SECTION 13

FT4060 / FT4030
ELECTRICAL DATA

13. [illegible] (FT4060/FT4030) ELECTRICAL [illegible]

13-1. [illegible] ..... 13-[illegible]

13-2. [illegible] ..... 13-[illegible]

13-3. [illegible] ..... 13-[illegible]

13-4. Schematic/Component Connector Layout (FT4060) ..... 13-[illegible]

13-5. [illegible] Point to Point/Timing Chart (FT4060) 13-13

13-6. [illegible] OPTICS Schematic (FT4060) 13-15

13-7. Schematic Main/Operation Control (FT4060) 13-17

13-8. Schematic/Component Connector Layout (FT4030) 13-19

13-9. Point to Point/Timing Chart (FT4030) 13-21

13-10. Schematic Main/Operation Control (FT4030) 13-23

13-11. Operation Board Pattern (FT4060/FT4030) 13-25

13-12. Main Board/OPTICS Board, Paper Feed, Toner Control Board Pattern 13-27

13-1. GLOSSARY OF TERMS

○ ... Used
× ... Not used

1. MOTORS

		4030	4060
M1	Main Drive Motor	○	○
M2	Transport Vacuum Fan Motor	○	○
M3	Inlet Cooling Fan Motor	○	○
M4	Outlet Cooling Fan Motor	○	○
M5	Paper Feed Motor	○	○
M6	Scanner Drive Motor	×	○
M7	Lens Drive Motor	×	○

2. CLUTCHES

MC1	Registration Clutch	○	○
MC2	Toner Supply Clutch	○	○
MC3	Scanner Drive Clutch	○	×

3. SOLENOIDS

SOL1	Cleaning Solenoid	○	○
SOL2	Crimp Solenoid	○	○
SOL3	Pick-off Solenoid	○	○
SOL4	Jam Solenoid	○	○
SOL5	By-pass Feed Solenoid	○	×

4. SWITCHES

		4030	4060
SW1	Main Switch	○	○
SW2	Anti-condensation Heater Switch	○	○
SW3	Development Bias Switch	○	○
RS11	Upper Paper End Switch	×	○
RS12	Lower Paper End Switch	○	○
RS13	Upper Paper Size (5 pcs)	×	○
RS14	Lower Paper Size (5 pcs)	○	○
RS15	By-pass Table Switch	○	×
RS16	Registration Switch	○	×
RS17	Toner End Switch	○	○
RS18	Toner Tank Cover Switch	○	○
RS19	Overrun Switch	○	×
RS20	Overrun Switch (Enlargement)	×	○
MS31	Overrun Switch	×	○
MS32	Front Cover Safety Switch	○	○
MS33	Jam Keep Switch	○	○
MS34	Rear Cover Safety Switch (Only 115V 60Hz Machine)	○	○

○ ... Used
× ... Not used

5. PHOTOSENSORS

	4030	4060
By-pass Feed Sensor	○	×
Paper Feed Sensor	○	○
Scanner Home Position Sensor	○	○
Lens Home Position Sensor	○	○
Pick-off Sensor	○	○
Paper Exit Sensor	○	○
Toner Collection Bottle Sensor	○	○
Toner Density Sensor	○	○

6. PCB's

			4030	4060
PCB1	:	Main PCB	○	○
PCB4	:	Optics Control PCB	×	○
PCB5	:	Operation PCB	○	○
PCB6	:	Power Supply Unit	○	○
PCB7	:	Temperature Control PCB	○	○
PCB8	:	Paper Feed Motor PCB	○	○
PCB9	:	Fusing Power Supply PCB	○	○
		Lamp Regurator	○	○
		Monitor PCB	○	○

7. THERMISTORS

		4030	4060
TH1	: Drum Heater Control	○	○
TH2	: Development Bias Control	○	○
TH3	: Hot Control	○	○

8. OTHERS

	4030	4060
Drum Heater	○	○
Anti-condensation Heater	○	○
First Quenching Lamp	○	○
Second Quenching Lamp	○	○
Erase Lamp	○	○
Exposure Lamp	○	○
Fusing Lamp	○	○
Charge Power Pack	○	○
Transfer & Separation Power Pack	○	○
Bias Power Pack	○	○
Thermofuse	○	○

13-2. CONNECTOR LIST

○ ... Used
× ... Not used

			4030	4060
CN	1	Anti-condensation Heater Switch (SW-2)	○	○
	2	Exposure Lamp	○	○
	3	Anti-condensation Heater	○	○
	4	Lamp Regurator (AC)	○	○
	5	Outlet Cooling Fan Motor (M4)	○	○
	6	Transformer — P.P.	○	○
	8	Connect to CN9	○	○
	9	Connect to CN8	○	○
	10	Lamp Cooling Fan Motor (M3)	○	○
	11	Drum Heater	○	○
	12	2nd Quenching Lamp	○	○
	13	Main Motor (M1)	○	○
	14	Fusing Unit	○	○
	15	Connect to CN78	○	○
	16	Power Supply Unit	○	○
	17	Transport Vacuum Fan Motor (M2)	○	○
	18	SADF AC Power	○	○
	21	Erase Lamp	○	○
	22	Power Supply Unit	○	○
	23	Power Supply Unit	○	○
	31	Scanner Home Position Sensor	○	○
	32	Lens Home Position Sensor	×	○
	33	Lens Drive Motor (M7)	×	○
	34	Scanner Drive Motor (M6)	×	○
	35	Scanner Drive Motor (M6)	×	○

			4030	4060
CN	36	Scanner Drive Clutch (MC3)	○	×
	37	Overrun Swich-Enlarge (RS20)	×	○
	38	Registration Switch (RS16)	○	×
	39	By-Pass Feed Sensor	○	×
	40	Overrun Switch (MS19)	○	×
	41	Paper Feed Board	○	○
	42	Upper Paper Size Switch (RS13)	×	○
	43	Upper Paper End Switch (RS11)	×	○
	44	Lower Paper Size Switch (RS14)	○	○
	45	Lower Paper End Switch (RS12)	○	○
	46	Registration Clutch (MC1)	○	○
	47	Paper Feed Sensor	○	○
	48	Crimp Solenoid (Sol. 2)	○	○
	49	By-Pass Table Switch (RS15)	○	×
	50	By-Pass Feed Solenoid (Sol. 5)	○	×
	51	Toner End Switch (RS17)	○	○
	52	Toner Supply Clutch (MC2)	○	○
	53	Toner Density Sensor	○	○
	54	Toner Tank Cover Switch (RS18)	○	○
	61	Charge P.P.	○	○
	62	Transfer & Separation P.P.	○	○
	63	Bias P.P.	○	○
	71	Pick-Off Solenoid (Sol. 3)	○	○
	72	Cleaning Solenoid (Sol. 1)	○	○
	73	Interface Board	○	○
	74	Pulse Generator	○	○
	78	Connect to CN15	○	○

○ ... Used
× ... Not used

			4030	4060
			○ ... Used	× ... Not used
CN	81	Total Counter	○	○
	82	Operation Board	○	○
	83	Key Counter	○	○
	84	Option Counter	○	○
	85	Jam Solenoid (Sol. 4)	○	○
	91	Lamp Regurator (DC)	○	○
	101	Main Board	○	○
	102	Main Board	○	○
	103	Main Board	○	○
	104	Main Board	○	○
	105	Main Board	○	○
	106	Main Board	○	○
	401	Optics Control Board	×	○
	402	Optics Control Board	×	○
	403	Optics Control Board	×	○
	501	Operation Board	○	○
	502	Operation Board	○	○
	503	Operation Board	○	×
	701	Temperature Control Board	○	○
	702	Temperature Control Board	○	○
	801	Paper Feed Board	○	○
	802	Paper Feed Board	○	○
	901	Fusing Power Supply Board	○	○
	902	Fusing Power Supply Board	○	○
	903	Fusing Power Supply Board	○	○
	911	Interface Board	○	○
	913	Interface Board	○	○

13-3. FAULT INDICATOR CHECK LIST

SERVICE CALL INDICATOR: When the Service Call Indicator lights, one of the following LED's will light up. Listed to the right of such indicator is the electrical components which can cause this condition.

INDICATOR	POSSIBLE CAUSE
Exposure	1) CN91-3 or CN91-2 level is 0V during waiting condition. # Shorted L.R. (Photocoupler is defective) # Main Board defective (CN103-B6, B9) 2) Shorted L.R. (10 sec. timer is defective) 3) Interference from other P.C.B. Boards.
Optics	1) Overrun sw. (full size or reduction) is shorted (immediately response). 2) Overrun sw. (enlarge) is opened (Enlarge mode setting is completed, then check)
Optics	3) Lens home position (CN32) is opened — Check 4.5 sec. after main sw. ON 4) Power supply unit 24V line has no output. 5) Scanner home position (CN31) is open or shorted. 6) Interference from other P.C. Boards.
Functional Drive	1) Photocoupler 2) CN74 3) CN103-B18 4) Main Board 5) Main Motor 6) CN13-1, CN16-4 7) CN13-2 8) Motor Trigger Signal CN22-10, CN102-B6 9) CN22-3, CN23-1- — 24V line 10) RA1 contacts 11) RA1 coil 12) CN10-2A7, -13 13) CN78-5, CN91-5, CN91-4 14) Interference from other P.C. Boards

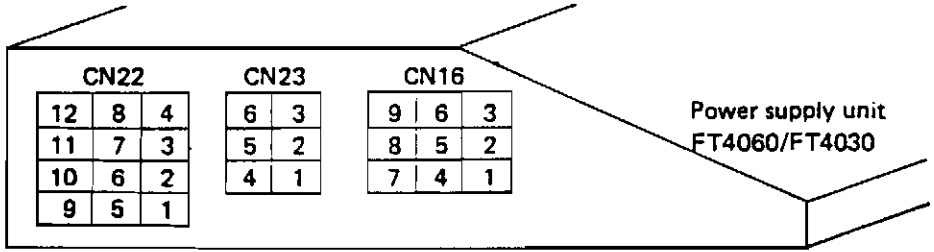
INDICATOR	POSSIBLE CAUSE
Thermistor Failure	- Drum Heater Thermistor Open - (TH1) 1) Erase lamp unit — CN21-A, B open 2) Drum thermistor (TH1) open 3) CN701-5, -8 open 4) No. 7 P.C. Board shorted 5) CN701-6, CN103-89 6) Main Board defective 7) Interference from other P.C. Boards - Fusing Thermistor Failure - (TH3) 8) TH1 is shorted or opened. 9) CN78-1, 2 10) Same as 4), 6).
No Indication	1) Total Counter # Defective # Between CN81-4 and CN81-3 stays ON # Between CN81-4 and CN81-3 stays ON 2) Interference from other P.C. Boards.

"Other P.C. Board" mean display board, SADF, Sorter, Optics.
Please take out connector respectively.
Then replace defective P.C. Board

POWER SUPPLY UNIT LEVEL TABLE

SYMBOL	WORKING LEVEL	STATUS LEVEL	CONNECTOR	WIRE COLOR
V_{ZZ}	+10V	+11.5V	CN22-8	Orange
V_{PP}	+24V	+22.5V	CN23-5	Blue
V_{CC}	+ 5.1V	+ 5.15V	CN22-1	Red
V_{EE}	− 5V	− 5.1V	CN22-2	Sky Blue
V_{MM}	+15V	+27.5V	CN23-3	Yellow
V_{AA}	+24V	+24.8V	CN23-1 CN22-3	White White
V_{FF}	−32V	−32.5V	CN22-7	Purple
V_K	−25V + AC5.1V	−25.7V	CN22-5	Gray
V_K	−25V + AC32V	−25.7V	CN22-6	Gray

Status Level means no load condition.
V_{PP} (CN23-6) is different from other circuits.



When the fuses in the power supply unit are cut off, the machine becomes the condition as shown below.

	FUSE	PHENOMENON	CONNECTOR
FT4060	FS601 (5A)	No Responce, Machine Stays OFF	All No. Output
	FS602 (0.5A)	No Responce, Machine Stays OFF	All No. Output
	FS603 (5A)	Scanner Drive Motor doesn't work --- Service Call "OPTICS"	CN23-3
	FS604 (5A)	Abnormal Indications	CN22-3, CN23-1
	RS605 (5A)	No Output for Power Pack	CN23-5
FT4030	Fuse 1	No Response, Machine Stays OFF	All No Output
	Fuse 2	No Output to Power Packs	CN16-8
	Fuse 3	No Response, Machine Stays OFF	All No Output