

# CONTENTS

## **SECTION 1. GENERAL**

- SERVICING PRECAUTIONS ..... 1-2
- ESD PRECAUTIONS ..... 1-4
- SPECIFICATIONS ..... 1-5

## **SECTION 2. ELECTRICAL**

- ADJUSTMENTS ..... 2-1
- TROUBLESHOOTING ..... 2-3
- WAVEFORMS OF MAJOR CHECK POINT ..... 2-7
- BLOCK DIAGRAM ..... 2-17
- SCHEMATIC DIAGRAMS ..... 2-19
- WIRING DIAGRAM ..... 2-27
- PRINTED CIRCUIT DIAGRAMS ..... 2-29
- INTERNAL BLOCK DIAGRAM OF IC's ..... 2-38
- REPAIRS REGARDING CD MECHANISM ..... 2-45

## **SECTION 3. EXPLODED VIEWS**

- CABINET AND MAIN FRAME SECTION ..... 3-1
- TAPE DECK MECHANISM: AUTO STOP DECK(OPTIONAL) ..... 3-3
- TAPE DECK MECHANISM: AUTO REVERSE DECK ..... 3-5
- CD MECHANISM ..... 3-7

## **SECTION 4. SPEAKER ..... 4-1**

## **SECTION 5. REPLACEMENT PARTS LIST ..... 5-1**

# SECTION 1. GENERAL

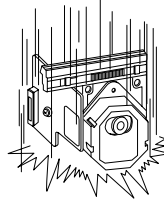
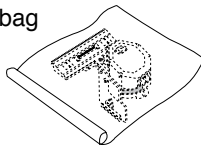
## SERVICING PRECAUTIONS

### NOTES REGARDING HANDLING OF THE PICK-UP

#### 1. Notes for transport and storage

- 1) The pick-up should always be left in its conductive bag until immediately prior to use.
- 2) The pick-up should never be subjected to external pressure or impact.

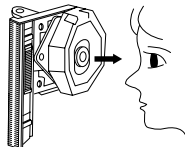
Storage in conductive bag



Drop impact

#### 2. Repair notes

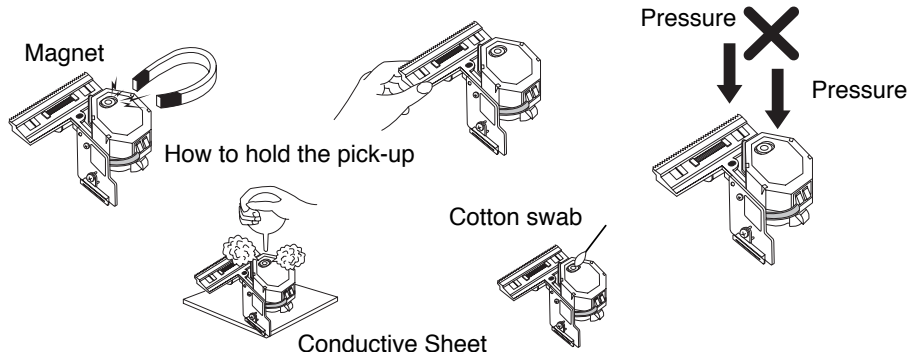
- 1) The pick-up incorporates a strong magnet, and so should never be brought close to magnetic materials.
- 2) The pick-up should always be handled correctly and carefully, taking care to avoid external pressure and impact. If it is subjected to strong pressure or impact, the result may be an operational malfunction and/or damage to the printed-circuit board.
- 3) Each and every pick-up is already individually adjusted to a high degree of precision, and for that reason the adjustment point and installation screws should absolutely never be touched.
- 4) Laser beams may damage the eyes!  
Absolutely never permit laser beams to enter the eyes!  
Also NEVER switch ON the power to the laser output part (lens, etc.) of the pick-up if it is damaged.



NEVER look directly at the laser beam, and don't let contact fingers or other exposed skin.

#### 5) Cleaning the lens surface

If there is dust on the lens surface, the dust should be cleaned away by using an air bush (such as used for camera lens). The lens is held by a delicate spring. When cleaning the lens surface, therefore, a cotton swab should be used, taking care not to distort this.



#### 6) Never attempt to disassemble the pick-up.

Spring by excess pressure. If the lens is extremely dirty, apply isopropyl alcohol to the cotton swab. (Do not use any other liquid cleaners, because they will damage the lens.) Take care not to use too much of this alcohol on the swab, and do not allow the alcohol to get inside the pick-up.

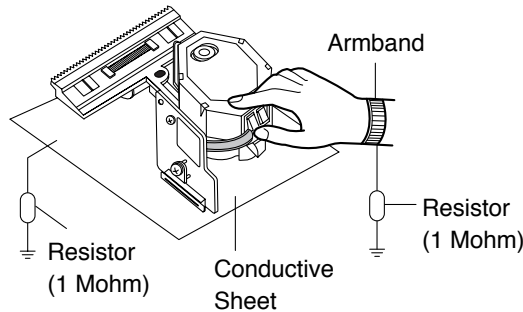
# NOTES REGARDING COMPACT DISC PLAYER REPAIRS

## 1. Preparations

- 1) Compact disc players incorporate a great many ICs as well as the pick-up (laser diode). These components are sensitive to, and easily affected by, static electricity. If such static electricity is high voltage, components can be damaged, and for that reason components should be handled with care.
- 2) The pick-up is composed of many optical components and other high-precision components. Care must be taken, therefore, to avoid repair or storage where the temperature of humidity is high, where strong magnetism is present, or where there is excessive dust.

## 2. Notes for repair

- 1) Before replacing a component part, first disconnect the power supply lead wire from the unit
- 2) All equipment, measuring instruments and tools must be grounded.
- 3) The workbench should be covered with a conductive sheet and grounded.  
When removing the laser pick-up from its conductive bag, do not place the pick-up on the bag. (This is because there is the possibility of damage by static electricity.)
- 4) To prevent AC leakage, the metal part of the soldering iron should be grounded.
- 5) Workers should be grounded by an armband (1M $\Omega$ )
- 6) Care should be taken not to permit the laser pick-up to come in contact with clothing, in order to prevent static electricity changes in the clothing to escape from the armband.
- 7) The laser beam from the pick-up should NEVER be directly facing the eyes or bare skin.



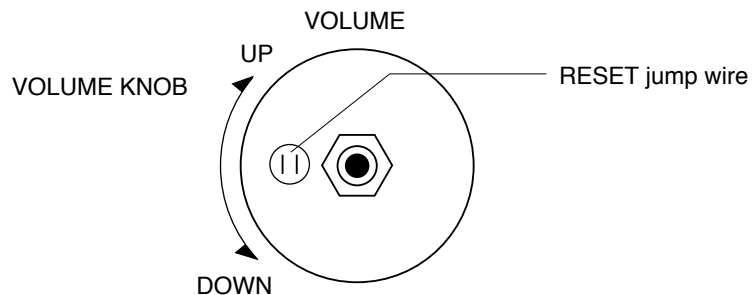
## CLEARING MALFUNCTION

You can reset your unit to initial status if malfunction occur(button malfunction, display, etc.).

Using a pointed good conductor(such as driver), simply short the RESET jump wire on the inside of the volume knob for more than 3 seconds.

If you reset your unit, you must reenter all its settings(stations, clock, timer)

- NOTE:** 1. To operate the RESET jump wire, pull the volume rotary knob and release it.  
2. If you wish to operate the RESET jump wire, it is necessary to unplug the power cord.



# ESD PRECAUTIONS

## Electrostatically Sensitive Devices (ESD)

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive Devices (ESD). Examples of typical ESD devices are integrated circuits and some field-effect transistors and semiconductor chip components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ESD devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ESD devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESD devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESD devices.
6. Do not remove a replacement ESD device from its protective package until immediately before you are ready to install it. (Most replacement ESD devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive materials).
7. Immediately before removing the protective material from the leads of a replacement ESD device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

**CAUTION : BE SURE NO POWER IS APPLIED TO THE CHASSIS OR CIRCUIT, AND OBSERVE ALL OTHER SAFETY PRECAUTIONS.**

8. Minimize bodily motions when handing unpackaged replacement ESD devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ESD device).

## CAUTION. GRAPHIC SYMBOLS



THE LIGHTNING FLASH WITH APROWHEAD SYMBOL. WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK.



THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF IMPORTANT SAFETY INFORMATION IN SERVICE LITERATURE.

# SECTION 2. ELECTRICAL ADJUSTMENTS

This set has been aligned at the factory and normally will not require further adjustment. As a result, it is not recommended that any attempt is made to modify any circuit. If any parts are replaced or if anyone tampers with the adjustment, realignment may be necessary.

## IMPORTANT

1. Check Power-source voltage.
2. Set the function switch to band being aligned.
3. Turn volume control to minimum unless otherwise noted.
4. Connect low side of signal source and output indicator to chassis ground unless otherwise specified.
5. Keep the signal input as low as possible to avoid AGC and AC action.

## TAPE DECK ADJUSTMENT

### 1. AZIMUTH ADJUSTMENT

| Deck Mode       | Test Tape | Test Point  | Adjustment                  | Adjust for |
|-----------------|-----------|-------------|-----------------------------|------------|
| A Deck Playback | MTT-114   | Speaker Out | DECK Screw<br>Azimuth Screw | Maximum    |
| B Deck Playback | MTT-114   | Speaker Out | Azimuth Screw               | Maximum    |

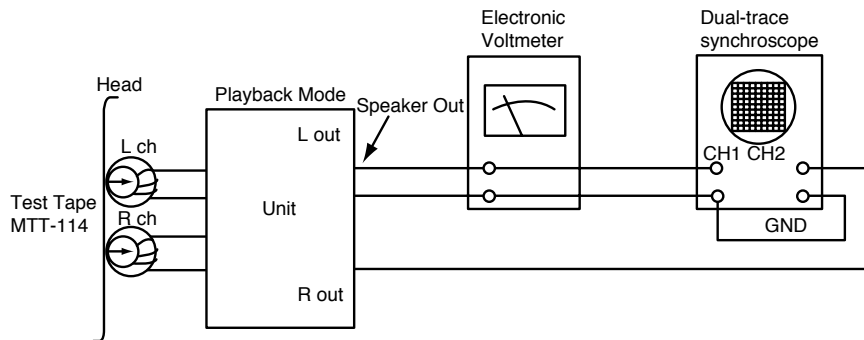


Figure 1. Azimuth Adjustment Connection Diagram

### 2. MOTOR SPEED ADJUSTMENT

| Deck Mode    | Test Tape | Test Point  | Adjustment       | Adjust for    | Remark                |
|--------------|-----------|-------------|------------------|---------------|-----------------------|
| Normal Speed | MTT-111   | Speaker Out | VR201            | 3kHz $\pm$ 1% | A Deck                |
| HI-Speed     | MTT-111   | Speaker Out | more than 5.4kHz |               | HI-Speed Dubbing Mode |

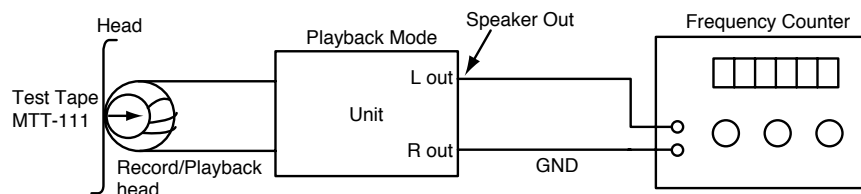


Figure 2. Motor Speed Adjustment Connection Diagram

### 3. RECORD BIAS ADJUSTMENT

| Deck Mode | Test Tape | Test Point             | Adjustment | Adjust for   |
|-----------|-----------|------------------------|------------|--|
| Rec/Pause | MTT-5511  | ERASE HEAD WIRE(PN202) | L203       | 60kHz±5kHz (Auto stop)<br>85kHz±5kHz(Auto Reverse) |

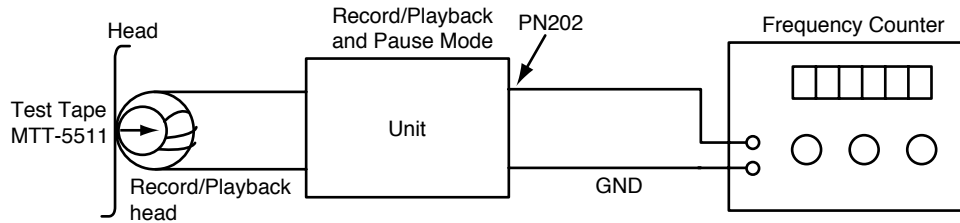
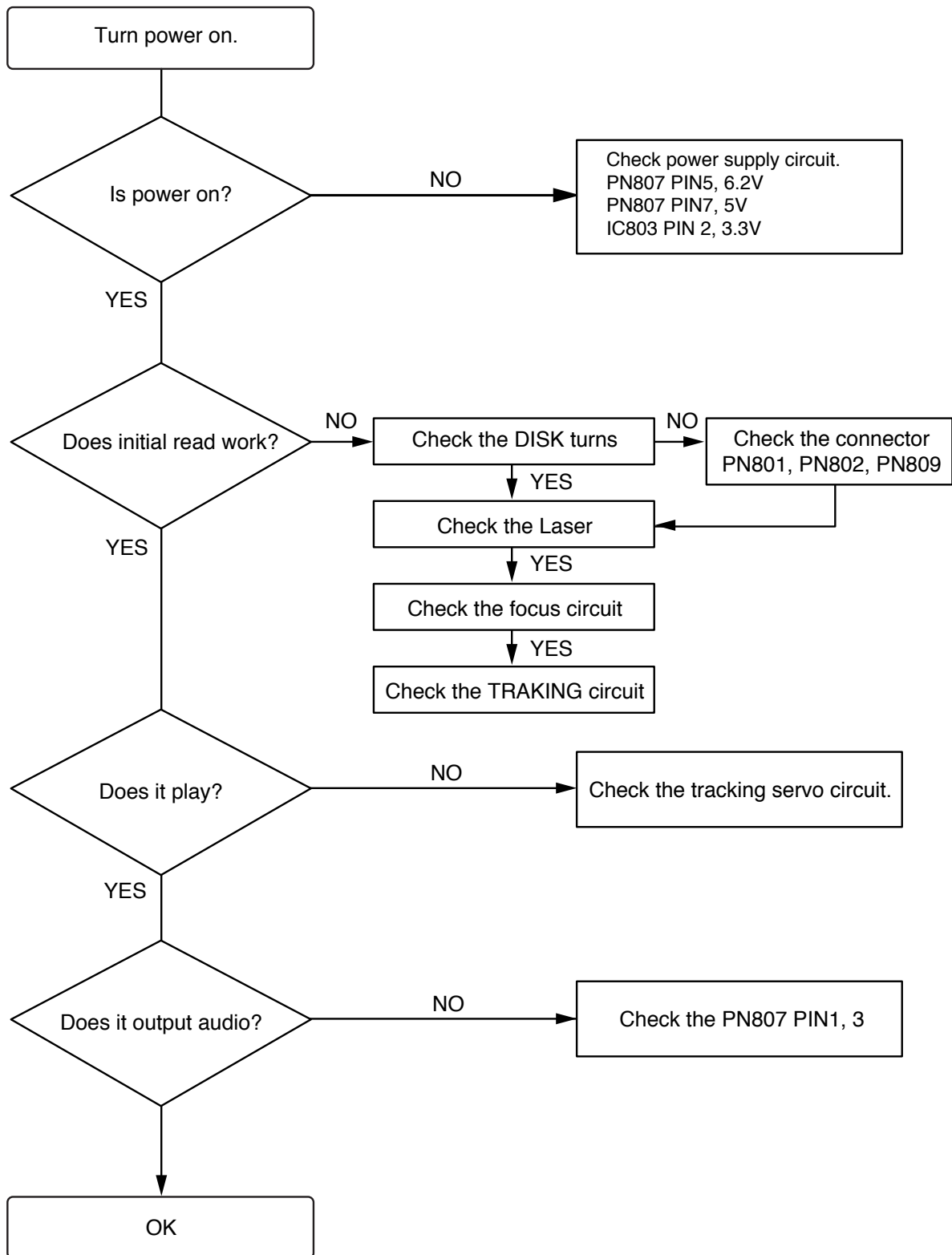
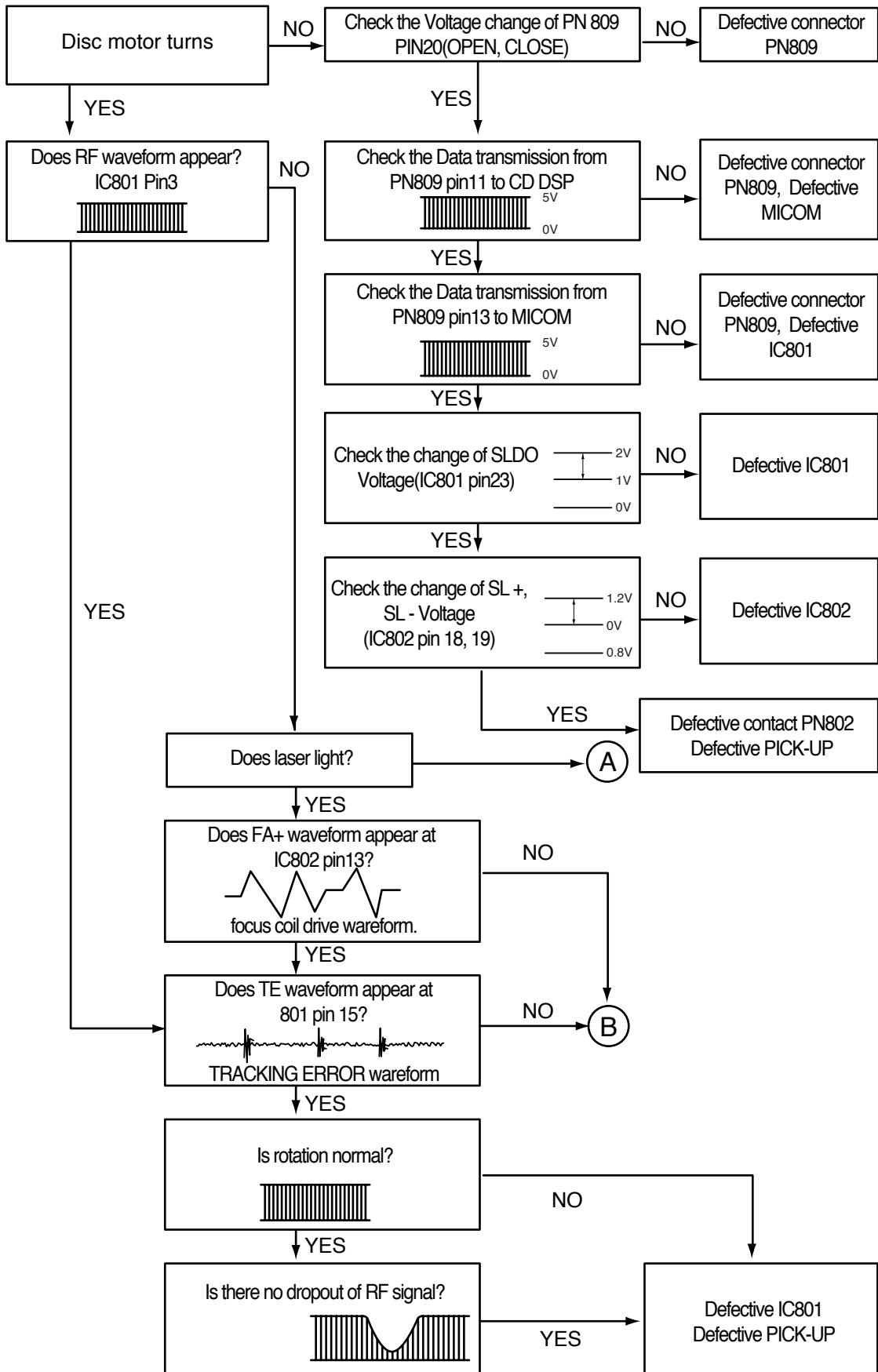


Figure 3. Record Bias Adjustment Connection Diagram

# TROUBLESHOOTING



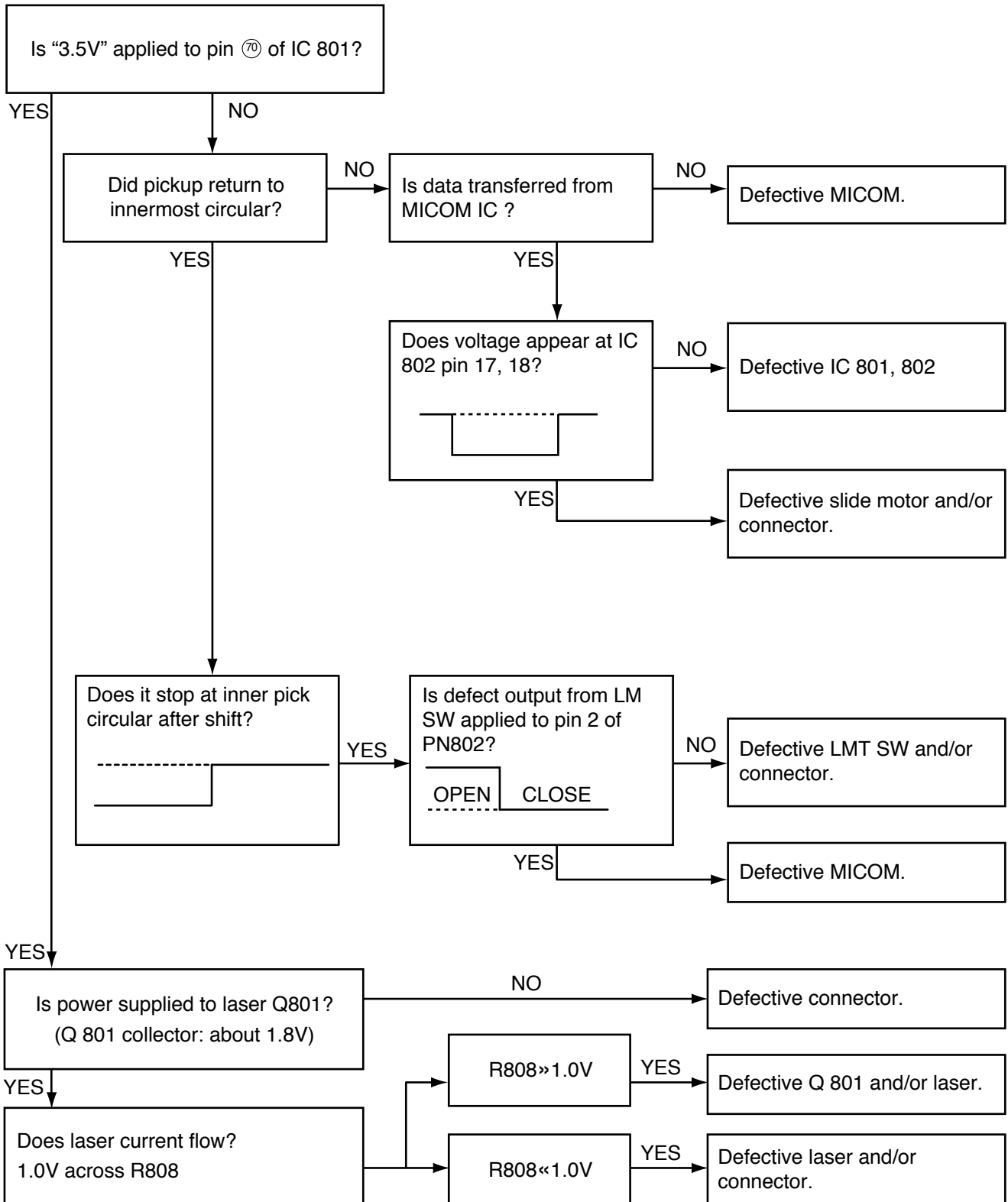
**FAILS TO INITIAL READ**

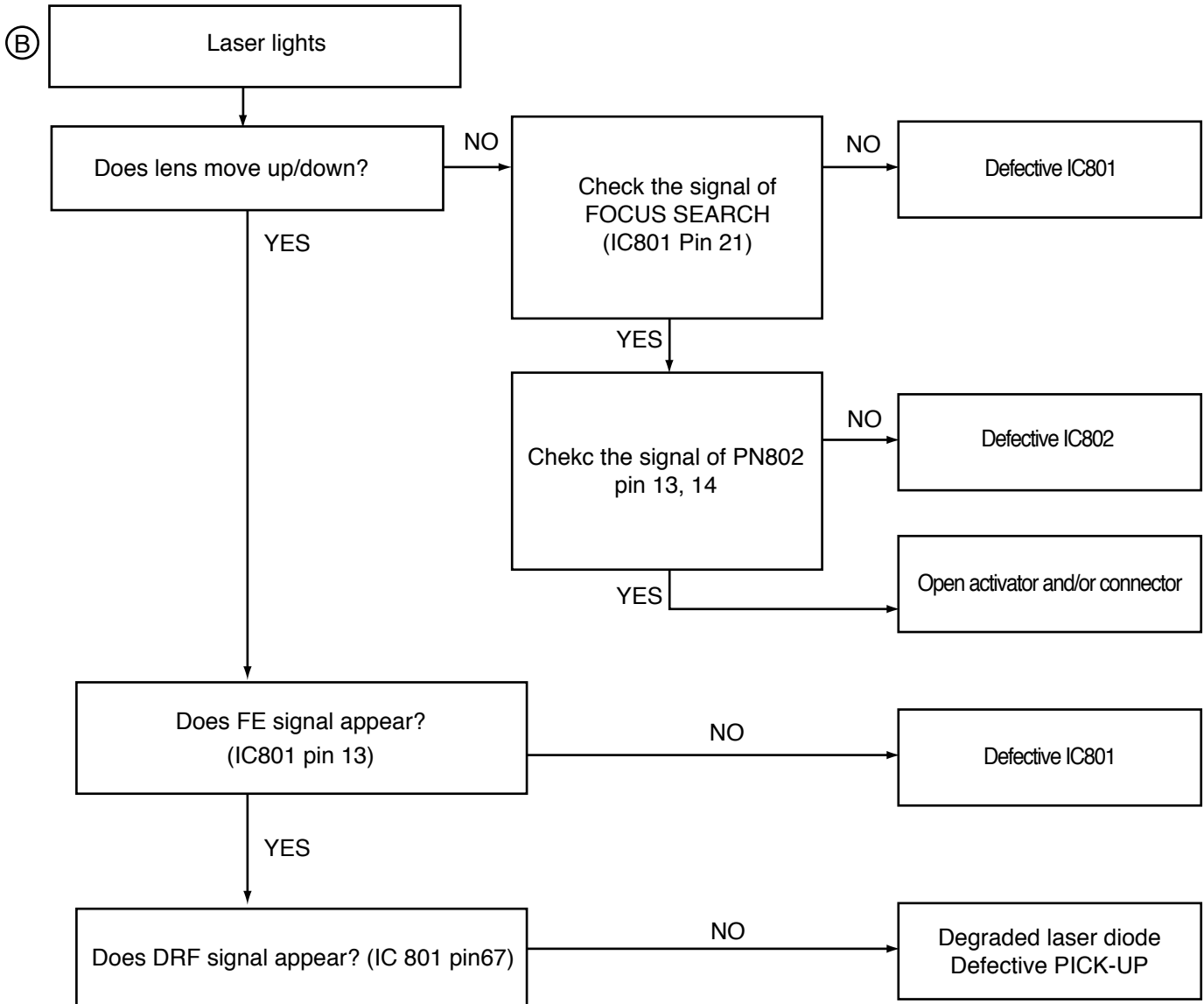




(A)

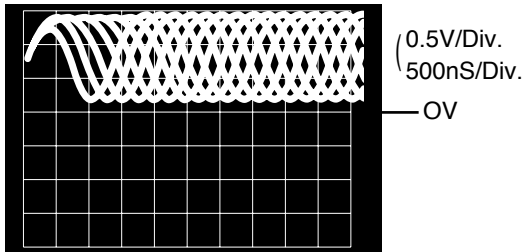
Laser does not light.



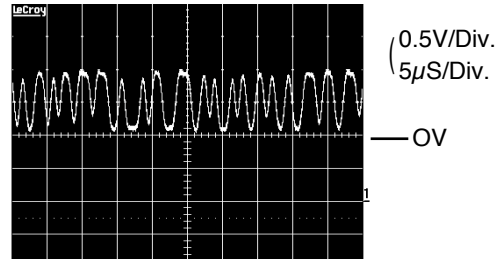


# WAVEFORMS OF MAJOR CHECK POINT

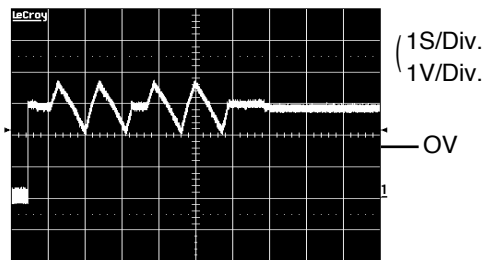
1. HF signal (RF signal ) waveform (IC801 pin 3) during normal play



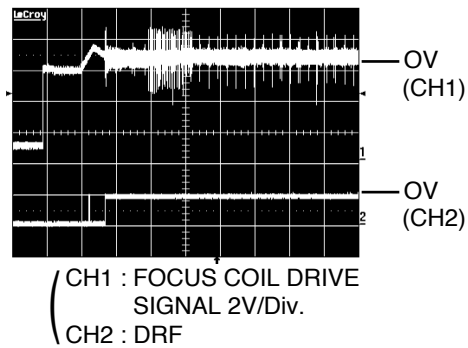
2. EFM signal (IC801 pin 3) waveform during Normal Play



3. Focus coil drive waveform(IC802 pin13)  
• When focus search failed or there is no disc on the tray

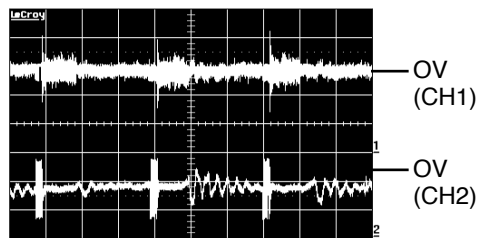


• Focus coil drive waveform(FDO: IC801 pin21) and DRF(IC801 pin67) when focus search is accomplished



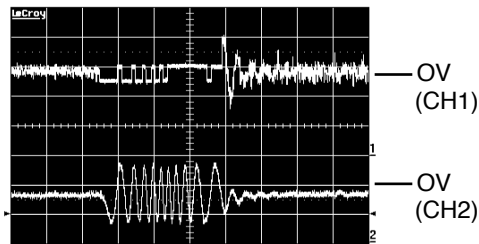
4. Tracking coil drive waveform and TE during track traverse

(1) When time division is 20mS/Div. 1V/Div.



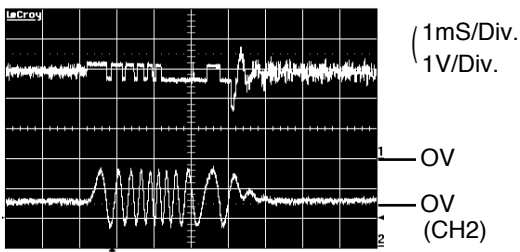
CH1 : TRACKING COIL DRIVE (IC802 pin27)  
CH2 : TRACKING ERROR (TE: IC801 pin15)

(2) When time division 1mS/Div, 1V/Div (During forward track traverse)



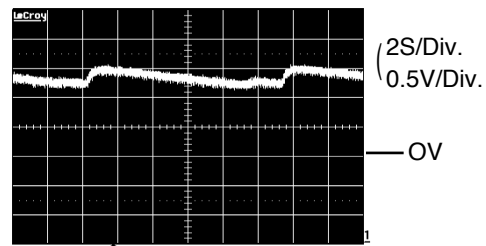
CH2 : TRACKING COIL DRIVE (IC802 pin27) SIGNAL 2V/Div.  
CH2 : TRACKING ERROR (TE: IC801 pin15) 1V/Div.

(3) When time division is 0.5nS/div. (During backward Track Traverse)

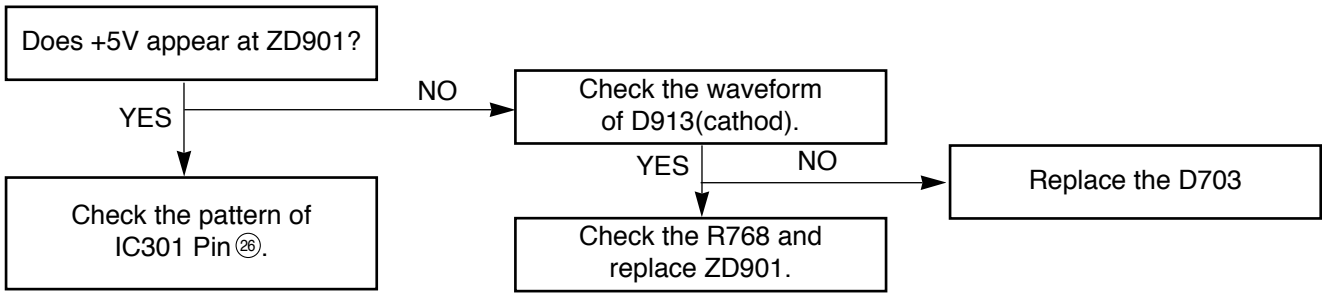


CH1 : TRACKING COIL DRIVE SIGNAL 2V/Div. (IC802 pin27)  
CH2 : TRACKING ERROR(TE: IC801 pin15) 1V/Div.

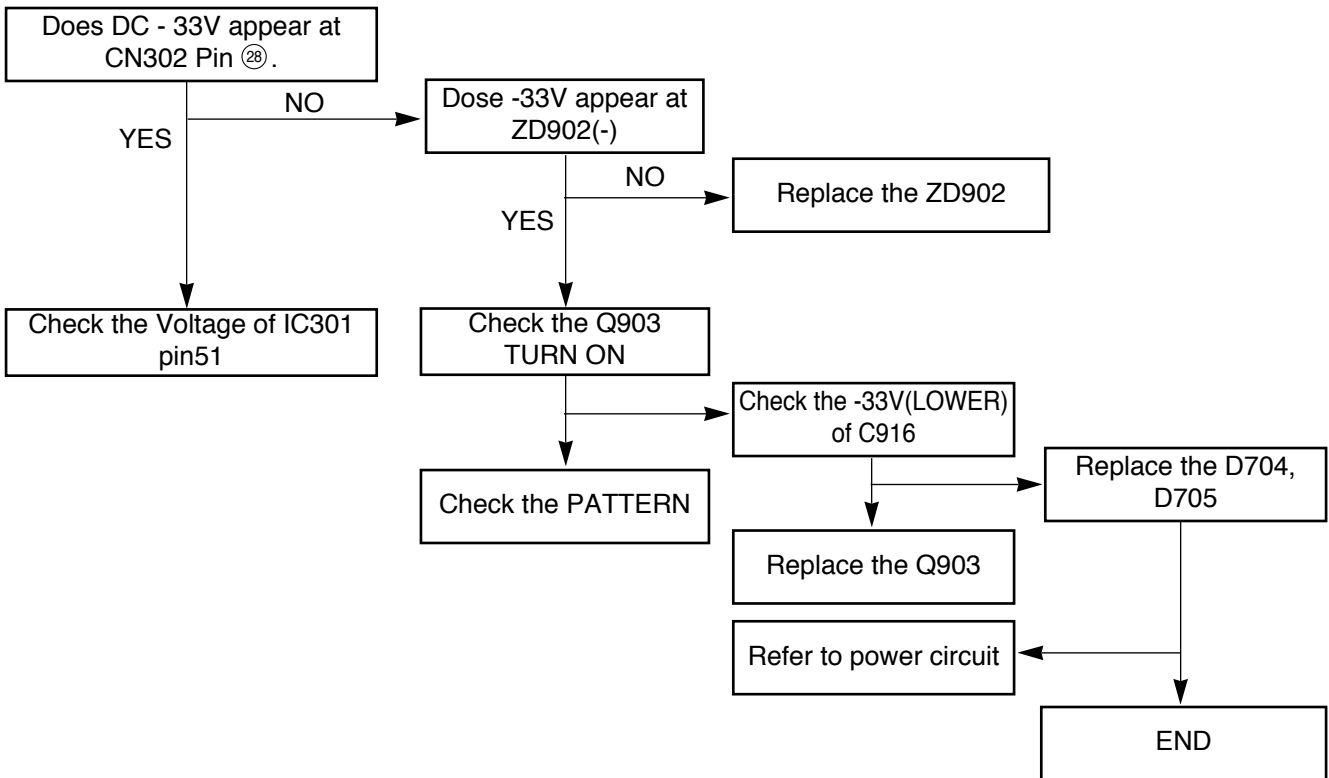
5. Feed motor drive waveform(IC 802 pin18) During normal play



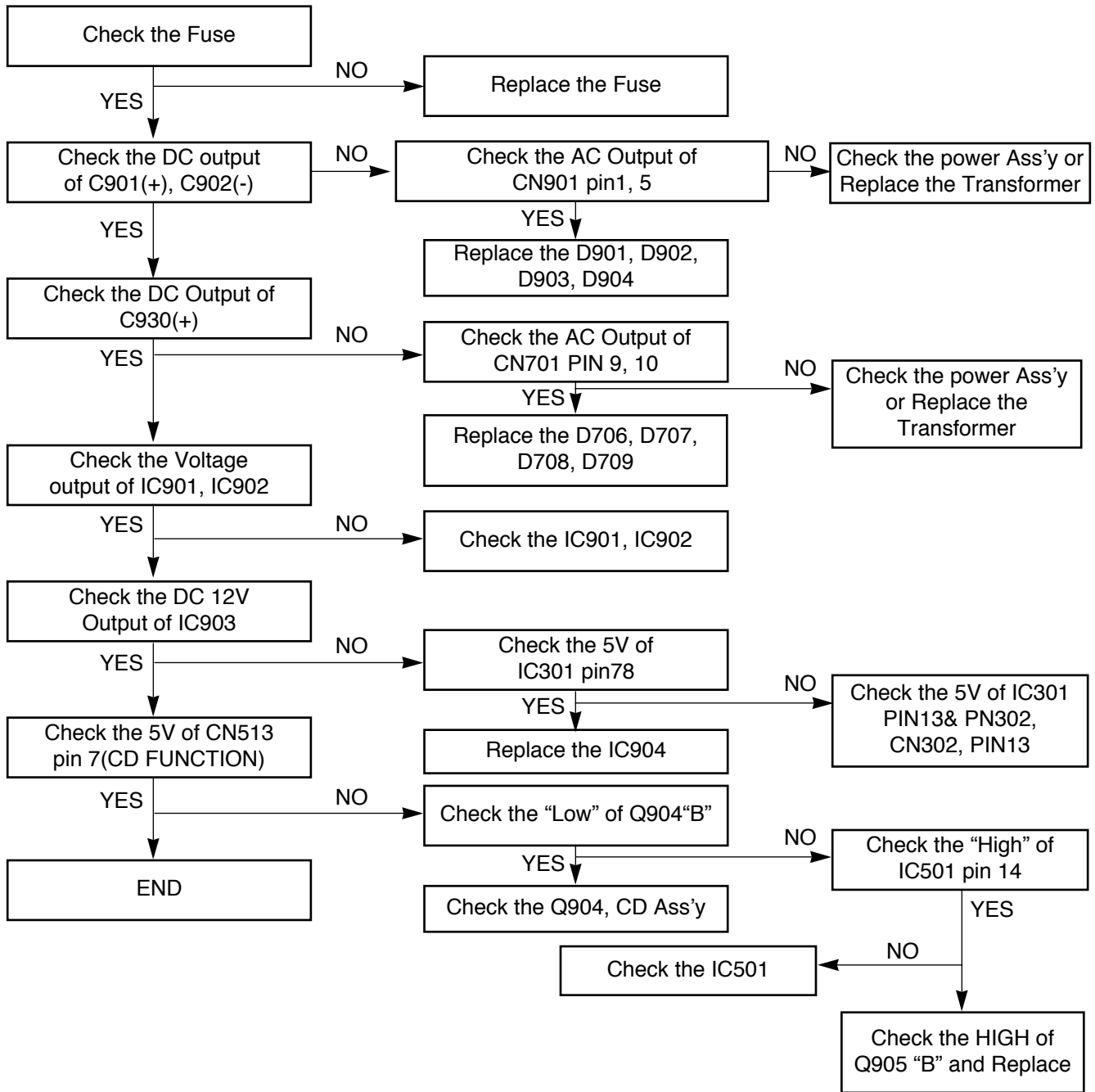
## P-SENS PART



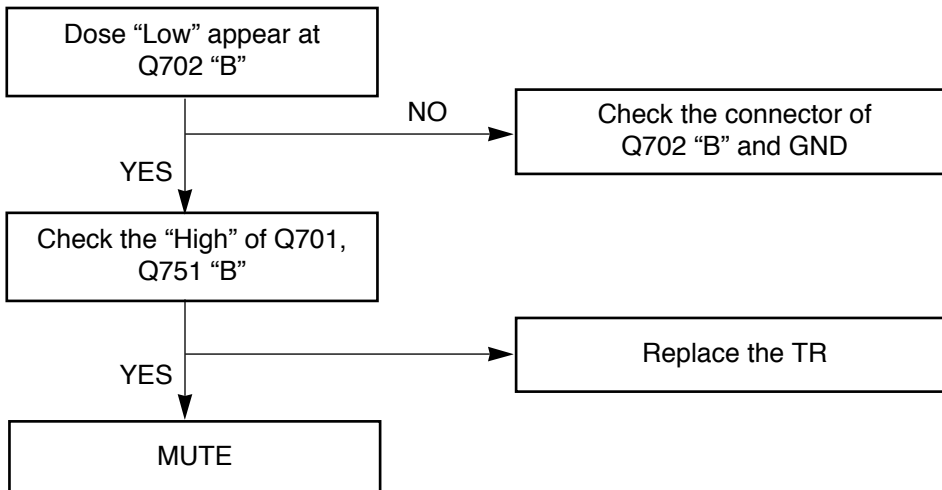
## VKK PART



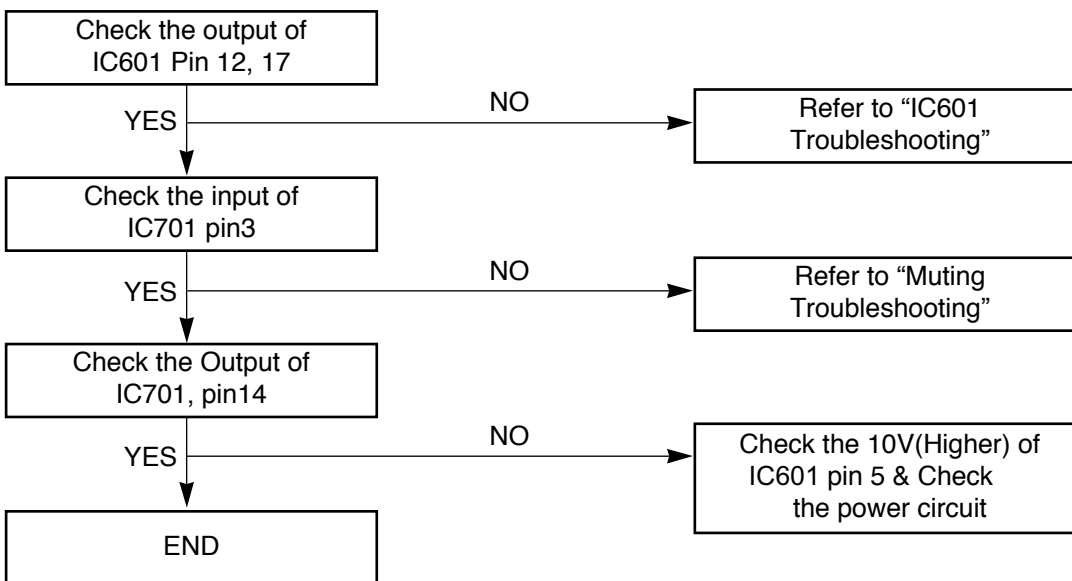
# POWER CIRCUIT



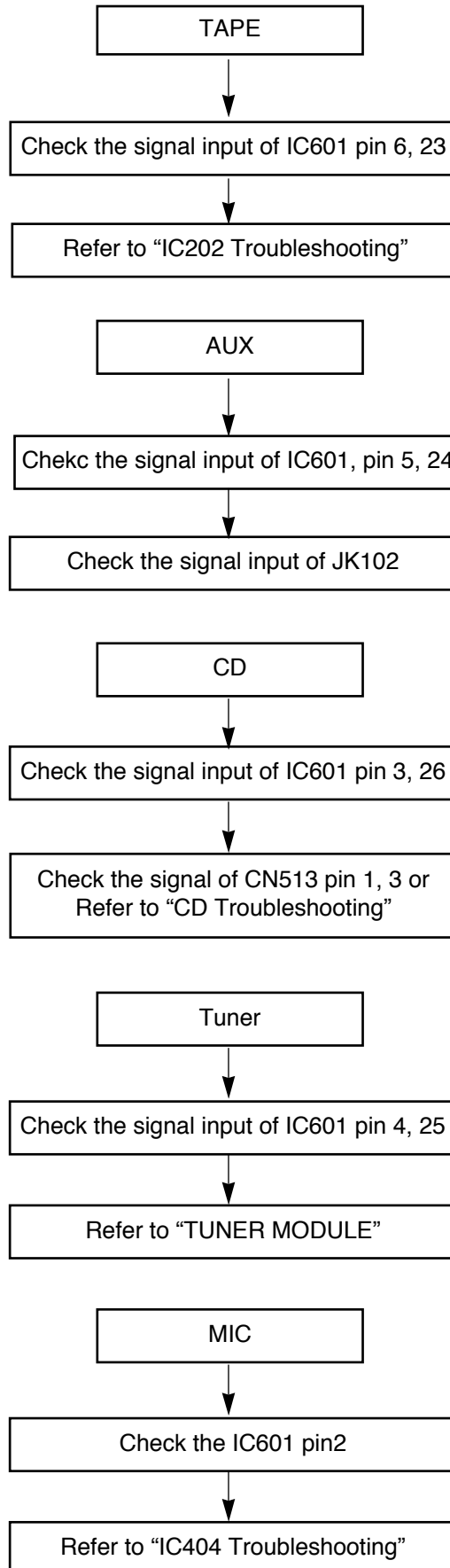
## Muting circuit (MUTE)



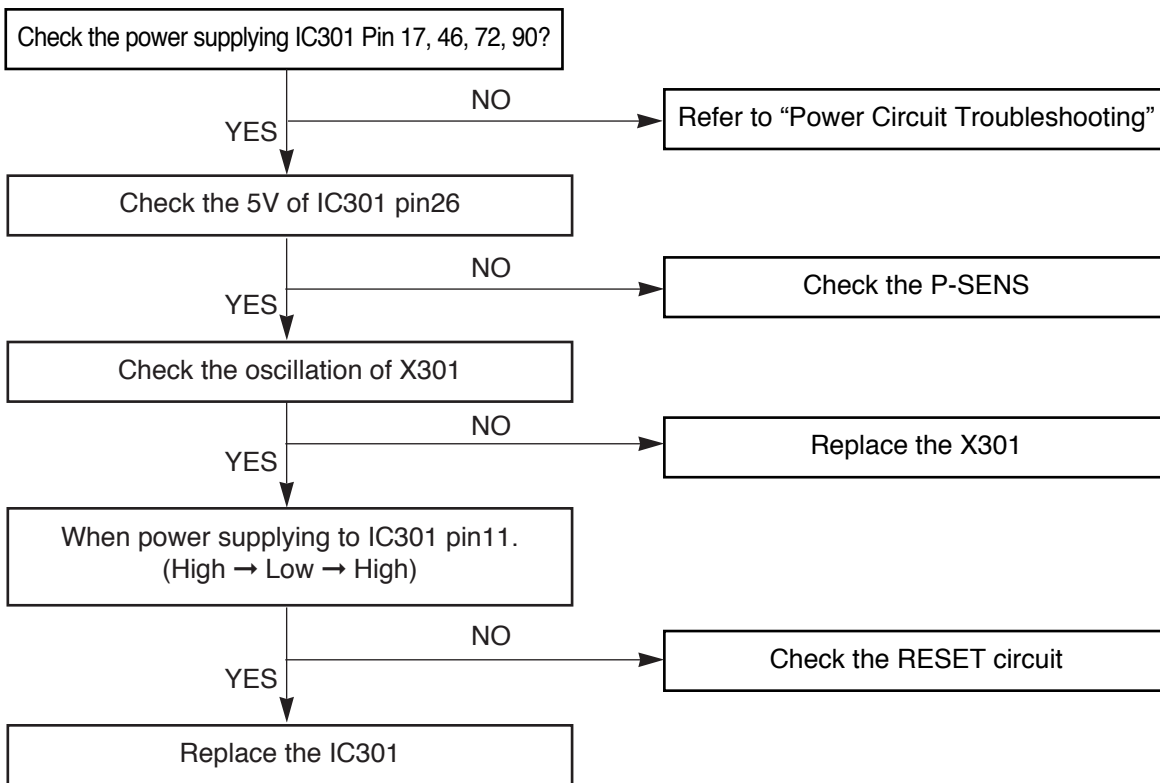
## AUDIO ABNORMAL



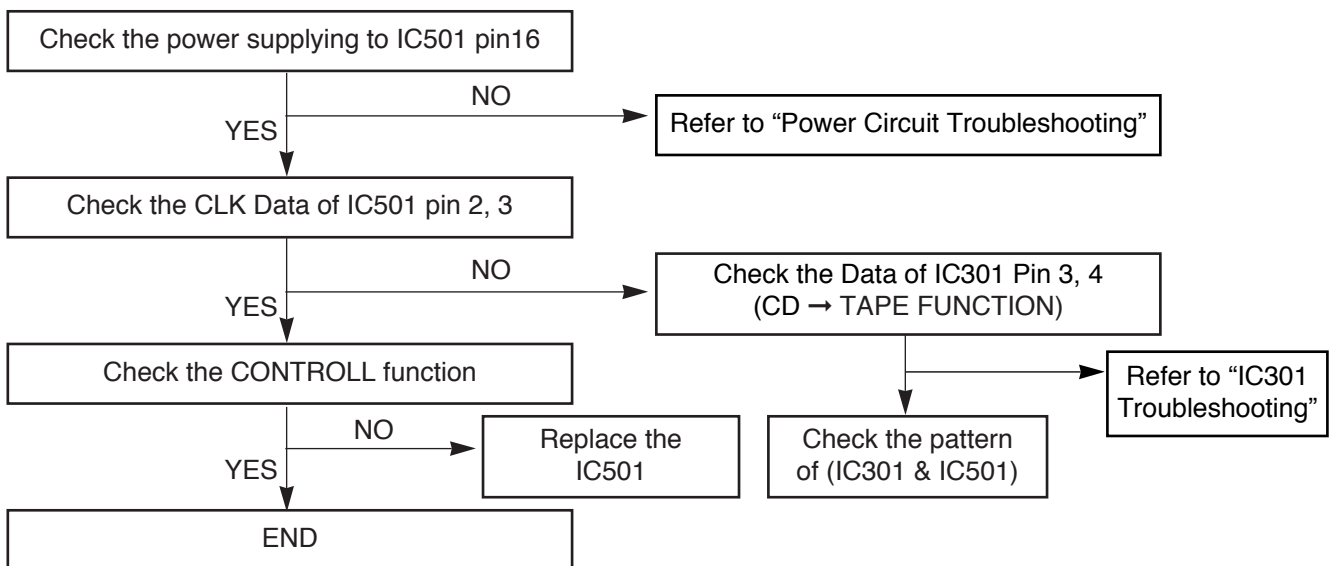
## FUNCTION MODE AUDIO ABNORMAL



## IC301 Troubleshooting

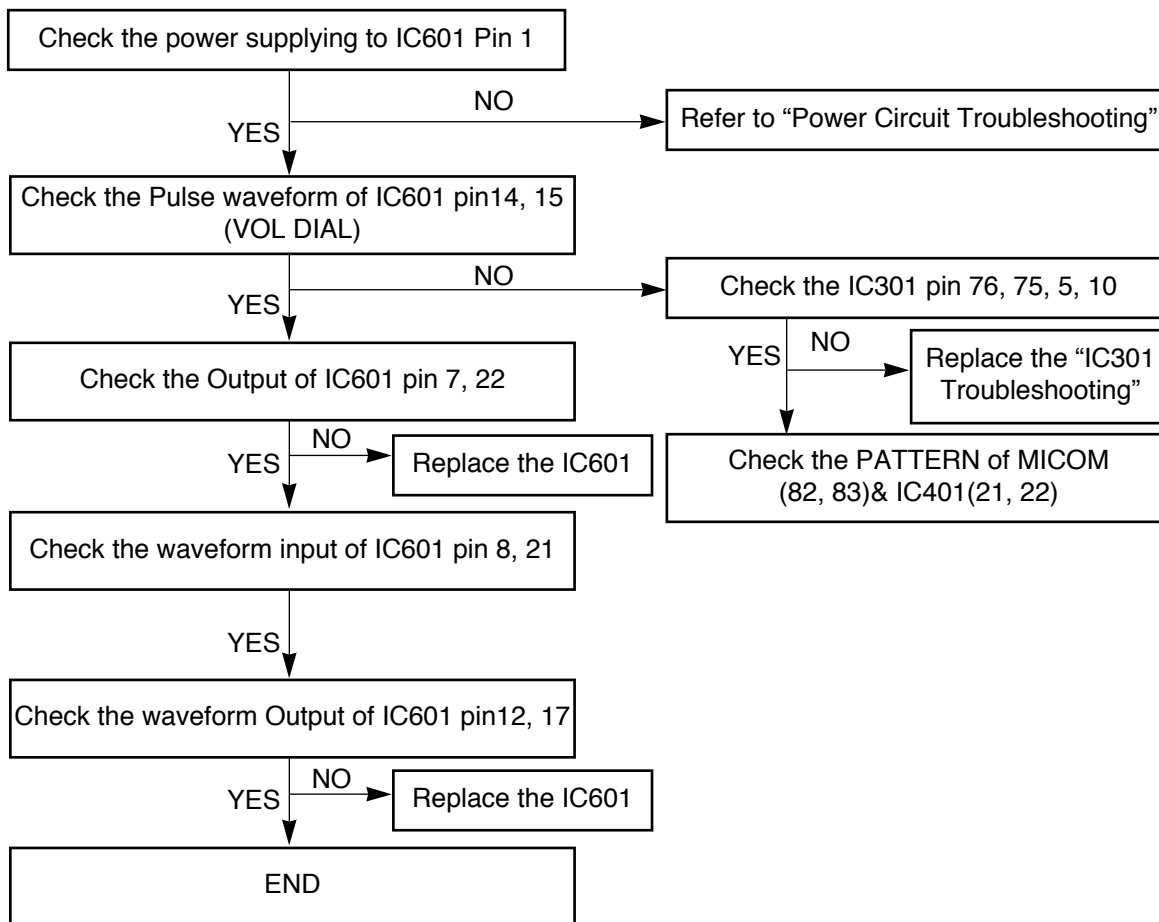


## IC501 Troubleshooting

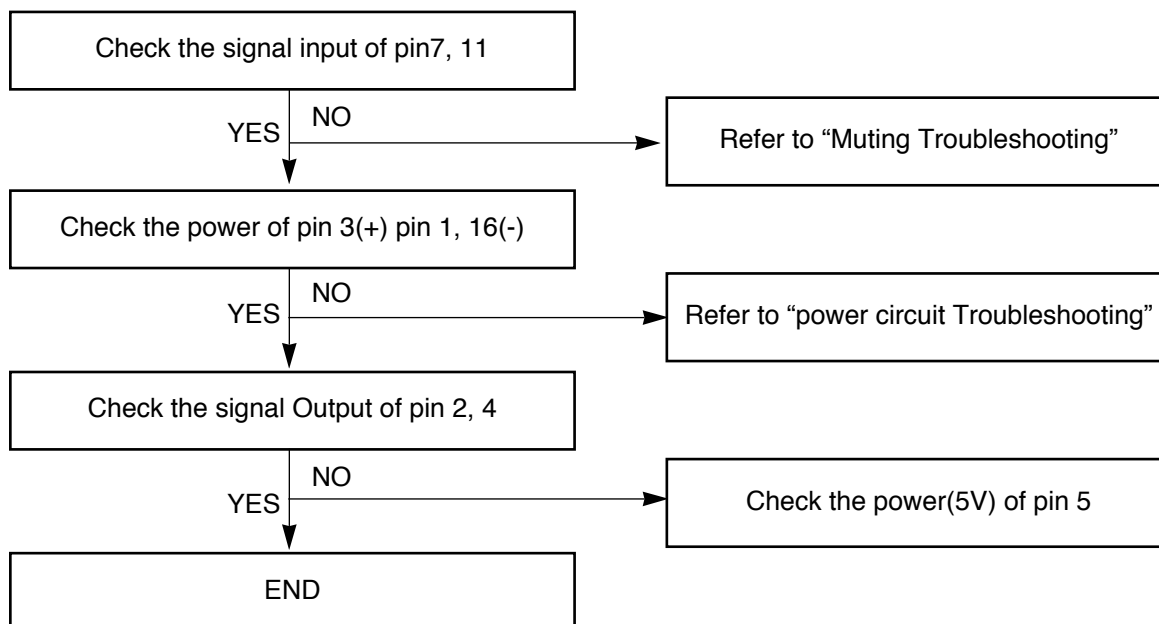




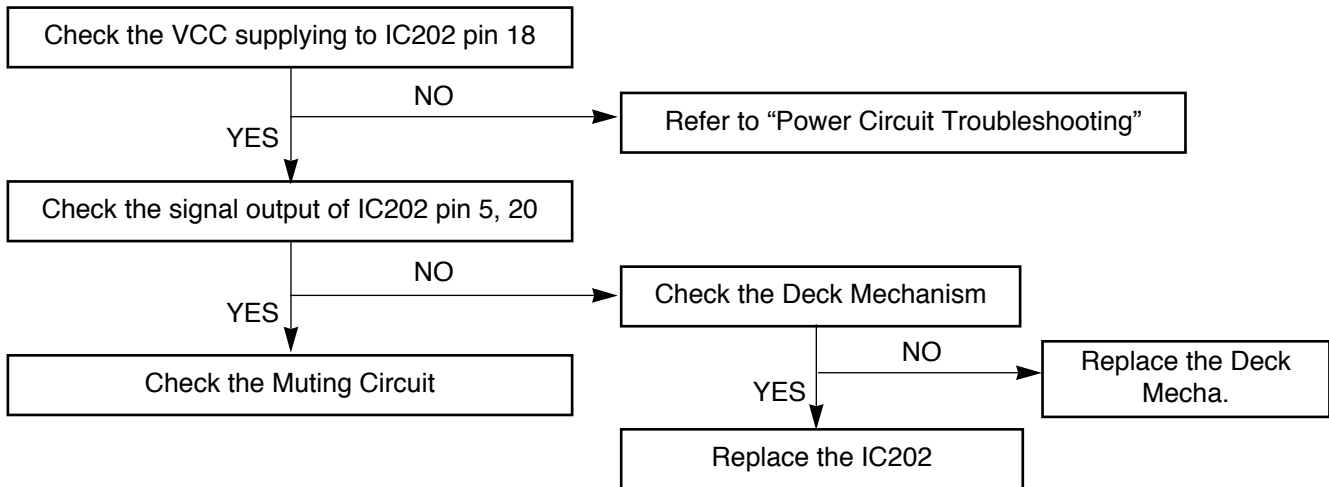
## IC601 Troubleshooting



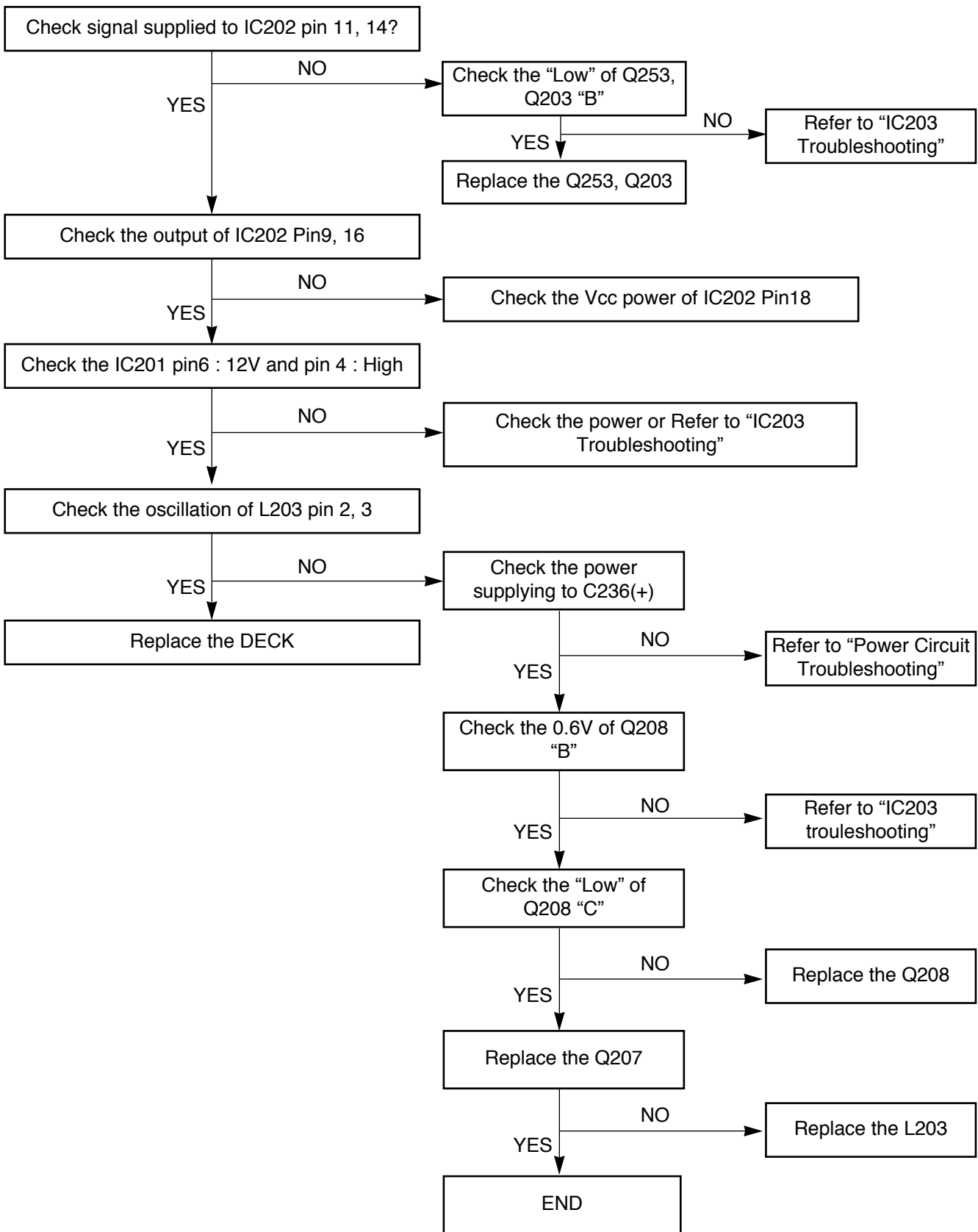
## IC701 Troubleshooting



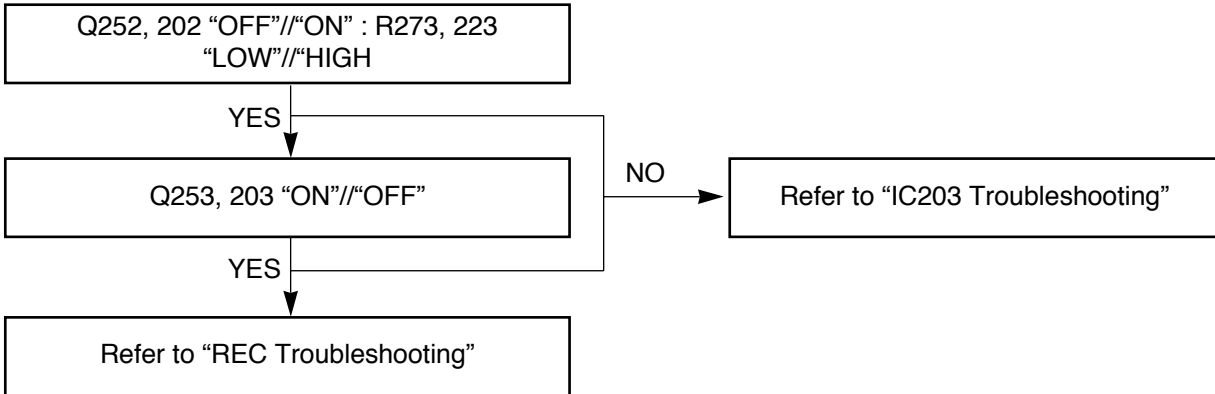
**Play**




**REC (Q252, Q202 ON / R273, R223 High)**

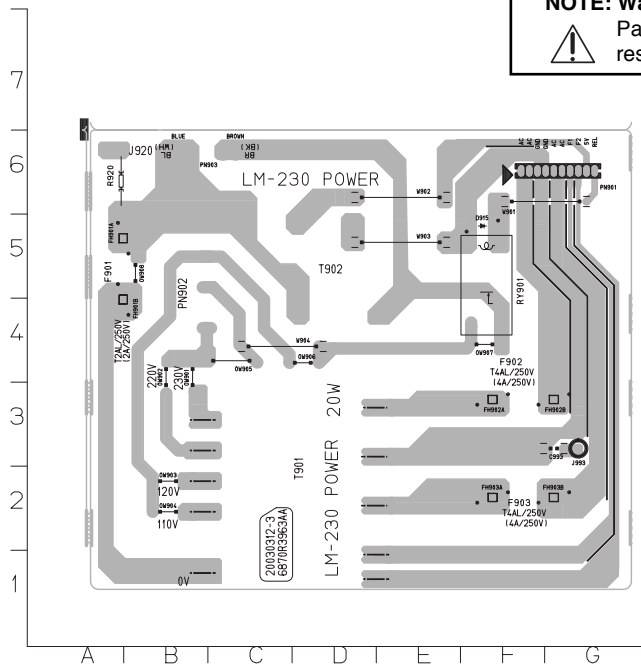


**Dubbing("NORMAL or REC "//"HIGH")**



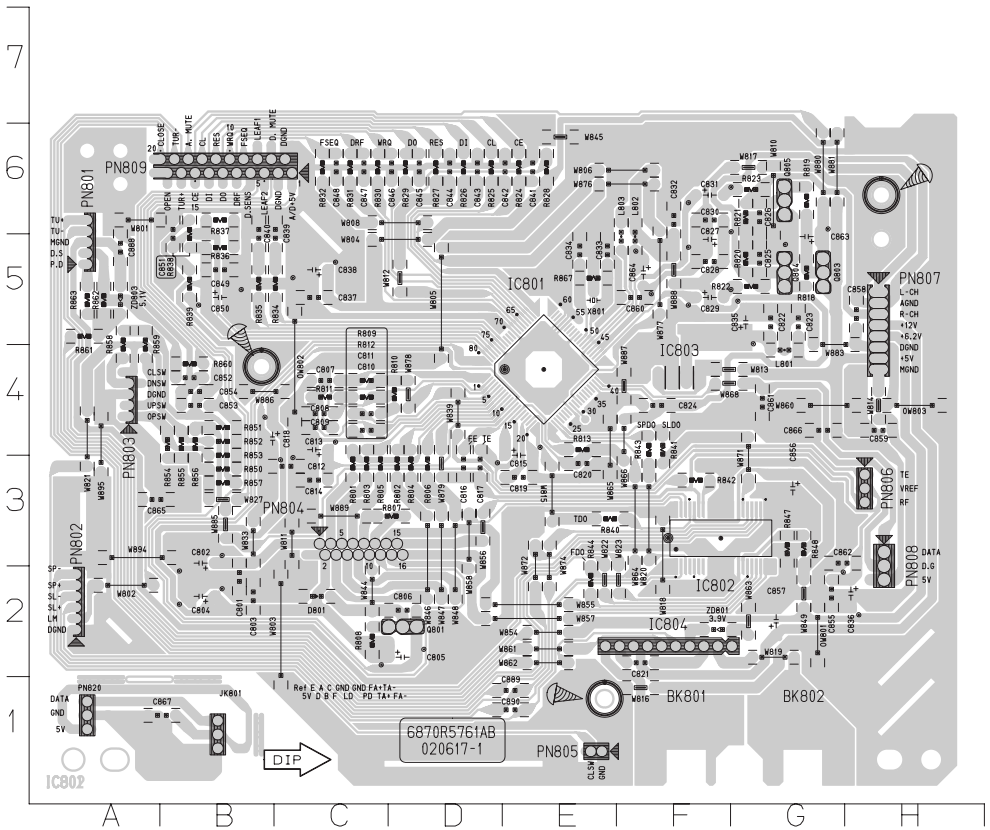
# • Power P.C. BOARD

**NOTE: Warning**  
 Parts that are shaded are critical With respect to risk of fire or electrical shock.



|        |    |
|--------|----|
| C993   | G3 |
| C992   | N3 |
| D915   | F5 |
| FH901A | A5 |
| FH901B | A4 |
| FH902A | F3 |
| FH902B | G3 |
| FH903A | F2 |
| FH903B | G2 |
| J920   | A6 |
| J993   | G3 |
| OW901  | B4 |
| OW902  | B4 |
| OW903  | B2 |
| OW904  | B2 |
| OW905  | C4 |
| OW906  | D4 |
| OW907  | F4 |
| OW908  | B5 |
| PN901  | G6 |
| PN902  | B5 |
| R920   | A6 |
| RY901  | F5 |
| SW901  | O4 |
| TM901  | B6 |
| TM902  | C6 |

# • CD MAIN P.C. BOARD



|       |    |       |    |
|-------|----|-------|----|
| C801  | B2 | OW801 | G2 |
| C802  | B3 | OW802 | C4 |
| C803  | B2 | OW803 | H4 |
| C804  | B2 | PN801 | A5 |
| C805  | D2 | PN802 | A2 |
| C806  | D2 | PN803 | A4 |
| C807  | C4 | PN804 | C3 |
| C808  | C4 | PN805 | E1 |
| C809  | C4 | PN806 | H3 |
| C810  | C4 | PN807 | H5 |
| C811  | C4 | PN808 | H3 |
| C812  | C3 | PN809 | C6 |
| C813  | C4 | PN820 | A1 |
| C814  | C3 | O801  | D2 |
| C815  | E3 | O803  | G5 |
| C816  | D3 | O804  | G5 |
| C817  | D3 | O805  | G6 |
| C818  | B4 | R801  | C3 |
| C819  | E3 | R802  | D3 |
| C820  | E3 | R803  | C3 |
| C821  | F2 | R804  | D3 |
| C822  | G5 | R805  | C3 |
| C823  | G5 | R806  | D3 |
| C824  | F4 | R807  | D3 |
| C825  | G5 | R808  | C2 |
| C826  | G6 | R809  | C4 |
| C827  | F5 | R810  | D4 |
| C828  | F5 | R811  | C4 |
| C829  | F5 | R812  | C4 |
| C830  | F6 | R813  | E4 |
| C831  | F6 | R818  | G5 |
| C832  | F6 | R819  | G6 |
| C833  | E5 | R820  | G5 |
| C834  | E5 | R821  | G6 |
| C835  | G5 | R822  | G5 |
| C836  | H2 | R823  | G6 |
| C837  | C5 | R824  | F6 |
| C838  | C5 | R825  | E6 |
| C839  | C5 | R826  | D6 |
| C840  | B5 | R827  | D6 |
| C841  | E6 | R828  | E6 |
| C842  | E6 | R829  | D6 |
| C843  | D6 | R830  | C6 |
| C844  | D6 | R831  | C6 |
| C845  | D6 | R832  | C6 |
| C846  | D6 | R834  | C5 |
| C847  | C6 | R835  | B5 |
| C848  | C6 | R836  | B5 |
| C849  | B5 | R837  | B6 |
| C850  | B5 | R838  | B5 |
| C851  | B5 | R839  | B5 |
| C852  | B4 | R840  | B5 |
| C853  | B4 | R841  | F4 |
| C854  | B4 | R842  | F3 |
| C855  | G2 | R843  | F4 |
| C856  | G3 | R844  | E2 |
| C857  | G2 | R847  | G3 |
| C858  | H5 | R848  | G3 |
| C859  | H4 | R850  | B3 |
| C860  | F5 | R851  | B4 |
| C861  | G4 | R852  | B4 |
| C862  | G3 | R853  | B3 |
| C863  | G5 | R854  | B4 |
| C864  | F5 | R855  | B4 |
| C865  | A3 | R856  | B4 |
| C866  | G4 | R857  | B3 |
| C867  | B1 | R858  | A4 |
| C868  | A5 | R859  | A4 |
| C869  | E1 | R860  | B4 |
| D801  | C2 | R862  | A5 |
| IC803 | F4 | R863  | A5 |
| IC804 | C2 | R867  | E5 |
| L801  | G4 | X801  | E5 |
| L802  | F5 | Z801  | F2 |
| L803  | F5 | Z803  | A5 |

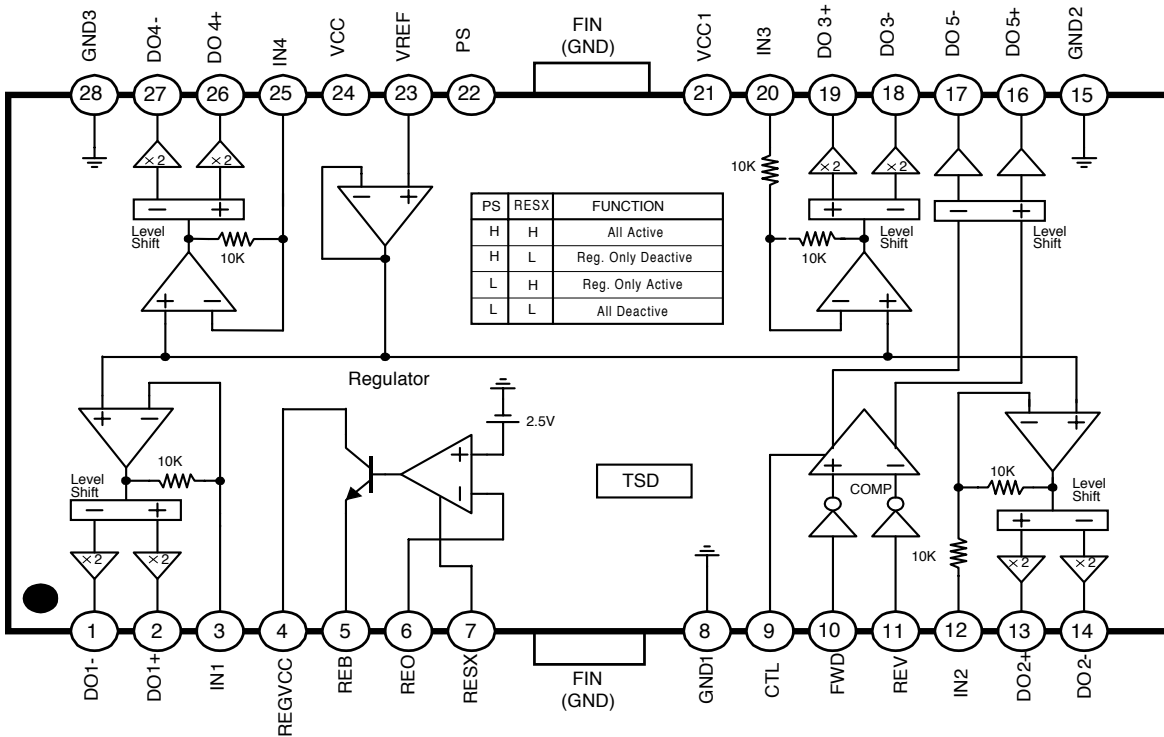
# INTERNAL BLOCK DIAGRAM OF ICs

## ■ FAN8039BD3 (IC 802)

### 5-CH Motor Driver

#### Description

The FAN8039BD3 is a monolithic integrated circuit suitable for a 5-CH motor driver which drives the tracking actuator, focus actuator, sled motor, tray motor, spindle motor of the DVDP/CAR-CD systems.



#### Pin Definitions

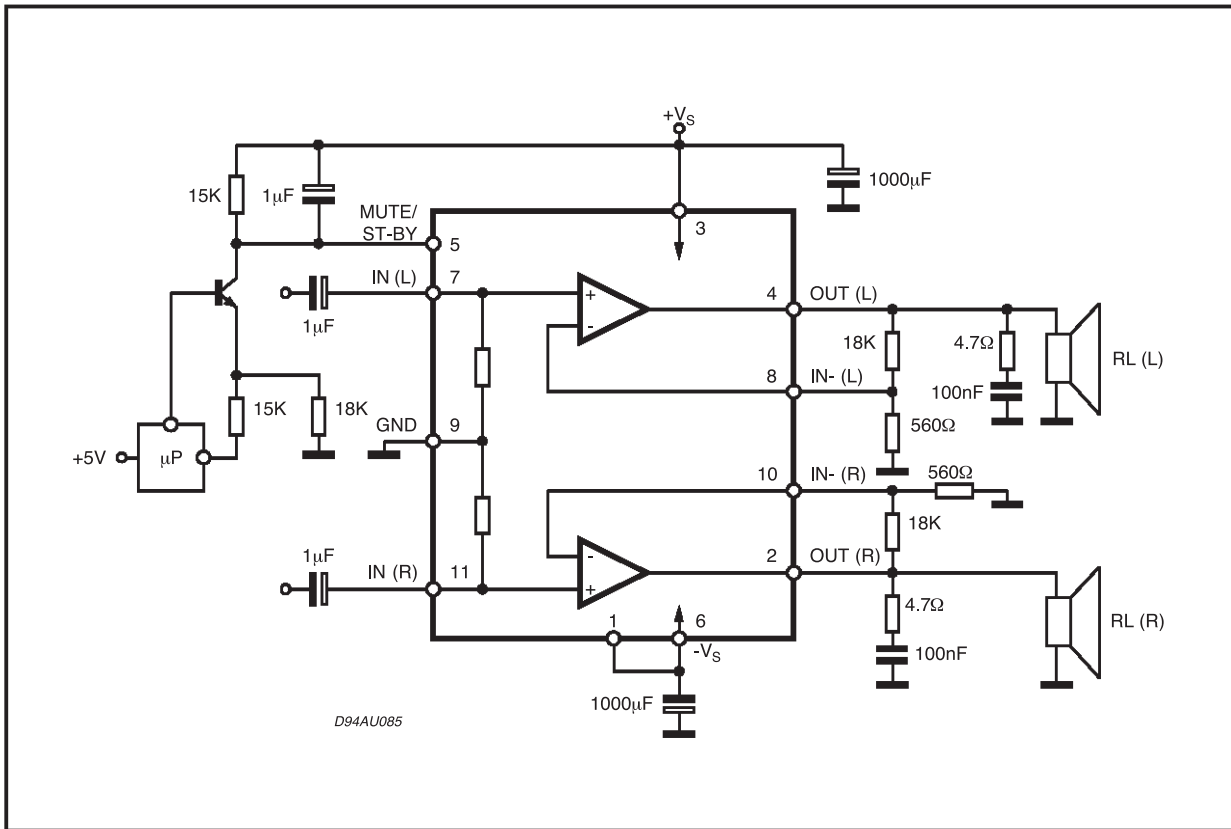
| NO | Symbol | Description              | NO | Symbol | Description                  |
|----|--------|--------------------------|----|--------|------------------------------|
| 1  | DO1-   | CH1 Drive Output (-)     | 15 | GND2   | Power Ground1 (CH 2,3,5)     |
| 2  | DO1+   | CH1 Drive Output (+)     | 16 | DO5+   | CH5 Drive Output (+)         |
| 3  | IN1    | CH1 Drive Input          | 17 | DO5-   | CH5 Drive Output(-)          |
| 4  | REGVCC | Regulator Supply Voltage | 18 | DO3-   | CH3 Drive Output(-)          |
| 5  | REB    | Regulator Output         | 19 | DO3+   | CH3 Drive Output (+)         |
| 6  | REO    | Regulator Feedback Input | 20 | IN3    | CH3 Drive Input              |
| 7  | RESX   | Regulator Reset          | 21 | VCC1   | Supply Voltage1(CH2,CH3,CH5) |
| 8  | GND1   | Signal Ground            | 22 | PS     | Power Save                   |
| 9  | CTL    | CH5 Motor Speed Control  | 23 | VREF   | Bias Voltage                 |
| 10 | FWD    | CH5 Forward Input        | 24 | VCC    | Supply Voltage(CH1,CH4)      |
| 11 | REV    | CH5 Reverse Input        | 25 | IN4    | CH4 Drive Input              |
| 12 | IN2    | CH2 Drive Input          | 26 | DO4+   | CH4 Drive Output (+)         |
| 13 | DO2+   | CH2 Drive Output (+)     | 27 | DO4-   | CH4 Drive Output (-)         |
| 14 | DO2-   | CH2 Drive Output (-)     | 28 | GND3   | Power Ground2 (CH 1,4)       |

# ■ TDA7265 (IC 701)

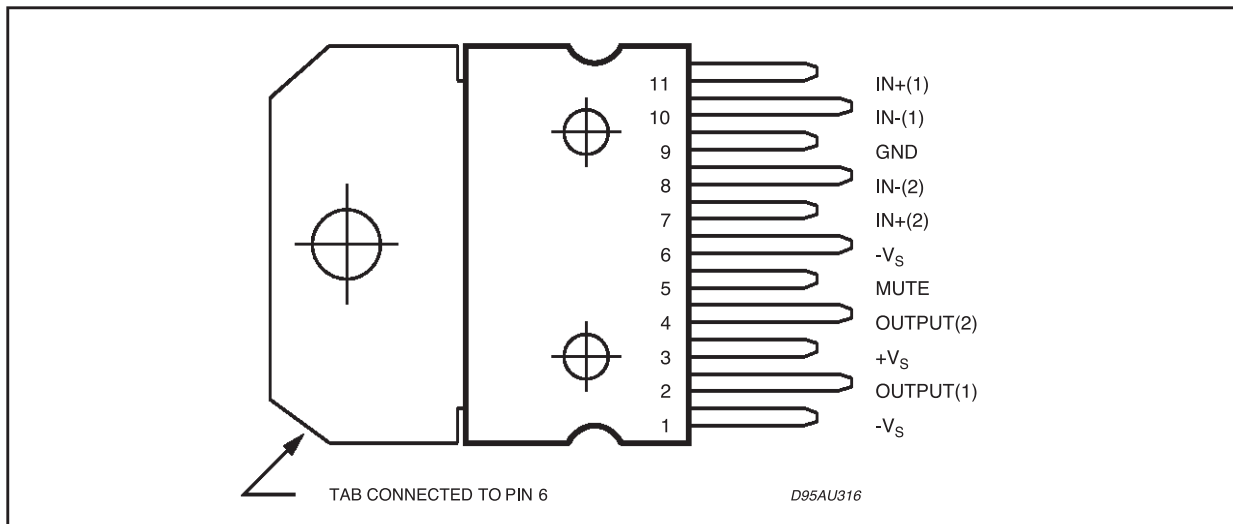
## 25 +25W STEREO AMPLIFIER WITH MUTE & ST-BY

### DESCRIPTION

The TDA7265 is class AB dual Audio power am-plifier assembled in the Multiwatt package, spe-cially designed for high quality sound application as Hi-Fi music centers and stereo TV sets.



### PIN CONNECTION (Top view)



# ■ KA3082 (IC 804)

## Bi-Directional DC Motor Driver

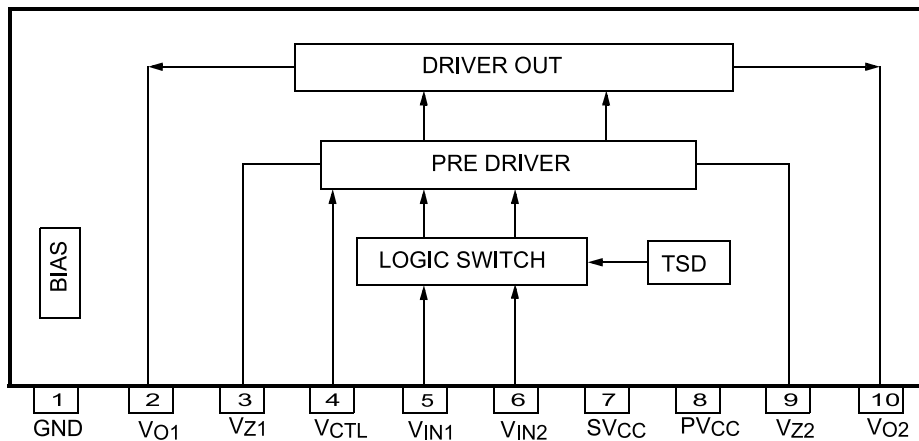
### Description

The KA3082 is a monolithic integrated circuit designed for driving bi-directional DC motor with braking and speed control, and it is suitable for the loading motor driver of VCR, CDP, and TOY systems. The speed control can be achieved by adjusting the external voltage of the speed control pin. It has two pins of logic inputs for controlling the forward/ reverse and braking.

### Pin Definitions

| Pin Number | Pin Name | I/O | Pin Function Description |
|------------|----------|-----|--------------------------|
| 1          | GND      | -   | Ground                   |
| 2          | VO1      | O   | Output 1                 |
| 3          | VZ1      | -   | Phase Compensation       |
| 4          | VCTL     | I   | Motor Speed Control      |
| 5          | VIN1     | I   | Input 1                  |
| 6          | VIN2     | I   | Input 2                  |
| 7          | SVCC     | -   | Supply Voltage (Signal)  |
| 8          | PVCC     | -   | Supply Voltage (Power)   |
| 9          | VZ2      | -   | Phase Compensation       |
| 10         | VO2      | O   | Output 2                 |

### Internal Block Diagram





## ■ KIA 78R12 PI (IC 902)

### 4 TERMINAL LOW DROP VOLTAGE REGULATOR

The KIA78RXX Series are Low Drop Voltage Regulator suitable for various electronic equipments. It provides constant voltage power source with TO-220 4 terminal lead full molded PKG. The Regulator has multi function such as over current protection, overheat protection and ON/OFF control.

#### ELECTRICAL CHARACTERISTICS

(Unless otherwise specified,  $I_o=0.5A$ ,  $T_a=25^{\circ}C$ , Note1.)

| CHARACTERISTIC                       |              | SYMBOL            | CONDITIONS | MIN.  | TYP. | MAX.    | UNIT |
|--------------------------------------|--------------|-------------------|------------|-------|------|---------|------|
| Output Voltage                       | KIA78R05     | $V_o$             | -          | 4.88  | 5.0  | 5.12    | V    |
|                                      | KIA78R06     |                   | -          | 5.85  | 6.0  | 6.15    |      |
|                                      | KIA78R08     |                   | -          | 7.80  | 8.0  | 8.2     |      |
|                                      | KIA78R09     |                   | -          | 8.78  | 9.0  | 9.22    |      |
|                                      | KIA78R10     |                   | -          | 9.75  | 10.0 | 10.25   |      |
|                                      | KIA78R12     |                   | -          | 11.70 | 12.0 | 12.30   |      |
|                                      | KIA78R15     |                   | -          | 14.70 | 15.0 | 15.30   |      |
| Load Regulation                      | Reg Load     | $I_o=5mA \sim 1A$ | -          | 0.1   | 2.0  | %       |      |
| Line Regulation                      | Reg Line     | (Note 2)          | -          | 0.5   | 2.5  | %       |      |
| Ripple Rejection                     | R•R          |                   | 45         | 55    | -    | dB      |      |
| Drop Out Voltage                     | $V_D$        | (Note 3)          | -          | -     | 0.5  | V       |      |
| Output ON state for control Voltage  | $V_{C(ON)}$  |                   | 2.0        | -     | -    | V       |      |
| Output ON state for control Current  | $I_{C(ON)}$  | $V_C=2.7V$        | -          | -     | 20   | $\mu A$ |      |
| Output OFF state for control Voltage | $V_{C(OFF)}$ | -                 | -          | -     | 0.8  | V       |      |
| Output OFF state for control Current | $I_{C(OFF)}$ | $V_C=0.4V$        | -          | -     | -0.4 | mA      |      |
| Quiescent Current                    | $I_Q$        | $I_o=0$           | -          | -     | 10   | mA      |      |

Note1)  $V_{IN}$  of KIA78R05=7V

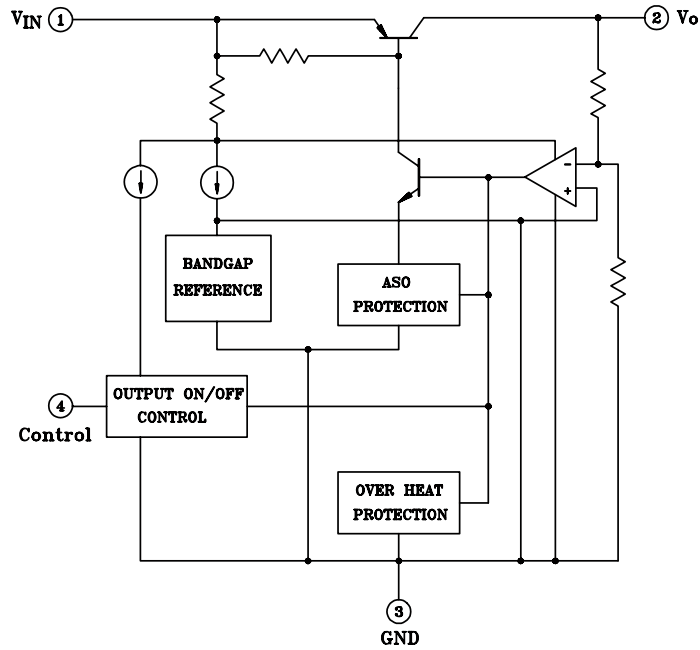
- " KIA78R06=8V
- " KIA78R08=10V
- " KIA78R09=15V
- " KIA78R10=16V
- " KIA78R12=18V
- " KIA78R15=21V

Note2)  $V_{IN}$  of KIA78R05=6~12V

- " KIA78R06=7~15V
- " KIA78R08=9~25V
- " KIA78R09=10~25V
- " KIA78R10=11~26V
- " KIA78R12=13~29V
- " KIA78R15=16~32V

Note3) At  $V_{IN}=0.95V_o$

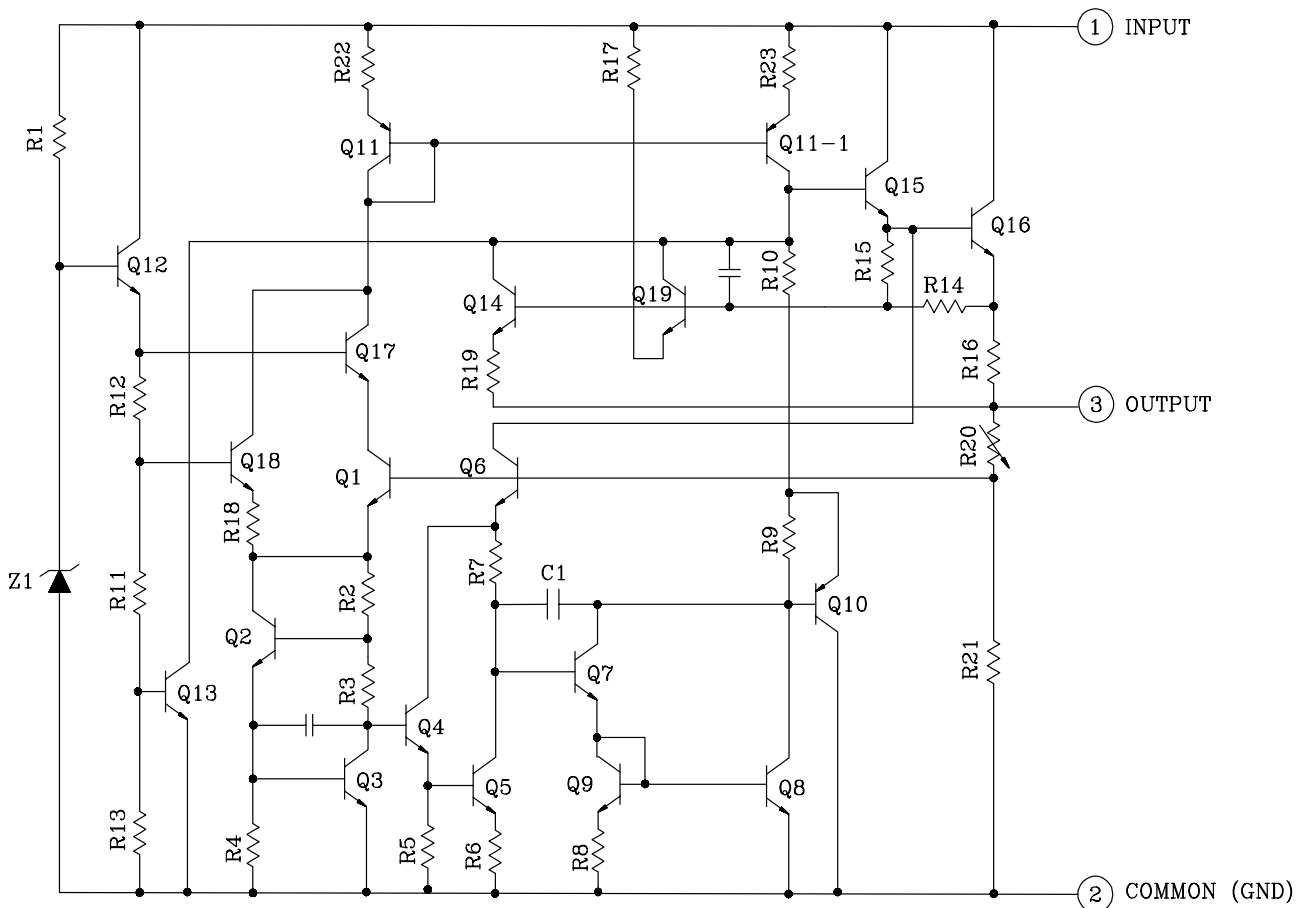
## Block Diagram



## ■ KIA7805AP/API (IC 901)

THREE TERMINAL POSITIVE VOLTAGE REGULATORS 5V, 6V, 8V, 9V, 10V, 12, 15V, 18V, 24V.

### EQUIVALENT CIRCUIT



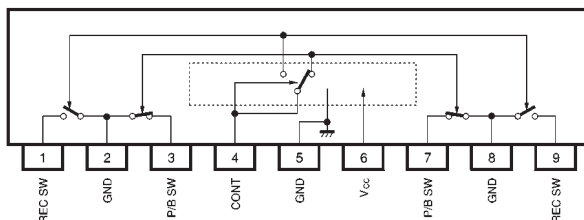
KIA7805AP/API

ELECTRICAL CHARACTERISTICS ( $V_{IN}=10V$ ,  $I_{OUT}=500mA$ ,  $0^{\circ}C \leq T_j \leq 125^{\circ}C$ )

| CHARACTERISTIC                                    | SYMBOL       | TEST CIRCUIT | TEST CONDITION  | MIN.                            | TYP. | MAX. | UNIT            |    |
|---|--------------|--------------|---|---------------------------------|------|------|-----------------|----|
| Output Voltage                                    | $V_{OUT}$    | 1            | $T_j=25^{\circ}C$ , $I_{OUT}=100mA$   | 4.8                             | 5.0  | 5.2  | V               |    |
| Input Regulation                                  | Reg line     | 1            | $T_j=25^{\circ}C$   | $7.0V \leq V_{IN} \leq 25V$     | -    | 3    | 100             | mV |
|   |              |              |   | $8.0V \leq V_{IN} \leq 12V$     | -    | 1    | 50              |    |
| Load Regulation                                   | Reg load     | 1            | $T_j=25^{\circ}C$   | $5mA \leq I_{OUT} \leq 1.4A$    | -    | 15   | 100             | mV |
|   |              |              |   | $250mA \leq I_{OUT} \leq 750mA$ | -    | 5    | 50              |    |
| Output Voltage                                    | $V_{OUT}$    | 1            | $7.0V \leq V_{IN} \leq 20V$<br>$5.0mA \leq I_{OUT} \leq 1.0A$ , $P_o \leq 15W$  | 4.75                            | -    | 5.25 | V               |    |
| Quiescent Current                                 | $I_B$        | 1            | $T_j=25^{\circ}C$ , $I_{OUT}=5mA$   | -                               | 4.2  | 8.0  | mA              |    |
| Quiescent Current Change                          | $\Delta I_B$ | 1            | $7.0V \leq V_{IN} \leq 25V$   | -                               | -    | 1.3  | mA              |    |
| Output Noise Voltage                              | $V_{NO}$     | 1            | $T_a=25^{\circ}C$ , $10Hz \leq f \leq 100kHz$<br>$I_{OUT}=50mA$                 | -                               | 50   | -    | $\mu V_{rms}$   |    |
| Ripple Rejection Ratio                            | RR           | 1            | $f=120Hz$ , $8.0V \leq V_{IN} \leq 18V$ ,<br>$I_{OUT}=50mA$ , $T_j=25^{\circ}C$ | 62                              | 78   | -    | dB              |    |
| Dropout Voltage                                   | $V_D$        | 1            | $I_{OUT}=1.0A$ , $T_j=25^{\circ}C$  | -                               | 2.0  | -    | V               |    |
| Short Circuit Current Limit                       | $I_{SC}$     | 1            | $T_j=25^{\circ}C$   | -                               | 1.6  | -    | A               |    |
| Average Temperature Coefficient of Output Voltage | $TC_{VO}$    | 1            | $I_{OUT}=5mA$ , $0^{\circ}C \leq T_j \leq 125^{\circ}C$                         | -                               | -0.6 | -    | mV/ $^{\circ}C$ |    |

## ■ BA3126N (IC 201)

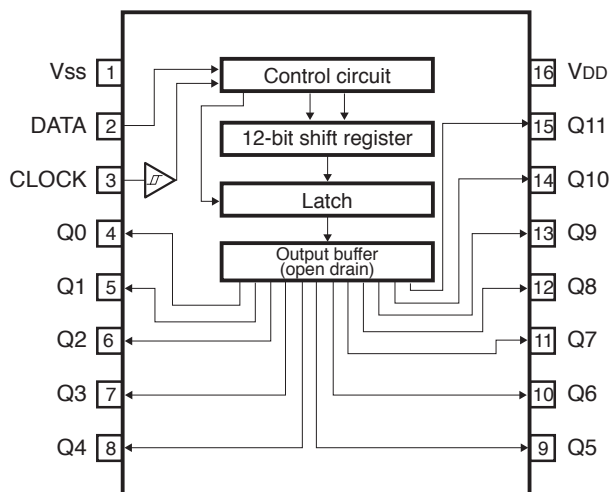
2-channel head switch for radio cassette recorders



# ■ BU2090F (IC 501)

12-bit, Serial IN, Parallel OUT driver

## Block diagram

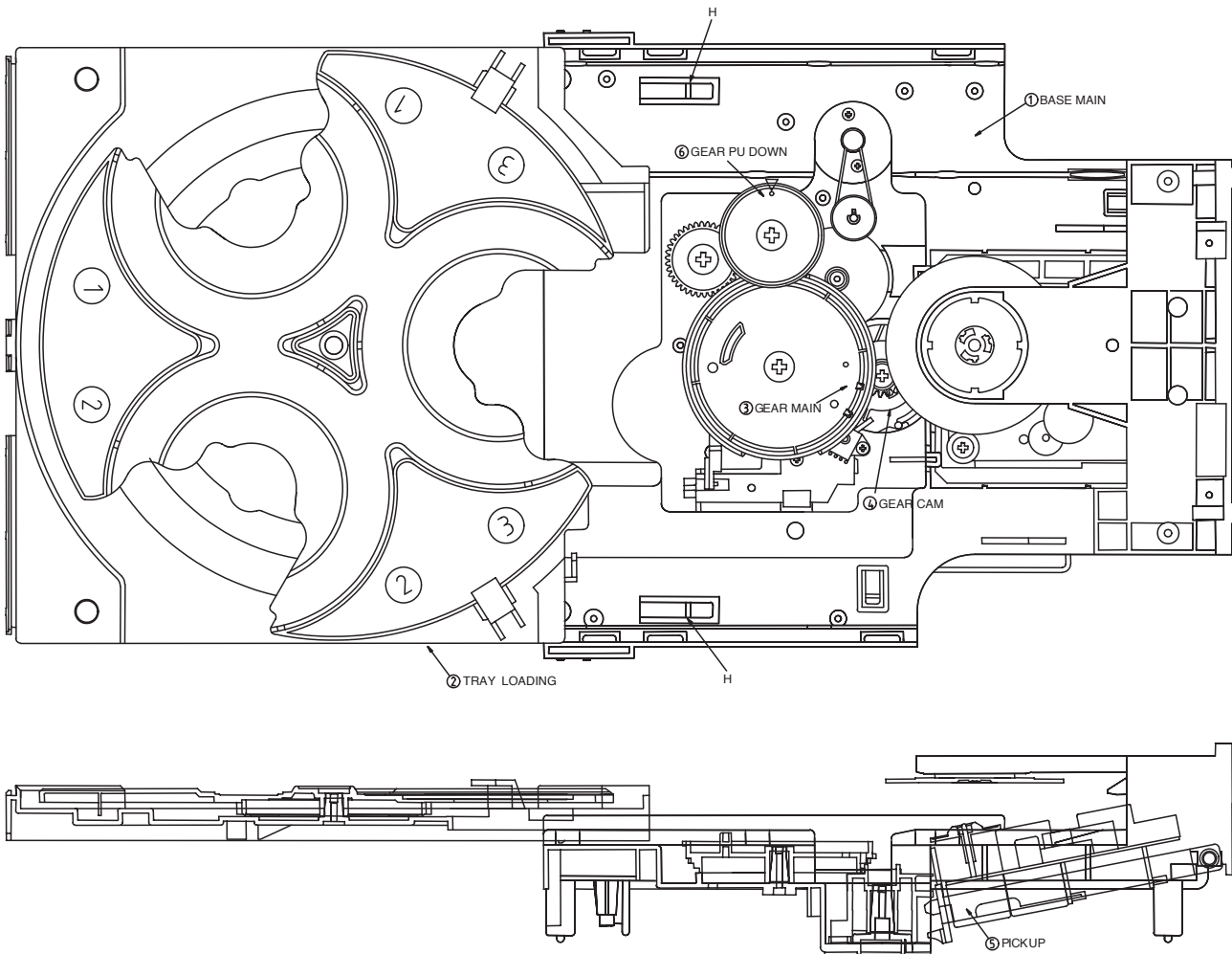


## PIN DESCRIPTION

| Pin No.     |          |           | Pin name        | Function               |
|-------------|----------|-----------|-----------------|------------------------|
| BU2090/F/FS | BU2092/F | BU2092/FV |                 |                        |
| 1           | 1        | 1         | Vss             | GND                    |
| 2           | 2        | 2         | DATA            | Serial data input      |
| 3           | 3        | 3         | CLOCK           | Data shift clock input |
| -           | 4        | 4         | LCK             | Data latch clock input |
| 4           | 5        | 5         | Q0              | parallel data output   |
| 5           | 6        | 6         | Q1              | parallel data output   |
| 6           | 7        | 7         | Q2              | parallel data output   |
| 7           | 8        | 8         | Q3              | parallel data output   |
| 8           | 9        | 9         | Q4              | parallel data output   |
| 9           | 10       | 10        | Q5              | parallel data output   |
| 10          | 11       | 11        | Q6              | parallel data output   |
| -           | -        | 12        | N.C.            | Not connected          |
| -           | -        | 13        | N.C.            | Not connected          |
| 11          | 12       | 14        | Q7              | parallel data output   |
| 12          | 13       | 15        | Q8              | parallel data output   |
| 13          | 14       | 16        | Q9              | parallel data output   |
| 14          | 15       | 17        | Q10             | parallel data output   |
| 15          | 16       | 18        | Q11             | parallel data output   |
| -           | 17       | 19        | $\overline{OE}$ | Output Enable          |
| 16          | 18       | 20        | VDD             | Power supply           |

# □ REPAIRS REGARDING CD MECHANISM

## ■ IMPROVED METHOD - WHEN THE TRAY GEARS WERE DISTORTED



### 1. How to open the tray

Push two hooks (H) of the ① BASE MAIN, and open the ② TRAY LOADING

### 2. How to correct the distorted gears

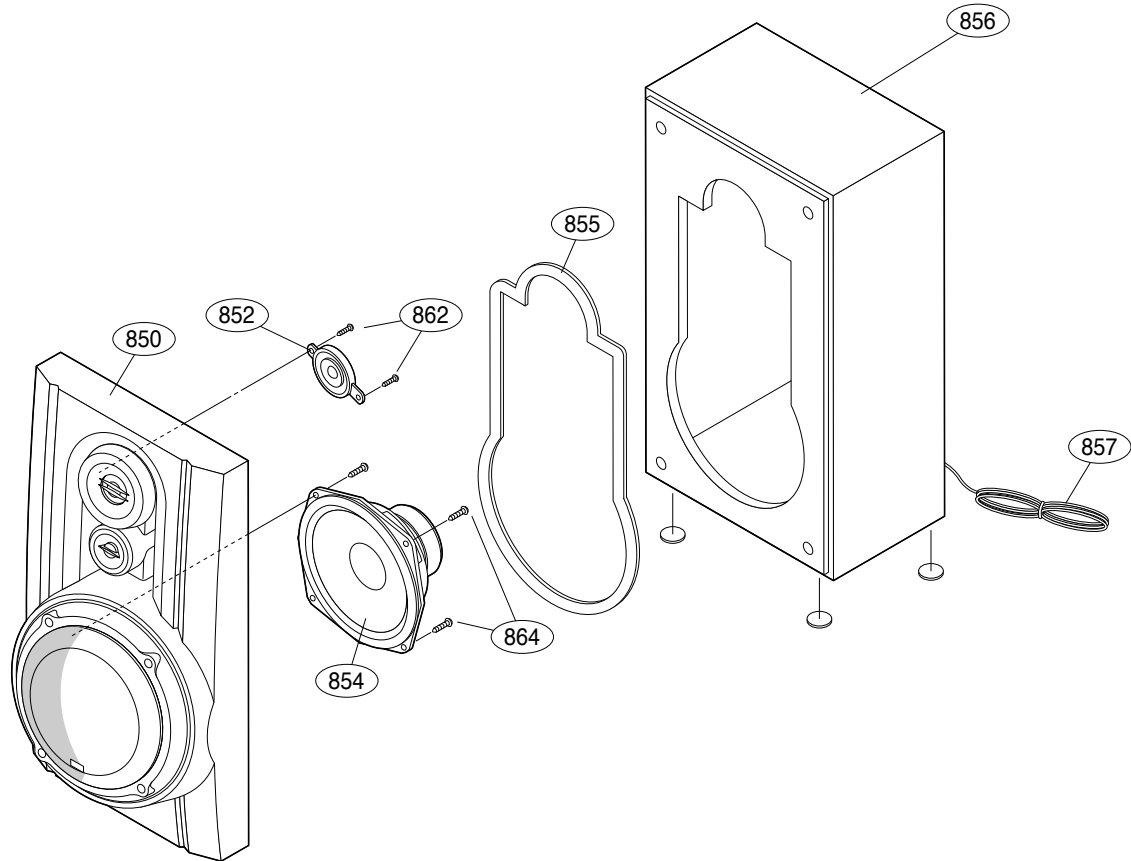
(1) Turn ③ GEAR MAIN until it clicks, if so that ⑤ PICK-UP is downed completely

(2) The hold of ⑥ GEAR FU DOWN array as the arrow of ① BASEMAIN

(3) Push the ② TRAY LOADING

# SECTION 4. SPEAKER SECTION

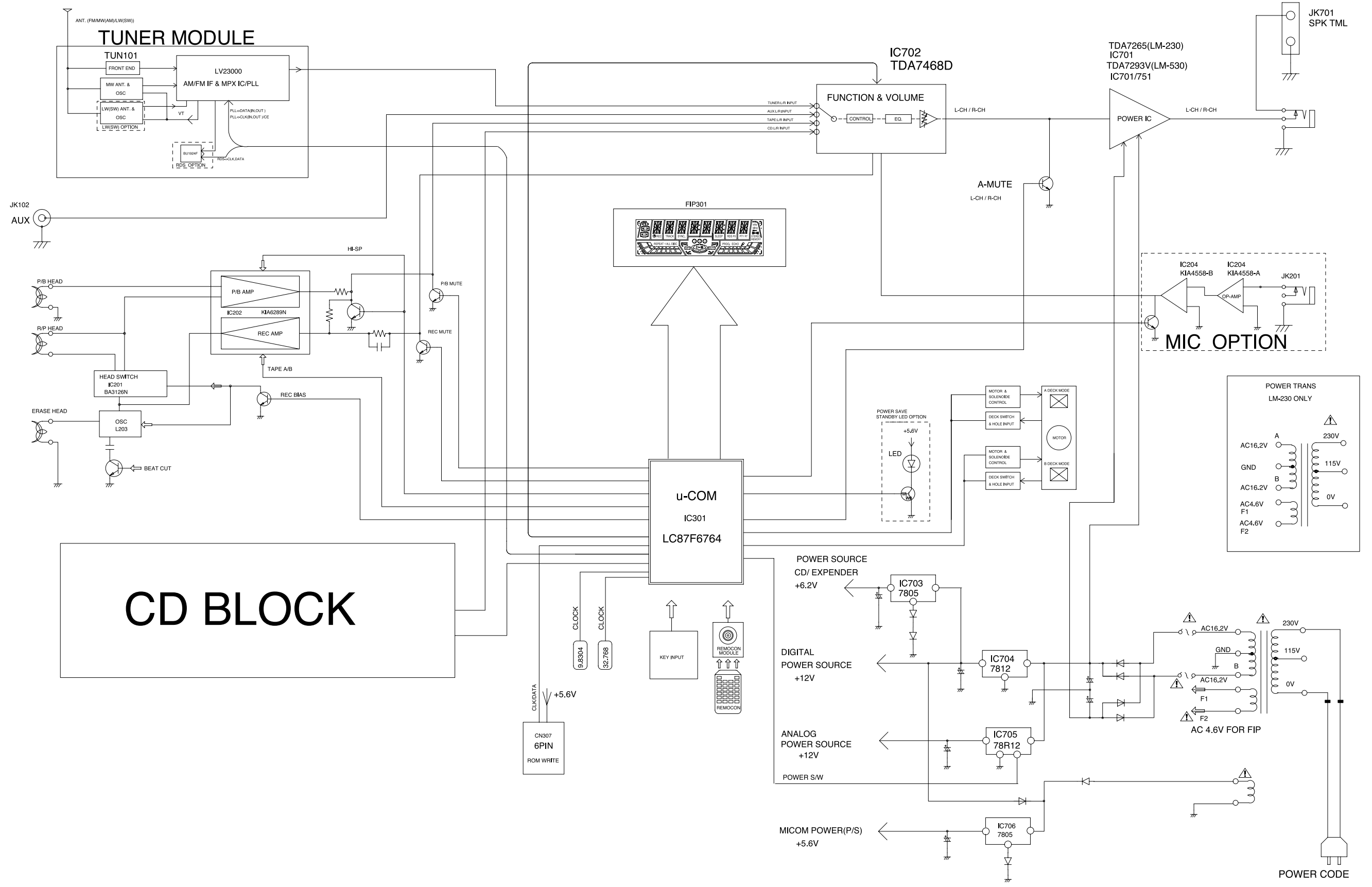
## MODEL: LMS-230



# BLOCK DIAGRAM

**NOTE: Warning**  
 ⚠️ Parts that are shaded are critical With respect to risk of fire or electrical shock.

**NOTE:**  
 1. Shaded(■) parts are critical for safety. Replace only with specified part number.  
 2. Voltages are DC-measured with a digital voltmeter during Play mode.



# SCHEMATIC DIAGRAMS

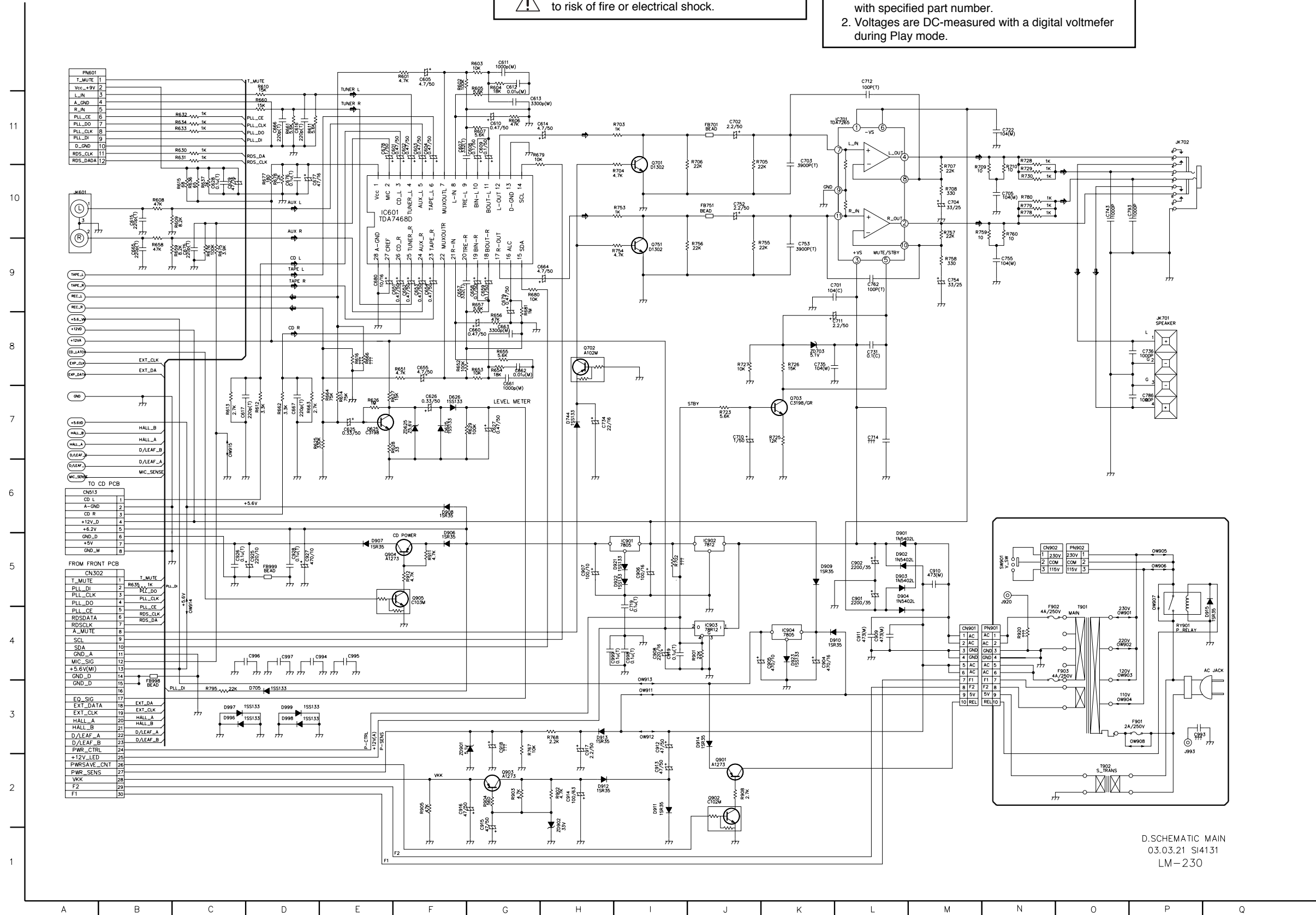
## • MAIN SCHEMATIC DIAGRAM

**NOTE: Warning**

Parts that are shaded are critical With respect to risk of fire or electrical shock.

**NOTE:**

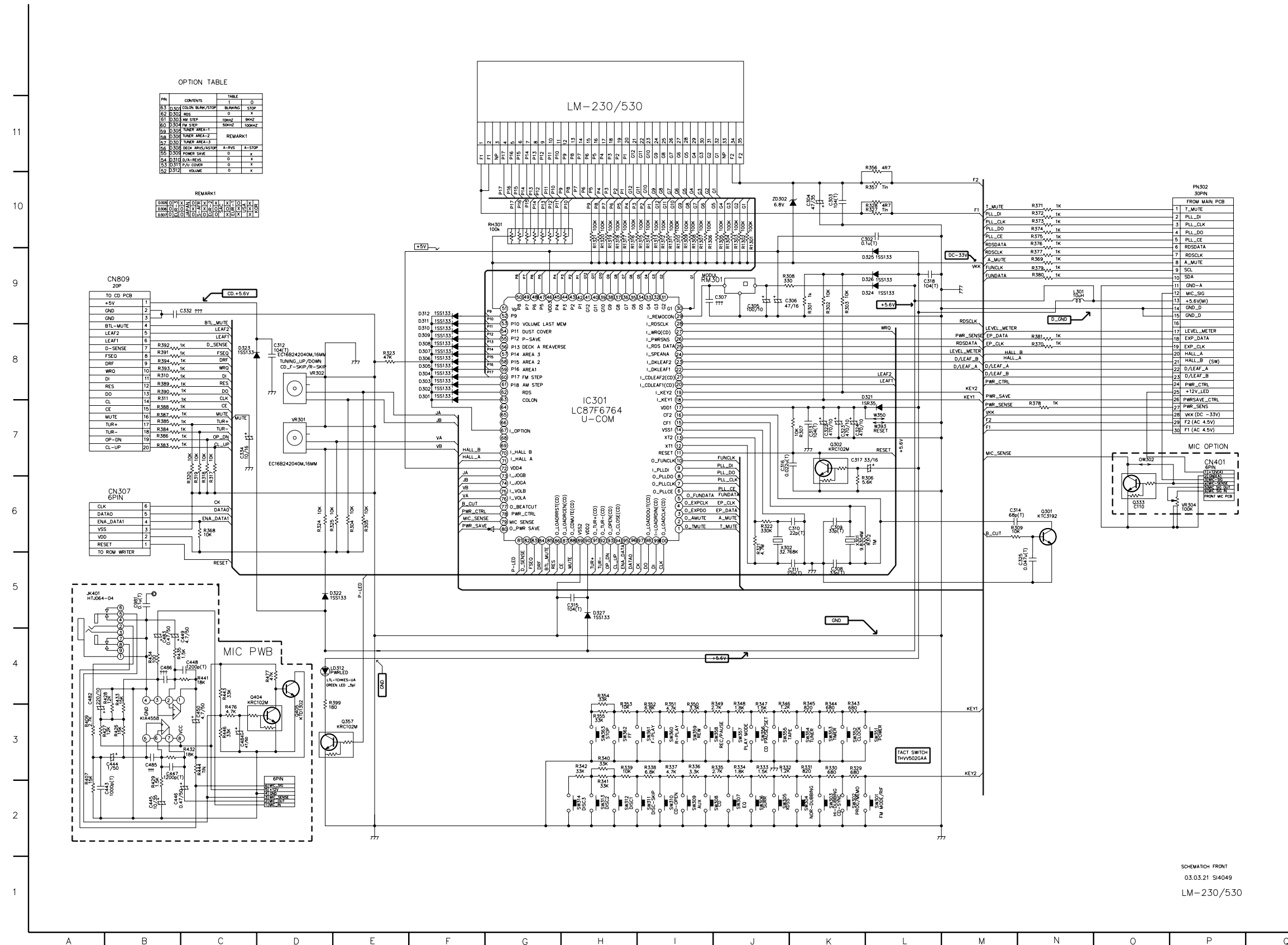
1. Shaded(■) parts are critical for safety. Replace only with specified part number.
2. Voltages are DC-measured with a digital voltmeter during Play mode.



D.SCHEMATIC MAIN  
03.03.21 SI4131  
LM-230



# FRONT SCHEMATIC DIAGRAM

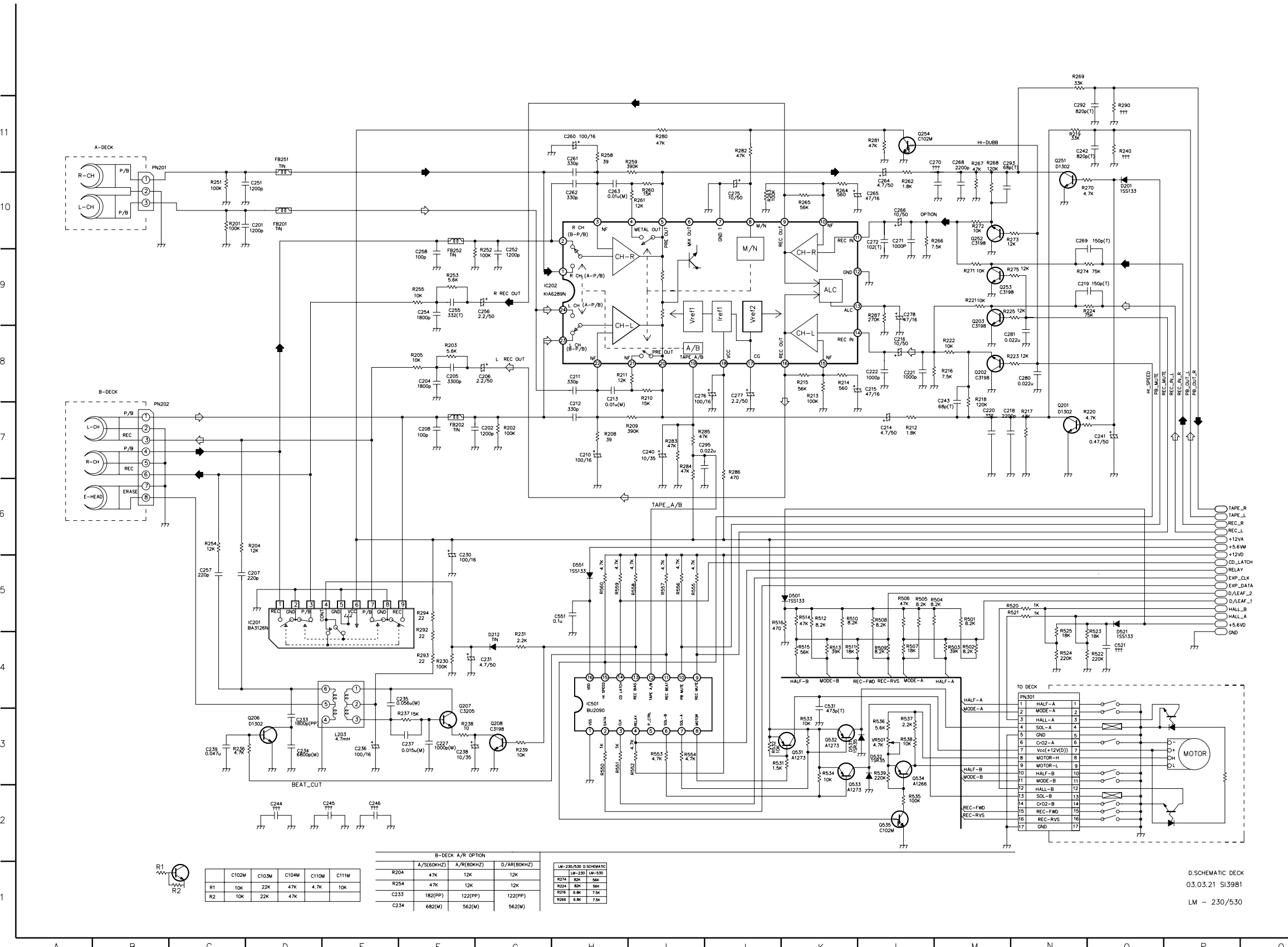


LOCATION GUIDE

|      |     |      |     |       |     |
|------|-----|------|-----|-------|-----|
| C302 | K10 | R321 | J5  | SW363 | H3  |
| C303 | K10 | R322 | J6  | VKK   | M7  |
| C304 | K10 | R323 | E8  | VKK   | M9  |
| C305 | J9  | R324 | D6  | VR301 | D7  |
| C306 | J9  | R325 | E6  | VR302 | D8  |
| C307 | J9  | R327 | L10 | VR304 | P6  |
| C308 | K5  | R328 | L10 | W350  | L7  |
| C309 | K6  | R329 | K3  | W393  | L7  |
| C310 | J6  | R330 | K3  | WRO   | L8  |
| C311 | J5  | R331 | K3  | WRO   | C8  |
| C312 | D8  | R332 | J3  | X301  | K6  |
| C313 | K7  | R333 | J3  | X302  | J6  |
| C314 | M6  | R334 | J3  | ZD302 | J10 |
| C315 | H5  | R335 | I3  |       |     |
| C316 | J7  | R336 | I3  |       |     |
| C317 | K7  | R337 | I3  |       |     |
| C318 | L9  | R338 | I3  |       |     |
| C319 | K7  | R339 | H3  |       |     |
| C320 | K7  | R340 | H3  |       |     |
| C321 | K7  | R341 | H2  |       |     |
| C322 | K7  | R342 | H3  |       |     |
| C323 | K7  | R343 | K3  |       |     |
| C324 | K7  | R344 | K3  |       |     |
| C325 | N5  | R345 | K3  |       |     |
| C326 | B9  | R346 | J3  |       |     |
| C327 | B9  | R347 | J3  |       |     |
| C328 | B9  | R348 | J3  |       |     |
| C329 | B9  | R349 | J3  |       |     |
| C330 | B9  | R350 | I3  |       |     |
| C331 | B9  | R351 | I3  |       |     |
| C332 | B9  | R352 | I3  |       |     |
| C333 | B9  | R353 | H3  |       |     |
| C334 | B7  | R354 | H4  |       |     |
| C335 | B7  | R355 | H3  |       |     |
| C336 | B3  | R356 | L11 |       |     |
| C337 | B3  | R357 | L10 |       |     |
| C338 | B4  | R358 | C6  |       |     |
| C339 | B5  | R359 | N9  |       |     |
| C340 | B6  | R360 | N9  |       |     |
| C341 | B7  | R361 | N10 |       |     |
| C342 | B8  | R362 | N10 |       |     |
| C343 | B8  | R363 | N10 |       |     |
| C344 | B8  | R364 | N10 |       |     |
| C345 | B8  | R365 | N10 |       |     |
| C346 | B8  | R366 | N10 |       |     |
| C347 | B8  | R367 | N10 |       |     |
| C348 | B8  | R368 | N10 |       |     |
| C349 | B8  | R369 | N10 |       |     |
| C350 | B8  | R370 | N10 |       |     |
| C351 | B8  | R371 | N10 |       |     |
| C352 | B8  | R372 | N10 |       |     |
| C353 | B8  | R373 | N10 |       |     |
| C354 | B8  | R374 | N10 |       |     |
| C355 | B8  | R375 | N10 |       |     |
| C356 | B8  | R376 | N10 |       |     |
| C357 | B8  | R377 | N9  |       |     |
| C358 | B8  | R378 | N7  |       |     |
| C359 | B8  | R379 | N9  |       |     |
| C360 | B8  | R380 | N9  |       |     |
| C361 | B8  | R381 | N8  |       |     |
| C362 | B8  | R382 | B7  |       |     |
| C363 | B8  | R383 | B7  |       |     |
| C364 | B8  | R384 | B7  |       |     |
| C365 | B8  | R385 | B7  |       |     |
| C366 | B8  | R386 | B7  |       |     |
| C367 | B8  | R387 | B7  |       |     |
| C368 | B8  | R388 | B7  |       |     |
| C369 | B8  | R389 | B8  |       |     |
| C370 | B8  | R390 | B8  |       |     |
| C371 | B8  | R391 | B8  |       |     |
| C372 | B8  | R392 | B8  |       |     |
| C373 | B8  | R393 | B8  |       |     |
| C374 | B8  | R394 | B8  |       |     |
| C375 | B8  | R395 | B8  |       |     |
| C376 | B8  | R396 | D3  |       |     |
| C377 | B8  | R397 | D3  |       |     |
| C378 | B8  | R398 | D3  |       |     |
| C379 | B8  | R399 | D3  |       |     |
| C380 | B8  | R400 | A2  |       |     |
| C381 | B8  | R401 | A3  |       |     |
| C382 | B8  | R402 | B3  |       |     |
| C383 | B8  | R403 | B3  |       |     |
| C384 | B8  | R404 | B3  |       |     |
| C385 | B8  | R405 | B4  |       |     |
| C386 | B8  | R406 | B4  |       |     |
| C387 | B8  | R407 | B4  |       |     |
| C388 | B8  | R408 | B4  |       |     |
| C389 | B8  | R409 | C4  |       |     |
| C390 | B8  | R410 | C3  |       |     |
| C391 | B8  | R411 | C3  |       |     |
| C392 | B8  | R412 | C3  |       |     |
| C393 | B8  | R413 | C3  |       |     |
| C394 | B8  | R414 | C3  |       |     |
| C395 | B8  | R415 | C3  |       |     |
| C396 | B8  | R416 | C3  |       |     |
| C397 | B8  | R417 | C3  |       |     |
| C398 | B8  | R418 | C3  |       |     |
| C399 | B8  | R419 | C3  |       |     |
| C400 | B8  | R420 | C3  |       |     |
| C401 | B8  | R421 | C3  |       |     |
| C402 | B8  | R422 | C3  |       |     |
| C403 | B8  | R423 | C3  |       |     |
| C404 | B8  | R424 | C3  |       |     |
| C405 | B8  | R425 | C3  |       |     |
| C406 | B8  | R426 | C3  |       |     |
| C407 | B8  | R427 | C3  |       |     |
| C408 | B8  | R428 | C3  |       |     |
| C409 | B8  | R429 | C3  |       |     |
| C410 | B8  | R430 | C3  |       |     |
| C411 | B8  | R431 | C3  |       |     |
| C412 | B8  | R432 | C3  |       |     |
| C413 | B8  | R433 | C3  |       |     |
| C414 | B8  | R434 | C3  |       |     |
| C415 | B8  | R435 | C3  |       |     |
| C416 | B8  | R436 | C3  |       |     |
| C417 | B8  | R437 | C3  |       |     |
| C418 | B8  | R438 | C3  |       |     |
| C419 | B8  | R439 | C3  |       |     |
| C420 | B8  | R440 | C3  |       |     |
| C421 | B8  | R441 | C3  |       |     |
| C422 | B8  | R442 | C3  |       |     |
| C423 | B8  | R443 | C3  |       |     |
| C424 | B8  | R444 | C3  |       |     |
| C425 | B8  | R445 | C3  |       |     |
| C426 | B8  | R446 | C3  |       |     |
| C427 | B8  | R447 | C3  |       |     |
| C428 | B8  | R448 | C3  |       |     |
| C429 | B8  | R449 | C3  |       |     |
| C430 | B8  | R450 | C3  |       |     |
| C431 | B8  | R451 | C3  |       |     |
| C432 | B8  | R452 | C3  |       |     |
| C433 | B8  | R453 | C3  |       |     |
| C434 | B8  | R454 | C3  |       |     |
| C435 | B8  | R455 | C3  |       |     |
| C436 | B8  | R456 | C3  |       |     |
| C437 | B8  | R457 | C3  |       |     |
| C438 | B8  | R458 | C3  |       |     |
| C439 | B8  | R459 | C3  |       |     |
| C440 | B8  | R460 | C3  |       |     |
| C441 | B8  | R461 | C3  |       |     |
| C442 | B8  | R462 | C3  |       |     |
| C443 | B8  | R463 | C3  |       |     |
| C444 | B8  | R464 | C3  |       |     |
| C445 | B8  | R465 | C3  |       |     |
| C446 | B8  | R466 | C3  |       |     |
| C447 | B8  | R467 | C3  |       |     |
| C448 | B8  | R468 | C3  |       |     |
| C449 | B8  | R469 | C3  |       |     |
| C450 | B8  | R470 | C3  |       |     |
| C451 | B8  | R471 | C3  |       |     |
| C452 | B8  | R472 | C3  |       |     |
| C453 | B8  | R473 | C3  |       |     |
| C454 | B8  | R474 | C3  |       |     |
| C455 | B8  | R475 | C3  |       |     |
| C456 | B8  | R476 | C3  |       |     |
| C457 | B8  | R477 | C3  |       |     |
| C458 | B8  | R478 | C3  |       |     |
| C459 | B8  | R479 | C3  |       |     |
| C460 | B8  | R480 | C3  |       |     |
| C461 | B8  | R481 | C3  |       |     |
| C462 | B8  | R482 | C3  |       |     |
| C463 | B8  | R483 | C3  |       |     |
| C464 | B8  | R484 | C3  |       |     |
| C465 | B8  | R485 | C3  |       |     |
| C466 | B8  | R486 | C3  |       |     |
| C467 | B8  | R487 | C3  |       |     |
| C468 | B8  | R488 | C3  |       |     |
| C469 | B8  | R489 | C3  |       |     |
| C470 | B8  | R490 | C3  |       |     |
| C471 | B8  | R491 | C3  |       |     |
| C472 | B8  | R492 | C3  |       |     |
| C473 | B8  | R493 | C3  |       |     |
| C474 | B8  | R494 | C3  |       |     |
| C475 | B8  | R495 | C3  |       |     |
| C476 | B8  | R496 | C3  |       |     |
| C477 | B8  | R497 | C3  |       |     |
| C478 | B8  | R498 | C3  |       |     |
| C479 | B8  | R499 | C3  |       |     |
| C480 | B8  | R500 | C3  |       |     |
| C481 | B8  | R501 | C3  |       |     |
| C482 | B8  | R502 | C3  |       |     |
| C483 | B8  | R503 | C3  |       |     |
| C484 | B8  | R504 | C3  |       |     |
| C485 | B8  | R505 | C3  |       |     |
| C486 | B8  | R506 | C3  |       |     |
| C487 | B8  | R507 | C3  |       |     |
| C488 | B8  | R508 | C3  |       |     |
| C489 | B8  | R509 | C3  |       |     |
| C490 | B8  | R510 | C3  |       |     |
| C491 | B8  | R511 | C3  |       |     |
| C492 | B8  | R512 | C3  |       |     |
| C493 | B8  | R513 | C3  |       |     |
| C494 | B8  | R514 | C3  |       |     |
| C495 | B8  | R515 | C3  |       |     |
| C496 | B8  | R516 | C3  |       |     |
| C497 | B8  | R517 | C3  |       |     |
| C498 | B8  | R518 | C3  |       |     |
| C499 | B8  | R519 | C3  |       |     |
| C500 | B8  | R520 | C3  |       |     |

SCHEMATIC FRONT  
03.03.21 SI4049  
LM-230/530

# TUNER/DECK SCHEMATIC DIAGRAM

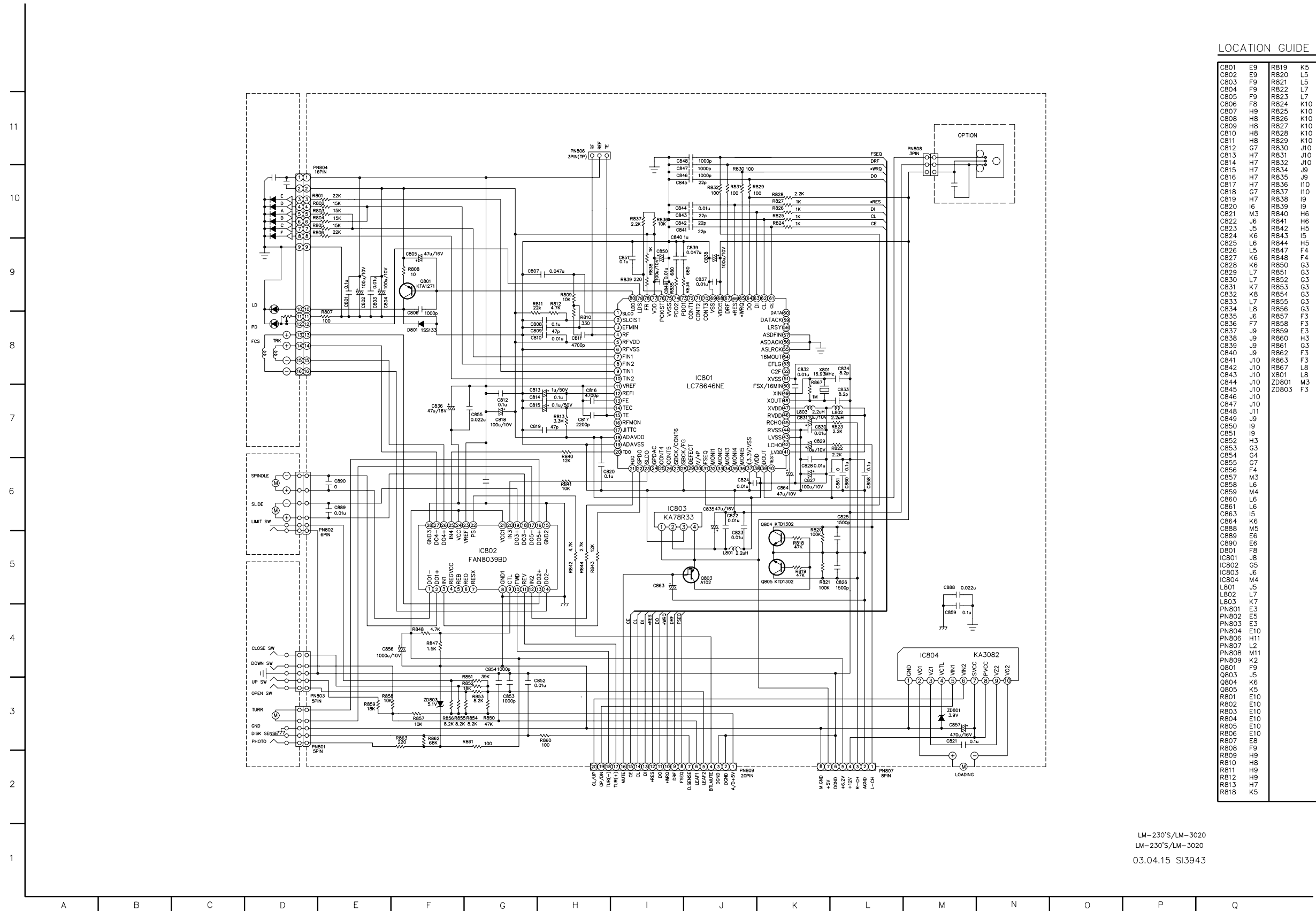


## LOCATION GUIDE

|      |     |      |     |
|------|-----|------|-----|
| C201 | D10 | R209 | H7  |
| C202 | G7  | R210 | H8  |
| C204 | F8  | R211 | H8  |
| C205 | F8  | R212 | L7  |
| C206 | G8  | R213 | K8  |
| C207 | D5  | R214 | K8  |
| C208 | F7  | R215 | K8  |
| C210 | H7  | R216 | M8  |
| C211 | H8  | R217 | N7  |
| C212 | H7  | R218 | M8  |
| C213 | H8  | R219 | N11 |
| C214 | L7  | R220 | N7  |
| C215 | L8  | R221 | M9  |
| C216 | L8  | R222 | M8  |
| C218 | M7  | R223 | M8  |
| C219 | N9  | R224 | N9  |
| C220 | M7  | R225 | M9  |
| C221 | L8  | R226 | F4  |
| C222 | L8  | R227 | M9  |
| C227 | F3  | R231 | G4  |
| C230 | F5  | R232 | C3  |
| C231 | G4  | R233 | E3  |
| C233 | D3  | R234 | F3  |
| C234 | D3  | R235 | G3  |
| C235 | E4  | R236 | C10 |
| C236 | E3  | R237 | G9  |
| C237 | F3  | R238 | F9  |
| C238 | F3  | R239 | C6  |
| C239 | C3  | R240 | F9  |
| C240 | I7  | R241 | H11 |
| C241 | O7  | R242 | H11 |
| C242 | N11 | R243 | I10 |
| C243 | M7  | R244 | I10 |
| C244 | D2  | R245 | L10 |
| C245 | E2  | R246 | J10 |
| C246 | E2  | R247 | K10 |
| C251 | D10 | R248 | K10 |
| C252 | G9  | R249 | L10 |
| C254 | F9  | R250 | M11 |
| C255 | F9  | R251 | M11 |
| C256 | G9  | R252 | N12 |
| C257 | C5  | R253 | N10 |
| C258 | F9  | R254 | M9  |
| C260 | H11 | R255 | M10 |
| C261 | H11 | R256 | M10 |
| C262 | H10 | R257 | N9  |
| C263 | H10 | R258 | M9  |
| C264 | L10 | R259 | I11 |
| C265 | L10 | R260 | I11 |
| C266 | L10 | R261 | J11 |
| C268 | N10 | R262 | I7  |
| C269 | N10 | R263 | I7  |
| C270 | L11 | R264 | J7  |
| C271 | L10 | R265 | I7  |
| C272 | J10 | R266 | L9  |
| C275 | J10 | R267 | O11 |
| C276 | I8  | R268 | F5  |
| C277 | J8  | R269 | F4  |
| C278 | L9  | R270 | F5  |
| C280 | N8  | R271 | M5  |
| C281 | M8  | R272 | M4  |
| C282 | M8  | R273 | M4  |
| C283 | M11 | R274 | L5  |
| C285 | I7  | R275 | L5  |
| C286 | I7  | R276 | L5  |
| C287 | I7  | R277 | L5  |
| C288 | I7  | R278 | L5  |
| C289 | I7  | R279 | L5  |
| C290 | I7  | R280 | L5  |
| C291 | I7  | R281 | L5  |
| C292 | I7  | R282 | L5  |
| C293 | I7  | R283 | L5  |
| C294 | I7  | R284 | L5  |
| C295 | I7  | R285 | L5  |
| C296 | I7  | R286 | L5  |
| C297 | I7  | R287 | L5  |
| C298 | I7  | R288 | L5  |
| C299 | I7  | R289 | L5  |
| D501 | K5  | R290 | L5  |
| D502 | K5  | R291 | L5  |
| D503 | K5  | R292 | L5  |
| D504 | K5  | R293 | L5  |
| D505 | K5  | R294 | L5  |
| D506 | K5  | R295 | L5  |
| D507 | K5  | R296 | L5  |
| D508 | K5  | R297 | L5  |
| D509 | K5  | R298 | L5  |
| D510 | K5  | R299 | L5  |
| D511 | K5  | R300 | L5  |
| D512 | K5  | R301 | L5  |
| D513 | K5  | R302 | L5  |
| D514 | K5  | R303 | L5  |
| D515 | K5  | R304 | L5  |
| D516 | K5  | R305 | L5  |
| D517 | K5  | R306 | L5  |
| D518 | K5  | R307 | L5  |
| D519 | K5  | R308 | L5  |
| D520 | K5  | R309 | L5  |
| D521 | K5  | R310 | L5  |
| D522 | K5  | R311 | L5  |
| D523 | K5  | R312 | L5  |
| D524 | K5  | R313 | L5  |
| D525 | K5  | R314 | L5  |
| D526 | K5  | R315 | L5  |
| D527 | K5  | R316 | L5  |
| D528 | K5  | R317 | L5  |
| D529 | K5  | R318 | L5  |
| D530 | K5  | R319 | L5  |
| D531 | K5  | R320 | L5  |
| D532 | K5  | R321 | L5  |
| D533 | K5  | R322 | L5  |
| D534 | K5  | R323 | L5  |
| D535 | K5  | R324 | L5  |
| D536 | K5  | R325 | L5  |
| D537 | K5  | R326 | L5  |
| D538 | K5  | R327 | L5  |
| D539 | K5  | R328 | L5  |
| D540 | K5  | R329 | L5  |
| D541 | K5  | R330 | L5  |
| D542 | K5  | R331 | L5  |
| D543 | K5  | R332 | L5  |
| D544 | K5  | R333 | L5  |
| D545 | K5  | R334 | L5  |
| D546 | K5  | R335 | L5  |
| D547 | K5  | R336 | L5  |
| D548 | K5  | R337 | L5  |
| D549 | K5  | R338 | L5  |
| D550 | K5  | R339 | L5  |
| D551 | K5  | R340 | L5  |
| D552 | K5  | R341 | L5  |
| D553 | K5  | R342 | L5  |
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| D555 | K5  | R344 | L5  |
| D556 | K5  | R345 | L5  |
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| D559 | K5  | R348 | L5  |
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| D562 | K5  | R351 | L5  |
| D563 | K5  | R352 | L5  |
| D564 | K5  | R353 | L5  |
| D565 | K5  | R354 | L5  |
| D566 | K5  | R355 | L5  |
| D567 | K5  | R356 | L5  |
| D568 | K5  | R357 | L5  |
| D569 | K5  | R358 | L5  |
| D570 | K5  | R359 | L5  |
| D571 | K5  | R360 | L5  |
| D572 | K5  | R361 | L5  |
| D573 | K5  | R362 | L5  |
| D574 | K5  | R363 | L5  |
| D575 | K5  | R364 | L5  |
| D576 | K5  | R365 | L5  |
| D577 | K5  | R366 | L5  |
| D578 | K5  | R367 | L5  |
| D579 | K5  | R368 | L5  |
| D580 | K5  | R369 | L5  |
| D581 | K5  | R370 | L5  |
| D582 | K5  | R371 | L5  |
| D583 | K5  | R372 | L5  |
| D584 | K5  | R373 | L5  |
| D585 | K5  | R374 | L5  |
| D586 | K5  | R375 | L5  |
| D587 | K5  | R376 | L5  |
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| D592 | K5  | R381 | L5  |
| D593 | K5  | R382 | L5  |
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| D595 | K5  | R384 | L5  |
| D596 | K5  | R385 | L5  |
| D597 | K5  | R386 | L5  |
| D598 | K5  | R387 | L5  |
| D599 | K5  | R388 | L5  |
| D600 | K5  | R389 | L5  |
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| D602 | K5  | R391 | L5  |
| D603 | K5  | R392 | L5  |
| D604 | K5  | R393 | L5  |
| D605 | K5  | R394 | L5  |
| D606 | K5  | R395 | L5  |
| D607 | K5  | R396 | L5  |
| D608 | K5  | R397 | L5  |
| D609 | K5  | R398 | L5  |
| D610 | K5  | R399 | L5  |
| D611 | K5  | R400 | L5  |

D.SCHEMATIC DECK  
03.03.21 SI3981  
LM - 230/530

# • CDP SCHEMATIC DIAGRAM




## LOCATION GUIDE

|       |     |       |     |
|-------|-----|-------|-----|
| C801  | E9  | R819  | K5  |
| C802  | E9  | R820  | L5  |
| C803  | F9  | R821  | L5  |
| C804  | F9  | R822  | L7  |
| C805  | F9  | R823  | L7  |
| C806  | F8  | R824  | K10 |
| C807  | H9  | R825  | K10 |
| C808  | H8  | R826  | K10 |
| C809  | H8  | R827  | K10 |
| C810  | H8  | R828  | K10 |
| C811  | H8  | R829  | K10 |
| C812  | G7  | R830  | J10 |
| C813  | H7  | R831  | J10 |
| C814  | H7  | R832  | J10 |
| C815  | H7  | R834  | J9  |
| C816  | H7  | R835  | J9  |
| C817  | H7  | R836  | I10 |
| C818  | G7  | R837  | I10 |
| C819  | H7  | R838  | I9  |
| C820  | I6  | R839  | I9  |
| C821  | M3  | R840  | H6  |
| C822  | J6  | R841  | H6  |
| C823  | J5  | R842  | H5  |
| C824  | K6  | R843  | I5  |
| C825  | L6  | R844  | H5  |
| C826  | L5  | R847  | F4  |
| C827  | K6  | R848  | F4  |
| C828  | K6  | R850  | G3  |
| C829  | L7  | R851  | G3  |
| C830  | L7  | R852  | G3  |
| C831  | K7  | R853  | G3  |
| C832  | K8  | R854  | G3  |
| C833  | L7  | R855  | G3  |
| C834  | L8  | R856  | G3  |
| C835  | J6  | R857  | F3  |
| C836  | F7  | R858  | F3  |
| C837  | J9  | R859  | E3  |
| C838  | J9  | R860  | H3  |
| C839  | J9  | R861  | G3  |
| C840  | J9  | R862  | F3  |
| C841  | J10 | R863  | F3  |
| C842  | J10 | R867  | L6  |
| C843  | J10 | X801  | L8  |
| C844  | J10 | ZD801 | M3  |
| C845  | J10 | ZD803 | F3  |
| C846  | J10 |       |     |
| C847  | J10 |       |     |
| C848  | J11 |       |     |
| C849  | J9  |       |     |
| C850  | I9  |       |     |
| C851  | I9  |       |     |
| C852  | H3  |       |     |
| C853  | G3  |       |     |
| C854  | G4  |       |     |
| C855  | G7  |       |     |
| C856  | F4  |       |     |
| C857  | M3  |       |     |
| C858  | L6  |       |     |
| C859  | M4  |       |     |
| C860  | L6  |       |     |
| C861  | L6  |       |     |
| C863  | I5  |       |     |
| C864  | K6  |       |     |
| C868  | M5  |       |     |
| C889  | E6  |       |     |
| C890  | E6  |       |     |
| D801  | F8  |       |     |
| IC801 | J8  |       |     |
| IC802 | G5  |       |     |
| IC803 | J6  |       |     |
| IC804 | M4  |       |     |
| L801  | J5  |       |     |
| L802  | L7  |       |     |
| L803  | K7  |       |     |
| PN801 | E3  |       |     |
| PN802 | E5  |       |     |
| PN803 | E3  |       |     |
| PN804 | E10 |       |     |
| PN806 | H11 |       |     |
| PN807 | L2  |       |     |
| PN808 | M11 |       |     |
| PN809 | K2  |       |     |
| Q801  | F9  |       |     |
| Q803  | J5  |       |     |
| Q804  | K6  |       |     |
| Q805  | K5  |       |     |
| R801  | E10 |       |     |
| R802  | E10 |       |     |
| R803  | E10 |       |     |
| R804  | E10 |       |     |
| R805  | E10 |       |     |
| R806  | E10 |       |     |
| R807  | E8  |       |     |
| R808  | F9  |       |     |
| R809  | H9  |       |     |
| R810  | H8  |       |     |
| R811  | H9  |       |     |
| R812  | H9  |       |     |
| R813  | H7  |       |     |
| R818  | K5  |       |     |

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LM-230S/LM-3020  
03.04.15 SI3943

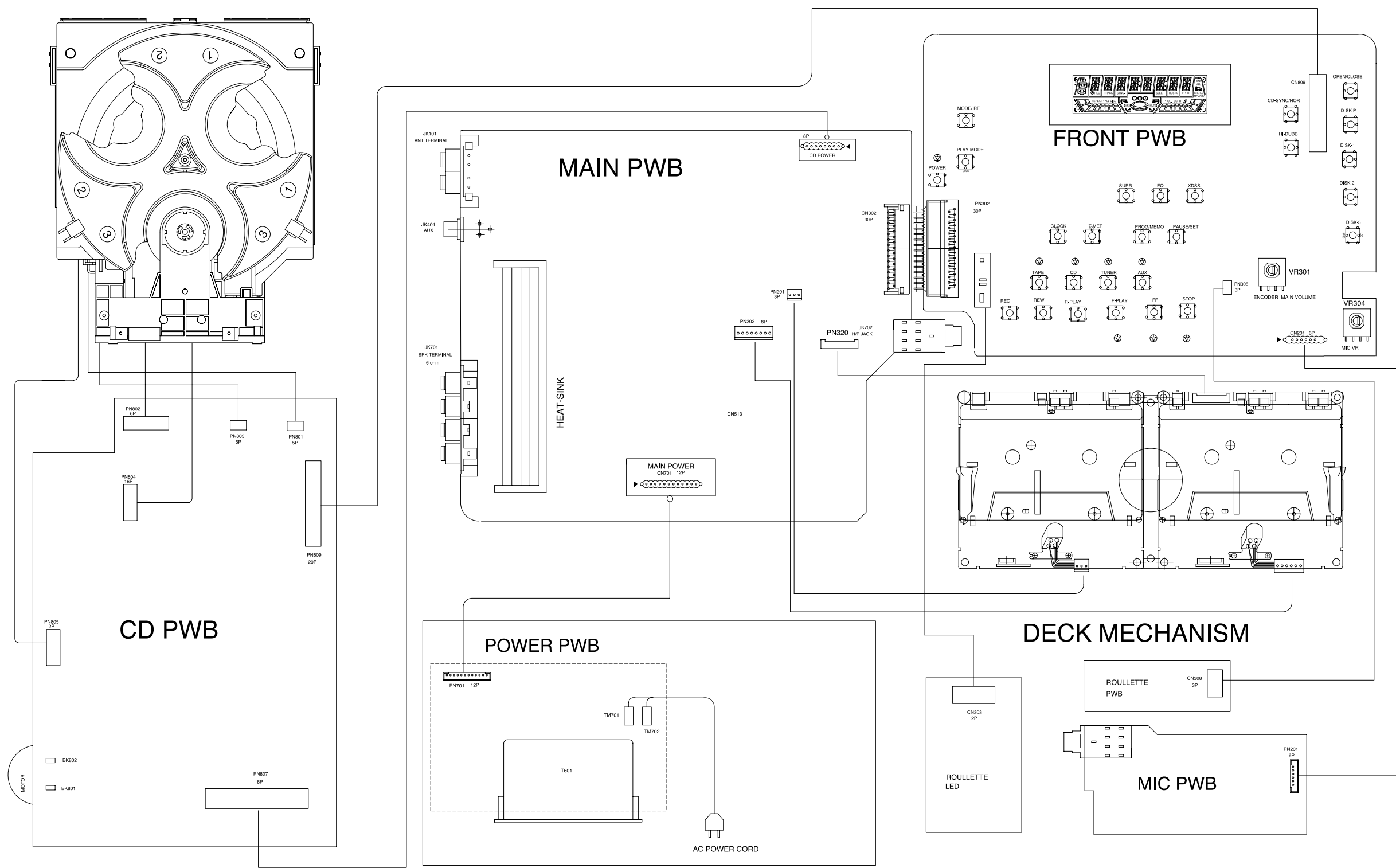
# WIRING DIAGRAM

**NOTE: Warning**  
 Parts that are shaded are critical With respect to risk of fire or electrical shock.

**NOTE:**  
 1. Shaded(■) parts are critical for safety. Replace only with specified part number.  
 2. Voltages are DC-measured with a digital voltmeter during Play mode.

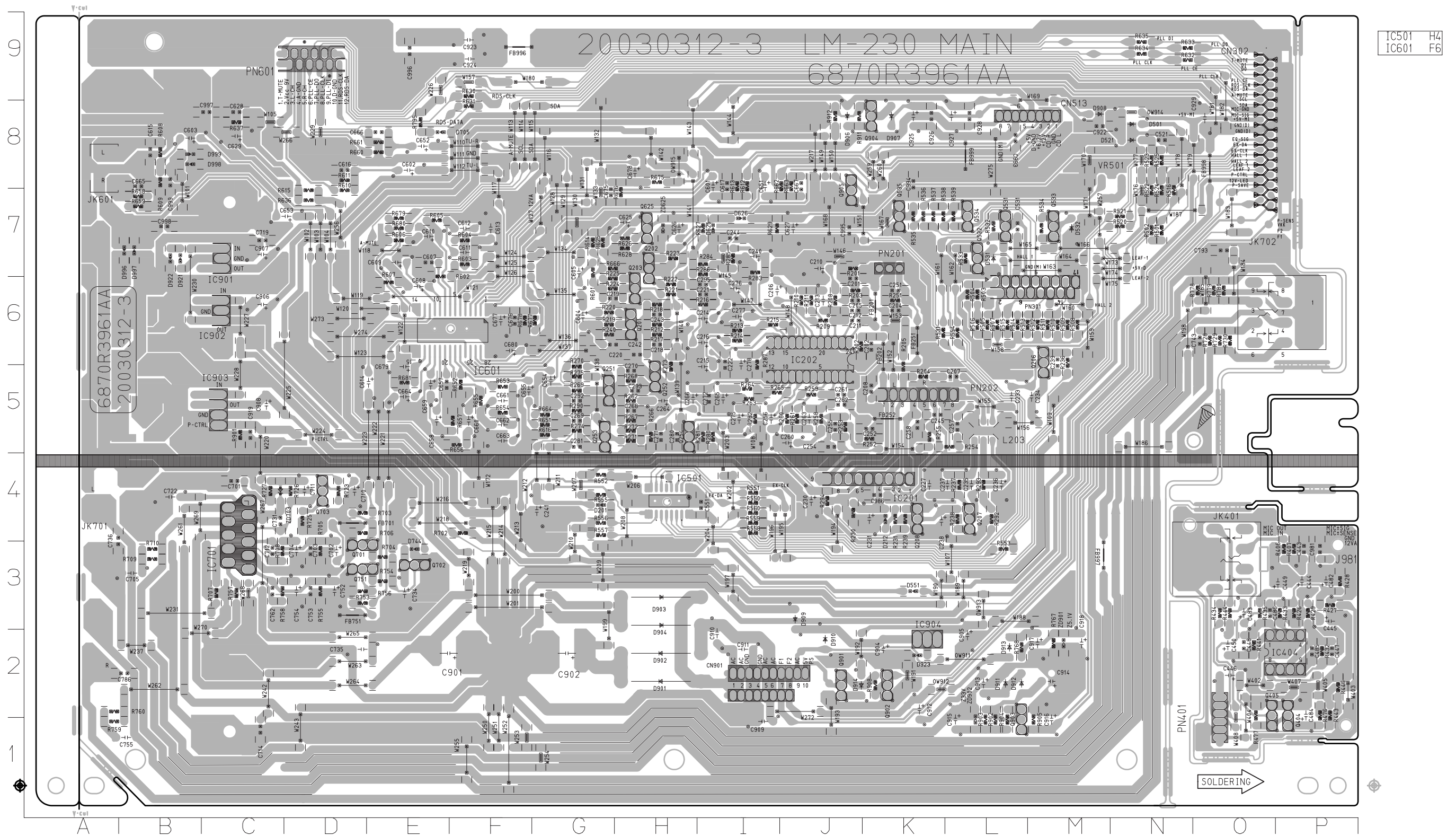
3CD CHANGER MECHANISM ASSY

LM-230/530 WIRING DIAGRAM



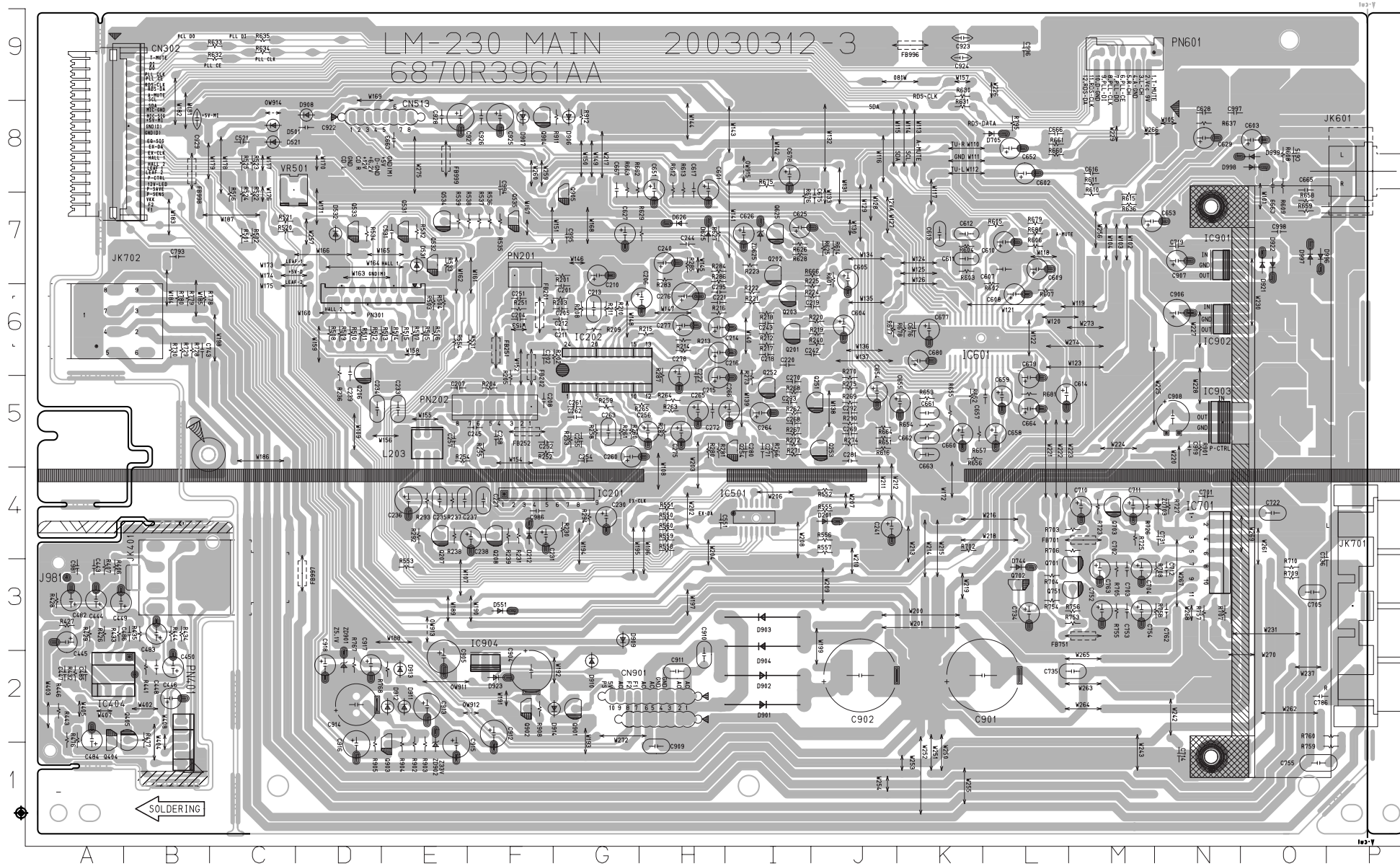
# PRINTED CIRCUIT DIAGRAMS

## • MAIN P.C. BOARD (SOLDER SIDE)



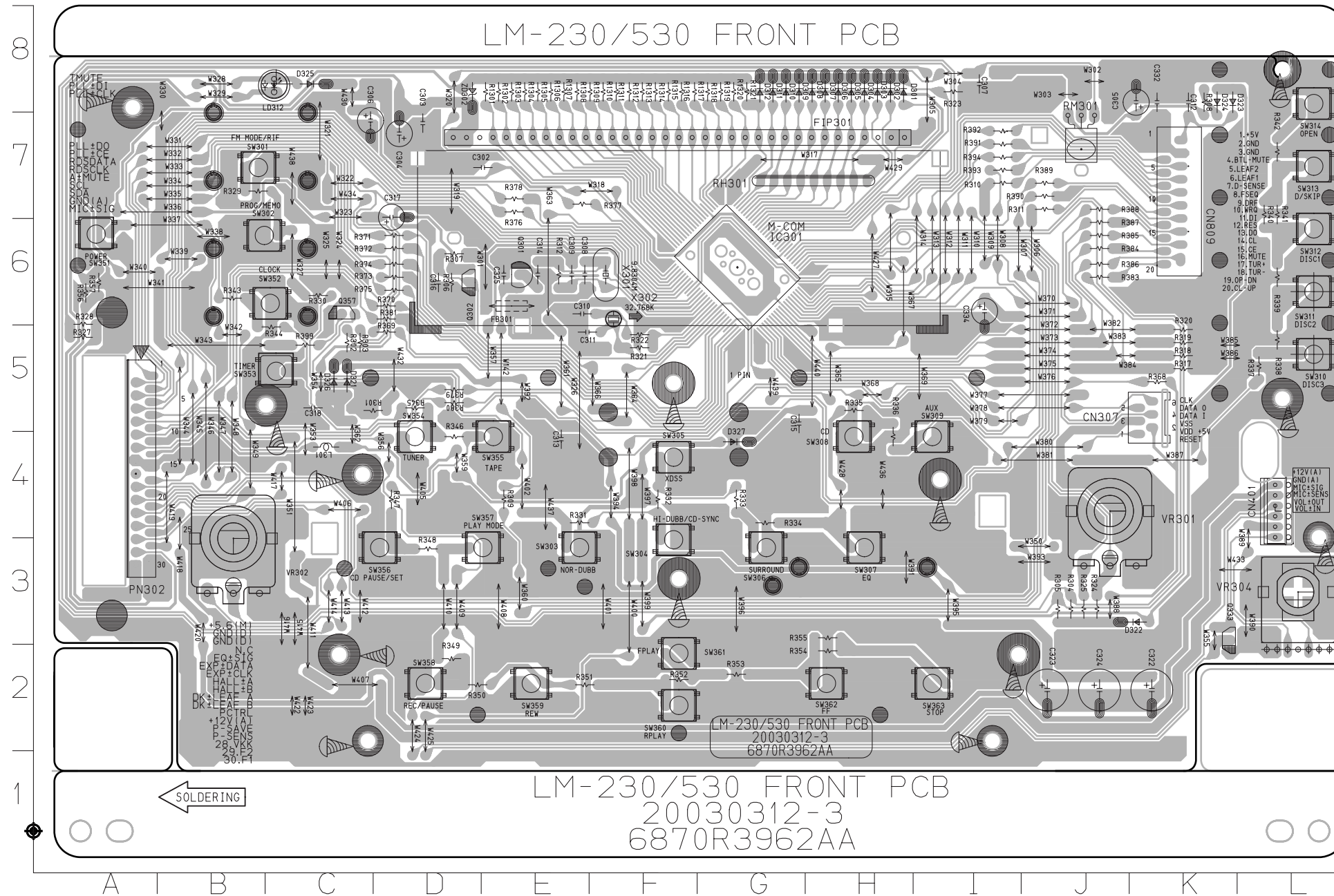
|       |    |
|-------|----|
| IC501 | H4 |
| IC601 | F6 |

• MAIN P.C. BOARD (COMPONENT SIDE)



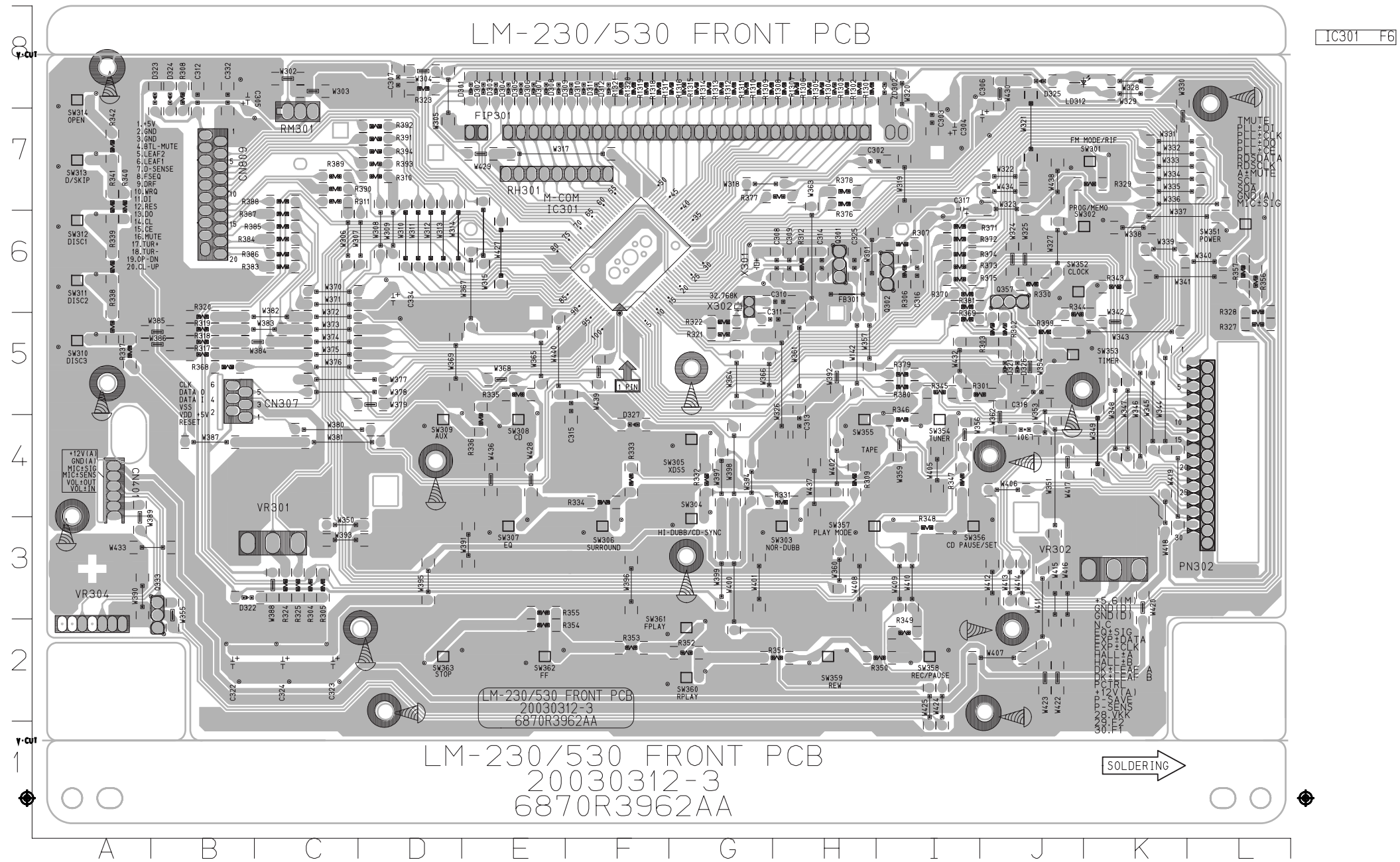
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|------|----|------|----|-------|----|-------|----|------|----|------|----|------|----|-------|----|
| C201 | G6 | C295 | H6 | C703  | M3 | D521  | C8 | Q201 | I6 | R258 | G5 | R520 | C7 | R658  | O7 |
| C202 | F6 | C443 | A3 | C704  | M3 | D531  | E7 | Q202 | I7 | R259 | G5 | R521 | C7 | R659  | O7 |
| C204 | F6 | C444 | A3 | C705  | O3 | D532  | D7 | Q203 | I6 | R260 | G5 | R522 | C7 | R660  | L8 |
| C205 | G6 | C445 | A3 | C710  | M4 | D551  | F3 | Q206 | D6 | R261 | G5 | R523 | C8 | R661  | L8 |
| C206 | H6 | C446 | B2 | C711  | M4 | D625  | H7 | Q207 | E4 | R262 | I5 | R524 | C7 | R662  | G8 |
| C207 | F5 | C447 | A2 | C712  | N3 | D626  | H7 | Q208 | F4 | R263 | H5 | R525 | C8 | R663  | G8 |
| C208 | F5 | C448 | B2 | C714  | N1 | D705  | L8 | Q251 | J5 | R264 | H5 | R531 | F6 | R664  | J5 |
| C210 | G7 | C449 | A3 | C719  | N7 | D744  | L3 | Q252 | I5 | R265 | H5 | R532 | E7 | R666  | J7 |
| C211 | G6 | C450 | B2 | C722  | O4 | D901  | I2 | Q253 | J5 | R266 | I5 | R533 | E7 | R675  | I8 |
| C212 | G6 | C482 | A3 | C731  | N4 | D902  | I2 | Q254 | I5 | R267 | I5 | R534 | D7 | R676  | I7 |
| C213 | G6 | C483 | B3 | C734  | L3 | D903  | I3 | Q404 | A2 | R268 | I5 | R535 | F7 | R677  | J6 |
| C214 | H6 | C484 | A2 | C735  | M2 | D904  | I3 | Q405 | B2 | R269 | J5 | R536 | F7 | R678  | K6 |
| C215 | H5 | C485 | A2 | C736  | P3 | D906  | G8 | Q531 | E7 | R270 | J5 | R537 | F7 | R679  | L7 |
| C216 | H6 | C486 | B3 | C743  | B6 | D907  | F8 | Q532 | E7 | R271 | I5 | R538 | F7 | R680  | L7 |
| C218 | I6 | C521 | C8 | C752  | M3 | D908  | D8 | Q533 | D7 | R272 | I5 | R539 | E7 | R681  | L5 |
| C219 | J6 | C531 | E7 | C753  | M3 | D909  | G3 | Q534 | E7 | R273 | I5 | R550 | H4 | R702  | K4 |
| C220 | I6 | C551 | H4 | C754  | M3 | D910  | G2 | Q535 | F7 | R274 | J5 | R551 | H4 | R703  | M4 |
| C221 | H6 | C601 | H8 | C755  | O1 | D911  | E2 | Q625 | I7 | R275 | J5 | R552 | J4 | R704  | L3 |
| C222 | H5 | C602 | L8 | C762  | N3 | D912  | E2 | Q701 | M3 | R280 | H5 | R553 | E3 | R705  | M3 |
| C227 | F4 | C603 | O8 | C786  | O2 | D913  | E2 | Q702 | L3 | R281 | H5 | R554 | E6 | R706  | M4 |
| C230 | G4 | C604 | J6 | C793  | B7 | D914  | G2 | Q703 | M4 | R282 | H5 | R555 | J4 | R707  | N3 |
| C231 | F4 | C605 | J7 | C901  | L2 | D921  | O7 | Q751 | M3 | R283 | H7 | R556 | J4 | R708  | N3 |
| C233 | E5 | C607 | L7 | C902  | J2 | D922  | O7 | Q901 | G2 | R284 | H7 | R557 | J4 | R709  | O3 |
| C234 | D5 | C608 | L6 | C904  | F2 | D923  | F2 | Q902 | F2 | R285 | H7 | R558 | H4 | R710  | O3 |
| C235 | E4 | C609 | L7 | C905  | E2 | D996  | O7 | Q903 | E1 | R286 | H7 | R559 | H4 | R723  | M4 |
| C236 | E4 | C610 | L7 | C906  | N6 | D997  | O7 | Q904 | F8 | R287 | H5 | R560 | H4 | R725  | M4 |
| C237 | E4 | C611 | K7 | C907  | N7 | D998  | O8 | Q905 | G7 | R290 | J5 | R601 | J7 | R726  | M4 |
| C238 | F4 | C612 | K7 | C908  | N5 | D999  | O8 | R201 | G7 | R292 | E4 | R602 | L6 | R727  | N4 |
| C239 | D6 | C613 | K7 | C909  | H1 | FB201 | F6 | R202 | G6 | R293 | E4 | R603 | K7 | R728  | B6 |
| C240 | H7 | C614 | L5 | C910  | H2 | FB202 | F6 | R203 | G6 | R294 | G4 | R604 | K7 | R729  | B6 |
| C241 | J4 | C615 | O8 | C911  | H2 | FB251 | F6 | R204 | F5 | R406 | A3 | R605 | L7 | R730  | B6 |
| C242 | J6 | C616 | M8 | C912  | F2 | FB252 | F5 | R205 | F5 | R407 | A3 | R606 | L7 | R753  | M3 |
| C243 | I6 | C617 | H8 | C913  | E2 | FB701 | M4 | R208 | G6 | R426 | A3 | R607 | L6 | R754  | L3 |
| C244 | H7 | C625 | I7 | C914  | D2 | FB751 | M3 | R209 | G6 | R427 | A3 | R608 | O8 | R755  | M3 |
| C245 | F5 | C626 | I7 | C915  | E1 | FB996 | K9 | R210 | G6 | R428 | A3 | R609 | O8 | R756  | M3 |
| C251 | F6 | C627 | G7 | C916  | D1 | FB997 | D3 | R211 | G6 | R429 | A3 | R610 | M7 | R757  | N3 |
| C252 | F5 | C628 | N8 | C917  | D2 | FB998 | B8 | R212 | I6 | R432 | A2 | R611 | M8 | R758  | N3 |
| C254 | G5 | C629 | N8 | C918  | D2 | FB999 | E8 | R213 | H6 | R433 | A3 | R612 | H8 | R759  | P1 |
| C255 | G5 | C651 | H8 | C919  | N5 | IC201 | F4 | R214 | H6 | R434 | B3 | R613 | H8 | R760  | P2 |
| C256 | H5 | C652 | L8 | C922  | D8 | IC202 | G5 | R215 | H6 | R435 | B3 | R614 | J7 | R767  | D2 |
| C257 | E5 | C653 | M7 | C923  | K9 | IC404 | B2 | R216 | H6 | R441 | B2 | R615 | M7 | R768  | E2 |
| C258 | F5 | C654 | J5 | C924  | K9 | IC701 | N4 | R217 | I6 | R443 | A2 | R616 | J5 | R778  | B6 |
| C260 | G5 | C655 | K5 | C925  | F8 | IC901 | N7 | R218 | I6 | R444 | B3 | R625 | J7 | R779  | B6 |
| C261 | G5 | C657 | L5 | C926  | F8 | IC902 | N6 | R219 | J6 | R446 | A2 | R626 | I7 | R780  | B6 |
| C262 | G5 | C658 | L5 | C927  | E8 | IC903 | N5 | R220 | J6 | R476 | A2 | R627 | H7 | R795  | L8 |
| C263 | G5 | C659 | L5 | C928  | E8 | IC904 | F2 | R221 | I6 | R477 | B2 | R628 | I7 | R901  | N5 |
| C264 | I5 | C660 | K5 | C929  | B8 | J981  | A3 | R222 | I6 | R501 | C7 | R629 | H7 | R902  | E1 |
| C265 | H5 | C661 | K5 | C981  | A3 | JK401 | C3 | R223 | I7 | R502 | C7 | R630 | K9 | R903  | E1 |
| C266 | I5 | C662 | K5 | C986  | F4 | JK601 | P8 | R224 | J6 | R503 | E6 | R631 | K8 | R904  | E1 |
| C268 | I5 | C663 | K5 | C993  | E8 | JK701 | P3 | R225 | J6 | R504 | E6 | R632 | C9 | R905  | D1 |
| C269 | J5 | C664 | L5 | C994  | F8 | JK702 | A6 | R230 | G4 | R505 | E6 | R633 | C9 | R908  | F2 |
| C270 | J5 | C665 | O8 | C995  | G7 | L203  | E5 | R231 | F4 | R506 | E6 | R634 | C9 | R911  | G8 |
| C271 | I5 | C666 | L8 | C996  | L9 | OW911 | E2 | R236 | D6 | R507 | E6 | R635 | C9 | R912  | G8 |
| C272 | H5 | C667 | G8 | C997  | N8 | OW912 | F2 | R237 | E4 | R508 | D6 | R636 | M7 | VR501 | C8 |
| C275 | H5 | C675 | J7 | C998  | O7 | OW913 | E3 | R238 | E4 | R509 | D6 | R637 | N8 | ZD625 | I7 |
| C276 | H6 | C676 | K6 | C999  | O8 | OW914 | C8 | R239 | F4 | R510 | D6 | R651 | J5 | ZD703 | N4 |
| C277 | H6 | C677 | K6 | CN302 | B8 | OW915 | I8 | R240 | J6 | R511 | D6 | R652 | K5 | ZD901 | D2 |
| C278 | H5 | C678 | L5 | CN513 | D8 | PN201 | F7 | R251 | F6 | R512 | D6 | R653 | K5 | ZD902 | E1 |
| C280 | I5 | C679 | L5 | CN901 | H2 | PN202 | F5 | R252 | F5 | R513 | E6 | R654 | K5 |       |    |
| C281 | J5 | C680 | K6 | D201  | J4 | PN301 | E6 | R253 | G5 | R514 | E6 | R655 | K5 |       |    |
| C292 | J5 | C701 | N4 | D212  | F4 | PN401 | B1 | R254 | E5 | R515 | E6 | R656 | K5 |       |    |
| C293 | I5 | C702 | M3 | D501  | C8 | PN601 | M9 | R255 | F5 | R516 | C7 | R657 | K5 |       |    |

• FRONT P.C. BOARD(COMPONENT SIDE)



|        |    |       |    |      |    |       |    |
|--------|----|-------|----|------|----|-------|----|
| C302   | E7 | LD312 | C8 | R327 | A5 | R386  | J6 |
| C303   | D7 | PN302 | A4 | R328 | A6 | R387  | J6 |
| C304   | D7 | Q301  | E6 | R329 | B7 | R388  | J7 |
| C305   | K8 | Q302  | D6 | R330 | C6 | R389  | J7 |
| C306   | C7 | Q333  | K3 | R331 | E4 | R390  | J7 |
| C307   | I8 | Q357  | C6 | R332 | F4 | R391  | I7 |
| C308   | E6 | R1301 | E8 | R333 | G4 | R392  | I7 |
| C309   | E6 | R1302 | E8 | R334 | G4 | R393  | I7 |
| C310   | E6 | R1303 | E8 | R335 | H5 | R394  | I7 |
| C311   | E5 | R1304 | E8 | R336 | H4 | R399  | C5 |
| C312   | K8 | R1305 | E8 | R337 | L5 | RH301 | H7 |
| C313   | E4 | R1306 | E8 | R338 | L5 | RM301 | J7 |
| C314   | E6 | R1307 | E8 | R339 | L6 | SW301 | B7 |
| C315   | G5 | R1308 | E8 | R340 | L7 | SW302 | B6 |
| C316   | D6 | R1309 | F8 | R341 | L7 | SW303 | E3 |
| C317   | D7 | R1310 | F8 | R342 | L7 | SW304 | F3 |
| C318   | C5 | R1311 | F8 | R343 | B6 | SW305 | F4 |
| C322   | K2 | R1312 | F8 | R344 | C5 | SW306 | G3 |
| C323   | J2 | R1313 | F8 | R345 | D5 | SW307 | H3 |
| C324   | J2 | R1314 | F8 | R346 | D4 | SW308 | H4 |
| C325   | E6 | R1315 | F8 | R347 | D4 | SW309 | I4 |
| C332   | K8 | R1316 | F8 | R348 | D3 | SW310 | L5 |
| C334   | I6 | R1317 | F8 | R349 | D2 | SW311 | L6 |
| CN307  | K4 | R1318 | F8 | R350 | D2 | SW312 | L6 |
| CN401  | L4 | R1319 | G8 | R351 | E2 | SW313 | L7 |
| CN809  | K6 | R1320 | G8 | R352 | F2 | SW314 | L8 |
| D301   | H8 | R1321 | G8 | R353 | G2 | SW351 | A6 |
| D302   | H8 | R301  | D5 | R354 | H2 | SW352 | C6 |
| D303   | H8 | R302  | C5 | R355 | H3 | SW353 | C5 |
| D304   | H8 | R303  | C5 | R356 | A6 | SW354 | D4 |
| D305   | H8 | R304  | J3 | R357 | A6 | SW355 | E4 |
| D306   | H8 | R305  | J3 | R368 | K5 | SW356 | D3 |
| D307   | H8 | R306  | D6 | R369 | D5 | SW357 | E3 |
| D308   | H8 | R307  | D6 | R370 | D6 | SW358 | D2 |
| D309   | G8 | R308  | K8 | R371 | D6 | SW359 | E2 |
| D310   | G8 | R309  | E4 | R372 | D6 | SW360 | F2 |
| D311   | G8 | R310  | I7 | R373 | D6 | SW361 | F2 |
| D312   | G8 | R311  | J7 | R374 | D6 | SW362 | H2 |
| D321   | C5 | R312  | E6 | R375 | D6 | SW363 | I2 |
| D322   | K3 | R317  | K5 | R376 | E7 | VR301 | J4 |
| D323   | K8 | R318  | K5 | R377 | E7 | VR302 | B3 |
| D324   | K8 | R319  | K5 | R378 | E7 | VR304 | L3 |
| D325   | C8 | R320  | K5 | R379 | D5 | X301  | F6 |
| D326   | C5 | R321  | F5 | R380 | D5 | X302  | F6 |
| D327   | G4 | R322  | F5 | R381 | D6 | ZD302 | D8 |
| FB301  | E6 | R323  | I8 | R383 | J6 |       |    |
| FIP301 | H7 | R324  | J3 | R384 | J6 |       |    |
| L301   | C4 | R325  | J3 | R385 | J6 |       |    |

• FRONT P.C. BOARD(SOLDER SIDE)

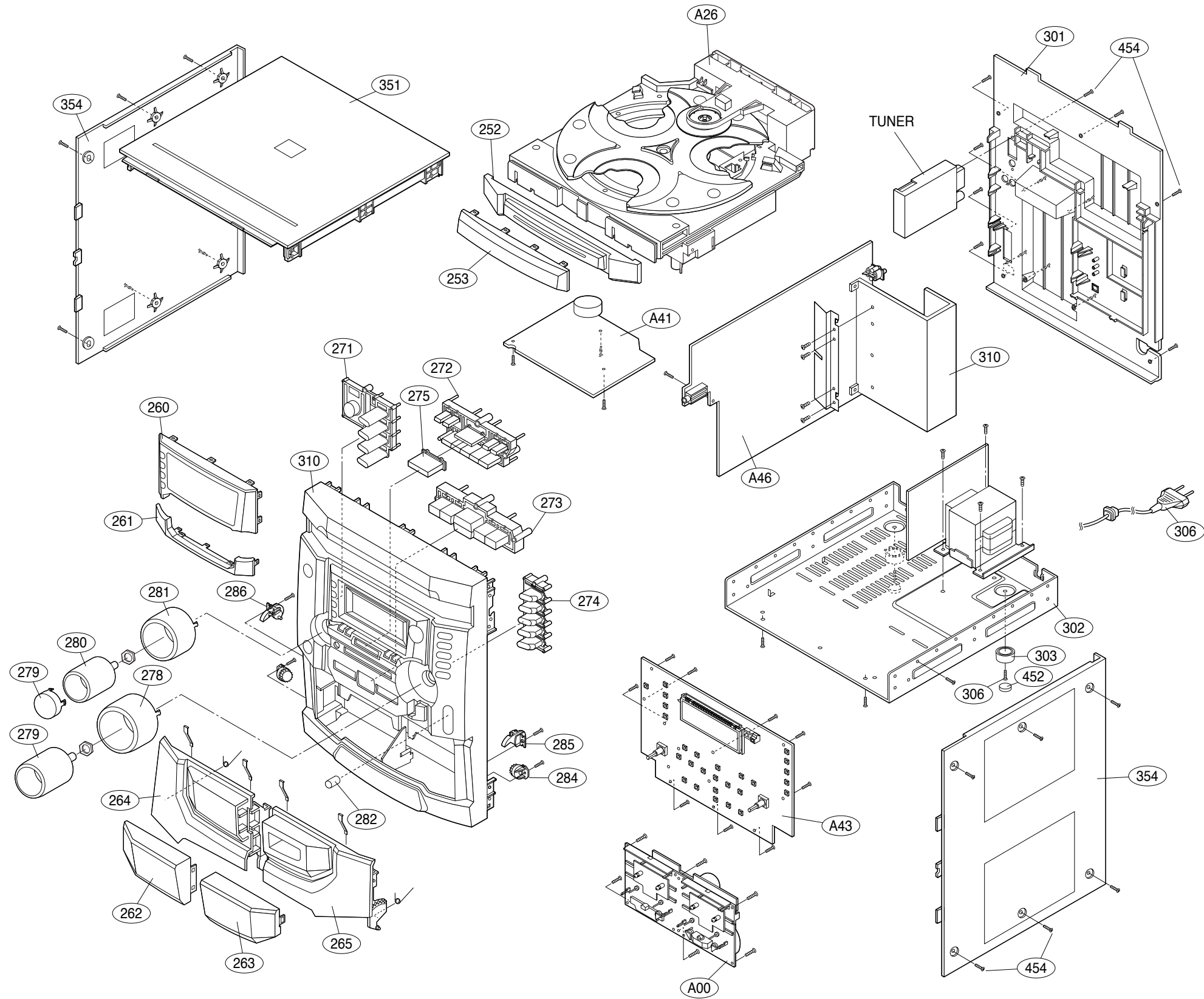




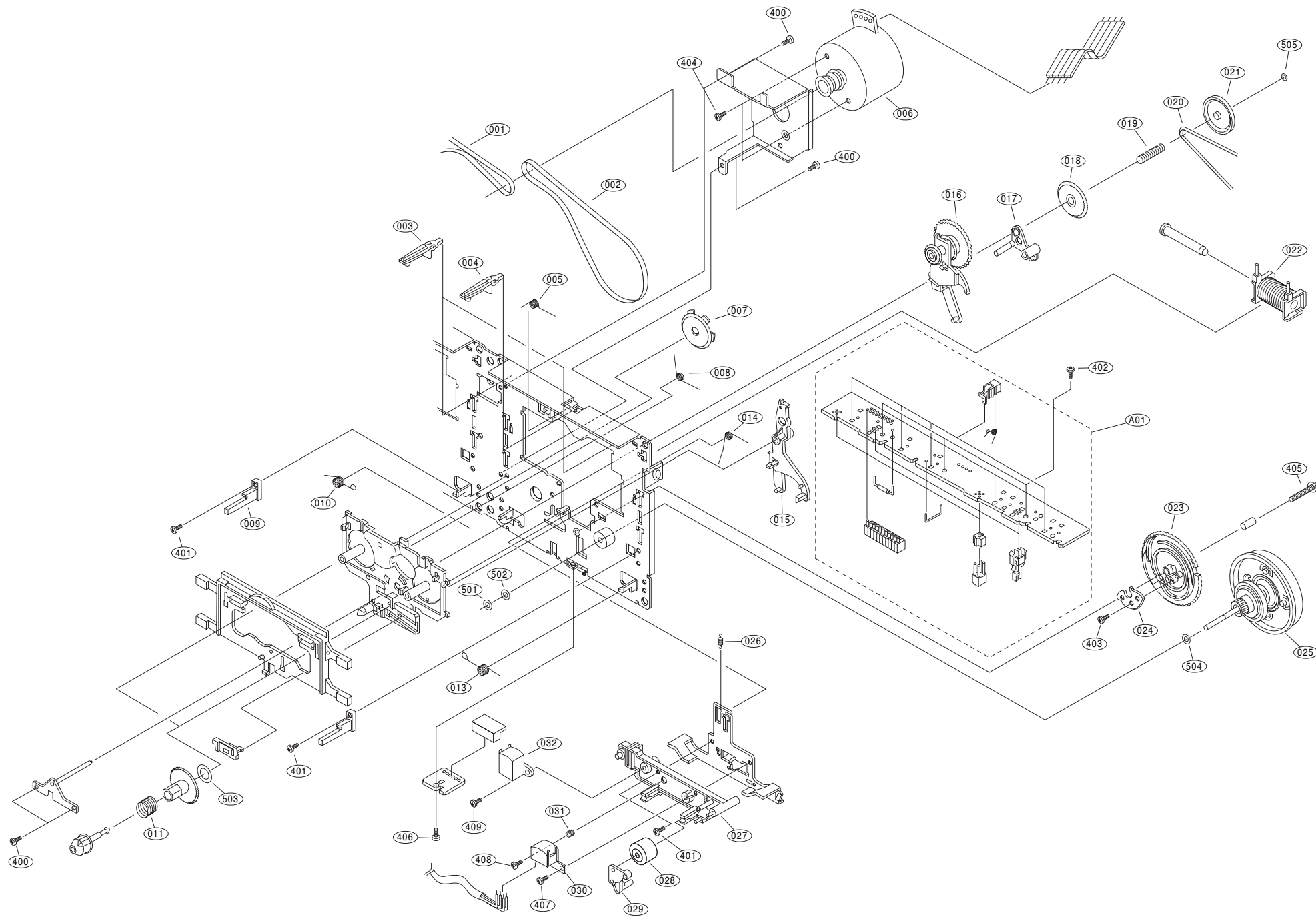
# SECTION 3. EXPLODED VIEWS

## • CABINET AND MAIN FRAME SECTION

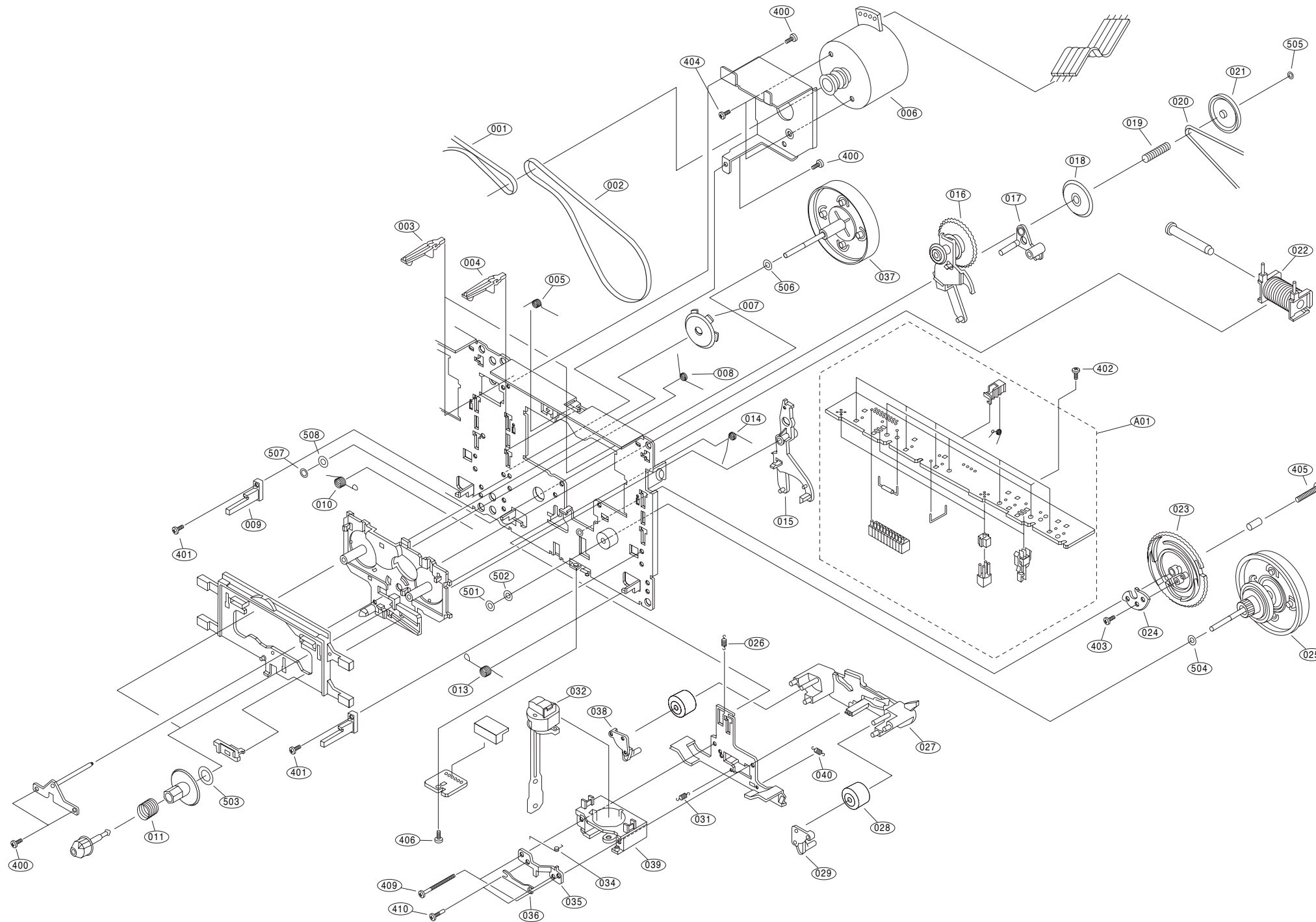
NOTE) Refer to "SECTION 5 REPLACEMENT PARTS LIST" in order to look for the part number of each part.



• TAPE DECK MECHANISM: AUTO STOP DECK(OPTIONAL)



• TAPE DECK MECHANISM: AUTO REVERSE DECK



| LOCA. NO | PART NO.    | SPECIFICATION         |
|----------|-------------|-----------------------|
| A00      | 6730R-G007B | CDM-H1323 CD CHAN     |
| A01      | 6768R-UP01A | 50-093-4249 PCB AS    |
| 001      | 6768R-BP01B | 02-084-4202 BELT/FELT |
| 002      | 6768R-BP01A | 02-084-4204 BELT/FELT |
| 003      | 6768R-AP01D | 50-239-4027 CWL44     |
| 004      | 6768R-AP01E | 50-239-4026 ARM       |
| 005      | 6768R-SP01E | 01-082-4654 SPRING    |
| 006      | 6768R-QP01A | 50-093-4316 MOTOR     |
| 007      | 6768R-GP01A | 50-093-4063 GEAR      |
| 008      | 6768R-SP01F | 01-082-4598 SPRING    |
| 009      | 6768R-MP01C | 50-219-4014 MOLD      |
| 010      | 6768R-SP01C | 01-082-4652 SPRING    |
| 011      | 6768R-SP01A | 01-081-4601 SPRING    |
| 013      | 6768R-SP01B | 01-082-4651 SPRING    |
| 014      | 6768R-SP01G | 01-082-4597 SPRING    |
| 015      | 6768R-AP01A | 50-268-3016 ARM       |
| 016      | 6768R-GP01C | 50-093-4069 GEAR      |
| 017      | 6768R-AP01C | 50-239-4072 ARM       |
| 018      | 6768R-GP01D | 50-222-4007 GEAR      |
| 019      | 6768R-SP01H | 01-081-4657 SPRING    |
| 020      | 6768R-BP01C | 02-083-4188 BELT/FELT |
| 021      | 6768R-LP01A | 50-223-4254 PULLEY    |
| 022      | 6768R-VP01A | 50-093-4125 SOLENOID  |
| 023      | 6768R-GP01B | 50-221-3009 GEAR      |
| 024      | 6768R-AP01B | 50-139-4292 ARM       |
| 025      | 6768R-JP01B | 50-093-3361 PULLEY    |
| 026      | 6768R-SP01D | 01-080-4609 SPRING    |
| 027      | 6768R-DP01A | 50-259-3342 LEVER     |
| 028      | 6768R-RP01A | 22-027-41054 ROLLER   |
| 029      | 6768R-MP01A | 50-219-4033 MOLD      |
| 031      | 6768R-SP01L | 01-080-4649 SPRING    |
| 032      | 6768R-EP01A | 50-093-4070 HEAD AY   |
| 033      | 6768R-JP01A | 50-093-3360 PULLEY    |
| 034      | 6768R-SP01K | 01-082-4650 SPRING    |
| 035      | 6768R-PP01A | 50-119-4046 PRESS     |
| 036      | 6768R-PP01B | 50-160-4108 PRESS     |
| 037      | 6768R-JP01C | 50-093-3315 PULLEY    |
| 038      | 6768R-MP01D | 50-219-4034 MOLD      |
| 040      | 6768R-SP01M | 01-080-4607 SPRING    |
| 400      | 6768R-CP01A | GSE10A2003 SCREW      |
| 401      | 6768R-CP01B | GSE20A2005 SCREW      |
| 402      | 6768R-CP01C | GSE10A2004 SCREW      |
| 403      | 6768R-CP01D | GSL10A1704 SCREW      |
| 404      | 6768R-CP01E | GSP10A2603 SCREW      |
| 405      | 6768R-CP01F | GSP11A2012 SCREW      |
| 406      | 6768R-CP01G | GSE20A2004 SCREW      |
| 409      | 6768R-CP01L | GSD10A2018 SCREW      |
| 410      | 6768R-CP01M | 03-300-4056 SCREW     |
| 501      | 6768R-WP01A | GWM19S035035 WASHER   |
| 502      | 6768R-WP01B | GWM17S050035S WASHER  |
| 503      | 6768R-WP01C | GWM40X075010 WASHER   |
| 504      | 6768R-WP01D | GWP21X045020 WASHER   |
| 505      | 6768R-WP01E | GWP12X030040S WASHER  |
| 506      | 6768R-WP01H | GWP23X040020 WASHER   |
| 507      | 6768R-WP01F | GWN21X040040 WASHER   |
| 508      | 6768R-WP01G | GWM19X055035S WASHER  |

