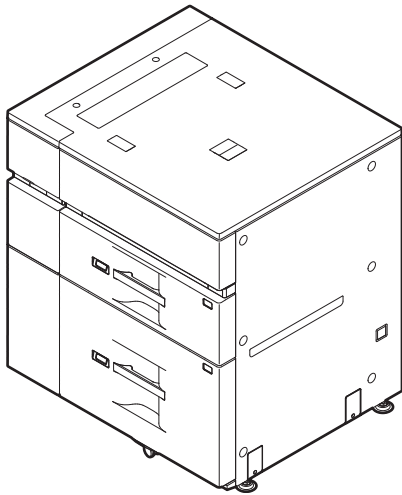


# SERVICE MANUAL



## DIGITAL MULTIFUNCTIONAL SYSTEM OPTION LARGE CAPACITY TRAYS

### MODEL **MX-LC13**

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Parts marked with "▲" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

## **[1] PRODUCT OUTLINE**

This unit has the capacity of 2,500 sheets for the upper stage and 2,500 sheets for the lower stage, greatly reducing paper supply care when installed once.

When using this unit, check to confirm that there is any other indispensable option by referring to the configuration in the Service manual of the machine.

## [2] SPECIFICATIONS

Model name	MX-LC13	
Name	LARGE CAPACITY TRAYS	
Transport reference	Center reference	
Paper size	Refer to the table of "Paper size/Kind/Weight".	
Paper size display	YES	
Paper size setting	Upper tray: User setting Lower tray: User setting	
Paper size setting when shipping	Inch: 11 x 17 AB: A3	
Feedable paper weight	Refer to the table of "Paper size/Kind/Weight".	
Paper type	Refer to the table of "Paper size/Kind/Weight".	
Paper capacity	Normal paper	Upper tray: 2,500 sheets Lower tray: 2,500 sheets (80g/m <sup>2</sup> )
Paper remaining detection	Level detection: 6 steps Upper/lower: 100%, 83.3%, 66.7%, 50%, 33.3%, 16.7%, and none	
Paper feed system	Air paper feed, assist (with the dehumidifier heater)	
Paper supply system	Front loading system	
Tray lift time	Up	Upper/lower tray: Within 24 sec Time required to detect paper empty from insertion of the tray.
	Down	Upper/lower tray: Within 24 sec Time required to detect paper empty from insertion of the tray.
Tray lock	YES	
Power consumption	Max 900W	
Power source	AC120V/10A cord (North America) AC230V/10A cord series (Europe) (3 pcs. Bundled for Europe/U.K./ Australia)	
External dimensions (W x D x H )	880 x 760 x 986mm	
Weight	130.3kg	
Dehumidifier heater	AC10W x 5 50W (Service part )	

### Paper size/Kind/Weight

			1-stage	2-stage
Min. weight			55g/m <sup>2</sup>	55g/m <sup>2</sup>
Max. weight			300g/m <sup>2</sup>	300g/m <sup>2</sup>
Paper type	Thin paper		Yes	Yes
	Standard paper		Yes	Yes
	Recycled paper		Yes	Yes
	Color paper		Yes	Yes
	Letterhead		Yes	Yes
	Printed paper		Yes	Yes
	Punched paper		Yes	Yes
	Thick paper 1 106 - 176g/m <sup>2</sup>		Yes	Yes
	Thick paper 2 177 - 220g/m <sup>2</sup>		Yes	Yes
	Thick paper 3 221 - 256g/m <sup>2</sup>		Yes	Yes
	Thick paper 4 257 - 300g/m <sup>2</sup>		Yes	Yes
	Embossed paper		Yes	Yes
	Tab paper		Yes	Yes
	OHP		Yes	Yes
	Label sheet		Yes	Yes
Glossy paper		Yes	Yes	
User type 1 - 9		Yes	Yes	
Paper size	12' x 18' (A3W )	305 x 457	Yes	Yes
	Ledger (11' x 17' )	279 x 432	Yes	Yes
	Ledger (11' x 17' ) Z-fold	279 x 216	No	No
	Legal (8.5' x 14' )	216 x 356	Yes	Yes
	Legal (8.5' x 14' ) Z-fold	216 x 178	No	No
	Asian legal (8.5 x 13.5 )	216 x 343	Yes	Yes
	Mexico legal (8.5' x 13.4' )	216 x 340	Yes	Yes
	Foolscap (8.5' x 13' )	216 x 330	Yes	Yes
	Letter (8.5' x 11' )	279 x 216	Yes	Yes
	Letter R (8.5' x 11'R )	216 x 279	Yes	Yes
	Letter R (8.5' x 11'R ) Z-fold	216 x 140	No	No
	Letter R (8.5' x 11'R ) 2-fold	216 x 140	No	No
	Letter R 3-fold/4-fold	216 x 93/70	No	No
	Invoice (5.5' x 8.5' ) <sup>*1</sup>	216 x 140	No	No
	Invoice R (5.5' x 8.5'R )	140 x 216	No	No
	Executive R (7.25' x 10.5'R )	184 x 266	Yes	Yes
	9 x 12 (A4W )	305 x 229	Yes	Yes
	A3	297 x 420	Yes	Yes
	A3 Z-fold	297 x 210	No	No
	B4	257 x 364	Yes	Yes

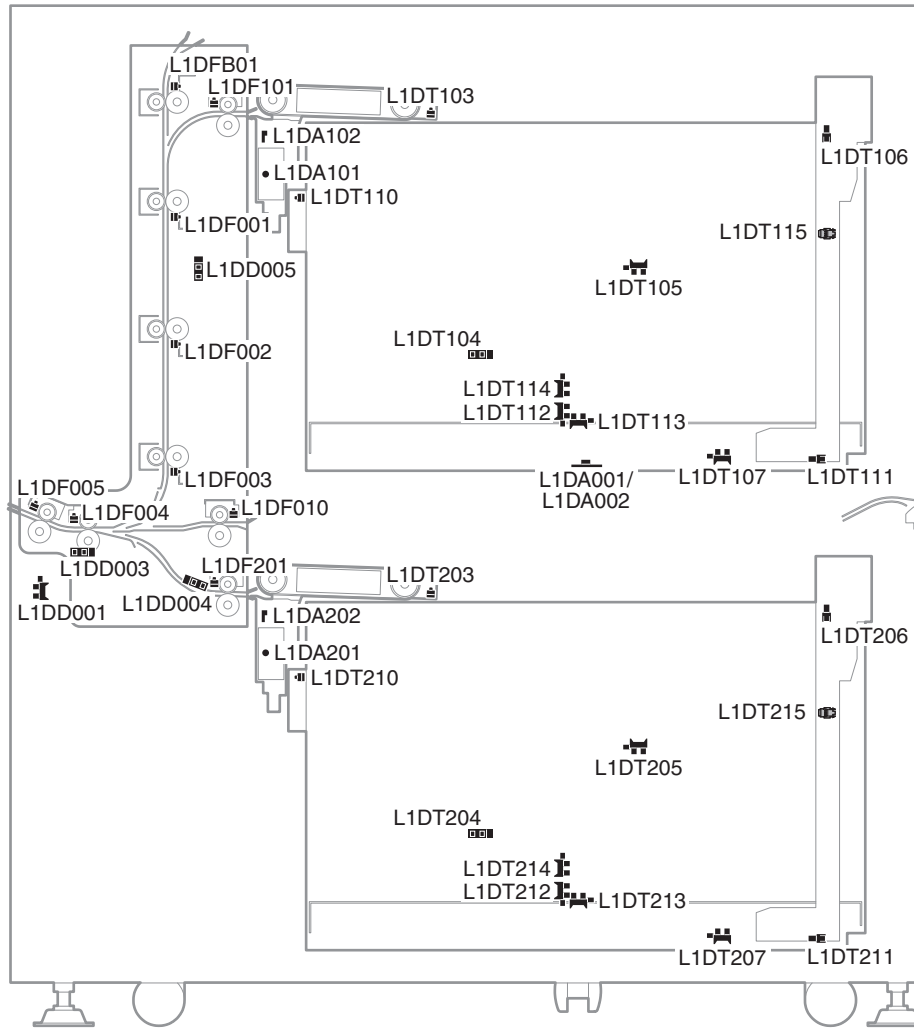
			1-stage	2-stage
Paper size	B4 Z-fold	257 x 182	No	No
	A4	297 x 210	Yes	Yes
	A4-R	210 x 297	Yes	Yes
	A4-R Z-fold	210 x 148	No	No
	A4R 2-fold, Z-fold	210 x 148	No	No
	A4-R 3-fold/4-fold	210 x 99/74	No	No
	B5	257 x 182	Yes	Yes
	B5-R	182 x 257	Yes	Yes
	A5 <sup>*1</sup>	210 x 148	No	No
	A5-R	148 x 210	No	No
	SRA3	320 x 450mm	Yes	Yes
	SRA4	320 x 225mm	Yes	Yes
	Kiku 8	318 x 234.75	Yes	Yes
	A 8	312.5 x 220	Yes	Yes
	Kiku 4	318 x 469.5	Yes	Yes
	A 4	312.5 x 440	Yes	Yes
	8K	270 x 390	Yes	Yes
	16K	270 x 195	Yes	Yes
	16K-R	195 x 270	Yes	Yes
	Monarch	98 x 191	No	No
	COM10	105 x 241	No	No
	DL	110 x 220	No	No
	C5	229 x 162	No	No
	Long No. 3	120 x 235	No	No
	Long No. 4	90 x 205	No	No
	Western No. 2	114 x 162	No	No
	Western No. 4	105 x 235	No	No
	Square No. 2	240 x 332	No	No
	Square No. 3	216 x 277	No	No
	Special - custom size		Yes	Yes
	Custom range	min X (Sub scanning)	182	182
		max X (Sub scanning )	457	457
		min Y (Main scanning )	182	182
max Y (Main scanning )		320	320	
Special - size undefined		No	No	
Long scale paper	Width: 90 - 305 Length: 458 - 1200	No	No	

\*1 : Invoice and A5 are treated as special paper.



# [3] EXTERNAL VIEW AND INTERNAL STRUCTURE

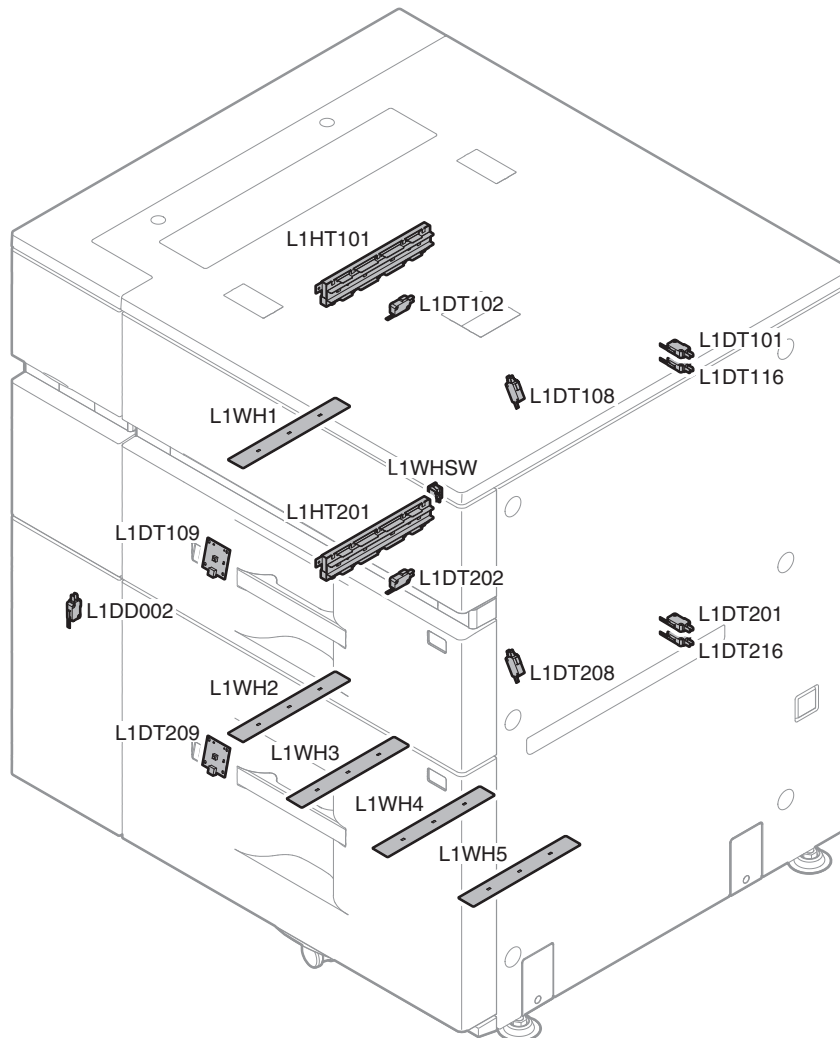
## 1. Sensor



Signal name	Name	Function/Operation
L1DA001/L1DA002	LCT inside temperature/humidity sensor	Detects the temperature and humidity in the LCT.
L1DA101	1CS hot-air heater temperature sensor	Detects the temperature in the hot-air heater.
L1DA102	1CS temperature sensor	Detects the temperature in the 1CS paper feed duct.
L1DA201	2CS hot-air heater temperature sensor	Detects the temperature in the hot-air heater.
L1DA202	2CS temperature sensor	Detects the temperature in the 2CS paper feed duct.
L1DD001	LCT machine connection sensor	Detects connection to the machine.
L1DD003	Transport open/close sensor 1	Detects open/close of the transport paper guide.
L1DD004	Transport open/close sensor 2	Detects open/close of the transport paper guide.
L1DD005	Vertical transport open/close sensor	Detects open/close of the vertical transport paper guide.
L1DF001	Vertical transport sensor 1	Detects transport of paper.
L1DF002	Vertical transport sensor 2	Detects transport of paper.
L1DF003	Vertical transport sensor 3	Detects transport of paper.
L1DF004	Vertical transport sensor 4	Detects transport of paper.
L1DF005	LCT paper exit sensor	Detects transport of paper.
L1DF010	Horizontal transport sensor 5	Detects transport of paper.
L1DF101	1CS paper exit sensor	Detects transport of paper.
L1DF201	2CS paper exit sensor	Detects transport of paper.
L1DFB01	Manual feed paper entry sensor	Detects transport of paper.
L1DT103	1CS paper sensor	Detects 1CS paper.
L1DT104	1CS lift motor encoder sensor	Detects rotation of the 1CS lift motor.
L1DT105	1CS tray lock sensor	Detects lock of the 1CS tray.
L1DT106	1CS upper limit sensor	Detects the upper limit of the 1CS tray.
L1DT107	1CS lower limit sensor	Detects the lower limit of the 1CS tray.
L1DT110	1CS paper top surface sensor	Detects the top surface of paper in the 1CS.
L1DT111	1CS length sensor	Detects the 1CS length.
L1DT112	1CS width sensor 1	Detects the 1CS width.
L1DT113	1CS width sensor 2	Detects the 1CS width.
L1DT114	1CS width sensor 3	Detects the 1CS width.
L1DT115	1CS paper rear edge sensor	Detects paper rear edge of 1CS.
L1DT203	2CS paper sensor	Detects 2CS paper.
L1DT204	2CS lift motor encoder sensor	Detects rotation of the 2CS lift motor.

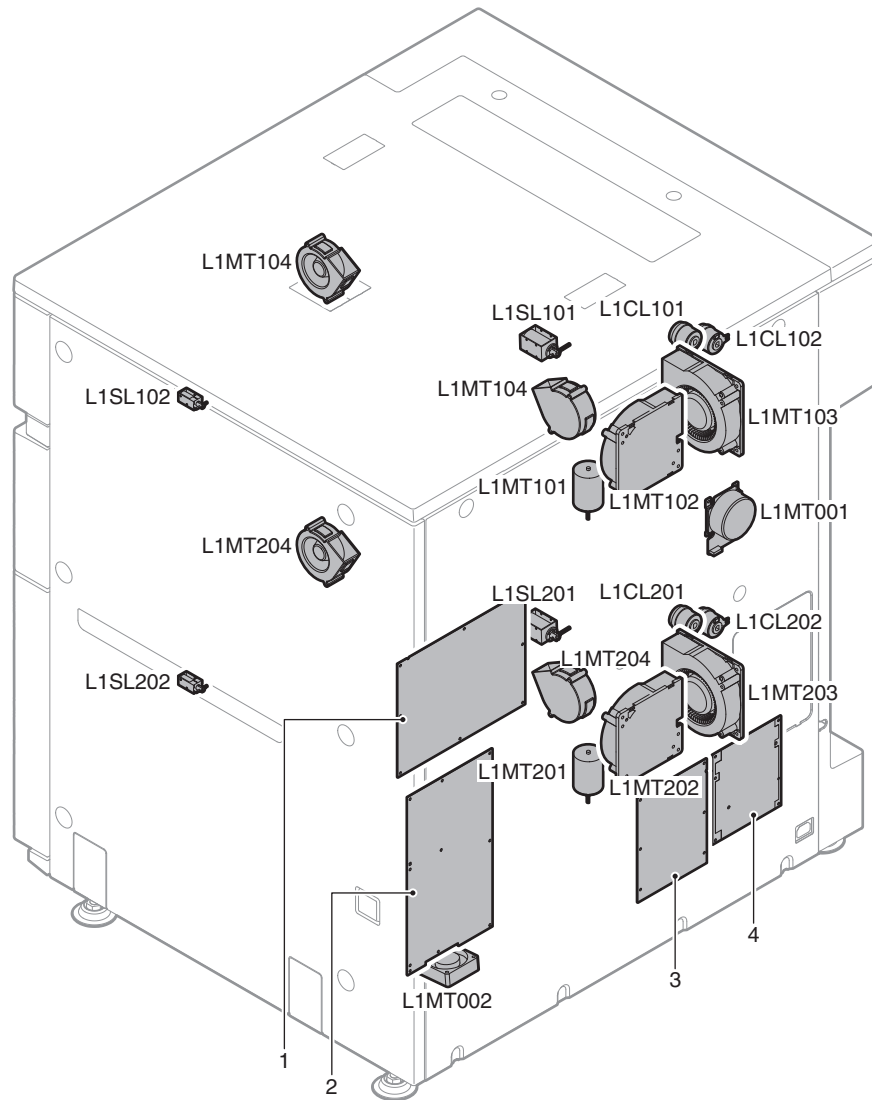
Signal name	Name	Function/Operation
L1DT205	2CS tray lock sensor	Detects lock of the 2CS tray.
L1DT206	2CS upper limit sensor	Detects the upper limit of the 2CS tray.
L1DT207	2CS lower limit sensor	Detects the lower limit of the 2CS tray.
L1DT210	2CS paper top surface sensor	Detects the top surface of paper in the 2CS.
L1DT211	2CS length sensor	Detects the 2CS length.
L1DT212	2CS width sensor 1	Detects the 2CS width.
L1DT213	2CS width sensor 2	Detects the 2CS width.
L1DT214	2CS width sensor 3	Detects the 2CS width.
L1DT215	2CS paper rear edge sensor	Detects paper rear edge of 1CS.

## 2. Switch, Heater



Signal name	Name	Function/Operation
L1DD002	LCT front door open/close detection switch	Detects open/close of the front door.
L1DT101	1CS insertion detection switch 1	Detects insertion of the cassette.
L1DT102	1CS upper limit switch	Prevents the tray from lifting extraordinarily to break the paper feed unit.
L1DT108	1CS reverse rotation detection switch	Detects reverse rotation of the lift motor.
L1DT109	1CS descending switch	Shifts the tray to the paper supply position.
L1DT116	1CS insertion detection switch 2	Detects insertion of the cassette.
L1DT201	2CS insertion detection switch 1	Detects insertion of the cassette.
L1DT202	2CS upper limit switch	Prevents the tray from lifting extraordinarily to break the paper feed unit.
L1DT208	2CS reverse rotation detection switch	Detects reverse rotation of the lift motor.
L1DT209	2CS descending switch	Shifts the tray to the paper supply position.
L1DT216	2CS insertion detection switch 2	Detects insertion of the cassette.
L1HT101	1CS hot-air heater	Makes paper feed air hot.
L1HT201	2CS hot-air heater	Makes paper feed air hot.
L1WH1	1CS dehumidifier heater	Dehumidifies inside of the LCT. (Option)
L1WH2	2CS dehumidifier heater	Dehumidifies inside of the LCT. (Option)
L1WH3	Dehumidifier heater 3	Dehumidifies inside of the LCT. (Option)
L1WH4	Dehumidifier heater 4	Dehumidifies inside of the LCT. (Option)
L1WH5	Dehumidifier heater 5	Dehumidifies inside of the LCT. (Option)
L1WHSW	Dehumidifier heater switch	Manually turns ON/OFF the dehumidifier heater. (Option)

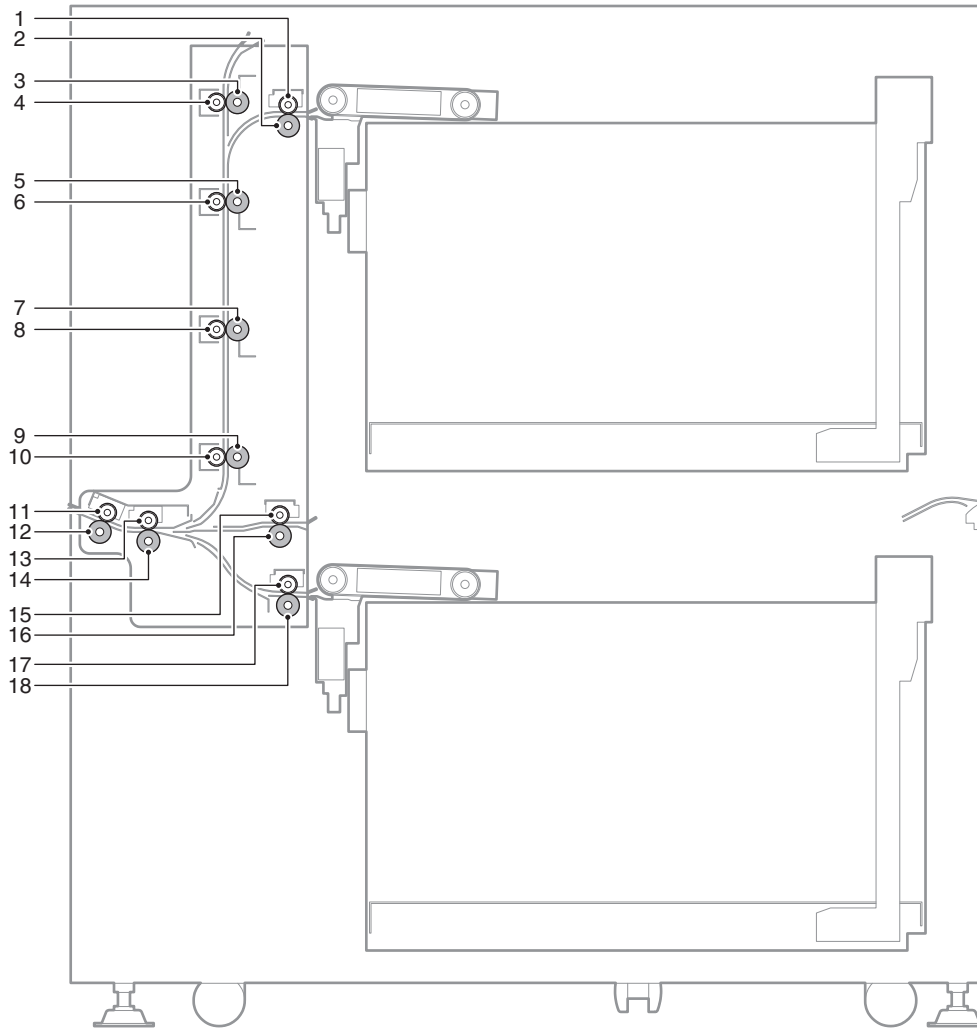
### 3. Drive motor, Clutch, Solenoid, Fan, PWB



Signal name	Name	Function/Operation
L1CL101	1CS paper feed clutch	Controls ON/OFF of the 1CS paper feed belt.
L1CL102	1CS transport clutch	Controls ON/OFF of the 1CS transport roller.
L1CL201	2CS paper feed clutch	Controls ON/OFF of the 2CS paper feed belt.
L1CL202	2CS transport clutch	Controls ON/OFF of the 2CS transport roller.
L1MT001	Transport motor 1	Drives the paper feed and the transport section.
L1MT002	Power unit cooling fan	Cools the power unit.
L1MT101	1CS lift motor	Lifts the paper feed base.
L1MT102	1CS suction fan	Sucks the paper feed unit.
L1MT103	1CS exhaust fan	Blows to the paper feed section.
L1MT104	1CS assist fan	Assists the paper feed unit.
L1MT201	2CS lift motor	Lifts the paper feed base.
L1MT202	2CS suction fan	Blows to the paper feed unit.
L1MT203	2CS exhaust fan	Blows to the paper feed section.
L1MT204	2CS assist fan	Assists the paper feed unit.
L1SL101	1CS suction valve solenoid	Controls ON/OFF of suction air.
L1SL102	1CS tray lock solenoid	Controls ON/OFF of the tray lock.
L1SL201	2CS suction valve solenoid	Controls ON/OFF of suction air.
L1SL202	2CS tray lock solenoid	Controls ON/OFF of the tray lock.

No.	Name	Function/Operation
1	Main PWB	Controls and drives the LCT.
2	DC power PWB	Switch AC to DC.
3	Heater relay PWB	Turns ON/OFF the AC power.
4	AC PWB	Controls the AC power.

## 4. Roller

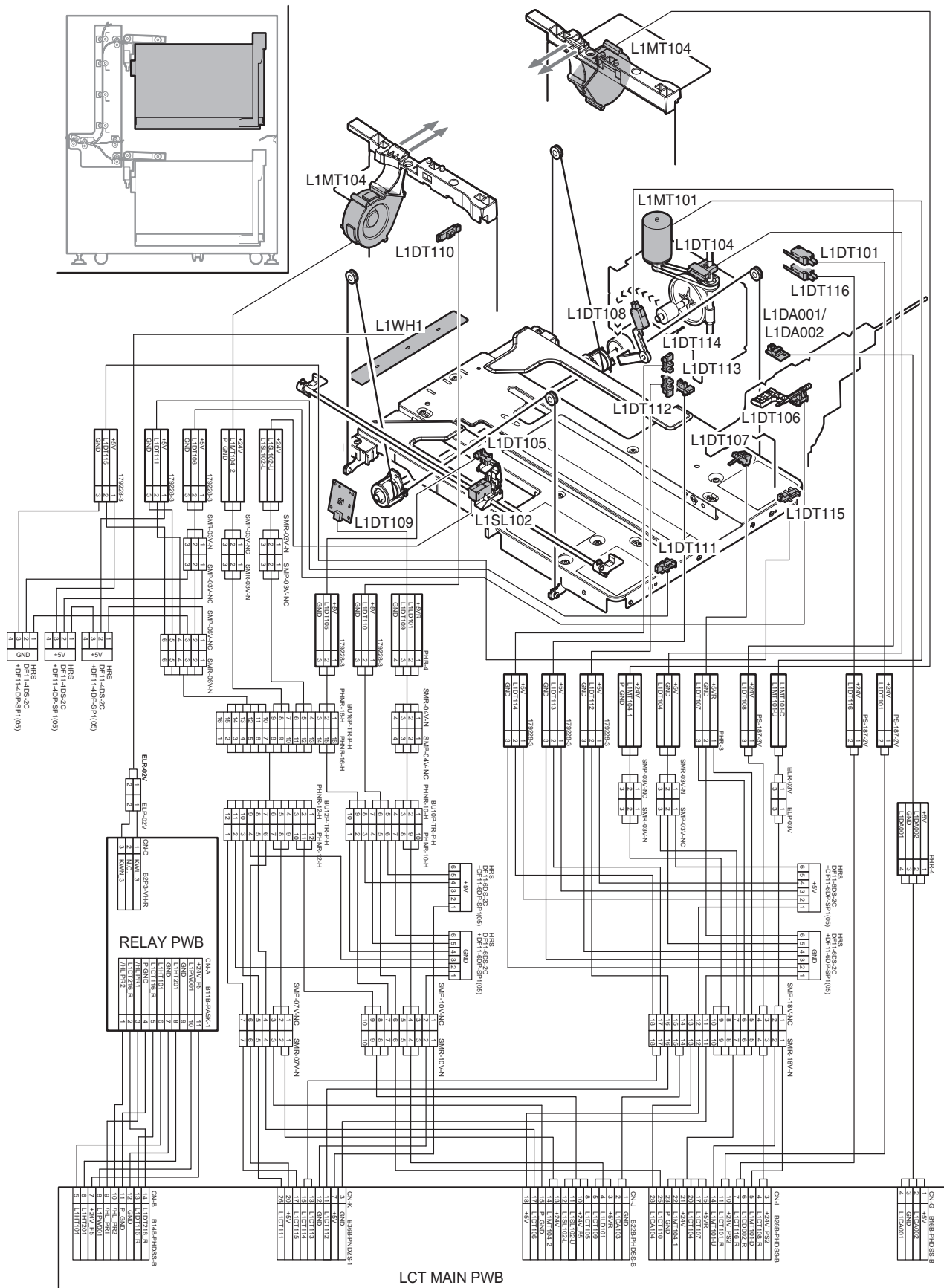


No.	Name	Function/Operation
1	Transport roller 1 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
2	Transport roller 1 (Drive)	Transports paper from the paper feed tray to the transport roller 4.
3	Transport roller 3 (Drive)	Transports paper from the manual paper feed tray to the transport roller 4.
4	Transport roller 3 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
5	Transport roller 4 (Drive)	Transports paper to the transport roller 5.
6	Transport roller 4 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
7	Transport roller 5 (Drive)	Transports paper to the transport roller 6.
8	Transport roller 5 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
9	Transport roller 6 (Drive)	Transports paper to the transport roller 7.
10	Transport roller 6 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
11	Transport roller 8 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
12	Transport roller 8 (Drive)	Transports paper to the transport unit.
13	Transport roller 7 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
14	Transport roller 7 (Drive)	Transports paper to the transport roller 8.
15	Transport roller 9 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
16	Transport roller 9 (Drive)	Transports paper to the transport roller 7.
17	Transport roller 2 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
18	Transport roller 2 (Drive)	Transports paper from the paper feed tray to the transport roller 7.

# [4] OPERATIONAL DESCRIPTIONS

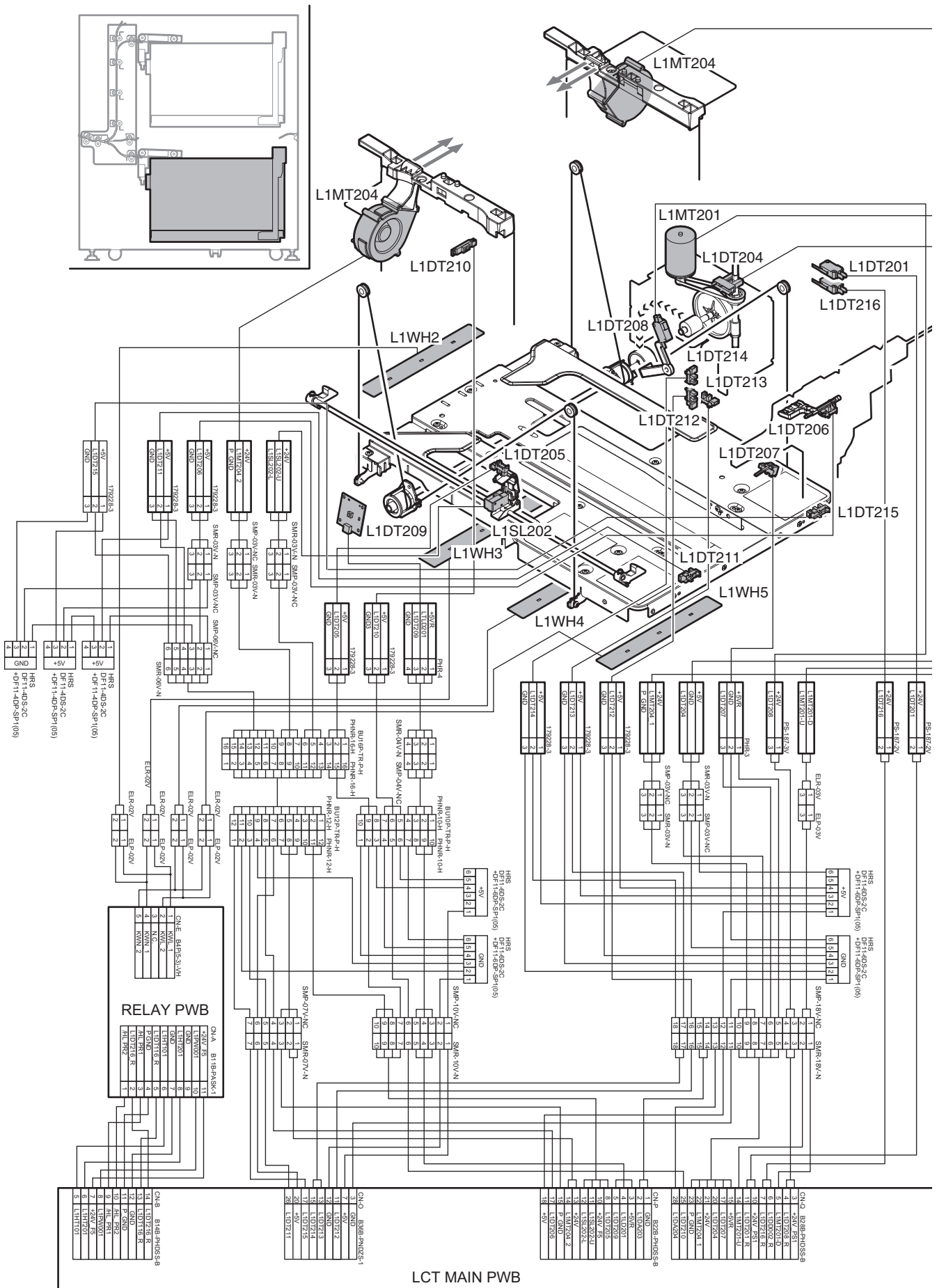
## 1. Electrical and mechanism relation diagram

### A. Paper feed tray (1CS)



<b>Signal name</b>	<b>Name</b>	<b>Function/Operation</b>
L1DA001/L1DA002	LCT inside temperature/humidity sensor	Detects the temperature and humidity in the LCT.
L1DT101	1CS insertion detection switch 1	Detects insertion of the cassette.
L1DT104	1CS lift motor encoder sensor	Detects rotation of the 1CS lift motor.
L1DT105	1CS tray lock sensor	Detects lock of the 1CS tray.
L1DT106	1CS upper limit sensor	Detects the upper limit of the 1CS tray.
L1DT107	1CS lower limit sensor	Detects the lower limit of the 1CS tray.
L1DT108	1CS reverse rotation detection switch	Detects reverse rotation of the lift motor.
L1DT109	1CS descending switch	Shifts the tray to the paper supply position.
L1DT110	1CS paper top surface sensor	Detects the top surface of paper in the 1CS.
L1DT111	1CS length sensor	Detects the 1CS length.
L1DT112	1CS width sensor 1	Detects the 1CS width.
L1DT113	1CS width sensor 2	Detects the 1CS width.
L1DT114	1CS width sensor 3	Detects the 1CS width.
L1DT115	1CS paper rear edge sensor	Detects paper rear edge of 1CS.
L1DT116	1CS insertion detection switch 2	Detects insertion of the cassette.
L1MT101	1CS lift motor	Lifts the paper feed base.
L1MT104	1CS assist fan	Assists the paper feed unit.
L1SL102	1CS tray lock solenoid	Controls ON/OFF of the tray lock.
L1WH1	1CS dehumidifier heater	Dehumidifies inside of the LCT. (Option)

## B. Paper feed tray (2CS)



Signal name	Name	Function/Operation
L1DT201	2CS insertion detection switch 1	Detects insertion of the cassette.
L1DT204	2CS lift motor encoder sensor	Detects rotation of the 2CS lift motor.
L1DT205	2CS tray lock sensor	Detects lock of the 2CS tray.
L1DT206	2CS upper limit sensor	Detects the upper limit of the 2CS tray.
L1DT207	2CS lower limit sensor	Detects the lower limit of the 2CS tray.
L1DT208	2CS reverse rotation detection switch	Detects reverse rotation of the lift motor.
L1DT209	2CS descending switch	Shifts the tray to the paper supply position.
L1DT210	2CS paper top surface sensor	Detects the top surface of paper in the 2CS.
L1DT211	2CS length sensor	Detects the 2CS length.
L1DT212	2CS width sensor 1	Detects the 2CS width.
L1DT213	2CS width sensor 2	Detects the 2CS width.
L1DT214	2CS width sensor 3	Detects the 2CS width.
L1DT215	2CS paper rear edge sensor	Detects paper rear edge of 2CS.
L1DT216	2CS insertion detection switch 2	Detects insertion of the cassette.
L1MT201	2CS lift motor	Lifts the paper feed base.
L1MT204	2CS assist fan	Assists the paper feed unit.
L1SL202	2CS tray lock solenoid	Controls ON/OFF of the tray lock.
L1WH2	2CS dehumidifier heater	Dehumidifies inside of the LCT. (Option)
L1WH3	Dehumidifier heater 3	Dehumidifies inside of the LCT. (Option)
L1WH4	Dehumidifier heater 4	Dehumidifies inside of the LCT. (Option)
L1WH5	Dehumidifier heater 5	Dehumidifies inside of the LCT. (Option)

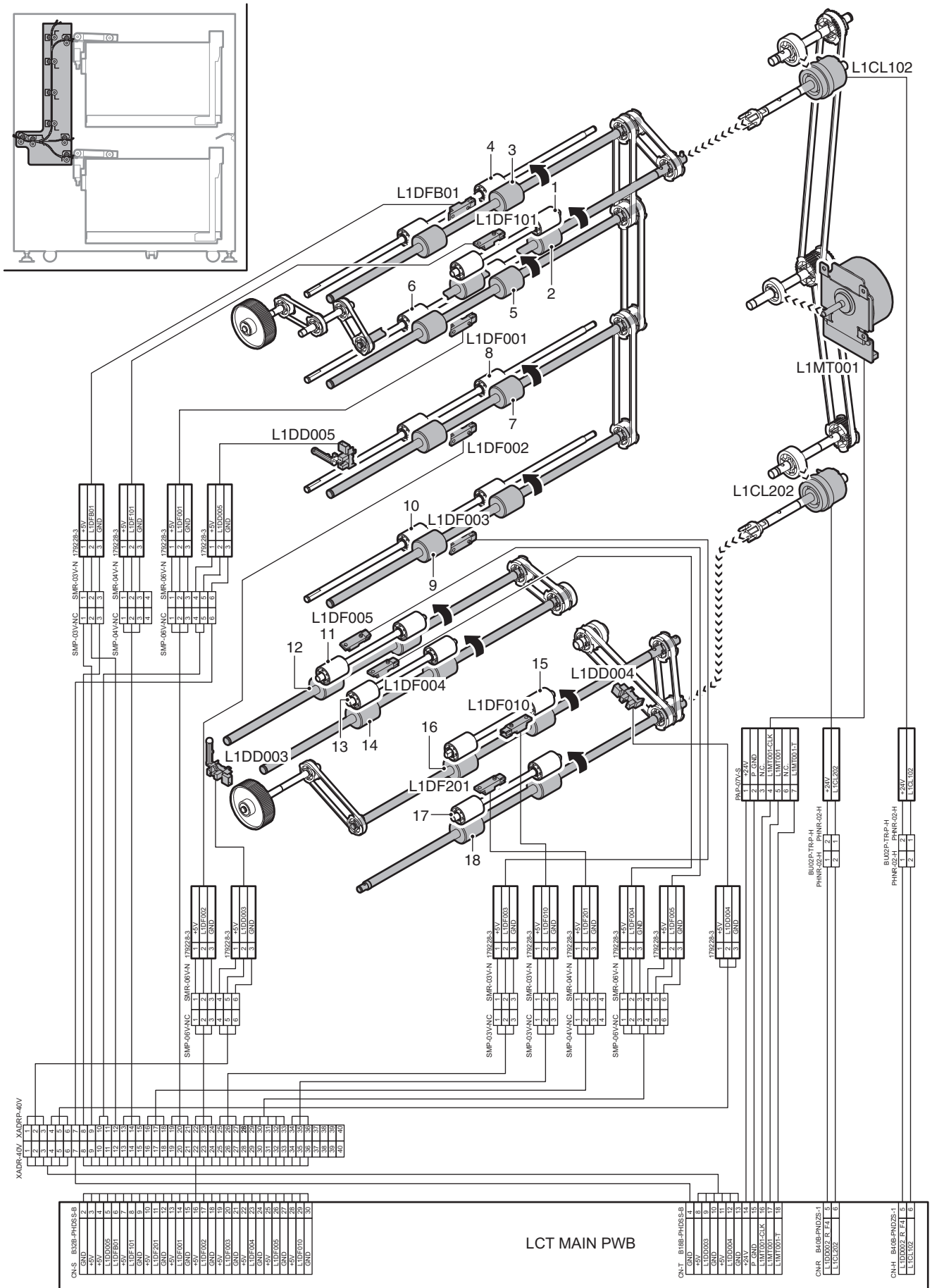




Signal name	Name	Function/Operation
L1CL101	1CS paper feed clutch	Controls ON/OFF of the 1CS paper feed belt.
L1CL201	2CS paper feed clutch	Controls ON/OFF of the 2CS paper feed belt.
L1DA101	1CS hot-air heater temperature sensor	Detects the temperature in the hot-air heater.
L1DA102	1CS temperature sensor	Detects the temperature in the 1CS paper feed duct.
L1DA201	2CS hot-air heater temperature sensor	Detects the temperature in the hot-air heater.
L1DA202	2CS temperature sensor	Detects the temperature in the 2CS paper feed duct.
L1DT102	1CS upper limit switch	Prevents the tray from lifting extraordinarily to break the paper feed unit.
L1DT103	1CS paper sensor	Detects 1CS paper.
L1DT202	2CS upper limit switch	Prevents the tray from lifting extraordinarily to break the paper feed unit.
L1DT203	2CS paper sensor	Detects 2CS paper.
L1HT101	1CS hot-air heater	Makes paper feed air hot.
L1HT201	2CS hot-air heater	Makes paper feed air hot.
L1MT001	Transport motor 1	Drives the paper feed and the transport section.
L1MT102	1CS suction fan	Sucks the paper feed unit.
L1MT103	1CS exhaust fan	Blows to the paper feed section.
L1MT202	2CS suction fan	Blows to the paper feed unit.
L1MT203	2CS exhaust fan	Blows to the paper feed section.
L1SL101	1CS suction valve solenoid	Controls ON/OFF of suction air.
L1SL201	2CS suction valve solenoid	Controls ON/OFF of suction air.

No.	Name	Function/Operation
1	Paper feed belt	Sucks paper to the belt to transport it.
2	Suction valve	Opens and closes the valve to apply a sucking power to the paper feed belt.
3	Relief valve	Opens and closes the valve by a change in the wind pressure in the duct when in paper feed operation.

# D. Vertical transport unit



Signal name	Name	Function/Operation
L1CL102	1CS transport clutch	Controls ON/OFF of the 1CS transport roller.
L1CL202	2CS transport clutch	Controls ON/OFF of the 2CS transport roller.
L1DD003	Transport open/close sensor 1	Detects open/close of the transport paper guide.
L1DD004	Transport open/close sensor 2	Detects open/close of the transport paper guide.
L1DD005	Vertical transport open/close sensor	Detects open/close of the vertical transport paper guide.
L1DF001	Vertical transport sensor 1	Detects transport of paper.
L1DF002	Vertical transport sensor 2	Detects transport of paper.
L1DF003	Vertical transport sensor 3	Detects transport of paper.
L1DF004	Vertical transport sensor 4	Detects transport of paper.
L1DF005	LCT paper exit sensor	Detects transport of paper.
L1DF010	Horizontal transport sensor 5	Detects transport of paper.
L1DF101	1CS paper exit sensor	Detects transport of paper.
L1DF201	2CS paper exit sensor	Detects transport of paper.
L1DFB01	Manual feed paper entry sensor	Detects transport of paper.
L1MT001	Transport motor 1	Drives the paper feed and the transport section.

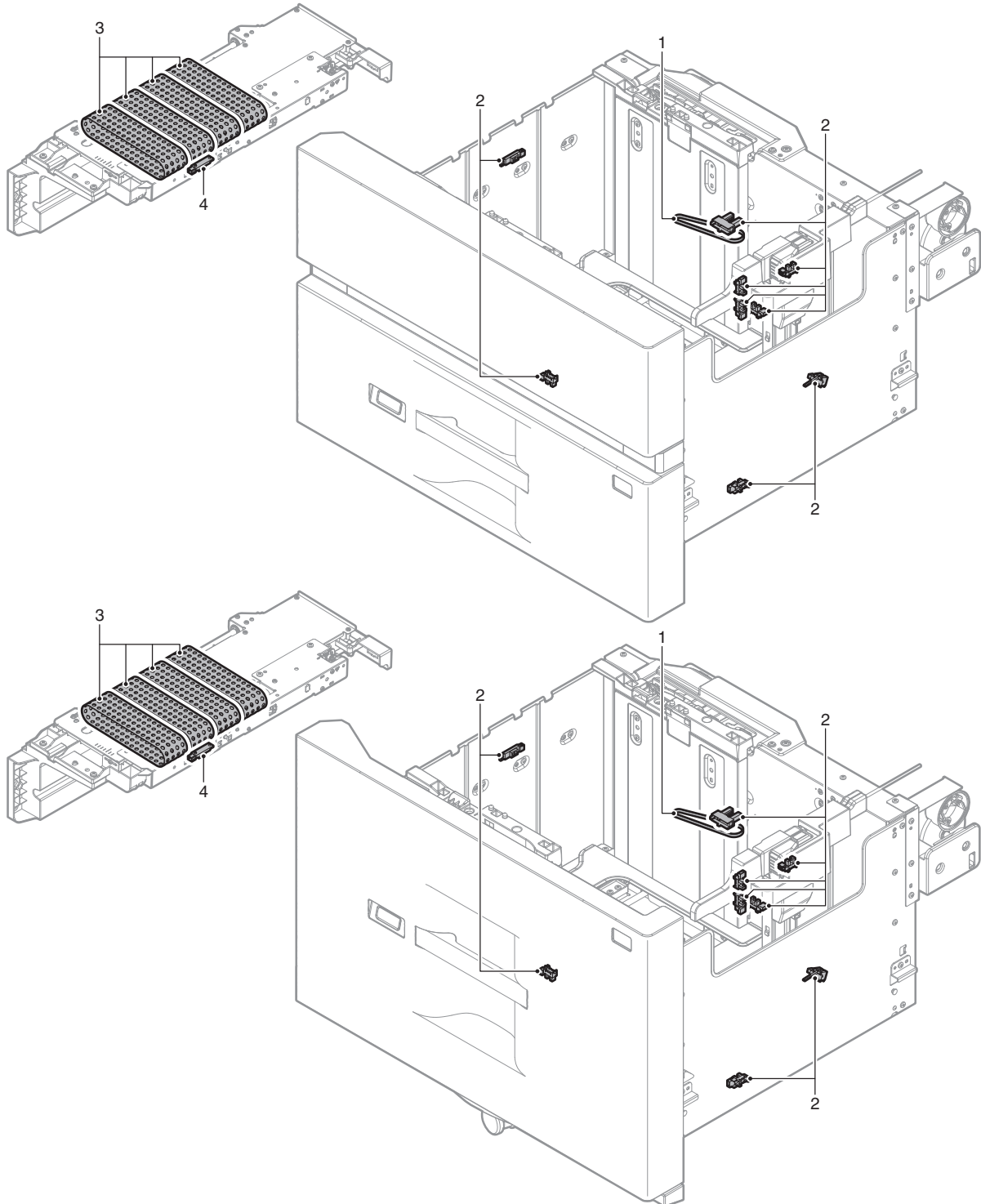
No.	Name	Function/Operation
1	Transport roller 1 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
2	Transport roller 1 (Drive)	Transports paper from the paper feed tray to the transport roller 4.
3	Transport roller 3 (Drive)	Transports paper from the manual paper feed tray to the transport roller 4.
4	Transport roller 3 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
5	Transport roller 4 (Drive)	Transports paper to the transport roller 5.
6	Transport roller 4 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
7	Transport roller 5 (Drive)	Transports paper to the transport roller 6.
8	Transport roller 5 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
9	Transport roller 6 (Drive)	Transports paper to the transport roller 7.
10	Transport roller 6 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
11	Transport roller 8 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
12	Transport roller 8 (Drive)	Transports paper to the transport unit.
13	Transport roller 7 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
14	Transport roller 7 (Drive)	Transports paper to the transport roller 8.
15	Transport roller 9 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
16	Transport roller 9 (Drive)	Transports paper to the transport roller 7.
17	Transport roller 2 (Idle)	Apply a pressure to paper and the transport roller, providing a transport power to the transport roller.
18	Transport roller 2 (Drive)	Transports paper from the paper feed tray to the transport roller 7.

# [5] MAINTENANCE

## 1. Paper feed section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

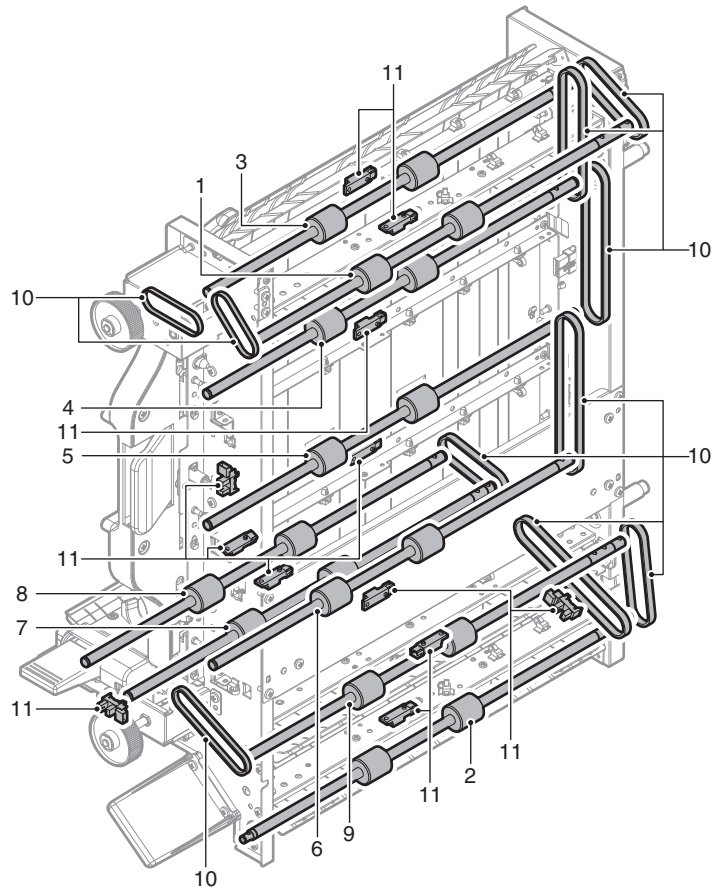
Unit	No.	Maintenance part	When calling	Every 300K	Remarks
Paper feed tray	1	Belts	---	×	
	2	Sensors	×	×	
Paper feed unit	3	Paper feed belt	×	○	Clean with a water dampened cloth.
	4	Sensors	×	×	
	---	Transport paper guides	○	○	



## 2. Transport section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate

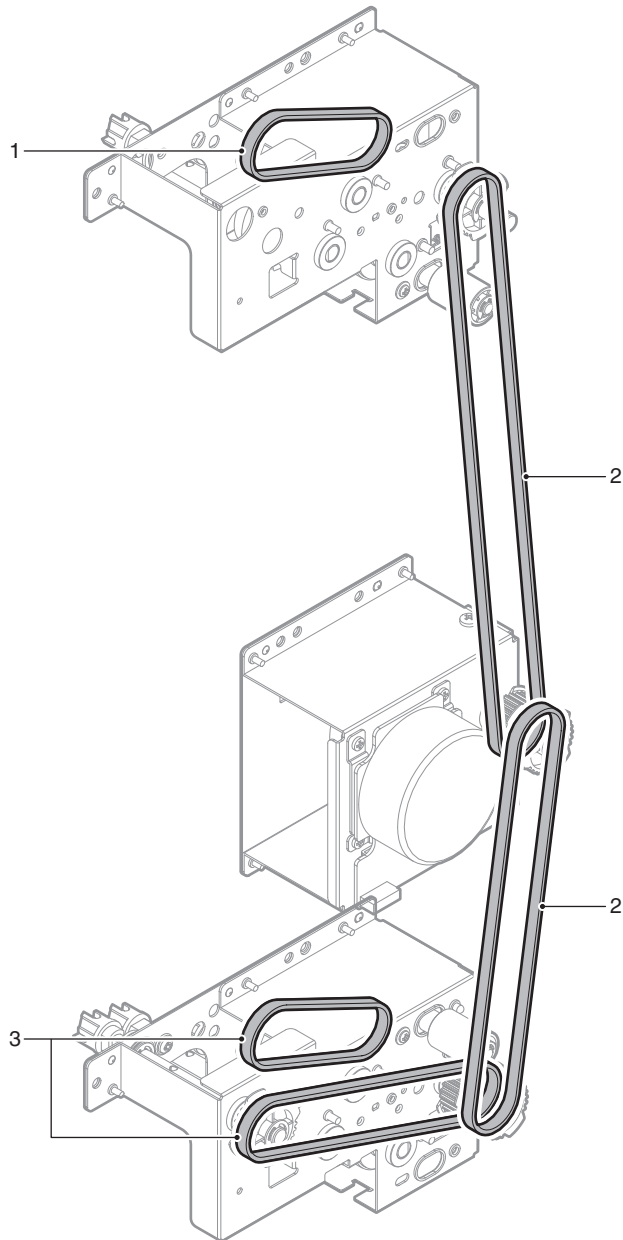
Unit	No.	Maintenance part	When calling	Every 300K	Remarks
Vertical transport unit	1	Transport roller 1	×	○	Clean with a water dampened cloth.
	2	Transport roller 2	×	○	
	3	Transport roller 3	×	○	
	4	Transport roller 4	×	○	
	5	Transport roller 5	×	○	
	6	Transport roller 6	×	○	
	7	Transport roller 7	×	○	
	8	Transport roller 8	×	○	
	9	Transport roller 9	×	○	
	10	Belts	---	×	
	11	Sensors	×	×	
	---	Transport paper guides	○	○	



### 3. Drive section

×: Check (Clean, replace, or adjust according to necessity.) O: Clean ▲: Replace △: Adjust ☆: Lubricate

Unit	No.	Maintenance part	When calling	Every 300K	Remarks
Upper paper feed drive unit	1	Belts	---	×	
Main drive unit	2	Belts	---	×	
Lower paper feed drive unit	3	Belts	---	×	

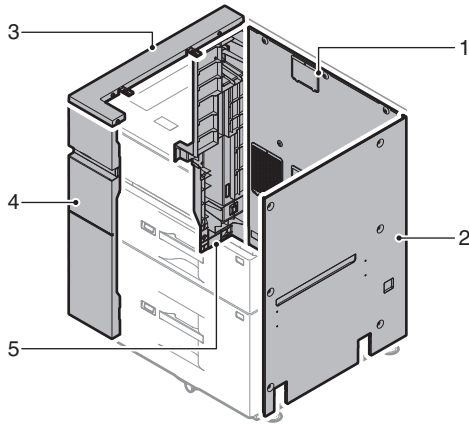


# [6] DISASSEMBLY AND ASSEMBLY

## 1. Each unit disassembly

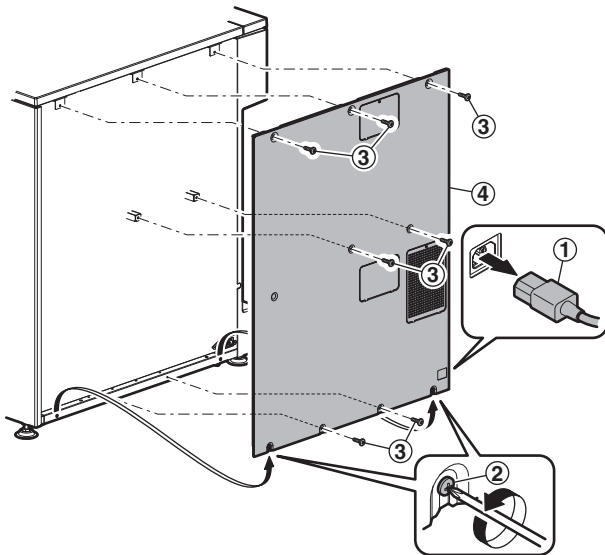
### A. Exterior section

No.	Unit name
1	Rear cabinet
2	Right cabinet
3	Upper cabinet left
4	Left front cabinet
5	Left rear cabinet



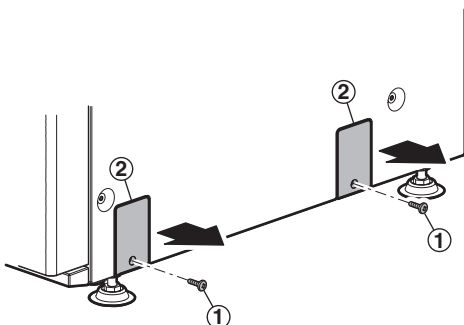
#### (1) Rear cabinet

- 1) Disconnect the power cord. Loosen the screws at the bottom ends. Remove the screw, and remove the rear cabinet.

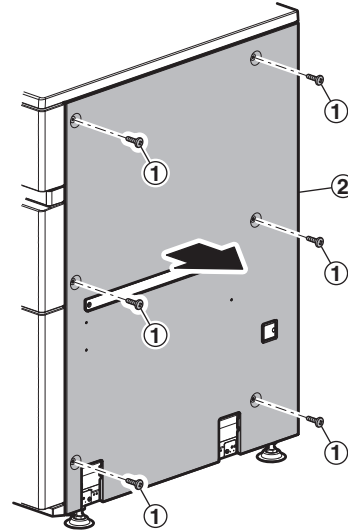


#### (2) Right cabinet

- 1) Remove the screw, and remove the right cabinet lower cover.

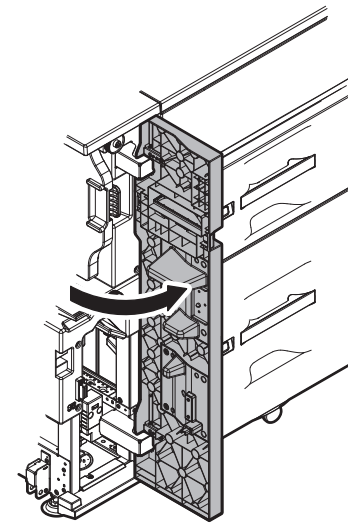


- 2) Remove the screw, and remove the right cabinet.

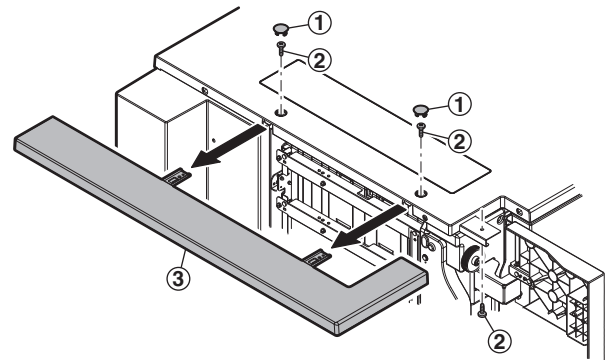


#### (3) Upper cabinet left

- 1) Open the left door.



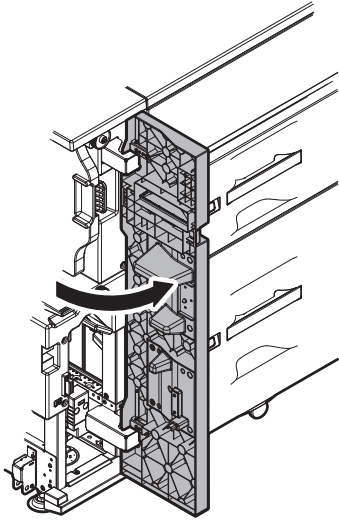
- 2) Remove the cap. Remove the screw, and remove the upper cabinet left.



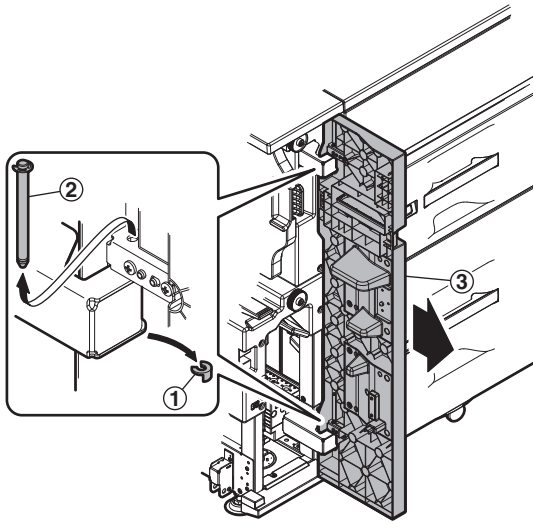


**(4) Left door**

- 1) Remove the upper cabinet left.
- 2) Open the left door.

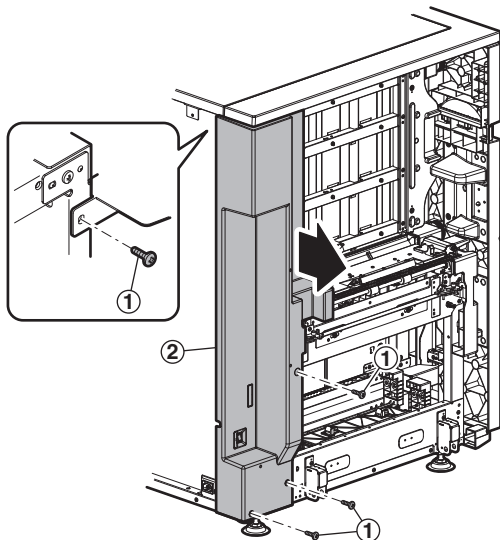


- 3) Remove the resin E-ring, and remove the shaft. Remove the left door.



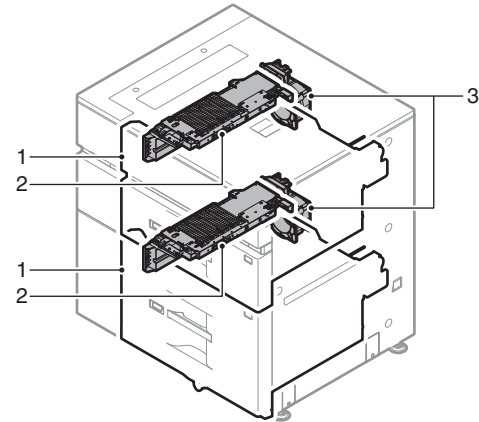
**(5) Left rear cabinet**

- 1) Remove the rear cabinet.
- 2) Remove the screw, and remove the left rear cabinet



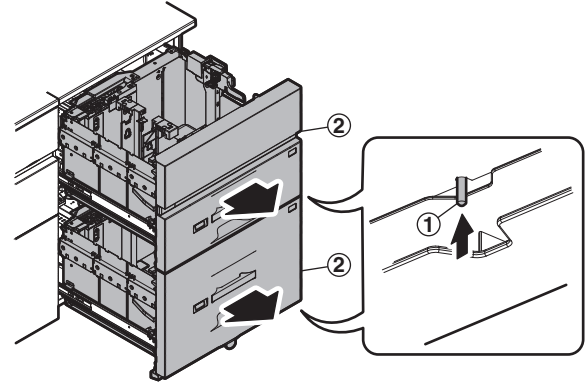
**B. Paper feed section**

No.	Unit name
1	Paper feed tray
2	Paper feed unit
3	Paper feed belt
4	Paper feed duct unit

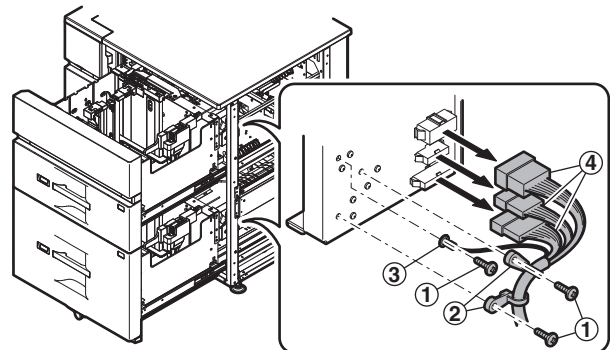


**(1) Paper feed tray**

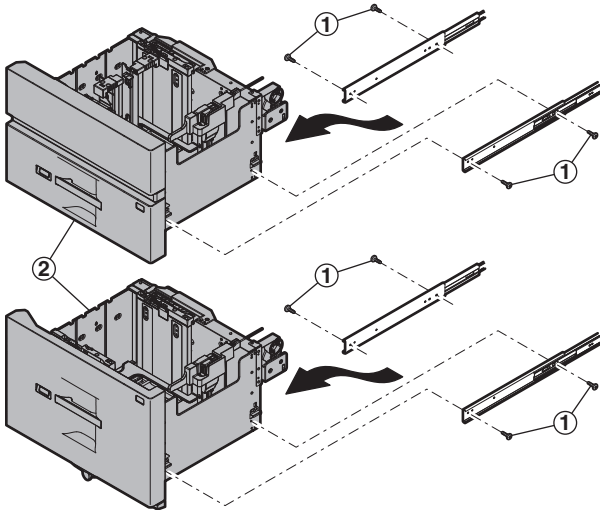
- 1) Remove the right cabinet.
- 2) While releasing lock of the paper feed tray bottom, pull out the paper feed tray.



- 3) Remove the screws at the back side of the paper feed tray, and remove the binding band and the earth wire. Disconnect the connector.

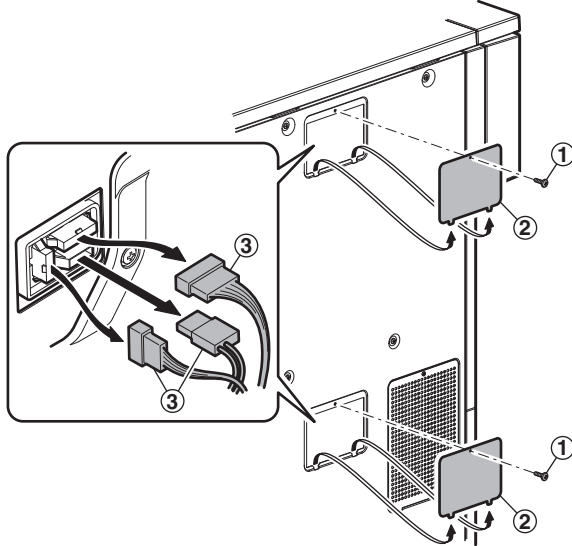


- Remove the screws at the both sides of the paper feed tray, and remove the paper feed tray from the slide rail.

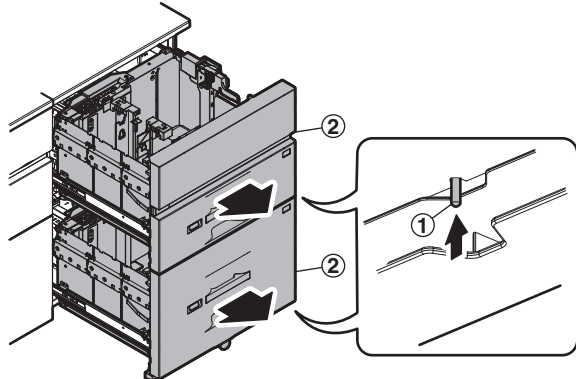


## (2) Paper feed unit

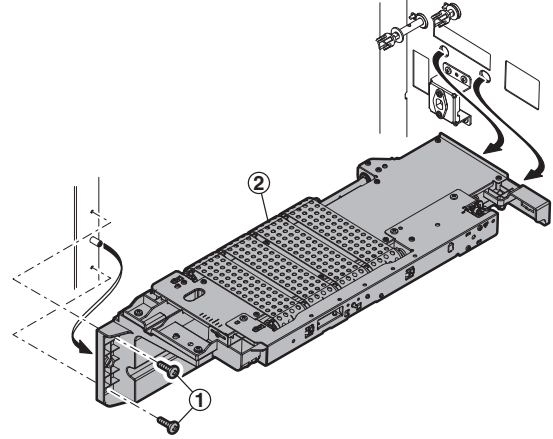
- Remove the screws of the rear cabinet, and remove the cover. Disconnect the connector from the paper feed unit.



- While releasing lock of the paper feed tray bottom, pull out the paper feed tray.

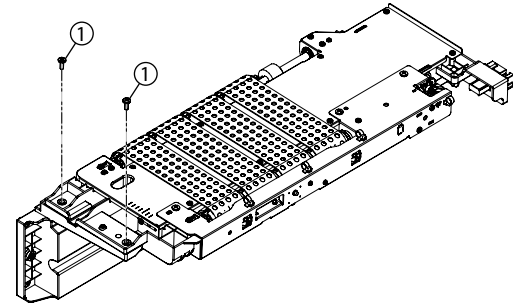


- Remove the screw, and remove the paper feed unit.

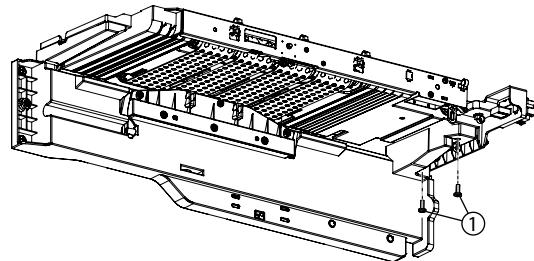


## (3) Paper feed belt

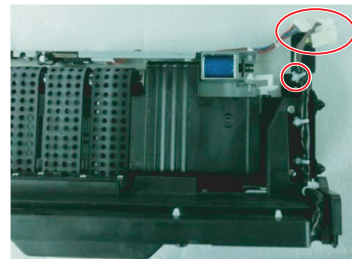
- Remove two screws from the suction duct front frame/top side of the Unit.



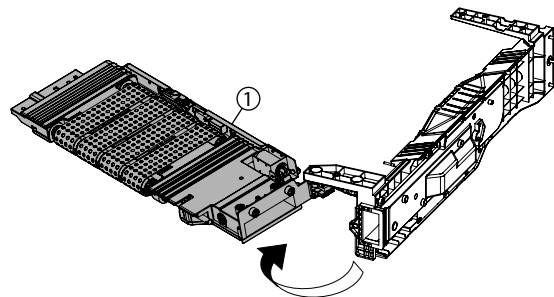
- Turn the unit over and remove two screws from the blower duct; rear side/bottom of the unit.



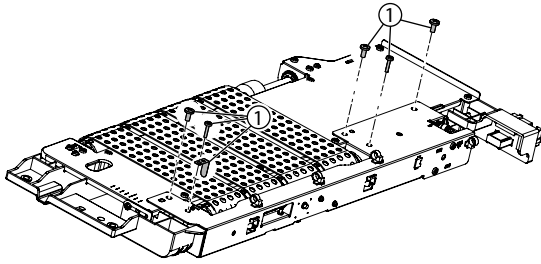
- Disconnect 3 connectors and remove the band.



- Remove the Blower duct.

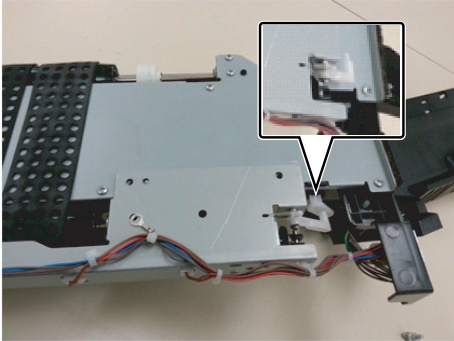


- Remove 3 screws 2 ground screws and ground plate from the mounting plate.

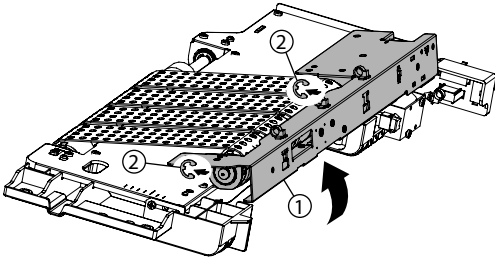


\*When installing the unit, make sure not to drop and lose the grounding plate. Put it aside for later installation.

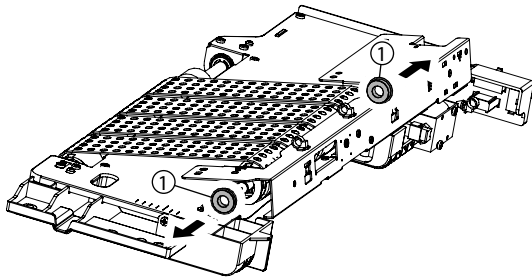
- Before moving the Follower roller shaft, make sure that you pull the solenoid arm out of the slot.



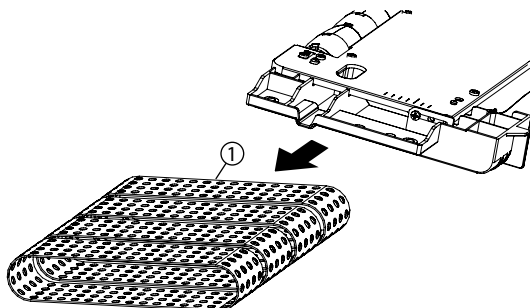
- Lift and move the follower roller shaft to the center of the unit to release the tension on the belt. And then remove the E-clips of the both side of the follower shaft..



- Remove the bearings of the both side and remove the follower roller shaft out of the slot to allow the belt to slide out.



- Slide the belts out one by one.

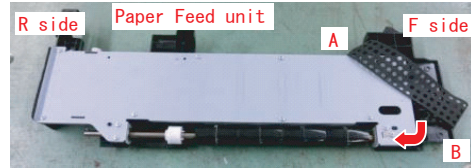


**NOTE:** Replace all four belts at the same time.

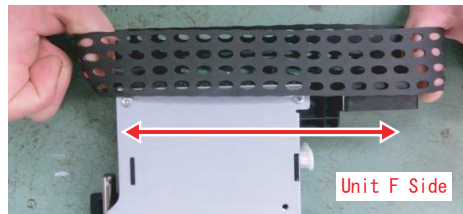
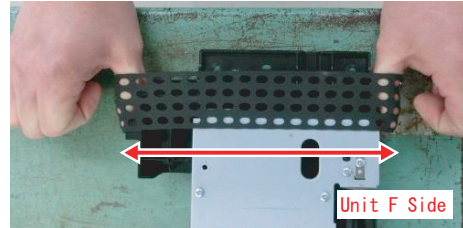
**NOTE:** Replace them with new ones one at a time without damaging the belts.

**NOTE:** Insert the belt to the position A and slide it to the allow B direction as the photo below.

**NOTE:** Never stretch it out too much to prevent the belt transformation.

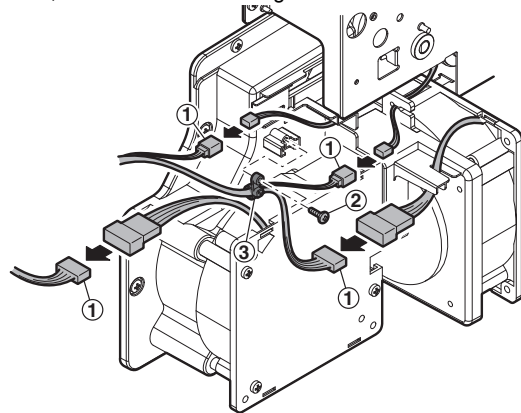


**NOTE:** Never insert the belts horizontally by force, in order not to transform the belts.

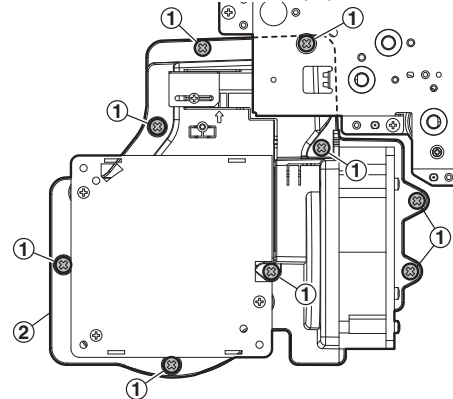


#### (4) Paper feed duct unit

- Remove the rear cabinet.
- Disconnect the connector of the fan and clutch. Remove the screw, and remove the binding band.

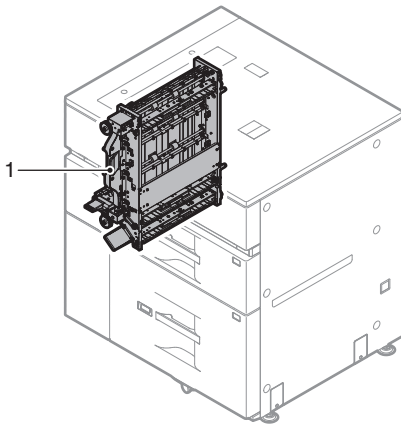


- Remove the screw, and remove the paper feed duct unit.



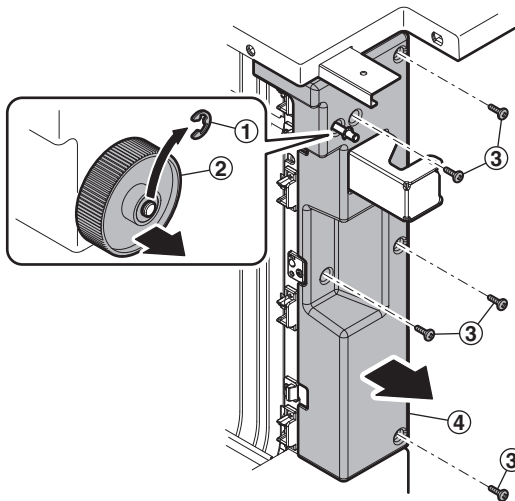
## C. Transport section

No.	Unit name
1	Vertical transport unit

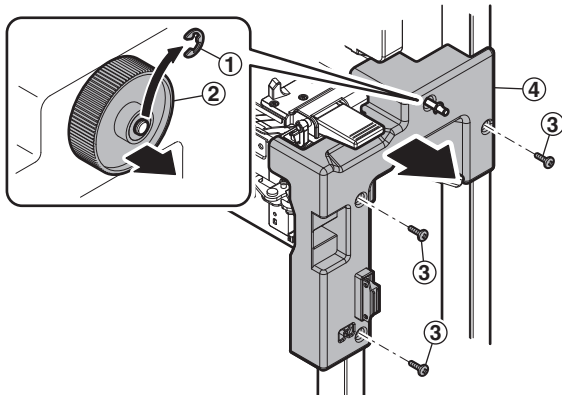


### (1) Vertical transport unit

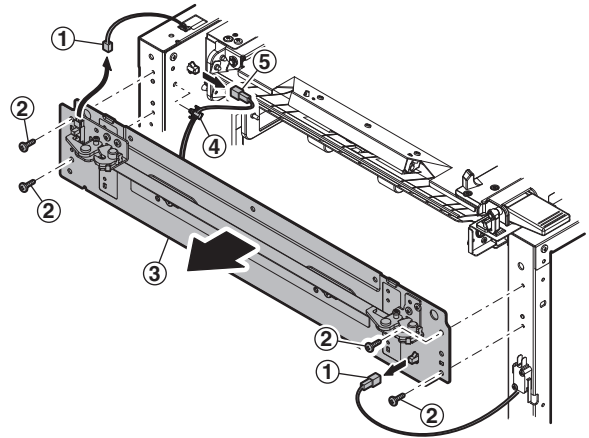
- 1) Remove the rear cabinet.
- 2) Remove the left door.
- 3) Remove the left rear cabinet.
- 4) Remove the paper feed tray.
- 5) Remove the paper feed unit.
- 6) Remove the E-ring, and remove the knob. Remove the screws and remove the inside cabinet left upper.



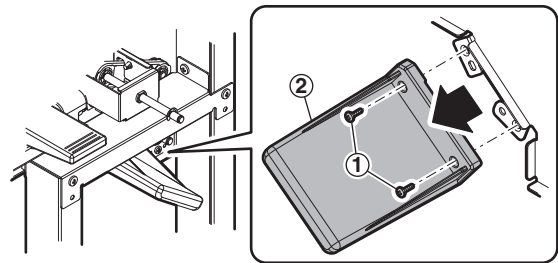
- 7) Remove the E-ring, and remove the knob. Remove the screws and remove the inside cabinet left lower.



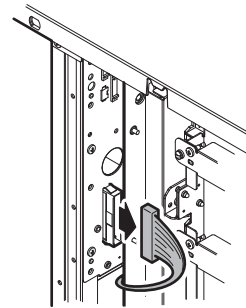
- 8) Disconnect the connector of the switch and sensor. Remove the screw, and remove the connection unit. Remove the snap band, and disconnect the connector of the connection unit.



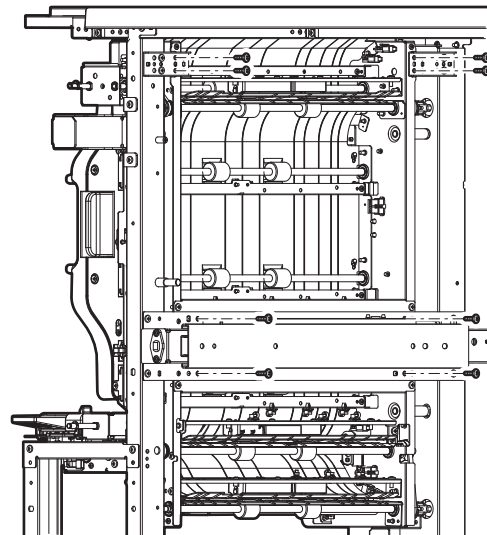
- 9) Remove the screw, and remove the handle.



- 10) Disconnect the connector of the vertical transport unit.

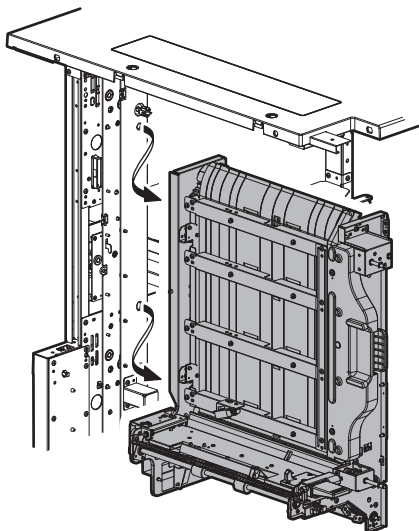


- 11) Remove the screws fixing the vertical transport unit.



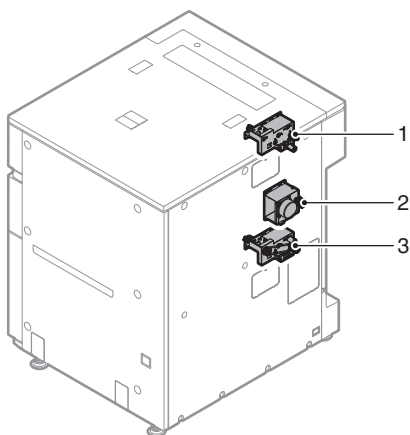


12) Remove the vertical transport unit.



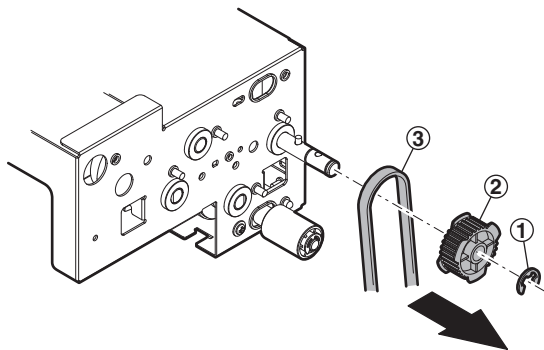
**D. Drive section**

No.	Unit name
1	Upper paper feed drive unit
2	Main drive unit
3	Lower paper feed drive unit

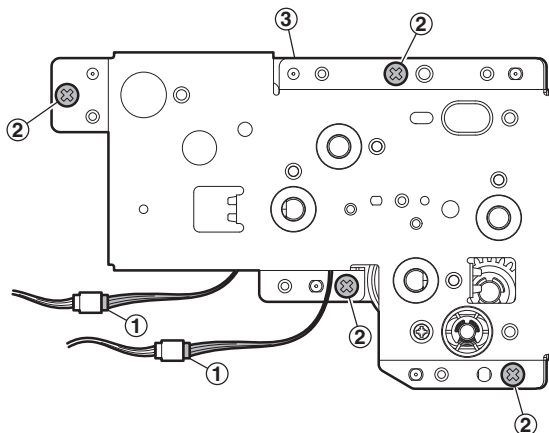


**(1) Upper paper feed drive unit**

- 1) Remove the rear cabinet.
- 2) Remove the E-ring, the pulley, and the belt.

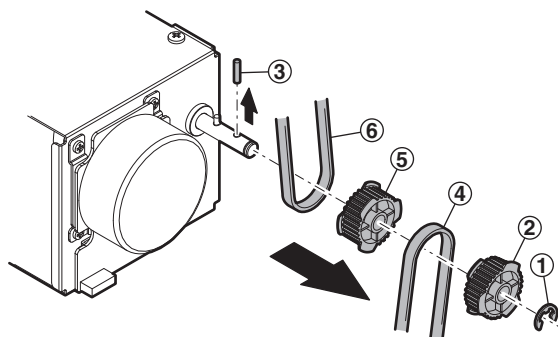


3) Disconnect the connector of the clutch. Remove the screws, and remove the upper paper feed drive unit.

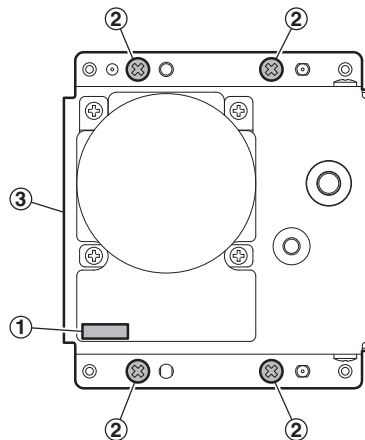


**(2) Main drive unit**

- 1) Remove the rear cabinet.
- 2) Remove the E-ring, the pulley, the parallel pin, and the belt.

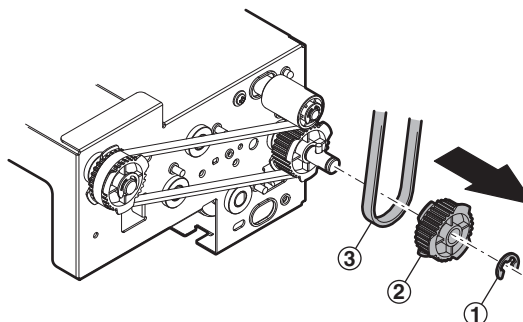


3) Disconnect the connector of the motor. Remove the screw, and remove the main drive unit.

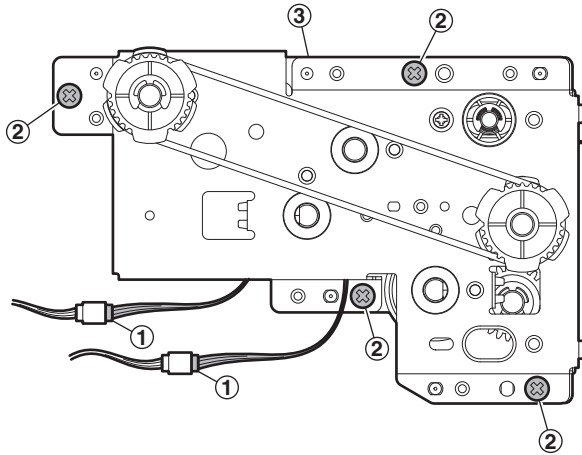


**(3) Lower paper feed drive unit**

- 1) Remove the rear cabinet.
- 2) Remove the E-ring, the pulley, and the belt.

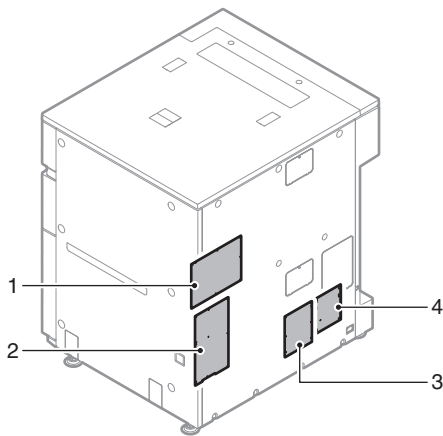


- 3) Disconnect the connector of the clutch. Remove the screws, and remove the lower paper feed drive unit.



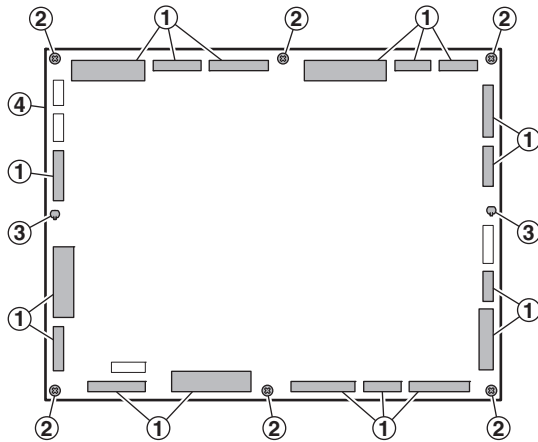
### E. PWB section

No.	Unit name
1	Main PWB
2	DC power PWB
3	Heater relay PWB
4	AC PWB



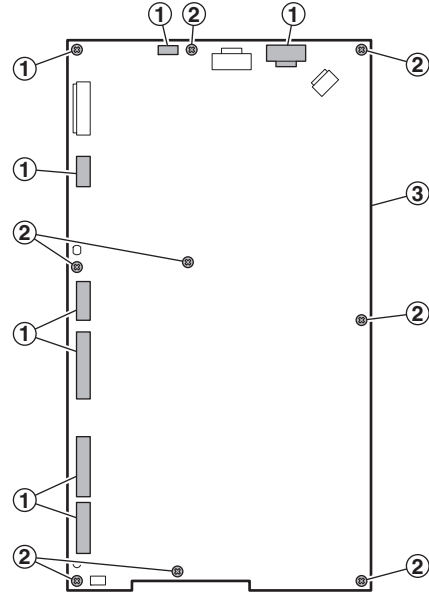
#### (1) Main PWB

- 1) Disconnect the connector from the main PWB. Remove the screw and the supporter, and remove the main PWB.



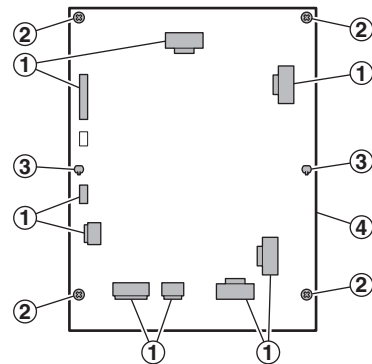
#### (2) DC power PWB

- 1) Disconnect the connector from the DC power PWB. Remove the screw, and remove the DC power PWB.



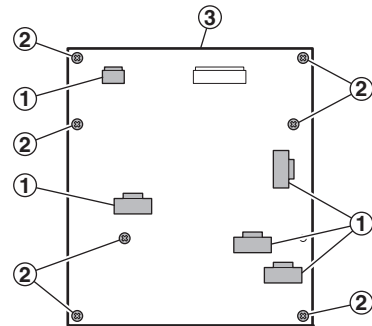
#### (3) Heater relay PWB

- 1) Disconnect the connector from the heater relay PWB. Remove the screw and the supporter, and remove the heater relay PWB.



#### (4) AC PWB

- 1) Disconnect the connector from the AC PWB. Remove the screw, and remove the AC PWB.



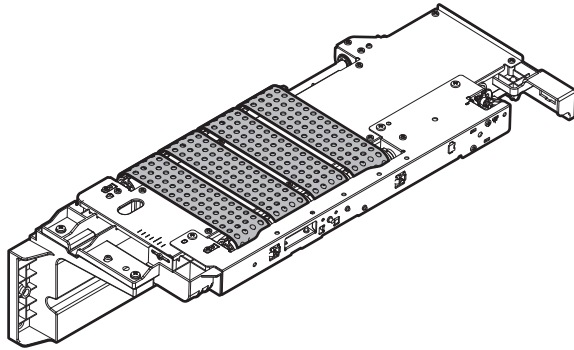
## 2. Maintenance

### A. Paper feed section

#### (1) Paper feed unit

##### a. Paper feed belt

- 1) Clean the paper feed belt.

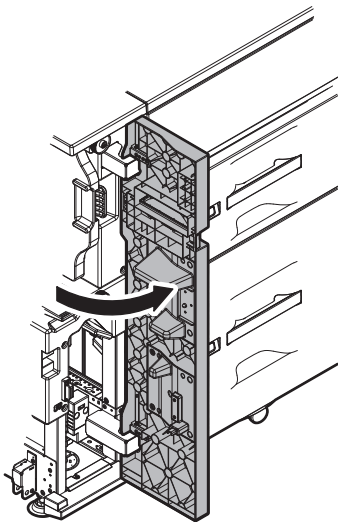


### B. Transport section

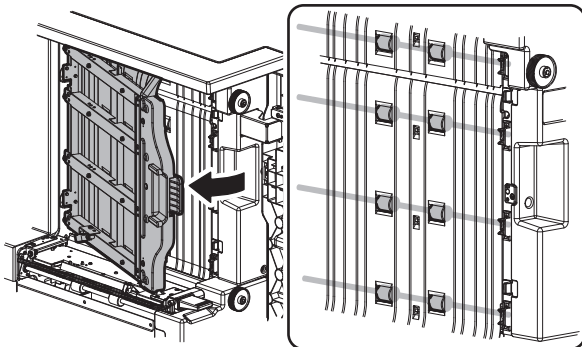
#### (1) Vertical transport unit

##### a. Transport roller 3, Transport roller 4, Transport roller 5, Transport roller 6

- 1) Open the left door.

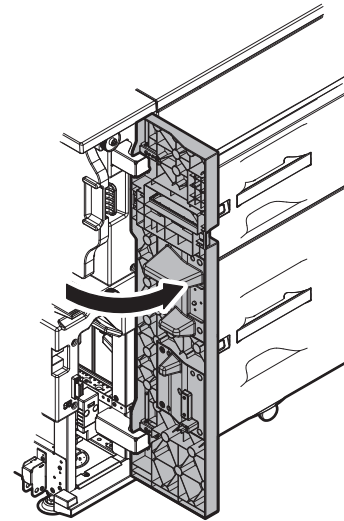


- 2) Open the paper guide.  
Clean the transport roller 3, the transport roller 4, the transport roller 5 and the transport roller 6.

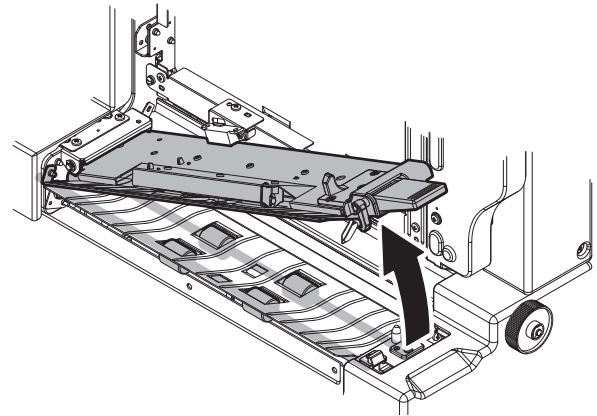


##### b. Transport roller 7, Transport roller 8

- 1) Open the left door.

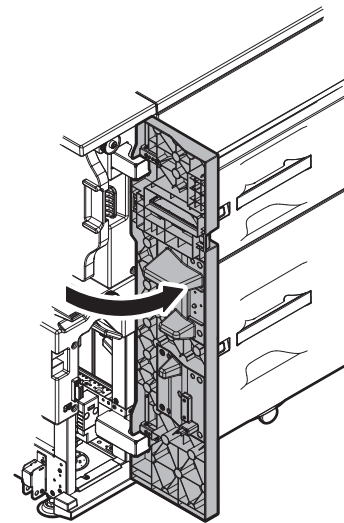


- 2) Open the paper guide.  
Clean the transport roller 7 and the transport roller 8.

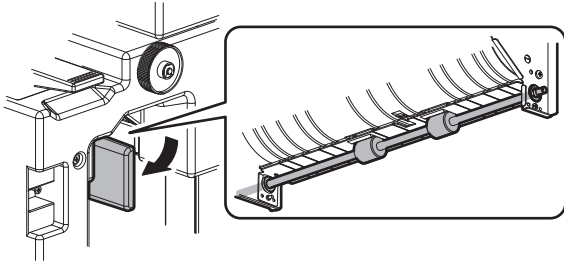


##### c. Transport roller 2

- 1) Open the left door.

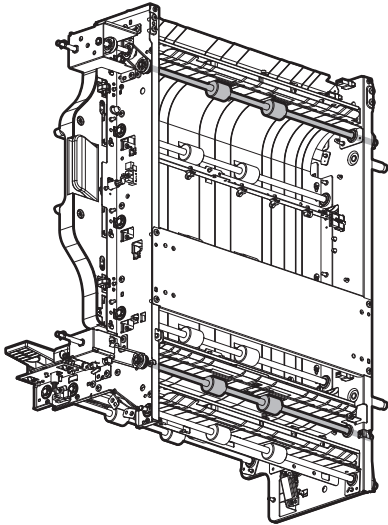


- 2) Open the paper guide.  
Clean the transport roller 2.



**d. Transport roller 1, Transport roller 9**

- 1) Clean the transport roller 1 and the transport roller 9.





## [7] ADJUSTMENT

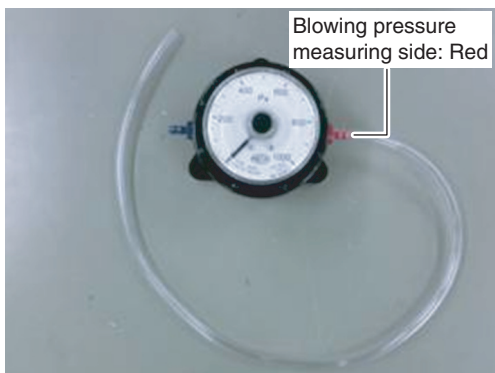
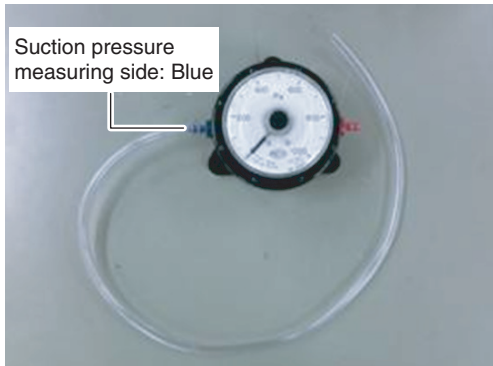
The following service parts are needed to be adjust.

- Air pressure meter LCT: UKOG-0342FCZZ
- Tube for air pressure meter LCT: UKOG-0343FCZZ

### 1. Paper feed section adjustments

Check to confirm that the pointer of the pressure display section of the air pressure meter is at "0" (Pa).

If not, turn the correction knob to set at "0" (Pa).



The table below shows the specified ranges at the measuring points of air pressure.

	LCT cassette 1		LCT cassette 2	
Suction duct <sup>*1</sup>	A	130 - 230	C	130 - 230
Blowing duct	B	310 - 410	D	310 - 410
Simulation No.	Sim4-3		Sim4-3	

Unit (Pa)

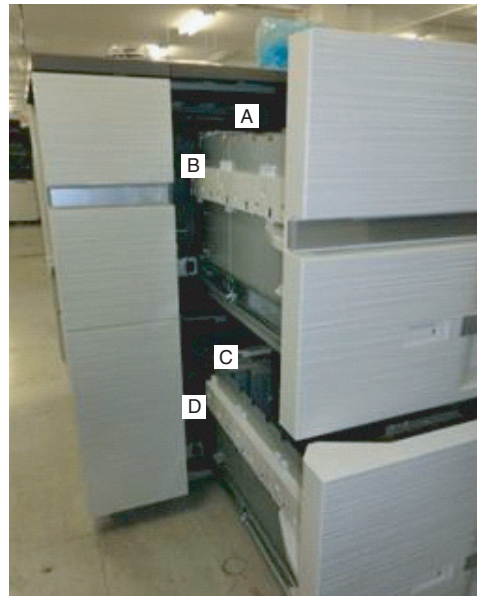
\*1 : The air pressure of the suction duct must be measures with paper attached to the paper feed belt.

When the measured value of the air pressure is outside the specified range, check the following items.

- Does the blower fan rotate?
- Are the valves opened and closed smoothly?
- Is the connector to the rear frame connected securely?
- Is the solenoid installed to the proper position? (Does it operate smoothly?)
- Are the duct body, the suction duct and the blowing duct not broken?
- Are the duct body, the suction duct, the blowing duct, the blower fan, and the duct joint tightened by screws firmly?
- Is there no air leak in the sound-muffling duct, between the blower fan, and in the duct joint?

#### Measuring method

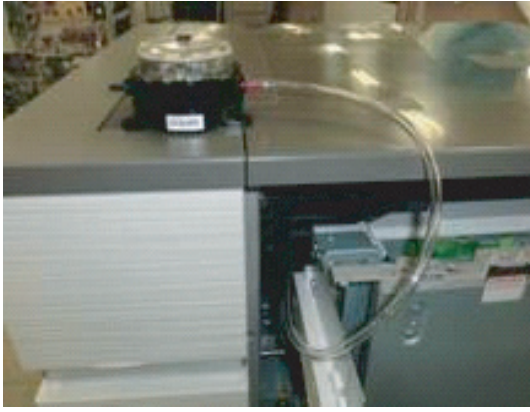
- 1) With the LCT left front door open, turn ON the door SW.
- 2) Pull out the LCT cassette.
- 3) Put standard paper (60 - 80g paper) of A4/LT in landscape to the LCT cassette, and close the cassette.
- 4) Check to confirm that the paper feed table reaches the paper feed point, and enter the simulation shown below.  
Upper stage check: Select "L1CHK101" of Sim4-3.  
Lower stage check: Select "L1CHK201" of Sim4-3.  
Overall



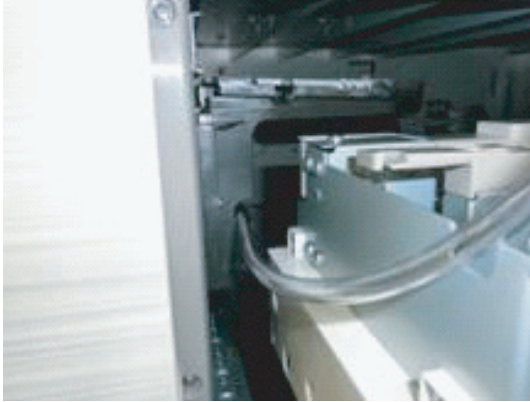
Suction side



Blowing side

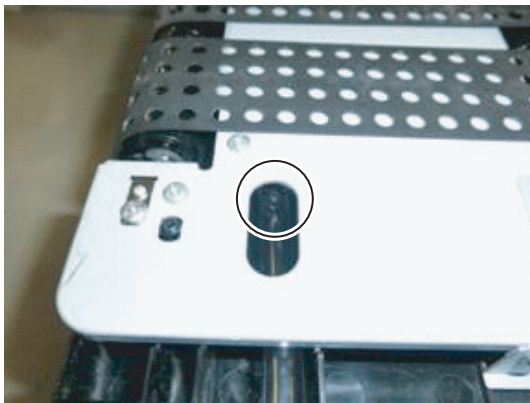


Blowing side



- 5) Insert a tube into the measuring point to measure. (For an actual measuring, attach the toll to the machine.) Check to confirm that the tube is securely inserted, and then measure.

Suction side



- 6) When the air pressure is in the specified range, cancel the program with "EXECUTE."
- 7) When the air pressure is outside the specified range, adjust in the following procedures.

When the values of "B VACUUM FAN DUTY(PLAIN-M)" and "T BLOWER FAN DUTY (PLAIN-M)" in Sim4-11 are changed, they are reflected to the measured value of the above Sim4-3.

By increasing the vacuum fan duty and the blower fan duty values in the simulation, the suction pressure is increased.

(The vacuum fan duty and the blower fan duty values must be changed to the same value. Example: When B is 60, make T 60.) Since the blowing pressure is also increased, be sure to check the blowing pressure after adjustment of the suction pressure.

By decreasing the vacuum fan duty and the blower fan duty values in the simulation, the suction pressure is decreased.

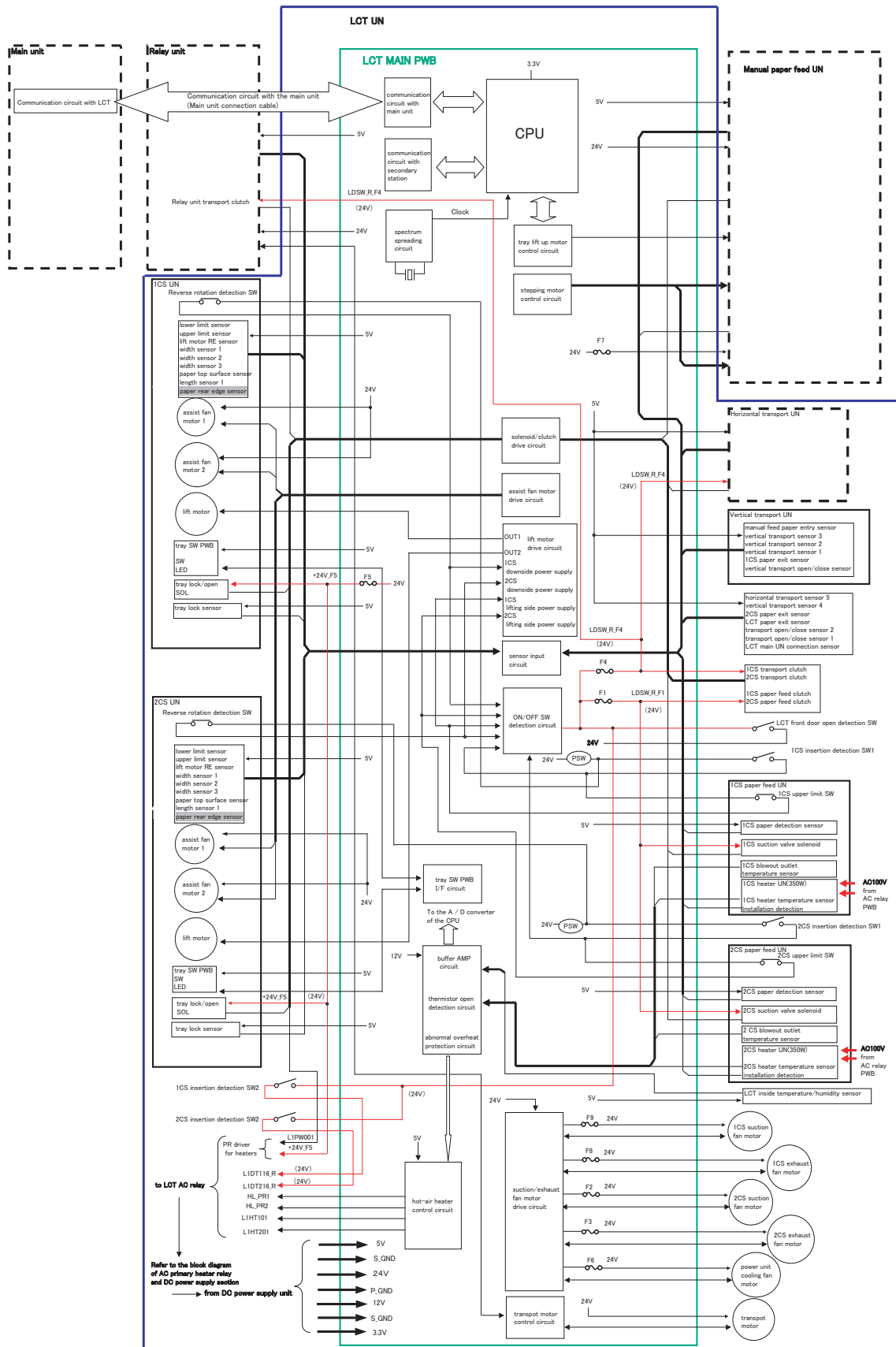
(The vacuum fan duty and the blower fan duty values must be changed to the same value. Example: When B is 40, make T 40.) Since the blowing pressure is also decreased, be sure to check the blowing pressure after adjustment of the suction pressure.

**NOTE:** Though the duty setting in Sim4-11 can be changed according to the size and the paper type, it is not reflected to the measured value of the above Sim4-3. Note that carefully.

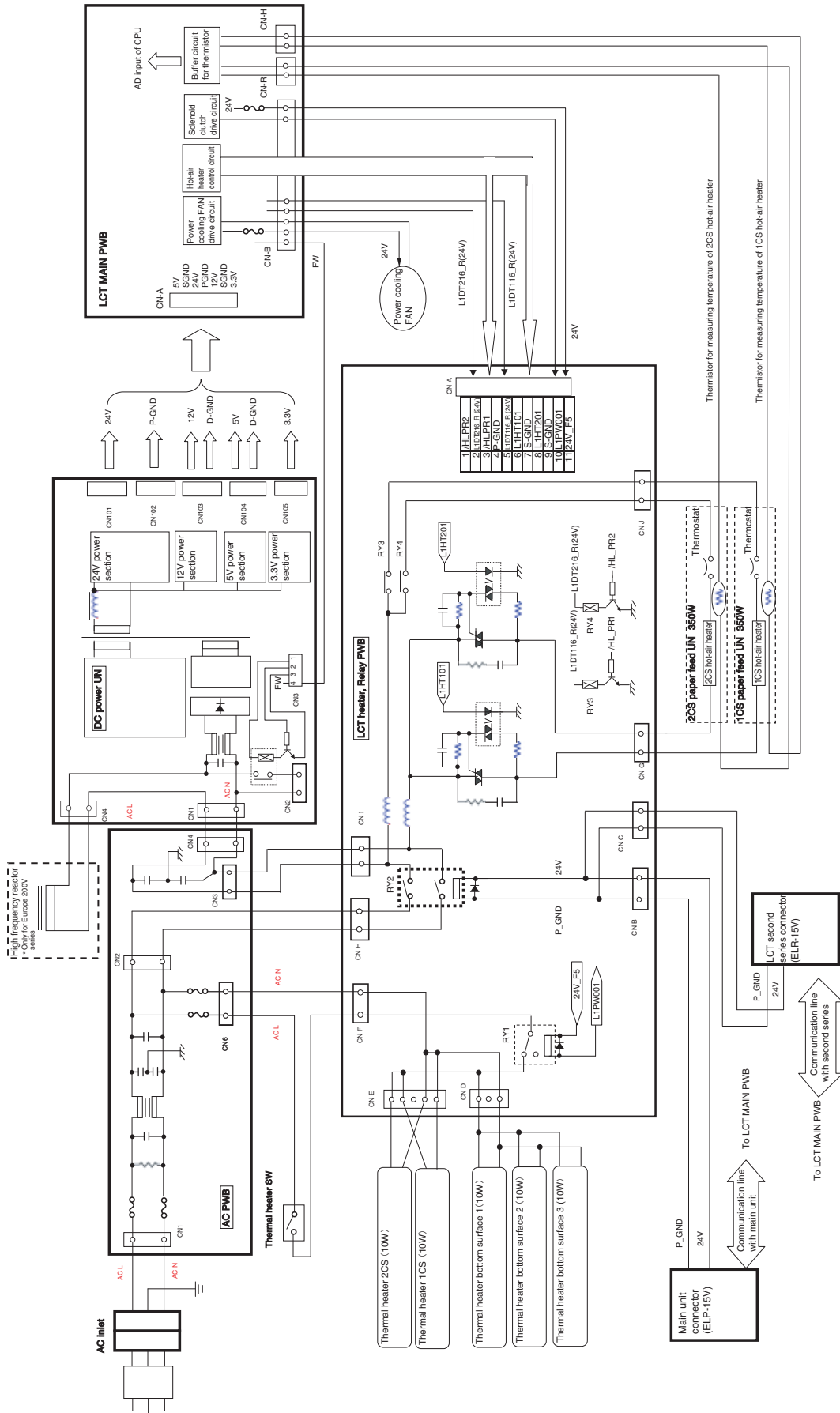
# [8] ELECTRICAL SECTION

## 1. Block diagram

### A. Overall

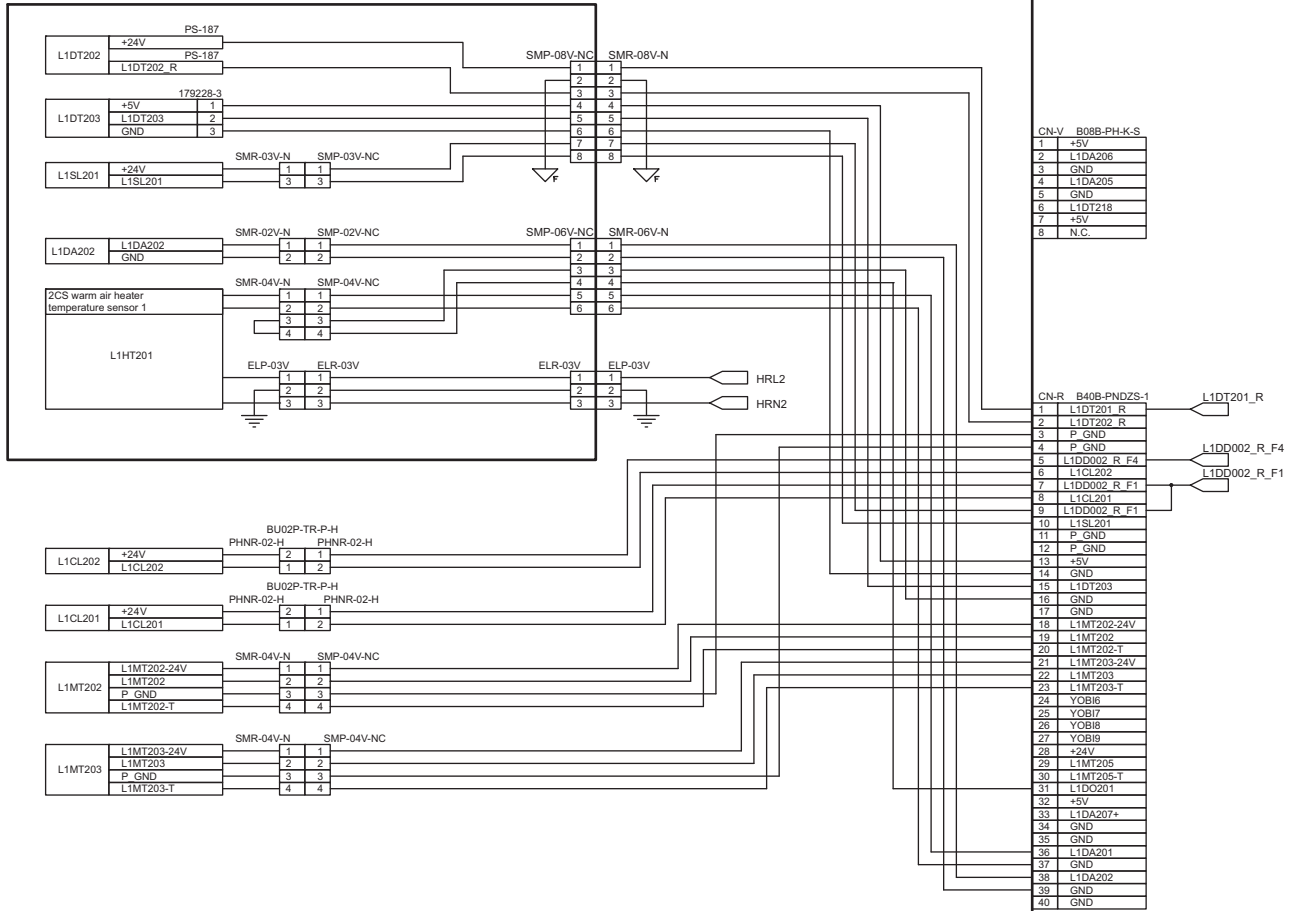


## B. Power section

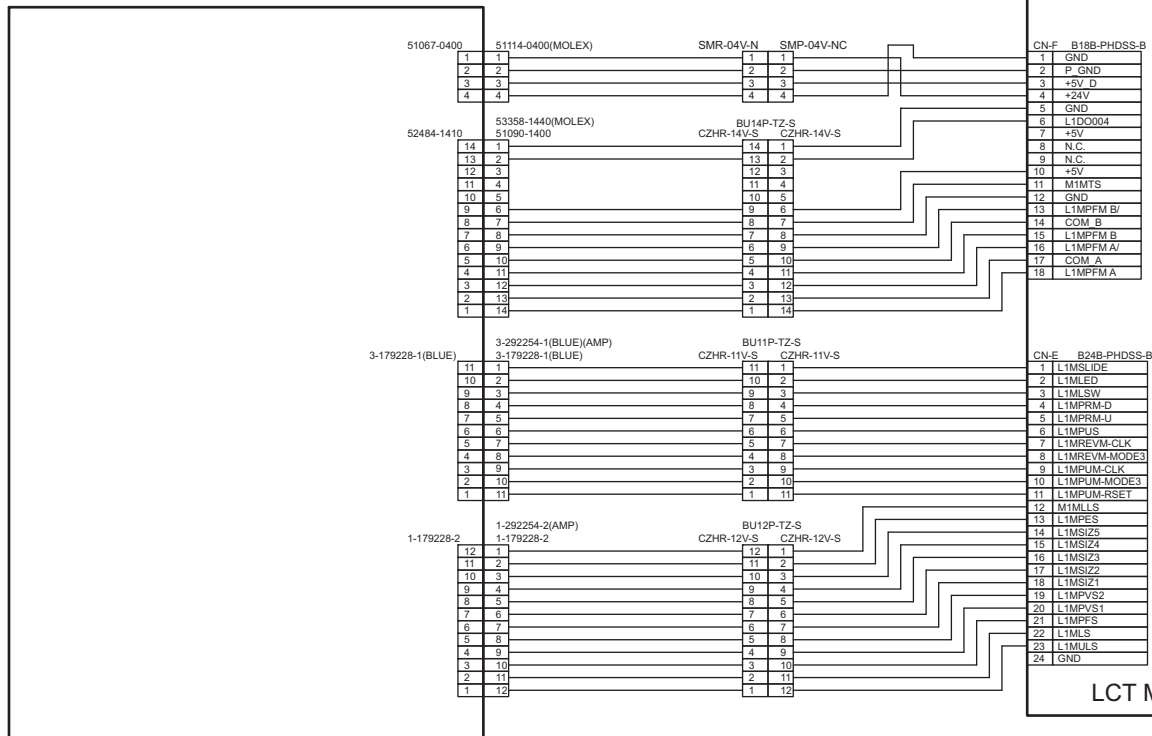


## 2. Actual wiring diagram

### 2CS PAPER FEED UN

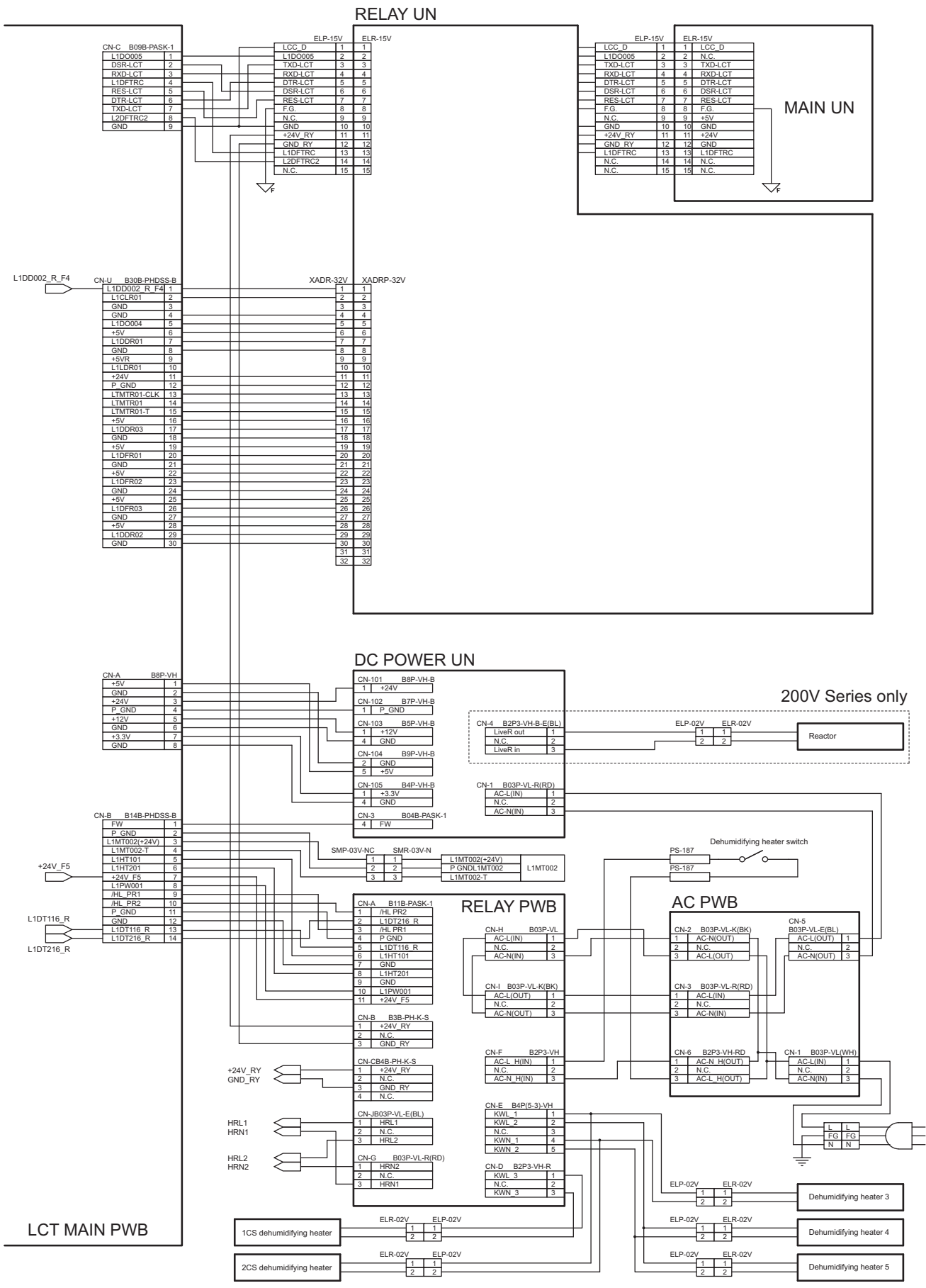


### MULTI PAPER FEED UN



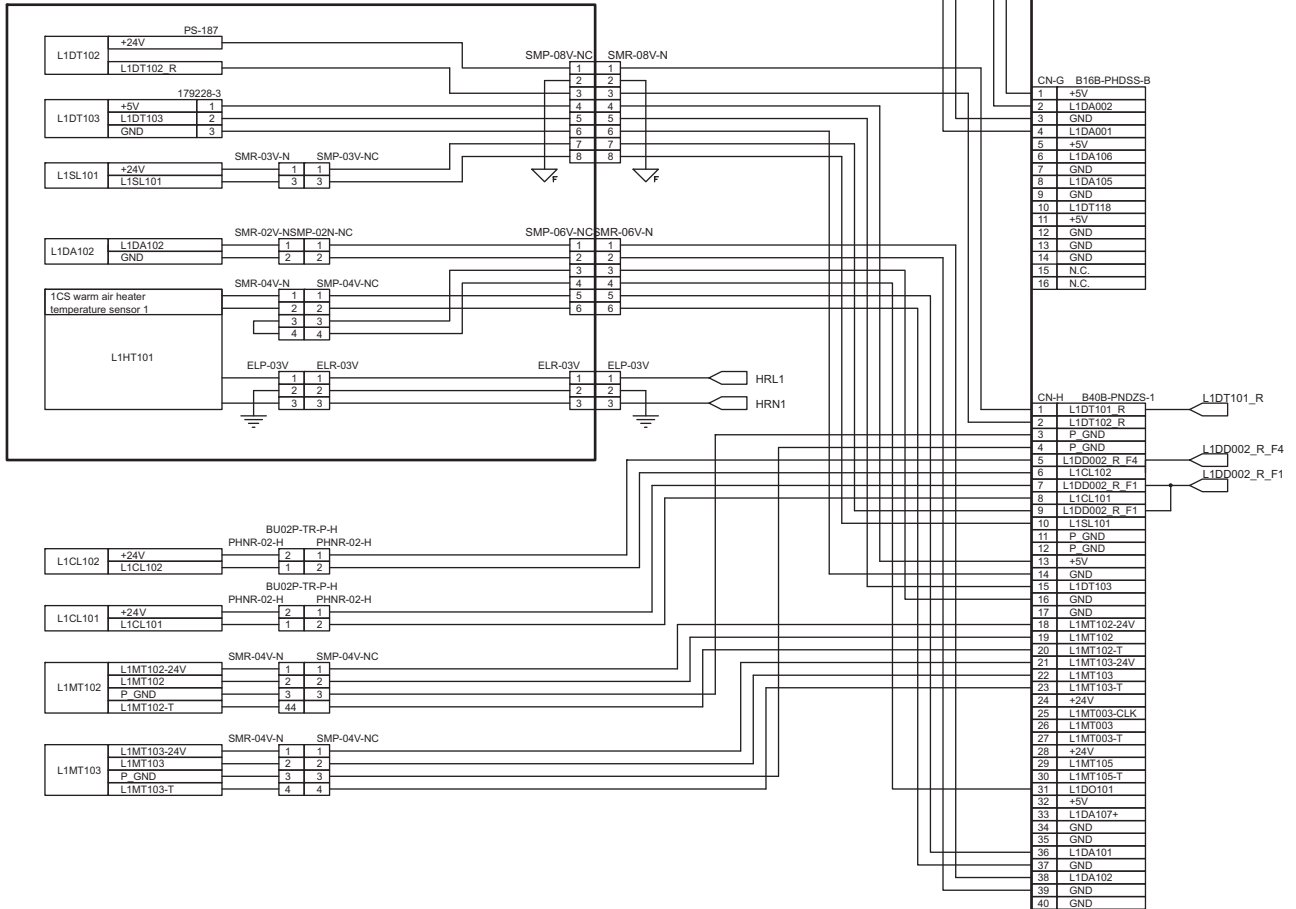
LCT MAIN PWB



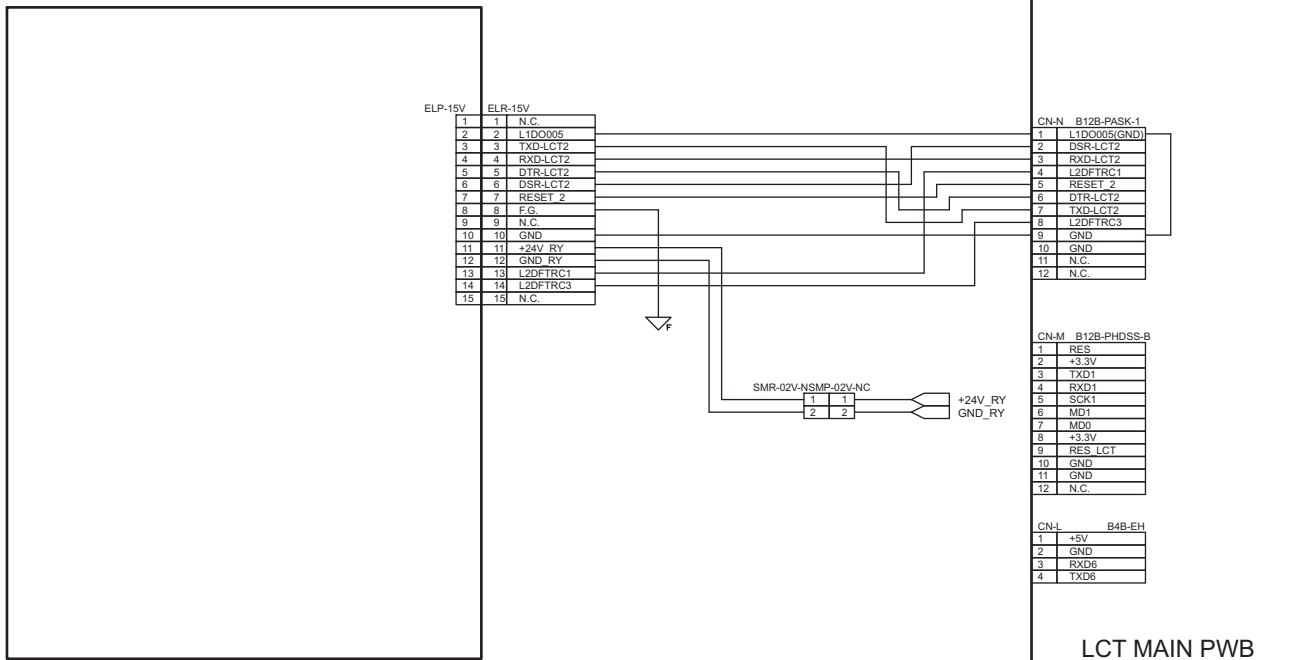


LCT humidity sensor		PHR-4
L1DA001	+5V	1
L1DA002	L1DA002	2
L1DA002	GND	3
L1DA001	L1DA001	4

### 1CS PAPER FEED UN

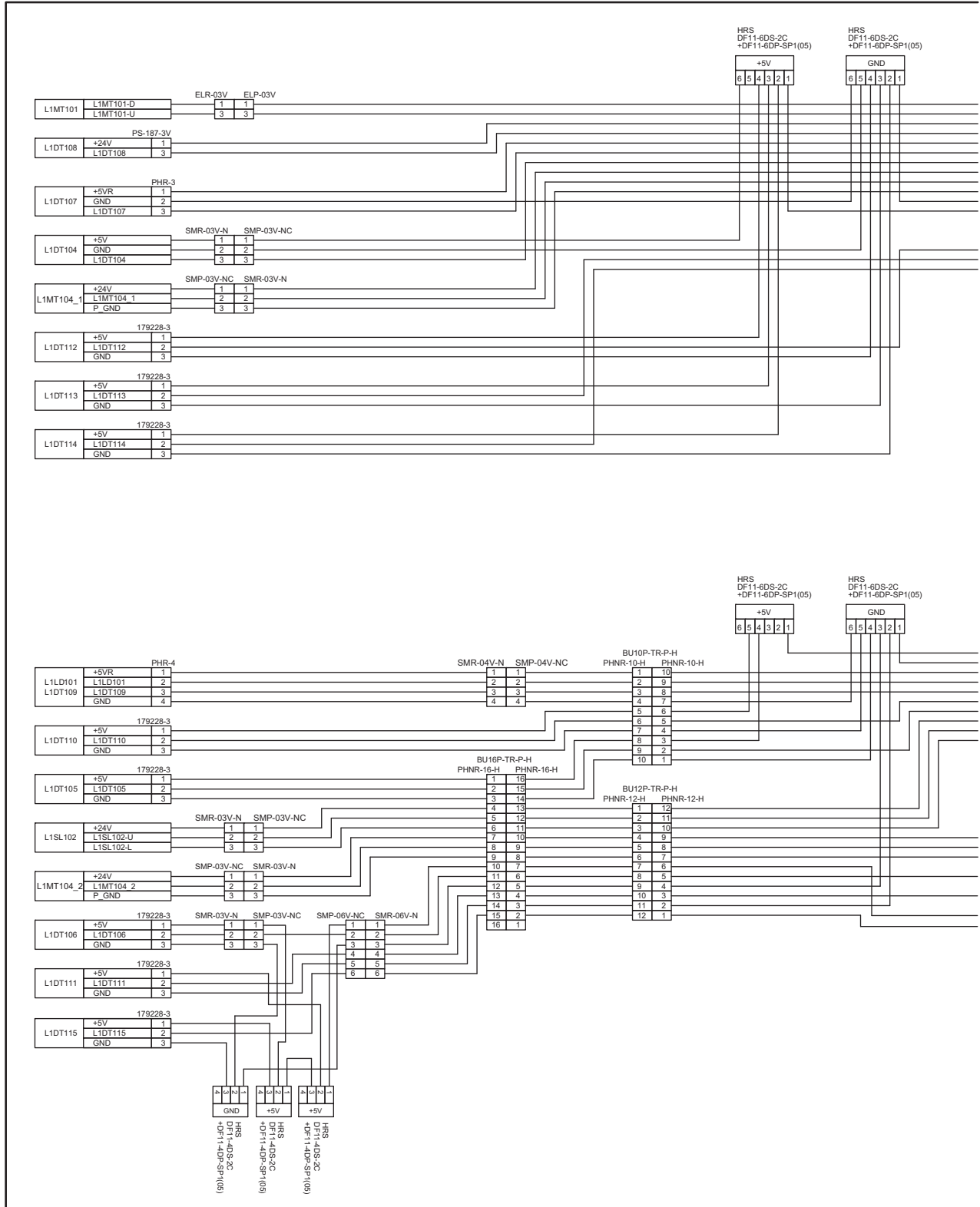


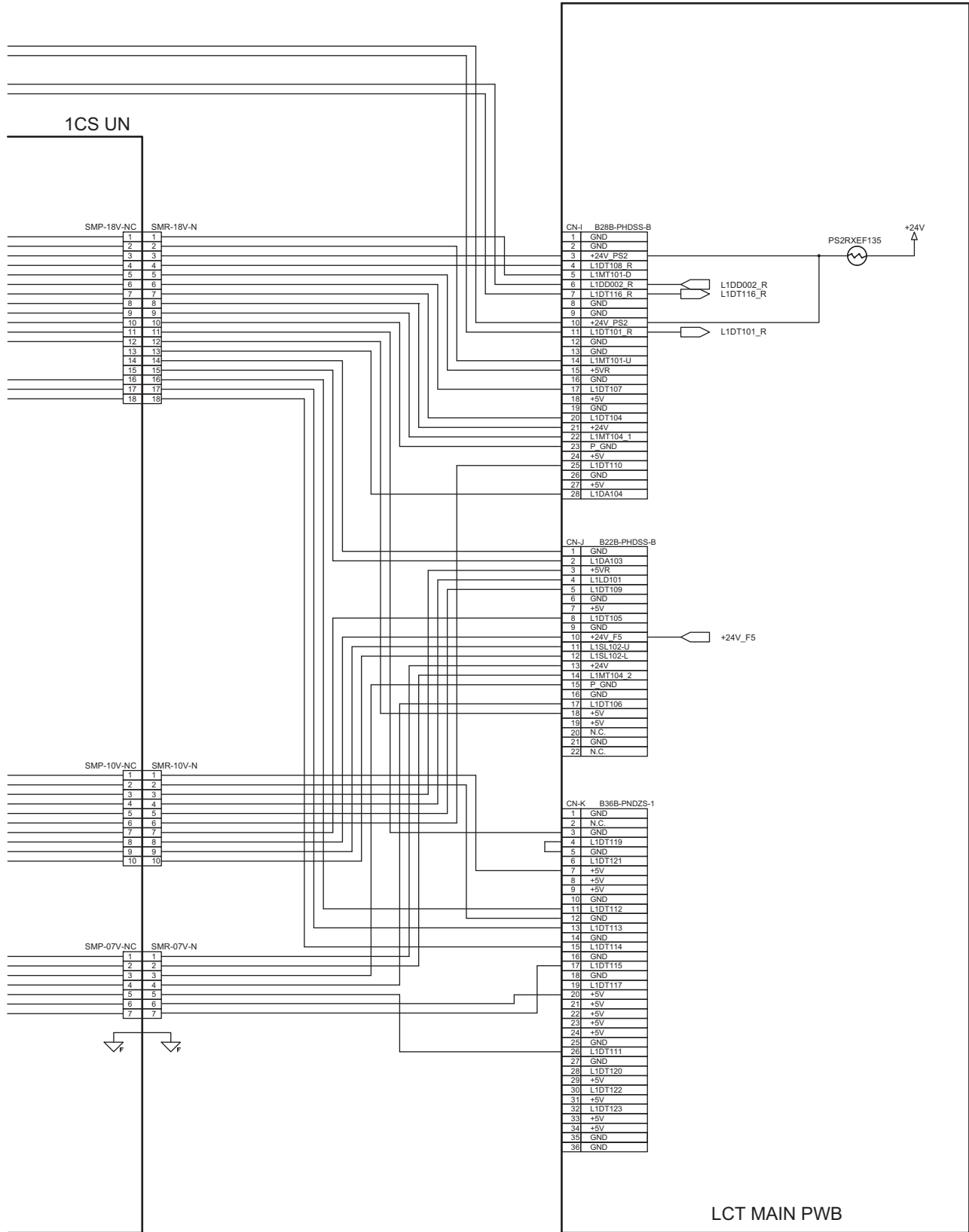
### 2 connection LCT

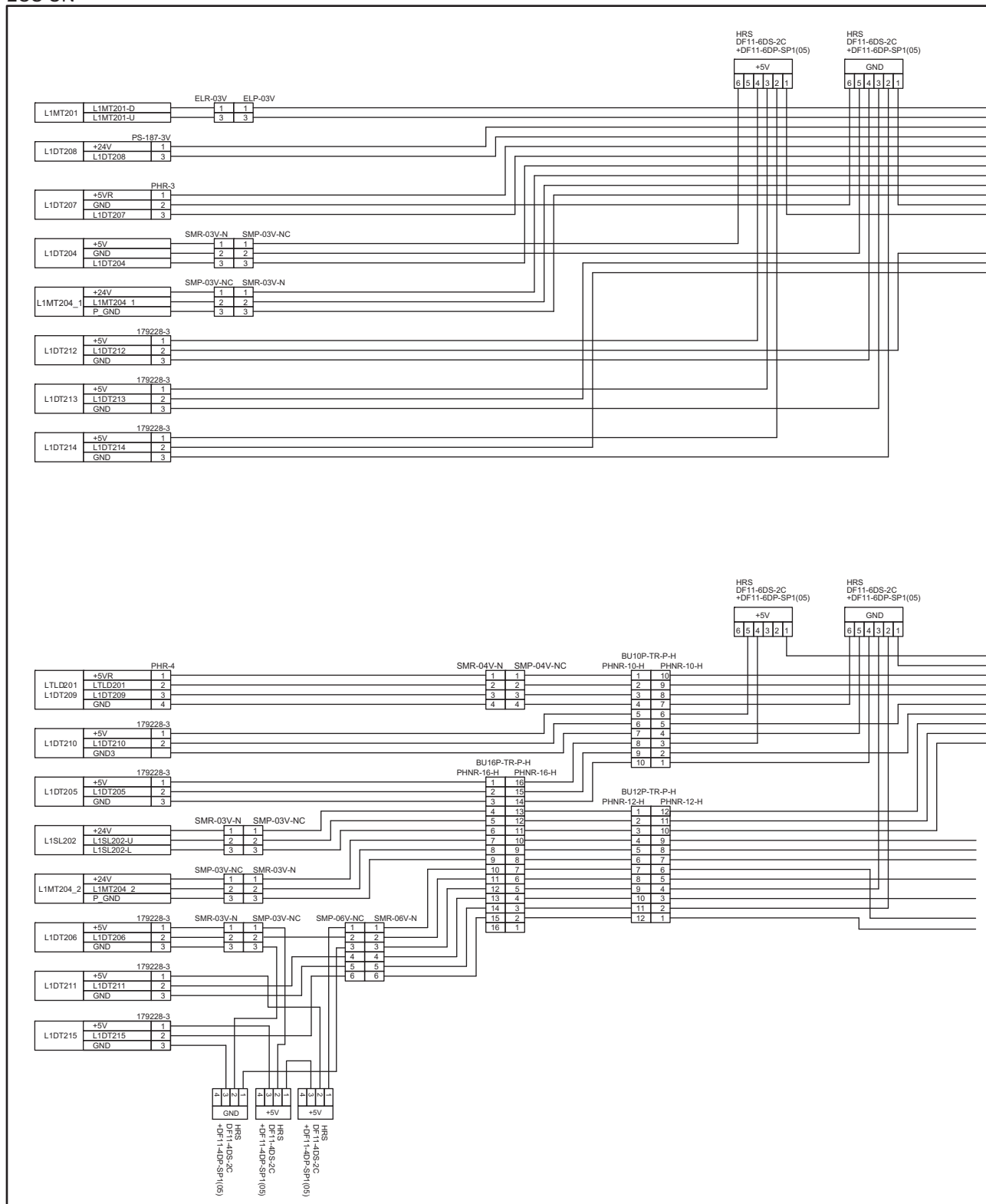


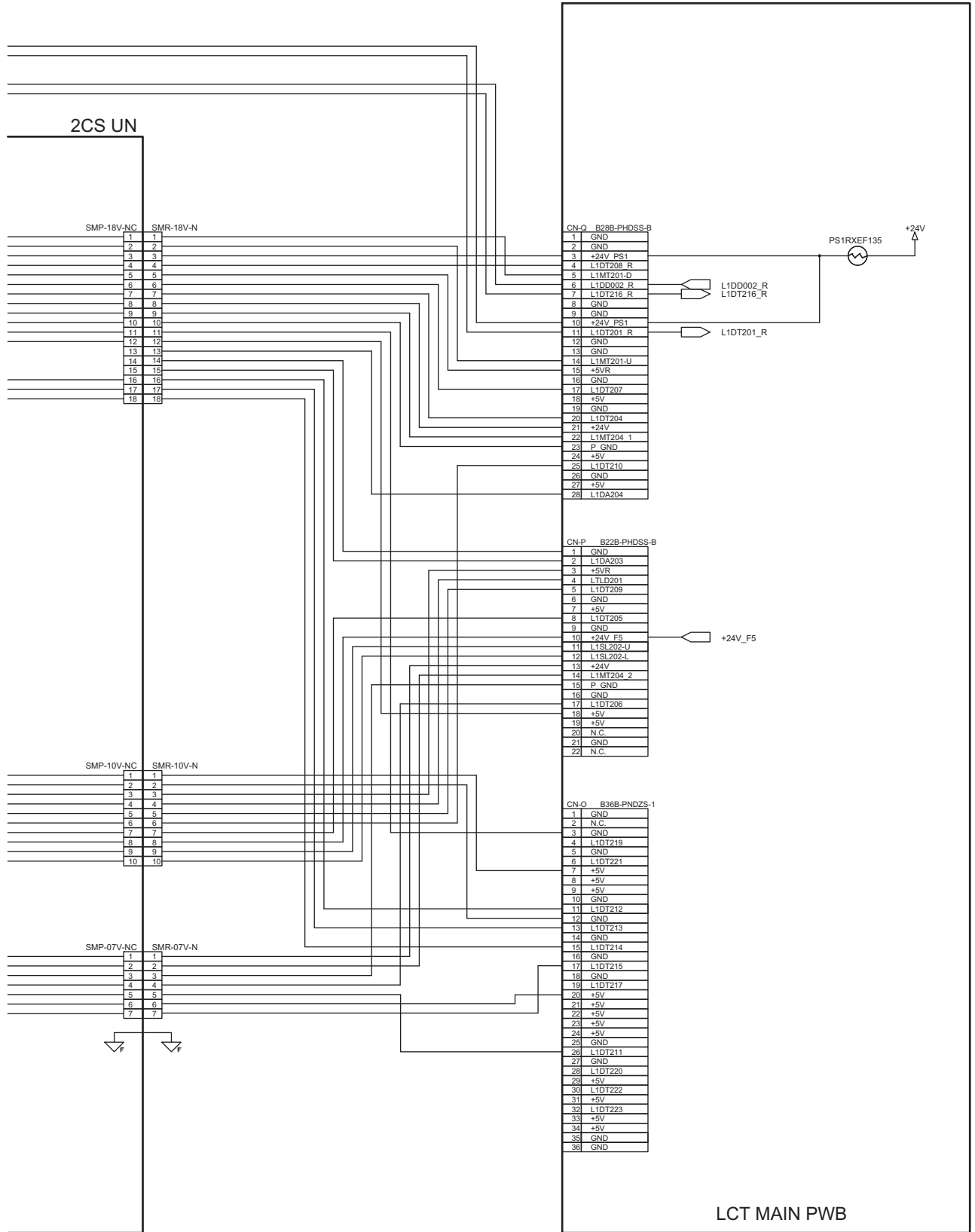








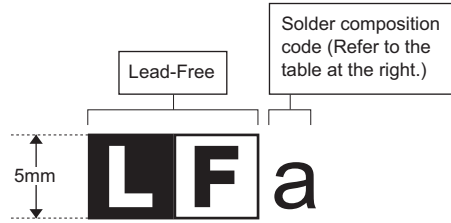




# LEAD-FREE SOLDER

The PWB's of this model employs lead-free solder. The "LF" marks indicated on the PWB's and the Service Manual mean "Lead-Free" solder. The alphabet following the LF mark shows the kind of lead-free solder.

**Example:**



<Solder composition code of lead-free solder>

Solder composition	Solder composition code
Sn-Ag-Cu	a
Sn-Ag-Bi Sn-Ag-Bi-Cu	b
Sn-Zn-Bi	z
Sn-In-Ag-Bi	i
Sn-Cu-Ni	n
Sn-Ag-Sb	s
Bi-Sn-Ag-P Bi-Sn-Ag	p

**(1) NOTE FOR THE USE OF LEAD-FREE SOLDER THREAD**

When repairing a lead-free solder PWB, use lead-free solder thread.

Never use conventional lead solder thread, which may cause a breakdown or an accident.

Since the melting-point of lead-free solder thread is about 40°C higher than that of conventional lead solder thread, the use of the exclusive-use soldering iron is recommended.

**(2) NOTE FOR SOLDERING WORK**

Since the melting-point of lead-free solder is about 220°C, which is about 40°C higher than that of conventional lead solder, and its soldering capacity is inferior to conventional one, it is apt to keep the soldering iron in contact with the PWB for longer time. This may cause land separation or may exceed the heat-resistive temperature of components. Use enough care to separate the soldering iron from the PWB when completion of soldering is confirmed.

Since lead-free solder includes a greater quantity of tin, the iron tip may corrode easily. Turn ON/OFF the soldering iron power frequently.

If different-kind solder remains on the soldering iron tip, it is melted together with lead-free solder. To avoid this, clean the soldering iron tip after completion of soldering work.

If the soldering iron tip is discolored black during soldering work, clean and file the tip with steel wool or a fine filer.

### CAUTION FOR BATTERY REPLACEMENT

(Danish) ADVARSEL !  
Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.  
Udskiftning må kun ske med batteri  
af samme fabrikat og type.  
Levér det brugte batteri tilbage til leverandoren.

(English) Caution !  
Danger of explosion if battery is incorrectly replaced.  
Replace only with the same or equivalent type  
recommended by the manufacturer.

Dispose of used batteries according to manufacturer's instructions.

(Finnish) VAROITUS  
Paristo voi räjähtää, jos se on virheellisesti asennettu.  
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan  
tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden  
mukaisesti.

(French) ATTENTION  
Il y a danger d'explosion s' il y a remplacement incorrect  
de la batterie. Remplacer uniquement avec une batterie du  
même type ou d'un type équivalent recommandé par  
le constructeur.  
Mettre au rebut les batteries usagées conformément aux  
instructions du fabricant.

(Swedish) VARNING  
Explosionsfara vid felaktigt batteribyte.  
Använd samma batterityp eller en ekvivalent  
typ som rekommenderas av apparattillverkaren.  
Kassera använt batteri enligt fabrikantens  
instruktion.

(German) Achtung  
Explosionsgefahr bei Verwendung inkorrekt  
er Batterien.  
Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder  
vom Hersteller empfohlene Batterien verwendet werden.  
Entsorgung der gebrauchten Batterien nur nach den vom  
Hersteller angegebenen Anweisungen.

### CAUTION FOR BATTERY DISPOSAL

(For USA, CANADA)

"BATTERY DISPOSAL"  
THIS PRODUCT CONTAINS A LITHIUM PRIMARY  
(MANGANESE DIOXIDE) MEMORY BACK-UP BATTERY  
THAT MUST BE DISPOSED OF PROPERLY. REMOVE THE  
BATTERY FROM THE PRODUCT AND CONTACT YOUR  
LOCAL ENVIRONMENTAL AGENCIES FOR INFORMATION  
ON RECYCLING AND DISPOSAL OPTIONS.

"TRAITEMENT DES PILES USAGÉES"  
CE PRODUIT CONTIENT UNE PILE DE SAUVEGARDE DE  
MÉMOIRE LITHIUM PRIMAIRE (DIOXYDE DE MANGANÈSE)  
QUI DOIT ÊTRE TRAITÉE CORRECTEMENT. ENLEVEZ LA  
PILE DU PRODUIT ET PRENEZ CONTACT AVEC VOTRE  
AGENCE ENVIRONNEMENTALE LOCALE POUR DES  
INFORMATIONS SUR LES MÉTHODES DE RECYCLAGE ET  
DE TRAITEMENT.

