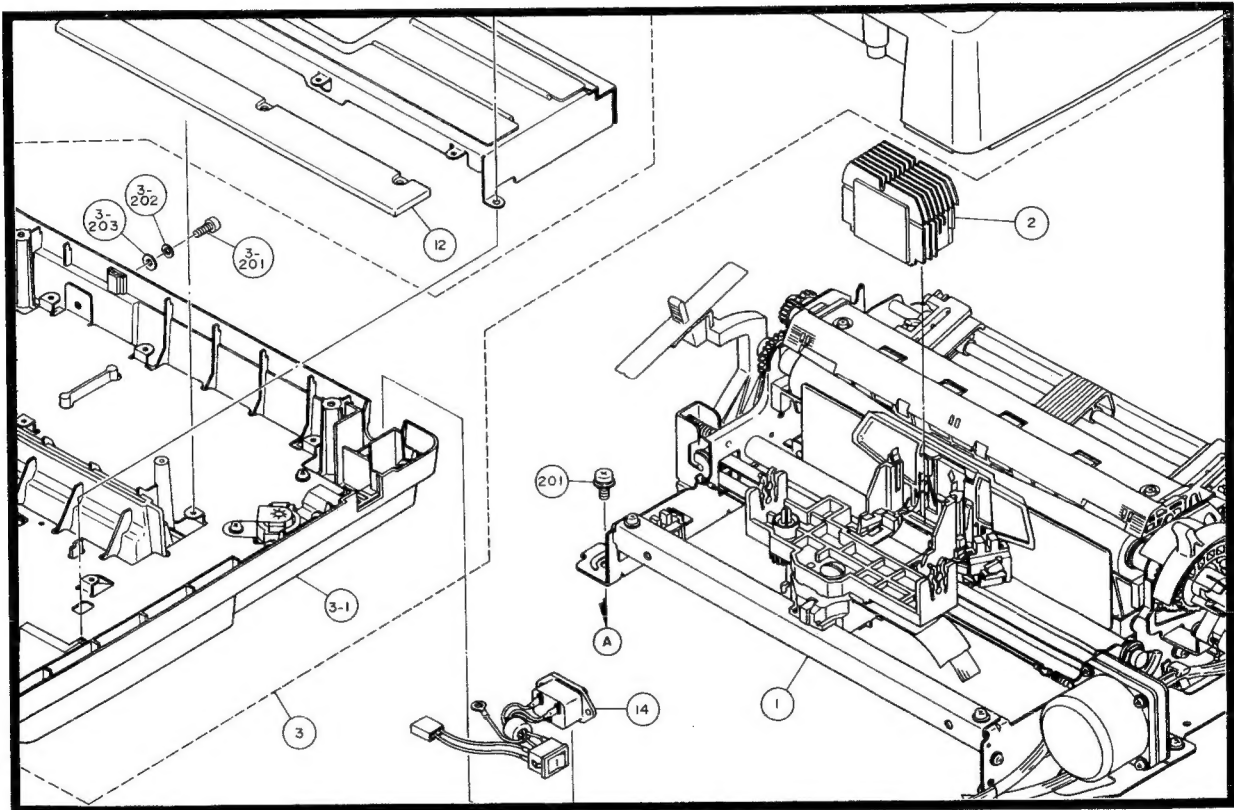


PINWRITER® SERIES

Maintenance Guide



P60
P70
P6200
P6300

NEC
NEC Corporation

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**FEDERAL COMMUNICATIONS COMMISSION
RADIO FREQUENCY INTERFERENCE STATEMENT**

This unit has been type-tested and found to comply with the limits for a Class B computing device in accordance with the specifications for Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation.

**Manufacturer's Instructions and User's responsibility
to Prevent radio Frequency Interference**

Manufacturer's Instructions

The user must observe the following precautions in installing and operating this device:

1. Operate the equipment in strict accordance with the manufacturer's instructions for the model.
2. Plug the unit into a properly grounded wall outlet and use the power cord supplied with the unit, unmodified.
3. Always operate the unit with the factory-installed cover on the unit.
4. Make no modification to the equipment which would affect its meeting the specified limits of the Rules.
5. Maintain the equipment in a satisfactory state of repair.
6. Use a shielded and properly grounded I/O cable to ensure compliance of this unit to the specified limits of the rules.

User's Responsibility

The user is ultimately responsible for correcting problems that arise from harmful radio-frequency emissions from equipment under his control. If this equipment does cause interference to radio or television reception (which can be determined by turning the equipment off and on), the user is encouraged to try to correct the interference by one of the following measures. All of these responsibilities and any others not mentioned are exclusively at the expense of the user.

1. Change in orientation of the receiving device antenna.
2. Change in orientation of the equipment.
3. Change in location of equipment.
4. Change in equipment power source.

If these attempts are unsuccessful, install one or all of the following devices:

1. Line isolation transformers
2. Line filters
3. Electro-magnetic shielding

If necessary, the user should consult the dealer, NEC, or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission to be helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.

NOTE

The operator of a computing device may be required to stop operation his device upon finding that the device is causing harmful interference and it is in the public interest to stop operation until the interference problem has been corrected.

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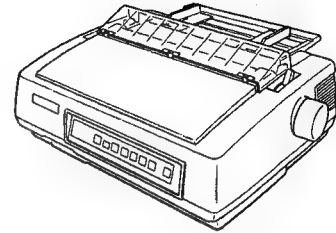
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Abbreviations

ac	alternating current
ASCII	American Standard Code for Information Interchange
CG	character generator
CN	connector
cps	characters per second
CPU	central processing unit
dc	direct current
EEPROM	electrically erasable programmable ROM
FE	film end
FET	field-effect transistor
FG	frame ground
Gnd	ground
HP	home position
HS	high speed
IC	integrated circuit
in.	inches
IPB	illustrated parts breakdown
KB	kilobytes
LF	line feed
LQ	letter-quality
LSI	large scale integration
mm	millimeters
MPU	microprocessing unit
PCB	printed circuit board
PPS	pulses per second
PWM	pulse width modulation
RAM	random-access memory
RCC	ringing choke converter
ROM	read-only memory
SG	signal ground
SP	spacing
SW	switch
V	volts
Vac	volts ac

Section 1

General Description



The Pinwriter® P6200/P6300 and P60/P70 printers are high-quality, multimode dot matrix printers. The P6200/P60 models are 80-column printers and the P6300/P70 models are 136-column printers. In high-speed models all models print 300 characters per second (cps), in draft mode they print 250 cps, and in letter-quality mode they print 83 cps.

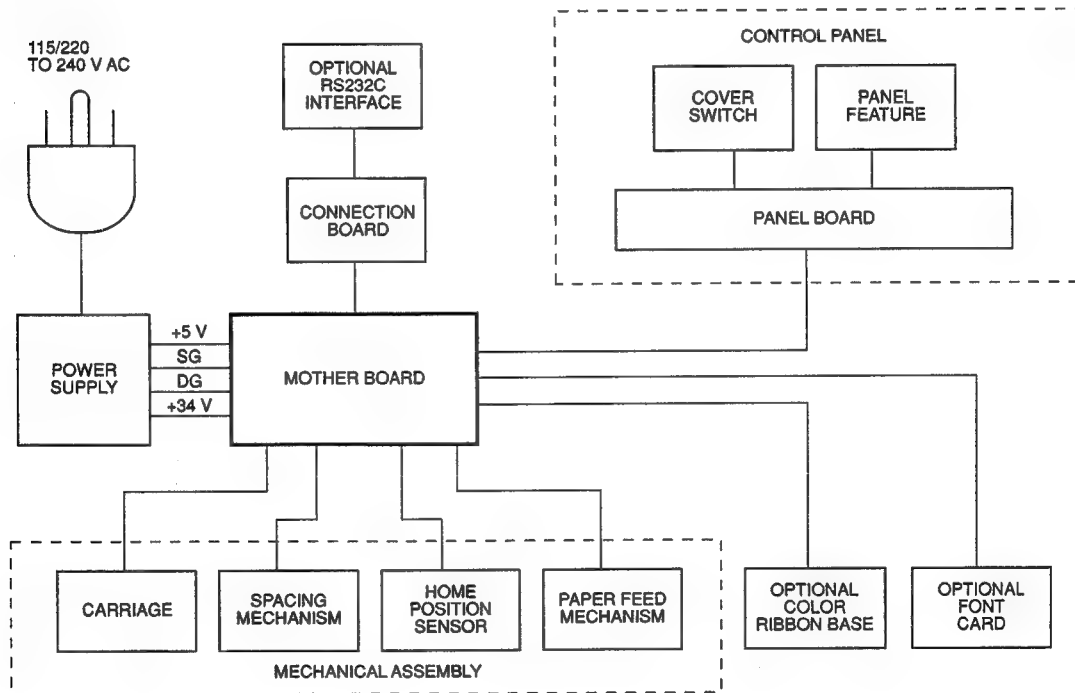


Figure 1-1 Pinwriter Block Diagram

General Description

MOTHER BOARD

The mother board is the main circuit board of the printer. It consists of the micro-processing unit (MPU) circuit, memory, and gate array (see Figure 1-2). Main Gate array's functions are parallel latch, interface and driver controller.

Microprocessing Unit

The microprocessing unit (MPU) μ PD70208GF is the ultimate control for all printer functions. It controls the interface, memory, gate array, and timer by reading, paper status, print head temperature, and homing sensor status, as well as information from the control panel.

Memory

Printer memory consists of both random access memory (RAM) and read only memory (ROM). Only the two major types of RAM are described here - the image RAM and the receive buffer RAM. The program ROM, the character generator (CG) ROM, and EEPROM are also described.

The image RAM enables high-speed operation of the printing, backspace, delete, and cancel functions. It stores the image to be printed in the form of a bit pattern. The 48/80 kilobyte (KB) selectable receive buffer RAM stores the data received by the interface circuit.

The 128 KB program ROM (27C1001) contains the program that controls MPU operation. The 256 KB (μ PD23C2000) standard CG ROM contains the resident character sets of the printer.

The 1 K-bit EEPROM (NMC9346) is used for mode settings: Print mode, Forms, Horizontal, and Interface.

Parallel Latch

The bit image information is moved from the image RAM to the parallel latch for controlling the print head driver. This information is then used as data for the printing operation.

Driver Controller

Driver controller controls the spacing motor driver circuit and line feed motor driver circuit.

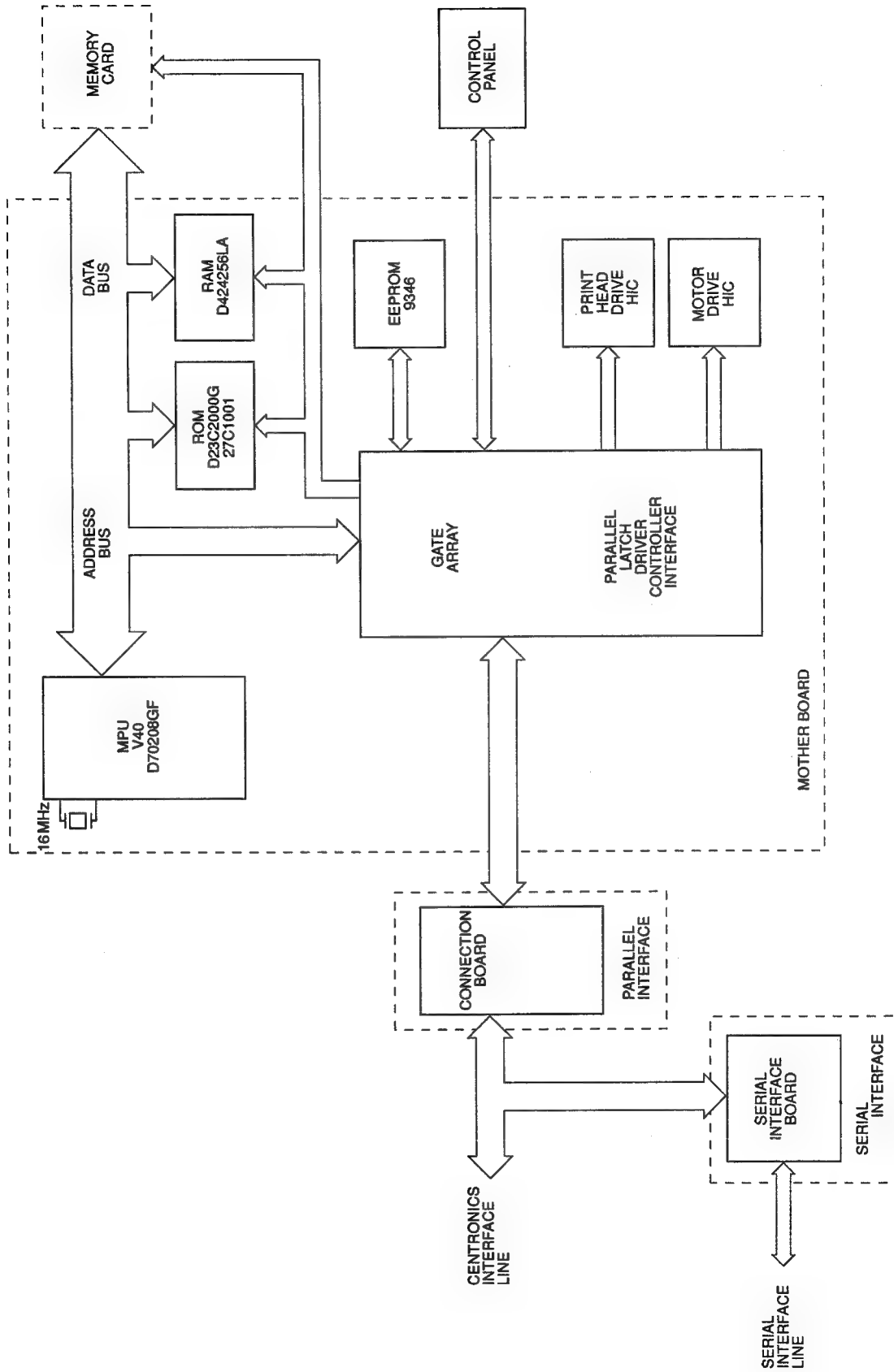


Figure 1-2 Mother Board Simplified Block Diagram

General Description

Interface

The printer has either an IBM® compatible parallel interface or an RS-232C serial interface. The parallel interface supports control logic used on all IBM PC products and most clones. Parallel interface pin assignments are listed in Table 1-1 and serial interface pin assignments are listed in Table 1-2.

Table 1-1 Parallel Interface Pin Assignments

SIGNAL PIN	RETURN PIN	SIGNAL	DIRECTION	DESCRIPTION
1	19	<u>Data Strobe</u>	To printer	Strobes a data byte to the printer. The minimum pulse width of the signal is 1 μ s, active low.
2	20	Data 1	To printer	Data lines 1 through 8 transmit ASCII code. The lines are high (true) at logic 1 and low (false) at logic 0.
3	21	Data 2	To printer	The minimum pulse width of the signal is 2 μ s.
4	22	Data 3	To printer	
5	23	Data 4	To printer	
6	24	Data 5	To printer	
7	25	Data 6	To printer	
8	26	Data 7	To printer	
9	27	Data 8	To printer	
10	28	<u>Acknlg</u>	From printer	An 8- μ s pulse on this status line indicates that the printer received a data byte and it can receive next data.
11	29	Busy	From printer	This signal goes high when the printer is busy because <ul style="list-style-type: none">• the buffer is full.• the printer is initializing.• the printer is deselected.• a printer fault has occurred.• data is received and next data can not be received yet.

Table 1-1 Parallel Interface Pin Assignments (cont'd)

SIGNAL PIN	RETURN PIN	SIGNAL	DIRECTION	DESCRIPTION
12	30	Paper Empty	From printer	This status line goes high when the printer is out of paper.
13	—	Slct	From printer	This status line goes high when the printer is selected. The line is low when the printer is deselected.
14	—	$\overline{\text{Auto Feed XT}}$	To printer	When this line is low at initializing, the printer performs an automatic line feed after CR code.
15	—	—	—	Not used.
16	—	SG	—	Signal ground.
17	—	FG	—	Frame ground.
18	—	+5 V (Direct)	—	+5 V
19, 20 21, 22 23, 24 25, 26 27, 28 29, 30	—	SG	—	Signal ground. Pin 19 is ground for Strobe, and pins 20 through 27 are ground for data lines 1 through 8, pin 28 is ground for Acknlg, pin 29 is ground for Busy, and pin 30 is ground for Input Prime.
31	30	$\overline{\text{Input Prime}}$	To printer	A low on this line initializes the printer. The signal pulse width must be more than 15 μs .
32	—	$\overline{\text{Fault}}$	From printer	This line goes low when the printer is <ul style="list-style-type: none"> • out of paper. • deselected. • in a fault state.
33	—	SG	—	Signal ground.
34	—	—	—	Not used.
35	—	—	—	Not used.
36	—	SG	—	Signal ground.

General Description

Table 1-2 Serial Interface Pin Assignments

SIGNAL/CONTROL LINES	DIRECTION OF SIGNAL	DESCRIPTION
Data Carrier Detect (DCD) (EIA pin 8)	To printer	This line must be active (on) for the Pinwriter to operate. The line goes active when the modem detects a carrier tone, indicating that the phone line is usable. When DCD, CTS, DSR signals are disabled, this line goes active even if this signal line is not connected.
Data Terminal Ready (DTR) (EIA pin 20)	From printer	This line is the same functional signal as Reverse Channel (SRTS).
Data Set Ready (DSR) (EIA pin 6)	To printer	This line must be active (on) for the Pinwriter to operate. The line goes active when the modem power is on and the modem is not in a test mode. When DCD, CTS, DSR signals are disabled, this line goes active even if this signal line is not connected.
Request to Send (RTS) (EIA pin 4)	From printer	This line goes active (on) when the Data Terminal Ready is available and when the modem replies with Data Set Ready.
Clear to Send (CTS) (EIA pin 5)	To printer	This line must be active for the Pinwriter to operate. The input signal from the modem goes active when the modem is ready for the Pinwriter to transmit. When DCD, CTS, DSR signals are disabled, this line goes active even if the signal line is not connected.
Transmitted Data (TXD) (EIA pin 2)	From printer	This line transmits ACSII-coded digital data to a modem. This line is held at Mark (logic "1") when no data is being transmitted.
Received Data (RXD) (EIA pin 3)	To printer	This line holds ASCII-coded digital data received by the Pinwriter. This line must be held at Mark (logic "1") when no data is being received from the modem.
Reverse Channel (SRTS) (EIA pin 19)	From printer	This line goes from active (on) to inactive (off) when any one of the following occurs. <ul style="list-style-type: none"> • 8-kilobyte receive buffer is almost full (8056 characters). • Printer is out of paper. • Printer's condition must be checked. • Printer's cover is open.

POWER SUPPLY

The Pinwriter can use three types of power supplies. The PSD Power (B) PCB, the PSD Power (C) PCB (808-891104-003-A) or the PSD Power (C) PCB (808-891104-303-A).

The power supply unit converts AC power into DC power and supplies DC voltage to the control circuit unit, the print head drive circuit and the motor drive circuit. The input voltage for these power supplies are shown in Table 1-3.

Table 1-3 Input Voltage Requirements

POWER SUPPLY PCB	AC VOLTS	HZ	AMPS	REMARKS
PSD Power (B) (808-891104-002-A)	115+/-15%	50/60	125V/5A	—
PSD Power (C) (808-891104-003-A)	220-240V+/-10%	50/60	250V/3.15A	Used for only Japan products.
PSD Power (C) (808-891104-303-A)	220-240V+/-10%	50/60	250V/3.15A	Used for only U. K. products.

The power supply circuit supplies +5V to the control circuit and +34V to the drive circuit of the print head and the motor. The current capacity corresponding to each output voltage is shown in Table 1-4.

Table 1-4 Output Voltage Capacity

DC VOLTS	AMPS
5+/-5%	2 Max.
34+/-7%	4.5 Average

Figure 1-3 shows the block diagram for the PSD Power (B) power supply and Figure 1-4 shows the block diagram for the PSD Power (C) (808-891104-003-A) and Figure 1-5 shows the block diagram for the PSD Power (C) (808-891104-303-A) power supply.

General Description

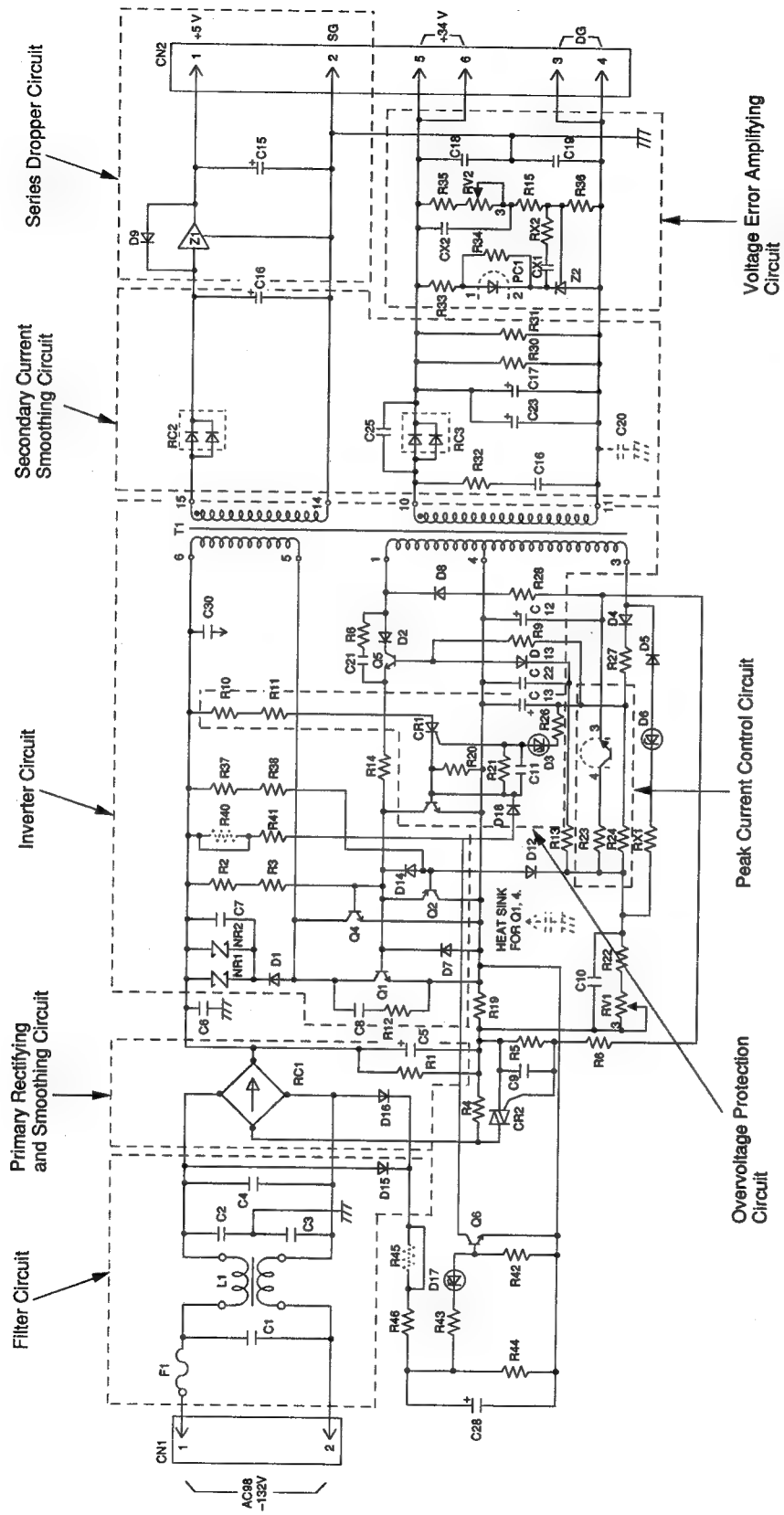


Figure 1-3 PSD Power (B) (808-891104-002-A) Block Diagram

PSD Power (B) Power Supply (808-891104-002-A)

The power supply consists of a filter circuit, primary side rectifying and smoothing circuit, inverter circuit, peak current control circuit, overvoltage protection circuit, secondary side smoothing circuit, series dropper circuit and voltage error amplifying circuit.

The +34V output voltage is generated by a self-excited oscillator using a ringing choke converter (RCC), and stabilized by controlling currents flowing through the primary winding of a transformer of the inverter circuit.

The +5V output voltage is stabilized by rectifying and smoothing the output voltage of the secondary winding of the transformer for the series dropper, and stepping it down with the series dropper circuit. In reality, the series dropper circuit uses a 3-terminals regulator.

FILTER CIRCUIT

The filter circuit consists of a capacitor and choke coil. It prevents and outer high-frequency noise from flowing into the power circuit, or a high-frequency noise generated inside the power circuit from flowing outside.

PRIMARY RECTIFYING AND SMOOTHING CIRCUIT

This circuit converts the AC input voltage, which has passed through the filter circuit, into high DC voltage by full-wave rectifying the AC input voltage, and smoothing it with a capacitor.

INVERTER CIRCUIT

The inverter circuit consists of a transformer, power transistors (Q1, Q4), resistor for starting the circuit, drive circuit, resistor which detects currents flowing through the primary winding of the transformer and surge killer circuit.

PEAK CURRENT CONTROL CIRCUIT

This circuit controls the peak value of currents flowing through the primary winding of a transformer to stabilize the +34V output voltage. The peak value of currents is controlled by transmitting a signal from the voltage error amplifying circuit, which will be described later, to this circuit through a photocoupler.

This circuit consists of a transistor (Q2) for leading in the base currents of power transistors (Q1, Q4), output transistor of the photocoupler and resistor.

Currents flowing through the output transistor of the photocoupler increase or decrease depending upon signals from the differential voltage amplifier circuit. When currents of the output transistor have increased, the base current of the power transistors (Q1, Q4) flows into the collector of the transistor (Q2). In this case, the power transistors (Q1, Q4) is abruptly turned off. In this case, the peak value of currents flowing through the output transistor of the photocoupler have decreased, the base current of the power transistors (Q1, Q4) does not flow very much into the collector of the transistor (Q2). In this case, the peak value of currents flowing through the primary winding of the transformer is high.

General Description

SECONDARY CURRENT SMOOTHING CIRCUIT

This circuit is a half-wave rectifier circuit consisting of a diode and capacitor. Secondary current smoothing circuits may be classified into two types: a rectifying and smoothing circuit for +5V, and a rectifier circuit for +34V.

SERIES DROPPER CIRCUIT

The series dropper circuit consists of a 3-terminal regulator IC (Z1). It receives the voltage, which has been rectified and smoothed by the +5V rectifying and smoothing circuit, at the input terminal of the 3-terminal regulator IC, and provides +5V as an output voltage of the 3-terminals regulator.

VOLTAGE ERROR AMPLIFYING CIRCUIT

The voltage error amplifying circuit consists of a shunt regulator, input diode of the photocoupler and a few resistors, and is mounted in the +34V output circuit.

This circuit compares the +34V output voltage value with the reference voltage of the shunt regulator, converts the differential voltage into a current, and applies the current between the cathode and anode of the shunt regulator. In this case, the current flows also into a diode of the photocoupler because the input diode of the photocoupler is connected also with the cathode of the shunt regulator.

This current decreases when the +34V output voltage drops, and increases when the +34V output voltage rises. It is fed back to the primary side via the photocoupler.

OVERVOLTAGE PROTECTION CIRCUIT

The overvoltage protection circuit prevents the output voltage from rising abnormally when the photocoupler circuit is opened or damaged. It consists of a photothyristor, Zener diode and a few resistors, and is connected to an auxiliary winding of the transformer.

This circuit detects a rise of the +34V output voltage from a rise of the voltage of the auxiliary winding of the transformer. When, for instance, the photocoupler is damaged, and the +34V output voltage rises, the voltage of the auxiliary sending of the transformer also rises. In this case, the voltage of the auxiliary winding triggers the thyristor, stops the oscillation of the power circuit, and cuts off the output voltage.

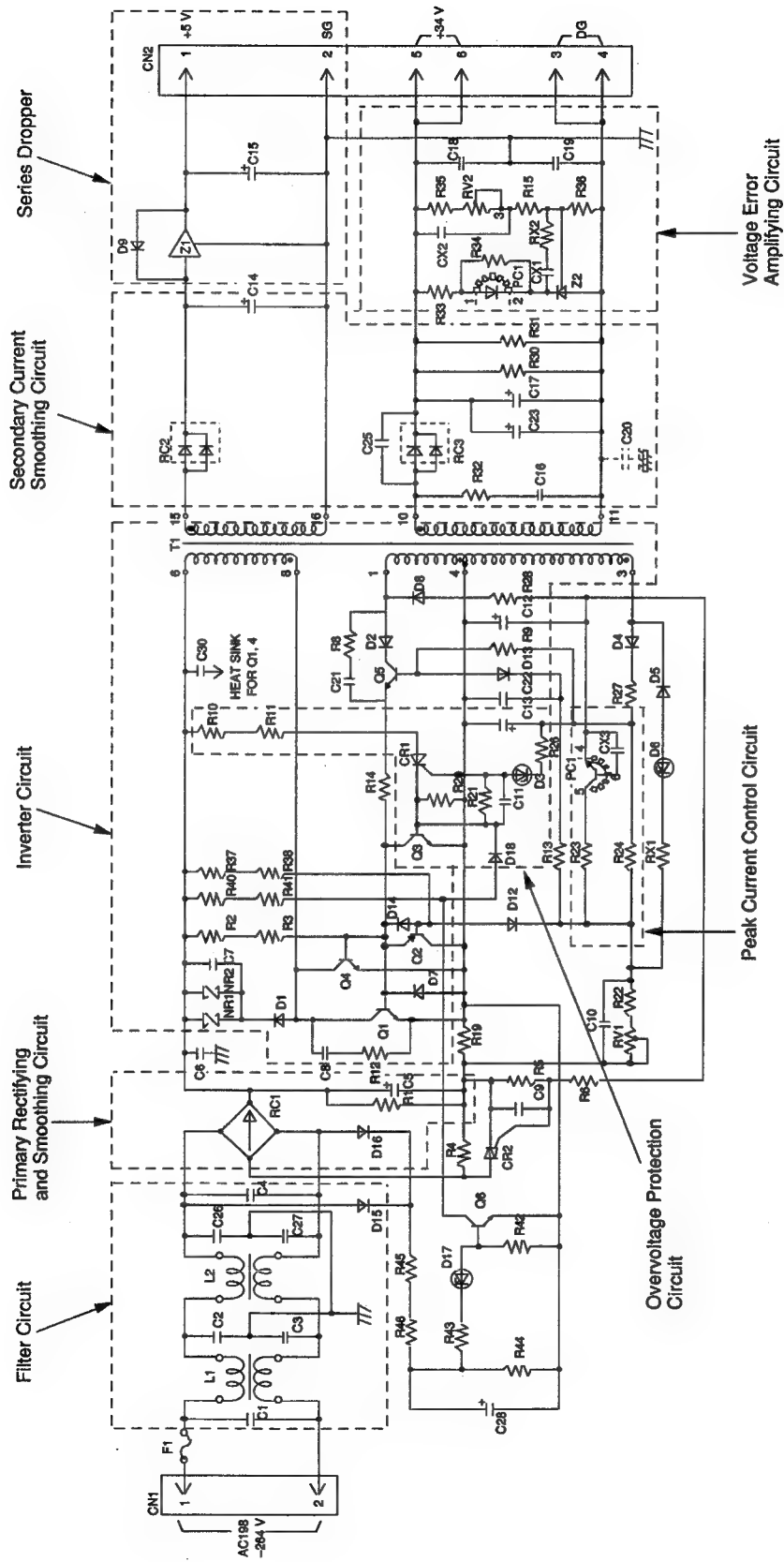


Figure 1-4 PSD Power (C) (808-891104-003-A) Block Diagram

General Description

PSD Power (C) Power Supply (808-891104-003-A)

The power supply consists of a filter circuit, primary side rectifying and smoothing circuit, inverter circuit, peak current control circuit, overvoltage protection circuit, secondary side smoothing circuit, series dropper circuit and voltage error amplifying circuit.

The +34V output voltage is generated by a self-excited oscillator using a ringing choke converter (RCC), and stabilized by controlling currents flowing through the primary winding of a transformer of the inverter circuit.

The +5V output voltage is stabilized by rectifying and smoothing the output voltage of the secondary winding of the transformer for the series dropper, and stepping it down with the series dropper circuit. In reality, the series dropper circuit uses a 3-terminals regulator.

FILTER CIRCUIT

The filter circuit consists of a capacitor and choke coil. It prevents an outer high-frequency noise from flowing into the power circuit, or a high-frequency noise generated inside the power circuit from flowing outside.

PRIMARY RECTIFYING AND SMOOTHING CIRCUIT

This circuit converts the AC input voltage, which has passed through the filter circuit, into high DC voltage by full-wave rectifying the AC input voltage, and smoothing it with a capacitor.

INVERTER CIRCUIT

The inverter circuit consists of a transformer, power transistor (Q2), resistor for starting the circuit, drive circuit, resistor which detects currents flowing through the primary winding of the transformer and surge killer circuit.

PEAK CURRENT CONTROL CIRCUIT

This circuit controls the peak value of currents flowing through the primary winding of a transformer to stabilize the +34V output voltage. The peak value of currents is controlled by transmitting a signal from the voltage error amplifying circuit, which will be described later, to this circuit through a photocoupler.

This circuit consists of a transistor (Q3) for leading in the base currents of a power transistor (Q2), output transistor of the photocoupler and resistor.

Currents flowing through the output transistor of the photocoupler increase or decrease depending upon signals from the differential voltage amplifier circuit. When currents of the output transistor have increased, the base current of the power transistors (Q2) flow into the collector of the transistor (Q3). In this case, the power transistors (Q1, Q4) is abruptly turned off. In this case, the peak value of currents flowing through the primary winding of the transformer is low.

On the contrary, when currents flowing through the output transistor of the photocoupler have decreased, the base current of the power transistor (Q2) does not flow very much into the collector of the transistor (Q3). In this case, the peak value of currents flowing through the primary winding of the transformer is high.

SECONDARY CURRENT SMOOTHING CIRCUIT

This circuit is a half-wave rectifier circuit consisting of a diode and capacitor. Secondary current smoothing circuits may be classified into two types: a rectifying and smoothing circuit for +5V and a rectifier circuit for +34V.

SERIES DROPPER CIRCUIT

The series dropper circuit consists of a 3-terminal regulator IC (Z1). It receives the voltage, which has been rectified and smoothed by the +5V rectifying and smoothing circuit, at the input terminal of the 3-terminal regulator IC, and provides +5V as an output voltage of the 3-terminals regulator.

VOLTAGE ERROR AMPLIFYING CIRCUIT

The voltage error amplifying circuit consists of a shunt regulator, input diode of the photocoupler and a few resistors, and is mounted in the +34V output circuit.

This circuit compares the +34V output voltage value with the reference voltage of the shunt regulator, converts the differential voltage into a current, and applies the current between the cathode and anode of the shunt regulator. In this case, the current flows also into a diode of the photocoupler because the input diode of the photocoupler is connected also with the cathode of the shunt regulator.

This current decreases when the +34V output voltage drops, and increases when the +34V output voltage rises. It is fed back to the primary side via the photocoupler.

OVERVOLTAGE PROTECTION CIRCUIT

The overvoltage protection circuit prevents the output voltage from rising abnormally when the photocoupler circuit is opened or damaged. It consists of a photothyristor, Zener diode and a few resistors, and is mounted in the +34V output circuit.

This circuit detects a rise of the +34V put it voltage by comparing the +34V output voltage with the Zener voltage of the Zener diode. When the +34V output voltage has risen, currents flow to the input diode of the photothyristor, an output thyristor of the photothyristor is turned on, the oscillation of the power circuit is stopped, and thus the output voltage is cut off.

General Description

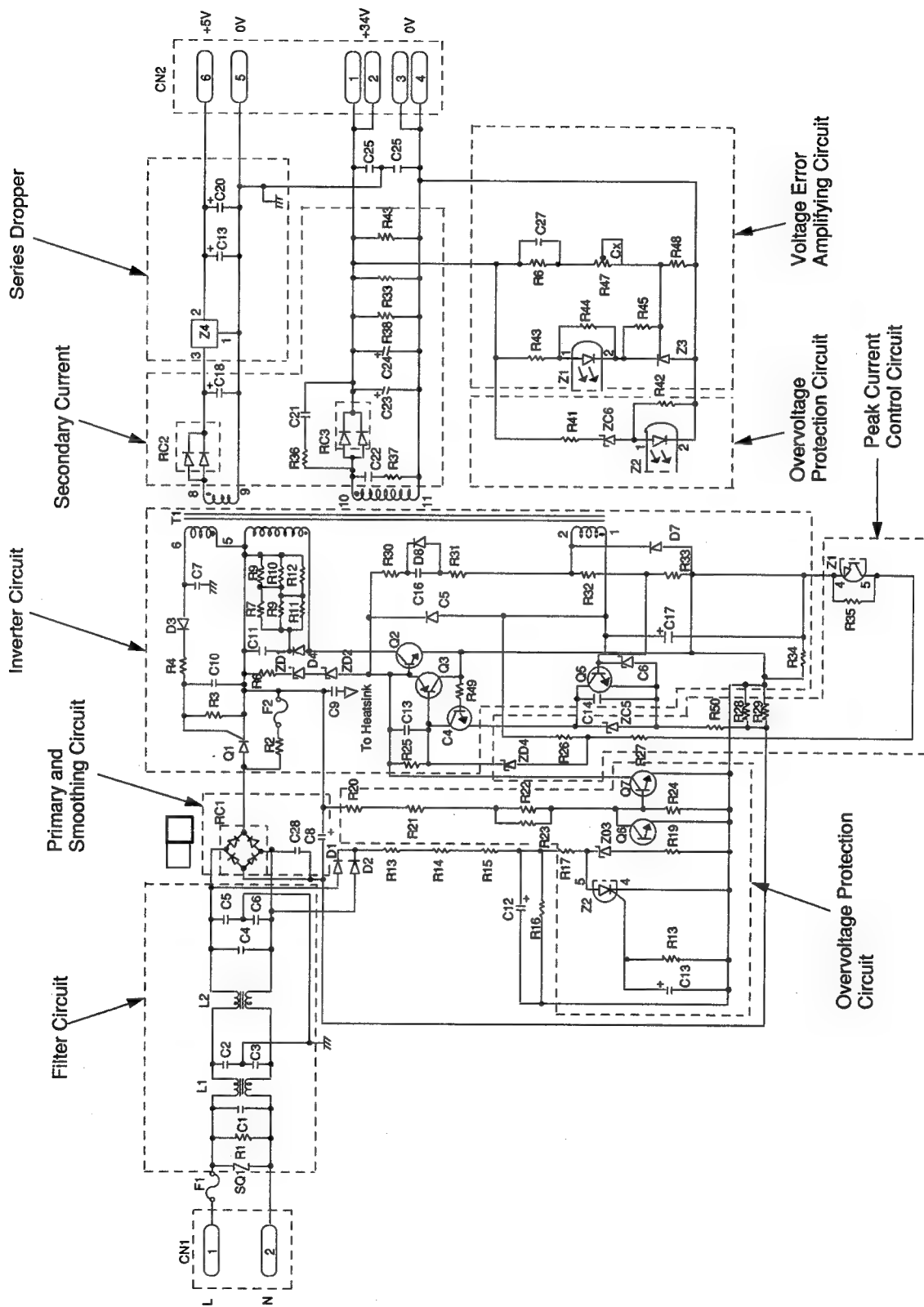


Figure 1-5 PSD Power (C) (808-891104-303-A) Block Diagram

PSD Power (C) Power Supply (808-891104-303-A)

The power supply consists of a filter circuit, primary side rectifying and smoothing circuit, inverter circuit, peak current control circuit, overvoltage protection circuit, secondary side smoothing circuit, series dropper circuit and voltage error amplifying circuit.

The +34V output voltage is generated by a self-excited oscillator using a rearing choke converter (RCC), and stabilized by controlling currents flowing through the primary winding of a transformer of the inverter circuit.

The +5V output voltage is stabilized by rectifying and smoothing the output voltage of the secondary winding of the transformer for the series dropper, and stepping it down with the series dropper circuit. In reality, the series dropper circuit uses a 3-terminal regulator.

FILTER CIRCUIT

The filter circuit consists of a capacitor and choke coil. It prevents an outer high-frequency noise from flowing into the power circuit, or a high-frequency noise generated inside the power circuit from flowing outside.

PRIMARY RECTIFYING AND SMOOTHING CIRCUIT

This circuit converts the AC input voltage, which has passed through the filter circuit, into high DC voltage by full-wave rectifying the AC input voltage, and smoothing it with a capacitor.

INVERTER CIRCUIT

The inverter circuit consists of a transformer, power transistor (Q2), resistor for starting the circuit, drive circuit, resistor which detects currents flowing through the primary winding of the transformer and surge killer circuit.

PEAK CURRENT CONTROL CIRCUIT

This circuit controls the peak value of currents flowing through the primary winding of a transformer to stabilize the +34V output voltage. The peak value of currents is controlled by transmitting a signal from the voltage error amplifying circuit, which will be described later, to this circuit through a photocoupler.

This circuit consists of a transistor (Q3) for leading in the base current of a power transistor (Q2), output transistor of the photocoupler and resistor.

Currents flowing through the output transistor of the photocoupler increase or decrease depending upon signals from the differential voltage amplifier circuit. When currents of the output transistor have increased, the base current of the power transistors (Q2) flows into the collector of the transistor (Q3). In this case, the power transistors (Q2) is abruptly turned off. In this case, the peak value of currents flowing through the primary winding of the transformer is low.

On the contrary, when currents flowing through the output transistor of the photocoupler have decreased, the base current of the power transistor (Q2) does not flow very much into the collector of the transistor (Q3). In this case, the peak

General Description

value of currents flowing through the primary winding of the transformer is high.

SECONDARY CURRENT SMOOTHING CIRCUIT

This circuit is a half-wave rectifier circuit consisting of a diode and capacitor. Secondary current smoothing circuits may be classified into two types: a rectifying and smoothing circuit for +5V, and a rectifier circuit for +34V.

SERIES DROPPER CIRCUIT

The series dropper circuit consists of a 3-terminal regulator IC (Z4). It receives the voltage, which has been rectified and smoothed by the +5V rectifying and smoothing circuit, at the input terminal of the 3-terminal regulator IC, and provides +5V as an output voltage of the 3-terminal regulator.

VOLTAGE ERROR AMPLIFYING CIRCUIT

The voltage error amplifying circuit consists of a shunt regulator, input diode of the photocoupler and a few resistors, and is mounted in the +34V output circuit.

This circuit compares the +34V output voltage value with the reference voltage of the shunt regulator, converts the differential voltage into a current, and applies the current between the cathode and anode of the shunt regulator. In this case, the current flows also into a diode of the photocoupler because the input diode of the photocoupler is connected also with the cathode of the shunt regulator.

This current decreases when the +34V output voltage drops, and increases when the +34V output voltage rises. It is fed back to the primary side via the photocoupler.

OVERVOLTAGE PROTECTION CIRCUIT

The overvoltage protection circuit prevents the output voltage from rising abnormally when the photocoupler circuit is opened or damaged.

It consists of a photorhyristor, Zener diode and a few resistors, and is mounted in the +34V output circuit.

This circuit detects a rise of the +34V output voltage by comparing the +34V output voltage with the Zener voltage of the Zener diode. When the +34V output voltage has risen, currents flow to the input diode of the photorhyristor, an output thyristor of the photorhyristor is turned on the oscillation of the power circuit is stopped, and thus the output voltage is cut off.

MECHANICAL ASSEMBLY

The mechanical assembly consists of following subassemblies.

- Print Head Assembly
- Carrier Assembly
- Spacing Mechanism
- Home Position Switch Assembly
- Paper Feed Mechanism
- Push Tractor
- Ribbon Feed Assembly
- Paper-Out Detector Mechanism
- Ribbon Sensor Assembly

Print Head Assembly

The print head is mounted on the carrier and moves bidirectionally at a speed of up to 300 cps (at high-speed draft 12). The print head assembly consists of the following components (see Figure 1-6).

- 24 Pins
- 24 Corresponding Armatures, Magnets, and Solenoids
- Print Wire Guides

General Description

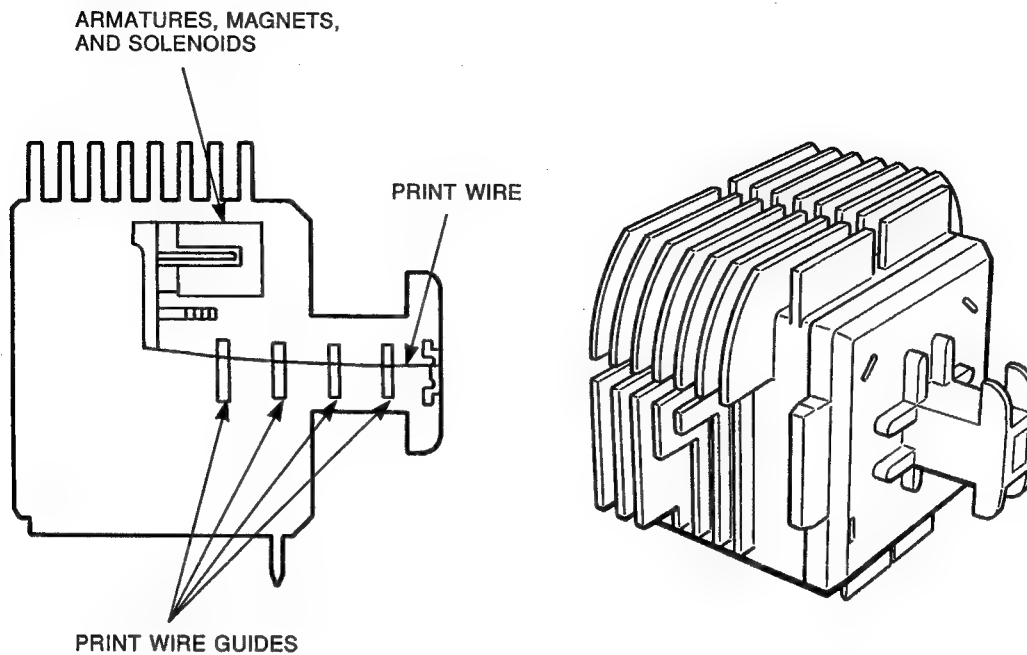


Figure 1-6 Print Head Assembly

The print wire guide, located at the tip of the print head, arranges the 24 pins in two staggered rows. The guide plate supports the pins at the center of the print head.

Printing occurs in the following manner. When a solenoid is energized, it moves an armature. This motion causes the pin that corresponds to the armature to strike the ribbon, printing a dot on the paper. An attached spring returns the pin to its resting position. Pins strike the ribbon simultaneously to form sequential rows until the dots form a complete character on the paper.

Carrier Assembly

The carrier assembly consists of a carrier, card holder, and print head assembly (see Figure 1-7). The carrier rides on a guide shaft and slides along by the front stay. The card holder helps guide the paper around the platen and stabilize ribbon movement. The copy control lever located on the left end of the guide shaft allows you to adjust the gap between the print head and the platen.

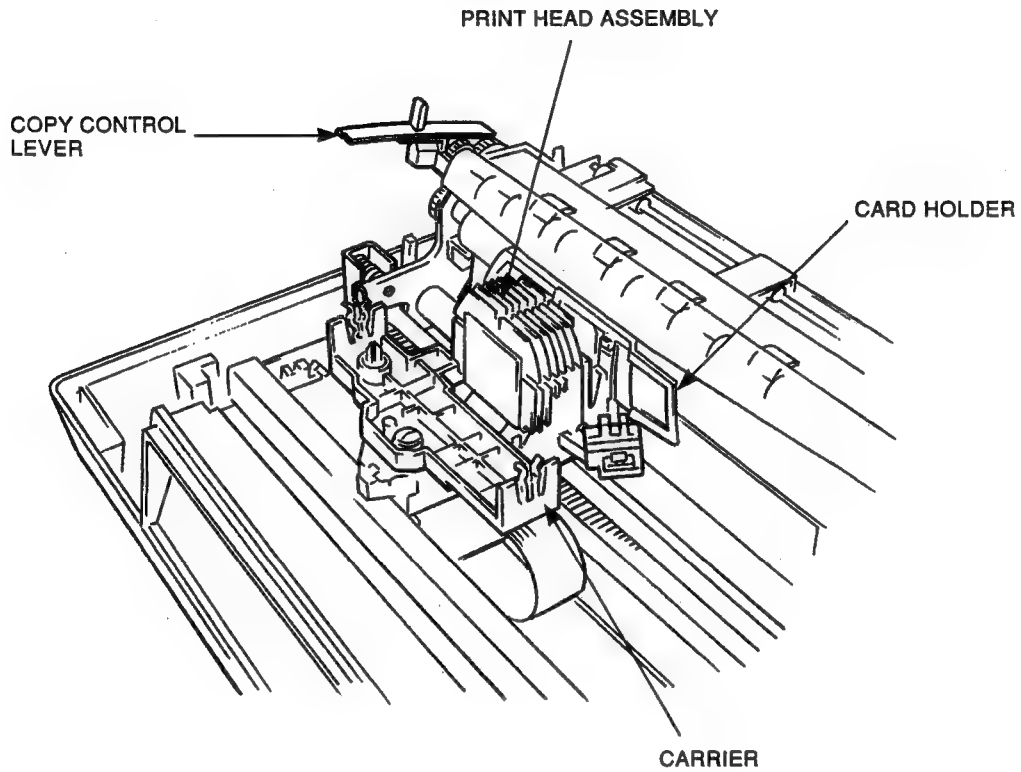


Figure 1-7 Carrier Assembly

General Description

Spacing Mechanism

The spacing mechanism consists of a spacing motor, spacing motor pulley, tension spring, tension arm, driven pulley, pulley shaft, driven pulley collar and drive belt (see Figure 1-8). The looped drive belt is stretched by the spacing motor pulley and driven pulley. The carrier is fixed to the drive belt, and moves along the guide shaft and front stay according to the forward or reverse motion of the spacing motor.

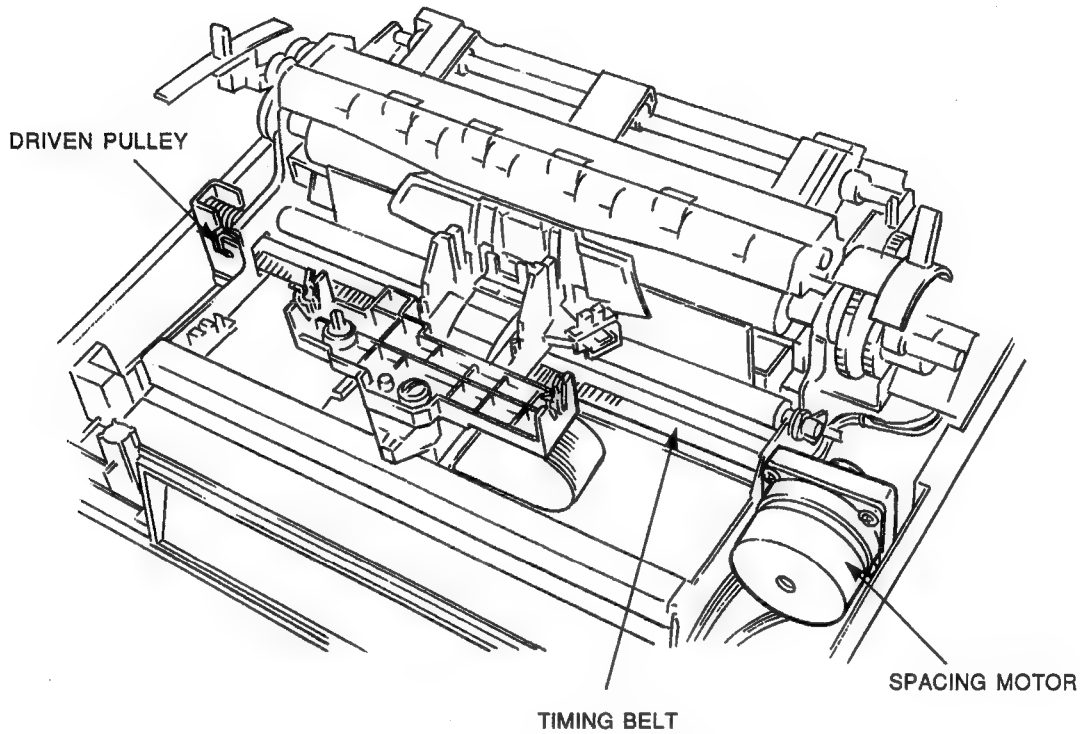


Figure 1-8 Spacing Assembly

Home Position Sensor Assembly

The home position sensor assembly consists of the photosensor assembly and sensor holder. Located on the frame at the far left side of the carrier, it detects the print head home position (see Figure 1-9). At power on, the print head automatically moves to the left until reaches the home position sensor and then stops. If the print head is at the left of the photosensor assembly already, it moves slightly to the right and then back to the home position.

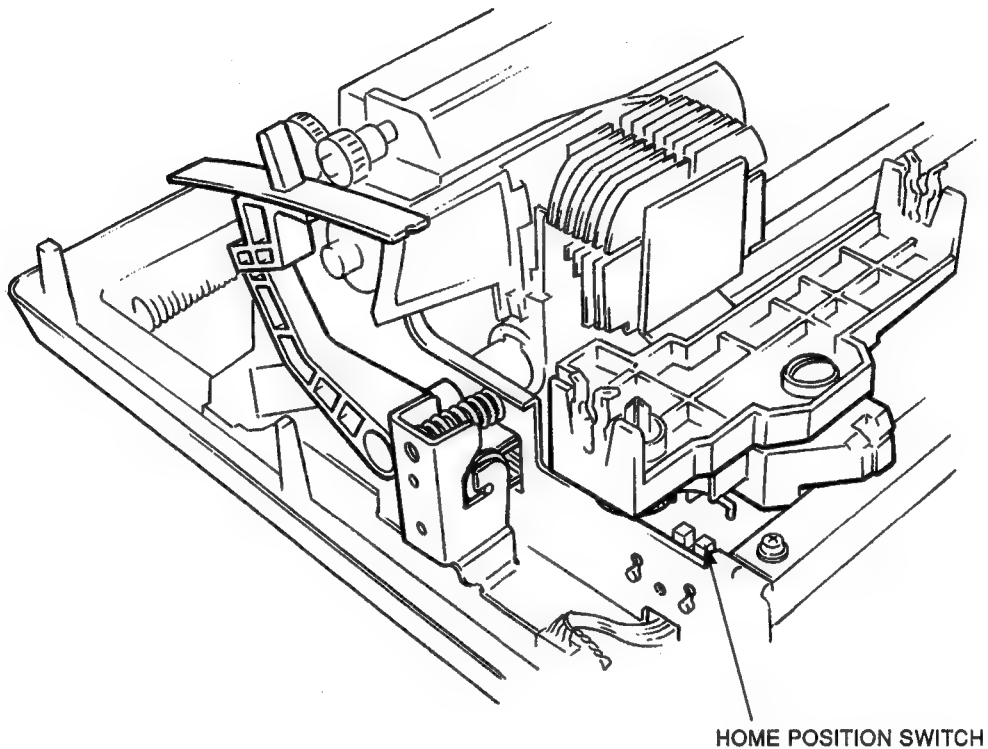


Figure 1-9 Home Position Switch Assembly

General Description

Paper Feed Mechanism

The paper feed mechanism feeds the paper by means of a line feed motor (see Figure 1-10). The motion of the line feed motor is transmitted to the platen or the push tractor through the tractor gear by setting the paper selection lever. Two steps of the motor equals 1/360-inch of paper movement. A unit of minimum movement is two steps at least. During tractor feed, paper feeds bidirectionally in the same 1/360-inch increments.

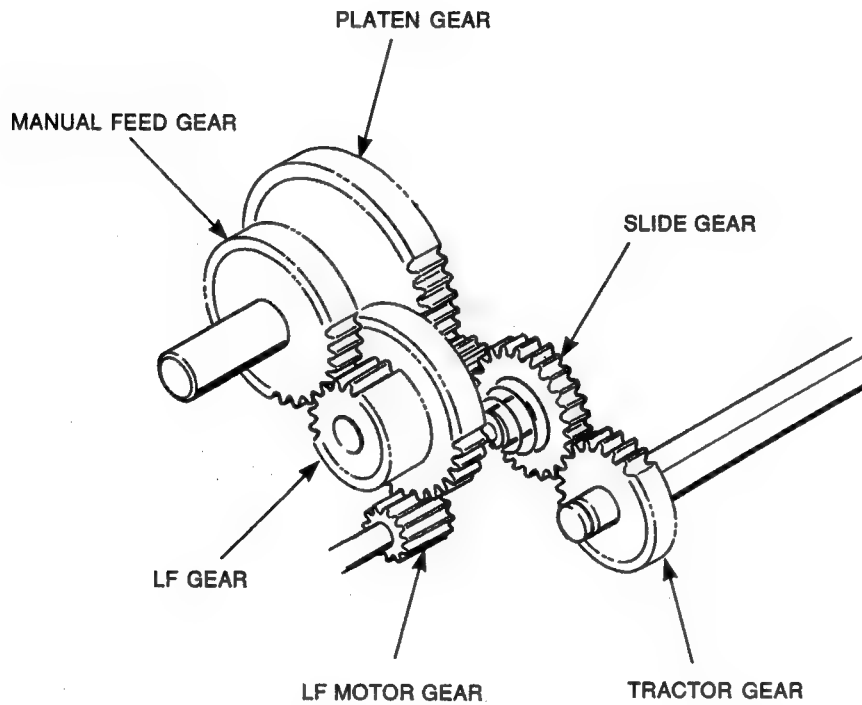


Figure 1-10 Paper Feed Assembly

Ribbon Feed Assembly

Regardless of whether the carrier is moving left to right or right to left, the ribbon feed assembly feeds ribbon in one direction only by means of the torque piece gear (see Figure 1-11). The torque piece gear rotates in one direction. It is driven by the ribbon drive engaging with the ribbon feed pulley and ribbon feed wire (see Figure 1-12).

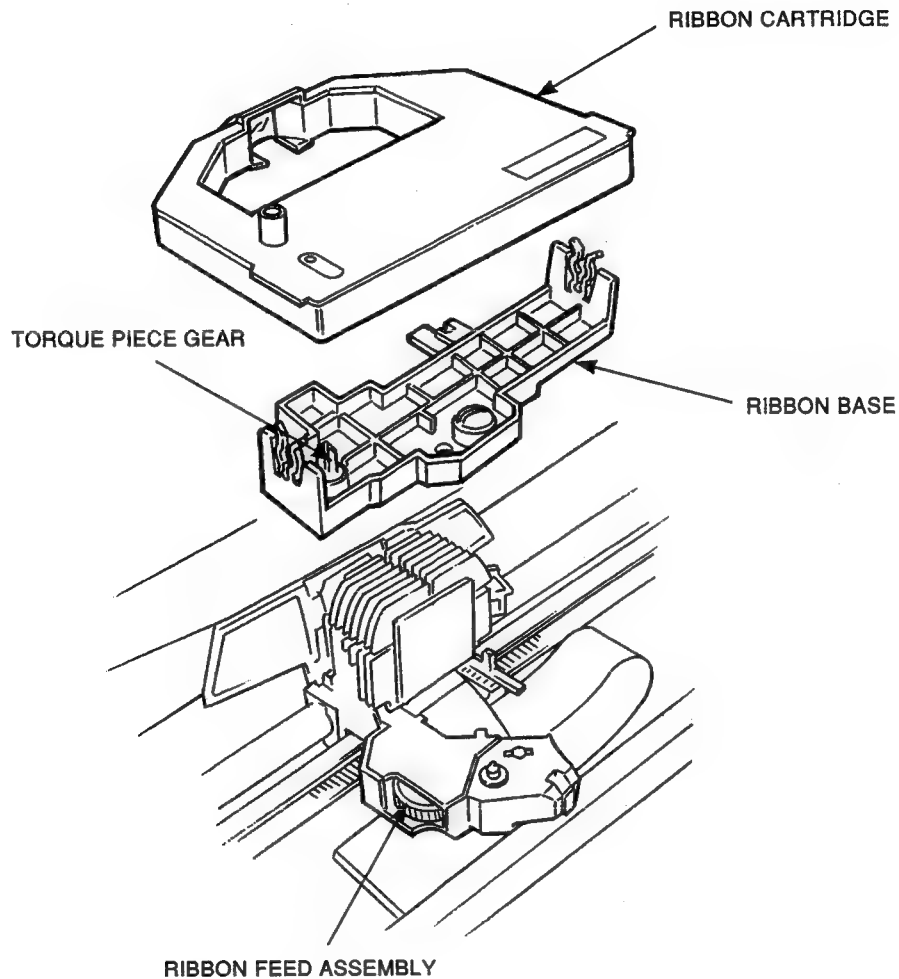


Figure 1-11 Ribbon Feed Assembly

General Description

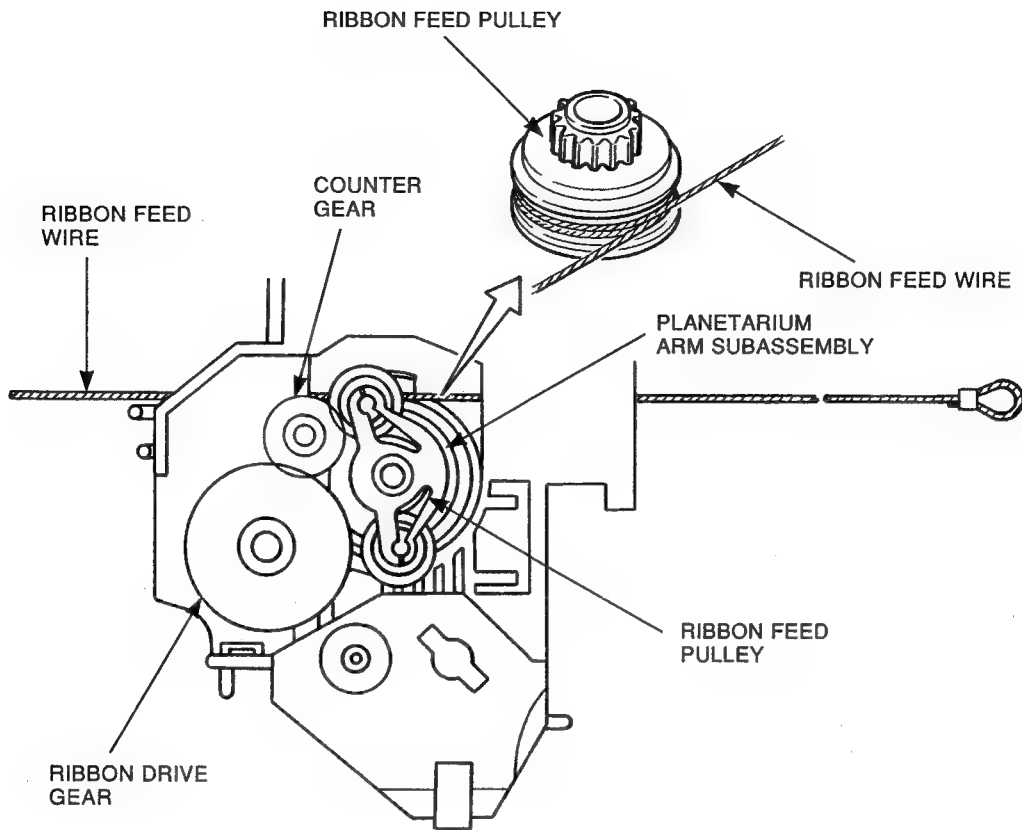


Figure 1-12 Ribbon Feed Mechanism

Paper-Out Detector Mechanism

The paper-out detector mechanism consists of the photo sensor assembly, sensor bracket and sensor levers which are friction MDL lever, rear paper end lever, bottom MDL lever (see Figure 1-13). When the printer runs out of paper, the sensor lever blocks photo sensor. When paper supply exists, the sensor lever moves away from photo sensor, making detection possible.

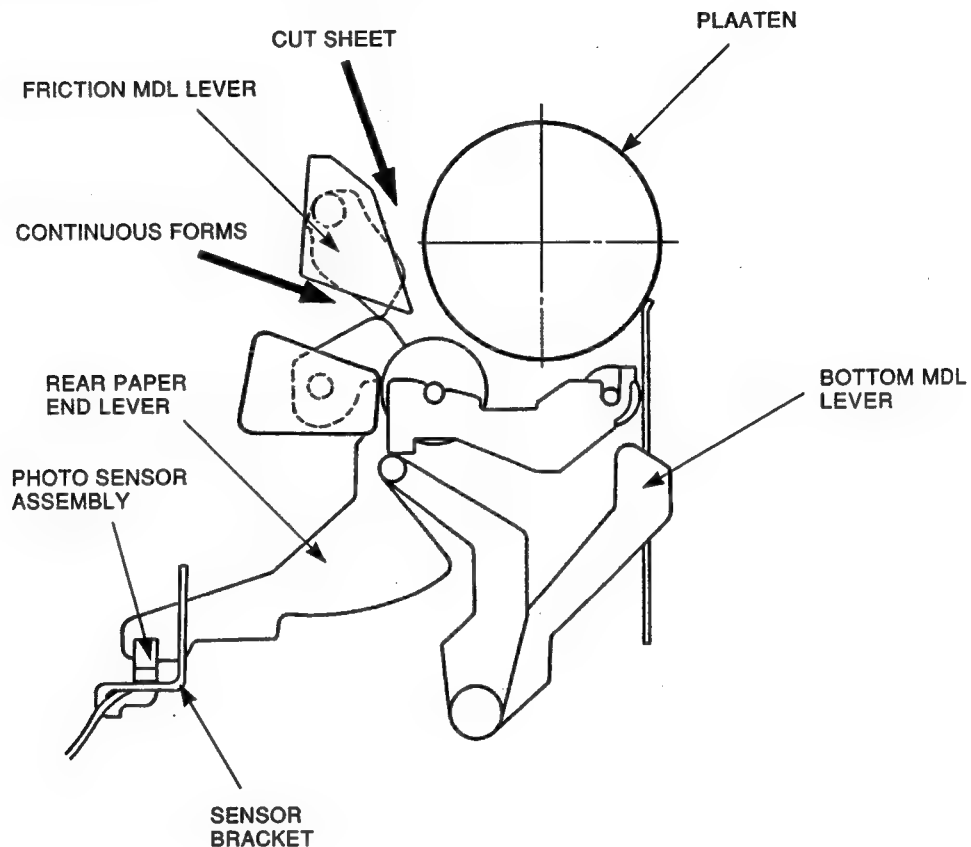


Figure 1-13 Paper-Out Detector Assembly

Ribbon Sensor Assembly

The ribbon sensor assembly senses:

- the kinds of installed ribbon (black nylon, black multistrike film, or color nylon).
- ribbon empty (multistrike film ribbon is installed).
- color homing error.

This assembly is located on the carrier, beside the print head, and consists of a color sensor and a MS switch (see Figure 1-14). Each sensor and switch is either on or off, depending on the situations shown in Table 1-5.

General Description

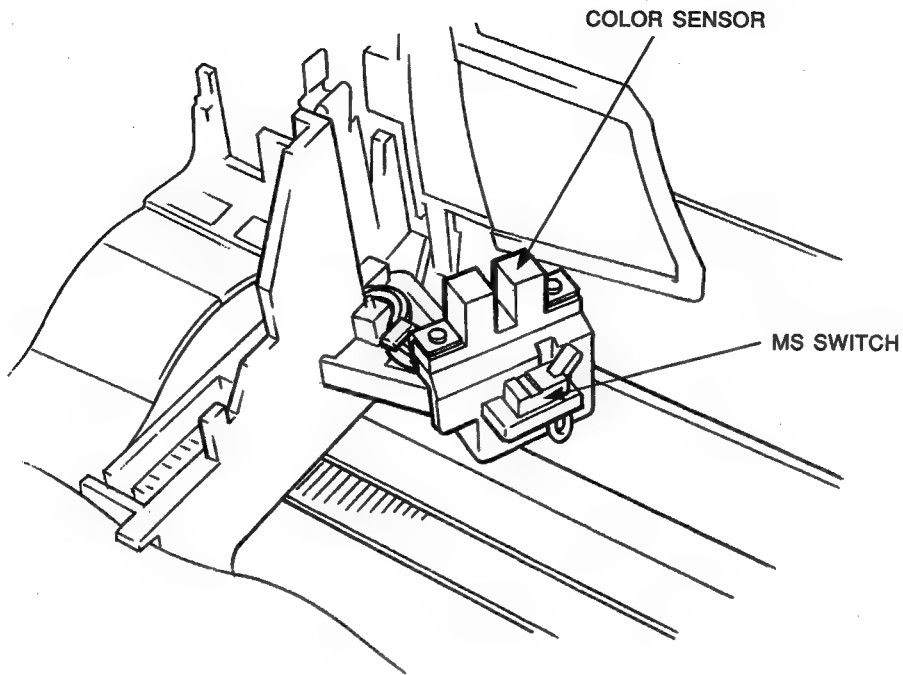


Figure 1-14 Ribbon Sensor Assembly

Table 1-5 Ribbon Situation

SIGNAL STATUS		RIBBON SITUATION
Color Sensor	MS Switch	
OFF	OFF	Black nylon ribbon is installed.
OFF	ON	Black multistrike film ribbon is empty.
ON	OFF	Color homing error.
ON	ON	Black multistrike film ribbon is installed.
ON/OFF	OFF	Color nylon ribbon is installed.

RIBBON CARTRIDGES

There are three types of ribbon cartridges for the Pinwriter.

- Black Nylon Ribbon Cartridge
- Black Multistrike Film Ribbon Cartridge
- Color Nylon Ribbon Cartridge

Black Nylon Ribbon Cartridge

This cartridge uses continuous loop, nylon fabric ribbon and it should be replaced when print quality becomes unsatisfactory (see Figure 1-15).

Black Multistrike Film Ribbon Cartridge

This cartridge uses carbon film ribbon, so it produces even sharper print quality than fabric ribbon cartridge (see Figure 1-16). This cartridge should be replaced when the ribbon is used up.

Color Nylon Ribbon Cartridge

This cartridge uses continuous loop, four-color nylon fabric ribbon, so it produces multicolor printing when the color ribbon base is installed (See Figure 1-17). It should be replaced when print quality becomes unsatisfactory.

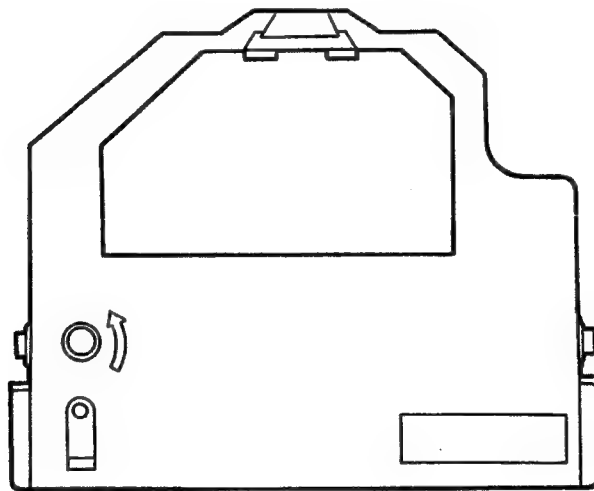


Figure 1-15 Black Nylon Ribbon Cartridge

General Description

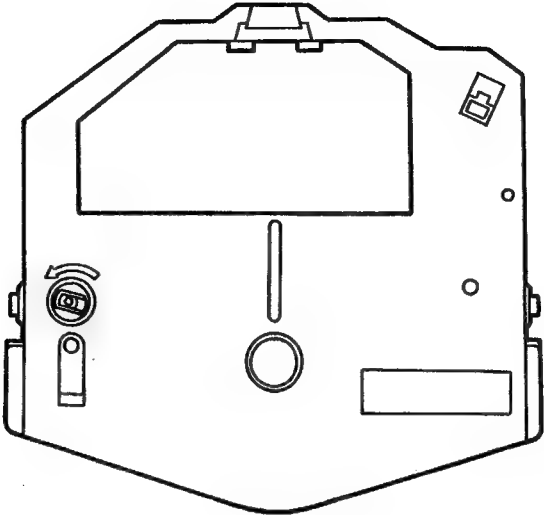


Figure 1-16 Black Multistrike Film Ribbon Cartridge

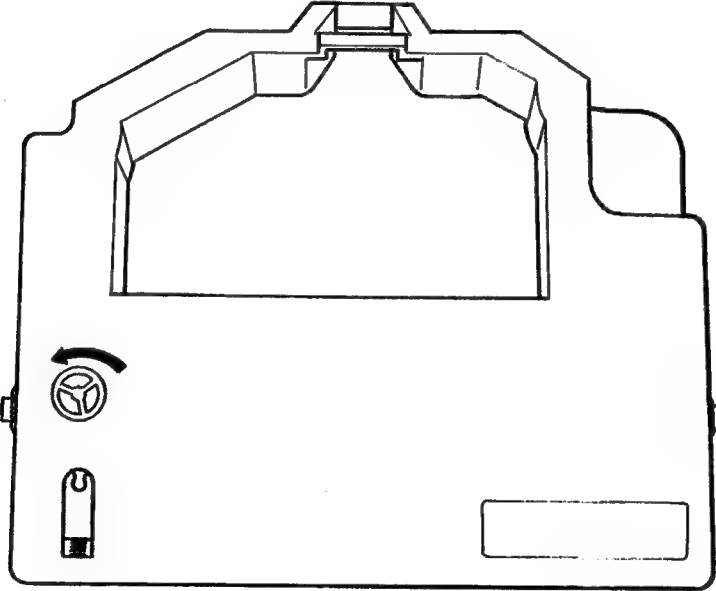


Figure 1-17 Color Nylon Ribbon Cartridge

CONTROL PANEL

The buttons and lights on the control panel allow you to control the printer, set print parameters, and monitor its status (see Figure 1-18). The PITCH indicators flash to aid in diagnosing printer malfunctions.

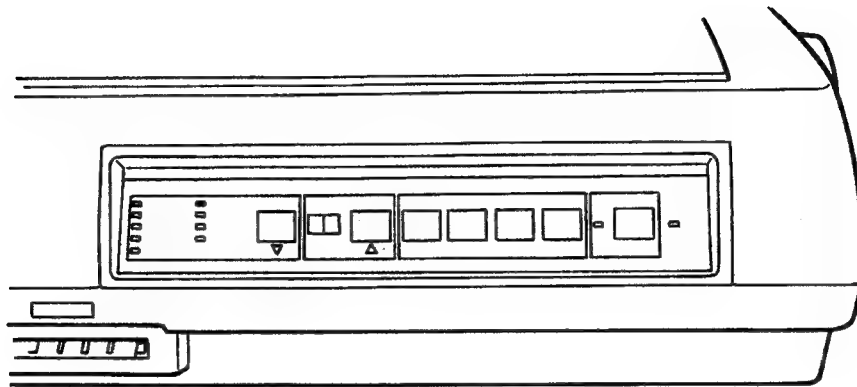


Figure 1-18 Control Panel

OPTIONAL FONT CARDS

Optional font cards can be inserted into the slot in the front of the printer (see Figure 1-19). Each font card has a capacity of 64 or 128 KB and can add an extra font to the printer.

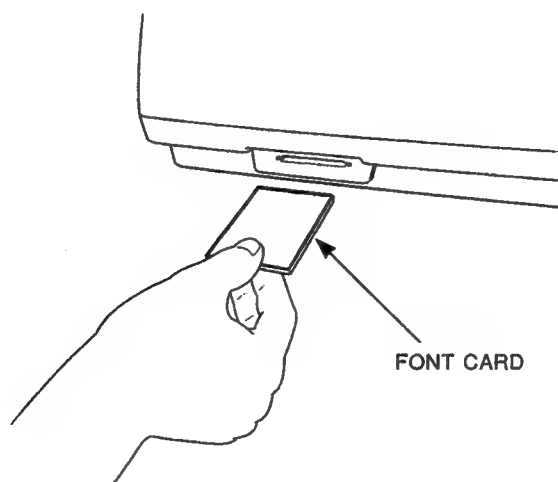


Figure 1-19 Font Card

General Description

OPTIONAL RS-232C INTERFACE

The optional RS-232C interface converts serial data of the RS-232C to parallel data used by the mother board (see Figure 1-20). The main components of the interface are

- μ PD78C11G-251 MPU, which controls the operation of the RS-232C interface and stores the program,
- μ PD4364C RAM, which stores received data (8 KB),
- pseudo-Centronics[®] interface, which transfers data to the mother board,
- DC-DC converter, which converts +5 V from the power supply to ± 12 V to be used by the RS-232C interface driver.

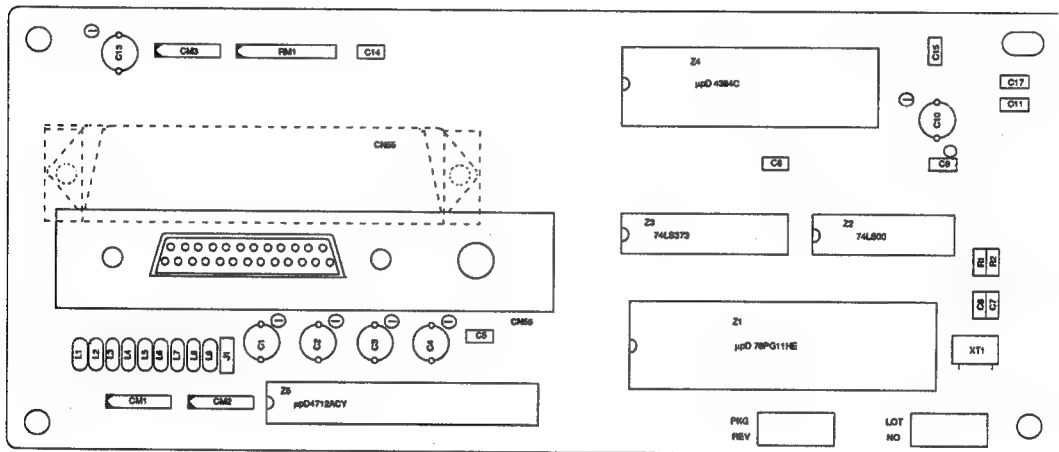


Figure 1-20 RS-232C Interface Board

OPTIONAL COLOR KIT

The optional color kit enables the printer to produce multicolor printing (see Figure 1-21).

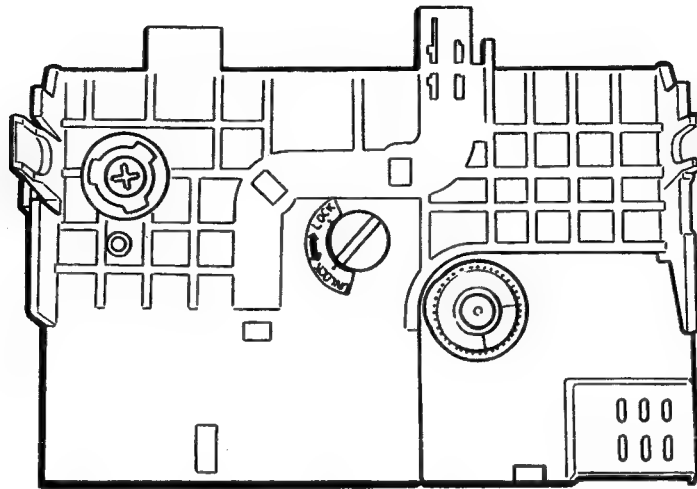


Figure 1-21 Color Ribbon Base

MEMORY SETTINGS

The memory settings are read by the printer at power-on. These settings can be changed by the operator. The Pinwriter responds to the following parameter settings.

- Print Mode Settings
- Form Settings
- Horizontal Settings
- Interface Settings

Table 1-6 gives the factory setting of each parameter.

Table 1-6 Factory Memory Settings

PARAMETER	SETTINGS
Print Mode Settings	
1. 12 cpi draft speed	High speed
2. Print style at power-up	Courier 10
3. Language character sets	USA
4. Character sets	IBM/Standard
5. Shape of zero	0
6. Graphics print direction	Unidirection
7. Download character sets	128 characters x 2
8. Heavy duty check	On
9. Quiet mode	Off
Form Settings	
1. Form length	
In lines of 6 lpi	66
In inches	11
2. Skip-over perforation	Off
3. Lines per inch	6 lpi
4. CR function	CR only
5. LF function	CR + LF
6. Buffer full auto line feed	On
7. Load/tear off	1 inch
8. Auto tear off	disable
9. Pull tractor mode	Off
10. Sheet Feeder Option type*	1 bin
Horizontal Settings	
1. Left margin column	1
2. Horizontal alignment LQ	5
3. Horizontal alignment DR	5
4. Carrier stop position	Normal
5. Sheet feeder left margin*	Column 1
Interface Settings	
1. Buffer capacity	80 KB
2. 7 or 8 bit data	8 bit
3. DC1/DC3	Disable
4. Baud rate	9600
5. Word length	8 bit
6. Parity check	None
7. DCD. CTS. DSR signals	Checked
8. Communication protocol	X-on/X-off
9. Ready/busy control	Pin 19, 20
10. Ready polarity	High
11. Emuration**	Pinwriter

* This item is printed only with P6300/P70.

** This item is printed only if an emulation card is installed.

Entering the Memory Switch Menu Mode

To enter the memory set mode, follow these steps.

1. Load the continuous forms paper into the printer.
2. Press the **SELECT** button to place the printer offline.
3. Press the **MENU** button.

The printer will enter the memory switch menu mode and print out the main menu (see Figure 1-22).

```
MAIN MENU

1. PRINT MODE SETTINGS
2. FORM SETTINGS
3. HORIZONTAL SETTINGS
4. INTERFACE SETTINGS
5. PRINT ALL CURRENT SETTINGS

6. TEST PRINT
7. HEX DUMP

PLEASE ENTER NO. ?

"PITCH" button increases display value
"TYPE STYLE" button decreases display value
"SELECT" button enters selection no.
"MENU" button SAVE & EXIT
```

Figure 1-22 Printer Main Menu

Changing the Memory Settings

To change any of the parameters, you will interact with the printer and respond to questions that are printed out.

The control panel is used to respond to the questions that appear at the end of the printout. Each button function in the memory set mode is described below.

- **PITCH** button – Press to increase the menu number.
- **TYPE STYLE** button – Press to decrease the menu number.
- **SELECT** button – Press to enter the selected parameter.
- **MENU** button – Press to save settings and quit menu mode.

General Description

Memory Switch Description

This section describes all memory switch settings.

NOTE

- Items or function indicated with asterisk is the factory setting.
- Never change RFU switch settings.
- Most of undefined settings represent that the respective switches are off. Avoid use of undefined settings since they may be used for additional functions in the future.
- Default of character set varies from that of conventional Pinwriters.
- SELECT IN and AUTO FEED XT signals cannot be controlled.
- Download characters cannot be used unless receive buffer capacity is set to 48KB.
- “#” represents a function in the memory set, which is released to users.
- MSW configuration is determined based on model P8300.
- Description on memory set n-m:

Indicates that settings can be conducted in memory set mode. Be careful since all items are not necessary be set.

- n :
1. Print Mode Settings
 2. Forms Settings
 3. Horizontal Settings
 4. Interface Settings

m : Item number of each settings.

- When special assignment is entered, [] is not printed.
- MSWn-m

m: b7=1, .. b0=8

(MSW1-1)

#(MSW1-2) Power up default: Select/Deselect

SELECT/DESELECT AT POWER UP	MSW1-2	
Deselect	1	ON
Select	0	OFF

*

#(MSW1-3) Receive buffer capacity

RECEIVE BUFFER CAPACITY	MSW1-3	
80K bytes (NO DL)	1	ON
48K bytes	0	OFF

*

Memory set 4-1

Download characters cannot be used unless the setting is 48K.

#(MSW1-4) 7 or 8 bit data

SWITCHING OF 7/8 bit	MSW1-4	
7-bit data	1	ON
8-bit data	0	OFF

*

Memory set 4-2

#(MSW1-5) Default of printing direction dot mode

DEFAULT OF DOT MODE PRINTING DIRECTION	MSW1-5	
Unidirectional	1	ON
Bidirectional	0	OFF

*

Memory set 1-6

General Description

(MSW1-6) RFU

#(MSW1-7) Number of download characters

NUMBER OF DOWNLOAD CHARACTERS	MSW1-7	
	1	ON
256 characters	1	ON
128 characters	0	OFF

*

Memory set 1-7

#(MSW1-8) Left margin position for printer with sheet feeder

LEFT MARGIN FOR PRINTER WITH S/F	MSW1-8	
	1	ON
35th column	1	ON
1st column	0	OFF

*

Memory set 3-5

#(MSW2-1, 2-2) Line spacing default

LINE SPACING DEFAULT	MSW 2	
	1	2
1/6"	1	0
1/8"	0	0
1/3"	1	1
1/4"	1	1

*

Memory set 2-3

#(MSW2-3) Skip over perforation

SKIP OVER PERFORATION	MSW2-3	
	1	ON
With 1" skip	1	ON
Without 1" skip	0	OFF

*

Memory set 2-2

W(MSW2-4) Buffer full auto line feed

BUFFER FULL AUTO LINE FEED	MSW2-4	
Carriage return (CR)	1	ON
Carriage return (CR) + line feed (LF)	0	OFF

*

Memory set 2-6

#(MSW2-5) LF function

LF FUNCTION	MSW2-5	
Line feed (LF)	1	ON
Carriage return (CR) + line feed (LF)	0	OFF

*

Memory set 2-5

#(MSW2-6) CR function

CR FUNCTION	MSW2-6	
Carriage return (CR) + line feed (LF)	1	ON
Carriage return (CR)	0	OFF

*

Memory set 2-4

#(MSW2-7) Carriage stop position

CARRIAGE STOP POSITION	MSW2-7	
Left margin position	1	ON
Normal	0	OFF

*

Memory set 3-4

General Description

#(MSW2-8) Centering position

CENTERING POSITION	MSW2-8	
0th column	1	ON
70th/42nd column	0	OFF

*

#(MSW3-1 to 3-5) Language character sets

LANGUAGE CHARACTER SETS	MSW 3				
	1	2	3	4	5
USA - U. S. A	0	0	0	0	0
FRA - FRANCE	1	0	0	0	0
GER - GERMANY	0	1	0	0	0
NG - ENGLAND	1	1	0	0	0
DM1 - DENMARK-1	0	0	1	0	0
SWD - SWEDEN	1	0	1	0	0
ITL - ITALY	0	1	1	0	0
SPA - SPAIN	1	1	1	0	0
JPN - JAPAN	0	0	0	1	0
NOR - NORWAY	1	0	0	1	0
DM2 - DENMARK-2	0	1	0	1	0
NET - NETHERLANDS	1	1	0	1	0
TUK - TURKEY	0	0	1	1	0
SP2 - SPAIN-2	1	0	1	1	0
L. A. - LATIN AMERICA	0	1	1	1	0
R. F. U	1	1	1	1	0
MULTILINGUAL	0	0	0	0	1
PORTUGAL	1	0	0	0	1
CANADA-FRENCH	0	1	0	0	1
NORWAY-2	1	1	0	0	1
R. F. U	0	0	1	0	1
	1	1	1	1	1

*

Memory set 1-3

* Thai language can be selected only when THAI FONT is installed.

LANGUAGE CHARACTER SETS (THAI)	MSW 3				
	1	2	3	4	5
TH1 THAI 1	0	1	1	1	0
TH2 THAI 2	1	1	1	1	0

#(MSW3-6) Shape of zero

SHAPE OF ZERO	MSW3-6	
With slash	1	ON
Without slash	0	OFF

*

Memory set 1-5

#(MSW3-7, 3-8) Load/tear-off function

LOAD/TEAR-OFF FUNCTION	MSW3	
	7	8
1 INCH	0	0
0 MGN EMLTN	0	1
SHORT ADJ	1	0
R. F. U	1	1

*

Memory set 2-7

(MSW4-1) 80 or 136 columns

80 OR 136 COLUMN SWITCHING	MSW4-1	
80 columns	1	ON
136 columns	0	OFF

#(MSW4-2) Auto tear off function

AUTO TEAR OFF FUNCTION	MSW4-2	
Enable	1	ON
Disable	0	OFF

*

Memory set 2-8

#(MSW4-3) Pull tractor mode

PULL TRACTOR MODE	MSW4-3	
Pull tractor	1	ON
Normal	0	OFF

*

Memory set 2-9

General Description

#(MSW4-4) Sheet feeder mode

S/F MODE	MSW4-4	
2Bin S/F	1	ON
1Bin S/F	0	OFF

*

Memory set 2-10

#(MSW4-5) Quiet mode

QUIET MODE	MSW4-5	
Quiet mode	1	ON
Normal mode	0	OFF

*

Memory set 1-9

#(MSW4-6) Draft 12 font type

DRAFT 12 FONT TYPE	MSW4-6	
Draft 12	1	ON
Draft 12 HS	0	OFF

*

Memory set 1-1

#(MSW4-7) Character set select

CHARACTER SET SWITCHING	MSW4-7	
IBM(R)/STD	1	ON
Italic	0	OFF

*

Memory set 1-4

#(MSW4-8) DC1/DC3 code

DC1/DC3 CODE	MSW4-8	
Enable	1	ON
Disable	0	OFF

*

Memory set 4-3

#(MSW5-1 to 5-3) Baud rate (communication speed)

BAUD RATE	MSW 5		
	1	2	3
150 bps	1	0	1
300 bps	1	1	0
600 bps	1	1	1
1200 bps	0	0	0
2400 bps	0	0	1
4800 bps	0	1	0
9600 bps	0	1	1
19200 bps	1	0	0

*

Memory set 4-4

#(MSW5-4) Word length

WORD LENGTH	MSW5-4	
7 bits	1	ON
8 bits	0	OFF

*

Memory set 4-5

General Description

#(MSW5-5, 5-6) Parity check

PARITY	MSW 5	
	5	6
None (No parity check)	0	0
Odd	1	0
Even	1	1
R. F. U	0	1

*

Memory set 4-6

#(MSW5-7) SCA DTR

SCA → DTR	MSW5-7	
Does not output	1	ON
Output (DTR=SCA)	0	OFF

*

Memory set 4-9

(MSW5-8) Communication test

COMMUNICATION TEST (RFU)	MSW5-8	
Communication test	1	ON
Normal	0	OFF

*

#(MSW6-1) DSR, CTS, DCD signal check

DSR, CTS, DCD SIGNAL CHECK	MSW6-1	
Without check (regarded as normally on)	1	ON
With check	0	OFF

*

Memory set 4-7

(MSW6-2) RFU

(MSW6-3) Break signal check

BREAK SIGNAL CHECK	MSW6-3	
Does not output	1	ON
Output	0	OFF

*

Since many personal computers cannot process BREAK signal, it is not output.

#(MSW6-4) SCA (reverse channel) polarity switching

SCA POLARITY SWITCHING	MSW6-4	
	1	0
Negative (NOT BUSY = -12V)	1	ON
Positive (NOT BUSY = +12V)	0	OFF

*

Memory set 4-10

#(MSW6-5, 6-6) Communication protocol

COMMUNICATION PROTOCOL	MSW6	
	5	6
X-ON/X-OFF	0	0
ETX/ACK	1	0
X-ON/X-OFF repetition	0	1
R. F. U	1	1

*

Memory set 4-8

#(MSW6-7, 6-8) Recieve buffer busy timing

RECEIVE BUFFER BUSY TIMING	MSW6	
	7	8
152 bytes	0	0
288 bytes	0	1
560 bytes	1	0
8056 bytes	1	1

*

General Description

#(MSW7-1 to 7-4) Font style selection

FONT STYLE SELECTION	MSW 7			
	1	2	3	4
Courier	0	0	0	0
Prestige Elite	1	0	0	0
ITC Survenir	0	1	0	0
Bold PS	1	1	0	0
Times PS	0	0	1	0
Helvetica PS	1	0	1	0
Quick Gothic	0	1	1	0
Draft Gothic	1	1	1	0
Option Font 1	0	0	0	1
2	1	0	0	1
3	0	1	0	1
4	1	1	0	1
R. F. U	0	0	1	1
	1	1	1	1

*

Memory set 1-2

#(MSW7-5 to 7-8) Pitch selection

FONT PITCH SETTING	MSW 7			
	5	6	7	8
10 cpi	0	0	0	0
12 cpi	1	0	0	0
15 cpi	0	1	0	0
17 cpi	1	1	0	0
20 cpi	0	0	1	0
R. F. U	1	0	1	0
	1	1	1	1

*

Memory set 1-2

#(MSW8-1) Heavy duty check

HEAVY DUTY CHECK	MSW8-1	
Without check	1	ON
With check	0	OFF

*

Memory set 1-8

(MSW8-2) Use prohibited
Used for special functions at PSA Rev. 09.02.

TEAR OFF POSITION CHANGE	MSW8-2	
	Last printing line	1
Perforation	0	OFF

*

(MSW8-3) Switching of emulation card

EMULATION	MSW8-3	
	Emulation card	1
Pinwriter	0	OFF

*

Memory set 4-11
Effective when emulation card is installed.

(MSW8-4) CR code function

CR CODE FUNCTION	MSW8-4	
	CR code only moves to LM position	1
According to MSW2-6	0	OFF

*

Memory set 2-4
(MSW8-5 to 8-8) RFU

#(MSW9-1 to 9-4) Horizontal alignment LQ

HORIZONTAL ALIGNMENT LQ	MSW 9			
	1	2	3	4
0: F/W set value	0	0	0	0
+1/360" 0.07 mm	1	0	0	0
+2/360" 0.14 mm	0	1	0	0
+3/360" 0.21 mm	1	1	0	0
+4/360" 0.28 mm	0	0	1	0
Undefined				
-4/360" 0.28 mm	0	0	1	1
-3/360" 0.21 mm	1	0	1	1
-2/360" 0.14 mm	0	1	1	1
-1/360" 0.07 mm	1	1	1	1

*

Memory set 3-2

General Description

#(MSW9-5 to 9-8) Horizontal alignment DR

HORIZONTAL ALIGNMENT	MSW 9			
	5	6	7	8
0: F/W set value	0	0	0	0
+1/360" 0.07 mm	1	0	0	0
+2/360" 0.14 mm	0	1	0	0
+3/360" 0.21 mm	1	1	0	0
+4/360" 0.28 mm	0	0	1	0
Undefined				
-4/360" 0.28 mm	0	0	1	1
-3/360" 0.21 mm	1	0	1	1
-2/360" 0.14 mm	0	1	1	1
-1/360" 0.07 mm	1	1	1	1

*

Memory set 3-3

(MSW10-1) Validity of $\overline{\text{SELECT IN}}$ signal

$\overline{\text{SELECT IN}}$	MSW10-1	
Effective*	1	ON
According to MSW4-8	0	OFF

*

Note: Fixed to low in H/W. Can be changed by pattern cut.

(MSW10-2) Validity of $\overline{\text{AUTO FEED XT}}$ signal

$\overline{\text{AUTO FEED XT}}$	MSW10-2	
Fixed to low	1	ON
Effective	0	OFF

*

(MSW10-3) Test print mode switching

TEST PRINT MODE SWITCHING	MSW10-3	
Manual	1	ON
Auto	0	OFF

*

In manual mode, pressing SELECT button halts test printing. Print mode is not changed until it changed using TYPE STYLE or PITCH button.

(MSW10-4) Homing disable/enable (for PCB aging)

HOMING PROHIBITED	MSW10-4	
Disable	1	ON
Enable	0	OFF

*

(MSW10-5) Aging mode

AGING MODE	MSW10-5	
Enable	1	ON
Disable	0	OFF

*

(MSW10-6) RFU

(MSW10-7) Thai font mode

THAI FONT MODE	MSW10-7	
Thai font mode	1	ON
Normal font mode	0	OFF

*

* Effective when THAI FONT is installed.

(MSW10-8) RFU

(MSW11-1 to 11-8)
One byte specifies PTR backlash (1/720").

00H*

(MSW12-1 to 12-8) RFU

(MSW13-1 to 13-8) RFU

(MSW14-1 to 14-8, MSW15-1 to 15-8)

The sheet feeder loading position is specified (1/720").

00H*

General Description

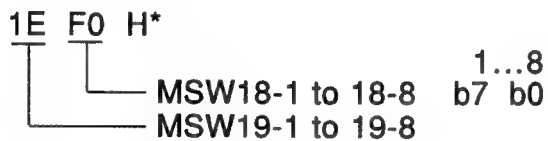
(MSW16-1 to 16-8) Print compensation (plant setting): LQ mode

PRINT COMPENSATION (plant setting)	MSW 16							
	1	2	3	4	5	6	7	8
No compensation	0	0	0	0	0	0	0	0
+1/360" 0.07 mm	1	0	0	0	0	0	0	0
+2/360" 0.14 mm	0	1	0	0	0	0	0	0
+3/360" 0.21 mm	1	1	0	0	0	0	0	0
+4/360" 0.28 mm	0	0	1	0	0	0	0	0
+5/360" 0.35 mm	1	0	1	0	0	0	0	0
+6/360" 0.42 mm	0	1	1	0	0	0	0	0
+7/360" 0.49 mm	1	1	1	0	0	0	0	0
Undefined								
-7/360" 0.49 mm	1	0	0	1	1	1	1	1
-6/360" 0.42 mm	0	1	0	1	1	1	1	1
-5/360" 0.35 mm	1	1	0	1	1	1	1	1
-4/360" 0.28 mm	0	0	1	1	1	1	1	1
-3/360" 0.21 mm	1	0	1	1	1	1	1	1
-2/360" 0.14 mm	0	1	1	1	1	1	1	1
-1/360" 0.07 mm	1	1	1	1	1	1	1	1

(MSW17-1 to 17-8) RFU

#(MSW18-1 to 18-8, MSW19-1 to 19-8) FF length

Two bytes data specify the FF length (1/720").



Memory set 2-1

(MSW20-1 to 20-8) Print compensation (plant setting): HS-LQ, Draft 12/15/17/20, 1/80" dot mode

PRINT COMPENSATION (plant setting)	MSW 20							
	1	2	3	4	5	6	7	8
No compensation	0	0	0	0	0	0	0	0
+1/360" 0.07 mm	1	0	0	0	0	0	0	0
+2/360" 0.14 mm	0	1	0	0	0	0	0	0
+3/360" 0.21 mm	1	1	0	0	0	0	0	0
+4/360" 0.28 mm	0	0	1	0	0	0	0	0
+5/360" 0.35 mm	1	0	1	0	0	0	0	0
+6/360" 0.42 mm	0	1	1	0	0	0	0	0
+7/360" 0.49 mm	1	1	1	0	0	0	0	0
Undefined								
-7/360" 0.49 mm	1	0	0	1	1	1	1	1
-6/360" 0.42 mm	0	1	0	1	1	1	1	1
-5/360" 0.35 mm	1	1	0	1	1	1	1	1
-4/360" 0.28 mm	0	0	1	1	1	1	1	1
-3/360" 0.21 mm	1	0	1	1	1	1	1	1
-2/360" 0.14 mm	0	1	1	1	1	1	1	1
-1/360" 0.07 mm	1	1	1	1	1	1	1	1

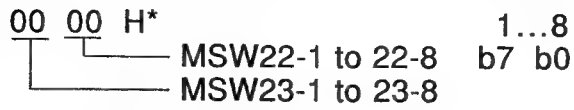
(MSW21-1 to 21-8) Print compensation (plant setting): Draft 10, HS-12

PRINT COMPENSATION (plant setting)	MSW 21							
	1	2	3	4	5	6	7	8
No compensation	0	0	0	0	0	0	0	0
+1/360" 0.07 mm	1	0	0	0	0	0	0	0
+2/360" 0.14 mm	0	1	0	0	0	0	0	0
+3/360" 0.21 mm	1	1	0	0	0	0	0	0
+4/360" 0.28 mm	0	0	1	0	0	0	0	0
+5/360" 0.35 mm	1	0	1	0	0	0	0	0
+6/360" 0.42 mm	0	1	1	0	0	0	0	0
+7/360" 0.49 mm	1	1	1	0	0	0	0	0
Undefined								
-7/360" 0.49 mm	1	0	0	1	1	1	1	1
-6/360" 0.42 mm	0	1	0	1	1	1	1	1
-5/360" 0.35 mm	1	1	0	1	1	1	1	1
-4/360" 0.28 mm	0	0	1	1	1	1	1	1
-3/360" 0.21 mm	1	0	1	1	1	1	1	1
-2/360" 0.14 mm	0	1	1	1	1	1	1	1
-1/360" 0.07 mm	1	1	1	1	1	1	1	1

General Description

#(MSW22-1 to 22-8) Left margin

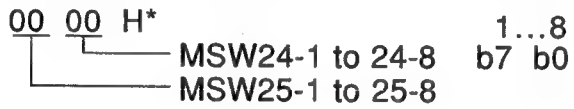
LM distance is specified by 2-byte data (1/2880").



Memory set 3-1

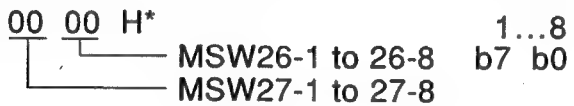
(MSW24-1 to 24-8, MSW25-1 to 25-8) Load position

Load position is specified by 2-byte data (1/720").



(MSW26-1 to 26-8, MSW27-1 to 27-8) Tear off position

Tear off position is specified by 2-byte data (1/720").



Maintenance Function

Information contained in this section shall not be released to users without prior consultation with technical staff members.

EEPROM

Secret Mode

This function is used to use special functions which cannot be set by the menu mode by changing memory switch data in bit unit.

(1) Entering into secret mode

To enter into the secret mode, turn power on while depressing **FEED**, **TEAR PAPER**, **LOAD/UNLOAD** and **MENU** buttons, then press **MENU** then **SELECT** buttons.

* The interface connector should be disconnected when entering into the secret mode. Otherwise, unexpected data may be transmitted and contents of the EEPROM may be damaged.

Example printout:

```
FW REV.XX
CG REV.XX
ERROR : XX XX
MEMORY SWITCH SETTINGS
S 1 xxxxxxxx S 2 xxxxxxxx S 3 xxxxxxxx
S 5 xxxxxxxx S 6 xxxxxxxx S 7 xxxxxxxx
```

1st line: FW Rev. number
2nd line: CG Rev. number
3rd line: Error history
4th line and after: Memory switch contents

After the above, MAIN MENU is printed.

```
99. EXIT
0. RESET TO FACTORY SETTING
1 -- 27.CHANGE MSW X-Y
```

General Description

(2) Setting procedure

Select a number, 99, 0, or 1 to 27 using NEXT or PREV. button then press ENTER button to enter the selected function (switch functions are the same as memory setting).

1. 99. EXIT
The updated settings are stored in the EEPROM memory and control returns to the on-line mode.
2. 0.RESET TO FACTORY SETTING
Factory settings are stored in the EEPROM memory and control returns to MAIN MENU (80/130 columns are not changed).
3. 1 -- 27. CHANGE MSW X-Y
The control proceeds to setting of the selected memory switch.
4. Setting of memory switch X
The following message is printed out and control waits for data input.

```
S 1 - 1 0
  |   |   |
  |   |   |----- CURRENT SETTING 0: OFF
  |   |   |----- SUB SWITCH NO.   1: ON
  |   |   |----- SWITCH NO.
```

When settings are to be changed, select the desired number using NEXT and/or PREV. buttons and press ENTER button. When data are entered, results are printed out on the right side. If no change is specified, control proceeds to the next bit without printing.

```
S 1 - 1 0 1
```

```
S 1 - 2 0
```

When sub-switch 8 is processed, control returns automatically to MAIN MENU.

99. EXIT
0. RESET TO FACTORY SETTING
1--27. CHANGE MSW X-Y

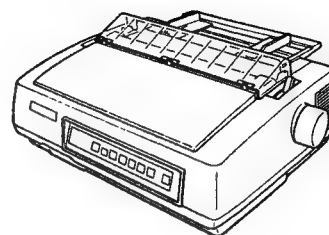
CAUTION

If wrong settings are entered, the printer may not be usable thereafter. Operate after thorough understanding of switch functions.

- * Even if memory switch 4-1 (136/80 columns) is changed midway, the model name printed out in test print does not change. If you want to change the model name, contact your NEC headquarter.

Section 2

Troubleshooting



Pinwriter printers are highly reliable and virtually trouble-free. However, if a problem occurs, use the information in this section to identify the malfunction.

GENERAL TROUBLESHOOTING PROCEDURES

To perform the troubleshooting generally, you can use the following features.

- Error Codes
- Status Codes
- Self-Test
- Print Screen
- Hex Dump
- Control Panel
- Special Feature
- Test Points

The subsequent flowcharts offer solutions to specific Pinwriter problems. Try each solution, in the order listed, until the problem is solved.

Error Codes

The PITCH indicator on the printer's control panel displays error codes to help diagnose printer malfunctions. The error codes are divided into three groups. "dx" indicates an error in the RS-232C interface, "Ex" indicates an error in the electronic circuit, and "Ax" indicates an error in the mechanical assembly. Tables 2-1 through 2-3 give the values of x and the corresponding definition for each type of error. PITCH indicator flashes, and SELECT lamp off, if one of them occurs. Electronic circuit diagnostics is done once at power up. If powered up with PITCH and TYPE STYLE button holded, printer continues this diagnostics until power off.

Figure 2-1 shows the order of the error codes displayed on the PITCH indicator.

Table 2-1 RS-232C Interface Errors (dx)

VALUE OF X	ERROR DEFINITION
0	Timer check error in RS-232C CPU
1	Check sum error for RS-232C firmware ROM
2	RAM check error for 8K receive buffer
7	Check sum error for TAIWAN board firmware ROM
A	RS-232C option error (hardware)
b	Communication error between RS-232C option and printer

Table 2-2 Electronic Circuit Errors (Ex)

VALUE OF X	ERROR DEFINITION
0	Check sum error for master firmware ROM
3	Check sum error for resident CG ROM
4	RAM check error used for CPU
8	Check sum error for ROM of font card
9	Check sum error for ROM of emulation card
b	Emulation card pulled out while power is on
E	EEPROM check error

Table 2-3 Mechanical Assembly Errors (Ax)

VALUE OF X	ERROR DEFINITION
0	Carrier movement error during printing
3	Color ribbon homing error/color change error
4	Carrier homing error
9	Sheet feeder paper eject error at power on

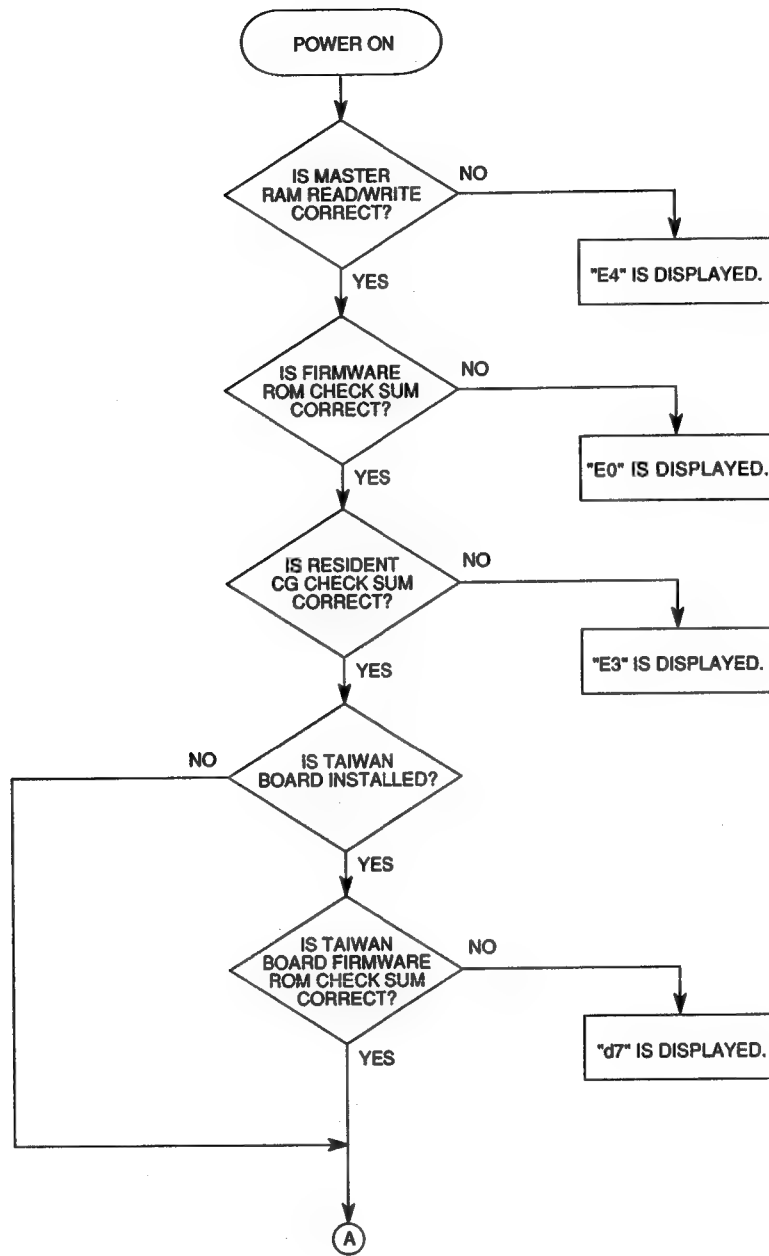


Figure 2-1 Error Codes (1/4)

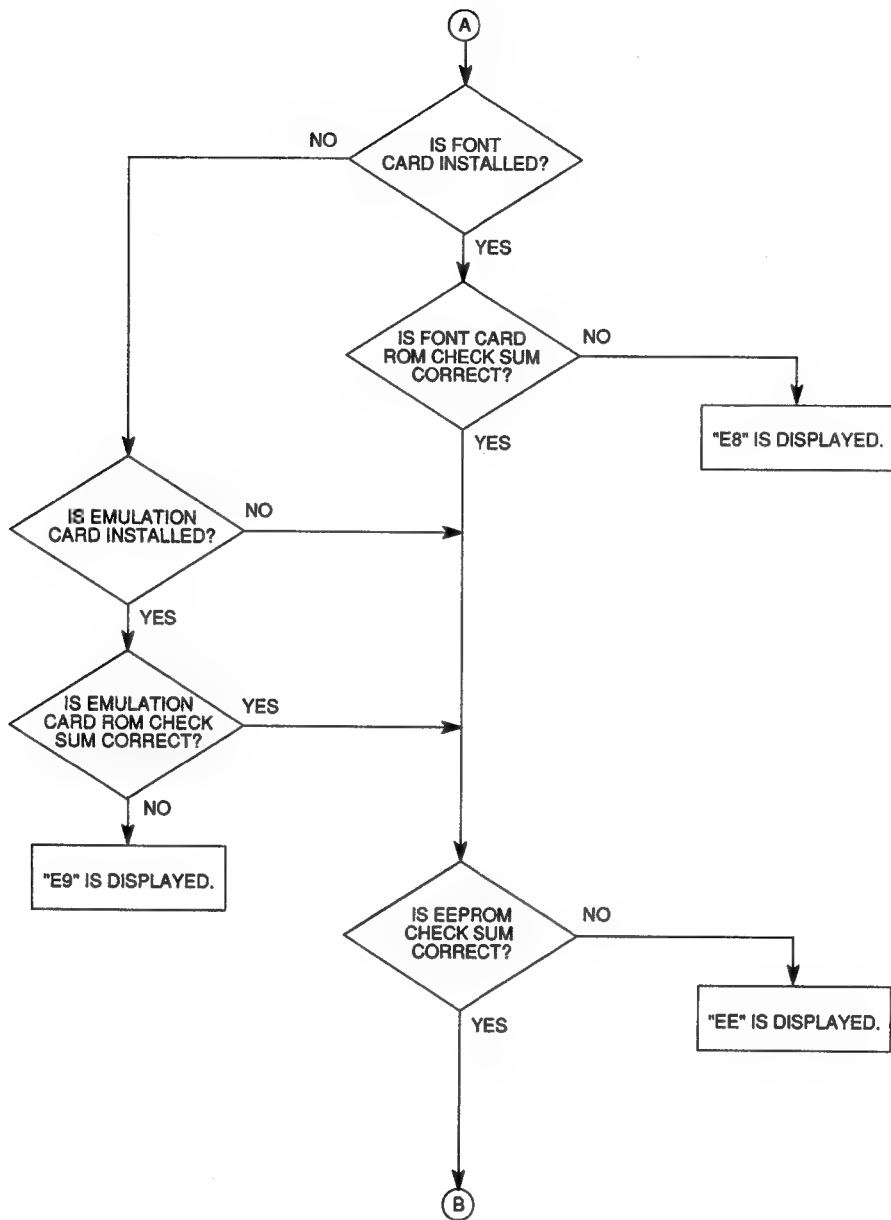


Figure 2-1 Error Codes (2/4)

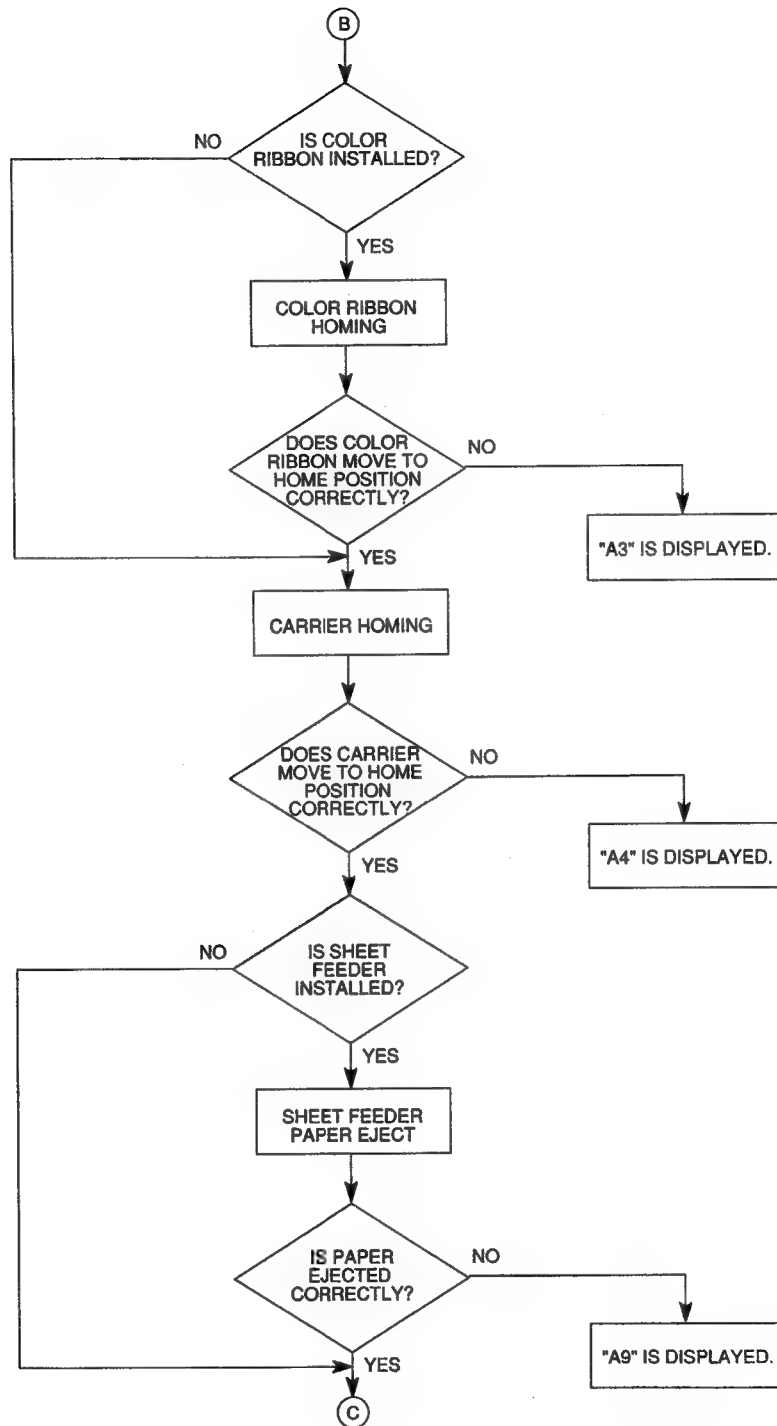


Figure 2-1 Error Codes (3/4)

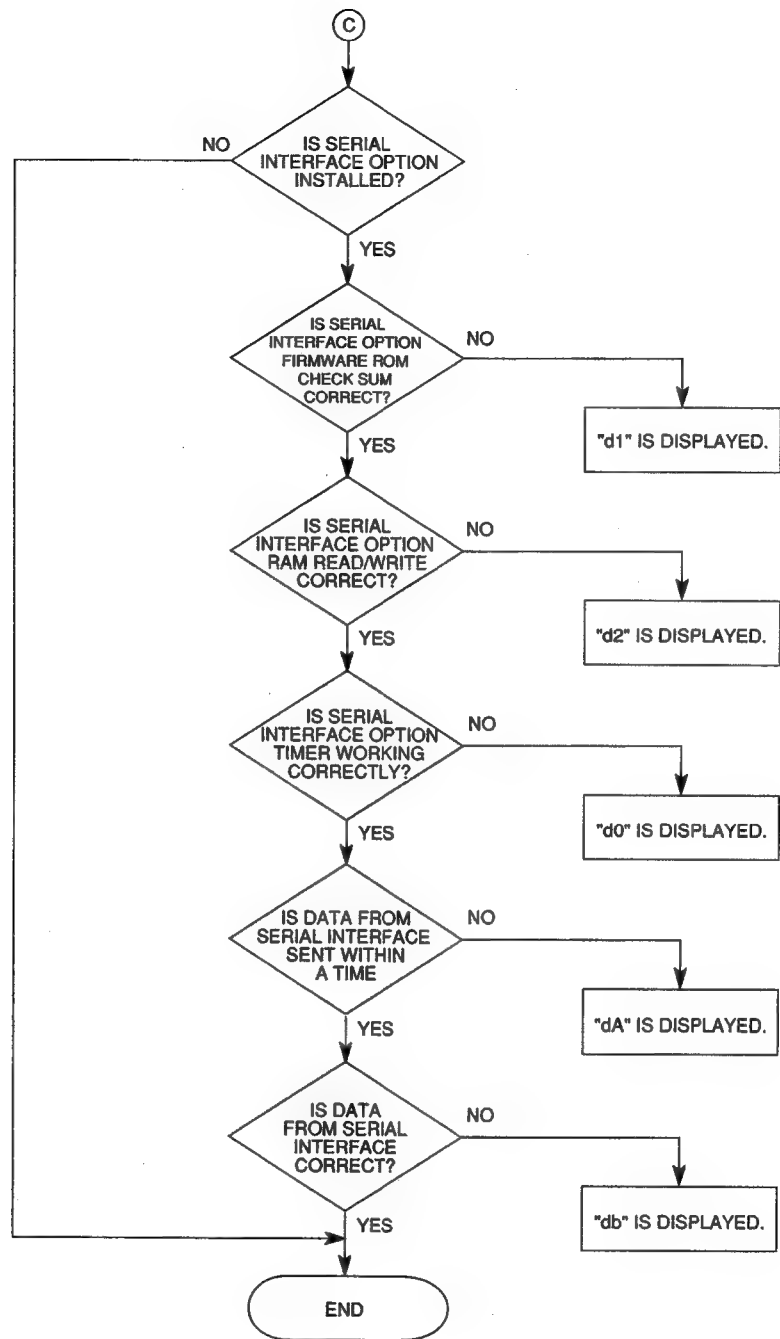


Figure 2-1 Error Codes (4/4)

Status Codes

The PITCH indicator also displays status codes which help to identify and correct minor printer problems. Table 2-4 lists each status code and its corrective action.

Table 2-4 Status Codes

STATUS CODE	MEANING	CORRECTIVE ACTION
Cd	Font card is pulled out while power is on.	Press the SELECT button.
CE	Multistrike ribbon cartridge is empty.	Replace ribbon and press the SELECT button.
CO	Top front cover is open.	Close the top front cover and press the SELECT button.
dL	Downloading data came but printer is not able to receive it.	Change buffer capacity to 48 KB by memory setting or press the SELECT button.
SE	Serial Interface buffer overflow.	Press the SELECT button.
SF	Paper jam or paper loading error with the sheet feeder installed.	Remove jammed paper, and press the SELECT button.
PH	Print head is overheated.	Printing resumes automatically when the print head cools down.
PO	Printer is out of paper.	Load paper and press the SELECT button.

Self-Test

If your Pinwriter will not print, run a self-test to determine whether the problem is with the printer itself.

1. Turn on the printer and press **SELECT** button to be DESELECT mode.
2. Load paper into the printer and press **MENU** button to enter the memory switch menu mode, then the main menu is printed out.
3. Select item number 6, "TEST PRINT" by pressing the **PITCH** button repeatedly until "6" appears on the pitch indicator.
4. Press the **SELECT** button to begin the self-test.

Print Screen

If the self-test runs with no problems, you should now perform a print screen to determine if the interface is working correctly. With most computer systems, a print screen is performed by pressing the shift key and print screen key at the same time. If the screen does not print out, your computer is probably not communicating with your printer. Check your interface connections and try a print screen again. If the screen still does not print out, call your printer service representative for assistance.

If the screen does print out, the printer is probably fine and the problem lies with your software. See your software dealer for assistance.

Hex Dump

If you are having problems with a particular printer function such as underlining or condensed printing, perform a hex dump to determine whether the problem is with the printer or the software.

1. Create several lines of text using the function which is giving you problems. In this example, we will use the underlining function.
2. Exit the software package and press **SELECT** button to make the printer DESELECT mode.
3. Press **MENU** button. The printer enters the memory set mode and prints out the main menu.
4. Select item number 7, "HEX DUMP" by pressing the **PITCH** button repeatedly until "7" appears on the pitch indicator. Press the **SELECT** button to begin the hex dump.
5. The computer now sends your lines of text to the printer, which in turn prints out the data in hexadecimal form. You will want to check the hex codes to see if the underlining code appears.

Try to find the underlining code (hexadecimal code: 1B 2D) among the hex codes in the hex dump printout (see Figure 2-3).

6. If the underlining hex code appears, the software is doing its job and the problem lies with the printer.

If the underlining hex code does not appear, you have a software problem and should see your software dealer.

Troubleshooting

```
F6300
FW REV.12
CG REV.02
MEMORY SWITCH SETTINGS
S 1 00100000 S 2 00000000 S 3 00000000
S 4 00000010 S 5 01100000 S 6 01100011
S 7 00000000 S 8 00000000 S 9 00000000
S10 00000000 S11 00000000 S12 00000000
S13 00000000 S14 00000000 S15 00000000
S16 00000000
1B 2D 01 20 21 22 23 24 25 26 27 28 29 2A 2B 2C
2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A 3B 3C
3D 3E 3F 40 41 42 43 44 45 46 47 48 49 4A 4B 4C
4D 4E 4F 50 51 52 53 54 55 56 57 58 59 5A 5B 5C
5D 5E 5F 60 61 62 63 64 65 66 67 68 69 6A 6B 6C
6D 6E 6F 70 71 72 73 74 75 76 77 78 79 7A 7B 7C
7D 7E 0D 0A
.-. !"#$$%&'()*+ ,
-./0123456789:;<
=>?@ABCDEFGHIJKL
MNOPQRSTUVWXYZ[\
]^_`abcdefghijkl
mnopqrstuvwxyz{|
```

Figure 2-3 Sample of Hex Dump

Control Panel Special Feature

You can perform the tests and access the printer settings by using the special features of the control panel. Table 2-5 gives the switch combinations of the special features in on-line status. Table 2-5 gives the switch combinations of the special features that are operated with the power-on.

Table 2-5 Control Panel Special Features (Online)

SPECIAL FEATURES	FUNCTION	TYPE STYLE	PITCH	MENU	LOAD UNLOAD	TEAR PAPER	FEED	SELECT
Reset Printer	Resets the printer force.	-	-	-	-	0	0	0
Move to Left Position	Move the carrier to the left margin position	-	-	-	-	0	-	0
Set TOF/ Short Adj.	Resets the current print position as the top of form. Short adj. is available even with cover open.	-	-	-	-	-	0	0
Centering Position Change	Changes the print centering position of the auto-load or the hot-zone.	-	-	-	0	-	-	0

Note: In the above switch combination, SELECT condition will be changed but other switch original function is not activated.

Table 2-6 Control Panel Special Features (Power On)

SPECIAL FEATURES	FUNCTION	TYPE STYLE	PITCH	MENU	LOAD UNLOAD	TEAR PAPER	FEED	SELECT
Secret Mode	Operates the memory switches by bit.	-	-	0	0	0	0	-
To start this mode, press MENU button, then press SELECT button.								
Hex Dump Mode	Prints the hex dump.	-	-	-	0	-	-	-
EEPROM Access Mode	Sets the EEPROM through the parallel interface.	-	-	0	0	0	0	-
Test Printing	Prints the test pattern.	-	-	-	-	-	0	-
H/W Self-Check	Performs the hardware self-check.	0	0	-	-	-	-	-
Aging Mode	Sets the aging mode.	-	-	0	0	0	0	-
To start this mode, press SELECT button, then power off, then power on.								
Mechanism Test Mode	Tests the precisions of the spacing and the line feed.	-	-	0	0	0	0	-
To start this mode, press FEED button, then press SELECT button.								
Running Test Mode	Checks the precision of the printer.	-	-	0	0	0	0	-
To start this mode, press TEAR PAPER button, then press SELECT button.								

Test Points

When the power supply seems to be defective, check the output voltage first of all. CN2 on the power board allow you to check the +5 V and +34 V outputs.

PSD POWER (B): 808-891104-002-A

Use the following procedure to check the voltage.

1. To check +5 V output voltage, connect a positive lead to pin 1 and negative lead to pin 2.
2. To check +34 V output voltage, connect a positive lead to pin 5 or 6 and negative lead to pin 3 or 4.

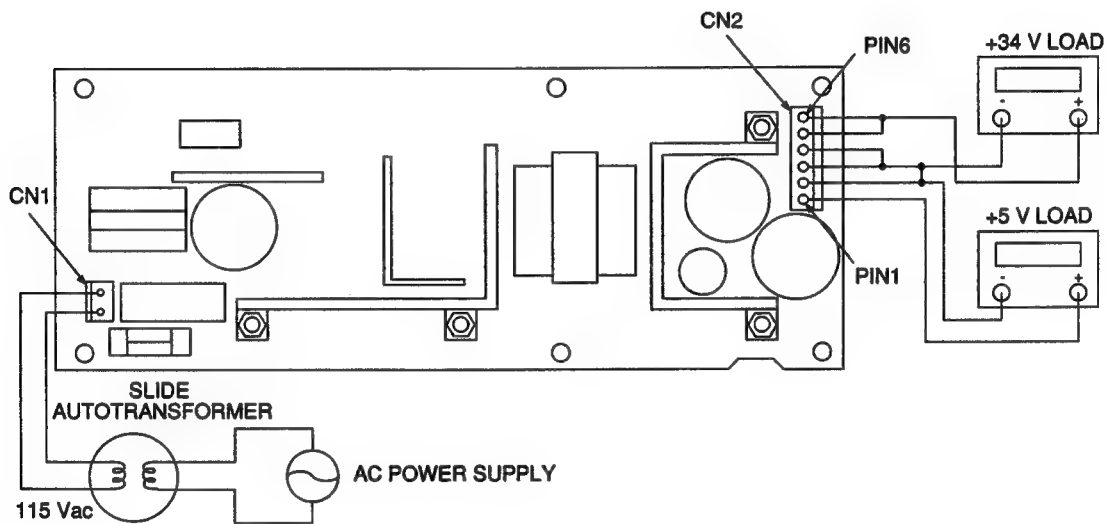


Figure 2-4 PSD Power (B) Output Voltage Check

Troubleshooting

PSD POWER (C): 808-891104-003-A

Use the following procedure to check the voltage.

1. To check +5 V output voltage, connect a positive lead to pin 1 and negative lead to pin 2.
2. To check +34 V output voltage, connect a positive lead to pin 5 or 6 and negative lead to pin 3 or 4.

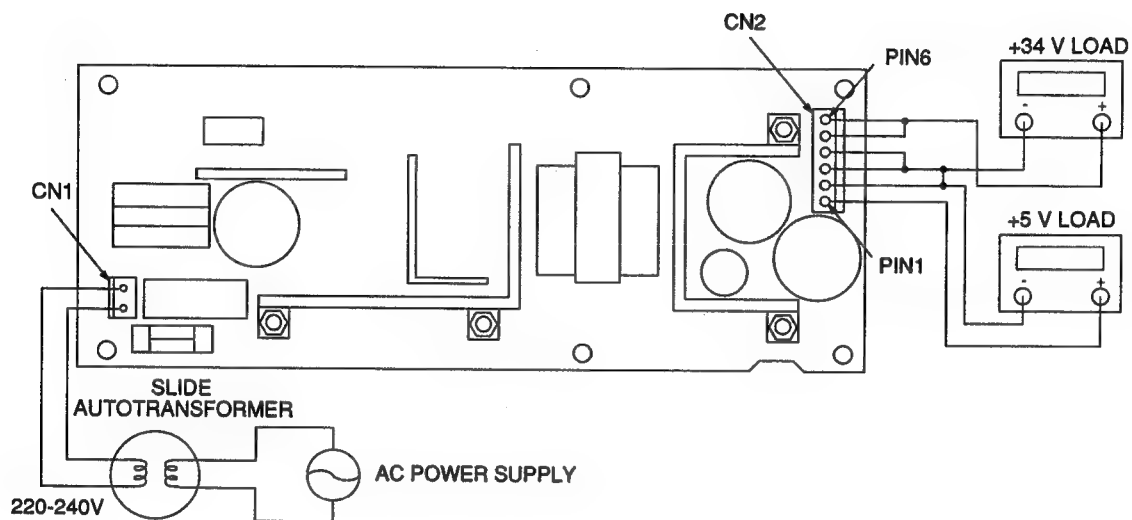


Figure 2-5 PSD Power (C) (GRP003) Output Voltage Check

PSD POWER (C): 808-891104-303-A

Use the following procedure to check the voltage.

1. To check +5 V output voltage, connect a positive lead to pin 6 and negative lead to pin 5.
2. To check +34 V output voltage, connect a positive lead to pin 1 or 2 and negative lead to pin 3 or 4.

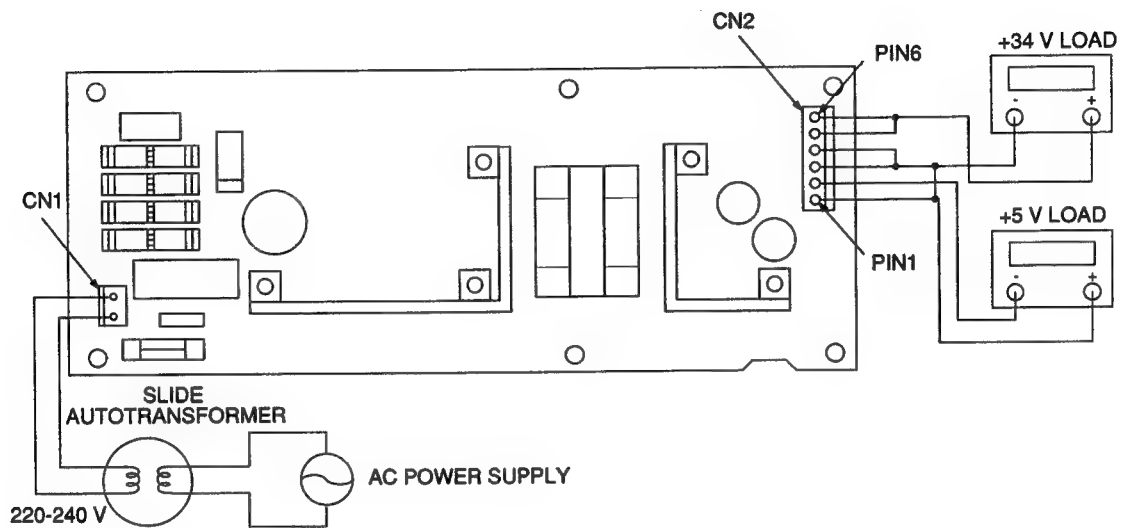


Figure 2-6 PSD Power (C) (GRP303) Output Voltage Check

Troubleshooting

SPECIFIC TROUBLESHOOTING PROCEDURES

The following flowcharts give troubleshooting procedures for these printer problems.

- Power lamp does not light.
- Carrier does not initialize.
- Control panel buttons do not function properly.
- Control panel lamps do not function properly.
- Self-test printout is abnormal.
- On-line printing using the serial interface is abnormal.
- On-line printing using the parallel interface is abnormal.
- Color printing is abnormal.
- PSD Power (B) or PSD Power (C) (GRP 003) is faulty.
- PSD Power (C) (GRP 303) is faulty.

Refer to the appropriate flowchart for solutions to a particular problem.

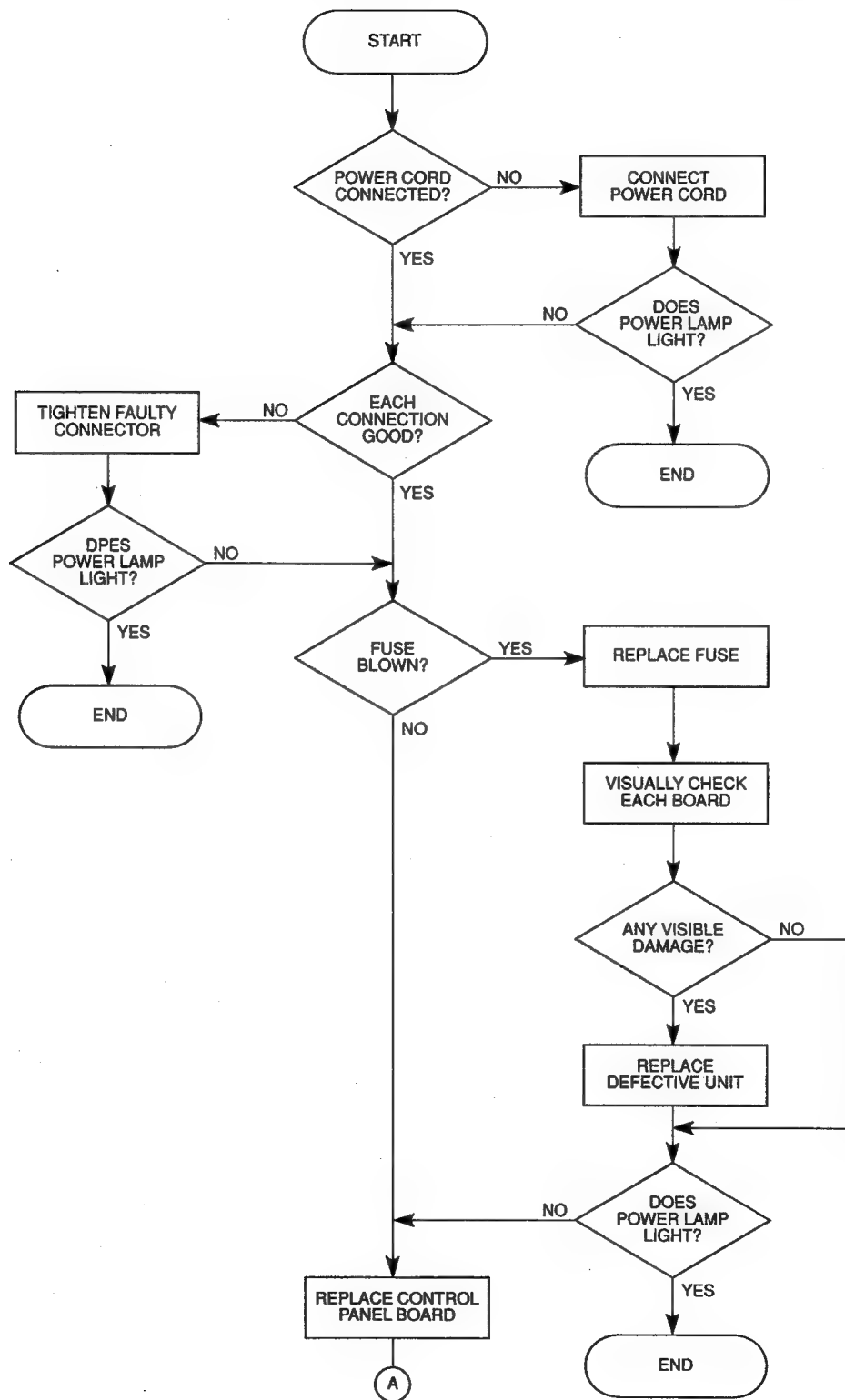


Figure 2-7 Power Lamp Does Not Light (1 of 2)

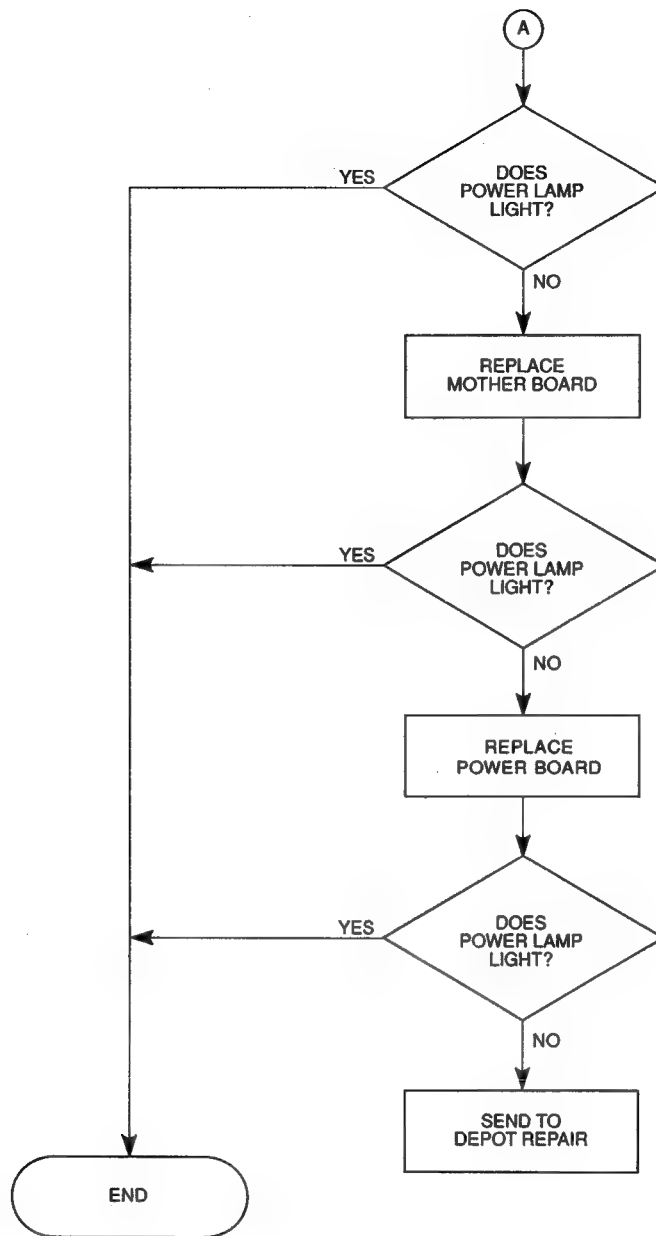


Figure 2-7 Power Lamp Does Not Light (2 of 2)

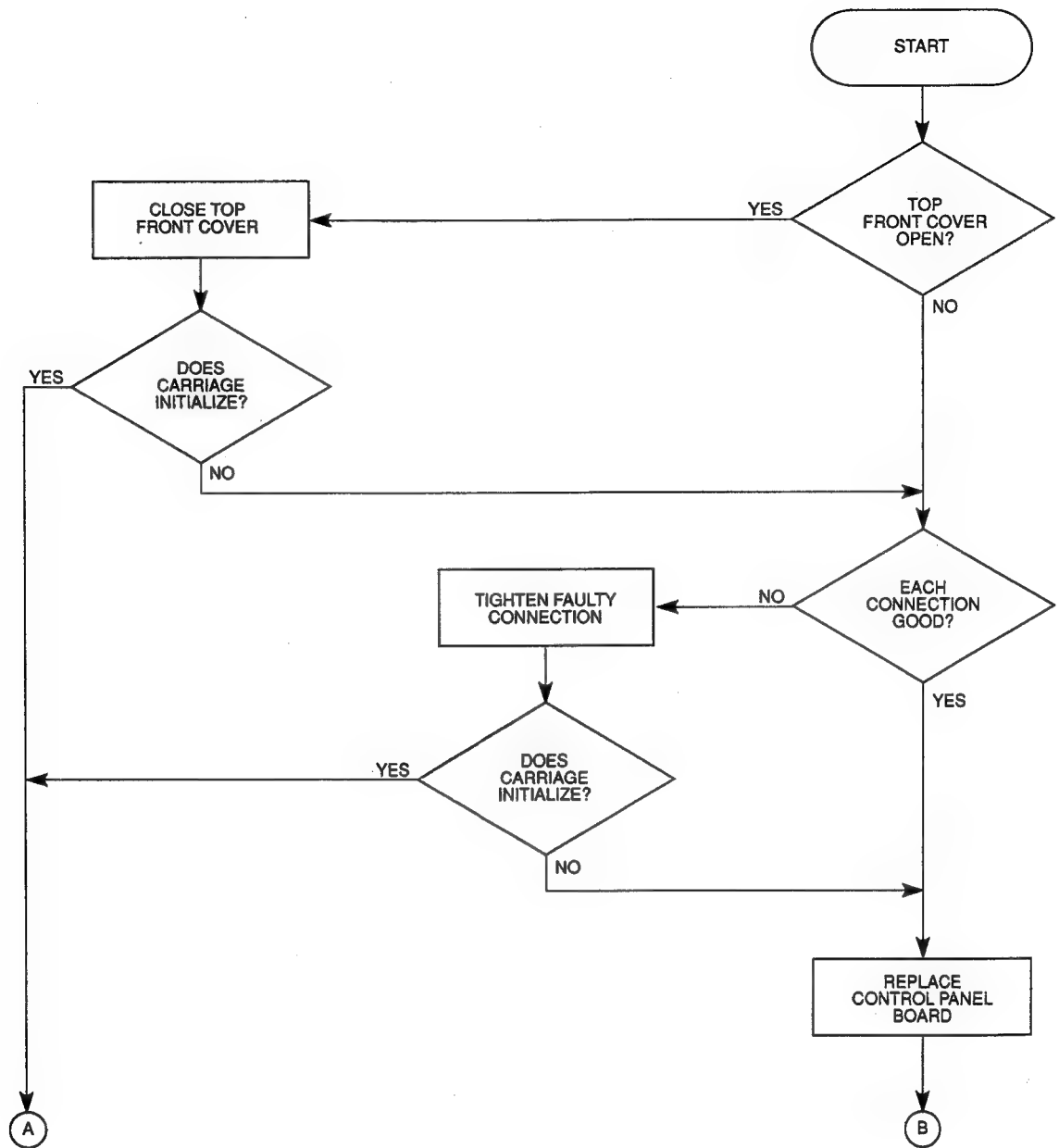


Figure 2-8 Carrier Does Not Initialize (1 of 2)

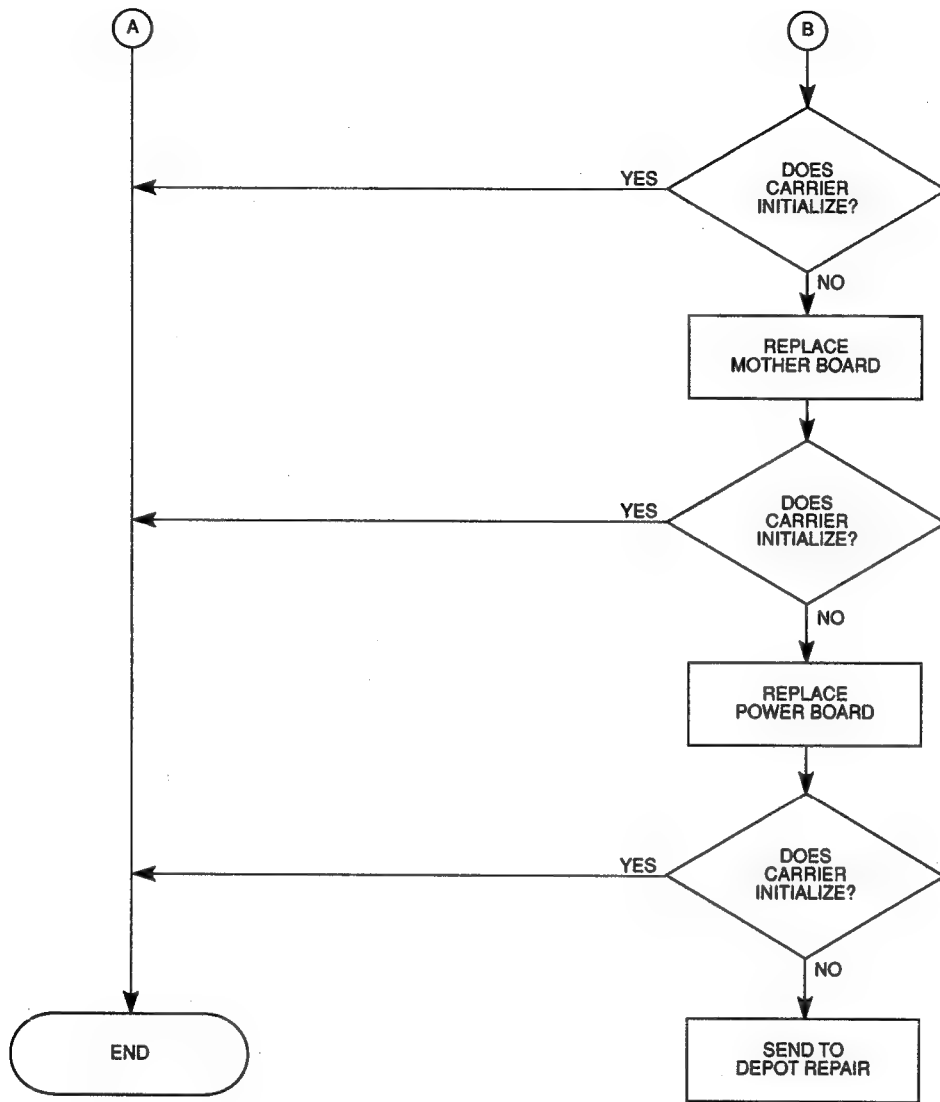


Figure 2-8 Carrier Does Not Initialize (2 of 2)

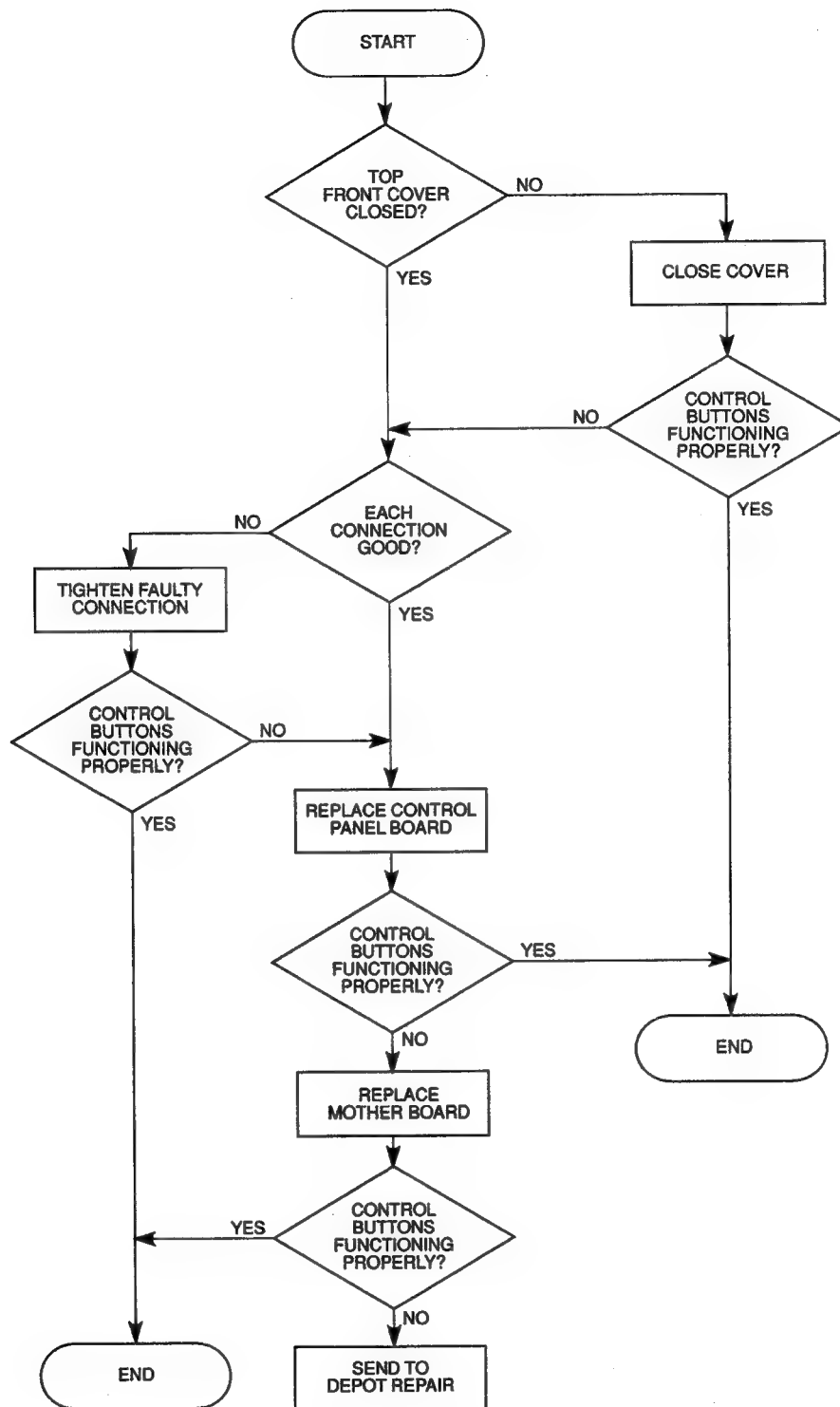


Figure 2-9 Control Panel Buttons Do Not Function Properly

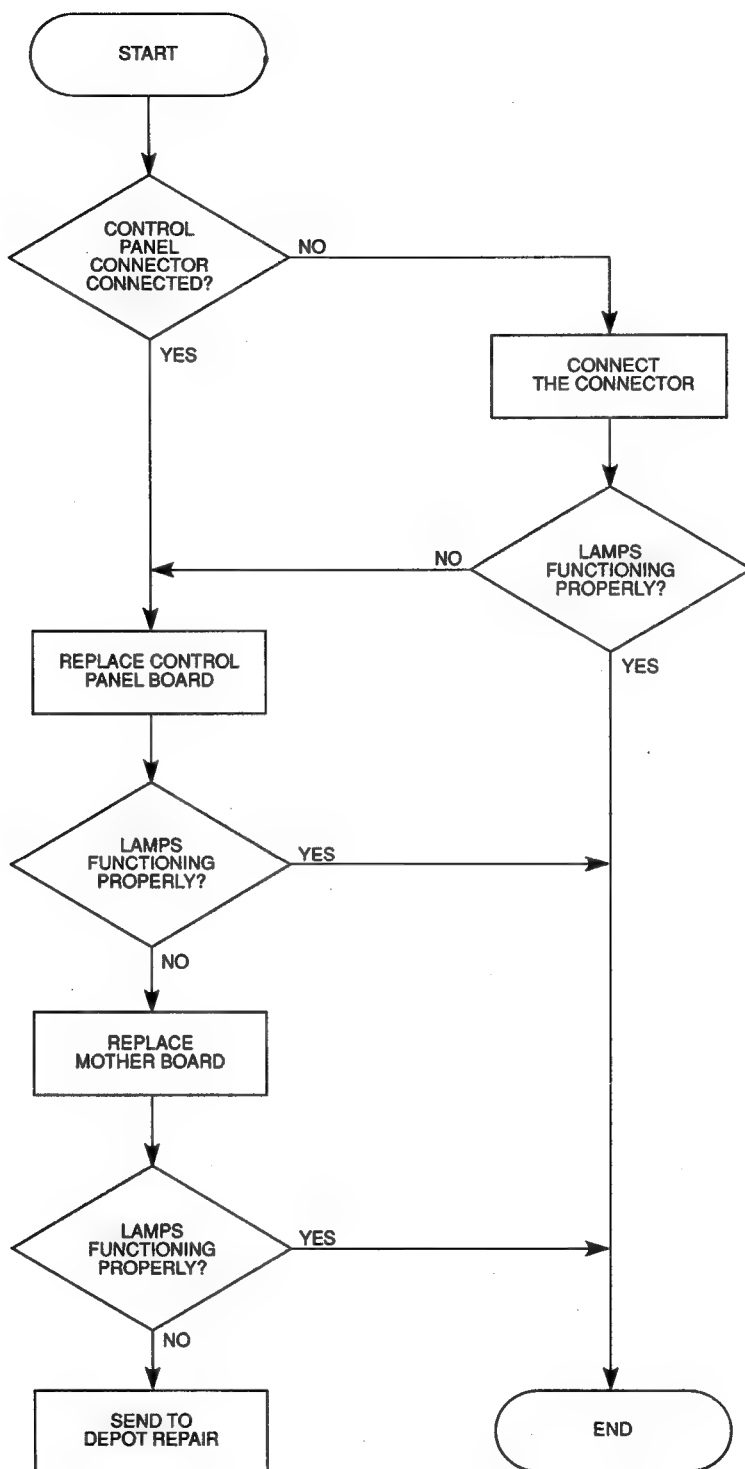


Figure 2-10 Control Panel Lamps Do Not Function Properly

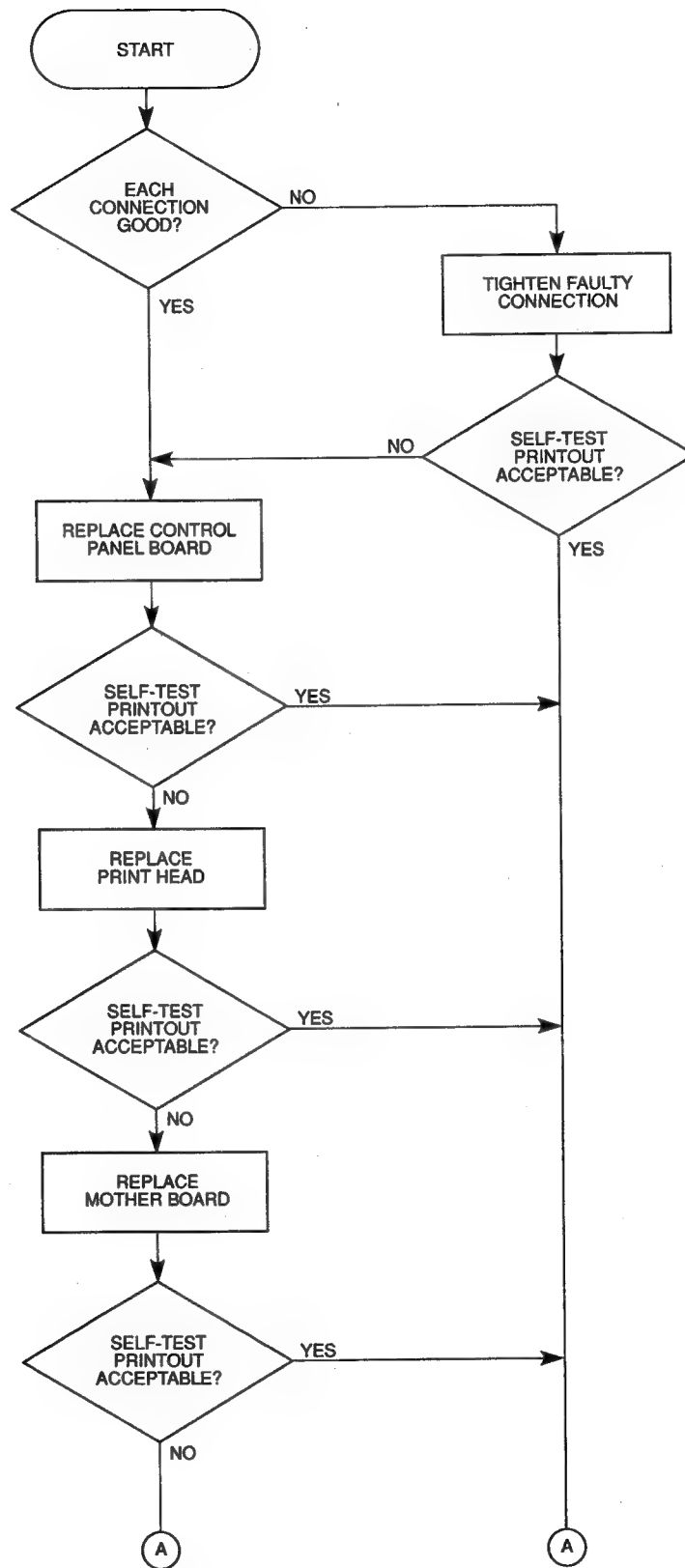


Figure 2-11 Self-Test Printout Is Abnormal (1 of 2)

Troubleshooting

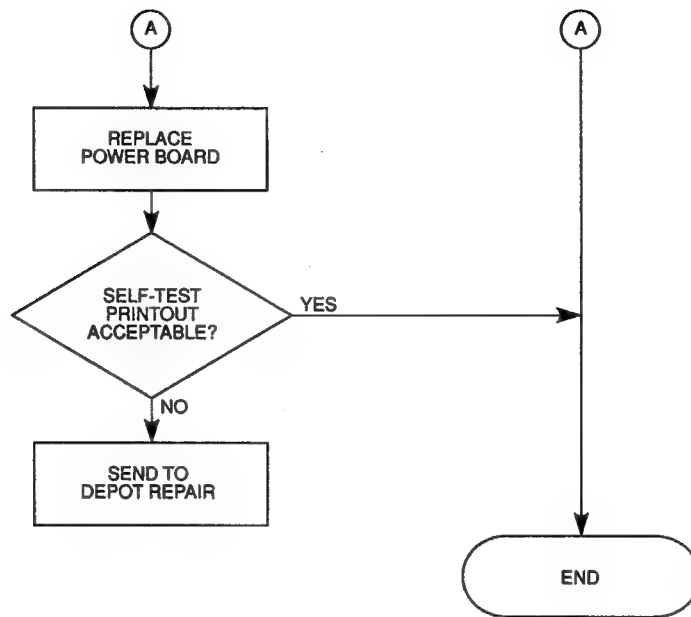


Figure 2-11 Self-Test Printout Is Abnormal (2 of 2)

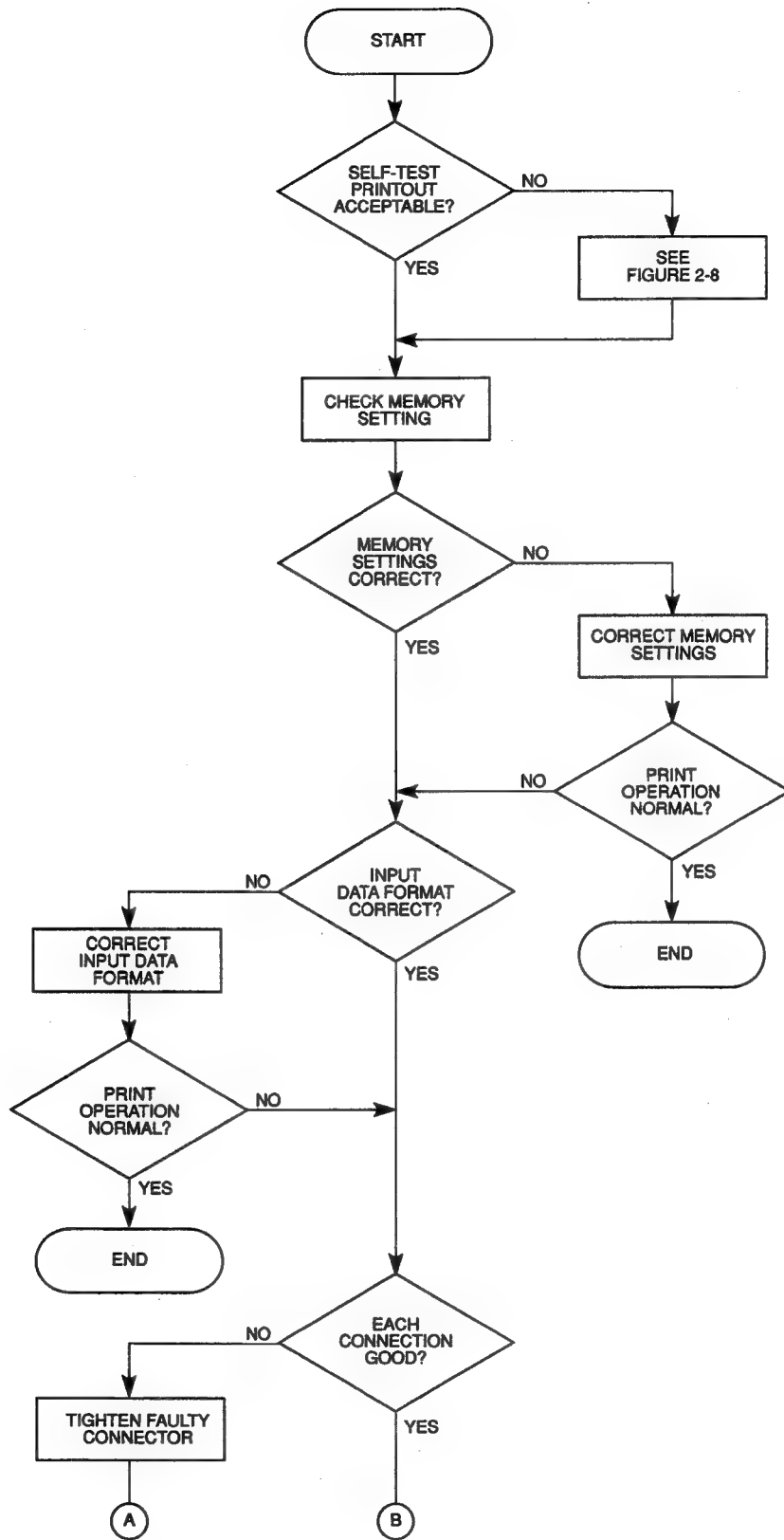


Figure 2-12 On-Line Printing Using the Serial Interface Is Abnormal (1 of 2)

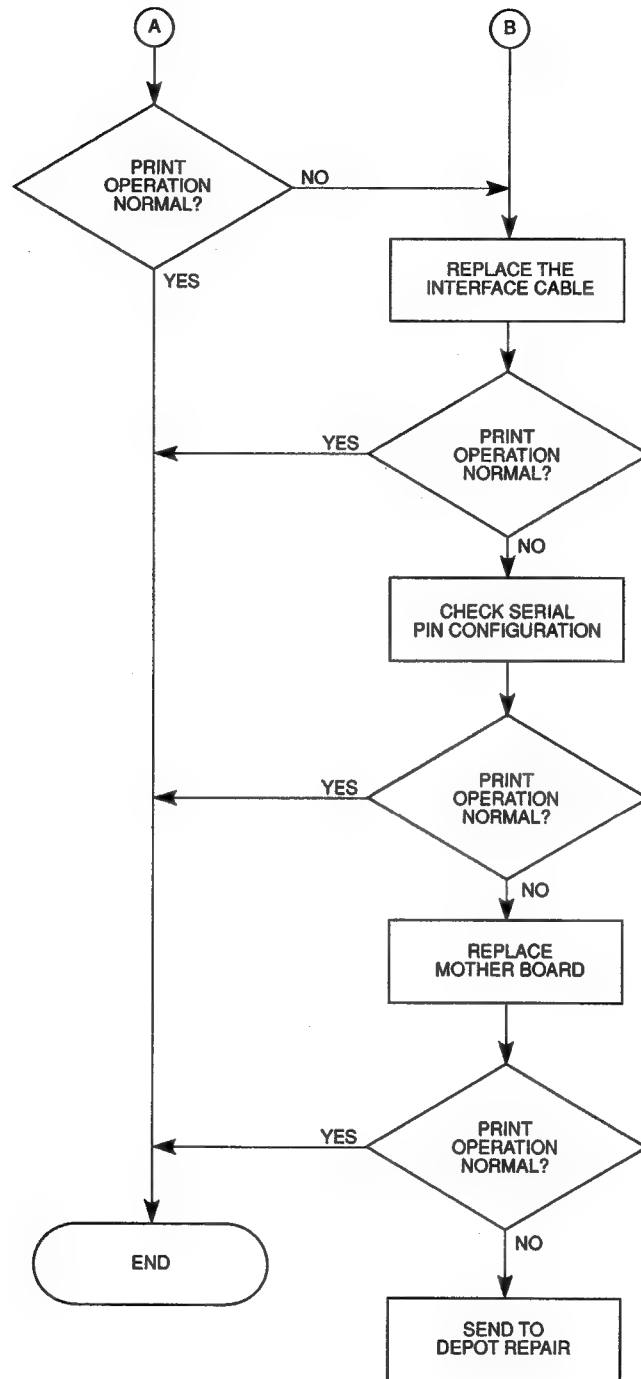


Figure 2-12 On-Line Printing Using the Serial Interface Is Abnormal (2 of 2)

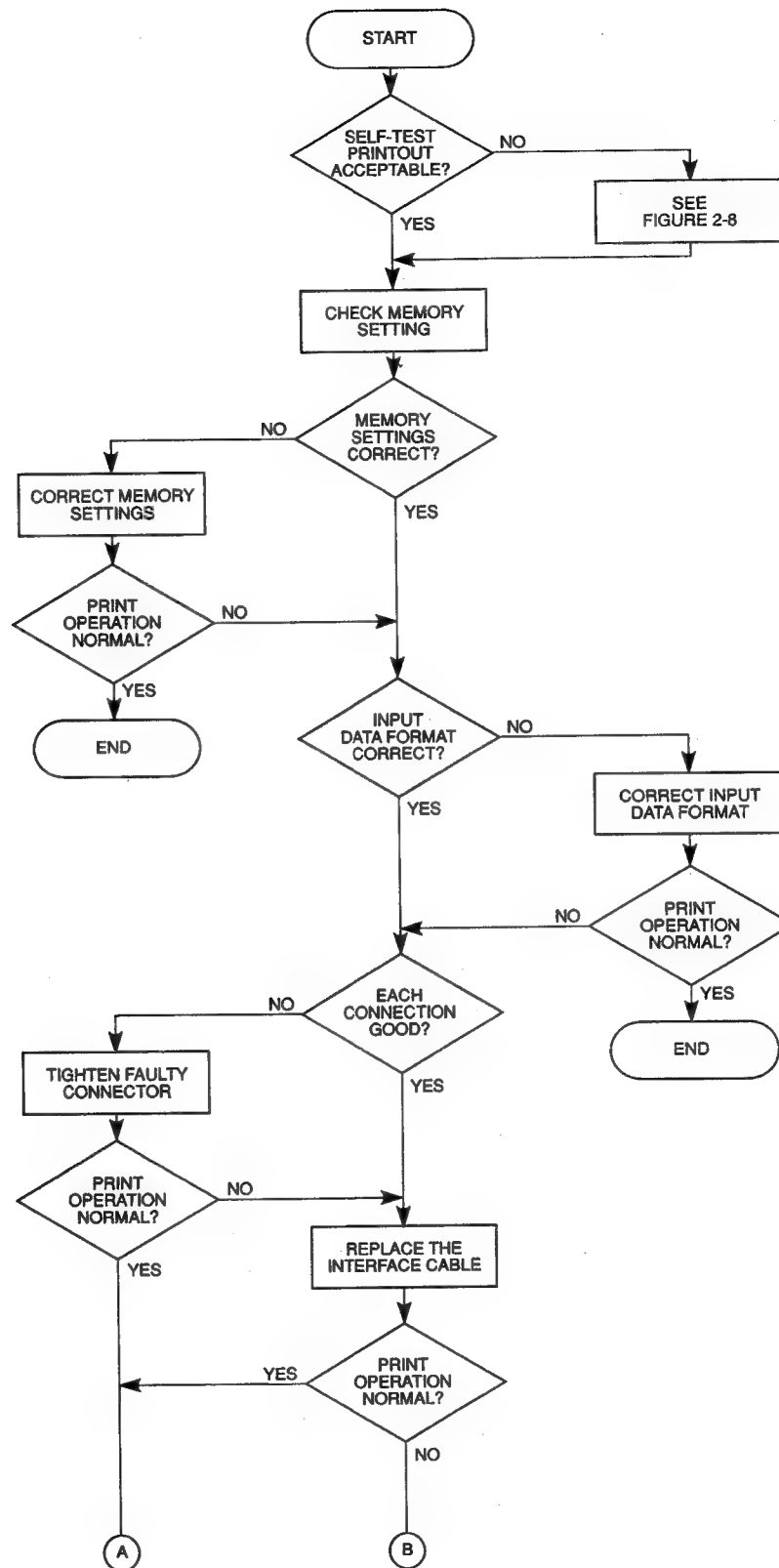


Figure 2-13 On-Line Printing Using the Parallel Interface Is Abnormal (1 of 2)

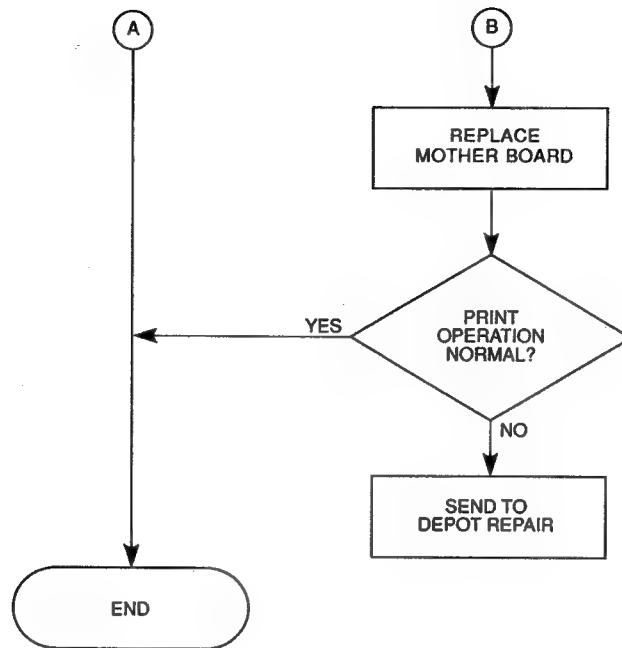


Figure 2-13 On-Line Printing Using the Parallel Interface Is Abnormal (2 of 2)

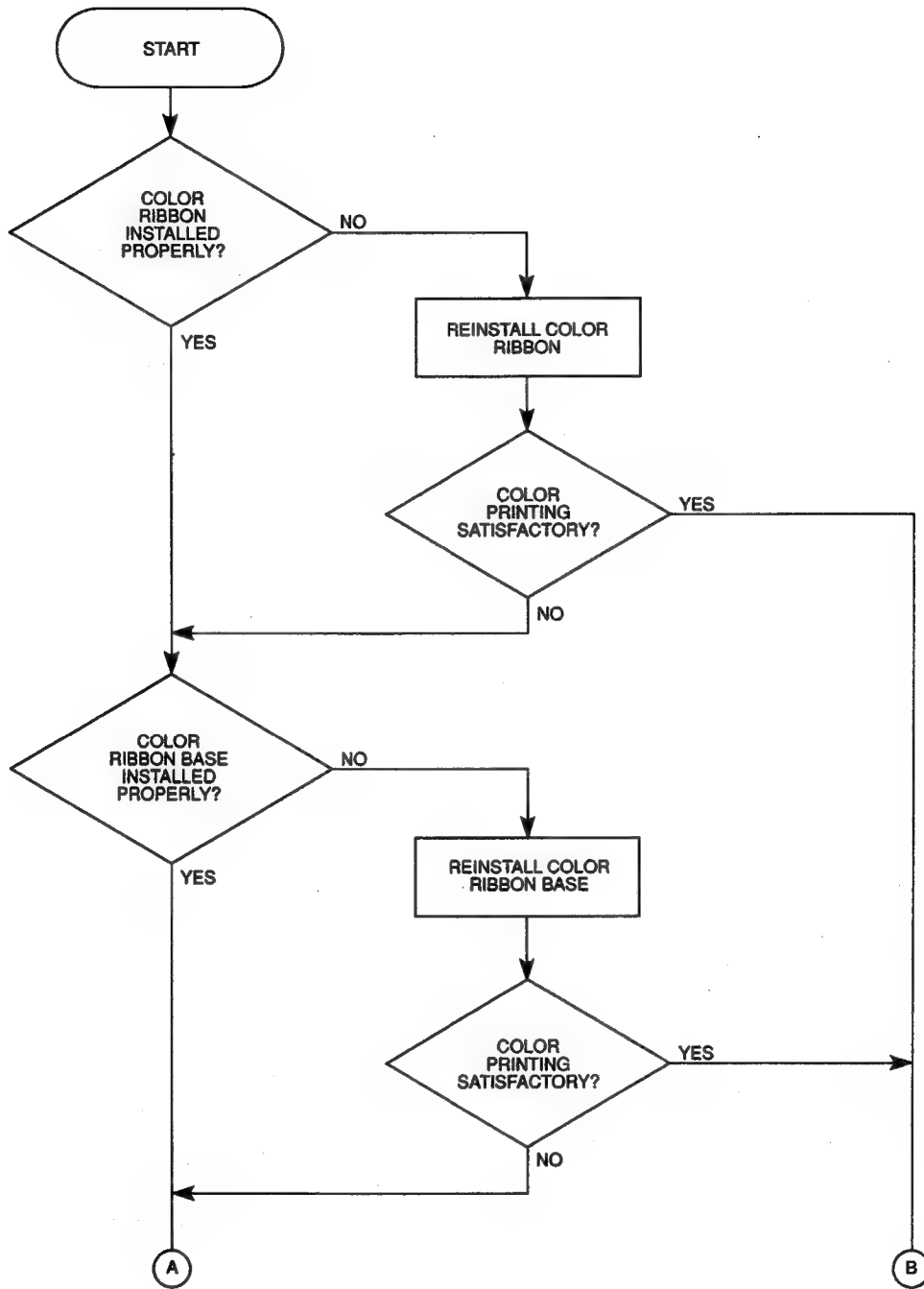


Figure 2-14 Color Printing Is Abnormal (1 of 2)

Troubleshooting

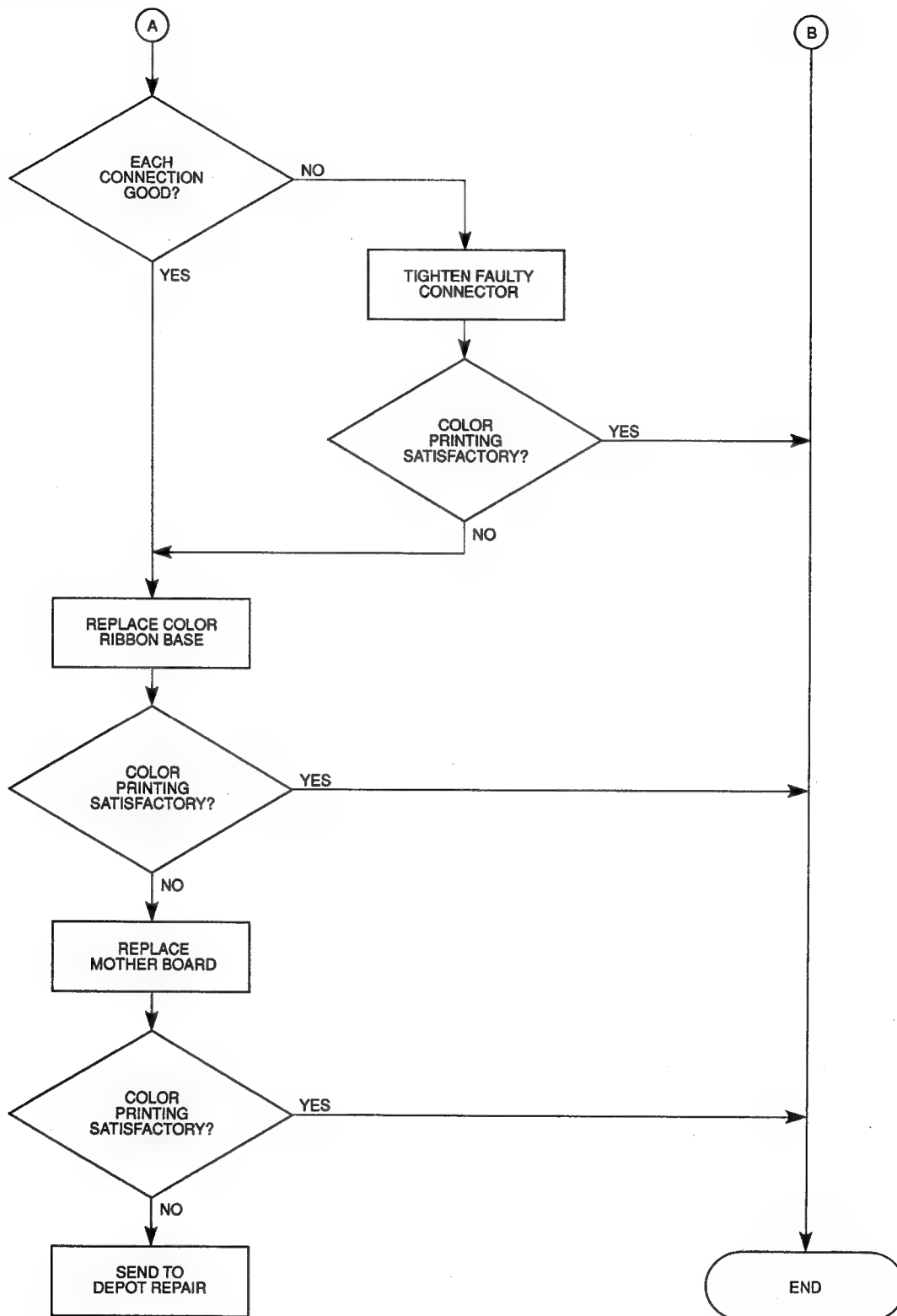


Figure 2-14 Color Printing Is Abnormal (2 of 2)

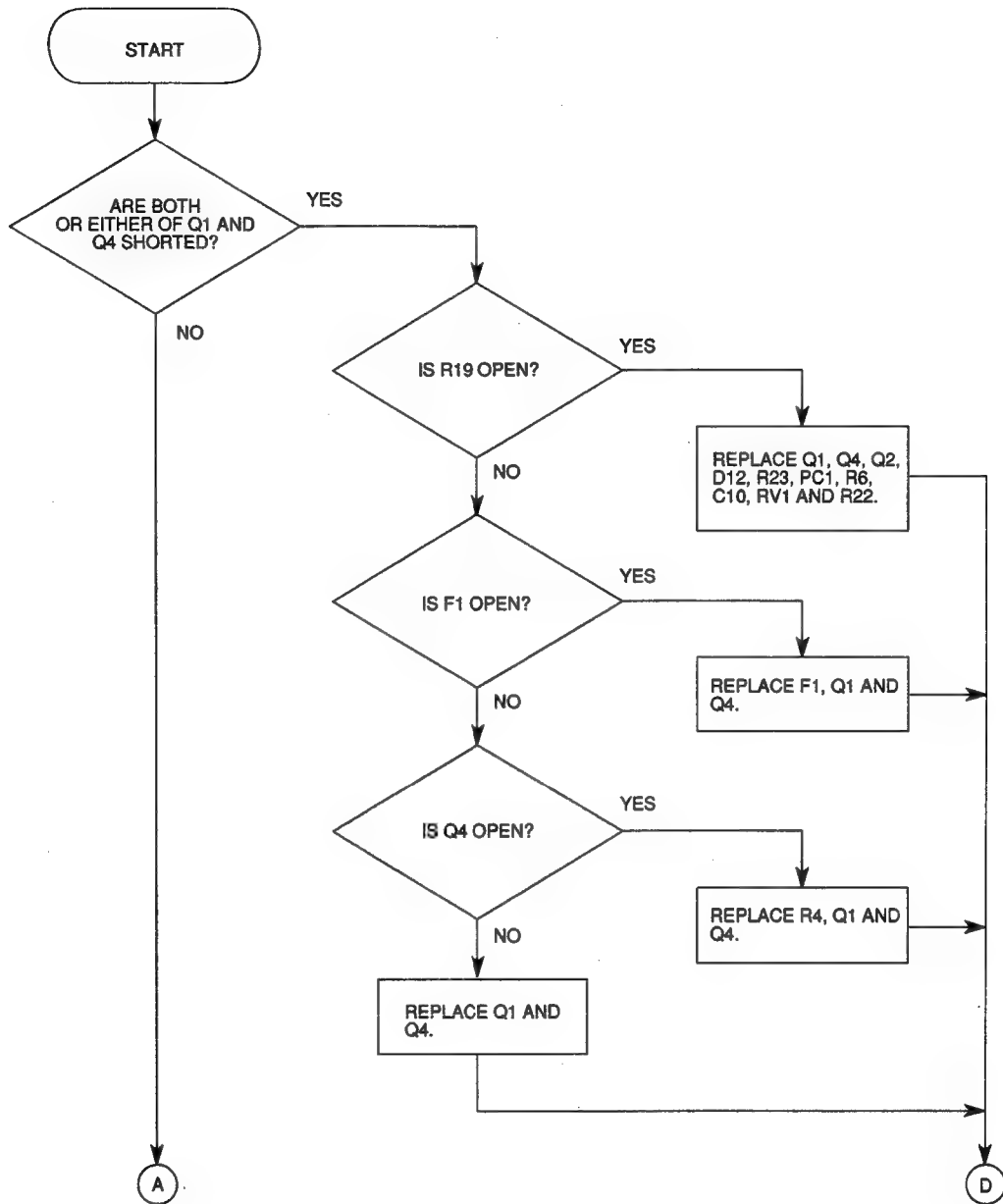


Figure 2-15 PSD Power (B) or PSD Power (C) (GRP003) is faulty (1 of 4)

Troubleshooting

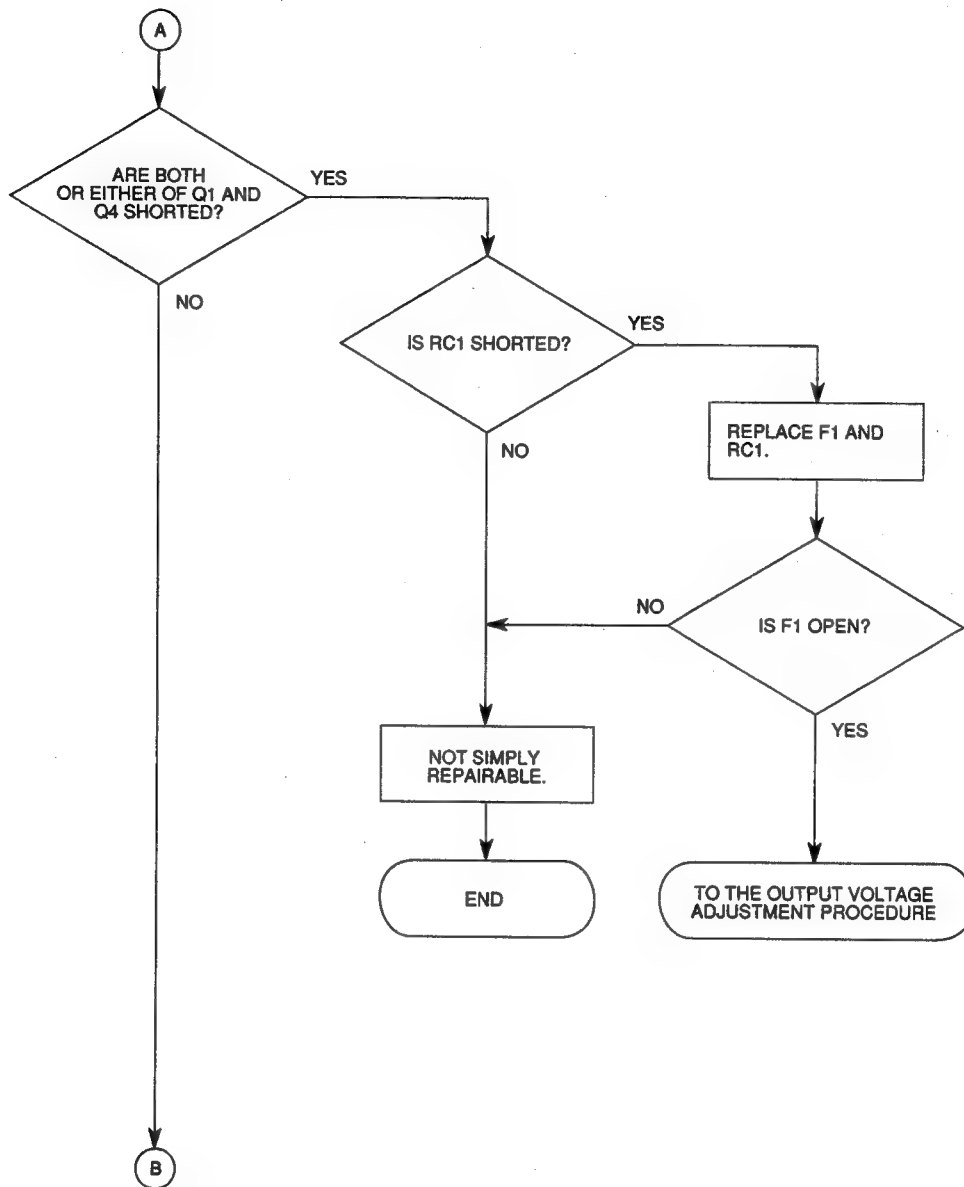


Figure 2-15 PSD Power (B) or PSD Power (C) (GRP003) is faulty (2 of 4)

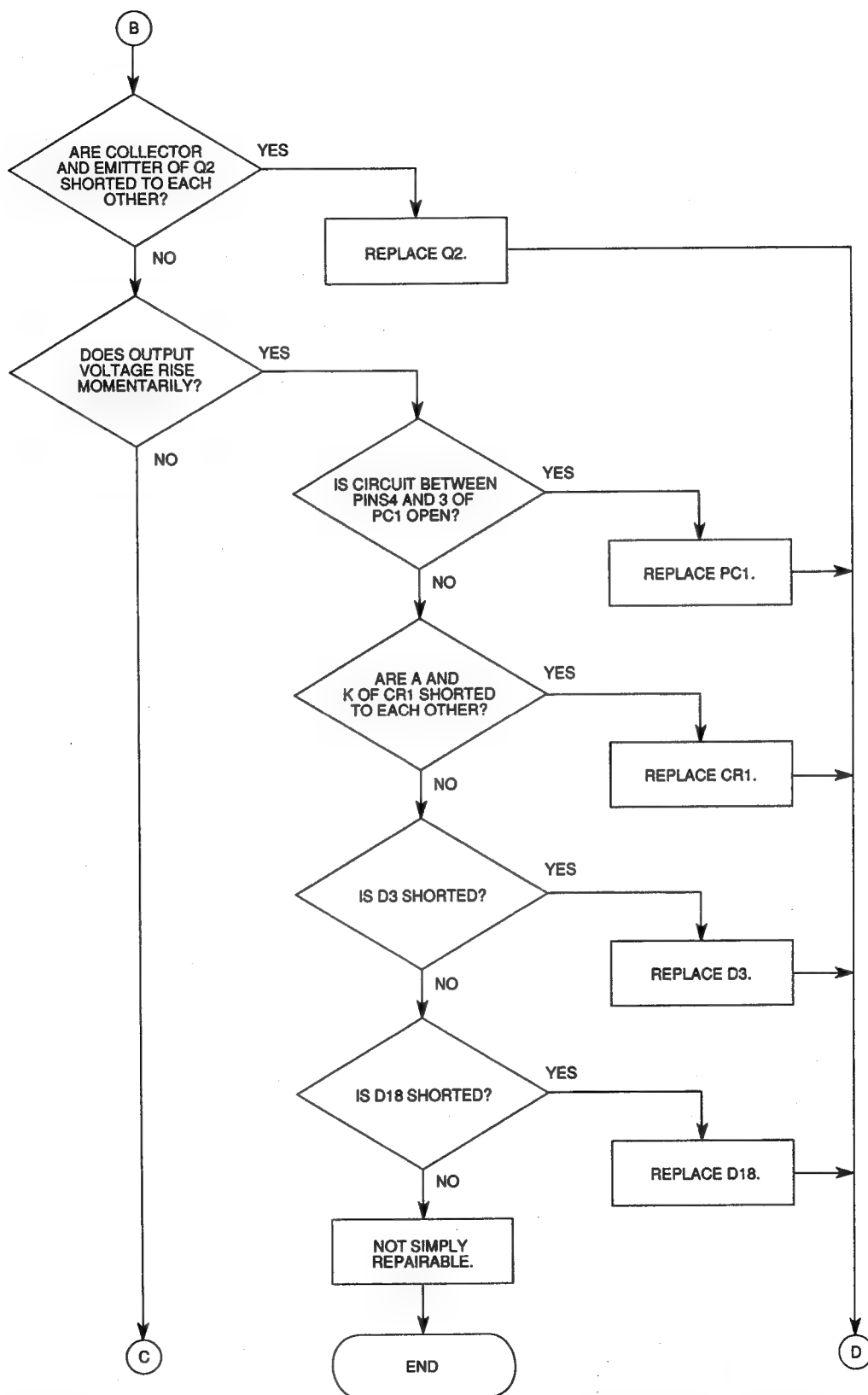


Figure 2-15 PSD Power (B) or PSD Power (C) (GRP003) is faulty (3 of 4)

Troubleshooting

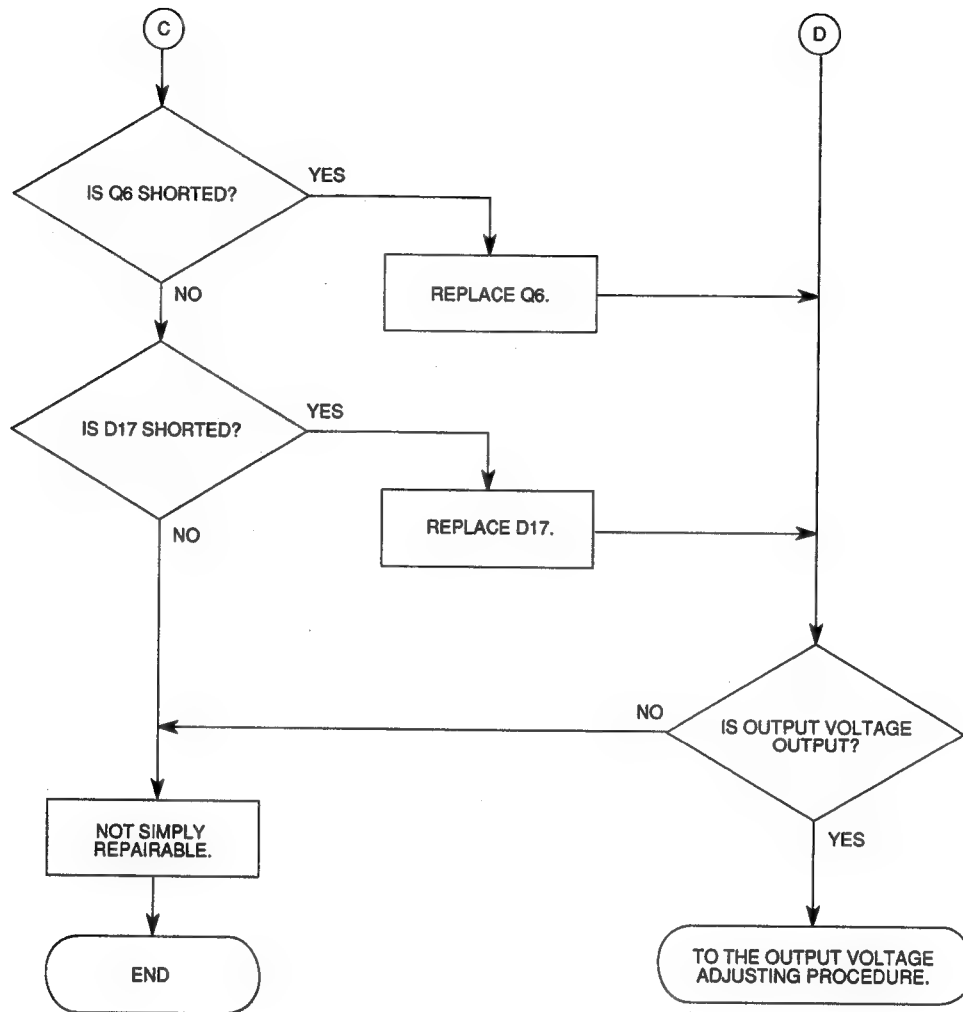


Figure 2-15 PSD Power (B) or PSD Power (C) (GRP003) is faulty (4 of 4)

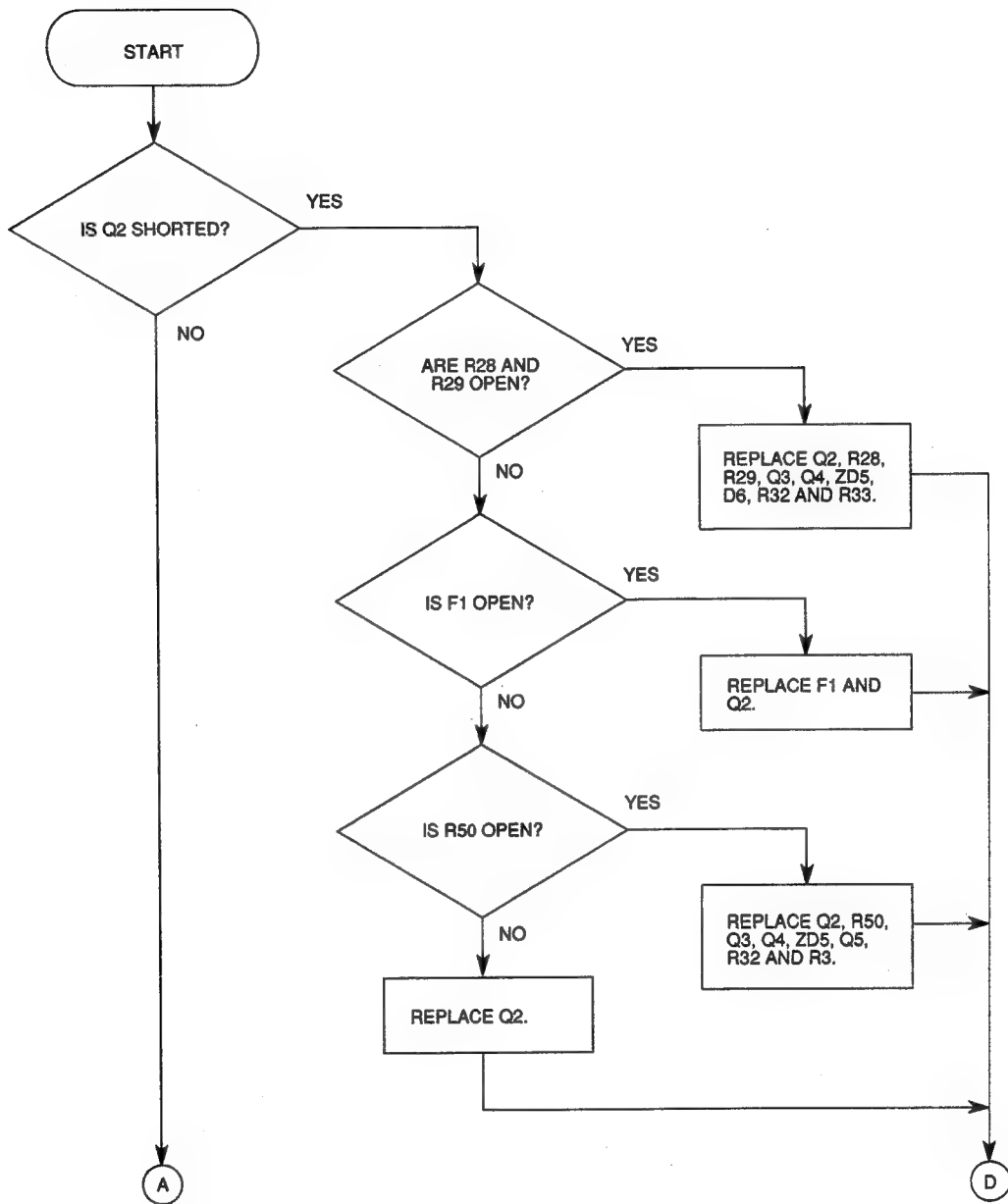


Figure 2-16 PSD Power (C) (GRP303) is faulty (1 of 4)

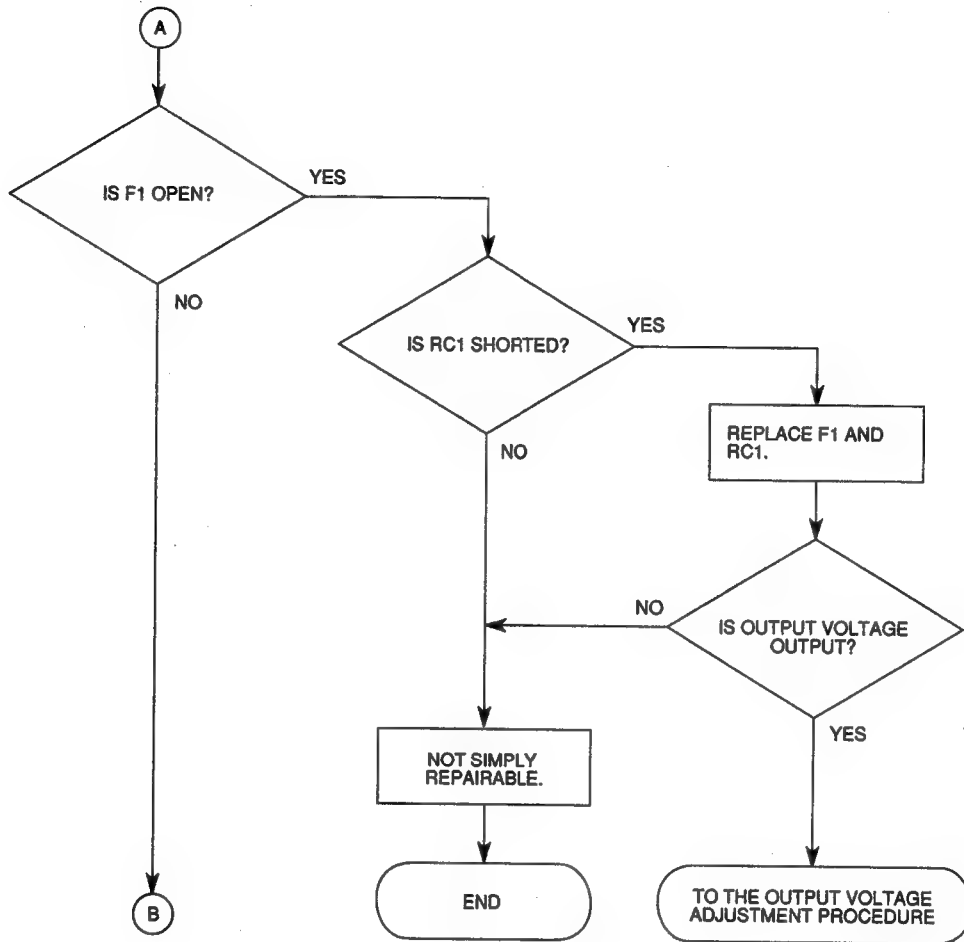


Figure 2-16 PSD Power (C) (GRP303) is faulty (2 of 4)

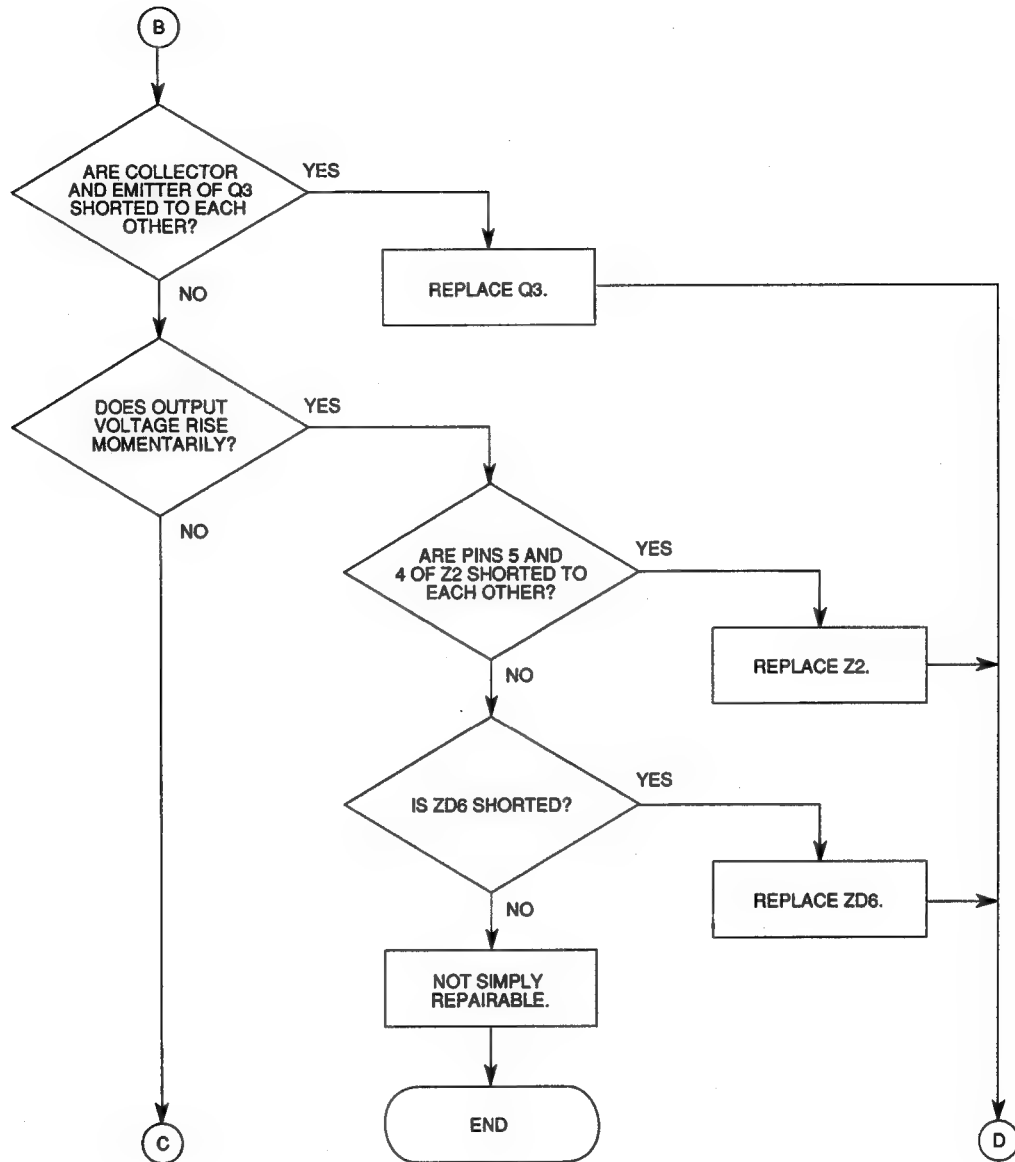


Figure 2-16 PSD Power (C) (GRP303) is faulty (3 of 4)

Troubleshooting

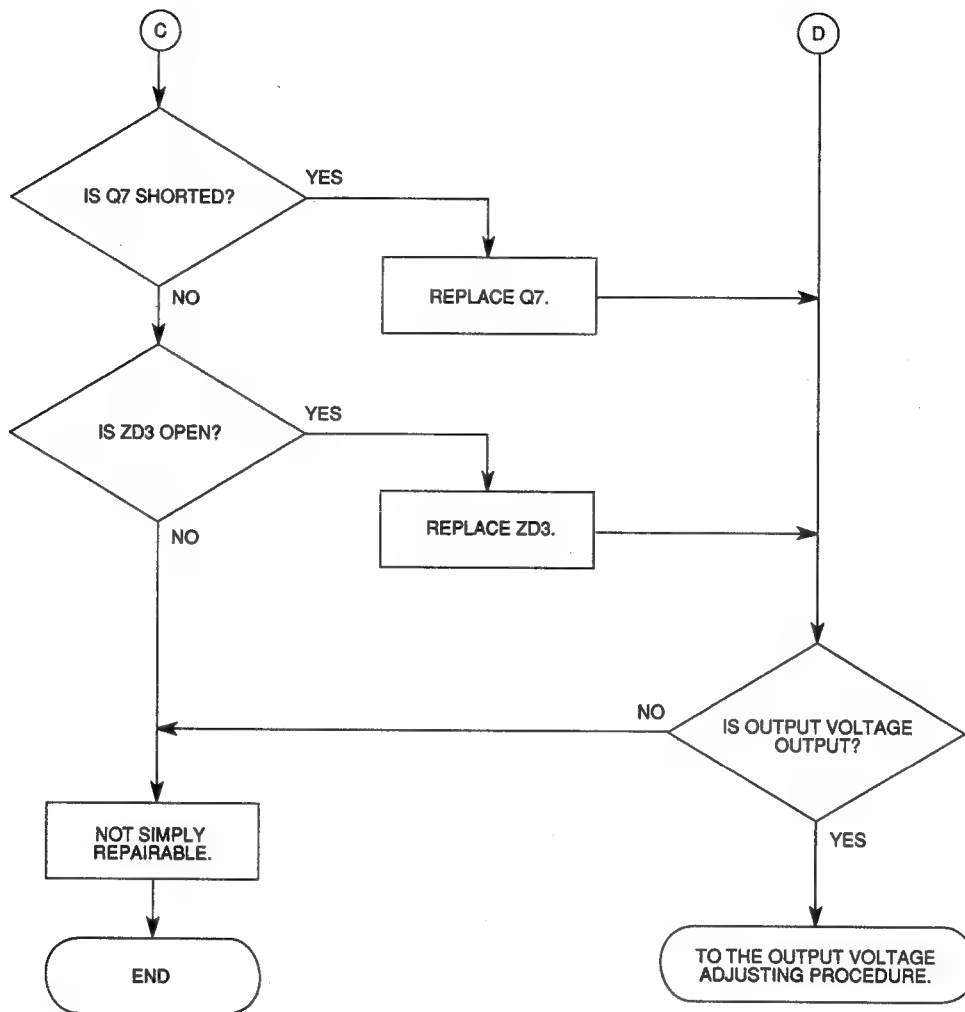
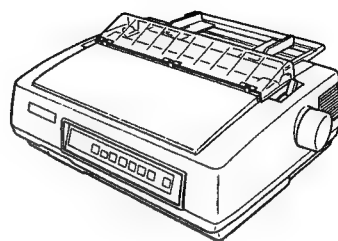


Figure 2-16 PSD Power (C) (GRP303) is faulty (4 of 4)

Section 3

Parts Removal and Installation



This section provides parts removal and installation procedures for the Pinwriter. Unless otherwise noted, install a part by simply reversing the removal procedure. Section 6 lists order numbers for replacement parts.

Observe the following rules when disassembling the Pinwriter.

- Turn off and unplug the printer.
- Remove paper handling options, such as a sheet feeder, that may be attached to the printer.
- Do not disassemble units into parts that are smaller than replacement units.
- Grasp a connector by its sides to remove it; do not pull on the wire harness that is attached to the connector.
- Perform the removal procedures in the sequence given.

WARNING

Always disconnect the power cord before performing any maintenance or adjustment procedure on the Pinwriter. Voltage is present inside the printer even after power is turned off. Only when the power cord is disconnected is all voltage removed.

The following tools are required to remove or install Pinwriter parts:

- #2 Phillips screwdriver
- Flat-blade screwdriver
- Round-nose pliers
- Tweezers
- Thickness gauge
- 14 mm nut driver

Parts Removal and Installation

TOP COVER REMOVAL

Follow these steps to remove the top cover with the silent canopy.

1. Open the top cover with the silent canopy by lifting it toward you (see Figure 3-1).
2. Lift the left corner up and away from the printer.
3. Slide the right corner away from the printer and lift it straight up.

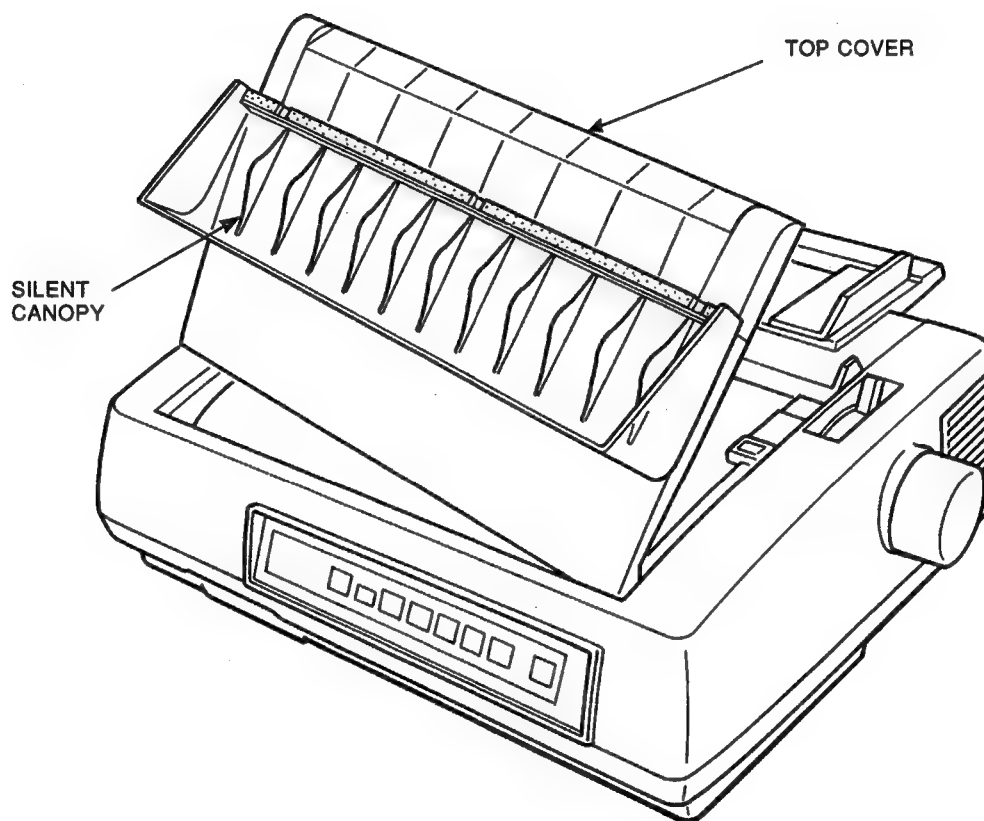


Figure 3-1 Top Cover

MIDDLE COVER ASSEMBLY REMOVAL

Remove any paper handling options and/or RS-232C interface board that may be installed. Then proceed as follows.

1. Pull off the platen knob.
2. Open the top cover and the rear cover.
3. Loosen the four screws on the middle cover (see Figure 3-2).
4. Lift up the middle cover and remove it from the printer.

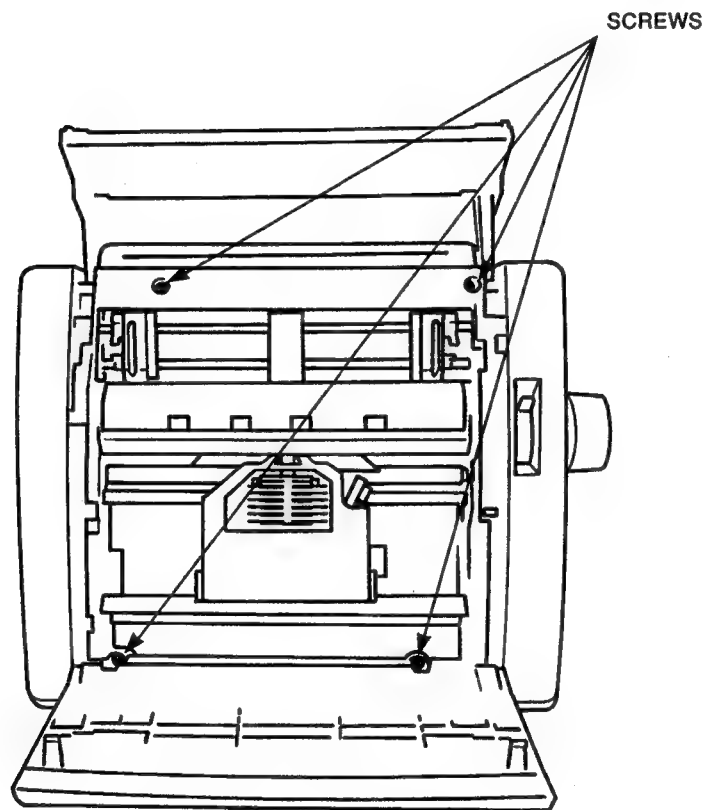


Figure 3-2 Middle Cover Assembly Removal

Parts Removal and Installation

PRINT HEAD REMOVAL

1. Open the top cover, and remove the ribbon cartridge.
2. Open the bail roller guide (see Figure 3-3).
3. Move the carrier assembly to the center of the unit.
4. Unlock the clamp levers by pulling them outward (see Figure 3-4).
5. Lift up the print head (see Figure 3-5).

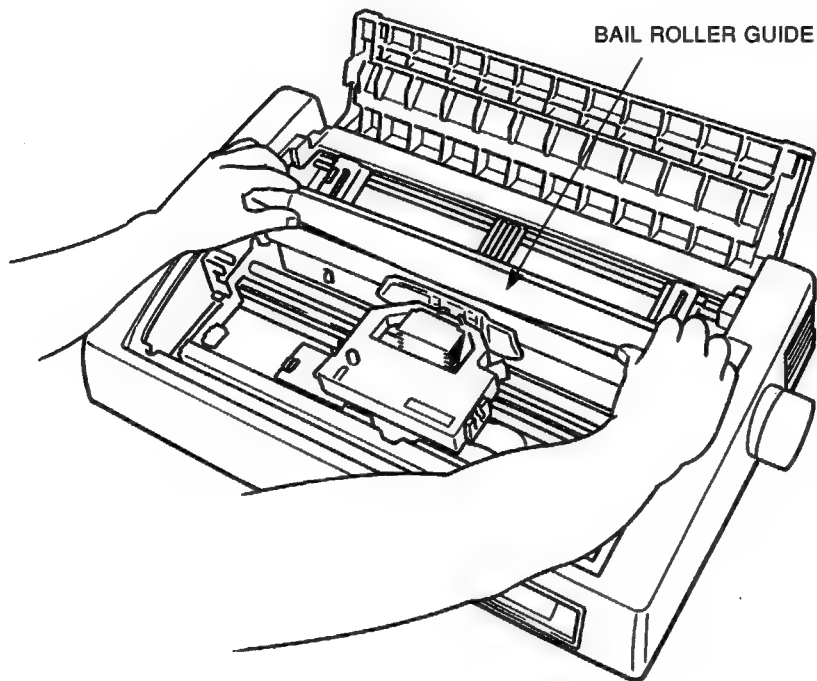


Figure 3-3 Bail Roller Guide

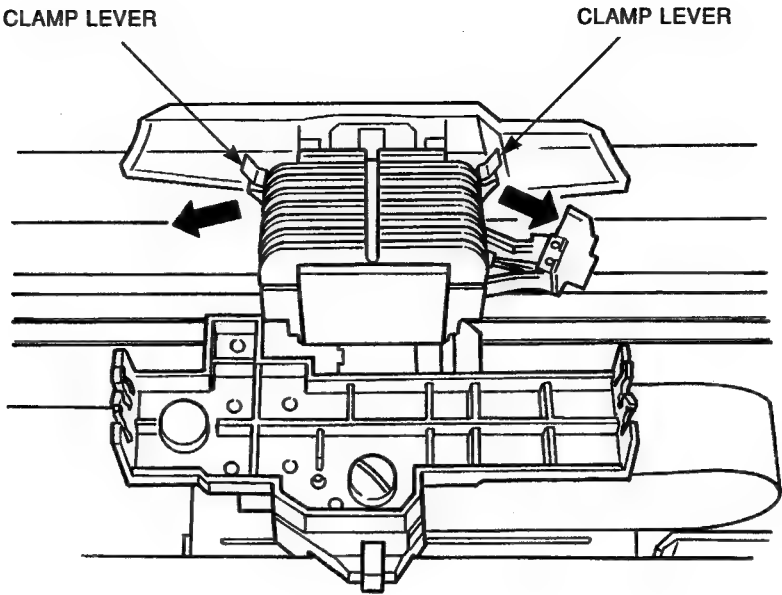


Figure 3-4 Clamp Lever Release

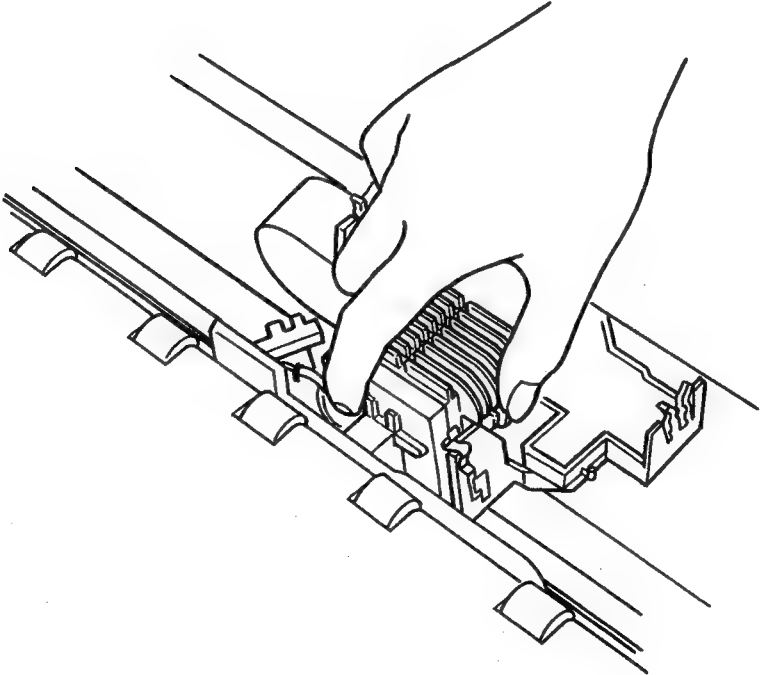


Figure 3-5 Print Head Removal

Parts Removal and Installation

CARD HOLDER REMOVAL

To remove the card holder, first remove the print head. Then proceed as follows.

1. Open the bail roller guide.
2. Pull the plastic tabs at the bottom of the card holder together, and remove the card holder (see Figure 3-6).

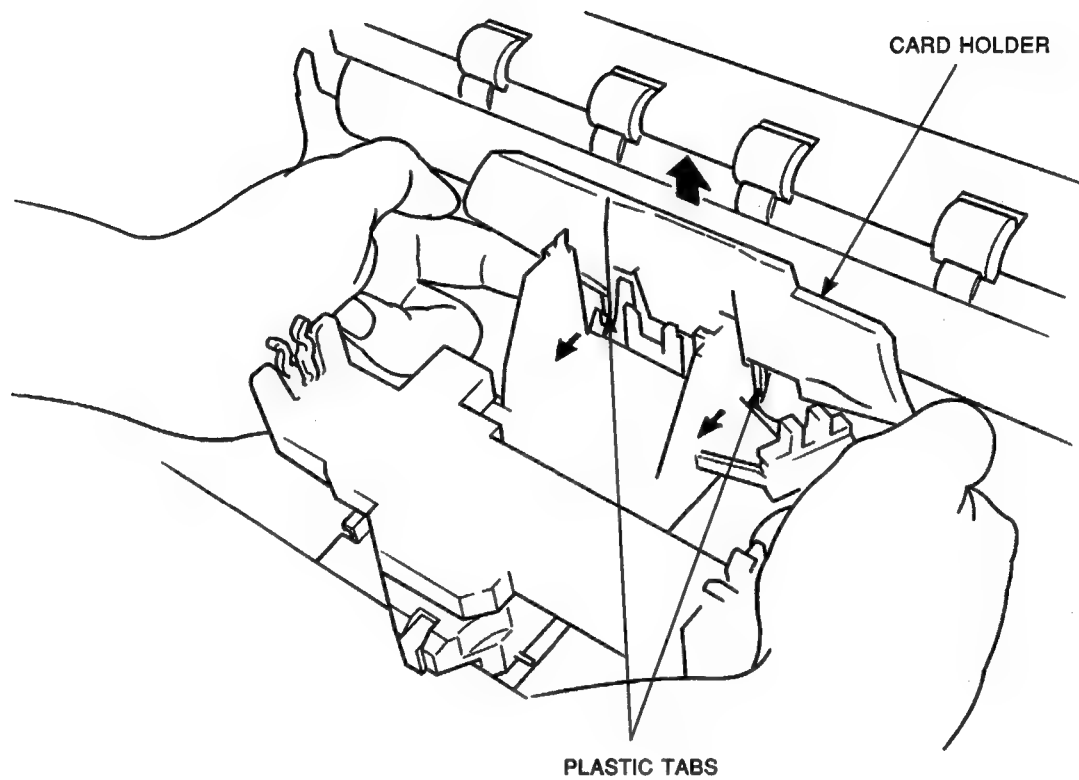


Figure 3-6 Card Holder Removal

RIBBON BASE REMOVAL

To remove the ribbon base, first remove the print head. Then proceed as follows.

1. Unlock the ribbon base by turning the fastener counterclockwise with coin (see Figure 3-7).
2. Remove the base by lifting it up.

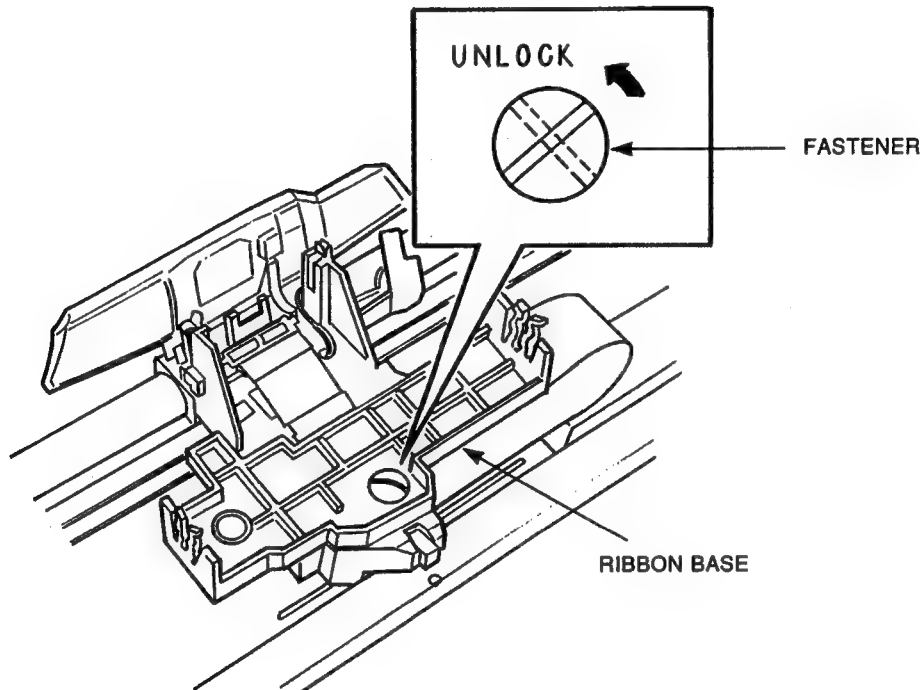


Figure 3-7 Ribbon Base Removal

CARRIER CABLE ASSEMBLY REMOVAL

To remove the carrier cable assembly which consists of two carrier cables and one color cable, first remove the ribbon base. Then proceed as follows.

1. Move the carrier to the right side of the printer.
2. Lift off the carrier cable cover by unlocking the tab (see Figure 3-8).
3. Pull up both ends of the connector locks CN14 through CN16 (see Figure 3-9).
4. Remove the cables from the unlocked connectors.
5. Release the cable from the three cable clamps on the carrier (see Figure 3-10).
6. With a screwdriver blade, press the two locking tabs out as far as possible to release the connector from the carrier and lift the connector out of the printer (see Figure 3-11).
7. Pull up both ends of the color cable connector lock and remove the color cable from the unlocked connector. (see Figure 3-12).

CAUTION

Do not press the tab more than necessary. Excessive force may cause damage.

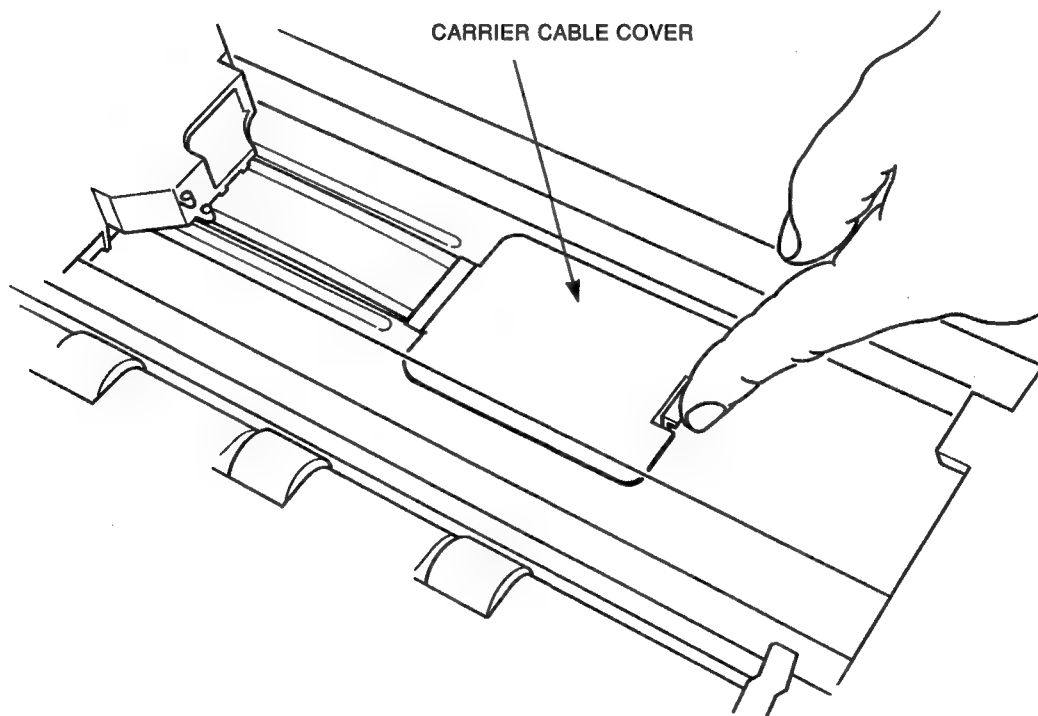


Figure 3-8 Carrier Cable

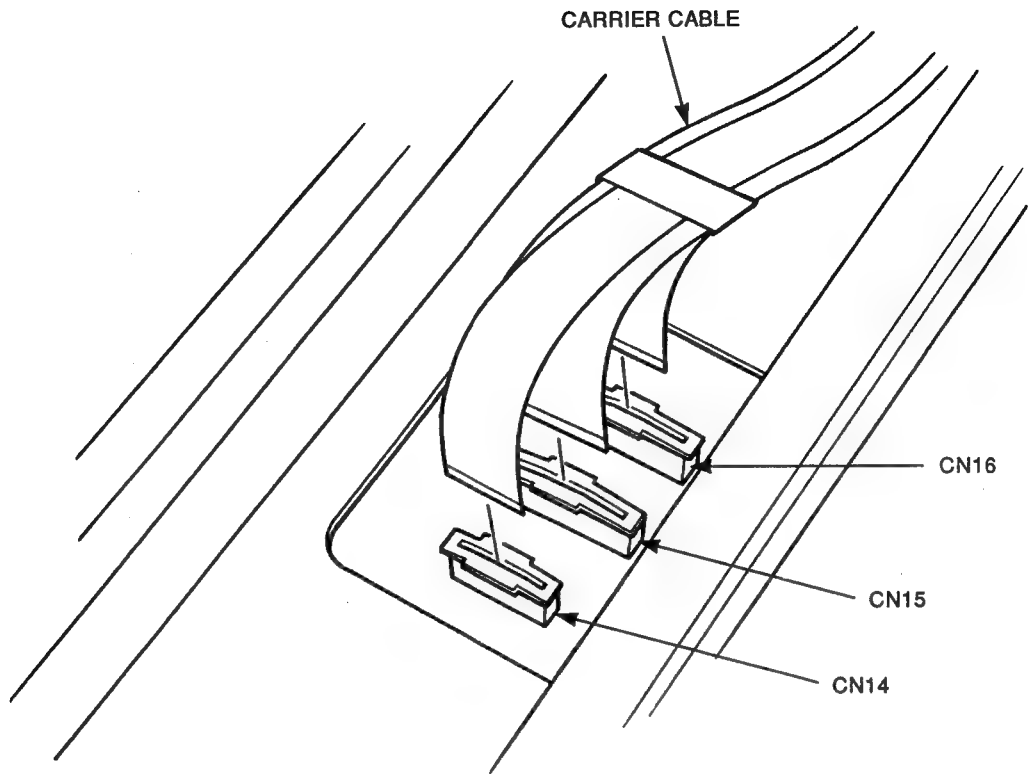


Figure 3-9 Carrier Cable Connector

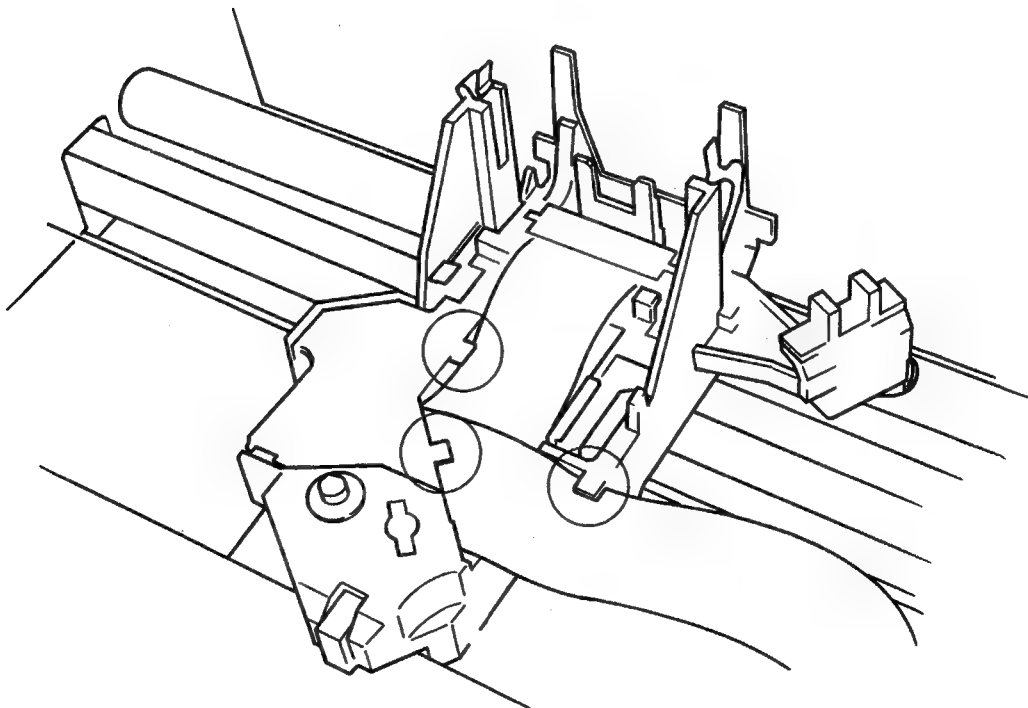


Figure 3-10 Cable Clamps

Parts Removal and Installation

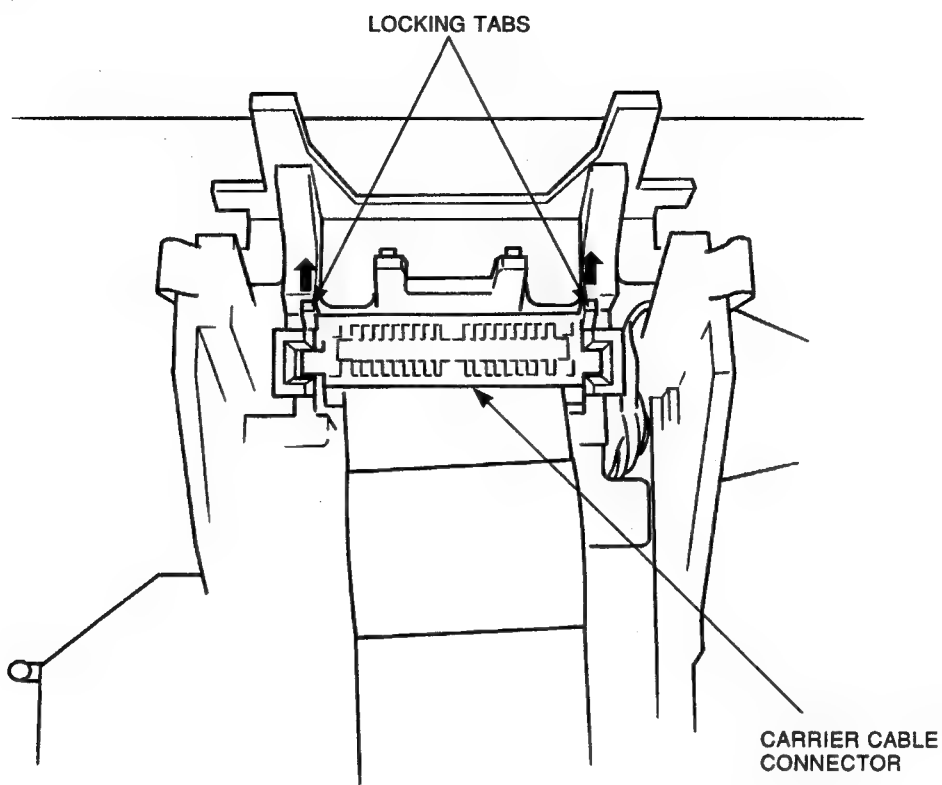


Figure 3-11 Carrier Cable Connector

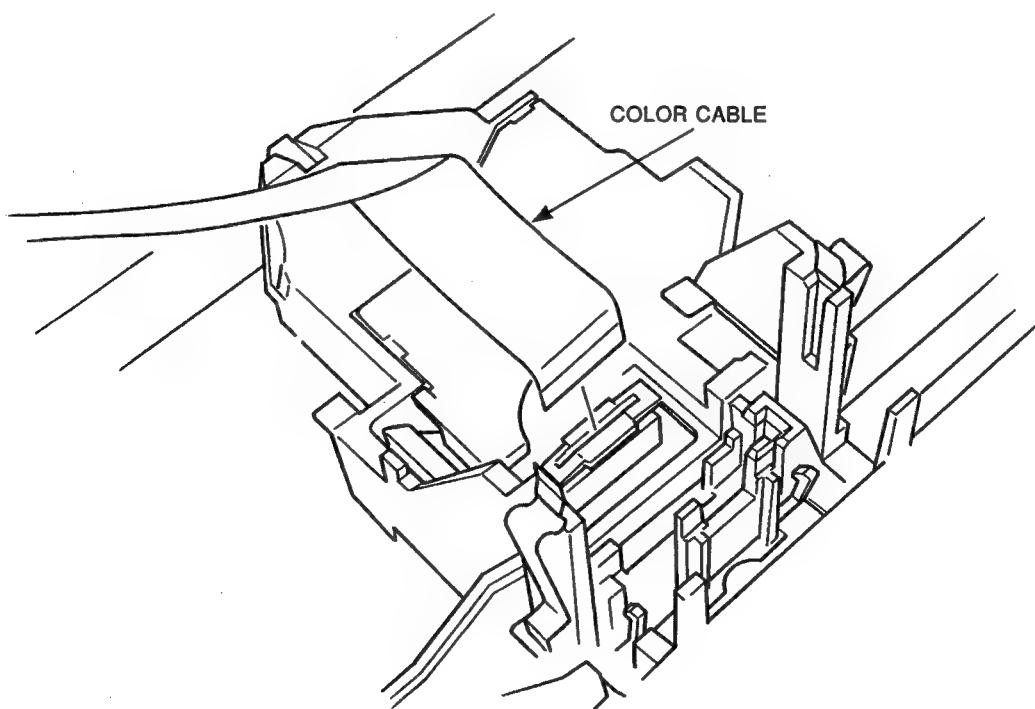


Figure 3-12 Color Cable Removal

COLOR CABLE REMOVAL

To remove the color cable, first remove the carrier cable. Then proceed as follows.

1. Pull up both ends of the color cable connector lock (see Figure 3-13).
2. Remove the color cable from the unlocked connector (see Figure 3-13).

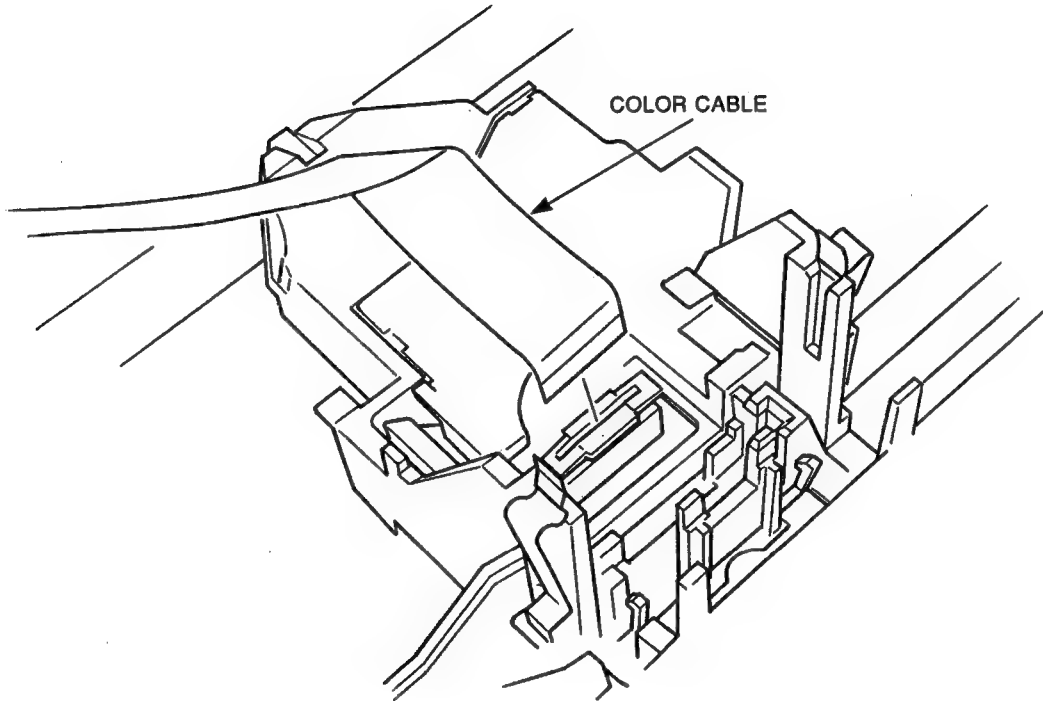


Figure 3-13 Color Cable Removal

RIBBON SENSOR ASSEMBLY REMOVAL

To remove the ribbon sensor assembly, first remove the carrier cable assembly. Then proceed as follows.

1. With a screwdriver blade, unlock the three locking tabs and lift the carrier frame cover. (see Figure 3-14).
2. With a screwdriver blade, unlock the two locking tabs and lift the carrier connector PCB out of the carrier (see Figure 3-15).
3. Release the sensor cable from the cable clamp on the carrier (see Figure 3-16).
4. With a screwdriver blade, unlock the sensor clamp plate and remove it.
5. Lift up the ribbon end sensor.
6. Unlock the locking tab and remove the microswitch by turning it counter-clockwise (see Figure 3-16).

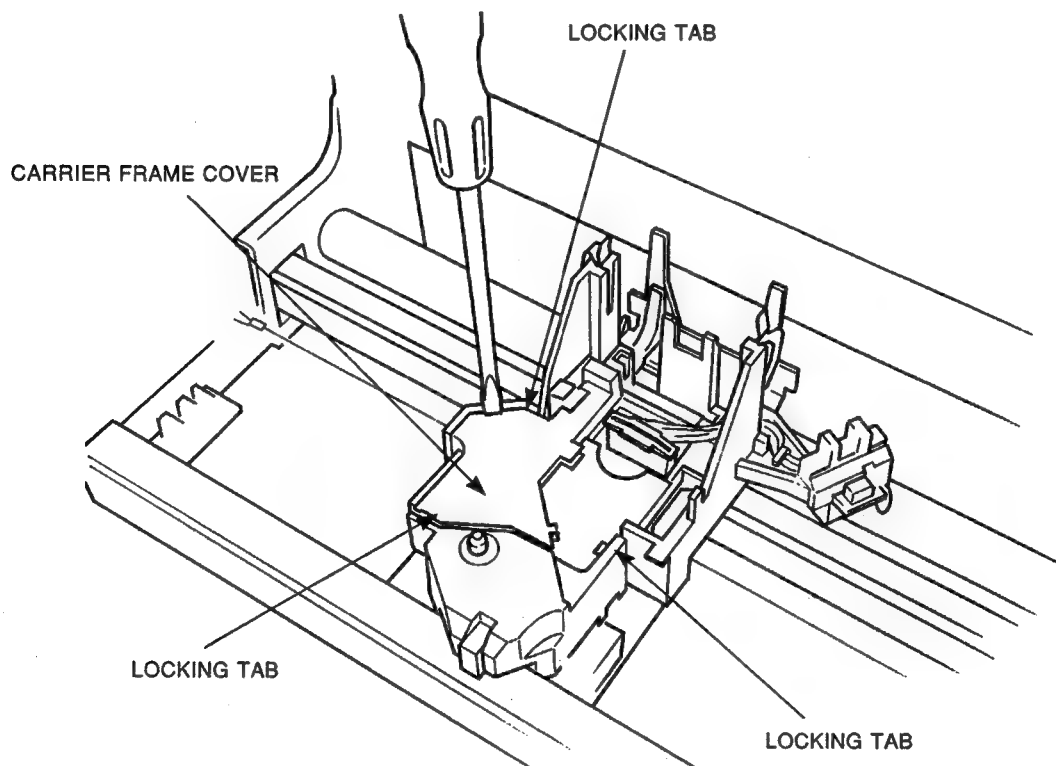


Figure 3-14 Carrier Frame Cover

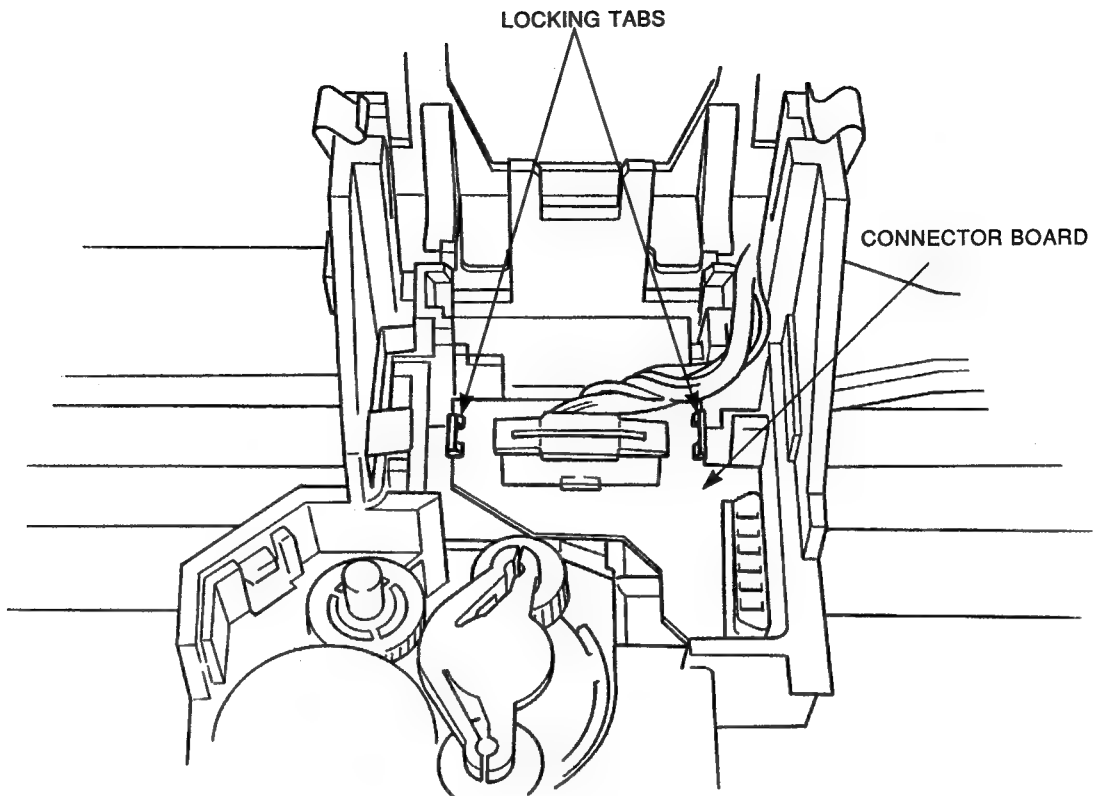


Figure 3-15 Connector Board

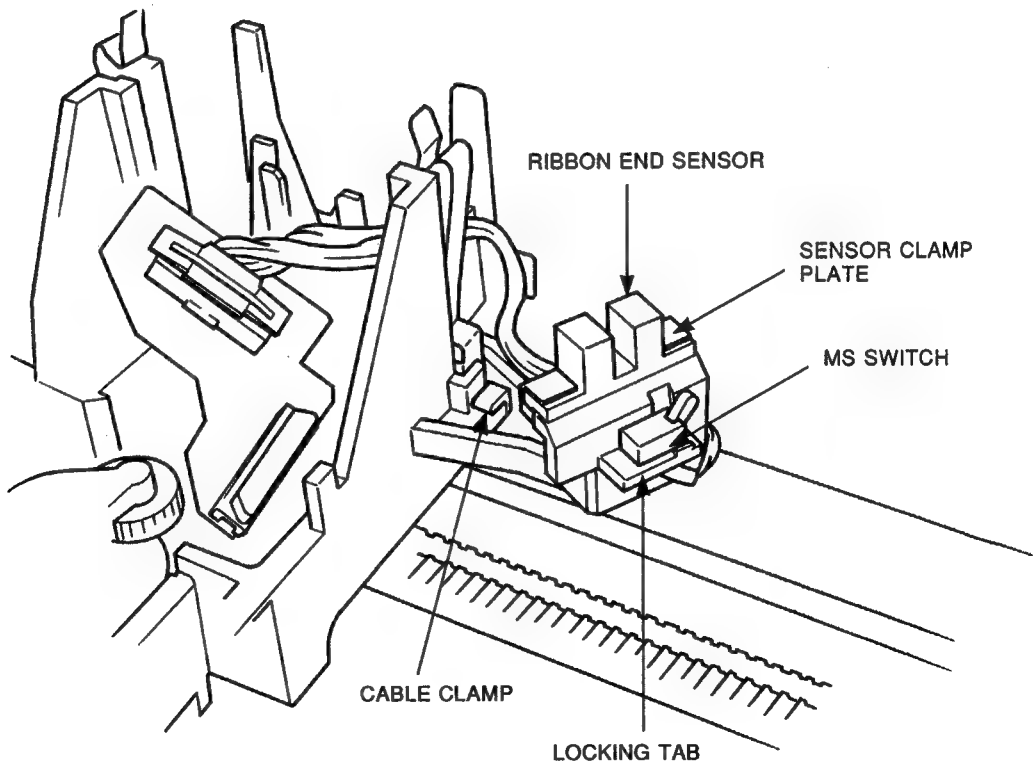


Figure 3-16 Ribbon Sensor Assembly

Parts Removal and Installation

COPY CONTROL LEVER REMOVAL

To remove the copy control lever, first remove the middle cover assembly.

1. Remove the screw securing the copy control lever to the guide shaft and remove the lever (see Figure 3-17).

NOTE

When replacing the copy control lever, see Section 4 for the platen gap and card holder adjustment procedures.

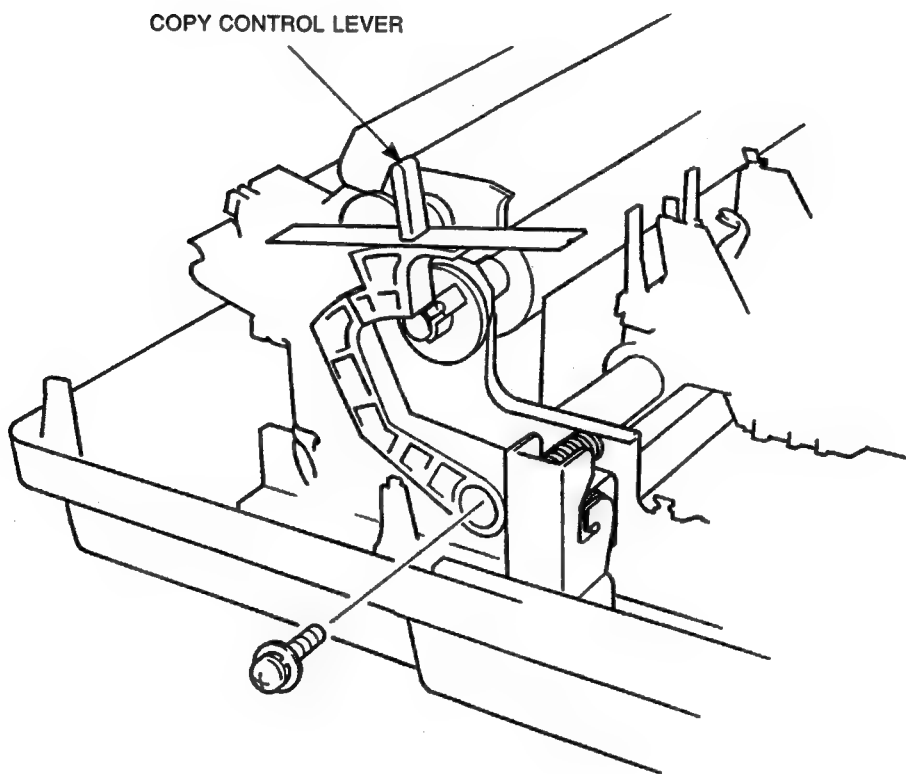


Figure 3-17 Copy Control Lever

TIMING BELT REMOVAL

To remove the timing belt, first remove the carrier cable and the color cable. Then proceed as follows.

1. Remove the carrier frame cover.
2. With a screwdriver blade, unlock the two locking tabs and lift the connector board out of the carrier (see Figure 3-18).
3. With a screwdriver blade, unlock the locking tab and lift the belt holder out of the carrier (see Figure 3-19).
4. Release the timing belt from the carrier by pulling the belt forward.
5. Press the tension arm assembly to the left side frame and remove the timing belt from the SP motor pulley (see Figure 3-20).
6. Remove the driven pulley assembly from the tension arm (see Figure 3-21).
7. Remove the timing belt from the driven pulley assembly (see Figure 3-21).

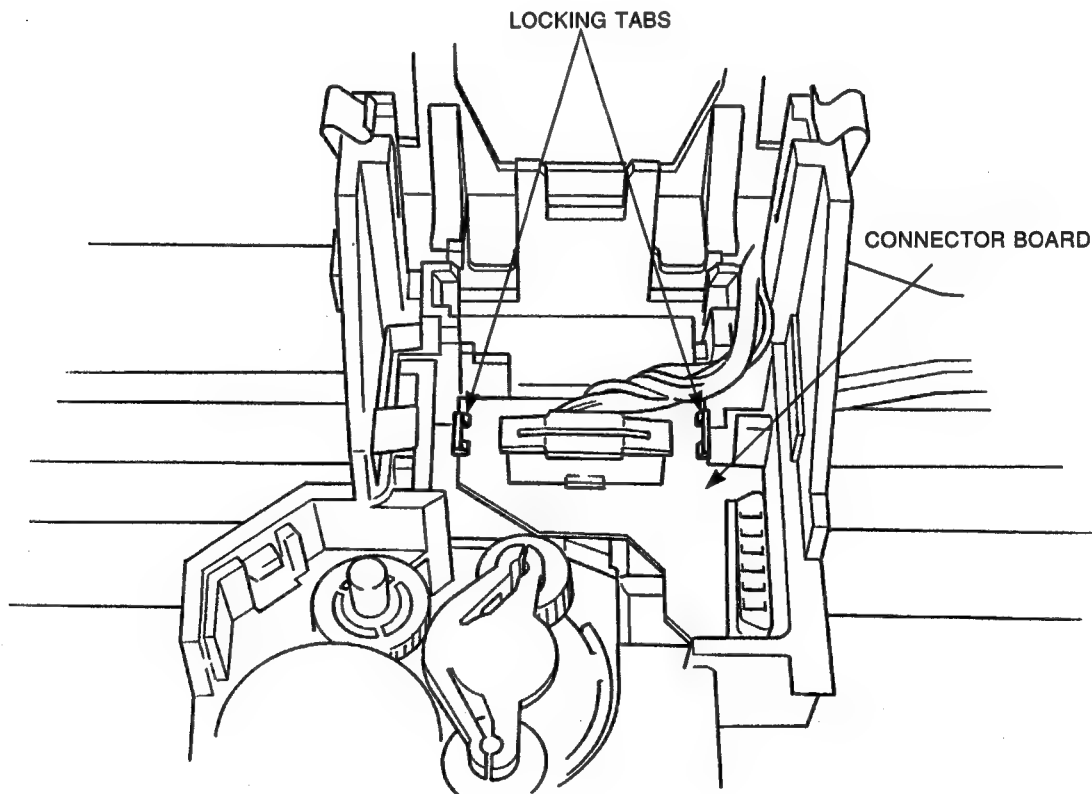


Figure 3-18 Connector Board

Parts Removal and Installation

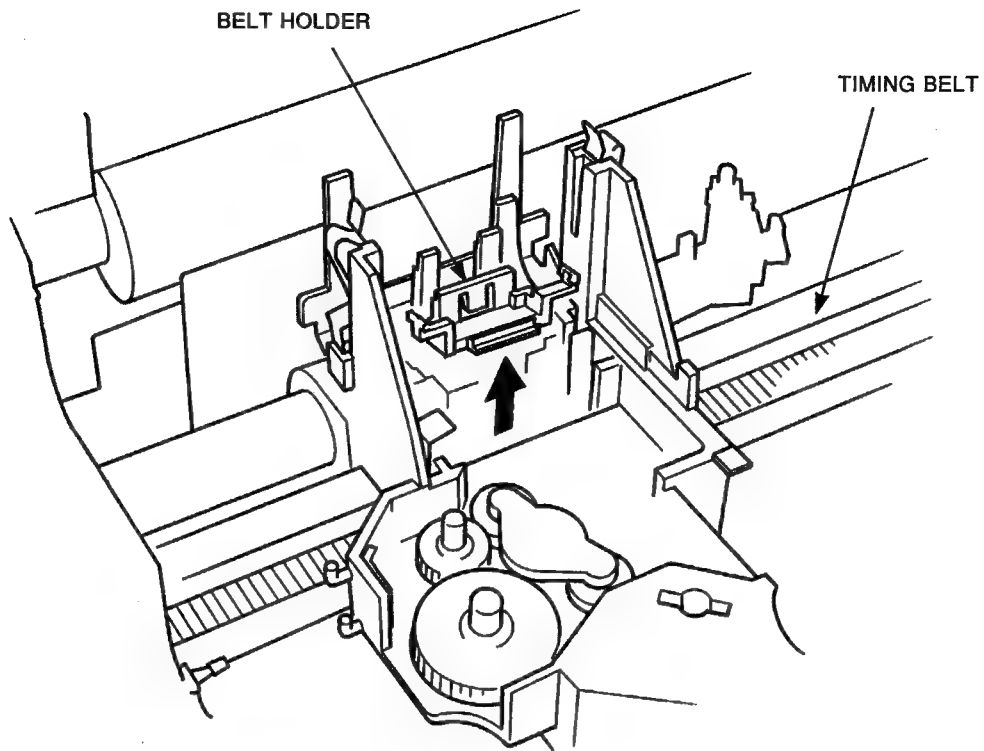


Figure 3-19 Belt Holder

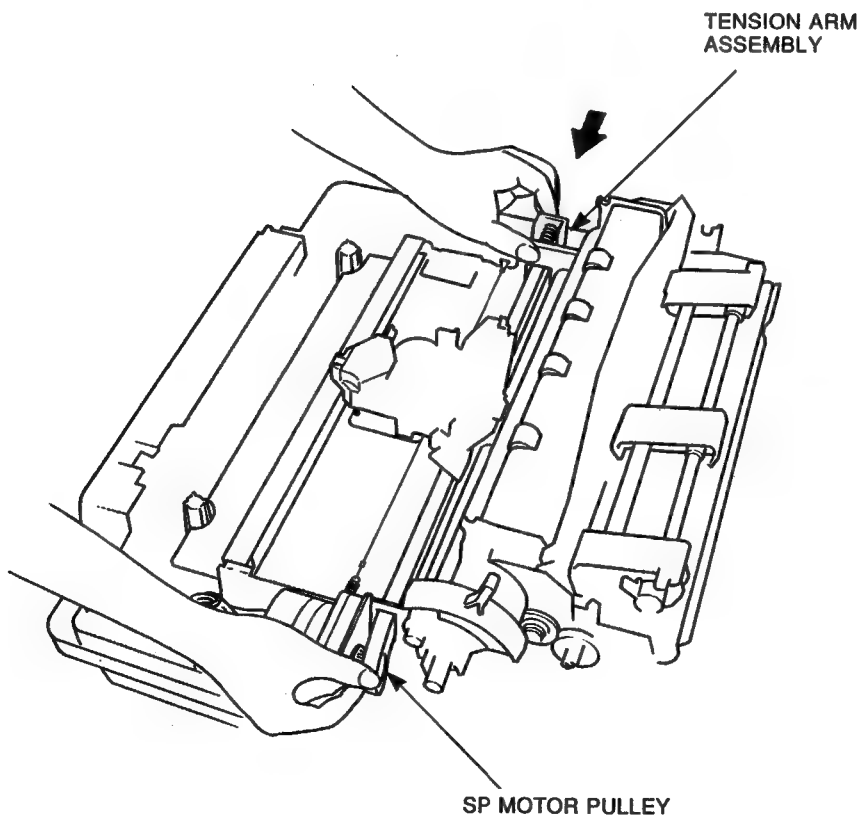


Figure 3-20 Timing Belt

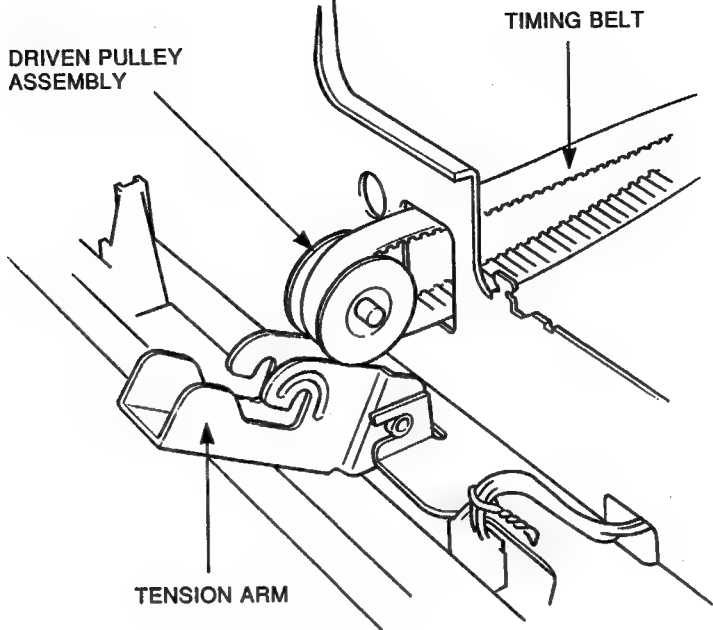


Figure 3-21 Driven Pulley Assembly

CARRIER ASSEMBLY REMOVAL

To remove the carrier assembly, first remove the card holder assembly, gap adjust lever, carrier cable assembly and timing belt. Then proceed as follows.

1. Turn the eccentric bushing until the tab on the bushing aligns with the slot on the right side frame (see Figure 3-22).
2. Slide the guide shaft to the right and remove the eccentric bushing.
3. Remove the ribbon feed wire from the left side frame and the spring.
4. Remove the front stay by removing the four mounting screws (see Figure 3-22).
5. Lift the carrier assembly with guide shaft up and out of the printer.

NOTE

When replacing the carrier assembly, see Section 4 for the platen gap and card holder adjustment procedure.

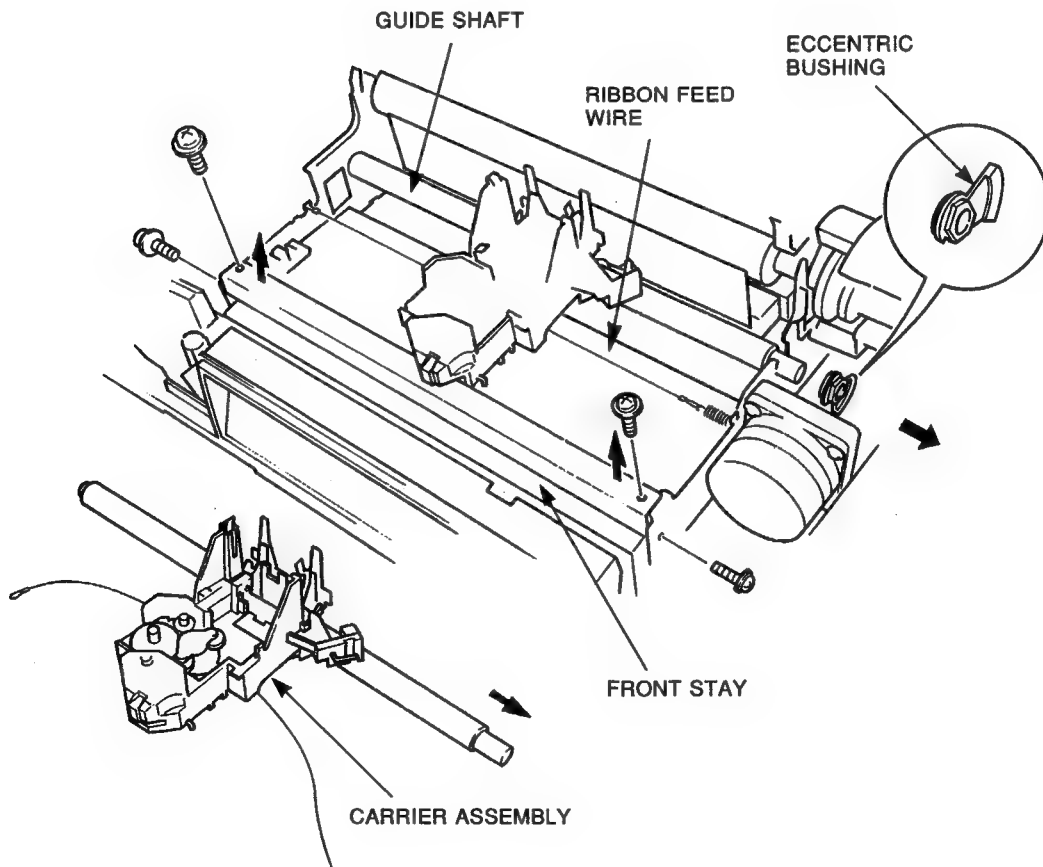


Figure 3-22 Carrier Assembly

DRIVEN PULLEY ASSEMBLY REMOVAL

To remove the driven pulley assembly, first remove the middle cover assembly and timing belt. Then proceed as follows.

1. Press the tension arm assembly to the left side frame and remove the timing belt from the SP motor pulley (see Figure 3-23).
2. Remove the driven pulley assembly from the tension arm (see Figure 3-24).
3. Remove the timing belt from the driven pulley assembly (see Figure 3-24).
4. Remove the driven bushing from the driven pulley.

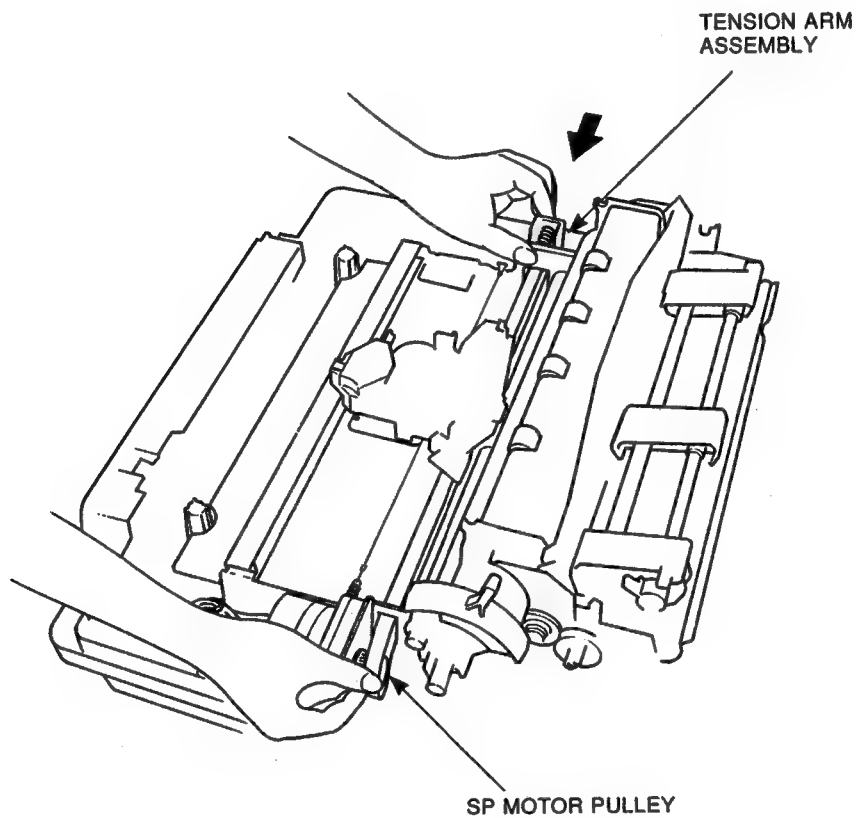


Figure 3-23 Timing Belt

Parts Removal and Installation

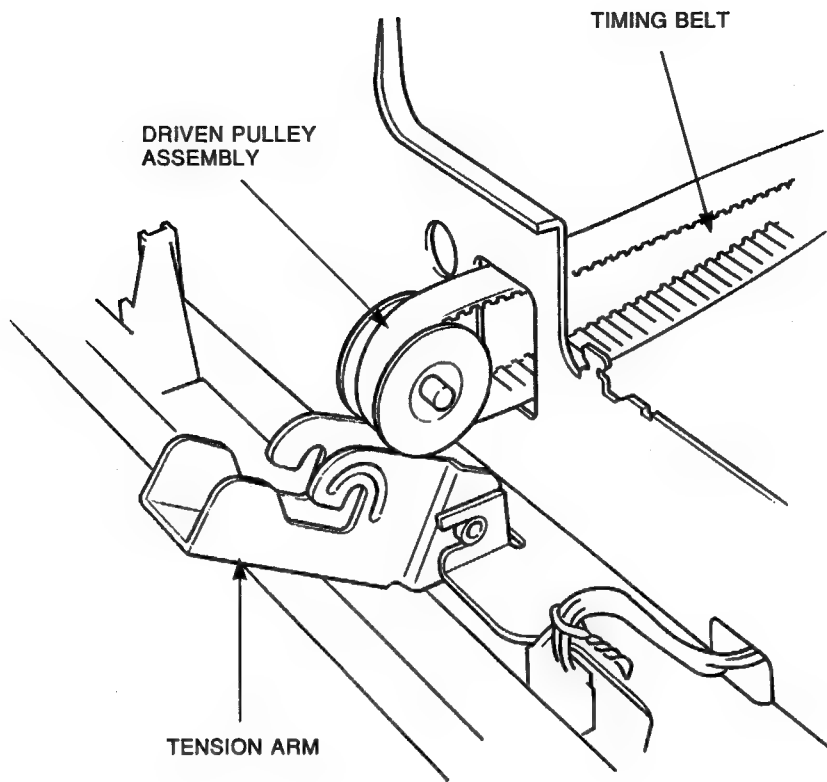


Figure 3-24 Driven Pulley Assembly

HP SENSOR ASSEMBLY REMOVAL

To remove the HP sensor assembly, first remove the middle cover assembly. Then proceed as follows.

1. Disconnect CN42 from the connection board (see Figure 3-25).
2. Unlock the locking tab of the HP sensor holder and lift up and slide to the left side frame to remove it (see Figure 3-26).

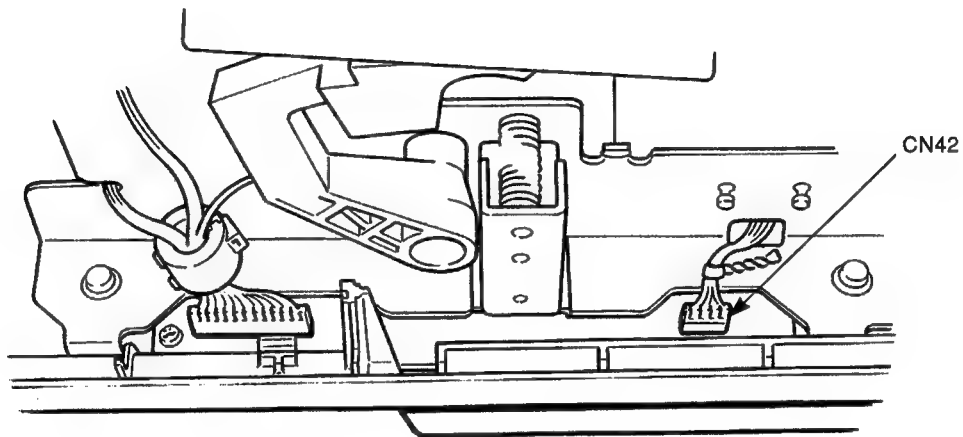


Figure 3-25 HP Sensor Connector

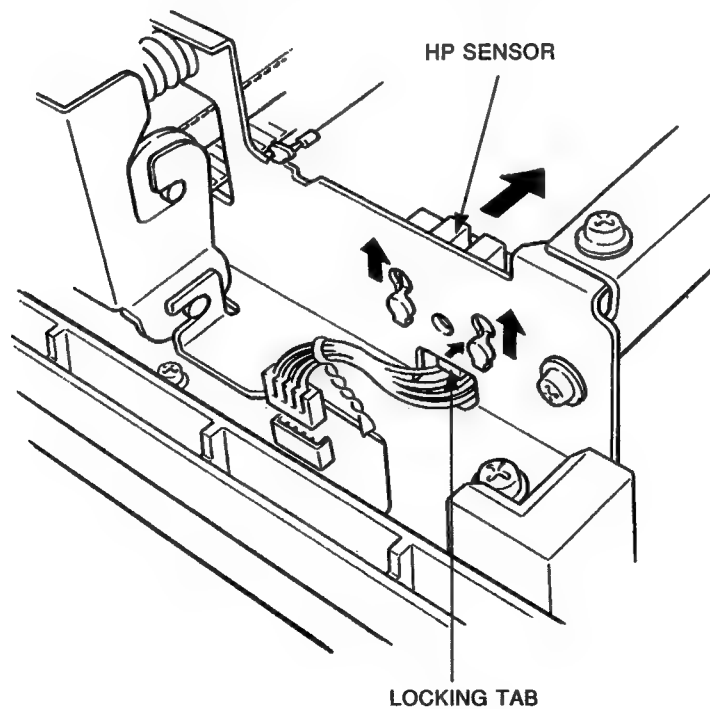


Figure 3-26 HP Sensor

SENSOR AND SWITCH ASSEMBLY REMOVAL

To remove the sensor and switch assembly, first remove the middle cover assembly. Then proceed as follows.

1. Disconnect CN44 from the connection board (see Figure 3-27).
2. Remove the PF sensor by removing the screw securing it to the left side frame (see Figure 3-28).

NOTE

When replacing the PF sensor, see Section 4 for the PF sensor adjustment procedures.

3. Remove the option sensor bracket by removing the screw securing it to the left side frame (see Figure 3-29).
4. Remove the MDL sensor bracket by removing the two screws securing it to the main stay (see Figure 3-30).

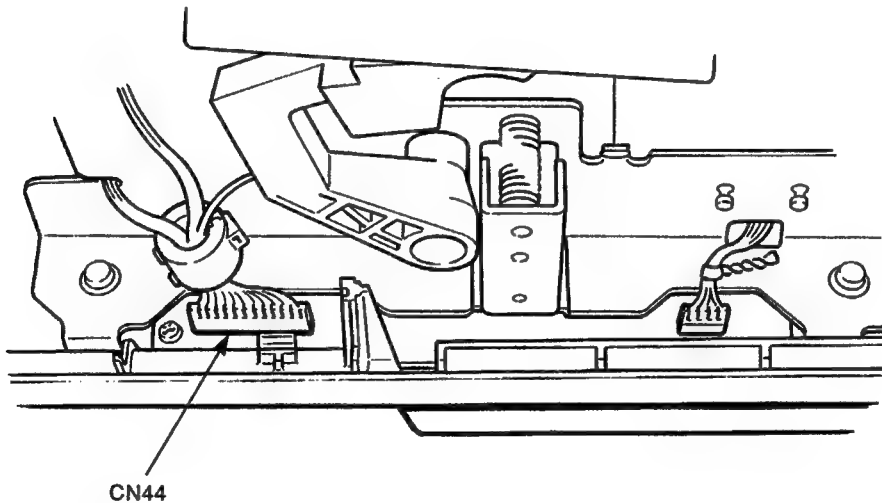
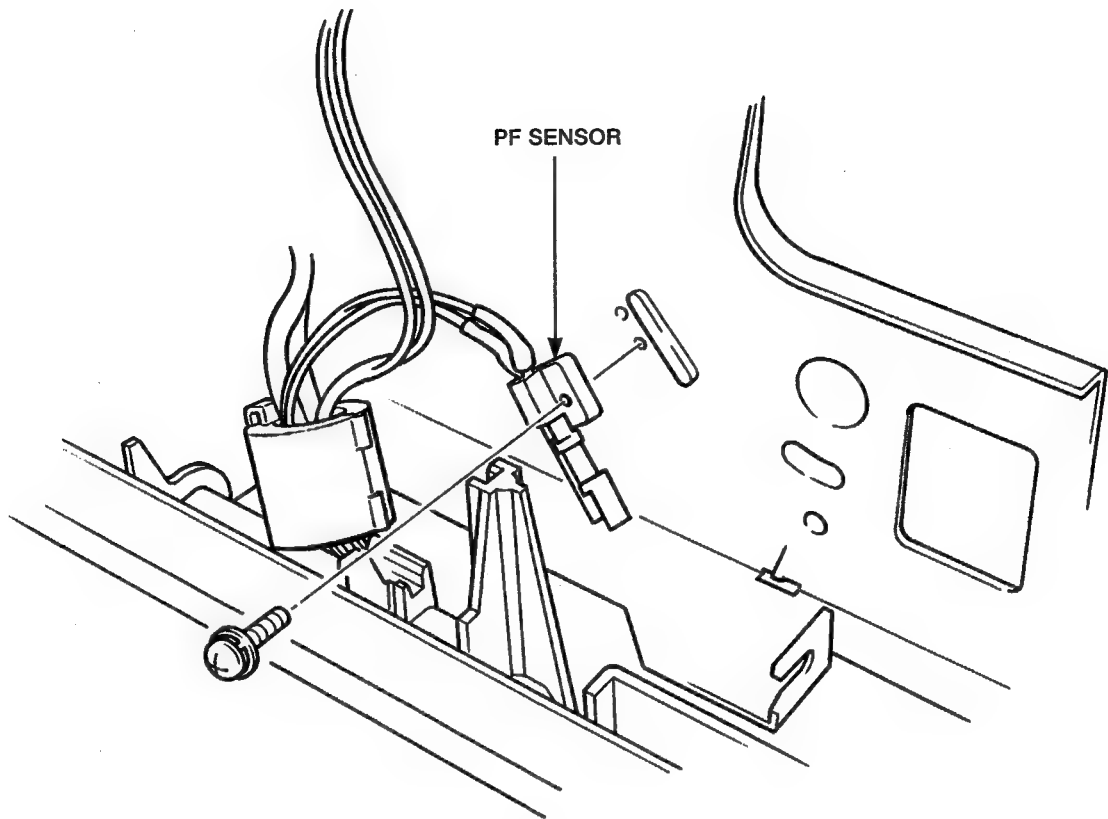
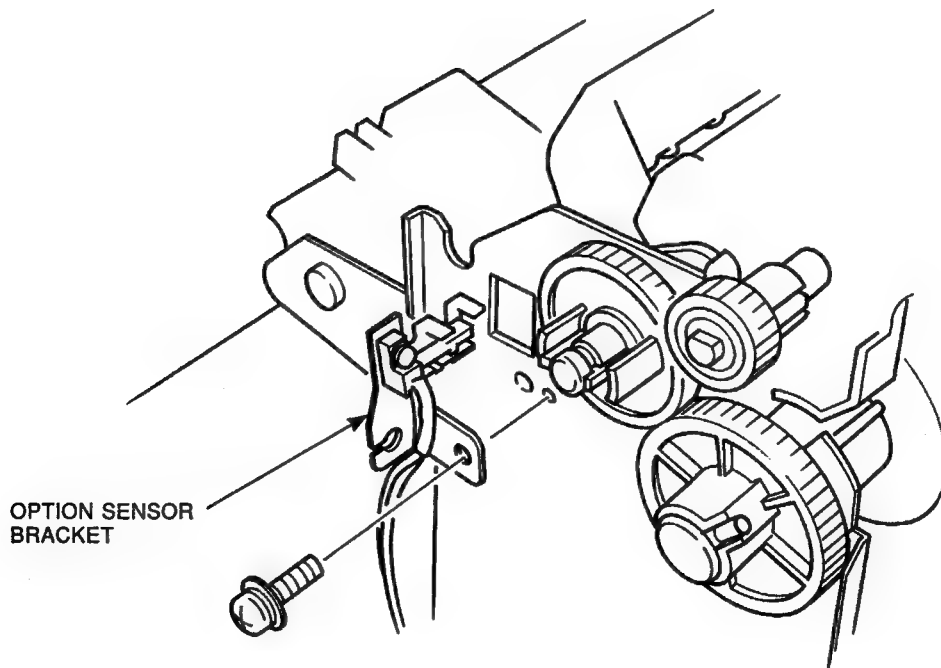


Figure 3-27 Connector CN44



PF SENSOR

Figure 3-28 PF Sensor



OPTION SENSOR
BRACKET

Figure 3-29 Option Sensor Bracket

Parts Removal and Installation

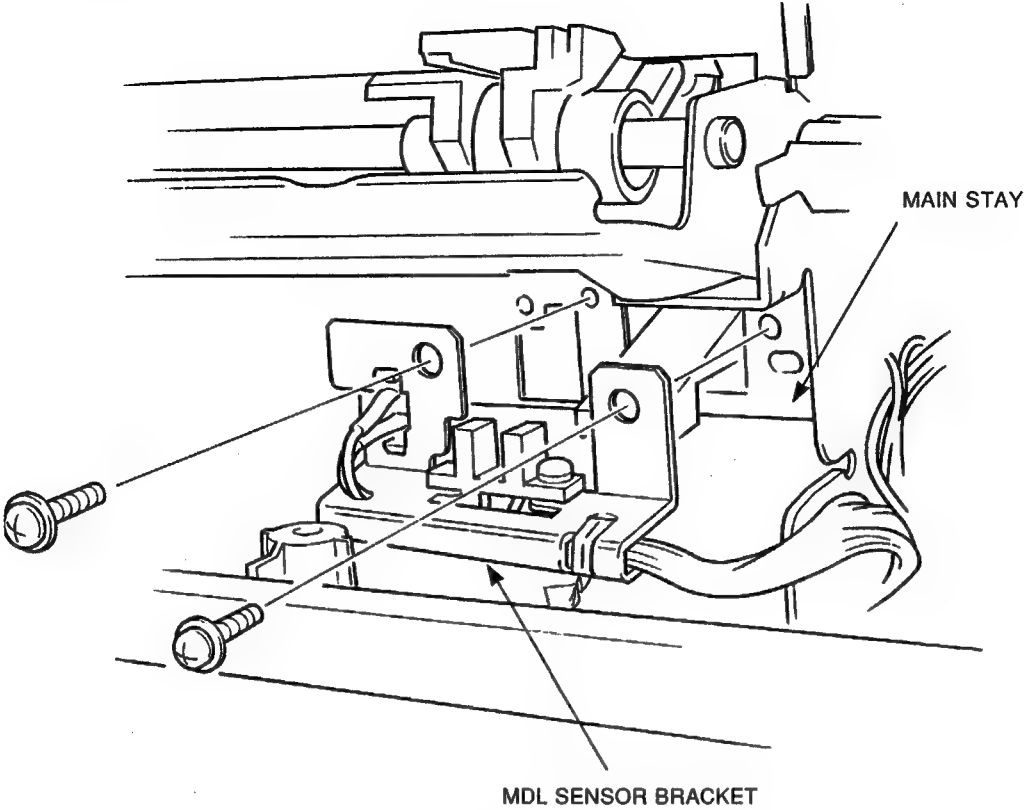


Figure 3-30 MDL Sensor Bracket

FEED ROLLER UNIT REMOVAL

To remove the feed roller unit, first remove the middle cover assembly. Then proceed as follows.

1. Pull the feed roller unit up to remove it (see Figure 3-31).

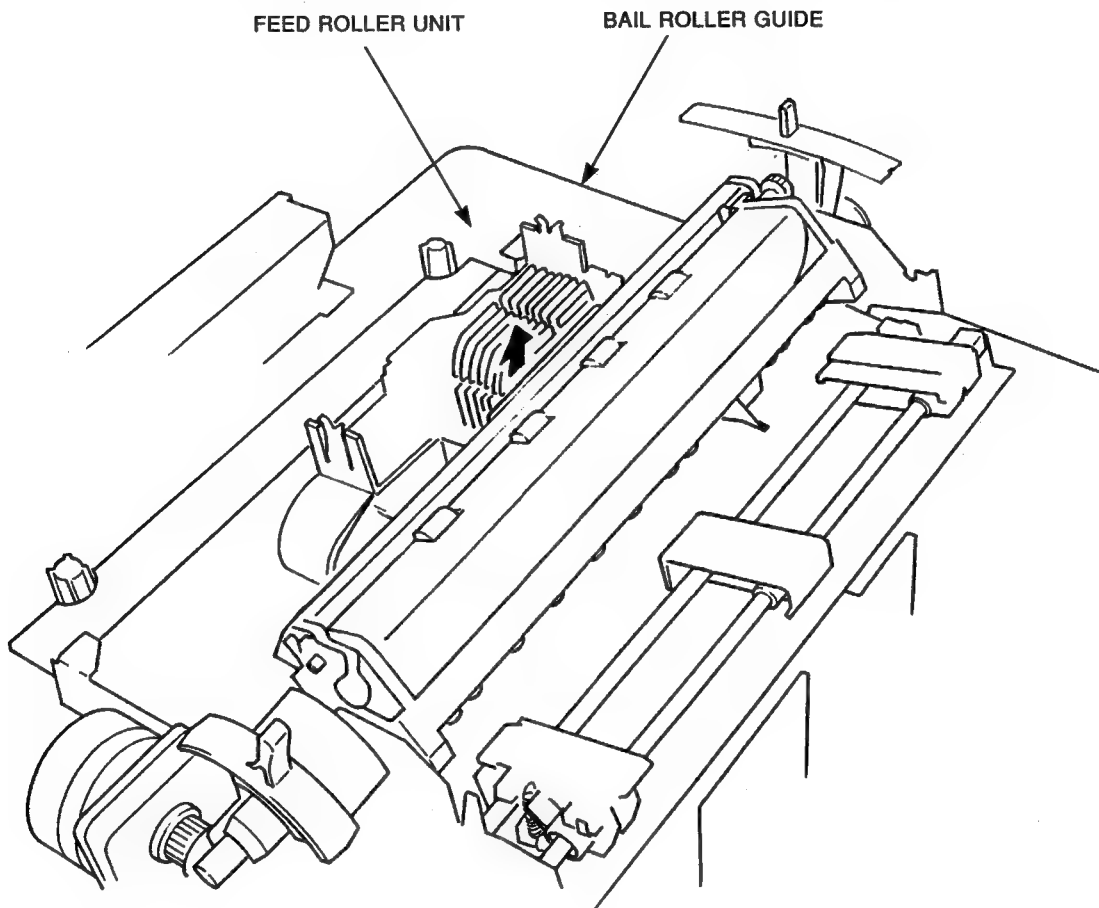


Figure 3-31 Feed Roller Unit

Parts Removal and Installation

BAIL ROLLER GUIDE ASSEMBLY REMOVAL

To remove the bail roller guide assembly, first remove the middle cover assembly and feed roller unit. Then proceed as follows.

1. Open the bail roller guide backward.
2. Pull the both ends of the bail roller guide outward and remove it from the feed roller unit (see Figure 3-32).

CAUTION

Do not pull off the bail roller guide more than necessary. Excessive force may cause damage.

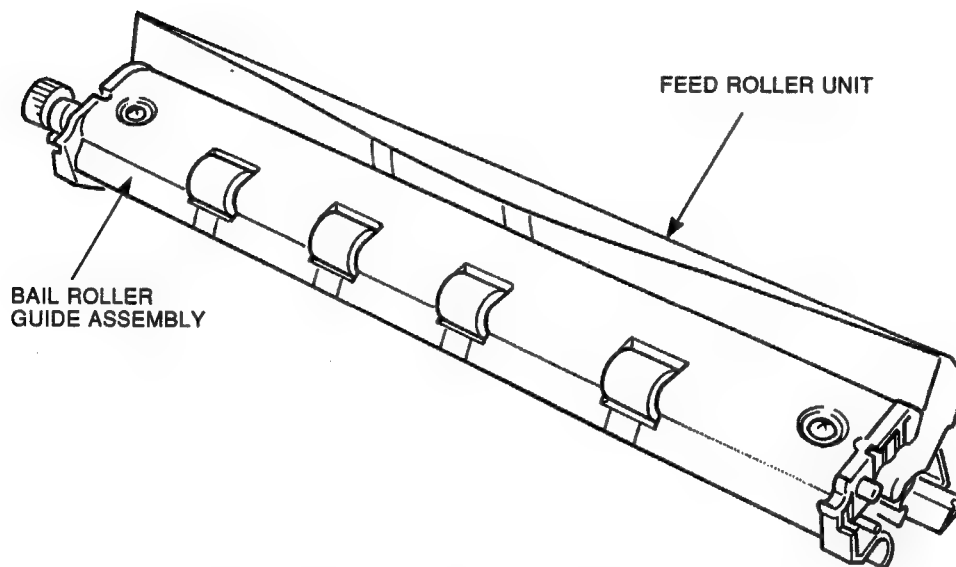


Figure 3-32 Bail Roller Guide Assembly

PLATEN ASSEMBLY REMOVAL

To remove the platen assembly, first remove the middle cover assembly, feed roller unit, print head and card holder. Then proceed as follows.

1. Unlock two locking tabs of the option gear to remove the option gear (see Figure 3-33).
2. Shift the release lever forward (friction mode).
3. Unlock the locking tabs by turning the left and right platen bushing forward and remove the platen assembly (see Figure 3-34 and Figure 3-35).

After replacing the platen assembly, you will need to adjust the platen gap and card holder (see Section 4). Then perform a printer self-test to check for smudging and poor line registration. If necessary, perform the adjustment again.

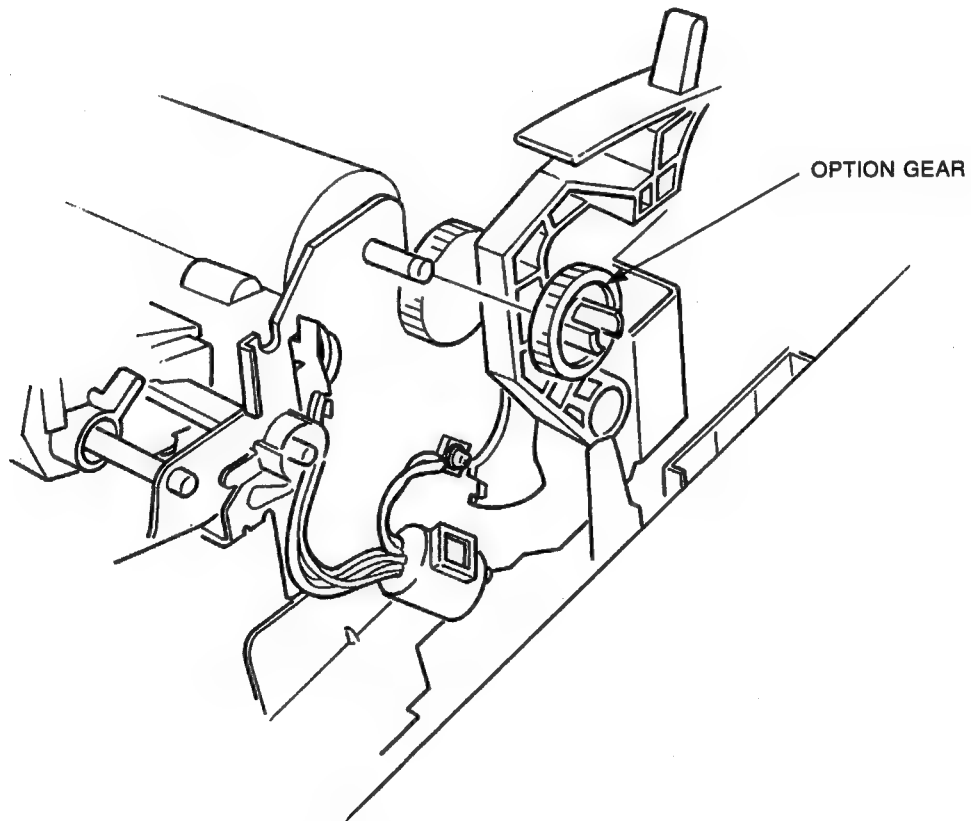


Figure 3-33 Option Gear

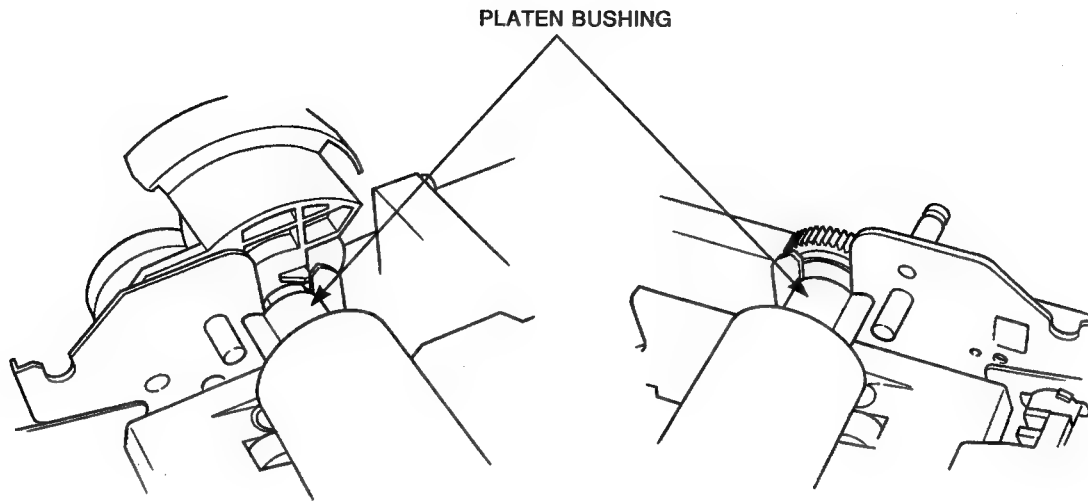


Figure 3-34 Platen Bushing

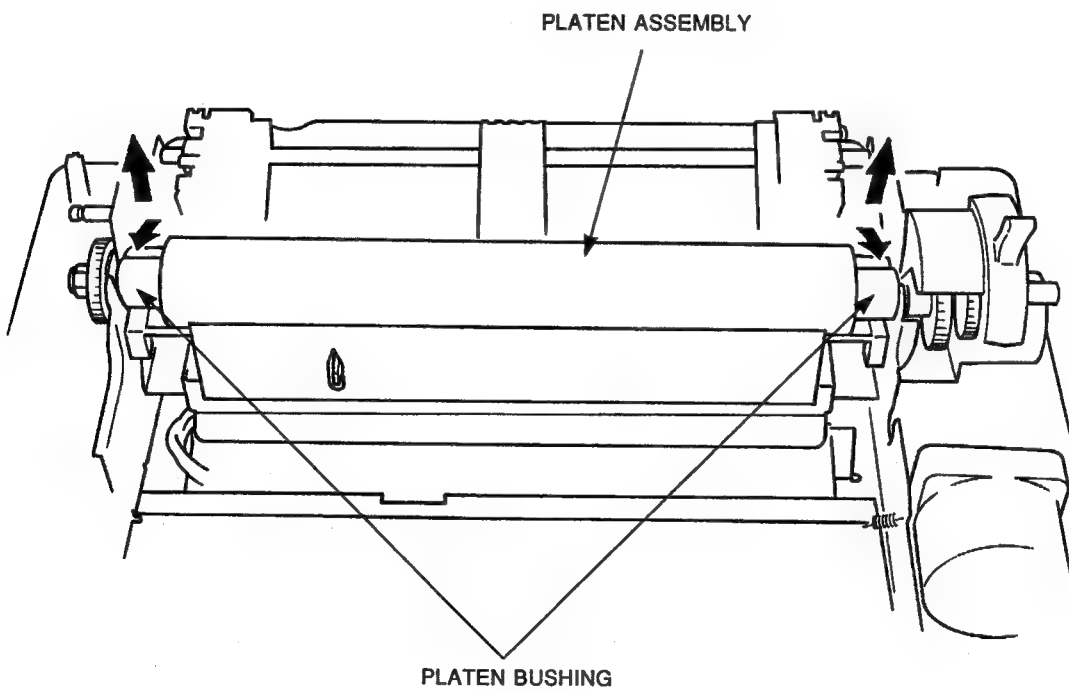


Figure 3-35 Platen Assembly

BOTTOM GUIDE ASSEMBLY REMOVAL

To remove the bottom guide assembly, first remove the middle cover assembly, the carrier assembly, the feed roller unit and the platen assembly.

1. Remove two screws by inserting the screwdriver into the holes on the both left and right side of the paper guide (see Figure 3-36).
2. Remove the bottom guide assembly.

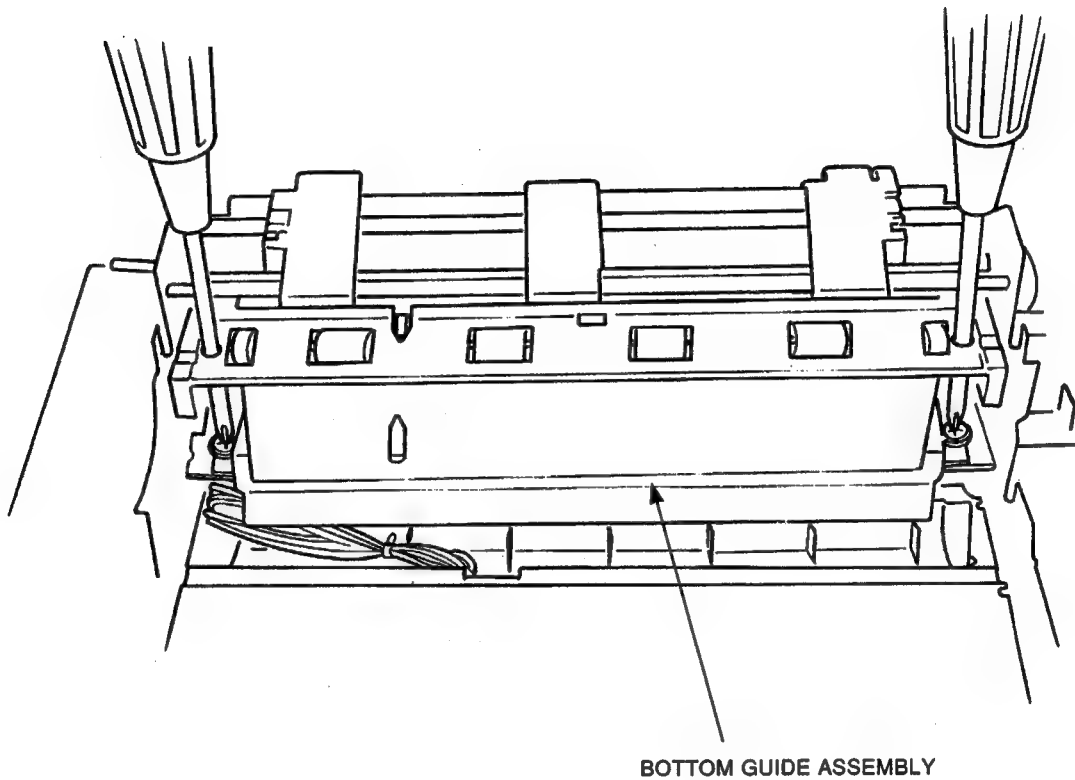


Figure 3-36 Bottom Guide Assembly

Parts Removal and Installation

PAPER GUIDE REMOVAL

To remove the paper guide, first remove the middle cover assembly, the feed roller unit, card holder, the platen assembly, the carrier assembly and the bottom guide assembly.

1. Lift up the front side off the paper guide and remove it from the printer (see Figure 3-37).

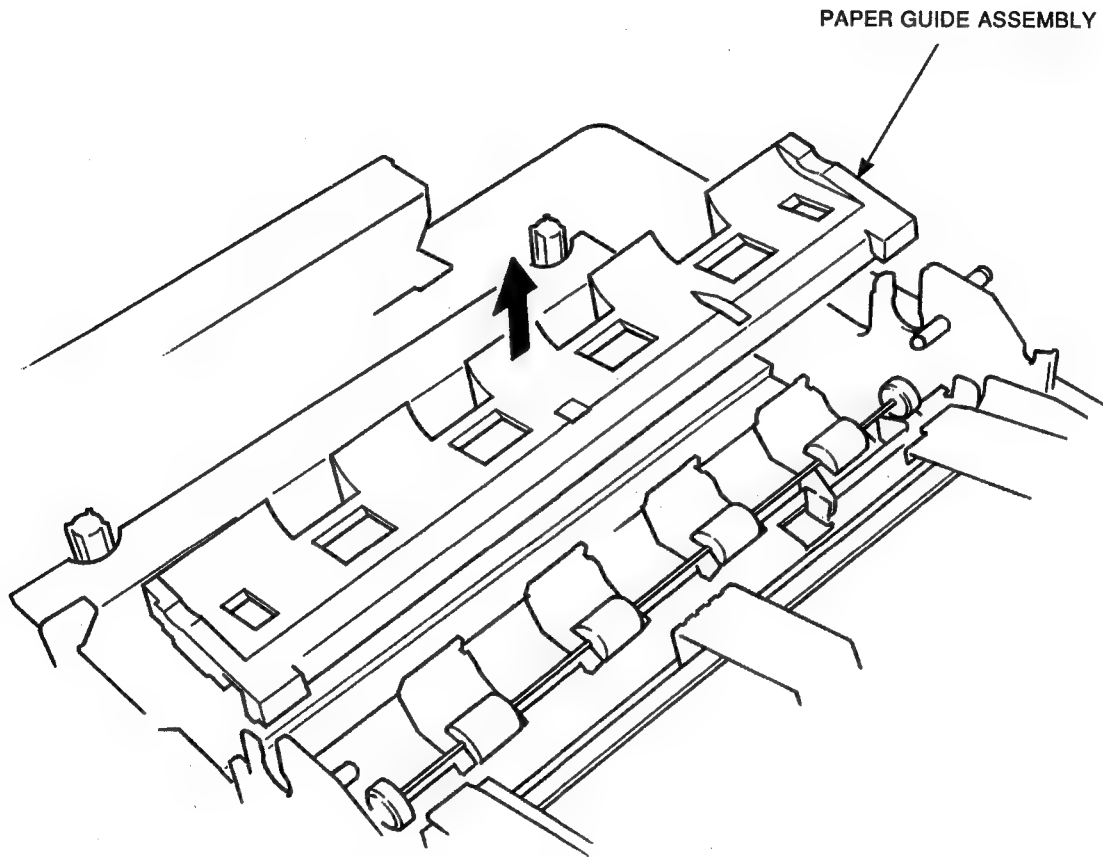


Figure 3-37 Paper Guide Assembly

MECHANISM UNIT REMOVAL

To remove the mechanism unit, first remove the middle cover assembly. Then proceed as follows.

1. Move the carrier to the right side of the printer.
2. Lift off the carrier cable cover by unlocking the tab (see Figure 3-38).
3. Pull up both ends of the connector locks CN14 through CN16 (see Figure 3-39).
4. Remove the cables from the unlocked connectors.
5. Remove the cable cover by removing the three screws securing it to the shield cover (see Figure 3-40).
6. Disconnect CN18 and CN19 from the mother board (see Figure 3-41).
7. Disconnect CN42 and CN44 from the connection board (see Figure 3-42).
8. Remove the four screws securing the mechanism assembly (see Figure 3-43).
9. Hold the mechanism assembly by the front and rear frames, lift the assembly out of the printer (see Figure 3-44).

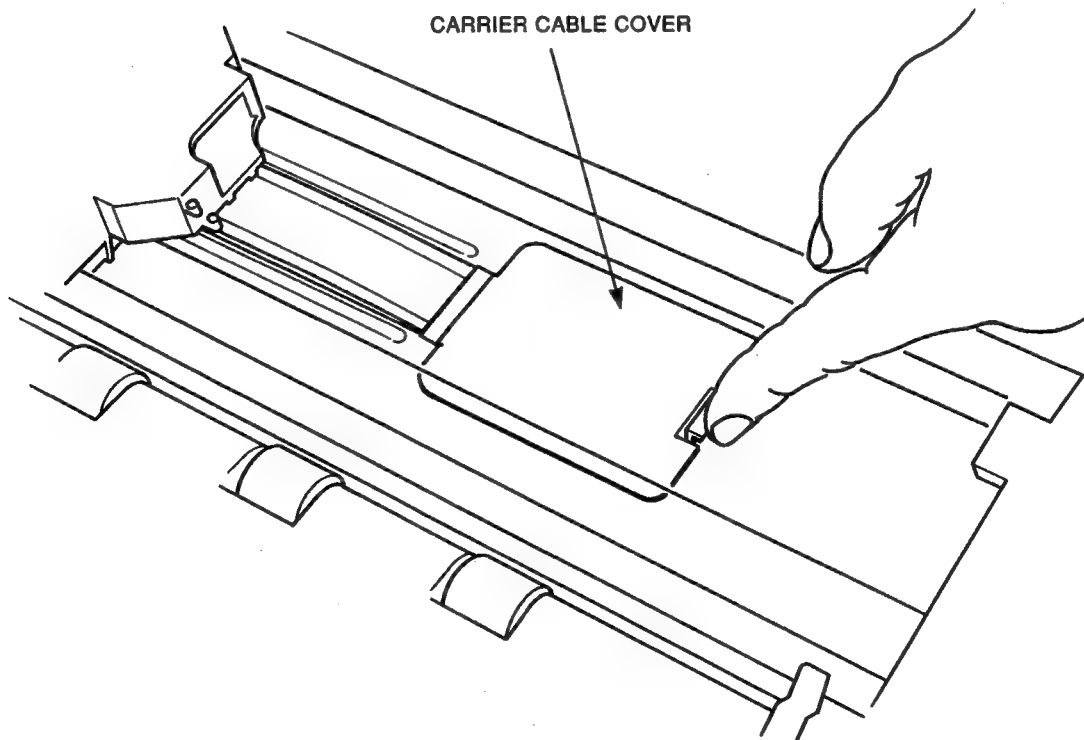


Figure 3-38 Carrier Cable Cover

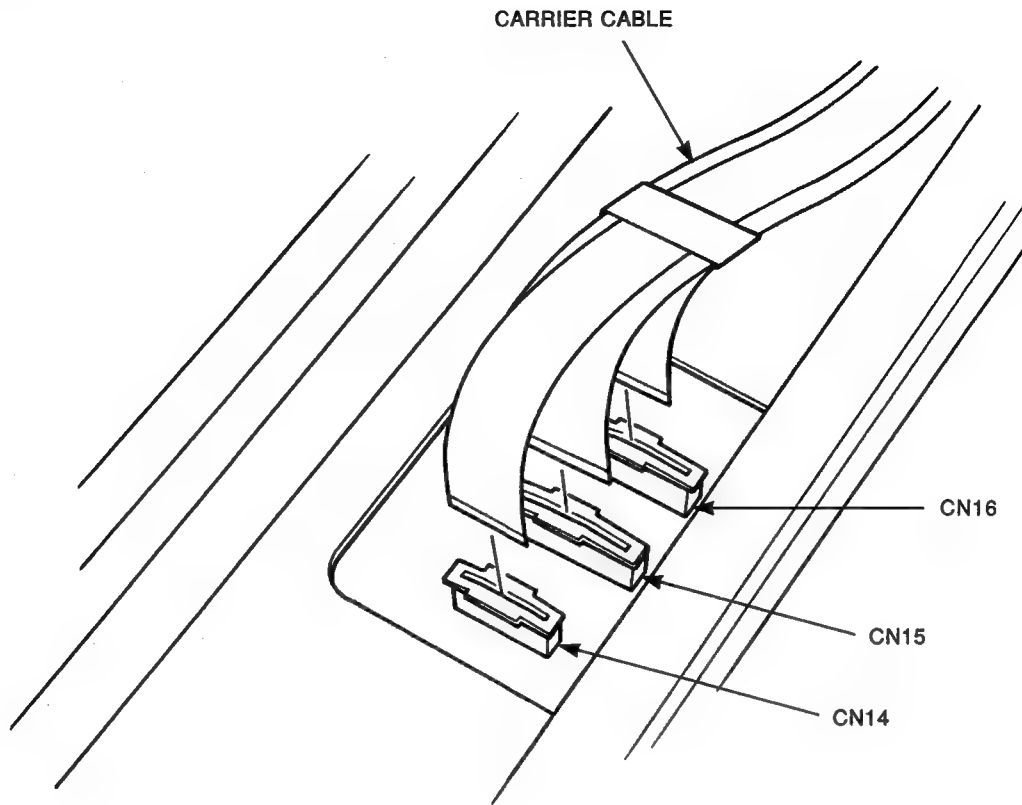


Figure 3-39 Carrier Cable Connectors

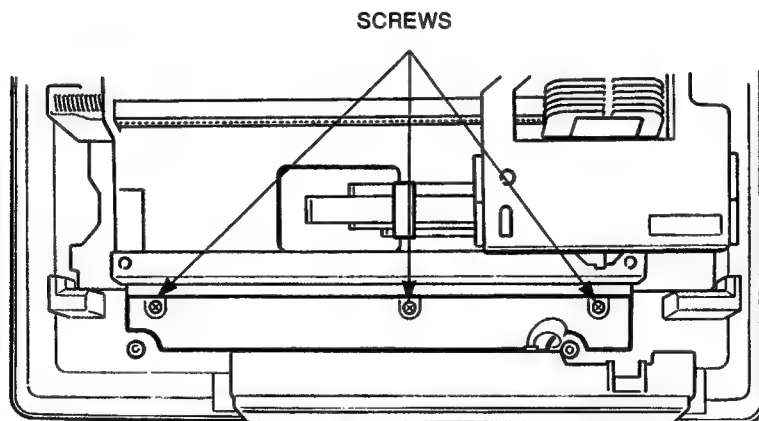


Figure 3-40 Cable Cover

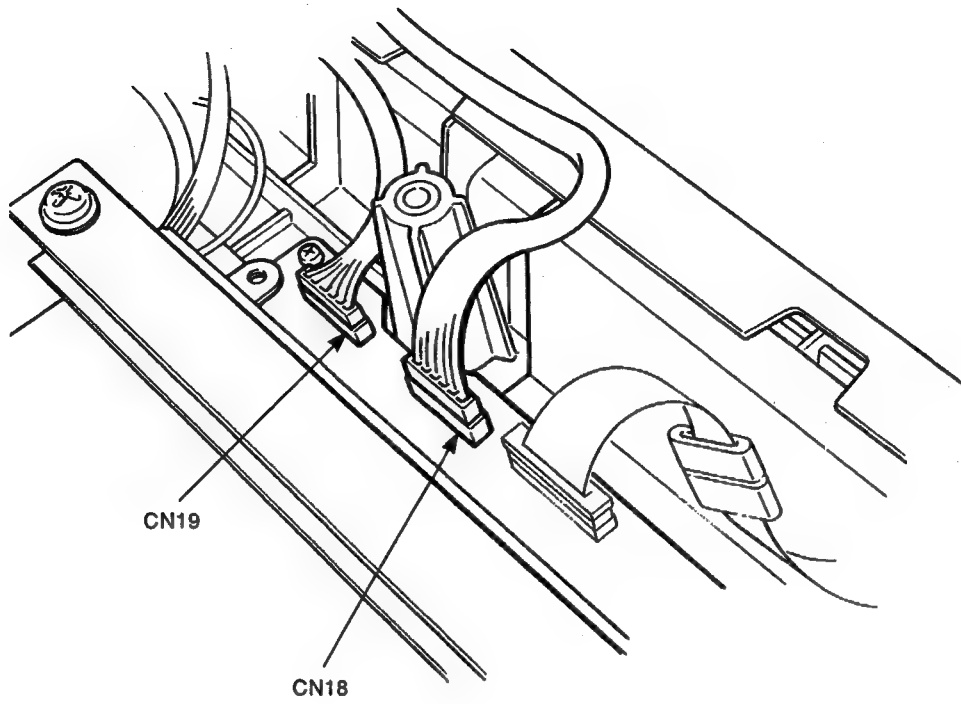


Figure 3-41 Motor Connectors

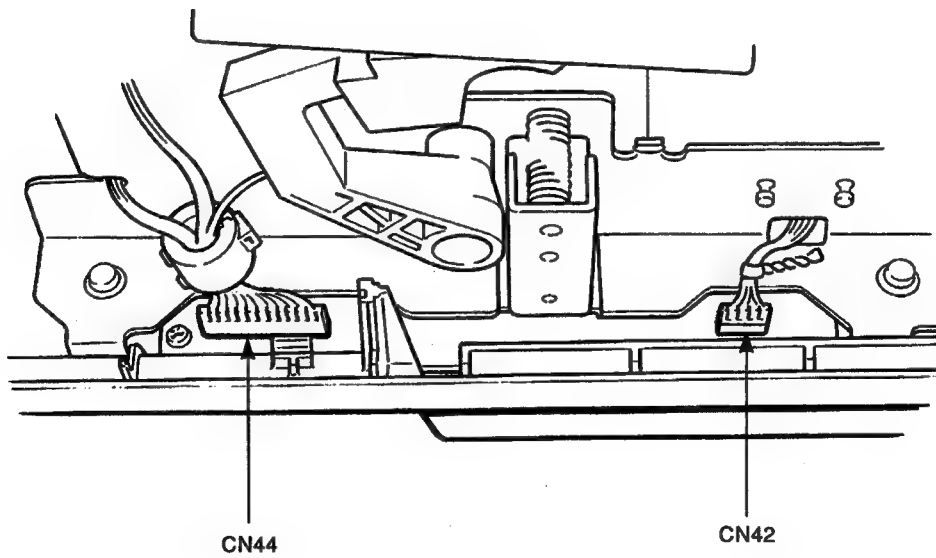


Figure 3-42 Connectors CN42 and CN44

Parts Removal and Installation

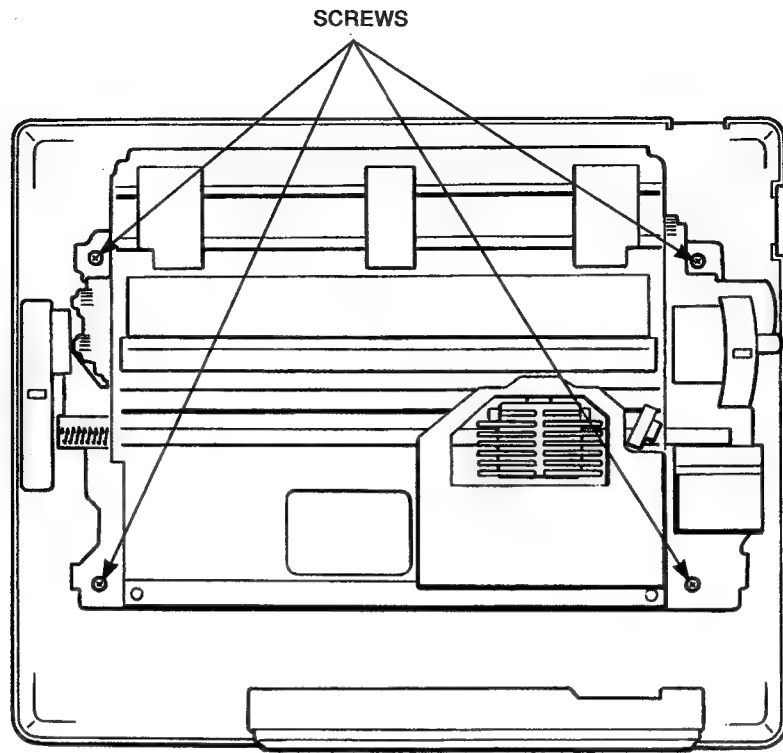


Figure 3-43 Mechanism Assembly Mounting Screws

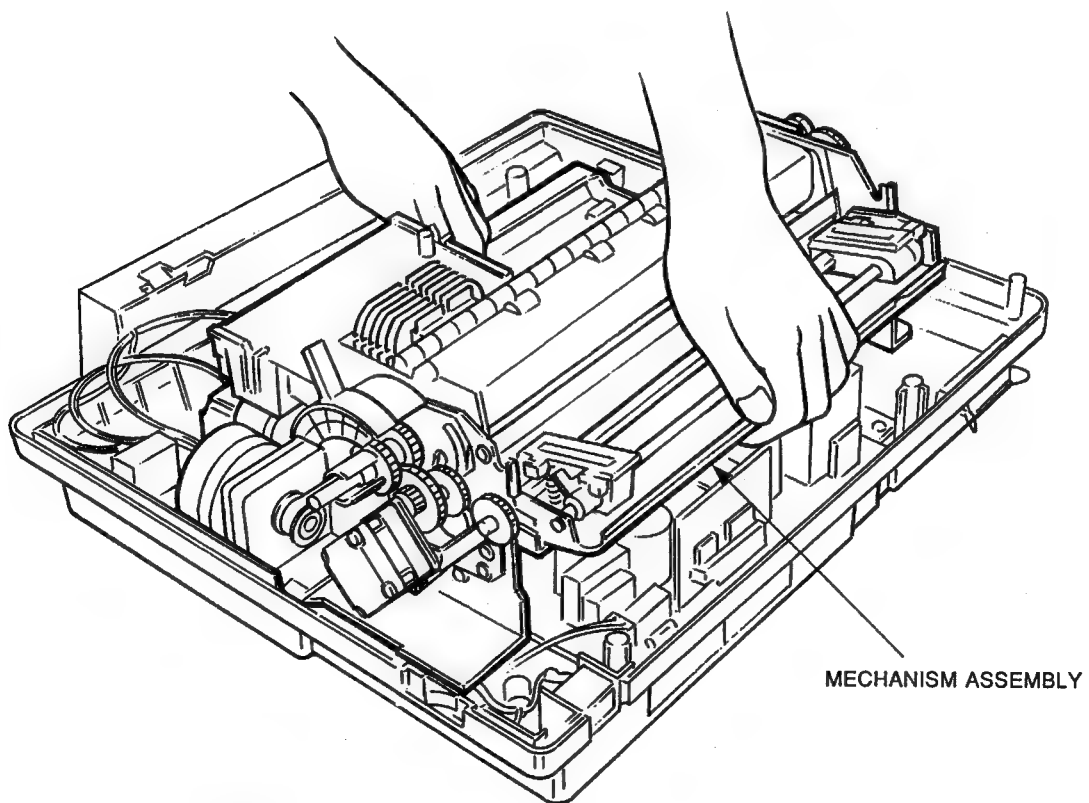


Figure 3-44 Mechanism Assembly Removal

SP MOTOR ASSEMBLY REMOVAL

To remove the SP motor assembly, first remove the middle cover assembly, print head and card holder. Then proceed as follows.

1. Press the tension arm to the left side frame and remove the timing belt from the SP motor pulley (see Figure 3-45).
2. Remove the cable cover by removing the three screws securing it to the shield cover (see Figure 3-46).
3. Disconnect CN18 from the mother board (see Figure 3-47).
4. Remove the vinyl twist-tie securing the motor cable to the right side frame (see Figure 3-48).
5. Remove the two screws securing the SP motor unit to the right side frame (see Figure 3-49).
6. Remove the SP motor unit out of the printer.
7. Remove the four screws securing the SP motor assembly to the SP motor bracket (see Figure 3-50).

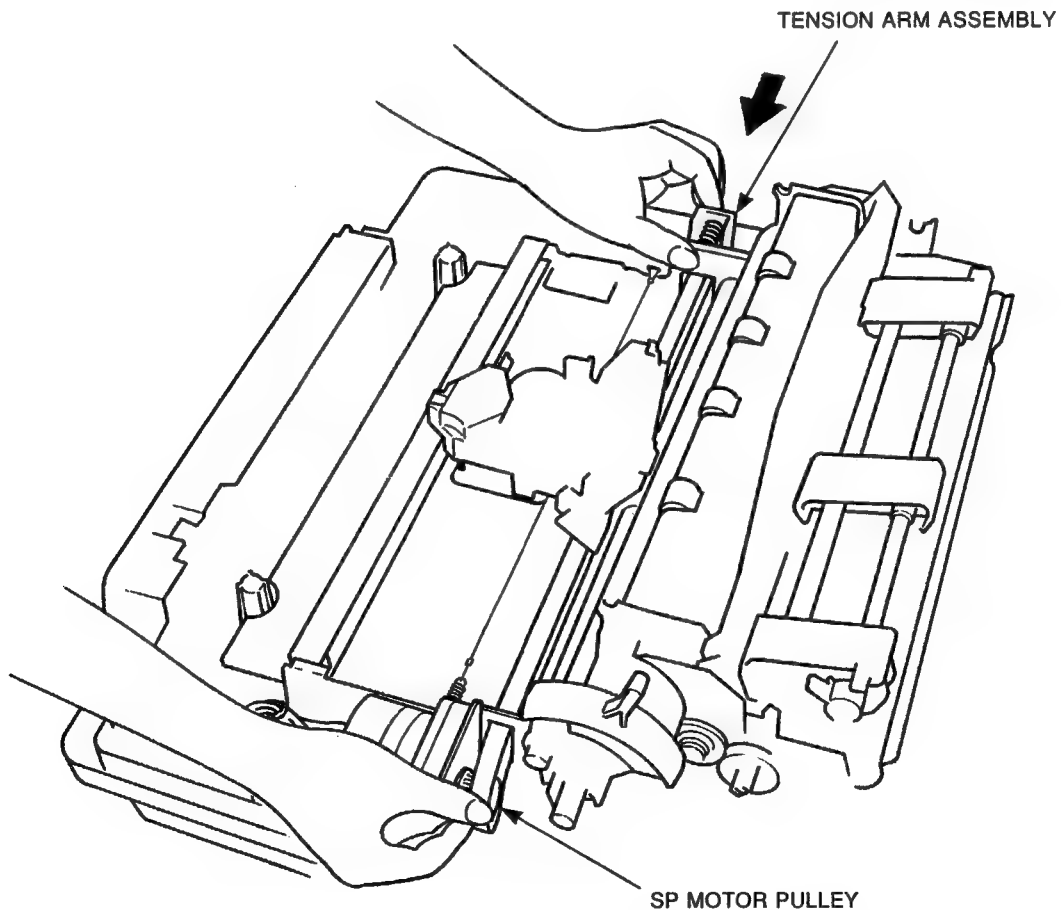


Figure 3-45 Timing Belt

Parts Removal and Installation

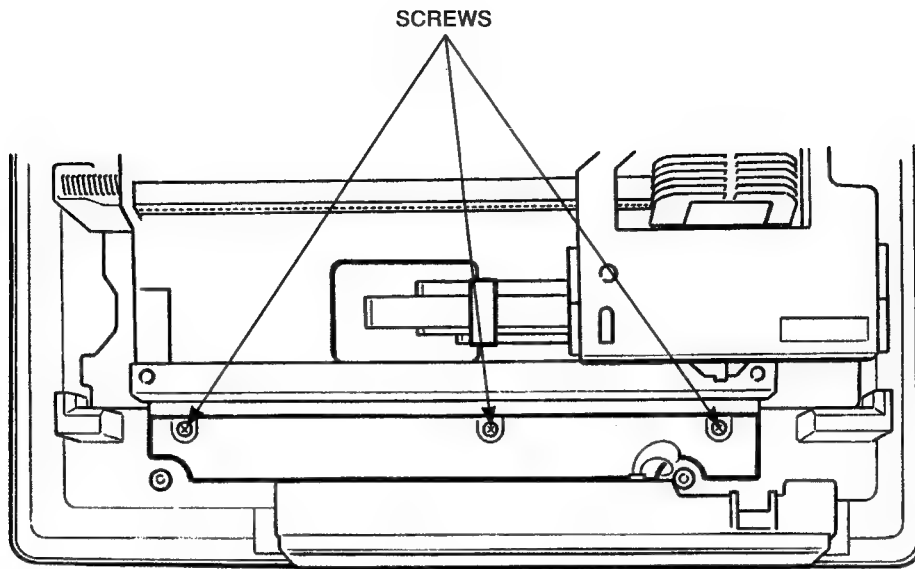


Figure 3-46 Cable Cover

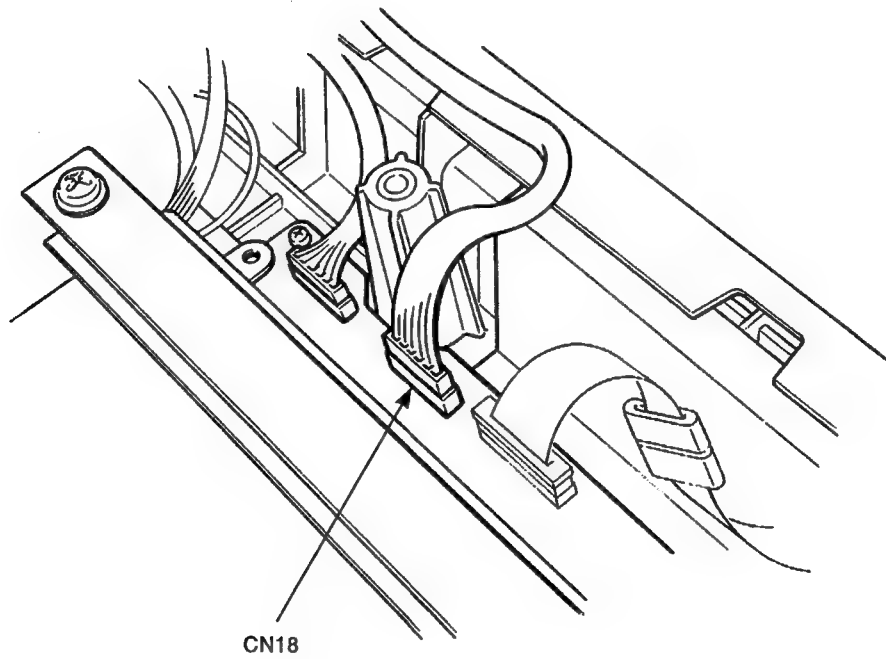


Figure 3-47 Connector CN18

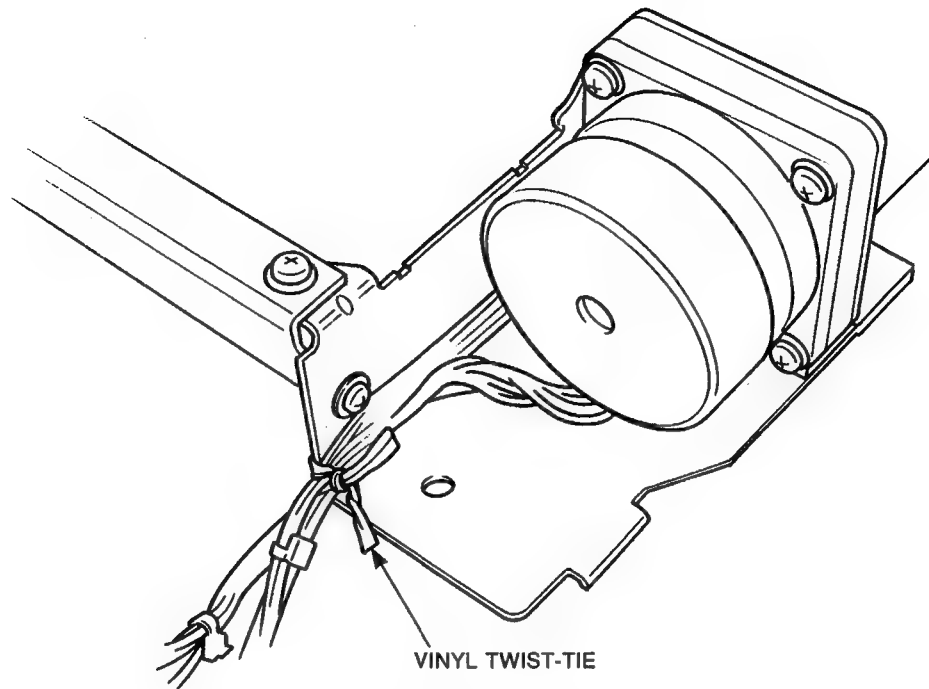


Figure 3-48 Vinyl Twist-Tie

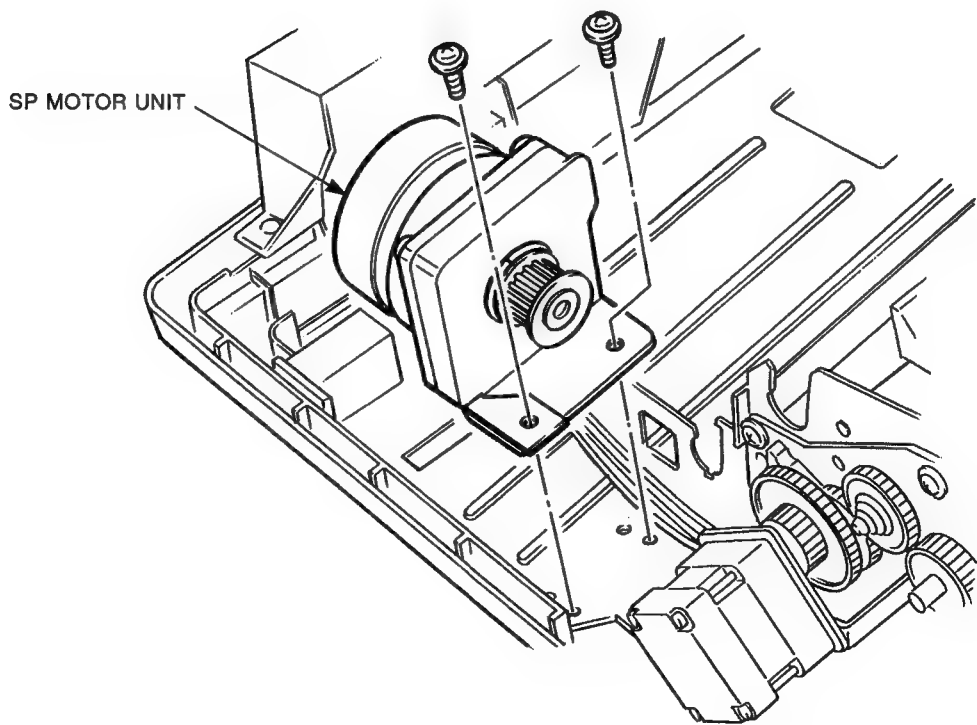


Figure 3-49 SP Motor Unit

Parts Removal and Installation

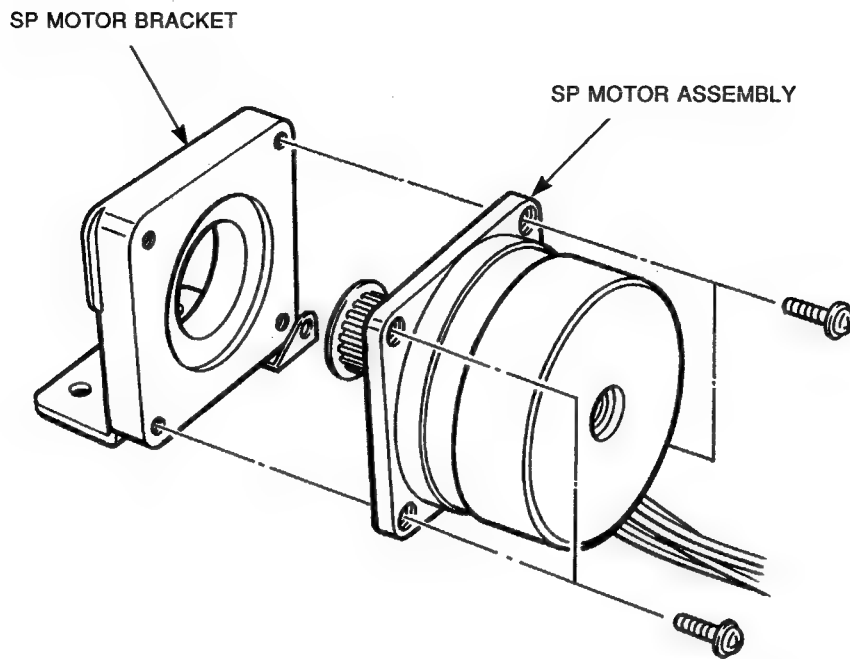


Figure 3-50 SP Motor Assembly

LF MOTOR ASSEMBLY REMOVAL

To remove the LF motor assembly, first remove the middle cover assembly, feed roller unit, the platen assembly, SP motor unit and tractor unit (see Figure 3-49). Then proceed as follows.

1. Disconnect CN19 from the mother board (see Figure 3-51).
2. Remove the LF motor unit by removing the three mounting screws (see Figure 3-52).
3. Remove LF motor cables from cable clamp (see Figure 3-53).
4. Remove the three screws securing the LF motor assembly to the LF motor bracket (see Figure 3-54).

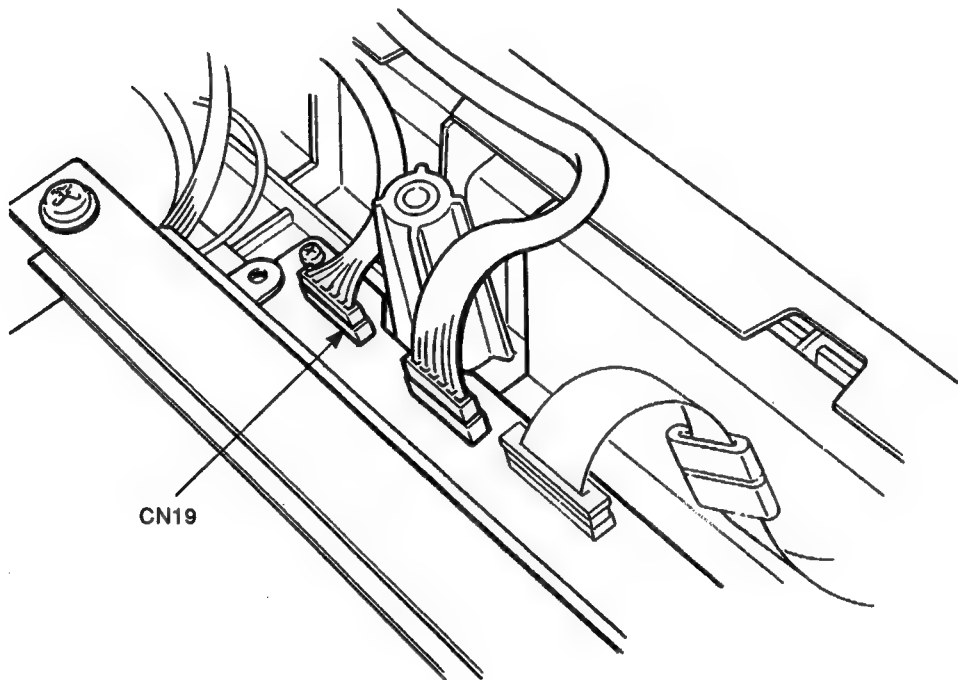


Figure 3-51 Connector CN19

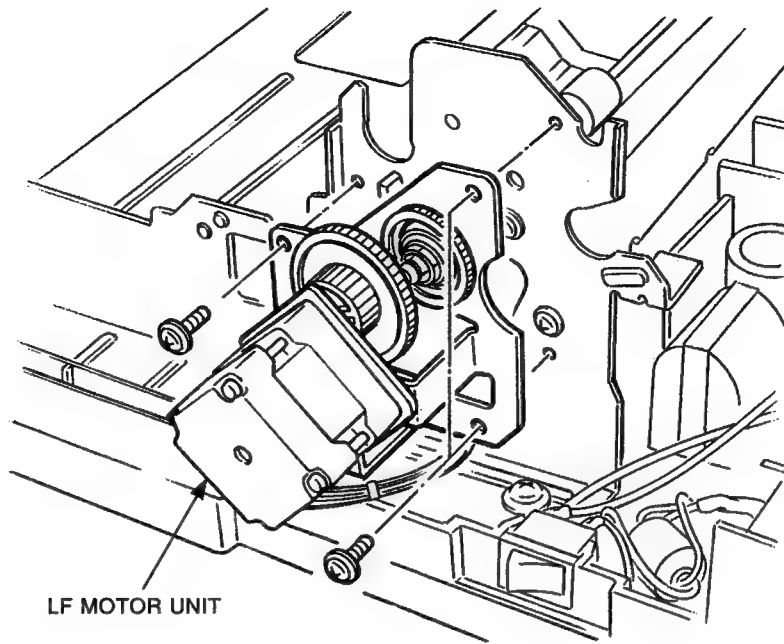


Figure 3-52 LF Motor Unit

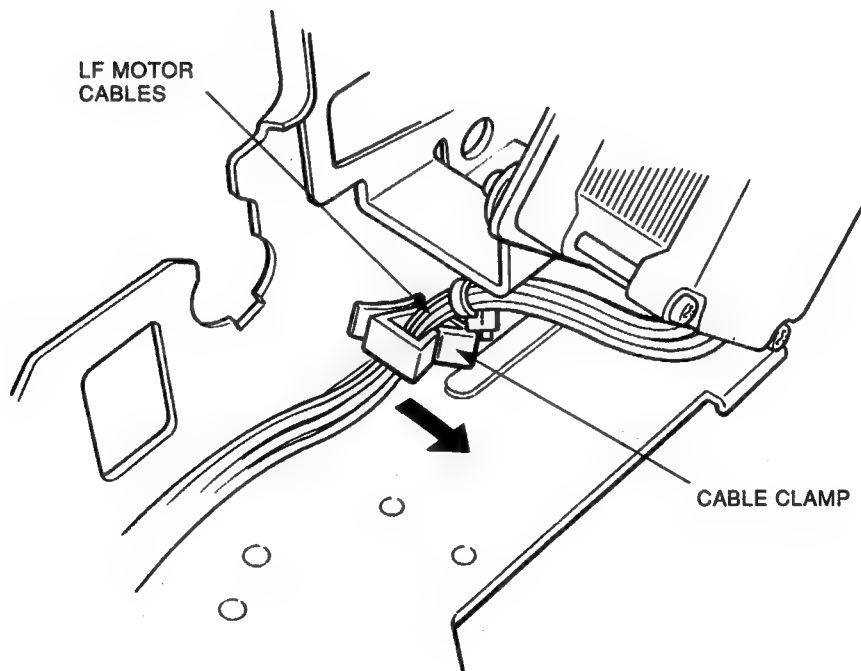


Figure 3-53 Cable Clamp

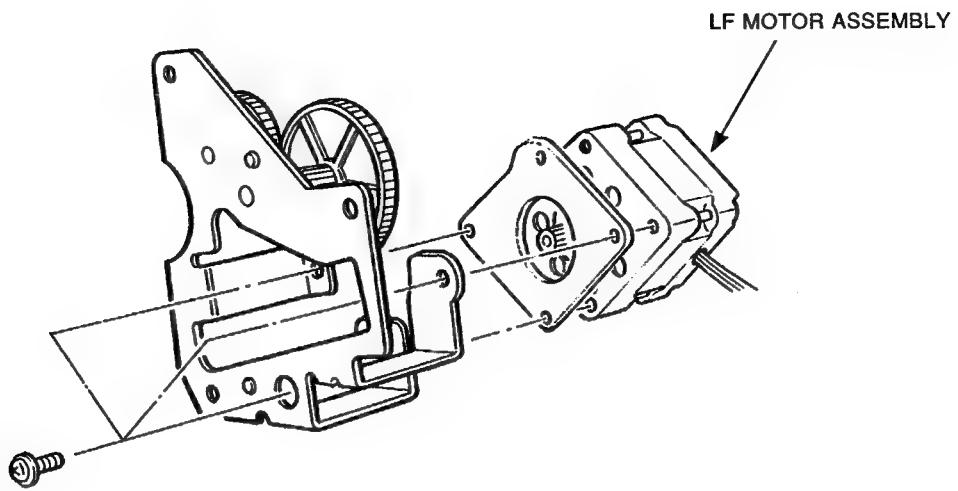


Figure 3-54 LF Motor Assembly

Parts Removal and Installation

PAPER RELEASE ARM REMOVAL

To remove the paper release arm, first remove the middle cover assembly, the platen assembly and tractor unit.

1. Remove the LF motor unit by removing the three screws securing it to the right side frame (see Figure 3-55).
2. Turn the paper release arm until the tab on the paper release arm aligns with the slot on the right side frame (see Figure 3-56).
3. Pull off the paper release arm.

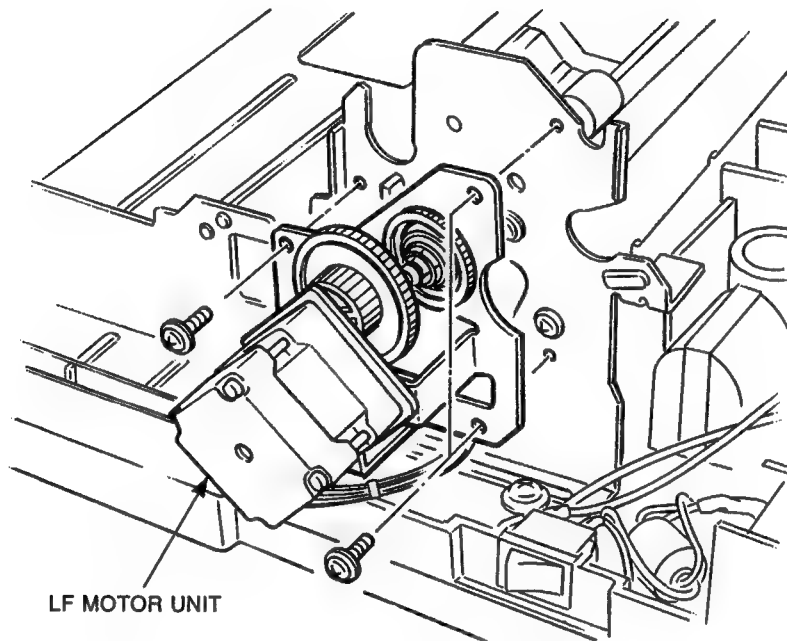


Figure 3-55 LF Motor Unit

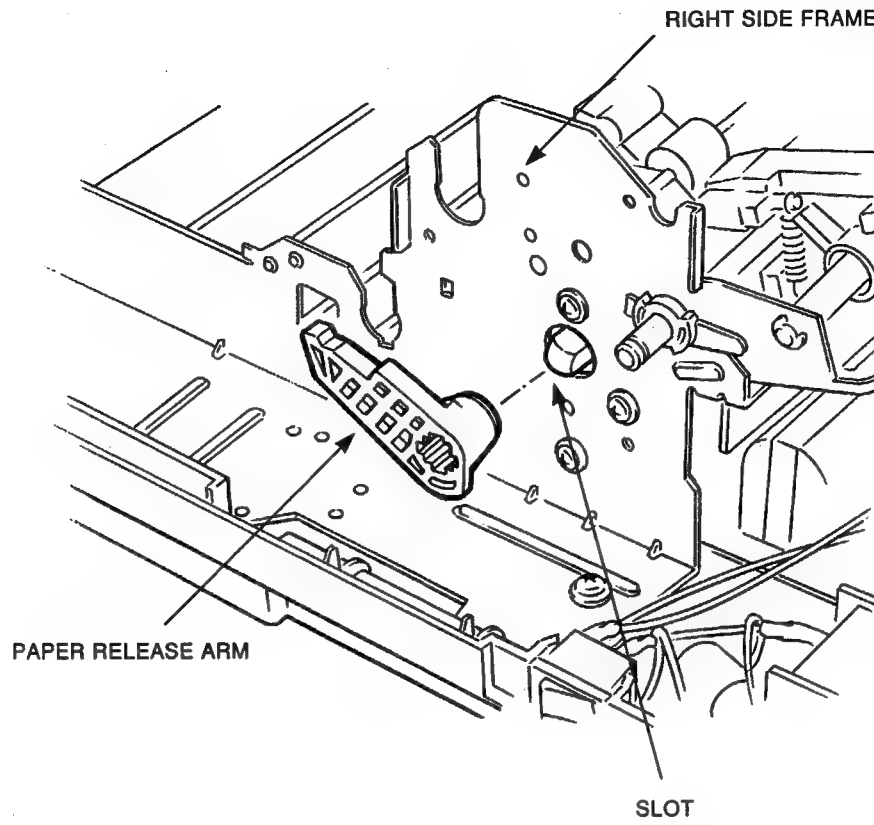


Figure 3-56 Paper Release Arm

Parts Removal and Installation

TRACTOR UNIT REMOVAL

To remove the tractor unit, first remove the middle cover assembly. Then proceed as follows.

1. Remove the two screws securing the tractor frame to the left and right side frames (see Figure 3-57).
2. Turn the tractor unit forward and lift it out of the mechanism unit (see Figure 3-57).

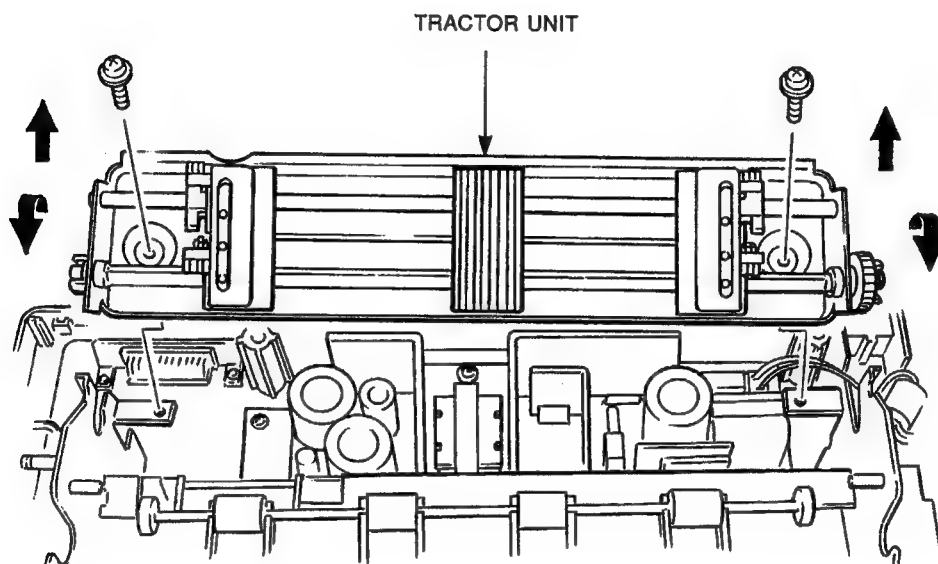


Figure 3-57 Tractor Unit Mounting Screws

TRACTOR ASSEMBLY REMOVAL

To remove the tractor assembly, first remove the middle cover assembly and tractor unit. Then proceed as follows.

1. Remove the tractor gear from the tractor drive shaft by unlocking the lock tab (see Figure 3-58).
2. Releasing the locking tab, turn the tractor bushing (RH) until the tabs on the bushing align with the slot on the tractor frame and remove it (see Figure 3-58).
3. Releasing the locking tab, turn the tractor bushing (LH) until the tabs on the bushing align with the slot on the tractor frame and remove it (see Figure 3-59).
4. Slide and remove the tractor drive shaft (see Figure 3-60).
5. Remove the special retainer and slide the tractor support shaft to the left side (see Figure 3-61).
6. Pull the right tractor assembly, center guide, and left tractor assembly from the tractor unit.

CAUTION

When replacing the tractor assembly, make sure the alignment marks on the tractors are in the same relative position (see Figure 3-62).

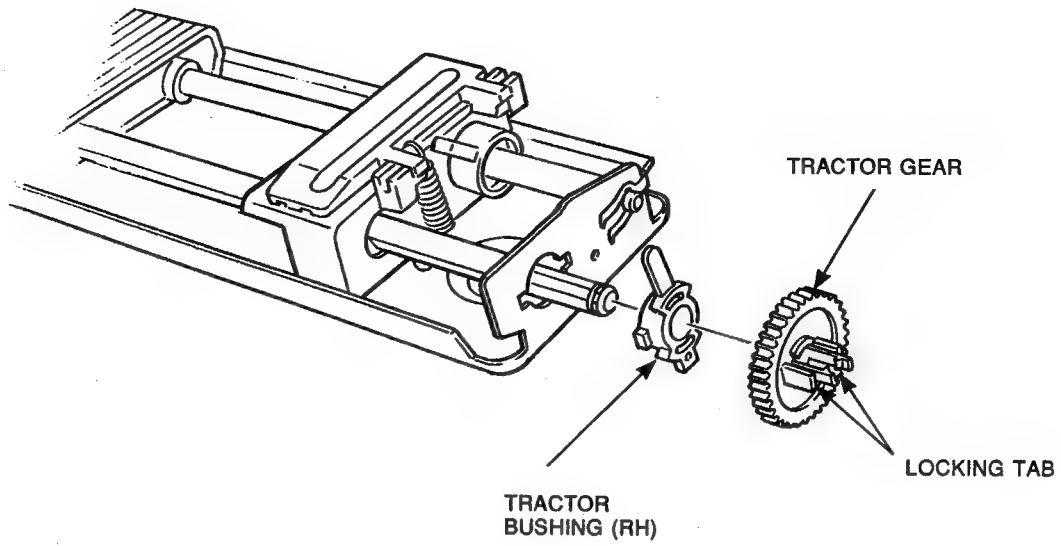


Figure 3-58 Tractor Gear and Tractor Bushing (RH)

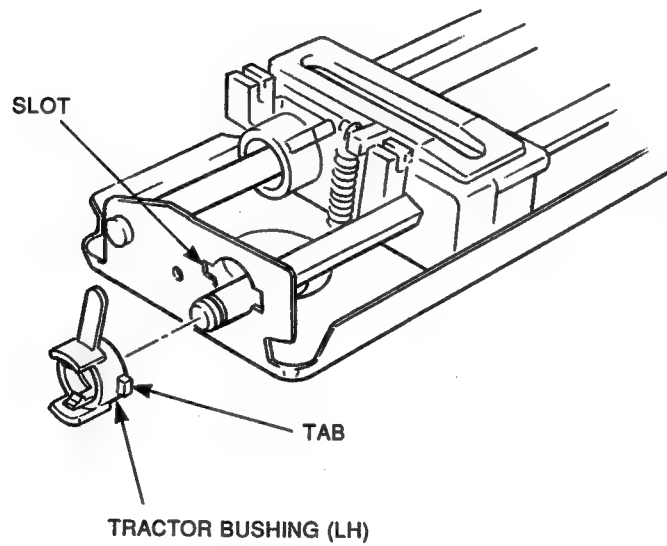


Figure 3-59 Tractor Bushing (LH)

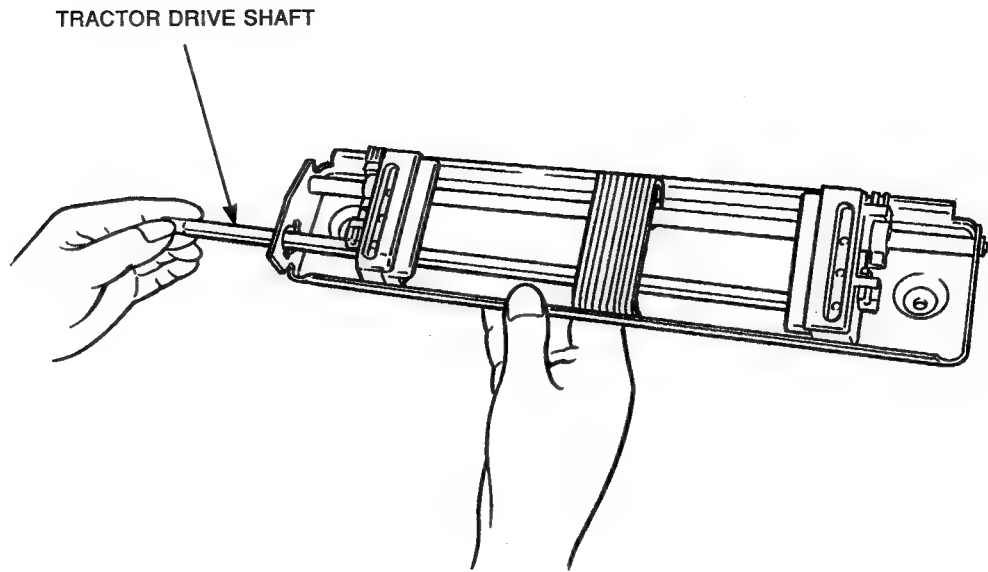


Figure 3-60 Tractor Drive Shaft

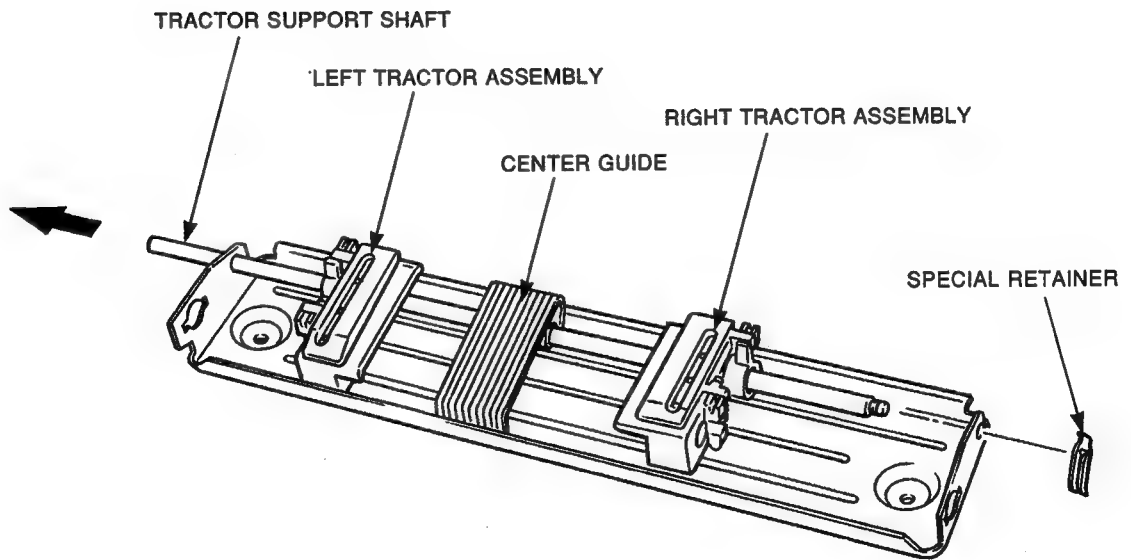


Figure 3-61 Tractor Support Shaft

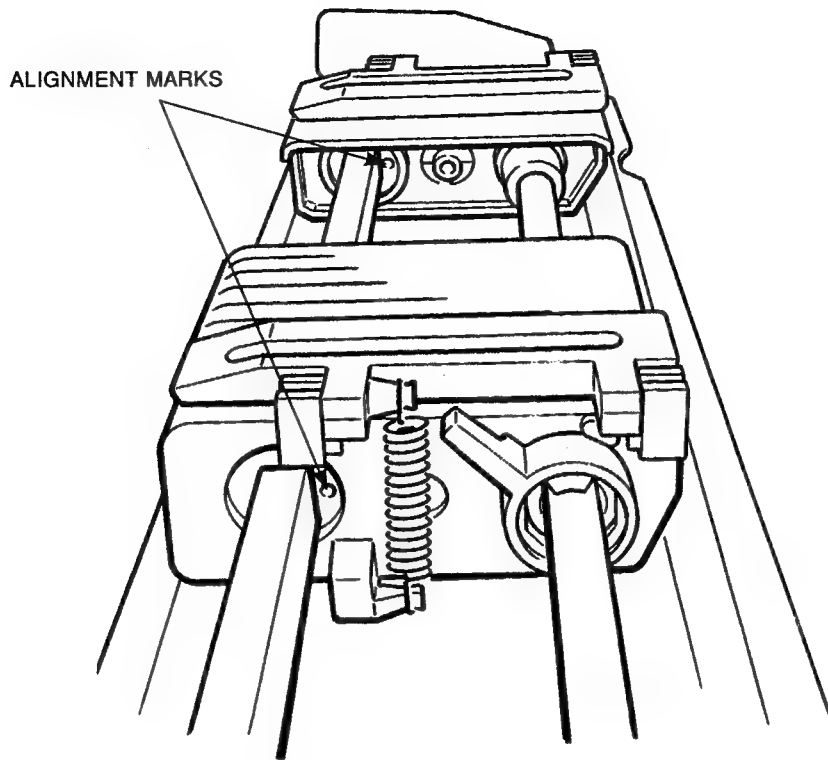


Figure 3-62 Alignment Marks

MOTHER BOARD PCB ASSEMBLY REMOVAL

To remove the mother board PCB assembly, first remove the middle cover assembly and mechanism unit. Then proceed as follows.

1. Remove the shield cover by removing the four mounting screws (see Figure 3-63).

NOTE

Make sure the screw at right-front corner of the shield cover secures the cover, together with the FG cable.

2. Pull up both ends of the connector lock CN17 and remove the OPP cable from the unlocked connector (see Figure 3-64).
3. Disconnect DC cable from CN12 of the mother board PCB (see Figure 3-64).
4. Remove the six mounting screws (see Figure 3-64).
5. Lift off the mother board PCB assembly by disconnecting CN11 from CN41 on the connection board PCB assembly (see Figure 3-65).

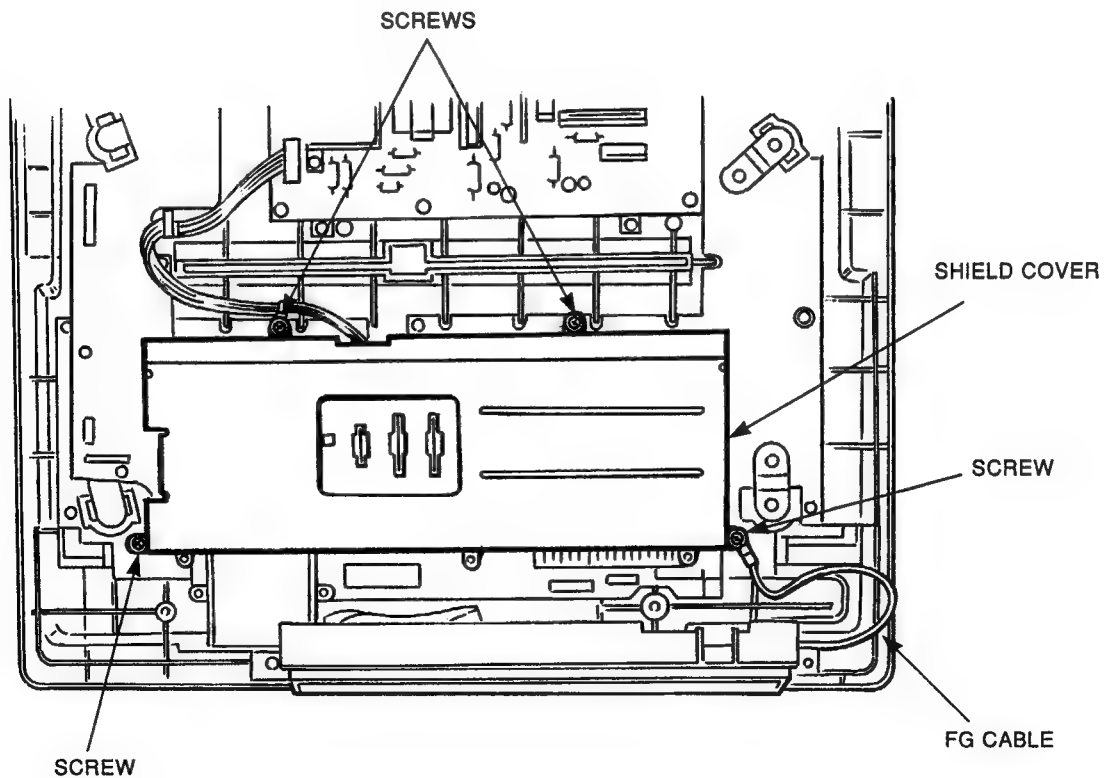


Figure 3-63 Shield Cover

Parts Removal and Installation

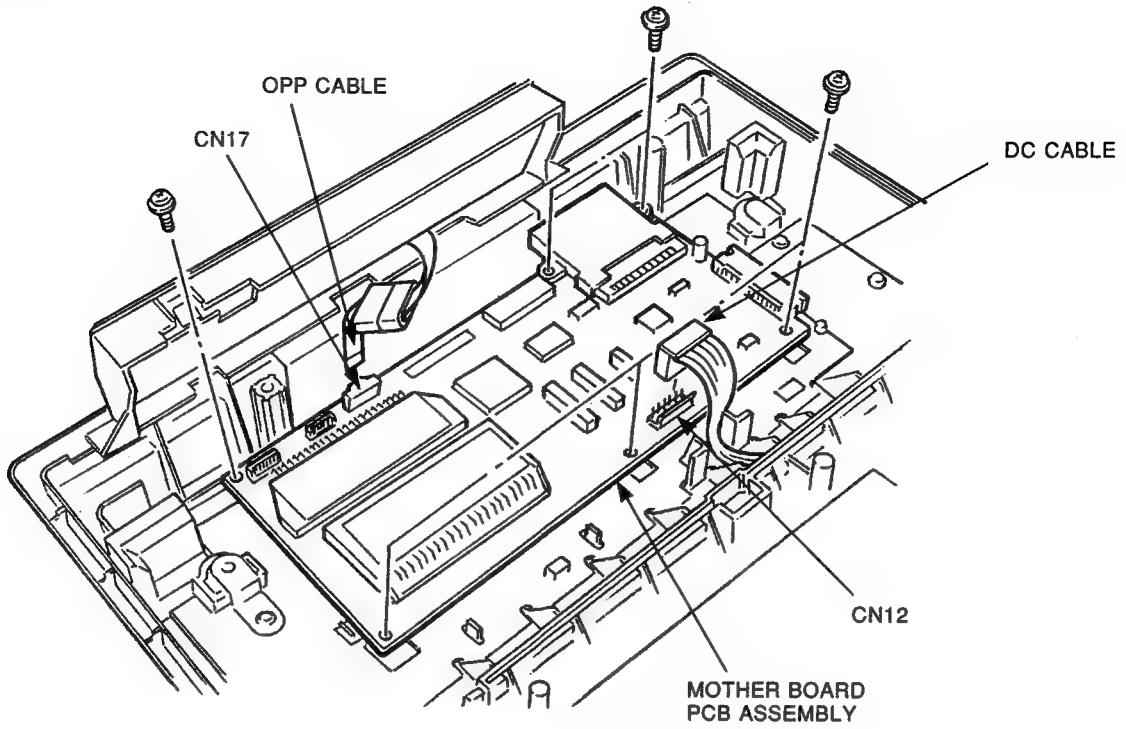


Figure 3-64 DC Cable Removal and Mother Board PCB Assembly Removal

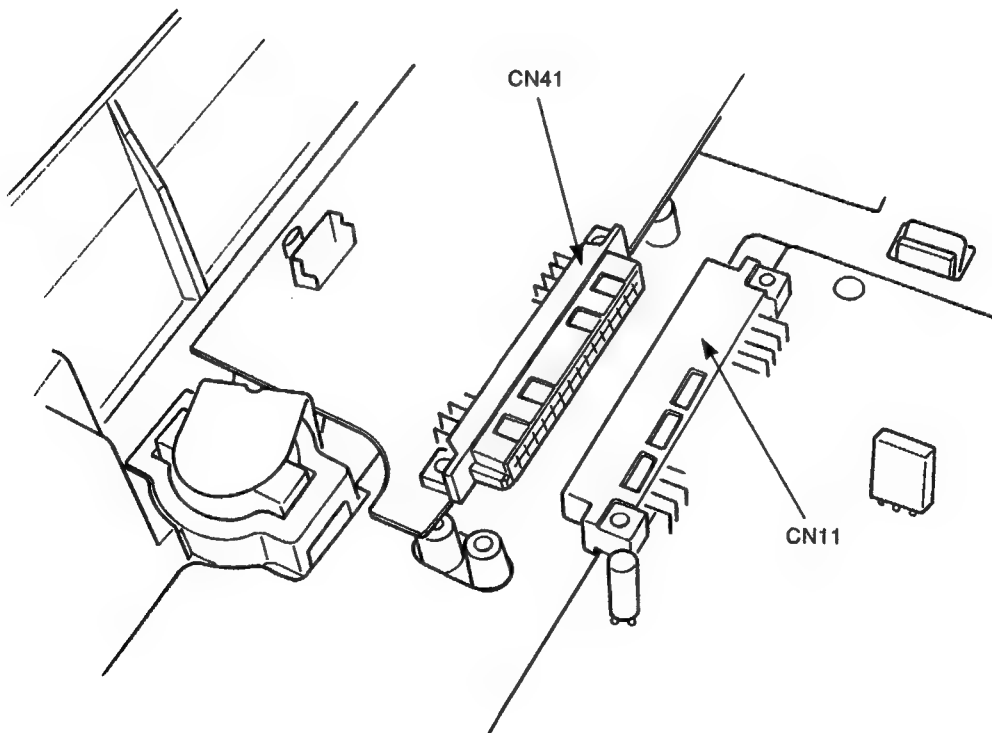


Figure 3-65 Connectors CN11 and CN41

POWER SUPPLY PCB ASSEMBLY REMOVAL

To remove the power supply PCB assembly, first remove the middle cover assembly and mechanism assembly. Then proceed as follows.

1. Disconnect CN1 and CN2 from the power supply PCB assembly (see Figure 3-66).
2. Lift off the power supply PCB assembly by removing the six mounting screws (see Figure 3-66).

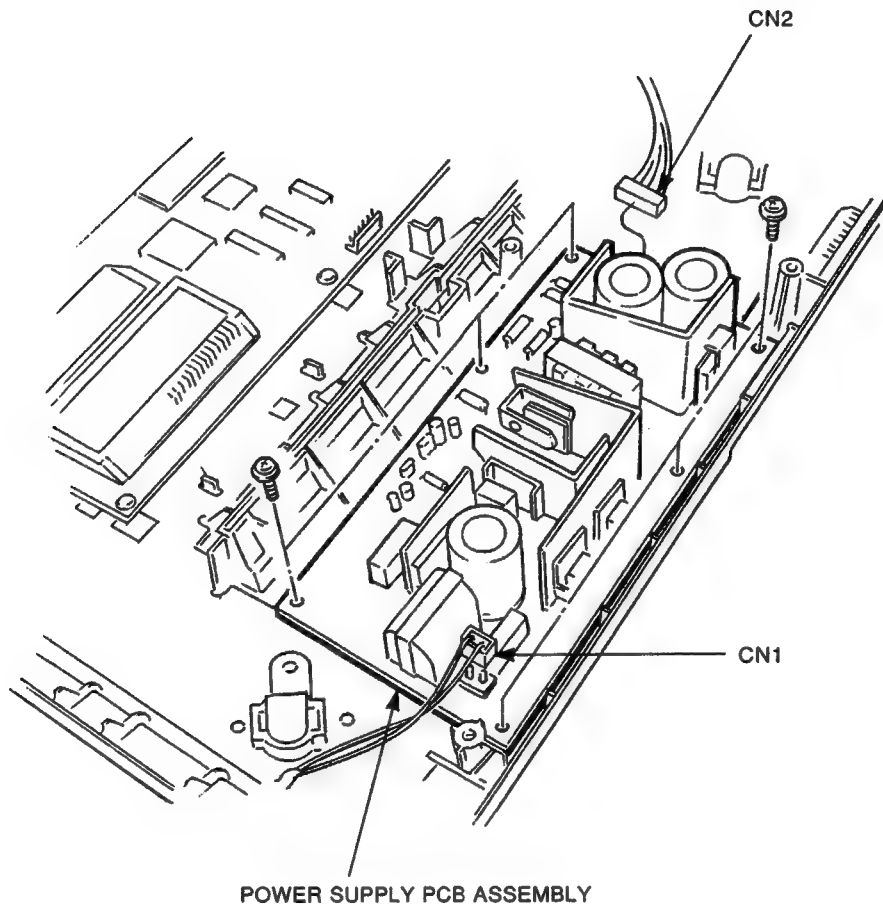


Figure 3-66 Power Supply PCB Assembly

CONTROL PANEL ASSEMBLY REMOVAL

To remove the control panel assembly, first remove the middle cover assembly. Then proceed as follows.

1. Remove the cable cover by removing the three screws securing it to the shield cover (see Figure 3-67).
2. Pull up both ends of the connector lock CN17 and remove the cable from the unlocked connector (see Figure 3-68).
3. Remove the FG cable by removing the screw securing it to the shield cover (see Figure 3-68).
4. Remove the control panel by removing the two screws securing it to the printer base (see Figure 3-69).

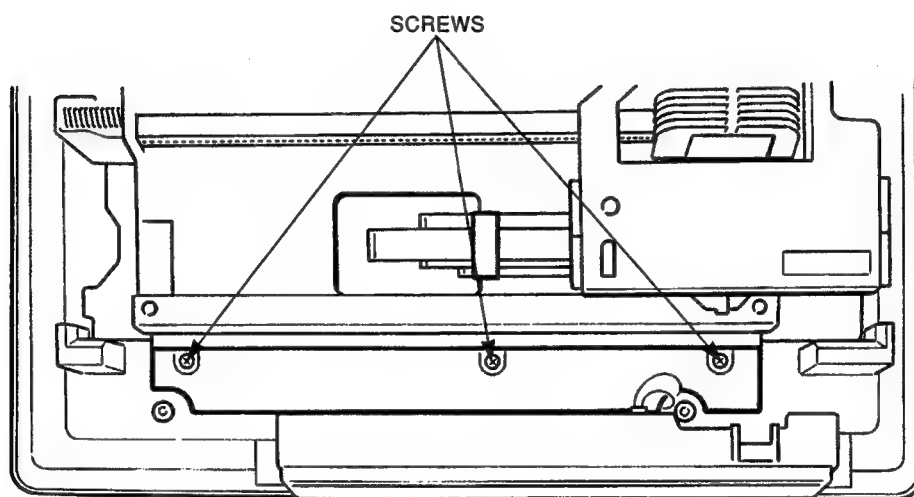


Figure 3-67 Cable Cover

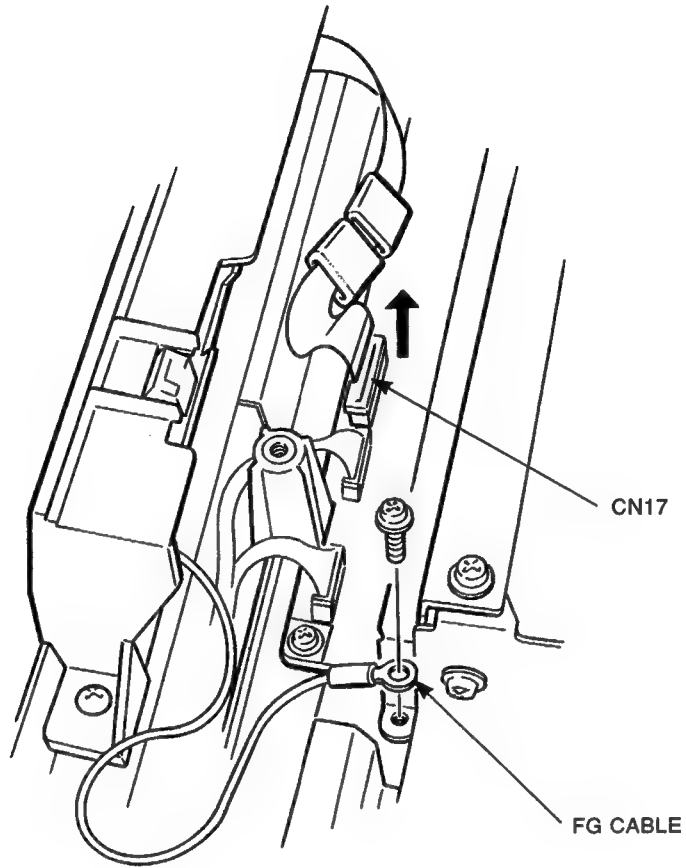


Figure 3-68 Control Panel Cable

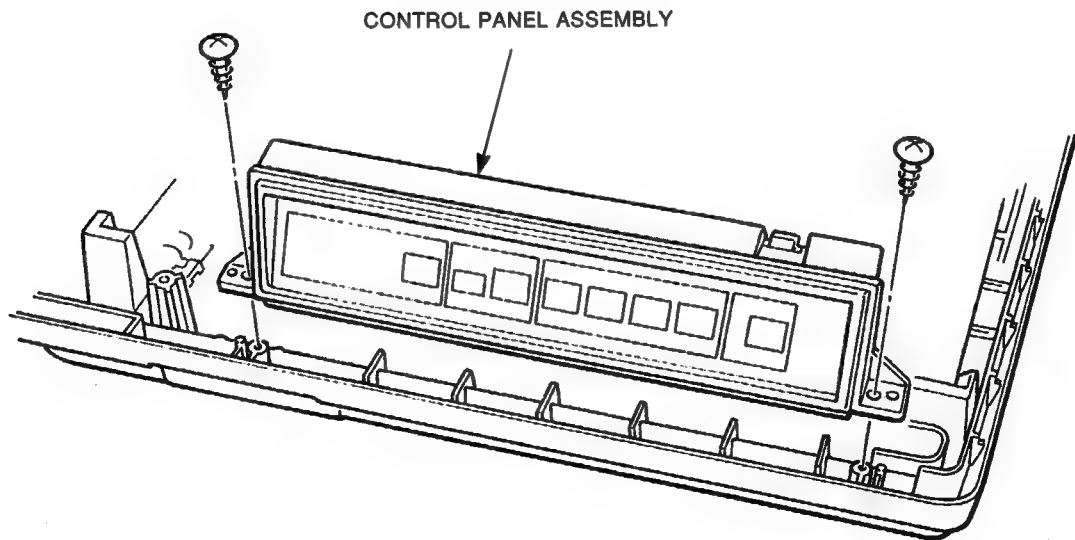
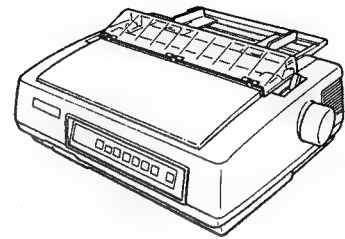


Figure 3-69 Control Panel Assembly

Section 4

Adjustments



The adjustment procedures in this section are designed for field-level maintenance of the Pinwriter. Refer to Section 3 for any removal procedures involved in the adjustments.

REQUIRED TOOLS

- #2 Phillips screwdriver
- Metric feeler gauges
- Adjustable wrench
- Metric ruler
- 14 mm nut driver
- Shaft retaining jig

PRINT HEAD GAP ADJUSTMENT

An improperly adjusted print head can result in smudging on one side of the page and not the other, especially with multipart forms. When the print head is adjusted properly, it operates at the optimum wire stroke to obtain a crisp and legible printout. Before performing the print head gap adjustment, check for a worn ribbon or print wires.

NOTE

In acceptance inspection, check that the print head gap is between 0.012 and 0.017 in. (0.31 and 0.43 mm) with copy control lever at position 4.

If the print quality is still not clear or the print head is replaced, follow these steps to obtain the gap measurement of 0.013 to 0.016 in. (0.34 to 0.40 mm).

1. Set the copy control lever to position 4.
2. Remove the top front cover, the print head and card holder, and then reinstall the print head.
3. Move the carrier to the left of the printer.
4. Use feeler gauge to measure the distance between the print head and platen.
5. Move the carrier to the right of the printer.
6. Use the feeler gauge to measure the distance between the print head and platen. The gap should be the same on both ends of the platen. If not, adjust the right side gap by turning the eccentric bushing.
7. Move the carrier to the center of the printer.
8. Measure the distance between the print head and platen (see Figure 4-1). The gap should measure between 0.013 and 0.016 in. (0.34 and 0.40 mm).
9. If the gap needs to be adjusted, remove the copy control lever mounting screw, and retighten the screw temporarily (see Figure 4-2).
10. Insert the shaft retaining jig into the hole on the left side of the guide shaft, and turn the shaft. When the correct gap has been obtained, hold the guide shaft in position while tightening the screw.
(Tightening torque = 14 kg·cm)
11. After removing the print head, replace and adjust the card holder and then replace the print head.
12. Replace the top front cover and ribbon cartridge.

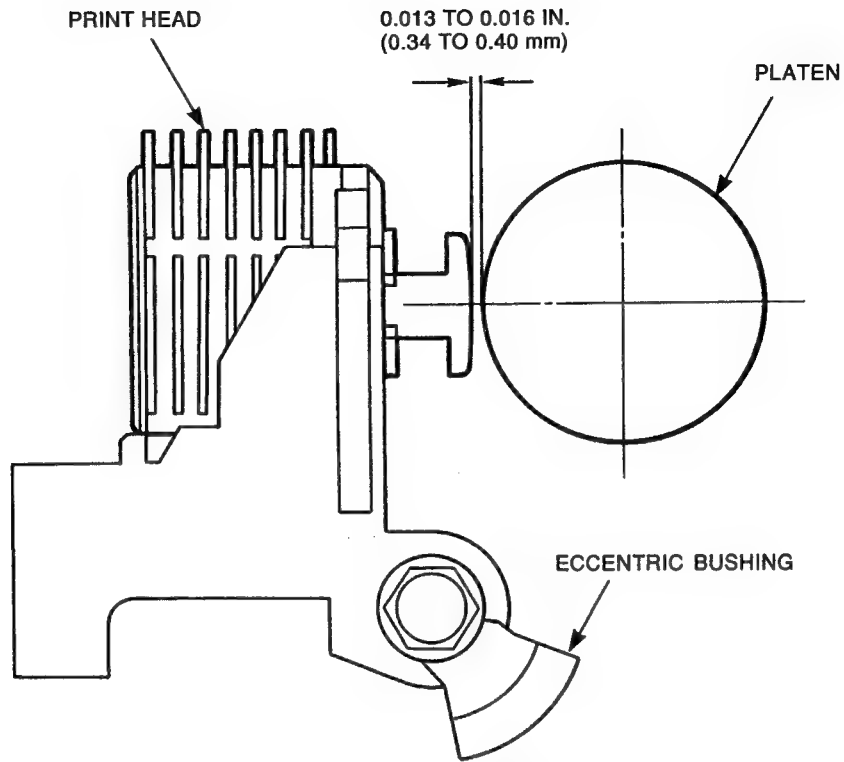


Figure 4-1 Print Head Gap

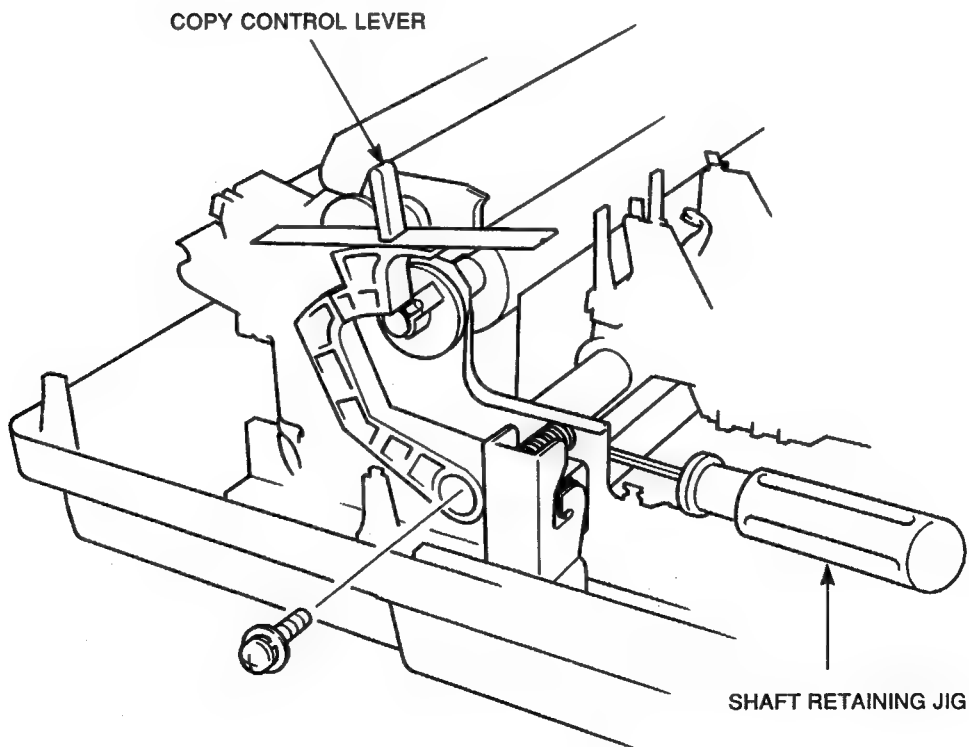


Figure 4-2 Print Head Adjustment

Adjustments

PF SENSOR ADJUSTMENT

When the PF sensor is not adjusted properly, the following conditions can occur:

- Poor printout with multipart forms.

Follow these steps to adjust the PF sensor for correct operation.

1. Set the copy control lever to position 7.
2. Remove the middle cover assembly.
3. Loosen the screw securing the PF sensor to the left side frame (see Figure 4-3).
4. Adjust the PF sensor and tighten it with the screw so that the PF sensor is ON.
5. Set the gap adjust lever to position 6, and make sure that the PF sensor is OFF.
6. Replace the middle cover assembly.

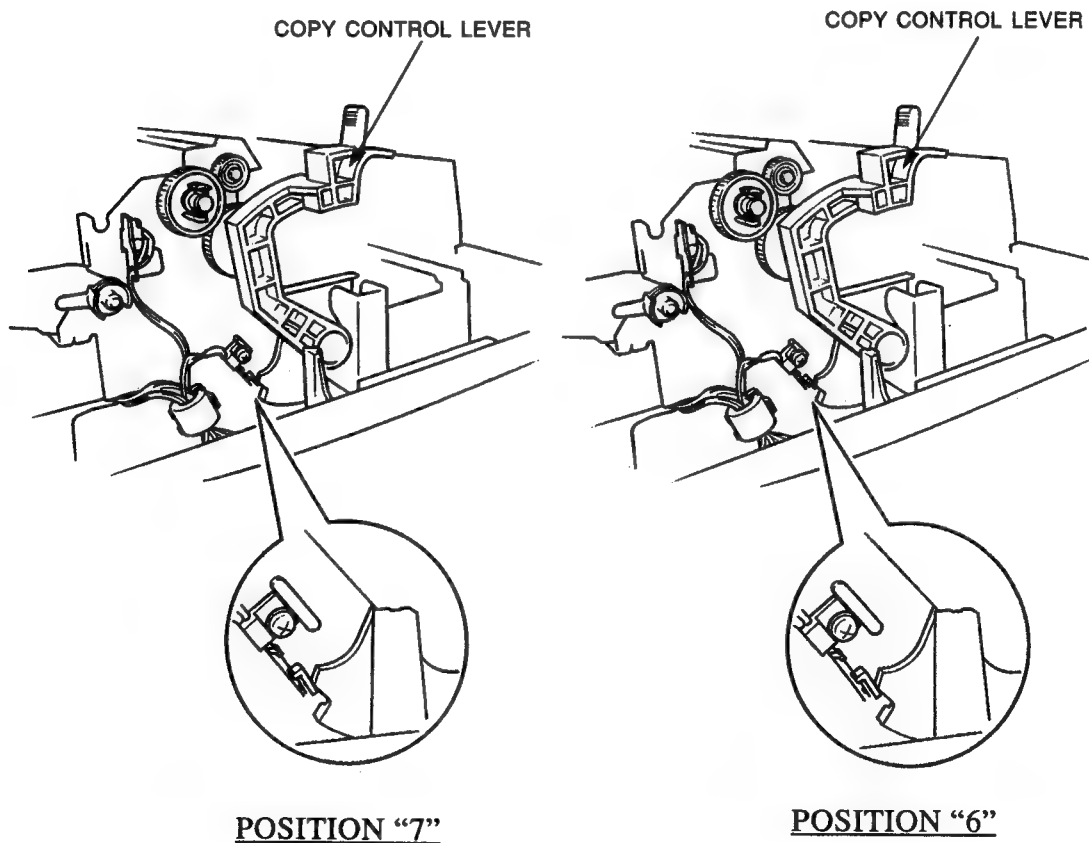


Figure 4-3 PF Sensor Adjustment

PSD POWER (B) OUTPUT VOLTAGE ADJUSTMENT

Follow these steps to adjust the power supply output voltage.

1. Connect the 115 V power supply to connector CN1 (see Figure 4-4).
2. Connect the +34 V and +5 V loads to connector CN2 (see Figure 4-4).

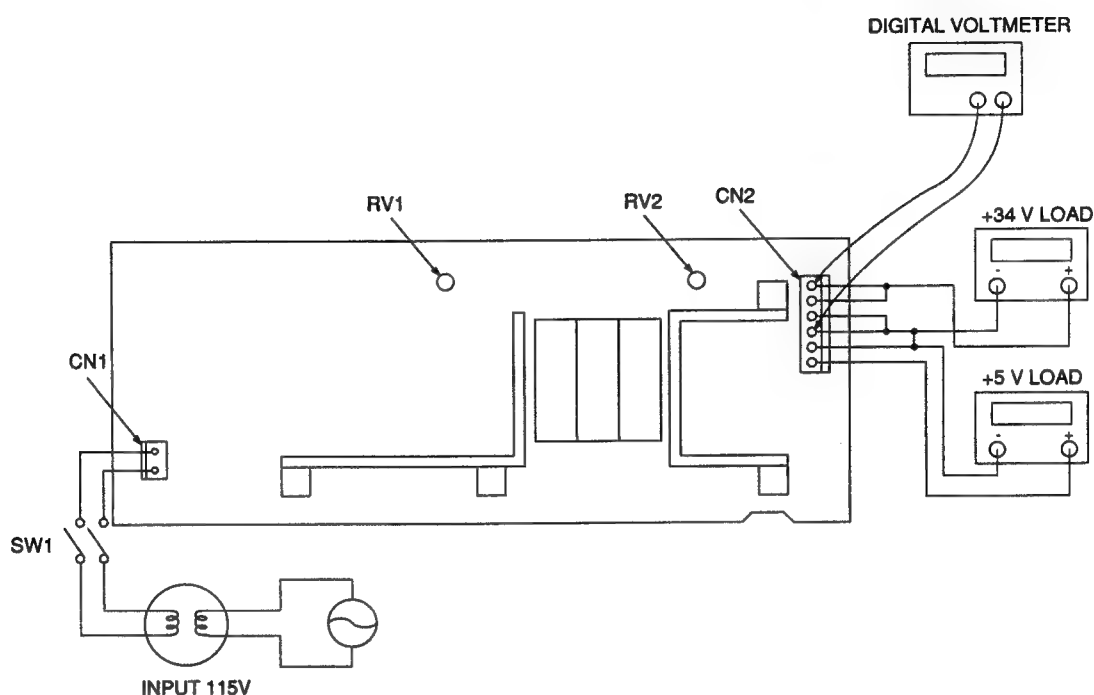
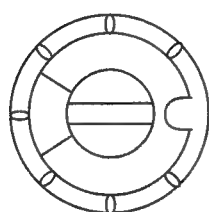
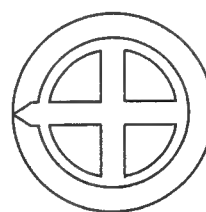


Figure 4-4 PSD Power (B) Adjustment Circuit

3. Set RV1 and RV2 knobs to the position shown below.



RV1



RV2

Figure 4-5 PSD Power (B) Adjusters

4. Apply no load to the +5V and +34V loads, and set SW1 to ON.
5. Set the +5V and +34V loads to 2A and 2.65A, respectively.
6. Turn the RV2 knob clockwise until the digital voltmeter reads the +34 V, and adjust it to 34 ± 0.04 V.
7. After completing the adjustment, lock the RV2 knob by applying silicon rubber on it.
8. Proceed to the power supply output power adjusting procedure.

Adjustments

PSD POWER (B) OUTPUT POWER ADJUSTMENT

Follow these steps to adjust the power supply output power.

1. Connect the 115 V power supply to connector CN1 (see Figure 4-4).
2. Connect the +34 V and +5 V loads to connector CN2 (see Figure 4-4).
3. Apply no load to the +34 V and +5 V loads.
4. Set the input voltage to 97 V.
5. Set SW1 to ON.
6. Set the +5 V and +34 V loads to 2A and 6.5A, respectively.
7. When the +34 V output voltage is higher than 33 V, turn the RV1 knob counterclockwise until it reaches the position where the +34 V output voltage becomes lower than 33 V.
8. When the +34 V output voltage is lower than 33 V, turn the RV1 knob clockwise until it reaches the position where the +34 V output voltage becomes higher than 33V.
9. Lock the RV1 knob with silicon rubber.

PSD POWER (C) (GRP 003) OUTPUT VOLTAGE ADJUSTMENT

Follow these steps to adjust the power supply output voltage.

1. Connect the 220 to 240 V power supply to connector CN1 (see Figure 4-6).
2. Connect the +34 V and +5 V loads to connector CN2 (see Figure 4-6).

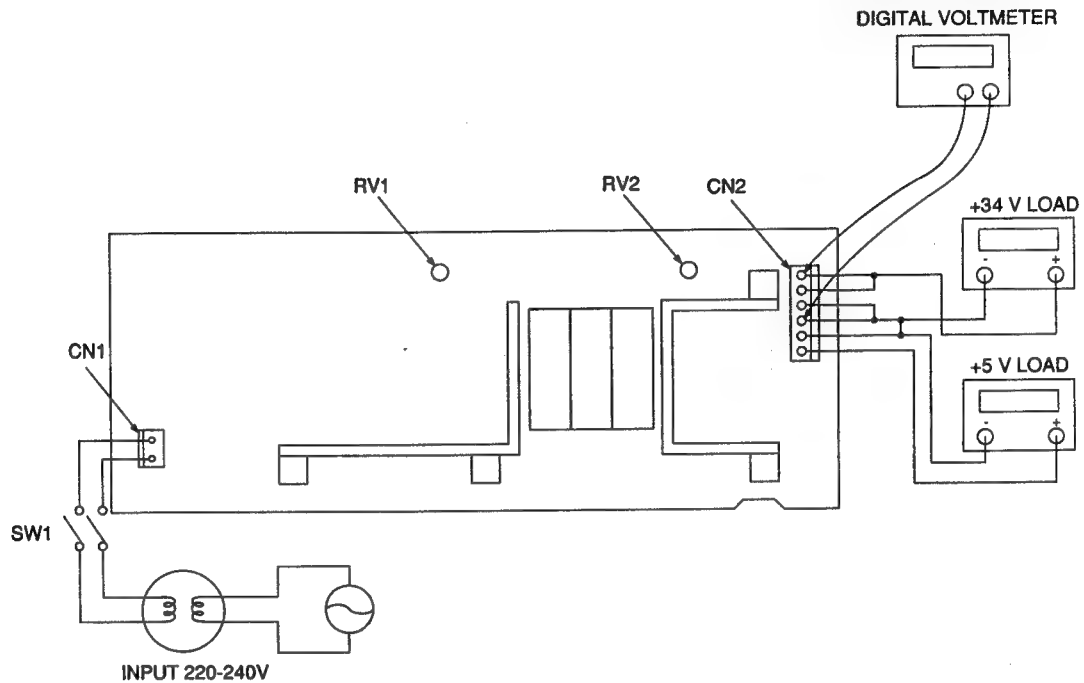
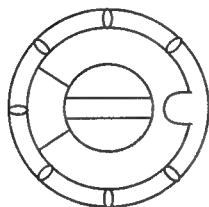
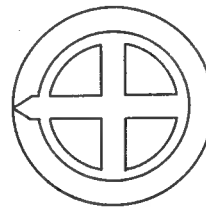


Figure 4-6 PSD Power (C) (GRP003) Adjustment Circuit

3. Set RV1 and RV2 knobs to the position shown below.



RV1



RV2

Figure 4-7 PSD Power (C) (GRP003) Adjusters

4. Apply no load to the +5 V and +34 V loads, and set SW1 to ON.
5. Set the +5 V and +34 V loads to 2A and 2.65A, respectively.
6. Turn the RV2 knob clockwise until the digital voltmeter reads the +34 V, and adjust it to 34 ± 0.04 V.
7. After completing the adjustment, lock the RV2 knob by applying silicon rubber on it.
8. Proceed to the power supply output power adjusting procedure.

Adjustments

PSD POWER (C) (GRP003) OUTPUT POWER ADJUSTMENT

Follow these steps to adjust the power supply output voltage.

1. Connect the 220-240 V power supply to connector CN1 (see Figure 4-6).
2. Connect the +34 V and +5 V loads to connector CN2 (see Figure 4-6).
3. Apply no load to the +34 V and +5 V loads.
4. Set the input voltage to 198 V.
5. Set SW1 to ON.
6. Set the +5 V and +34 V loads to 2A and 6.5A, respectively.
7. When the +34 V output voltage is higher than 33 V, turn the knob RV1 in the direction of the arrow until it reaches the position where the +34 V output voltage becomes lower than 33 V.
8. When the +34 V output voltage is lower than 33 V, turn the RV1 knob clockwise of the arrow until it reaches the position where the +34 V output voltage becomes higher than 33 V.
9. Lock the RV1 knob with silicon rubber.

PSD POWER (C) (GRP303) OUTPUT VOLTAGE ADJUSTMENT

Follow these steps to adjust the power supply output voltage.

1. Connect the 220-240 V power supply to connector CN1 (see Figure 4-8).
2. Connect the +34 V and +5 V loads to connector CN2 (see Figure 4-8).

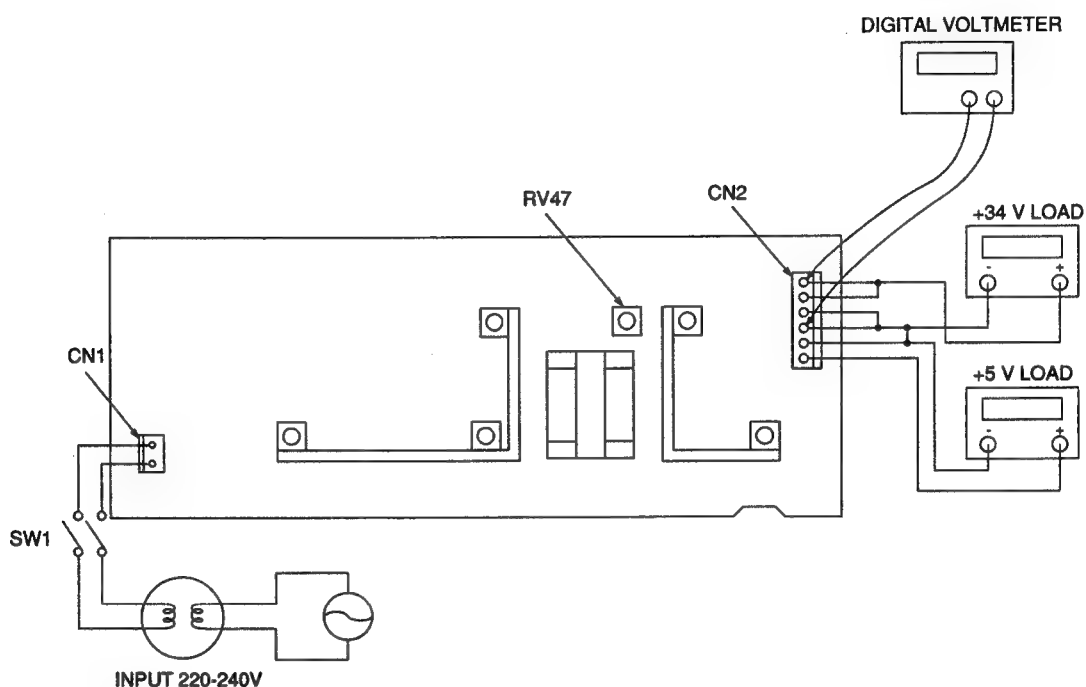
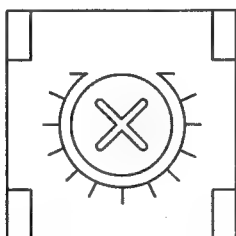


Figure 4-8 PSD Power (C) (GRP303) Adjustment Circuit

3. Turn the RV47 knob counterclockwise until it stops.



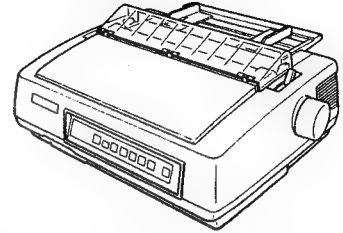
RV47

Figure 4-9 PSD Power (C) (GRP303) Adjuster

4. Apply no load to the +5 V and +34 V loads, and set SW1 to ON.
5. Set the +5 V and +34 V loads to 2A and 4.4A, respectively.
6. Turn the RV47 knob counterclockwise until the digital voltmeter reads +34 V, and adjust it to 34 ± 0.2 V.
7. After completing the adjustment, lock the RV47 knob by applying silicon rubber on it.

Section 5

Preventive Maintenance



Clean and check the Pinwriter at least once a year. No other scheduled maintenance is required.

CLEANING

Inspect the entire printer for foreign material (such as bits of paper, dust, or paper clips) before performing the following cleaning procedure.

1. Using a soft lint-free cloth, remove any dust from the guide shafts and front stay.
2. Clean the base frame under the carrier assembly.
3. Use a mild detergent to clean the cover. Use a hand cleaner to remove any stains.

CAUTION

Do not use platen cleaner to clean any plastic items or surfaces. Do not use alcohol to clean the cover, the platen, or any plastic surfaces.

4. Remove any pieces of paper attached to the tractor assembly and pressure roller.

CHECKING

Run the self-test (see Section 2) to ensure that the printer is printing correctly. Then check the following items.

- Verify that the ribbon is in good condition. Replace any ribbon that is dried out or malfunctioning.
- Be sure that the paper is of high quality and is inserted properly.
- Check the gap adjust lever. Adjust it if necessary.
- Inspect the printer for any accumulation of foreign materials, such as bits of paper or paper clips.

LUBRICATION

Lubricate parts only if they have been replaced or if lubricant has been removed during a repair, cleaning, or adjustment procedure. Table 5-1 gives the lubrication requirements for each point. The designation letters in Table 5-1 correspond to the letters in Figures 5-1 through 5-6. The figures show the lubrication points.

Recommended lubricants include the following.

- Daphne Coronex Grease #2
Use a light brush coat.
Lube code: G
- Daphne Mechanic Oil #35 or 132G Oil
Use 1 to 2 drops.
Lube Code: O

Table 5-1 Lubrication Points

DESIGNATION	LOCATION	LUBRICATION CODE
Ⓐ	Contact surface of right side frame hole and paper release arm	G
Ⓑ	Contact surface of paper selection lever and paper release arm	G
Ⓒ	Contact surface of left side frame and copy control lever	G
Ⓓ	Guide shaft. Front stay.	O
Ⓔ	Piece (1) of carrier	O
Ⓕ	Contact surface of carrier frame and ribbon feed pulley, planet arm, counter gear and ribbon drive gear.	G
Ⓖ	Contact surface of planet arm and planet gear	G
Ⓗ	Contact surface of ribbon base and torque piece gear	G
Ⓘ	Contact surface of manual feed gear and platen shaft.	G

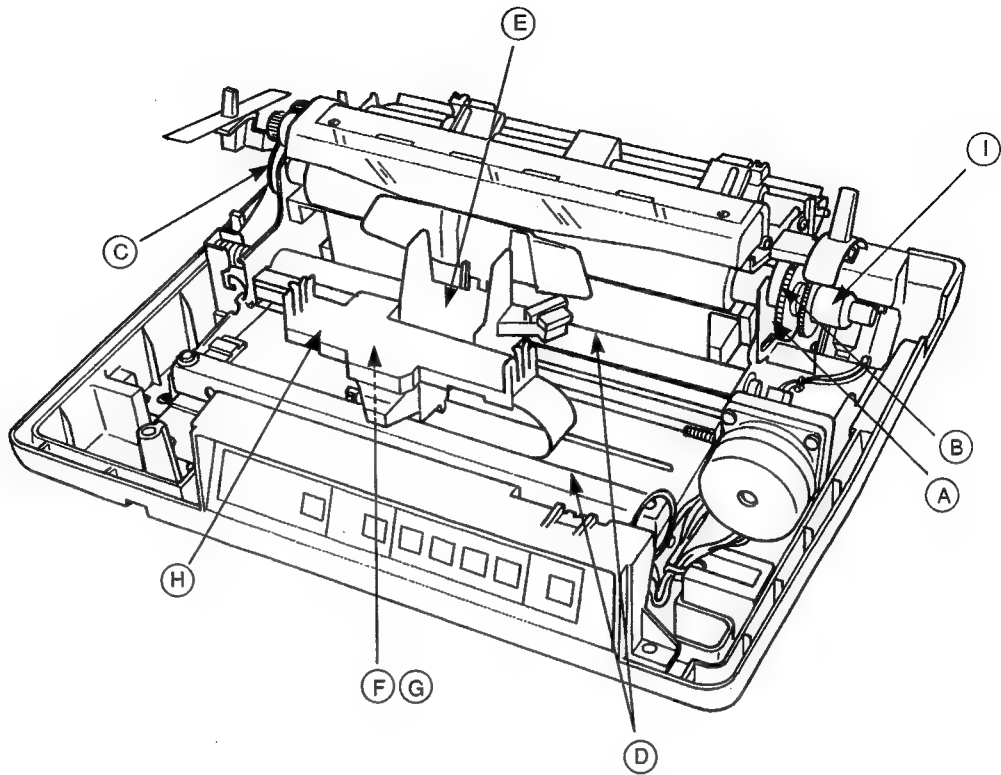


Figure 5-1 Mechanical Assembly Lubrication Points

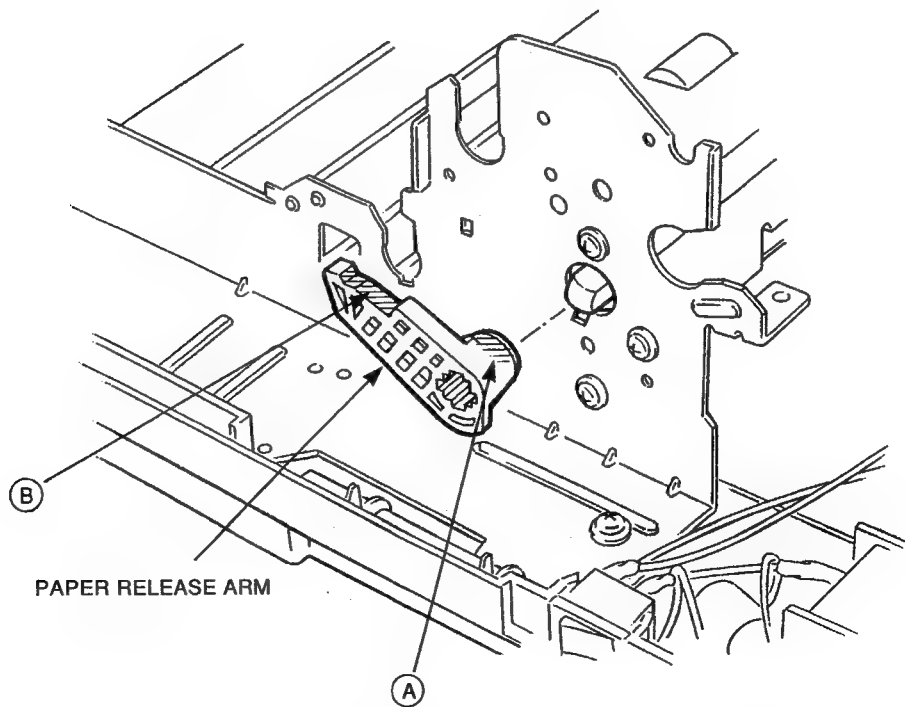


Figure 5-2 Paper Release Arm Lubrication Point

Preventive Maintenance

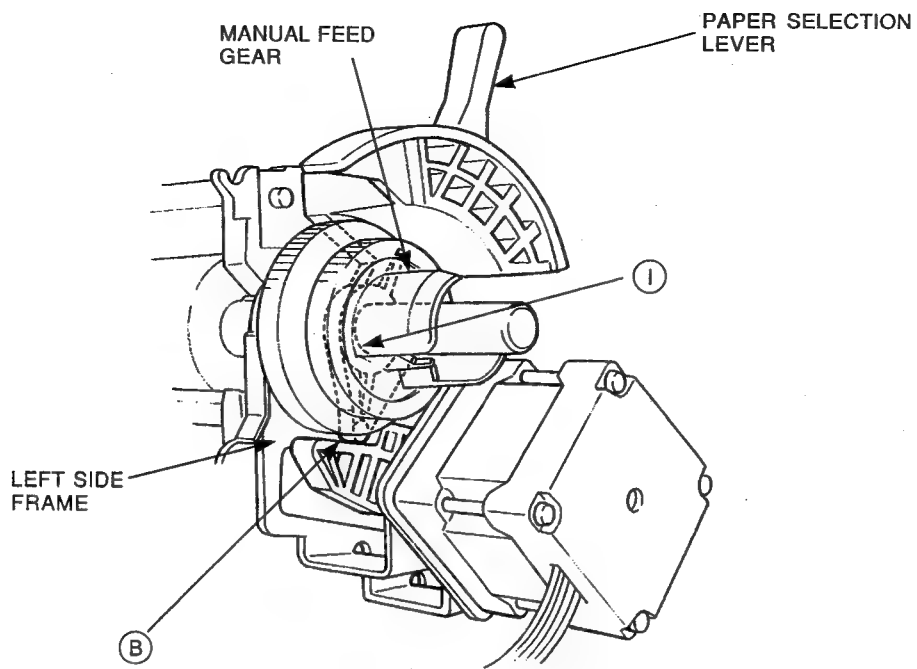


Figure 5-3 Paper Selection Lever Lubrication Points

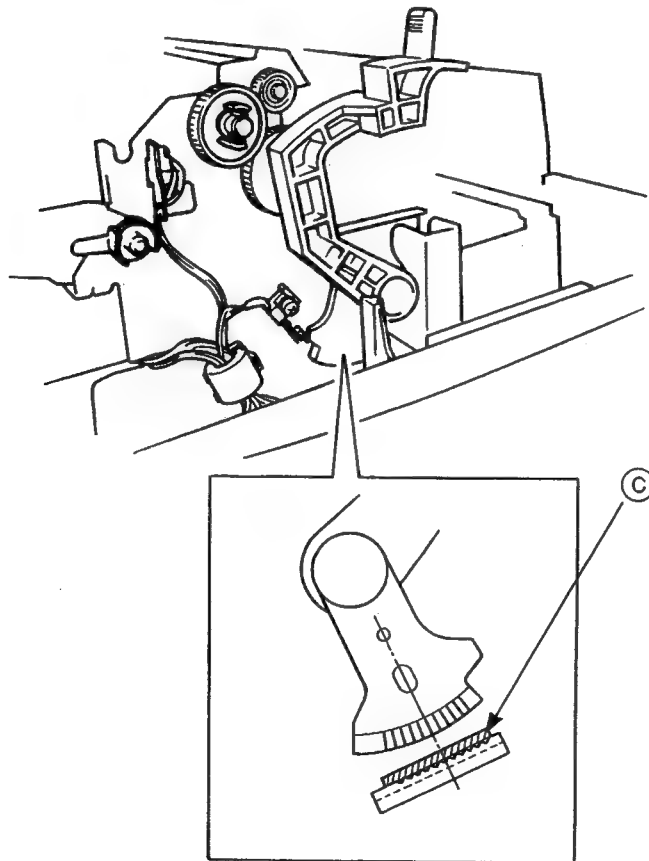


Figure 5-4 Copy Control Lever Lubrication Points

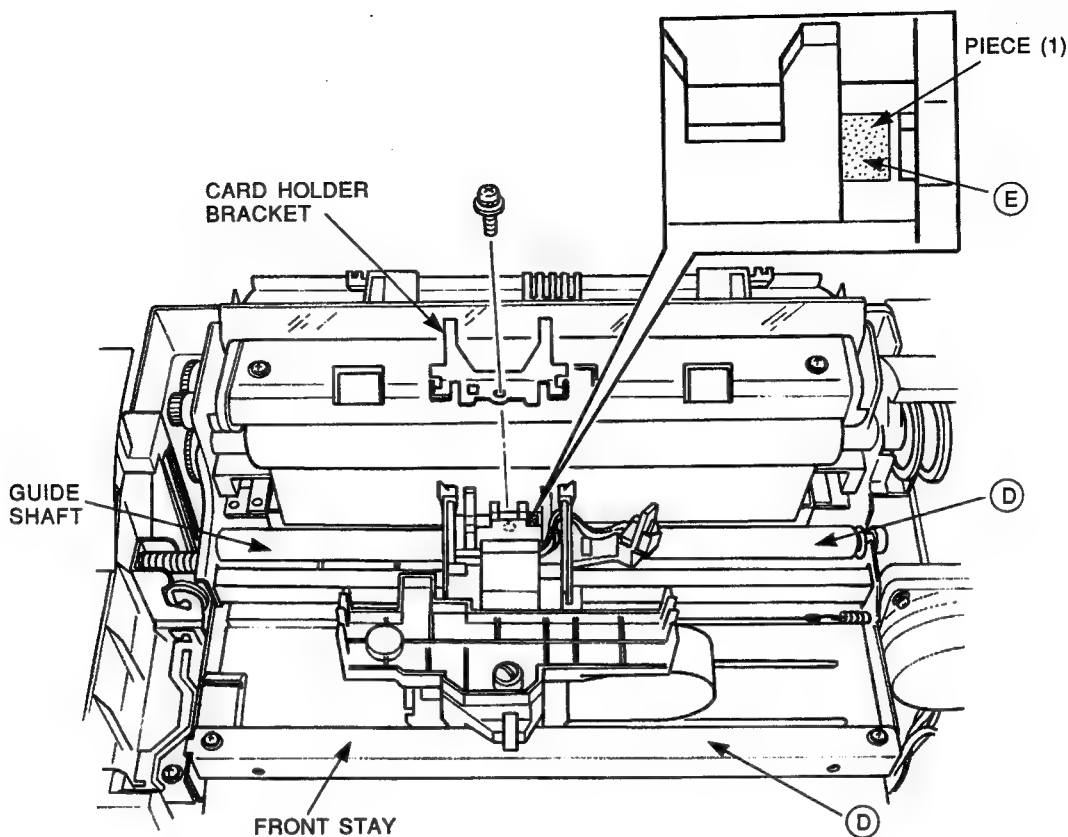


Figure 5-5 Guide Shaft, Front Stay and Piece (1)

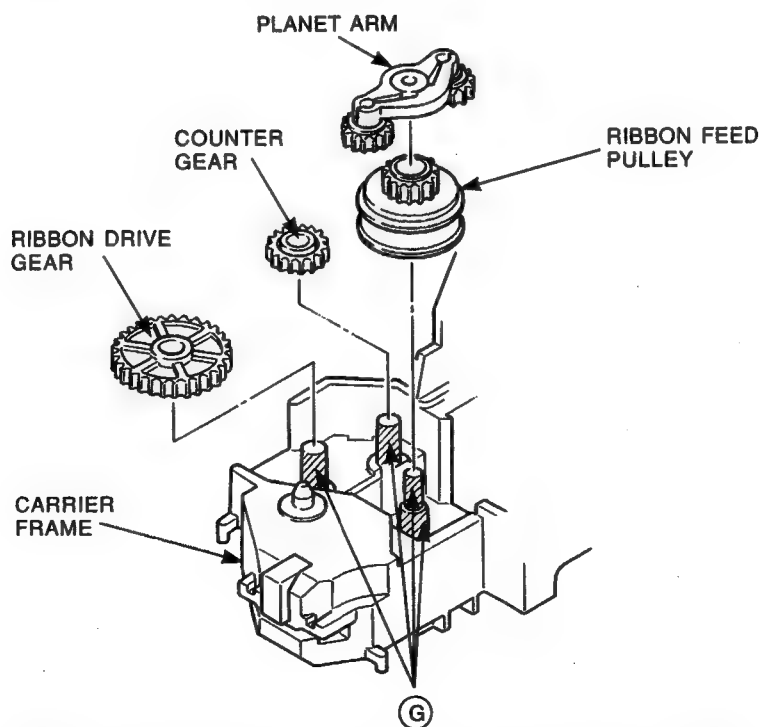


Figure 5-6 Carrier Assembly Lubrication Points

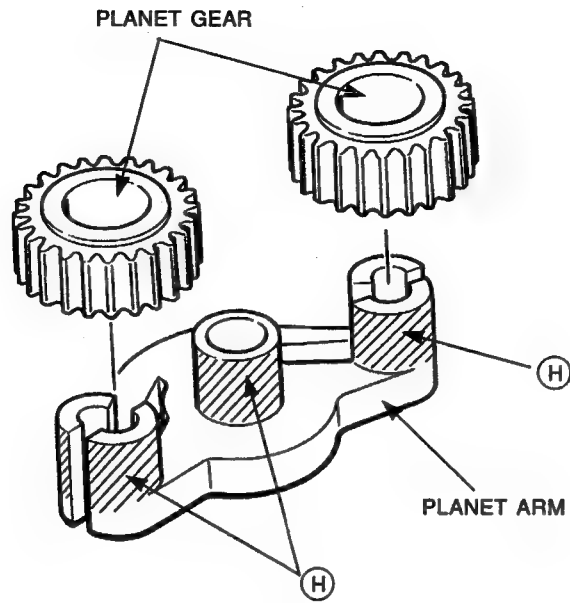


Figure 5-7 Planet Arm Lubrication Points

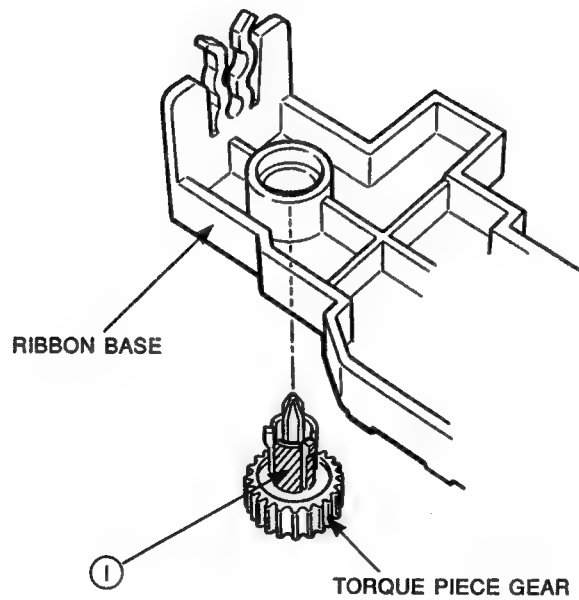
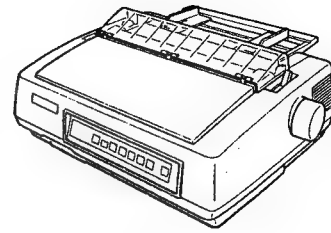


Figure 5-8 Ribbon Base Assembly Lubrication Point

Section 6

Illustrated Parts Breakdown



This section contains optional and spare parts numbers, and the mechanical illustrated parts breakdown (IPB) for the Pinwriter P6200/P6300 and P60/P70 plus printers.

OPTIONAL PARTS

Tables 6-1 through 6-4 provide order numbers for the Pinwriter's optional parts.

Table 6-1 Ribbons

RIBBON	ORDER NUMBER
Black Nylon Ribbon	808-867928-301-A
Black Multistrike Film Ribbon	808-869921-301-A
Color Nylon Ribbon	808-867928-311-A

Table 6-2 Paper Handling Options

OPTION	ORDER NUMBER
Sheet Feeder 4613	136-009953-301-A
Sheet Feeder 4713	136-009953-601-A
Dual Bin Sheet Feeder 4714	136-009953-901-A
Pull Tractor 4619	136-009700-301-A
Pull Tractor 4719	136-009700-801-A

Table 6-3 Optional Kits

OPTION	ORDER NUMBER
Color Kit 5208	136-218469-001-A
Serial Interface Option 5207	136-218769-001-A

Table 6-4 Font Cards

FONT CARD	ORDER NUMBER
Times® Greek/Tech Math Helvetica® Greek/Tech Math	136-218775-701-A
OCR A/B Bar Code 39, UPC/EAN	136-218775-702-A
Letter Gothic	136-218775-703-A
Times 18PT/24PT	136-218775-704-A
Helvetica 18PT/24PT	136-218775-705-A
ITC Bookman® 10PT/18PT/24PT	136-218775-706-A
Super Focus Letter Gothic	136-218775-707-A
Bold Italic Prestige Pica	136-218775-708-A

SPARE PARTS

The recommended spare parts for the Pinwriter are listed in Table 6-5.

Table 6-5 Recommended Spare Parts Kit (136-260503-GRP-A) - 1/4

SPARE PART	ORDER NUMBER	QUANTITY*								
		GRP: 200	203	300	400	700	703	800	900	
Bottom Guide Assembly (N)	136-846277-001-A	1	1	1	1	1	1	1	1	1
Bottom Guide Assembly (W)	136-846277-501-A	1	1	1	1	1	1	1	1	1
Paper Guide (N)	136-846286-001-A	1	1	1	1	1	1	1	1	1
Paper Guide (W)	136-846286-501-A	1	1	1	1	1	1	1	1	1
Paper Release Arm	136-846287-001-A	1	1	1	1	1	1	1	1	1
LF Motor Unit	136-218460-001-A	1	1	1	1	1	1	1	1	1
SP Motor Unit	136-218459-001-A	1	1	1	1	1	1	1	1	1
Platen Assembly (N)	136-218461-001-A	1	1	1	1	1	1	1	1	1
Platen Assembly (W)	136-218461-501-A	1	1	1	1	1	1	1	1	1
H.P. Sensor Assembly	808-820754-001-A	1	1	1	1	1	1	1	1	1
Option Gear	136-846288-001-A	1	1	1	1	1	1	1	1	1
Sensor & Switch Assembly	808-820753-001-A	1	1	1	1	1	1	1	1	1
Carrier Subassembly (N)	136-846278-001-A	1	1	1	1	1	1	1	1	1
Carrier Subassembly (W)	136-846278-501-A	1	1	1	1	1	1	1	1	1
Piece (1)	136-846363-001-A	1	1	1	1	1	1	1	1	1
Carrier Cable (N) Assembly	136-812392-001-A	1	1	1	1	1	1	1	1	1
Carrier Cable (W) Assembly	136-812392-501-A	1	1	1	1	1	1	1	1	1
Card Holder Assembly (P60/P70 only)	136-846275-001-A	1	1	1	1	1	1	1	1	1
Card Holder (S. T. D) Assembly	136-846275-40-1-A	2	2	2	2	2	2	2	2	2
Planetarium Gear	136-846358-001-A	1	1	1	1	1	1	1	1	1
Planetarium Arm Subassembly	136-854350-001-A	1	1	1	1	1	1	1	1	1
Eccentric Bushing	136-846383-001-A	1	1	1	1	1	1	1	1	1
Gap Adjust Lever	136-846285-001-A	1	1	1	1	1	1	1	1	1
Tension Arm Assembly	136-846302-001-A	1	1	1	1	1	1	1	1	1
Ribbon Base (Black) Assembly	136-218465-001-A	1	1	1	1	1	1	1	1	1

Table 6-5 Recommended Spare Parts Kit (136-260503-GRP-A) - 2/4

SPARE PART	ORDER NUMBER	QUANTITY*								
		GRP: 200	203	300	400	700	703	800	900	
Tractor Unit (N)	136-218463-001-A	1	1	1	1	1	1	1	1	1
Tractor Unit (W)	136-218463-501-A	1	1	1	1	1	1	1	1	1
Feed Roller Unit (N)	136-218464-001-A	1	1	1	1	1	1	1	1	1
Feed Roller Unit (W)	136-218464-501-A	1	1	1	1	1	1	1	1	1
Print Head Assembly	136-218474-002-A	1	1	1	1	1	1	1	1	1
Top Cover Assembly	136-215360-001-A	1	1	1	1	1	1	1	1	1
Top Cover Assembly	136-215360-301-A	1	1	1	1	1	1	1	1	1
Top Cover Assembly	136-215360-401-A	1	1	1	1	1	1	1	1	1
Top Cover Assembly	136-215360-501-A	1	1	1	1	1	1	1	1	1
Top Cover Assembly	136-215360-801-A	1	1	1	1	1	1	1	1	1
Top Cover Assembly	136-215360-901-A	1	1	1	1	1	1	1	1	1
Rear Cover Assembly (S)	136-218953-001-A	1	1	1	1	1	1	1	1	1
Rear Cover Assembly (S)	136-218953-301-A	1	1	1	1	1	1	1	1	1
Rear Cover Assembly (S)	136-218953-401-A	1	1	1	1	1	1	1	1	1
Rear Cover Assembly (L)	136-218953-501-A	1	1	1	1	1	1	1	1	1
Rear Cover Assembly (L)	136-218953-801-A	1	1	1	1	1	1	1	1	1
Rear Cover Assembly (L)	136-218953-901-A	1	1	1	1	1	1	1	1	1
PSD Power (B)	808-891104-002-A	1	1	1	1	1	1	1	1	1
PSD Power (C)-Japan Production	808-891104-003-A	1	1	1	1	1	1	1	1	1
PSD Power (C)-U.K. Production	808-891104-303-A	1	1	1	1	1	1	1	1	1
G8ESPA PCB Assembly	136-436268-001-A	1	1	1	1	1	1	1	1	1
G8ESR PCB Assembly	136-436270-001-A	1	1	1	1	1	1	1	1	1
G8ESQA PCB Assembly	136-436269-001-A	1	1	1	1	1	1	1	1	1
G8EST PCB Assembly	136-436272-001-A	1	1	1	1	1	1	1	1	1
G8ESV PCB Assembly	136-436274-001-A	1	1	1	1	1	1	1	1	1

Table 6-5 Recommended Spare Parts Kit (136-260503-GRP-A) - 3/4

SPARE PART	ORDER NUMBER	QUANTITY*							
		GRP: 200	203	300	400	700	703	800	900
PSD Operator Panel	808-818170-301-A	1	1	1	1	1	1	1	1
Silent Canopy Assembly (S)	136-217750-001-A	1	1	—	—	—	—	—	—
Silent Canopy Assembly (S)	136-217750-301-A	—	—	1	—	—	—	—	—
Silent Canopy Assembly (S)	136-217750-401-A	—	—	—	1	—	—	—	—
Silent Canopy Assembly (L)	136-217750-501-A	—	—	—	—	1	—	—	—
Silent Canopy Assembly (L)	136-217750-801-A	—	—	—	—	—	—	1	—
Silent Canopy Assembly (L)	136-217750-901-A	—	—	—	—	—	—	—	1
Ribbon Feed Pulley	136-846354-001-A	1	1	1	1	1	1	1	1
Ribbon Feed Wire Assembly	808-812396-001-A	1	1	1	1	—	—	—	—
Ribbon Feed Wire Assembly	808-812396-501-A	—	—	—	—	1	—	1	1
Tractor Assembly R	808-868140-011-A	1	1	1	1	1	1	1	1
Tractor Assembly L	808-868140-012-A	1	1	1	1	1	1	1	1
Carrier Cable Cover	136-843457-001-A	1	1	—	—	—	—	—	—
Carrier Cable Cover	136-843457-301-A	—	—	1	—	—	—	1	—
Carrier Cable Cover	136-843457-401-A	—	—	—	1	—	—	—	1
POW S/W Cable	808-857767-001-A	1	—	—	1	1	—	—	1
POW S/W Cable	808-857767-002-A	—	1	1	—	—	—	1	—
Platen Knob	136-846283-001-A	1	1	1	1	1	1	1	1
Sheet Guide	136-846416-001-A	1	1	—	—	—	—	—	—
Sheet Guide	136-846416-301-A	—	—	1	—	—	—	—	—
Sheet Guide	136-846416-401-A	—	—	—	1	—	—	—	—
Sheet Guide	136-846416-501-A	—	—	—	—	1	—	—	—
Sheet Guide	136-846416-801-A	—	—	—	—	—	—	1	—
Sheet Guide	136-846416-901-A	—	—	—	—	—	—	—	1
Paper Set Piece (L)	136-846418-001-A	1	1	—	—	—	—	—	—

Illustrated Parts Breakdown

Table 6-5 Recommended Spare Parts Kit (136-260503-GRP-A) - 4/4

SPARE PART	ORDER NUMBER	QUANTITY*								
		GRP: 200	203	300	400	700	703	800	900	
Paper Set Piece (L)	136-846418-301-A	—	—	1	—	—	—	1	—	
Paper Set Piece (L)	136-846418-401-A	—	—	—	1	—	—	—	1	
Paper Set Piece (R)	136-846419-001-A	1	1	—	—	1	1	—	—	
Paper Set Piece (R)	136-846419-301-A	—	—	1	—	—	—	1	—	
Paper Set Piece (R)	136-846419-401-A	—	—	—	1	—	—	—	1	

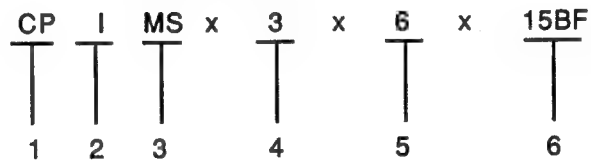
- * GRP 200: Model P6200, 115 V (Japan Production)
- GRP 203: Model P60/P6200, 230 V (Japan Production)
- GRP 300: Model P60, 230 V (U.K. Production)
- GRP 400: Model P6200, 115 V (U.S.A. Production)
- GRP 700: Model P6300, 115 V (Japan Production)
- GRP 703: Model P70/P6300, 230 V (Japan Production)
- GRP 800: Model P70, 230 V (U.K. Production)
- GRP 900: Model P6300, 115 V (U.S.A. Production)

ILLUSTRATED PARTS BREAKDOWN

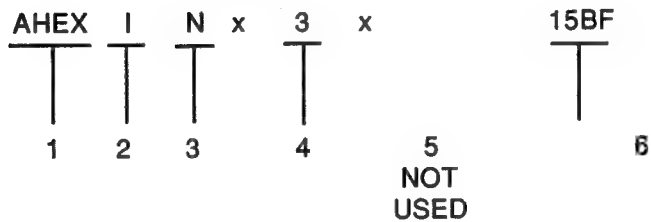
The following explains the organization of the parts list that accompanies each IPB.

- **Item** Indicates the item numbers referred to in the callouts.
- **Part Number** Provides the NEC part number for ordering spare or replacement parts. Attaching hardware, such as screws, nuts, and washers, are described with six codes as shown in Figure 6-1. The screw in Figure 6-1 is a galvanized pan-head metric screw with cross groove, where nominal diameter is 3 mm and length is 6 mm. The codes are described in Table 6-6.
- **Description** Provides a brief description of the part.
- **Quantity** Indicates the number of parts per unit.

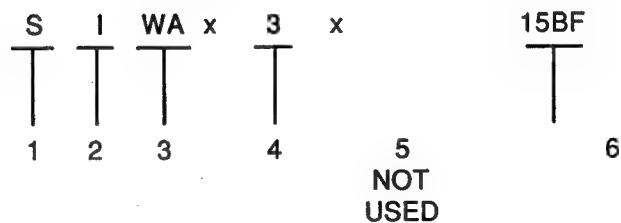
SCREW



NUT



WASHER



LEGEND

- 1 - HEAD DESCRIPTION
- 2 - TYPE OF MATERIAL
- 3 - TYPE OF HARDWARE
- 4 - DIAMETER
- 5 - LENGTH
- 6 - TYPE OF FINISH

Figure 6-1 Typical Codes for Attaching Hardware

Table 6-6 Typical Codes for Attaching Hardware

CALLOUT	CODE	DESCRIPTION
1	CP	Pan-head screw with cross groove
	CF	Flat-head screw with cross groove
	L-CP	CP (see above) with spring washer
	P-CP	CP with polished washer
	S-CP	CP with small washer
	PL-CP	CP with polished and spring washers
	SL-CP	CP with small and spring washers
	HEX	Hexagon-head screw
	AHEX	A-type hexagon nut
	BHEX	B-type hexagon nut
	S	Small washer
	P	Polished washer
	#2xL	Spring washer
2	I	Iron
	B	Brass
	ST	Spring steel
3	MS	Metric screw
	N	Nut
	WA	Washer
4	x mm	Nominal diameter in mm
5	x mm	Length of screw in mm
6	15BF	Galvanized, lustrous coloration, chromate finish
	3GF	Lustrous nickel-plated finish

6-9

PART NAME		PART NUMBER	FIG.NO.
A	PINWRITER P60/P6200	136-218451-GRP-0*1	6-4
B	PRINTER UNIT(N)	136-218454-GRP-A*2	6-4
C	MECHANISM UNIT (N)	136-218455-001-A	6-6
D	FRAME UNIT (N)	136-218456-001-A	6-8
	FRAME ASSEMBLY (N)	136-218457-001-A	6-10
	RIGHT SIDE FRAME SUBASSEMBLY	136-846265-001-A	6-12
	LEFT SIDE FRAME SUBASSEMBLY	136-846265-002-A	6-12
	MAIN STAY ASSEMBLY (N)	136-218466-001-A	6-12
	MAIN STAY (N)	136-846337-001-A	6-14
	REAR PAPER END LEVER	136-846344-001-A	6-14
	BOTTOM MDL LEVER	136-846345-001-A	6-14
	ROLLER SUPPORT	136-846339-001-A	6-14
	ROLLER SUPPORT SPRING	136-846306-001-A	6-14
	ROLLER SUPPORT BRACKET	136-846338-001-A	6-14
	RELEASE SHAFT (N)	136-846340-001-A	6-14
	PRESSURE ROLLER (N)	136-846341-001-A	6-14
	PRESSURE ROLLER (F)	136-846342-001-A	6-14
	PRESSURE SPRING (N)	136-846406-001-A	6-14
	BOTTOM GUIDE ASSEMBLY (N)	136-846277-001-A	6-14
	SCREW, STCS-CPIMSx4x6x15BF	808-802445-406-A	6-14
	FRONT STAY (N)	136-846297-001-A	6-12
	PAPER GUIDE (N)	136-846286-001-A	6-12
	WIRE SADDLE WS-1NS	808-811031-001-A	6-12
	SCREW, STCS-CPIMSx4x6x15BF	808-802445-406-A	6-12

Figure 6-2 Family Tree - P60/P6200 (1/13)

Illustrated Parts Breakdown

6-10

A	B	C	D			
				PAPER RELEASE ARM	136-846287-001-A	6-10
				LF MOTOR UNIT	136-218460-001-A	6-10
				LF MOTOR FRAME SUBASSEMBLY	136-846276-001-A	6-10
				SLIDE GEAR	136-846311-001-A	6-10
				SLIDE GEAR SPRING	136-846312-001-A	6-10
				LF GEAR	136-846310-001-A	6-10
				LF MOTOR ASSEMBLY	808-869546-001-A	6-10
				LF PLATE	136-854346-001-A	6-10
				SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	6-10
				SP MOTOR UNIT	136-218459-001-A	6-10
				SP MOTOR BRACKET	136-846308-001-A	6-10
				SP MOTOR ASSEMBLY	808-869545-001-A	6-10
				FG PLATE (SP)	136-846309-001-A	6-10
				SCREW, STCS-CPIMSx4x10x15BF	808-802445-410-A	6-10
				PLATEN ASSY (N)	136-218461-001-A	6-10
				PLATEN (N)	136-846313-001-A	6-16
				PLATEN BUSHING (LH)	136-846314-001-A	6-16
				PLATEN BUSHING (RH)	136-846314-002-A	6-16
				PLATEN THRUST SHIM	136-768495-0	6-16
				OPTION DRIVE GEAR	136-846315-001-A	6-16
				PAPER SELECTION LEVER	136-846316-001-A	6-16
				PLATEN GEAR	136-846317-001-A	6-16
				MANUAL FEED GEAR	136-846318-001-A	6-16
				SPRING PIN	803-010022-314-0	6-16

Illustrated Parts Breakdown

Figure 6-2 Family Tree - P60/P6200 (2/13)

Level	Part Name	Part Number	Page
A			
B			
C			
D	OPTION GEAR	136-846288-001-A	6-10
	H.P SENSOR ASSEMBLY	808-820754-001-A	6-10
	SENSOR & SW ASSEMBLY	808-820753-001-A	6-10
	CARRIER UNIT (N)	136-218462-001-A	6-10
E	CARRIER ASSEMBLY (N)	136-846266-001-A	6-10
	CARRIER SUBASSEMBLY (N)	136-846278-001-A	6-18
	CARRIER FRAME SUBASSEMBLY	136-846267-001-A	6-18
	SLIDE SET PIECE	136-824597-001-B	6-18
	CLAMP LEVER (LH)	136-846386-001-A	6-18
	CLAMP LEVER (RH)	136-846386-002-A	6-18
	PLANETARIUM GEAR	136-846358-001-A	6-18
	PLANETARIUM ARM	136-846357-001-A	6-18
	FRICTION SPRING	136-854349-001-A	6-18
	RIBBON FEED PULLEY	136-846354-001-A	6-18
	RIBBON FEED WIRE (N) ASSEMBLY	808-812396-001-A	6-18
	PULLEY CASE	136-846385-001-A	6-18
	COUNTER GEAR	136-846359-001-A	6-18
	RIBBON DRIVE GEAR	136-846360-001-A	6-18
	TIMING BELT (N)	808-812393-001-A	6-18
	BELT HOLDER	136-846361-001-A	6-18
	RIBBON SENSOR ASSEMBLY	808-820752-001-A	6-18
	PHOTO SENSOR CLAMP PLATE	136-824599-001-A	6-18
	CARRIER FRAME COVER	136-846362-001-A	6-18
	CARRIER FG SPRING (LH)	136-846367-001-A	6-18
	CARRIER FG SPRING (RH)	136-846367-002-A	6-18
	PIECE (1)	136-846363-001-A	6-18
	SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	6-18

Figure 6-2 Family Tree - P60/P6200 (3/13)

6-12

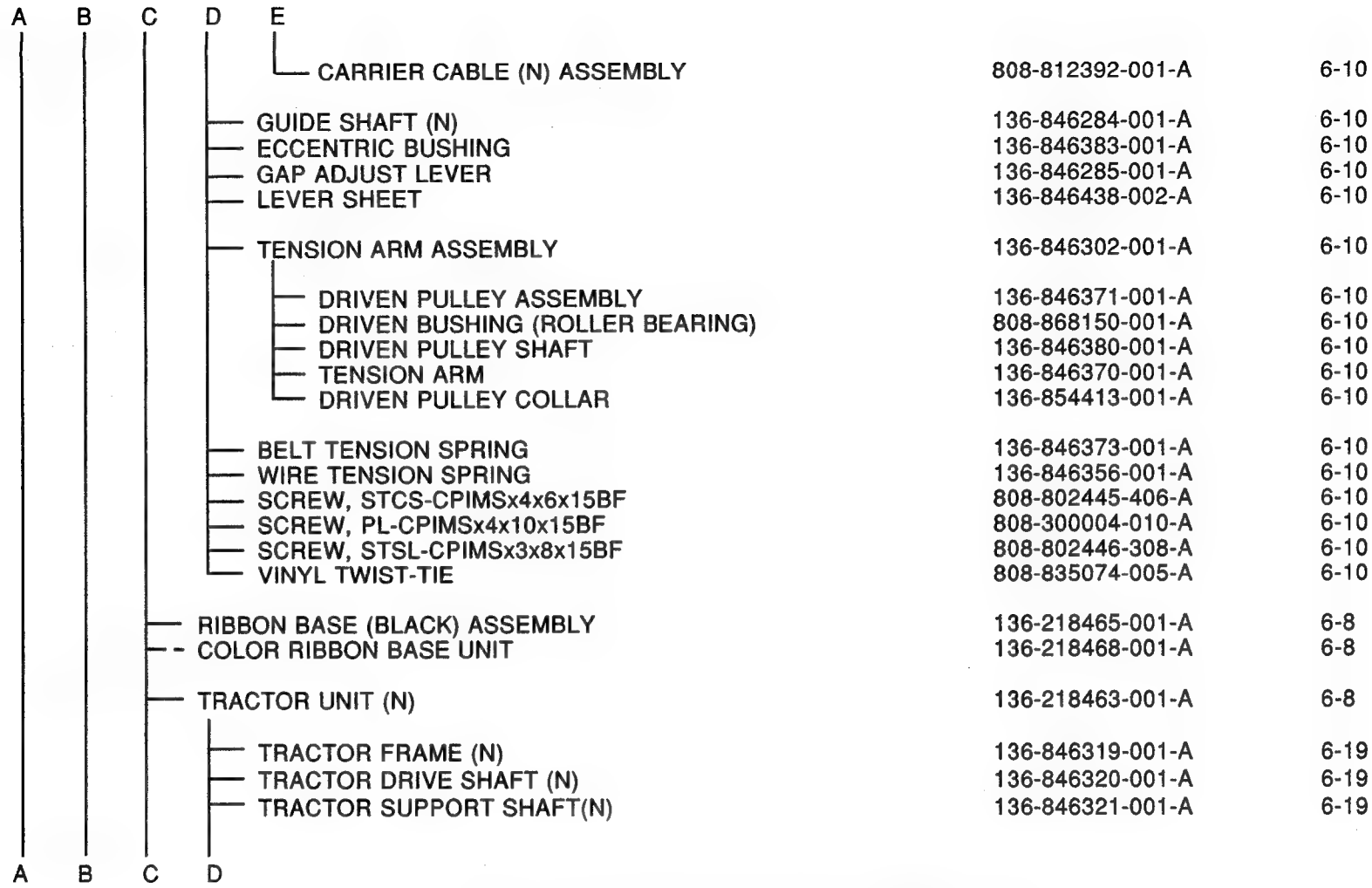


Figure 6-2 Family Tree - P60/P6200 (4/13)

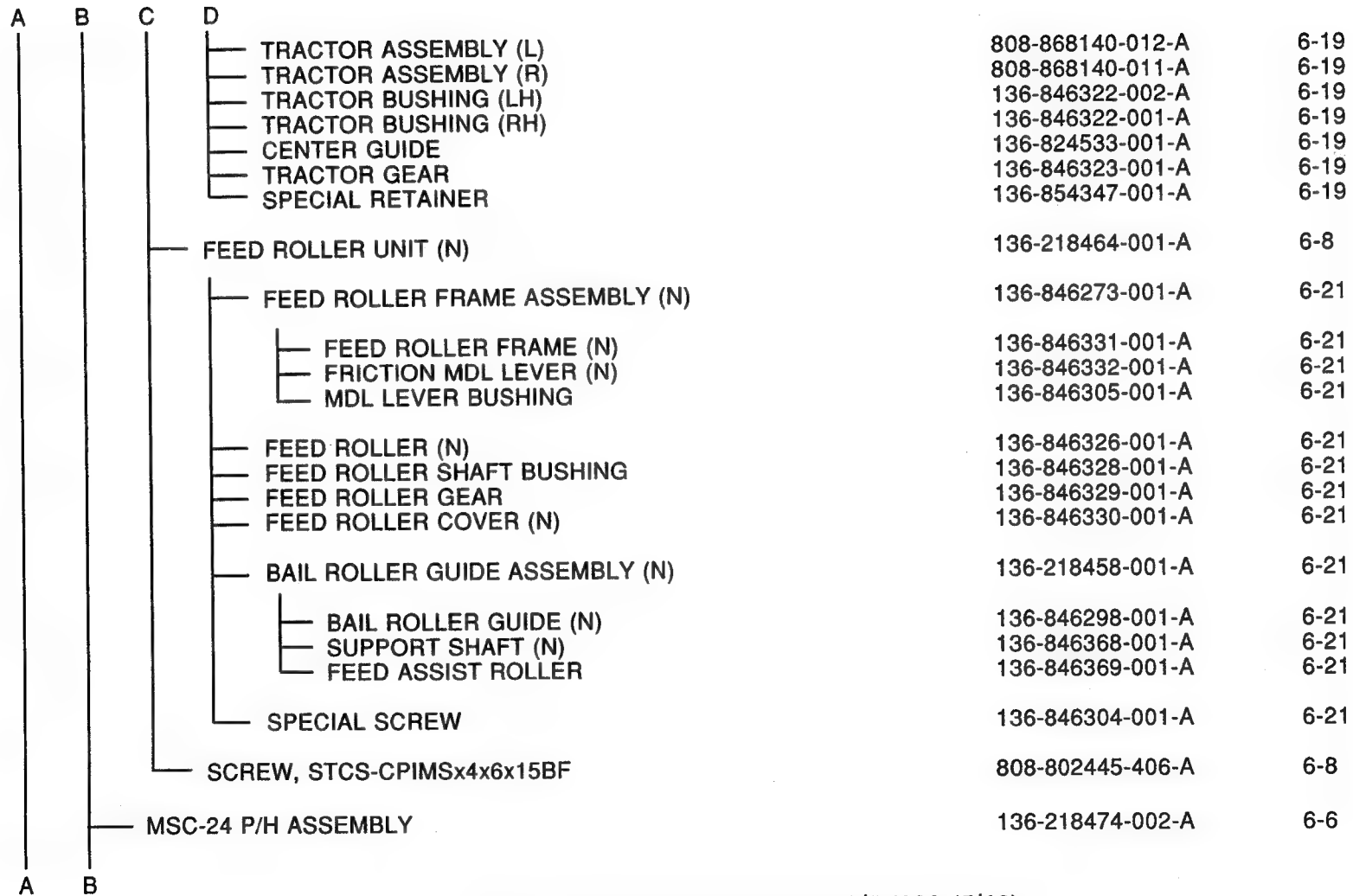


Figure 6-2 Family Tree - P60/P6200 (5/13)

6-14

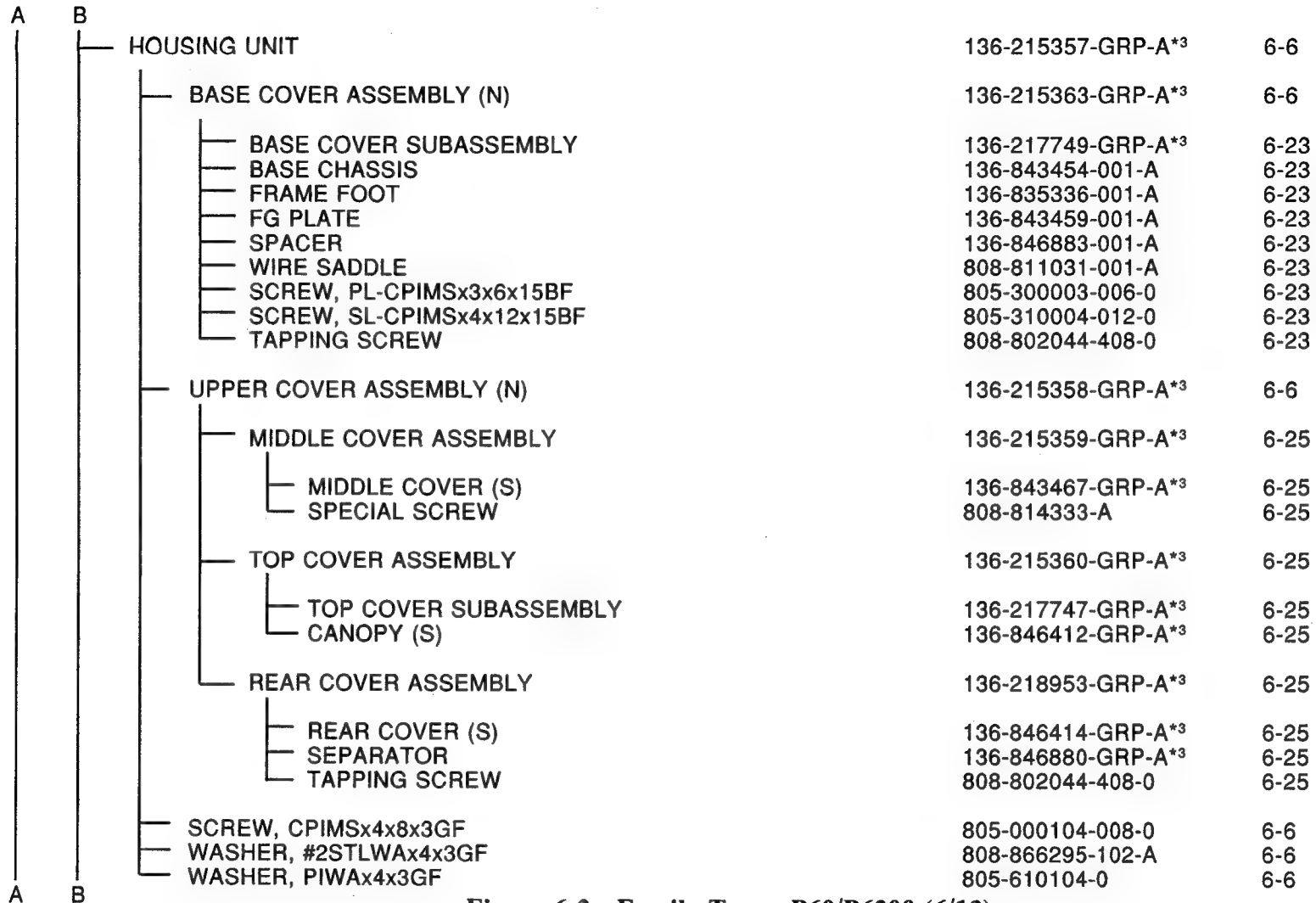


Figure 6-2 Family Tree - P60/P6200 (6/13)

A	B		
	PSD OPERATOR PANEL	808-818170-301-A	6-6
	OPERATOR PANEL	136-846432-301-A	6-27
	OPERATOR PANEL SHEET	136-846425-301-A	6-27
	OPERATOR PANEL PCB ASSEMBLY	808-818170-602-A	6-27
	CORE ASSEMBLY	136-789708-001-A	6-27
	SCREW, #2CPTSx2.6x6x15BF	805-060026-006-0	6-27
	CARD HOLDER ASSY	136-846275-GRP-A*10	6-18
	CARD HOLDER SUBASSEMBLY	136-854348-GRP-A*10	6-18
	CARD HOLDER BRACKET	136-846364-GRP-A*10	6-18
	POWER BOARD	808-891104-GRP-A*4	6-6
	MOTHER BOARD	136-XXXXXX-XXX-A*5	6-6
	CONNECTION BOARD	136-XXXXXX-001-A*6	6-6
	DC CABLE	808-857768-101-A	6-6
	PLATEN KNOB	136-846283-001-A	6-6
	FONT HOLDER	136-843451-GRP-A*3	6-6
	SHIELD COVER ASSEMBLY	136-217753-001-A	6-6
	CABLE COVER	136-843463-GRP-A*3	6-6
	CARRIER CABLE COVER	136-843457-GRP-A*3	6-6
	POWER SWITCH CABLE	808-857767-GRP-A*7	6-6
	SHIELD PLATE	136-846894-001-A	6-6
	FG SPRING	136-846906-001-A	6-6
	SCREW, PL-CPIMSx5x8x15BF	805-300005-008-0	6-6
	SCREW, BCBTSx4x10x15BF	808-802044-410-0	6-6
	SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	6-6
	SCREW, PL-CPIMSx4x8x15BF	805-300004-008-0	6-6
	SPECIAL SCREW	136-852788-001-A	6-6
	SCREW, PL-CPIMSx3x10x15BF	805-300003-010-0	6-6
	LOGO LABEL	136-707134-GRP-A*8	6-4
	CONTROL NAME PLATE	136-707137-GRP-A*8	6-4

Figure 6-2 Family Tree - P60/P6200 (7/13)

6-16

A	— SHEET GUIDE	136-846416-GRP-A*3	6-4
	— POWER CODE SET	808-XXXXXX-XXX-A*9	6-4
	— BLACK NYLON RIBBON	808-867928-301-A	6-4
	— BLACK MULTISTRIKE FILM RIBBON	808-869921-301-A	6-4
	— COLOR NYLON RIBBON	808-867928-311-A	6-4
	— REFERENCE SHEET	136-843464-001-A	6-4
	— PAPER SET PIECE (L)	136-846418-GRP-A*3	6-4
	— PAPER SET PIECE (R)	136-846419-GRP-A*3	6-4
	— SILENT CANOPY ASSEMBLY	136-217750-GRP-A*3	6-4
	— RS-232C KIT	136-217741-001-A	6-4
	— SERIAL I/F CASE (U)	136-846899-001-A	6-37
	— SERIAL I/F CASE (L)	136-846900-001-A	6-37
	— SET SCREW	136-846884-001-A	6-37
	— G8ESW PCB ASSEMBLY	136-436275-A	6-37
	— SCREW, PCBTSTx3x8x3GF	808-802172-308-0	6-37
	— SCREW, PCBTSTx3x12x3GF	808-802172-312-0	6-37
	— TRACTOR UNIT (S)	136-218470-001-A	6-4
	— SIDE FRAME (R) SUBASSEMBLY	136-789127-001-A	6-39
	— SIDE FRAME (L) SUBASSEMBLY	136-789127-002-A	6-39
	— LOCK SPRING	136-789132-A	6-39
	— IDLE GEAR 1	136-789143-A	6-39
	— GEAR 2	136-789144-A	6-39
	— CENTER GUIDE	136-789138-A	6-39
	— TRACTOR GEAR	136-789140-A	6-39
	— DRIVE SHAFT (S)	136-789141-001-A	6-39
	— HOLD SHAFT (S)	136-789142-001-A	6-39
	— TRACTOR KNOB	136-789162-001-A	6-39
	— CLUTCH SPRING	136-789151-A	6-39
	— BUSHING	136-789152-A	6-39
	— PAPER NET (S)	136-789154-001-A	6-39
A	B		

Figure 6-2 Family Tree - P60/P6200 (8/13)

6-18

A	B	C	D			
			└	- MIDDLE GUIDE (S)	136-788860-001-A	6-43
			└	- SIDE GUIDE	136-788849-001-A	6-43
			└	- SIDE GUIDE	136-788849-002-A	6-43
			└	- EJECT GUIDE S ASSEMBLY	136-788870-001-A	6-43
			└	- EJECT GUIDE (S) SUBASSEMBLY	136-789409-001-A	6-43
			└	- STACKER ROLLER S	136-788903-A	6-43
			└	- BUSHING D	136-788901-001-A	6-43
			└	- BUSHING D	136-788901-002-A	6-43
			└	- EJECT ROLLER GEAR	136-788843-A	6-43
			└	- E RING (E-37)	803-010030-037-A	6-43
			└	- BOTTOM STACKER S ASSEMBLY	136-788869-001-A	6-43
			└	- BOTTOM STACKER (S) SUBASSEMBLY	136-789410-001-A	6-43
			└	- FRONT STAY S	136-788905-A	6-43
			└	- SCREW, #2CBTSx3x6x3GF	805-230103-006-0	6-43
			└	- REAR STACKER (S) ASSEMBLY	136-788822-001-A	6-43
			└	- REAR STACKER	136-788823-001-A	6-43
			└	- E.S.D BRUSH	136-788824-001-A	6-43
			└	- SCREW, PL-CPIMSx3x5x15BF	805-300003-005-0	6-43
			└	- HOPPER UNIT ASSEMBLY	136-788825-001-A	6-43
			└	- HOPPER BASE	136-788791-001-A	6-43
			└	- HOPPER BASE	136-788791-002-A	6-43
			└	- HOPPER COVER	136-788797-001-A	6-43
			└	- HOPPER COVER	136-788797-002-A	6-43
			└	- SEPARATOR	136-788792-001-A	6-43
A	B	C	D			

Figure 6-2 Family Tree - P60/P6200 (10/13)

A	B	C	D	Part Number	Page
			- SEPARATOR	136-788792-002-A	6-43
			- HOPPER PLATE ASSEMBLY	136-788794-001-A	6-43
			- HOPPER PLATE ASSEMBLY	136-788794-002-A	6-43
			- SEPARATOR SPRING	136-788793-001-A	6-43
			- PRESSURE SPRING	136-788861-002-A	6-43
			- SELECT ARM	136-788798-A	6-43
			- LOCK PIECE	136-787516-001-A	6-43
			- HOPPER RELEASE BAR	136-788817-001-A	6-43
			- HOLD SHAFT	136-788809-001-A	6-43
		- FEED ROLLER GEAR ASSEMBLY		136-788808-A	6-43
		- CLUTCH ASSEMBLY		136-788800-001-A	6-43
		- TOP GEAR ASSEMBLY		136-788801-001-A	6-43
		- MIDDLE DISK ASSEMBLY		136-788804-A	6-43
		- BASE GEAR 3		136-788889-A	6-43
		- PICK ROLLER SHAFT		136-788876-001-A	6-43
		- EJECT ROLLER 2 (S)		136-788872-001-A	6-43
		- CLUTCH HOLDER ASSEMBLY		136-789408-A	6-43
		- IDLE GEAR A		136-788837-A	6-43
		- IDLE GEAR B		136-788838-A	6-43
		- IDLE GEAR C		136-788880-A	6-43
		- IDLE GEAR D		136-788836-A	6-43
		- IDLE GEAR E		136-788910-A	6-43
		- IDLE GEAR G		136-788836-A	6-43
		- EJECT ROLLER GEAR		136-788843-A	6-43
		- PICK ROLLER GEAR		136-788841-A	6-43
		- RELEASE LEVER		136-788814-001-A	6-43
		- RELEASE LEVER		136-788814-002-A	6-43
		- PICK ROLLER		136-788811-001-A	6-43

Figure 6-2 Family Tree - P60/P6200 (11/13)

A	B	C			
			-- PICK ROLLER	136-788811-002-A	6-43
			-- SELECT LEVER	136-788799-A	6-43
			-- EJECT SPRING	136-788863-001-A	6-43
			-- HOLD BUSHING	136-788818-A	6-43
			-- SIDE COVER	136-788884-001-A	6-43
			-- SIDE COVER	136-788885-001-A	6-43
			-- IDLE GEAR F	136-788912-A	6-43
			-- NUT WASHER	136-789407-A	6-43
			-- SCREW, PL-CPIMSx3x6x15BF	805-300003-006-0	6-43
			-- SCREW, SL-CPIMSx3x10x15BF	805-310003-010-0	6-43
			-- SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	6-43
			-- E RING (E-32)	803-010030-032-0	6-43
			-- E RING (E-40)	803-010030-040-0	6-43
			└-- UPPER STACKER	136-788815-001-A	6-41
			└-- STACKER GUIDE ASSEMBLY	136-788828-001-A	6-41
			└-- STACKER GUIDE	136-788834-001-A	6-41
			└-- PAPER GUIDE	136-788835-A	6-41
			└-- CENTER GUIDE	136-788807-001-A	6-41
			└-- HOPPER GUIDE BAR	136-788866-A	6-41
			└-- CANOPY (S)	136-846890-001-A	6-4

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Figure 6-2 Family Tree - P60/P6200 (12/13)

NOTE: Dotted lines denote option.

*1	GRP 200, 208:	P6200, 115 V	(Japan Production)	*9	808-846004-010-A:	P6200, 115 V	(Japan Production)
	GRP 204, 206:	P6200, 230 V	(Japan Production)			P6200/P6260, 115 V	(U.S.A. Production)
	GRP 203:	P60, 230 V	(Japan Production)		808-840491-001-A:	P60/P6200, 230 V	(Japan Production)
	GRP 301 - 306:	P60, 230 V	(U.K. Production)		808-840491-003-A:	P6200, 230 V, Australia model	(Japan Production)
	GRP 408:	P6200, 115 V	(U.S.A. Production)		808-846856-001-A:	P60, 230 V	(U.K. Production)
	GRP 409:	P6260, 115 V	(U.S.A. Production)		808-846856-002-A:	P60, 230 V, Non-plug type	(U.K. Production)
*2	GRP 200, 202:	P6200, 115 V	(Japan Production)	*10	GRP 001:	P60	
	GRP 203:	P60/P6200, 230 V	(Japan Production)		GRP401:	P6200	
	GRP 303:	P60, 230 V	(U.K. Production)				
	GRP 402:	P6200, 115 V	(U.S.A. Production)				
	GRP 403:	P6260, 115 V	(U.S.A. Production)				
*3	GRP 001:	Model P6200/P60	(Japan Production)				
	GRP 301:	Model P60	(U.K. Production)				
	GRP 401:	Model P6200/P6260	(U.S.A. Production)				
*4	GRP 002:	PSD Power (B)	(Japan Production)				
	GRP 003:	PSD Power (C)	(Japan Production)				
	GRP 303:	PSD Power (C)	(U.K. Production)				
*5	136-436268-001-A:	G8ESPA PCB Assembly	(Japan Production)				
	135-436268-002-A:	G8ESPB PCB Assembly	(Japan Production)				
	136-436269-001-A:	G8ESQA PCB Assembly	(U.S.A. Production)				
	136-436270-001-A:	G8ESRA PCB Assembly	(U.K. Production)				
*6	136-436272-001-A:	G8ESTA PCB Assembly	(Japan/U.S.A. Production)				
	136-436274-001-A:	G8ESVA PCB Assembly	(U.K. Production)				
*7	GRP 001:	115 V model					
	GRP 002:	230 V model					
*8	GRP 201:	P60	(Japan Production)				
	GRP 202:	P6200	(Japan Production)				
	GRP 301:	P60	(U.K. Production)				
	GRP 401:	P6200/P6260	(U.S.A. Production)				

Figure 6-2 Family Tree - P60/P6200 (13/13)

		PART NAME	PART NUMBER	FIG.NO.
		PINWRITER P70/P6300	136-218451-GRP-0*1	6-5
A		— PRINTER UNIT(W)	136-218454-GRP-A*2	6-5
	B	— MECHANISM UNIT (W)	136-218455-501-A	6-7
		— FRAME UNIT (W)	136-218456-501-A	6-9
		— FRAME ASSY (W)	136-218457-501-A	6-11
		— RIGHT SIDE FRAME SUBASSEMBLY	136-846265-001-A	6-13
		— LEFT SIDE FRAME SUBASSEMBLY	136-846265-002-A	6-13
		— MAIN STAY ASSY (W)	136-218466-501-A	6-13
		— MAIN STAY (W)	136-846337-501-A	6-15
		— REAR PAPER END LEVER	136-846344-001-A	6-15
		— BOTTOM MDL LEVER	136-846345-001-A	6-15
		— ROLLER SUPPORT	136-846339-001-A	6-15
		— ROLLER SUPPORT SPRING	136-846306-001-A	6-15
		— ROLLER SUPPORT BRACKET	136-846338-001-A	6-15
		— RELEASE SHAFT (W)	136-846340-501-A	6-15
		— PRESSURE ROLLER (W)	136-846341-501-A	6-15
		— PRESSURE ROLLER (F)	136-846342-001-A	6-15
		— PRESSURE SPRING (W)	136-846406-501-A	6-15
		— BOTTOM GUIDE ASSEMBLY (W)	136-846277-501-A	6-15
		— SCREW, STCS-CPIMSx4x6x15BF	808-802445-406-A	6-15
		— FRONT STAY (W)	136-846297-501-A	6-13
		— PAPER GUIDE (W)	136-846286-501-A	6-13
		— WIRE SADDLE WS-1NS	808-811031-001-A	6-13
		— SCREW, STCS-CPIMSx4x6x15BF	808-802445-406-A	6-13

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Figure 6-3 Family Tree - P70/P6300 (1/16)

A	B	C	D		Part Number	Revision
				PAPER RELEASE ARM	136-846287-001-A	6-11
				LF MOTOR UNIT	136-218460-001-A	6-11
				LF MOTOR FRAME SUBASSEMBLY	136-846276-001-A	6-11
				SLIDE GEAR	136-846311-001-A	6-11
				SLIDE GEAR SPRING	136-846312-001-A	6-11
				LF GEAR	136-846310-001-A	6-11
				LF MOTOR ASSEMBLY	808-869546-001-A	6-11
				LF PLATE	136-854346-001-A	6-11
				SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	6-11
				SP MOTOR UNIT	136-218459-001-A	6-11
				SP MOTOR BRACKET	136-846308-001-A	6-11
				SP MOTOR ASSEMBLY	808-869545-001-A	6-11
				FG PLATE (SP)	136-846309-001-A	6-11
				SCREW, STCS-CPIMSx4x10x15BF	808-802445-410-A	6-11
				PLATEN ASSY (W)	136-218461-501-A	6-11
				PLATEN (W)	136-846313-501-A	6-17
				PLATEN BUSHING (LH)	136-846314-001-A	6-17
				PLATEN BUSHING (RH)	136-846314-002-A	6-17
				PLATEN THRUST SHIM	136-768495-0	6-17
				OPTION DRIVE GEAR	136-846315-001-A	6-17
				PAPER SELECTION LEVER	136-846316-001-A	6-17
				PLATEN GEAR	136-846317-001-A	6-17
				MANUAL FEED GEAR	136-846318-001-A	6-17
				SPRING PIN	803-010022-314-0	6-17
				OPTION GEAR	136-846288-001-A	6-11
				H.P SENSOR ASSEMBLY	808-820754-001-A	6-11
				SENSOR & SW ASSEMBLY	808-820753-001-A	6-11

Figure 6-3 Family Tree - P70/P6300 (2/16)

6-24

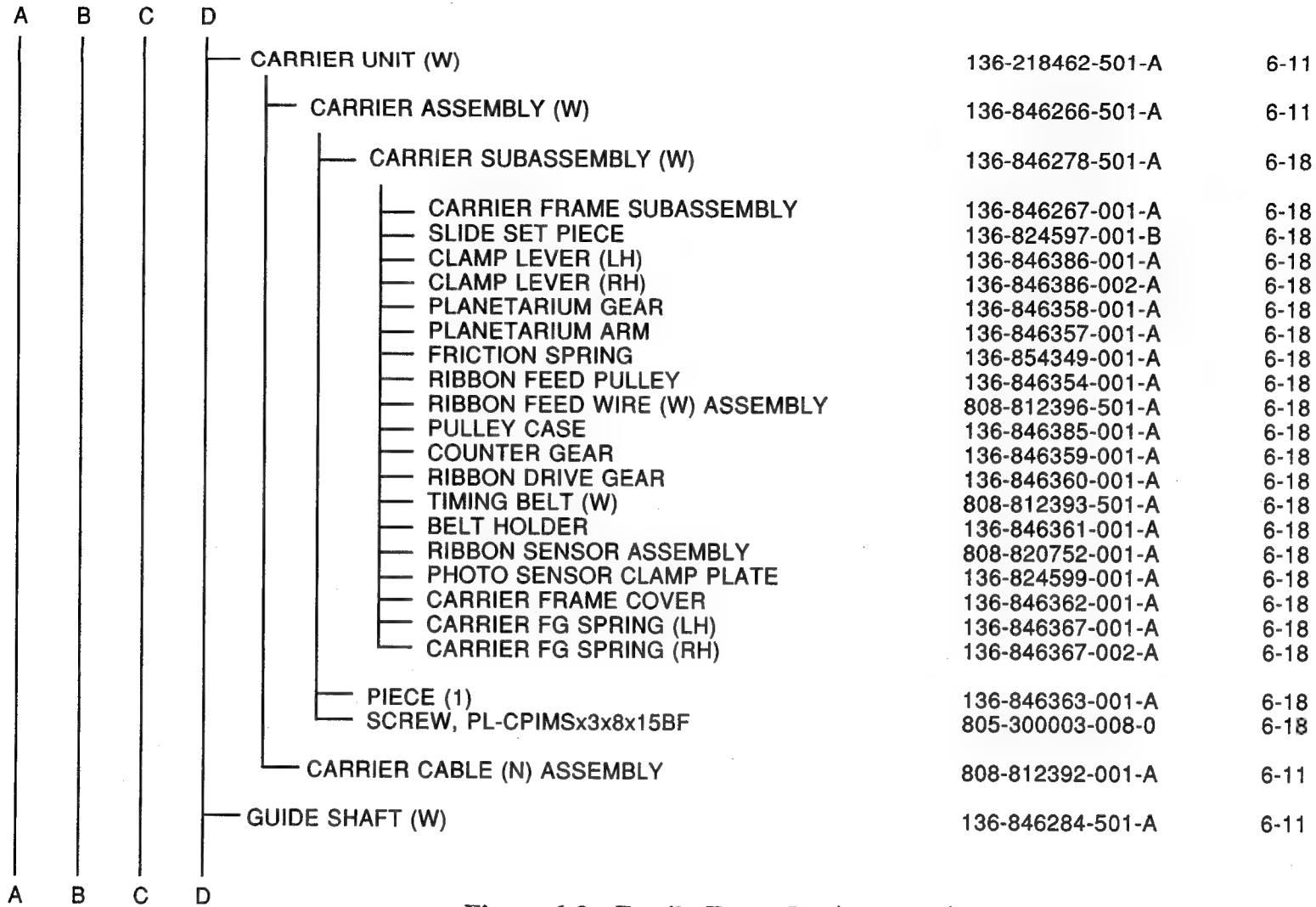


Figure 6-3 Family Tree - P70/P6300 (3/16)

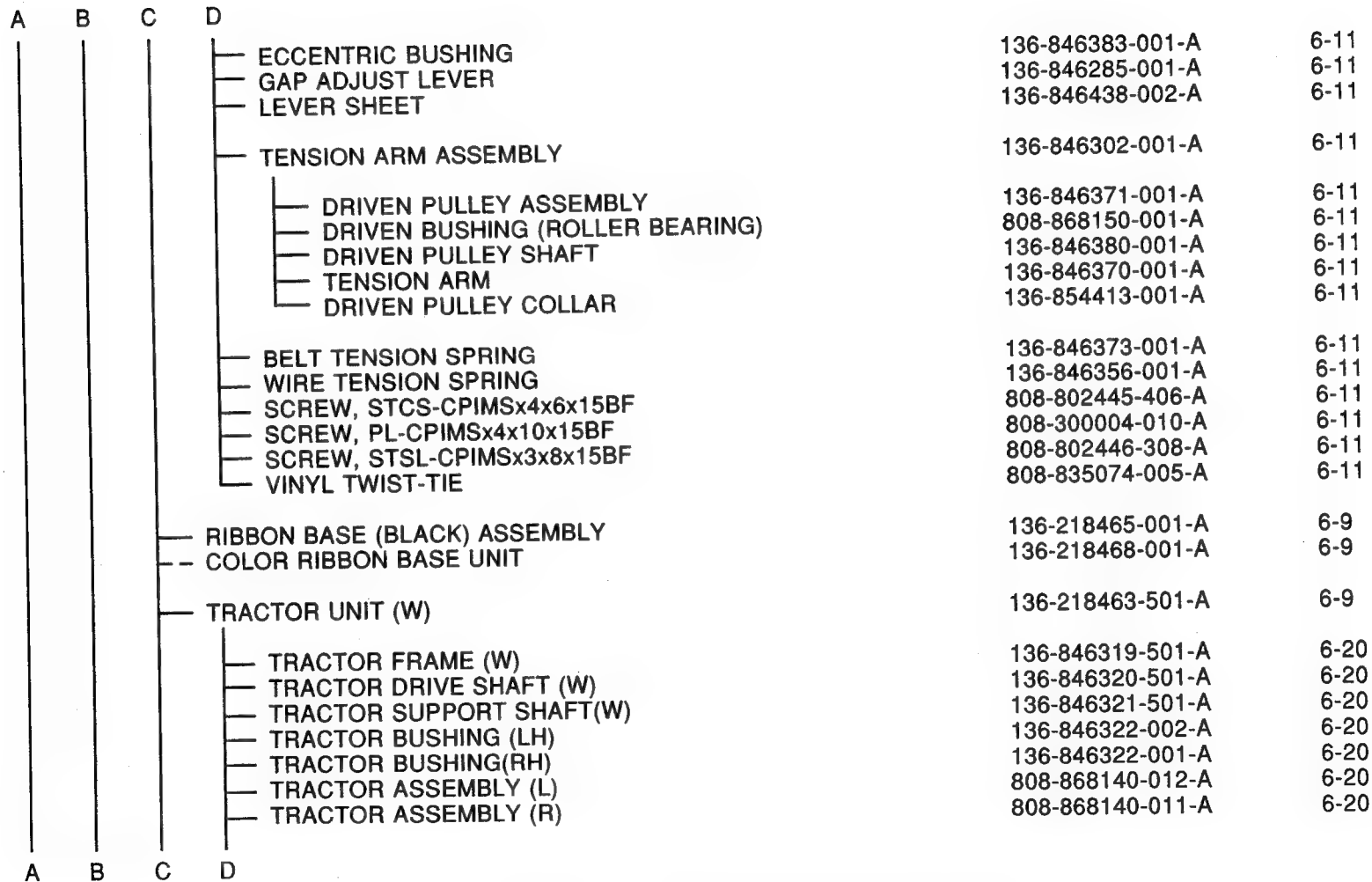


Figure 6-3 Family Tree - P70/P6300 (4/16)

6-26

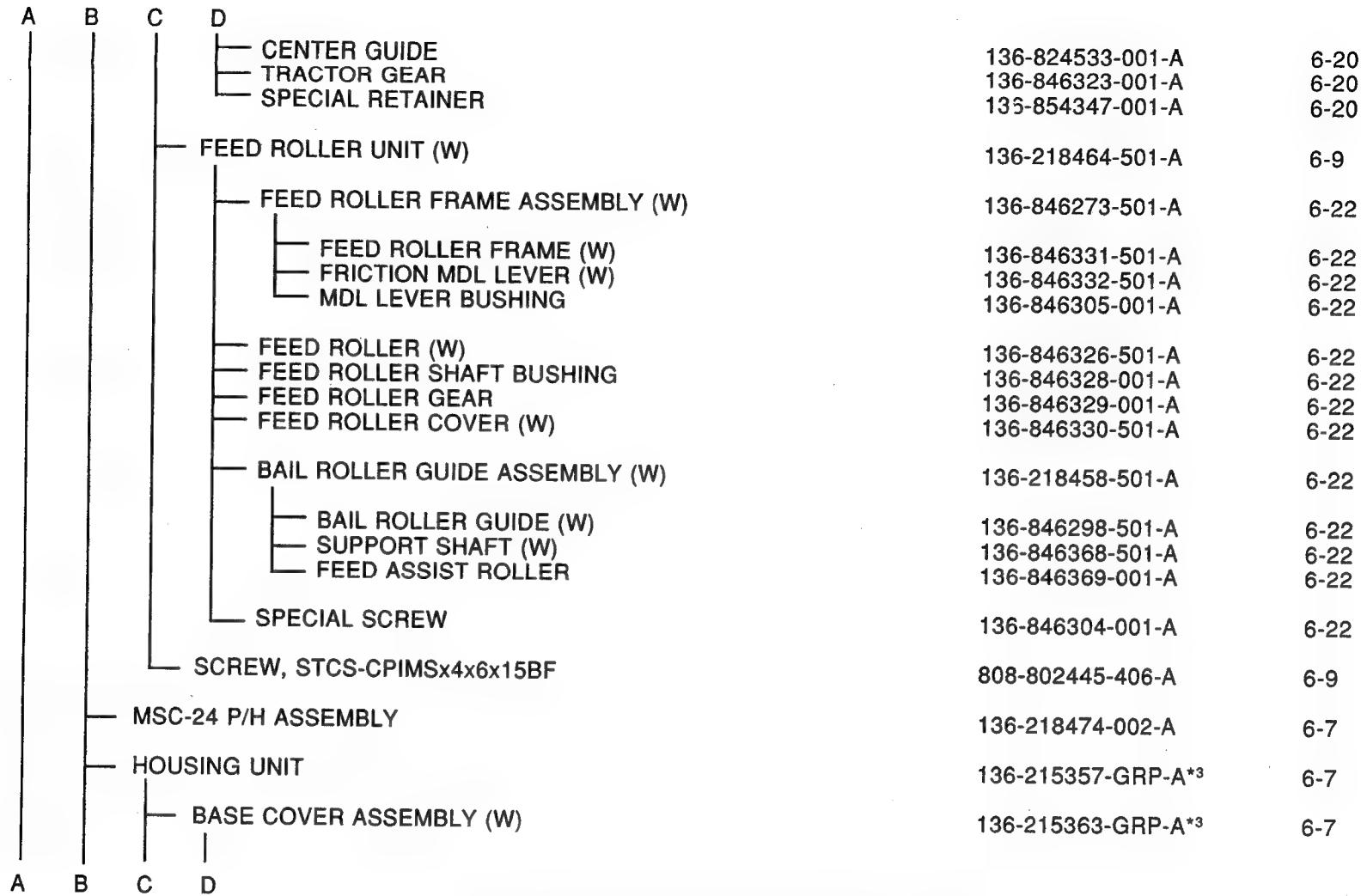


Figure 6-3 Family Tree - P70/P6300 (5/16)

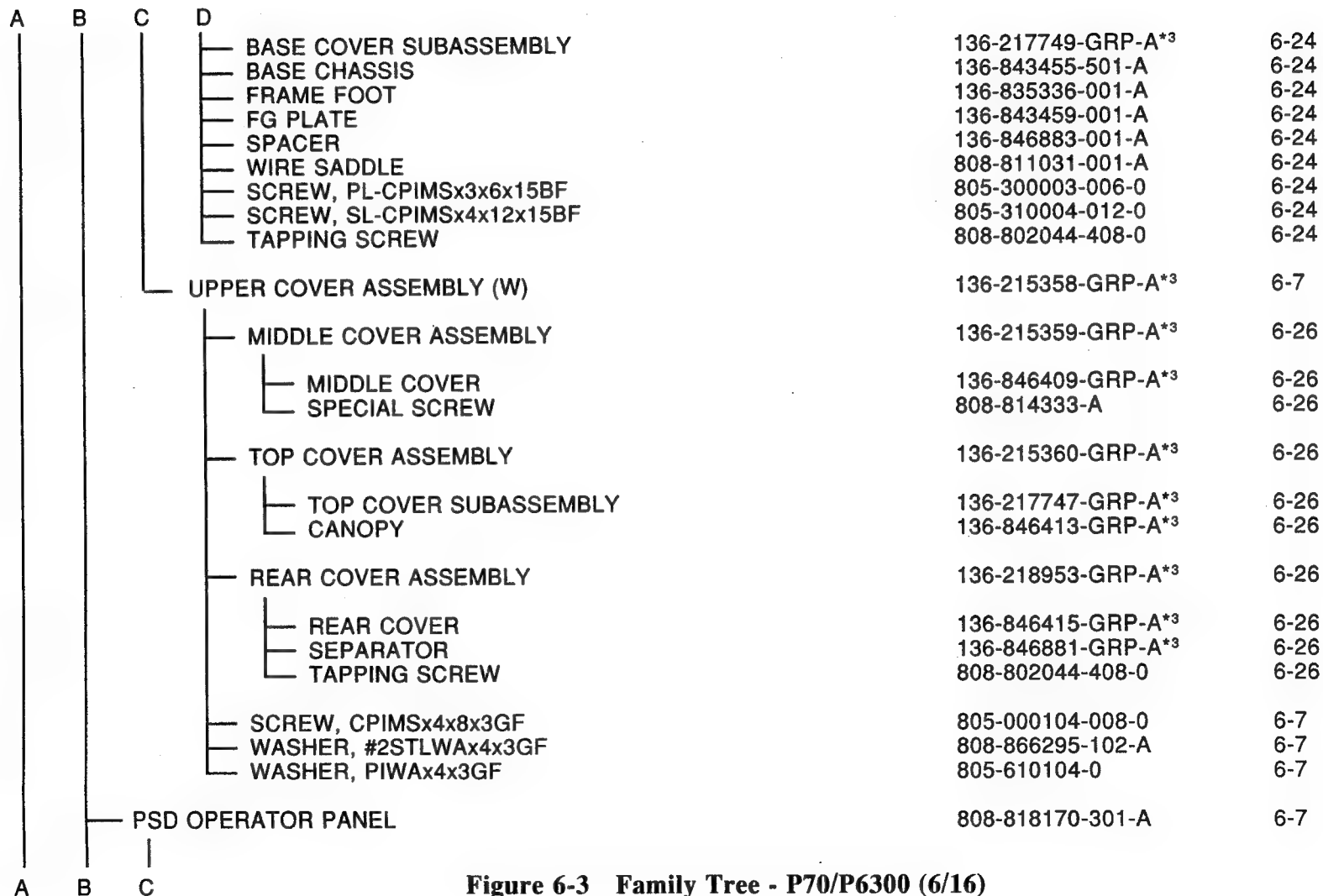


Figure 6-3 Family Tree - P70/P6300 (6/16)

6-28

A	B	C			
		—	OPERATOR PANEL	136-846432-301-A	6-27
		—	OPERATOR PANEL SHEET	136-846425-301-A	6-27
		—	OPERATOR PANEL PCB ASSEMBLY	808-818170-602-A	6-27
		—	CORE ASSEMBLY	136-789708-001-A	6-27
		—	SCREW, #2CPTSx2.6x6x15BF	805-060026-006-0	6-27
	—		CARD HOLDER ASSEMBLY	136-846275-GRP-A*10	6-18
		—	CARD HOLDER SUBASSEMBLY	136-854348-GRP-A*10	6-18
		—	CARD HOLDER BRACKET	136-846364-GRP-A*10	6-18
	—		POWER BOARD	808-891104-GRP-A*4	6-7
	—		MOTHER BOARD	136-XXXXXX-XXX-A*5	6-7
	—		CONNECTION BOARD	136-XXXXXX-001-A*6	6-7
	—		DC CABLE	808-857768-201-A	6-7
	—		PLATEN KNOB	136-846283-001-A	6-7
	—		FONT HOLDER	136-843451-GRP-A*3	6-7
	—		SHIELD COVER ASSEMBLY	136-217753-001-A	6-7
	—		CABLE COVER	136-843463-GRP-A*3	6-7
	—		CARRIER CABLE COVER	136-843457-GRP-A*3	6-7
	—		POWER SWITCH CABLE	808-857767-GRP-A*7	6-7
	—		SHIELD PLATE	136-846894-501-A	6-7
	—		FG SPRING	136-846906-001-A	6-7
	—		SCREW, PL-CPIMSx5x8x15BF	805-300005-008-0	6-7
	—		SCREW, BCBTSx4x10x15BF	808-802044-410-0	6-7
	—		SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	6-7
	—		SCREW, PL-CPIMSx4x8x15BF	805-300004-008-0	6-7
	—		SPECIAL SCREW	136-852788-001-A	6-7
	—		SCREW, PL-CPIMSX3X10X15BF	805-300003-010-0	6-7
	—		LOGO LABEL	136-707134-GRP-A*8	6-5
	—		CONTROL NAME PLATE	136-707137-GRP-A*8	6-5
	—		SHEET GUIDE	136-846416-GRP-A*3	6-5
	—		POWER CODE SET	808-XXXXXX-XXX-A*9	6-5
	—		BLACK NYLON RIBBON	808-867928-301-A	6-5
A					

Figure 6-3 Family Tree - P70/P6300 (7/16)

A			
---	BLACK MULTISTRIKE FILM RIBBON	808-869921-301-A	6-5
---	COLOR NYLON RIBBON	808-867928-311-A	6-5
---	REFERENCE SHEET	136-843464-001-A	6-4
---	PAPER SET PIECE (L)	136-846418-GRP-A*3	6-5
---	PAPER SET PIECE (R)	136-846419-GRP-A*3	6-5
---	SILENT CANOPY ASSEMBLY	136-217750-GRP-A*3	6-5
---	RS-232C KIT	136-217741-001-A	6-5
---	SERIAL I/F CASE (U)	136-846899-001-A	6-37
---	SERIAL I/F CASE (L)	136-846900-001-A	6-37
---	SET SCREW	136-846884-001-A	6-37
---	G8ESW PCB ASSEMBLY	136-436275-A	6-37
---	SCREW, PCBTSx3x8x3GF	808-802172-308-0	6-37
---	SCREW, PCBTSx3x12x3GF	808-802172-312-0	6-37
---	TRACTOR UNIT (L)	136-218470-501-A	6-5
---	SIDE FRAME (R) SUBASSEMBLY	136-789127-001-A	6-40
---	SIDE FRAME (L) SUBASSEMBLY	136-789127-002-A	6-40
---	LOCK SPRING	136-789132-A	6-40
---	IDLE GEAR 1	136-789143-A	6-40
---	IDLE GEAR 2	136-789144-A	6-40
---	CENTER GUIDE	136-789138-A	6-40
---	TRACTOR GEAR	136-789140-A	6-40
---	DRIVE SHAFT (L)	136-789141-501-A	6-40
---	HOLD SHAFT (L)	136-789142-501-A	6-40
---	TRACTOR KNOB	136-789162-001-A	6-40
---	CLUTCH SPRING	136-789151-A	6-40
---	BUSHING	136-789152-A	6-40
---	PAPER NET (L)	136-789154-501-A	6-40
---	RUBBER CAP	136-811830-A	6-40
---	SIDE COVER (R)	136-789155-001-A	6-40
---	SIDE COVER (L)	136-789155-002-A	6-40
---	TRACTOR (R) ASSEMBLY	136-802351-001-A	6-40
A	B		

Figure 6-3 Family Tree - P70/P6300 (8/16)

6-30

A	B			
		--- TRACTOR (L) ASSEMBLY	136-802351-002-A	6-40
		--- FRAME STAY (LS)	136-789139-501-A	6-40
		--- FRAME STAY (L)	136-789139-502-A	6-40
		--- TRACTOR GUIDE (R)	808-789150-001-A	6-40
		--- TRACTOR GUIDE (L)	808-789150-002-A	6-40
		--- WASHER	136-789149-A	6-40
		--- E RING E-42	803-010030-042-0	6-40
		--- E RING E-50	803-010030-050-0	6-40
		--- SCREW, PL-CPIMSx4x6x15BF	805-300004-006-0	6-40
		--- SCREW, COFIMS3x6x15BF	805-020003-006-0	6-40
		--- SCREW, SL-CPIMSx3x8x15BF	805-310003-008-0	6-40
		--- TRACTOR COVER (L) ASSEMBLY	136-846898-501-A	6-5
		--- 1 BIN SHEET FEEDER UNIT (L)	136-218948-501-A	6-5
		--- MAIN UNIT (L) ASSEMBLY	136-218956-501-A	6-42
		--- UNIT SUB (L) ASSEMBLY	136-788858-501-A	6-44
		--- MAIN FRAME (L) ASSEMBLY	136-788852-501-A	6-46
		--- FEED ROLLER (L)	136-788893-A	6-46
		--- PRESSURE ROLLER (L)	136-788895-A	6-46
		--- HOLD BUSHING	136-788818-A	6-46
		--- GUIDE BUSHING	136-788907-A	6-46
		--- BACK-UP PIECE	136-788899-001-A	6-46
		--- BACK-UP SPRING	136-788821-003-A	6-46
		--- SCREW, PL-CPIMSx3x5x15BF	805-300003-005-0	6-46
		--- MIDDLE GUIDE L ASSEMBLY	136-788871-501-A	6-44
		--- MIDDLE GUIDE L	136-788859-501-A	6-44
		--- SIDE GUIDE	136-788849-001-A	6-44
		--- SIDE GUIDE	136-788849-002-A	6-44
A	B	C		

Figure 6-3 Family Tree - P70/P6300 (9/16)

A	B	C			
			└-- EJECT GUIDE (L) ASSEMBLY	136-788870-501-A	6-44
			└-- EJECT GUIDE (L) SUBASSEMBLY	136-789409-501-A	6-44
			└-- STACKER ROLLER (L)	136-788902-A	6-44
			└-- BUSHING D	136-788901-001-A	6-44
			└-- BUSHING D	136-788901-002-A	6-44
			└-- EJECT ROLLER GEAR	136-788843-A	6-44
			└-- E RING (E-37)	803-010030-037-A	6-44
			└-- BOTTOM STACKER L ASSEMBLY	136-788869-501-A	6-44
			└-- BOTTOM STACKER (L) SUBASSEMBLY	136-789410-501-A	6-44
			└-- FRONT STAY L	136-788904-A	6-44
			└-- SCREW, #2CBTSx3x6x3GF	805-230103-006-0	6-44
			└-- REAR STACKER (L) ASSEMBLY	136-788822-501-A	6-44
			└-- REAR STACKER L	136-788823-501-A	6-44
			└-- E.S.D BRUSH L	136-788824-501-A	6-44
			└-- SCREW, PL-CPIMSx3x5x15BF	805-300003-005-0	6-44
			└-- HOPPER UNIT ASSEMBLY	136-788825-501-A	6-44
			└-- HOPPER BASE	136-788791-001-A	6-44
			└-- HOPPER BASE	136-788791-002-A	6-44
			└-- HOPPER COVER	136-788797-001-A	6-44
			└-- HOPPER COVER	136-788797-002-A	6-44
			└-- SEPARATOR	136-788792-001-A	6-44
			└-- SEPARATOR	136-788792-002-A	6-44
			└-- HOPPER PLATE ASSEMBLY	136-788794-001-A	6-44
			└-- HOPPER PLATE ASSEMBLY	136-788794-002-A	6-44
			└-- SEPARATOR SPRING	136-788793-001-A	6-44
A	B	C	D		

Figure 6-3 Family Tree - P70/P6300 (10/16)

A	B	C	D		
				-- PRESSURE SPRING	136-788861-002-A 6-44
				-- SELECT ARM	136-788798-A 6-44
				-- LOCK PIECE	136-787516-001-A 6-44
				-- HOPPER RELEASE BAR	136-788817-501-A 6-44
				-- HOLD SHAFT	136-788809-501-A 6-44
			--	FEED ROLLER GEAR ASSEMBLY	136-788808-A 6-44
			--	CLUTCH ASSEMBLY	136-788800-001-A 6-44
				-- TOP GEAR ASSEMBLY	136-788801-001-A 6-44
				-- MIDDLE DISK ASSEMBLY	136-788804-A 6-44
				-- BASE GEAR 3	136-788889-A 6-44
		--	PICK ROLLER SHAFT	136-788876-501-A 6-44	
		--	EJECT ROLLER 2 (L)	136-788872-501-A 6-44	
		--	CLUTCH HOLDER ASSEMBLY	136-789408-A 6-44	
		--	IDLE GEAR A	136-788837-A 6-44	
		--	IDLE GEAR B	136-788838-A 6-44	
		--	IDLE GEAR C	136-788880-A 6-44	
		--	IDLE GEAR D	136-788836-A 6-44	
		--	IDLE GEAR E	136-788910-A 6-44	
		--	IDLE GEAR G	136-788911-A 6-44	
		--	EJECT ROLLER GEAR	136-788843-A 6-44	
		--	PICK ROLLER GEAR	136-788841-A 6-44	
		--	RELEASE LEVER	136-788814-001-A 6-44	
		--	RELEASE LEVER	136-788814-002-A 6-44	
		--	PICK ROLLER	136-788811-001-A 6-44	
		--	PICK ROLLER	136-788811-002-A 6-44	
		--	SELECT LEVER	136-788799-A 6-44	
		--	EJECT SPRING	136-788863-001-A 6-44	
		--	HOLD BUSHING	136-788818-A 6-44	
		--	SIDE COVER	136-788884-001-A 6-44	
		--	SIDE COVER	136-788885-001-A 6-44	
A	B	C			

Figure 6-3 Family Tree - P70/P6300 (11/16)

A	B	C			
		---	--- IDLE GEAR F	136-788912-A	6-44
		---	--- NUT WASHER	136-789407-A	6-44
		---	--- SCREW, PL-CPIMSx3x6x15BF	805-300003-006-0	6-44
		---	--- SCREW, SL-CPIMSx3x10x15BF	805-310003-010-0	6-44
		---	--- SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	6-44
		---	--- E RING (E-32)	803-010030-032-0	6-44
		---	--- E RING (E-40)	803-010030-040-0	6-44
	---		--- UPPER STACKER	136-788815-001-A	6-42
	---		--- STACKER GUIDE ASSEMBLY	136-788828-001-A	6-42
		---	--- STACKER GUIDE	136-788834-001-A	6-42
		---	--- PAPER GUIDE	136-788835-A	6-42
	---		--- CENTER GUIDE	136-788807-001-A	6-42
	---		--- HOPPER GUIDE BAR	136-788866-A	6-42
---			--- CANOPY (L)	136-846891-501-A	6-5
---			--- 2 BIN SHEET FEEDER UNIT (L)	136-218949-501-A	6-5
	---		--- 2 BIN MAIN UNIT ASSEMBLY	136-218957-501-A	6-47
		---	--- 2 BIN UNIT SUBASSEMBLY	136-788855-501-A	6-48
		---	--- SECOND MAIN FRAME ASSEMBLY	136-788810-001-A	6-49
		---	--- FEED ROLLER	136-788893-A	6-49
		---	--- PRESSURE ROLLER (L)	136-788895-A	6-49
		---	--- HOLD BUSHING	136-788818-A	6-49
		---	--- GUIDE BUSHING	136-788907-A	6-49
		---	--- BACK-UP PIECE	136-788899-001-A	6-49
		---	--- BACK-UP SPRING	136-788821-002-A	6-49
A	B	C			

Figure 6-3 Family Tree - P70/P6300 (12/16)

6-34

A	B	C			
		└	SCREW, PL-CPIMSx3x5x15BF	805-300003-005-0	6-49
		└	MIDDLE GUIDE L ASSEMBLY	136-788871-501-A	6-48
		└	└ MIDDLE GUIDE (L)	136-788859-501-A	6-48
		└	└ SIDE GUIDE	136-788849-001-A	6-48
		└	└ SIDE GUIDE	136-788849-002-A	6-48
		└	EJECT GUIDE L ASSEMBLY	136-788870-501-A	6-48
		└	└ EJECT GUIDE (L) SUBASSEMBLY	136-789409-501-A	6-48
		└	└ STACKER ROLLER (L)	136-788902-A	6-48
		└	└ BUSHING D	136-788901-001-A	6-48
		└	└ BUSHING D	136-788901-002-A	6-48
		└	└ EJECT ROLLER GEAR	136-788843-A	6-48
		└	└ E RING (E-37)	803-010030-037-A	6-48
		└	BOTTOM STACKER (L) ASSEMBLY	136-788869-501-A	6-48
		└	└ BOTTOM STACKER (L) SUBASSEMBLY	136-789410-501-A	6-48
		└	└ FRONT STAY (L)	136-788904-A	6-48
		└	└ EJECT ROLLER	136-788873-001-A	6-48
		└	└ EJECT PIN	136-788850-A	6-48
		└	└ SCREW, #2CBTSx3x6x3GF	805-230103-006-0	6-48
		└	REAR STACKER (L) ASSEMBLY	136-788822-501-A	6-48
		└	└ REAR STACKER	136-788823-501-A	6-48
		└	└ E.S.D BRUSH (L)	136-788824-501-A	6-48
		└	└ SCREW, PL-CPIMSx3x5x15BF	805-300003-005-0	6-48
A	B				

Figure 6-3 Family Tree - P70/P6300 (13/16)

6-36

A	B			
		-- FEED ROLLER GEAR ASSEMBLY	136-788808-A	6-48
		-- CLUTCH ASSEMBLY	136-788800-001-A	6-48
		-- TOP GEAR ASSEMBLY	136-788801-001-A	6-48
		-- MIDDLE DISK ASSEMBLY	136-788804-A	6-48
		-- BASE GEAR 3	136-788889-A	6-48
		-- CLUTCH ASSEMBLY	136-788800-002-A	6-48
		-- TOP GEAR ASSEMBLY	136-788801-002-A	6-48
		-- MIDDLE DISK ASSEMBLY	136-788804-A	6-48
		-- BASE GEAR 3	136-788889-A	6-48
		-- PICK ROLLER SHAFT (L)	136-788876-501-A	6-48
		-- EJECT ROLLER 2 (L)	136-788872-501-A	6-48
		-- CLUTCH HOLDER ASSEMBLY	136-789408-A	6-48
		-- IDLE GEAR A	136-788837-A	6-48
		-- IDLE GEAR B	136-788838-A	6-48
		-- IDLE GEAR C	136-788880-A	6-48
		-- IDLE GEAR D	136-788836-A	6-48
		-- IDLE GEAR E	136-788910-A	6-48
		-- IDLE GEAR G	136-788911-A	6-48
		-- IDLE GEAR F	136-788912-A	6-48
		-- GEAR PULLEY D	136-788848-A	6-48
		-- EJECT ROLLER GEAR	136-788843-A	6-48
		-- PICK ROLLER GEAR	136-788841-A	6-48
		-- RELEASE LEVER R	136-788814-001-A	6-48
		-- RELEASE LEVER L	136-788814-002-A	6-48
		-- PICK ROLLER	136-788811-001-A	6-48
		-- PICK ROLLER	136-788811-002-A	6-48
		-- SELECT LEVER	136-788799-A	6-48
A	B			

Figure 6-3 Family Tree - P70/P6300 (15/16)

A	B			
		└─ EJECT SPRING	136-788893-001-A	6-48
		└─ HOLD BUSHING	136-788818-A	6-48
		└─ SIDE COVER L	136-788886-001-A	6-48
		└─ SIDE COVER R	136-788887-001-A	6-48
		└─ IDLE GEAR H	136-788913-A	6-48
		└─ NUT WASHER	136-789407-A	6-48
		└─ PULLEY SPACER	136-788919-A	6-48
		└─ MICRO-PITCH TIMING BELT	808-805049-016-A	6-48
		└─ SCREW, PL-CPIMSx3x6x15BF	805-300003-006-0	6-48
		└─ SCREW, SL-CPIMSx3x10x15BF	805-310003-010-0	6-48
		└─ SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	6-48
		└─ SCREW, PL-CPIMSx4x8x15BF	805-300004-008-0	6-48
		└─ E RING (E-32)	803-010030-032-0	6-48
		└─ E RING (E-40)	803-010030-040-0	6-48
		└─ UPPER STACKER	136-788815-001-A	6-47
		└─ STACKER GUIDE ASSEMBLY	136-788828-001-A	6-47
		└─ STACKER GUIDE	136-788834-001-A	6-47
		└─ PAPER GUIDE	136-788835-A	6-47
		└─ CENTER GUIDE	136-788807-001-A	6-47
		└─ HOPPER GUIDE BAR	136-788866-A	6-47

NOTE: Dotted lines denote option.

*1	GRP 700, 708:	P6300, 115 V	(Japan Production)
	GRP 704, 706:	P6300, 230 V	(Japan Production)
	GRP 703:	P70, 230 V	(Japan Production)
	GRP 801 - 806:	P70, 230 V	(U.K. Production)
	GRP 908:	P6300, 115 V	(U.S.A. Production)
	GRP 909:	P6360, 115 V	(U.S.A. Production)
*2	GRP 700, 702:	P6300	(Japan Production)
	GRP 703:	P70, 230 V	(Japan Production)
	GRP 803:	P70, 230 V	(U.K. Production)
	GRP 902:	P6300, 115 V	(U.S.A. Production)
	GRP 903:	P6360, 115 V	(U.S.A. Production)
*3	GRP 501:	P6300/P70	(Japan Production)
	GRP 801:	P70	(U.K. Production)
	GRP 901:	P6300/P6360	(U.S.A. Production)
*4	GRP 002:	PSD Power (B)	(Japan Production)
	GRP 003:	PSD Power (C)	(Japan Production)
	GRP 303:	PSD Power (C)	(U.K. Production)
*5	136-436268-001-A:	G8ESPA PCB Assembly	(Japan Production)
	136-436268-002-A:	G8ESPB PCB Assembly	(Japan Production)
	136-436269-001-A:	G8ESQA PCB Assembly	(U.S.A. Production)
	136-436270-001-A:	G8ESRA PCB Assembly	(U.K. Production)
*6	136-436272-001-A:	G8ESTA PCB Assembly	(Japan/U.S.A. Production)
	136-436274-001-A:	G8ESVA PCB Assembly	(U.K. Production)
*7	GRP 001:	115 V Model	
	GRP 002:	230 V Model	
*8	GRP 701:	P70	(Japan Production)
	GRP 702:	P6300	(Japan Production)
	GRP 801:	P70	(U.K. Production)
	GRP 901:	P6300/P6360	(U.S.A. Production)
*9	808-846004-010-A:	P6300, 115 V	(Japan Production)
		P6300/P6360, 115 V	(U.S.A. Production)
	808-840491-001-A:	P70/P6300, 230 V	(Japan Production)
	808-840491-003-A:	P6300, 230 V, Australia model	(Japan Production)
	808-846856-001-A:	P70, 230 V	(U.K. Production)
	808-846856-002-A:	P60, 230 V, Non-plug type	(U.K. Production)
*10	GRP 001:	P70	
	GRP 401:	P6300	

Figure 6-3 Family Tree - P70/P6300 (16/16)

Pinwriter P60/P6200 Major Assembly (136-218451-GRP-0)

ITEM	PART NAME	PART NUMBER	QTY*													
			GRP: 200	203	204	206	208	301	302	303	304	305	306	408	409	
1	Printer Unit (N) (See Figure 6-6 for breakdown)	136-218454-200-A	1	—	—	—	—	—	—	—	—	—	—	—	—	—
1	Printer Unit (N) (See Figure 6-6 for breakdown)	136-218454-202-A	—	—	—	—	1	—	—	—	—	—	—	—	—	—
1	Printer Unit (N) (See Figure 6-6 for breakdown)	136-218454-203-A	—	1	1	1	—	—	—	—	—	—	—	—	—	—
1	Printer Unit (N) (See Figure 6-6 for breakdown)	136-218454-303-A	—	—	—	—	—	1	1	1	1	1	1	—	—	—
1	Printer Unit (N) (See Figure 6-6 for breakdown)	136-218454-402-A	—	—	—	—	—	—	—	—	—	—	—	—	1	—
1	Printer Unit (N) (See Figure 6-6 for breakdown)	136-218454-403-A	—	—	—	—	—	—	—	—	—	—	—	—	—	1
2	Logo Label	136-707134-201-A	—	1	—	—	—	—	—	—	—	—	—	—	—	—
2	Logo Label	136-707134-202-A	1	—	1	1	1	—	—	—	—	—	—	—	—	—
2	Logo Label	136-707134-301-A	—	—	—	—	—	1	1	1	1	1	1	—	—	—
2	Logo Label	136-707134-401-A	—	—	—	—	—	—	—	—	—	—	—	—	1	1
3	Control Nameplate	135-707137-201-A	—	1	—	—	—	—	—	—	—	—	—	—	—	—
3	Control Nameplate	135-707137-202-A	1	—	—	—	1	—	—	—	—	—	—	—	—	—
3	Control Nameplate	135-707137-203-A	—	—	1	1	—	—	—	—	—	—	—	—	—	—
3	Control Nameplate	135-707137-301-A	—	—	—	—	—	1	1	1	1	1	1	—	—	—
3	Control Nameplate	135-707137-401-A	—	—	—	—	—	—	—	—	—	—	—	—	1	1
4	Sheet Guide	136-846416-001-A	1	1	1	1	1	—	—	—	—	—	—	—	—	—
4	Sheet Guide	136-846416-301-A	—	—	—	—	—	1	1	1	1	1	1	—	—	—
4	Sheet Guide	136-846416-401-A	—	—	—	—	—	—	—	—	—	—	—	—	1	1
5	Power Cord Set	808-840491-001-A	—	1	—	1	—	—	—	—	—	—	—	—	—	—
5	Power Cord Set	808-840491-003-A	—	—	1	—	—	—	—	—	—	—	—	—	—	—
5	Power Cord Set	808-846004-010-A	1	—	—	—	1	—	—	—	—	—	—	—	1	1
5	Power Cord Set	808-846856-001-A	—	—	—	—	—	1	1	1	—	1	—	—	—	—
5	Power Cord Set	808-846856-002-A	—	—	—	—	—	—	—	—	1	—	1	—	—	—
6	Black Nylon Ribbon	808-867928-301-A	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7**	Black Multistrike Film Ribbon	808-869921-301-A	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8**	Color Nylon Ribbon	808-867928-311-A	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	Reference Sheet	136-843464-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	Paper Set Piece (L)	136-846418-001-A	1	1	1	1	1	—	—	—	—	—	—	—	—	—
10	Paper Set Piece (L)	136-846418-301-A	—	—	—	—	—	1	1	1	1	1	1	—	—	—
10	Paper Set Piece (L)	136-846418-401-A	—	—	—	—	—	—	—	—	—	—	—	—	1	1
11	Paper Set Piece (R)	136-846419-001-A	1	1	1	1	1	—	—	—	—	—	—	—	—	—
11	Paper Set Piece (R)	136-846419-301-A	—	—	—	—	—	1	1	1	1	1	1	—	—	—
11	Paper Set Piece (R)	136-846419-401-A	—	—	—	—	—	—	—	—	—	—	—	—	1	1
12	Silent Canopy Assembly	136-217750-001-A	1	1	1	1	1	—	—	—	—	—	—	—	—	—
12	Silent Canopy Assembly	136-217750-301-A	—	—	—	—	—	1	1	1	1	1	1	—	—	—
12	Silent Canopy Assembly	136-217750-401-A	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Optional Kits:																
13	RS-232C Kit (See Figure 6-37 for breakdown)	136-217741-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	Tractor Unit (S) (See Figure 6-39 for breakdown)	136-218470-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	Tractor Cover (S) Assembly	136-846898-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16	1 Bin Sheet Feeder Unit (S) (See Figure 6-41 for breakdown)	136-218948-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1	1
17	Canopy (S)	136-846890-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1	1
18	Color Kit	136-218469-001-A	1	1	1	1	1	1	1	1	1	1	1	1	1	1

* GRP 200, 208: P6200, 115 V (Japan Production)
 GRP 204, 206: P6200, 230 V (Japan Production)
 GRP 203: P60, 230 V (Japan Production)
 GRP 301 - 306: P60, 230 V (U.K. Production)
 GRP 408: P6200, 115 V (U.S.A. Production)
 GRP 409: P6260, 115 V (U.S.A. Production)

** Optional part

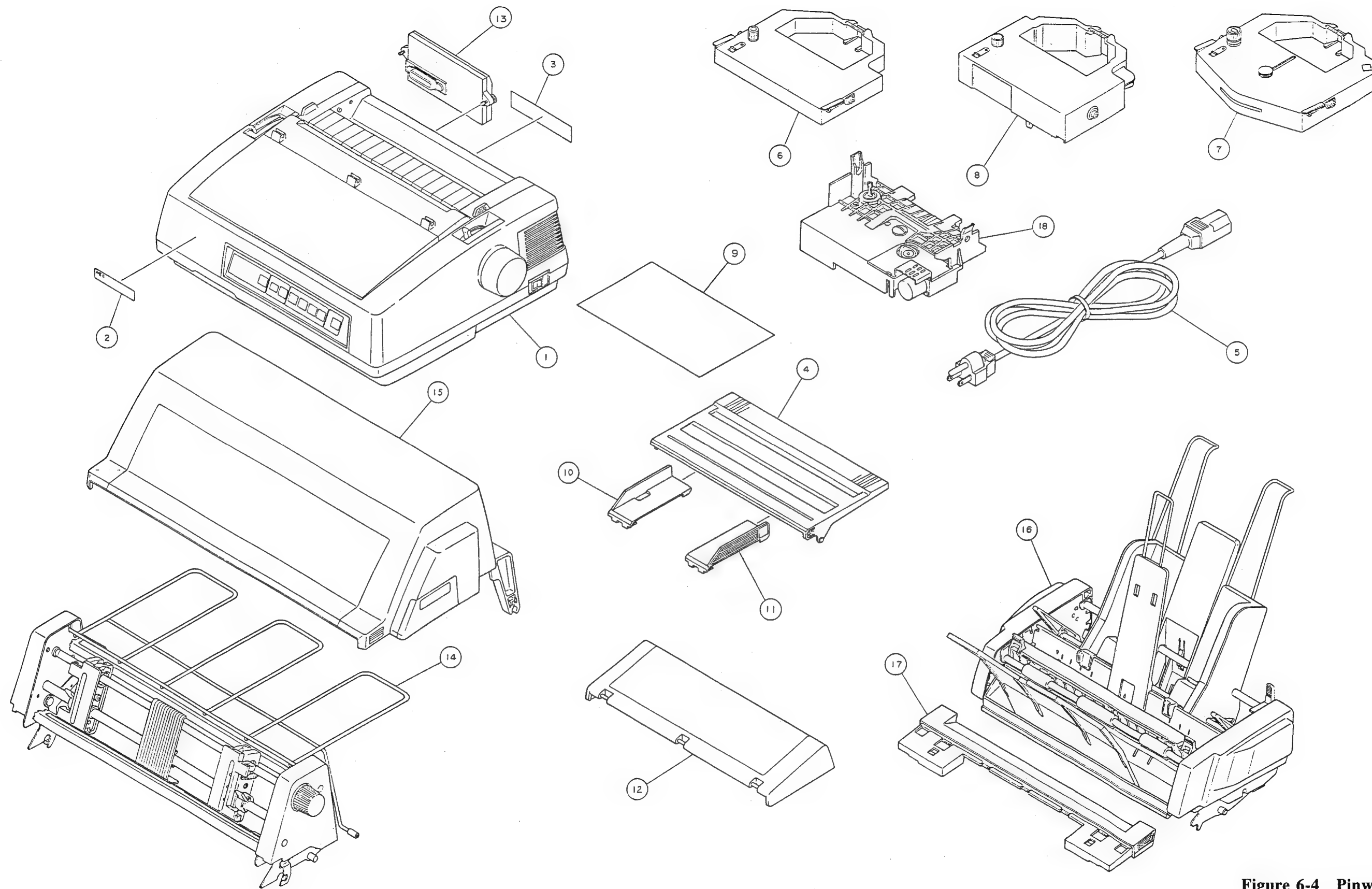


Figure 6-4 Pinwriter P60/P6200

Pinwriter P70/P6300 Major Assembly (136-218451-GRP-0)

ITEM	PART NAME	PART NUMBER	QTY*												
			GRP: 700	703	704	706	708	801	802	803	804	805	806	908	909
1	Printer Unit (N) (See Figure 6-7 for breakdown)	136-218454-700-A	1	—	—	—	—	—	—	—	—	—	—	—	
1	Printer Unit (N) (See Figure 6-7 for breakdown)	136-218454-702-A	—	—	—	—	1	—	—	—	—	—	—	—	
1	Printer Unit (N) (See Figure 6-7 for breakdown)	136-218454-703-A	—	1	1	1	—	—	—	—	—	—	—	—	
1	Printer Unit (N) (See Figure 6-7 for breakdown)	136-218454-803-A	—	—	—	—	—	1	1	1	1	1	1	—	
1	Printer Unit (N) (See Figure 6-7 for breakdown)	136-218454-902-A	—	—	—	—	—	—	—	—	—	—	—	1	
1	Printer Unit (N) (See Figure 6-7 for breakdown)	136-218454-903-A	—	—	—	—	—	—	—	—	—	—	—	1	
2	Logo Label	136-707134-701-A	—	1	—	—	—	—	—	—	—	—	—	—	
2	Logo Label	136-707134-702-A	1	—	1	1	1	—	—	—	—	—	—	—	
2	Logo Label	136-707134-801-A	—	—	—	—	—	1	1	1	1	1	1	—	
2	Logo Label	136-707134-901-A	—	—	—	—	—	—	—	—	—	—	—	1	
3	Control Nameplate	135-707137-701-A	—	1	—	—	—	—	—	—	—	—	—	—	
3	Control Nameplate	135-707137-702-A	1	—	—	—	1	—	—	—	—	—	—	—	
3	Control Nameplate	135-707137-703-A	—	—	1	1	—	—	—	—	—	—	—	—	
3	Control Nameplate	135-707137-801-A	—	—	—	—	—	1	1	1	1	1	1	—	
3	Control Nameplate	135-707137-901-A	—	—	—	—	—	—	—	—	—	—	—	1	
4	Sheet Guide	136-846417-001-A	1	1	1	1	1	—	—	—	—	—	—	—	
4	Sheet Guide	136-846417-301-A	—	—	—	—	—	1	1	1	1	1	1	—	
4	Sheet Guide	136-846417-401-A	—	—	—	—	—	—	—	—	—	—	—	1	
5	Power Cord Set	808-840491-001-A	—	1	—	1	—	—	—	—	—	—	—	—	
5	Power Cord Set	808-840491-003-A	—	—	1	—	—	—	—	—	—	—	—	—	
5	Power Cord Set	808-846004-010-A	1	—	—	—	1	—	—	—	—	—	—	1	
5	Power Cord Set	808-846856-001-A	—	—	—	—	—	1	1	1	—	1	—	—	
5	Power Cord Set	808-846856-002-A	—	—	—	—	—	—	—	—	1	—	1	—	
6	Black Nylon Ribbon	808-867928-301-A	1	1	1	1	1	1	1	1	1	1	1	1	
7**	Black Multistrike Film Ribbon	808-869921-301-A	1	1	1	1	1	1	1	1	1	1	1	1	
8**	Color Nylon Ribbon	808-867928-311-A	1	1	1	1	1	1	1	1	1	1	1	1	
9	Reference Sheet	136-843464-001-A	1	1	1	1	1	1	1	1	1	1	1	1	
10	Paper Set Piece (L)	136-846418-001-A	1	1	1	1	1	—	—	—	—	—	—	—	
10	Paper Set Piece (L)	136-846418-301-A	—	—	—	—	—	1	1	1	1	1	1	—	
10	Paper Set Piece (L)	136-846418-401-A	—	—	—	—	—	—	—	—	—	—	—	1	
11	Paper Set Piece (R)	136-846419-001-A	1	1	1	1	1	—	—	—	—	—	—	—	
11	Paper Set Piece (R)	136-846419-301-A	—	—	—	—	—	1	1	1	1	1	1	—	
11	Paper Set Piece (R)	136-846419-401-A	—	—	—	—	—	—	—	—	—	—	—	1	
12	Silent Canopy Assembly	136-217750-001-A	1	1	1	1	1	—	—	—	—	—	—	—	
12	Silent Canopy Assembly	136-217750-301-A	—	—	—	—	—	1	1	1	1	1	1	—	
12	Silent Canopy Assembly	136-217750-401-A	—	—	—	—	—	—	—	—	—	—	—	1	
Optional Kits:															
13	RS-232C Kit (See Figure 6-37 for breakdown)	136-217741-001-A	1	1	1	1	1	1	1	1	1	1	1	1	
14	Tractor Unit (S) (See Figure 6-39 for breakdown)	136-218470-001-A	1	1	1	1	1	1	1	1	1	1	1	1	
15	Tractor Cover (S) Assembly	136-846898-001-A	1	1	1	1	1	1	1	1	1	1	1	1	
16	1 Bin Sheet Feeder Unit (S) (See Figure 6-41 for breakdown)	136-218948-001-A	1	1	1	1	1	1	1	1	1	1	1	1	
17	Canopy (S)	136-846890-001-A	1	1	1	1	1	1	1	1	1	1	1	1	
18	2Bin Sheet Feeder Unit (L) (See Figure 6-47 for breakdown)	136-218949-501-A	1	1	1	1	1	1	1	1	1	1	1	1	
19	Color Kit	136-218469-001-A	1	1	1	1	1	1	1	1	1	1	1	1	

Illustrated Parts Breakdown

* GRP 700, 708: P6200, 115 V (Japan Production)
 GRP 704, 706: P6200, 230 V (Japan Production)
 GRP 703: P60, 230 V (Japan Production)
 GRP 801 - 806: P60, 230 V (U.K. Production)
 GRP 908: P6200, 115 V (U.S.A. Production)
 GRP 909: P6260, 115 V (U.S.A. Production)

** Optional part

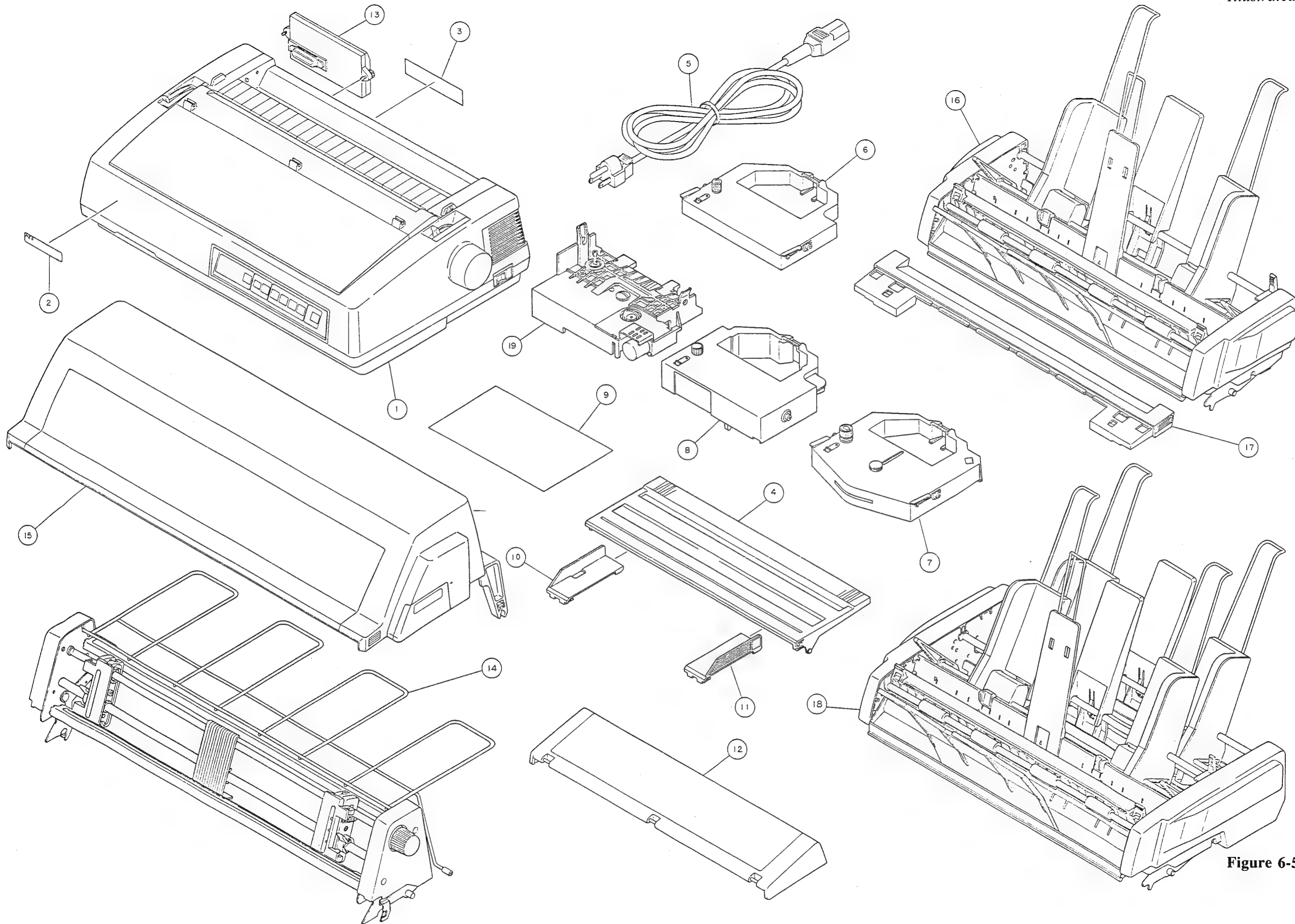


Figure 6-5 Pinwriter P70/P6300

Printer Unit (N) (136-218454-GRP-A)

ITEM	PART NAME	PART NUMBER	QTY*						
			200	202	203	303	402	403	
1	Mechanism Unit (N) (See Figure 6-8 for breakdown)	136-218455-001-A	1	1	1	1	1	1	1
2	MSC-24 P/H Assembly	136-218474-002-A	1	1	1	1	1	1	1
3	Housing Unit	136-215357-001-A	1	1	1	1	1	1	1
3	Housing Unit	136-215357-301-A	1	1	1	1	1	1	1
3	Housing Unit	136-215357-401-A	1	1	1	1	1	1	1
3-1	Base Cover Assembly (N) (See Figure 6-23 for breakdown)	136-215363-001-A	1	1	1	1	1	1	1
3-1	Base Cover Assembly (N)	136-215363-301-A	1	1	1	1	1	1	1
3-1	Base Cover Assembly (N) (See Figure 6-23 for breakdown)	136-215363-401-A	1	1	1	1	1	1	1
3-2	Upper Cover Assembly (N) (See Figure 6-23 for breakdown)	136-215358-001-A	1	1	1	1	1	1	1
3-2	Upper Cover Assembly (N) (See Figure 6-25 for breakdown)	136-215358-301-A	1	1	1	1	1	1	1
3-2	Upper Cover Assembly (N) (See Figure 6-25 for breakdown)	136-215358-401-A	1	1	1	1	1	1	1
3-201	Screw, CPIMSx4x8x3GF	805-000104-008-0	1	1	1	1	1	1	1
3-202	Washer, #2STLWAx4x3GF	808-866295-102-A	1	1	1	1	1	1	1
3-203	Washer, PIWAx4x3GF	805-610104-0	1	1	1	1	1	1	1
4	PSD Operator Panel (See Figure 6-27 for breakdown)	808-818170-301-A	1	1	1	1	1	1	1
5	PSD Power (B) (See Figure 6-28 for breakdown)	808-891104-002-A	1	1	1	1	1	1	1
5	PSD Power (C) (See Figure 6-29 for breakdown)	808-891104-003-A	1	1	1	1	1	1	1
5	PSD Power (C) (See Figure 6-30 for breakdown)	808-891104-303-A	1	1	1	1	1	1	1
6	G8ESPA PCB Assembly (See Figure 6-31 for breakdown)	136-436268-001-A	1	1	1	1	1	1	1
6	G8ESPB PCB Assembly (See Figure 6-32 for breakdown)	136-436268-002-A	1	1	1	1	1	1	1
6	G8ESQA PCB Assembly (See Figure 6-33 for breakdown)	136-436269-001-A	1	1	1	1	1	1	1
6	G8ESR PCB Assembly (See Figure 6-34 for breakdown)	136-436270-001-A	1	1	1	1	1	1	1
7	G8ESTA PCB Assembly (See Figure 6-35 for breakdown)	136-436272-001-A	1	1	1	1	1	1	1
7	G8ESV PCB Assembly (See Figure 6-36 for breakdown)	136-436274-001-A	1	1	1	1	1	1	1
8	DC Cable	808-857768-101-A	1	1	1	1	1	1	1
9	Platen Knob	136-846283-001-A	1	1	1	1	1	1	1
10	Font Holder	136-843451-001-A	1	1	1	1	1	1	1
10	Font Holder	136-843451-301-A	1	1	1	1	1	1	1
10	Font Holder	136-843451-401-A	1	1	1	1	1	1	1
11	Shield Cover Assembly	136-217753-001-A	1	1	1	1	1	1	1
12	Cable Cover	136-843463-001-A	1	1	1	1	1	1	1
12	Cable Cover	136-843463-301-A	1	1	1	1	1	1	1
12	Cable Cover	136-843463-401-A	1	1	1	1	1	1	1
13	Carrier Cable Cover	136-843457-001-A	1	1	1	1	1	1	1
13	Carrier Cable Cover	136-843457-301-A	1	1	1	1	1	1	1
13	Carrier Cable Cover	136-843457-401-A	1	1	1	1	1	1	1
14	Power Switch Cable	808-857767-001-A	1	1	1	1	1	1	1
14	Power Switch Cable	808-857767-002-A	1	1	1	1	1	1	1
15	Shield Plate	136-846894-001-A	1	1	1	1	1	1	1
16	FG Spring	136-846906-001-A	1	1	1	1	1	1	1
201	Screw, PL-CPIMSx5x8x15BF	805-300005-008-0	4	4	4	4	4	4	4
202	Screw, BCBTSx4x10x15BF	808-802044-410-0	2	2	2	2	2	2	2
203	Screw, PL-CPIMSx3x8x15BF	808-300003-008-0	20	20	20	20	20	20	20
204	Screw, PL-CPIMSx4x8x15BF	805-300004-008-0	1	1	1	1	1	1	1
205	Special Screw	136-852788-001-A	3	3	3	3	3	3	3
206	Screw, PL-CPIMSx3x10x15BF	805-300003-010-0	2	2	2	2	2	2	2

* GRP 200, 202: P6200, 115 V (Japan Production)
 GRP 203: P60/P6200, 230 V (Japan Production)
 GRP 303: P60, 230 V (U.K. Production)
 GRP 402: P6200, 115 V (U.S.A. Production)
 GRP 403: P6260, 115 V (U.S.A. Production)

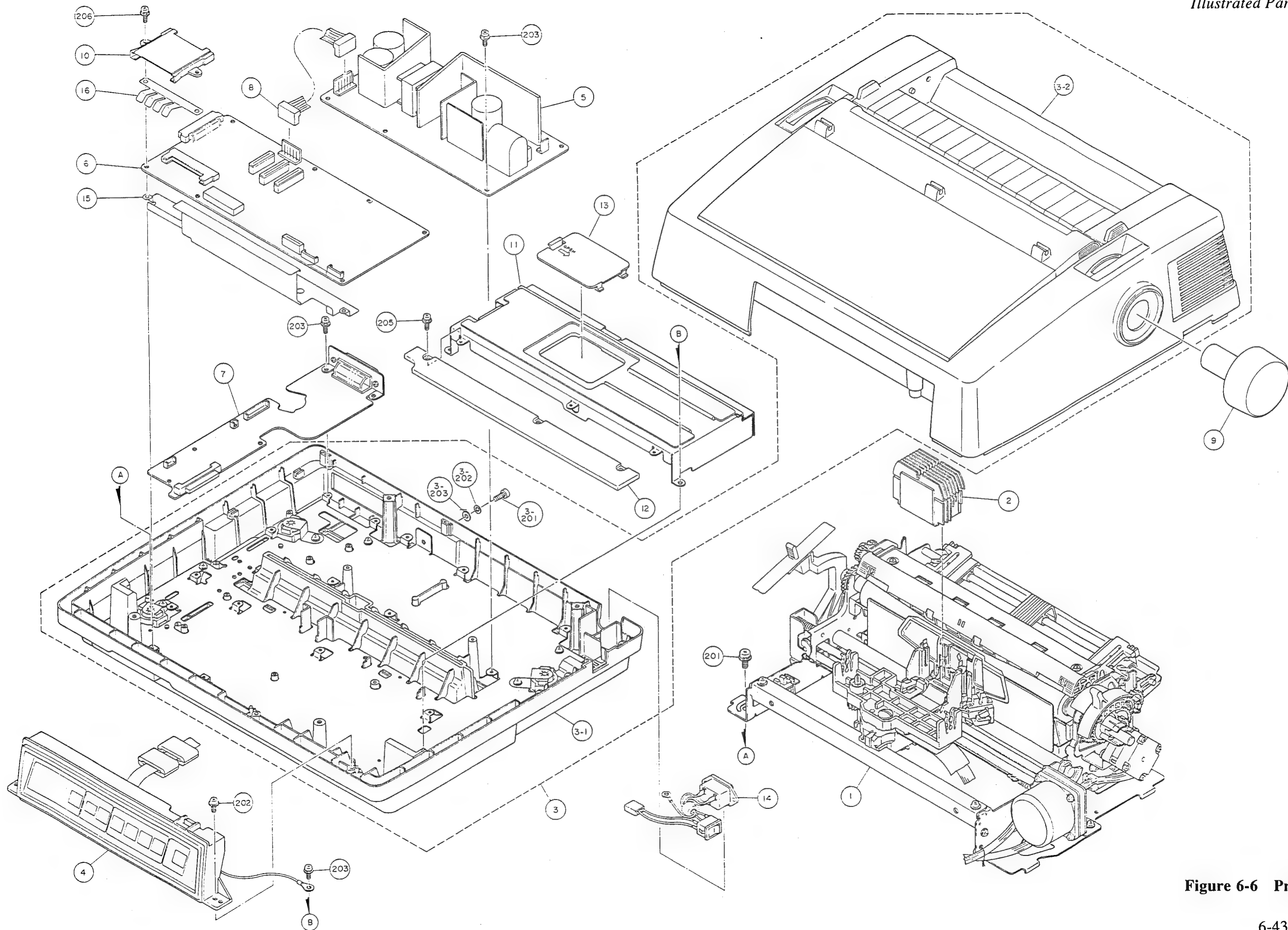


Figure 6-6 Printer Unit (N)

Printer Unit (W) (136-218454-GRP-A)

Illustrated Parts Breakdown

ITEM	PART NAME	PART NUMBER	QTY*						
			700	702	703	803	902	903	
1	Mechanism Unit (W) (See Figure 6-9 for breakdown)	136-218455-501-A	1	1	1	1	1	1	1
2	MSC-24 P/H Assembly	136-218474-002-A	1	1	1	1	1	1	1
3	Housing Unit	136-215357-501-A	1	1	1	1	1	1	1
3	Housing Unit	136-215357-801-A	1	1	1	1	1	1	1
3	Housing Unit	136-215357-901-A	1	1	1	1	1	1	1
3-1	Base Cover Assembly (W) (See Figure 6-24 for breakdown)	136-215363-501-A	1	1	1	1	1	1	1
3-1	Base Cover Assembly (W)	136-215363-801-A	1	1	1	1	1	1	1
3-1	Base Cover Assembly (W) (See Figure 6-24 for breakdown)	136-215363-901-A	1	1	1	1	1	1	1
3-2	Upper Cover Assembly (W) (See Figure 6-24 for breakdown)	136-215358-501-A	1	1	1	1	1	1	1
3-2	Upper Cover Assembly (W) (See Figure 6-26 for breakdown)	136-215358-801-A	1	1	1	1	1	1	1
3-2	Upper Cover Assembly (W) (See Figure 6-26 for breakdown)	136-215358-901-A	1	1	1	1	1	1	1
3-201	Screw, CPIMSx4x8x3GF	805-000104-008-0	1	1	1	1	1	1	1
3-202	Washer, #2STLWAx4x3GF	808-866295-102-A	1	1	1	1	1	1	1
3-203	Washer, PIWAx4x3GF	805-610104-0	1	1	1	1	1	1	1
4	PSD Operator Panel (See Figure 6-27 for breakdown)	808-818170-301-A	1	1	1	1	1	1	1
5	PSD Power (B) (See Figure 6-28 for breakdown)	808-891104-002-A	1	1	1	1	1	1	1
5	PSD Power (C) (See Figure 6-29 for breakdown)	808-891104-003-A	1	1	1	1	1	1	1
5	PSD Power (C) (See Figure 6-30 for breakdown)	808-891104-303-A	1	1	1	1	1	1	1
6	G8ESPA PCB Assembly (See Figure 6-31 for breakdown)	136-436268-001-A	1	1	1	1	1	1	1
6	G8ESPB PCB Assembly (See Figure 6-32 for breakdown)	136-436268-002-A	1	1	1	1	1	1	1
6	G8ESQA PCB Assembly (See Figure 6-33 for breakdown)	136-436269-001-A	1	1	1	1	1	1	1
6	G8ESR PCB Assembly (See Figure 6-34 for breakdown)	136-436270-001-A	1	1	1	1	1	1	1
7	G8ESTA PCB Assembly (See Figure 6-35 for breakdown)	136-436272-001-A	1	1	1	1	1	1	1
7	G8ESV PCB Assembly (See Figure 6-36 for breakdown)	136-436274-001-A	1	1	1	1	1	1	1
8	DC Cable	808-857768-201-A	1	1	1	1	1	1	1
9	Platen Knob	136-846283-001-A	1	1	1	1	1	1	1
10	Font Holder	136-843451-001-A	1	1	1	1	1	1	1
10	Font Holder	136-843451-301-A	1	1	1	1	1	1	1
10	Font Holder	136-843451-401-A	1	1	1	1	1	1	1
11	Shield Cover Assembly	136-217753-001-A	1	1	1	1	1	1	1
12	Cable Cover	136-843463-001-A	1	1	1	1	1	1	1
12	Cable Cover	136-843463-301-A	1	1	1	1	1	1	1
12	Cable Cover	136-843463-401-A	1	1	1	1	1	1	1
13	Carrier Cable Cover	136-843457-001-A	1	1	1	1	1	1	1
13	Carrier Cable Cover	136-843457-301-A	1	1	1	1	1	1	1
13	Carrier Cable Cover	136-843457-401-A	1	1	1	1	1	1	1
14	Power Switch Cable	808-857767-001-A	1	1	1	1	1	1	1
14	Power Switch Cable	808-857767-002-A	1	1	1	1	1	1	1
15	Shield Plate	136-846894-501-A	1	1	1	1	1	1	1
16	FG Spring	136-846906-001-A	1	1	1	1	1	1	1
201	Screw, PL-CPIMSx5x8x15BF	805-300005-008-0	4	4	4	4	4	4	4
202	Screw, BCBTSx4x10x15BF	808-802044-410-0	2	2	2	2	2	2	2
203	Screw, PL-CPIMSx3x8x15BF	808-300003-008-0	20	20	20	20	20	20	20
204	Screw, PL-CPIMSx4x8x15BF	805-300004-008-0	1	1	1	1	1	1	1
205	Special Screw	136-852788-001-A	3	3	3	3	3	3	3
206	Screw, PL-CPIMSx3x10x15BF	805-300003-010-0	2	2	2	2	2	2	2

* GRP 700, 702: P6300, 115 V (Japan Production)
 GRP 703: P70/P6300, 230 V (Japan Production)
 GRP 803: P70, 230 V (U.K. Production)
 GRP 902: P6300, 115 V (U.S.A. Production)
 GRP 903: P6360, 115 V (U.S.A. Production)

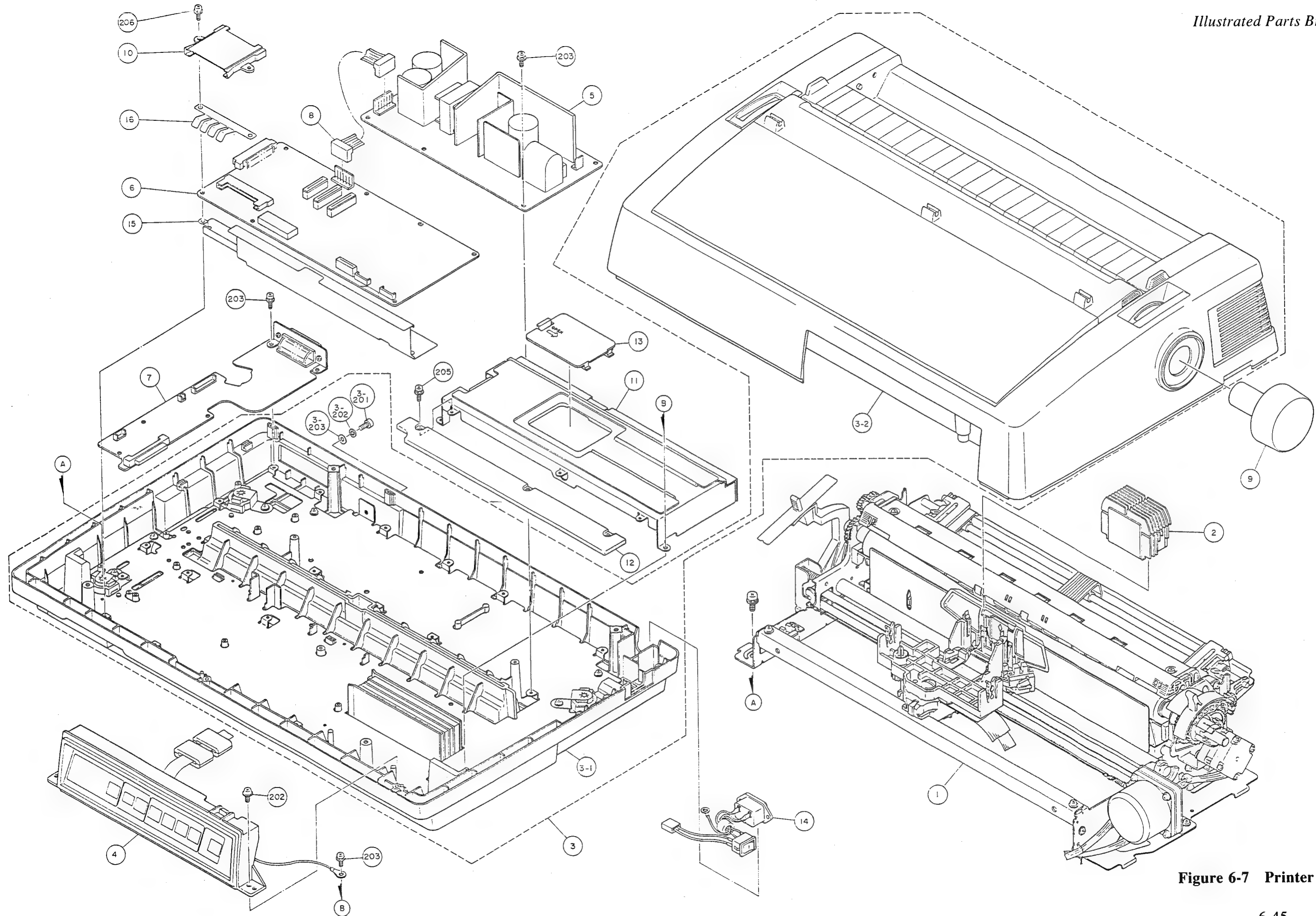


Figure 6-7 Printer Unit (W)

Illustrated Parts Breakdown

Mechanism Unit (N) (136-218455-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Frame Unit (N) (See Figure 6-10 for breakdown)	136-218456-001-A	1
2	Ribbon Base (Black) Assembly	136-218465-001-A	1
3	Tractor Unit (N) (See Figure 6-19 for breakdown)	136-218463-001-A	1
4	Feed Roller Unit (N) (See Figure 6-21 for breakdown)	136-218464-001-A	1
201	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A	2

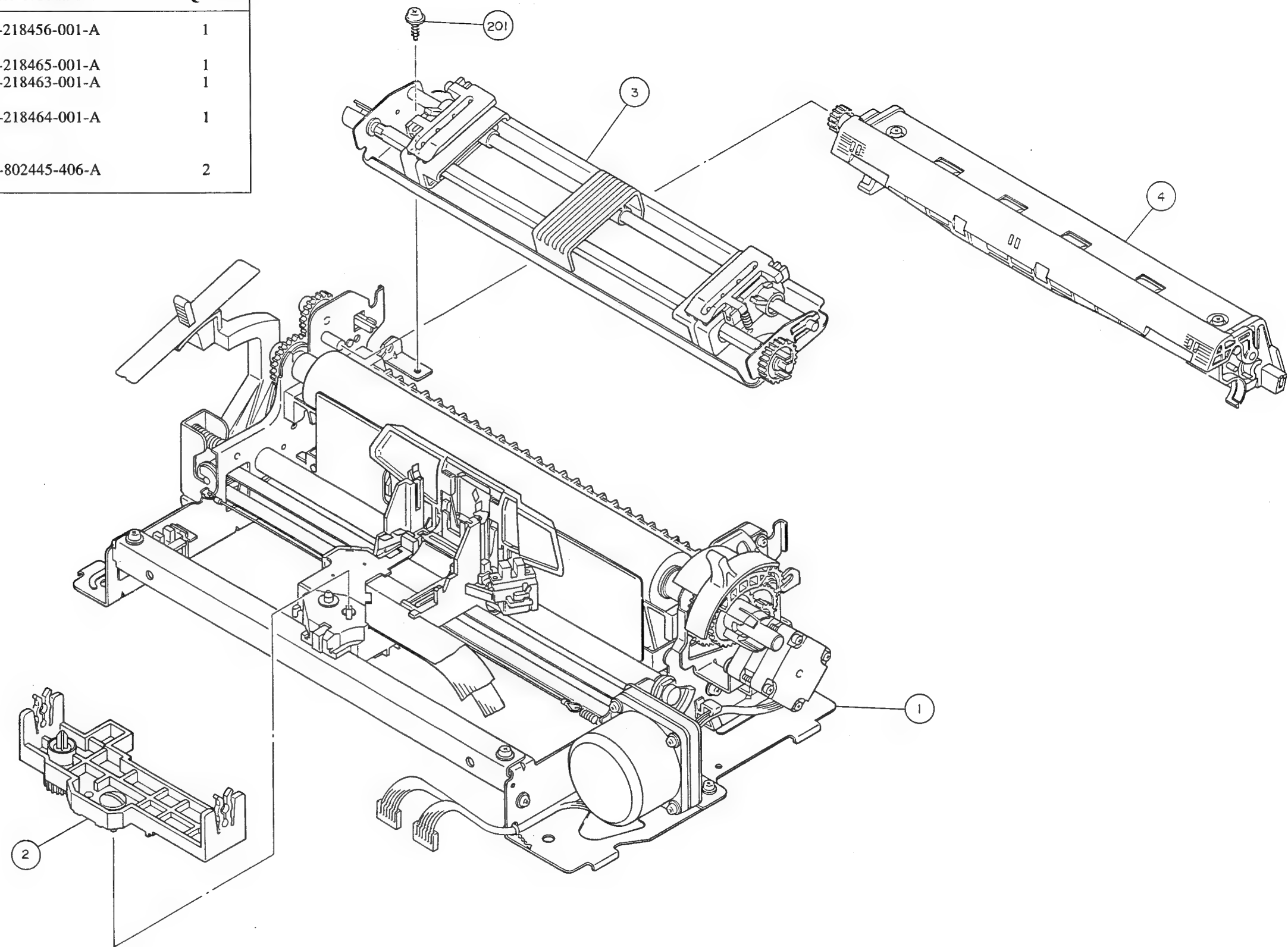


Figure 6-8 Mechanism Unit (N)

Mechanism Unit (W) (136-218455-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Frame Unit (W) (See Figure 6-11 for breakdown)	136-218456-501-A	1
2	Ribbon Base (Black) Assembly	136-218465-001-A	1
3	Tractor Unit (W) (See Figure 6-20 for breakdown)	136-218463-501-A	1
4	Feed Roller Unit (W) (See Figure 6-22 for breakdown)	136-218464-501-A	1
201	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A	2

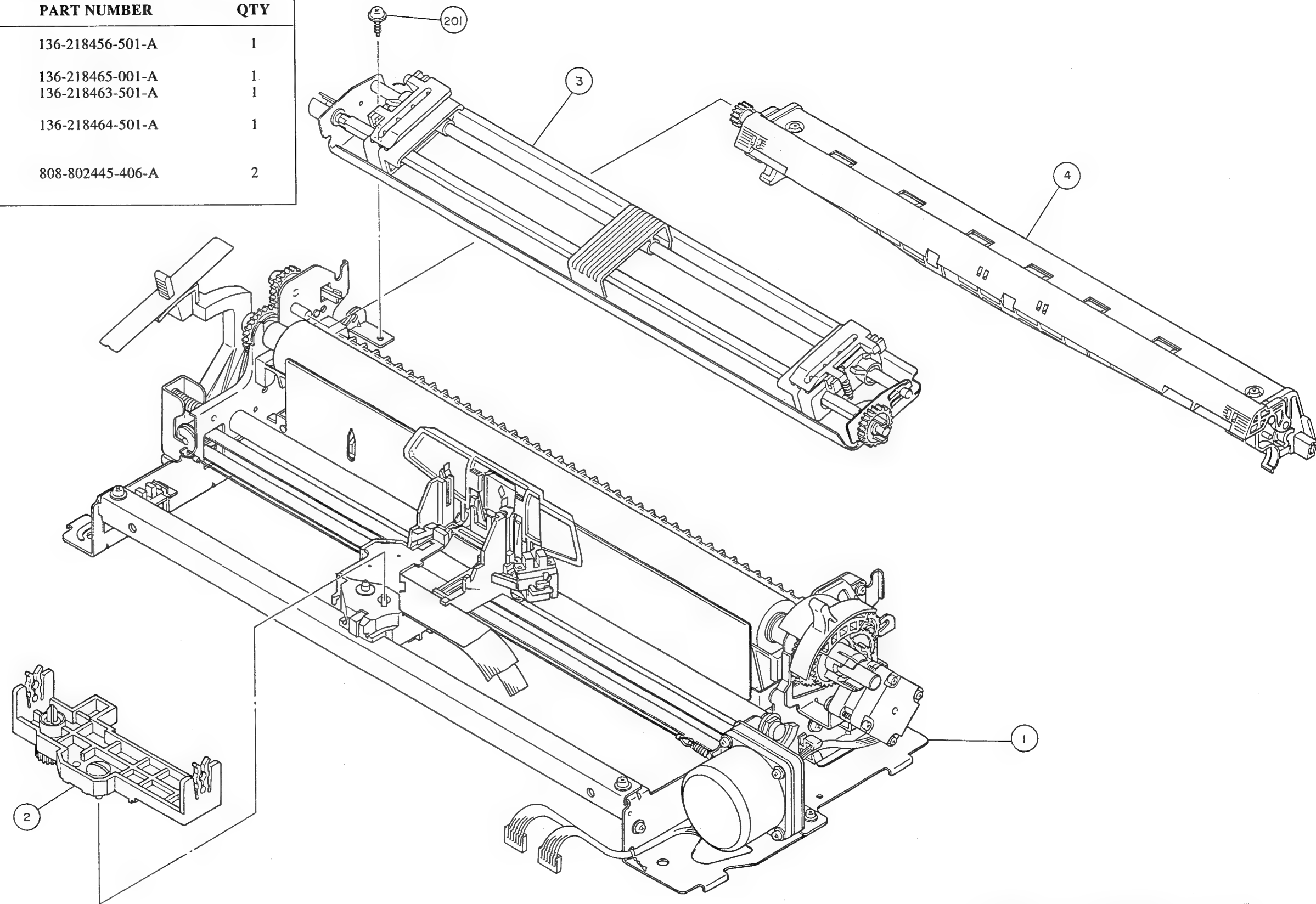


Figure 6-9 Mechanism Unit (W)

Illustrated Parts Breakdown

Frame Unit (N) (136-218456-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Frame Assembly (N) (See Figure 6-12 for breakdown)	136-218457-001-A	1
2	Paper Release Arm	136-846287-001-A	1
3	LF Motor Unit	136-218460-001-A	1
3-1	LF Motor Frame Subassembly	136-846276-001-A	1
3-2	Slide Gear	136-846311-001-A	1
3-3	Slide Gear Spring	136-846312-001-A	1
3-4	LF Gear	136-846310-001-A	1
3-5	LF Motor Assembly	808-869546-001-A	1
3-6	LF Plate	136-854346-001-A	1
3-201	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0	3
4	SP Motor Unit	136-218459-001-A	1
4-1	SP Motor Bracket	136-846308-001-A	1
4-2	SP Motor Assembly	808-869545-001-A	1
4-3	FG Plate (SP)	136-846309-001-A	1
4-201	Screw, STCS-CPIMSx4x10x15BF	808-802445-410-A	4
5	Platen Assembly (N) (See Figure 6-16 for breakdown)	136-218461-001-A	1
6	Option Gear	136-846288-001-A	1
7	H.P Sensor Assembly	808-820754-001-A	1
8	Sensor & SW Assembly	808-820753-001-A	1
9	Carrier Unit (N)	136-218462-001-A	1
9-1	Carrier Assembly (N) (See Figure 6-18 for breakdown)	136-846266-001-A	1
9-2	Carrier Cable (N) Assembly	808-812392-001-A	1
10	Guide Shaft (N)	136-846284-001-A	1
11	Eccentric Bushing	136-846383-001-A	1
12	Gap Adjust Lever	136-846285-001-A	1
13	Lever Sheet	136-846438-002-A	1
14	Tension Arm Assembly	136-846302-001-A	1
14-1	Driven Pulley Assembly	136-846371-001-A	1
14-2	Driven Bushing (Roller Bearing)	808-868150-001-A	1
14-3	Driven Pulley Shaft	136-846380-001-A	1
14-4	Tension Arm	136-846370-001-A	1
14-5	Driven Pulley Collar	136-854413-001-A	1
15	Belt Tension Spring	136-846373-001-A	1
16	Wire Tension Spring	136-846356-001-A	1
201	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A	7
202	Screw, PL-CPIMSx4x10x15BF	808-300004-010-A	1
203	Screw, STSL-CPIMSx3x8x15BF	808-802446-308-A	2
204	Vinyl Twist-Tie	808-835074-005-A	1

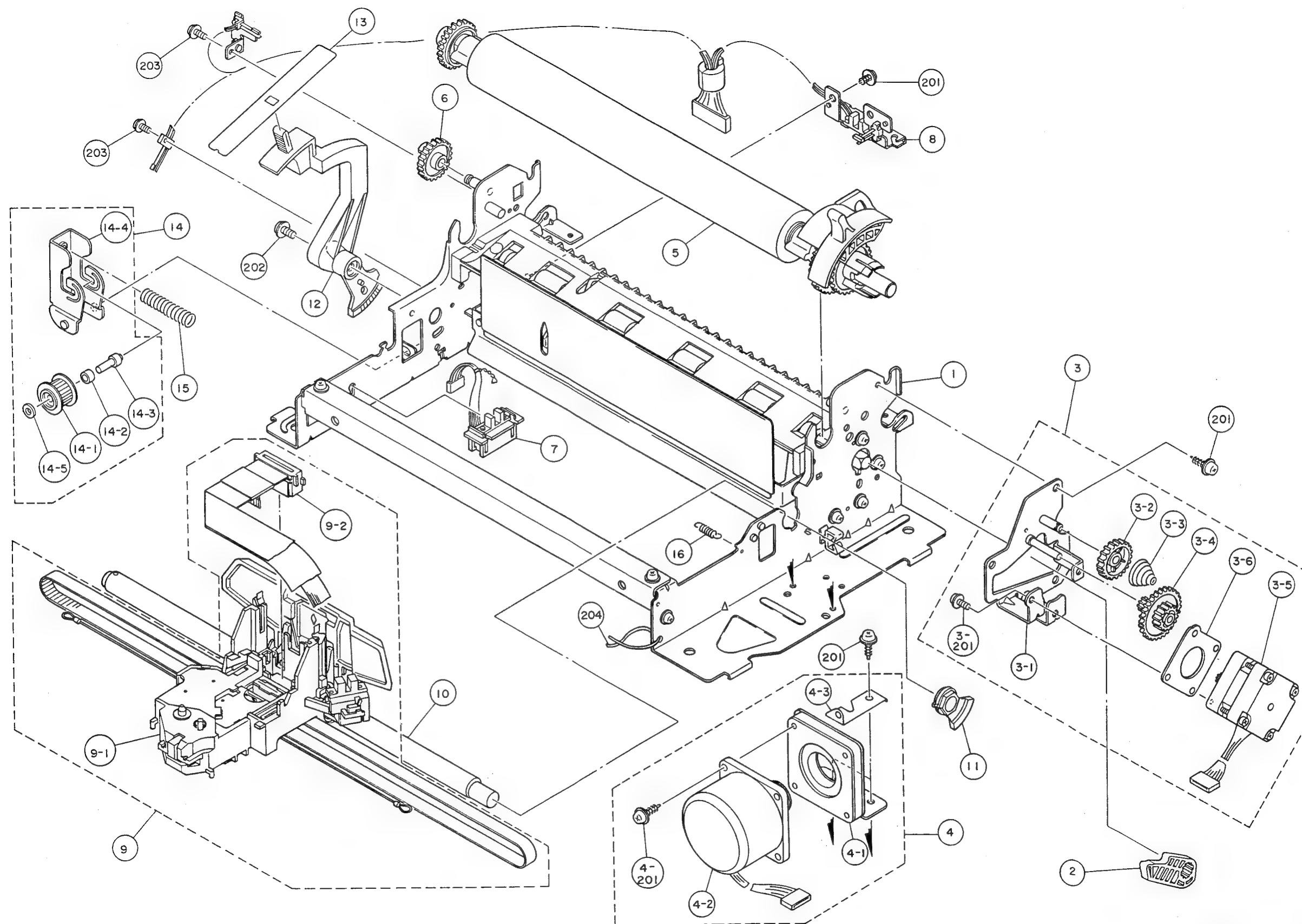


Figure 6-10 Frame Unit (N)

Illustrated Parts Breakdown

Frame Unit (W) (136-218456-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Frame Assembly (W) (See Figure 6-13 for breakdown)	136-218457-501-A	1
2	Paper Release Arm	136-846287-001-A	1
3	LF Motor Unit	136-218460-001-A	1
3-1	LF Motor Frame Subassembly	136-846276-001-A	1
3-2	Slide Gear	136-846311-001-A	1
3-3	Slide Gear Spring	136-846312-001-A	1
3-4	LF Gear	136-846310-001-A	1
3-5	LF Motor Assembly	808-869546-001-A	1
3-6	LF Plate	136-854346-001-A	1
3-201	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0	3
4	SP Motor Unit	136-218459-001-A	1
4-1	SP Motor Bracket	136-846308-001-A	1
4-2	SP Motor Assembly	808-869545-001-A	1
4-3	FG Plate (SP)	136-846309-001-A	1
4-201	Screw, STCS-CPIMSx4x10x15BF	808-802445-410-A	4
5	Platen Assembly (W) (See Figure 6-17 for breakdown)	136-218461-501-A	1
6	Option Gear	136-846288-001-A	1
7	H.P Sensor Assembly	808-820754-001-A	1
8	Sensor & SW Assembly	808-820753-001-A	1
9	Carrier Unit (W)	136-218462-501-A	1
9-1	Carrier Assembly (W) (See Figure 6-18 for breakdown)	136-846266-501-A	1
9-2	Carrier Cable (W) Assembly	808-812392-501-A	1
10	Guide Shaft (W)	136-846284-501-A	1
11	Eccentric Bushing	136-846383-001-A	1
12	Gap Adjust Lever	136-846285-001-A	1
13	Lever Sheet	136-846438-002-A	1
14	Tension Arm Assembly	136-846302-001-A	1
14-1	Driven Pulley Assembly	136-846371-001-A	1
14-2	Driven Bushing (Roller Bearing)	808-868150-001-A	1
14-3	Driven Pulley Shaft	136-846380-001-A	1
14-4	Tension Arm	136-846370-001-A	1
14-5	Driven Pulley Collar	136-854413-001-A	1
15	Belt Tension Spring	136-846373-001-A	1
16	Wire Tension Spring	136-846356-001-A	1
201	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A	7
202	Screw, PL-CPIMSx4x10x15BF	808-300004-010-A	1
203	Screw, STSL-CPIMSx3x8x15BF	808-802446-308-A	2
204	Vinyl Twist-Tie	808-835074-005-A	1

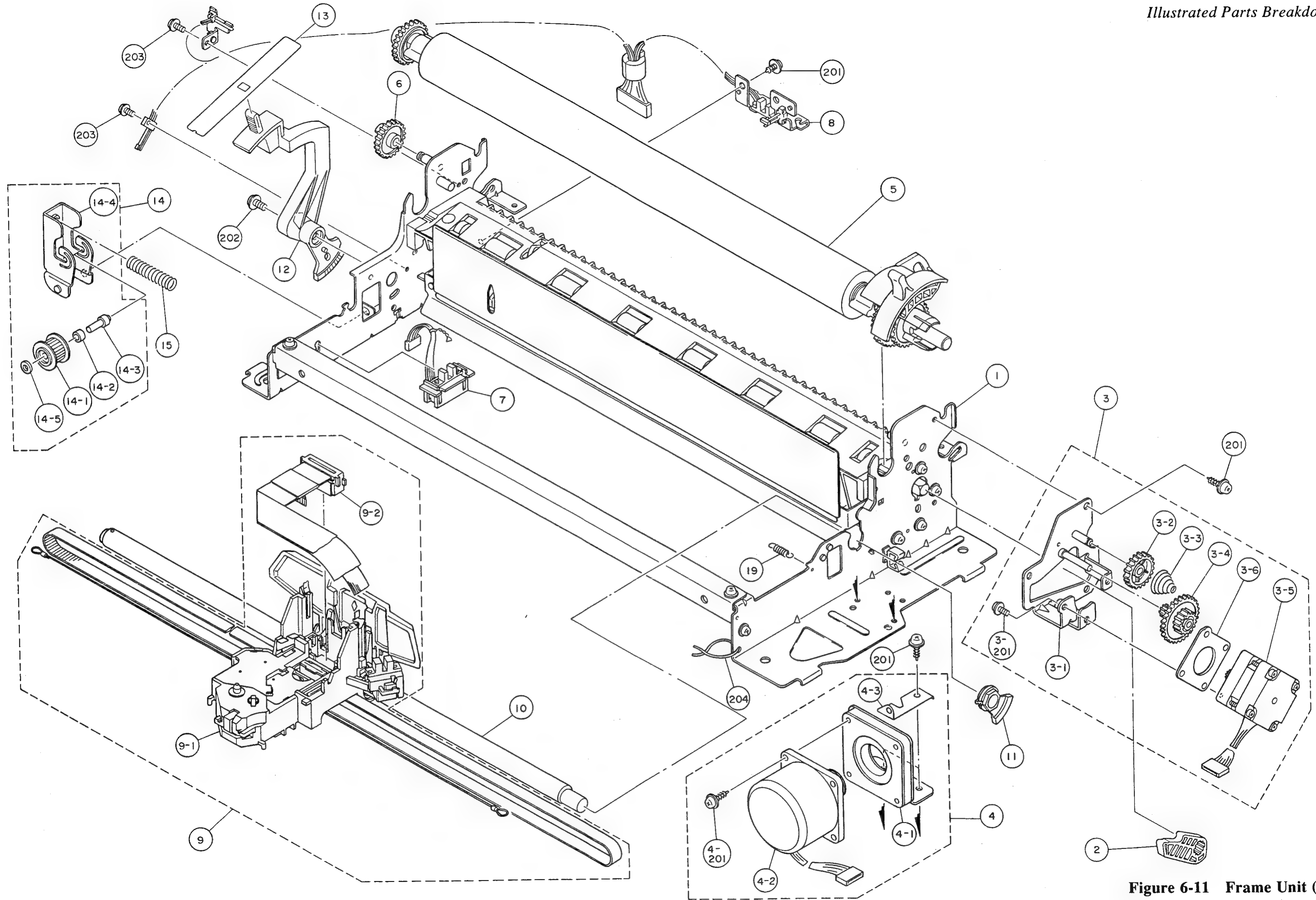
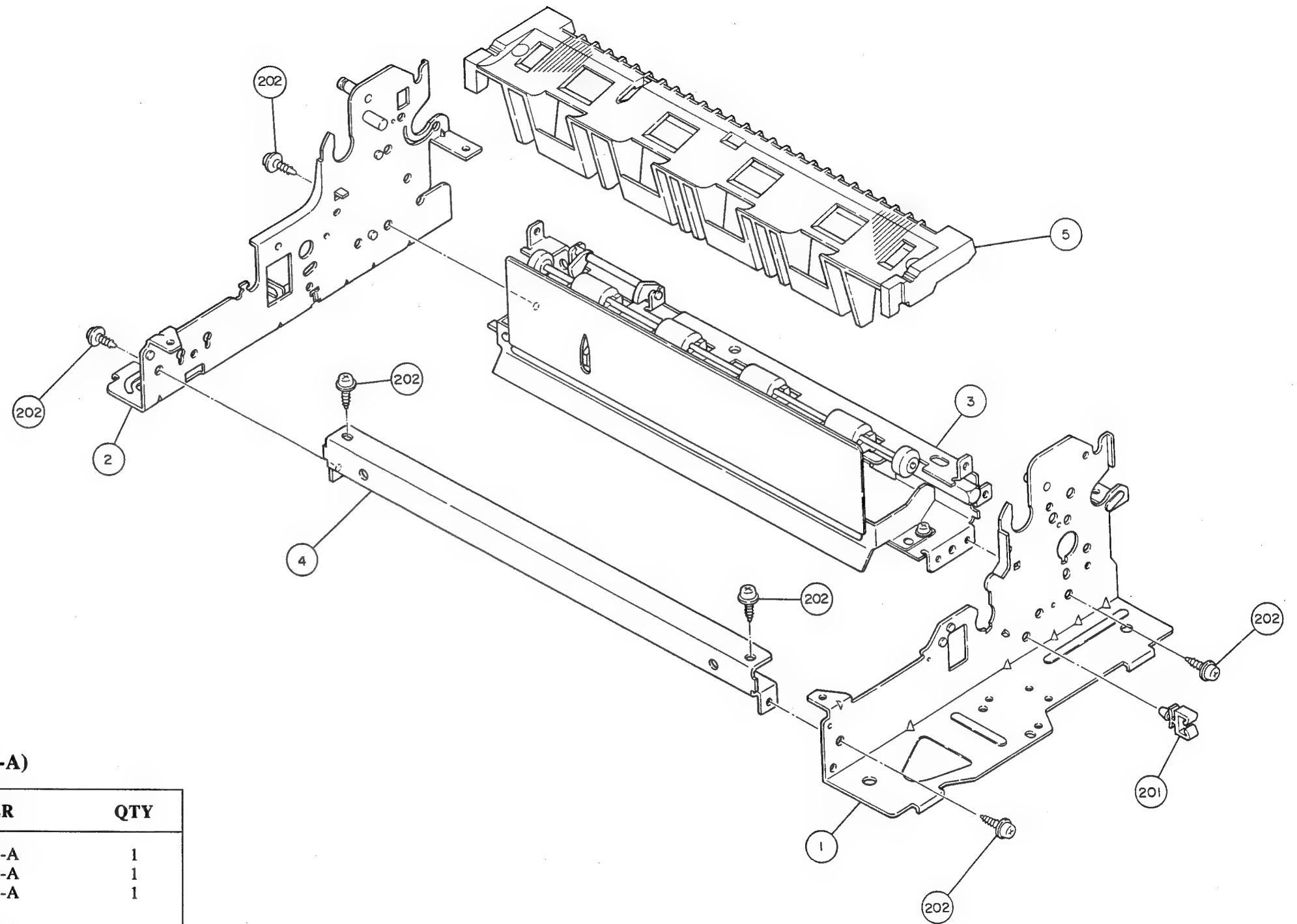


Figure 6-11 Frame Unit (W)

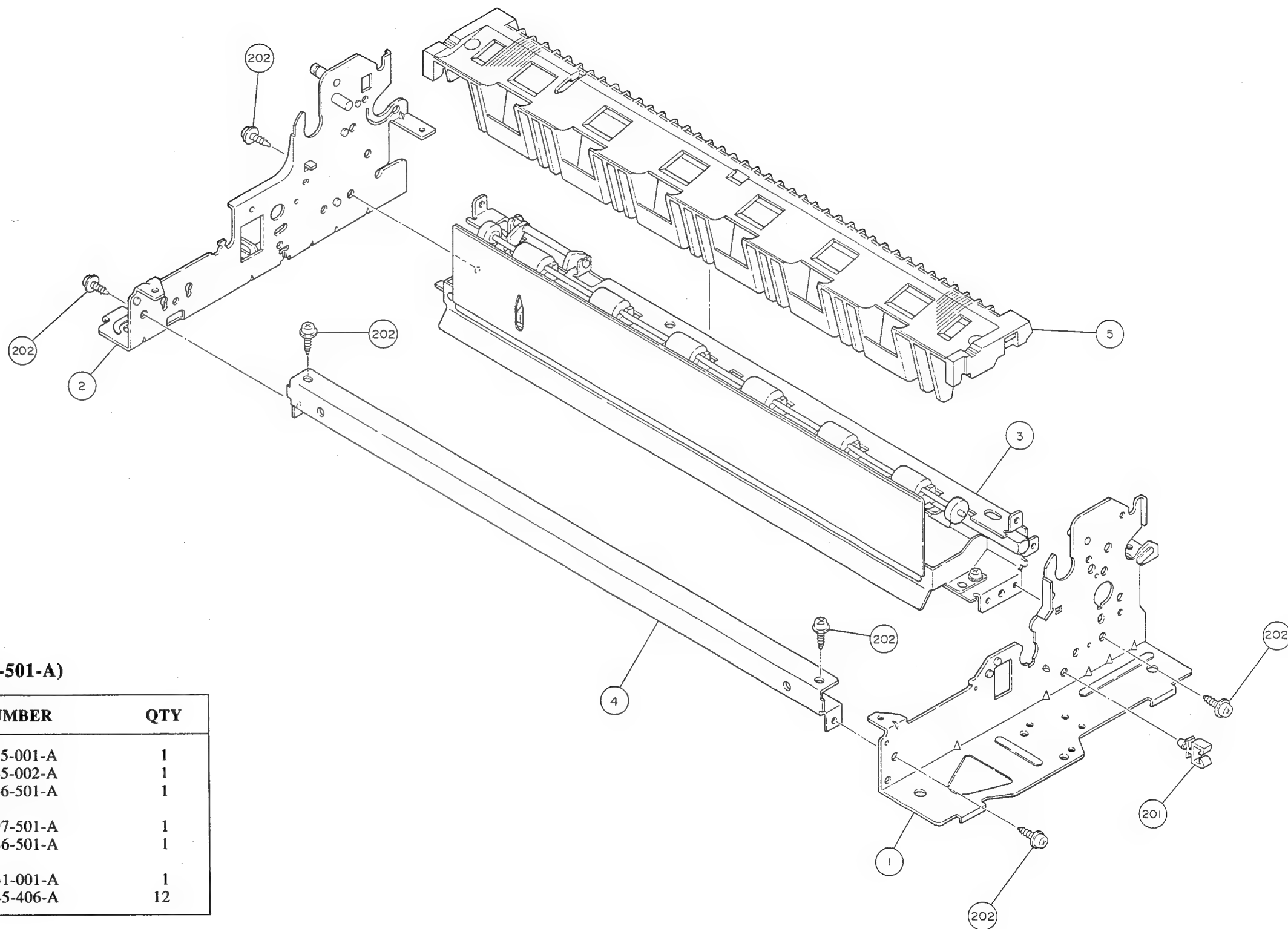
Illustrated Parts Breakdown



Frame Assembly (N) (136-218457-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Right Side Frame Subassembly	136-846265-001-A	1
2	Left Side Frame Subassembly	136-846265-002-A	1
3	Main Stay Assembly (N) (See Figure 6-14 for breakdown)	136-218466-001-A	1
4	Front Stay (N)	136-846297-001-A	1
5	Paper Guide (N)	136-846286-001-A	1
201	Wire Saddle WS-1NS	808-811031-001-A	1
202	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A	12

Figure 6-12 Frame Assembly (N)



Frame Assembly (W) (136-218457-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Right Side Frame Subassembly	136-846265-001-A	1
2	Left Side Frame Subassembly	136-846265-002-A	1
3	Main Stay Assembly (W) (See Figure 6-15 for breakdown)	136-218466-501-A	1
4	Front Stay (W)	136-846297-501-A	1
5	Paper Guide (W)	136-846286-501-A	1
201	Wire Saddle WS-1NS	808-811031-001-A	1
202	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A	12

Figure 6-13 Frame Assembly (W)

Illustrated Parts Breakdown

Main Stay Assembly (N) (136-218466-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Main Stay (N)	136-846337-001-A	1
2	Rear Paper End Lever	136-846344-001-A	1
3	Bottom MDL Lever	136-846345-001-A	1
4	Roller Support	136-846339-001-A	4
5	Roller Support Spring	136-846306-001-A	4
6	Roller Support Bracket	136-846338-001-A	4
7	Release Shaft (N)	136-846340-001-A	1
8	Pressure Roller (N)	136-846341-001-A	1
9	Pressure Roller (F)	136-846342-001-A	4
10	Pressure Spring (N)	136-846406-001-A	4
11	Bottom Guide Assembly (N)	136-846277-001-A	1
201	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A	2

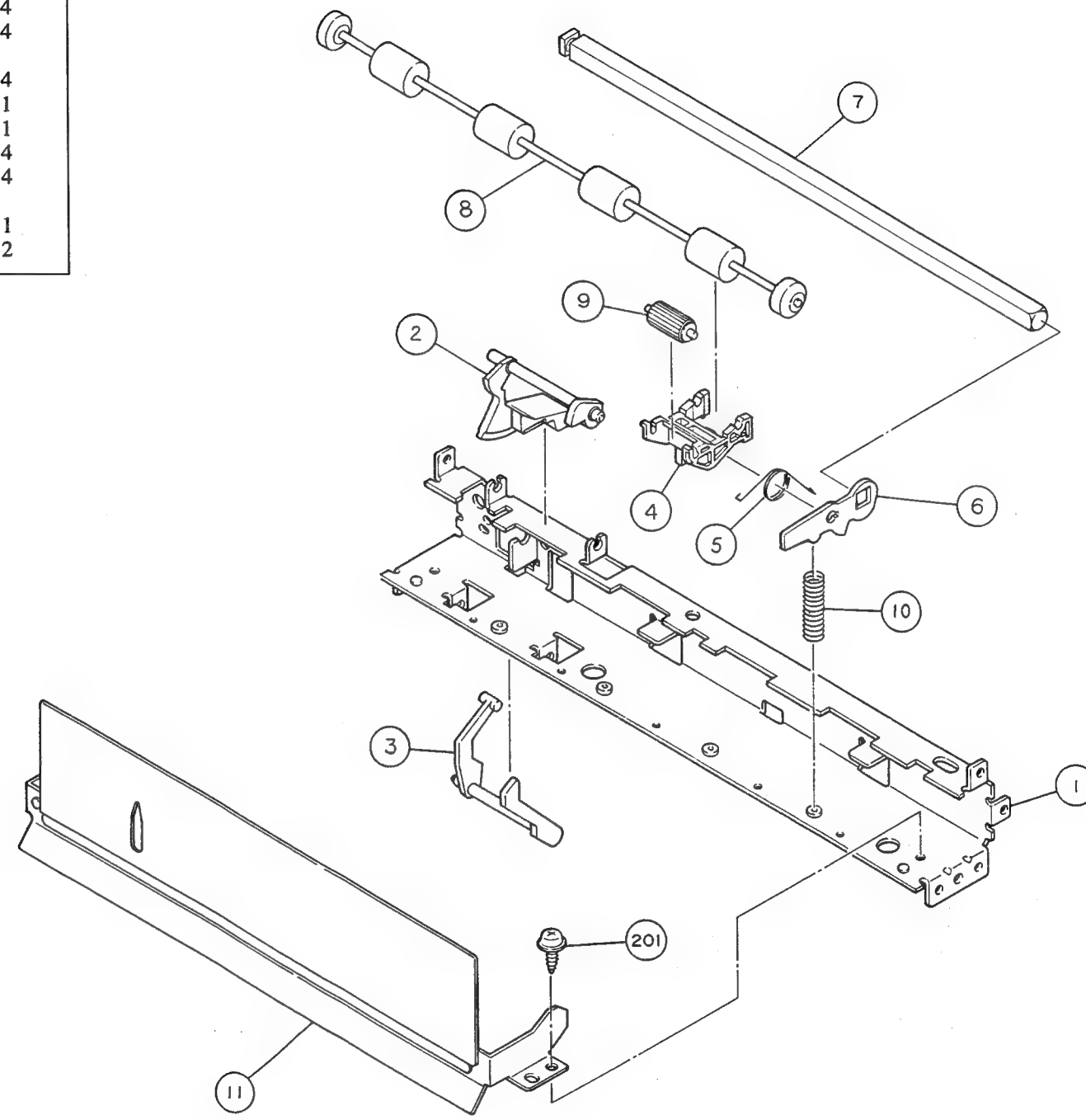


Figure 6-14 Main Stay Assembly (N)

Main Stay Assembly (W) (136-218466-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Main Stay (W)	136-846337-501-A	1
2	Rear Paper End Lever	136-846344-001-A	1
3	Bottom MDL Lever	136-846345-001-A	1
4	Roller Support	136-846339-001-A	6
5	Roller Support Spring	136-846306-001-A	6
6	Roller Support Bracket	136-846338-001-A	6
7	Release Shaft (W)	136-846340-501-A	1
8	Pressure Roller (W)	136-846341-501-A	1
9	Pressure Roller (F)	136-846342-001-A	6
10	Pressure Spring	136-846343-001-A	6
11	Bottom Guide Assembly (W)	136-846277-501-A	1
201	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A	2

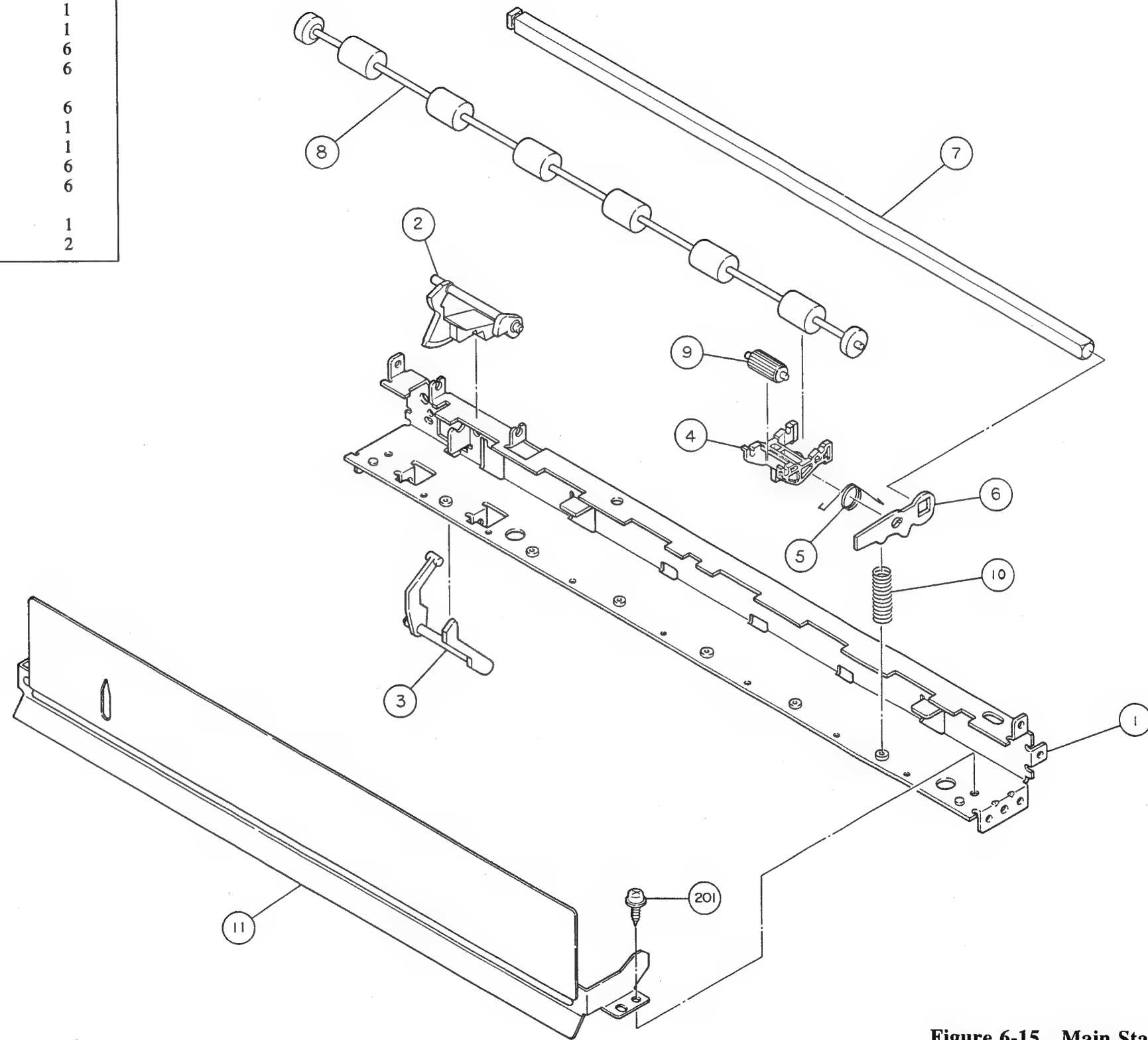


Figure 6-15 Main Stay Assembly (W)

Illustrated Parts Breakdown

Platen Assembly (N) (136-218461-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Platen (N)	136-846313-001-A	1
2	Platen Bushing (LH)	136-846314-001-A	1
3	Platen Bushing (RH)	136-846314-002-A	1
4	Platen Thrust Shim	136-768495-0	1
5	Option Drive Gear	136-846315-001-A	1
6	Paper Selection Lever	136-846316-001-A	1
7	Platen Gear	136-846317-001-A	1
8	Manual Feed Gear	136-846318-001-A	1
201	Spring Pin	803-010022-314-0	2

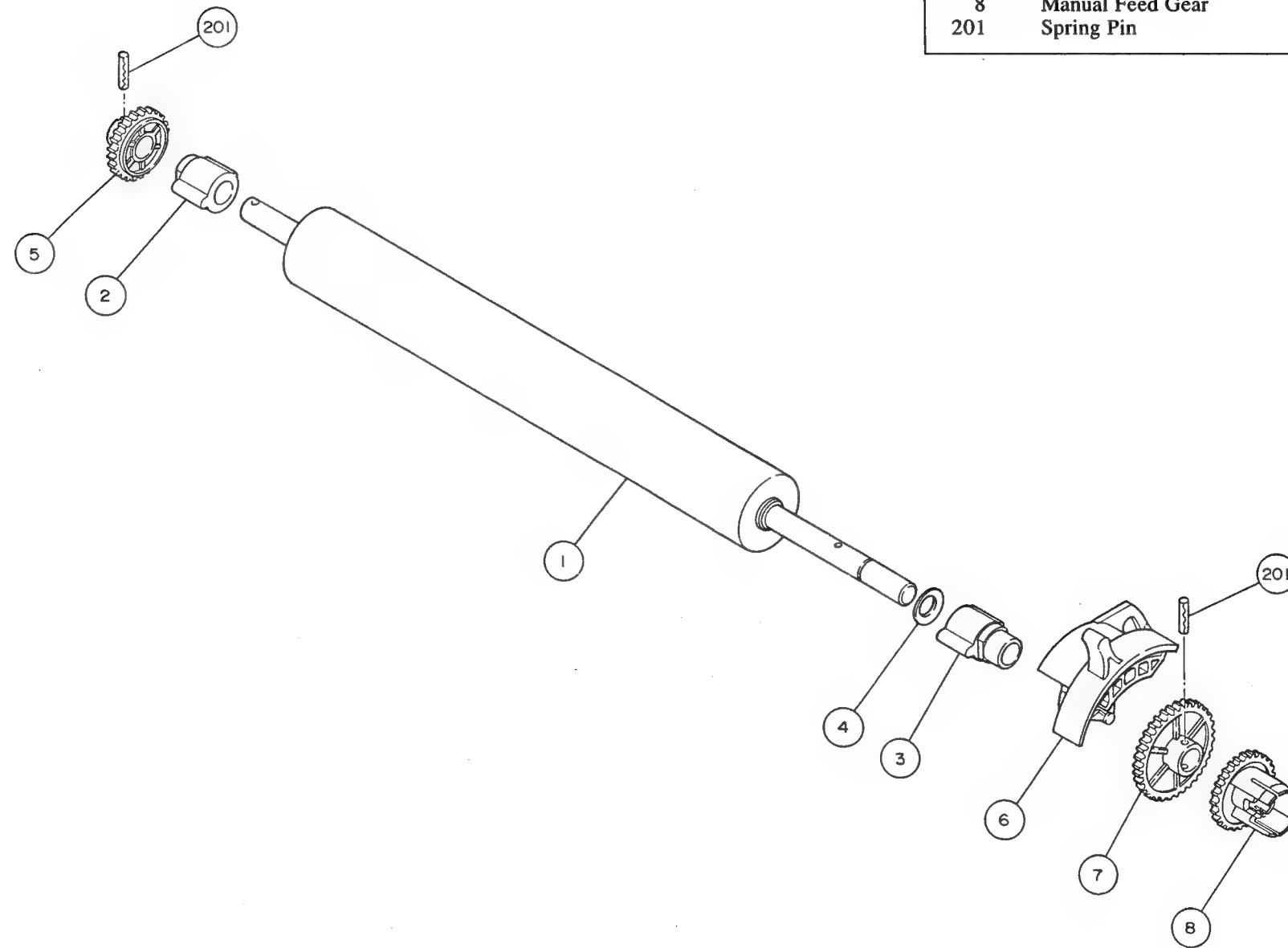


Figure 6-16 Platen Assembly (N)

Platen Assembly (W) (136-218461-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Platen (W)	136-846313-501-A	1
2	Platen Bushing (LH)	136-846314-001-A	1
3	Platen Bushing (RH)	136-846314-002-A	1
4	Platen Thrust Shim	136-768495-0	1
5	Option Drive Gear	136-846315-001-A	1
6	Paper Selection Lever	136-846316-001-A	1
7	Platen Gear	136-846317-001-A	1
8	Manual Feed Gear	136-846318-001-A	1
201	Spring Pin	803-010022-314-0	2

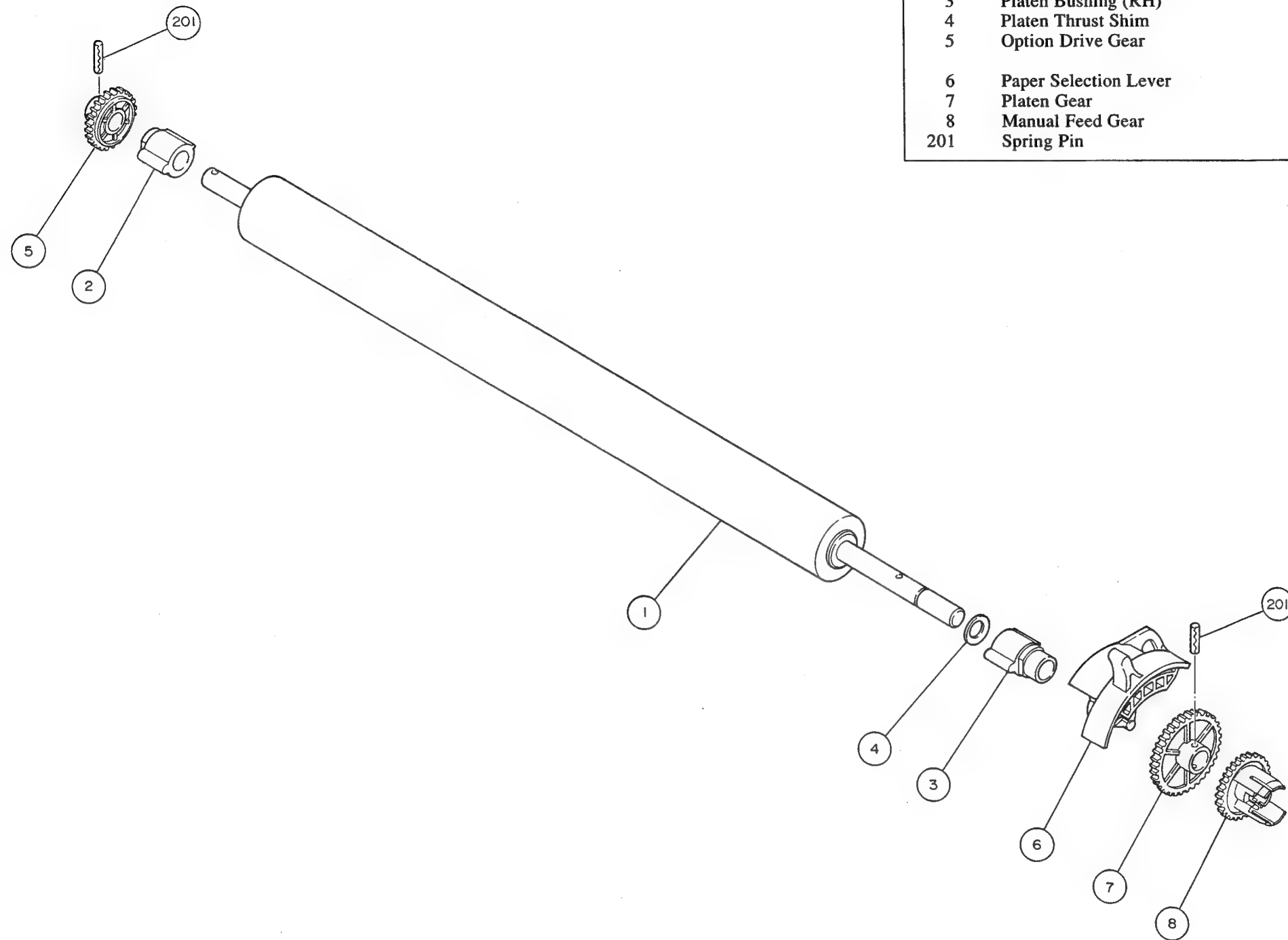


Figure 6-17 Platen Assembly (W)

Illustrated Parts Breakdown

Carrier Assembly (136-846266-GRP-A)

ITEM	PART NAME	PART NUMBER	QTY	
			001	501
1	Carrier Subassembly (N)	136-846278-001-A	1	—
1	Carrier Subassembly (W)	136-846278-501-A	—	1
1-1	Carrier Frame Subassembly	136-846267-001-A	1	1
1-2	Slide Set Piece	136-824597-001-B	1	1
1-3	Clamp Lever (LH)	136-846386-001-A	1	1
1-4	Clamp Lever (RH)	136-846386-002-A	1	1
1-5	Planetarium Gear	136-846358-001-A	2	2
1-6	Planetarium Arm Subassembly	136-854350-001-A	1	1
1-7	Ribbon Feed Pulley	136-846354-001-A	1	1
1-8	Ribbon Feed Wire (N) Assembly	808-812396-001-A	1	—
1-8	Ribbon Feed Wire (W) Assembly	808-812396-501-A	—	1
1-9	Pulley Case	136-846385-001-A	1	1
1-10	Counter Gear	136-846359-001-A	1	1
1-11	Ribbon Drive Gear	136-846360-001-A	1	1
1-12	Timing Belt (N)	808-812393-001-A	1	—
1-12	Timing Belt (W)	808-812393-501-A	—	1
1-13	Belt Holder	136-846361-001-A	1	1
1-14	Ribbon Sensor Assembly	808-820752-001-A	1	1
1-15	Photo Sensor Clamp Plate	136-824599-001-A	1	1
1-16	Carrier Frame Cover	136-846362-001-A	1	1
1-17	Carrier FG Spring (LH)	136-846367-001-A	1	1
1-18	Carrier FG Spring (RH)	136-846367-002-A	1	1
2	Card Holder Assembly	136-846275-001-A	1	1
2**	Card Holder Assembly (Std.)	136-846275-401-A	1	1
2-1*	Card Holder Subassembly	136-854348-001-A	1	1
2-1**	Card Holder Subassembly (Std.)	136-854348-401-A	1	1
2-2*	Card Holder Bracket	136-846364-001-A	1	1
2-2**	Card Holder Bracket (Std.)	136-846364-401-A	1	1
3	Piece (1)	136-846363-001-A	1	1
201	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0	1	1

* Only use for P60/P70. This part is not contained in carrier assembly (136-846266-GRP-A).

** Only use for P6200/P6300. This part is not contained in carrier assembly (136-846266-GRP-A).

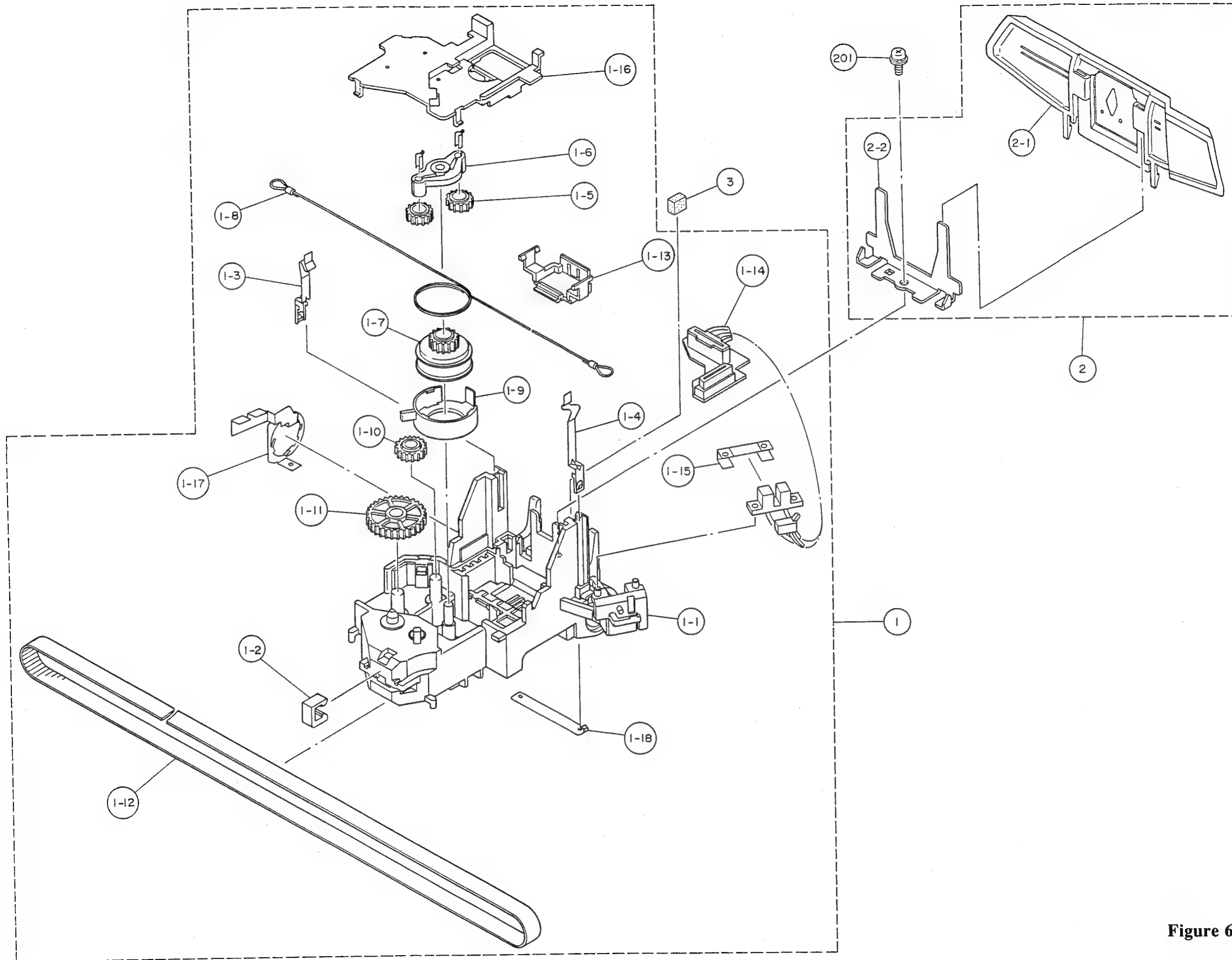


Figure 6-18 Carrier Assembly

Illustrated Parts Breakdown

Tractor Unit (N) (136-218463-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Tractor Frame (N)	136-846319-001-A	1
2	Tractor Drive Shaft (N)	136-846320-001-A	1
3	Tractor Support Shaft (N)	136-846321-001-A	1
4	Tractor Assembly (L)	808-868140-012-A	1
5	Tractor Assembly (R)	808-868140-011-A	1
6	Tractor Bushing (LH)	136-846322-002-A	1
7	Tractor Bushing (RH)	136-846322-001-A	1
8	Center Guide	136-824533-001-A	1
9	Tractor Gear	136-846323-001-A	1
201	Special Retainer	136-854347-001-A	1

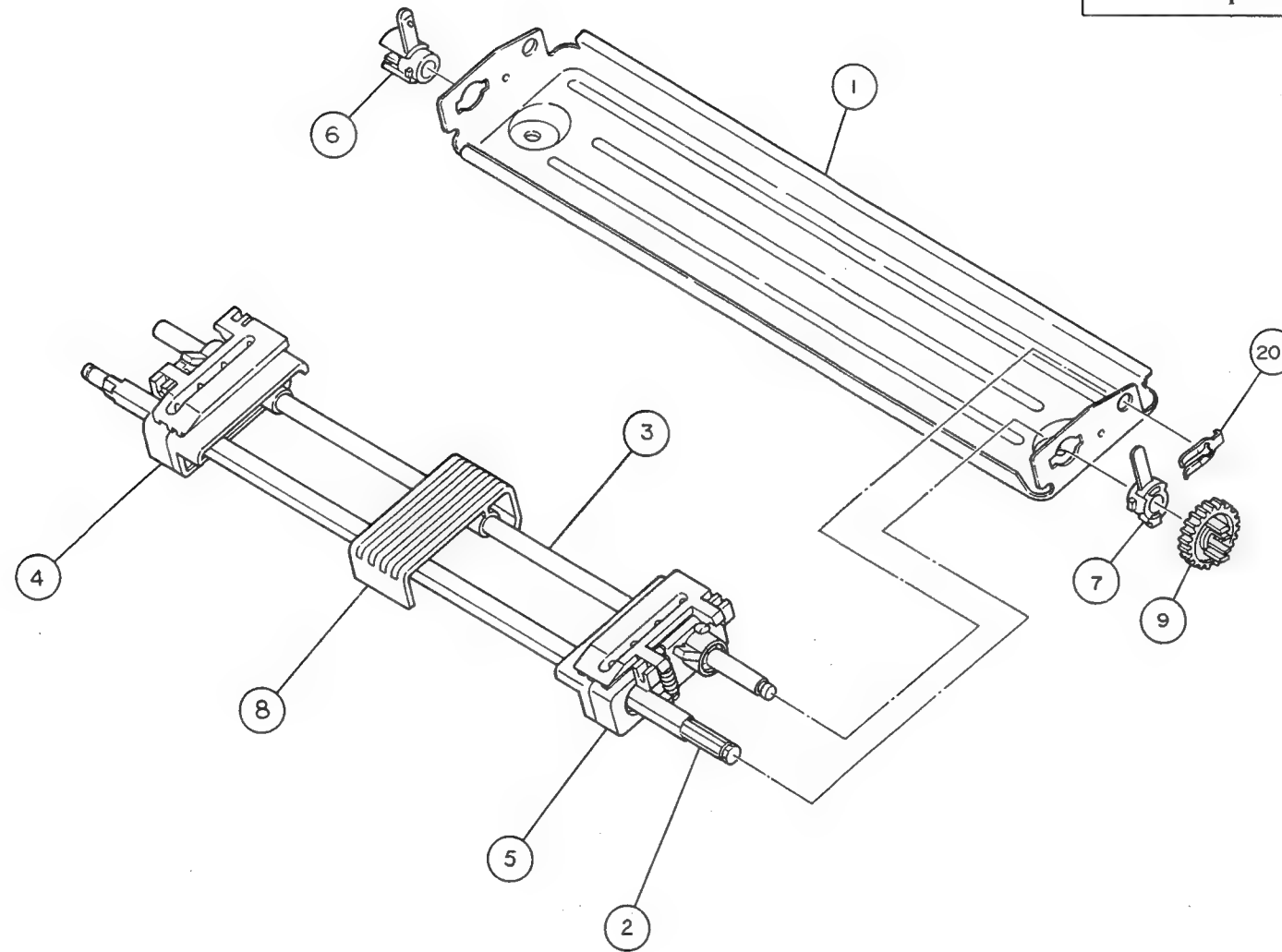


Figure 6-19 Tractor Unit (N)

Tractor Unit (W) (136-218463-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Tractor Frame (W)	136-846319-501-A	1
2	Tractor Drive Shaft (W)	136-846320-501-A	1
3	Tractor Support Shaft (W)	136-846321-501-A	1
4	Tractor Assembly (L)	808-868140-012-A	1
5	Tractor Assembly (R)	808-868140-011-A	1
6	Tractor Bushing (LH)	136-846322-002-A	1
7	Tractor Bushing (RH)	136-846322-001-A	1
8	Center Guide	136-824533-001-A	1
9	Tractor Gear	136-846323-001-A	1
201	Special Retainer	136-854347-001-A	1

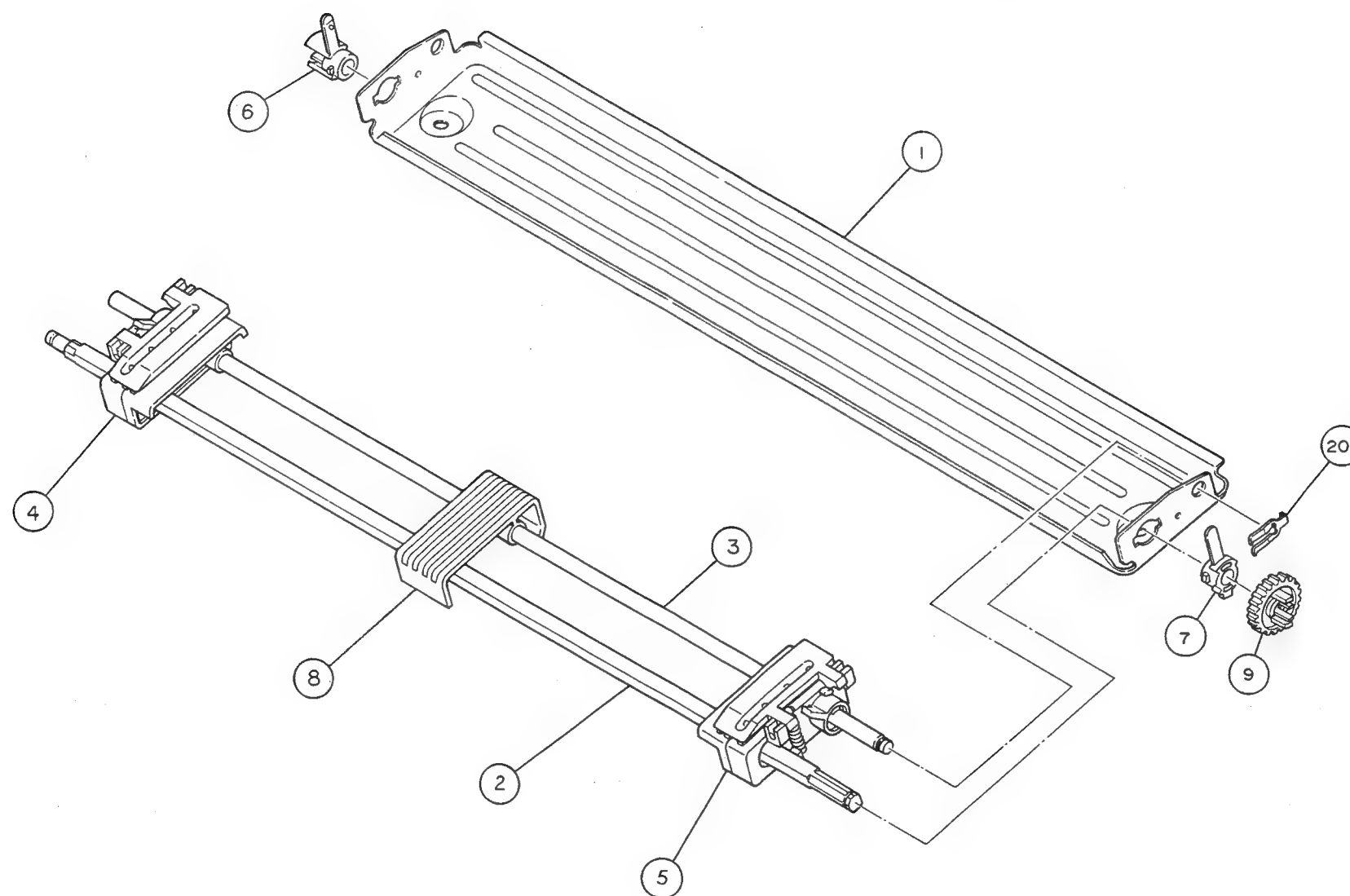


Figure 6-20 Tractor Unit (W)

Illustrated Parts Breakdown

Feed Roller Unit (N) (136-218464-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Feed Roller Frame Assembly (N)	136-846273-001-A	1
1-1	Feed Roller Frame (N)	136-846331-001-A	1
1-2	Friction MDL Lever (N)	136-846332-001-A	1
1-3	MDL Lever Bushing	136-846305-001-A	2
2	Feed Roller (N)	136-846326-001-A	1
3	Feed Roller Shaft Bushing	136-846328-001-A	2
4	Feed Roller Gear	136-846329-001-A	1
5	Feed Roller Cover (N)	136-846330-001-A	1
6	Bail Roller Guide Assembly (N)	136-218458-001-A	1
6-1	Bail Roller Guide (N)	136-846298-001-A	1
6-2	Support Shaft (N)	136-846368-001-A	1
6-3	Feed Assist Roller	136-846369-001-A	8
201	Special Screw	136-846304-001-A	2

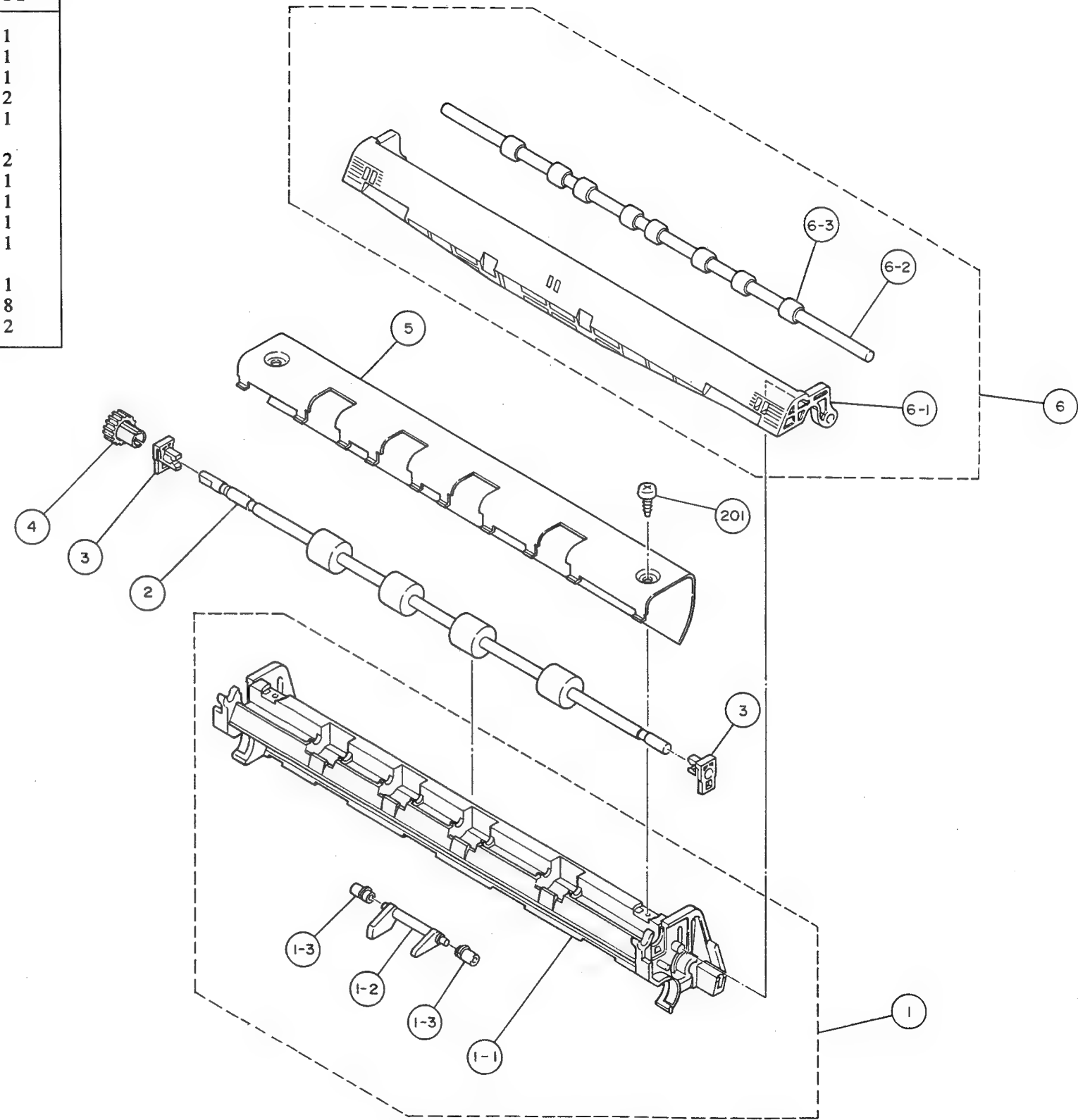


Figure 6-21 Feed Roller Unit (N)

Feed Roller Unit (W) (136-218464-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Feed Roller Frame Assembly (W)	136-846273-501-A	1
1-1	Feed Roller Frame (W)	136-846331-501-A	1
1-2	Friction MDL Lever (W)	136-846332-501-A	1
1-3	MDL Lever Bushing	136-846305-001-A	2
2	Feed Roller (W)	136-846326-501-A	1
3	Feed Roller Shaft Bushing	136-846328-001-A	2
4	Feed Roller Gear	136-846329-001-A	1
5	Feed Roller Cover (W)	136-846330-501-A	1
6	Bail Roller Guide Assembly (W)	136-218458-501-A	1
6-1	Bail Roller Guide (W)	136-846298-501-A	1
6-2	Support Shaft (W)	136-846368-501-A	1
6-3	Feed Assist Roller	136-846369-001-A	12
201	Special Screw	136-846304-001-A	2

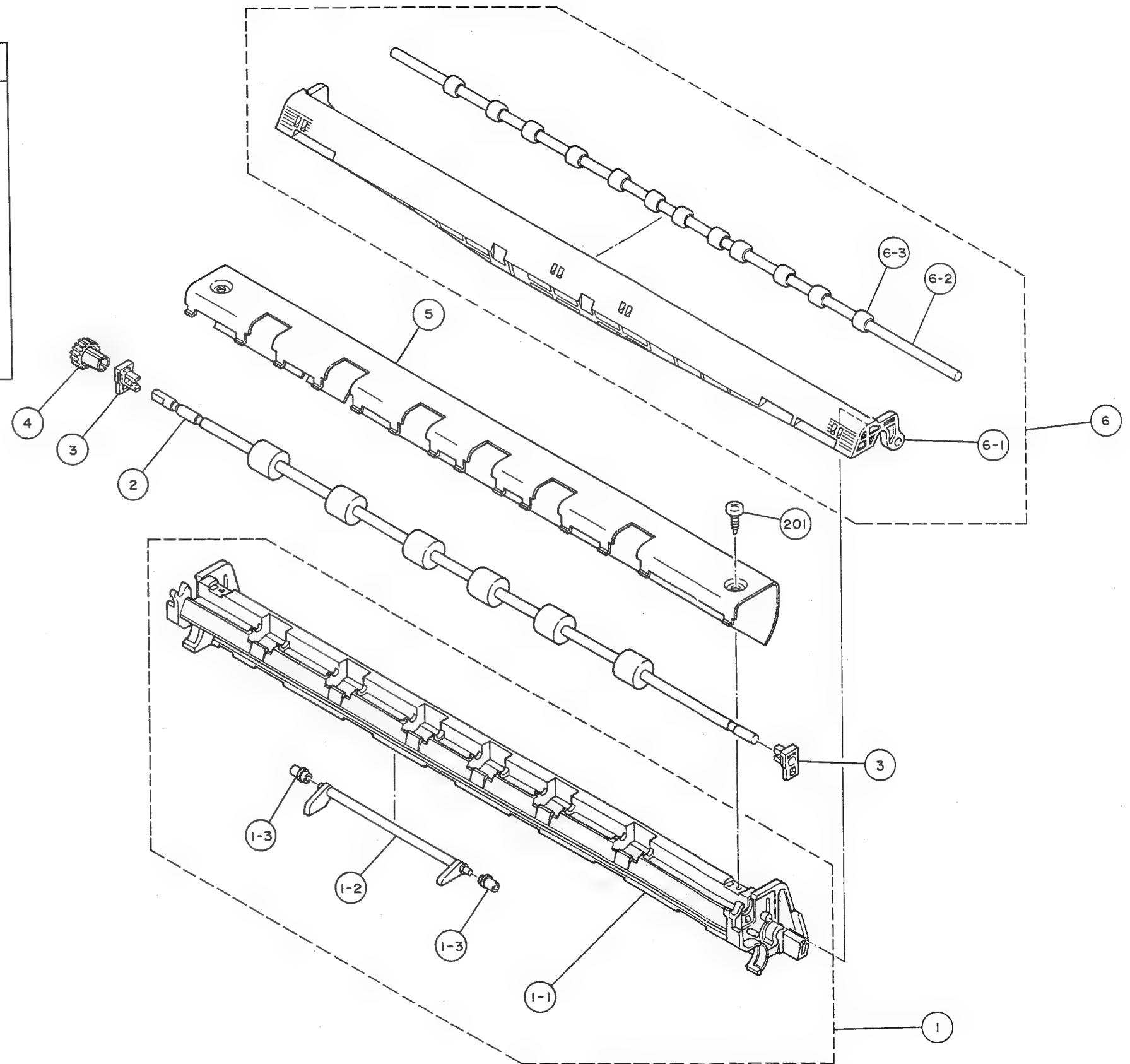


Figure 6-22 Feed Roller Unit (W)

Illustrated Parts Breakdown

Base Cover Assembly (N) (136-215363-001/-301/-401-A)

ITEM	PART NAME	PART NUMBER	QTY*		
			001	301	401
1	Base Cover Subassembly	136-217749-001-A	1	—	—
1	Base Cover Subassembly	136-217749-301-A	—	1	—
1	Base Cover Subassembly	136-217749-401-A	—	—	1
2	Base Chassis	136-843454-001-A	1	1	1
3	Frame Foot	136-835336-001-A	4	4	4
4	FG Plate	136-843459-001-A	4	4	4
5	Spacer	136-846883-001-A	2	2	2
6	Wire Saddle	808-811031-001-A	1	1	1
201	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0	4	4	4
202	Screw, SL-CPIMSx4x12x15BF	805-310004-012-0	8	8	8
203	Tapping Screw	808-802044-408-0	8	8	8

* 001: P6200/P60 (Japan Production)
 301: P60 (U.K. Production)
 401: P6200 (U.S.A. Production)

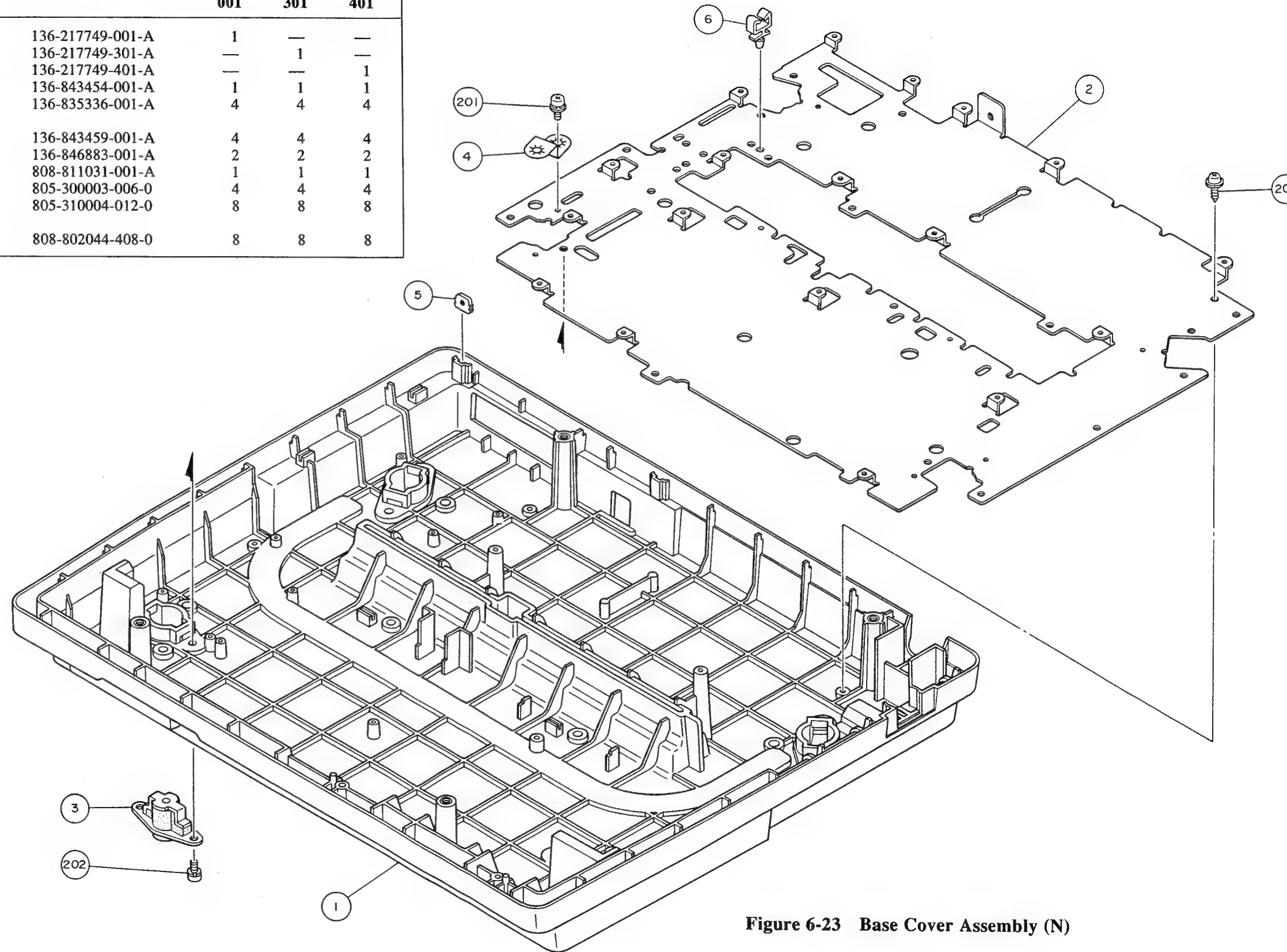


Figure 6-23 Base Cover Assembly (N)

Base Cover Assembly (W) (136-215363-501/-801/-901-A)

ITEM	PART NAME	PART NUMBER	QTY*		
			501	801	901
1	Base Cover Subassembly	136-217749-501-A	1	—	—
1	Base Cover Subassembly	136-217749-801-A	—	1	—
1	Base Cover Subassembly	136-217749-901-A	—	—	1
2	Base Chassis	136-843455-501-A	1	1	1
3	Frame Foot	136-835336-001-A	4	4	4
4	FG Plate	136-843459-001-A	4	4	4
5	Spacer	136-846883-001-A	2	2	2
6	Wire Saddle	808-811031-001-A	1	1	1
201	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0	4	4	4
202	Screw, SL-CPIMSx4x12x15BF	805-310004-012-0	8	8	8
203	Tapping Screw	808-802044-408-0	8	8	8

* 501: P6300/P70 (Japan Production)
 801: P70 (U.K. Production)
 901: P6300 (U.S.A. Production)

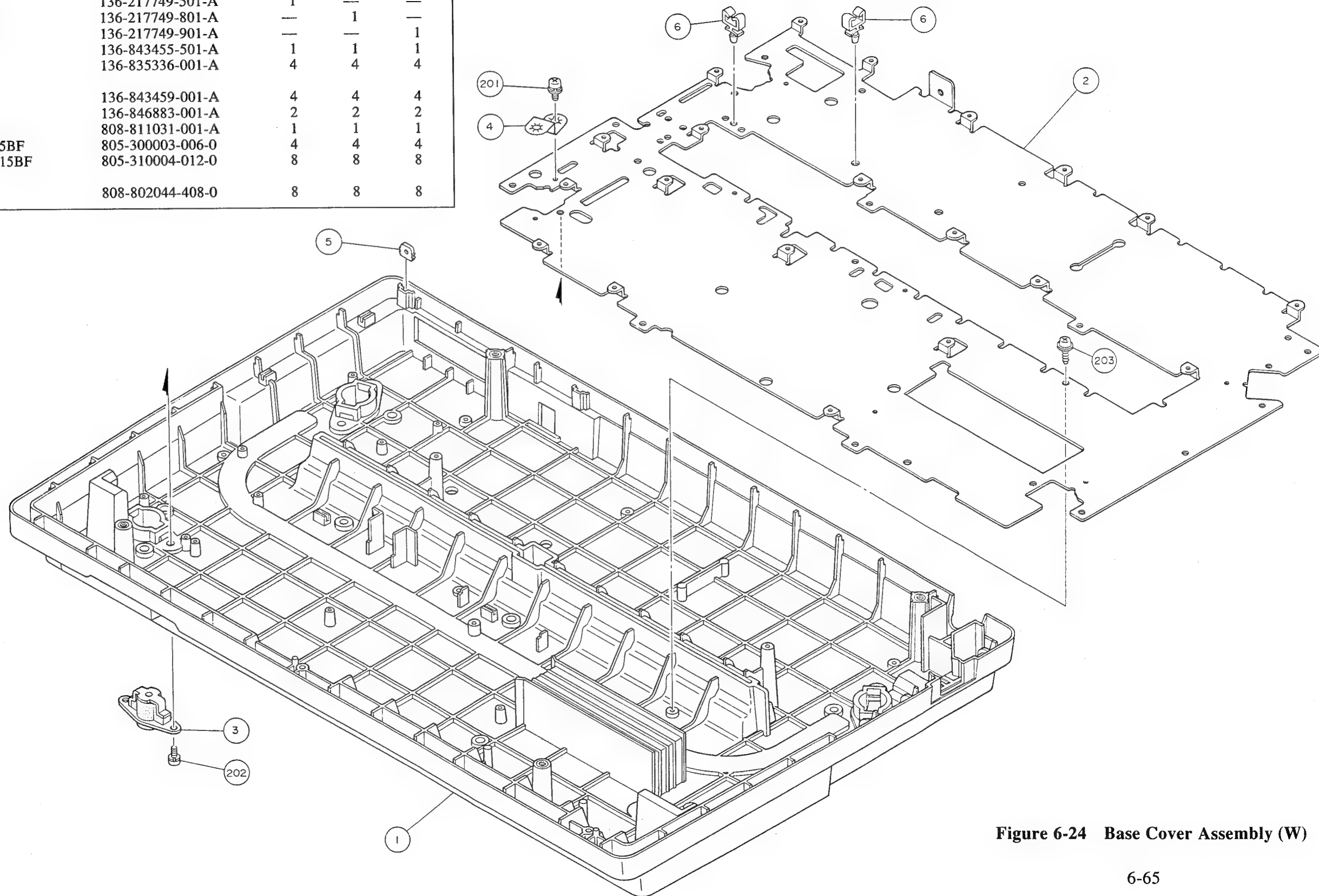


Figure 6-24 Base Cover Assembly (W)

Illustrated Parts Breakdown

Upper Cover Assembly (N) (136-215358-001/-301/-401-A)

ITEM	PART NAME	PART NUMBER	QTY*		
			001	301	401
1	Middle Cover Assembly	136-215359-001-A	1	—	—
1	Middle Cover Assembly	136-215359-301-A	—	1	—
1	Middle Cover Assembly	136-215359-401-A	—	—	1
1-1	Middle Cover (S)	136-843467-001-A	1	—	—
1-1	Middle Cover (S)	136-843467-301-A	—	1	—
1-1	Middle Cover (S)	136-846467-401-A	—	—	1
1-2	Special Screw	808-814333-A	4	4	4
2	Top Cover Assembly	136-215360-001-A	1	—	—
2	Top Cover Assembly	136-215360-301-A	—	1	—
2	Top Cover Assembly	136-215360-401-A	—	—	1
2-1	Top Cover Subassembly	136-217747-001-A	1	—	—
2-1	Top Cover Subassembly	136-217747-301-A	—	1	—
2-1	Top Cover Subassembly	136-217747-401-A	—	—	1
2-2	Canopy (S)	136-846412-001-A	1	—	—
2-2	Canopy (S)	136-846412-301-A	—	1	—
2-2	Canopy (S)	136-846412-401-A	—	—	1
3	Rear Cover Assembly	136-218953-001-A	1	—	—
3	Rear Cover Assembly	136-218953-301-A	—	1	—
3	Rear Cover Assembly	136-218953-401-A	—	—	1
3-1	Rear Cover (S)	136-846414-001-A	1	—	—
3-1	Rear Cover (S)	136-846414-301-A	—	1	—
3-1	Rear Cover (S)	136-846414-401-A	—	—	1
3-2	Separator	136-846880-001-A	1	—	—
3-2	Separator	136-846880-301-A	—	1	—
3-2	Separator	136-846880-401-A	—	—	1
3-201	Tapping Screw	808-802044-408-0	2	2	2

* 001: P6200/P60 (Japan Production)
 301: P60 (U.K. Production)
 401: P6200 (U.S.A. Production)

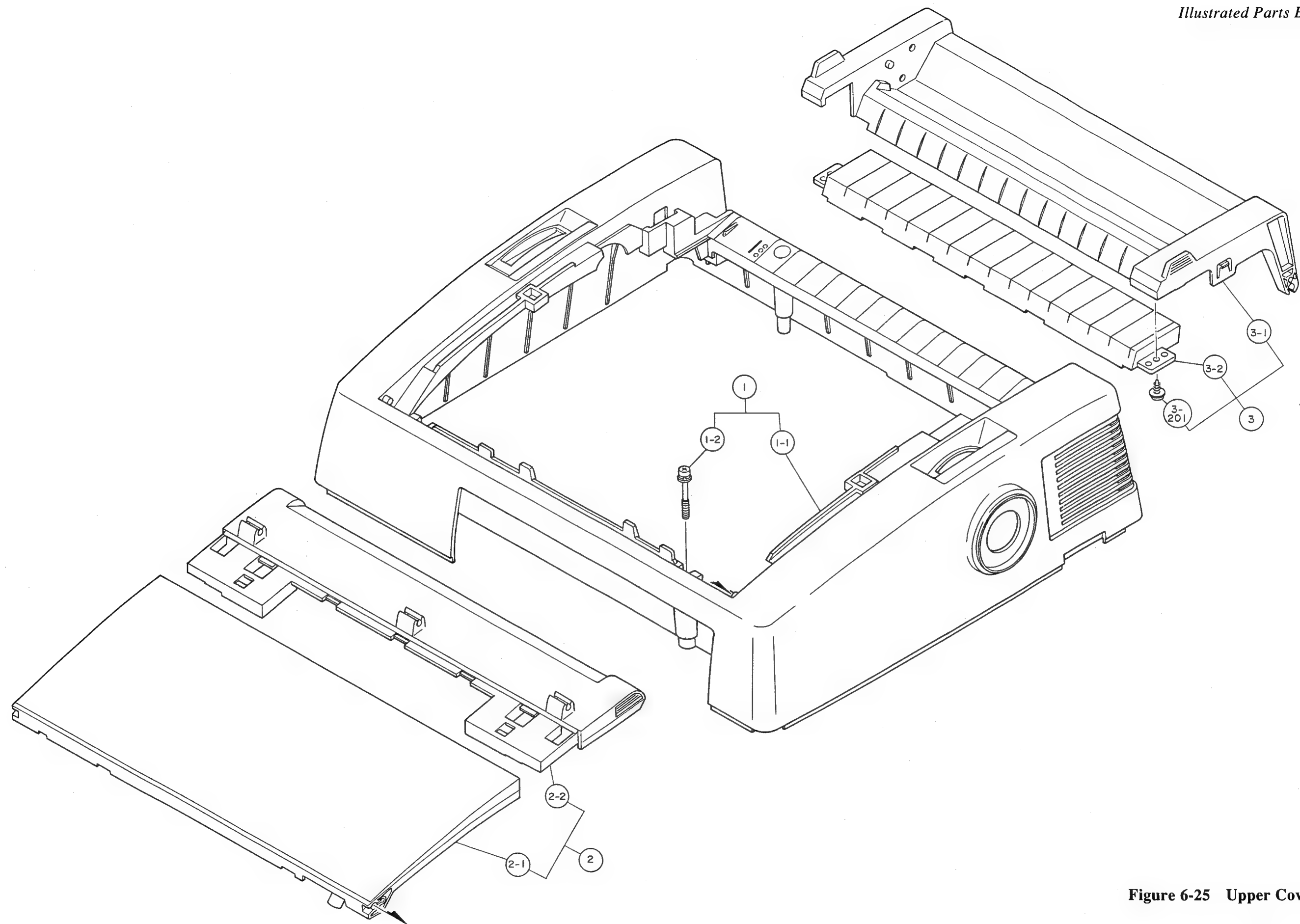


Figure 6-25 Upper Cover Assembly (N)

Illustrated Parts Breakdown

Upper Cover Assembly (W) (136-215358-501/-801/-901-A)

ITEM	PART NAME	PART NUMBER	QTY*		
			501	801	901
1	Middle Cover Assembly	136-215359-501-A	1	—	—
1	Middle Cover Assembly	136-215359-801-A	—	1	—
1	Middle Cover Assembly	136-215359-901-A	—	—	1
1-1	Middle Cover (L)	136-843409-501-A	1	—	—
1-1	Middle Cover (L)	136-843409-801-A	—	1	—
1-1	Middle Cover (L)	136-846409-901-A	—	—	1
1-2	Special Screw	808-814333-A	4	4	4
2	Top Cover Assembly	136-215360-501-A	1	—	—
2	Top Cover Assembly	136-215360-801-A	—	1	—
2	Top Cover Assembly	136-215360-901-A	—	—	1
2-1	Top Cover Subassembly	136-217747-501-A	1	—	—
2-1	Top Cover Subassembly	136-217747-801-A	—	1	—
2-1	Top Cover Subassembly	136-217747-901-A	—	—	1
2-2	Canopy (L)	136-846413-501-A	1	—	—
2-2	Canopy (L)	136-846413-801-A	—	1	—
2-2	Canopy (L)	136-846413-901-A	—	—	1
3	Rear Cover Assembly	136-218953-501-A	1	—	—
3	Rear Cover Assembly	136-218953-801-A	—	1	—
3	Rear Cover Assembly	136-218953-901-A	—	—	1
3-1	Rear Cover (L)	136-846415-501-A	1	—	—
3-1	Rear Cover (L)	136-846415-801-A	—	1	—
3-1	Rear Cover (L)	136-846415-901-A	—	—	1
3-2	Separator	136-846881-501-A	1	—	—
3-2	Separator	136-846881-801-A	—	1	—
3-2	Separator	136-846881-901-A	—	—	1
3-201	Tapping Screw	808-802044-408-0	2	2	2

* 501: P6300/P70 (Japan Production)
 801: P60 (U.K. Production)
 901: P6200 (U.S.A. Production)

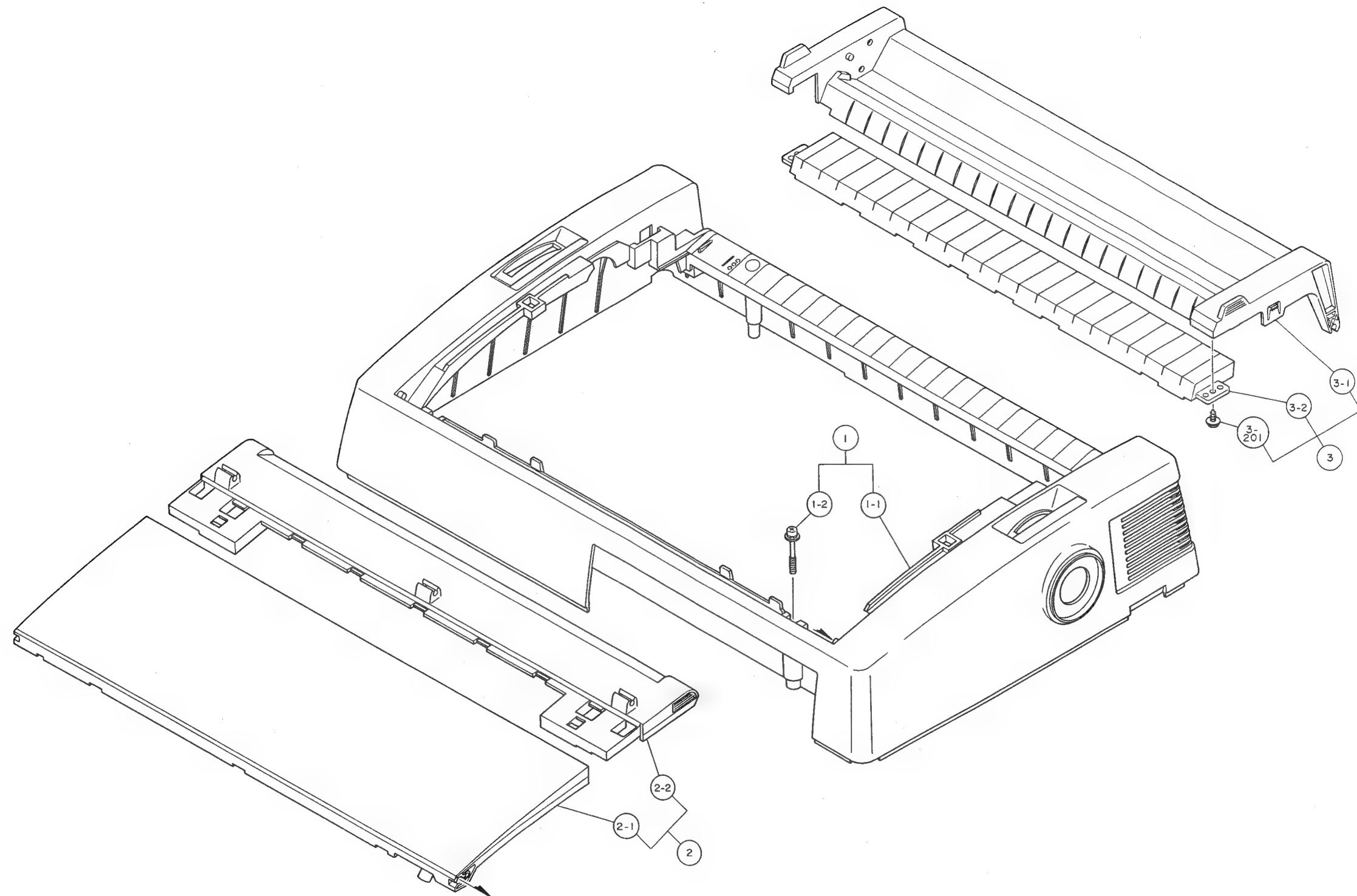


Figure 6-26 Upper Cover Assembly (W)

Illustrated Parts Breakdown

PSD Operator Panel (808-818170-301-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Operator Panel	136-846432-301-A	1
2	Operator Panel Sheet	136-846425-301-A	1
3	Operator Panel PCB Assembly	808-818170-602-A	1
4	Core Assembly	136-789708-001-A	1
201	Screw, #2CPTSx2.6x6x15BF	805-060026-006-0	7

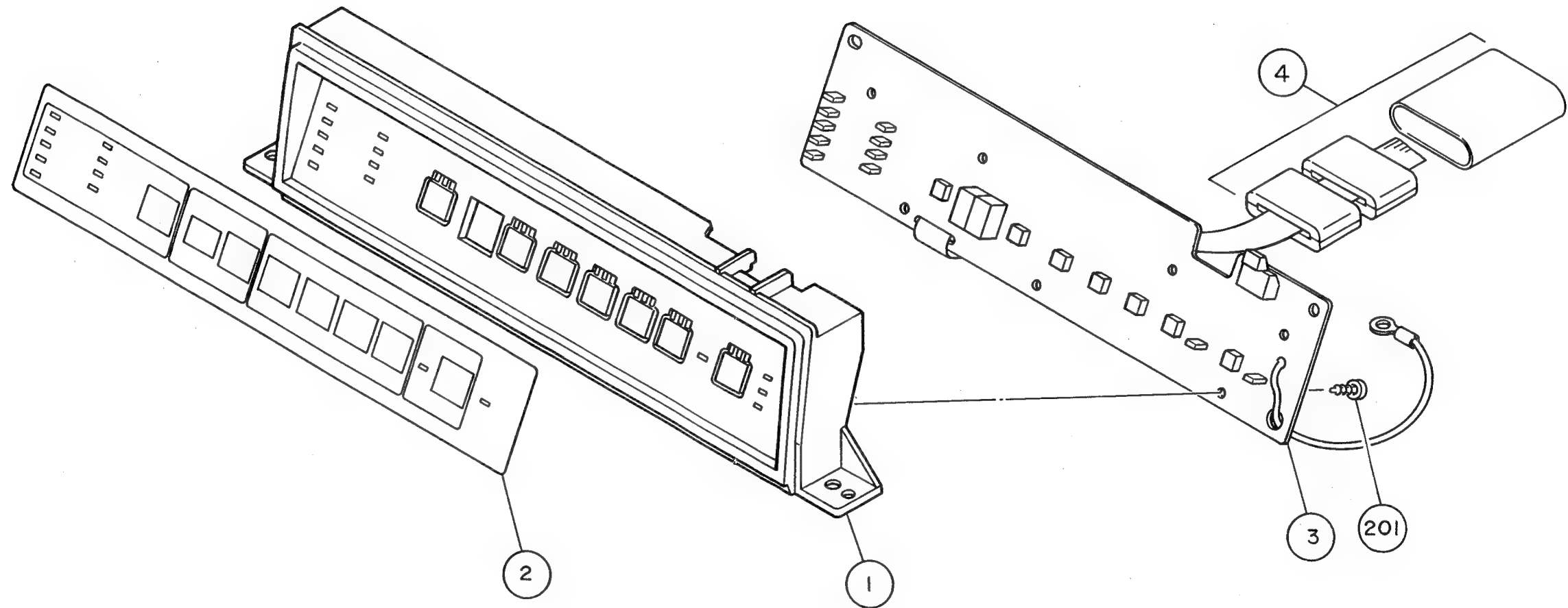


Figure 6-27 PSD Operator Panel

PSD Power (B) Assembly (808-891104-002-A) -1/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
R6	RM 1 W 33 Ω	808-891208-001-A	1
R8	RM 3 W 22 Ω	808-891208-002-A	1
R10	RM 2 W 15 kΩ	808-891208-201-A	1
R11	RM 3 W 15 kΩ	808-891208-202-A	1
R12	RM 3 W 68 Ω	808-891208-203-A	1
R14	RM 3 W 4.7 Ω	808-891208-003-A	1
R19	RM 2 W 0.47 Ω	808-891208-204-A	1
R27	RM 1/2 W 22 Ω	808-891208-004-A	1
R28	RM 1/2 W 1.5 Ω	808-891208-005-A	1
R30, R31	RM 3 W 1.5 kΩ	808-891208-006-A	2
R32	RM 3 W 15 Ω	808-891208-007-A	1
R33	RM 2 W 1 kΩ	808-891208-008-A	1
R41	RM 2 W 47 kΩ	808-891208-009-A	1
R46	RM 2 W 33 kΩ	808-891208-010-A	1
R1	RC 1/4 W 150 kΩ	808-891208-206-A	1
R2, R3, R37, R38	RC 1/4 W 68 kΩ	808-891208-207-A	4
R9	RC 1/4 W 6.8 kΩ	808-891208-017-A	1
R15	RC 1/4 W 4.7 kΩ	808-891208-018-A	1
R22	RC 1/4 W 150 Ω	808-891208-209-A	1
R23	RC 1/4 W 220 Ω	808-891208-210-A	1
R24	RC 1/4 W 1 kΩ	808-891208-016-A	1
R26	RC 1/4 W 27 Ω	808-891208-015-A	1
R42	RC 1/4 W 2.2 kΩ	808-891208-012-A	1
R43	RC 1/4 W 3.3 kΩ	808-891208-013-A	1
R5, R13, R20, R21, R34	RC 1/4 W 1 kΩ	808-891208-014-A	5
R35	RC 1/4 W 10 kΩ	808-891208-019-A	1
R36	RC 1/4 W 1.2 kΩ	808-891208-020-A	1
R44	RC 1/4 W 15 kΩ	808-891208-208-A	1
RX1	RC 1/4 W 1 kΩ	808-891208-014-A	1
RX2	RC 1/4 W 0 kΩ	808-891208-011-A	1
RV1	RV 200 Ω	808-891208-021-A	1
RV2	RV 2 kΩ	808-891208-022-A	1
R4	RS 5 W 10 Ω	808-891208-211-A	1
C5	CE 200 V 1000 μF	808-891208-212-A	1
C12	CE 25 V 220 μF	808-891208-023-A	1
C13	CE 63 V 22 μF	808-891208-025-A	1
C14	CE 16 V 4700 μF	808-891208-026-A	1
C15	CE 10 V 1000 μF	808-891208-027-A	1
C28	CE 50 V 22 μF	808-891208-024-A	1
C17, C23	CE 40 V 10000 μF	808-891208-028-A	2

PSD Power (B) Assembly (808-891104-002-A) -2/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
CX1	CF 50 V 1000 μF	808-891208-029-A	1
CX2	CF 50 V 0.22 μF	808-891208-034-A	1
C9, C10, C22	CF 50 V 0.1 μF	808-891208-030-A	3
C18, C19	CF 50 V 0.1 μF	808-891208-031-A	2
C21	CF 50 V 0.01 μF	808-891208-032-A	1
C25	CF 630 V 2200 μF	808-891208-033-A	1
C1	CF 250 Vac 0.22 μF	808-891208-035-A	1
C4	CF 250 Vac 0.1 μF	808-891208-213-A	1
C7	CF 250 V 0.33 μF	808-891208-214-A	1
C11	CF 50 V 0.022 μF	808-891208-036-A	1
C2, C3, C6	CC 400/250/125 Vac 4700 pF	808-891208-215-A	3
C8	CC 2 kV 470 pF	808-891208-216-A	1
C16	CC 250 Vac 4700 pF	808-891208-037-A	1
C30	CC 400/250/125 Vac 2200 pF	808-891208-038-A	1
D2, D9, D15, D16	DG 600 V 1 A	808-891208-039-A	4
D4, D5, D7	DG 50 V 400 mA	808-891208-040-A	3
D12, D14, D18	DG 50 V 300 mA	808-891208-042-A	3
D13	DG 50 V 300 mA	808-891208-043-A	1
D8	DS 40 V 1 A	808-891208-041-A	1
D3	DZ 18 V 500 mW	808-891208-218-A	1
D17	DZ 6.8 V 500 mW	808-891208-219-A	1
D1	DF 1000 V 1 A	808-891208-217-A	1
D6	DZ 12 V 500 mW	808-891208-044-A	1
NR1, NR2	VR 140 V	808-891208-220-A	2
Q1, Q4	TRN 450 V 12 A	808-891208-221-A	2
Q2	TRP 60 V 6 A	808-891208-045-A	1
Q3	TRN 40 V 2 A	808-891208-047-A	1
Q5	TRN 50 V 10 A	808-891208-046-A	1
Q6	TRN 50 V 50 mA	808-891208-048-A	1
Z1	IC SI-3052V	808-891208-049-A	1
Z2	IC HA17431PA	808-891208-050-A	1
RC1	DB 400 V 6 A	808-891208-225-A	1
RC2	DSCK 40 V 5 A	808-891208-051-A	1
RC3	DFCK 200 V 10 A	808-891208-052-A	1
CN1	B2P3-VH	808-891208-053-A	1
CN2	B6P-VR	808-891208-054-A	1
CR1	SCR 200 V 300 mA	808-891208-222-A	1
CR2	TRI 400 V 10 A	808-891208-223-A	1
PC1	PC	808-891208-224-A	1
L1	ELF 18D850C	808-891208-226-A	1
T1	CX47038-259	808-891208-227-A	1
F1	FF 125 V 5 A	808-891208-228-A	1

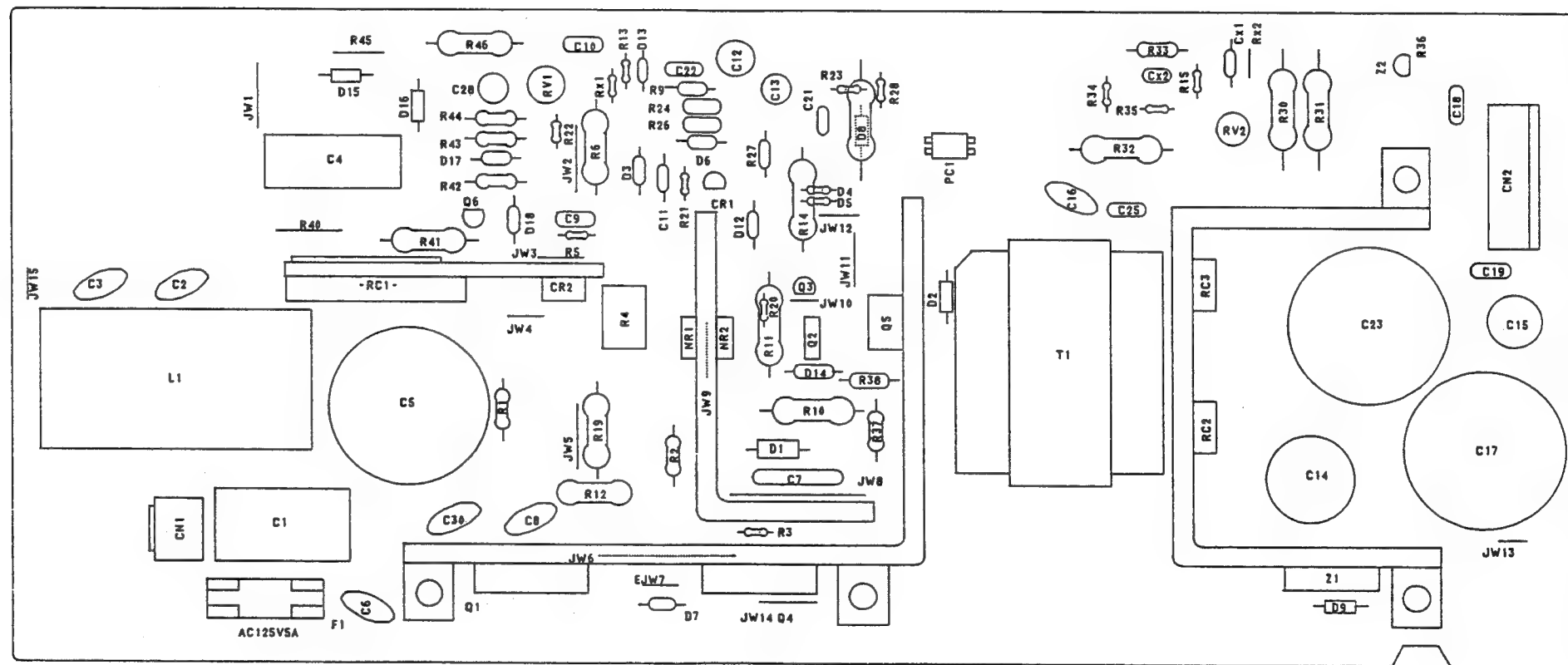


Figure 6-28 PSD Power (B) Assy (808-891104-002-A)

PSD Power (C) Assembly (808-891104-003-A) -1/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
R2, R3, R37, R38	RM 1 W 150 kΩ	808-891208-301-A	4
R6	RM 1 W 33 Ω	808-891208-001-A	1
R8	RM 3 W 22 Ω	808-891208-002-A	1
R10	RM 2 W 22 kΩ	808-891208-305-A	1
R11	RM 3 W 47 kΩ	808-891208-302-A	1
R12	RM 3 W 150 Ω	808-891208-303-A	1
R14	RM 3 W 4.7 Ω	808-891208-003-A	1
R19	RM 2 W 1 Ω	808-891208-304-A	1
R27	RM 1/2 W 22 Ω	808-891208-004-A	1
R28	RM 1/2 W 1.5 Ω	808-891208-005-A	1
R30, R31	RM 3 W 1.5 kΩ	808-891208-006-A	2
R32	RM 3 W 15 Ω	808-891208-007-A	1
R33	RM 2 W 1 kΩ	808-891208-008-A	1
R40, R41	RM 2 W 47 kΩ	808-891208-009-A	2
R45, R46	RM 2 W 33 kΩ	808-891208-010-A	2
RX1	RC 1/4 W 1 kΩ	808-891208-014-A	1
RX2	RC 1/4 W 0 kΩ	808-891208-011-A	1
R1	RC 1/4 W 680 kΩ	808-891208-307-A	1
R5, R13, R20, R21, R34	RC 1/4 W 1 kΩ	808-891208-014-A	5
R9	RC 1/4 W 6.8 kΩ	808-891208-017-A	1
R15	RC 1/4 W 4.7 kΩ	808-891208-018-A	1
R22	RC 1/4 W 270 Ω	808-891208-308-A	1
R23	RC 1/4 W 120 Ω	808-891208-309-A	1
R24	RC 1/4 W 1 kΩ	808-891208-016-A	1
R26	RC 1/4 W 27 Ω	808-891208-015-A	1
R35	RC 1/4 W 10 kΩ	808-891208-019-A	1
R36	RC 1/4 W 1.2 kΩ	808-891208-020-A	1
R42	RC 1/4 W 2.2 kΩ	808-891208-012-A	1
R43	RC 1/4 W 3.3 kΩ	808-891208-013-A	1
R44	RC 1/4 W 33 kΩ	808-891208-310-A	1
RV1	RV 200 Ω	808-891208-021-A	1
RV2	RV 2 kΩ	808-891208-022-A	1
R4	RS 5 W 22 Ω	808-891208-312-A	1
C5	CE 400 V 220 μF	808-891208-313-A	1
C12	CE 25 V 220 μF	808-891208-023-A	1
C13	CE 63 V 22 μF	808-891208-025-A	1
C14	CE 16 V 4700 μF	808-891208-026-A	1
C15	CE 10 V 1000 μF	808-891208-027-A	1
C17, C23	CE 40 V 10000 μF	808-891208-028-A	2
C28	CE 50 V 22 μF	808-891208-024-A	1
C1	CF 250 Vac 0.47 μF	808-891208-316-A	1
C4	CF 250 Vac 0.22 μF	808-891208-035-A	1
C7	CF 400 V 0.1 μF	808-891208-315-A	1
C9, C10, C22	CF 50 V 0.1 μF	808-891208-030-A	3
C11	CF 50 V 0.022 μF	808-891208-036-A	1

PSD Power (C) Assembly (808-891104-003-A) -2/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
C18, C19	CF 50 V 0.1 μF	808-891208-031-A	2
C21	CF 50 V 0.01 μF	808-891208-032-A	1
C25	CF 630 V 2200 pF	808-891208-033-A	1
CX1	CF 50 V 1000 pF	808-891208-029-A	1
CX2	CF 50 V 0.22 μF	808-891208-034-A	1
C6	CC 400/250/125 Vac 3300 pF	808-891208-318-A	1
C8	CC 2 kV 220 pF	808-891208-317-A	1
C16	CC 250 Vac 4700 pF	808-891208-037-A	1
C26, C27	CC 400/250/125 Vac 470 pF	808-891208-319-A	2
C2, C3, C30	CC 400/250/125 Vac 2200 pF	808-891208-038-A	3
D2, D9, D15, D16	DG 600 V 1 A	808-891208-039-A	4
D1	DG 1000 V 0.8 A	808-891208-320-A	1
D4, D5, D7	DG 50 V 400 mA	808-891208-040-A	3
D8	DS 40 V 1 A	808-891208-041-A	1
D12, D14, D18	DG 50 V 300 mA	808-891208-042-A	3
D13	DG 50 V 300 mA	808-891208-043-A	1
D3	DZ 16 V 500 mW	808-891208-321-A	1
D17	DZ 13 V 500 mW	808-891208-322-A	1
D6	DZ 12 V 500 mW	808-891208-044-A	1
Q1, Q4	TRN 800 V	808-891208-324-A	2
Q2	TRP 60 V 6 A	808-891208-045-A	1
Q5	TRN 50 V 10 A	808-891208-046-A	1
Q3	TRN 40 V 2 A	808-891208-047-A	1
Q6	TRN 50 V 50 mA	808-891208-048-A	1
Z1	IC SI-3052V	808-891208-049-A	1
Z2	IC HA17431PA	808-891208-050-A	1
RC2	DSCK 40 V 5 A	808-891208-051-A	1
RC3	DFCK 200 V 10 A	808-891208-052-A	1
CN1	B2P3-VH	808-891208-053-A	1
CN2	B6P-VR	808-891208-054-A	1
NR1, NR2	VR 300V	808-891208-323-A	2
CR1	SCR 200 V 300 mA	808-891208-325-A	1
CR2	TRI 600 V 10 A	808-891208-326-A	1
PC1	PC	808-891208-327-A	1
RC1	DB 600 V 6 A	808-891208-328-A	1
L1	ELF 18D850D	808-891208-329-A	1
L2	PLA 1522B	808-891208-330-A	1
T1	CX47038-267	808-891208-331-A	1
F1	FF 250 V 3.15 A	808-891208-332-A	1

Illustrated Parts Breakdown

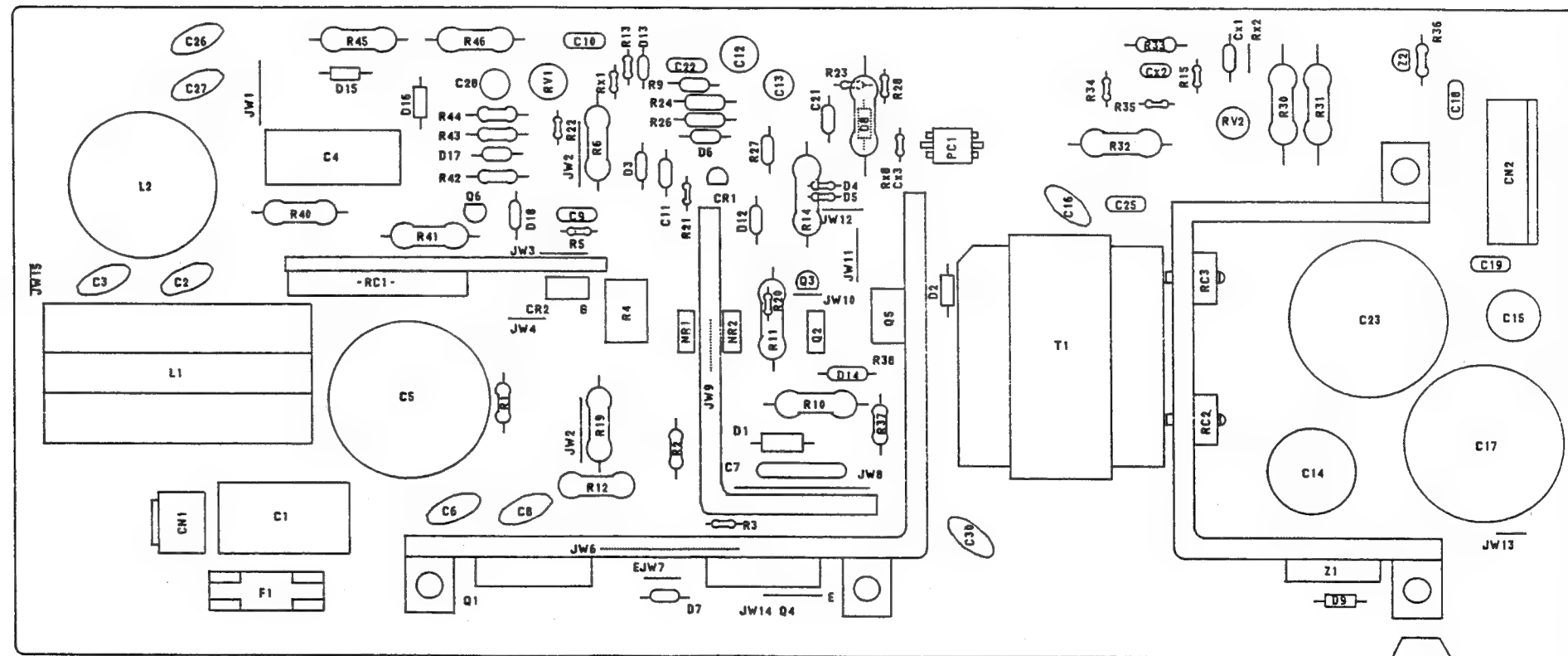


Figure 6-29 PSD Power (C) Assy (808-891104-003-A)

PSD Power (C) Assembly (808-891104-303-A) -1/2

PSD Power (C) Assembly (808-891104-303-A) -2/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
R1	RC 1/4 W 1 MΩ	808-891209-001-A	1
R2	RS 5 W 22 Ω	808-891209-002-A	1
R3	RC 1/4 W 1 kΩ	808-891209-003-A	1
R4	RC 1/2 W 47 Ω	808-891209-004-A	1
R6	RC 1/2 W 100 kΩ	808-891209-005-A	1
R7-R12	RM 2 W 47 kΩ	808-891209-006-A	6
R13-R15	RM 1 W 18 kΩ	808-891209-007-A	3
R16, R44	RC 1/4 W 10 kΩ	808-891209-008-A	2
R17	RC 1/4 W 5.6 kΩ	808-891209-009-A	1
R18	RC 1/4 W 27 kΩ	808-891209-010-A	1
R19	RC 1/6 W 680 Ω	808-891209-011-A	1
R20, R21	RC 1/2 W 22 kΩ	808-891209-012-A	2
R22, R23	RM 1 W 100 kΩ	808-891209-013-A	2
R24	RC 1/4 W 2.2 kΩ	808-891209-014-A	1
R25	RC 1/6 W 47 Ω	808-891209-015-A	1
R26	RC 1/4 W 680 Ω	808-891209-016-A	1
R27	RC 1/4 W 33 Ω	808-891209-017-A	1
R28, R29	RM 2 W 2.2 Ω	808-891209-018-A	2
R30	RS 5 W 15 Ω	808-891209-019-A	1
R31	RM 2 W 6.8 Ω	808-891209-020-A	1
R32	RC 1/4 W 4.7 Ω	808-891209-021-A	1
R33	RM 1/4 W 2 kΩ	808-891209-022-A	1
R34	RC 1/2 W 820 Ω	808-891209-023-A	1
R35	RC 1/4 W 220 Ω	808-891209-024-A	1
R36	RM 1 W 10 Ω	808-891209-025-A	1
R37	RM 2 W 15 Ω	808-891209-026-A	1
R38-R40	RM 2 W 1.2 kΩ	808-891209-027-A	3
R41	RC 1/4 W 330 Ω	808-891209-028-A	1
R42	RC 1/4 W 1 kΩ	808-891209-029-A	1
R43	RM 2 W 1 kΩ	808-891209-030-A	1
R45	RC 1/4 W 680 kΩ	808-891209-031-A	1
R46	RM 1/4 W 15 kΩ	808-891209-032-A	1
R47	RV 0.5 W 1 kΩ	808-891209-033-A	1
R48	RM 1/4 W 1.2 kΩ	808-891209-034-A	1
R49	RC 1/6 W 4.7 Ω	808-891209-035-A	1
R50	RC 1/4 W 2.2 Ω	808-891209-036-A	1
C1	CF 250Vac 0.47 μF	808-891209-045-A	1
C2, C3, C5-C7, C9, C28	CC 400Vac 2200 pF	808-891209-046-A	7
C4	CF 250Vac 0.22 μF	808-891209-047-A	1
RC2	DSCK 40 V 5 A	808-891209-069-A	1
RC3	DFCK 200 V 10 A	808-891209-070-A	1

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
Q2	TRN 800 V 5A or 10 A	808-891209-071-A	1
Q3	TRP 50 V 2 A	808-891209-072-A	1
Q4-Q6	TRN 50 V 0.15 A	808-891209-073-A	3
Q7	TRN 50 V 2 A	808-891209-074-A	1
Q1	SCR 400 V 5 A	808-891209-075-A	1
Z1	IC TLP732-LF2	808-891209-076-A	1
Z2	IC TLP741-LF2	808-891209-077-A	1
Z3	IC μPC1093J	808-891209-078-A	1
Z4	IC SI-3052V	808-891209-079-A	1
SQ1	VR 470 V 2500 A	808-891209-080-A	1
ZD1, ZD2	ZD 120 V 0.5 W	808-891209-081-A	2
ZD3	ZD 6.2 V 0.4 W	808-891209-082-A	1
ZD4	ZD 5.1 V 0.4 W	808-891209-083-A	1
ZD5	ZD 3.9 V 0.4 W	808-891209-084-A	1
ZD6	ZD 39 V 0.4 W	808-891209-085-A	1
CN1	CN B2P3-VH	808-891209-086-A	1
CN2	CN B6P-VR	808-891209-087-A	1
L1, L2	L 8 mH 2 A	808-891209-088-A	2
T1	TM1294	808-891209-089-A	1
F1	FF 250 V 3.15 A	808-891209-090-A	1
F2	FR 250 V 2 A	808-891209-091-A	1
C8	CE 400 V 270 μF	808-891209-049-A	1
C10	CF 50 V 0.1 μF	808-891209-050-A	1
C11	CF 630 V 0.01 μF	808-891209-051-A	1
C12	CE 63 V 27 μF	808-891209-052-A	1
C13	CE 50 V 3.3 μF	808-891209-053-A	1
C14	CF 63 V 0.22 μF	808-891209-054-A	1
C15	CF 50 V 0.033 μF	808-891209-055-A	1
C16	CF 100 V 0.68 μF	808-891209-056-A	1
C17	CE 50 V 56 μF	808-891209-057-A	1
C18	CE 10 V 4700 μF	808-891209-058-A	1
C19, C20	CE 16 V 180 μF	808-891209-059-A	2
C21	CF 400 V 1000 pF	808-891209-060-A	1
C22	CF 400 V 4700 pF	808-891209-061-A	1
C23, C24	CE 40 V 10000 μF	808-891209-062-A	2
C25, C26	CF 63 V 0.1 μF	808-891209-063-A	2
C27	CF 50 V 1000 pF	808-891209-064-A	1
D1-D3, D5, D6	DG 600 V 1 A	808-891209-065-A	5
D4	DF 1000 V 1 A	808-891209-066-A	1
D7	DF 40 V 1 A	808-891209-067-A	1
D8	DGM 200V 0.5 A	808-891209-093-A	1
RC1	DB 600 V 6 A	808-891209-068-A	1

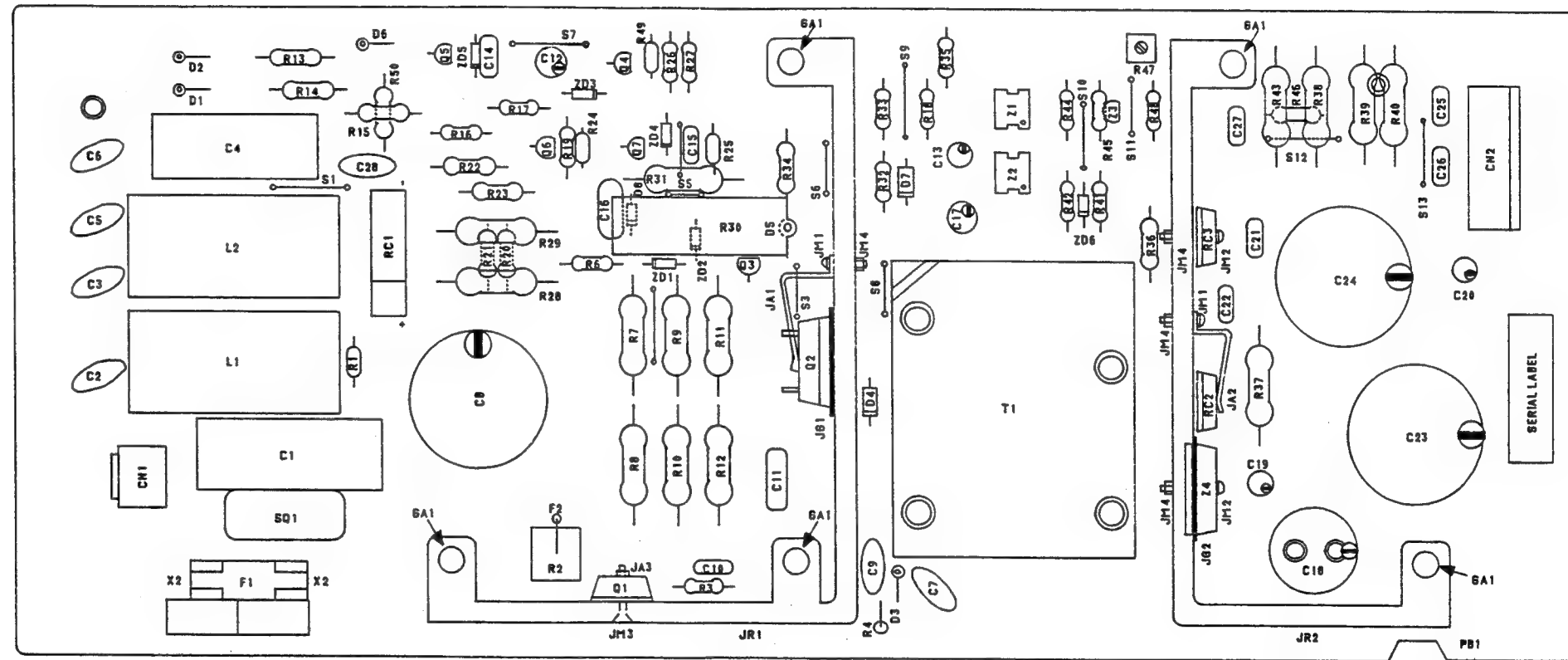


Figure 6-30 PSD Power (C) Assy (808-891104-303-A)

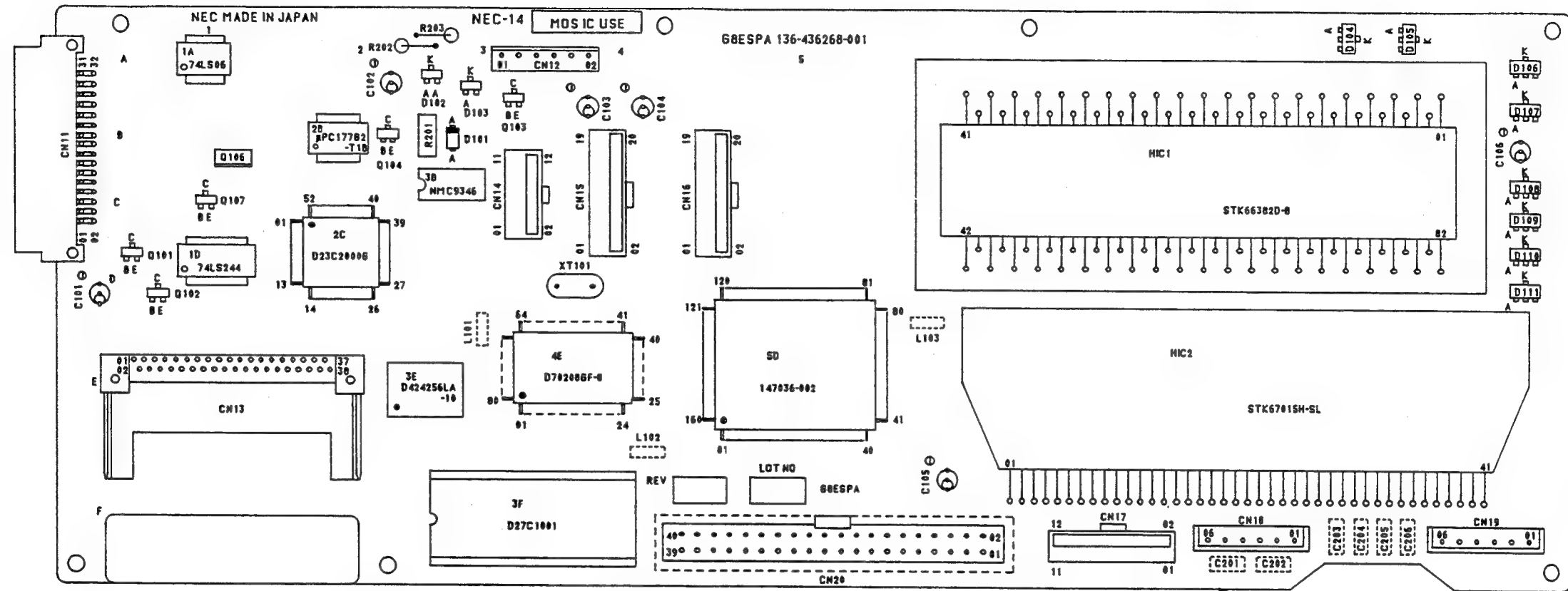
G8ESPA PCB Assembly (136-436268-001-A) -1/2

G8ESPA PCB Assembly (136-436268-001-A) -2/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
4E	D70208GF-8	802-140236-103-A	1
5D	147036-002	802-147036-002-A	1
3F	PROM (27C1001) Rework	136-211641-001-A	1
2C	D23C2000G-F33	802-140874-333-A	1
3E	4C4256L-10	802-140494-210-A	1
3B	NMC9346	802-140501-001-A	1
1A	74LS06	802-120467-005-A	1
1D	74LS244	802-120203-005-A	1
2B	µPC177G2-T1B	802-180380-001-A	1
HIC1	STK66382D-B	802-180386-004-A	1
HIC2	STK67015H-SL	802-180385-002-A	1
Q101	2SC1623-T1B	802-250049-101-0	1
Q103	2SA812-T1B	802-250050-002-0	1
Q106	2SB794	802-260054-0	1
Q102, Q107	FA1A4M-T1B	802-250044-002-A	2
Q104	FP1L2Q-T1B	802-250094-001-0	1
D102	1S2837-T1B	802-220080-001-A	1
D103	RD3.3MB2-T1B	802-230026-106-A	1
D104-D111	RD6.8PB-T1	802-230025-021-A	8
D101	T-FRDCM40V1.0A	802-210047-002-A	1
C53-C55	CKC10B1H222K-T	802-410073-033-A	3
C1-C5, C21-C36, C47	CCC10CH1H101J-T	802-410072-049-A	22
C41, C42	CCC10CH1H300J-T	802-410072-036-A	2
C50	CCC10CH1H331J-T	802-410072-061-A	1
C6-C9, C13-C18, C52, C56-C60	CKC10B1H102K-T	802-410072-025-A	16
C10-C12, C19, C20, C37-C40, C43-C46, C48, C49, C51	CKC10F1E104Z-T	802-410073-473-A	16
C101-C103, C105	T-CEK16V22µF	808-935300-111-A	4
C104, C106	T-CEK50V22µF	808-935300-101-A	2
R201	MCR50JZHJ301-T	802-310070-251-A	1
R127, R128	MCR100JZHJ120-T	802-310070-427-A	2
R117, R118	MCR100JZHJ510-T	802-310070-466-A	2
R36-R40, R42, R45-R77, R81, R86-R89, R93-R97, R101, R110-R115	RM73B2A101J-T	802-310054-049-A	56
R82	RM73B2A181J-T	802-310054-055-A	1
R80	RM73B2A331J-T	802-310054-061-A	1
R85	RM73B2A621J-T	802-310054-068-A	1

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
R1, R2, R99	RM73B2A681J-T	802-310054-069-A	3
R27	RM73B2A911J-T	802-310054-072-A	1
R4-R8	RM73B2A102J-T	802-310054-073-A	5
R29, R103	RM73B2A132J-T	802-310054-076-A	2
R9	RM73B2A152J-T	802-310054-077-A	1
R104	RM73B2A242J-T	802-310054-082-A	1
R102	RM73B2A272J-T	802-310054-083-A	1
R28	RM73B2A362J-T	802-310054-086-A	1
R3, R11-R16, R21-R26, R30-R34, R98, R100, R116	RM73B2A472J-T	802-310054-089-A	21
R119-R122	RM73B2A303J-T	802-310054-108-A	4
R17, R19, R20, R41, R78, R79, R84, R90, R91, R106, R108, R134, R135	RM73B2A103J-T	802-310054-097-A	13
R18, R83	RM73B2A473J-T	802-310054-113-A	2
R123-R126	RM73B2A474J-T	802-310054-137-A	4
R10	RM73B2A104J-T	802-310054-121-A	1
R35	RM73B2A105J-T	802-310054-145-A	1
R132	RM73B2A162J-T	802-310054-078-A	1
XT101	CSA16.00MX	808-970112-009-A	1
L1-L9	BLM41A04PT-T	802-530167-002-A	9
R131	MCR25JZHJ183-T	802-310070-097-A	1
R202, R203	RSM3FB30ΩJUZ	802-310051-616-A	2
CN11	PCN10-32P-2.54DS	808-955329-104-A	1
CN12	VR-06	808-955247-806-A	1
CN13	ICP-H38	802-720076-138-0	1
CN15, CN16	FH11-20S-1.27DSA	808-955311-020-A	2
CN14, CN17	FH11-12S-1.27DSA	808-955311-012-A	2
CN18	HR06S, Black	808-955247-563-A	1
CN19	HR06S, White	808-955247-561-A	1
(1)	G8ESP PWB	136-456268-D	1
(2E)	Insulating Sheet	136-852765-001-A	1
(3F)	32Pin, IC Socket	802-730031-132-0	1

Illustrated Parts Breakdown



- NOTES:
1. CN20, L101 TO L103 AND C201 TO C206 ARE NOT MOUNTED.
 2. 3F IS MOUNTED WITH IC SOCKET ON THE PCB.
 3. CN11 AND 13 SHALL BE MOUNTED WITHOUT ANY CLEARANCE ON THE PCB.
 4. NO DIRT SUCH AS FLUX SHALL ADHERE TO CONTACTS OF CONNECTORS CN11 TO 19 AND CONTACT PART OF IC SOCKET.
 5. MOUNT Q106 WITH MARKING SURFACE SIDE DIRECTING TO UPPER SIDE OF THIS DRAWING.

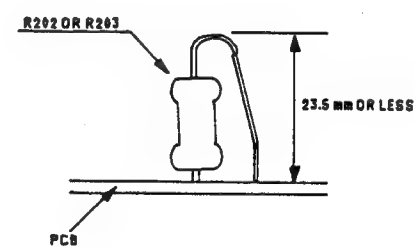
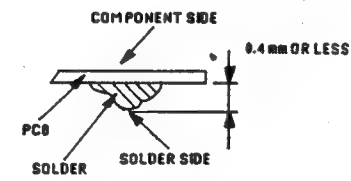
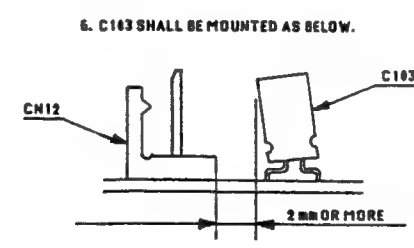
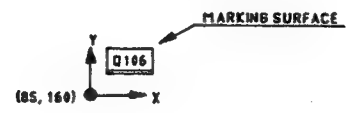
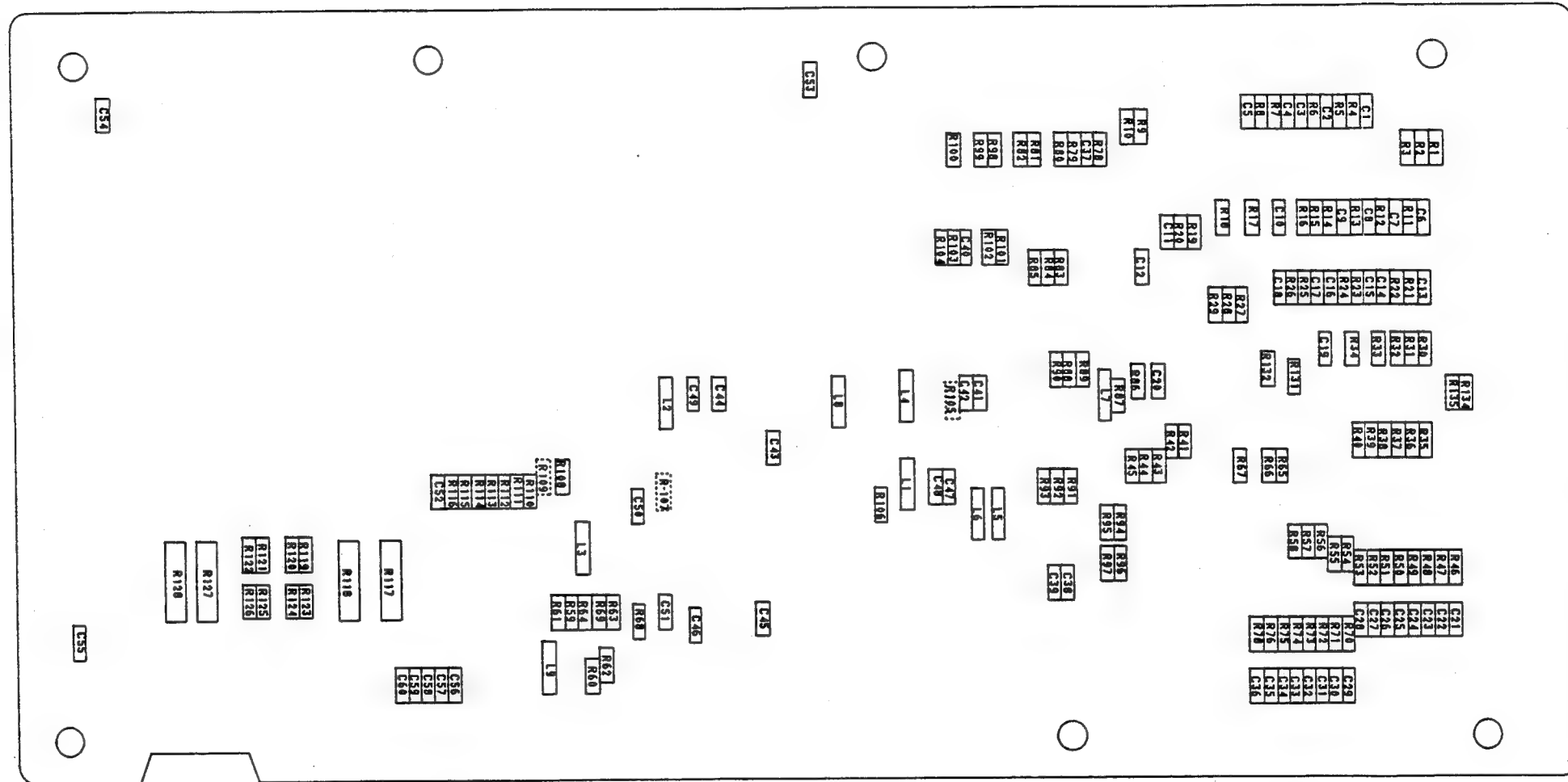


Figure 6-31 G8ESPA PCB Assembly (Component Side)



NOTE: R43, R44, R92, R105, R107 AND R109 IS NOT MOUNTED.

Figure 6-31 G8ESPA PCB Assembly (Solder Side)

Illustrated Parts Breakdown

G8ESPB PCB Assembly (136-436268-002-A) -1/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
4E	D70208GF-8	802-140236-103-A	1
5D	147036-002	802-147036-002-A	1
3F	PROM (27C1001) Rework	136-211641-007-A	1
2C	D23C2000G-F33	802-140874-333-A	1
3E	4C4256L-10	802-140494-210-A	1
3B	9346	802-140501-001-A	1
1A	74LS06	802-120467-005-A	1
1D	74LS244	802-120203-005-A	1
2B	μPC177G2-T1	802-180380-001-A	1
HIC1	STK66382D-B	802-180386-004-A	1
HIC2	STK67015H-SL	802-180385-002-A	1
Q101	2SC1623-T1B	802-250049-101-0	1
Q103	2SA812-T1B	802-250050-002-0	1
Q106	2SB794	802-260054-0	1
Q102, Q107	FA1A4M-T1B	802-250044-002-A	2
Q104	FP1L2Q-T1B	802-250094-001-0	1
D102	1S2837-T1B	802-220080-001-A	1
D103	RD3.3MB2-T1B	802-230026-106-A	1
D104-D111	RD6.8PB-T1	802-230025-021-A	8
D101	T-FRDCM40V1.0A	802-210047-002-A	1
C53-C55	CKC10B1H222K-T	802-410073-033-A	3
C1-C5, C21-C36, C47	CCC10CH1H1C1J	802-410072-049-A	22
C41, C42	CCC10CH1H300J-T	802-410072-036-A	2
C50	CCC10CH1H331J-T	802-410072-061-A	1
C6-C9, C13-C18, C52, C56-C60	CKC10B1H102K-T	802-410073-025-A	16
C10-C12, C19, C20, C37-C40, C43-C46, C48, C49, C51	CKC10F1E104Z-T	802-410073-473-A	16
C101-C103, C105	T-CEK16V22μF	808-935300-111-A	4
C104, C106	T-CEK50V22μF	808-935300-101-A	2
R201	MCR50JZHJ301-T	802-310070-251-A	1
R127, R128	MCR100JZHJ120-T	802-310070-427-A	2
R117, R118	MCR100JZHJ510-T	802-310070-466-A	2
R36-R40, R42, R45-R77, R81, R86-R89, R93-R97, R101, R110-R115	RM73B2A101J-T	802-310054-049-A	56
R82	RM73B2A181J-T	802-310054-055-A	1
R80	RM73B2A331J-T	802-310054-061-A	1
R85	RM73B2A621J-T	802-310054-068-A	1

G8ESPB PCB Assembly (136-436268-002-A) -2/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
R1, R2, R99	RM73B2A681J-T	802-310054-069-A	3
R27	RM73B2A911J-T	802-310054-072-A	1
R4-R8	RM73B2A102J-T	802-310054-073-A	5
R29, R103	RM73B2A132J-T	802-310054-076-A	2
R9	RM73B2A152J-T	802-310054-077-A	1
R104	RM73B2A242J-T	802-310054-082-A	1
R102	RM73B2A272J-T	802-310054-083-A	1
R28	RM73B2A362J-T	802-310054-086-A	1
R3, R11-R16, R21-R26, R26, R30-R34, R98, R100, R116	RM73B2A472J-T	802-310054-089-A	21
R119-R122	RM73B2A303J-T	802-310054-108-A	4
R17, R19, R20, R41, R78, R79, R84, R90, R91, R106, R108, R134, R135	RM73B2A103J-T	802-310054-097-A	13
R18, R83	RM73B2A473J-T	802-310054-113-A	2
R123-R126	RM73B2A474J-T	802-310054-137-A	4
R10	RM73B2A104J-T	802-310054-121-A	1
R35	RM73B2A105J-T	802-310054-145-A	1
R132	RM73B2A162J-T	802-310054-078-A	1
XT101	CSA16.00MX	808-970112-009-A	1
L1-L9	BLM41A04PT-T	802-530167-002-A	9
R131	MCR25JZHJ183-T	802-310070-097-A	1
R202, R203	RSM3FB30ΩJUZ	802-310051-616-A	2
CN11	PCN10-32P-2.54DS	808-955329-104-A	1
CN12	VR-06	808-955247-806-A	1
CN13	ICP-H38	802-720076-138-0	1
CN15, CN16	FH11-20S-1.27DSA	808-955311-020-A	2
CN14, CN17	FH11-12S-1.27DSA	808-955311-012-A	2
CN18	HR06S, Black	808-955247-563-A	1
CN19	HR06S, Natural	808-955247-561-A	1
CN20	STP-40P	802-720044-106-0	1
(1)	G8ESPB PCB	136-456268-D	1
(78)	32 Pin IC Socket	802-730031-132-0	1
(90)	Insulation Sheet	136-852765-001-A	1

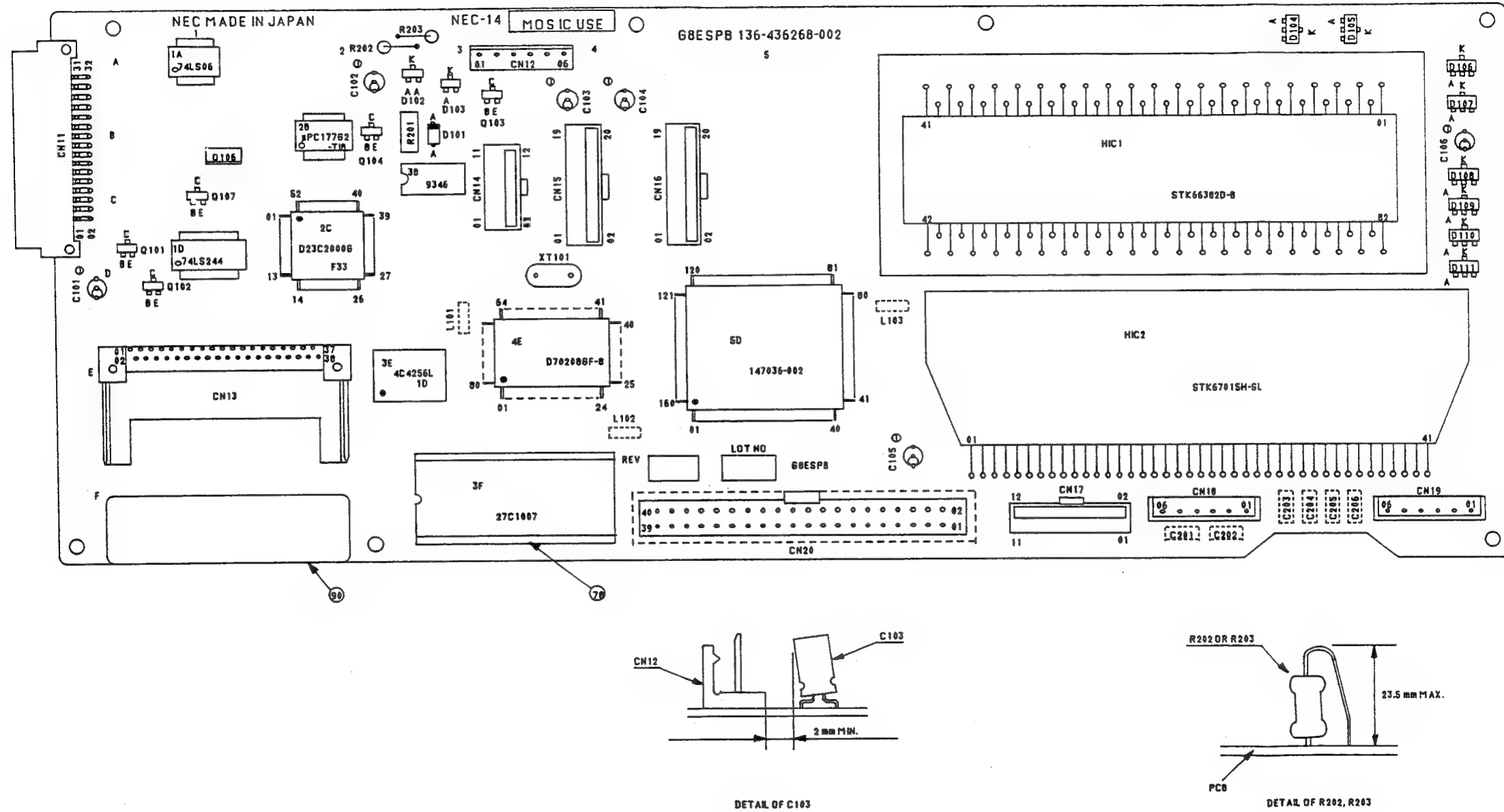
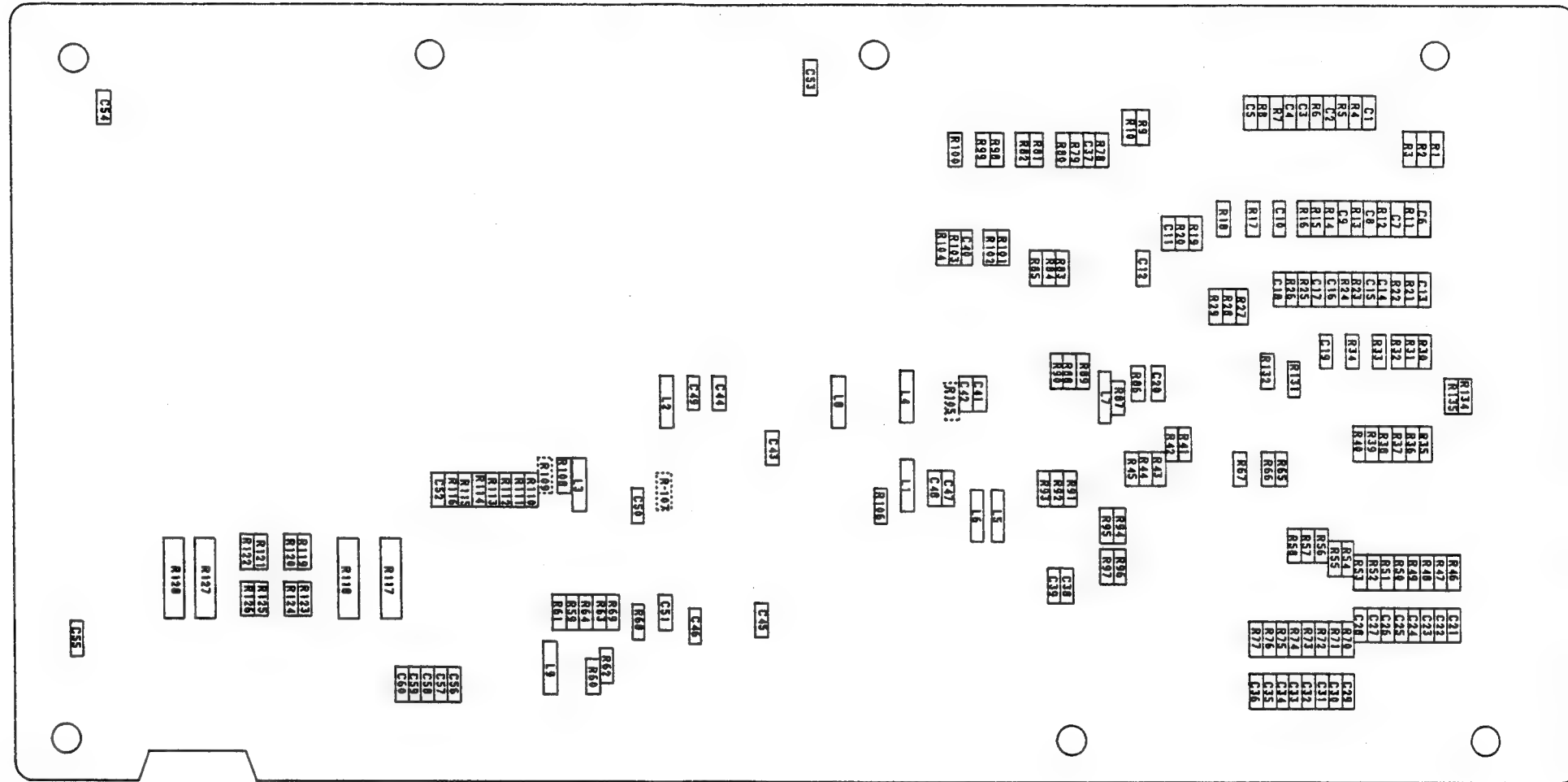


Figure 6-32 G8ESPB PCB Assembly (Component Side)

Illustrated Parts Breakdown



NOTE: R43, R44, R92, R105, R107, R109 ARE NOT MOUNTED.

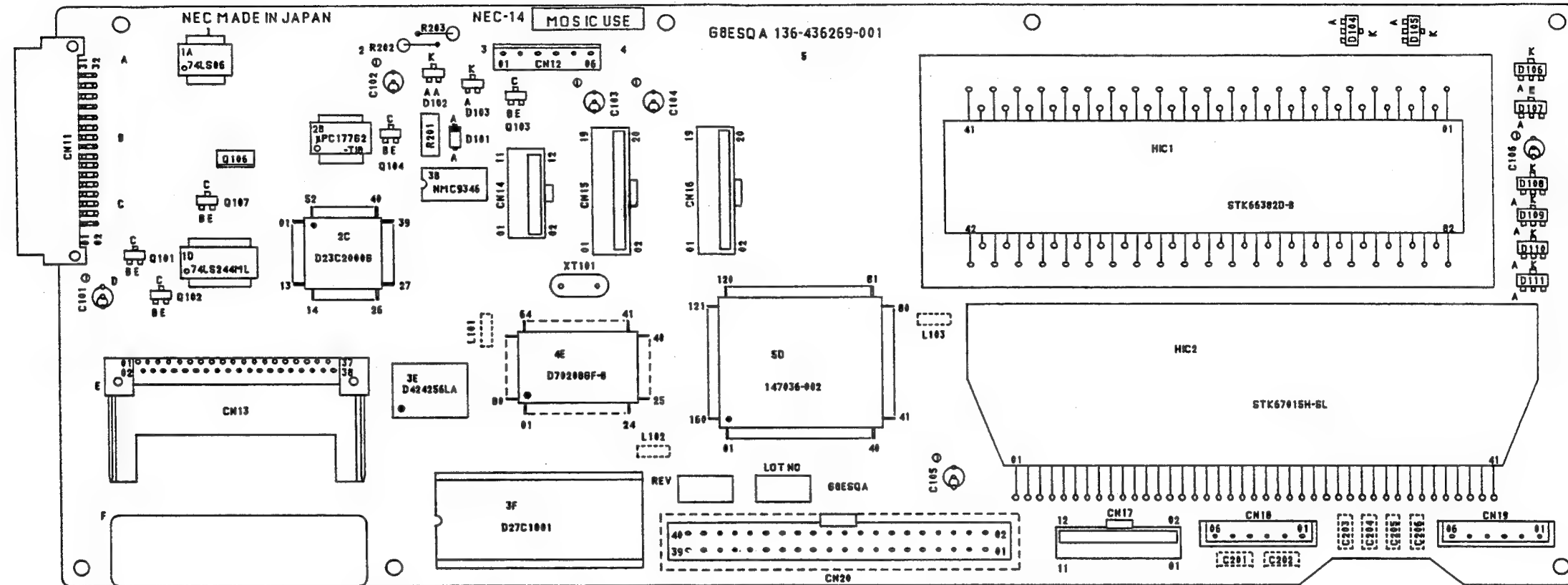
Figure 6-32 G8ESPB PCB Assembly (Solder Side)

G8ESQA PCB Assembly (136-436269-001-A) -1/2

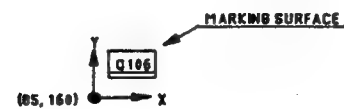
COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
4E	D70208GF-8	802-140236-103-A	1
5D	147036-002	802-147036-002-A	1
3F	PROM (27C1001) Rework	136-211641-001-A	1
2C	D23C2000G-F43	802-140874-043-A	1
3E	4C256L-10	802-140494-210-A	1
3B	NMC9346	802-140501-001-A	1
1A	74LS06	802-120467-005-A	1
1D	74LS244	802-120203-005-A	1
2B	μPC177G2-T1B	802-180380-001-A	1
HIC1	STK66382D-B	802-180386-004-A	1
HIC2	STK67015H-SL	802-180385-002-A	1
Q101	2SC1623-T1B	802-250049-101-0	1
Q103	2SA812-T1B	802-250050-002-0	1
Q106	2SB794	802-260054-0	1
Q102, Q107	FA1A4M-T1B	802-250044-002-A	2
Q104	FP1L2Q-T1B	802-250094-001-0	1
D102	1S2837-T1B	802-220080-001-A	1
D103	RD3.3MB2-T1B	802-230026-106-A	1
D104-D111	RD6.8PB-T1	802-230025-021-A	8
D101	T-FRDCM40V1.0A	802-210047-002-A	1
C53-C55	CKC10B1H222K-T	802-410073-033-A	3
C1-C5, C21-C36, C47	CCC10CH1H101J-T	802-410072-049-A	22
C41, C42	CCC10CH1H300J-T	802-410072-036-A	2
C50	CCC10CH1H331J-T	802-410072-061-A	1
C6-C9, C13-C18, C52, C56-C60	CKC10B1H102K-T	802-410073-025-A	16
C10-C12, C19, C20, C37-C40, C43-C46, C48, C49, C51	CKC10F1E104Z-T	802-410073-473-A	16
C101-C103, C105	T-CEK16V22μF	808-935300-111-A	4
C104, C106	T-CEK50V22μF	808-935300-101-A	2
R201	MCR50JZHJ301-T	802-310070-251-A	1
R127, R128	MCR100JZHJ120-T	802-310070-427-A	2
R117, R118	MCR100JZHJ510-T	802-310070-466-A	2
R36-R40, R42, R45-R77, R81, R86-R89, R93-R97, R101, R110-R115	RM73B2A101J-T	802-310054-049-A	56
R82	RM73B2A181J-T	802-310054-055-A	1
R80	RM73B2A331J-T	802-310054-061-A	1
R85	RM73B2A621J-T	802-310054-068-A	1
R1, R2, R99	RM73B2A681J-T	802-310054-069-A	3
R27	RM73B2A911J-T	802-310054-072-A	1
R4-R8	RM73B2A102J-T	802-310054-073-A	5
R29, R103	RM73B2A132J-T	802-310054-076-A	2
R9	RM73B2A152J-T	802-310054-077-A	1

G8ESQA PCB Assembly (136-436269-001-A) -2/2

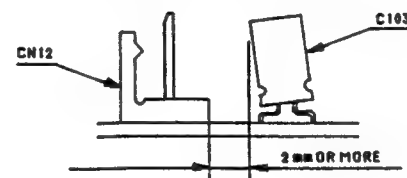
COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
R104	RM73B2A242J-T	802-310054-082-A	1
R102	RM73B2A272J-T	802-310054-083-A	1
R28	RM73B2A362J-T	802-310054-086-A	1
R3, R11-R16, R21-R26, R30-R34, R98, R100, R116	RM73B2A472J-T	802-310054-089-A	21
R119-R122	RM73B2A303J-T	802-310054-108-A	4
R17, R19, R20, R41 R78, R79, R84, R90 R91, R106, R108, R134, R145	RM73B2A103J-T	802-310054-097-A	13
R18, R83	RM73B2A473J-T	802-310054-113-A	2
R123-R126	RM73B2A474J-T	802-310054-137-A	4
R10	RM73B2A104J-T	802-310054-121-A	1
R35	RM73B2A105J-T	802-310054-145-A	1
R132	RM73B2A162J-T	802-310054-078-A	1
XT101	CSA16.00MX	808-970112-009-A	1
L1-L9	BLM41A04PT-T	802-530167-002-A	9
R131	MCR25JZHJ183-T	802-310070-097-A	1
R202, R203	RSM3FB30ΩJUZ	802-310051-616-A	2
CN11	PCN10-32P-2.54DS	808-955329-104-A	1
CN12	VR-06	808-955247-806-A	1
CN13	ICP-H38	802-720076-138-0	1
CN15, CN16	FH11-20S-1.27DSA	808-955311-020-A	2
CN14, CN17	FH11-12S-1.27DSA	808-955311-012-A	2
CN18	HR06S, Black	808-955247-563-A	1
CN19	HR06S, White	808-955247-561-A	1
(1)	G8ESQ PWB	136-456269-D	1
(2E)	Insulating Sheet	136-852765-001-A	1
(3F)	32 Pin, IC Socket	802-730031-132-0	1



- NOTES:
1. CN20, L101 TO L103 AND C201 TO C206 ARE NOT MOUNTED.
 2. 3F IS MOUNTED WITH IC SOCKET ON THE PCB.
 3. CN11 AND 13 SHALL BE MOUNTED WITHOUT ANY CLEARANCE ON THE PCB.
 4. NO DIRT SUCH AS FLUX SHALL ADHERE TO CONTACTS OF CONNECTORS CN11 TO 19 AND CONTACT PART OF IC SOCKET.
 5. MOUNT Q106 WITH MARKING SURFACE SIDE DIRECTING TO UPPER SIDE OF THIS DRAWING.



6. C103 SHALL BE MOUNTED AS BELOW.



7. MOUNTING OF R202 AND R203 SHALL BE AS FOLLOWS.

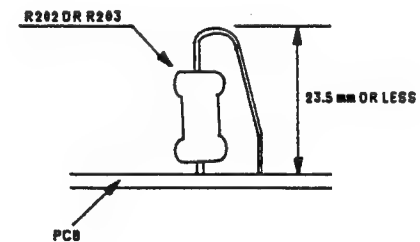
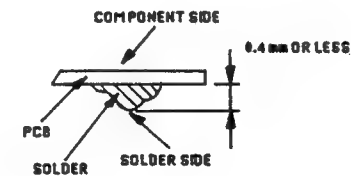
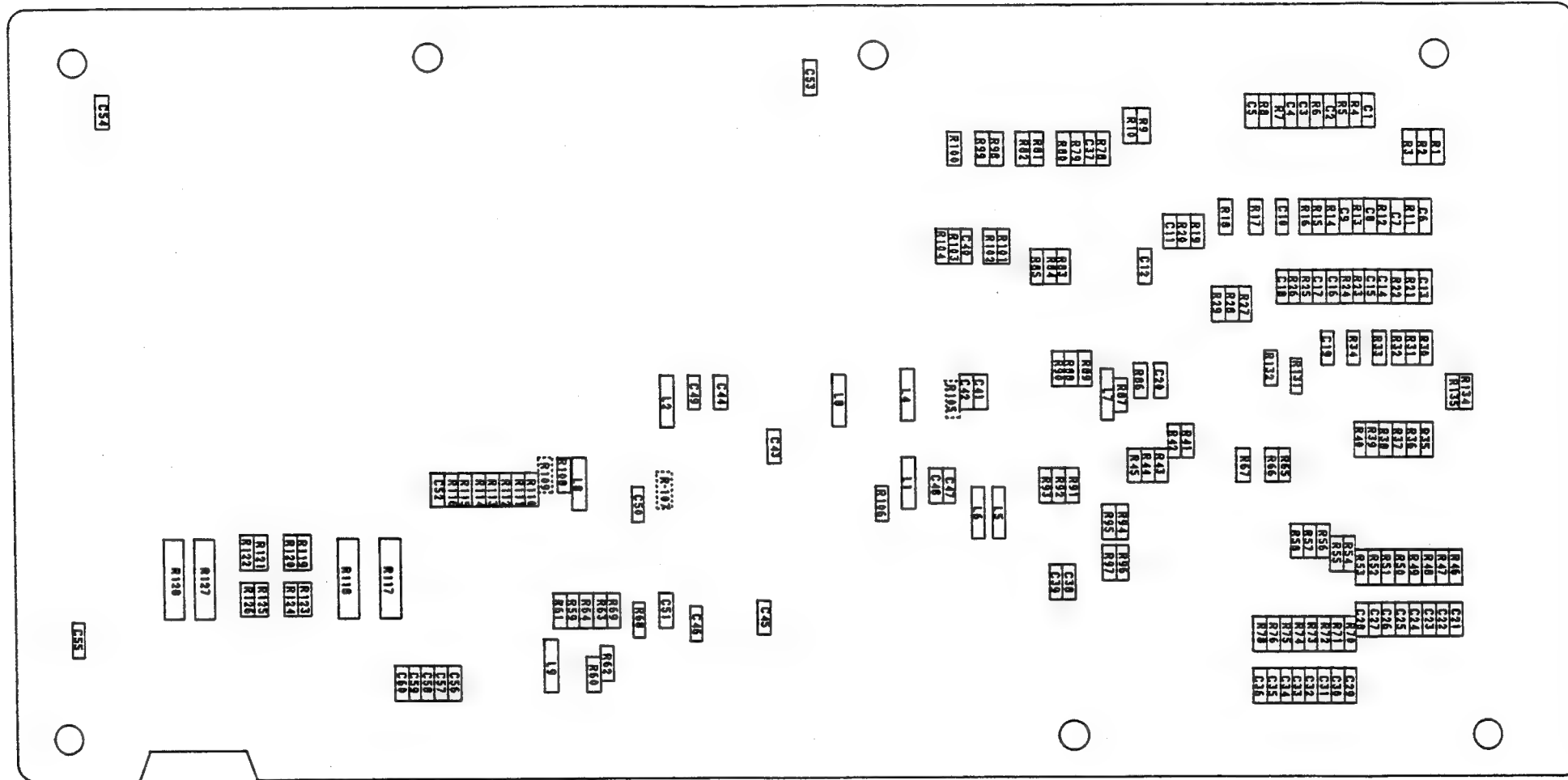


Figure 6-33 G8ESQA PCB Assembly (Component Side)



NOTE: R43, R44, R92, R105, R107, R109 ARE NOT MOUNTED.

Figure 6-33 G8ESQA PCB Assembly (Solder Side)

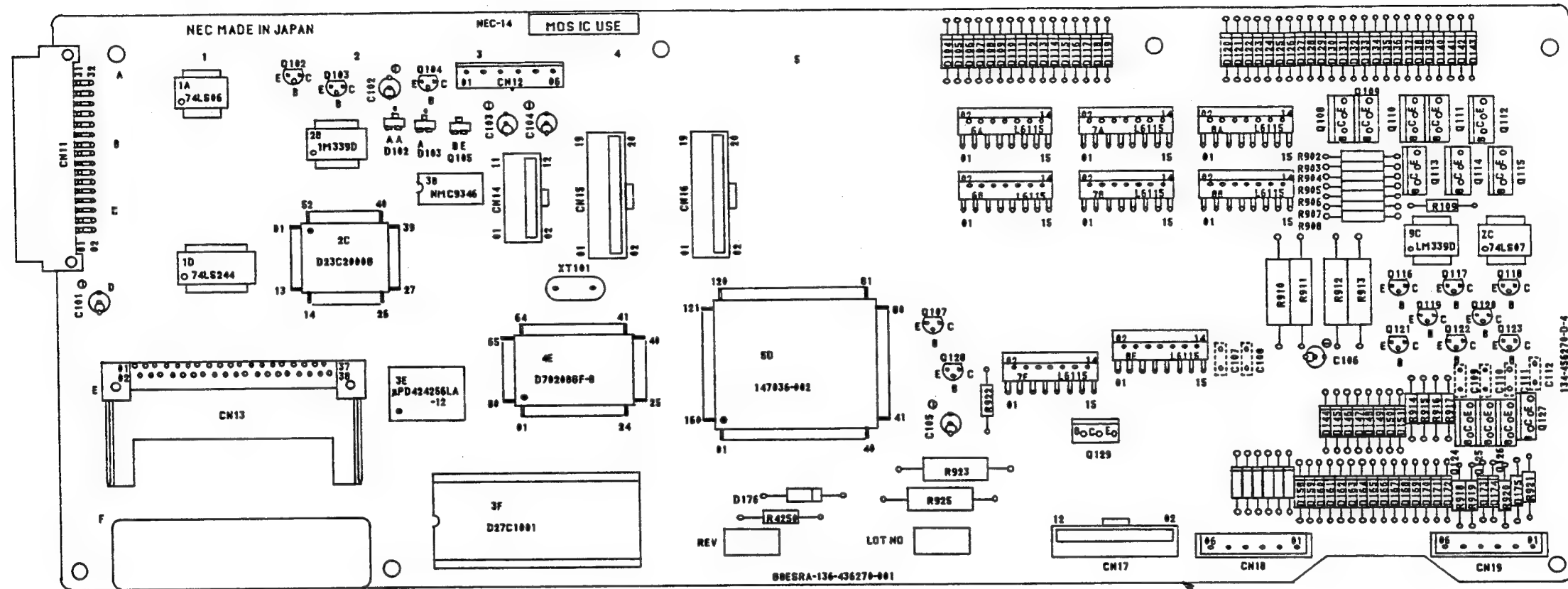
Illustrated Parts Breakdown

G8ESRA PCB Assembly (136-436270-001-A) -1/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
4E	D70208GF-8-3B9	802-140236-103-A	1
5E	147036-002	802-147036-002-A	1
3F	EP-ROM Rework	136-218768-001-A	1
2C	23C2000G-F43	802-140874-043-A	1
3E	4C256L-10	802-140494-210-A	1
3B	9346	802-140501-001-A	1
1A	DM7406MR	808-861475-001-A	1
ZC	DM7407MR	808-861475-002-A	1
1D	SN74LS244DWR	808-961475-003-A	1
2B, 9C	LM339DR	808-861475-004-A	2
6A, 6B, 7A, 7B, 7E 8A, 8B, 8E	L6115 (FET)	808-861475-005-A	8
Q108-Q115, Q124-Q127, Q104	TIP135	808-861475-006-A	12
Q102, Q103, Q116-Q123, Q128	BC636	808-861475-007-A	1
Q107	BC337	808-861475-008-A	11
Q105	BC635	808-861475-009-A	1
Q129	BC856/T1	808-861475-010-A	1
D104-D123, D126, D127, D130, D133, D136-D151, D154-D161, D164-D176	BD678	808-861475-011-A	1
D102	BYD73D	808-861475-012-A	61
D103	BAV70/T1	808-861475-013-A	1
D124, D125, D128, D129, D131, D132, D134, D135	BZX84-C3V3/T1	808-861475-014-A	1
D152, D153, D162, D163	RD6.8FB	802-230014-021-0	8
C1-C5, C21-C36, C47	RD24FB	802-230014-047-0	4
C41, C42	CCC10CH1H101J-T	802-410072-049-A	22
C51	CCC10CH1H300J-T	802-410072-036-A	2
C6-C9, C13-C18, C56, C70, C76	CCC10CH1H331J-T	802-410072-061-A	1
C67-C69	CKC10B1H102K-T	802-410073-025-A	18
C54, C57-C59	CKC10B1H222K-T	802-410073-033-A	3
C10-C12, C19, C20, C37-C40, C48, C60-C66	CKC10B1H333K-T	802-410073-061-A	4
C101-C103, C105	CKC10F1E104Z-T	802-410073-473-A	17
C104, C106	T-CEK16V22µF	808-935300-111-A	4
R155-R158	03628229	808-861475-023-A	2
R41-R45, R47-R82, R88, R93-R96, R100-R104, R108, R124-R129	RC11 10R	808-861475-024-A	4
R89	RC11 100R	808-861475-025-A	58
R87	RC11 180R	808-861475-026-A	1
R83	RC11 330R	808-861475-027-A	1
R92	RC11 470R	808-861475-028-A	1
R1, R2, R106	RC11 620R	808-861475-029-A	1
	RC11 680R	808-861475-030-A	3

G8ESRA PCB Assembly (136-436270-001-A) -2/2

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
R32	RC11 910R	808-861475-031-A	1
R4-R6, R8, R9, R112, R141-R145, R150-R152, R169-R172	RC11 1K	808-861475-032-A	18
R119	RC11 1K2	808-861475-033-A	1
R34, R110	RC11 1K3	808-861475-034-A	2
R14	RC11 1K5	808-861475-035-A	1
R199	RC11 1K6	808-861475-036-A	1
R111	RC11 2K4	808-861475-037-A	1
R109	RC11 2K7	808-861475-038-A	1
R33	RC11 3K6	808-861475-039-A	1
R3, R16-R21, R26-R31, R35-R39, R84, R105	RC11 4K7	808-861475-040-A	63
R107, R113, R130, R132, R136, R137, R149, R164, R166-R168, R173-R196, R224-R231			
R10-R13, R22, R24, R25, R46, R85, R86, R91, R97, R98, R115, R122, R153, R154, R159-R163, R165, R197, R198	RC11 10K	808-861475-041-A	25
R120, R131, R140, R146	RC11 11K	808-861475-042-A	4
R121, R134, R139, R148	RC11 43K	808-861475-043-A	4
R23, R90	RC11 47K	808-861475-044-A	2
R133, R135, R138, R147	RC11 68K	808-861475-045-A	4
R15	RC11 100K	808-861475-046-A	1
R40	RC11 1M	808-861475-047-A	1
R922	SFR16S 18K	808-861475-048-A	1
R924	SFR16T 300R	808-861475-049-A	1
R920, R921	PR01 12R	808-861475-057-A	2
R918, R919	PR01 51R	808-861475-051-A	2
R902-R909	PR01 1K1	808-861475-052-A	8
R914-R917	PR01 2K7	808-861475-053-A	4
R910-913	PR03 1R	808-861475-054-A	4
R923, R925	PR03 30R	808-861475-055-A	2
L1-L9	BLM41A 04PT-T	802-530167-002-A	9
XT101	CSA16.00MX	808-970112-009-A	1
CN11	PCN10-32P-2.54DS	808-955239-104-A	1
CN14, CN17	FH11-12S-1.27DSA	808-955311-012-A	2
CN12	VR06	808-955247-806-A	1
CN13	ICP-H38	808-720076-138-0	1
CN15, CN16	FH11-20S-1.27DSA	808-955311-020-A	2
CN18	HR06S Black	808-955247-563-A	1
CN19	HR06S Natural	808-955247-561-A	1
(1)	G8ESR PWB	136-456270-E	1
(2E)	Insulation Sheet	136-852765-001-A	1
(3F)	42000-3230	808-861475-056-A	1



NOTES:

1. 3F IS MOUNTED WITH IC SOCKET ON THE PCB.
2. C101 TO C106 SHALL BE INHIBITED FROM CLEANING WITH TRICHLOROETHANE.
3. C103 SHALL BE MOUNTED AS BELOW.

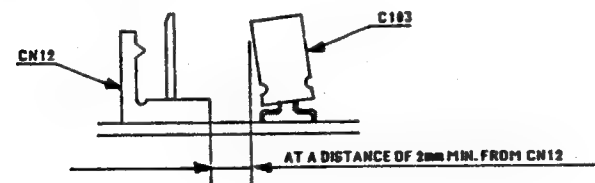
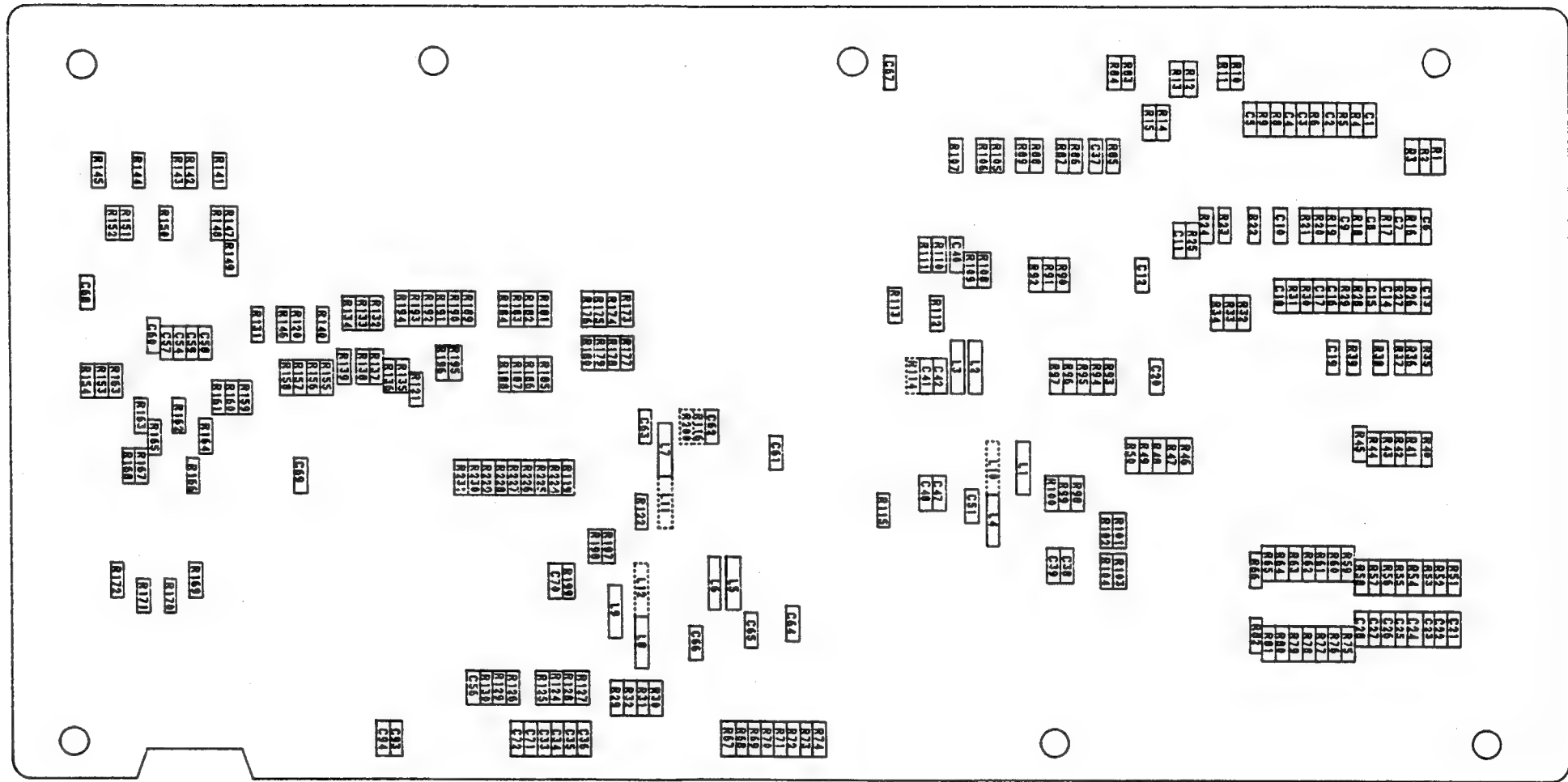


Figure 6-34 G8ESRA PCB Assembly (Component Side)

Illustrated Parts Breakdown



NOTE: FOLLOWING PARTS ARE NOT MOUNTED ON THIS PCB.
R99, R114, R116, R200, L10, L11, L12

Figure 6-34 G8ESRA PCB Assembly (Solder Side)

G8EESTA PCB Assembly (136-4367272-001-A)

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
C1, C3-C5	T-MC02F1H104Z	808-935500-002-A	4
C2, C6	T-MC02H1H101K	808-935500-010-A	2
CN42	HR-045, Natural	808-955247-541-A	1
CN44	HR-0125, Natural	808-955247-591-A	1
CN41	PCN10B-32S-2.54DS	808-955329-002-A	1
CN45	Centronics Connector Assembly	136-843453-001-A	1
J1, J2, J4, J6	Jumper Wire (16P)	133-381000-016-A	4
J3, J8	Jumper Wire (12P)	133-381000-012-A	2
J5, J7	Jumper Wire (8P)	133-381000-008-A	2
(1)	G8EST PCB	136-456272-D	1

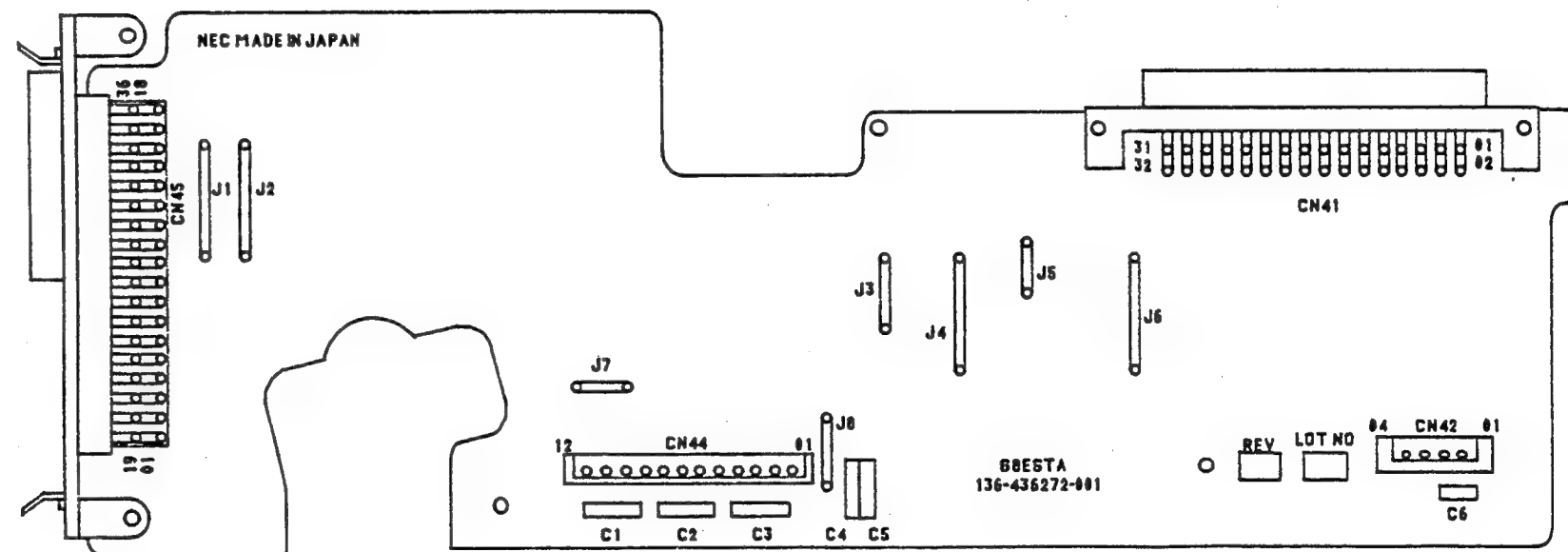


Figure 6-35 G8EESTA PCB Assembly

G8ESVA PCB Assembly (136-436274-001-A)

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
C1, C3-C5	T-MC02F1H104Z	808-935500-002-A	4
C2, C6	T-MC02H1H101K	808-935500-010-A	2
CN42	HR-045, Natural	808-955247-541-A	1
CN44	HR-0125, Natural	808-955247-591-A	1
CN41	PCN10B-32S-2.54DS	808-955329-002-A	1
CN45	Centronics Connector Assembly	136-843453-001-A	1
J1, J2, J4, J6	Jumper Wire (16P)	133-381000-016-A	4
J3, J8	Jumper Wire (12P)	133-381000-012-A	2
J5, J7	Jumper Wire (8P)	133-381000-008-A	2
(1)	G8ESV PCB	136-456274-D	1

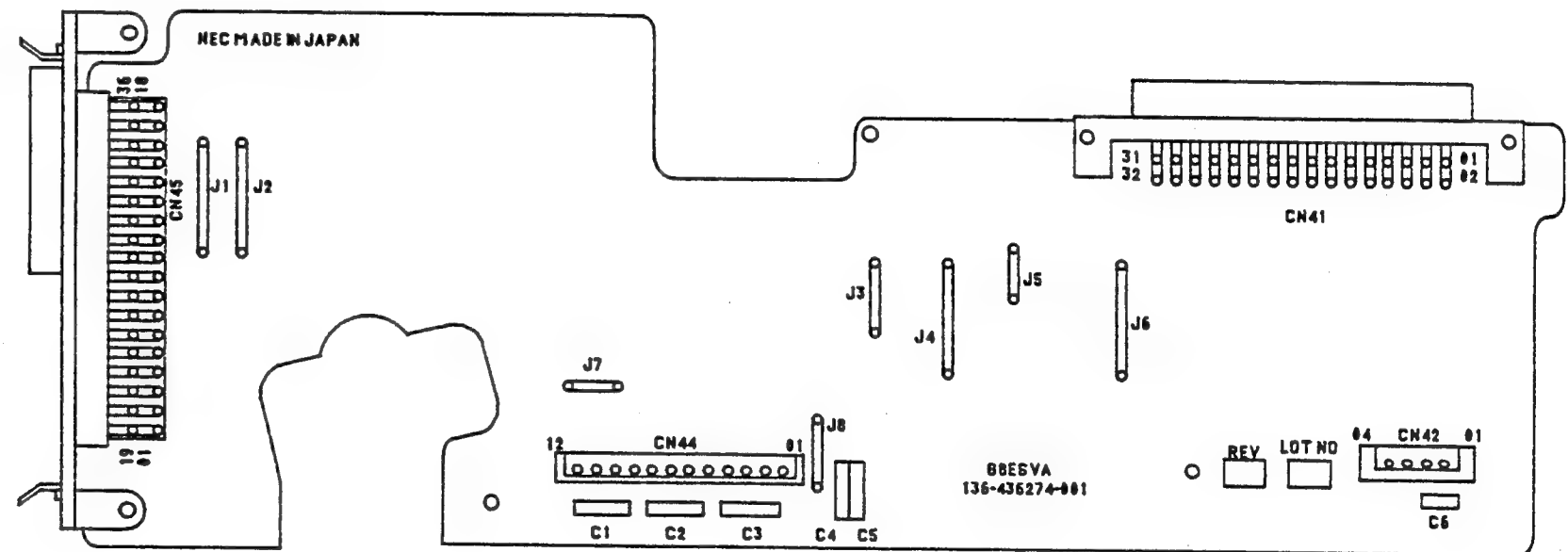


Figure 6-36 G8ESVA PCB Assembly

RS-232C Kit (808-217741-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Serial I/F Case (U)	136-846899-001-A	1
2	Serial I/F Case (L)	136-846900-001-A	1
3	Set Screw	136-846884-001-A	2
4	G8ESW PCB Assembly (See Figure 6-38 for breakdown)	136-436275-A	1
201	Screw, PCBTSx3x8x3GF	808-802172-308-0	4
202	Screw, PCBTSx3x12x3GF	808-802172-312-0	2

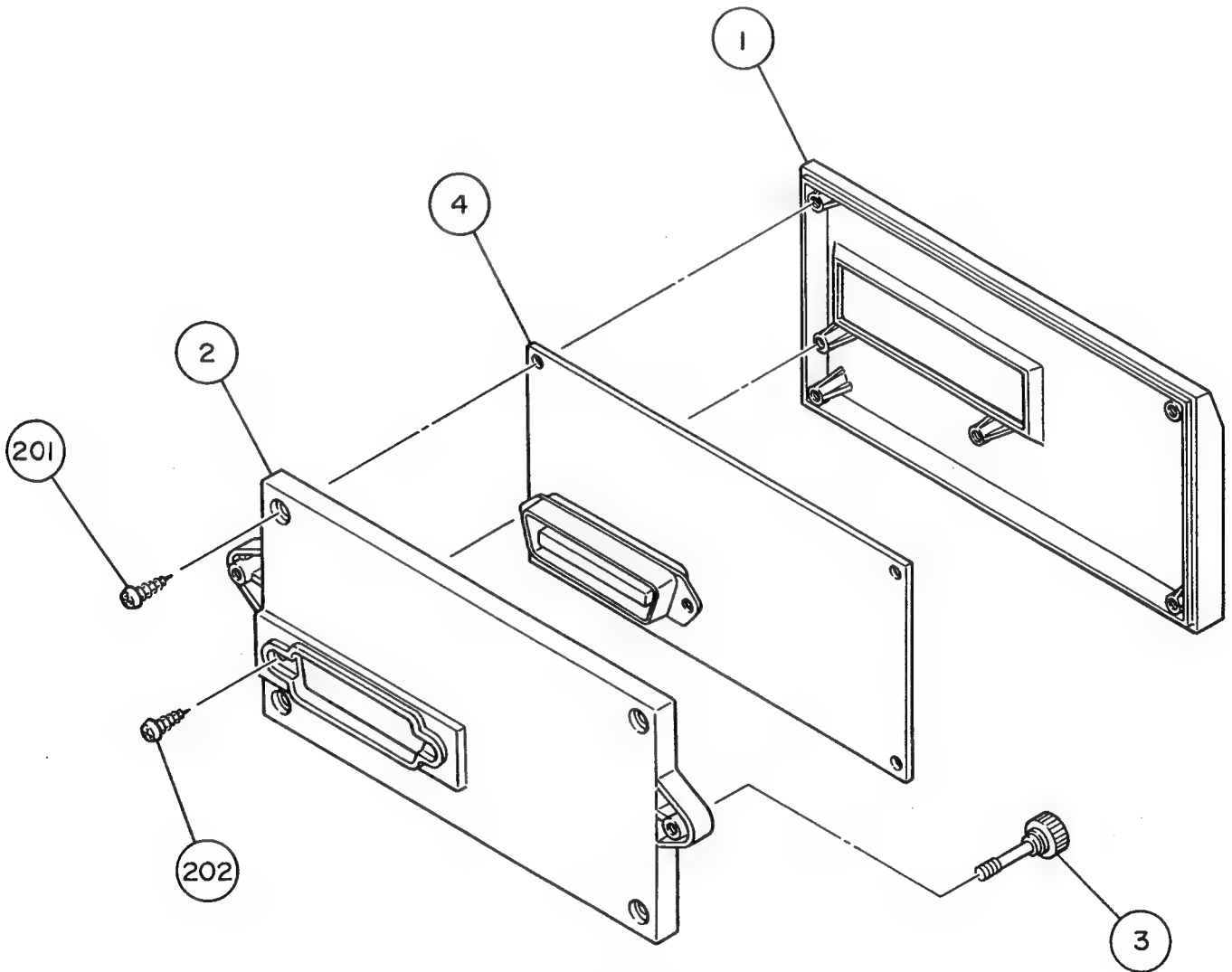


Figure 6-37 RS-232C Kit

Illustrated Parts Breakdown

G8ESW PCB Assembly (136-436275-A)

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
Z1	D78C11G-251	802-140628-251-A	1
Z2	74LS00	808-907000-001-A	1
Z3	74LS373	808-907373-001-A	1
Z4	464 (150)	808-919407-150-A	1
Z5	D4712A	802-180453-002-A	1
D1	1S953-TB	802-210018-002-0	1
R1	T-RF07Q203G	808-930300-017-A	1
R2	T-RF07Q105G	808-930300-074-A	1
RM1	RRS09BL472J(L)	802-190033-908-A	1
L1-L9	ZBF503D-00	802-840043-002-A	9
C6, C7	FMC02CH1H300K	808-935501-006-A	2
C5, C8, C9, C11, C12 C14, C15	FMC02F1H104Z	808-935500-002-A	6
C1-C4, C10, C13	T-CE16V22 μ F	808-935300-084-A	6
CM1, CM2	IHC4-331KA	808-935569-001-A	2
CM3	IHC4-222KA	808-935569-002-A	1
XT1	CSA 7.37 MT	808-970112-011-A	1
CN55	57-10360-13	802-710037-423-A	1
CN56	Serial Connector Assembly	136-846428-001-A	1
J1	Z-149-3P	808-955125-022-A	1
(1)	G8ESW PCB	136-456274-D	1
(22)	Spacer	136-846431-001-A	2

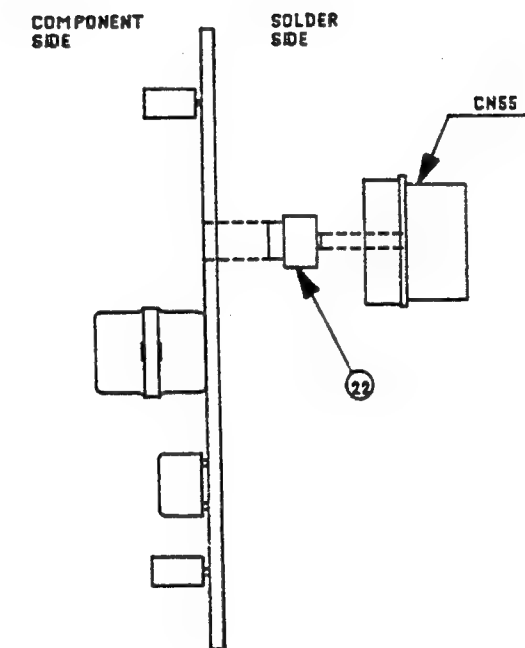
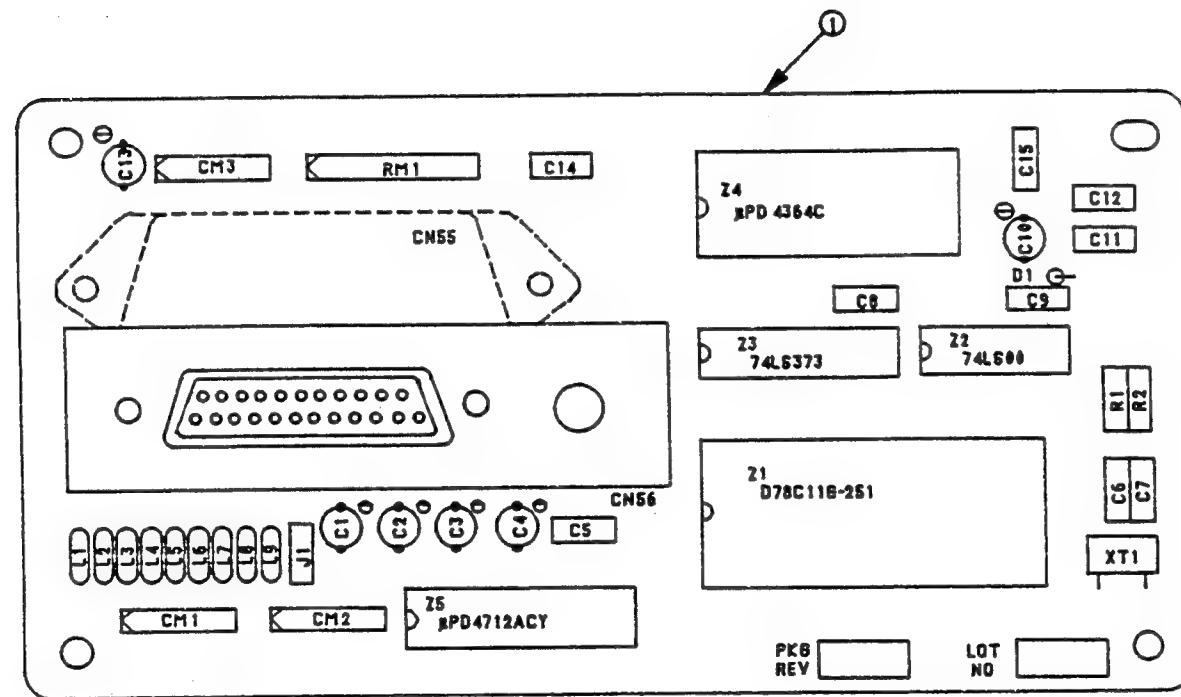


Figure 6-38 G8ESW PCB Assembly

Illustrated Parts Breakdown

Pull Tractor Unit (S) (136-218470-001-A)

ITEM	DESCRIPTION	PART NUMBER	QTY
1	Side Frame (R) Subassembly	136-789127-001-A	1
2	Side Frame (L) Subassembly	136-789127-002-A	1
3	Lock Spring	136-789132-A	2
4	Idle Gear 1	136-789143-A	1
5	Idle Gear 2	136-789144-A	1
6	Center Guide	136-789138-A	1
7	Tractor Gear	136-789140-A	1
8	Drive Shaft (S)	136-789141-001-A	1
9	Hold Shaft (S)	136-789142-001-A	1
10	Tractor Knob	136-789162-001-A	1
11	Clutch Spring	136-789151-A	1
12	Bushing	136-789152-A	2
13	Paper Net (S)	136-789154-001-A	1
14	Rubber Cap	136-811830-A	1
15	Side Cover (R)	136-789155-001-A	1
16	Side Cover (L)	136-789155-002-A	1
17	Tractor (R) Assembly	808-802351-001-A	1
18	Tractor (L) Assembly	808-802351-002-A	1
19	Frame Stay (SS)	136-789139-001-A	1
20	Frame Stay (S)	136-789139-002-A	1
21	Tractor Guide (R)	136-789150-001-A	1
22	Tractor Guide (L)	136-789150-002-A	1
23	Washer	136-789149-A	1
201	E Ring E-42	803-010030-042-0	1
202	E Ring E-50	803-010030-050-0	1
203	Screw, PL-CPIMSx4x6x15BF	805-300004-006-0	2
204	Screw, COFIMSx3x6x15BF	805-020003-006-0	4
205	Screw, SL-CPIMSx3x8x15BF	805-310003-008-0	4

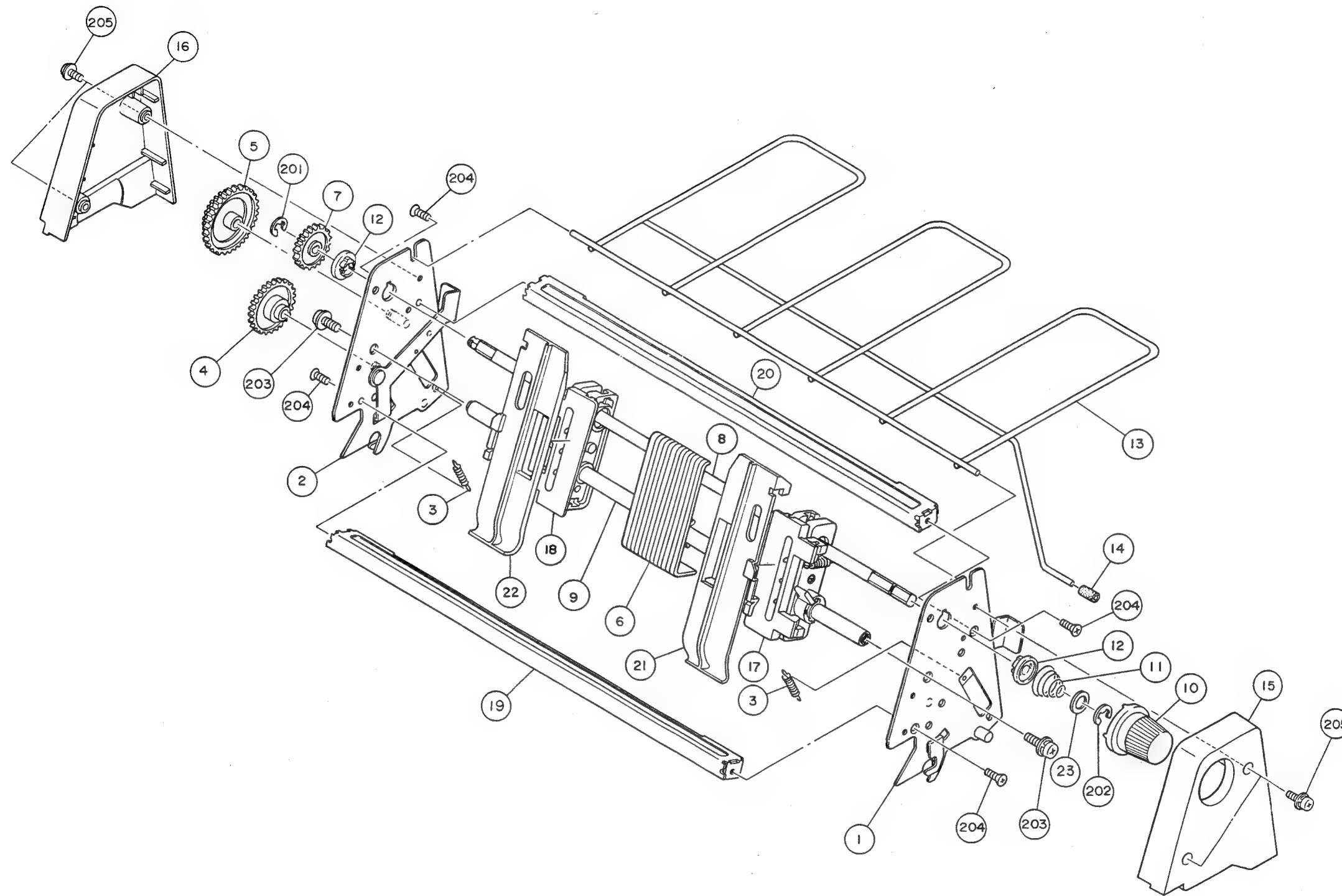


Figure 6-39 Pull Tractor Unit (S)

Illustrated Parts Breakdown

Pull Tractor Unit (L) (136-218470-501-A)

ITEM	DESCRIPTION	PART NUMBER	QTY
1	Side Frame (R) Subassembly	136-789127-001-A	1
2	Side Frame (L) Subassembly	136-789127-002-A	1
3	Lock Spring	136-789132-A	2
4	Idle Gear 1	136-789143-A	1
5	Idle Gear 2	136-789144-A	1
6	Center Guide	136-789138-A	1
7	Tractor Gear	136-789140-A	1
8	Drive Shaft (L)	136-789141-501-A	1
9	Hold Shaft (L)	136-789142-501-A	1
10	Tractor Knob	136-789162-001-A	1
11	Clutch Spring	136-789151-A	1
12	Bushing	136-789152-A	2
13	Paper Net (L)	136-789154-501-A	1
14	Rubber Cap	136-811830-A	1
15	Side Cover (R)	136-789155-001-A	1
16	Side Cover (L)	136-789155-002-A	1
17	Tractor (R) Assembly	808-802351-001-A	1
18	Tractor (L) Assembly	808-802351-002-A	1
19	Frame Stay (LS)	136-789139-501-A	1
20	Frame Stay (L)	136-789139-502-A	1
21	Tractor Guide (R)	136-789150-001-A	1
22	Tractor Guide (L)	136-789150-002-A	1
23	Washer	136-789149-A	1
201	E Ring E-42	803-010030-042-0	1
202	E Ring E-50	803-010030-050-0	1
203	Screw, PL-CPIMSx4x6x15BF	805-300004-006-0	2
204	Screw, COFIMSx3x6x15BF	805-020003-006-0	4
205	Screw, SL-CPIMSx3x8x15BF	805-310003-008-0	4

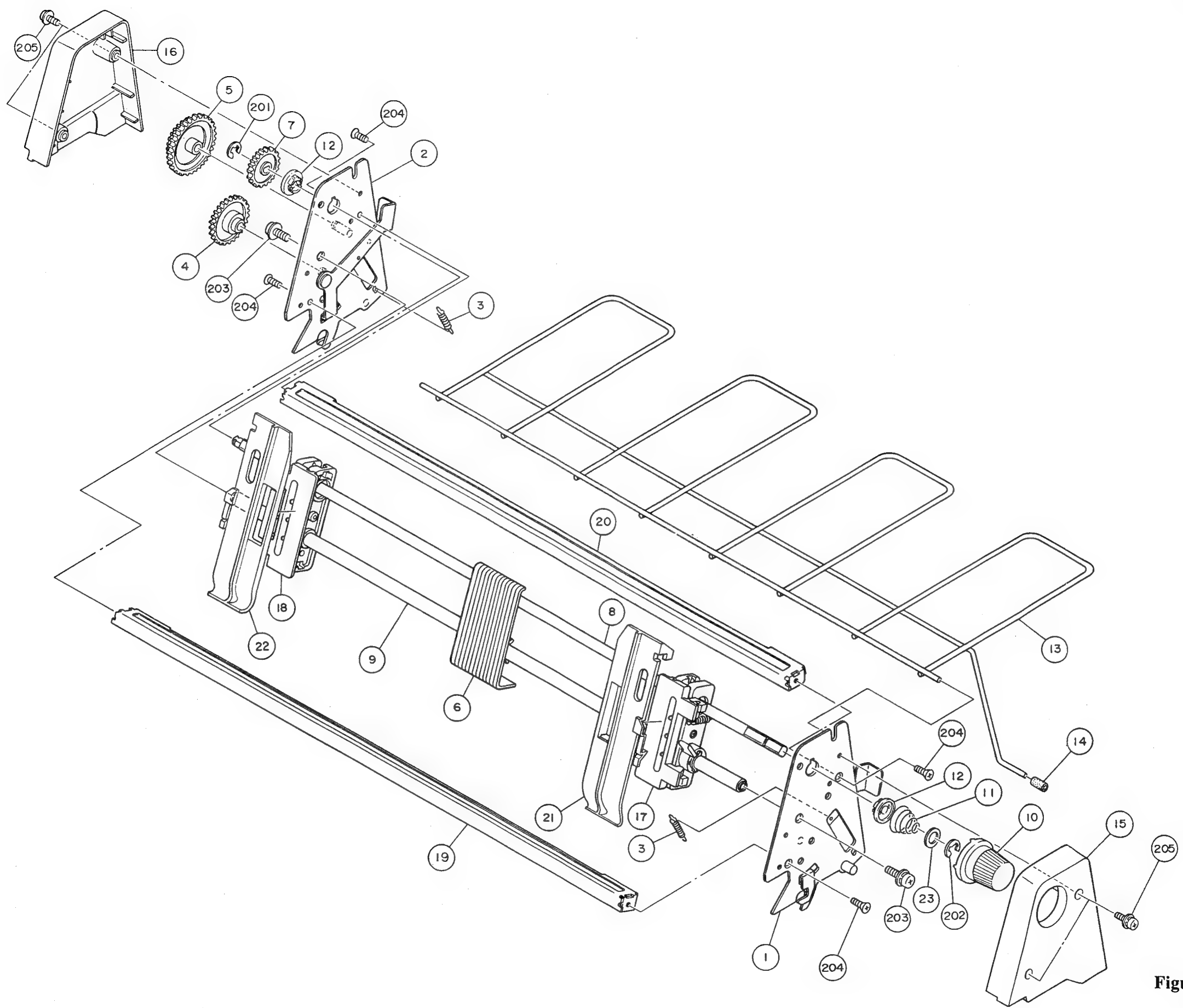
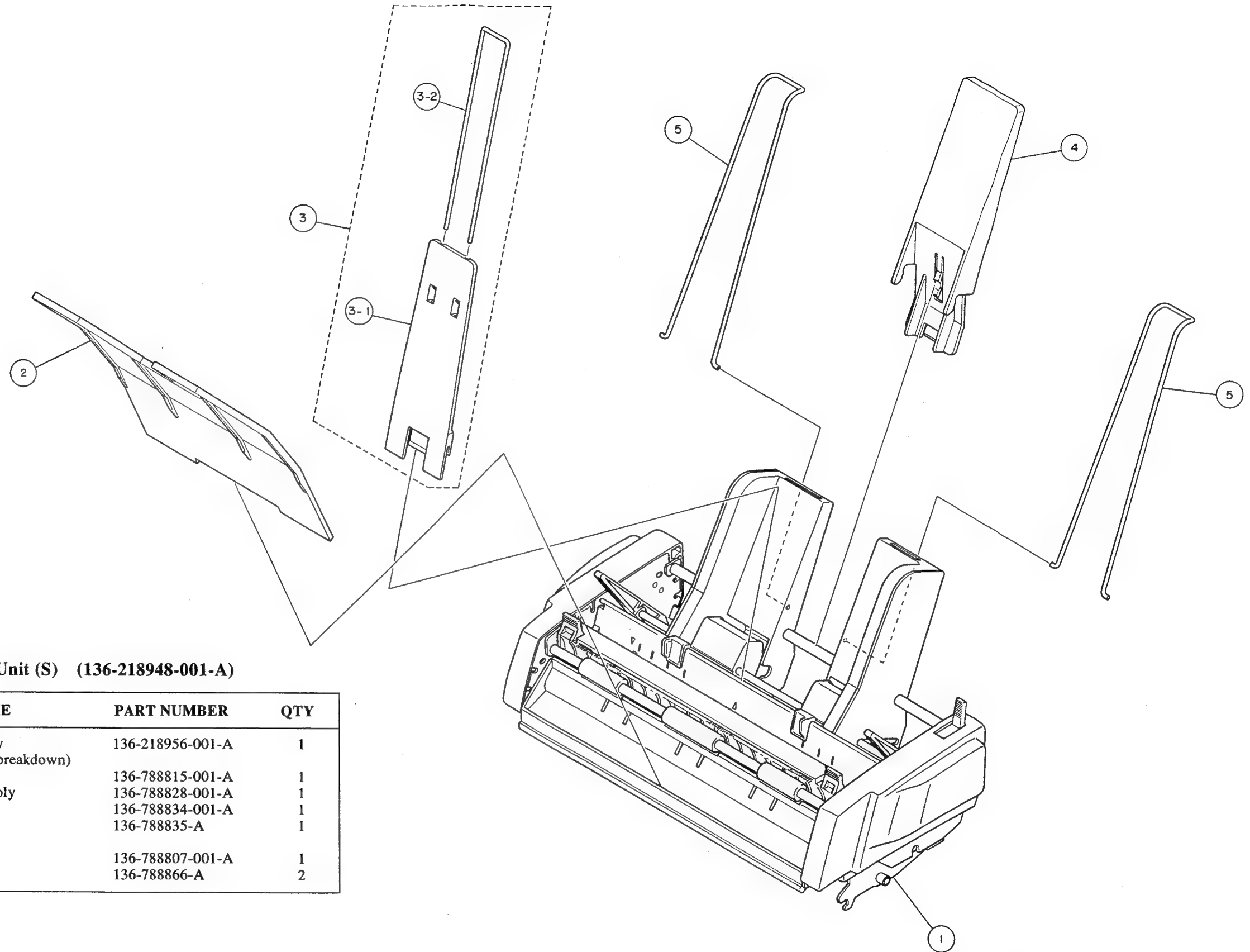


Figure 6-40 Pull Tractor Unit (L)

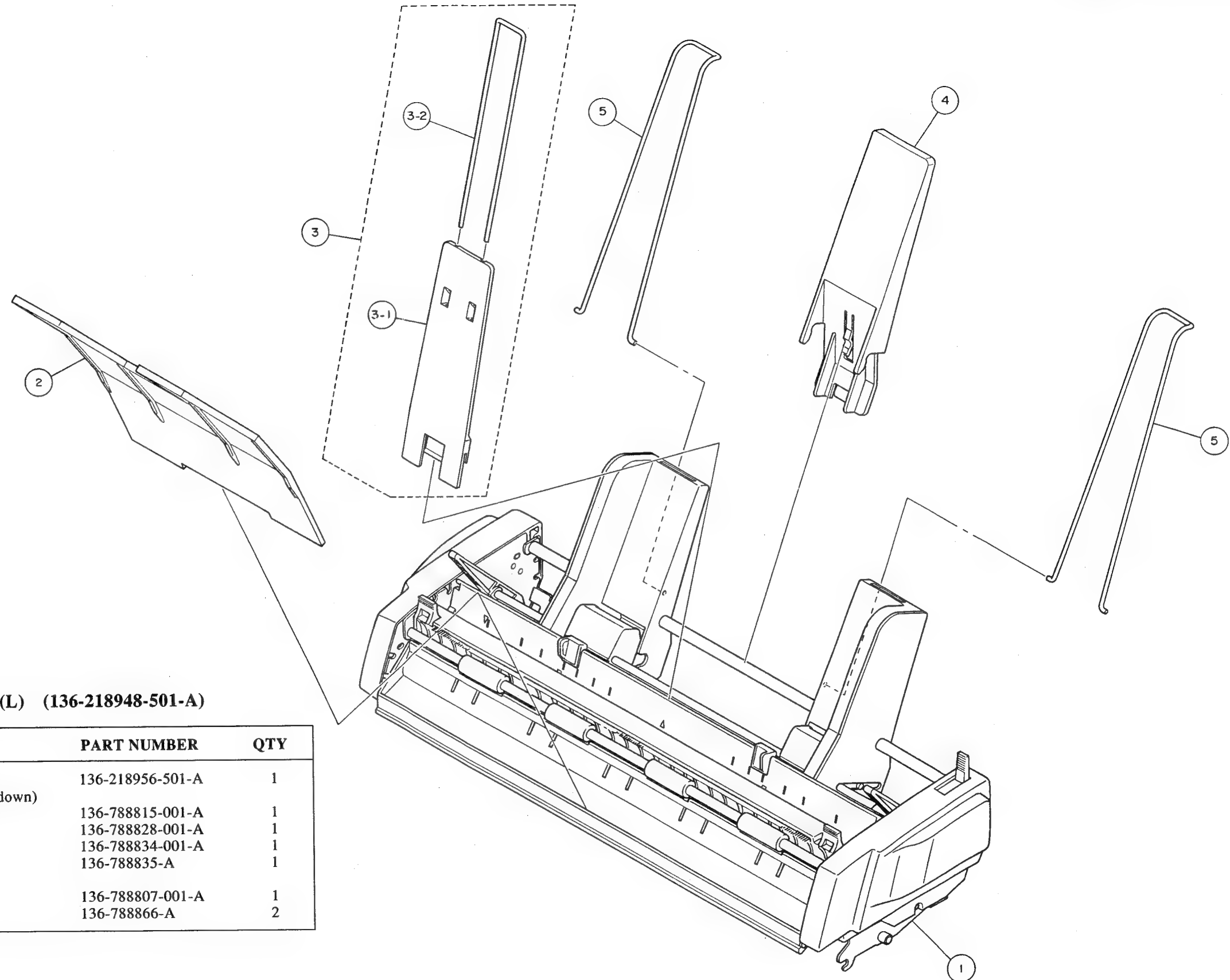
Illustrated Parts Breakdown



1 Bin Sheet Feeder Unit (S) (136-218948-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Main Unit S Assembly (See Figure 6-43 for breakdown)	136-218956-001-A	1
2	Upper Stacker	136-788815-001-A	1
3	Stacker Guide Assembly	136-788828-001-A	1
3-1	Stacker Guide	136-788834-001-A	1
3-2	Paper Guide	136-788835-A	1
4	Center Guide	136-788807-001-A	1
5	Hopper Guide Bar	136-788866-A	2

Figure 6-41 1 Bin Sheet Feeder Unit (S)



1 Bin Sheet Feeder Unit (L) (136-218948-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Main Unit L Assembly (See Figure 6-44 for breakdown)	136-218956-501-A	1
2	Upper Stacker	136-788815-001-A	1
3	Stacker Guide Assembly	136-788828-001-A	1
3-1	Stacker Guide	136-788834-001-A	1
3-2	Paper Guide	136-788835-A	1
4	Center Guide	136-788807-001-A	1
5	Hopper Guide Bar	136-788866-A	2

Figure 6-42 1 Bin Sheet Feeder Unit (L)

Illustrated Parts Breakdown

Main Unit S Assembly (136-218956-001-A) - 1/2

ITEM	PART NAME	PART NUMBER	QTY
1	Unit Sub (S) Assembly (See Figure 6-45 for breakdown)	136-788858-001-A	1
2	Middle Guide S Assembly	136-788871-001-A	1
2-1	Middle Guide (S)	136-788860-001-A	1
2-2	Side Guide	136-788849-001-A	1
2-3	Side Guide	136-788849-002-A	1
3	Eject Guide S Assembly	136-788870-001-A	1
3-1	Eject Guide (S) Subassembly	136-789409-001-A	1
3-2	Stacker Roller S	136-788903-A	1
3-3	Bushing D	136-788901-001-A	1
3-4	Bushing D	136-788901-002-A	1
3-5	Eject Roller Gear	136-788843-A	1
3-201	E Ring (E-37)	803-010030-037-A	1
4	Bottom Stacker S Assembly	136-788869-001-A	1
4-1	Bottom Stacker (S) Subassembly	136-789410-001-A	1
4-2	Front Stay S	136-788905-A	1
4-201	Screw, #2CBTSx3x6x3GF	805-230103-006-0	2
5	Rear Stacker (S) Assembly	136-788822-001-A	1
5-1	Rear Stacker	136-788823-001-A	1
5-2	E.S.D Brush	136-788824-001-A	1
5-201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0	2
6	Hopper Unit Assembly	136-788825-001-A	1
6-1	Hopper Base	136-788791-001-A	1
6-2	Hopper Base	136-788791-002-A	1
6-3	Hopper Cover	136-788797-001-A	1
6-4	Hopper Cover	136-788797-002-A	1
6-5	Separator	136-788792-001-A	1
6-6	Separator	136-788792-002-A	1
6-7	Hopper Plate Assembly	136-788794-001-A	1
6-8	Hopper Plate Assembly	136-788794-002-A	1
6-9	Separator Spring	136-788793-001-A	2
6-10	Pressure Spring	136-788861-002-A	2
6-11	Select Arm	136-788798-A	2
6-12	Lock Piece	136-787516-001-A	2
6-13	Hopper Release Bar	136-788817-001-A	1
6-14	Hold Shaft	136-788809-001-A	1
7	Feed Roller Gear Assembly	136-788808-A	1
8	Clutch Assembly	136-788800-001-A	1
8-1	Top Gear Assembly	136-788801-001-A	1
8-2	Middle disk Assembly	136-788804-A	1
8-3	Base Gear 3	136-788889-A	1

Main Unit S Assembly (136-218956-001-A) - 2/2

ITEM	PART NAME	PART NUMBER	QTY
9	Pick Roller Shaft	136-788876-001-A	1
10	Eject Roller 2 (S)	136-788872-001-A	1
11	Clutch Holder Assembly	136-789408-A	1
12	Idle Gear A	136-788837-A	1
13	Idle Gear B	136-788838-A	1
14	Idle Gear C	136-788880-A	1
15	Idle Gear D	136-788836-A	1
16	Idle Gear E	136-788910-A	1
17	Idle Gear G	136-788836-A	1
18	Eject Roller Gear	136-788843-A	1
19	Pick Roller Gear	136-788841-A	1
20	Release Lever	136-788814-001-A	1
21	Release Lever	136-788814-002-A	1
22	Pick Roller	136-788811-001-A	1
23	Pick Roller	136-788811-002-A	1
24	Select Lever	136-788799-A	1
25	Eject Spring	136-788863-001-A	2
26	Hold Bushing	136-788818-A	6
27	Side Cover L	136-788884-001-A	1
28	Side Cover R	136-788885-001-A	1
29	Idle Gear F	136-788912-A	1
30	Nut Washer	136-789407-A	1
201	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0	6
202	Screw, SL-CPIMSx3x10x15BF	805-310003-010-0	2
203	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0	1
204	E Ring (E-32)	803-010030-032-0	3
205	E Ring (E-40)	803-010030-040-0	1

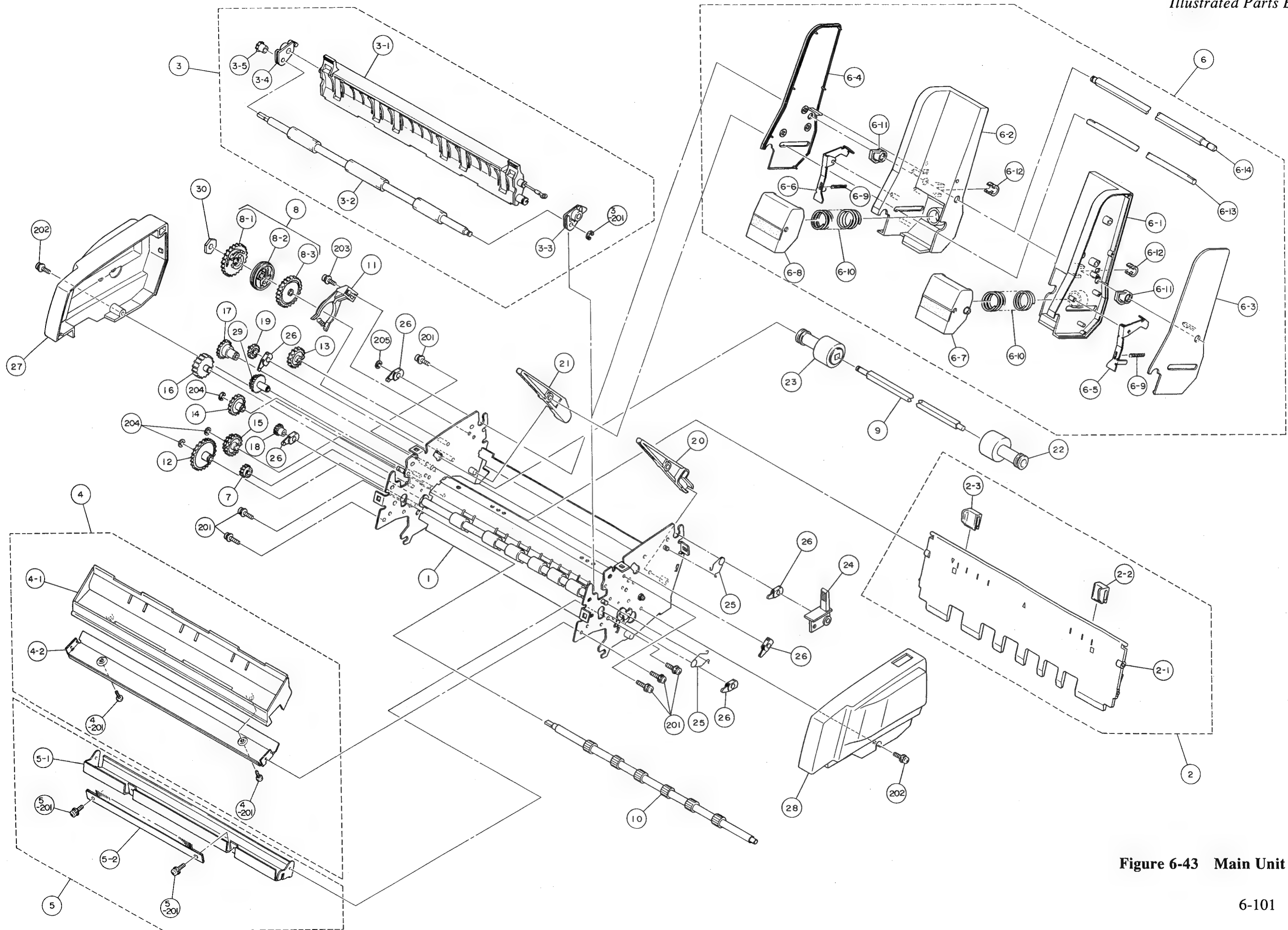


Figure 6-43 Main Unit (S) Assembly

Illustrated Parts Breakdown

Main Unit L Assembly (136-218956-501-A) - 1/2

ITEM	PART NAME	PART NUMBER	QTY
1	Unit Sub (L) Assembly (See Figure 6-46 for breakdown)	136-788858-501-A	1
2	Middle Guide L Assembly	136-788871-501-A	1
2-1	Middle Guide (L)	136-788859-501-A	1
2-2	Side Guide	136-788849-001-A	1
2-3	Side Guide	136-788849-002-A	1
3	Eject Guide (L) Assembly	136-788870-501-A	1
3-1	Eject Guide (L) Subassembly	136-789409-501-A	1
3-2	Stacker Roller(L)	136-788902-A	1
3-3	Bushing D	136-788901-001-A	1
3-4	Bushing D	136-788901-002-A	1
3-5	Eject Roller Gear	136-788843-A	1
3-201	E Ring (E-37)	803-010030-037-A	1
4	Bottom Stacker L Assembly	136-788869-501-A	1
4-1	Bottom Stacker (L) Subassembly	136-789410-501-A	1
4-2	Front Stay L	136-788904-A	1
4-201	Screw, #2CBTSx3x6x3GF	805-230103-006-0	3
5	Rear Stacker (L) Assembly	136-788822-501-A	1
5-1	Rear Stacker	136-788823-501-A	1
5-2	E.S.D Brush	136-788824-501-A	1
5-201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0	2
6	Hopper Unit Assembly	136-788825-501-A	1
6-1	Hopper Base	136-788791-001-A	1
6-2	Hopper Base	136-788791-002-A	1
6-3	Hopper Cover	136-788797-001-A	1
6-4	Hopper Cover	136-788797-002-A	1
6-5	Separator	136-788792-001-A	1
6-6	Separator	136-788792-002-A	1
6-7	Hopper Plate Assembly	136-788794-001-A	1
6-8	Hopper Plate Assembly	136-788794-002-A	1
6-9	Separator Spring	136-788793-001-A	2
6-10	Pressure Spring	136-788861-002-A	2
6-11	Select Arm	136-788798-A	2
6-12	Lock Piece	136-787516-001-A	2
6-13	Hopper Release Bar	136-788817-501-A	1
6-14	Hold Shaft	136-788809-501-A	1
7	Feed Roller Gear Assembly	136-788808-A	1
8	Clutch Assembly	136-788800-001-A	1
8-1	Top Gear Assembly	136-788801-001-A	1
8-2	Middle disk Assembly	136-788804-A	1
8-3	Base Gear 3	136-788889-A	1

Main Unit L Assembly (136-218956-501-A) - 2/2

ITEM	PART NAME	PART NUMBER	QTY
9	Pick Roller Shaft	136-788876-501-A	1
10	Eject Roller 2 (L)	136-788872-501-A	1
11	Clutch Holder Assembly	136-789408-A	1
12	Idle Gear A	136-788837-A	1
13	Idle Gear B	136-788838-A	1
14	Idle Gear C	136-788880-A	1
15	Idle Gear D	136-788836-A	1
16	Idle Gear E	136-788910-A	1
17	Idle Gear G	136-788911-A	1
18	Eject Roller Gear	136-788843-A	1
19	Pick Roller Gear	136-788841-A	1
20	Release Lever	136-788814-001-A	1
21	Release Lever	136-788814-002-A	1
22	Pick Roller	136-788811-001-A	1
23	Pick Roller	136-788811-002-A	1
24	Select Lever	136-788799-A	1
25	Eject Spring	136-788863-001-A	2
26	Hold Bushing	136-788818-A	6
27	Side Cover (L)	136-788884-001-A	1
28	Side Cover (R)	136-788885-001-A	1
29	Idle Gear F	136-788912-A	2
30	Nut Washer	136-789407-A	2
201	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0	6
202	Screw, SL-CPIMSx3x10x15BF	805-310003-010-0	2
203	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0	1
204	E Ring (E-32)	803-010030-032-0	3
205	E Ring (E-40)	803-010030-040-0	1

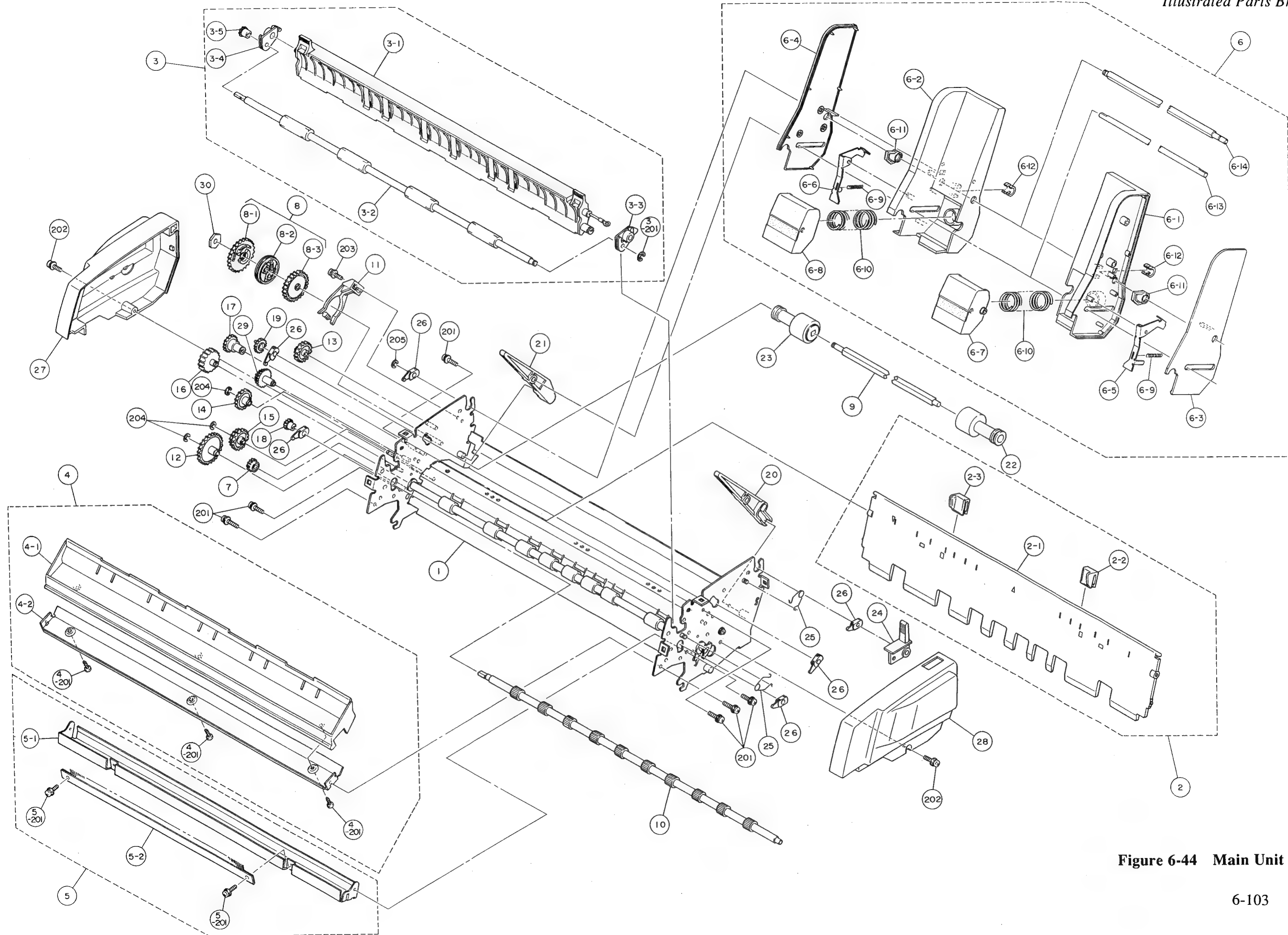
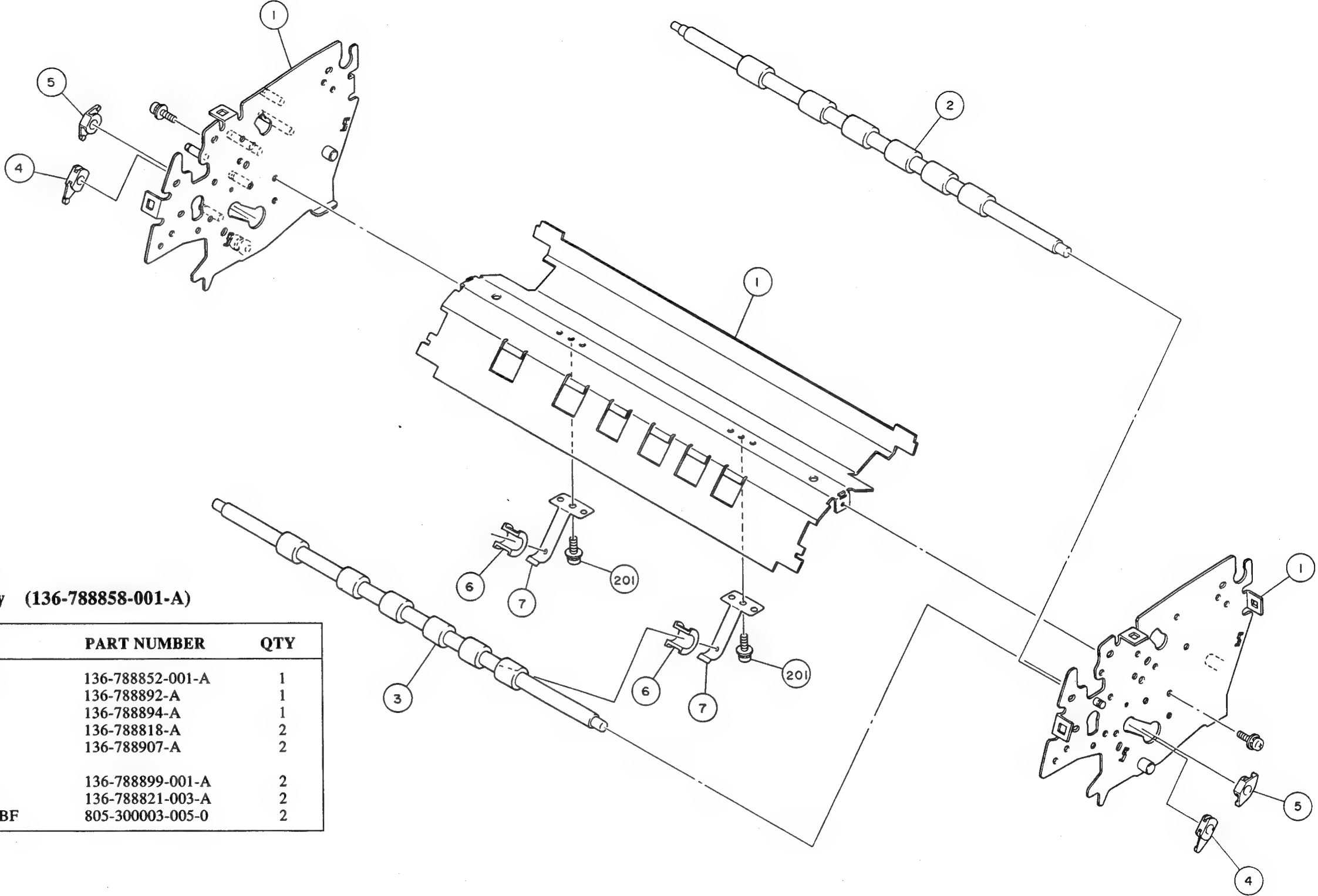


Figure 6-44 Main Unit (L) Assembly

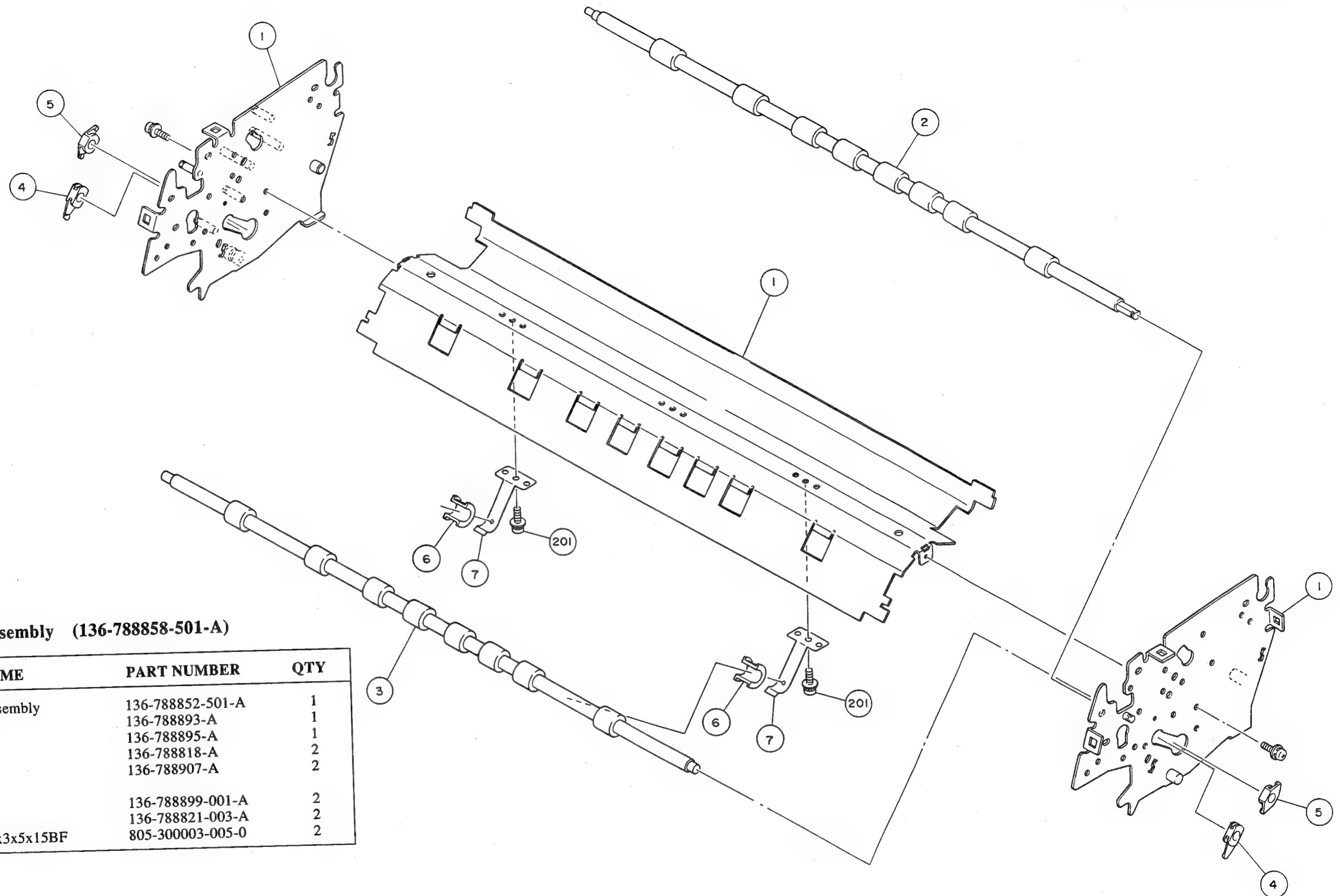
Illustrated Parts Breakdown



Unit Sub (S) Assembly (136-788858-001-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Main Frame (S) Assembly	136-788852-001-A	1
2	Feed Roller (S)	136-788892-A	1
3	Pressure Roller (S)	136-788894-A	1
4	Hold Bushing	136-788818-A	2
5	Guide Bushing	136-788907-A	2
6	Back-Up Piece	136-788899-001-A	2
7	Back-Up Spring	136-788821-003-A	2
201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0	2

Figure 6-45 Unit Sub (S) Assembly



Unit Sub (L) Assembly (136-78858-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Main Frame (L) Assembly	136-78852-501-A	1
2	Feed Roller (L)	136-78893-A	1
3	Pressure Roller (L)	136-78895-A	1
4	Hold Bushing	136-78818-A	2
5	Guide Bushing	136-788907-A	2
6	Back-Up Piece	136-78899-001-A	2
7	Back-Up Spring	136-78821-003-A	2
201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0	2

Figure 6-46 Unit Sub (L) Assembly

Illustrated Parts Breakdown

2 Bin Sheet Feeder Unit (L) (136-218949-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	2 Bin Main Unit Assembly (See Figure 6-48 for breakdown)	136-218957-501-A	1
2	Upper Stacker	136-788815-001-A	1
3	Stacker Guide Assembly	136-788828-001-A	1
3-1	Stacker Guide	136-788834-001-A	1
3-2	Paper Guide	136-788835-A	1
4	Center Guide	136-788807-001-A	2
5	Hopper Guide Bar	136-788866-A	4

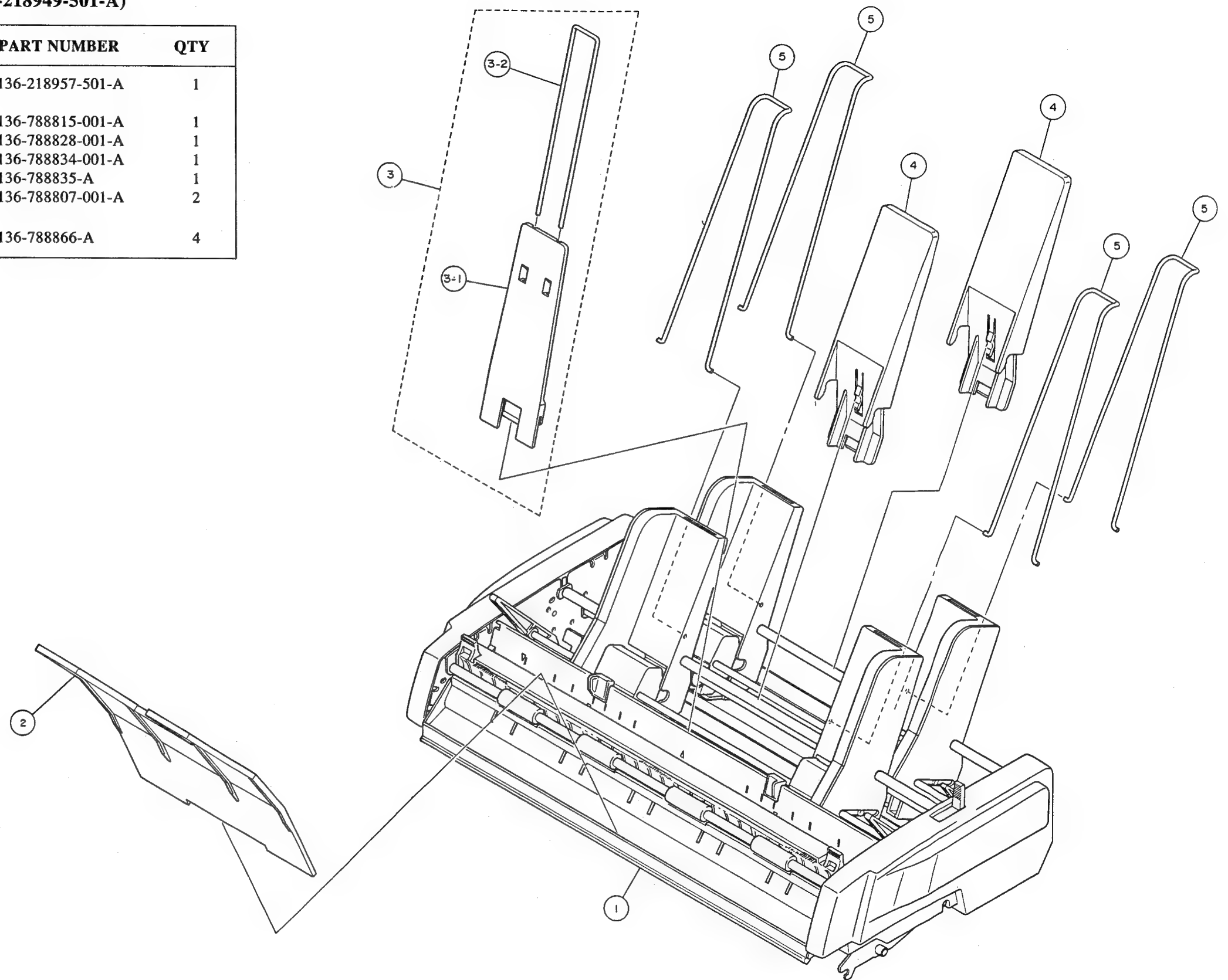


Figure 6-47 2 Bin Sheet Feeder Unit (L)

2 Bin Main Unit Assembly (136-218957-501-A) - 1/2

2 Bin Main Unit Assembly (136-218957-501-A) - 2/2

ITEM	PART NAME	PART NUMBER	QTY
1	2 Bin Unit Subassembly (See Figure 6-49 for breakdown)	136-788855-501-A	1
2	Middle Guide L Assembly	136-788871-501-A	1
2-1	Middle Guide (L)	136-788859-501-A	1
2-2	Side Guide	136-788849-001-A	1
2-3	Side Guide	136-788849-002-A	1
3	Eject Guide L Assembly	136-788870-501-A	1
3-1	Eject Guide (L) Subassembly	136-789409-501-A	1
3-2	Stacker Roller (L)	136-788902-A	1
3-3	Bushing D	136-788901-001-A	1
3-4	Bushing D	136-788901-002-A	1
3-5	Eject Roller Gear	136-788843-A	1
3-201	E Ring (E-37)	803-010030-037-A	1
4	Bottom Stacker (L) Assembly	136-788869-501-A	1
4-1	Bottom Stacker (L) Subassembly	136-789410-501-A	1
4-2	Front Stay (L)	136-788904-A	1
4-201	Screw #2CBTSx3x6x3GF	805-230103-006-0	3
5	Rear Stacker (L) Assembly	136-788822-501-A	1
5-1	Rear Stacker	136-788823-501-A	1
5-2	E.S.D Brush (L)	136-788824-501-A	1
5-201	Screw PL-CPIMSx3x5x15BF	805-300003-005-0	2
6	Hopper Unit Assembly	136-788825-501-A	1
6-1	Hopper Base	136-788791-001-A	1
6-2	Hopper Base	136-788791-002-A	1
6-3	Hopper Cover	136-788797-001-A	1
6-4	Hopper Cover	136-788797-002-A	1
6-5	Separator	136-788792-001-A	1
6-6	Separator	136-788792-002-A	1
6-7	Hopper Plate Assembly	136-788794-001-A	1
6-8	Hopper Plate Assembly	136-788794-002-A	1
6-9	Separator Spring	136-788793-001-A	2
6-10	Pressure Spring	136-788861-002-A	2
6-11	Select Arm	136-788798-A	2
6-12	Lock Piece	136-787516-002-A	2
6-13	Hopper Release Bar	136-788817-501-A	1
6-14	Hold Shaft	136-788809-501-A	1
7	Hopper Unit 2 Assembly	136-788826-501-A	1
7-1	Hopper Base	136-788791-001-A	1
7-2	Hopper Base	136-788791-002-A	1
7-3	Hopper Cover	136-788797-001-A	1
7-4	Hopper Cover	136-788797-002-A	1
7-5	Separator	136-788792-001-A	1
7-6	Separator	136-788792-002-A	1
7-7	Hopper Plate Assembly	136-788794-001-A	1
7-8	Hopper Plate Assembly	136-788794-002-A	1
7-9	Separator Spring	136-788793-001-A	2

ITEM	PART NAME	PART NUMBER	QTY
7-10	Pressure Spring	136-788861-002-A	2
7-11	Lock Piece	136-787516-001-A	2
7-12	Hopper Release Bar	136-788817-501-A	1
7-13	Hold Shaft 2	136-788816-001-A	1
8	Feed Roller Gear Assembly	136-788808-A	1
9	Clutch Assembly	136-788800-001-A	1
9-1	Top Gear Assembly	136-788801-001-A	1
9-2	Middle Disk Assembly	136-788804-A	1
9-3	Base Gear 3	136-788889-A	1
10	Clutch Assembly	136-788800-002-A	1
10-1	Top Gear Assembly	136-788801-002-A	1
10-2	Middle Disk Assembly	136-788804-A	1
10-3	Base Gear 3	136-788889-A	1
11	Pick Roller Shaft (L)	136-788876-501-A	2
12	Eject Roller 2 (L)	136-788872-501-A	1
13	Clutch Holder Assembly	136-789408-A	2
14	Idle Gear A	136-788837-A	1
15	Idle Gear B	136-788838-A	2
16	Idle Gear C	136-788880-A	1
17	Idle Gear D	136-788836-A	1
18	Idle Gear E	136-788910-A	1
19	Idle Gear G	136-788911-A	2
20	Idle Gear F	136-788912-A	1
21	Gear Pulley D	136-788848-A	2
22	Eject Roller Gear	136-788843-A	1
23	Pick Roller Gear	136-788841-A	2
24	Release Lever R	136-788814-001-A	2
25	Release Lever L	136-788814-002-A	2
26	Pick Roller	136-788811-001-A	2
27	Pick Roller	136-788811-002-A	2
28	Select Lever	136-788799-A	1
29	Eject Spring	136-788893-001-A	2
30	Hold Bushing	136-788818-A	8
31	Side Cover L	136-788886-001-A	1
32	Side Cover R	136-788887-001-A	1
33	Idle Gear H	136-788913-A	2
34	Nut Washer	136-789407-A	2
35	Pulley Spacer	136-788919-A	1
201	Micro-Pitch Timing Belt	808-805049-016-A	1
202	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0	6
203	Screw, SL-CPIMSx3x10x15BF	805-310003-010-0	2
204	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0	2
205	Screw, PL-CPIMSx4x8x15BF	805-300004-008-0	2
206	E Ring (E-32)	803-010030-032-0	3
207	E Ring (E-40)	803-010030-040-0	2

Illustrated Parts Breakdown

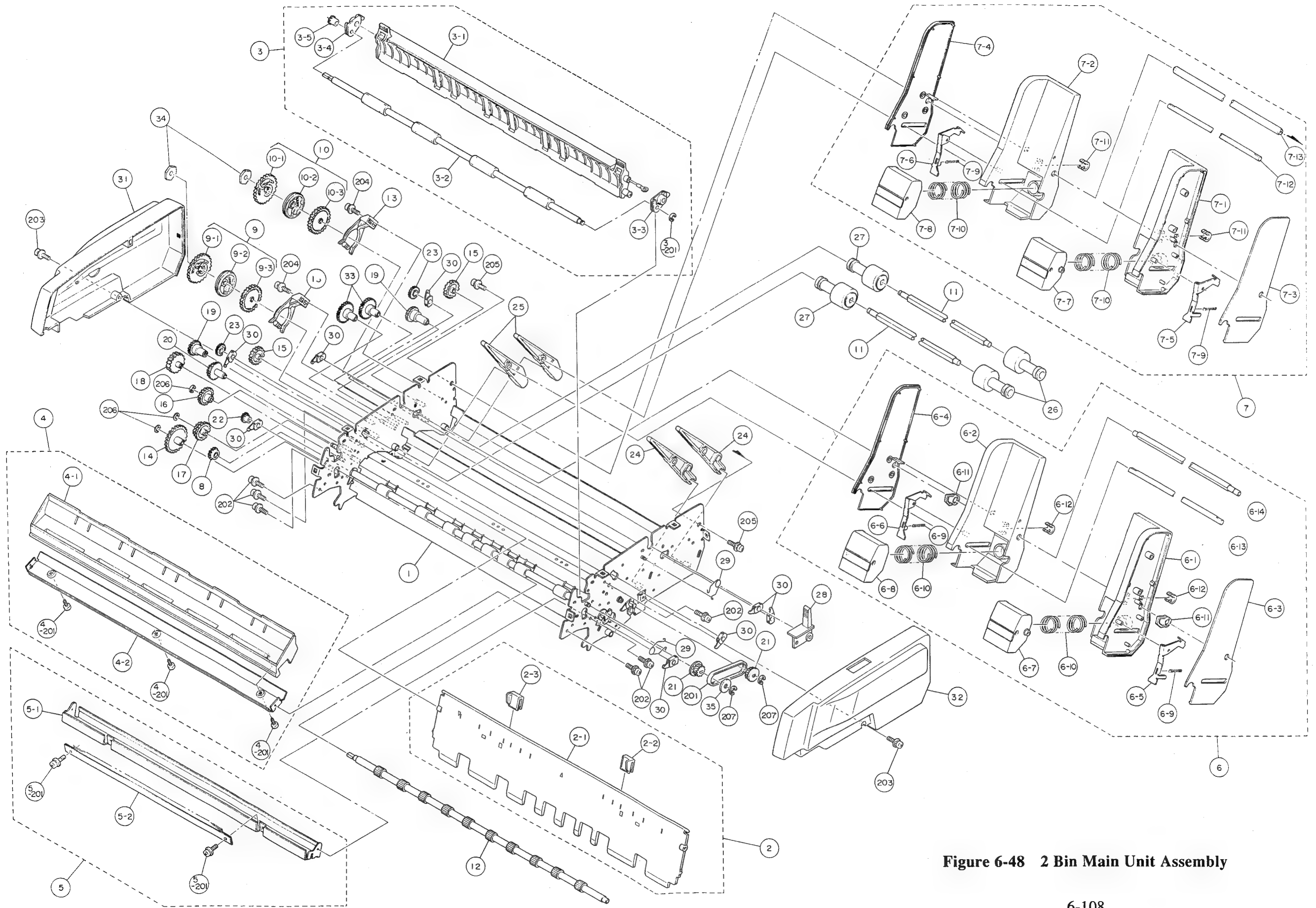
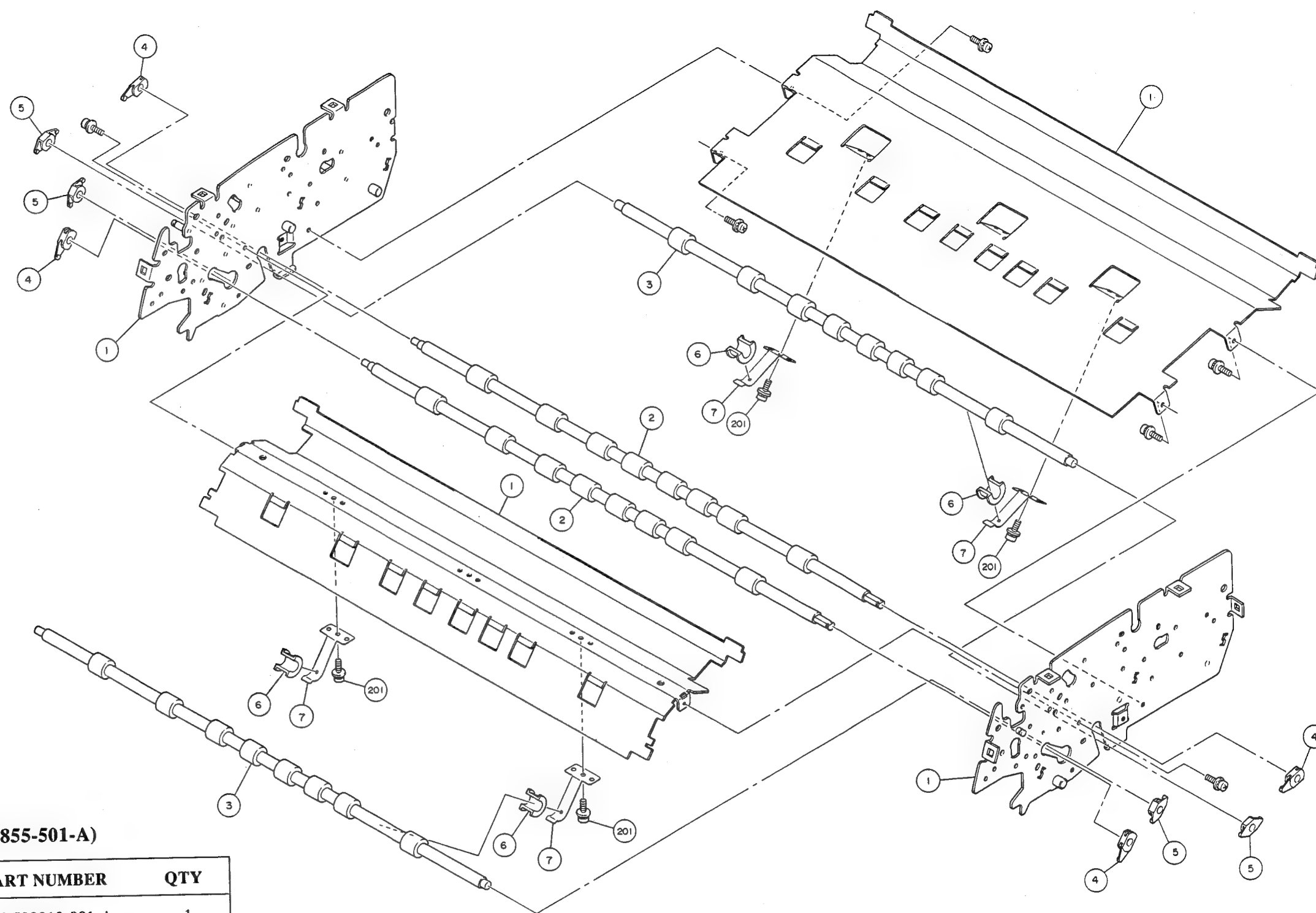


Figure 6-48 2 Bin Main Unit Assembly



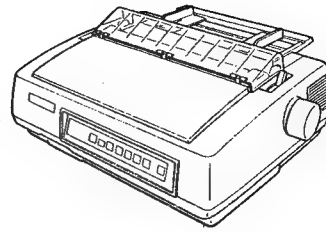
2 Bin Unit Subassembly (136-788855-501-A)

ITEM	PART NAME	PART NUMBER	QTY
1	Second Main Frame Assembly	136-788810-001-A	1
2	Feed Roller	136-788893-A	2
3	Pressure Roller (L)	136-788895-A	2
4	Hold Bushing	136-788818-A	4
5	Guide Bushing	136-788907-A	4
6	Back-Up Piece	136-788899-001-A	4
7	Back-Up Spring	136-788821-002-A	4
201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0	4

Figure 6-49 Unit Subassembly

Section 7

Diagrams



Figures 7-1 through 7-13 contain cabling diagrams for the P6200/P6300 and P60/P70 printers. These diagrams can be used when troubleshooting any potential problem with these printers.

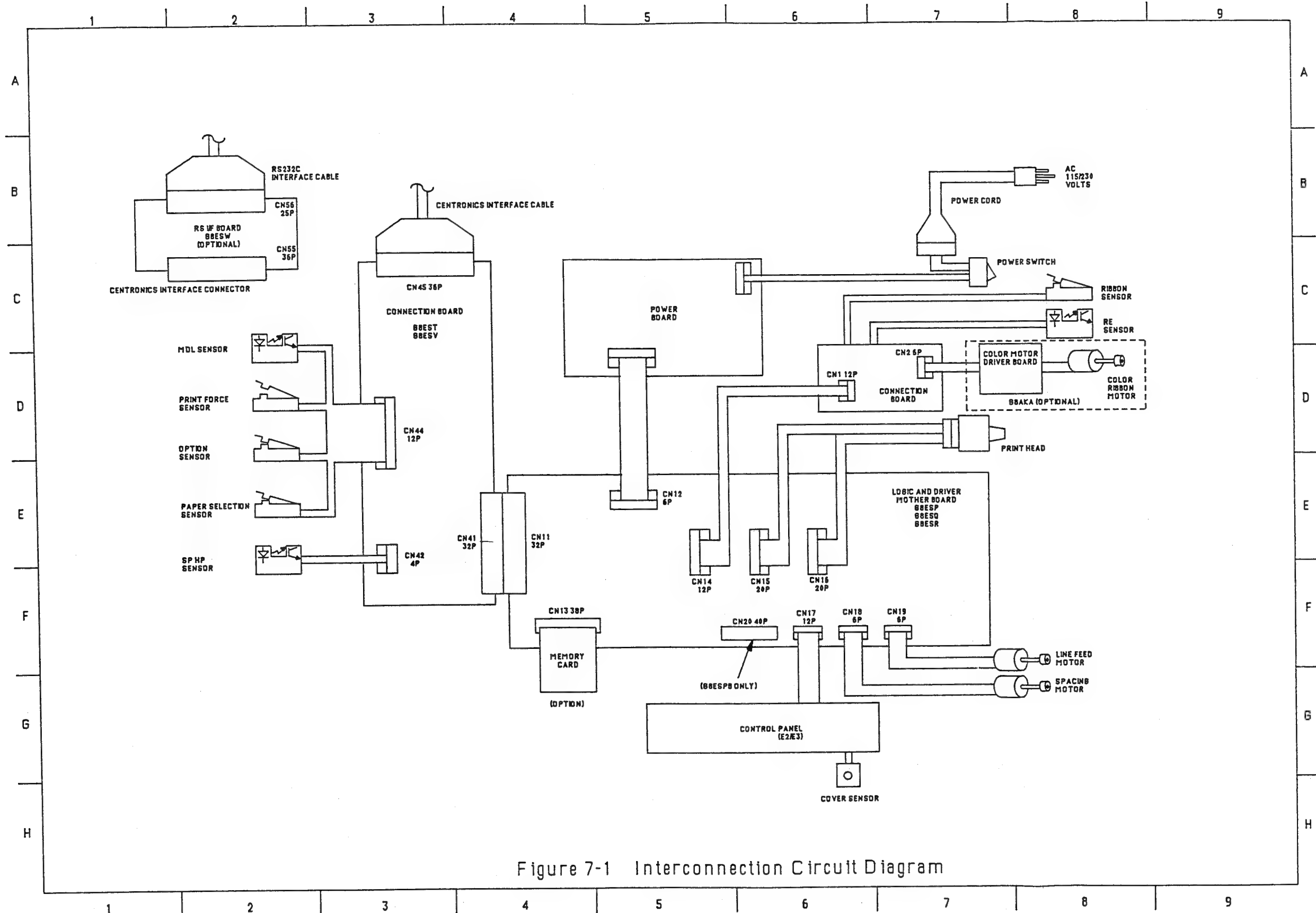


Figure 7-1 Interconnection Circuit Diagram

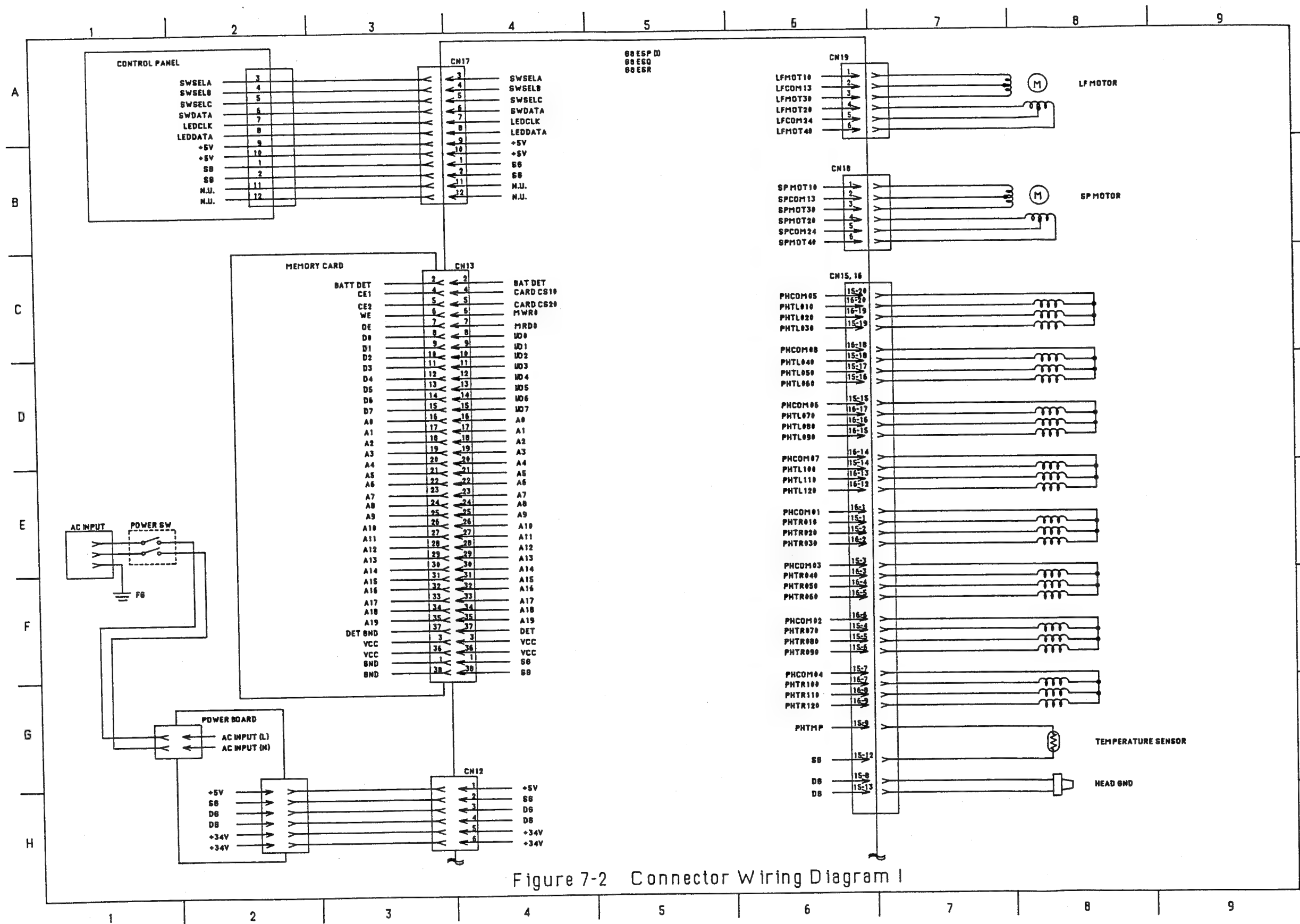


Figure 7-2 Connector Wiring Diagram I

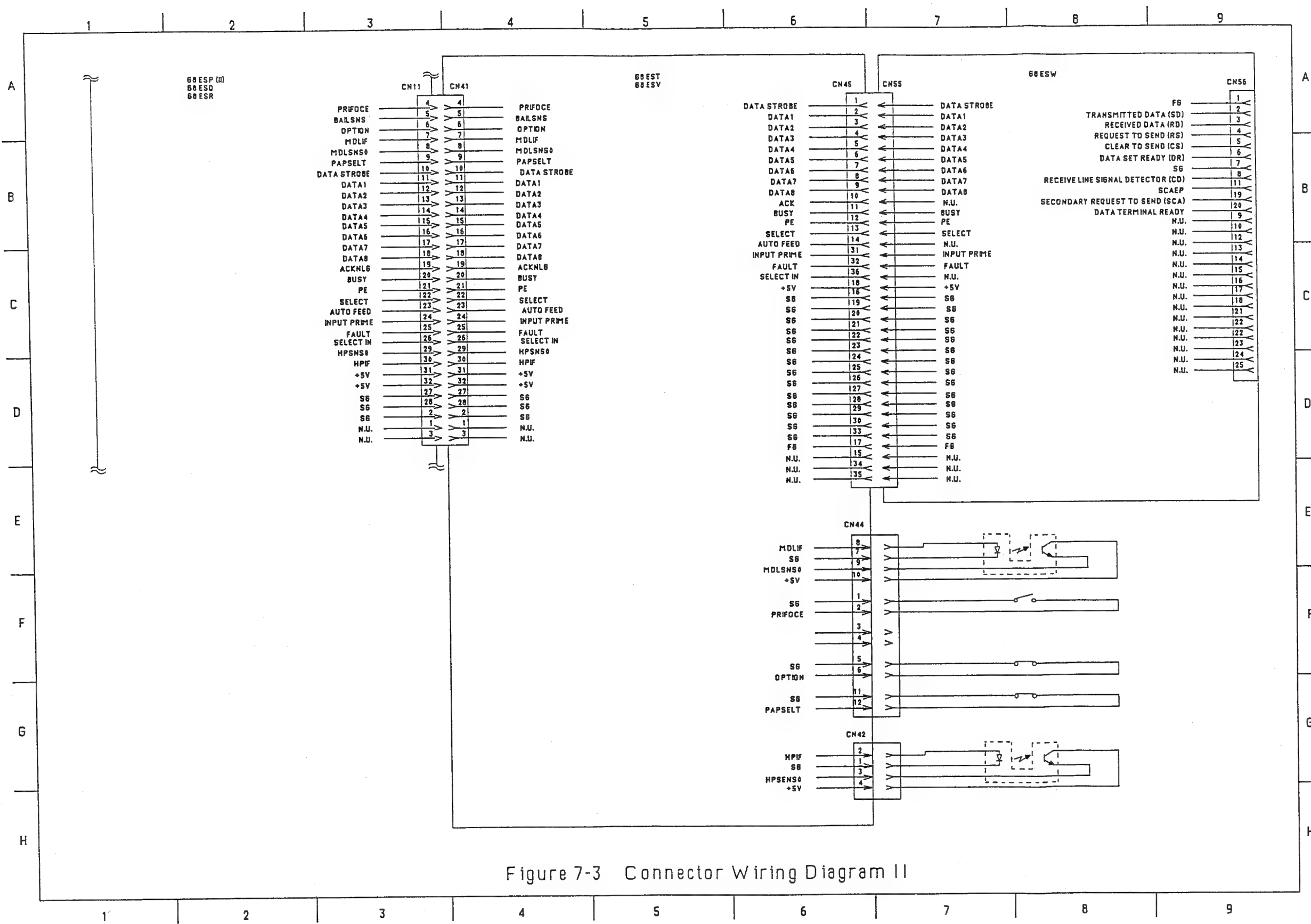


Figure 7-3 Connector Wiring Diagram II

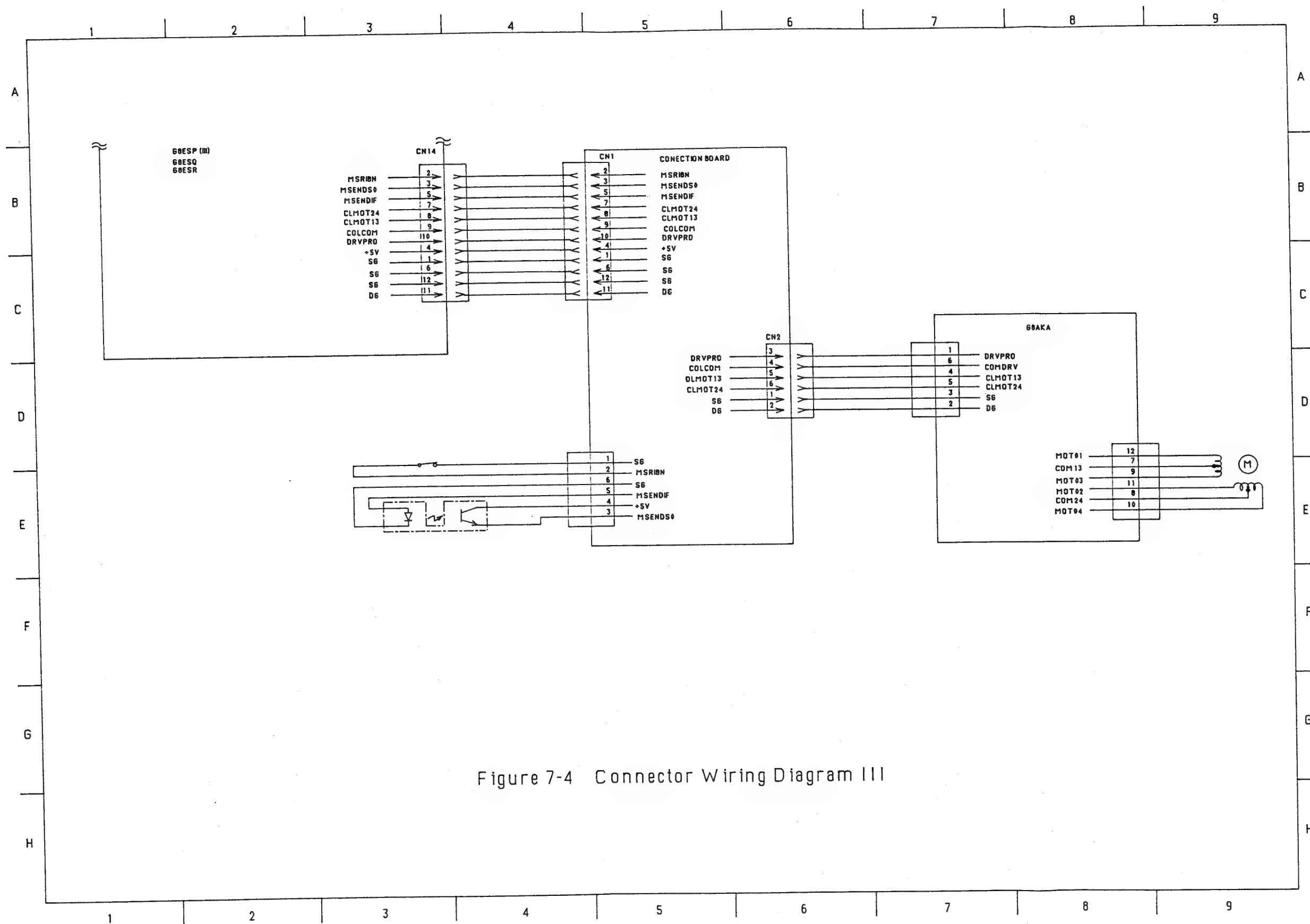
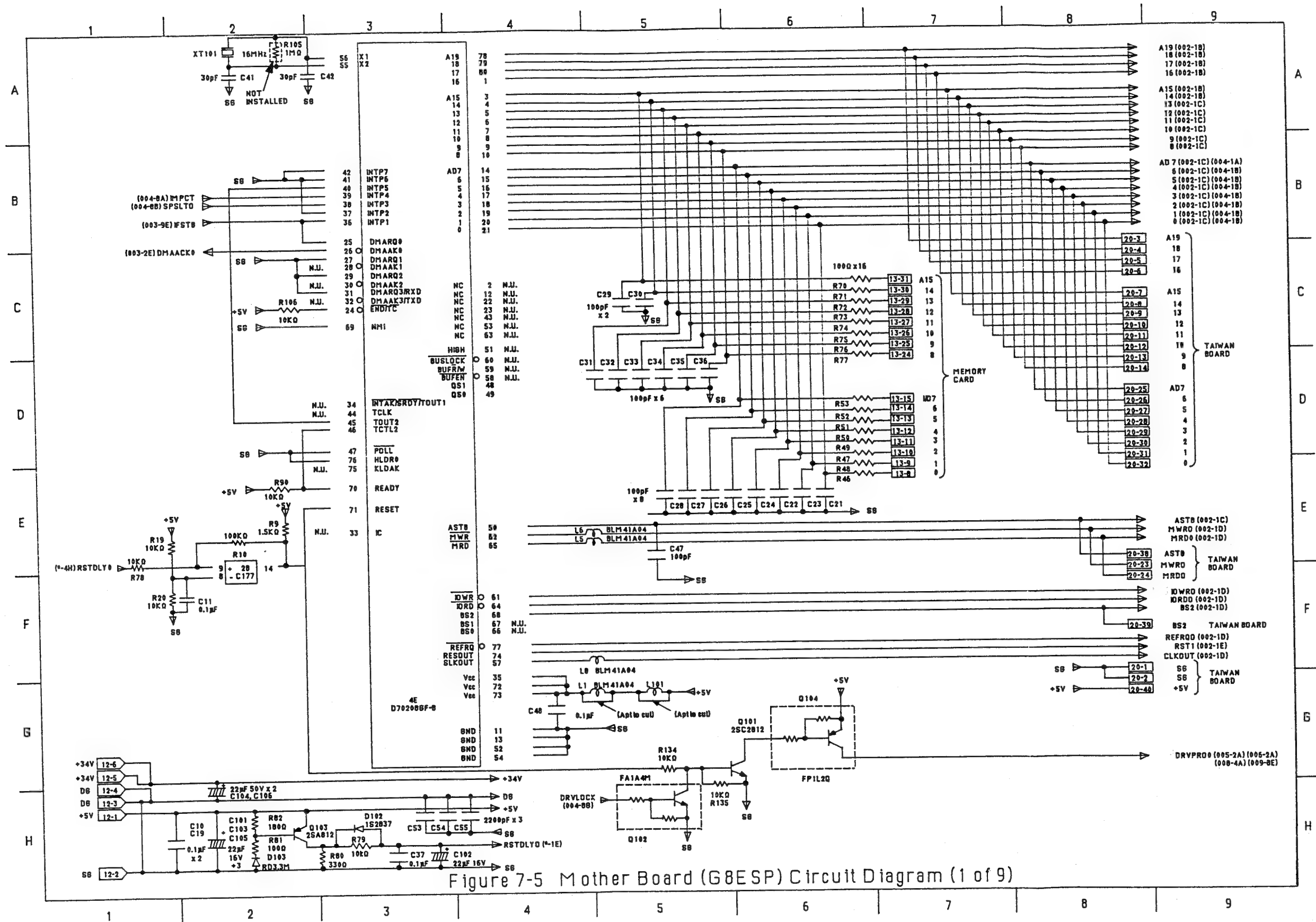


Figure 7-4 Connector Wiring Diagram III



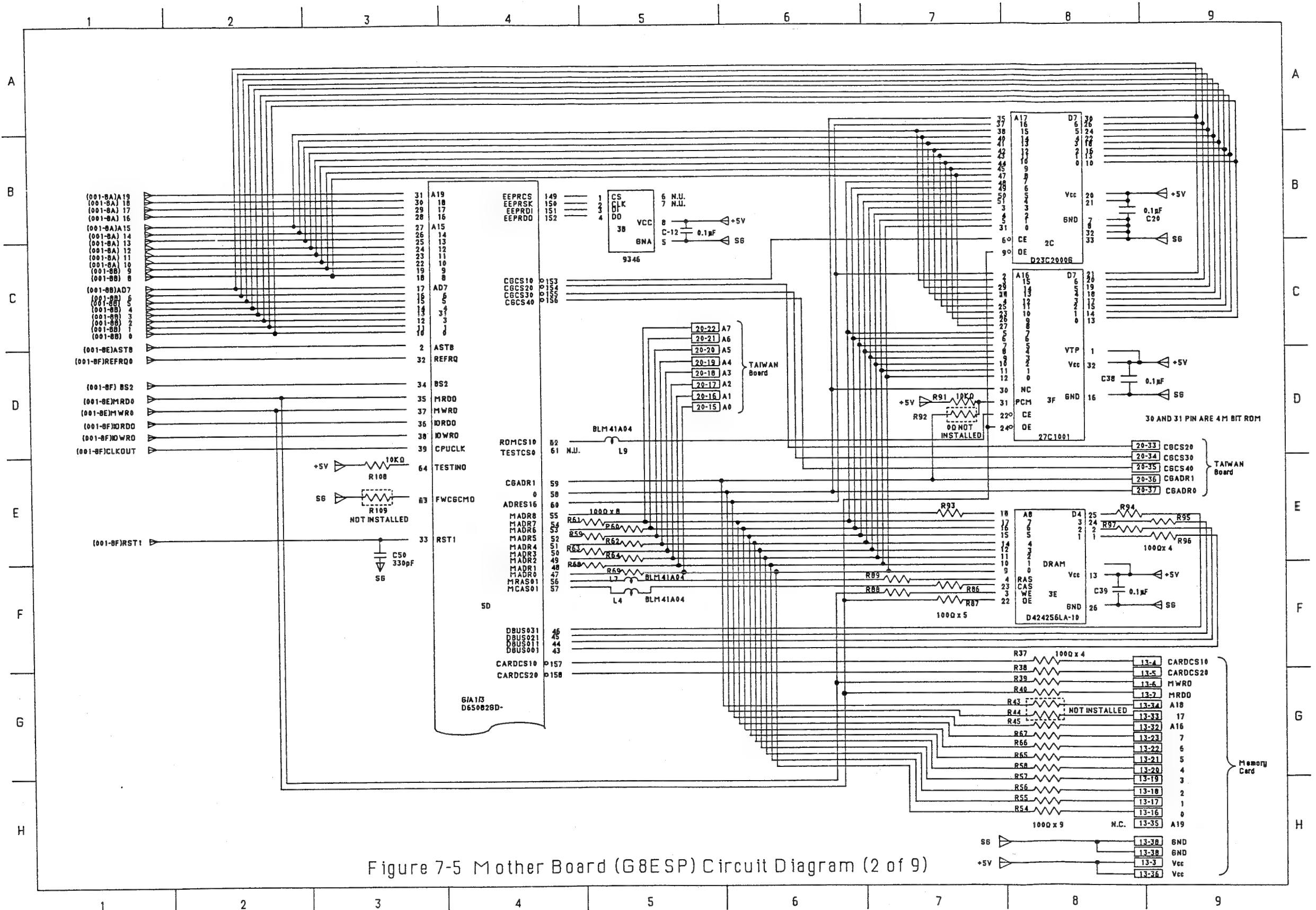


Figure 7-5 Mother Board (G8ESP) Circuit Diagram (2 of 9)

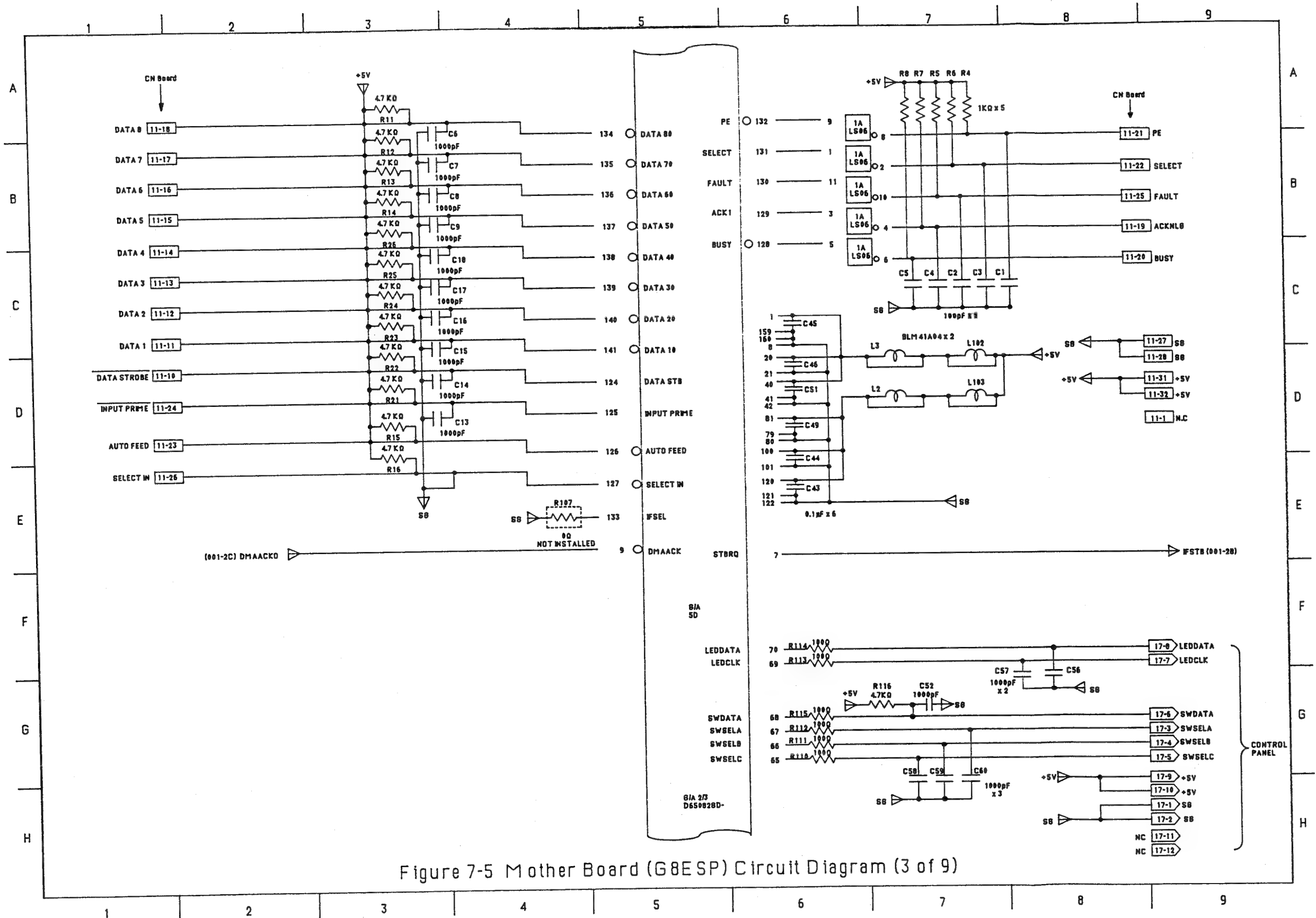


Figure 7-5 Mother Board (G8ESP) Circuit Diagram (3 of 9)

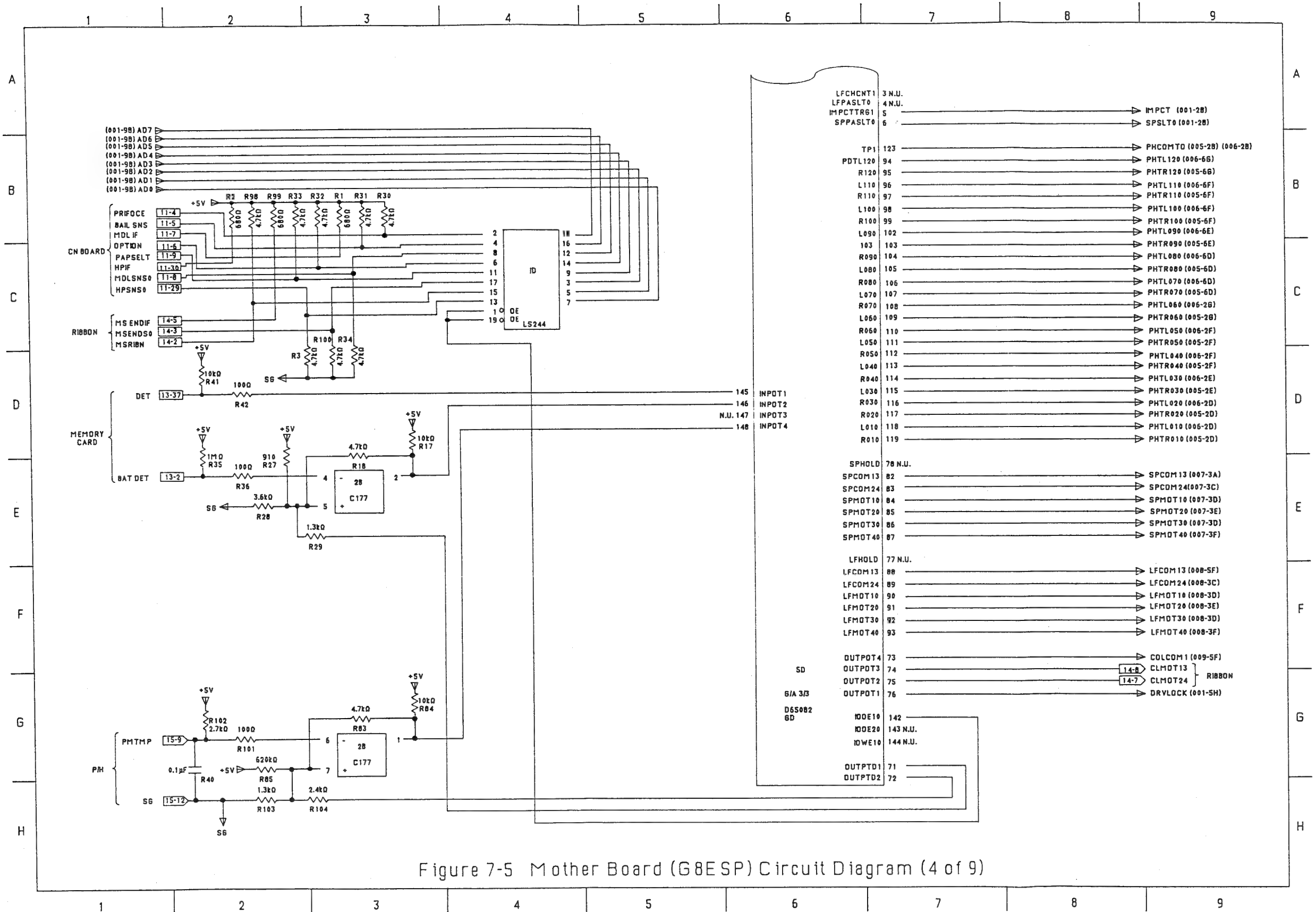


Figure 7-5 Mother Board (G8ESP) Circuit Diagram (4 of 9)

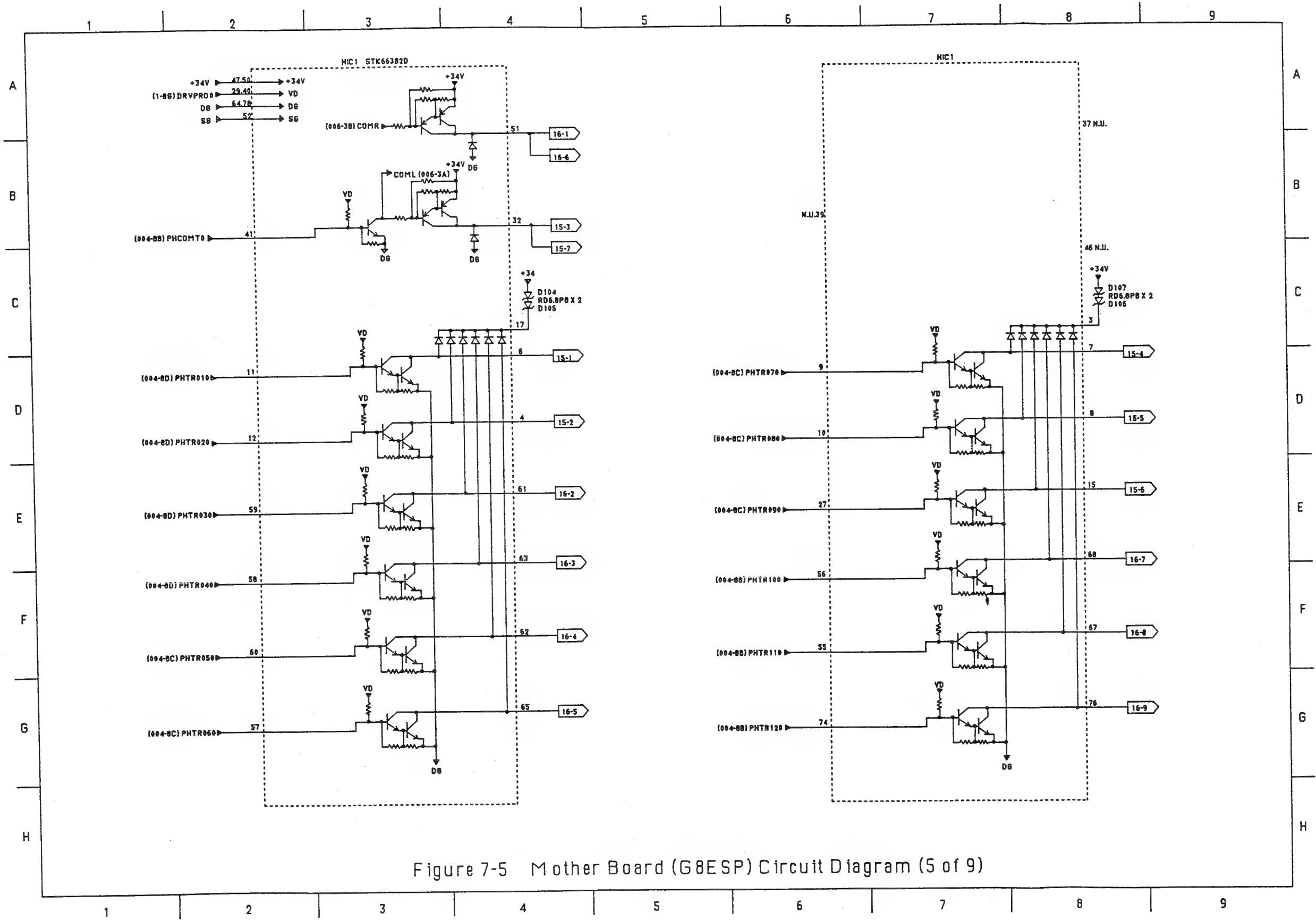


Figure 7-5 Mother Board (G8ESP) Circuit Diagram (5 of 9)

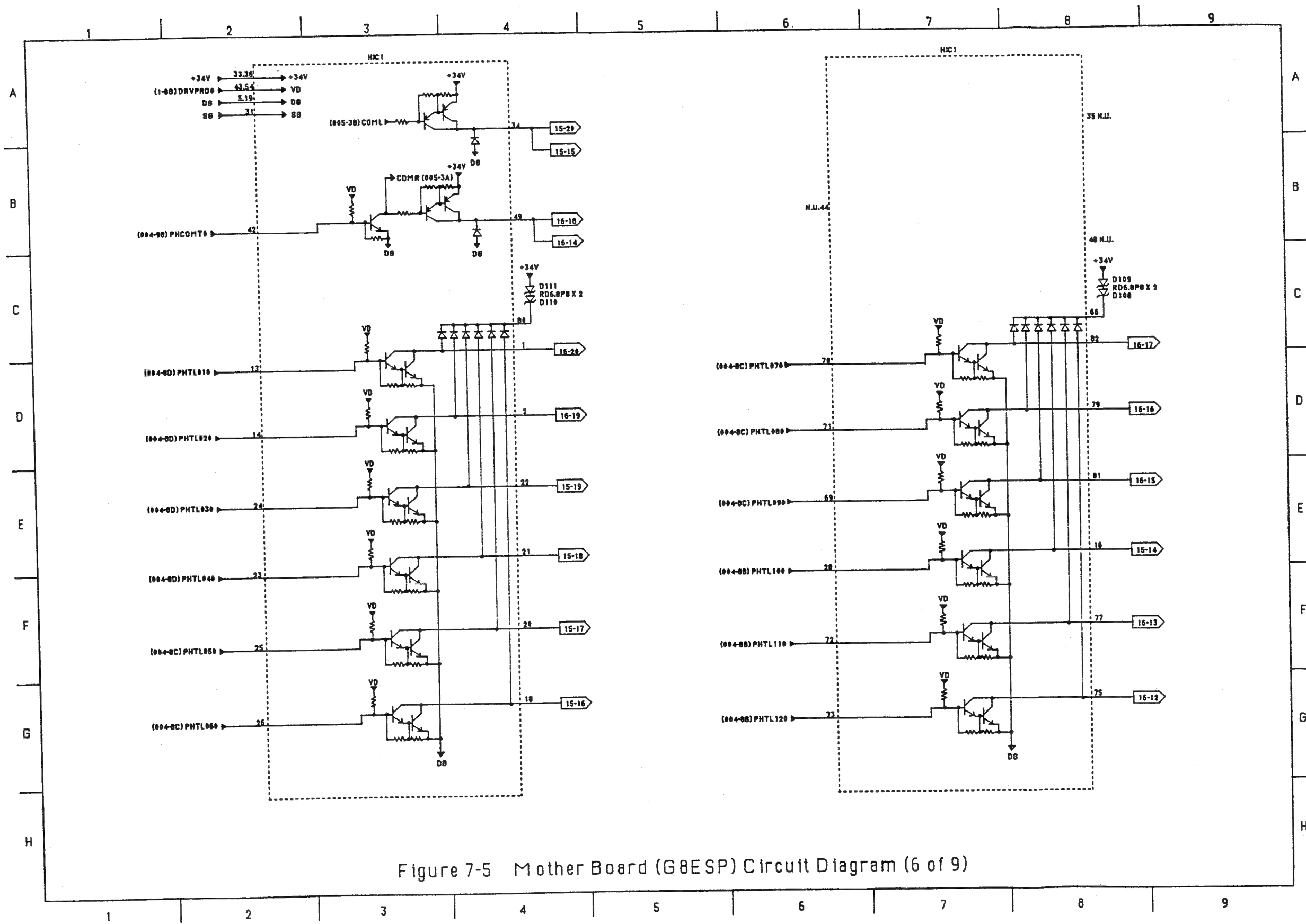


Figure 7-5 Mother Board (G8ESP) Circuit Diagram (6 of 9)

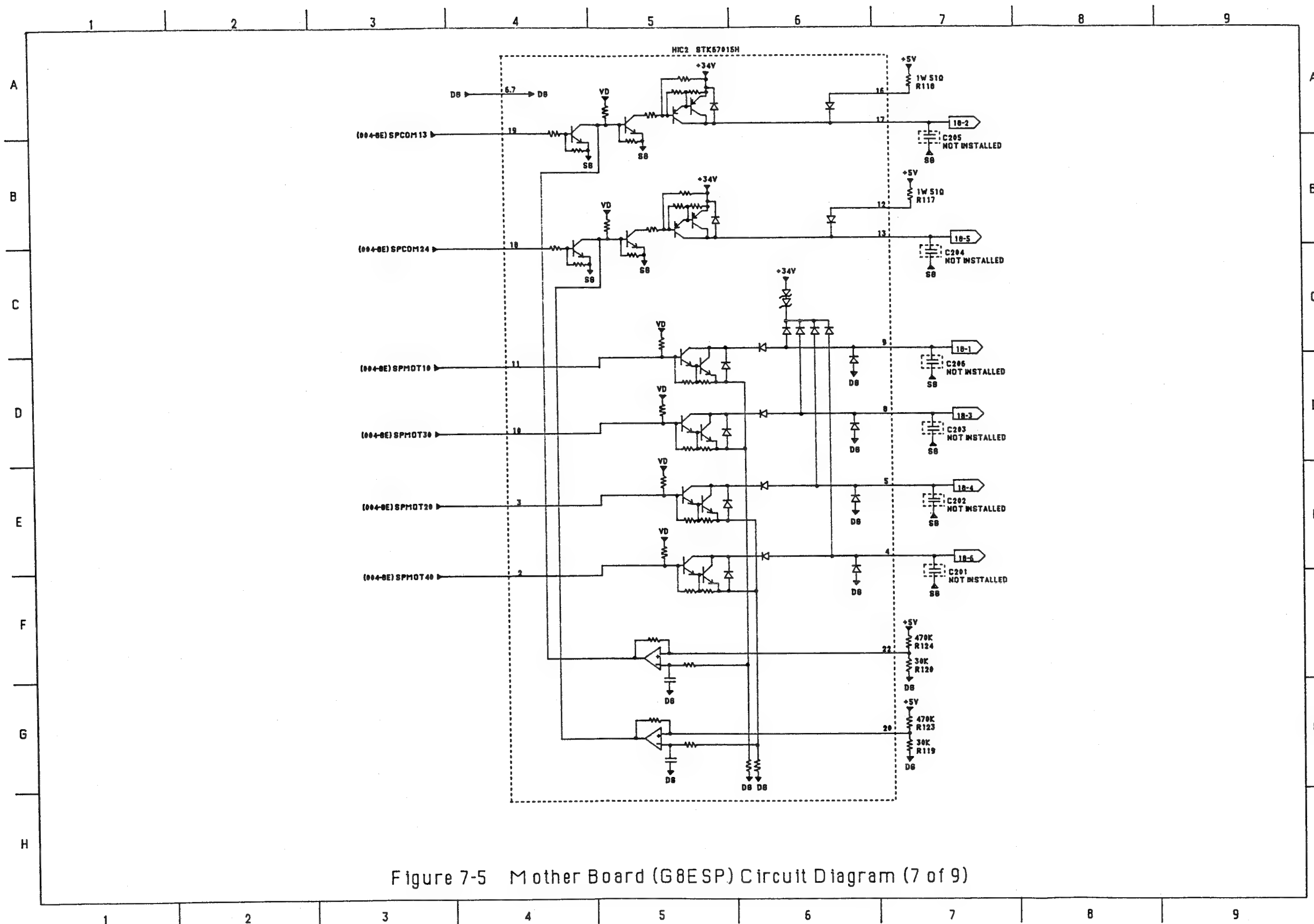


Figure 7-5 Mother Board (G8ESP) Circuit Diagram (7 of 9)

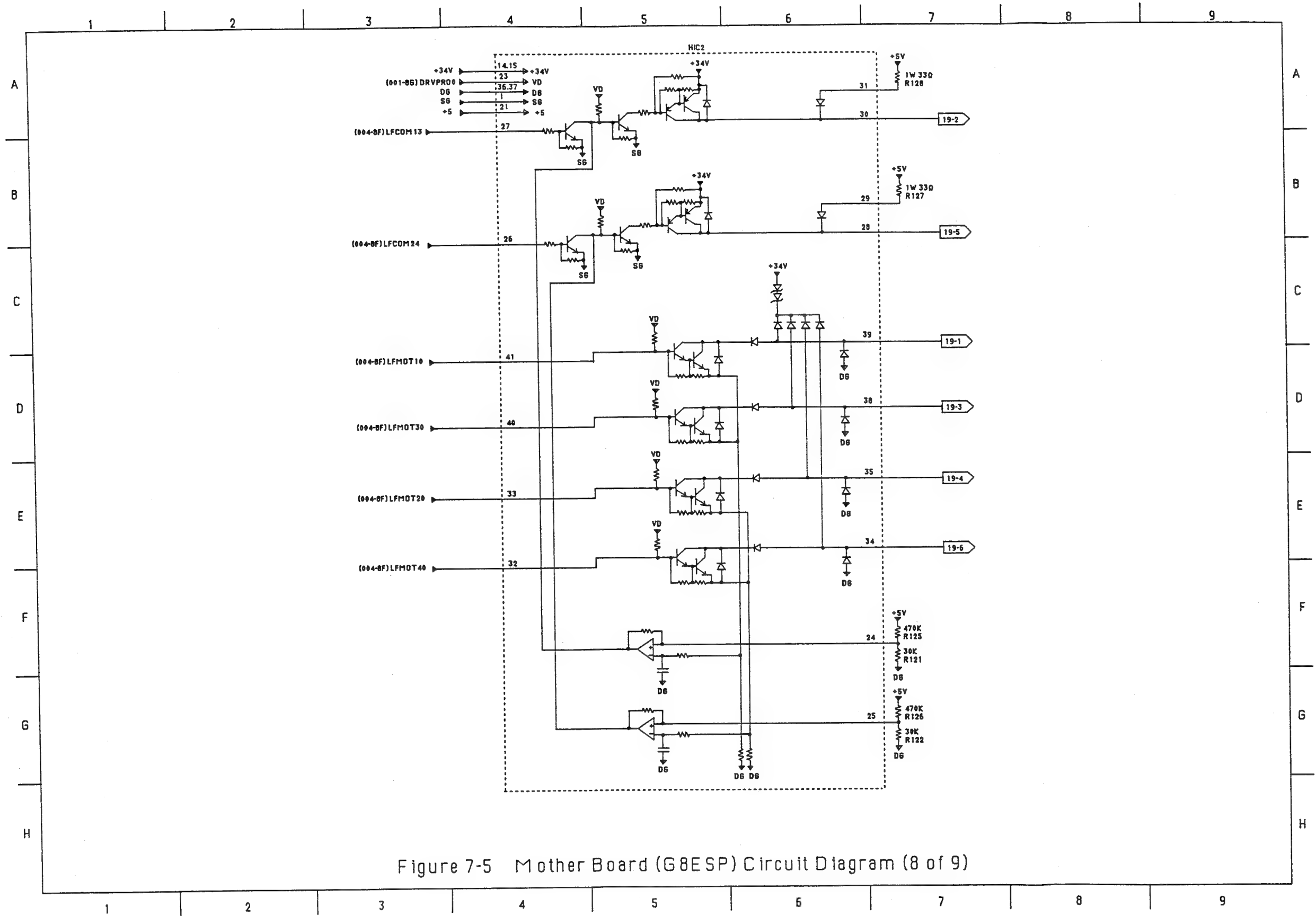


Figure 7-5 Mother Board (G8ESP) Circuit Diagram (8 of 9)

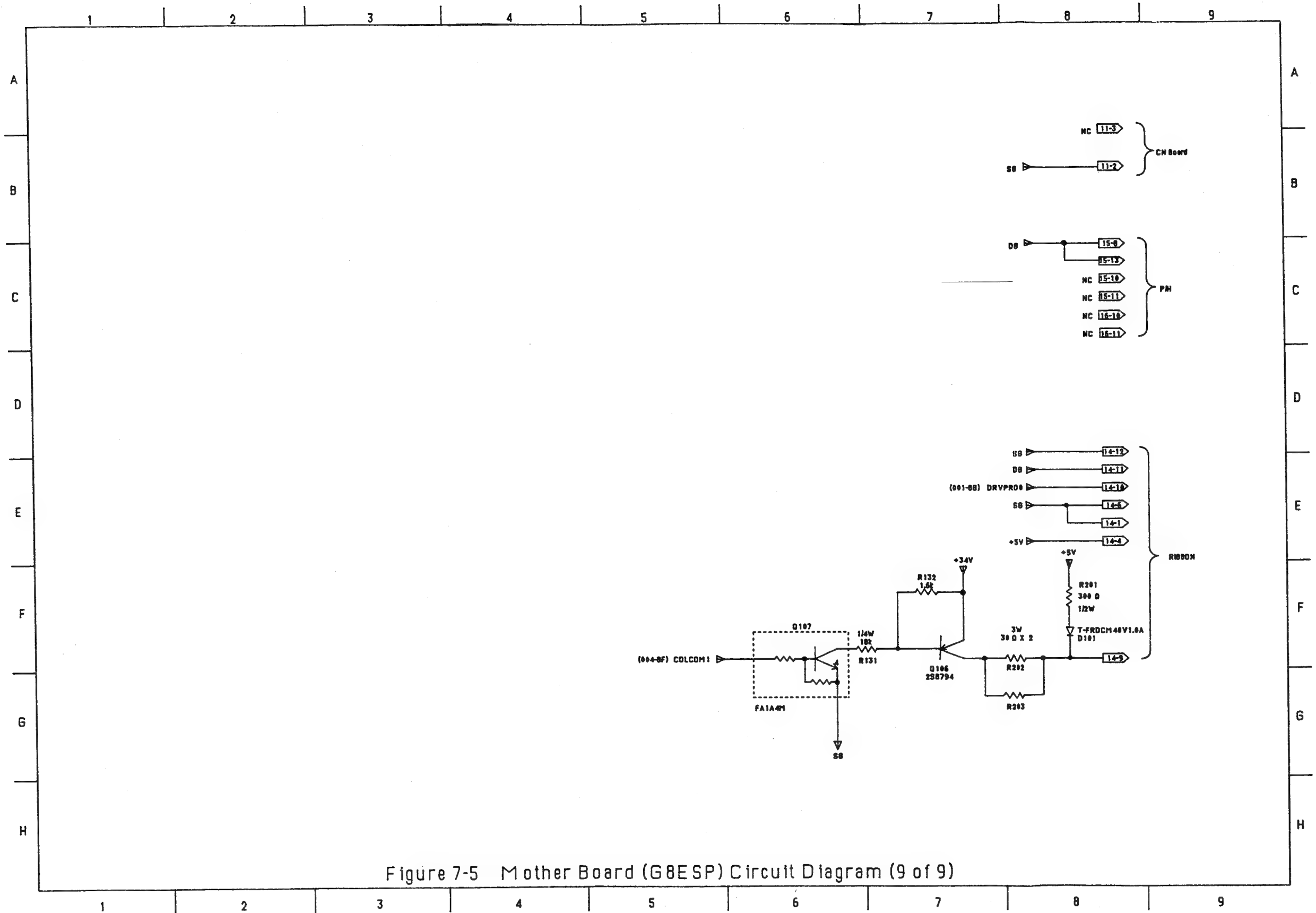


Figure 7-5 Mother Board (G8ESP) Circuit Diagram (9 of 9)

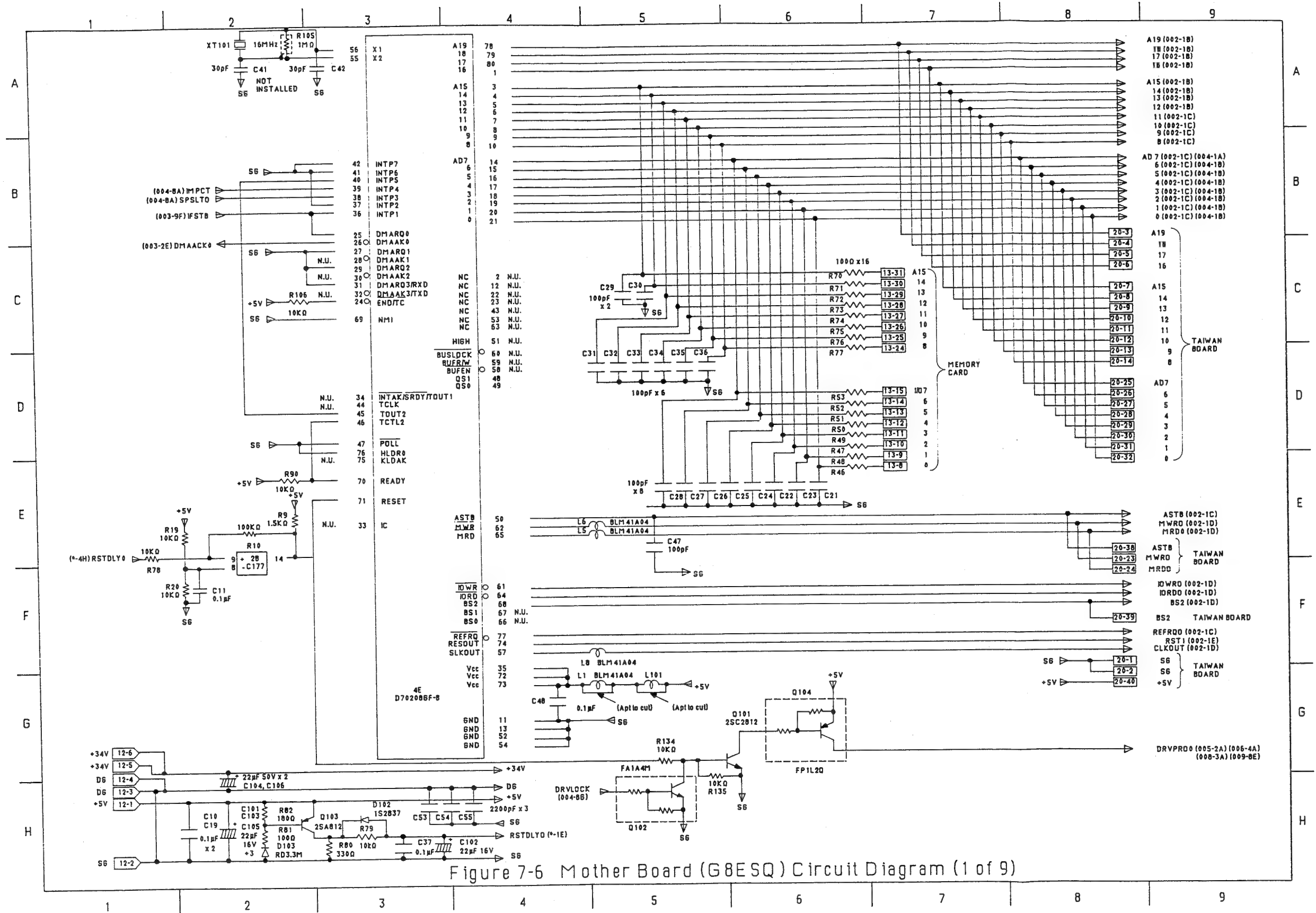
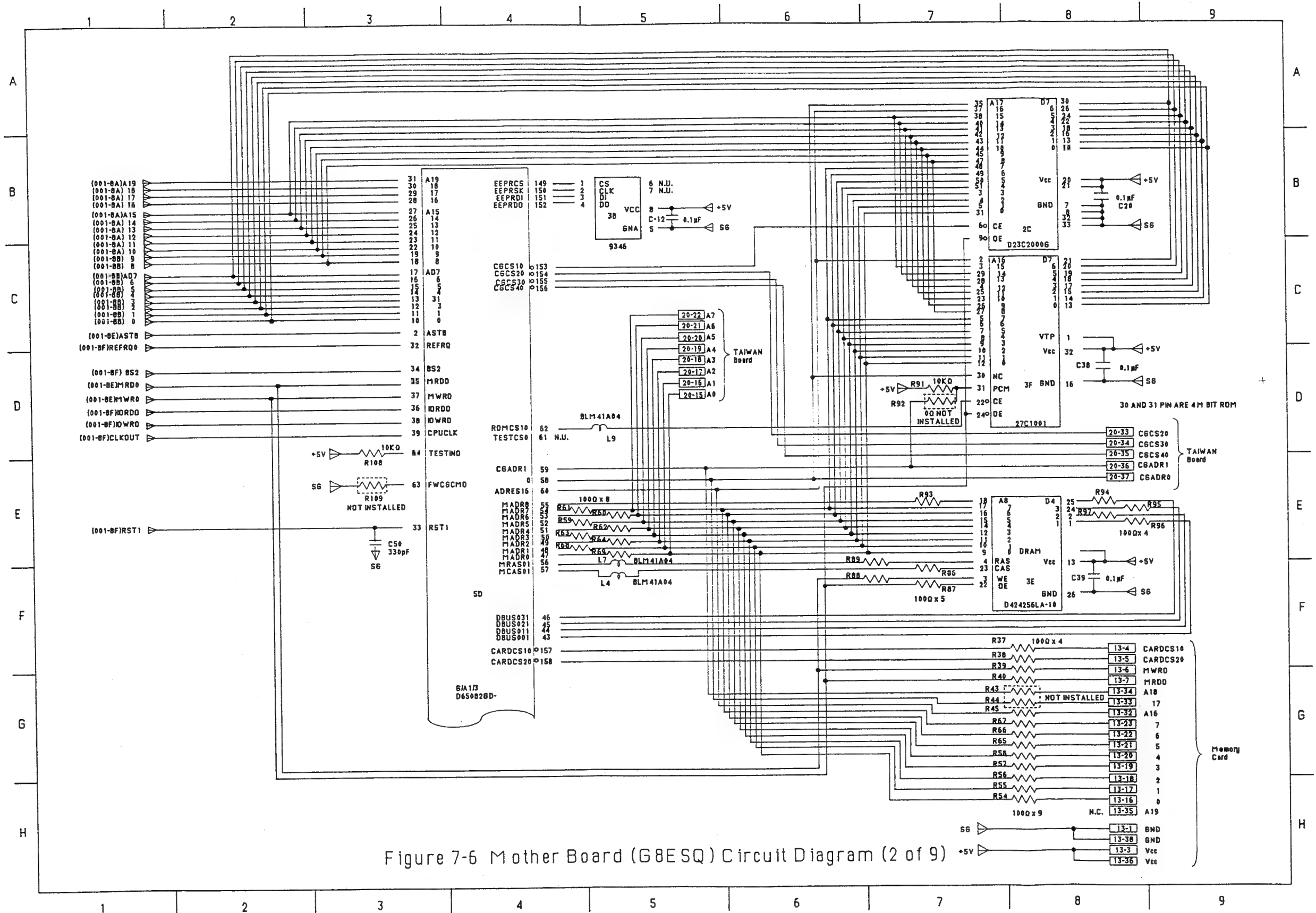


Figure 7-6 Mother Board (G8ESQ) Circuit Diagram (1 of 9)



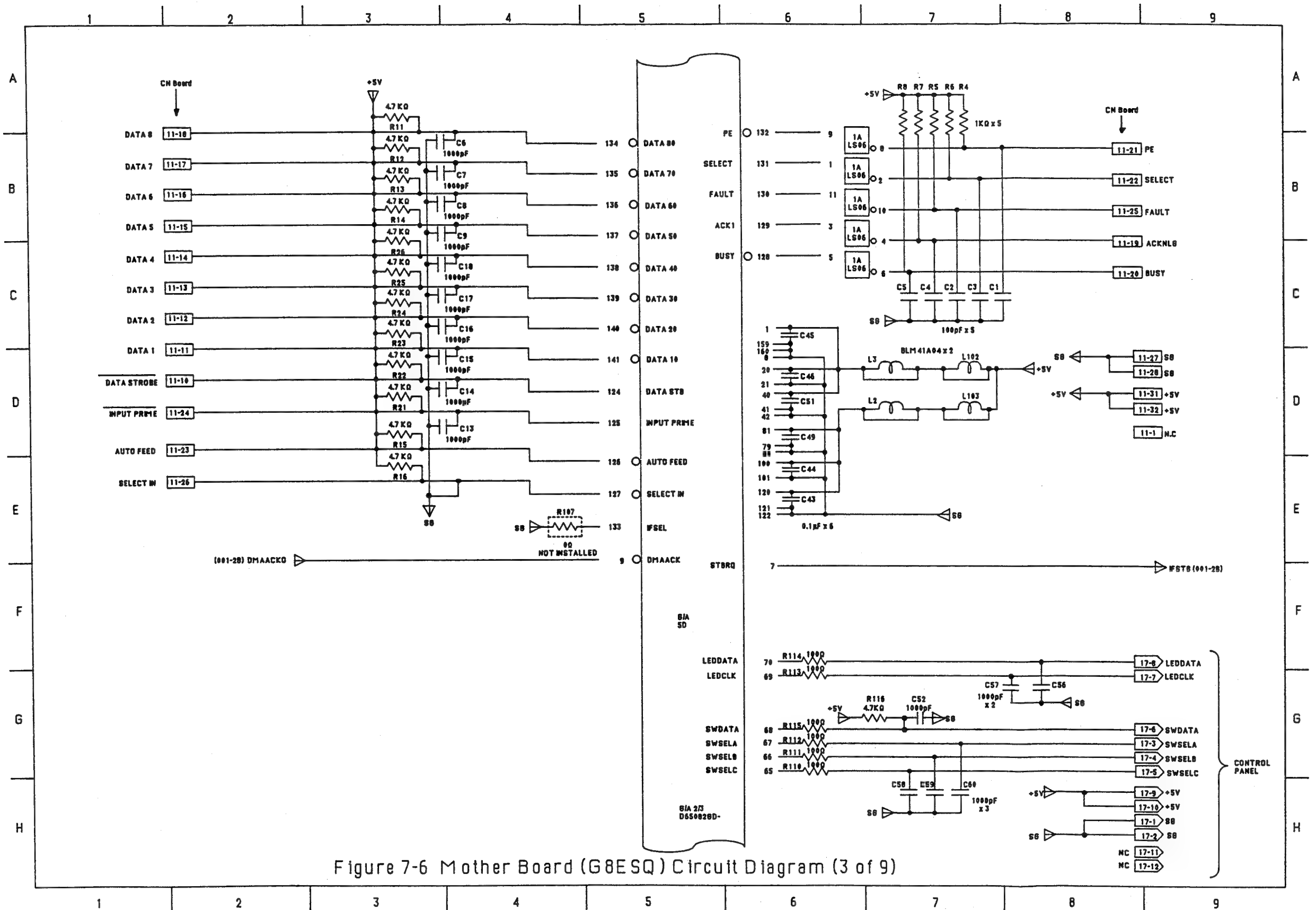


Figure 7-6 Mother Board (G8ESQ) Circuit Diagram (3 of 9)

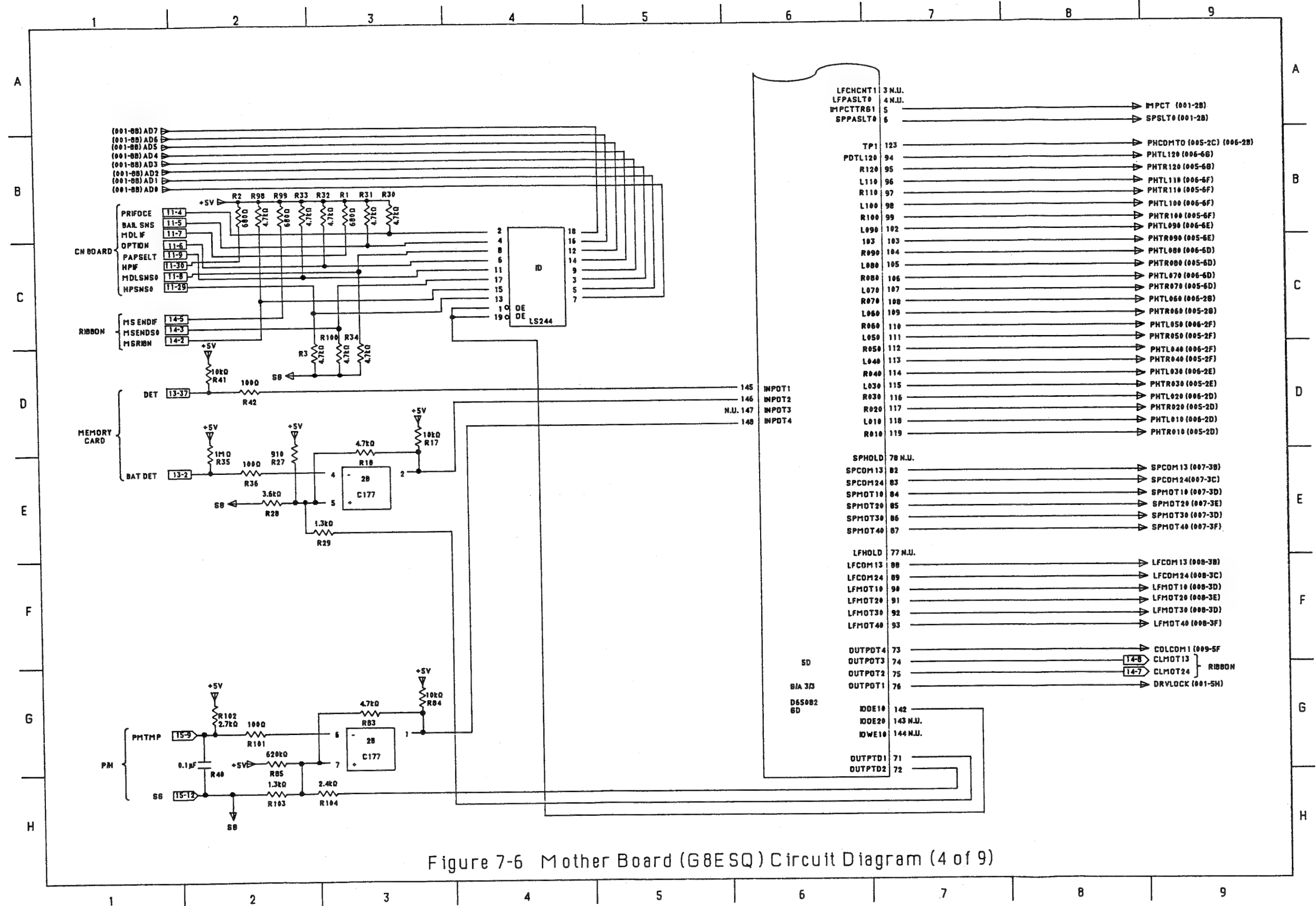


Figure 7-6 Mother Board (G8ESQ) Circuit Diagram (4 of 9)

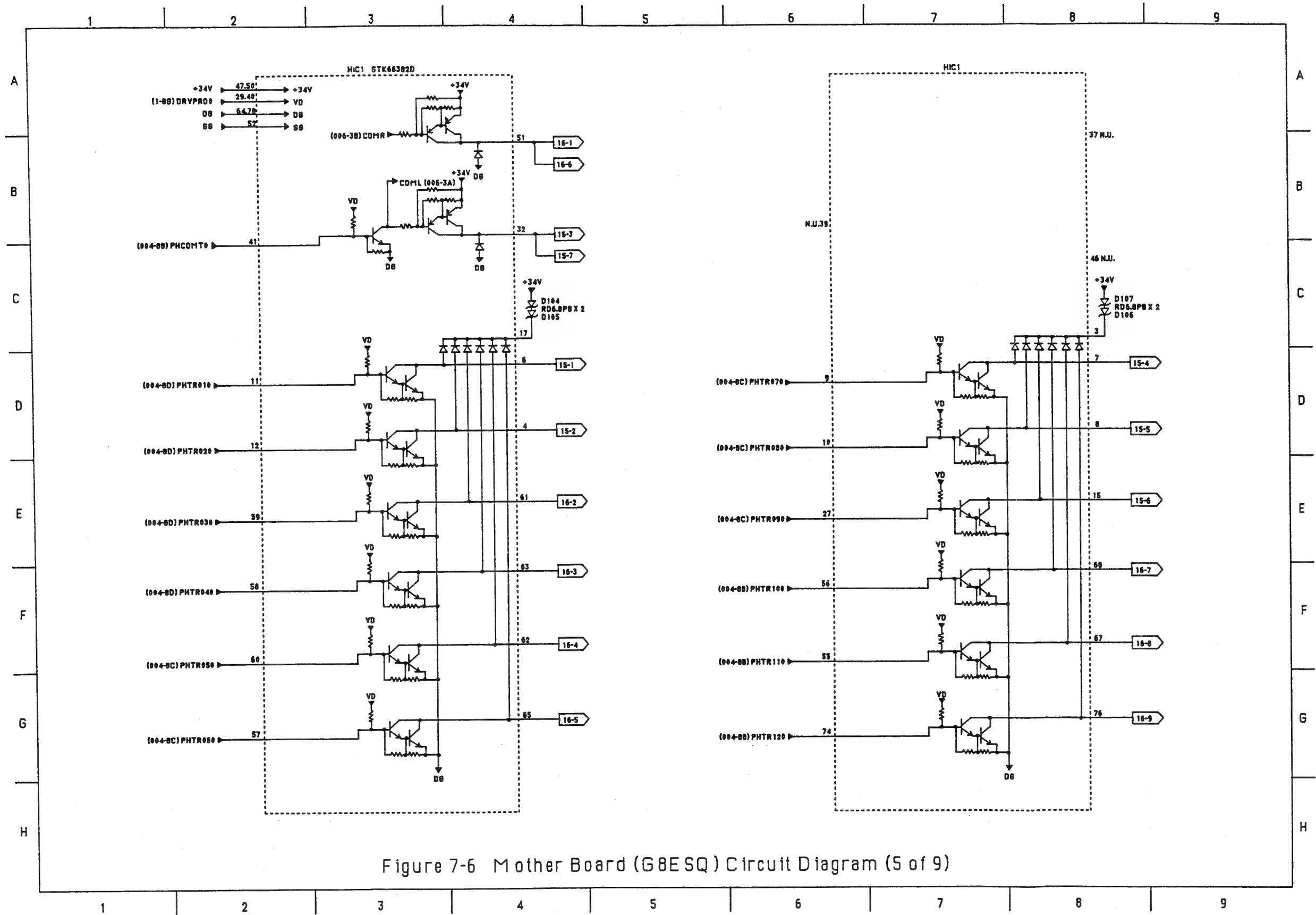


Figure 7-6 Mother Board (G8ESQ) Circuit Diagram (5 of 9)

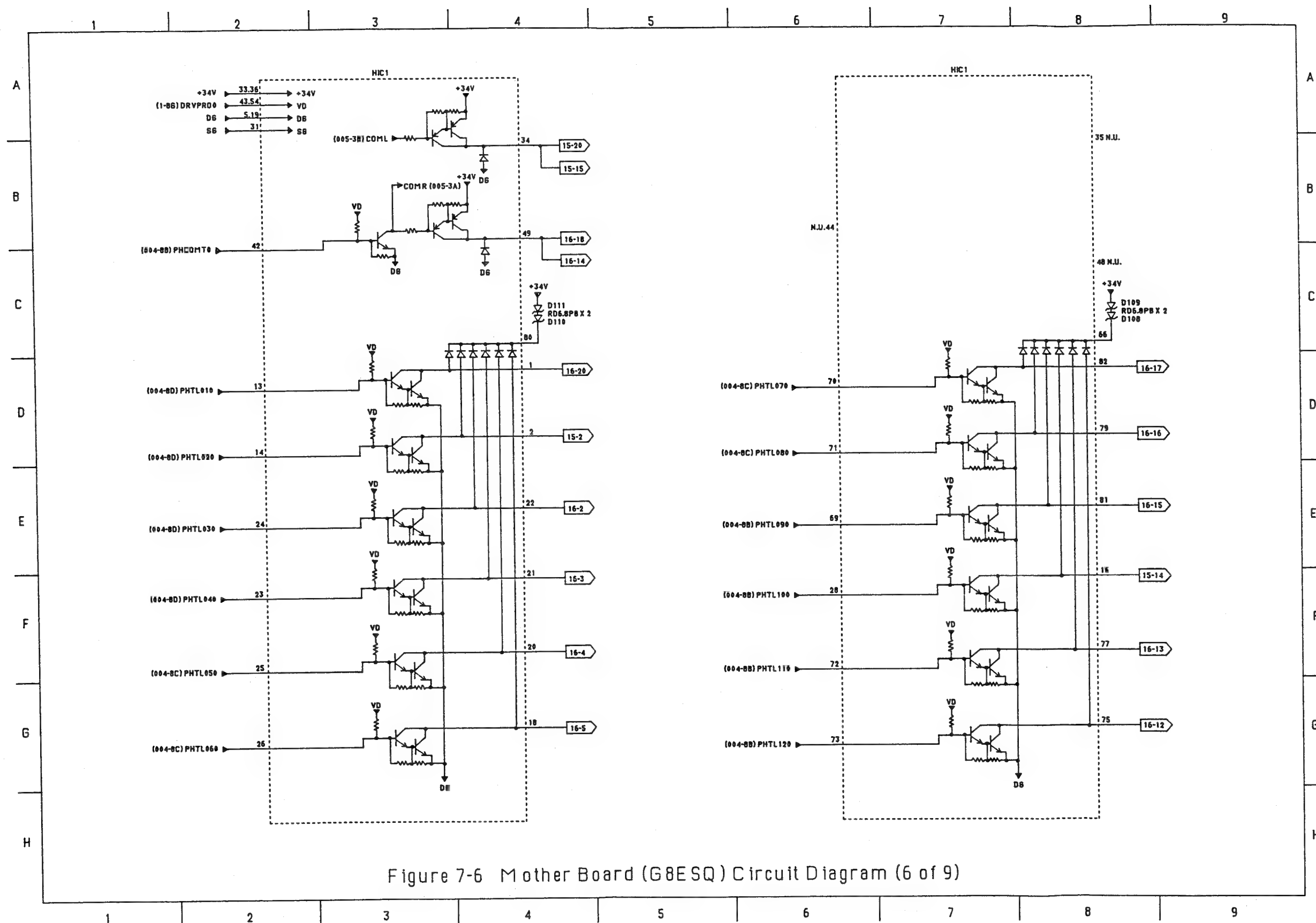


Figure 7-6 Mother Board (G8ESQ) Circuit Diagram (6 of 9)

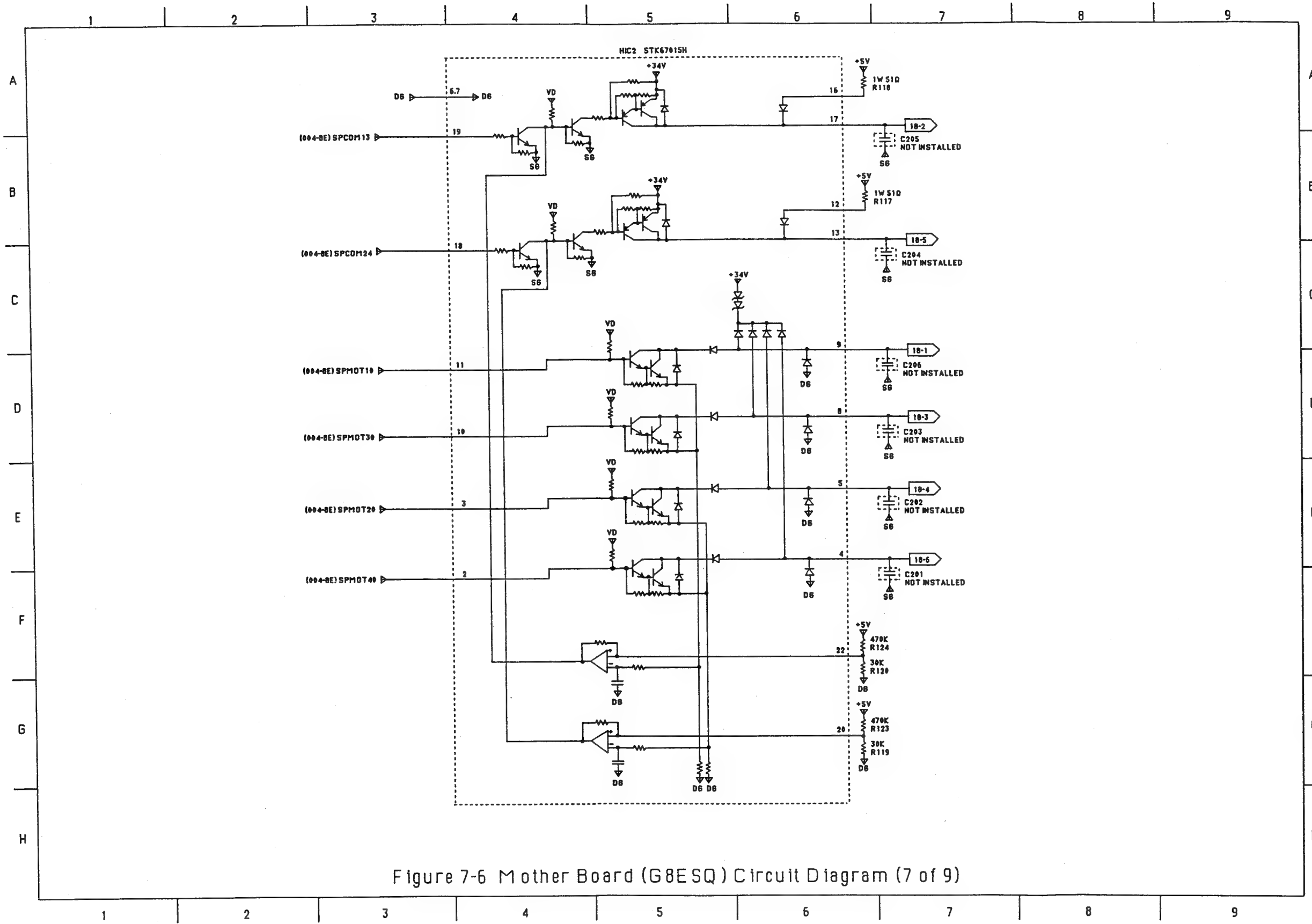


Figure 7-6 Mother Board (G8ESQ) Circuit Diagram (7 of 9)

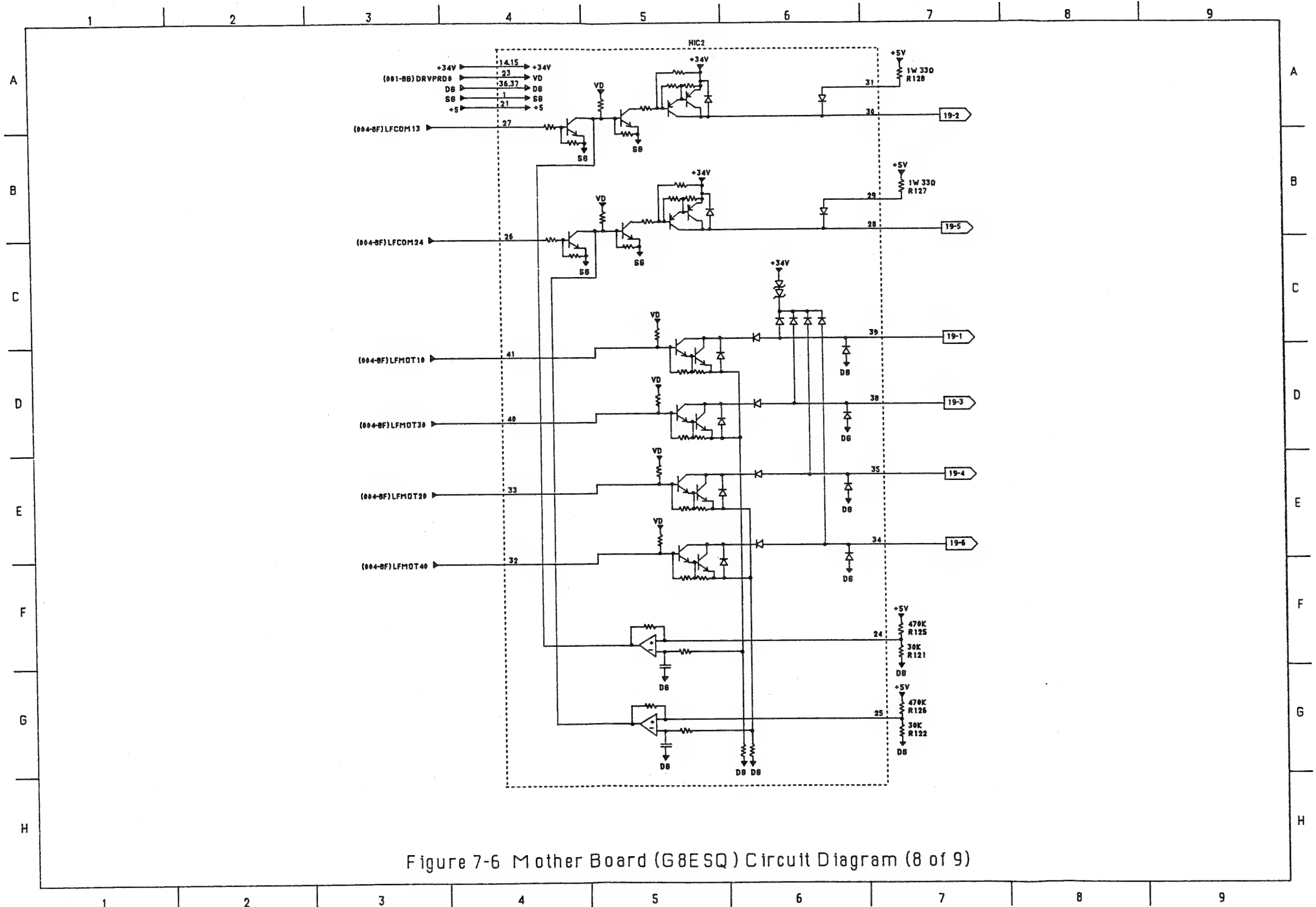


Figure 7-6 Mother Board (G8ESQ) Circuit Diagram (8 of 9)

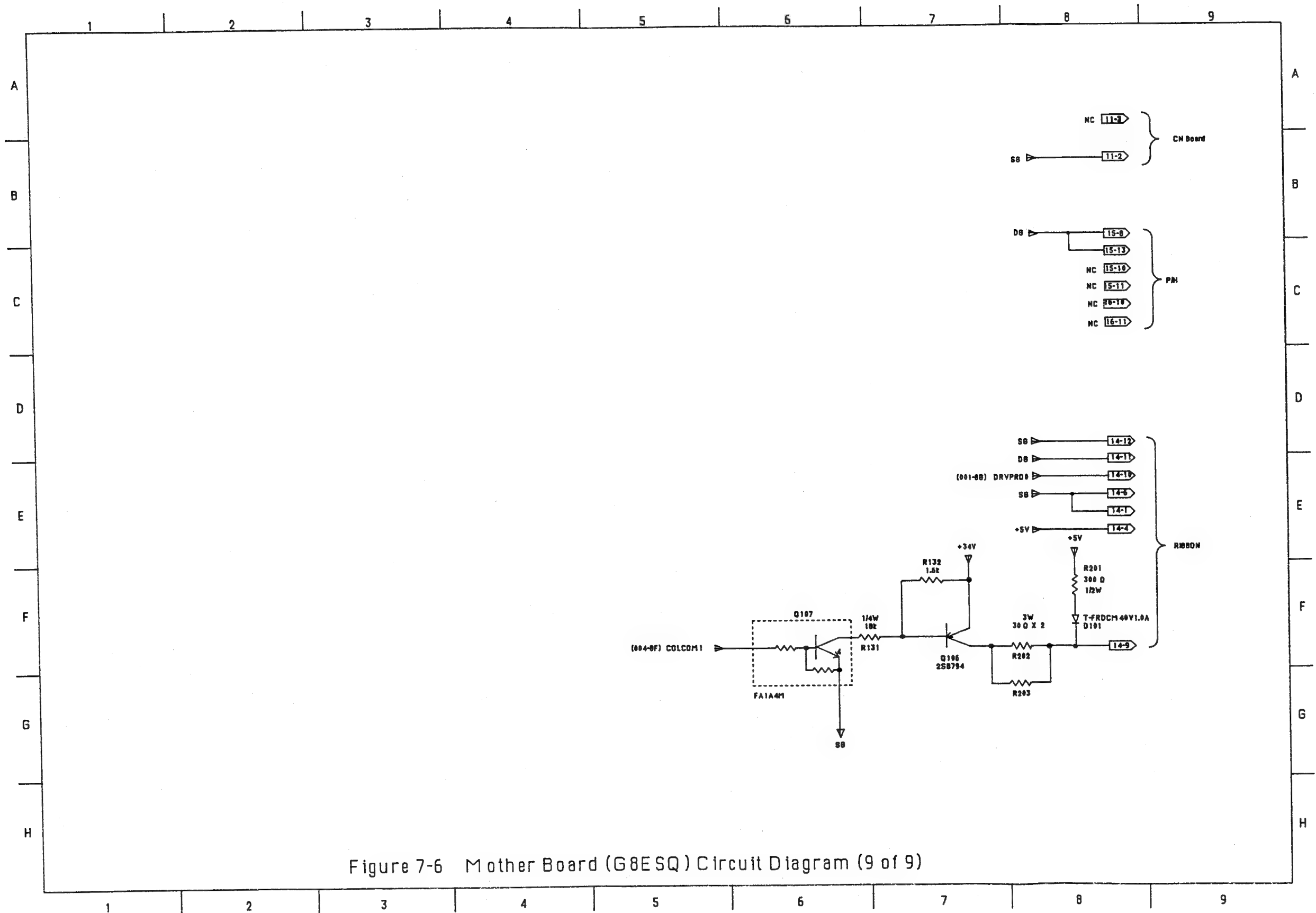


Figure 7-6 Mother Board (G8ESQ) Circuit Diagram (9 of 9)

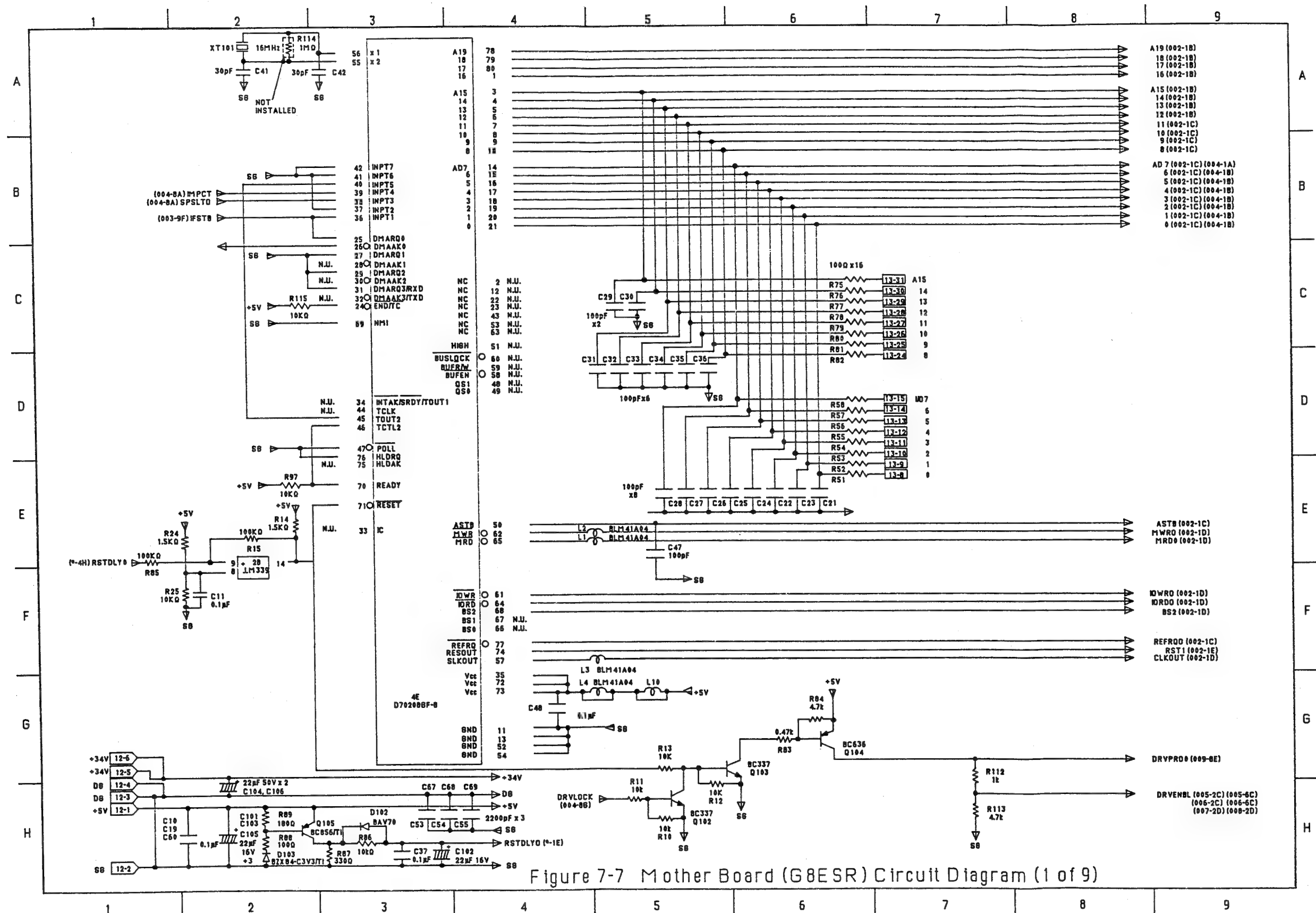


Figure 7-7 Mother Board (G8ESR) Circuit Diagram (1 of 9)

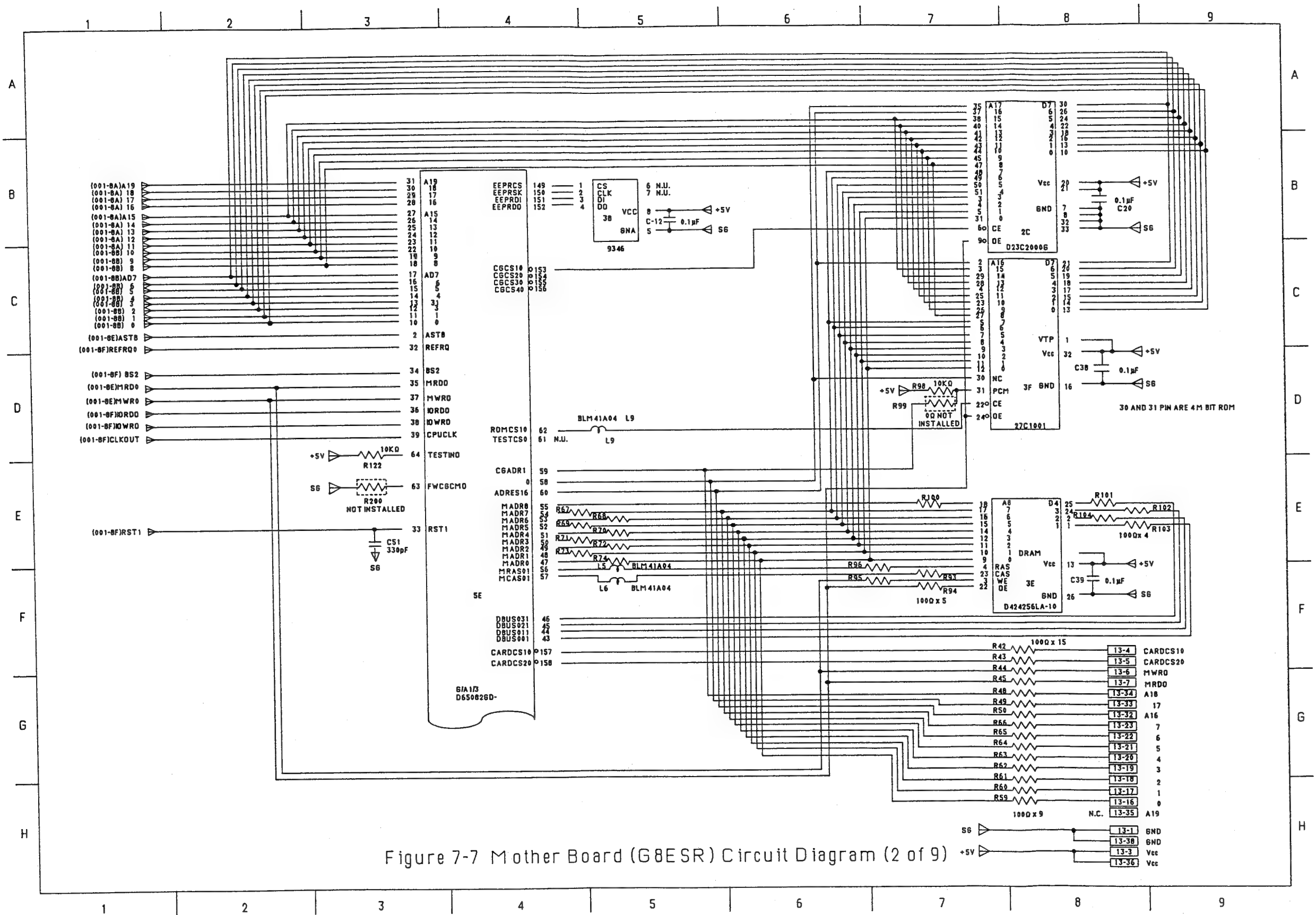


Figure 7-7 Mother Board (G8ESR) Circuit Diagram (2 of 9)

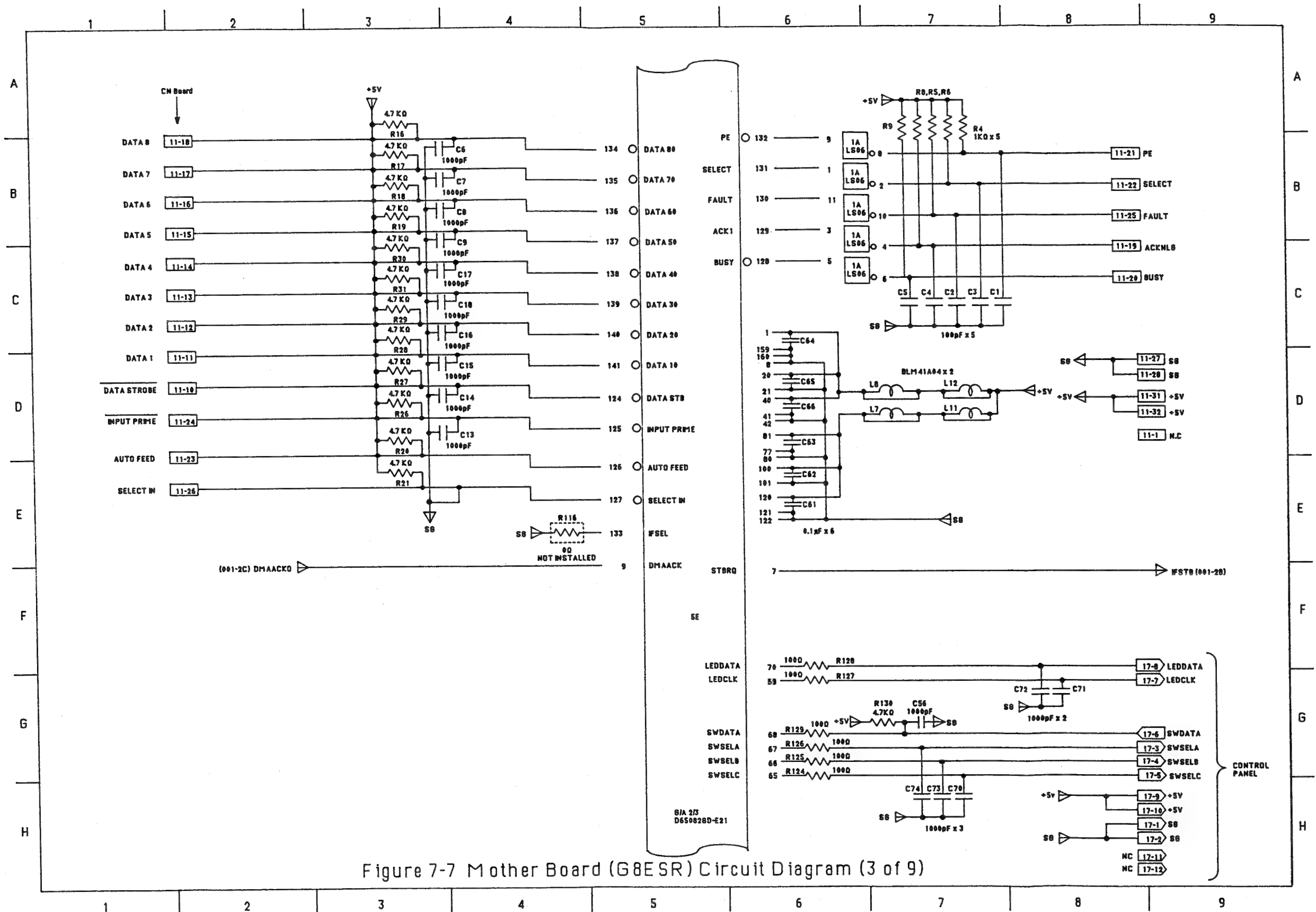


Figure 7-7 Mother Board (G8ESR) Circuit Diagram (3 of 9)

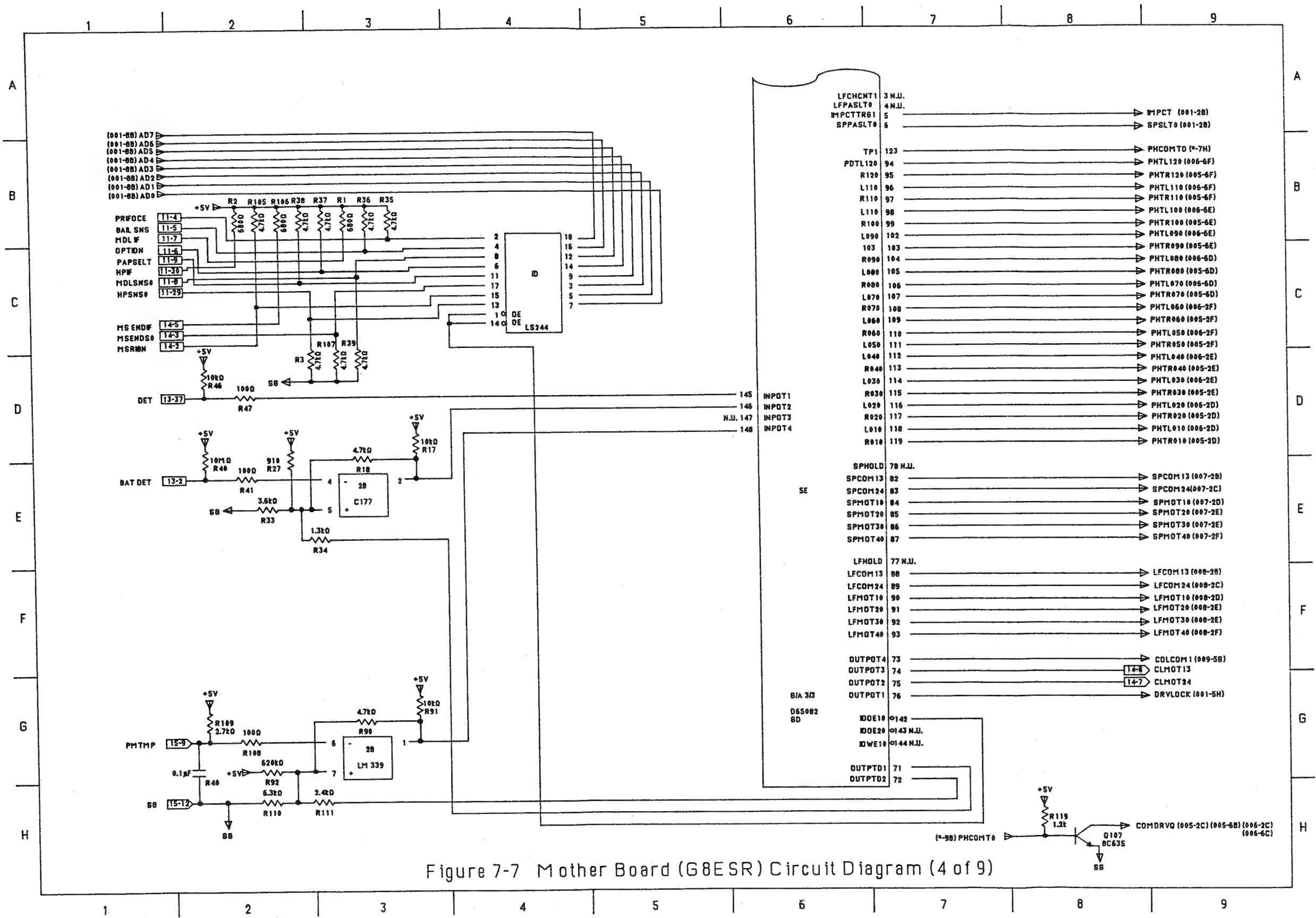


Figure 7-7 Mother Board (G8ESR) Circuit Diagram (4 of 9)

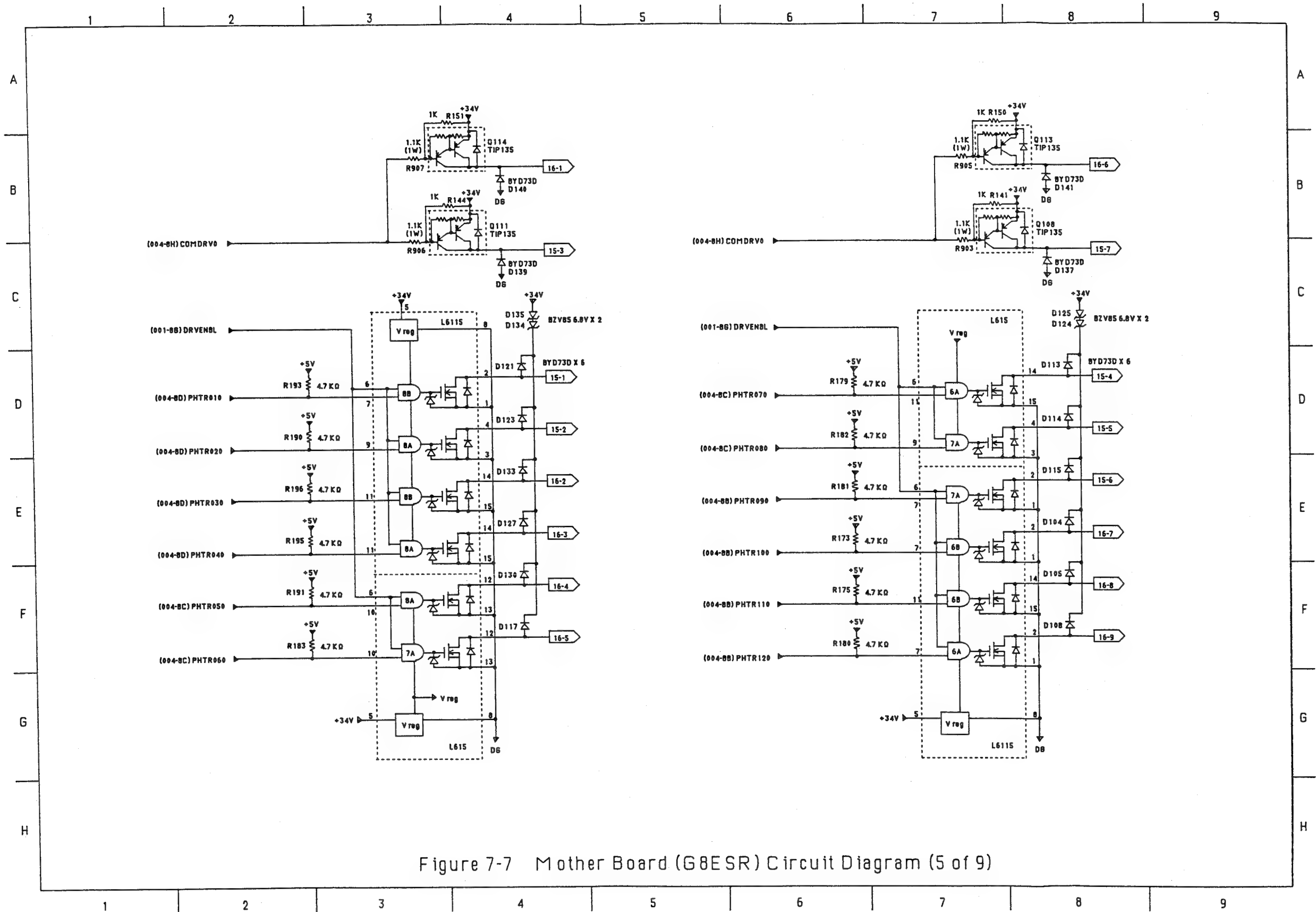


Figure 7-7 Mother Board (G8ESR) Circuit Diagram (5 of 9)

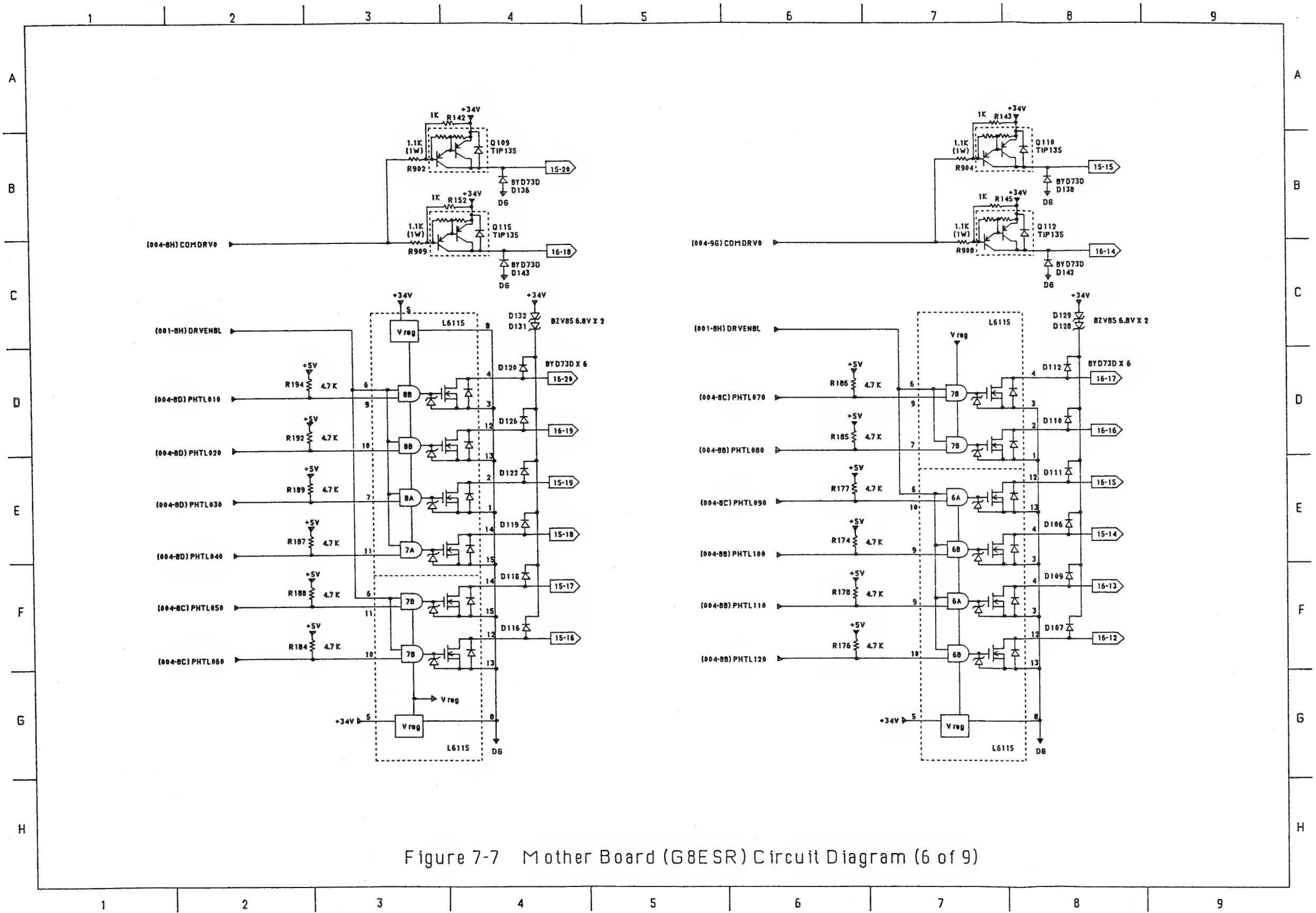


Figure 7-7 Mother Board (G8ESR) Circuit Diagram (6 of 9)

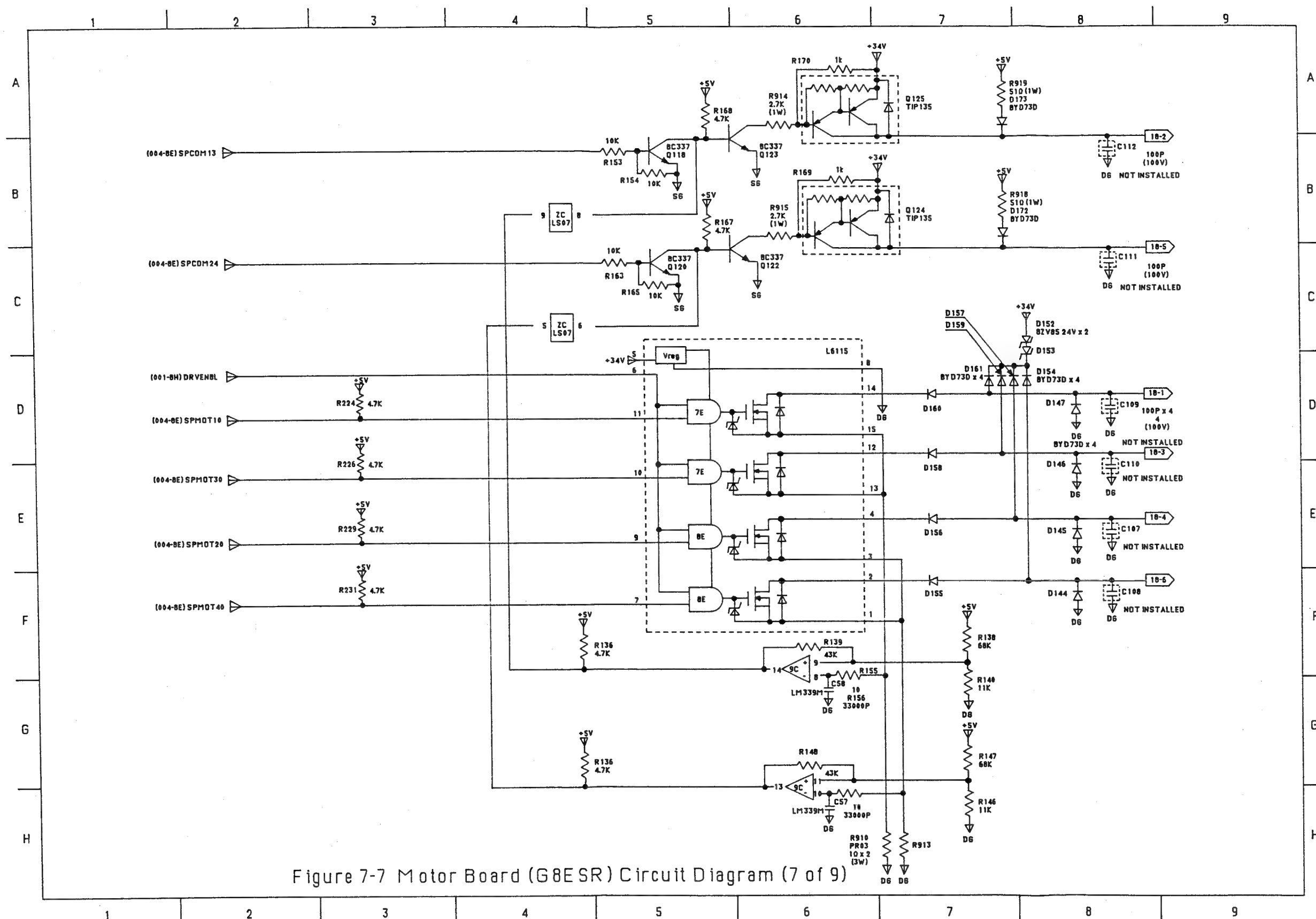


Figure 7-7 Motor Board (G8ESR) Circuit Diagram (7 of 9)

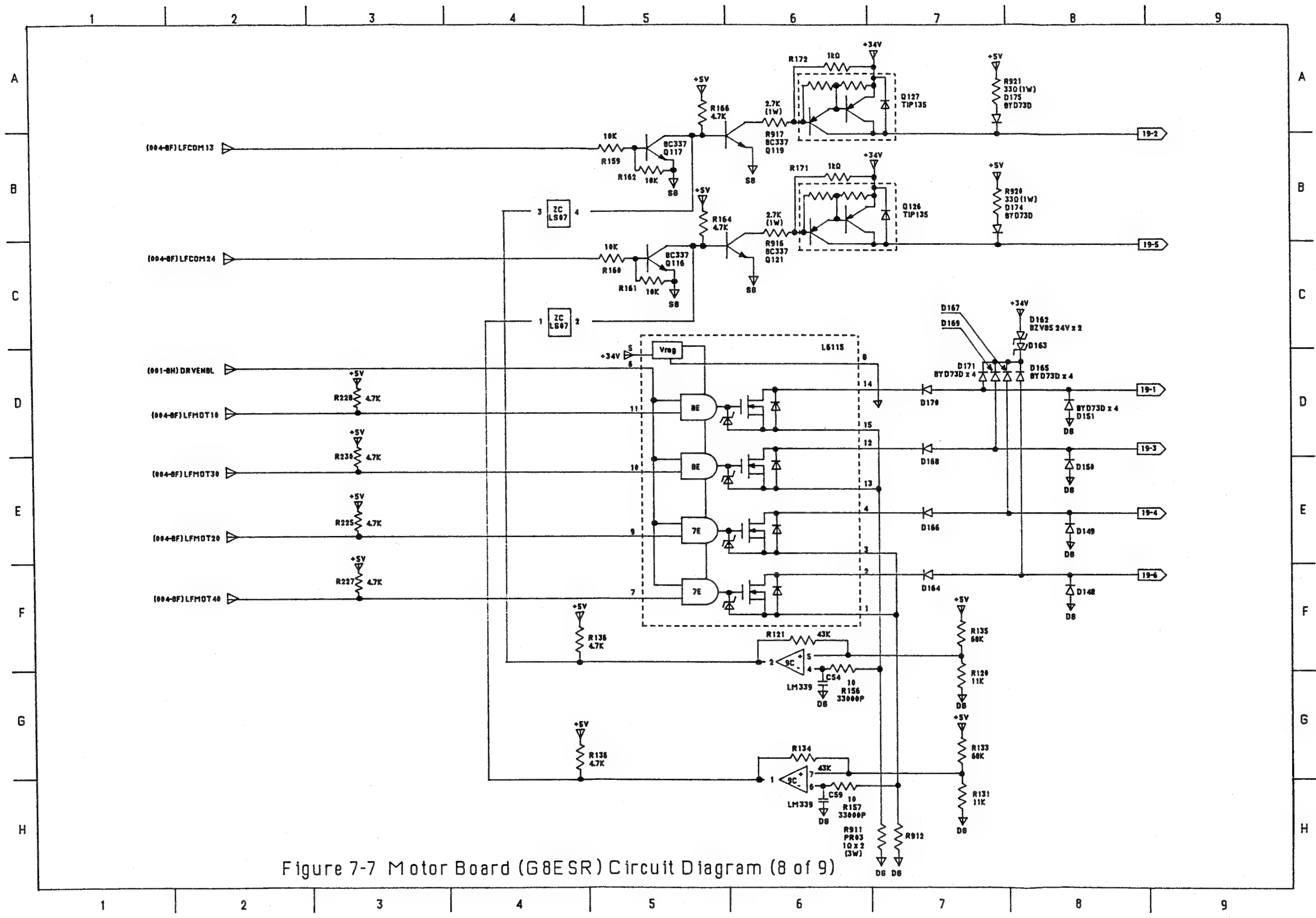


Figure 7-7 Motor Board (G8ESR) Circuit Diagram (8 of 9)

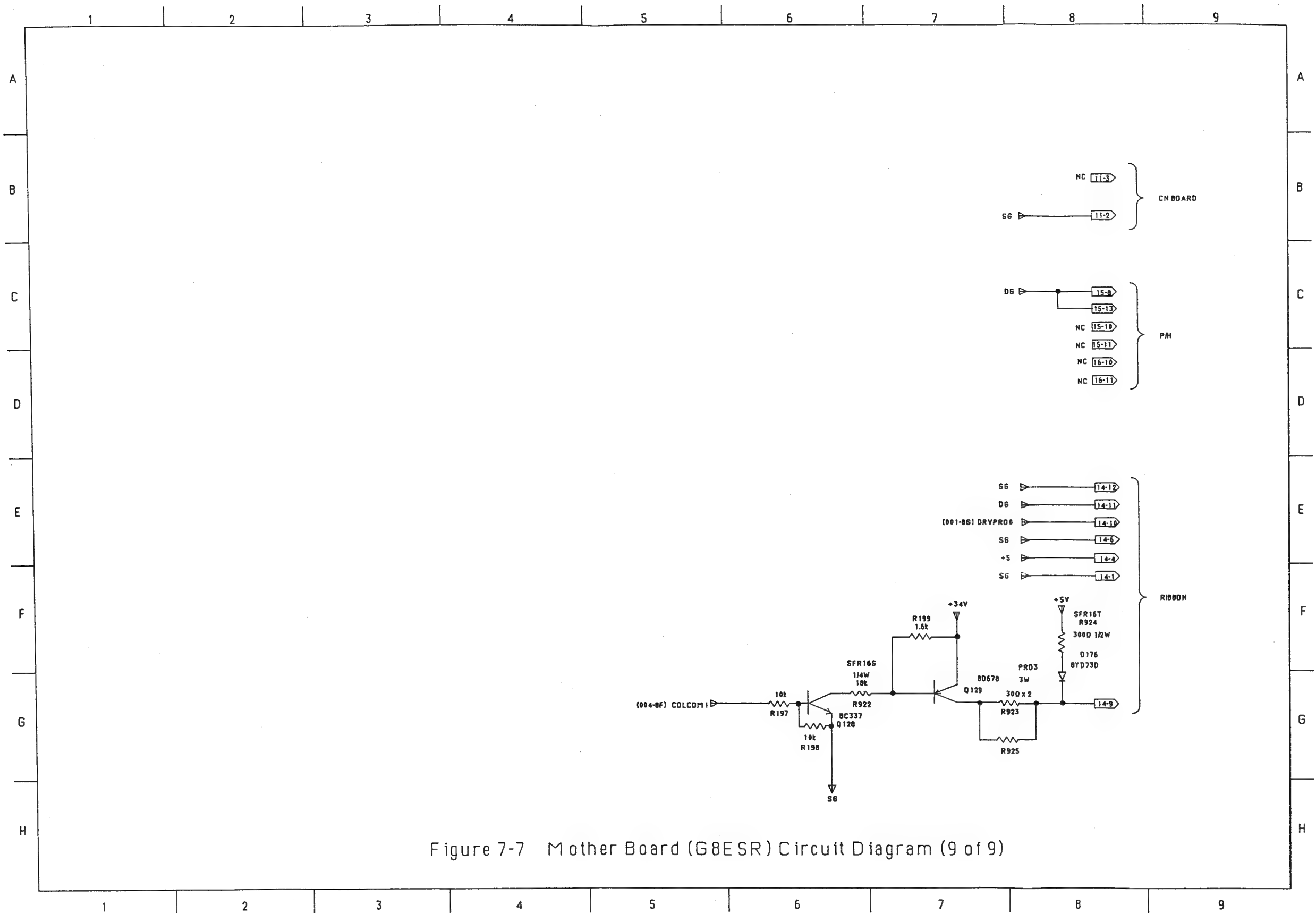


Figure 7-7 Mother Board (G8ESR) Circuit Diagram (9 of 9)

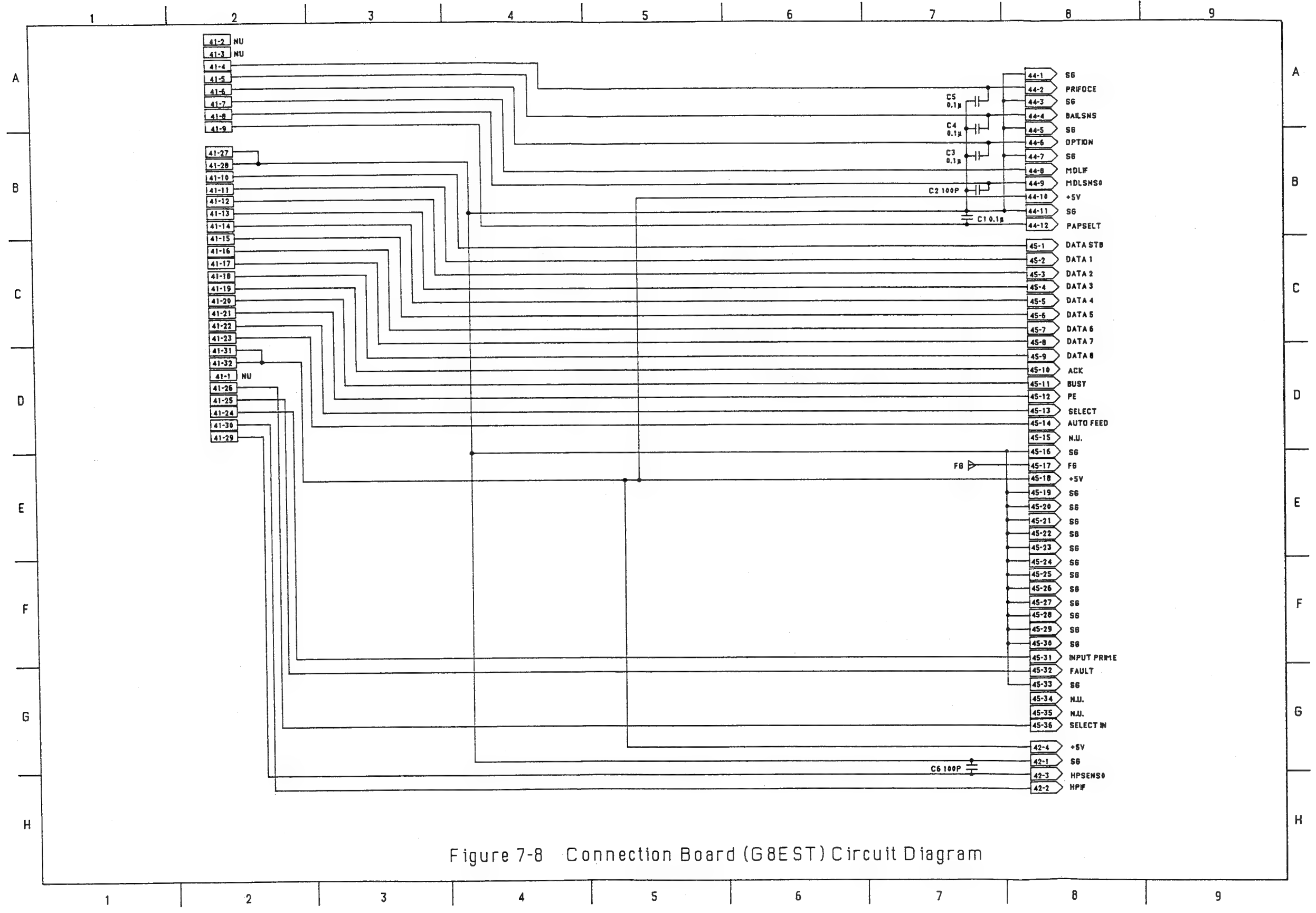


Figure 7-8 Connection Board (G8EST) Circuit Diagram

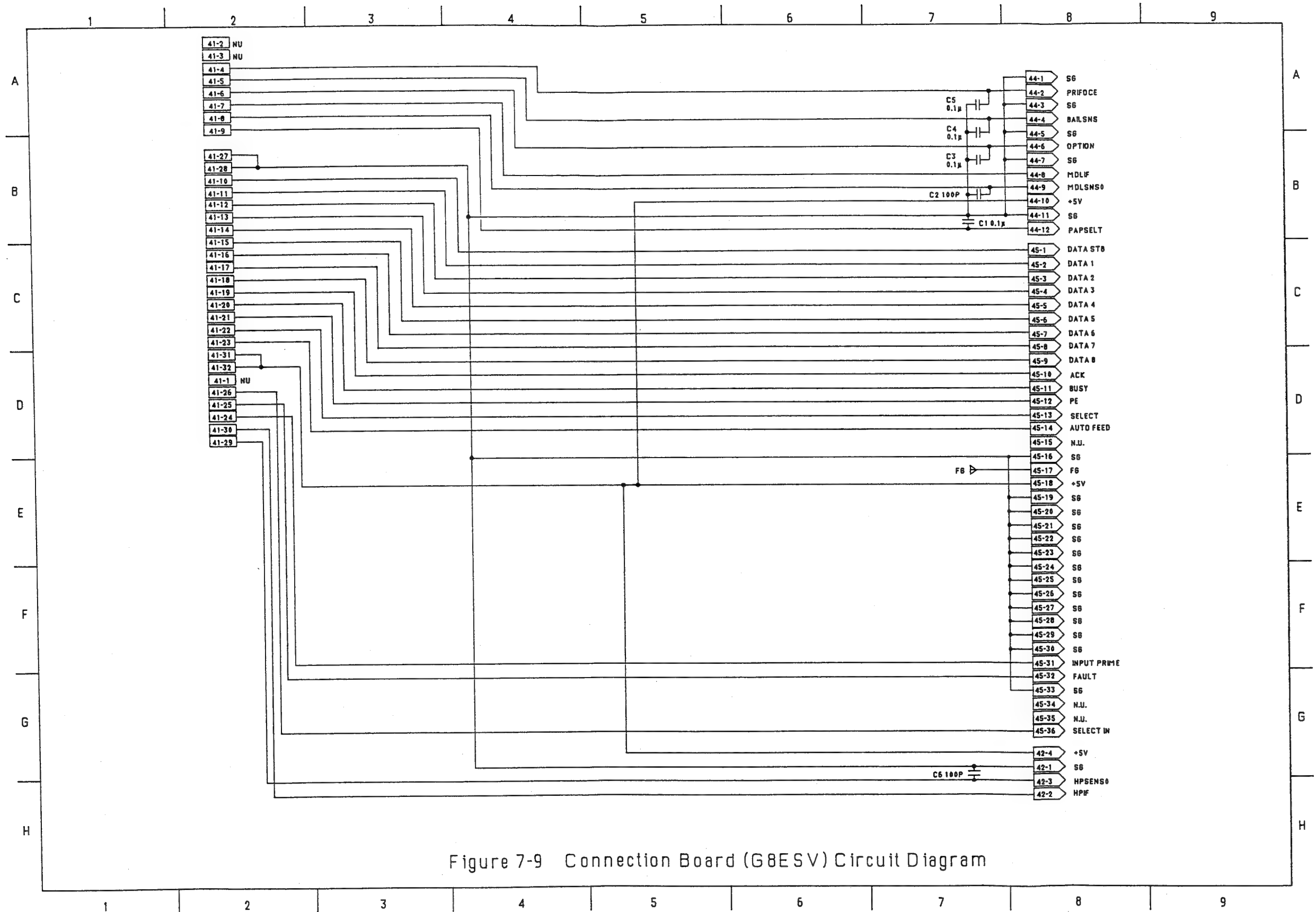
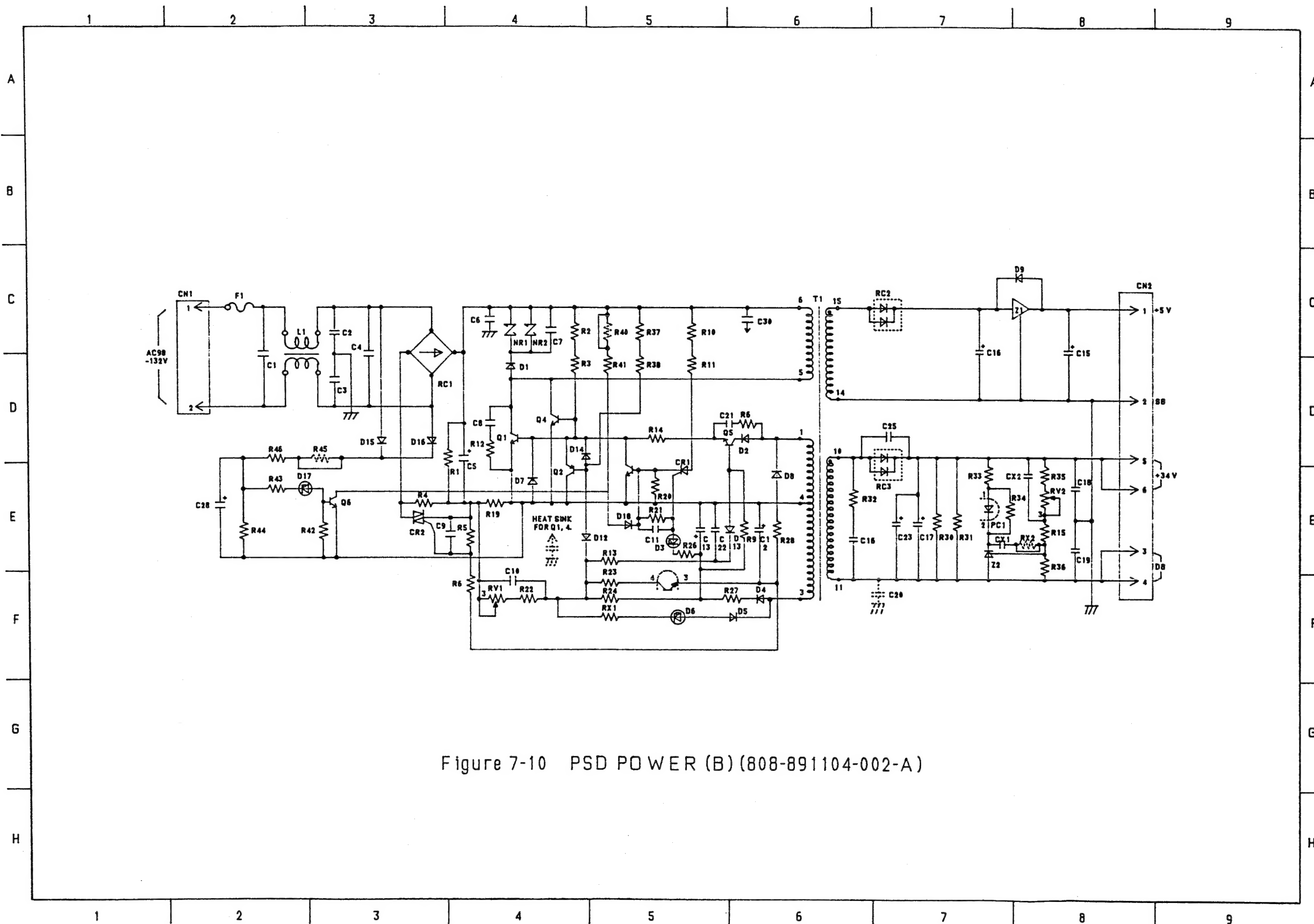


Figure 7-9 Connection Board (G8ESV) Circuit Diagram



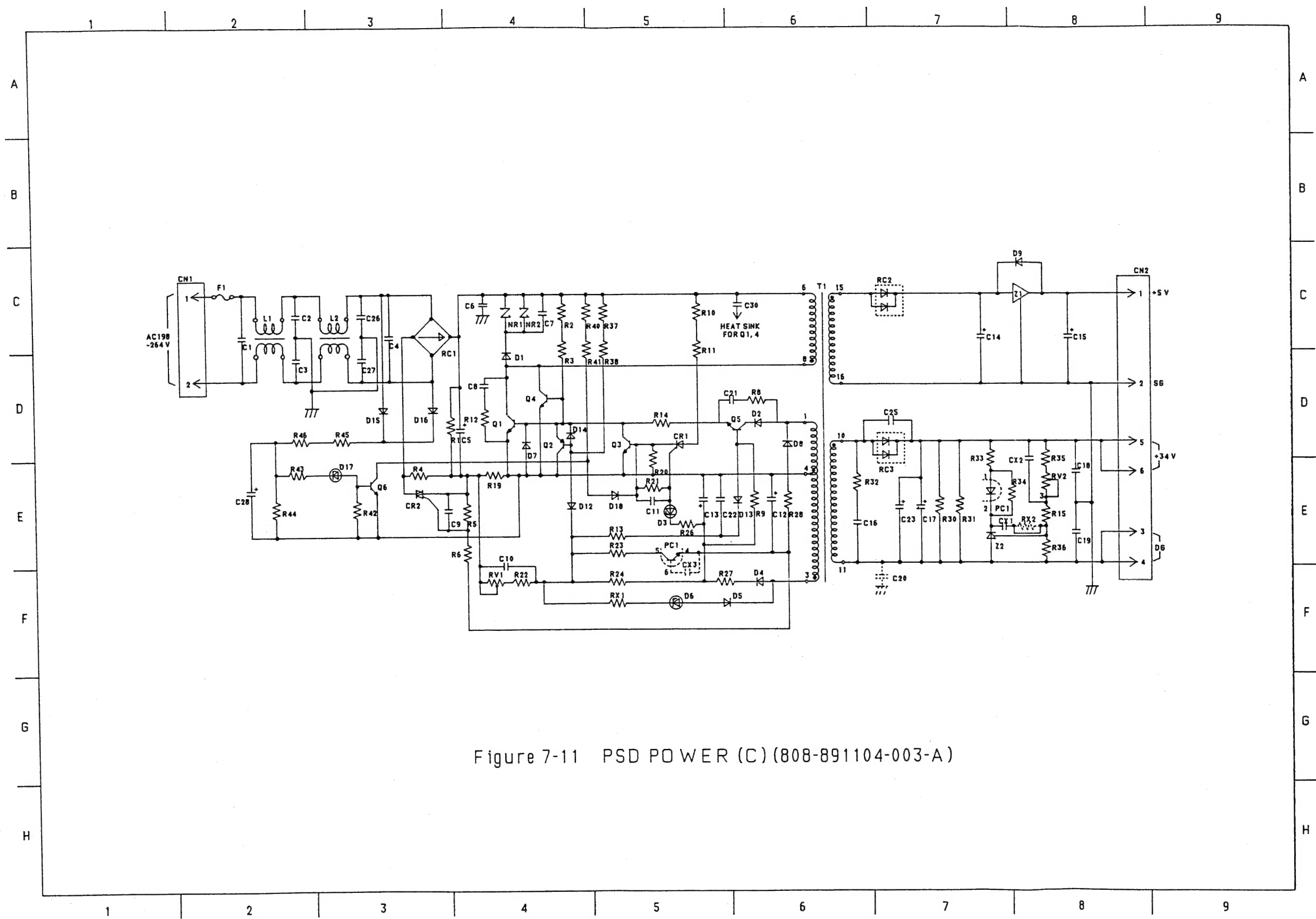


Figure 7-11 PSD POWER (C) (808-891104-003-A)

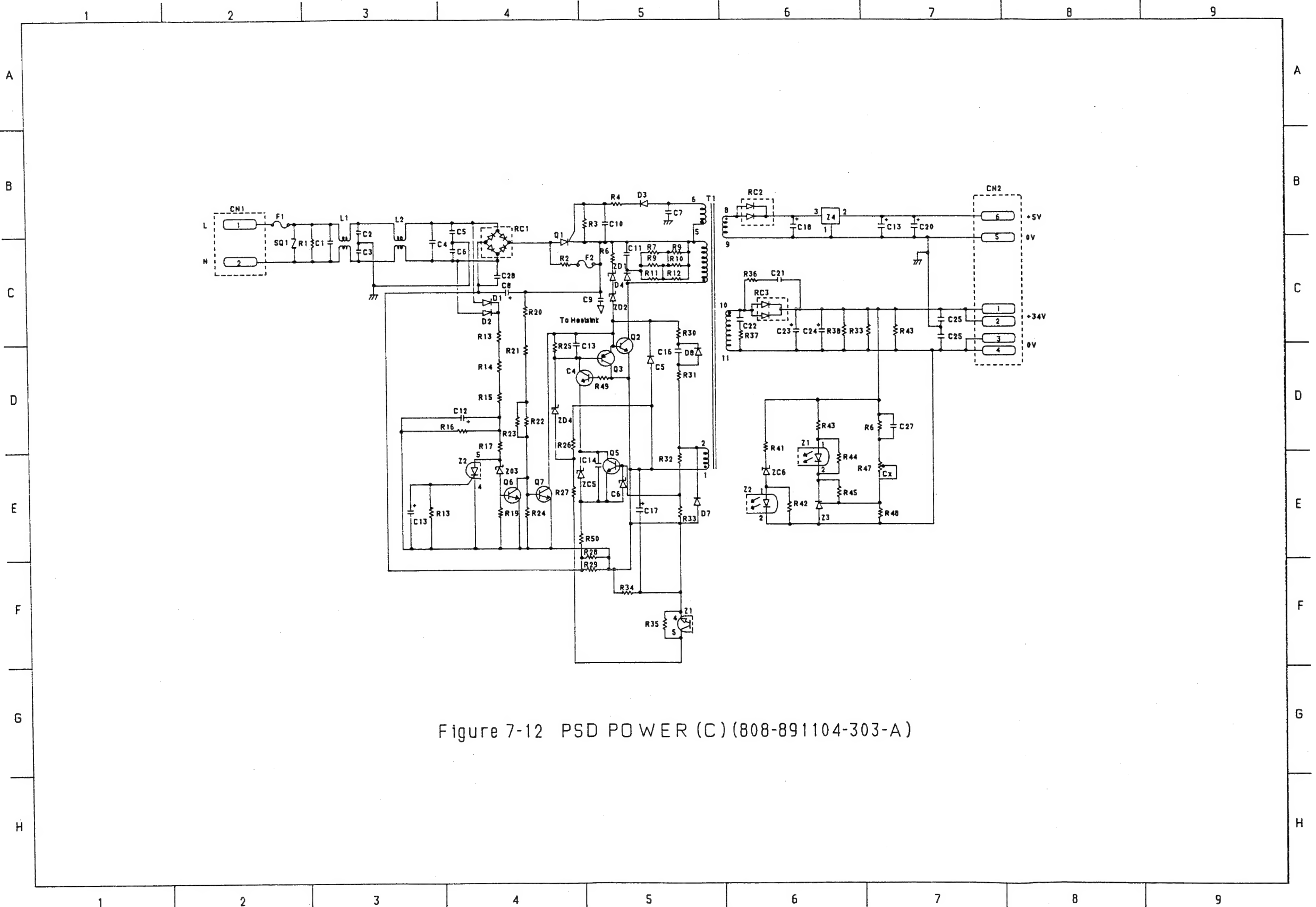


Figure 7-12 PSD POWER (C) (808-891104-303-A)

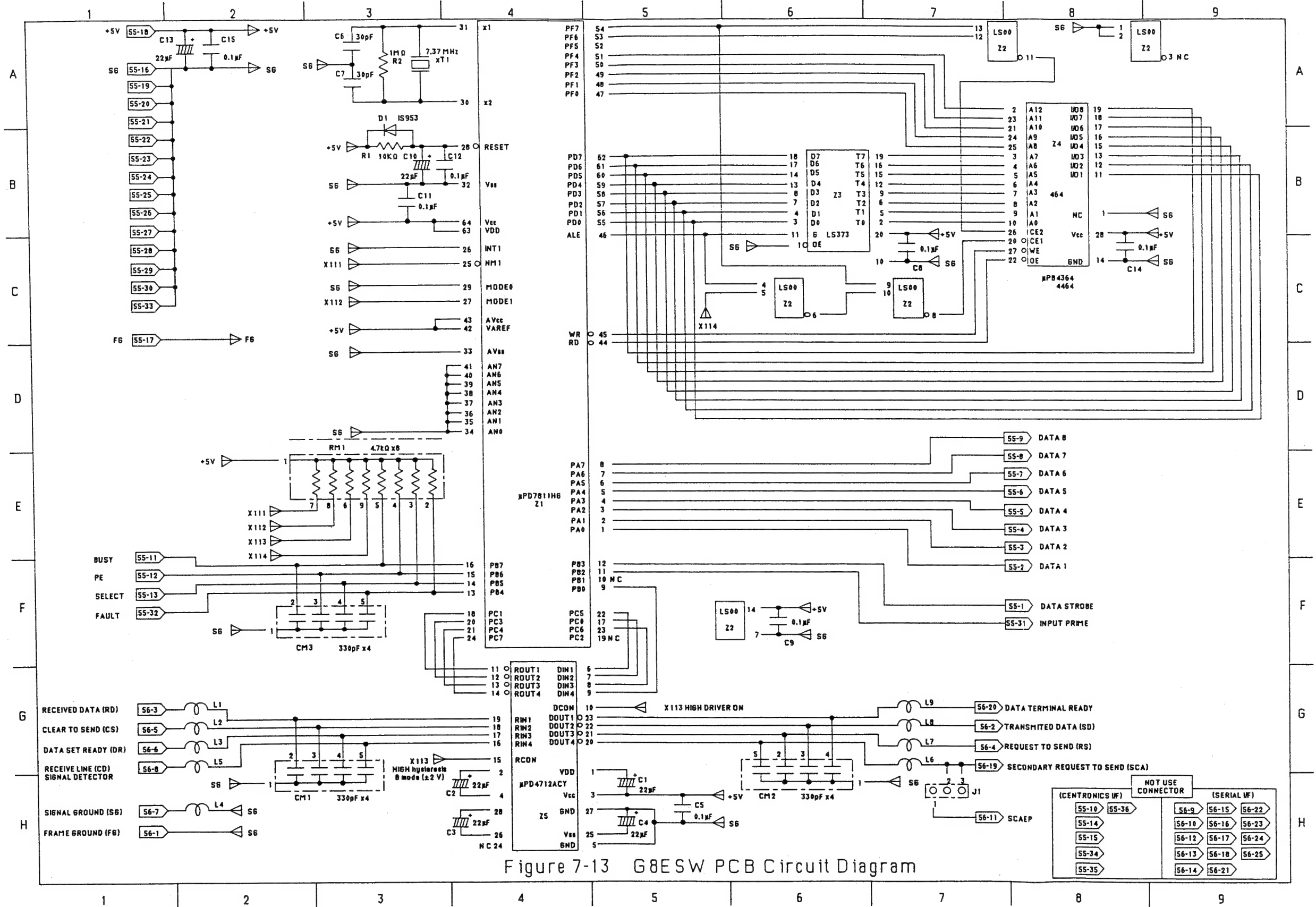


Figure 7-13 G8ESW PCB Circuit Diagram