

**SERVICE MANUAL**  
**(Machine code: C237)**

# INTRODUCTION

This manual explains only the features of the Silver-V (C237 model) that are different from the Silver (C231 model).

So, please refer to the Silver service manual for the sections which are not included in this manual.

# IMPORTANT SAFETY NOTICES

## PREVENTION OF PHYSICAL INJURY

1. Before disassembling or assembling parts of the printer and peripherals, make sure that the power cord is unplugged.
2. The wall outlet should be near the printer and easily accessible.
3. If any adjustment or operation check has to be made with exterior covers off or open while the main switch is turned on, keep hands away from electrified or mechanically driven components.

## HEALTH SAFETY CONDITIONS

1. If you get ink in your eyes by accident, try to remove it with eye drops or flush with water as first aid. If unsuccessful, get medical attention.
2. If you ingest ink by accident, induce vomiting by sticking a finger down your throat or by giving soapy or strong salty water to drink.

## OBSERVANCE OF ELECTRICAL SAFETY STANDARDS

1. The printer and its peripherals must be installed and maintained by a customer service representative who has completed the training course on those models.

### CAUTION

**The RAM has a lithium battery which can explode if handled incorrectly. Replace only with the same type of RAM. Do not recharge or burn this battery. Used RAM's must be handled in accordance with local regulations.**

### ATTENTION

**La carte RAM comporte une pile au lithium qui présente un risque d'explosion en cas de mauvaise manipulation. Remplacer la pile uniquement par une carte RAM identique. Ne pas recharger ni brûler cette pile. Les cartes RAM usagées doivent être éliminées conformément aux réglementations locales.**

## **SAFETY AND ECOLOGICAL NOTES FOR DISPOSAL**
















1. Dispose of replaced parts in accordance with local regulations.
2. Used ink and masters should be disposed of in an environmentally safe manner and in accordance with local regulations.
3. When keeping used lithium batteries (from the main processing units) in order to dispose of them later, do not store more than 100 batteries (from the main processing units) per sealed box. Storing larger numbers or not sealing them apart may lead to chemical reactions and heat build-up.

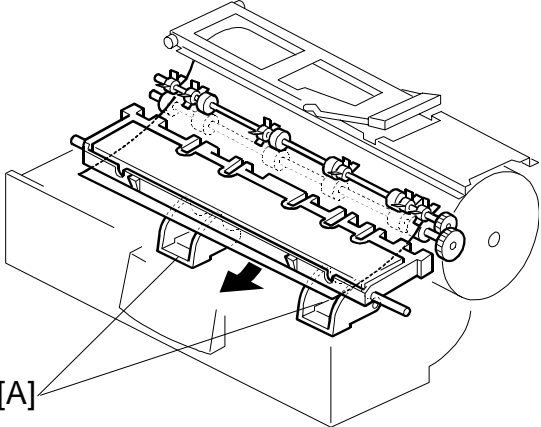
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# 1. OVERALL INFORMATION

## 1.1 ESSENTIAL DIFFERENCES BETWEEN THE C237 AND C231 MODELS

No.	Item	Remarks
1	Fast Printing Speed	The maximum printing speed is increased from the current 120 cpm to 130 cpm. C231 model: 80, 100, 120 sheets/minute C237 model: 80, 100, 130 sheets/minute
2	Print Paper Weight	By changing the type of rubber on the separation pad, the print paper weight specification is changed. C231 model: 47.1 g/m <sup>2</sup> to 157.0 g/m <sup>2</sup> C237 model: 47.1 g/m <sup>2</sup> to 209.3 g/m <sup>2</sup>
3	Energy Saver Mode	Energy saver mode lowers the energy consumption level below 10 W. When the machine enters Energy saver mode, only the LED for the clear mode key stays on. All other keys and the LCD remain on stand-by until the clear mode key is touched.
4	Combine Two Originals	<p>The model is equipped with an image rotation feature memory where the scanned image is rotated 90 degrees using an image processing technology.</p> <div style="text-align: center;"> <p>Originals <span style="float: right;">Output Image</span></p> <p>B4 Machine; B4  + B4  x 71% → B4 </p> <p>A4  + A4  x 87% → B4 </p> <p>A4  + A4  x 71% → A4 </p> <p>LG Machine; LT  + LT  x 77% → LG </p> <p>A4 Machine; A4  + A4  x 71% → A4 </p> <p>C237V501.WMF</p> </div> <p>The above combinations are already programmed and can be selected easily by pressing the “Combine Copies” key on the operation panel.</p>
5	Exit Pawl Air Pump	To ensure paper separation from the drum, the exit pawl air pump system is added. By adding the exit pawl air pump unit, thin paper separation from the drum has improved. Therefore, the unit is only added on the Chinese model.
6	MPU, PSU, Operation Panel Boards	Some related parts are different. Refer to the new electrical components section for details.

No.	Item	Remarks
7	Paper Separation Pressure Adjustment	The paper feed roller pressure position and paper separation pressure position are changed. For details, refer to the paper separation pressure adjustment in the replacement and adjustment section.
8	Supply Incompatibilities	<p><b><u>Ink:</u></b>                      The C237 model black ink is designed differently for each brand.                      The brand original packagings are different, and the physical design varies for different brands and areas. The C237 model black inks are incompatible with the current C231 model black ink.                      These incompatible designs are not applied for color inks; the C231 and C237 model color inks are the same.</p> <p><b><u>Master:</u></b>                      The C237 model master roll is physically different for each brand and the brand designs vary depend upon the area.                      It is also different from the current C231 model master, which can not be used for the C237 model.</p>
9	Master Eject Unit	<p>The C237 model has increased ejected master capacity. There are additional parts [A] inside the master eject unit for better master compression.</p>  <p style="text-align: center;">C237V503.WMF</p>

No.	Item	Remarks
10	New SC and SP numbers	<p>Some SC codes, SP numbers, and input check codes were changed.</p> <p><b><u>SC code:</u></b>                      E-21 Paper exit timing sensor remains off                      E-22 2nd feed timing sensor remains off                      E-23 Master eject position sensor remains off                      E-24 Feed start timing sensor remains off</p> <p><b><u>SP number:</u></b>                      No. 14 Not used for the C237 model                      No. 17 Not used for the C237 model                      No. 18 Master Type                      No. 19 Not used for the C237 model                      No. 125 Auto Energy Saving</p> <p><b><u>Input check:</u></b>                      Code 51 Not used for the C237 model</p> <p>Refer to the service tables section for details.</p>

Overall Information



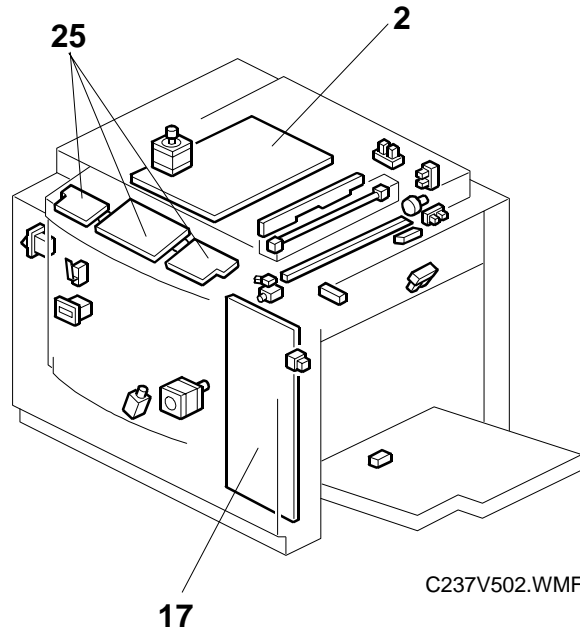
## 1.2 SPECIFICATIONS

The specifications are identical to the C231 models, except for the following.

Printing Speed:	80, 100, 130 sheets/minute (3 steps)
Print Paper Weight	47.1 g/m <sup>2</sup> to 209.3 g/m <sup>2</sup> [12.5 lb to 55.6 lb]
Master Process Time:	Platen mode: Less than 29 seconds (A4 paper) ADF mode: Less than 34 seconds (A4 paper)
Master Eject Box Capacity	Normal conditions: 60 masters (Master for B4 drum) 70 masters (Master for LG drum) 80 masters (Master for A4 drum)
Maximum Power Consumption:	Max: 250 W (Same as the C231 model) Energy saver mode: Below 10 W
Dimensions:	Trays closed: 607 mm x 651 mm x 567 mm 607 mm x 601 mm x 567 mm (Chinese model) 607 mm x 651 mm x 617 mm (With ADF) 607 mm x 601 mm x 617 mm (With ADF) (Chinese model) Trays open: 1187 mm x 651 mm x 567mm 1187 mm x 601 mm x 567mm (Chinese model) 1187 mm x 651 mm x 617mm (With ADF) 1187 mm x 601 mm x 617mm (With ADF) (Chinese model)
Noise Emission: (At the operation position)	At 80 rpm printing speed: 68 dB At 100 rpm printing speed: 70 dB At 130 rpm printing speed: 73 dB

## 1.3 NEW ELECTRICAL COMPONENTS

### 1.3.1 MAIN BODY



### 1.3.2 TABLES OF ELECTRICAL COMPONENTS

#### Boards

Index No.	Name	Function
2	Main Processing Unit (MPU)	Controls all machine functions both directly and through other boards. (The backup RAM number on the MPU is changed from IC140 to IC145.)
25	Operation Panel Boards	These boards control the operation panel.
17	Power Supply Unit (PSU)	Provides DC power to the system. [VR2 on the PSU (used for adjusting thermal head voltage) has been moved to a new position, but there are no changes in its function.]

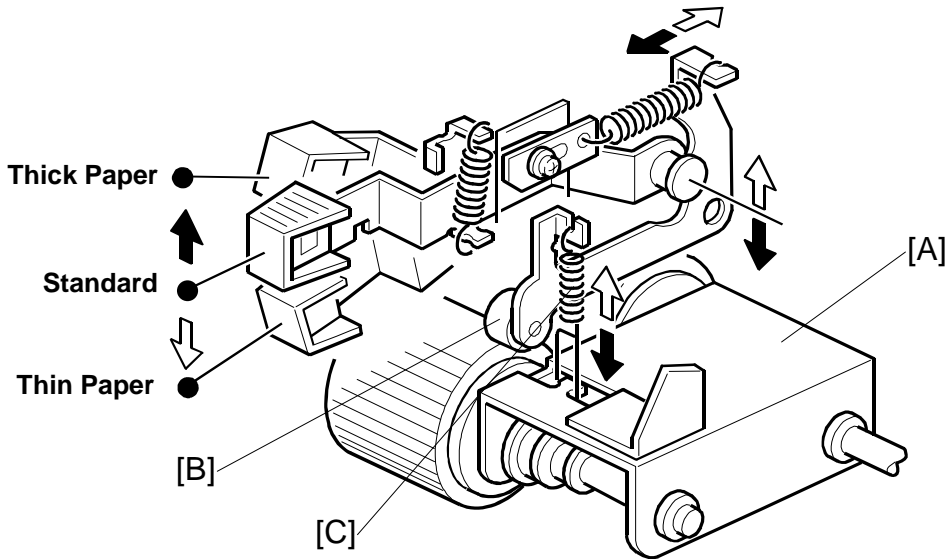
#### Switches

Index No.	Name	Remarks
-	Test Switch	Not used for the C237 model
-	Master Making Unit Cover Safety Switch	Not used for the C237 model

## 2. DETAILED SECTION DESCRIPTIONS

### 2.1 PAPER FEED

#### 2.1.1 PAER FEED/SEPARATION PRESSURE ADJUSTMENT MECHANISM



C237D574.WMF

The C237 model has an additional adjustment level for paper feed pressure. The paper feed pressure adjustment now has 3 levels.

C231 model	C237 model
Standard, Thick Paper	Standard, Thick Paper, Thin Paper

**Standard:** Gives paper feed pressure with the weight of the paper feed roller unit [A].

**Thick Paper:** Gives a higher pressure, using pressure from the roller [B] in addition to the weight of the paper feed roller unit [A].

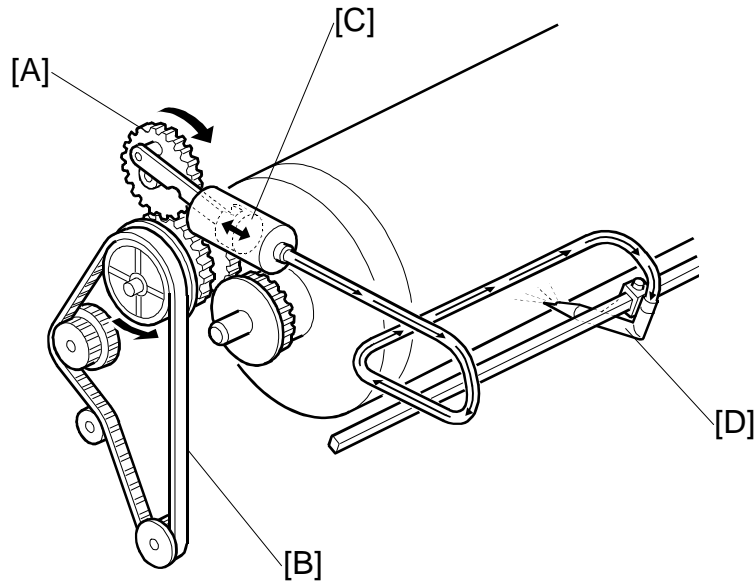
**Thin Paper:** Gives a lower pressure by lifting up the feed roller unit with a spring [C].

**NOTE:** The paper feed pressures for standard and thick paper are the same as for the current C231 model.

Detailed Descriptions

## 2.2 PAPER DELIVERY

### 2.2.1 EXIT PAWL AIR PUMP MECHANISM (CHINESE MODEL ONLY)



C237D500.WMF

Drive from the main motor is transmitted to the pump gear [A] through gears and a timing belt [B]. When the gear [A] rotates, it drives the piston [C] back and forth.

The piston moves forward and pushes a jet of air out through the nozzle [D]. This jet of air helps to separate the paper from the drum.

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### **3. INSTALLATION**

There are no differences from the C231 model in this section.

## 4. SERVICE TABLES

### 4.1 SERVICE CALL CODES

\*: Status code unique to the C237 model

No.	Description/Definition	Points to Check
<b>E-00</b>	<u>Clamper Motor Failure</u> The MPU cannot detect the master clamper position sensor signal (open or closed) within 1.2 seconds after the clamper motor turns on.	Mechanical interference with the clamper drive Master clamper sensors Clamper motor Clamper drive mechanism
<b>E-01</b>	<u>Cutter Failure</u> The cutter HP sensor does not turn on within 3 seconds after the cutter motor turns on.  If the master is not cut at the end of the master making. The drum master detection sensor is used to check if the black cover at the trailing part of the drum cloth screen is covered by the master just before the drum returns the home position. In this case, the SC is cleared once the power is off.	Master cut error occurred Cutter switch Cutter motor Cutter drive mechanism
<b>E-02</b>	<u>Paper Table Drive Failure</u> The paper height sensor or the table lower limit sensor does not turn on within 7 seconds after the table drive motor turns on.	Paper table drive motor Paper height sensor or table lower limit sensor Mechanical interference with the paper table drive
<b>E-04</b>	<u>Thermal Head Overheat</u> Temperature of the thermal head is greater than 54°C when the Start key is pressed.	Thermal head Thermistor of the thermal head (short circuit) Wait for the thermal head to cool down
<b>E-06</b>	<u>Main Motor Lock</u> The CPU cannot detect the feed start timing sensor signal within 2 seconds after the main motor turns on, or the sensor remains on for more than 0.5 seconds.	Main motor Power to the main motor Feed start timing sensor Mechanical interference with the drum drive
<b>E-09</b>	<u>Thermal Head Thermistor Open</u> The thermistor output voltage (CN109-A1) is over 4.9 volts.	Thermal head thermistor Thermal head connector
<b>E-10</b>	<u>Thermal Head Drive Failure</u> The CPU detects an abnormal condition in the thermal head drive circuit.	Thermal head MPU Thermal head connector and harness

<b>No.</b>	<b>Description/Definition</b>	<b>Points to Check</b>
<b>E-12</b>	<p><u>Pressure Plate Motor Failure</u> The pressure plate home position sensor signal is not detected within 4 seconds after the pressure plate motor turns on.</p>	<p>Mechanical interference with the pressure plate drive Pressure plate motor Pressure plate HP sensor</p>
<b>E-13</b>	<p><u>Scanner Malfunction</u> The scanner HP sensor does not turn on after the scanner motor moves for more than 7 seconds back to the home position after scanning.</p> <p>The scanner cannot leave the home position within 4 seconds of power on. When the scanner cannot return to the home position within 2 seconds of leaving.</p>	<p>Mechanical interference with the scanner Defective scanner HP sensor</p>
<b>E-14</b>	<p><u>IPU error</u> Signal transmission error (from the IPU) occurred in the MPU.</p>	MPU
<b>*E-21</b>	<p><u>Paper exit timing sensor remains off</u> The paper exit timing sensor does not activate before the master eject position sensor activates.</p>	Paper exit timing sensor
<b>*E-22</b>	<p><u>2nd feed timing sensor remains off</u> The 2nd feed timing sensor does not activate before the paper exit timing sensor activates.</p>	2nd feed timing sensor
<b>*E-23</b>	<p><u>Master eject position sensor remains off</u> The master eject position sensor does not activate before the feed start timing sensor activates.</p>	Master eject position sensor
<b>*E-24</b>	<p><u>Feed start timing sensor remains off</u> The feed start timing sensor does not activate before the 2nd feed timing sensor activates.</p>	Feed start timing sensor

## 4.2 SERVICE PROGRAM TABLE

\*: Accessible by a customer

\*\* : SP mode unique to the C237 model

\*\*\*: Not used for the C237 model

No.	Display	Function	Settings	Factory Setting	Comments
2	ADF Unit	Enables ADF operation.	0: No 1: Yes	0	
3	Key Counter	Enables key counter operation.	0: No 1: Yes	0	
4	Key Card	Used only in Japan.	0: No 1: Yes	0	
*5	Tape Marker Off	Disables tape marker operation.	0: No (Use the tape marker) 1: Yes	0	
*10.	Min. Print	Limits the minimum print quantity that can be entered.	0 to 9999	0	
*11	Max. Print	Limits the maximum print quantity that can be entered.	0 to 9999	9999	
*12	Set Display Mode	Selects the language used on the display. 0: Japanese 1: English 2: German 3: French 4: Italian 5: Spanish 6: Chinese 7: Dutch 8: Portuguese(Brazil)	0 to 8	1	
*13	Set Size Mode	Selects the metric size (mm) or inch size on the display.	0: mm 1: Inch	-	
***14	Not used for the C237 model				
15 -1	Set Drum Size	Selects the drum size that matches the machine. NOTE: This function is for production line use only.	0:B4 1:A4 2:LG	-	Never change the setting.
-2		Select the area name.	0:JPN 1:Asia 2:EU	-	Displays only when "0:B4" is selected in SP15-1. Never change the setting.

Service  
Tables



No.	Display	Function	Settings	Factory Setting	Comments
16	LCD Contrast Adjust	Changes the LCD contrast.	17 to 24	21	
***17	Not used for the C237 model				
**18	Master Type	Selects the master production district.	0:Overseas 1:Japan	0	Never change the setting.
***19	Not used for the C237 model				
*20	Buzzer On	Turns the beeper on.	0: No 1: Yes	0	
*21	Prints/Master Cost	Adjusts the cost ratio of masters to prints for accounting purposes. (When SP4 is set at 1, This function cannot be used.)	0 to 50	0	The set number (0 to 50) is automatically added to the key counter each time a master is used.
22	Home Position Adjust	The drum home position (the master eject position) changes.	0 to 9	5	Never change the setting.
23	Plot Position Adjust	The drum stop position for the master making changes.	0 to 9	3	Never change the setting.
*25	Clear 2 In 1	Selects whether to reset the Combine 2 Original mode automatically after master making.	0: No 1: Yes	0	
26	Feed Timing Adjust	Adjusts the registration motor on timing for better paper registration.	0 to 7	3	
27	ADF Current Down	Lowers the current to the ADF motor.	0: No 1: Yes	0	If the ADF motor vibrates due to a part variation causing noise, reduce the motor current with this mode.
28	Paste Shadow Erase	Adjusts the Paste Shadow Erase level that can be set with the key on the operation panel. The shadows of pasted-up edges on originals lighten.	0: Standard 1: Light 2: Lighter	0	

No.	Display	Function	Settings	Factory Setting	Comments
*29	Pht Background Correct	Determines whether the original background correction is done in Photo mode.	0: Correction is not done. 1: Correction is done.	0	
30	Sub Scan Mag. Adjust	Adjusts the sub-scan magnification.	-1.9 to +1.9%	(0)	<ul style="list-style-type: none"> <li>• For the platen mode</li> <li>• 0.1% steps</li> <li>• Use the Memory/Class key for "+" or "-"</li> </ul>
31	SCN Center Adjust	Adjusts the center position of copies in the platen mode.	-1.9 to +1.9 mm	0	<ul style="list-style-type: none"> <li>• For the platen mode</li> <li>• 0.1 mm steps</li> <li>• Use the Memory/Class key for "+" or "-"</li> <li>• See Remark 1</li> </ul>
32	SCN Line Adjust	Adjusts the position of the scanner (CIS) in the ADF mode. If images cannot be scanned in the ADF mode, adjust the position.  If the value is changed, perform SP38 also.	-1.9 to +1.9%	(0)	<ul style="list-style-type: none"> <li>• This is for the production use only.</li> <li>• 0.1% steps</li> <li>• Use the Memory/Class key for "+" or "-"</li> </ul>
33	Lead Edge Adjust	Adjusts the lead edge margin.	4 to 10 mm	5	
34	Head Energy Adjust (Normal)	Adjusts the thermal head energy for the normal mode.	0 to -99%	(-0)	
35	Economy Head Energy Adjust	Adjusts the thermal head energy for the Economy mode.	0 to -99%	(-8)	
36	ADF Mag. Adjust	Adjusts the ADF sub-scan magnification.	-1.9 to +1.9%	(0)	<ul style="list-style-type: none"> <li>• For the ADF mode</li> <li>• 0.1% steps</li> <li>• Use the Memory/Class key for "+" or "-"</li> </ul>

Service Tables

No.	Display	Function	Settings	Factory Setting	Comments
37	ADF Center Adjust	Adjusts the center position of copies in the ADF mode.	-1.9 to +1.9 mm	0	<ul style="list-style-type: none"> <li>• For the ADF mode</li> <li>• 0.1 mm steps</li> <li>• Use the Memory/Class key for "+" or "-"</li> <li>• See Remark 1</li> </ul>
38	ADF Scan Line Adjust	Adjusts the ADF scanning start position.	-4.9 to 4.9 mm	(0)	<ul style="list-style-type: none"> <li>• 0.1 mm steps.</li> <li>• Use the Memory/Class key for "+" or "-".</li> <li>• See Remark 2</li> </ul>
39	Trail Edge Adjust	Adjusts the blank margin at the trailing edge of prints.	0 to 3 mm	1	1 mm steps.
*40	Original	Specifies the image mode at power-up.	0: Letter 1: Lt/Photo 2: Photo	0	
*41	Image Density	Specifies the image density at power-up.	0: Light 1: Standard 2: Dark 3: Darker	1	
*42	Print Speed	Specifies the printing speed at power-up.	1: 80 rpm 2: 100 rpm 3: 120 rpm	2	
*43	Auto Cycle Mode	Specifies whether Auto Cycle mode is selected at power-up.	0: No 1: Yes	0	
*45	Std. Image Position	Specifies the image position at power-up.	40: +10mm   20: 0 mm   0: -10 mm	20	
46	Set Finemode Default	Specifies whether the fine mode is selected at power-up.	0:No 1:Yes	0	
47	Swap Start Key	Enables swapping the start (master making) key function and the print key function depending on the end user's preference.	0:No 1:Yes	0	

No.	Display	Function	Settings	Factory Setting	Comments
52	Compress W Start Key	Compressing the ejected masters is done every time when the Start key is pressed for the master making.	0: No 1: Yes	0	
60	Clear All Memory	Returns all SP modes to the default settings.	0: No 1: Yes	0	The memory is cleared after pressing the Enter (#) key.
61	Clear Memory/ Except Adj.	Returns all SP modes to the default settings except for Adjustments.	0: No 1: Yes	0	The memory is cleared after pressing the Enter (#) key.
70	Original Feed Jam	Displays the total number of original jams.		0	
71	Paper Feed Jam	Displays the total number of paper feed jams.		0	
72	Paper Wrap Jam	Displays the total number of times that paper has accidentally wrapped around the drum.		0	
73	Paper Delivery Jam	Displays the total number of paper delivery jams.		0	
74	Master Feed Jam	Displays the total number of master feed jams.		0	
75	Master Delivery Jam	Displays the total number of master delivery jams.		0	
76	Clear Jam Counters	Clears all jam counters.	0: No 1: Yes	0	The memory is cleared after pressing the Enter (#) key.
*81	Quality Start No.	Specifies how many prints are made with the lowest drum rotation speed (30 rpm) to stabilize image density for the beginning prints after a new master is made.	0 to 3 sheets	0	This mode is to ensure that the first print has sufficient ink density even if the machine was not used for a long.
*82	Skip Feed No.	Specifies how many prints are skipped between prints in the skip feed mode.	1 to 9	2	"1" means no skip.

Service  
Tables

No.	Display	Function	Settings	Factory Setting	Comments
<b>*84</b>	Auto Multi Copy	Specifies the initial mode for the Combine 2 Originals mode.	0: No 1: Yes (Two identical images are made if the Master Making key is pressed once.)	0	
<b>***85</b>	Not used for C237 model				
<b>*87</b>	Memory Print	Specifies the printing operation when in Memory mode.	0: Memory 1: Stack	0	
<b>*88</b>	Auto Memory/Class	Specifies whether the Memory/Class mode is used.	0: No 1: Yes	0	
<b>90</b>	Thermal Head Test	Select "1" to carry out the thermal head test.	0: Off 1: On	0	
<b>91</b>	CIS Test	Select "1" to carry out the CIS test. Select the photo mode and make a new master. If the CIS is damaged, white or black lines corresponding to damaged pixel elements will appear on prints.	0: Off 1: On	0	The mode is cancelled once a master is made or the power is turned off.
<b>95</b>	Scanner Free Run	Carries out a scanner free run test.	Start with the Print Start key. Stop with the Stop key.	0	
<b>96</b>	ADF Original Feed	Carries out an ADF original feed test.	Start with the Print Start key. Stop with the Stop key.		
<b>98</b>	Economy Count	Displays the total number of masters made in Economy mode.		0	
<b>103</b>	Margin Erase Count	Displays the total number of masters made with the Margin Erase key.		0	

No.	Display	Function	Settings	Factory Setting	Comments
104	On line Count	Displays the total number of masters made in On Line mode.		0	
105	Overlay Count	Displays the total number of masters made in Overlay mode.		0	
106	Enlarge Count	Displays the total number of masters made in Fixed Enlargement mode.		0	
107	Reduction Count	Displays the total number of masters made in Fixed Reduction mode.		0	
111	Total Count	Displays the total number of masters and prints.		0	M: Master count P: Print count
*113	Resettable Count	Used by the customer to display the total number of masters and prints.		0	M: Master count P: Print count
*114	CLR Resettable Count	Clears the resettable total master/print counters.	0: No 1: Yes	0	
115	ADF Mode Count	Displays the total number of sheets fed in the ADF mode.		0	
116	Scanner Mode Count	Displays the total number of originals set in platen mode.		0	
117	Color Drum Count	Displays the total number of prints made using the color drum.		0	
119	CLR All Total Count	Clears the following counters: SP Nos. 111, 115, 116, and 117.	0: No 1: Yes		
*120 -1	User Code Mode	Selects user code mode.	0: No 1: Yes		
-2	Auto Reset Time	Selects the auto reset time.	0: Unlimited 1: 1 min. 2: 2 min. 3: 3 min. 4: 4 min. 5: 5 min.	0	Displays only when "Yes" is selected in SP120-1.
*121	UC Count	Displays the total number of masters and prints made with each user code.		0	Press the # key to shift to another user code.
*122	Clear UC Count	Clears the selected user code counter.	0: No 1: Yes	0	Same as above.
*123	Total UC Count	Displays the total number of masters and prints for up to 20 user codes.		0	

No.	Display	Function	Settings	Factory Setting	Comments
*124	Clear Total UC Count	Clears the total user code counter.	0: No 1: Yes	0	
*/** 125	Auto Energy Saving	Selects an energy saver mode time from 0 to 120 minutes. "0" means that the machine does not enter energy saver mode.	0 to 120 min	3	
130	Input Check Mode	Displays the inputs from sensors and switches.			
131	Output Check Mode	Turns on the electrical components.			
132	All Indicators ON	Turns on all the indicators on the operation panel.			Press the # key to light all the indicators.
135	SN: Master End	Displays the master end sensor voltage.			Unit: Volts
140	Ink Detection	Specifies whether ink detection is done.	0: No 1: Yes	1	
141	Paper Detection	Specifies whether paper end detection is done.	0: No 1: Yes	1	
142	Master End Detection	Specifies whether master end detection is done.	0: No 1: Yes	1	
146	ADF Cover Detection	This mode disables the ADF cover switch.	0: No 1: Yes	1	This function is valid only when SP2 is set at "1".
147	ADF Set Detection	This mode disables the platen cover sensor detection.	0: No 1: Yes	1	If "0" is selected, "Set the original" is displayed each time at master making.
150	Control ROM No.	Displays the ROM part number and the ROM manufacturing date.		P/No.	YYYY/MM/DD
151	Machine No.	Displays the machine serial number and the installation date.		0	Input the serial number and the installation date.

No.	Display	Function	Settings	Factory Setting	Comments
152	Service Tel. No.	Input the service representative's telephone number, which is displayed with the service call code.		0	<ul style="list-style-type: none"> <li>Use the number keys to input the telephone number at installation.</li> <li>Press the Memory/Class key if you wish to add a hyphen between the digits.</li> </ul>
153	Last Service Code	Displays the last service call.		0	
*160	Side Ers.	Adjusts the default side edge margin width in the Margin Erase mode.	2 to 20 mm or 0.1 to 0.8 inch	5 mm or 0.2"	
*161	Center Ers.	Adjusts the default center margin width in the Margin Erase mode.	4 to 60 mm or 0.2 to 2.3 inch	10 mm or 0.4"	
*162	Horizontal Ers.	Adjusts the default horizontal edge (top and bottom) margin in the Margin Erase mode.	2 to 20 mm or 0.1 to 0.8 inch	5 mm or 0.2"	
*170	ERS. **1	Enter the original size (in "mm") that you want to use with the Margin Erase mode.	(100 to 258) x (100 to 364) mm or (4.0 to 10.0) x (4.0 to 14.3) inch	0 x 0	The original size entered is displayed by pressing the Select Size And Direction ("^" or "v") keys when in the Margin Erase mode.
*171	ERS. **2	Enter the original size (in "mm") that you want to use with the Margin Erase mode.	(100 to 258) x (100 to 364) mm or (4.0 to 10.0) x (4.0 to 14.3) inch	0 x 0	Same as above

Service Tables



No.	Display	Function	Settings	Factory Setting	Comments
*172	ERS. **3	Enter the original size (in "mm") that you want to use with the Margin Erase mode.	(100 to 258) x (100 to 364) mm or (4.0 to 10.0) x (4.0 to 14.3 ) inch	0 x 0	Same as above

### 4.3 INPUT/OUTPUT CHECK MODE

#### *Input Check Table*

\*: Not used for the C237 model

Code	LCD Display	Component Checked
1	SN: ADF Cover In- 1	ADF Cover Switch
2	SN: 1st Original (ADF) In- 2	Document Sensor
3	SN: 2nd Original (ADF) In- 3	Scan Line Sensor
18	SN: Paper End In-18	Paper End Sensor
20	SN: Paper Table Low Limit In-20	Table Lower Limit Sensor
21	SN: Paper Height In-21	Paper Height Sensor
22	KEY: Table Down In-22	Paper Table Lowering Switch
26	SN: Master End In-26	Master End Sensor
27	SIG: Ink In-27	When the Ink Detecting Pin detects ink
31	SN: Pressure Plate Home Position In-31	Pressure Plate Home Position Sensor
32	SN: Pressure Plate Limit Position In-32	Pressure Plate Limit Sensor
33	SW: Master Eject Box In-33	Eject Box Set Sensor
39	SIG: Key Counter In-39	When a key counter is installed

<b>Code</b>	<b>LCD Display</b>	<b>Component Checked</b>
<b>42</b>	SN: Paper Exit In-42	Paper Exit Sensor
<b>43</b>	SN: Master Eject In-43	Master Eject Sensor
<b>44</b>	SN: Drum Master In-44	Drum Master Sensor
<b>45</b>	SN: Scanner Home Position In-45	Scanner Home Position Sensor
<b>47</b>	SN: Platen Set In-47	Platen Cover Sensor
<b>*51</b>	Not used for the C237 model	
<b>52</b>	SW: Cover Open In-52	Door Safety Switch Scanner Unit Safety Switch
<b>53</b>	SN: Cutter Home Position In-53	Cutter Home Position Sensor
<b>54</b>	SN: Master Set Cover In-54	Master Set Cover Sensor
<b>56</b>	SN: Feed Start Timing In-56	Feed Start Timing Sensor
<b>57</b>	SN: 2nd Feed Timing In-57	2nd Feed Timing Sensor
<b>58</b>	SN: Paper Exit Timing In-58	Paper Exit Timing Sensor
<b>59</b>	SN: Master Eject Position In-59	Master Eject Position Sensor
<b>62</b>	SN: Drum Set In-62	When the drum connector is connected
<b>65</b>	SN: Clamper Close In-65	Clamper Close Sensor
<b>66</b>	SN: Clamper Open In-66	Clamper Open Sensor
<b>68</b>	SN: Registration In-68	Paper Registration Sensor

**Output Check Table**

There are no differences from the C231 model in this section.

<b>Code</b>	<b>LCD Display</b>	<b>Description</b>
<b>3</b>	MOTOR: Master Eject Out- 3	Turns on the master eject motor.
<b>6</b>	MOTOR: Vacuum Out- 6	Turns on the vacuum fan motor.
<b>7</b>	MOTOR: Air Knife Out- 7	Turns on the air knife fan motor.
<b>8</b>	SIG: Key Counter Out- 8	Increments the key counter.
<b>9</b>	COUNTER: Master Out- 9	Increments the master counter.
<b>10</b>	COUNTER: Paper Out-10	Increments the paper counter.
<b>12</b>	MOTOR: Ink Supply Out-12	Turns on the ink pump motor.
<b>14</b>	SOL: Print Pressure Out-14	Turns on the pressure release solenoids. At the same time, it turns on the paper transport motor.
<b>18</b>	MOTOR: Paper Table Down Out-18	Turns on the paper table motor (down).
<b>19</b>	MOTOR: Paper Table Up Out-19	Turns on the paper table motor (up).
<b>21</b>	SIG: Fluorescent Lamp Out-21	Turns on the xenon lamp.
<b>22</b>	MOTOR: Cutter + Direction Out-22	Turns on the cutter motor.
<b>23</b>	MOTOR: Cutter Home Out-23	Turns on the cutter motor and moves the cutter to the home position.
<b>27</b>	MOTOR: Drum Home Stop Out-27	Turns on the main motor and moves the drum to the home position.
<b>28</b>	MOTOR: Drum Plot Stop Out-28	Turns on the main motor and moves the drum to the master making position.
<b>33</b>	MOTOR: Original Feed Out-33	Turns on the ADF motor.
<b>34</b>	MOTOR: Master Feed High Speed Out-34	Turns on the master feed motor at high speed.

<b>Code</b>	<b>LCD Display</b>	<b>Description</b>
<b>35</b>	MOTOR: Master Feed Low Speed Out-35	Turns on the master feed motor at low speed.
<b>36</b>	MOTOR: Master Feed Normal Speed Out-36	Turns on the master feed motor at normal speed.
<b>37</b>	MOTOR: Scanner	Turns on the scanner motor. The scanner moves to the original scanning position for ADF mode when the Start key is pressed. It returns to home position when the Start key is pressed again.
<b>41</b>	SIG: VHD on Out-41	Applies thermal head voltage. Power is applied by pressing the Start key. It is stopped by pressing the Clear/Stop key.
<b>42</b>	MC: Paper Feed Out-42	Turns on the paper feed clutch.
<b>43</b>	MOTOR: Paper Delivery Out-43	Turns on the paper transport motor while the Start key is pressed.
<b>44</b>	MOTOR: Clamper Close Out-44	Turns on the clamper motor and moves to the clamper close position.
<b>45</b>	MOTOR: Clamper Open Out-45	Turns on the clamper motor and moves to the clamper open position.
<b>46</b>	MOTOR: Pressure Plate ON Out-46	Turns on the pressure plate motor and moves the plate to the lower limit position.
<b>47</b>	MOTOR: Pressure Plate OFF Out-47	Turns on the pressure plate motor and moves the plate to the home position.

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## **5. PREVENTIVE MAINTENANCE**

There are no differences from the C231 model in this section.

## 6. REPLACEMENT AND ADJUSTMENT

### 6.1 MASTER FEED SECTION

#### 6.1.1 MASTER END SENSOR ADJUSTMENT

**Purpose:**

To ensure that the sensor detects the end mark (a solid black area) on the master roll.

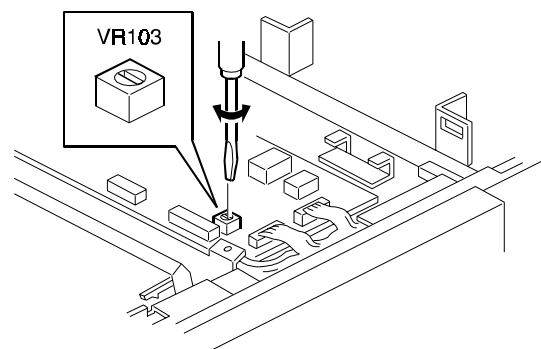
**NOTE:** In the C237 model, the master end sensor input voltage, when detecting the solid black area, is changed from  $1.5 \pm 0.1$  volts to  $2.0 \pm 0.1$  volts.

**Adjustment standard:**

Within  $2.0 \pm 0.1$  volts (when detecting the solid black area)

Within  $3.7 \pm 0.1$  volts (when detecting a new master roll)

1. Make a print that includes a solid-fill black area.
2. Open the scanner unit, and remove the master roll.
3. Position the print so that the solid black area faces the master end sensor.
4. Turn on the main switch and access SP mode.
5. Select the master end sensor voltage mode (SP135), then press the Enter key.
6. The sensor input voltage is displayed on the operation panel. (If it is  $2.0 \pm 0.1$  volts, the following steps are not necessary.)
7. Open the scanner unit, and remove the MPU cover.
8. Turn VR103 until the sensor input voltage becomes  $2.0 \pm 0.1$  volts.
9. Remove the solid black pattern from the master end sensor.
10. Install a new master roll.
11. The sensor input voltage is displayed on the operation panel. Check that it is  $3.7 \pm 0.1$  volts.



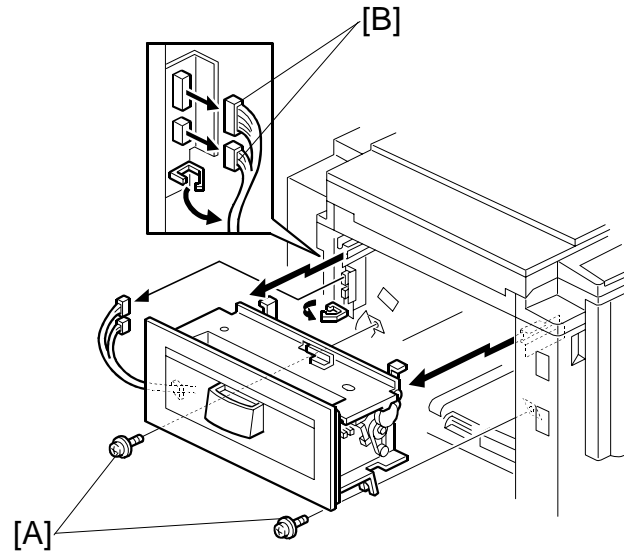
Replacement  
Adjustment

C237R559.WMF

## 6.2 MASTER EJECT SECTION

### 6.2.1 MASTER EJECT UNIT REMOVAL

1. Turn off the main switch and disconnect the power plug.
2. Remove the 2 screws [A].
3. Pull out the master eject unit.
4. Disconnect the 2 connectors [B].



C237R500.WMF

## 6.3 PAPER FEED SECTION

### 6.3.1 PAPER SEPARATION PRESSURE ADJUSTMENT

**Purpose:**

To ensure that the friction pad exerts sufficient pressure for smooth printing paper separation.

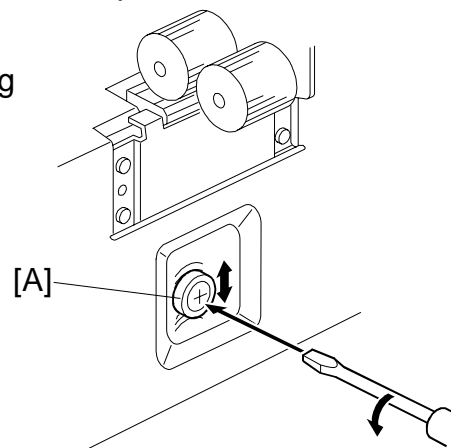
**NOTE:** As the default, the adjusting screw [A] is set at the 2nd position from the top. The amount of separation pressure is the same as for the C231 model. This change allows the separation pressure to be lowered more, which makes it more effective for thin paper feed and separation.

Adjust the paper separation pressure by loosening and moving the adjusting screw [A] up or down.

- Moving up the screw ⇒  
Increases the paper separation pressure
- Moving down the screw ⇒  
Decreases the paper separation pressure

Using this adjustment to cure non-feed and multi-feed is not simple and depends on many factors. Adjust using trial and error to get the best results.

Tighten the screw after the adjustment.



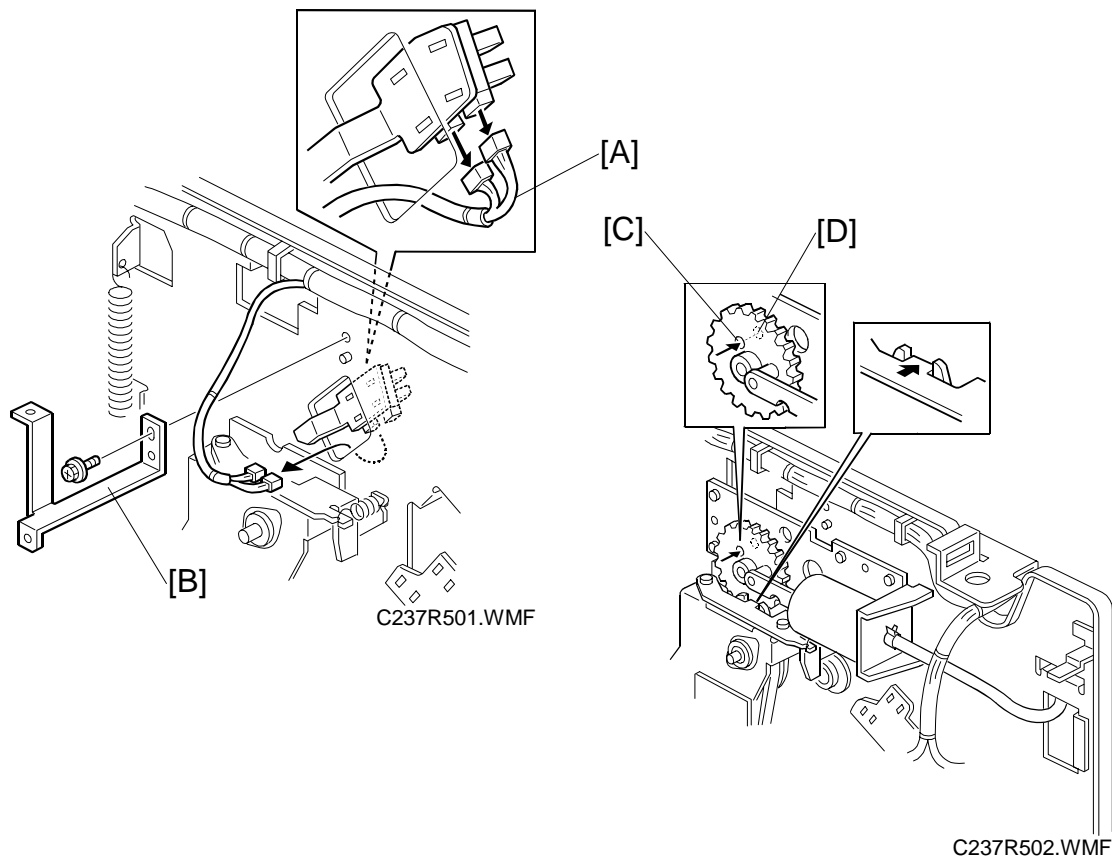
C237R542.WMF

## 6.4 PAPER DELIVERY SECTION

### 6.4.1 AIR PUMP ADJUSTMENT (CHINESE MODEL ONLY)

**Purpose:**

To ensure that the paper exit pawl air pump produces a jet of air at the proper time.



Replacement  
Adjustment

1. Turn off the main switch and disconnect the power plug.
2. Remove the rear cover.
3. Remove the drum.
4. Disconnect the 2 connectors [A] and remove the stay [B].
5. Check whether the hole [C] in the pump drive gear is aligned with the hole [D] in the air pump unit bracket.
6. If the alignment is incorrect, remove the air pump unit and reposition the gear.



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## 7. POINT TO POINT DIAGRAM

- Location Map
- Section A
- Section B
- Section C
- Section D
- Section E
- Section F

**NOTE:** The symbols and wire color codes used in the diagrams are as follows:

- SYMBOL TABLE -

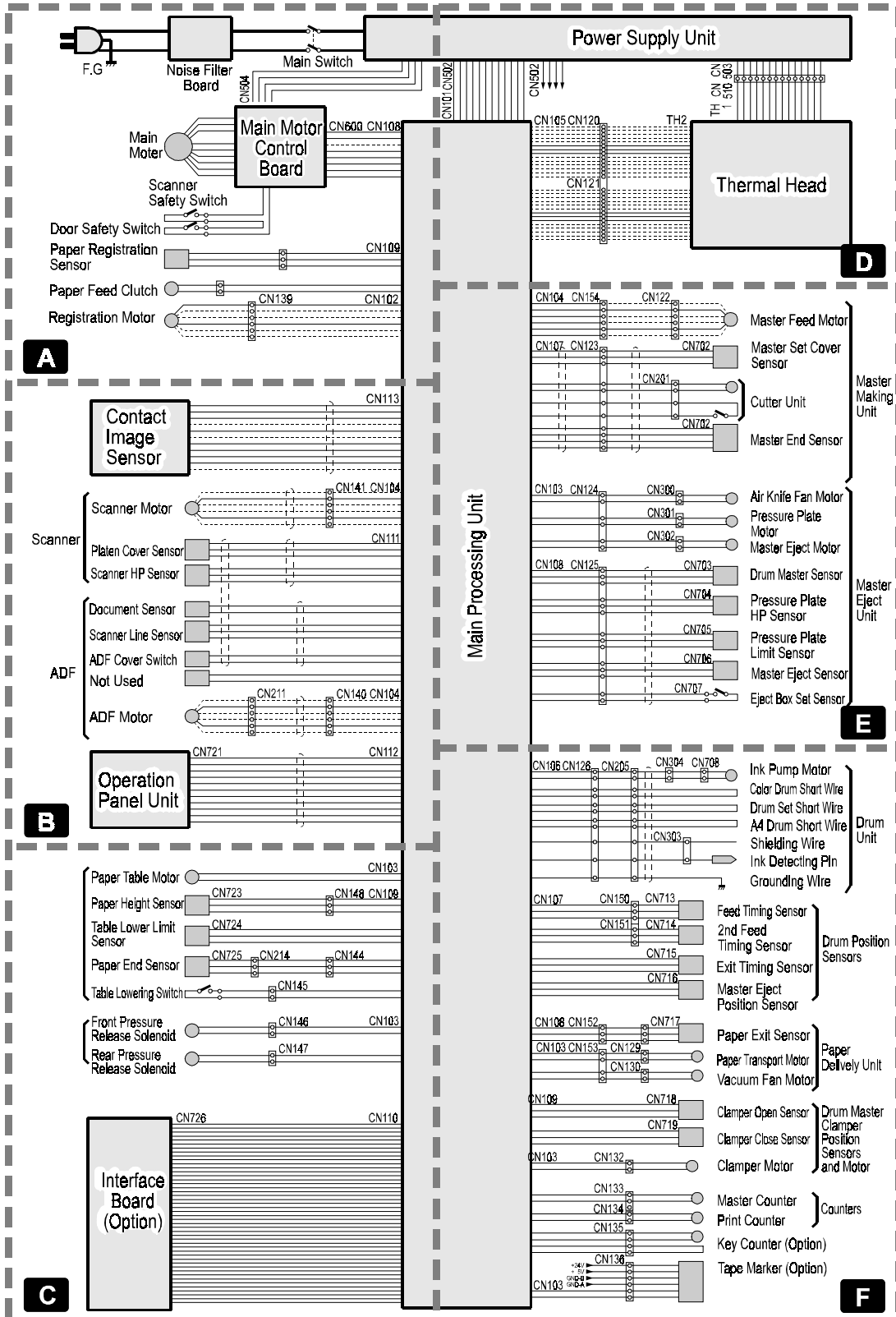
—	AC Line
—	DC Line
.....	Pulse Signal Line
▷	Signal Direction
▲	Active High Signal
▼	Active Low Signal

- WIRE COLOR CODE -

(B)	- Black
(C)	- Blue
(G)	- Green
(H)	- Gray
(M)	- Purple
(P)	- Pink
(R)	- Red
(S)	- Sky blue
(T)	- Brown
(W)	- White
(Y)	- Yellow
(Z)	- Orange

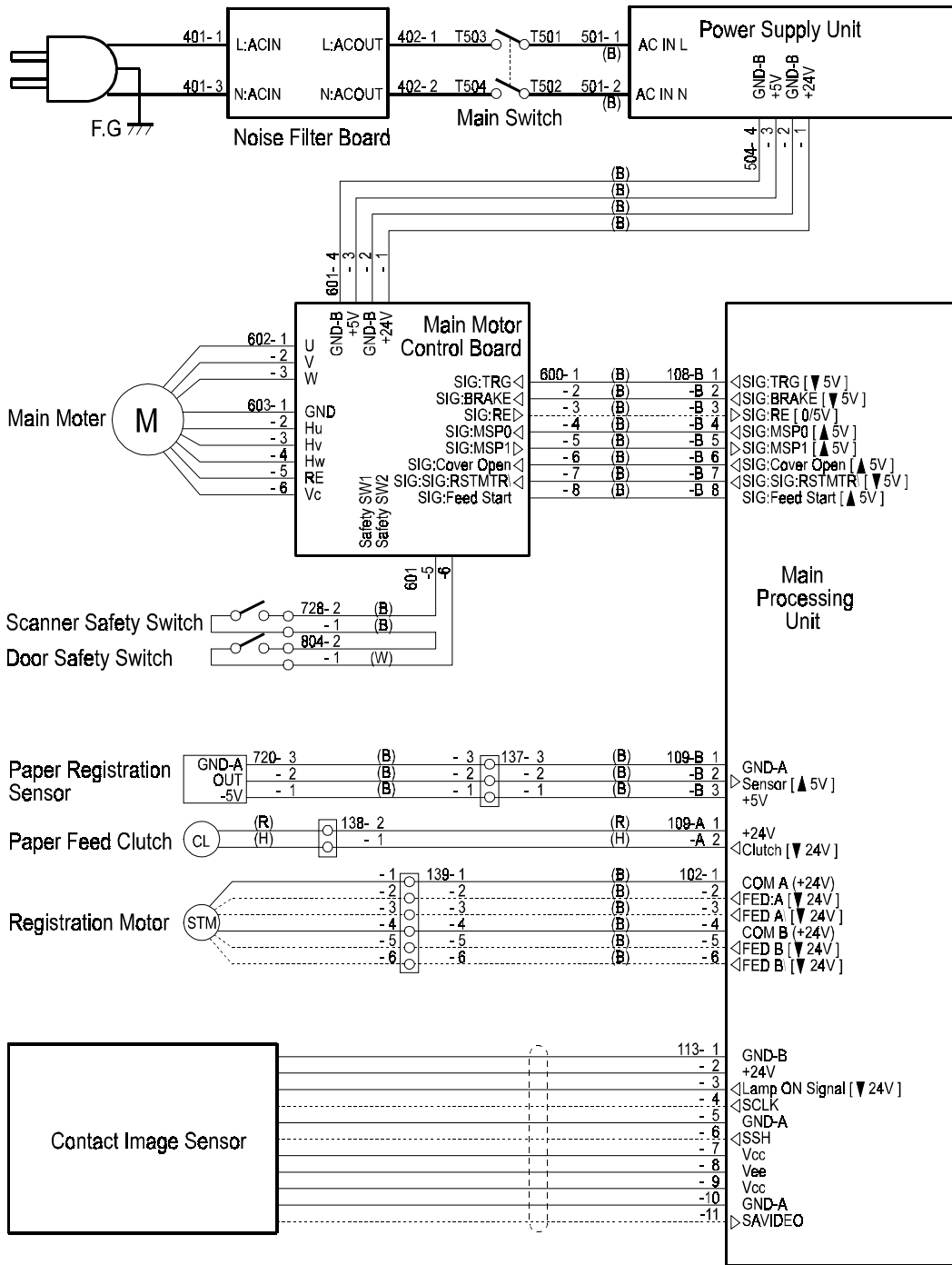
PP.WMF

LOCATION MAP



C237S500.WMF

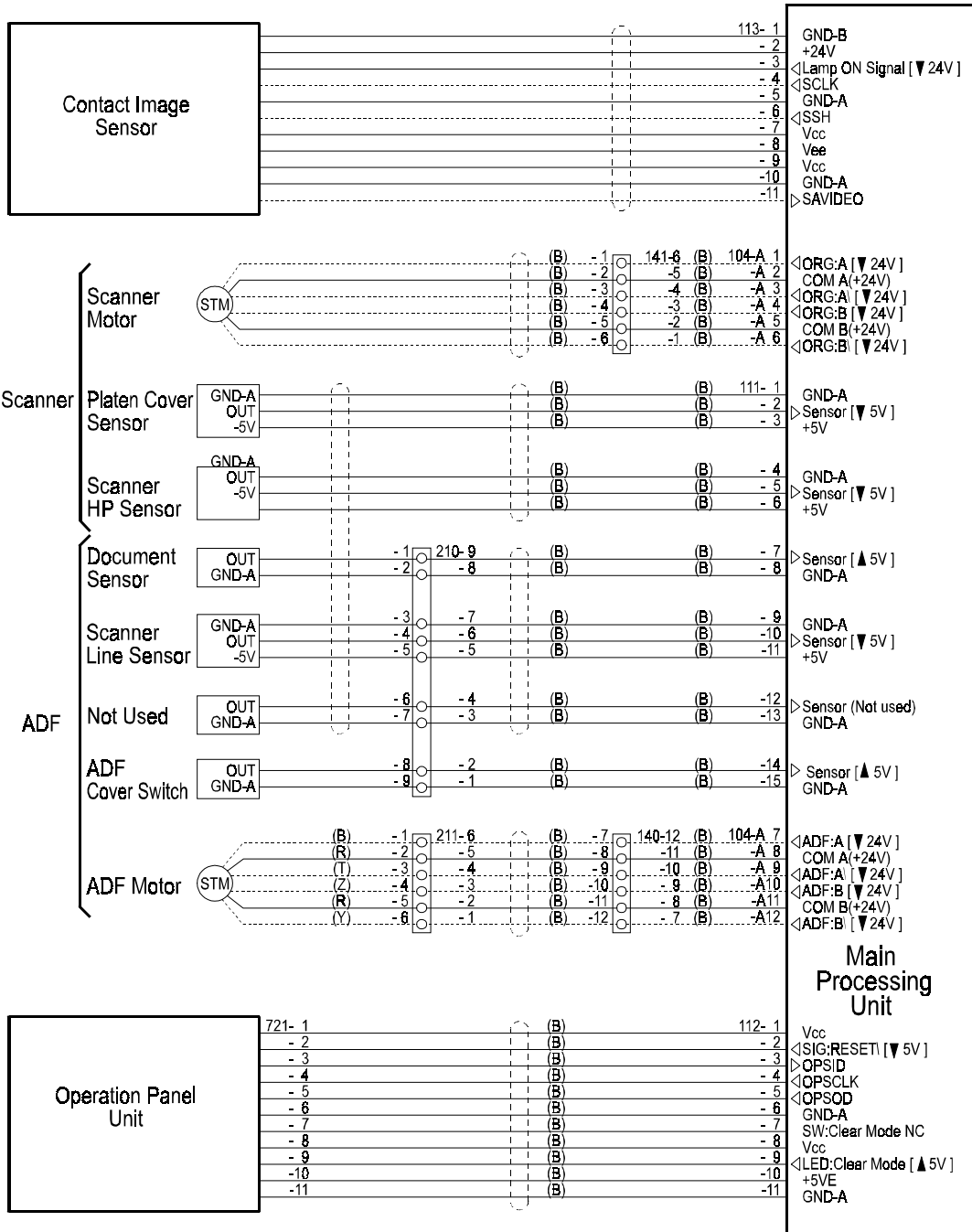
SECTION A



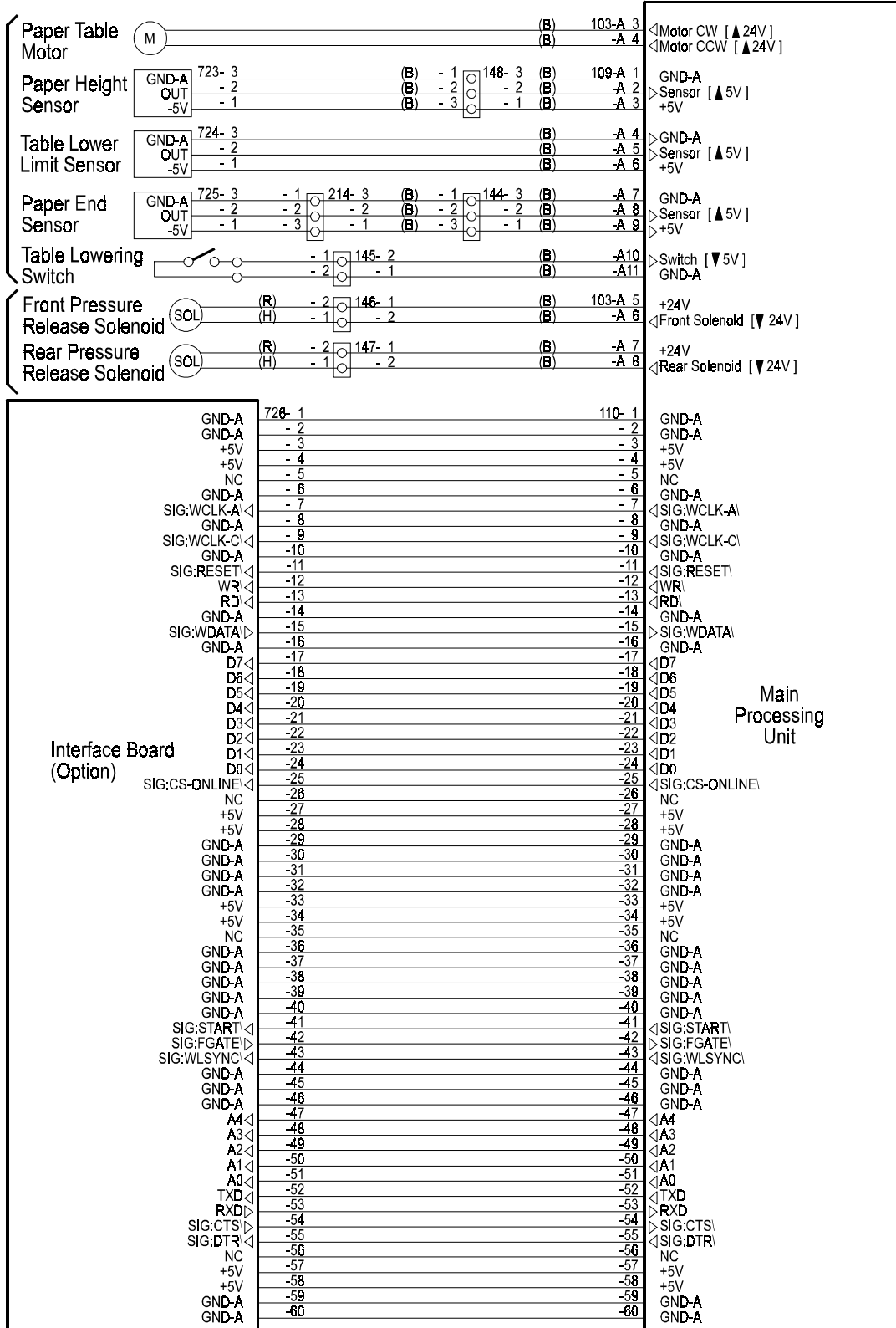
C237S501.WMF

P-to-P  
Diagram

SECTION B



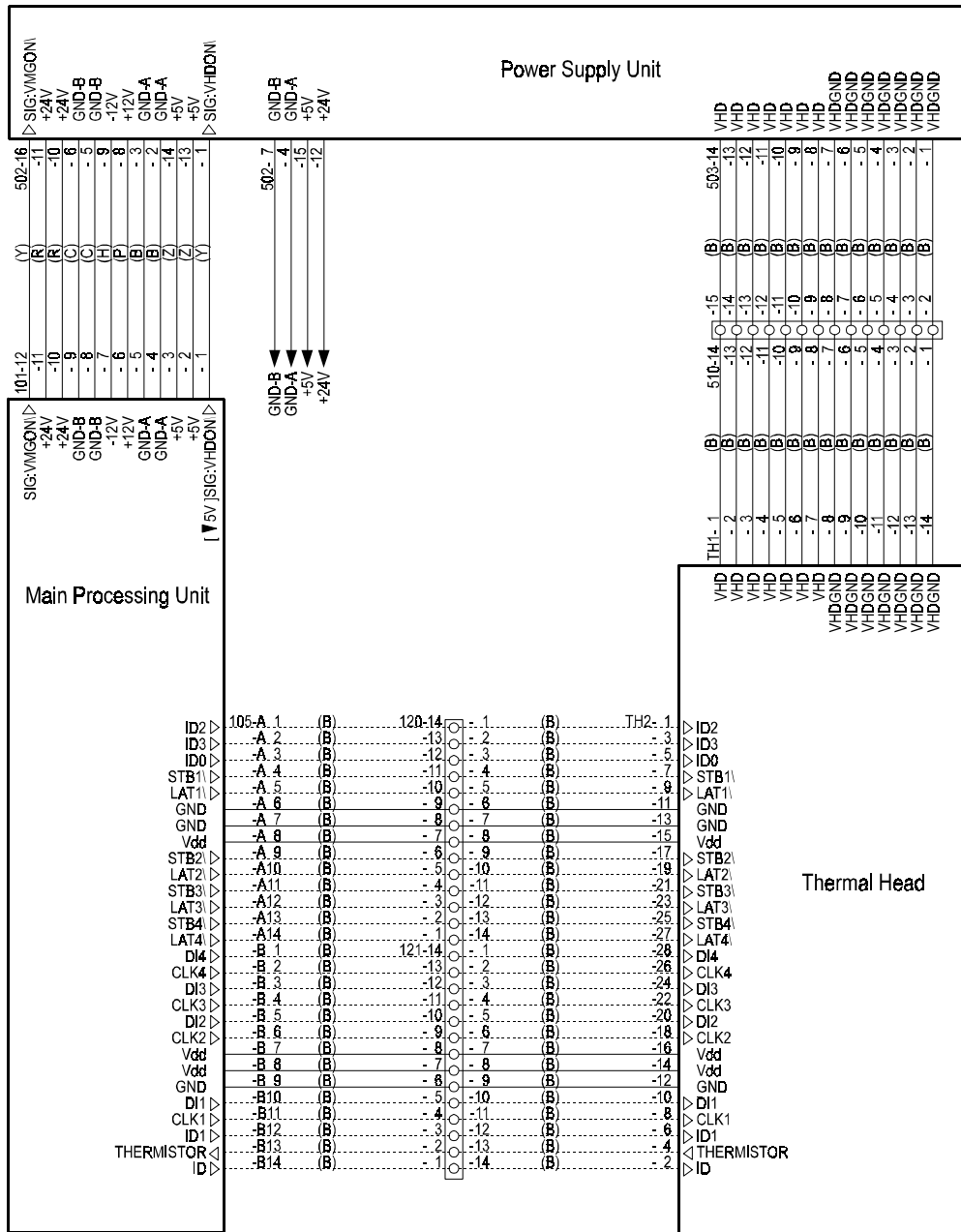
SECTION C



Main Processing Unit

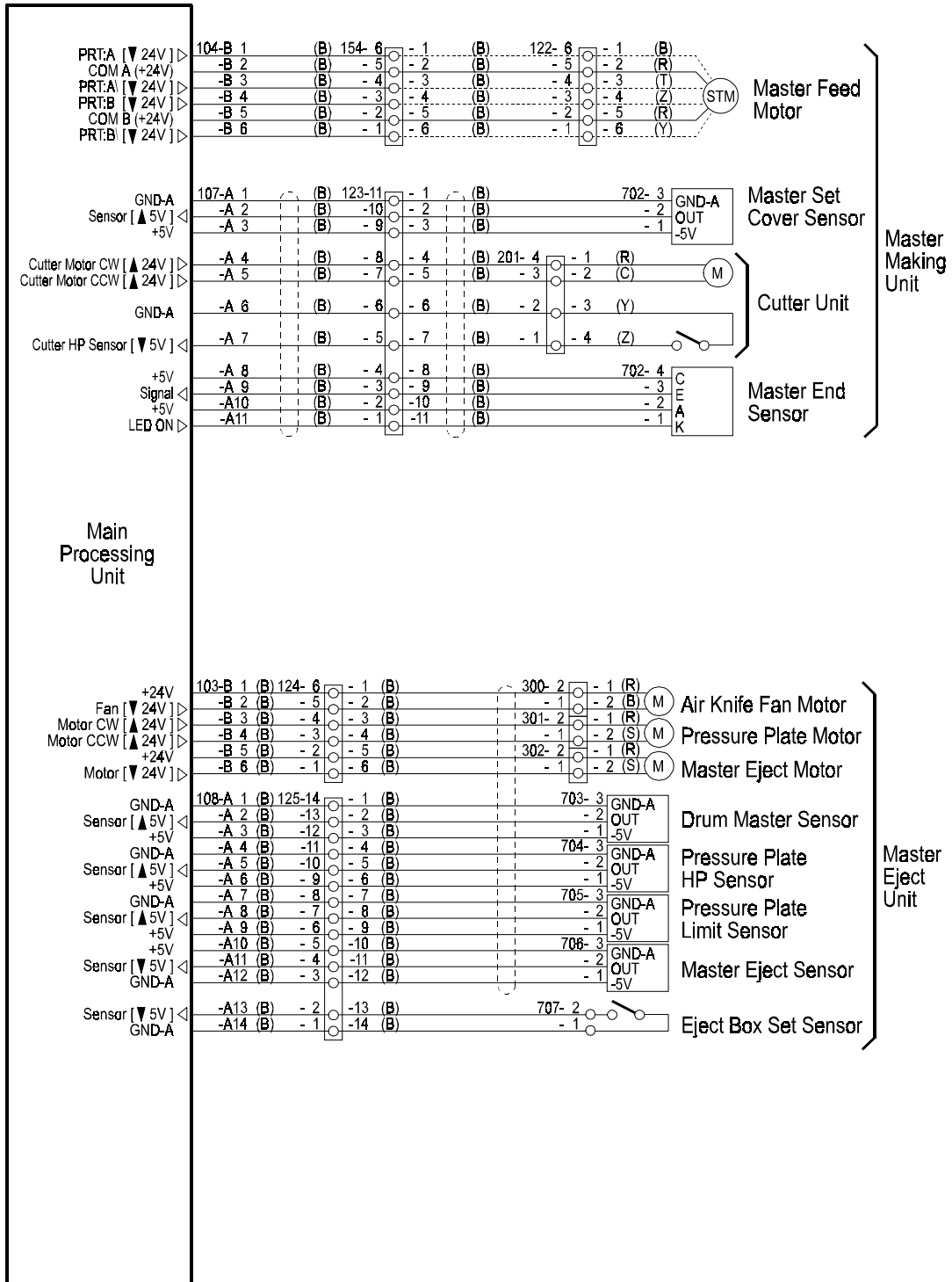
P-to-P Diagram

SECTION D



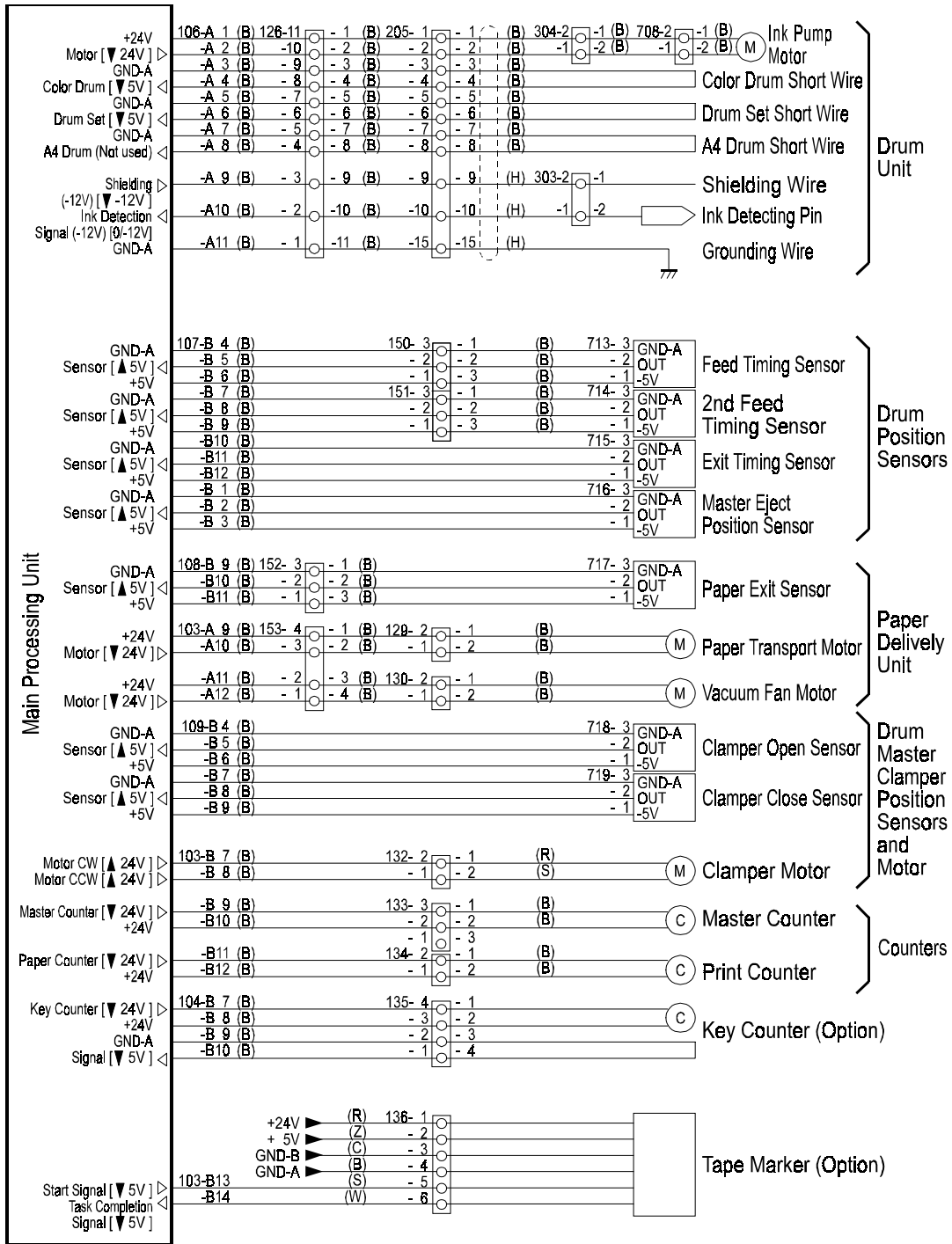
C237S504.WMF

SECTION E



C237S505.WMF

SECTION F



C237S506.WMF