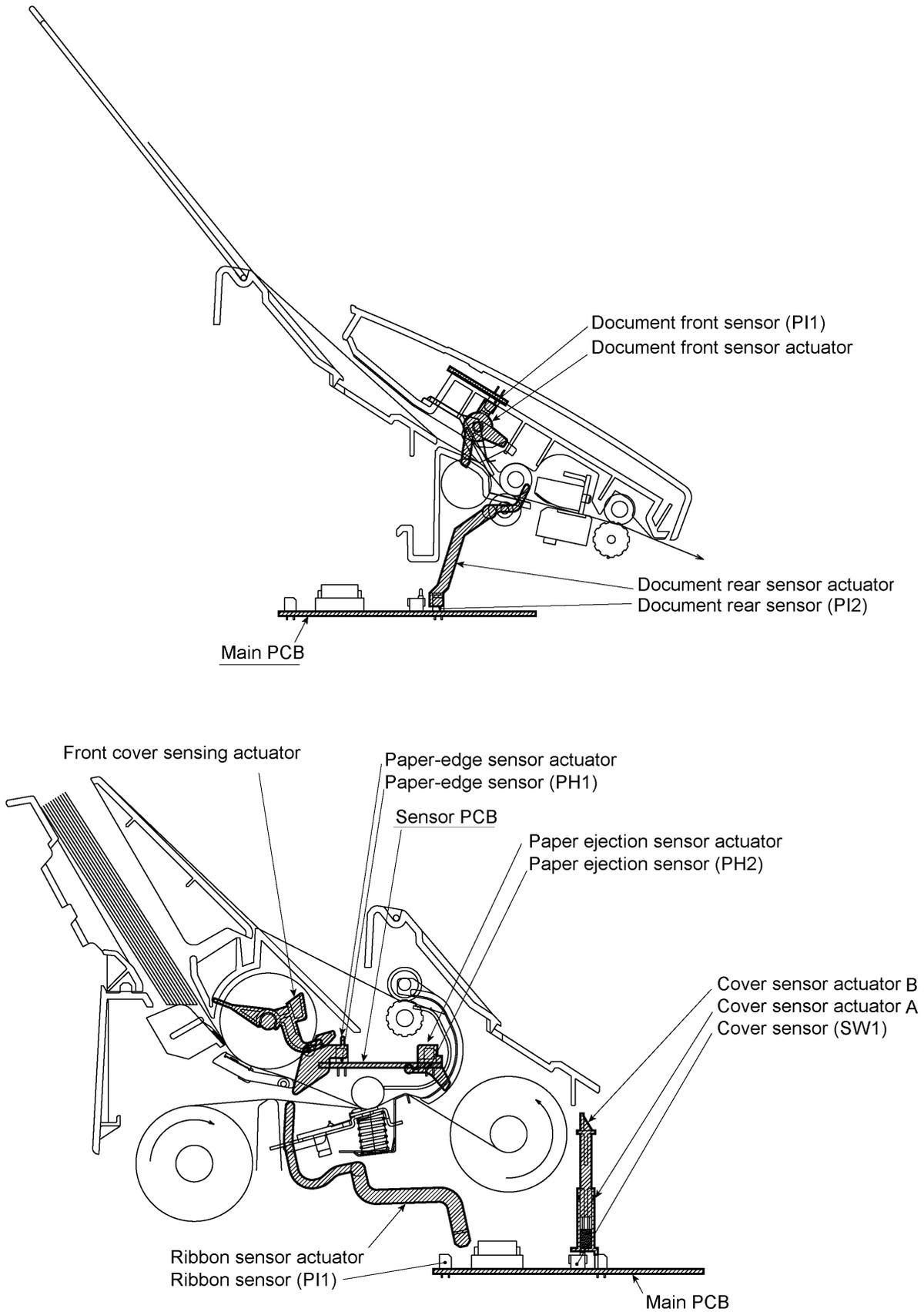
These photosensors are a photointerrupter consisting of a light-emitting diode and a light-sensitive transistor. Each of them has an actuator separately arranged (see the following pages) except that the paper-edge sensor has two actuators for sensing the paper and the paper front cover. When an actuator is not activated, its black end lies in the path of light issued from the light-emitting diode and interrupts its light so that the emitted light does not enter the light-sensitive transistor. If a document, paper, or ribbon comes in so as to activate the actuator, the actuator's black end goes out of the light path and the emitted light enters the light-sensitive transistor. This way, the sensor detects the presence of documents, paper, or ink ribbon.

- Cover sensor which detects whether the recording paper cover ASSY is closed.
- Hook switch sensor\* which detects whether the handset is placed on the handset mount.

The cover sensor has an actuator ASSY (consisting of two actuators and a spring). If you open the recording paper cover ASSY, the actuator ASSY pops up to release the sensor.



\*Not provided on the FAX-910.



Location of Sensors and Actuators (1)