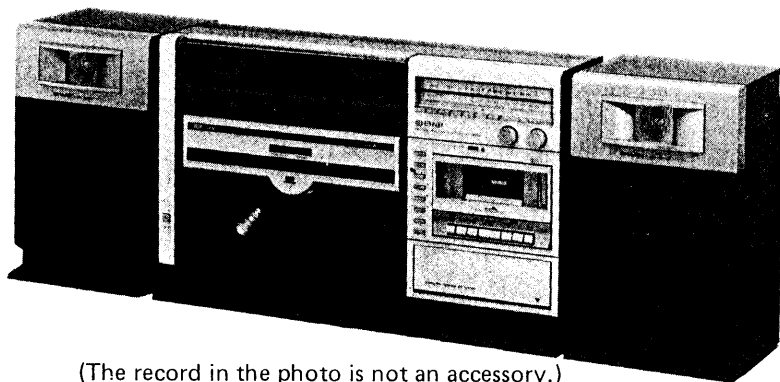


SHARP SERVICE MANUAL

VZ-3000H/E
CP-V300H

ATSM681071MCT

For Service Manuals
MAURITRON SERVICES
8 Cherry Tree Road, Chinnor
Oxfordshire, OX9 4QY.
Tel (01844) 351694
Fax (01844) 352554
email:- sales@mauritron.co.uk

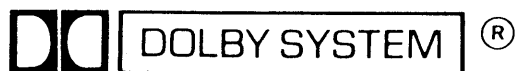


(The record in the photo is not an accessory.)

Photo | Main Unit: VZ-3000H
Speaker Box: CP-V300H

VZ-3000H/E CP-V300H

In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified be used.



Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.



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FEATURES

<VZ-3000H/E>

- Automatic playing of both sides of a record.
- Fully automatic control of the record with microcomputer and linear tracking mechanism.
- Compact, space-saving vertical player.

<CP-V300H>

- At the speaker section:
 - Bass ref. type 2-way speaker system
 - 16 cm free edge woofer
 - LC type network

5938
7014
8144
4386

SHARP CORPORATION OSAKA, JAPAN

- For a complete description of the operation of unit, please refer to the operation manual.

SPECIFICATIONS

<VZ-3000H/E>

General

General:	
Rated voltage:	AC 110 V, 220 V, 240 V, 50/60 Hz
Power consumption:	230 W
Dimensions (Main unit):	597(W) x 170(D) x 378(H) mm
Weight (Main unit):	14.6 kg
Input sockets:	Microphone: 1 mV/10K ohms, ϕ 6.3 mm jack Aux (P.B.): 190 mV, 47K ohms
Output sockets:	Aux (REC): 130 mV, 100K ohms Speaker: 4 ohms Headphones: 8 ohms, ϕ 6.3 mm jack
Outer sockets:	FM antenna: FM 300 ohms balanced MW/LW antenna: outside antenna Ground: MW/LW antenna ground
Semiconductors:	1 LSI, 17 ICs, 1 FET, 54 transistors, 56 diodes, 7 LEDs, 2 photo- transistors, 3 photo-interruptors 2 infrared emitting diodes

Amplifier Section

Circuit:	OCL power amp with $\pm$ power supply
Power output:	RMS; 25W x 2 at 0.5% THD, 4 ohms
Total harmonics distortion:	0.1% (4 ohms at 20W output)
Frequency response:	40 Hz $\sim$ 20 kHz $\pm$ 1.5 dB
Tone controls:	Bass: $\pm$ 9 dB (100 Hz) Treble: $\pm$ 9 dB (10 kHz)

Tuner Section

Circuit:	Superheterodyne FM/MW/LW tuner, PLL stereo demodulation circuit, FM muting circuit built-in
Frequency range:	FM: 87.6 ~ 108 MHz MW: 520 ~ 1,620 kHz LW: 148.5 ~ 285 kHz [VZ-3000H] 150 ~ 285 kHz [VZ-3000E]
Intermediate frequency:	FM: 10.7 MHz MW/LW: 455 kHz [VZ-3000H] 465 kHz [VZ-3000E]
Sensitivity:	FM: 2.0μV at S/N 26 dB, 40 kHz dev. MW/LW: 350μV/m
Separation:	FM: 36dB (1 kHz FM stereo)
S/N:	FM: 70dB (monaural 1 kHz)

Cassette Deck Section

Recording tracks:	4 track 2 channel stereo system
Recording system:	AC bias (85 kHz)
Erasing system:	AC erasing system (85 kHz)
Head:	Record/playback head x 1, Erase head x 1
Motor:	Electronic control DC motor
Tape speed:	4.8 cm/sec.
Fast forward time:	100 sec. (C-60 tape)
Rewind time:	100 sec. (C-60 tape)
Wow & flutter:	0.2% (DIN)
Frequency response:	Normal tape: 30 ~ 14,000 Hz Chrome tape: 30 ~ 15,000 Hz Metal tape: 30 ~ 16,000 Hz
S/N:	Dolby NR off: 52 dB Dolby NR on: 62 dB (Metal tape, over 5 kHz)

Player Section

Type:	Microcomputer control, Linear tracking full auto, Belt drive
Motor:	DC motor with FG (for platter drive) x 1, DC motor (for tonearm drive) x 1
Drive system:	Belt drive system
Speeds:	33-1/3, 45 rpm
Wow & Flutter:	0.085% (DIN)
S/N:	66 dB (DIN-B)
Tonearm:	Dynamic balanced, Linear tracking
Cartridge:	VM type
	Frequency response: 20 ~ 20,000 Hz
	Output voltage: 2.8 mV (1 kHz, 50mm/sec.)
	Exchangeable stylus: STY-121
Supplied devices:	Automatic door open/close, auto

<CP-V300H>

Speaker Section

Cabinet type:	Bass ref. type 2-way speaker system
Speakers:	16 cm free edge woofer 5 cm tweeter
Frequency range:	60 ~ 20,000 Hz
Crossover frequency:	2,500 Hz Woofer high-cut; 6 dB/oct Tweeter low-cut; 12 dB/oct

Maximum rated input:	50 W (MPO)
Impedance:	4 ohms
Sound pressure level:	89 dB/Wm
Dimensions:	220(W) x 220(D) x 378(H)mm
Weight:	4.7 kg x 1

* Specifications for this model are subject to change without prior notice.

VOLTAGE SELECTOR ADJUSTMENT

The voltage selector is located on the rear panel of the deck. If adjustment is necessary, use a screwdriver in order to turn the selector in either direction until the correct voltage figure is displayed in the window next to the adjustment screw.

NAMES OF PARTS

<VZ-3000H/E>

Front Parts

- 1 Power Switch
- 2 Side B Play Indicator
- 3 Dual Play Indicator
- 4 Repeat-Play Indicator
- 5 Side A Play Indicator
- 6 Player Door
- 7 Signal Meter
- 8 FM Stereo Indicator
- 9 Function Selector Buttons
- 10 Volume Control Knob
- 11 Tuning Control Knob
- 12 Tape Counter
- 13 Tape Counter Reset Button
- 14 Player Door Open/Close Key
- 15 Play/Cut Key
- 16 Tonearm Cue Key
- 17 Tonearm Forward Key
- 18 Tonearm Reverse Key
- 19 Dual Play Key
- 20 Repeat-Play Key
- 21 Side A/B Selector Key
- 22 Headphones Jack
- 23 Microphone Jacks

Tape Deck Parts

- 24 APSS Indicator
- 25 Dolby NR Indicator
- 26 Record Indicator
- 27 Cassette Holder
- 28 Tape Level Meter
- 29 Cassette Eject Button
- 30 Record Button
- 31 Play Button
- 32 Stop Button
- 33 Rewind Button
- 34 Fast Forward Button
- 35 Pause Button

Control Parts

- 36 Speed (33/45) Selector Key
- 37 Dolby NR Switch
- 38 Tape Selector Switches
- 39 Loudness Switch
- 40 Record Level Control Knobs
- 41 Bass Control Knob
- 42 Treble Control Knob
- 43 Balance Control Knob
- 44 Mic Mixing Knob

Rear Parts

- 45 Antenna Sockets
- 46 AUX (REC/P.B.) Input Socket
- 47 Hole to open player door in case of power failure.
- 48 Speaker Socket
- 49 Beat Cancel Switch
- 50 AC Power Supply Cord
- 51 Voltage Selector

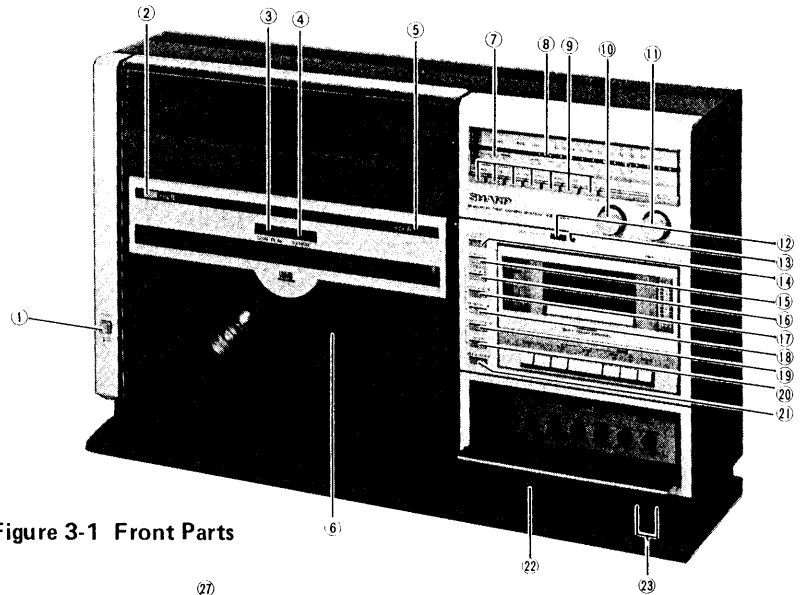


Figure 3-1 Front Parts

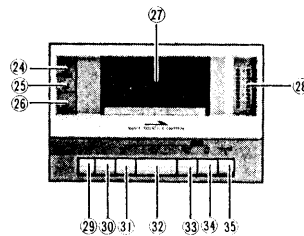


Figure 3-2 Tape Deck Parts

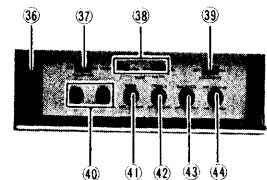


Figure 3-3 Control Parts

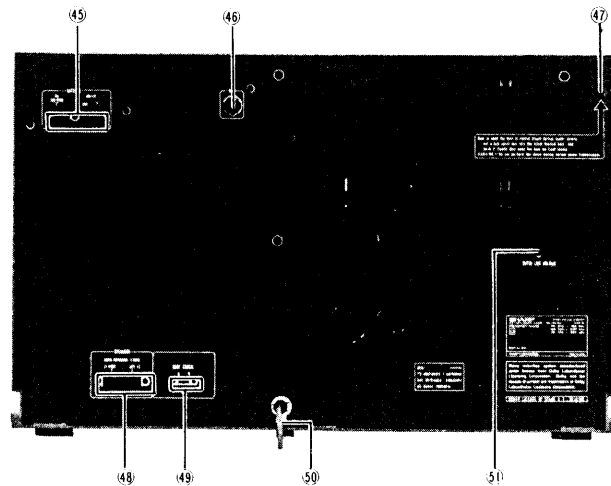


Figure 3-4 Rear Parts

<CP-V300H>

Speaker Parts

- 1 Tweeter
- 2 Woofer

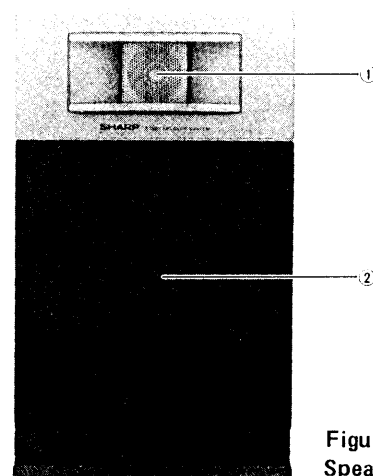


Figure 3-5
Speaker Parts

DISASSEMBLY

Cautions on Disassembly

Follow the below-mentioned notes when disassembling the set and reassembling it, to keep its safety and excellent performance:

1. Be sure to remove the power supply plug from the wall outlet before starting to disassemble the set.
2. Take cassette tape and record out of the unit.

3. Take off nylon bands or wire holders where they need be removed when disassembling the set. After repairing the set, be sure to rearrange the leads at where they have been before disassembling.
4. Take sufficient care on station electricity of integrated circuits and other circuits when repairing.

<VZ-3000H/E>

A REMOVAL OF DUST COVER

1. Remove two screws from the dust cover. See Figure 4-1.
2. Pull out the dust cover in the arrow direction shown in Figure 4-1, holding its lower part.

B REMOVAL OF PLAYER DOOR FRONT COVER

1. Remove the dust cover in the same way as in "A REMOVAL OF DUST COVER."
2. Remove six hooks shown in Figure 4-2, and pull out the play door front cover (its upper half must be taken off first and then its lower half.)

C REMOVAL OF REAR LID

1. Remove ten screws at the rear lid shown in Figure 4-3, and take it off.

D REMOVAL OF CABINET

1. Remove the dust cover and rear lid in the same ways as in "A REMOVAL OF DUST COVER" and "C REMOVAL OF REAR LID."
2. Disconnect two connectors (JCN901, JCN902) shown in Figure 4-4.
3. Remove eight screws at the cabinet shown in Figure 4-4.
4. Pull out eight knobs shown in Figure 4-5, and depress the cassette eject button to open the cassette holder.
5. Push the door lever shown in Figure 4-4 with a pencil or the like, and open the door.
6. Bring down the set with its rear side facing downwards, remove eight screws from the cabinet, and take out the cabinet by holding its both sides: do not touch the player door. See Figure 4-5.

* For easier removal of the cabinet, it is advised to remove two screws at the player mechanism.

E REMOVAL OF PLAYER MECHANISM

1. Remove the cabinet in the same way as in "D REMOVAL OF CABINET."
2. Remove two holders from the P.W. Board (PWB-B2) shown in Figure 5-2.
3. Pull out two sockets (CNS13, CNS514) shown in Figure 5-1.
4. Remove six screws from the player mechanism shown in Figure 5-1, and take the mechanism off.

F REMOVAL OF TAPE MECHANISM

1. Remove the cabinet in the same way as in "D REMOVAL OF CABINET."
2. Pull out four sockets (CNS201, CNS202, CNS851, CNS852) shown in Figure 5-3.
3. Remove four screws from the tape mechanism shown in Figure 5-2 and counter belt, and take the mechanism off.

G REMOVAL OF CASSETTE HOLDER

1. Remove the cabinet in the same way as "D REMOVAL OF CABINET."

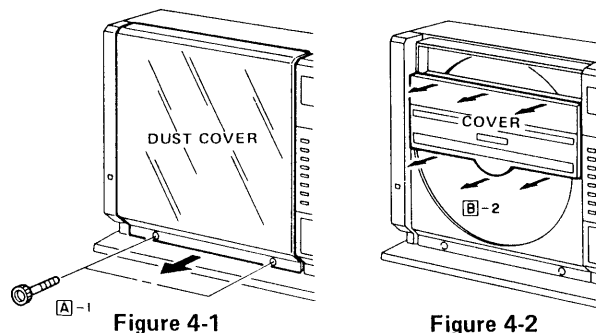


Figure 4-1

Figure 4-2

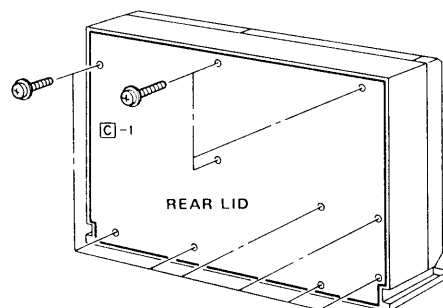


Figure 4-3

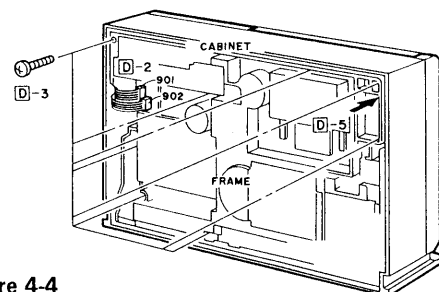


Figure 4-4

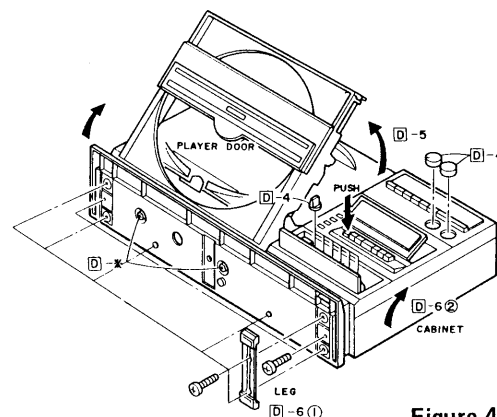


Figure 4-5

2. Detach the control indication plate shown in Figure 5-4, by removing binding agent and four hooks. Remove one screw from the cassette holder, and take the holder off.

* At left of the cassette holder there is a spring.

* When reassembling the control indication plate, secure it with binding agent.

[H] REMOVAL OF CONTROL LID

1. Remove the cabinet in the same way as in "[D] REMOVAL OF CABINET."
2. Push the control lid at its ▼ marked portion, and open it.
3. Push the control lid in the arrow direction shown in Figure 5-4, and remove it (first the part ① and then the part ②).

* Remove the spring at right of the control lid.

[I] REMOVAL OF P.W. BOARDS

* Prior to disassembling each P.W.B., remove the cabinet in the same way as in "[D] REMOVAL OF CABINET."

1. Control P.W.B. (PWB-D2)

- Remove three screws from the P.W.B. shown in Figure 5-2, and take it off.

2. Tape deck P.W.B. (PWB-D5)

- Remove three sockets (CNS201, CNS202, CNS203) and

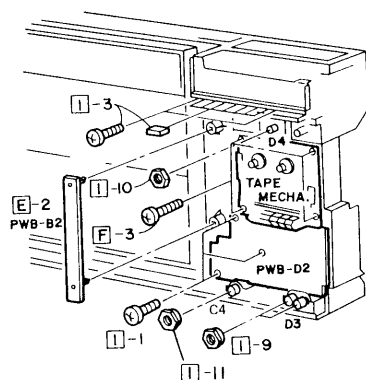


Figure 5-2

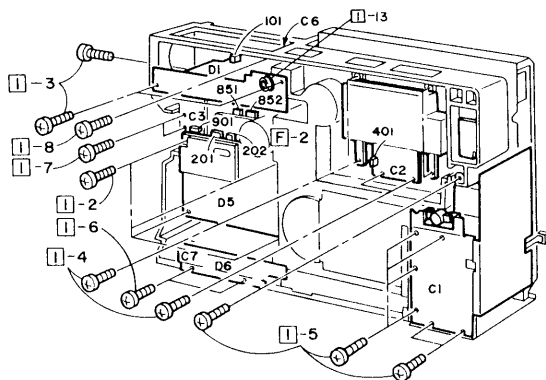


Figure 5-3

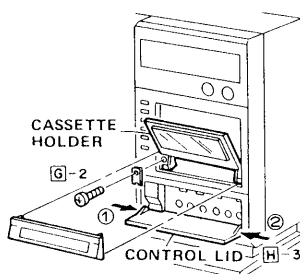


Figure 5-4

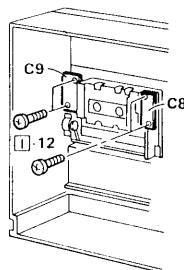


Figure 5-5

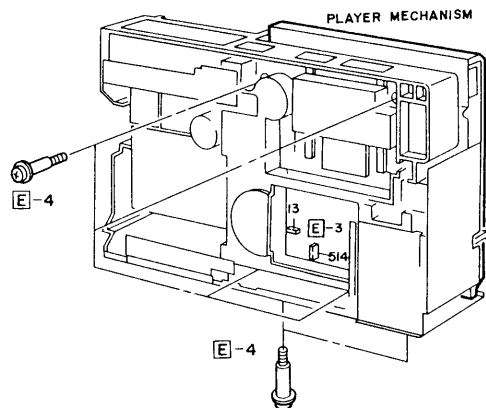


Figure 5-1

- four screws from the P.W.B., and take it off.
 - 3. Tuner P.W.B. (PWB-D1)**
 - Remove seven function selector buttons shown in Figure 5-2 from the left side by using a screwdriver. Be careful not to cause injuries to the buttons. Then remove two screws and the cord.
 - Remove three screws and one socket (CNS401) from the P.W.B. shown in Figure 5-3, and take it off.
 - 4. Power P.W.B. (PWB-C2) with heat sink**
 - Remove one socket (CNS401) and six screws from the P.W.B. and heat sink shown in Figure 5-3, and take the P.W.B. (with heat sink) off.
 - 5. Power block (PWB-C1)**
 - Remove seven screws from the power block shown in Figure 5-3, and take it off.
- Note:**
- * Remove two screws and five push-rivets from the power block insulating cover.
 - * When replacing the power IC or transistor, apply a thin layer of grease between it and heat sink.
- 6. Speaker socket/beat cancel switch P.W.B. (PWB-D6)**
 - Remove two screws from the bracket shown in Figure 5-3, and take it off.
 - 7. LED drive P.W.B. (PWB-C3)**
 - Remove one socket (CNS901) and two screws from the P.W.B. shown in Figure 5-3, and take it off.
 - 8. Signal meter P.W.B. (PWB-C6)**
 - Remove one socket (CNS101) and one screw from the P.W.B. shown in Figure 5-3, and take it off.
 - 9. Microphone jack P.W.B. (PWB-D3)**
 - Remove two nuts from the P.W.B. shown in Figure 5-3, and take it off.
 - 10. Volume P.W.B. (PWB-D4)**
 - Remove one nut from the P.W.B. shown in Figure 5-3, and take it off.
 - 11. Headphones jack P.W.B. (PWB-C4)**
 - Remove one nut from the headphone jack shown in Figure 5-2. Then take the headphone jack off.
 - 12. Meter/tape indicator P.W.B. (PWB-C9, PWB-C10)**
 - Remove four screws from the P.W.B. shown in Figure 5-5, and take it off.
 - 13. DIN Socket P.W.B. (PWB-D7)**
 - Remove two hooks from the antenna terminal shown in Figure 5-3, and take it off.

14. Tape mechanism P.W.B. (PWB-E)

- Remove the tape mechanism in the same way as in "F REMOVAL OF TAPE MECHANISM."
- Remove one screw from the record selector lever, two screws from the motor bracket and one screw from the P.W.B. shown in Figure 6-1. Then take the P.W.B. off.

15. Microcomputer P.W.B. (PWB-B1)

- Remove the player mechanism in the same way as "E REMOVAL OF PLAYER MECHANISM."
- Remove four screws from the P.W.B. shown in Figure 6-2, and take it off.

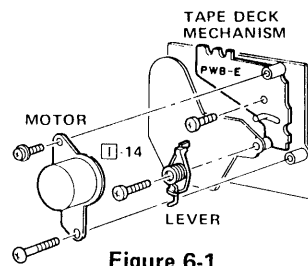


Figure 6-1

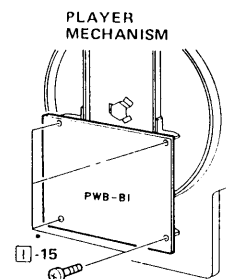


Figure 6-2

<CP-V300H>

REMOVAL OF SPEAKER BOX

1. Speaker net

- As shown in Figure 6-3, pull the net in the arrow directions in the numerical order ①, ②, ③ and ④. The parts ③ and ④ must be removed by using a bladed screwdriver.

2. Speaker

- For removal of the speaker, see Figure 20-4.

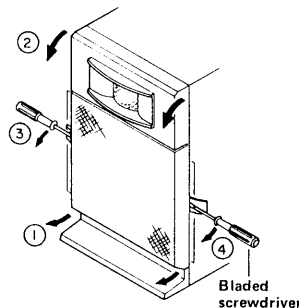


Figure 6-3

DIAL CORD STRINGING

● Setting order:

- Turn the drum fully counterclockwise (at the highest frequency position), and put a hook of the spring in the hole of the drum.
- Proceed with stringing in the numerical order from ① to ⑧.
- After the stringing, turn the dial drive shaft fully counterclockwise (at the lowest frequency position), and align the center of the pointer to zero point of the dial scale plate.

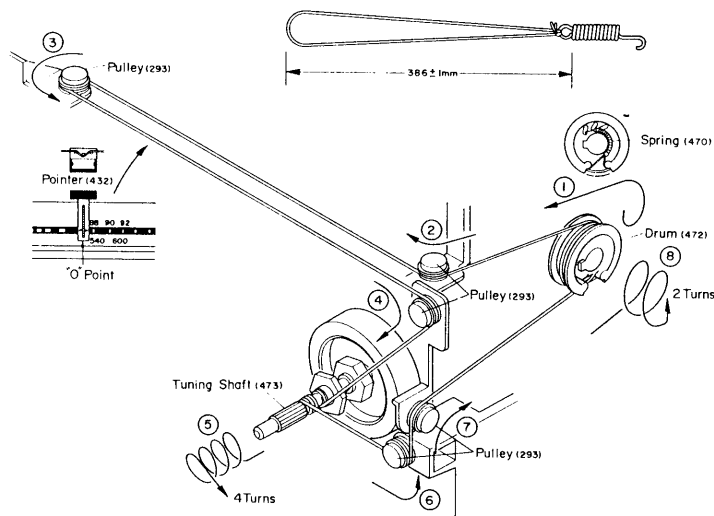


Figure 6-4

SETTING OF PLAYER WIRE

● Setting order

- Set the drum at its rest position, and put a hook of the spring in the hole of the drum.
- Stretch the wire in the numerical order from ① to ⑫.
- After setting the wire, set the side A tonearm and side B tonearm at their lead-in positions. Refer to the instructions in "POSITIONAL ADJUSTMENT OF TONEARM LEAD-IN POSITION."

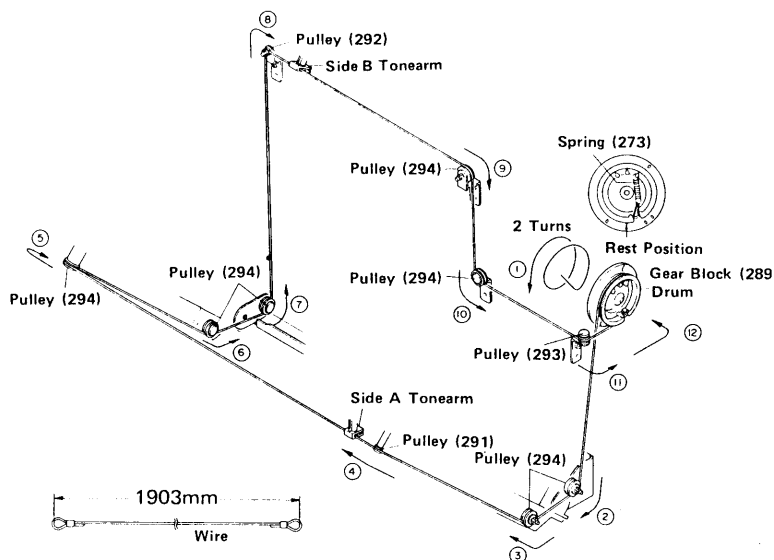
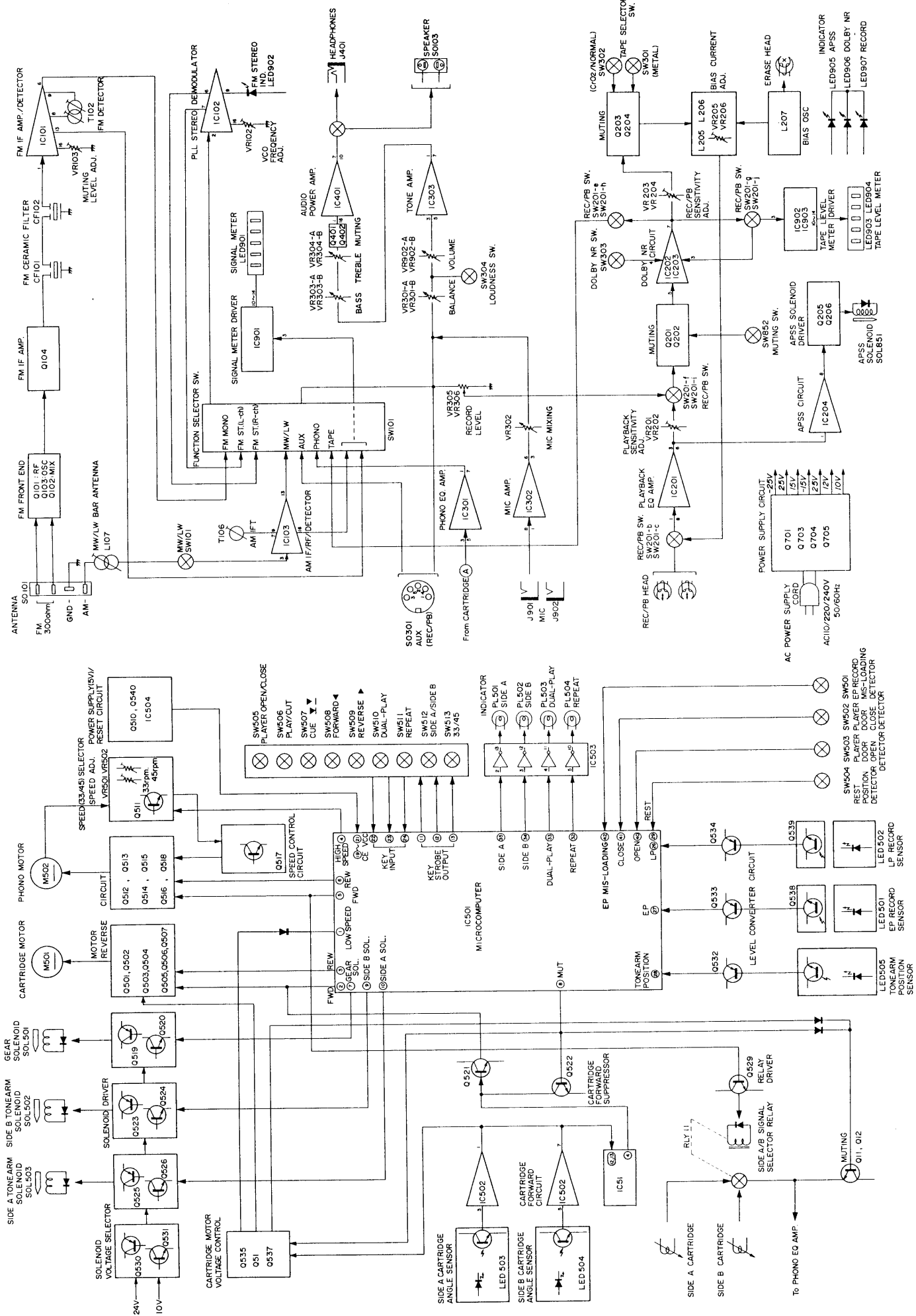


Figure 6-5



CIRCUIT DESCRIPTIONS

< OUTLINE OF PLAYER CONTROL SECTION >

KEY CONTROL SECTION

This section is made up of nine keys, and each key is of the lock-out type and its chattering time is limited to 40 msec.

1. Player door open/close key

Key for opening and closing the player door.

2. Play/cut key

Enables to begin playing a record and to stop it while it is playing — this is effective when the player door is closed. When the tonearm is at its rest position (at right for side A, or at left for side B), player operation starts when this key is pushed: when the tonearm is not at its rest position, the key functions as cut key.

3. Tonearm cue key

Enables cue up and cue down motion of the tonearm while a record is being played. It is used to keep or cancel cue up mode when the set is not playing a record.

4. Side A/side B selector key

Changes side A play and side B play. With this change, the tonearm moves to a lead-in position, which results in playing of the back side of a record which you are listening to.

5. Tonearm forward key

Enables to move the tonearm toward the optional portion on a record (to later selections). The tonearm can move until pushing the key is stopped.

6. Tonearm reverse key

Enables to move the tonearm back to the optional portion on a record (to previous selections). The tonearm can move until pushing this key is stopped.

7. Speed (33/45) selector key

Enables to manually change the speed for a record.

8. Dual play key

Enables to play side A (or side B) followed by automatic play of side B (or side A). The dual play is cancelled by pushing the key again.

9. Repeat play key

Enables to repeat play of side A or side B. The repeat play is cancelled by pushing the key again.

SENSOR SECTION

1. Player door open sensor

The skelton switch detects that the play door is opened completely.

2. Player door close sensor

The skelton switch detects that the player door is closed completely.

3. EP record misload sensor

The microswitch finds an error that an EP record is loaded in the LP record holder.

4. Tonearm rest position sensor

The skelton switch detects that the tonearm is at its rest position (at right for side A, at left for side B).

5. Tonearm position sensor

When the tonearm is out of its rest position, the photo-sensor produces four pulses to detect how far from the rest position the tonearm is situated.

6. EP/LP sensor

With the player door closed, the photosensor works to detect that an EP or LP record is loaded or that neither is loaded.

INDICATOR SECTION

1. Side A play indicator

Lights up when side A play is instructed by the side A/side B selector key and when side A of a record is being played.

2. Side B play indicator

Lights up when side B play is instructed by the side A/side B selector key and when side B play of a record is being played.

3. Dual play indicator

Lights up when dual play is instructed by the dual play key and when side A (or side B) of a record is played followed by automatic playing of side B (or side A).

4. Repeat play indicator

Lights up when repeat play is instructed by the repeat play key and when a record is played repeatedly. Each indicator lights up when it receives "high" level signal from the microcomputer.

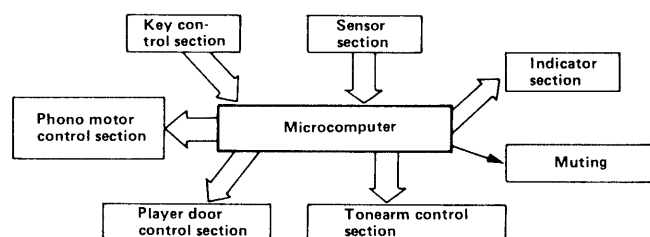


Figure 8-1

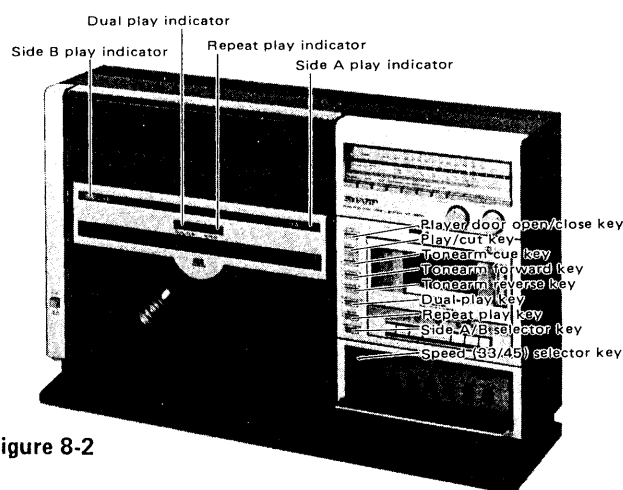


Figure 8-2

TONEARM CONTROL SECTION

Forward/reverse motion of the tonearm and also its up/down motion are controlled by the microcomputer's signals to be applied to the cartridge motor and tonearm solenoid.

- Output signal (D12) for side B tonearm solenoid: the tonearm moves down when the signal is at "high" level.
- Output signal (D11) for side B tonearm solenoid: the tonearm moves down when the signal is at "high" level.
- Output signal (D3) for cartridge motor low speed rotation: the motor rotates at low speed when the signal is at "low" level.
- Output signal (D4) for cartridge motor forward rotation: the tonearm rotates forwards when the signal is at "low" level.
- Output signal (D5) for cartridge motor backward rotation: the tonearm rotates backwards when the signal is at "low" level.

PLAYER DOOR CONTROL SECTION

Opening and closing of the player door is controlled by the microcomputer's signals to be applied to the gear changeover solenoid (to change the gear blocks) and to the cartridge motor (in the tonearm control section).

- Output signal (D9) for gear changeover solenoid: the gear blocks are changed when the signal is at "high" level.

- Output signal (D4) for cartridge motor forward rotation: the cartridge motor rotates forwards when the signal is at "low" level (with the player door opened).
- Output signal (D5) for cartridge motor backward rotation: the cartridge rotates backwards when the signal is at "low" level (with the player door closed).
- * The cartridge motor rotates at any time at high speeds.

PHONO MOTOR CONTROL SECTION

Side A or side B play is selected by the microcomputer's signals to be applied to the phono motor: the motor rotates forwards for side A play, and rotates backwards for side B play.

- Output signal (D6) for phono motor high-speed rotation: the motor rotates at high speeds (45 r.p.m.) when the signal is at "low" level.
- Output signal (D7) for phono motor forward rotation: the motor rotates forwards when the signal is at "low" level.
- Output signal (D8) for phono motor backward rotation: the motor rotates backwards when the signal is at "low" level.

MUTING

Muting occurs when the output signal (D10) from the microcomputer is at "high" level.

< FUNCTIONS OF PLAYER CONTROL SECTION > WITH POWER ON

The microcomputer starts operating when the power switch is turned on, and the VZ-3000H/E is first set as follows:

1. The tonearm returns to its rest position if it has been at the other position.
2. Side A of a record is ready to be played when the player door has been locked completely.
3. When the player door has been closed, the microcomputer detects whether there is a record in the compartment or not. If it is loaded, its side A is ready to be played: in the case of EP record, the speed is set at 45 r.p.m. and in the case of LP record it is set at 33 r.p.m. If an EP record is loaded by mistake in the LP record holder, the door is opened, and side A of a record is ready to be played.

DOOR OPEN OPERATION

When the door has been closed, it opens when the player door open/close key is operated or when the microcomputer finds that an EP record is loaded in the LP record holder.

1. When the tonearm is out of its rest position with the door closed, it returns to the rest position, then the door is allowed to open.
2. All the indicators are put off while the door is opening. When the opening completes, side A of a record is allowed to be played.
- * Any key operation is impossible while the door is opening.

DOOR CLOSE OPERATION

When the door has been opened, it is closed when the player door open/close key is operated: it is impossible when the tonearm is moving forwards or backwards, and when the microcomputer detects that an EP record is loaded in the LP record holder.

1. While the door is closing, if the microcomputer detects EP record misloading, the door stops and intends to open again.
2. When the door is closed completely, the microcomputer makes the tonearm return to its rest position if it has been at the other position. The microcomputer also detects whether a record is loaded or not and, if loaded, playing starts: in the case of EP record, the speed is set at 45 r.p.m.,

and in the case of LP record, the speed is set at r.p.m. All the indicators go off where no record is loaded. If an EP record is misloaded in the LP record holder, the door, if closed, will open.

PLAY START OPERATION

When a record has been loaded with the player door opened, the player door is closed when the player door open/close key is operated, then playing the record starts automatically. Where the tonearm is at the rest position and a record has been loaded with the player door closed, playing the record starts when the play/cut key or tonearm forward key is pushed. When playing starts, the tonearm moves at high speeds toward its lead-in position according to the microcomputer's signals to decide the rotational direction and speed of the phono motor; then the tonearm moves down to the record (cue up/down operation).

- * At the lead-in position, the tonearm moves forwards when the tonearm forward key is pushed.

PLAY CUT OPERATION

Play cut operation is allowed when the tonearm is away from its rest position with the player door closed. It starts when the play/cut key is operated or when the player door open/close key is pushed to open the door.

1. All the indicators other than side A or side B indicator go off while the play cut operation is performed.
2. The play cut operation makes the tonearm move up if it has been down on the record and also makes the phono motor stop to rotate.

ONEARM FORWARD OPERATION

When the player door is opened:

The tonearm moves forwards when the tonearm forward key is pushed.

1. When the tonearm forward key is pushed, the tonearm advances to EP lead-in position, and moves down to the record surface. However, if the tonearm has been inside the EP lead-in position, it remains where it is when the tonearm forward key is pushed and then moves down to the record surface.

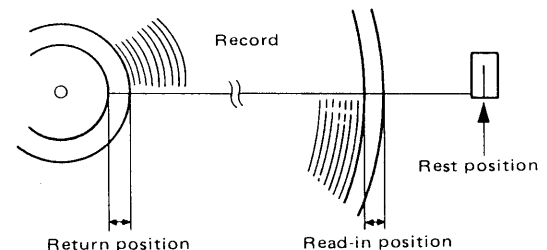


Figure 9

When the player door is closed:

The tonearm moves forwards when the tonearm forward key is pushed, provided that a record is loaded and that the tonearm is not at its returning process.

1. When the tonearm has been at the rest position, pushing the tonearm forward key makes the tonearm move up and brings it to its lead-in position. After the lead-in position, the tonearm forward speed slows down but the tonearm continues to move inwards until pushing the key is stopped.
2. After the forward operation completes, the tonearm performs, cue up or down operation according to the setting of tonearm cue key.
3. If the tonearm reaches its return position with a continuous push of the tonearm forward key, it automatically starts to return toward the rest position.

TONARM BACKWARD OPERATION

The tonearm moves backwards when the tonearm reverse key is pushed, provided that the tonearm is away from the rest position and the player door is closed.

1. Where the tonearm is placed between the rest position and lead-in position, play operation is cut when the tonearm reverse key is pushed.
2. Where the tonearm is at any place between the lead-in position and return position, the tonearm moves backwards when the tonearm reverse key is pushed.
3. While the tonearm is moving down, pushing the tonearm reverse key makes the tonearm move up and then backwards at low speed. The backward motion continues until pushing the key is stopped.
4. After the backward operation completes, the tonearm performs cue up or cue down operation according to the setting of the tonearm cue key.
5. If the tonearm moves back until it reaches the place between the lead-in position and rest position, the set gets in repeat play mode so that the tonearm again moves toward the lead-in position of the same record as previously played. Then the tonearm performs cue up or cue down operation according to the setting of the tonearm cue key.

CUE UP/CUE DOWN OPERATION

Record play stops temporarily when the tonearm cue key is pushed, and it resumes from that position when the key is again pushed. Temporary stop of record play is called cue up operation while its restarting is called cue down operation.

Cue up operation changes to cue down operation and vice versa each time the tonearm cue key is pushed.

• Cue down operation

1. Cue up state is cancelled and the side A or side B play indicator goes off.
2. Cue down operation lasts 1 second, and 2 seconds later the muting is cancelled.
3. If the tonearm cue key is pushed while the cue down operation is performed, cue up operation starts.

• Cue up operation

1. Cue up operation starts, and the side A or side B play indicator blinks (with approx. 3 Hz signal).
2. Cue up operation lasts 1 second. Muting occurs for 290 msec before cue up operation has started.
3. It is not possible to push the tonearm cue key while cue up operation is performed, thus no cue down operation being allowed.

SIDE A/B SELECTION

Side A play or side B play is selected by pushing the side A/B selector key. During cue down operation, this selection starts after the tonearm has been raised up.

1. The tonearm returns to the rest position and then moves into the lead-in position of the back side of the record you are listening to. Then the tonearm will perform cue up or cue down operation according to the setting of the tonearm cue key.
2. While the tonearm is returning to the rest position, the play indicator blinks (with approx. 3/2 Hz signal) to show that the back side of the record you are listening to will next begin playing from the beginning.
3. There is a time delay of about 1 second when the phono motor changes its direction: about 1 second after this change, the motor stops and then restarts rotating in the reverse direction. And it takes about 1 second for the motor to be set at its normal r.p.m.
These time delays are to keep a safe side A/B selection of a record to be played.

AUTO RETURN FUNCTION

When side A or side B play is finished, the tonearm is lifted off the record, it goes back to its rest position and the record stops revolving. If the tonearm has been in cue down position, it performs cue up operation and returns to its rest position.

1. If only the repeat play key has been pushed, one side of the record is played repeatedly.
If both the repeat play and dual play keys have been pushed, both sides of the record are played repeatedly.
2. For one side repeat play, when side A (or B) is finished, the tonearm returns to the rest position and the same side begins playing again from the beginning. For dual-side repeat play, when side A (or B) is finished, the tonearm returns to the rest position and the side B (or A), or the back side of the record you are listening to, begins playing from the beginning: if the tonearm cue key has been pushed, the tonearm performs cue up operation before playing the back side has started.
3. Unless both the repeat play and dual play keys have been pushed, the tonearm cue key once pushed is ineffective during the auto return operation.
4. During the auto return operation in one side repeat play, the play indicator blinks (with approx. 3/2 Hz signal) to show that the same side as you are listening to will begin playing again from the beginning: during the auto return operation in dual side repeat play, the play indicator blinks (with 3/2 Hz signal) to show that the back side of the record you are listening to will begin playing.

SIGNALS FROM SENSORS TO MICROCOMPUTER

1. Detection of tonearm position

Performed by using SW504, LED505 and a gear drum. SW504 is the sensor which detects that the tonearm is at the rest position. LED505 is the sensor which detects that the tonearm is at the lead-in or return position. The outputs from these sensors are shown in Figure 11-1, which are applied to pin (29) (R13) and pin (28) (R12) of the microcomputer.

2. Detection of EP/LP record loading or no loading

LED501 and LED502 sense whether an EP or LP record is loaded or not loaded, and their outputs which are shown in Table 10-1 are applied via Q538 (for EP record) or Q539 (for LP record) to pins (27) and (26) of the microcomputer.

Table 10-1

Load condition	EP record detection (pin (29))	LP record detection (pin (26))
No loading	H	H
Mis-loading	H	L
EP record loaded	L	H
LP record loaded	L	L

Note:

The content of "Mis-loading" in this table is different from that of "3. EP mis-loading detection" next described.

3. EP mis-loading detection

If an EP record is loaded by error into the LP record holder, SW501 turns on and its output signal (at "low" level) is applied to pin (42) (D₂) of the microcomputer.

4. Player door close detection

Closing the player door causes SW502 to turn on, and its output signal (at "low" level) is applied to pin (41) (D₁) of the microcomputer.

5. Player door open detection

Opening the player door causes SW503 to turn on, and its output signal (at "low" level) is applied to pin (40) (D₀) of the microcomputer.

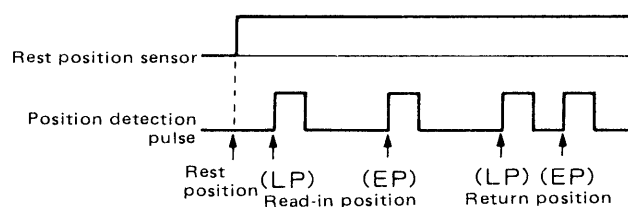


Figure 11-1

PLAYER CONTROL KEYS OPERATION TABLE

Effective range of each player control key is variable according to which mode the set is being situated in, which is shown in Table 11-1.

Table 11-1

Key code	1	2	3	4	5	6	7	8	9
Key	Dual play	Side A/ side B	Repeat play	Cue up/ cue down	Play/cut	Forwarded	Reverse	33/45	Player door open/ close
Door is opened.	○	○	○	○	△	△	△*	△	△
Door is closing.	○	○	○	○	△	△	△	△	△
Door is closed. (Record loaded, tonearm at rest position)	○	○	○	○	△	△	△	○	△
Tonearm is placed between rest position and lead-in position.	○	△	○	○	△	△	△	△	△
During playing.	○	△	○	△	△	△	△	△	△
During return.	○	○	○	△	△	△	△	△	△
During stop.	△	△	○	△	△	△	△	△	△
During cue up.	△	△	○	△	△	△	△	△	△
During cue down.	○	△	○	△	△	△	△	△	△
Door is opening.	△	△	○	△	△	△	△	△	△
Door is closed. (Record not loaded, tonearm at rest position)	△	△	○	△	△	△	△	△	△

Note:

Mark ○; With each key pushed, the corresponding mode is obtained.

Mark △; With each key pushed, the corresponding mode is obtained but with other mode accompanied.

Mark *; With the reverse key pushed, the tonearm moves backwards only after it has moved forwards, when the player door is opened.

< CIRCUITS AROUND THE MICROCOMPUTER > POWER CONTROL CIRCUIT

This circuit consists of ZD501, Q510, Q540 and IC504, and when the power switch is turned on, it controls the power supply (5 V) to be less than 10 msec for its rising, so that the microcomputer is automatically reset.

The 12 V line is controlled by ZD501, Q510 and Q540 to produce a power of more than 6 V, which is then applied to pin ① of IC504. IC504 is to produce a regulated power of 5 V.

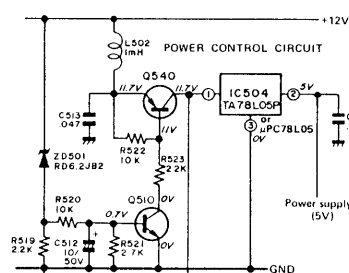


Figure 11-2

CARTRIDGE MOTOR HIGH SPEED/LOW SPEED SELECTOR CIRCUIT

This circuit is made up of Q51, Q535 and Q537, to which is applied the signal from pin ① (D₃) of the microcomputer. When the signal from the microcomputer is at "high" level, it causes Q537 to turn on and Q51 to turn off, and the resultant voltage (11V) is applied to the cartridge motor to allow it to rotate at high speed. On the other hand, when it is at "low" level, it causes Q537 to turn off and Q51 to turn on, and the resultant voltage (6V) is applied to the cartridge motor to allow it to rotate at low speed.

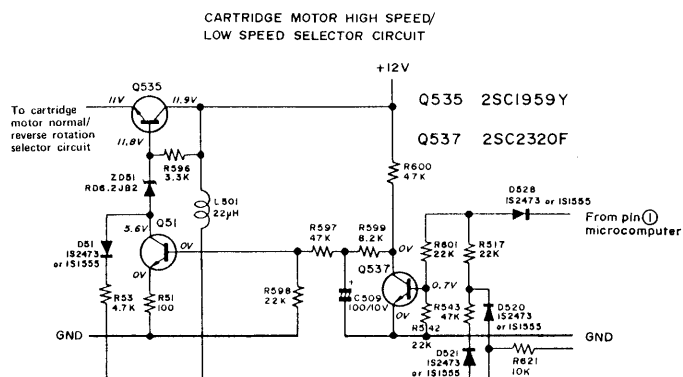


Figure 11-3

CARTRIDGE MOTOR NORMAL/REVERSE ROTATION SELECTOR CIRCUIT

This circuit is made up of Q501 to Q504, Q506 and Q507, and changes the power supply to make the cartridge motor rotate in normal or reverse direction.

- To make the motor rotate in normal direction (with player door open operation, and tonearm backward operation):**
In this case, the output from pin ② of the microcomputer becomes "low" level to turn off Q507. With Q507 turned off, Q506 and Q501 turn on so that pin ① and pin ② of the motor are negative and positive respectively, thus allowing the motor to revolve in normal direction.
- To make the motor rotate in reverse direction (with player door close operation, and tonearm forward operation):**
In this case, the output from pin ③ of the microcomputer becomes "low" level to turn off Q503. With Q503 turned off, Q504 and Q502 turn on so that pin ① and pin ② of the motor are positive and negative respectively, thus allowing the motor to revolve in reverse direction.

CARTRIDGE MOTOR STOP CIRCUIT

When both pins ② and ③ of the microcomputer are at "high" level, Q505 turns on. With Q505 turned on, Q501 and Q502 turn on to get shorted the motor terminals, the motor thus stopping immediately.

SOLENOID DRIVE CIRCUIT

This circuit consists of Q519, Q520, Q523 to Q526, Q530 and Q531, and drives the solenoids shown below.

1. Gear solenoid (SOL501)

When the player door open/close key has been pushed, the output from pin ⑦ of the microcomputer becomes "high" level to turn on Q502 and Q519. Then Q531 and Q530 turn on to charge C504 up, and the resultant power of 24 V attracts the gear solenoid.

Thereafter this attraction continues with the power of 10 V.

2. Side A tonearm solenoid (SOL503)

When the tonearm cue key for the side A has been pushed the output from pin ⑩ of the microcomputer becomes "high" level to turn on Q526 and Q525. The same operation as in 1 above occurs thereafter.

3. Side B tonearm solenoid (SOL502)

When the tonearm cue key for the side B has been pushed, the output from pin ⑨ of the microcomputer becomes "high" level to turn on Q524 and Q523. The same operation as in 1 above occurs thereafter.

CARTRIDGE ANGLE DETECTOR/CARTRIDGE FORWARD CIRCUIT

This circuit is composed of photo sensor LED503 for side A (or LED504 for side B), IC51, IC502, Q51, Q521, Q522, Q535 and Q537, and controls the cartridge forward operation when a record is playing.

At the start of playing the side A of a record, the tonearm is kept slantwise the angle of which is detected by LED503 (now there is no light emission to the LED503), and the resultant signal ("high" level) is applied to pin ③ of IC502. Then the signal goes out of pin ① of IC502 and is fed to the oscillator circuit (IC51) and cartridge motor voltage control circuit (Q51, Q535 and Q537).

The "high" level signal applied to the oscillator circuit goes out of pin ④, which is a pulse shown in Fig. 12-3 (B) to drive Q521, the output of which is reversed in polarity to be fed to the cartridge motor normal/reverse rotation selector circuit.

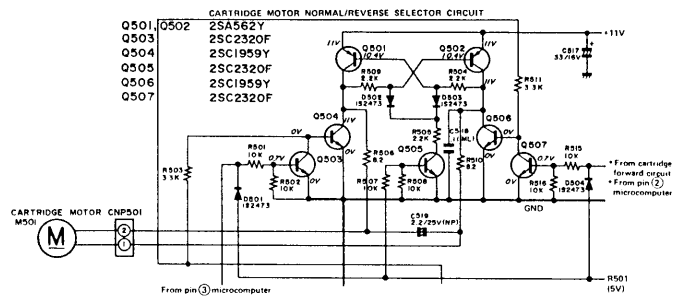


Figure 12-1

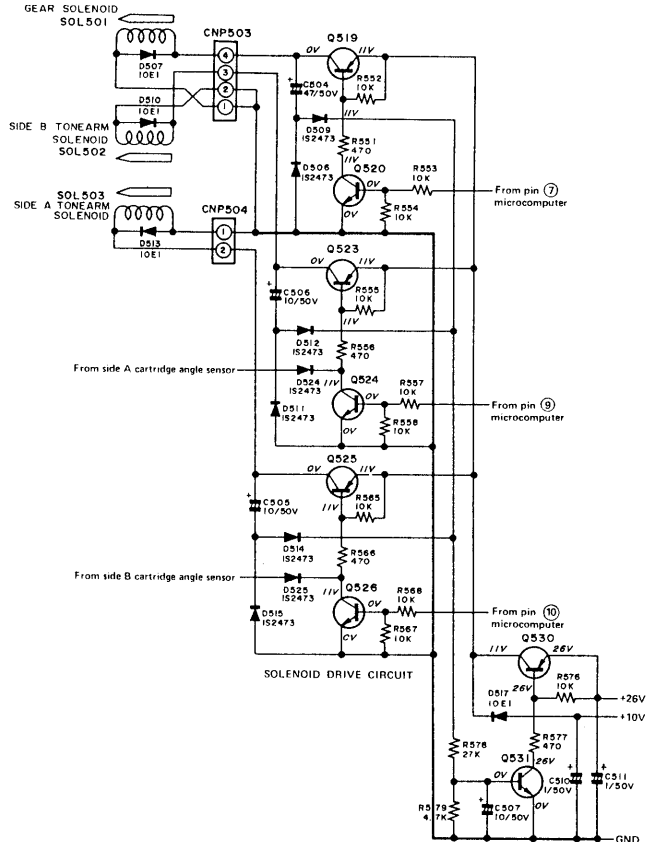


Figure 12-2

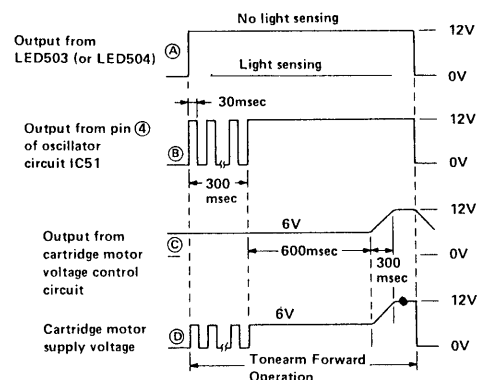


Figure 12-3

The oscillation takes place between pins ① and ② of 2 NAND gate circuit, and its pulse time (30 msec) is decided by C51 and R58, and its duration (300 msec) is decided by C54 and R56.

If there is something accidental to make slantwise the cartridge to cause its erroneous angle to be detected by LED503, Q522 turns on to stop the cartridge forward motion.

When the side B selector button is pushed, the output from pin ⑤ of the microcomputer becomes “high” level to turn on Q529. With Q529 turned on, there is current to run in RLY11 so that side A play is changed to side B play. When the side A selector button is pushed, Q529 turns OFF.

This circuit is made up of Q11 (or Q12). When the output from pin ⑧ of the microcomputer is at "high" level, Q11 (or Q12) turns on to cut off the signal which is applied to the side A (or side B) cartridge. This muting occurs unless the set is playing.

When any of the side A/side B selector, dual play and repeat keys is pushed, the output from the microcomputer becomes "high" level to be applied to the inverter IC503. Here it is inverted to be "low" level signal to light up the indicator corresponding to one of these buttons which has been pushed.

This circuit is made up of Q532, Q533 and Q534, and the signal from each sensor is here so processed that it is shaped in waveform and changed in level to be applied to the micro-computer.

When an EP or LP record is at the lead-in position or return position, LED505 and gear drum work together to detect this, and the resultant signal is applied to Q532 to turn it on, so that there is a pulse which is at "high" level (at 5 V) to arrive at pin (28) of the microcomputer.

- If an EP record is loaded, the sensor stops light emission to Q538, and so Q533 turns off. With Q533 turned off, the input signals to pin (27) and pin (26) of the microcomputer are at “low” level and “high” level respectively, so that the microcomputer can tell that an EP record has been loaded – see Table 10-1.
- If an LP record is loaded, the sensor stops light emission to Q538 and Q539, and so Q533 and Q534 turn off. With Q533 and Q534 turned off, the input signals to pin (27) and pin (26) of the microcomputer are both at “low” level, so that the microcomputer can tell that an LP record has been loaded – see Table 10-1.



- When no record is loaded, the sensor sends its light to Q538 and Q539, and so Q533 and Q534 turn on. With Q533 and Q534 turned on, the input signals to pin (27) and (26) of the microcomputer are both at “high” level, so that the microcomputer can tell that no record has been loaded — see Table 10-1.

PHONO MOTOR CONTROL CIRCUIT

This circuit consists of Q511 to Q518 and controls a proper rotation of the phono motor.

1. Speed (33/45 r.p.m.) selection

When the speed is set at 33 r.p.m., the output from pin ④ of the microcomputer becomes "high" level to turn on Q511, thus the phono motor revolving at the speed of 33 r.p.m. When the speed is set at 45 r.p.m., the output from pin ④ of the microcomputer becomes "low" level to turn off Q511, thus the phono motor revolving at the speed of 45 r.p.m.

The speed is adjustable with VR501 (for 33 r.p.m.) and VR502 (for 45 r.p.m.).

2. Normal/reverse rotation selection

• Normal rotation:

When the side A is playing, the output from pin ⑤ of the microcomputer is at "low" level to turn off Q518 and turn on Q516 and Q514. Then pin ② and pin ① of the phono motor are positive and negative respectively, so that the phono motor revolves in normal direction.

• Reverse rotation:

When the side B is playing, the output from pin ⑥ of the microcomputer is at "low" level to turn off Q512 and turn on Q513 and Q515. Then pin ② and pin ① of the phono motor is negative and positive respectively, so that the phono motor revolves in reverse direction.

3. Speed control

There may be a variation of the motor rotational speed, and this causes voltage at the base of Q517 to change in accordance with such amount of the variation. Thus this Q517 (of Darlington connection type) controls a proper voltage to apply it to the phono motor, with its speed being kept steady.

If, for instance, the motor speed is higher than specified, voltage at the base of Q517 decreases while its collector voltage increases, resulting in that voltage to be applied to the phono motor decreases so that the motor speed grows down to the specified one.

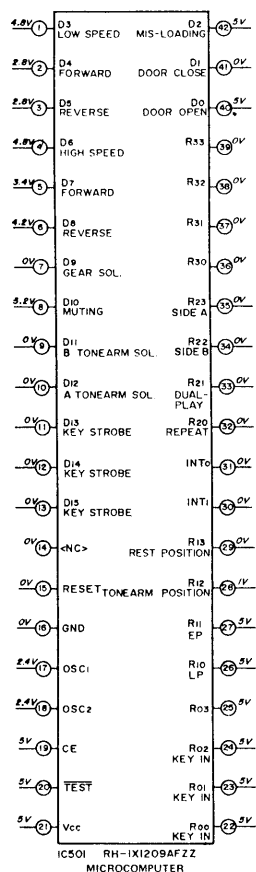


Figure 14-1

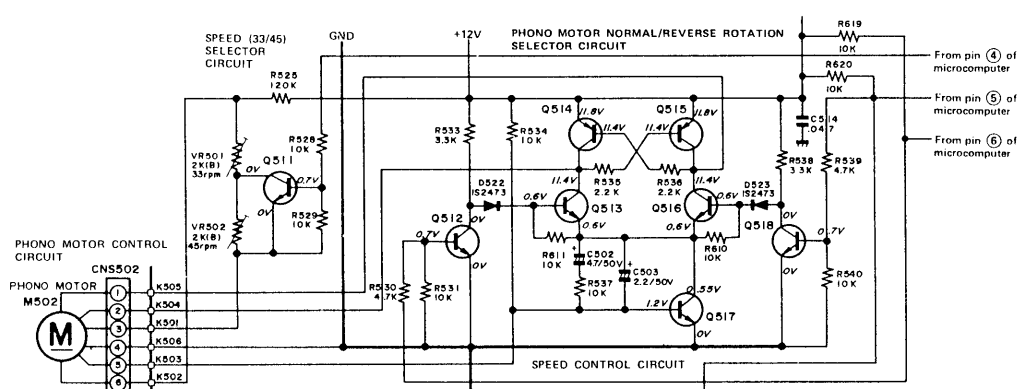


Figure 14-2

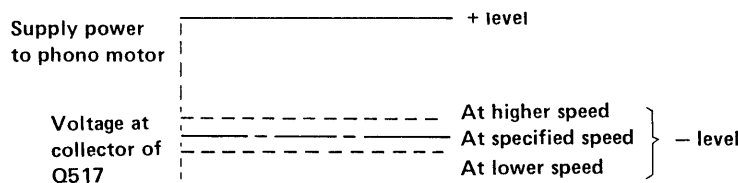


Figure 14-3

ADJUSTMENT OF TAPE MECHANISM

PINCH ROLLER PRESSURE CHECK

1. Place the unit in PLAY mode.
2. Push the pinch roller, at the point shown in Fig. 14-4, by using a tension gauge (500 gr.) so that it will come off the capstan. Then, slowly release the tension until the pinch roller hits the capstan again (i.e., the pinch roller is about to rotate again). Check, then, the tension gauge is reading 295 gr. to 365 gr.
3. If the reading is outside the range of 295 gr. to 365 gr. replace the pressure spring of the pinch roller.

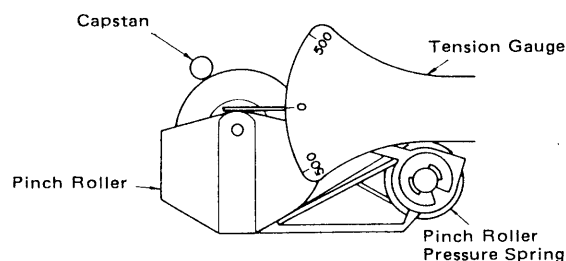


Figure 14-4

TORQUE CHECK AT PLAY, FAST FORWARD AND REWIND MODES

Put a torque meter cassette in the cassette compartment of the set, and see that the measured torque in each mode is normal as follows:

Table 15-1

Mode	Torque meter cassette	Measured torque
Playback	TW-2111	35 ~ 65 gram-cm
Fast-forward	TW-2231	90 ~ 135 gram-cm
Rewind	TW-2231	90 ~ 135 gram-cm

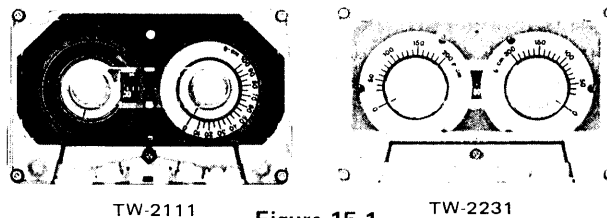


Figure 15-1

GAP CHECK OF PINCH ROLLER LEVER

Place the set in play mode, and see that the pinch roller lever moves to create the gaps (A), (B) and (C) as shown in Fig. 15-2.

RECORD/PLAYBACK HEAD AZIMUTH ADJUSTMENT

As shown in Fig. 15-3, make connection of instruments, and adjust the head azimuth adjusting screw so that VTVM reading is maximal, with no phase difference between channels.

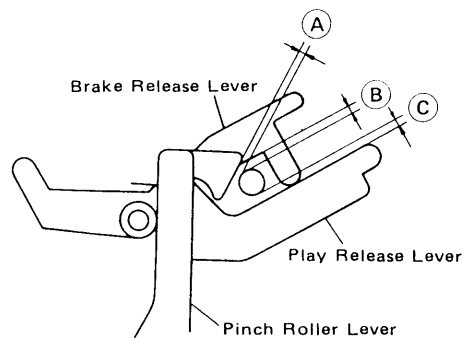


Figure 15-2

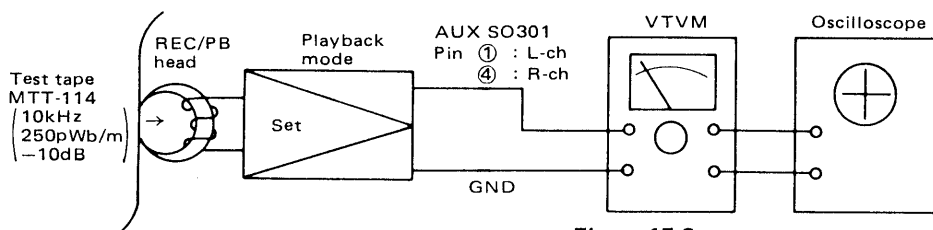


Figure 15-3

TAPE SPEED ADJUSTMENT

As shown in Fig. 15-4, make connection of instruments, put a screwdriver (for high-frequency use) into the hole of the motor, and adjust the variable resistor so that the output frequency is 2970 to 3000 Hz on frequency counter.

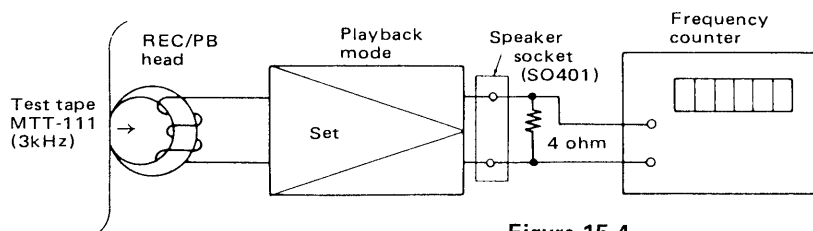
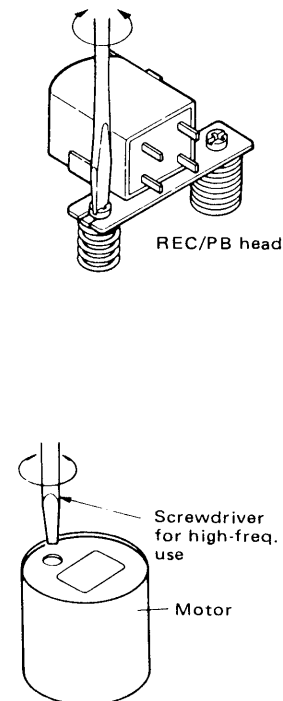


Figure 15-4



ADJUSTMENT OF PLAYER MECHANISM

POSITIONAL ADJUSTMENT OF PLAY DOOR OPEN/CLOSE GEAR (DOOR ARM OPERATING LEVER) AND PLAYER DOOR ARM

1. Keeping the player door open, bring the player door arm close to the player door open/close gear, then temporarily fit this gear to the shaft with screw. Then see that there is no thrust clearance at both sides.
2. Bring the player door fully toward arrow (A) direction, and secure the screw firmly.

* In the case of replacing the door arm operating lever assembly:

After the procedure of 2 above, close the door and lock it — by pushing up the right door lock lever, or pushing down the left door lock lever. Then fix the door arm operating lever with two screws, and secure them together with adhesives (instant-dry type).

3. Opening and closing the player door, see that the player door open/close detector switch is normal to detect the open/close operation. If not, see "POSITIONAL ADJUSTMENT OF PLAYER DOOR CLOSE DETECTOR SWITCH" and "POSITIONAL ADJUSTMENT OF PLAYER DOOR OPEN DETECTOR SWITCH".

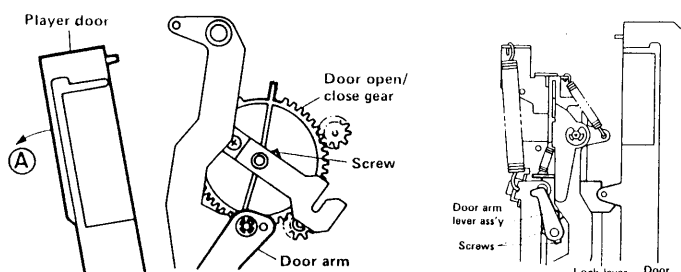


Figure 15-5

POSITIONAL ADJUSTMENT OF PLAYER DOOR CLOSE DETECTOR SWITCH

1. Close the player door, and bring the cushion rubber, at the door left-side arm, to the switch bracket.
2. Turn the player door close detector switch in arrow (A) direction shown in Fig. 16-1, and stop it at where it is about to switch on.

POSITIONAL ADJUSTMENT OF PLAYER DOOR OPEN DETECTOR SWITCH

1. Fully open the player door by using the player door open lever.
2. Turn the player door open detector switch in arrow (B) direction shown in Fig. 16-1, and stop it at where it is about to switch on.

POSITIONAL ADJUSTMENT OF REST POSITION DETECTOR SWITCH

1. Push the gear block's center gear in arrow (A) direction shown in Fig. 16-2, and turn the drum so that its point (B) shown in Fig. 16-2 is in the position shown in Fig. 16-3.
2. Stop the gear block's center gear to put the drum out of rotation.
3. Turn the rest position detector switch in arrow (C) direction shown in Fig. 16-2, and stop it at where it switches on touching the drum projection.
4. Returning the tonearm to the rest position with the power switch turned on, see that there is a clearance of 1 mm between the cartridge and the cabinet (chassis) surface.

POSITIONAL ADJUSTMENT OF SIDE A/SIDE B TONEARM SOLENOID

1. Loosen the screws at the tonearm solenoid, and put it in attraction.
2. Secure the screws so that there is a clearance of 1 to 1.5 mm at the port (A) shown in Fig. 16-3, between the tonearm guide and arm guide operating level: then, the arm (B) must be at down position as shown in Fig. 16-3.
3. Putting the solenoid in attraction with the power switch turned on, see that up/down motion of the arm is normal.

POSITIONAL ADJUSTMENT OF GEAR SOLENOID

1. Loosen the screws at the gear solenoid, and put it in attraction.
2. Secure the screws so that the center gear and small gear are fully engaged together (if not so, turn the worm gear), with the center gear going down to the full extent.
3. Putting the solenoid in attraction with the power switch turned on, see that the center gear is fully engaged with the drum and player door open/close gear.

POSITIONAL ADJUSTMENT OF TONEARM LEAD-IN POSITION

1. Load an LP record in the set, with the power switch turned on.
2. Push the tonearm cue key.
3. Push the player door open/close key, then see that the player door is closed and the tonearm is moving from the rest position to the LP lead-in position.
4. Loosen the screws at the side A or side B tonearm clamber to allow motion of the tonearm.
5. Secure the screws so that the cartridge stylus tip is at the central part of the lead-in position.
6. Again push the tonearm cue key to lower the cartridge, then see that the stylus tip is moving down to the central part of the lead-in position. If not, push the play/cut key to cause the tonearm to return to the rest position, then repeat steps 2 to 6 above.

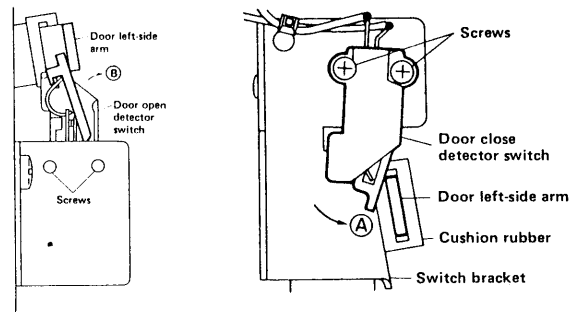


Figure 16-1

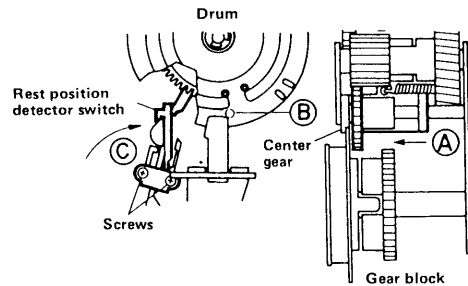


Figure 16-2

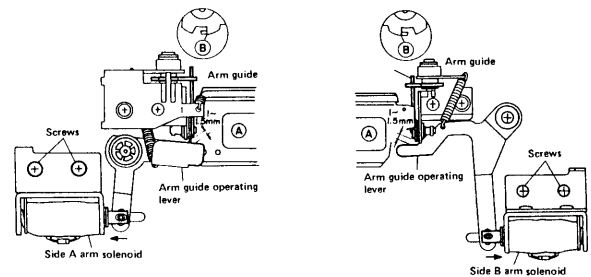


Figure 16-3

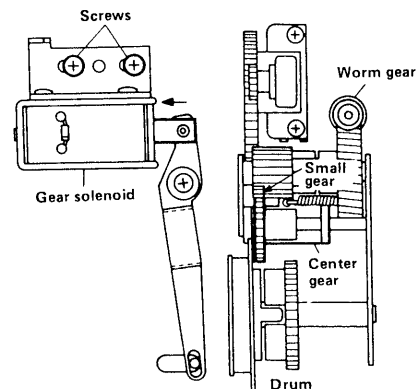


Figure 16-4

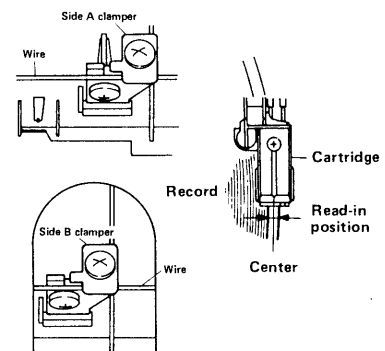


Figure 16-5

7. Take the same adjustment while loading an EP record in the set.

ROTATIONAL ADJUSTMENT OF PHONO MOTOR

1. Prepare an LP record which is provided with a strobo viewer, and load it in the set. Then put the set in cue up mode — by pushing the tonearm cue key first and then the player door open/close key.

2. Adjust variable resistor VR501 or VR502 so that the strobo viewer appears to be still.

- VR501: at 33 r.p.m. speed
- VR502: at 45 r.p.m. speed (set by the speed selector key)

ADJUSTMENT AND CHECK OF RECORD/PLAYBACK AMPLIFIER CIRCUIT

BIAS CURRENT ADJUSTMENT

- Make connection of instruments as shown in Fig. 17-2, and adjust variable resistor VR205 or VR206 so that bias current available with the tape selector switch set at each position is shown in Table 17-1.

Table 17-1

Tape selector switch	Voltage (Bias current)	Adjustment
Normal	36mV (360 μ A)	VR205 (L-ch) VR206 (R-ch)
CrO ₂	47 ~ 53mV (470 ~ 530 μ A)	Checking
Metal	66 ~ 74mV (660 ~ 740 μ A)	

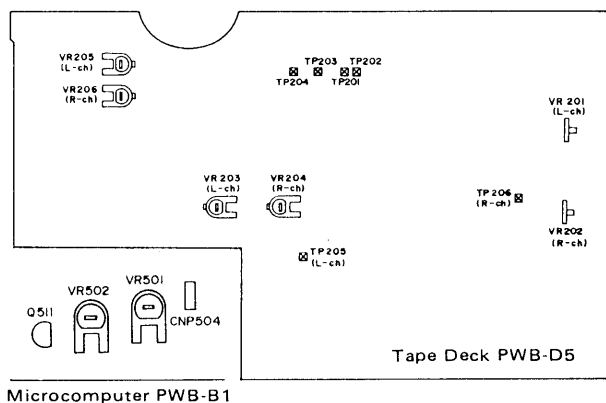


Figure 17-1 Adjustment points

ERASE CURRENT CHECK

- Make connection of instruments as shown in Fig. 17-3, and check if the erase current is as shown in Table 17-2.

(Table 17-2)

Tape selector switch	Voltage (erase current)
Metal	120 ~ 160mV (120 ~ 160mA)

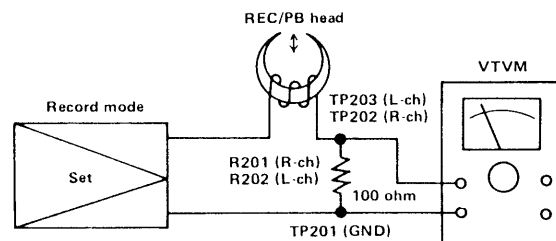


Figure 17-2

PLAYBACK SENSITIVITY ADJUSTMENT

- Make connection of instruments as shown in Fig. 17-4, and adjust variable resistor VR201 or VR202 so that the playback sensitivity is as shown in Table 17-3.

Table 17-3

Switch	Voltage	Adjustment
Tape selector switch at "normal"	580mV	VR201 (L-ch)
Dolby NR switch at "on"		VR202 (R-ch)

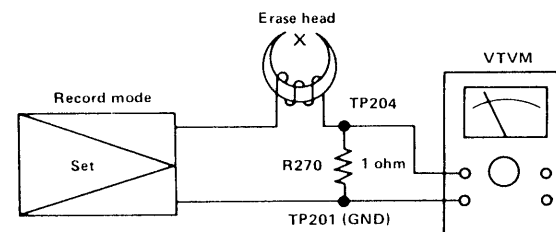


Figure 17-3

RECORD/PLAYBACK SENSITIVITY ADJUSTMENT

- Make connection of instruments as shown in Fig. 17-5, adjust variable resistor VR305, VR306, VR203 or VR204 so that the record/playback sensitivity is as shown in Table 17-4.

Table 17-4

Step	Switch	Voltage	Adjustment
Record	Tape selector switch at "normal"	410mV	Record level controls VR305 (L-ch), VR306 (R-ch)
Play-back	Dolby NR switch at "off"	365 ~ 460mV	VR203 (L-ch), VR204 (R-ch)

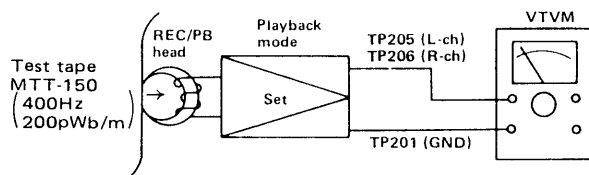


Figure 17-4

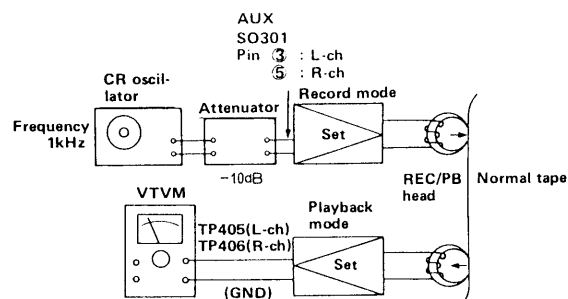


Figure 17-5

ADJUSTMENT OF TUNER CIRCUIT

AM IF/RF ADJUSTMENT

STEP	TEST STAGE	SIGNAL GENERATOR		DIAL POINTER SETTING	METER CONNECTION	ADJUSTMENT	REMARKS
		CONNECTION	FREQUENCY				
1	MW IF	Refer to Figure 18-1. (Reduce the input as low as possible.)	455kHz [VZ-3000H] 465kHz [VZ-3000E] (400Hz, 30%, AM modulated)	Highest frequency	Refer to Figure 18-1.	IF Transformer T104	Turn the core of T104 until IF waveform is maximal as shown in Fig. 18-2. Repeat this twice or three times to obtain best result.
2	LW Band coverage	Refer to Figure 18-3. (Reduce the input as low as possible.)	145kHz (400Hz, 30%, AM modulated)	Lowest frequency	Refer to Figure 18-3.	Oscillation coil L109	Adjust for maximal output.
3		Same as step 2.	295kHz (400Hz, 30%, AM modulated)	Highest frequency	Same as step 2.	Oscillation trimmer TC106A	Same as step 2.
4	LW Tracking	Same as step 2.	160kHz (400Hz, 30%, AM modulated)	Tune to 160kHz.	Same as step 2.	Antenna coil L107A	Same as step 2.
5		Same as step 2.	260kHz (400Hz, 30%, AM modulated)	Tune to 260kHz.	Same as step 2.	Antenna trimmer TC104A.	Same as step 2.
6	MW Band coverage	Same as step 2.	515kHz (400Hz, 30%, AM modulated)	Lowest frequency	Same as step 2.	Oscillation coil L110	Same as step 2.
7		Same as step 2.	1650kHz (400Hz, 30%, AM modulated)	Highest frequency	Same as step 2.	Oscillation trimmer TC106B	Same as step 2.
8	MW Tracking	Same as step 2.	600kHz (400Hz, 30%, AM modulated)	Tune to 600kHz	Same as step 2.	Antenna coil L107B	Same as step 2.
9		Same as step 2.	1400kHz (400Hz, 30%, AM modulated)	Tune to 1400kHz	Same as step 2.	Antenna trimmer TC104B.	Same as step 2.
10	Repeat steps 2 ~9 until no further improvement can be made, and try step 1 once more.						

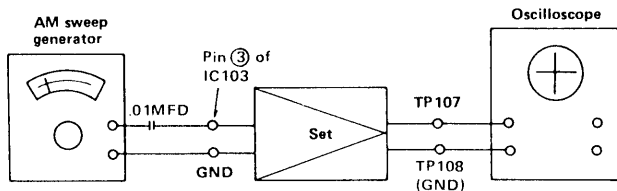


Figure 18-1 AM IF Adjustment

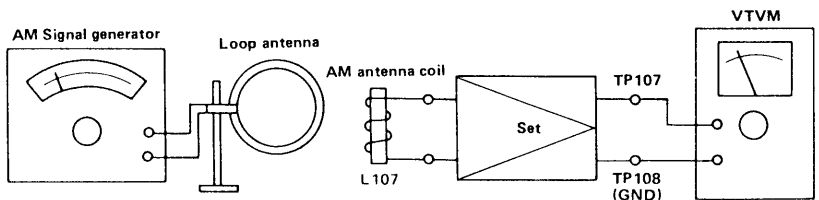


Figure 18-3 AM RF Adjustment

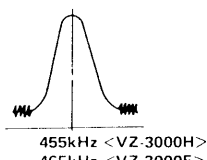


Figure 18-2 AM IF Curve

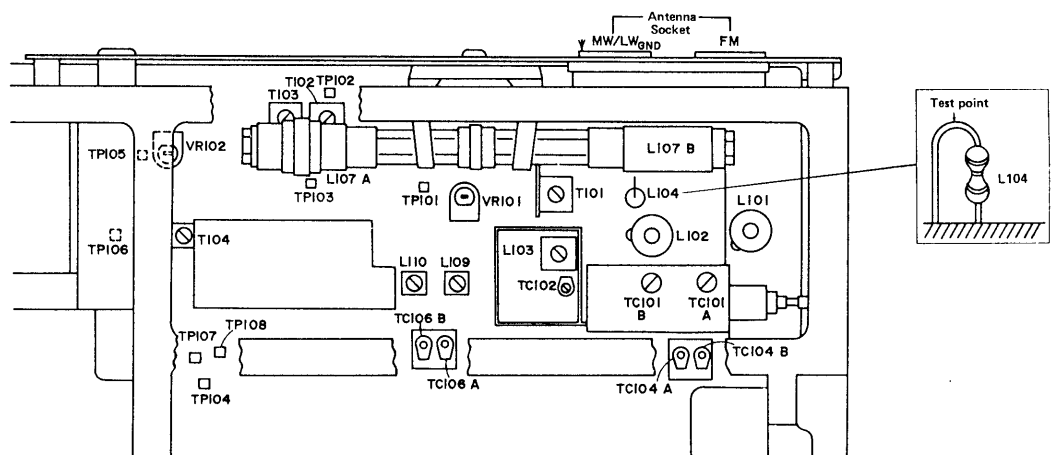


Figure 18-4 Adjustment points

THE INSTRUCTION OF FREQUENCY ADJUSTMENT (VZ-3000H Only)

In order to comply with FTZ rule: Nr. 358/1970, please fix the low end of dial frequency (87.6MHz) and the high end of dial frequency (108MHz) on FM band, by adjusting oscillation

coils (L103) and oscillation trimmer (TC102), respectively, as illustrated in Figure 18-4.

FM IF/RF ADJUSTMENT

- Set the function selector switch at FM MONO position.

STEP	TEST STAGE	SIGNAL GENERATOR		DIAL POINTER SETTING	METER CONNECTION	ADJUSTMENT	REMARKS
		CONNECTION	FREQUENCY				
1	IF	Refer to Figure 19-2.	10.7MHz (400Hz, 40kHz dev., FM modulated)	Highest frequency	Refer to Figure 19-2. (Test point TP104)	IF Transformer T101	Turn the core of T101 until waveform is symmetrical in right and left as shown Fig. 19-1.
2	Detection	Same as step 1.	Same as step 1.	Same as step 1.	Same as step 1. (Test point TP104)	Detector T102, T103	Turn the cores of T102 and T103 until waveform is symmetrical in the upper and lower with best linearity ("S" curve), as shown in Fig. 19-3.
3	Repeat steps 1 and 2 until no further improvement can be made.						
4	Band coverage	Refer to Figure 19-4. (Reduce the input as low as possible.)	87.3MHz (400Hz, 40kHz dev., FM modulated)	Lowest frequency	Refer to Figure 19-4.	Oscillation coil L103	Adjust for maximal output.
5		Same as step 4.	109MHz (400Hz, 40kHz dev., FM modulated)	Highest frequency	Same as step 4.	Oscillation trimmer TC102	Same as step 4.
6	Tracking	Same as step 4.	90MHz (400Hz, 40kHz dev., FM modulated)	Tune to 90MHz.	Same as step 4.	RF coil L102, Antenna coil L101	Same as step 4.
7		Same as step 4.	106MHz (400Hz, 40kHz dev., FM modulated)	Tune to 106MHz.	Same as step 4.	RF trimmer TC101B. Antenna trimmer TC101A.	Same as step 4.
8	Repeat step 4, 5, 6 and 7 until no further improvement can be made.						
9	Upon completion of the tracking, give no signal to the input then adjust the core of T102 so that there is no voltage caused between the test points TP103 and TP102.						

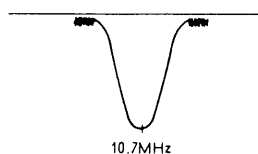


Figure 19-1 FM IF Curve

For Service Manuals
MAURITRON SERVICES
8 Cherry Tree Road, Chinnor
Oxfordshire, OX9 4QY.
Tel (01844) 351694
Fax (01844) 352554
email:- sales@mauritron.co.uk

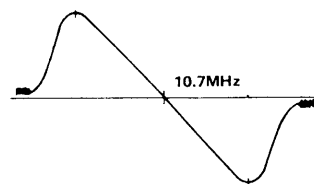


Figure 19-3 FM S Curve

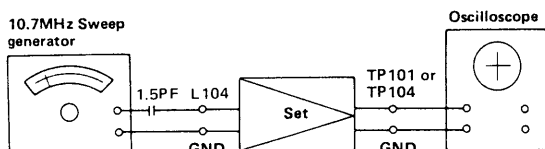


Figure 19-2 FM IF Adjustment

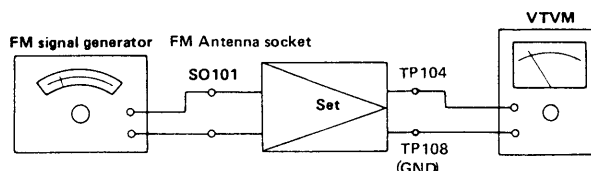


Figure 19-4 FM RF Adjustment

ADJUSTMENT OF VCO FREQUENCY AND MUTING LEVEL

VCO Frequency

1. Make connection of instruments as shown in Fig. 20-1.
2. Set the function selector switch at "FM MONO" position.
3. Set FM signal generator to produce a signal of 98 MHz, 60 dB, 400 Hz, 100% modulated, and let the set tune this signal.
4. Set the function selector switch at "FM STEREO" position.
5. Shorting test point TP102 and ground, adjust variable resistor VR102 so that frequency counter reads 76 kHz $\pm$ 76 Hz.

After VCO frequency adjustment, remove the shorting between TP102 and ground.

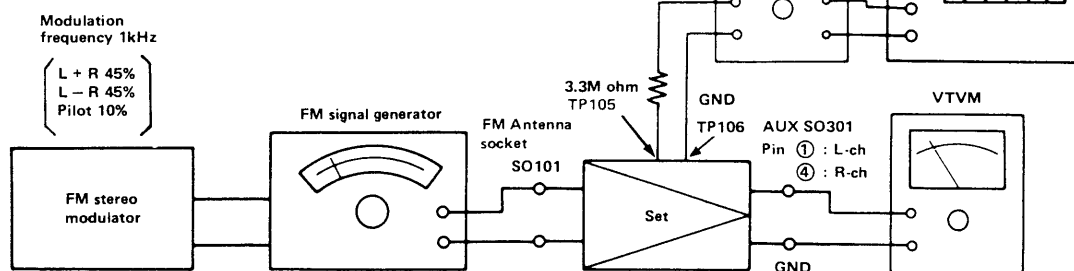


Figure 20-1

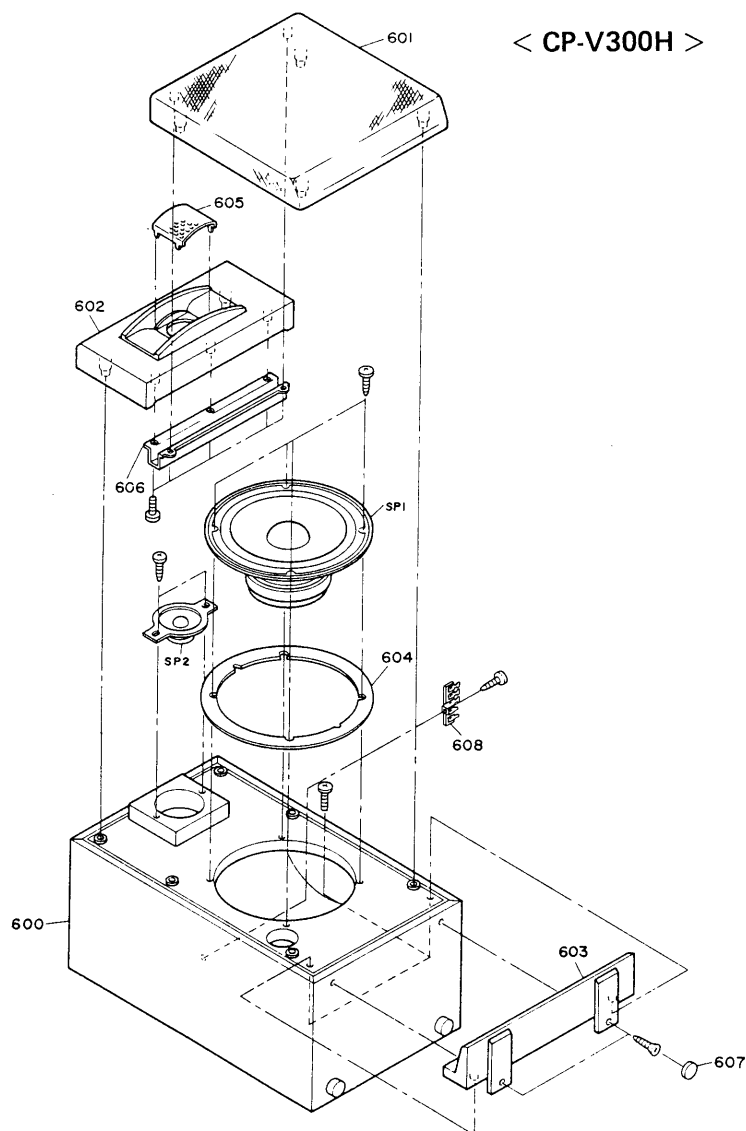


Figure 20-4 EXPLODED VIEW

< CP-V300H >

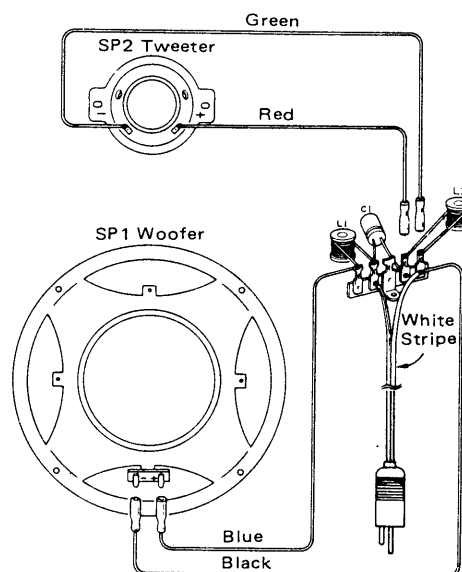


Figure 20-2 WIRING CONNECTION

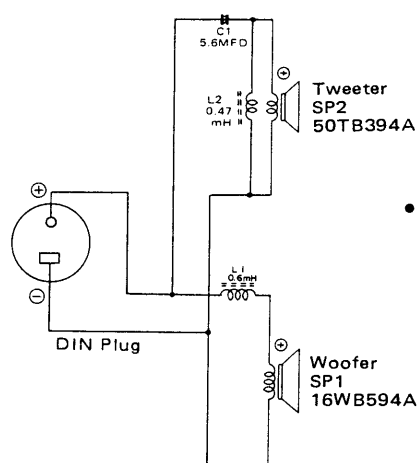


Figure 20-3 SCHEMATIC DIAGRAM

• Specifications or wiring diagrams of this model are subject to change for improvement without prior notice.

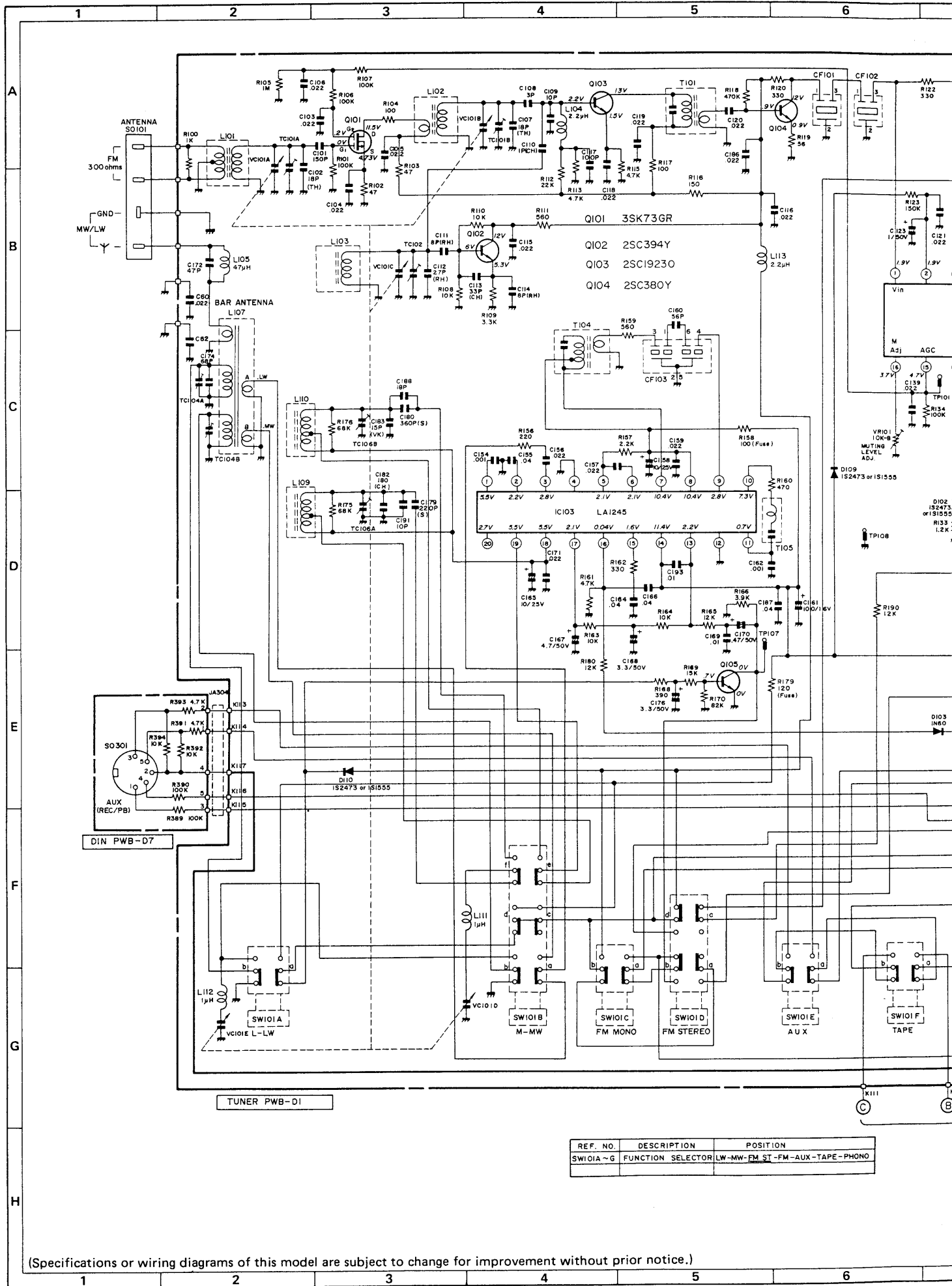
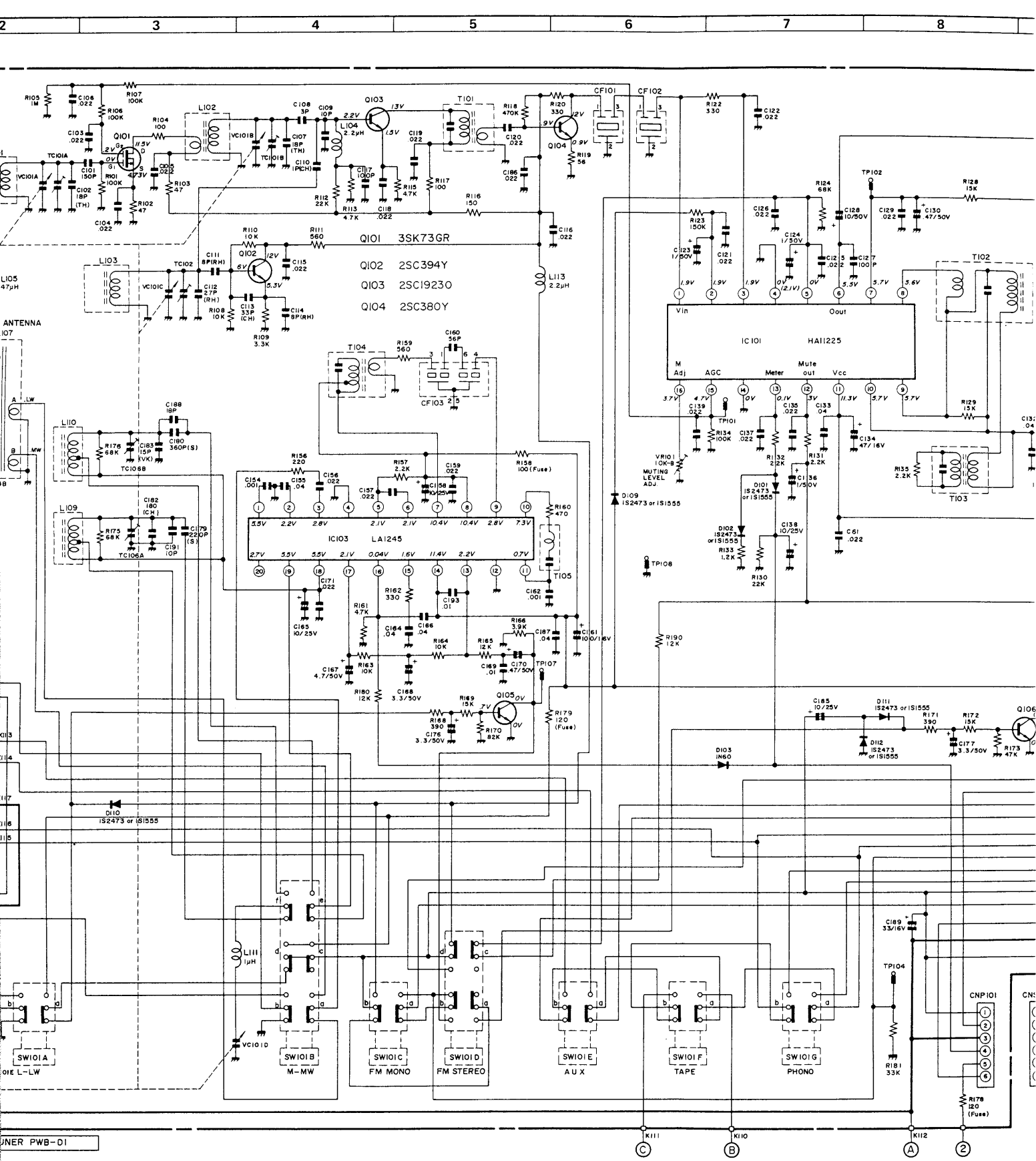


Figure 21 SCHEMATIC

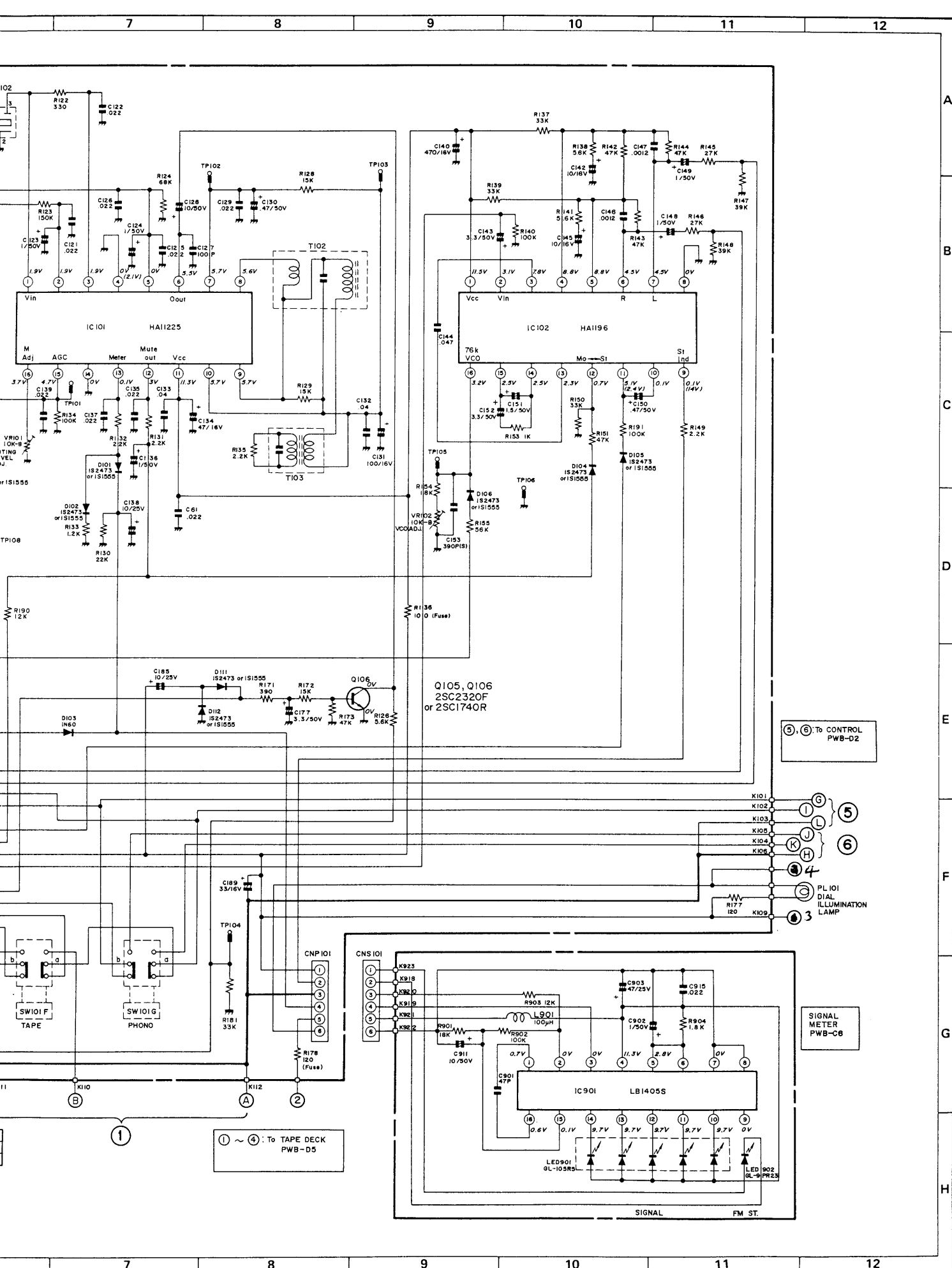


REF. NO.	DESCRIPTION	POSITION
SW101A ~ G	FUNCTION SELECTOR	LW-FM-FM ST-FM-AUX-TAPE-PHONO

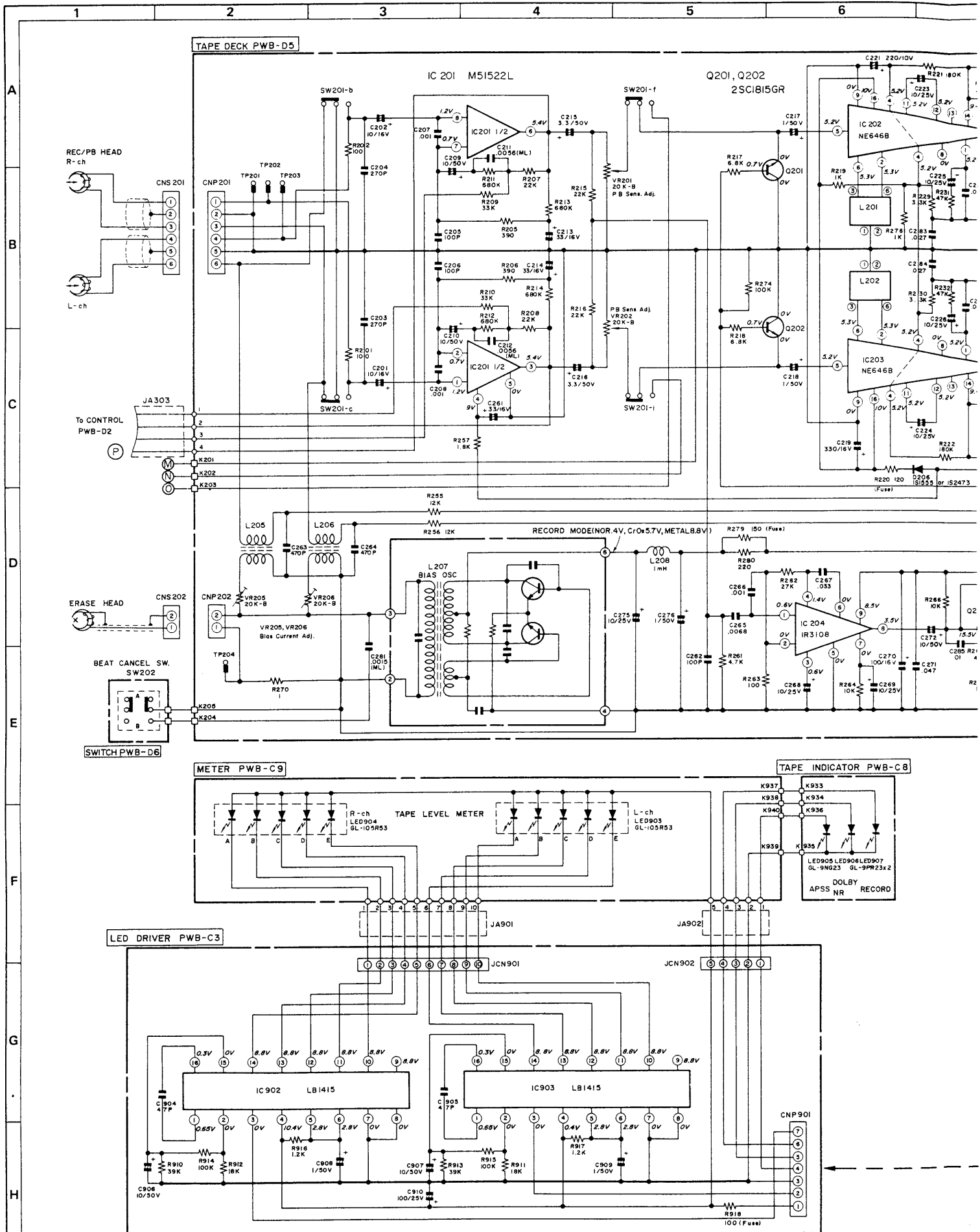
① ~ ④: To TAPE DECK
PWB-05

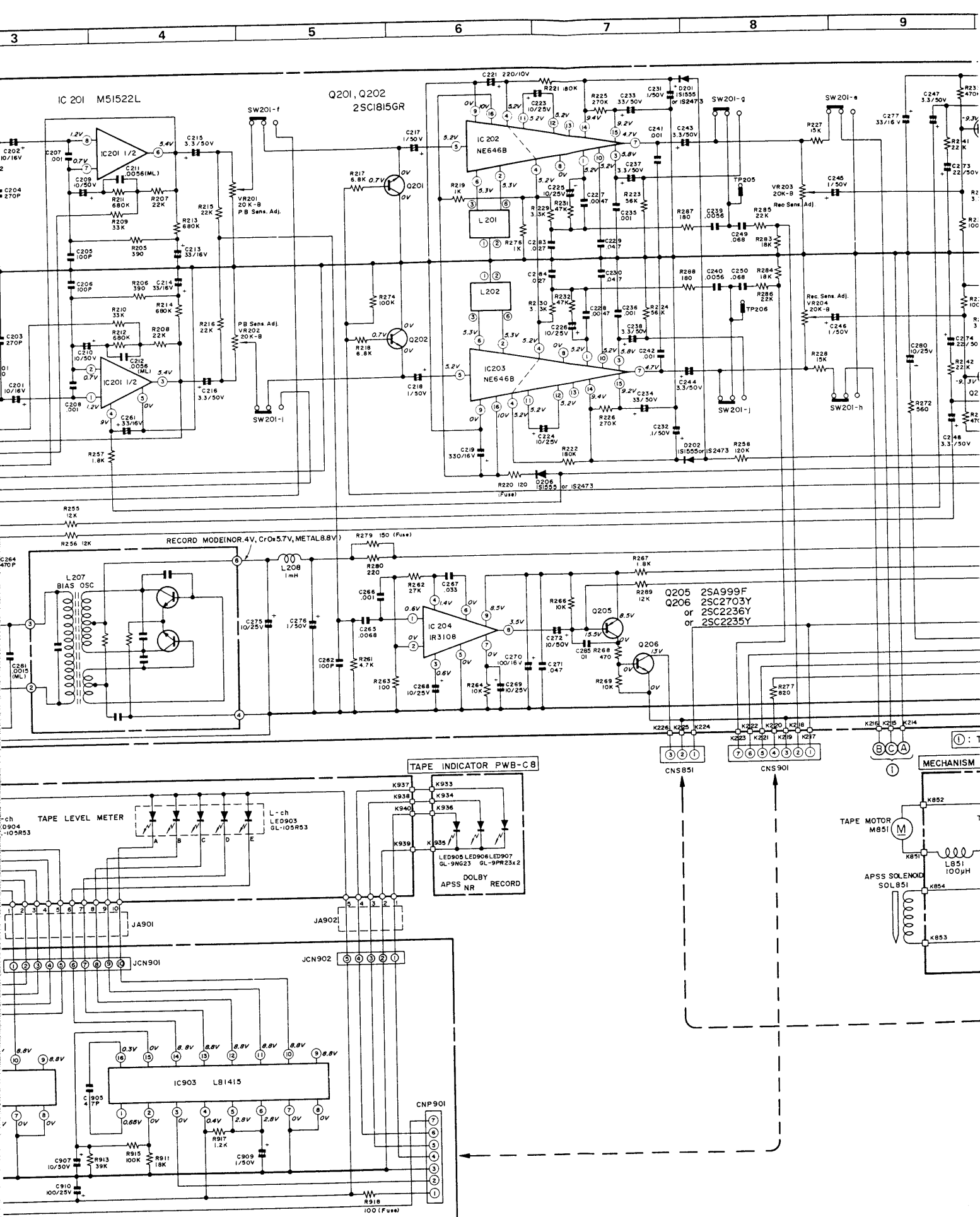
of this model are subject to change for improvement without prior notice.)

Figure 21 SCHEMATIC DIAGRAM (1/4)



HEMATIC DIAGRAM (1/4)





Subject to change for improvement without prior notice.)

Figure 23 SCHEMATIC DIAGRAM (2/4)



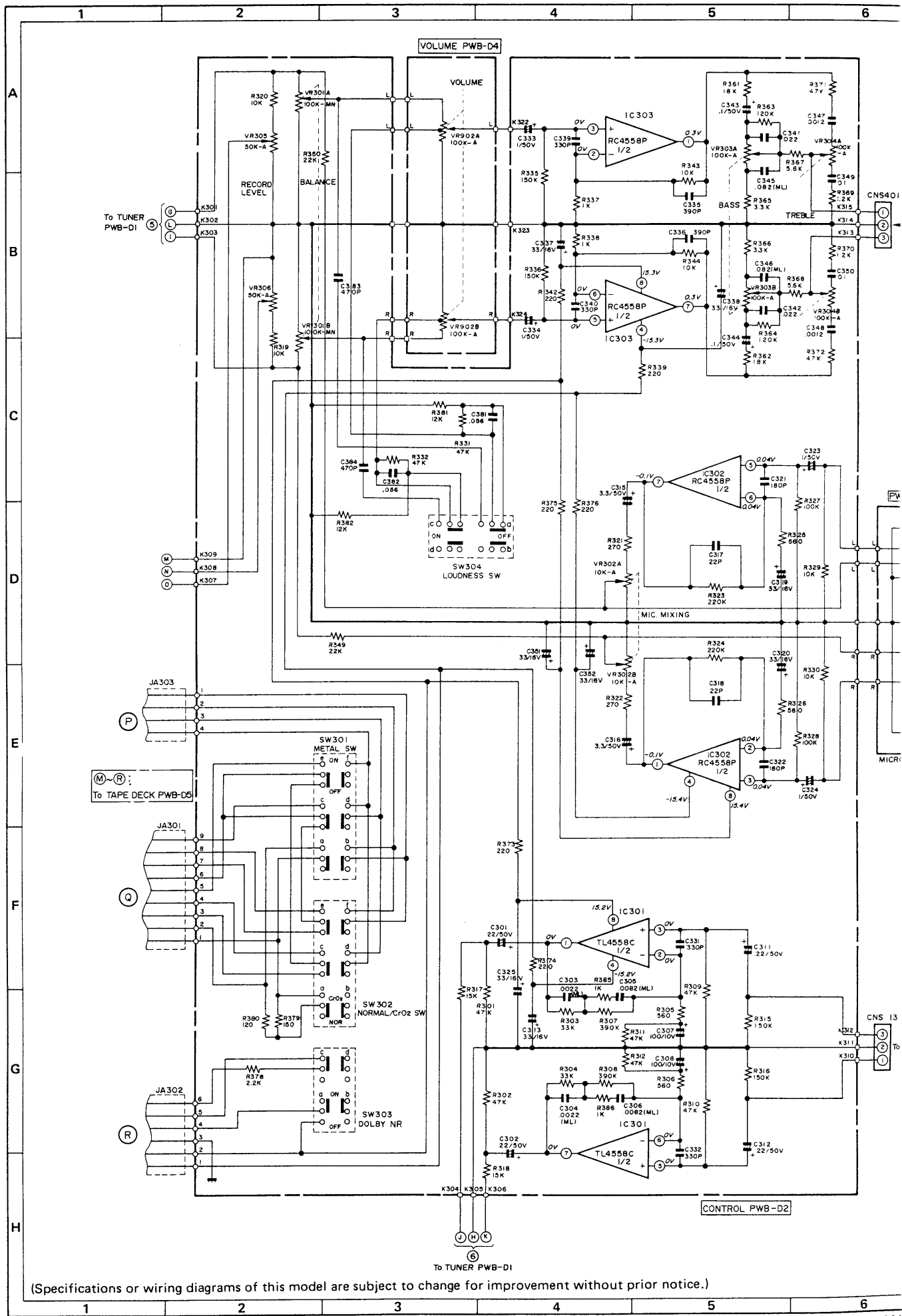
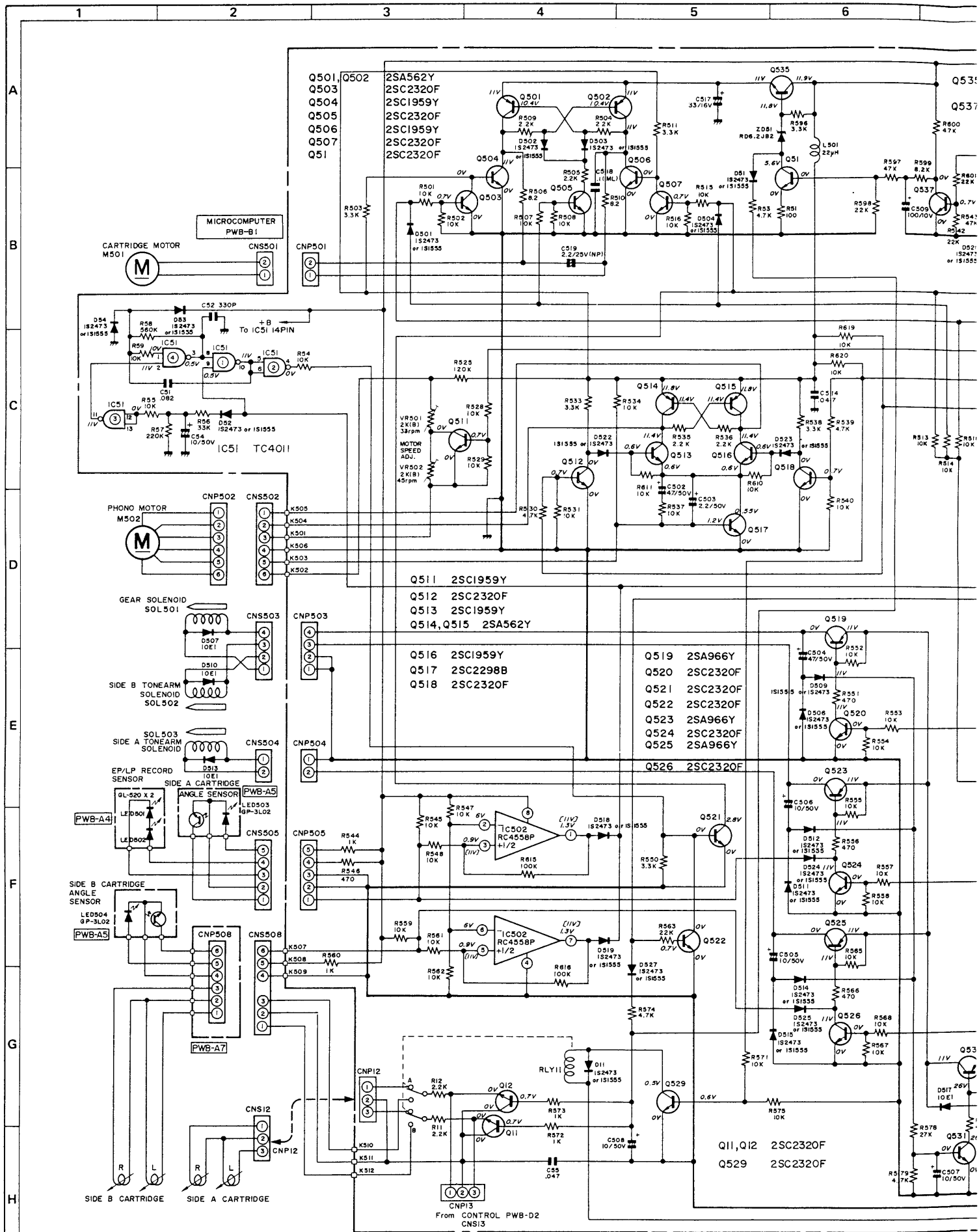
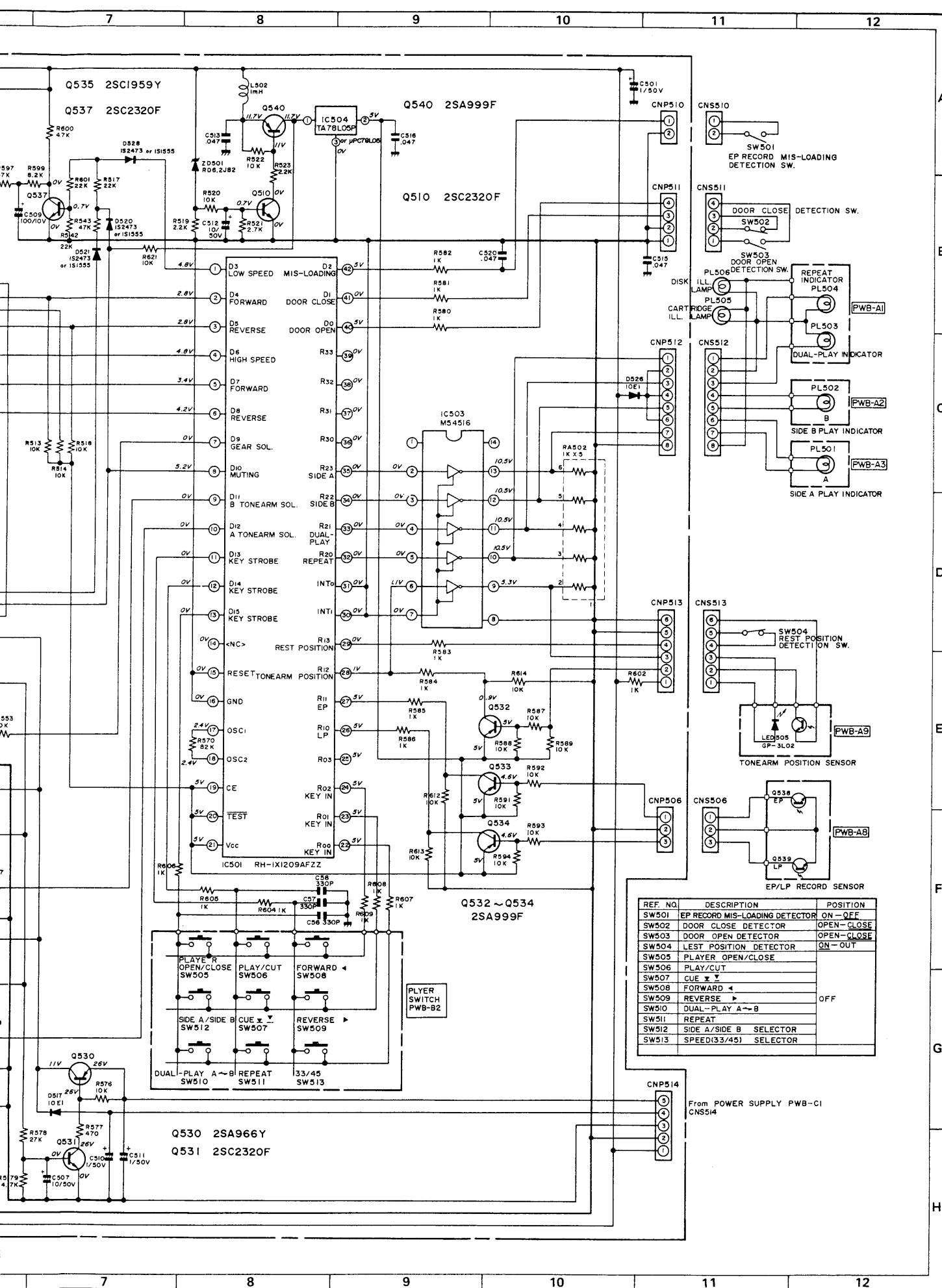


Figure 25 SCH



(Specifications or wiring diagrams of this model are subject to change for improvement without prior notice.)

Figure 27 SCHEMATIC DIA



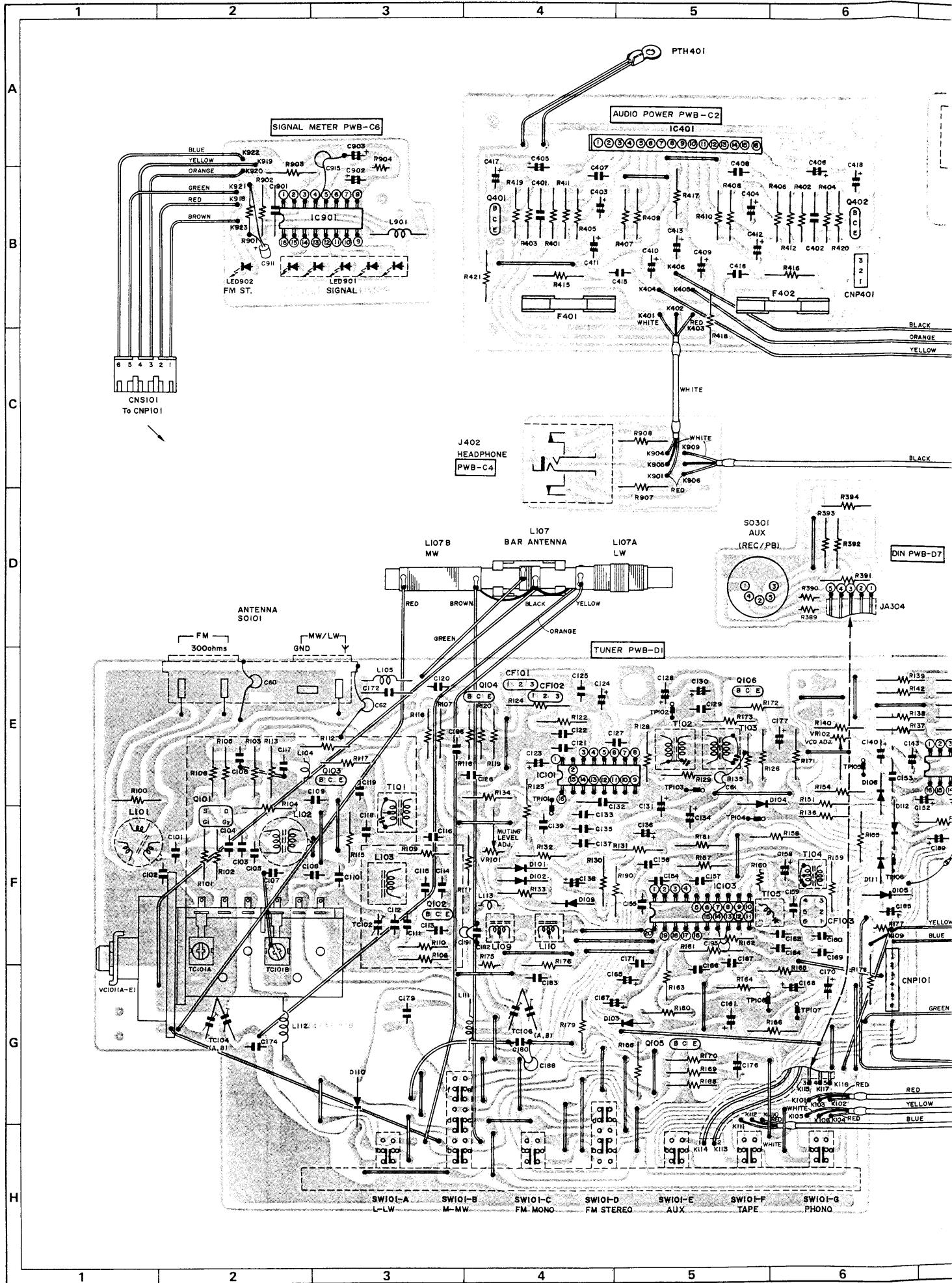


Figure 29 WIRING SIDE OF

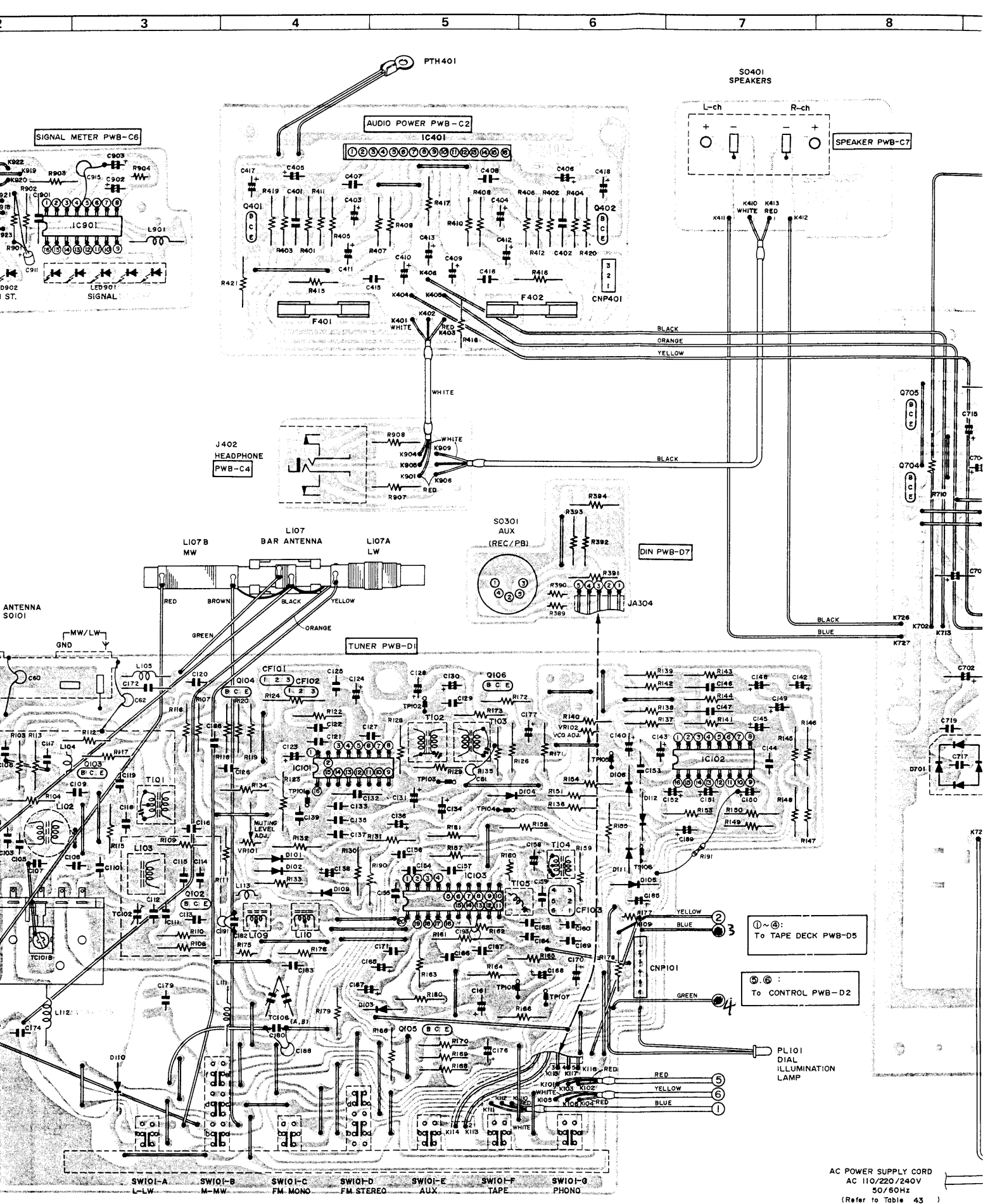
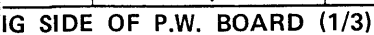


Figure 29 WIRING SIDE OF P.W. BOARD (1/3)





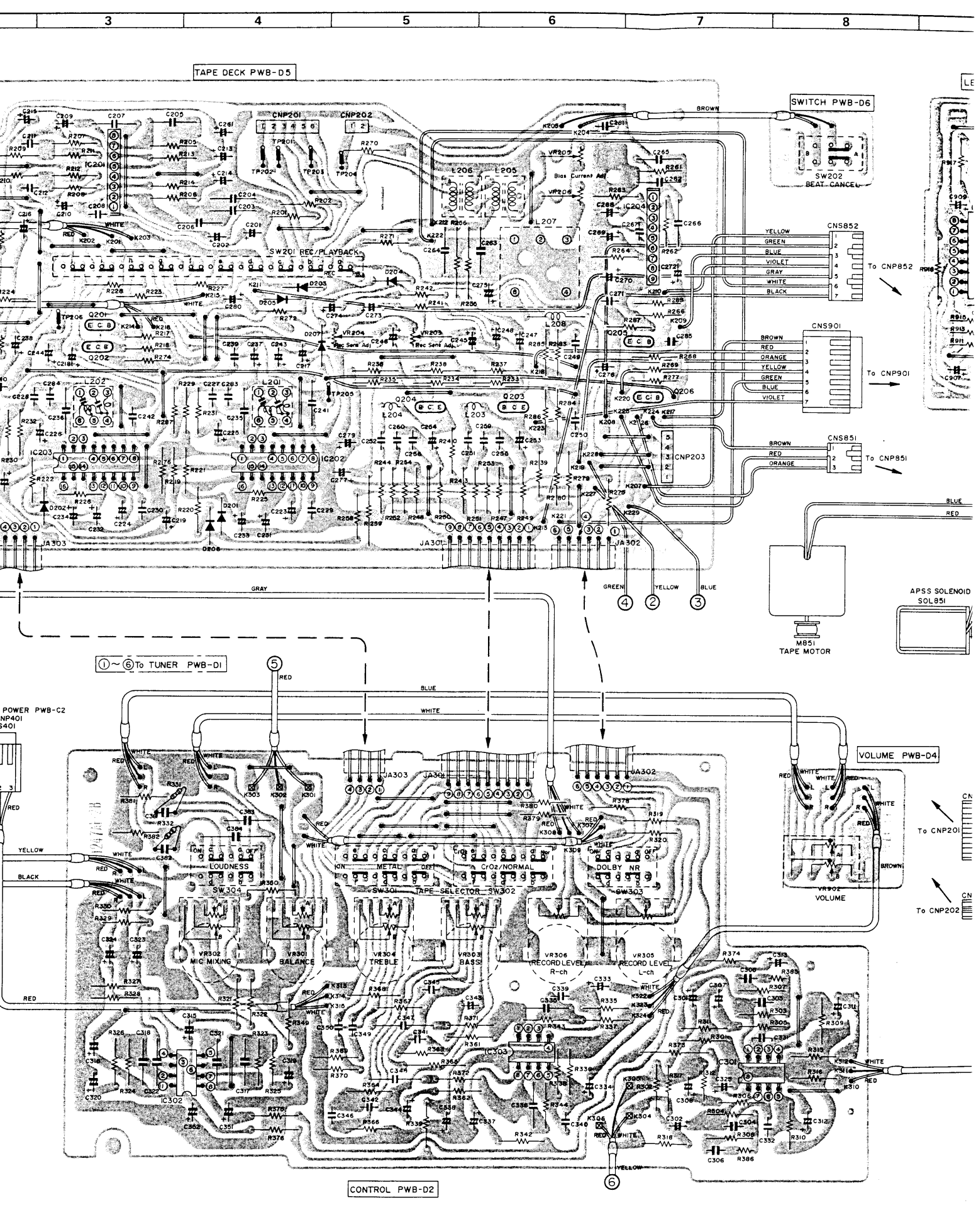
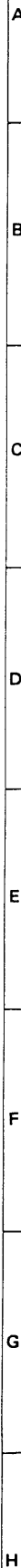


Figure 31 WIRING SIDE OF P.W. BOARD (2/3)



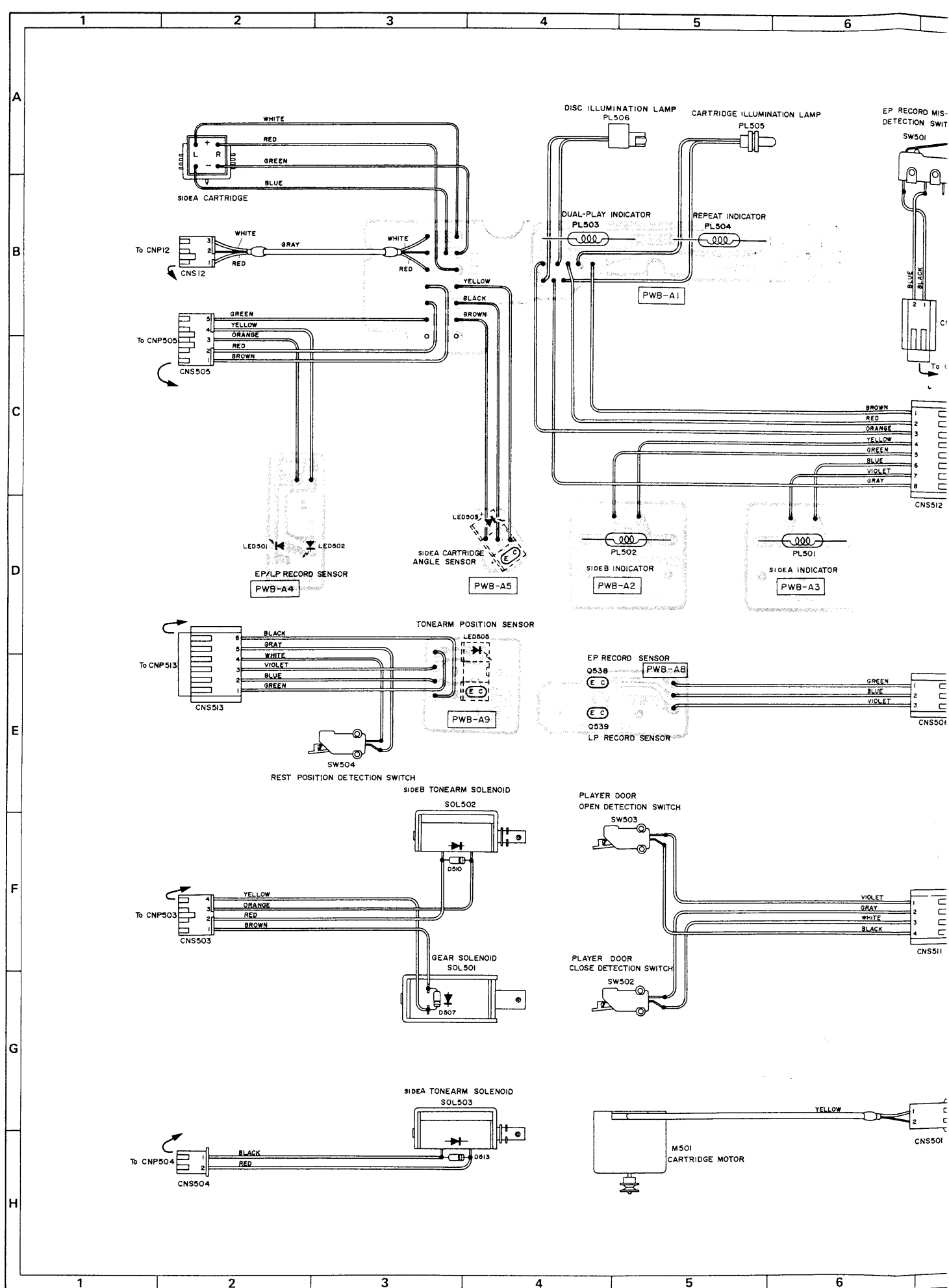


Figure 33 WIRING SIDE OF

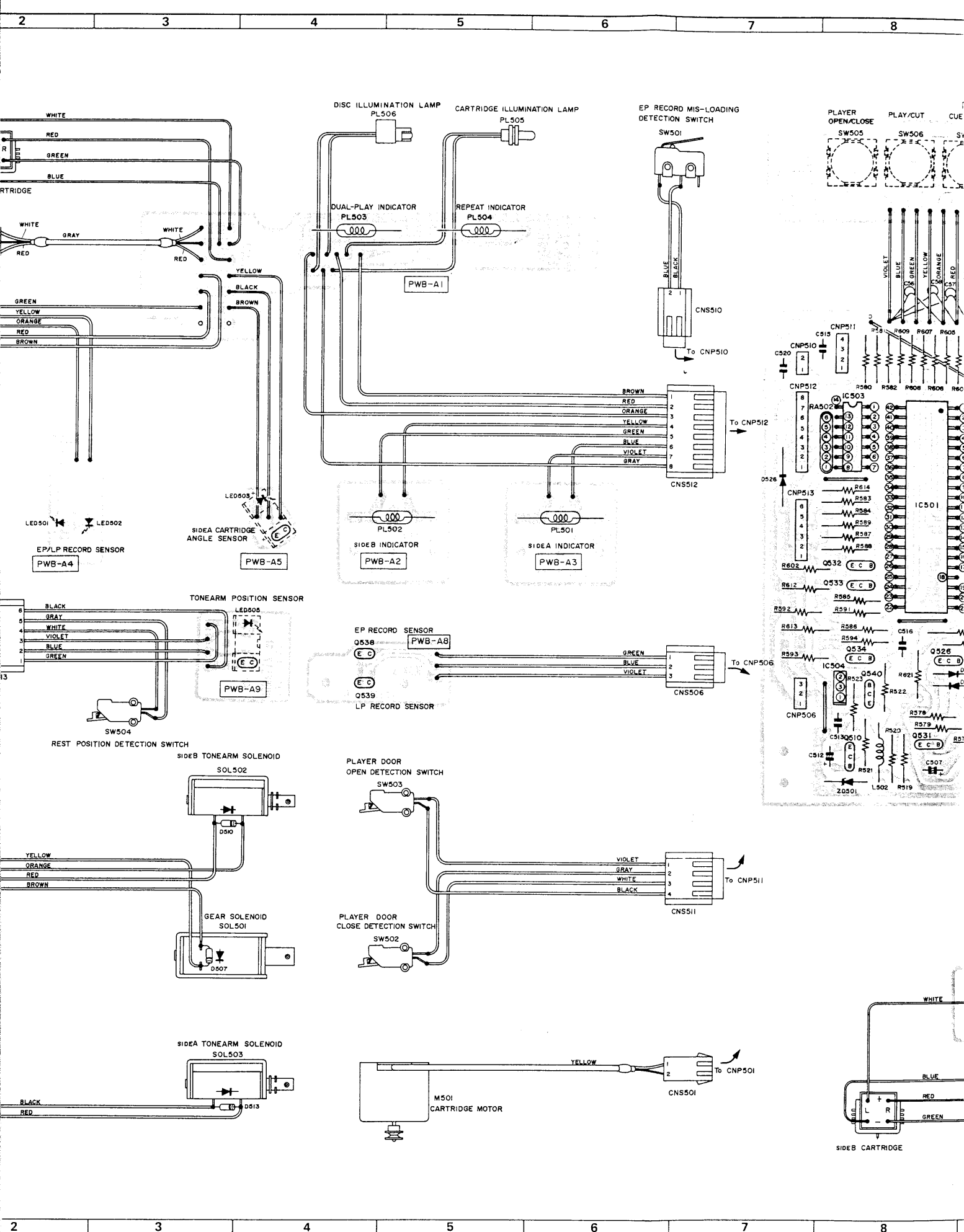
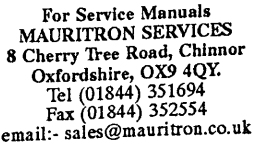
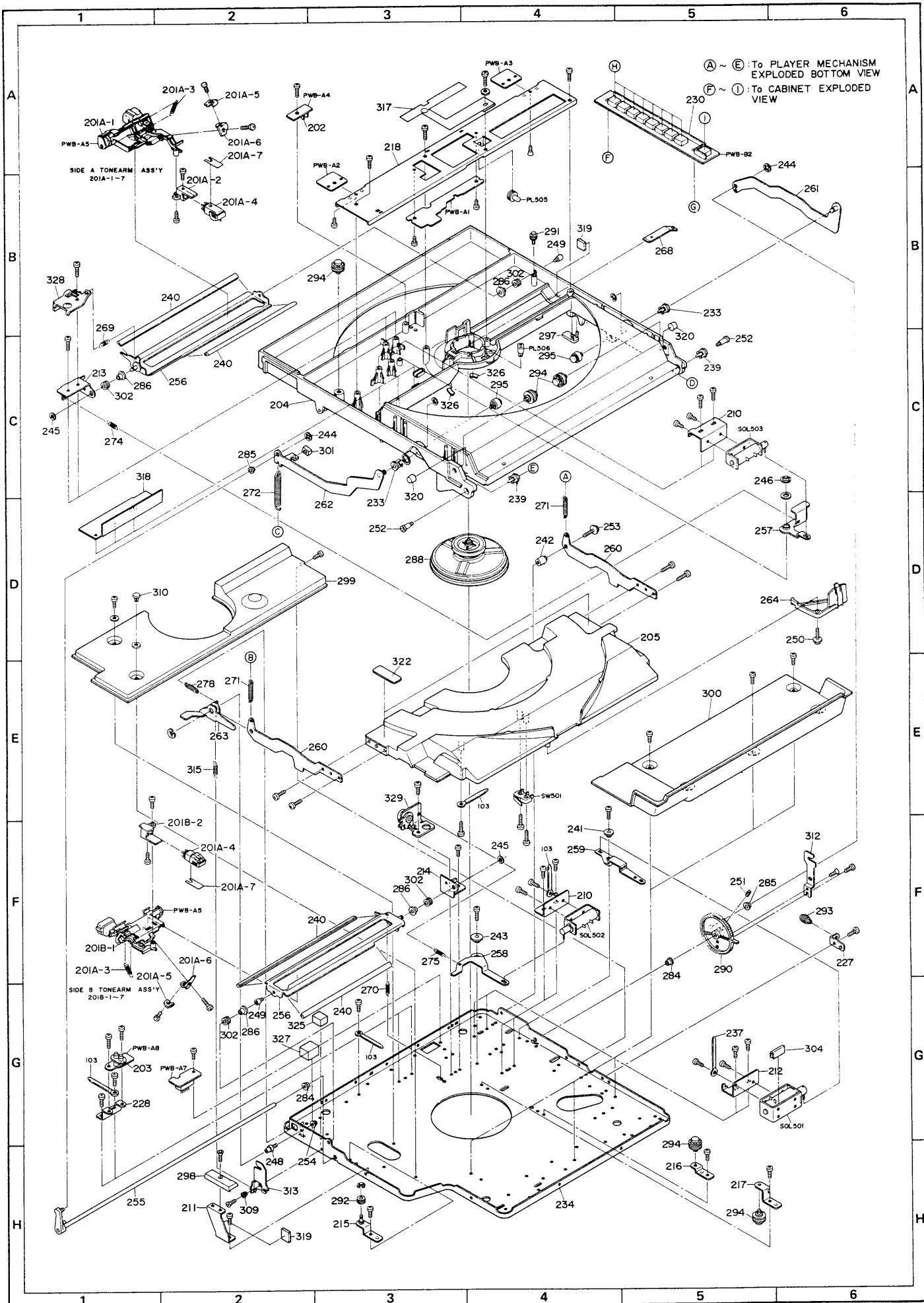
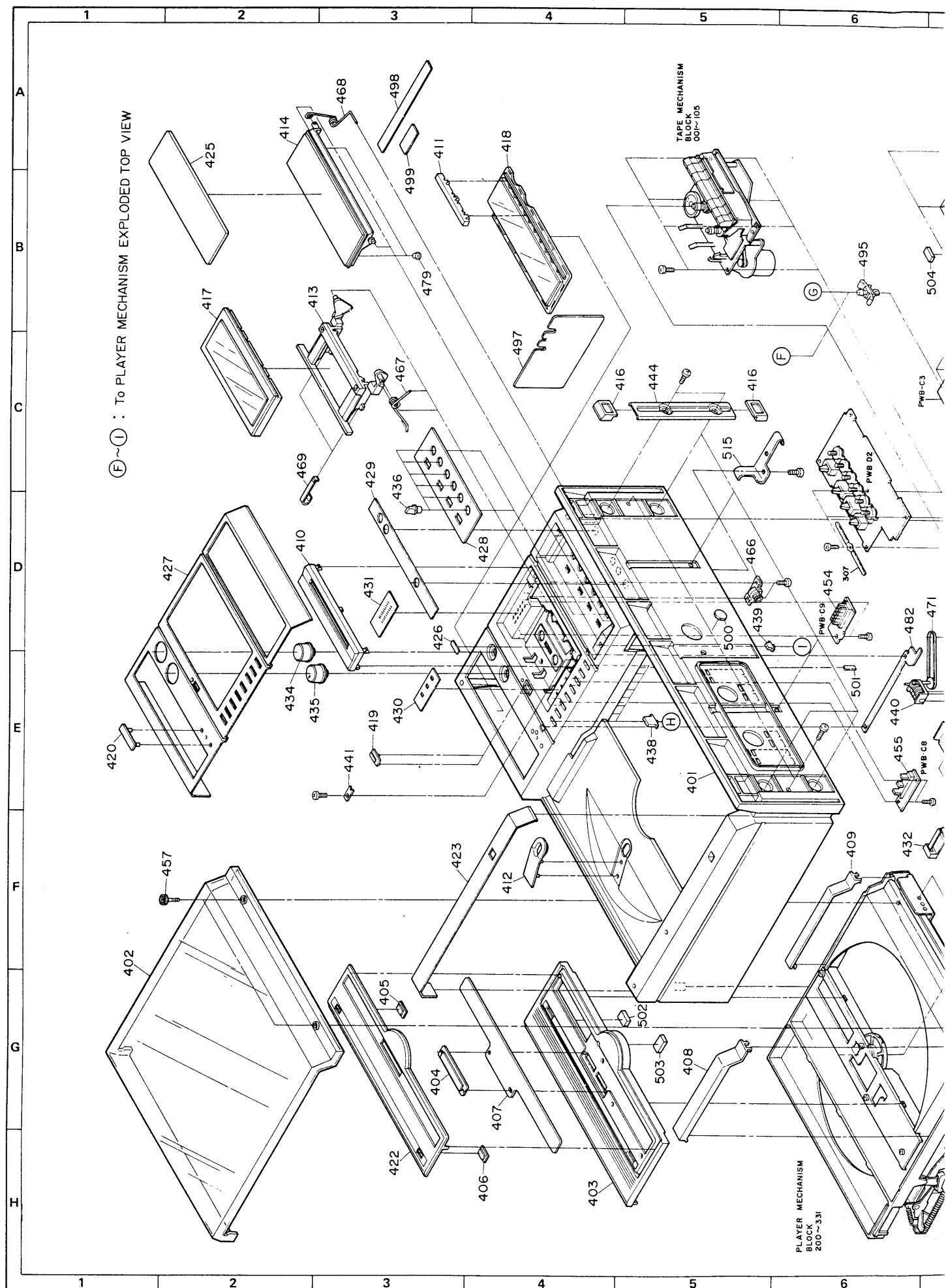


Figure 33 WIRING SIDE OF P.W. BOARD (3/3)







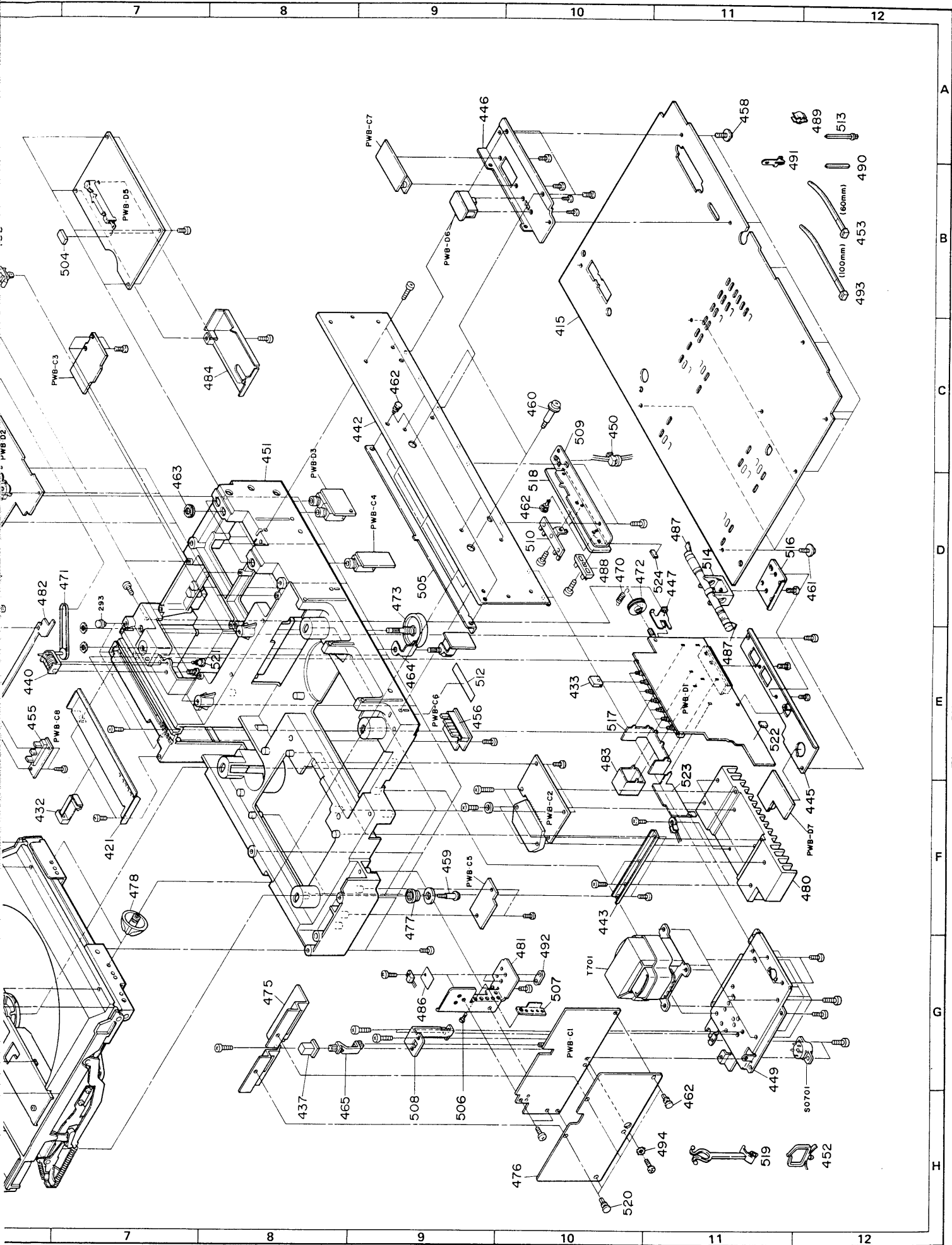


Figure 37 CABINET EXPLODED VIEW

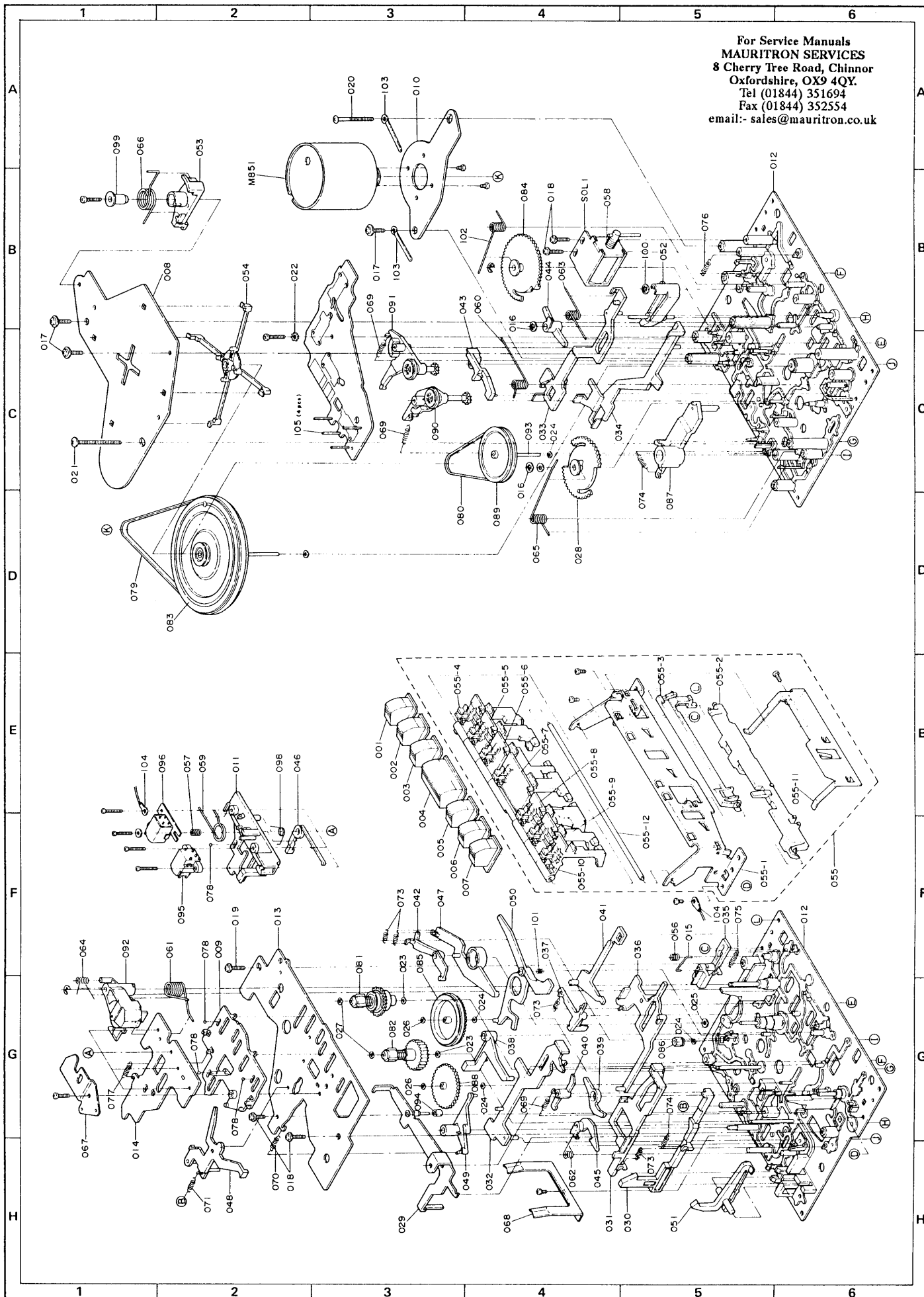


Figure 39-2 TAPE DECK MECHANISM EXPLODED BOTTOM VIEW

Figure 39-1 TAPE DECK MECHANISM EXPLODED TOP VIEW

• VHIHA11225/-1 (HA11225): IC101

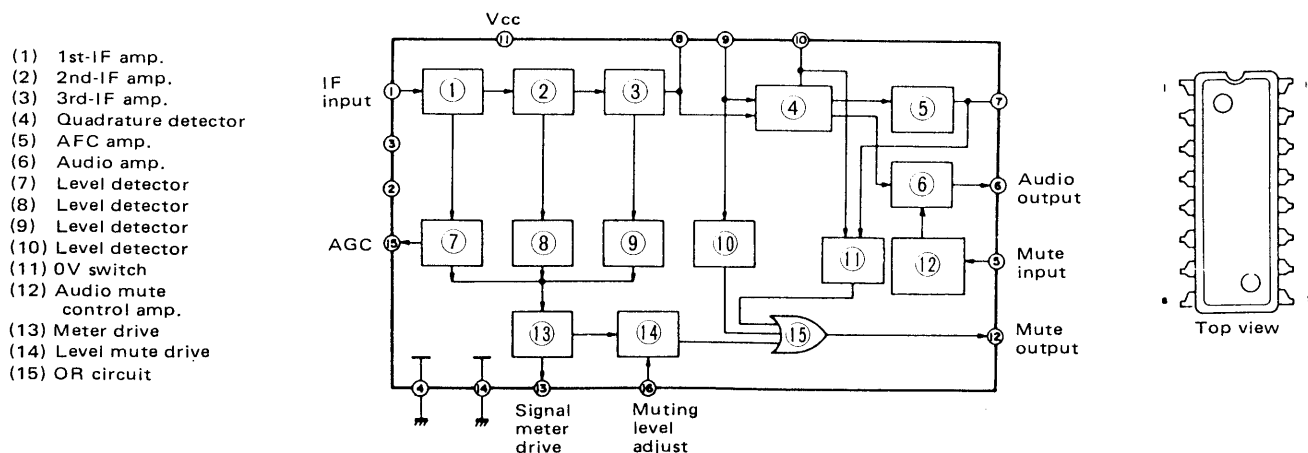


Figure 40-1 BLOCK DIAGRAM OF IC

• RH-IX1053AFZZ (HA1196): IC102

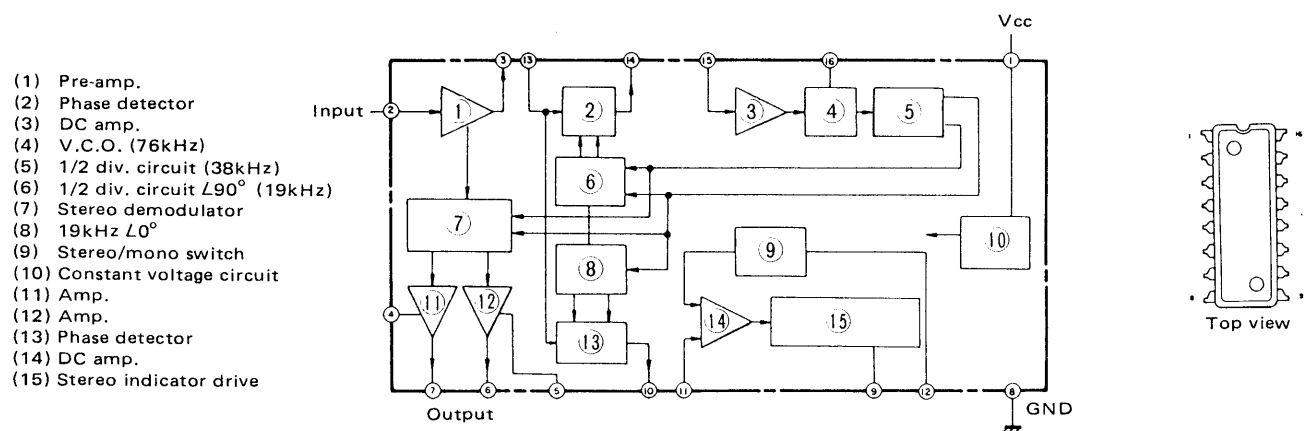


Figure 40-2 BLOCK DIAGRAM OF IC

• VHILA1245/-1 (LA1245): IC103

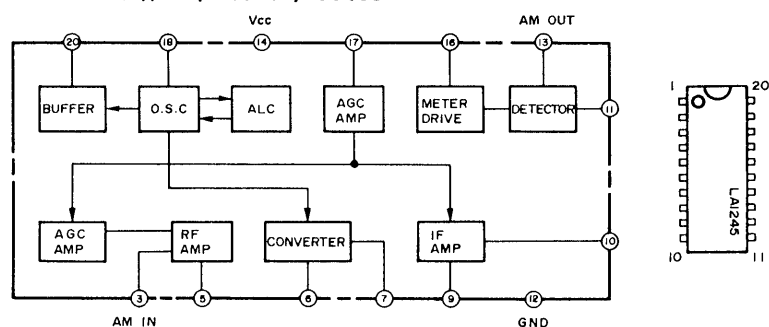


Figure 40-3 BLOCK DIAGRAM OF IC

• VHIM51522L/-1 (M51522L): IC201

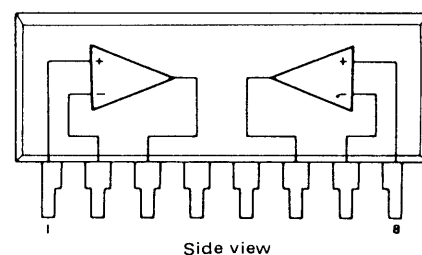


Figure 40-4 BLOCK DIAGRAM OF IC

• VHINE646B/-1F (NE646B): IC202, 203

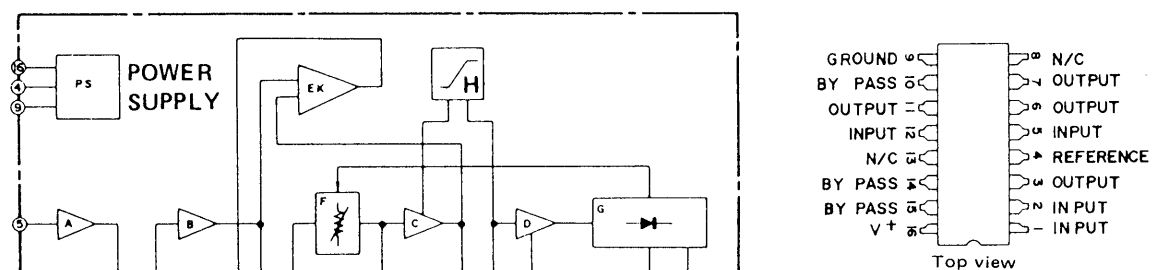


Figure 40-5 BLOCK DIAGRAM OF IC

• VHIIR3108/-1 (IR3108): IC204

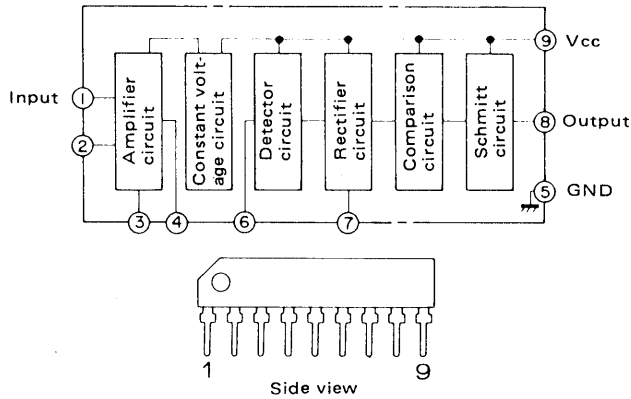


Figure 41-1 BLOCK DIAGRAM OF IC

• VHITL4558C/-1 (TL4558C): IC301
• VHIRC4558P/-1 (RC4558P): IC302, 303, 502

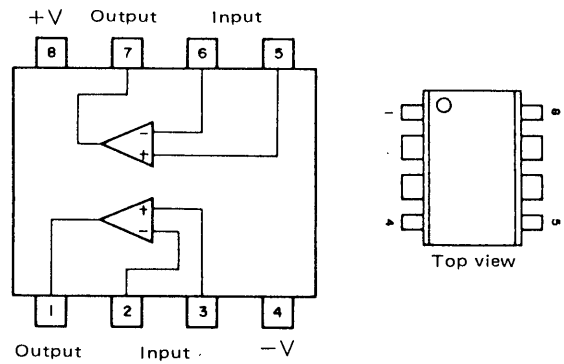


Figure 41-2 BLOCK DIAGRAM OF IC

• VHISTK461SL-1 (STK461SL): IC401

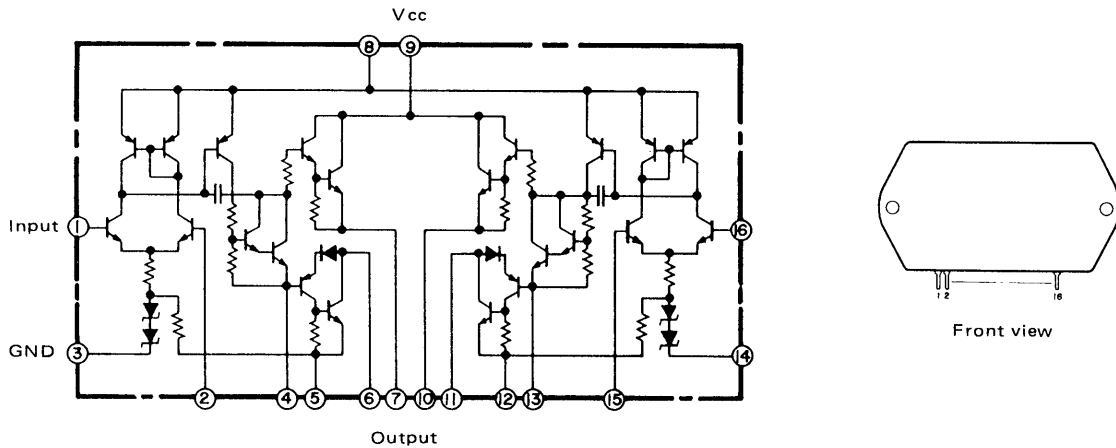


Figure 41-3 EQUIVALENT CIRCUIT OF IC

• RH-IX1209AFZZ: IC501

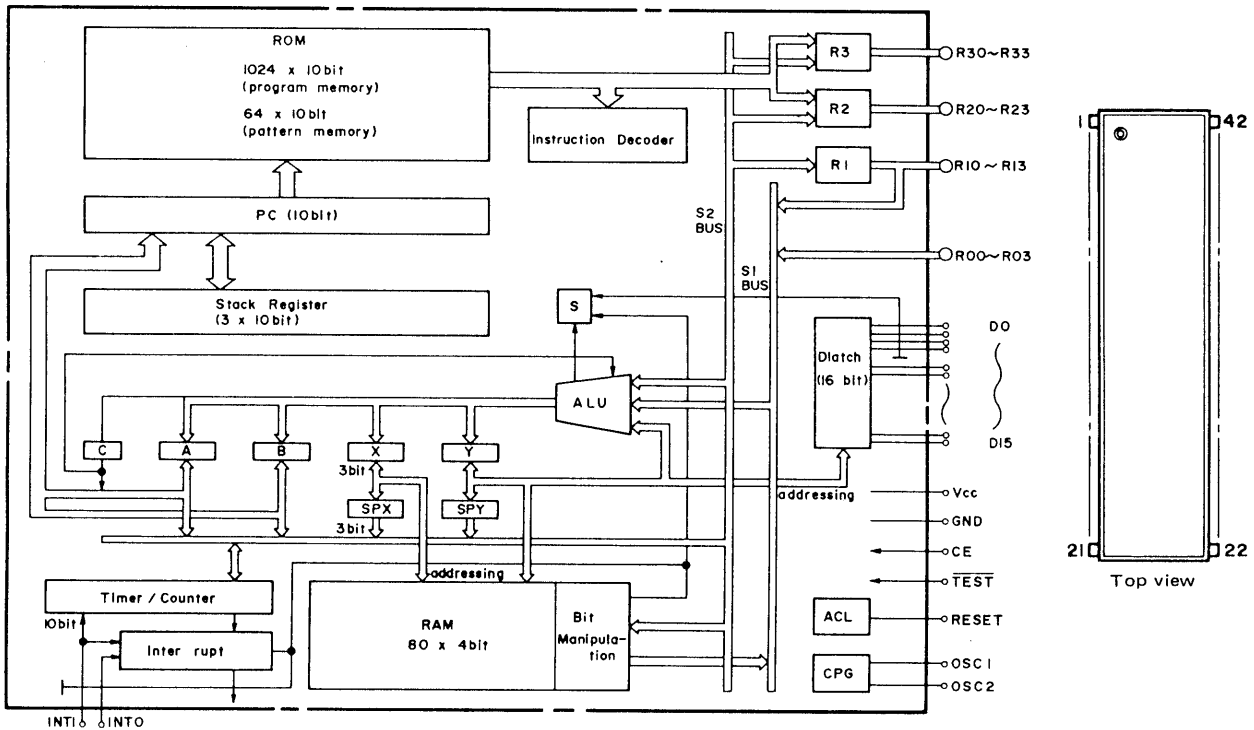


Figure 41-4 BLOCK DIAGRAM OF IC

• VHIM54516/-1 (M54516): IC503

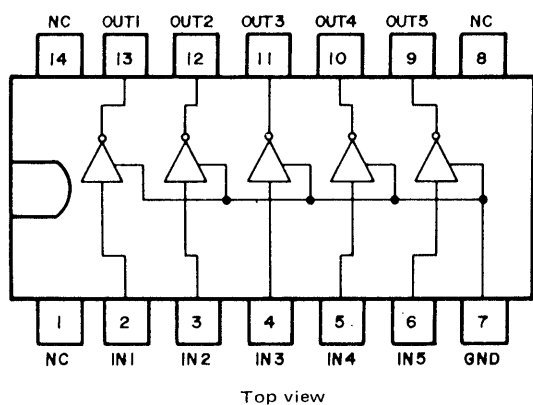


Figure 42-1 BLOCK DIAGRAM OF IC

• VHITA78L05P-1 (TA78L05P): IC504
• VHIUPC78L05-1 (μ PC78L05)

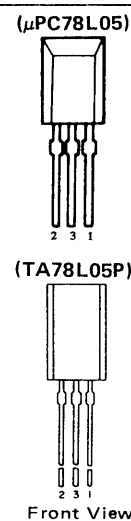
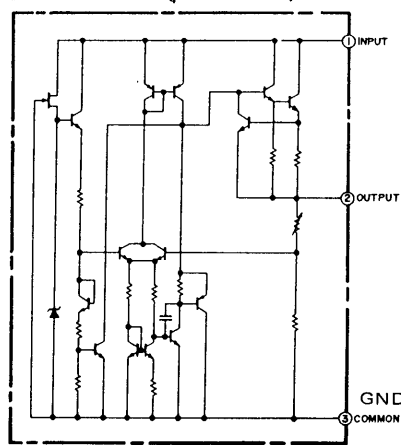


Figure 42-2 EQUIVALENT CIRCUIT OF IC

• VHILB1405S/1F (LB1405S): IC901
• VHILB1415/-1 (LB1415): IC902, 903

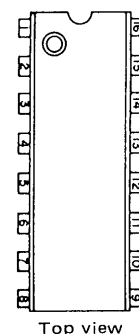
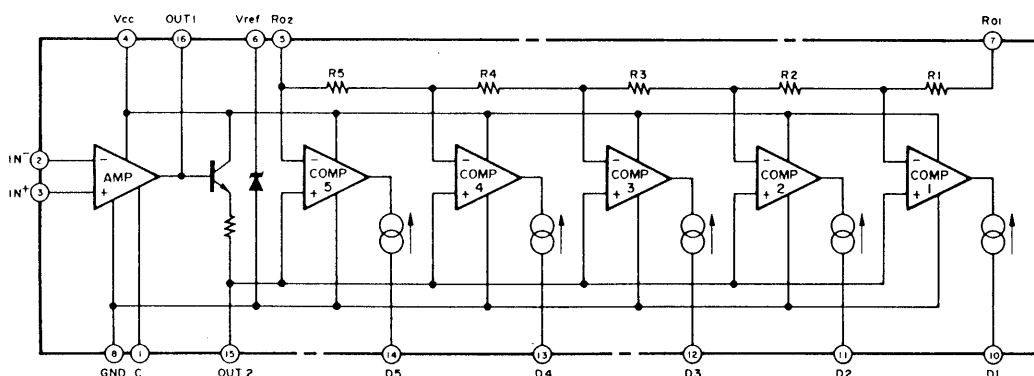


Figure 42-3 BLOCK DIAGRAM OF IC

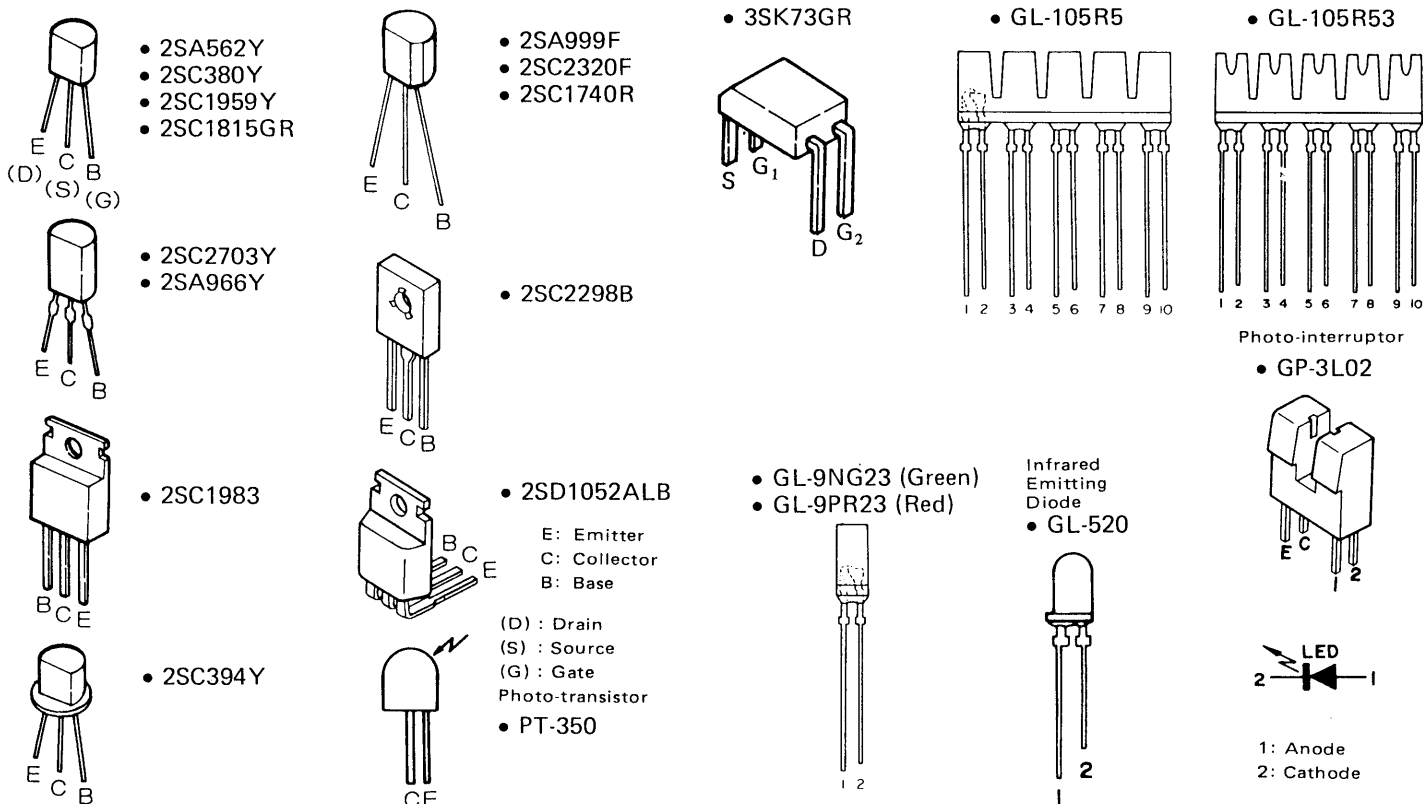


Figure 42-4 TYPES OF TRANSISTOR AND LED

CAUTION

If any one of the wire holders shown in the Figure 43 is once removed for some reason, be sure to reprice it to the original place in the same appearance as before.

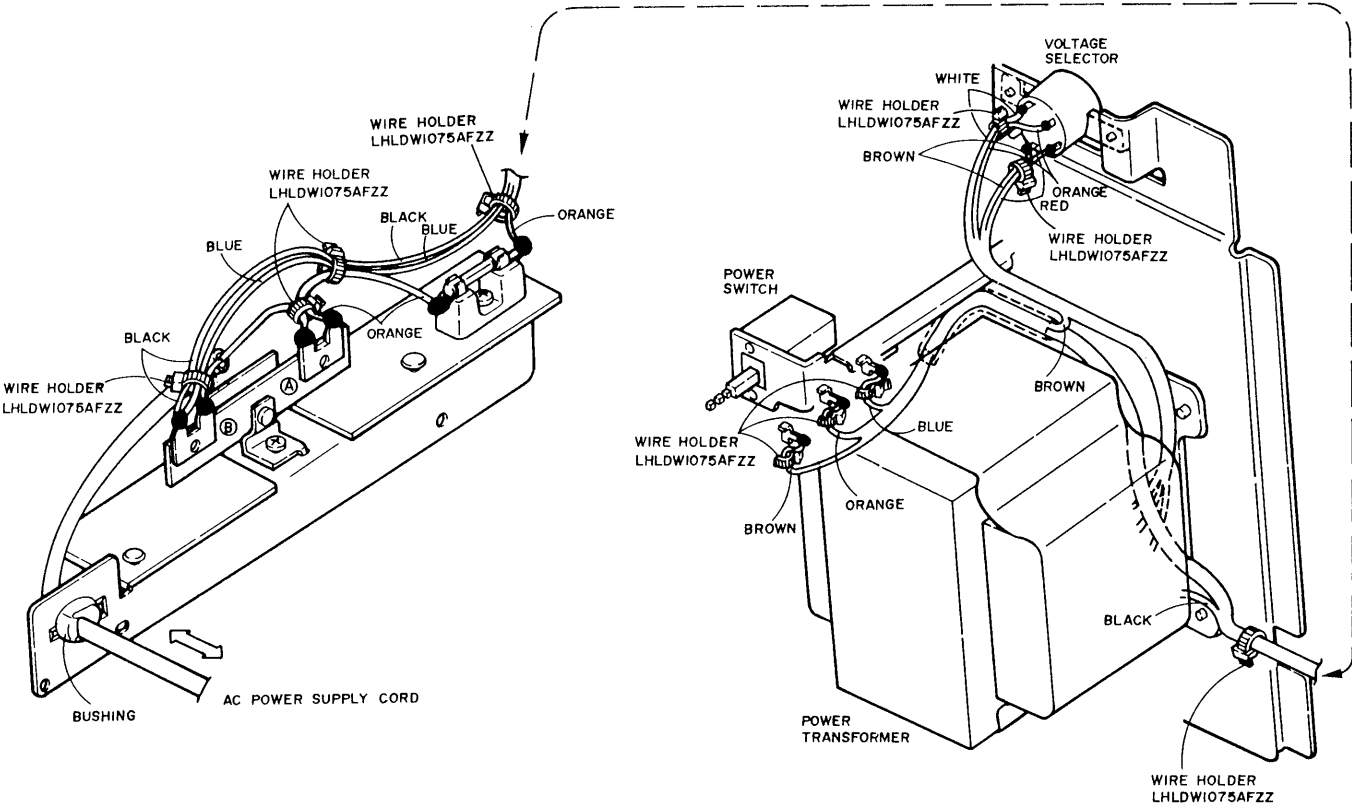


Figure 43

AC Power supply cord	Bushing	Connection		Figure
		(A)	(B)	
QACCB0054AF09	LBSHC0002AGZZ	Brown	Blue	
QACCV0001AGZZ	LBSHC0004AGZZ	Brown	Blue	
QAC CZ0002TA0F	LBSHC0053AFZZ	Brown	Brown	
QAC CZ0053AF00	LBSHC0053AFZZ	Black	Black	

Table 43 AC POWER SUPPLY CORD WIRING CONNECTIONS

REPLACEMENT PARTS LIST

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following information.

- | | |
|-----------------|----------------|
| 1. MODEL NUMBER | 2. REF. NO. |
| 3. PART NO. | 4. DESCRIPTION |

NOTES:

Parts marked with "△" () are important for maintaining the safety of the set.

Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
INTEGRATED CIRCUITS				Q505	VS2SC2320-F-1	Cartridge Motor Stop Circuit (2SC2320F)	AB
IC51	RH-IX1146AFZZ	2-input NAND Gate (TC4011)	AE	Q506	VS2SC1959Y/-1	Cartridge Motor Revers Circuit (2SC1959Y)	AC
IC101	VHHA11225/-1	FM IF Amplifier/Detector (HA11225)	AN	Q507	VS2SC2320-F-1	Cartridge Motor Forward Circuit (2SC2320F)	AB
IC102	RH-IX1053AFZZ	PLL Stereo Demodulator (HA1196)	AM	Q510	VS2SC2320-F-1	Voltage Control (2SC2320F)	
IC103	VHILA1245/-1	AM RF/IF Amplifier and Detector (LA1245)	AL	Q511	VS2SC1959Y/-1	Phono Motor Speed Selector (2SC1959Y)	AC
IC201	VHIM51522L/-1	Playback Equalizer Amplifier (M51522L)	AG	Q512	VS2SC2320-F-1	Phono Motor Reverse Circuit (2SC2320F)	AB
IC202, 203	VHINE646B//1F	Dolby NR Circuit (NE646B)	AM	Q513	VS2SC1959Y/-1	Phono Motor Reverse Circuit (2SC1959Y)	AC
IC204	VHIR3108/-1	APSS Circuit (IR3108)	AK	Q514, 515	VS2SA562-Y/-1	Phono Motor Reverse Circuit (2SA562Y)	
IC301	VHITL4558C/-1	Phono Equalizer Amplifier (TL4558C)	AH	Q516	VS2SC1959Y/-1	Phono Motor Reverse Circuit (2SC1959Y)	
IC302	VHIRC4558P/-1	Microphone Amplifier (RC4558P)	AG	Q517	VS2SC2298-B-1	Phono Motor Speed Control (2SC2298B)	AF
IC303	VHIRC4558P/-1	Tone Amplifier (RC4558P)	AG	Q518	VS2SC2320-F-1	Phono Motor Forward Circuit (2SC2320F)	AB
IC401	VHISTK461SL-1	Audio Power Amplifier (STK461SL)	AY	Q519	VS2SA966-Y/-1	Gear Solenoid Driver (2SA966Y)	AE
IC501	RH-IX1209AFZZ	Microcomputer	AY	Q520	VS2SC2320-F-1	Gear Solenoid Driver (2SC2320F)	AB
IC502	VHIRC4558P/-1	Cartridge Forward Circuit (RC4558P)	AG	Q521	VS2SC2320-F-1	Cartridge Forward Circuit (2SC2320F)	
IC503	VHIM54516/-1	Inverter (M54516)		Q522	VS2SC2320-F-1	Cartridge Forward Sup-pressor (2SC2320F)	
IC504	VHITA78L05P-1	5V Voltage (TA78L05P)	AF	Q523	VS2SA966-Y/-1	Side B Tonearm Solenoid Driver (2SA966Y)	AE
or	VHIUPC78L05-1	Regulator (μPC78L05)		Q524	VS2SC2320-F-1	Side B Tonearm Solenoid Driver (2SC2320F)	AB
IC901	VHILB1405S/1F	Signal Meter Driver (LB1405S)	AH	Q525	VS2SA966-Y/-1	Side A Tonearm Solenoid Driver (2SA966Y)	AE
IC902, 903	VHILB1415/-1	Tape Level Meter Driver (LB1415)		Q526	VS2SC2320-F-1	Side A Tonearm Solenoid Driver (2SC2320F)	AB
TRANSISTORS				Q529	VS2SC2320-F-1	Side A/B Signal Selector (2SC2320F)	
Q11, 12	VS2SC2320-F-1	Muting (2SC2320F)		Q530	VS2SA966-Y/-1	Solenoid Voltage Selector (2SA966Y)	AE
Q51	VS2SC2320-F-1	Cartridge Motor Voltage Control (2SC2320F)	AB	Q531	VS2SC2320-F-1	Solenoid Voltage Selector (2SC2320F)	AB
Q101	VS3SK73-GR/-1	FET, FM RF Amplifier (3SK73GR)	AF	Q532, 533, Q534	VS2SA999-F/-1	Level Converter (2SA999F)	AC
Q102	VS2SC394-Y/-1	FM Oscillator (2SC394Y)		Q535	VS2SC1959Y/-1	Cartridge Motor Voltage Control (2SC1959Y)	
Q103	VS2SC19230/-1	FM Mixer (2SC19230)	AC	Q537	VS2SC2320-F-1	Cartridge Motor Voltage Control (2SC2320F)	AB
Q104	VS2SC380-Y/-1	FM IF Amplifier (2SC380Y)		Q538	VHPPT-350/-1	Photo-transistor EP Record Sensor (PT-350)	AH
Q105, 106	VS2SC1740R/-1	Muting (2SC1740R or 2SC2320F)	AB	Q539	VHPPT-350/-1	Photo-transistor LP Record Sensor (PT-350)	AH
or	VS2SC2320-F-1			Q540	VS2SA999-F/-1	Microcomputer Reset (2SA999F)	AC
Q201, 202	VS2SC1815GR-1	Muting (2SC1815GR)	AB	Q701	VS2SD1052ALBF	Constant Voltage (2SD1052ALB)	AF
Q203, 204	VS2SC1740R/-1	Muting (2SC1740R or 2SC2320F)	AB	Q703	VS2SA966-Y/-1	Constant Voltage (2SA966Y	AE
or	VS2SC2320-F-1			or	VS2SA965-Y/-1	or 2SA965Y	
Q205	VS2SA999-F/-1	APSS Solenoid Driver (2SA999F)	AC	or	VS2SA1020-Y/-1	or 2SA1020Y	
Q206	VS2SC2703-Y-1	APSS Solenoid Driver (2SC2703Y or 2SC2235Y	AD	Q704, 705	VS2SC1983/-1	Constant Voltage (2SC1983)	AH
or	VS2SC2235Y/-1	or 2SC2235Y)					
or	VS2SC2236Y/-1	or 2SC2236Y)					
Q401, 402	VS2SC1740R/-1	Muting (2SC1740R or 2SC2320F)	AB				
or	VS2SC2320-F-1						
Q501, 502	VS2SA562-Y/-1	Cartridge Motor Revers Circuit (2SA562Y)	AC				
Q503	VS2SC2320-F-1	Cartridge Motor Revers Circuit (2SC2320F)	AB				
Q504	VS2SC1959Y/-1	Cartridge Motor Revers Circuit (2SC1959Y)	AC				

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
DIODES							
• Diode VHD1S2473//1 (1S2473) used in this set is replaceable with the other VHD1S1555V/1G (1S1555).							
D11	VHD1S2473//1	Discharge (1S2473)		LED906	VHPGL-9PR23-1	LED, Dolby NR Indicator (GL-9PR23)	AC
D51, 52	VHD1S2473//1	Reverse Current Protector (1S2473)		LED907	VHPGL-9PR23-1	LED, Record Indicator (GL-9PR23)	
D53, 54	VHD1S2473//1	Protector (1SC2473)		ZD51, 501	VHERD6R2JB2-1	Zener, 6V Constant Voltage (RD6.2JB2)	AB
D101, 102	VHD1S2473//1	Signal Level Shift (1S2473)		ZD701	VHERD160JB1-1	Zener, 16V Constant Voltage (RD16JB1)	
D103	VHD1N60///-1	Signal Level Shift (1N60)		ZD703	VHERD120JB3-1	Zener, 12V Constant Voltage (RD12JB3)	
D104, 105, D106, 109, D110, 111, D112, 201, D202, 203, D204, 205, D206, 207, D501, 502, D503, 504	VHD1S2473//1	Reverse Current Protector (1S2473)	AB	ZD704	VHERD9R1JB2-1	Zener, 9V Constant Voltage (RD9.1JB2)	
D506	VHD1S2473//1	Discharge (1S2473)		ZD705	VHERD160JB1-1	Zener, 16V Constant Voltage (RD16JB1)	
D507	RH-DX1006AFZZ	Surge Absorber (10E1)		COILS			
D509	VHD1S2473//1	Reverse Current Protector (1S2473)		L101	RCILA0407AFZZ	FM Antenna	
D510	RH-DX1006AFZZ	Surge Absorber (10E1)		L102	RCILR0350AFZZ	FM RF	AD
D511	VHD1S2473//1	Discharge (1S2473)		L103	RCILB0434AFZZ	FM Oscillation	
D512	VHD1S2473//1	Reverse Current Protector (1S2473)		L104	VP-CH2R2M0000	2.2μH, FM IF Trap	AB
D513	RH-DX1006AFZZ	Surge Absorber (10E1)		L105	VP-CH470K0000	47μH, Choke	
D514	VHD1S2473//1	Reverse Current Protector (1S2473)		L107	RCILA0530AFZZ	AM Bar Antenna	AM
D515	VHD1S2473//1	Discharge (1S2473)		L109	RCILB0557AFZZ	LW Oscillation	AD
D517	VHD10E1////-1	Reverse Current Protector (10E1)	AC	L110	RCILB0550AFZZ	MW Oscillation	AC
D518, 519, D520, 521, D522, 523, D524, 525	VHD1S2473//1	Reverse Current Protector (1S2473)	AB	L111, 112	VP-CH1R0M0000	1μH, Choke	AB
D526	VHD10E1////-1	Level Shift (10E1)	AC	L113	VP-CH2R2M0000	2.2μH, Choke	
D527, 528	VHD1S2473//1	Reverse Current Protector (1S2473)	AB	L201, 202	RCILL0068AFZZ	Dolby NR Low Pass Filter	AG
D701	VHDDBA40C//1	Bridge Rectifier (DBA40C)	AH	L203, 204	RCILZ0086AFZZ	6.8mH, Peaking	AC
D709, 710, D711, 712, D713, 714, D715, 716	VHD10E1////-1	Rectifier (10E1)	AC	L205, 206	RCILB0480AFZZ	Bias Step-up	AD
D851	RH-DX1006AFZZ	Surge Absorber (10E1)	AB	L207	RCILB0513AFZZ	Bias Oscillation Circuit	AN
LED501	VHPGL-520//1	Infrared Emitting Diode, EP Record Sensor (GL-520)	AG	L208	VP-CH102K0000	1mH, Noise Filter	
LED502	VHPGL-520//1	Infrared Emitting Diode, LP Record Sensor (GL-520)		L501	VP-CH220K0000	22μH, Noise Filter	AB
LED503	VHPGP3L02//1	Photo-interruptor, Side A Cartridge Angle Sensor (GP-3L02)		L502	VP-CH102K0000	1mH, Noise Filter	
LED504	VHPGP3L02//1	Photo-interruptor, Side B Cartridge Angle Sensor (GP-3L02)	AK	L851	RCILZ0062AFZZ	100μH, Noise Filter	AC
LED505	VHPGP3L02//1	Photo-interruptor, Tonearm Position Sensor (GP-3L02)		L901	VP-CH101K0000	100μH, Noise Filter	AB
LED901	VHPGL105R5/-1	LED Array (5), Signal Meter (GL-105R5)	AH	TRANSFORMERS			
LED902	VHPGL-9PR23-1	LED, FM Stereo Indicator (GL-9PR23)	AC	T101	RCILIO204AFZZ	FM IF	AC
LED903, 904	VHPGL105R53-1	LED Array (5), Tape Level Meter (GL-105R53)	AK	T102	RCILD0066AFZZ	FM Detector	AE
LED905	VHPGL-9NG23-1	LED, APSS Indicator (GL-9NG23)	AC	T103	RCILD0067AFZZ	FM Detector	AE
				T104	RCILIO292AFZZ	AM IF Filter [VZ-3000E]	
					RCILIO293AFZZ	AM IF Filter [VZ-3000H]	AD
				T105	RCILIO219AFZZ	AM IF	
				△ T701	RTRNP0768AFZZ	Power	BC
				FILTERS			
				CF101, 102	RFILF0077AFZZ	Ceramic, FM 10.7MHz	AF
				CF103	RFILA0074AFZZ	Ceramic, 455kHz [VZ-3000H]	AE
					RFILA0076AFZZ	Ceramic, 465kHz [VZ-3000E]	AF
				RESISTOR ARRAY			
				RA502	RMPTC0036AFZZ	1K ohm x 5	AC
				POSISTER			
				PTH401	RH-QX1002AFZZ	Positive Temperature Co-efficient	AG
				CONTROLS			
				VR101	RVR-M0248AFZZ	10K ohm (B), FM Muting Level Adjustment	AB
				VR102	RVR-M0199AFZZ	10K ohm (B), VCO Frequency Adjustment	AC
				VR201, 202	RVR-M0289AFZZ	20K ohm (B), Tape Playback Sensitivity Adjustment	AB

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
VR203, 204	RVR-M0256AFZZ	20K ohm (B), Tape Record Sensitivity Adjustment	AB	C233, 234	VCEALA1HW334K	.33MFD, 50V, $\pm 10\%$	
VR205, 206	RVR-M0256AFZZ	20K ohm (B), Bias Current Adjustment		C237, 238, 243, 244	RC-EZA335AF1H	3.3MFD, 50V	
VR301 A, B	RVR-G0065AFZZ	100K ohm (MN), Balance Control	AG	C245, 246	RC-EZA105AF1H	1MFD, 50V	
VR302 A, B		10K ohm (A), Microphone Mixing Control		C247, 248	RC-EZA335AF1H	3.3MFD, 50V	
VR303 A, B	RVR-A0168AFZZ	100K ohm (A), Bass Control		C253, 254	RC-EZA106AF1E	10MFD, 25V	
VR304 A, B	RVR-A0163AFZZ	100K ohm (A), Treble Control		C261	RC-EZA336AF1C	33MFD, 16V	AB
VR305, 306	RVR-A0164AFZZ	50K ohm (A), Record Level Control	AD	C268, 269	RC-EZA106AF1E	10MFD, 25V	
VR501	RVR-M0323AFZZ	2K ohm (B), Phono-Motor Speed (33rpm) Adjustment	AB	C270	RC-EZS107AF1C	100MFD, 16V	
VR502	RVR-M0323AFZZ	2K ohm (B), Phono Motor Speed (45rpm) Adjustment		C272	RC-EZV106AF1H	10MFD, 50V	
VR902 A, B	RVR-B0241AFZZ	100K ohm (A), Volume Control	AH	C273, 274	VCEALA1HW224M	.22MFD, 50V	
VC101 A~E	RVC-W0053AFZZ	Variable Capacitor Tuning with Trimmer Assembly	AU	C275	RC-EZA106AF1E	10MFD, 25V	
TC101 A, B		TC101A: FM Antenna Trimmer TC101B: FM RF Trimmer		C276	RC-EZA105AF1H	1MFD, 50V	
TC102	RTO-H1065AFZZ	Trimmer, FM Oscillator	AD	C277, 279	RC-EZA336AF1C	33MFD, 16V	
TC104 A, B	RTO-H2050AFZZ	Trimmer Assembly A: LW Antenna B: MW Antenna		C280	RC-EZA106AF1E	10MFD, 25V	
TC106 A, B	RTO-H2050AFZZ	Trimmer Assembly A: LW Oscillator B: MW Oscillator		C301, 302	VCEALA1HW224M	.22MFD, 50V	
				C307, 308	RC-EZA107AF1A	100MFD, 10V	
				C311, 312	VCEALA1HC224M	.22MFD, 50V	

ELECTROLYTIC CAPACITORS

(Unless otherwise specified electrolytic capacitors are $\pm 20\%$ type.)

C54	RC-EZA106AF1H	10MFD, 50V	AB
C123, 124	RC-EZA105AF1H	1MFD, 50V	
C128	RC-EZV106AF1H	10MFD, 50V	
C130	VCEALV1HW474M	.47MFD, 50V	
C131	RC-EZS107AF1C	100MFD, 16V	
C134	RC-EZA476AF1C	47MFD, 16V	
C136	RC-EZA105AF1H	1MFD, 50V	
C138	RC-EZA106AF1E	10MFD, 25V	
C140	RC-EZS477AF1C	470MFD, 16V	
C142	RC-EZT106AF1C	10MFD, 16V	
C143	RC-EZA335AF1H	3.3MFD, 50V	AC
C145	RC-EZT106AF1C	10MFD, 16V	
C148, 149	RC-EZT105AF1H	1MFD, 50V	
C150	VCEALU1HW474M	.47MFD, 50V	
C151	VCEALV1HW155M	1.5MFD, 50V	
C152	VCEALV1HW335M	3.3MFD, 50V	
C158	RC-EZA106AF1E	10MFD, 25V	
C161	RC-EZS107AF1C	100MFD, 16V	
C165	RC-EZA106AF1E	10MFD, 25V	
C167	RC-EZV475AF1H	4.7MFD, 50V	AB
C168	RC-EZV335AF1H	3.3MFD, 50V	
C170	RC-EZV474AF1H	.47MFD, 50V	
C176, 177	RC-EZA335AF1H	3.3MFD, 50V	
C185	RC-EZA106AF1E	10MFD, 25V	
C189	RC-EZV336AF1C	33MFD, 16V	
C201, 202	VCEALA1CC106M	10MFD, 16V	
C209, 210	RC-EZA106AF1H	10MFD, 50V	
C213, 214	RC-EZA336AF1C	33MFD, 16V	
C215, 216	RC-EZA335AF1H	3.3MFD, 50V	AC
C217, 218	RC-EZA105AF1H	1MFD, 50V	
C219	RC-EZV337AF1C	330MFD, 16V	
C221	RC-EZA227AF1A	220MFD, 10V	
C223, 224, 225, 226	RC-EZA106AF1E	10MFD, 25V	
C231, 232	VCEALA1HW104K	.1MFD, 50V, $\pm 10\%$	

C233, 234	VCEALA1HW334K	.33MFD, 50V, $\pm 10\%$	
C237, 238, 243, 244	RC-EZA335AF1H	3.3MFD, 50V	
C245, 246	RC-EZA105AF1H	1MFD, 50V	
C247, 248	RC-EZA335AF1H	3.3MFD, 50V	
C253, 254	RC-EZA106AF1E	10MFD, 25V	
C261	RC-EZA336AF1C	33MFD, 16V	
C268, 269	RC-EZA106AF1E	10MFD, 25V	
C270	RC-EZS107AF1C	100MFD, 16V	
C272	RC-EZV106AF1H	10MFD, 50V	
C273, 274	VCEALA1HW224M	.22MFD, 50V	
C275	RC-EZA106AF1E	10MFD, 25V	AB
C276	RC-EZA105AF1H	1MFD, 50V	
C277, 279	RC-EZA336AF1C	33MFD, 16V	
C280	RC-EZA106AF1E	10MFD, 25V	
C301, 302	VCEALA1HW224M	.22MFD, 50V	
C307, 308	RC-EZA107AF1A	100MFD, 10V	
C311, 312	VCEALA1HC224M	.22MFD, 50V	
C313	RC-EZA336AF1C	33MFD, 16V	
C315, 316	RC-EZA335AF1H	3.3MFD, 50V	
C319, 320	RC-EZA336AF1C	33MFD, 16V	
C323, 324	VCEALA1HC105M	1MFD, 50V	AC
C325	RC-EZA336AF1C	33MFD, 16V	
C333, 334	RC-EZA105AF1H	1MFD, 50V	
C337, 338	RC-EZA336AF1C	33MFD, 16V	
C343, 344	VCEALA1HW104K	.1MFD, 50V, $\pm 10\%$	
C351, 352	RC-EZA336AF1C	33MFD, 16V	
C403, 404	RC-EZA476AF1H	47MFD, 25V	
C405, 406	RC-EZA335AF1H	3.3MFD, 50V	
C409, 410	RC-EZA106AF1H	10MFD, 50V	
C411, 412	RC-EZA476AF1E	47MFD, 25V	AC
C413	RC-EZV107AF1V	100MFD, 35V	
C417, 418	RC-EZA335AF1H	3.3MFD, 50V	
C501	RC-EZA105AF1H	1MFD, 50V	
C502	RC-EZA475AF1H	4.7MFD, 50V	
C503	VCEALA1HW225M	2.2MFD, 50V	
C504	RC-EZA476AF1H	47MFD, 50V	
C505, 506, 507, 508	RC-EZA106AF1H	10MFD, 50V	
C509	RC-EZA107AF1A	100MFD, 10V	
C510, 511	RC-EZA105AF1H	1MFD, 50V	
C512	RC-EZV106AF1H	10MFD, 50V	AB
C517	RC-EZA336AF1C	33MFD, 16V	
C519	VCE9AU1EW225M	2.2MFD, 25V, Non-polar	
C701, 702	RC-EZ1149AFZZ	4700MFD, 35V	
C703	RC-EZA107AF1E	100MFD, 25V	
C704	RC-EZA106AF1H	10MFD, 50V	
C705	RC-EZV227AF1C	220MFD, 16V	
C706	RC-EZA106AF1H	10MFD, 50V	
C708	RC-EZW228AF1V	2200MFD, 35V	
C710	RC-EZA107AF1E	100MFD, 25V	
C713	RC-EZA106AF1H	10MFD, 50V	AB
C714, 715	RC-EZA336AF1C	33MFD, 16V	
C716	RC-EZW228AF1V	2200MFD, 35V	
C851	RC-EZS105AF1H	1MFD, 50V	
C902	RC-EZA105AF1H	1MFD, 50V	
C903	RC-EZV476AF1E	47MFD, 25V	
C906, 907	RC-EZA106AF1H	10MFD, 50V	
C908, 909	RC-EZA105AF1H	1MFD, 50V	
C910	RC-EZA107AF1E	100MFD, 25V	
C911	RC-EZV106AF1H	10MFD, 50V	

CAPACITORS

(Unless otherwise specified capacitors are 50V, $\pm 80 - 20\%$, Ceramic type.)

C51	VCQYKU1HM823J	.082MFD, 50V, $\pm 5\%$, Mylar	AC
C52	VCCSPU1HL331K	330PF, 50V, $\pm 10\%$, Ceramic	AA
C55	VCKZPU1HF473Z	.047MFD	
C56, 57, 58	VCCSPU1HL331K	330PF, 50V, $\pm 10\%$, Ceramic	AA
C60, 61, 62	VCKZPU1HF223Z	.022MFD	

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
C101	VCCSPU1HL151K	150PF, 50V, $\pm 10\%$, Ceramic		C239, 240	VCTYP A1EX562J	.0056MFD, 25V, $\pm 5\%$, Semiconductor	AB
C102	VCCTPU1HH180J	18PF, 50V, $\pm 5\%$, Ceramic (Blue)		C241	VCKYAT1HB102K	.001MFD, 50V, $\pm 10\%$, Ceramic	AA
C103, 104, C105, 106	VCKZPA1HF223Z	.022MFD		C242	VCKZPA1HF102Z	.001MFD	AA
C107	VCCTPU1HH180J	18PF, 50V, $\pm 5\%$, Ceramic (Blue)		C249, 250	VCTYP A1EX683K	.068MFD, 25V, $\pm 10\%$, Semiconductor	AB
C108	VCCSPV1HL3R0C	3PF, 50V, $\pm .25$ PF, Ceramic		C251, 252	VCTYP A1EX123J	.012MFD, 25V, $\pm 5\%$, Semiconductor	AB
C109	VCCSPU1HL100K	10PF, 50V, $\pm 10\%$, Ceramic		C255, 256	VCTYP A1EX103K	.01MFD, 25V, $\pm 10\%$, Semiconductor	AA
C110	VCCCPU1HH1R0C	1PF, 50V, $\pm .25$ PF, Ceramic (Black)		C259, 260	VCTYP A1EX183K	.018MFD, 25V, $\pm 10\%$, Semiconductor	AA
C111	VCCRP U1HH8R0D	8PF, 50V, $\pm .5$ PF, Ceramic (Yellow)		C262	VCCSAT1HL101J	100PF, 50V, $\pm 5\%$, Ceramic	AA
C112	VCCRP U1HH270J	27PF, 50V, $\pm 5\%$, Ceramic (Yellow)		C263, 264	VCKYAT1HB471K	470PF, 50V, $\pm 10\%$, Ceramic	AA
C113	VCCCPU1HH330J	33PF, 50V, $\pm 5\%$, Ceramic (Black)	AA	C265	VCTYAT1EX682K	.0068MFD, 25V, $\pm 10\%$, Semiconductor	AA
C114	VCCRP U1HH8R0D	8PF, 50V, $\pm .5$ PF, Ceramic (Yellow)		C266	VCKYAT1HB102K	.001MFD, 50V, $\pm 10\%$, Ceramic	AA
C115	VCKZPA1HF223Z	.022MFD		C267	VCTYP A1EX333J	.033MFD, 25V, $\pm 5\%$, Semiconductor	
C116	VCKZPU1HF223Z	.022MFD		C271	VCKZPA1HF473Z	.047MFD	AA
C117	VCCSPV1HL101J	100PF, 50V, $\pm 5\%$, Ceramic		C281	VCQYKA1HM152K	.0015MFD, 50V, $\pm 10\%$, Mylar	AB
C118, 119, C120, 121, C122	VCKZPA1HF223Z	.022MFD		C283, 284	VCTYP A1EX273J	.027MFD, 25V, $\pm 5\%$, Semiconductor	AB
C125, 126	VCKZPU1HF223Z	.022MFD		C285	VCKZPU1HF103Z	.01MFD	AA
C127	VCCSPV1HL101J	100PF, 50V, $\pm 5\%$, Ceramic		C303, 304	VCQYKV1HM222J	.0022MFD, 50V, $\pm 5\%$, Mylar	AB
C129	VCKZPU1HF223Z	.022MFD		C305, 306	VCQYKV1HM822J	.0082MFD, 50V, $\pm 5\%$, Mylar	AB
C132	VCKZPU1HF403Z	.04MFD		C317, 318	VCCSAT1HL220J	22PF, 50V, $\pm 5\%$, Ceramic	AA
C133	VCKZPA1HF403A	.04MFD		C321, 322	VCKYAT1HB181K	180PF, 50V, $\pm 10\%$, Ceramic	AA
C135, 137	VCKZPA1HF223Z	.022MFD		C331, 332	VCCSPV1HL331J	330PF, 50V, $\pm 5\%$, Ceramic	
C139	VCKZPU1HF223Z	.022MFD		C335, 336	VCKYAT1HB391K	390PF, 50V, $\pm 10\%$, Ceramic	AA
C144	VCTYPU1EX473K	.047MFD, 25V, $\pm 10\%$, Semiconductor	AB	C339, 340	VCCSPA1HL331J	330PF, 50V, $\pm 5\%$, Ceramic	
C146, 147	VCKYAT1HB122K	.0012MFD, 50V, $\pm 10\%$, Ceramic	AA	C341, 342	VCTYP A1EX223K	.022MFD, 25V, $\pm 10\%$, Semiconductor	AA
C153	VCQSMU1HS391J	390PF, 50V, $\pm 5\%$, Styrol		C345, 346	VCQYKA1HM823K	.082MFD, 50V, $\pm 10\%$, Mylar	AB
C154	VCKZPA1HF102Z	.001MFD	AA	C347, 348	VCKYAT1HB122K	.0012MFD, 50V, $\pm 10\%$, Ceramic	AA
C155	VCKZPA1HF403Z	.04MFD	AA	C349, 350	VCTYP A1EX103K	.01MFD, 25V, $\pm 10\%$, Semiconductor	AA
C156, 157, C159	VCKZPA1HF223Z	.022MFD	AA	C381, 382	VCTYP A1EX563K	.056MFD, 25V, $\pm 10\%$, Semiconductor	AB
C160	VCCSPV1HL560J	56PF, 50V, $\pm 5\%$, Ceramic	AA	C383, 384, C401, 402	VCKYAT1HB471K	470PF, 50V, $\pm 10\%$, Ceramic	AA
C162	VCKZPA1HF102Z	.001MFD	AA	C407, 408	VCCSPA1HL8R0C	8PF, 50V, $\pm .25$ PF, Ceramic	AA
C164, 166	VCKZPA1HF403Z	.04MFD	AA	C415, 416	VCQYKA1HM473K	.047MFD, 50V, $\pm 10\%$, Mylar	AB
C166	VCKZPU1HF403Z	.04MFD	AA	C513, 514, C515, 516	VCKZPA1HF473Z	.047MFD	AA
C169	VCKZPA1HF103Z	.01MFD	AA	C518	VCQYKU1HM104M	.1MFD, 50V, $\pm 20\%$, Mylar	AC
C171	VCKZPA1HF223Z	.022MFD	AA	C520	VCKZPA1HF473Z	.047MFD	AA
C172	VCCSAT1HL470J	47PF, 50V, $\pm 5\%$, Ceramic	AA	C711, 712, C717	VCKZPA1HF403Z	.04MFD	AA
C174	VCCSPV1HL680J	68PF, 50V, $\pm 5\%$, Ceramic	AA	△ C718	RC-FZ071CAFZZ	.01MFD, 250V, $\pm 20\%$, Ceramic	AE
C179	VCQSMU1HS221J	220PF, 50V, $\pm 5\%$, Styrol		C719	VCKZPA1HF403Z	.04MFD	AA
C180	VCQSMU1HS361J	360PF, 50V, $\pm 5\%$, Styrol		C852, 853	VCKZPU1HF223Z	.022MFD	AA
C182	VCCCPU1HH181J	180PF, 50V, $\pm 5\%$, Ceramic (Black)	AA	C901, 904	VCCSAT1HL470J	47PF, 50V, $\pm 5\%$, Ceramic	AA
C183	VCCVP U1HK150J	15PF, 50V, $\pm 5\%$, Ceramic		C905	VCCSPA1HL470J	47PF, 50V, $\pm 5\%$, Ceramic	AA
C186	VCKZPA1HF223Z	.022MFD	AA	C915	VCKZPU1HF223Z	.022MFD	AA
C187	VCCSPA1HF403Z	.04MFD	AA				
C188	VCCSPV1HL180J	18PF, 50V, $\pm 5\%$, Ceramic	AA				
C191	VCCSPU1HL100K	10PF, 50V, $\pm 10\%$, Ceramic	AA				
C193	VCKZPU1HF103Z	.01MFD	AA				
C203, 204	VCKYAT1HB271K	270PF, 50V, $\pm 10\%$, Ceramic	AA				
C205, 206	VCCSAT1HL101J	100PF, 50V, $\pm 5\%$, Ceramic	AA				
C207	VCKYAT1HB102K	.001MFD, 50V, $\pm 10\%$, Ceramic	AA				
C208	VCKZPA1HF102Z	.001MFD	AA				
C211, 212	VCQYKU1HM562J	.0056MFD, 50V, $\pm 5\%$, Mylar					
C227, 228	VCTYP A1EX472J	.0047MFD, 25V, $\pm 5\%$, Semiconductor	AB				
C229, 230	VCTYP A1EX473J	.047MFD, 25V, $\pm 5\%$, Semiconductor	AB				
C235, 236	VCKYAT1HB102K	.001MFD, 50V, $\pm 10\%$, Ceramic	AA				

RESISTORS

(Unless otherwise specified resistors are 1/4W, $\pm 5\%$, Carbon type.)

R11, 12	VRD-ST2EE222J	2.2K ohm	
R51	VRD-ST2EE101J	100 ohm	
R53	VRD-ST2EE472J	4.7K ohm	
R54, 55	VRD-ST2EE103J	10K ohm	
R56	VRD-ST2EE333J	33K ohm	

AA

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
R57	VRD-ST2EE224J	220K ohm	AA	R190	VRD-ST2EE123J	12K ohm	AA
R58	VRD-ST2EE564J	560K ohm		R191	VRD-ST2EE104J	100K ohm	
R59	VRD-ST2EE103J	10K ohm		R201, 202	VRD-ST2EE101J	100 ohm	
R100	VRD-ST2EE102J	1K ohm		R205, 206	VRD-ST2EE391J	390 ohm	
R101	VRD-ST2EE104J	100K ohm		R207, 208	VRD-ST2EE223J	22K ohm	
R102, 103	VRD-ST2EE470J	47 ohm		R209, 210	VRD-ST2EE333J	33K ohm	
R104	VRD-ST2EE101J	100 ohm		R211, 212, 213, 214	VRD-ST2EE684J	680K ohm	
R105	VRD-ST2EE105J	1Meg ohm		R215, 216	VRD-ST2EE223J	22K ohm	
R106, 107	VRD-ST2EE104J	100K ohm		R217, 218	VRD-ST2EE682J	6.8K ohm	
R108	VRD-ST2EE103J	10K ohm		R219	VRD-ST2EE102J	1K ohm	
R109	VRD-ST2EE332J	3.3K ohm		R220	VRG-ST2EC121J	120 ohm, 1/4W, ±5%, Fusible	AB
R110	VRD-ST2EE103J	10K ohm		R221, 222	VRD-ST2EE184J	180K ohm	AA
R111	VRD-ST2EE561J	560 ohm		R223, 224	VRD-ST2EE563J	56K ohm	
R112	VRD-ST2EE223J	22K ohm		R225, 226	VRD-ST2EE274J	270K ohm	
R113, 115	VRD-ST2EE472J	4.7K ohm		R227, 228	VRD-ST2EE153J	15K ohm	
R116	VRD-ST2EE151J	150 ohm		R229, 230	VRD-ST2EE332J	3.3K ohm	
R117	VRD-ST2EE101J	100 ohm		R231, 232	VRD-ST2EE473J	47K ohm	
R118	VRD-ST2EE474J	470K ohm		R233, 234	VRD-ST2EE474J	470K ohm	
R119	VRD-ST2EE560J	56 ohm		R235, 236	VRD-ST2EE104J	100K ohm	
R120, 122	VRD-ST2EE331J	330 ohm		R237, 238	VRD-ST2EE153J	15K ohm	
R123	VRD-ST2EE154J	150K ohm		R239, 240	VRD-ST2EE332J	3.3K ohm	
R124	VRD-ST2EE683J	68K ohm		R241, 242	VRD-ST2EE223J	22K ohm	
R126	VRD-ST2EE562J	5.6K ohm		R243, 244	VRD-ST2EE151J	150 ohm	
R128, 129	VRD-ST2EE153J	15K ohm		R247, 248	VRD-ST2EE272J	2.7K ohm	
R130	VRD-ST2EE223J	22K ohm		R249, 250	VRD-ST2EE472J	4.7K ohm	
R131	VRD-ST2EE222J	2.2K ohm		R251, 252	VRD-ST2EE562J	5.6K ohm	
R132	VRD-ST2EE223J	22K ohm		R253, 254	VRD-ST2EE222J	2.2K ohm	
R133	VRD-ST2EE122J	1.2K ohm		R255, 256	VRD-ST2EE122J	1.2K ohm	
R134	VRD-ST2EE101J	100K ohm		R257	VRD-ST2EE182J	1.8K ohm	
R22J	2.2K ohm		R258	VRD-ST2EE124J	120K ohm	R136	
R01J	100 ohm, 1/4W, ±5%, Fusible	AB	R259	VRD-ST2EE221J	220 ohm	R137	
R33J	33K ohm		R261	VRD-ST2EE472J	4.7K ohm	R138	
R22J	5.6K ohm		R262	VRD-ST2EE273J	27K ohm	R139	
R33J	33K ohm		R263	VRD-ST2EE101J	100 ohm	R140	
R04J	100K ohm		R264	VRD-ST2EE103J	10K ohm	R141	
R22J	5.6K ohm		R266	VRD-ST2EE103J	10K ohm	R142, 143,	
R73J	47K ohm		R267	VRD-ST2EE182J	1.8K ohm	R144	
R73J	27K ohm		R268	VRD-ST2EE471J	470 ohm	R145, 146	
R33J	39K ohm		R269	VRD-ST2EE103J	10K ohm	R147, 148	
R22J	2.2K ohm		R270	VRD-ST2EE1R0J	1 ohm	R149	
R33J	33K ohm		R271	VRD-ST2EE272J	2.7K ohm	R150	
R73J	47K ohm		R272	VRD-ST2EE561J	560 ohm	R151	
R03J	1K ohm		R274	VRD-ST2EE104J	100K ohm	R153	
R33J	18K ohm		R275	VRD-ST2EE471J	470 ohm	R154	
R33J	56K ohm		R276	VRD-ST2EE102J	1K ohm	R155	
R21J	220 ohm		R277	VRD-ST2EE821J	820 ohm	R156	
R22J	2.2K ohm		R279	VRG-ST2EC151J	150 ohm, 1/4W, ±5%, Fusible	AB	R157
R01J	100 ohm, 1/4W, ±5%, Fusible	AB	R280	VRD-ST2EE221J	220 ohm	R158	
R61J	560 ohm		R283, 284	VRD-ST2EE183J	18K ohm	R159	
R71J	470 ohm		R285, 286	VRD-ST2EE223J	22K ohm	R160	
R73J	4.7K ohm		R287, 288	VRD-ST2EE181J	180 ohm	R161	
R31J	330 ohm		R289	VRD-ST2EE123J	12K ohm	R162	
R03J	10K ohm		R301, 302	VRD-ST2EE473J	47K ohm	R163, 164	
R23J	12K ohm		R303, 304	VRD-ST2EE333J	33K ohm	R165	
R22J	3.9K ohm		R305, 306	VRD-ST2EE561J	560 ohm	R166	
R91J	390 ohm		R307, 308	VRD-ST2EE394J	390K ohm	R168	
R53J	15K ohm		R309, 310, 311, 312	VRD-ST2EE473J	47K ohm	R169	
R23J	82K ohm		R315, 316	VRD-ST2EE154J	150K ohm	R170	
R91J	390 ohm		R317, 318	VRD-ST2EE153J	15K ohm	R171	
R53J	15K ohm		R319, 320	VRD-ST2EE103J	10K ohm	R172	
R73J	47K ohm		R321, 322	VRD-ST2EE271J	270 ohm	R173	
R83J	68K ohm		R323, 324	VRD-ST2EE224J	220K ohm	R175	
R83J	68K ohm		R325, 326	VRD-ST2EE561J	560 ohm	R176	
R21J	120 ohm		R327, 328	VRD-ST2EE104J	100K ohm	R177	
R21J	120 ohm, 1/4W, ±5%, Fusible	AB	R329, 330	VRD-ST2EE103J	10K ohm	R178, 179	
R23J	12K ohm		R331, 332	VRD-SU2EE473J	47K ohm	R180	
R33J	33K ohm		R335, 336	VRD-ST2EE154J	150K ohm	R181	
			R337, 338	VRD-ST2EE102J	1K ohm		
			R339	VRD-ST2EE221J	220 ohm		

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REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE	
R342	VRD-ST2EE221J	220 ohm	AA	R553, 554, R555	VRD-ST2EE103J	10K ohm	AA	
R343, 344	VRD-ST2EE103J	10K ohm		R556	VRD-ST2EE471J	470 ohm		
R349, 350	VRD-ST2EE223J	22K ohm		R557, 558, R559	VRD-ST2EE103J	10K ohm		
R361, 362	VRD-ST2EE183J	18K ohm		R560	VRD-ST2EE102J	1K ohm		
R363, 364	VRD-ST2EE124J	120K ohm		R561, 562	VRD-ST2EE103J	10K ohm		
R365, 366	VRD-ST2EE332J	3.3K ohm		R563	VRD-ST2EE223J	22K ohm		
R367, 368	VRD-ST2EE562J	5.6K ohm		R565	VRD-ST2EE103J	10K ohm		
R369, 370	VRD-ST2EE122J	1.2K ohm		R566	VRD-ST2EE471J	470 ohm		
R371, 372	VRD-ST2EE472J	4.7K ohm		R567, 568	VRD-ST2EE103J	10K ohm		
R373, 374	VRD-ST2EE221J	220 ohm		R570	VRD-ST2EE823J	82K ohm		
R375, 376	VRD-ST2EE221J	220 ohm		R571	VRD-ST2EE103J	10K ohm		
R378	VRD-ST2EE222J	2.2K ohm		R572, 573	VRD-ST2EE102J	1K ohm		
R379	VRD-ST2EE151J	150 ohm		R574	VRD-ST2EE472J	4.7K ohm		
R380	VRD-ST2EE121J	120 ohm		R575, 576	VRD-ST2EE103J	10K ohm		
R381, 382	VRD-ST2EE123J	12K ohm		R577	VRD-ST2EE471J	470 ohm		
R385, 386	VRD-SU2EE102J	1K ohm		R578	VRD-ST2EE273J	27K ohm		
R389, 390	VRD-SU2EE104J	100K ohm		R579	VRD-ST2EE472J	4.7K ohm		
R391	VRD-ST2EE472J	4.7K ohm		R580, 581, R582, 583, R584, 585, R586	VRD-ST2EE102J	1K ohm		
R392	VRD-ST2EE103J	10K ohm		R587, 588, R589, 590, R591, 592, R593, 594,	VRD-ST2EE103J	10K ohm		
R393	VRD-ST2EE472J	4.7K ohm		R596	VRD-ST2EE332J	3.3K ohm		
R394	VRD-ST2EE103J	10K ohm		R597	VRD-ST2EE473J	47K ohm		
R389, 390	VRD-SU2EE104J	100K ohm		R598	VRD-ST2EE223J	22K ohm		
R401, 402	VRD-ST2EE333J	33K ohm		R599	VRD-ST2EE822J	8.2K ohm		
R403, 404	VRD-ST2EE222J	2.2K ohm		R600	VRD-ST2EE472J	4.7K ohm		
R405, 406	VRD-ST2EE391J	390 ohm		R601	VRD-ST2EE223J	22K ohm		
R407, 408	VRD-ST2EE332J	3.3K ohm		R602	VRD-ST2EE102J	1K ohm		
R409, 410	VRD-ST2EE102J	1K ohm		R604, 605, R606, 607, R608, 609	VRD-ST2EE102J	1K ohm		
R411, 412	VRD-ST2EE333J	33K ohm		R610, 611	VRD-SU2EE103J	10K ohm		
R415, 416	VRG-ST2ED4R7J	4.7 ohm, 1/4W, ±5%, Fusible	AB	R612, 613, R614	VRD-ST2EE103J	10K ohm		
R417	VRG-ST2EC101J	100 ohm, 1/4W, ±5%, Fusible	AB	R615, 616	VRD-ST2EE104J	100K ohm		
R418	VRD-ST2EE224J	220K ohm	AA	R619, 620, R621	VRD-SU2EE103J	10K ohm		
R419, 420	VRD-ST2EE472J	4.7K ohm		R701	VRG-ST2ED1R0J	1 ohm, 1/4W, ±5%, Fusible		AB
R421	VRD-ST2EE184J	180K ohm		R702	VRD-ST2EE182J	1.8K ohm		AA
R501, 502	VRD-ST2EE103J	10K ohm		R704	RR-XZ1023AFZZ	10 ohm, 3W, ±10% Cement (RGF3)		AD
R503	VRD-ST2EE332J	3.3K ohm		R705	VRD-ST2EE152J	1.5K ohm		AA
R504	VRD-ST2EE222J	2.2K ohm		R707	VRS-PU3DB102J	1K ohm, 2W, ±5%, Metal Oxide Film		AB
R505	VRD-ST2EE222J	2.2K ohm		R708	VRD-ST2EE222J	2.2K ohm		AA
R506	VRD-ST2EE8R2J	8.2 ohm		R710	VRD-ST2EE681J	680 ohm		
R507, 508	VRD-ST2EE103J	10K ohm		R901	VRD-ST2EE183J	18K ohm		
R509	VRD-ST2EE222J	2.2K ohm		R902	VRD-ST2EE104J	100K ohm		
R510	VRD-ST2EE8R2J	8.2 ohm		R903	VRD-ST2EE123J	12K ohm		
R511	VRD-ST2EE332J	3.3K ohm		R904	VRD-SU2EE182J	1.8K ohm		
R513, 514, R515, 516	VRD-ST2EE103J	10K ohm		R907, 908	VRG-ST2HC271J	270 ohm, 1/2W, ±5%, Fusible		AB
R517	VRD-ST2EE223J	22K ohm		R910	VRD-ST2EE393J	39K ohm	AA	
R518	VRD-ST2EE103J	10K ohm		R911, 912	VRD-ST2EE183J	18K ohm		
R519	VRD-ST2EE222J	2.2K ohm		R913	VRD-ST2EE393J	39K ohm		
R520	VRD-ST2EE103J	10K ohm		R914, 915	VRD-ST2EE104J	100K ohm		
R521	VRD-ST2EE272J	2.7K ohm		R916, 917	VRD-ST2EE122J	1.2K ohm		
R522	VRD-ST2EE103J	10K ohm		R918	VRG-ST2EC101J	100 ohm, 1/4W, ±5%, Fusible		AB
R523	VRD-ST2EE222J	2.2K ohm						
R525	VRD-ST2EE124J	120K ohm						
R528, 529	VRD-ST2EE103J	10K ohm						
R530	VRD-ST2EE472J	4.7K ohm						
R531	VRD-ST2EE103J	10K ohm						
R533	VRD-ST2EE332J	3.3K ohm						
R534	VRD-ST2EE103J	10K ohm						
R535, 536	VRD-ST2EE222J	2.2K ohm						
R537	VRD-ST2EE103J	10K ohm						
R538	VRD-ST2EE332J	3.3K ohm						
R539	VRD-ST2EE472J	4.7K ohm						
R540	VRD-ST2EE103J	10K ohm						
R542	VRD-ST2EE223J	22K ohm						
R543	VRD-ST2EE473J	47K ohm						
R544	VRD-ST2EE102J	1K ohm						
R545	VRD-ST2EE103J	10K ohm						
R546	VRD-ST2EE471J	470 ohm						
R547, 548	VRD-ST2EE103J	10K ohm						
R550	VRD-ST2EE332J	3.3K ohm						
R551	VRD-ST2EE471J	470 ohm						
R552	VRD-ST2EE103J	10K ohm						

CIRCUIT PARTS			
CNP12	QCNCM399CAFZZ	Plug, 3 Pin	AB
CNP13	QCNCM463CAFZZ	Plug, 3 Pin	AA

CIRCUIT PARTS

CNP12	QCNCM399CAFZZ	Plug, 3 Pin	AB
CNP13	QCNCM463CAFZZ	Plug, 3 Pin	AA

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
CNP101	QCNCM402FAFZZ	Plug, 6 Pin	AC	SOL501	RPLU-0139AFZZ	Solenoid, Gear	AQ
CNP201	QCNCM421FAFZZ	Plug, 6 Pin	AD	SOL502	RPLU-0140AFZZ	Solenoid, Side B Tonearm	AM
CNP202	QCNCM417BAFZZ	Plug, 2 Pin	AB	SOL503	RPLU-0140AFZZ	Solenoid, Side A Tonearm	
CNP203	QCNCM416EAFZZ	Plug, 5 Pin	AC	SOL851	RPLU-0114AFZZ	Solenoid, APSS	AF
CNP401	QCNCM436CAFZZ	Plug, 3 Pin	AA	SO101	QSOCD2497AFZZ	Socket, Antenna	
CNP501	QCNCM398BAFZZ	Plug, 2 Pin	AB	SO301	QSOCD4502AFZZ	DIN Socket, AUX (REC/PB)	AG
CNP502		Plug, 6 Pin (REF. NO. M502)	—	SO401	QSOCD2484AFZZ	Socket, Speaker	AF
CNP503	QCNCM400DAFZZ	Plug, 4 Pin	AB	△ SO701	QSOCE0567AFZZ	Voltage Selector	AG
CNP504	QCNCM462BAFZZ	Plug, 2 Pin	AA	SW101 (A~G)	QSW-P0353AFZZ	Switch Assembly, Function Selector	AS
CNP505	QCNCM401EAFZZ	Plug, 5 Pin	AD	SW201 (a~j)	QSW-S0320AFZZ	Switch, Record/Playback	AG
CNP506	QCNCM436CAFZZ	Plug, 3 Pin	AA	SW202	QSW-S0233AFZZ	Switch, Beat Cancel	AE
CNP508	QCNCM439FAFZZ	Plug, 6 Pin	AB	SW301 (a~f)	QSW-S0314AFZZ	Switch, Tape Selector (Metal)	AG
CNP510	QCNCM431BAFZZ	Plug, 2 Pin	AA	SW302 (a~f)	QSW-S0314AFZZ	Switch, Tape Selector (CrO ₂ /Normal)	
CNP511	QCNCM437DAFZZ	Plug, 4 Pin	AB	SW303 (a~d)	QSW-S0313AFZZ	Switch, Dolby NR	AF
CNP512	QCNCM432HAFZZ	Plug, 8 Pin		SW304 (a~d)	QSW-S0313AFZZ	Switch, Loudness	
CNP513	QCNCM439FAFZZ	Plug, 6 Pin		SW501	QSW-M0071AFZZ	Switch, EP Mis-Loading Detector	AD
CNP514	QCNCM465EAFZZ	Plug, 5 Pin	AD	SW502	QSW-F0161AFZZ	Switch, Door Close Detector	
CNP851	QCNCM418CAFZZ	Plug, 3 Pin		SW503	QSW-F0161AFZZ	Switch, Door Open Detector	
CNP852	QCNCM422GAFZZ	Plug, 7 Pin	AD	SW504	QSW-FQ161AFZZ	Switch, Rest Position Detector	AC
CNP901	QCNCM435GAFZZ	Plug, 7 Pin	AB	SW505	QSW-Z0051AFZZ	Switch, Player Door Open/Close	
CNS12	QCNW-1242AFZZ	Socket Assembly, 3 Pin	AF	SW506	QSW-Z0051AFZZ	Switch, Play/Cut	AC
CNS13	CCNCW335CAF01	Socket Assembly, 3 Pin	AH	SW507	QSW-Z0051AFZZ	Switch, Cue	
CNS101	CCNCW308FAF06	Socket Assembly, 6 Pin		SW508	QSW-Z0051AFZZ	Switch, Forward	
CNS201	QCNW-1049AFZZ	Socket Assembly, 6 Pin	AE	SW509	QSW-Z0051AFZZ	Switch, Reverse	AG
CNS202	QCNW-1050AFZZ	Socket Assembly, 2 Pin	AG	SW510	QSW-Z0051AFZZ	Switch, Dual-Play	
CNS203	CCNCW321EAF03	Socket Assembly, 5 Pin		SW511	QSW-Z0051AFZZ	Switch, Repeat Play	AE
CNS401	CCNCW327CAF02	Socket Assembly, 3 Pin	AH	SW512	QSW-Z0051AFZZ	Switch, Side A/Side B Selector	
CNS501		Socket, 2 Pin (REF. NO. M501) —		SW513	QSW-Z0051AFZZ	Switch, Speed (33/45) Selector	AH
CNS502	QCNW-1081AFZZ	Socket Assembly, 6 Pin	AF	△ SW701	QSW-P9132AFZZ	Switch, Power	
CNS503	QCNW-1079AFZZ	Socket Assembly, 4 Pin	AC	SW851	QSW-F0148AFZZ	Switch, Tape Motor	AE
CNS504	QCNW-1073AFZZ	Socket Assembly, 2 Pin	AF	SW852	QSW-F0137AFZZ	Switch, Muting	
CNS505	QCNW-1075AFZZ	Socket Assembly, 5 Pin	AE	SW853	QSW-F0137AFZZ	Switch, APSS	
CNS506	QCNW-1077AFZZ	Socket Assembly, 3 Pin	AC	SW854	QSW-F0149AFZZ	Switch, Bias	AC
CNS508	QCNW-1238AFZZ	Socket Assembly, 6 Pin			QCNW-1019AFZZ	Connecting Lead Assembly, 4 Leads	
CNS510	QCNW-1072AFZZ	Socket Assembly, 2 Pin	AF		QCNW-1020AFZZ	Connecting Lead Assembly, 3 Leads	AC
CNS511	QCNW-1078AFZZ	Socket Assembly, 4 Pin	AH		QCNW-1045AFZZ	Jumper, 5 Leads (160mm)	
CNS512	QCNW-1076AFZZ	Socket Assembly, 8 Pin	AG		QCNW-1083AFZZ	Connecting Lead, 8 Leads	
CNS513	QCNW-1080AFZZ	Socket Assembly, 6 Pin	AE		QCNW-1240AFZZ	Connecting Lead Ass'y for Microcomputer PWB, 10 Leads	AG
CNS514	CCNCW337EAF01	Socket Assembly, 5 Pin					
CNS851	CCNCW305CAF03	Socket Assembly, 3 Pin			QACCZ0002TA0F		AK
CNS852	CCNCW309GAF02	Socket Assembly, 7 Pin	AE		QACCZ0053AF00	AC Power Supply Cord;	
CNS901	CCNCW326GAF04	Socket Assembly, 7 Pin			QACCV0001AGZZ	Refer to Table 43	
△ F401, 402, F701, 702	QFS-C322CAFNI	Fuse, T3.15A/250V	AE		QACCB0054AF09		AL
△ F703	QFS-C162CAGNI	Fuse, T1.6A/250V					

REF. NO.	PART NO.	DESCRIPTION	CODE
	QPLGA0250AFZZ	Adaptor, AC Power Supply Cord [VZ-3000E]	AF
	SPAKA0743AFZZ	Packing Add, Left Side	AK
	SPAKA0744AFZZ	Packing Add, Right Side	AK
	SPAKC1760AFZZ	Packing Case [VZ-3000H]	AD
	SPAKC1765AFZZ	Packing Case [VZ-3000E]	
	SPAKC1815AFZZ	Packing Case [VZ-3000H for HELIP]	
	SPAKP0148AFZZ	Polyethylene Bag	AG
	SPAKX0420AFZZ	Cushion, Dust Cover Left Side	AA
	SPAKX0421AFZZ	Cushion, Dust Cover Right Side	AA
	SPAKX0480AFZZ	Packing Add, Upper Part	
	SPAKX0483AFZZ	Protection Sheet, Player [VZ-3000H]	
	SPAKX0484AFZZ	Protection Sheet, Player [VZ-3000E]	
	SPAKZ0121AFZZ	Attached Bar, Player Door Open	
	SPAKY0472AFZZ	Cover, Stylus	
	SSAKA0007AFZZ	Polyethylene Bag, EP/LP Sensor Cap	AA
	SSAKA0024AFZZ	Polyethylene Bag, Accessories	AA
	TINSE0734AFZZ	Operation Manual [VZ-3000E]	
	TINSZ0297AFZZ	Operation Manual [VZ-3000H]	
	TTAGH0189AFZZ	Tag	

P.W.B. ASSEMBLY (Not Replacement Item)

PWB-B1, B2	DUNTX0056AF03	Microcomputer P.W. Board (Combined Assembly)	—
PWB-C1~C9	DUNTA0126AF03	Power Supply P.W. Board/ (Combined Assembly)	—
PWB-D1~D7	DUNTK0050AF03	Tuner P.W. Board/Control P.W. Board/Tape Deck P.W. Board [VZ-3000H]	—

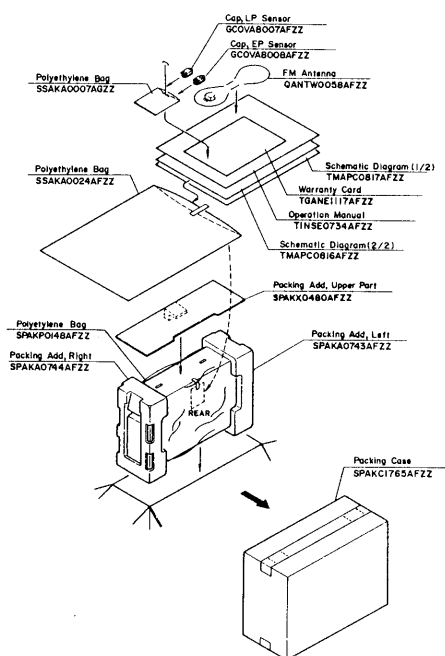
REF. NO.	PART NO.	DESCRIPTION	CODE
	DUNTK0050AF06	Tuner P.W. Board/Control P.W. Board/Tape Deck P.W. Board [VZ-3000E]	—

SPEAKER < CP-V300H >

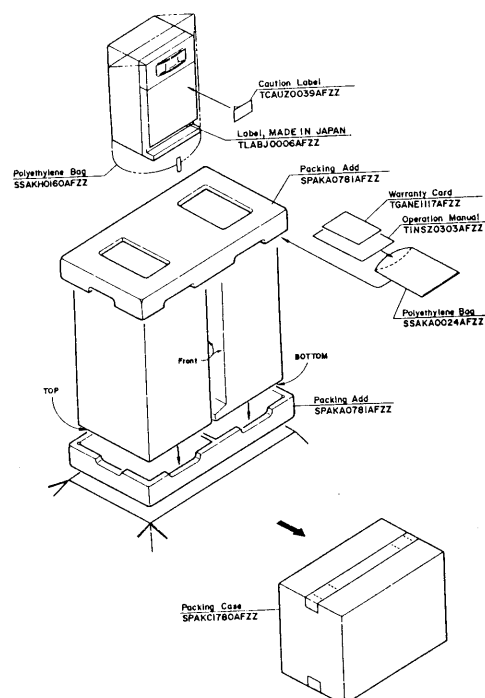
C1	RC-EZ1025AFZZ	Electrolytic Capacitor (Non-polar), 5.6MFD	AF
L1	RCILF0024AGZZ	Coil, 0.6mH	AL
L2	RCILF0050AFZZ	Coil, 0.47mH	AF
SP1	VSP0016WB594A	Woofer	
SP2	VSP0050TB394A	Tweeter	
600	GBOXS0080AFSA	Box Assembly	BF
601	GWAKP1100AFSA	Net Assembly	AV
602	HDECQ0141AFSA	Decoration Panel, Tweeter	
603	HDECQ0142AFSA	Decoration Plate, Box Leg	AL
604	HDECZ0068AFSA	Speaker Ring, Woofer	AE
605	HPNC-0136AFSA	Metal Net, Tweeter	AF
606	LANGJ0090AFZZ	Bracket, Net	AD
607	PFLT-0457AF00	Felt, Leg	AB
608	QLUGL0454AFZZ	Lug	AC
	QCNW-1147AFZZ	Speaker Cord Assembly, 4 Leads	AD
	QCNW-0973AFZZ	Speaker Output Cord with DIN Plug	AL
	SPAKA0766AFZZ	Packing Add, Upper Part	[VZ-3000H for HELIP with Unit]
	SPAKA0765AFZZ	Packing Add, Lower Part	
	SPAKA0781AFZZ	Packing Add.	
	SPAKC1780AFZZ	Packing Case	
	SSAKA0024AFZZ	Polyethylene Bag, Operation Manual	
	TINSZ0303AFZZ	Operation Manual	
	TSPC-0751AFZZ	Specification Label	

PACKING METHOD

< VZ-3000E Only >



< CP-V300H >



- TCAUH0056AGZZ
Caution Label, AC Power Supply Cord
- TCAUH0254AFZZ
Caution Label, Front Door
- TCAUH0256AFZZ
Caution Label, Upper
- TCAUH0268AFZZ
Caution Label, Player Door
- TCAUZ0039AFZZ
Caution Label, Polyethylene Bag (Unit)
- TLABJ0006AFZZ
Label, MADE IN JAPAN
- SPAKX0484AFZZ
Protection Sheet, Player

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
015	LPINZ0051AFZZ	Pin, Pause Lever	AA	068	MSPRP0252AFFJ	Spring (Plate type), Cassette Pressing	AB
016	LSTWC2001AFZZ	Stop Ring, 2mm Dia.		069	MSPRT0739AFFJ	Spring, Record Prevention Lever/Fast-forward Roller/Rewind Roller	AB
017	LX-HZ0056AFFD	Screw, 3mm Dia. x 10mm		070	MSPRT0740AFFJ	Spring, Auto Stop Killer	AB
018	LX-HZ0077AFZZ	Screw, 2.6mm Dia. x 10mm		071	MSPRT0741AFFJ	Spring, Brake Lever	AB
019	LX-HZ0078AFZZ	Screw, 2.6mm Dia. x 12mm		073	MSPRT0743AFFJ	Spring, Record Lever/P.A.D. Lock Lever/Brake Release Lever	AB
020	LX-HZ0080AFZZ	Screw, 3mm Dia. x 25mm		074	MSPRT0744AFFJ	Spring, Cassette Holder Lock Lever/Play Arm	AB
021	LX-HZ0081AFZZ	Screw, 3mm Dia. x 30mm		075	MSPRT0745AFFJ	Spring, Pause Lever	AB
022	LX-WZ0014AGFK	Lock Washer, 2.6mm Dia.		076	MSPRT0746AFFJ	Spring, Play Lever	AB
023	LX-WZ5018AGZZ	Washer, 2.1mm Dia.		077	MSPRT0747AFFJ	Spring, Sub Chassis Return	AB
024	LX-WZ5020AGZZ	Washer, 1.7mm Dia.		078	NBALS0006AGFJ	Steel Ball, 2mm Dia.	AA
025	LX-WZ9053AFZZ	Washer, Oil Thrower	AB	079	NBLTH0076AFJJ	Belt, Flywheel Drive	AC
026	LX-WZ9063AFZZ	Washer, 2mm Dia.		080	NBLTK0184AFZZ	Belt, Play	AB
027	LX-WZ9064AFZZ	Washer, 1.5mm Dia.	AD	081	NDAIR0150AFSA	Turntable, Take-up	AG
028	MCAMP0054AFZZ	Cam, Pause		082	NDAIR0151AFSA	Turntable, Supply	AE
029	MLEVF1120AFZZ	Arm, P.A.D.	AB	083	NFLYC0090AFZZ	Flywheel	AP
030	MLEVP0215AFZZ	Lever, Cassette Holder Lock		084	NGERH0066AFZZ	Gear, P.A.D.	AB
031	MLEVP0216AFZZ	Lever, Record	AC	085	NGERH0067AFZZ	Gear, Play	AE
032	MLEVP0217AFZZ	Lever, Play		086	NGERP0051AFZZ	Gear, Play Drive	AB
033	MLEVP0218AFZZ	Lever, Rewind	AB	087	NIDR-0073AFZZ	Arm, Play	AD
034	MLEVP0219AFZZ	Lever, Fast-forward		088	NIDR-0074AFZZ	Idler, Rewind	AB
035	MLEVP0220AFZZ	Lever, Pause	AC	089	NPLYR0076AFZZ	Pully, Play	AB
036	MLEVP0221AFZZ	Lever, P.A.D. Lock		090	NROLV0017AFZZ	Roller, Fast-forward	AF
037	MLEVP0222AFZZ	Arm, P.A.D. Lock	AB	091	NROLX0014AFZZ	Roller, Rewind	AF
038	MLEVP0223AFZZ	Lever, Start		092	NROLY0037AFZZ	Pinch Roller	AE
039	MLEVP0224AFZZ	Lever, Eject Prevention	AC	093	NSFTN0008AFFW	Shaft, Play Pulley	AB
040	MLEVP0225AFZZ	Lever, Record Prevention		094	PGUMR0052AFZZ	Cushion, P.A.D. Lever	AB
041	MLEVP0226AFZZ	Lever, Lock Release	AB	095	RHEDA0077AFZZ	Erase Head	AM
042	MLEVP0227AFZZ	Lever, Brake Release		096	RHEDH0085AFZZ	Record/Playback Head	AS
043	MLEVP0228AFZZ	Lever, APSS Switch Operation	AC	098	MSPRD0335AFFJ	Spring, Sub Chassis Lock Lever	AB
044	MLEVP0229AFZZ	Lever, Fast-forward/Rewind Prevention		099	NSFTT0148AFFW	Shaft, Record Conversion Lever	AD
045	MLEVP0230AFZZ	Arm, Record Sensor	AD	100	LSTWC4004AFZZ	Stop Ring, 4mm Dia.	AA
046	MLEVP0231AFZZ	Lever, Sub Chassis Lock		101	MSPRC0248AFFJ	Spring, Sensor Lever	AB
047	MLEVP0232AFZZ	Arm, Play Release	AC	102	MSPRD0349AFFJ	Spring, P.A.D. Gear	AB
048	MLEVP0233AFZZ	Lever, Brake		103	LHLDW3056AFZZ	Wire Holder	AA
049	MLEVP0234AFZZ	Lever, Auto Stop Killer	AC	104	QCNW-0964AFZZ	Earth Terminal with Lead	AC
050	MLEVP0235AFZZ	Lever, Sensor		105	QLUGP9052AFZZ	Wrapping Pin	AA
051	MLEVP0236AFZZ	Lever, Erase Prevention	AD	PLAYER MECHANICAL PARTS			
052	MLEVP0237AFZZ	Arm, Record Interlocking		200	CTNT-0051AF01	Turntable Assembly	
053	MLEVP0238AFZZ	Lever, Record Conversion	AC	201A	CAMR-0051AF02	Side A Tonearm Assembly	
054	MLEVP0239AFZZ	Pad, Thrust		201A-1	---	Side A Tonearm	---
055	JBOTN0075AFZZ	Button Block Assembly	AP	201A-2	LHLDZ1131AFSA	Holder, Cartridge	AF
055-1	LANGK0250AFFW	Bracket, Button Block	AC	201A-3	MSPRT0774AFFJ	Spring, Stylus Pressure	AA
055-2	MLEVP0240AFZZ	Lever, Button Lock (Main)	AB	201A-4	RCTRE5054AFSA	Cartridge with Stylus	AY
055-3	MLEVP0241AFZZ	Lever, Button Lock (Sub)		201A-5	PNDLD0050AFZZ	Stylus (STY-121)	AX
055-4	MLEVP0242AFZZ	Lever, Pause Button	AC	201A-6	LHLDW3067AFFW	Wire Cramp (Lower Part)	AB
055-5	MLEVP0243AFZZ	Lever, Fast-forward Button		201A-7	LHLDW3068AFFW	Wire Cramp (Upper Part)	AB
055-6	MLEVP0245AFZZ	Lever, Rewind Button	AB	201B	PCOVS3079AFFW	Shield, Cartridge	AB
055-7	MLEVP0246AFZZ	Lever, Stop Button		201B-1	CAMR-0051AF01	Side B Tonearm Assembly	
055-8	MLEVP0247AFZZ	Lever, Play Button	AC	201B-2	---	Side B Tonearm	---
055-9	MLEVP0248AFZZ	Lever, Record Button		201A-3	LHLDZ1131AFSB	Holder, Cartridge	
055-10	MLEVP0249AFZZ	Lever, Eject Button	AB	201A-4	MSPRT0774AFFJ	Spring, Stylus Pressure	AA
055-11	MSPRP0253AFFW	Spring (Plate Type), Button Lever		201A-5	RCTRE5054AFSA	Cartridge with Stylus	AY
055-12	NSFTT0144AFFD	Shaft, Button Lever	AC	201A-6	PNDLD0050AFZZ	Stylus (STY-121)	AX
056	MSPRC0229AFFJ	Spring Pause Lever Pin		201A-7	LHLDW3067AFFW	Wire Cramp (Lower Part)	AB
057	MSPRC0230AFFJ	Spring, Head Azimuth	AB	201A-8	LHLDW3068AFFW	Wire Cramp (Upper Part)	AB
058	MSPRC0231AFFJ	Spring, APSS Solenoid		201A-9	PCOVS3079AFFW	Shield, Cartridge	AB
059	MSPRD0311AFFJ	Spring, Over Stroke	AC	202	GDAI-1011AFSA	Spacer, Infrared Emitting Diode	AB
060	MSPRD0312AFFJ	Spring, P.A.D. Lock Lever		203	GDAI-1012AFSA	Spacer, Phototransistor	AB
061	MSPRD0314AFFJ	Spring Pinch Roller	AB	204	GFTAF1022AFSA	Player Door	AW
062	MSPRD0315AFFJ	Spring, Record Sensor Arm					
063	MSPRD0316AFFJ	Spring, Fast-forward/Rewind Return Lever	AC				
064	MSPRD0317AFFJ	Spring, Pinch Roller Return					
065	MSPRD0318AFFJ	Spring, Pinch Roller Return	AB				
066	MSPRD0319AFFJ	Spring, Record Conversion Lever					
067	MSPRP0251AFFJ	Spring (Plate type), Sub Chassis Pressing	AB				

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
205	GFTAF1023AFSA	Base, Disc	AN	269	MSPRT0767AFFJ	Spring, Side A Tonearm Guide	AA
206	LANGF0595AFZZ	Bracket, Flywheel	AK	270	MSPRT0768AFFJ	Spring, Side B Tonearm Guide	AA
207	LANGF0596AFZZ	Turntable Thrust Assembly	AE	271	MSPRT0769AFFJ	Spring, Disc Base Arm	AA
208	LANGF0597AFZZ	Bracket, Phono Motor	AC	272	MSPRT0770AFFJ	Spring, Door Left Side Arm	AC
209	LANGF0598AFZZ	Bracket, Cartridge Motor	AC	273	MSPRT0771AFFJ	Spring, Tonearm Wire	AA
210	LANGF0599AFZZ	Bracket, Tonearm Solenoid	AB	274	MSPRT0772AFFJ	Spring, Side A Tonearm Guide Lever	AA
211	LANGF0600AFZZ	Bracket, Brush	AC	275	MSPRT0773AFFJ	Spring, Side B Tonearm Guide Lever	AA
212	LANGF0601AFZZ	Bracket, Gear Solenoid	AC	278	MSPRT0789AFFJ	Spring, Door Open Lever	AA
213	LANGF0602AFZZ	Bracket, Side A Tonearm Guide	AC	280	NBLTH0080AF00	Belt, Turntable	AG
214	LANGF0603AFZZ	Bracket, Side B Tonearm Guide	AC	281	NBLTK0168AF00	Belt, Gear	AB
215	LANGF0604AFZZ	Bracket Assembly, Pulley	AC	282	NBRGC0076AFZZ	Bearing, Turntable	AG
216	LANGF0605AFZZ	Bracket, Pulley	AB	284	NBRGP0054AFZZ	Spacer, Door Open/Close Shaft	AA
217	LANGF0606AFZZ	Bracket, Pulley	AB	285	NBRGP0055AFZZ	Sleeve, Door Arm	AA
218	LANGF0607AFZZ	Bracket, Door Strength	AF	286	NBRGM0052AFFW	Bearing, Tonearm Guide	AB
219	LANGF0608AFFW	Bracket, Door Right Side	AE	288	CDRM-0170AF01	Disc Pressure Assembly	AL
220	LANGF0609AFFW	Bracket, Door Left Side	AE	289	NGERH0069AFZZ	Gear Assembly	AT
221	LANGF0611AFZZ	Bracket (Right Side), Spring	AC	290	NGERH0075AFZZ	Gear, Door Open/Close	AG
222	LANGF0612AFZZ	Bracket (Left Side), Spring	AC	291	NPLYB0051AFZZ	Pulley with Shaft	AA
223	LANGF0613AFZZ	Bracket, Door Close Detection Switch	AC	292	NPLYB0051AF01	Pulley	AA
225	LANGF0615AFZZ	Bracket, PWB	AC	293	NPLYD0052AFZZ	Pulley with Revet (Small)	AB
226	LANGF0616AFZZ	Bracket, Rest Position Detection Switch	AD	294	NPLYD0059AFZZ	Pulley with Revet (Large)	AB
227	LANGF0621AFZZ	Bracket, Pulley	AB	295	NROLP0070AFZZ	Roller with Revet	AA
228	LANGF0622AFZZ	Bracket, PWB	AB	297	PBRSR0002AFZZ	Brush, Side A	AD
229	LANGF0623AFZZ	Bracket, PWB	AC	298	PBRSR0003AFZZ	Brush, Side B	AD
230	LANGH0138AFZZ	Bracket, PWB Strength	AC	299	PCOVZ1056AFZZ	Cover, Mechanism Upper Part	AD
231	LANGK0265AFFW	Bracket, Damper	AC	300	PCOVZ1057AFZZ	Cover, Mechanism Lower Part	AD
232	LBSHS0001AG00	Bushing, Motor	AA	301	PCUSG0138AF00	Cushion, Door Arm	AB
233	LBSHZ0074AFZZ	Bushing, Door Shaft	AA	302	PCUSG0139AF00	Cushion, Tonearm Guide Shaft	AA
234	LCHSP0050AFZZ	Main Chassis		303	PEPAP0051AFSA	EP Adaptor	AD
236	LHLDW9002CEZZ	Holder, Wire	AA	304	PCOVU7126AF00	Insulator, Gear Solenoid	AA
237	LHLDW9003CEZZ	Holder, Wire	AA	309	LSLVM0115AFFW	Sleeve, Lock Lever	AB
239	LBSHZ0075AFZZ	Bushing, Door Shaft		310	LX-LZ0071AFZZ	Rivet	AA
240	LRALP0050AFZZ	Rail, Tonearm Guide	AB	312	MLEVF1237AFFE	Lever, Door Right Side Lock	AC
241	LSLVM0107AFFW	Sleeve (ø10mm)	AB	313	MLEVF1238AFFE	Lever, Door Left Side Lock	AC
242	LSLVM0108AFFW	Sleeve (ø8mm)	AB	315	MSPRT0800AFFJ	Spring, Door Lock Lever	AA
243	LSLVM0109AFFW	Sleeve (ø12mm)	AB	317	PSLDC7059AFZZ	Shield, Side A	AB
244	LSTWC3002AFZZ	Stopper (ø3mm)		318	PSLDM3211AFFW	Shield, Side B	AC
245	LX-WZ1057AFZZ	Stopper (ø6mm)		319	PGUMS0170AFZZ	Cushion, Tonearm	AA
246	LSTWC6006AFZZ	Stopper (ø6mm)		320	PGUMM0145AF00	Rubber, Pulley	AA
247	LX-BZ0219AFFD	Screw, Motor	AA	322	HDECP0060AFSA	Sheet, Disc Base	AA
248	LX-BZ0305AFFD	Screw (Shaft), Disc Base Lever	AA	324	LANGT1045AFZZ	Bracket, Door Open Detection Lever	
249	LX-BZ0306AFFW	Screw (Shaft), Tonearm Guide	AB	325	PCUSS0142AFZZ	Cushion, Tonearm	AA
250	LX-BZ0309AFFD	Screw, EP Mis-Loading Detection Lever	AA	326	PGUMS0174AF00	Cushion, Door	AA
251	LX-BZ0310AFZZ	Set Screw (M3x4mm)	AA	327	PGUMS0185AF00	Cushion, Tonearm Balance	AB
252	LX-BZ0313AFFD	Screw (Shaft)	AA	328	MLIFM0050AFZZ	Damper Assembly, Side A Tonearm	AK
253	LX-HZ0073AFZZ	Screw, Disc Base Lever	AA	329	MLIFM0051AFZZ	Damper Assembly, Side B Tonearm	AK
254	LX-NZ0122AFFD	Nut, Disc Base Lever Screw	AA	331	LX-HZ0053AFFD	Screw, Microcomputer PWB	AA
255	CARMM0065AF01	Door Arm Lever Assembly					
256	MLEVF1204AFZZ	Tonearm Guide	AF				
257	MLEVF1205AFZZ	Side A Tonearm Guide Operating Lever	AC				
258	MLEVF1206AFZZ	Side B Tonearm Guide Operating Lever	AD				
259	MLEVF1207AFZZ	Gear Shift Lever	AC				
260	MLEVF1208AFZZ	Arm, Disc Base	AF				
261	MLEVF1209AFZZ	Arm, Door Right Side	AH				
262	MLEVF1210AFZZ	Arm, Door Left Side	AH				
263	MLEVF1212AFZZ	Lever, Door Open	AC				
264	MLEVP0294AFZZ	Lever, EP Mis-Loading Detector	AB				
265	MLIFP0012AFZZ	Damper	AD				
266	MLNKM0050AFZZ	Tonearm Wire Assembly	AQ				
267	MSPRC0247AFFJ	Spring, EP Adaptor	AB				
268	MSPRP0271AFZZ	Spring (Plate type), Disc Pressure	AD				

CABINET EXPLODED VIEW PARTS

401	GCAB-1070AFSA	Cabinet	BB
402	GCOVA1237AFSA	Dust Cover	AW
403	GCOVA1238AFSA	Cover, Player Door Front	AK
404	GCOVA1239AFSA	Cover, Dual-Play/Repeat-Play Indicator	AB
405	GCOVA1240AFSA	Cover, Side A Play Indicator	AB
406	GCOVA1240AFSB	Cover, Side B Play Indicator	AB
407	GCOVA1261AFSA	Indication Plate	AG
408	GCOVA1242AFSA	Cover, Door Left Side	AC

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
409	GCOVA1243AFSA	Cover, Door Right Side	AC	464	LX-WZ3070AFZZ	Lug, Ground	AA
410	GCOVA1259AFSA	Indication Plate, Tape Deck Control	AM	465	MLEVP0298AF00	Lever, Power Switch	AC
411	GCOVA1270AFSA	Cover, Function Selector Button Right Side	AE	466	MLIFP0009AFZZ	Damper	AD
412	GCOVH8051AFSA	Rubber, Disc Fit	AC	467	MSPRD0346AFFJ	Spring, Cassette Holder Open	AA
413	GFTAC1155AFSA	Cassette Holder	AF	468	MSPRD0347AFFJ	Spring, Control Lid Open	AB
414	GFTAF1024AFSA	Control Lid	AE	469	MSPRP0242AFFJ	Spring (Plate type), Cassette Pressure	AA
415	GFTAR6197AFSA	Rear Plate [VZ-3000H]	AP	470	MSPRT0766AFFJ	Spring, Dial Cord	AA
	GFTAR6202AFSA	Rear Plate [VZ-3000E]		471	NBLTK0195AFZZ	Belt, Tape Counter	AB
	GFTAR6217AFSA	Rear Plate [VZ-3000H for HELIP]		472	NDRM-0169AFZZ	Drum	AC
416	GLEGG0057AF00	Leg		473	NSFTD0209AFZZ	Tuning Shaft	AM
417	CMADC0051AF02	Window, Cassette Holder		475	PCOVW1121AFZZ	Cover, Power Supply PWB	AF
418	GMADD0072AFSA	Window, Dial	AE	476	PCOVW1119AFZZ	Cover, Power Supply PWB	AG
419	GMADK0051AFSA	Window, Tape Counter	AB	477	PCUSG0140AF00	Cushion, Player Mechanism	AA
420	HBDGB3041GESA	Badge, SHARP	AE	478	PCUSG0143AF00	Cushion (Leg), Player Mechanism	AE
421	HDALM0331AFSA	Dial Scale	AL	479	PCUSG0146AF00	Cushion, Control Lid	AB
422	HDECA0470AFSA	Decoration Plate, Player Door Cover	AQ	480	PRDAR0247AFFW	Heat Sink, Power IC	AY
423	HDECA0471AFSA	Decoration Plate, Cabinet Left Side	AH	481	PRDAR0262AFZZ	Heat Sink, Transistor	AK
425	HDECA0472AFSA	Decoration Plate, Control Lid	AH	482	PSHEZ0104AFZZ	Stopper, Player Operation Key	
426	HDECZ0063AFSA	Mirror	AA	483	PSLDC3139AFZZ	Shield, Variable Capacitor	AB
427	HINDM1467AFSA	Decoration Plate, Cabinet Right Side	AW	484	PSLDC3131AFZZ	Shield, Control PWB	AC
428	HINDM1468AFSA	Indication Plate, Control Section	AG	486	PSPAZ9002AGZZ	Insulator (Mica)	AA
429	HINDM1474AFSA	Indication Plate, Mic/Phones Jacks	AE	487	PSTPK0005AGZZ	Stopper, Bar Antenna Coil	
430	HINDM1470AFSA	Indication Plate, Tape Indicator	AD	△ 488	QFSHC0003AGZZ	Holder, Fuse (F705)	AD
431	HINDM1471AFSA	Indication Plate, Tape Level Meter	AD	489	QFSDH2051AFZZ	Holder, Fuse (F401, 402, 701 ~ 704)	AA
432	HSSND0278AFSA	Dial Pointer with Lamp (PL101)	AP	490	QLUGP0111CEFW	Wrapping Pin (Small)	AA
433	JKNBM0395AFSA	Button, Function Selector	AD	△ 491	QLUGP0156AFZZ	Wrapping Pin (Large)	AA
434	JKNBN0481AFSA	Knob, Tuning	AE	492	QSOC0252AFZZ	Socket, Transistor	AC
435	JKNBN0482AFSA	Knob, Volume Control	AE	493	LHLDW1068AFZZ	Holder, Wire (100mm)	AA
436	JKNBN0483AFSA	Knob, Control	AA	494	LX-WZ3017CEFN	Washer	AA
437	JKNBP0138AFSA	Button, Power	AD	495	LHLDF1266AFZZ	Holder, Player Switch PWB	AB
438	JKNBZ0206AFSA	Key, Player Operation	AD	497	PSLDM3213AFZZ	Shield, Cabinet	AD
439	JKNBZ0207AFSA	Key, Speed (33/45) Selector	AB	498	PSLDC7060AFZZ	Shield, Control Lid	AB
440	KCOUB0110AFZZ	Tape Counter	AL	500	PFLT-0455AF00	Felt, Leg	AB
441	LANGA0070AFFW	Plate, Cassette Holder Pressure	AA	501	PSPAI0178AF00	Spacer, Indication Plate	AB
442	LANGF0617AFZZ	Bracket, Base	AN	502	PCUSS0141AF00	Cushion, Tonearm	AA
443	LANGF0618AFZZ	Bracket, Heat Sink	AB	503	PCUSS0143AFZZ	Cushion (Holder), Wire	AE
444	LANGF0619AFZZ	Bracket, Leg	AD	504	PGUMS0173AF00	Cushion, Tape Deck PWB	AC
445	LANGQ0836AFZZ	Bracket, Antenna Terminal	AE	505	PCOVZ1058AFZZ	Cover	AD
446	LANGQ0835AFZZ	Bracket, Speaker Terminal	AE	506	LX-BZ0220AFFF	Screw, Resistor (R704) Bracket	AA
447	LANGQ0813AFZZ	Bracket, PWB	AB	507	LANGK0271AFZZ	Bracket, Resistor (R704)	AB
449	LANGR0529AFZZ	Bracket, Power Transformer	AH	508	LANGQ0828AFZZ	Bracket, Power Switch	
△ 450	LBSHC0002AGZZ	Bushing, AC Power Supply Cord; Refer to Table 43	AB	509	LANGQ0827AFZZ	Bracket, Fuse Holder	AC
	LBSHC0004AGZZ			△ 510	QLUGL0451AFZZ	Terminal Strip (2-Lug)	AD
	LBSHC0053AFZZ			512	TLABP0191AFZZ	Caution Label, Fuse	
451	LCHSZ0085AFZZ	Frame	AX	513	QLUGP9052AFZZ	Test Pin	AA
452	LHLDW1050AFZZ	Holder, Wire	AA	514	LHLDA1001SG00	Holder, Bar Antenna	AC
453	LHLDW1075AFZZ	Holder, Wire (60mm)	AA	515	MSPRP0281AFZZ	Spring (Plate type), Shield	AB
454	LHLDZ1128AFZZ	Holder, Tape Level Meter	AB	516	LANGQ0837AFZZ	Bracket, AM Bar Antenna	AC
455	LHLDZ1129AFZZ	Holder, Tape Indicator	AA	517	PSLDM3224AFZZ	Shield, Variable Capacitor	AB
456	LHLDZ1130AFZZ	Holder, Signal Meter	AA	518	PCOVW1120AFZZ	Cover, Fuse Holder Bracket	AC
457	LX-BZ0316AFFF	Screw, Dust Cover	AA	519	LHLDW1053AFZZ	Holder, Wire	AB
458	LX-HZ0053AF00	Screw, Rear Plate	AA	520	LX-LZ0067AF00	Rivet	
459	LX-HZ0068AFFD	Screw	AA	521	LX-JZ0008AFFD	Screw, Tape Counter	
460	LX-HZ0084AFFD	Screw	AB	522	PGUMS0192AF00	Cushion, Tuner PWB	
461	LX-JZ0005AFFF	Screw, Rear Plate	AA	523	PSLDC3140AFZZ	Shield, Tuner PWB	
462	LX-LZ0051AF00	Rivet	AA	524	TLABP0155AFZZ	Label, T2.0A	
463	LX-NZ0141AFFW	Nut, Phones/Mic Jacks	AB				

PACKING PARTS

GCOVA8007AFZZ	LP Sensor Cap	AC
GCOVA8008AFZZ	EP Sensor Cap	AC
LHLDK1052AFZZ	Holder, AC Power Supply Cord	AA
QANTW0058AFZZ	FM Antenna	AK

SHARP

TECHNICAL BULLETIN

C.P.D. SERVICE

Bulletin N^o.....

LS/023/ONK-006/JL

Field Modification

Mandatory ☐
Recommended ☐
Overhaul ☒
Breakdown ☐

Production Change

Safety Information ☐
Technical Information ☒
Parts Information ☐

SUBJECT — APPLICATION

VZ-3000 SERIES
IMMEDIATE

DECEMBER 1981.

REPAIR METHOD OF GEARING ON PLAYER DOOR MECHANISM

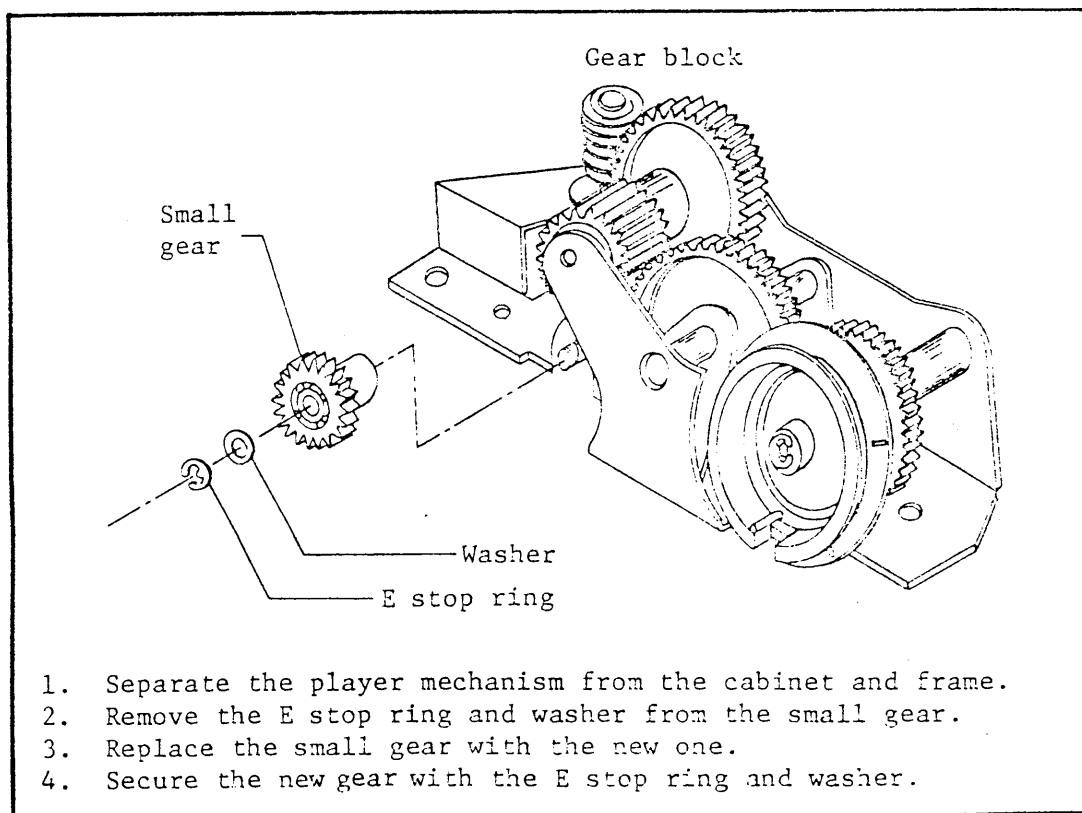
PROBLEM:

If the record player door is opened by hand, too much force can be applied which results in damage to the small gear (as illustrated).

REMEDY:

To date, the problem has been elivated by replacement of the gear as a complete assembly, comprising the SMALL GEAR, WASHER and "E" STOP RING. However, the new method of repair will entail replacing the STOP RING ONLY.

NOTE: This component is now being supplied under a new part number, specifically: NGERH0073AFZZ.



EXPLODED VIEW OF PLAYER MECHANISM GEAR BLOCK, REF 289.

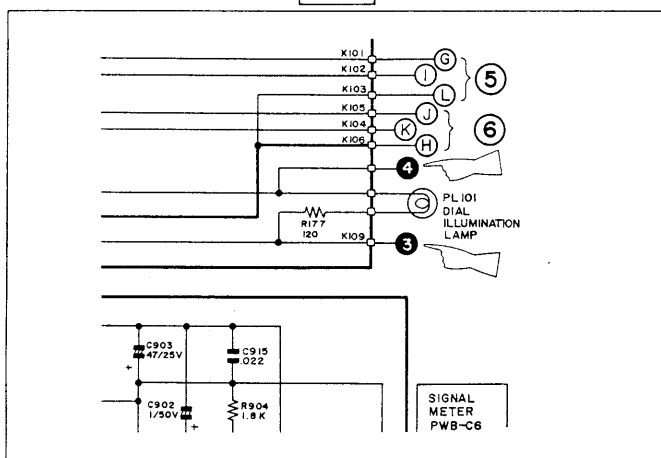
MODEL VZ-3000H/E

- (GB) There are mistakes in the Service Manual for VZ-3000H/E.
Please correct the mistakes in the Service Manual for VZ-3000H/E referring to the following.
- (D) Es gibt die Fehler in der Service-Anleitung Für VZ-3000H/E.
Verbessern Sie bitte folgenderweise die Fehler in der Service-Anleitung Für VZ-3000H/E.
- (F) Il y a des erreurs dans le Manuel de Service Pour le VZ-3000H/E.
Veuillez corriger les erreurs du Manuel de Service pour le VZ-3000H/E en vous reportant à ce qui suit.

SCHEMATIC DIAGRAM

Page 21, 22 (Figure 21)

11-F



WIRING SIDE OF P.W.BOARD

Page 29, 30 (Figure 29)

7-G

