

Service Manual

74 CD43/01B/02B/05B
74 CD53/01B/02B/05B/01G/02G
74 CD63/01B/02B/05B
Compact disc player



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marantz®

model CD-43/CD-53/CD-63

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4822 725 51037
PCS 71 452

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound. Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available at our National Marantz Subsidiary or Agent.

MARANTZ EUROPE B.V.
P.O. Box 80002
Building SFF 2
5600 JB Eindhoven
The Netherlands
Phone : +31-40-732241
Fax : +31-40-735578

ORDERING PARTS

Parts can be ordered either by mail or by telex. In both cases, the correct part number has to be specified. The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
Model number for which the part is required
5. Way of shipment
6. Signature: any order form or telex must be signed, otherwise such part order will be considered as null and void.

ADDRESSES

AUSTRALIA
MARANTZ AUSTRALIA
Figtree Drive
Australia Centre
Homebush, NSW 2140
AUSTRALIA

FINLAND
MARANTZ
Kuortanegatan 1
00520
Helsingfors 52
Finland

ITALY
MARANTZ ITALIANA SPA
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20124 Milano
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Assiden
3007 Drammen
Norway

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Martinez Villergas 2
Apartado 2065
Madrid 28027
Spain

AUSTRIA
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Hietzinger Kai 137a
1130 Wien
Austria

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MARANTZ FRANCE
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92600 Asnières
France

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35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
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Av. da Liberdade
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1200 Lisboa
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Box 1324
17125 Solna
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P.O.Box 80002
Building SFF 2
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The Netherlands

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Kleine Heide 12
Postfach 4802
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KUWAIT
AL ALAMIAH ELECTRONICS
P.O.Box 8196
Salmiah
22052 Kuwait

SAUDI ARABIA
AL ALAMIAH ELECTRONICS
P.O.Box 5954
University Street
Riyadh 11432
Saudi Arabia

SWITZERLAND
MARANTZ SWITZERLAND
Postfach
8010 Zürich-Müllingen
Switzerland

CHILE
MARANTZ DIVISION OF
PHILIPS S.A.
Av.Santa Maria 0760
Casilla 2687
Santiago
Chile

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Kingsbridge House
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10 Bond Street
Randburg 2194
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MARANTZ TRADING
P.O.Box 20008
Building SFF 2
5600 JB Eindhoven
The Netherlands

DENMARK
MARANTZ
Horsvinget 5
2630 Tastrup
Denmark

GREECE
ADAMCO ELECTR. SA
P.O.Box 21025
Hippocrates Str. 188
Athens 11471
Greece

All of the above locations are fully equipped to take care of your total service needs or can advise you. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please contact the nearest facility for the necessary assistance.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

1. TECHNICAL SPECIFICATIONS

| | CD43 | CD53 | CD63 |
|-------------------------------------|------------------|------------------|---|
| Audio Characteristics | | | |
| Channels | | | 2 channels |
| Sampling frequency | | | 44.1 kHz |
| Quantization | | | 16-bit linear/channel |
| Error correction | | | Cross-interleave read solomon code (CIRC) |
| D/A conversion | | | 1-bit linear/channel |
| Wow & flutter | | | Precision of quartz |
| Optical Readout System | | | |
| Laser | | | GaAIAs semiconductor |
| Wavelength | | | 780 nm |
| Frequency Characteristics | | | |
| Frequency range | 5 Hz – 20 kHz | 5 Hz – 20 kHz | 5 Hz – 20 kHz |
| Dynamic range | > 96 dB | > 96 dB | > 96 dB |
| S/N ratio | > 102 dB | > 104 dB | > 104 dB |
| Channel separation (1 kHz) | > 100 dB | > 100 dB | > 102 dB |
| THD (1 kHz) | 0.003 % | 0.0025 % | 0.0025 % |
| Analog output jack | | | |
| Output level | 2V RMS | 2V RMS | 2V RMS |
| Output impedance | 200 ohms | 200 ohms | 200 ohms |
| Digital output | | | |
| Pin jack | 0.5 Vp-p/75 ohms | 0.5 Vp-p/7 5ohms | 0.5 Vp-p/75 ohms |
| Optical output | — | — | -19 dBm |
| Power Supply | | | |
| /01 version | | | 110-120/220-240V AC 50/60 Hz |
| /02 version | | | 230V AC 50 Hz |
| /05 version | | | 240V AC 50 Hz |
| Power consumption | 11 W | 11 W | 13 W |
| Cabinet, etc. | | | |
| Dimensions | | | |
| Width | | | 420 mm |
| Height | | | 86 mm |
| Depth | | | 300 mm |
| Net weight | | | 4.1 kg |
| Operating temperatures | | | +5 °C ~ +35 °C |
| Operating humidity | | | 5 % ~ 90 % (without dew) |
| Accessories | | | |
| Remote control unit (RC-63CD) | — | 1 | 1 |
| AA (R6) batteries | — | 2 | 2 |
| Stereo audio cable | 1 | 1 | 1 |

Specifications subject to change without prior notice.

2. CAUTION

LASER NOTE:

- DANGER** — Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.
- CAUTION** — Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- CAUTION** — The use of optical instruments with this product will increase eye hazard.

THE COMPACT DISC PLAYER SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT PROPELY QUALIFIED SERVICE PERSONNEL.

LASER BEAM RADIATION SPOT

Laser Diode Properties

Material: Al GaAs

Wavelength: 780nm ± 20nm

Laser Output: Continuous Wave max. 0.5mW

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

ESD

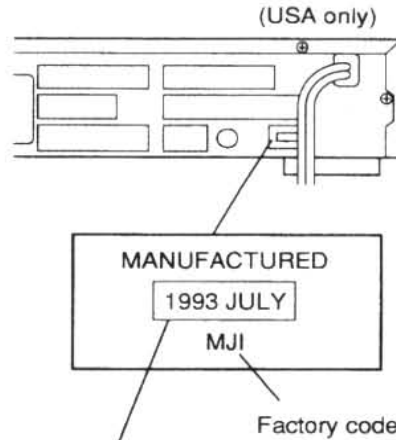
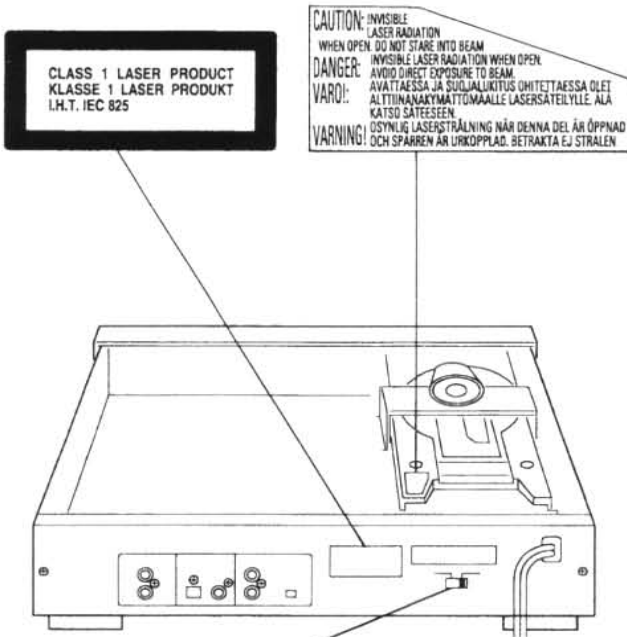


All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).

Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.

Keep components and tools also at this potential.

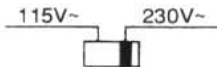


Manufactured year and month

VOLTAGE CONVERSION (/01B version only)

To convert the unit to a different power source voltage, change the position as illustrated in the drawing below.

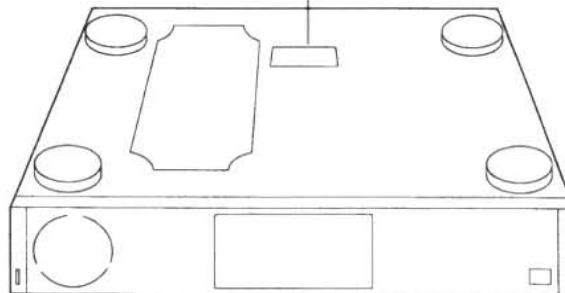
VOLTAGE SELECTOR



CAUTION
DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE.

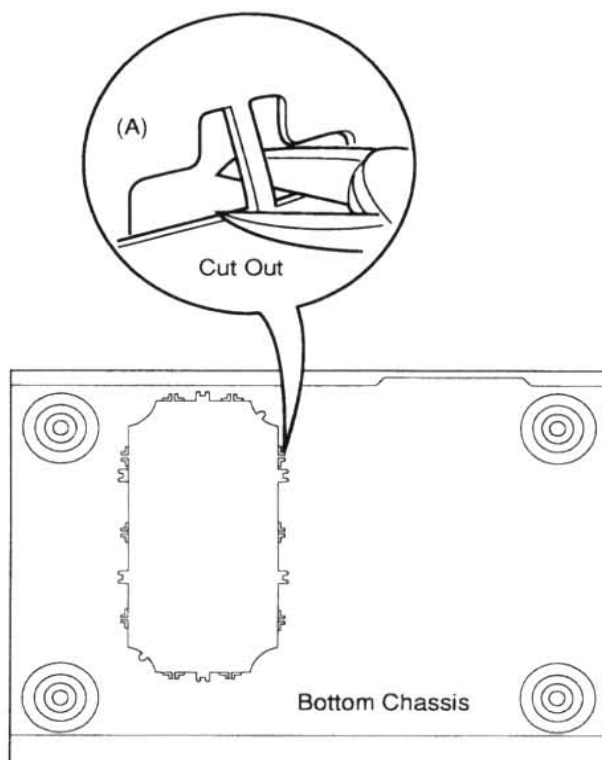
DANGER
INVISIBLE LASER RADIATION WHEN OPEN.
AVOID DIRECT EXPOSURE TO BEAM.

(USA only)



3. USE OF SERVICE HOLE

- (1) If the use of the service hole is required, remove the cover by cutting 10 bridges (A) using a tool such as a pair of cutters.
- (2) During this work, be careful of the sharp edges at the cut positions.
- (3) After using the service hole, rotate the cover and fix it using screws [3 x 6 (M)].



4. SERVICE MODE

1. How to enter into the Service Mode
 - Turn the power on while pressing at least 2 of [STOP], [PLAY], [NEXT], [PREV] keys.
2. Mode 0 (Display P00)

Condition: [FOCUS OFF] [SPINDLE OFF] [RADIAL OFF] [MUTE ON]

 - The sled moves outside when pressing [CUE]/[REVIEW] keys.
 - The function moves to Mode 1 when pressing [NEXT] key.
3. Mode 1 (Display P01)

Condition: [FOCUS ON] [SPINDLE OFF] [RADIAL OFF] [MUTE ON]

 - The function moves to Mode 2 when pressing [NEXT] key.
 - The function moves to Mode 0 when pressing [PREV] key.
4. Mode 2 (Display P02)

Condition: [FOCUS ON] [SPINDLE ON] [RADIAL OFF] [MUTE ON]

 - The function moves to Mode 3 when pressing [NEXT] key.
 - The function moves to Mode 0 when pressing [PREV] key.
5. Mode 3 (Display P03)

Condition: [FOCUS ON] [SPINDLE ON] [RADIAL ON] [MUTE OFF]

 - The Sled moves outside when pressing [CUE] key.
 - The Sled moves inside when pressing [REVIEW] key.
 - The function moves to Mode 2 when pressing [PREV] key.
 - The following key operation can be available at all of the conditions of the service mode.
 - 1) All of FL display light by pressing [STOP] key.
 - 2) Model Number and Version Nbr of the μ -processor are displayed by pressing [PAUSE] key.

Cd - -

| |
 Model Name μ -Processor Version Nbr.

1=CD1010 3=CD-63/53/43
 2=CD1020

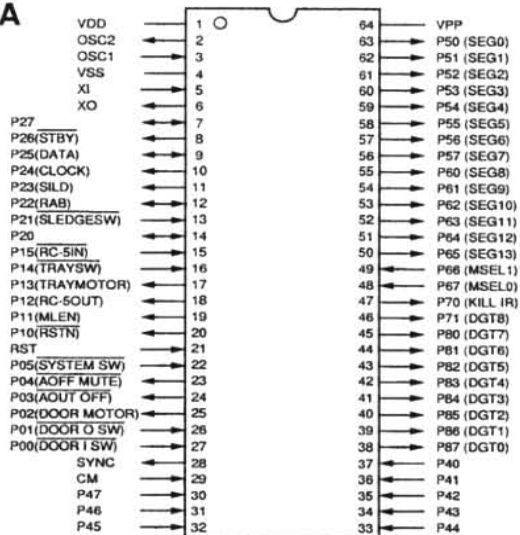
- 3) The same as Normal operation (except Service mode) is performed by pressing [PLAY] key. However if some default is detected, an error code is displayed. (For example: Err 10) The content for each error code is shown below.

| Error Code | Error |
|-------------|-----------------|
| Err 02 | FOCUS Error |
| Err 07 | SUB CODE Error |
| Err 08 | T. O. C Error |
| Err 09 | DECODER Error |
| Err 10 | RADIAL Error |
| Err 11, 12 | SLED Error |
| Err 13 | SPINDLE Error |
| Err 16 ~ 20 | SEARCH Error |
| Err 30 | DOOR Error |
| Err 31 | TRAY Error |
| Err 32 ~ 47 | KEY INPUT Error |

6. Cancelling the Service Mode
 - The Service Mode is cancelled by turning the power off.

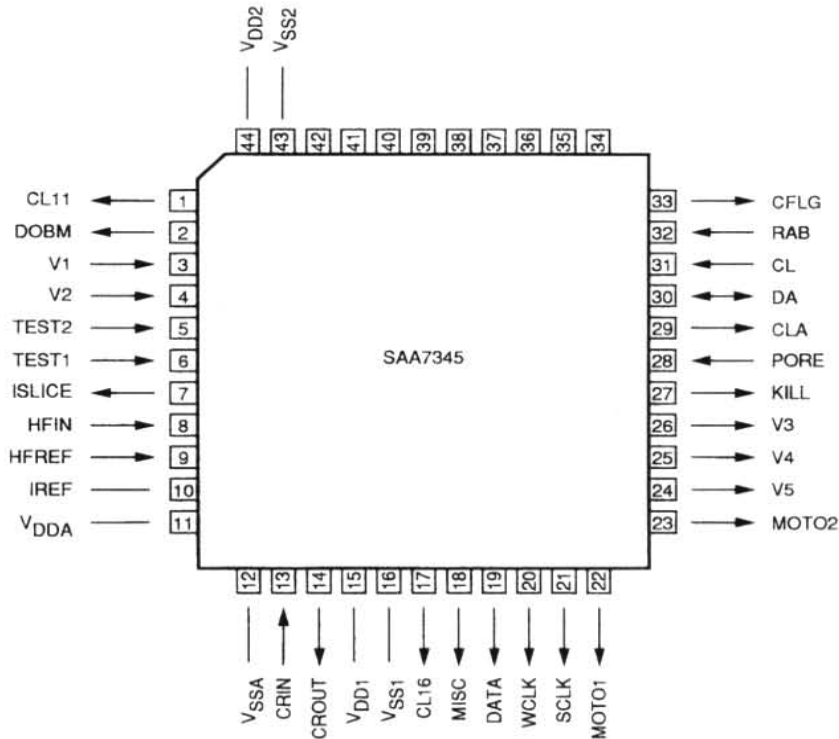
5. MICROPROCESSOR AND IC DATA

MN187164 (MICROPROCESSOR)



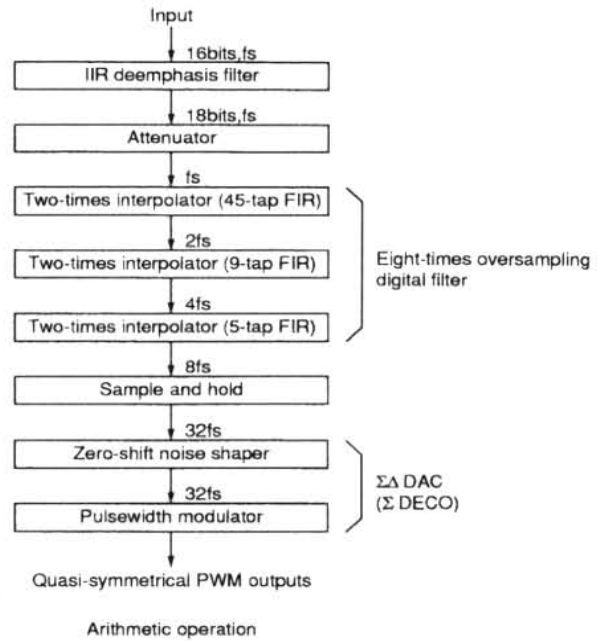
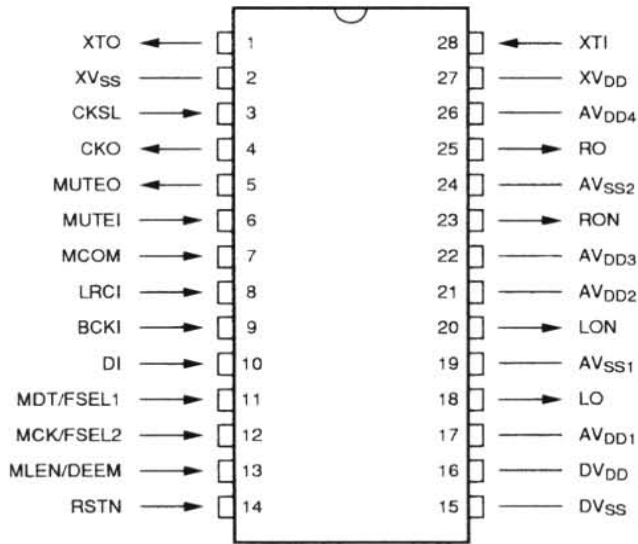
| Pin Nbr | Pin Name | I/O | Function | Pin Nbr | Pin Name | I/O | Function |
|---------|---------------|-----|----------------------|---------|-------------|-----|-------------------------|
| 1 | Vdd | - | Power Supply +5V | 33 | P44 | I | Key Input, KEY 5 |
| 2 | OSC2 | O | Clock out (8.0MHz) | 34 | P43 | I | Key Input, KEY 4 |
| 3 | OSC1 | I | Clock in (8.0MHz) | 35 | P42 | I | Key Input, KEY 3 |
| 4 | Vss | - | GND 0V | 36 | P41 | I | Key Input, KEY 2 |
| 5 | XI | I | 0V | 37 | P40 | I | Key Input, KEY 1 |
| 6 | XO | O | Not Used | 38 | P87 (DGT0) | O | FL Digit Data, G9 |
| 7 | P27 | I/O | Not Used | 39 | P86 (DGT1) | O | FL Digit Data, G8 |
| 8 | P26 STBY | O | TDA1301 RESET, NRST | 40 | P85 (DGT2) | O | FL Digit Data, G7 |
| 9 | P25 DATA | I/O | Data Bus Data, SIDA | 41 | P84 (DGT3) | O | FL Digit Data, G6 |
| 10 | P24 CLOCK | O | Data Bus Clock, SICK | 42 | P83 (DGT4) | O | FL Digit Data, G5 |
| 11 | P23 SILD | O | TDA1301 SILD (latch) | 43 | P82 (DGT5) | O | FL Digit Data, G4 |
| 12 | P22 RAB | I/O | SAA7345 RAB | 44 | P81 (DGT6) | O | FL Digit Data, G3 |
| 13 | P21 SLEDGESW | I | Sledge SW, SLSW | 45 | P80 (DGT7) | O | FL Digit Data, G2 |
| 14 | P20 MUTE | I/O | Not Used | 46 | P71 (DGT8) | O | FL Digit Data, G1 |
| 15 | P15 RC5IN | I | RC-5 code Input | 47 | P70 KILL IR | O | Kill IR, N.C. |
| 16 | P14 TRAYSW | I | Tray In/Out SW, TRSW | 48 | P67 MSEL0 | I | Model Select SW 0 |
| 17 | P13 TRAYMOTOR | O | Tray Motor | 49 | P66 MSEL1 | I | Model Select SW 1 |
| 18 | P12 RC5OUT | O | RC-5 code Output | 50 | P65 (SEG13) | O | FL Segment Data, P1 |
| 19 | P11 MLEN | O | SM5872 MLEN (latch) | 51 | P64 (SEG12) | O | FL Segment Data, P2 |
| 20 | P10 RSTN | O | SM5872 RSTN (reset) | 52 | P63 (SEG11) | O | FL Segment Data, P3 |
| 21 | RST | I | RESET | 53 | P62 (SEG10) | O | FL Segment Data, P4 |
| 22 | P05 SYSTEM SW | I | System SW | 54 | P61 (SEG9) | O | FL Segment Data, P5 |
| 23 | P04 AOFF MUTE | O | Audio OFF Mute, N.C. | 55 | P60 (SEG8) | O | FL Segment Data, P6 |
| 24 | P03 AOUT OFF | O | Audio Out OFF | 56 | P57 (SEG7) | O | FL Segment Data, P7 |
| 25 | P02 DOORMOTOR | O | Door Motor | 57 | P56 (SEG6) | O | FL Segment Data, P8 |
| 26 | P01 DOOR O SW | I | Door Out SW | 58 | P55 (SEG5) | O | FL Segment Data, P9 |
| 27 | P00 DOOR I SW | I | Door In SW | 59 | P54 (SEG4) | O | FL Segment Data, P10 |
| 28 | SYNC | O | Not Used | 60 | P53 (SEG3) | O | FL Segment Data, P11 |
| 29 | CM | I | 0V | 61 | P52 (SEG2) | O | FL Segment Data, P12 |
| 30 | P47 | I | Key Input, KEY 8 | 62 | P51 (SEG1) | O | FL Segment Data, P13 |
| 31 | P46 | I | Key Input, KEY 7 | 63 | P50 (SEG0) | O | FL Segment Data, P14 |
| 32 | P45 | I | Key Input, KEY 6 | 64 | Vpp | - | Power Supply -25V, VFTD |

SAA7345GP (DIGITAL DECODING IC WITH RAM)



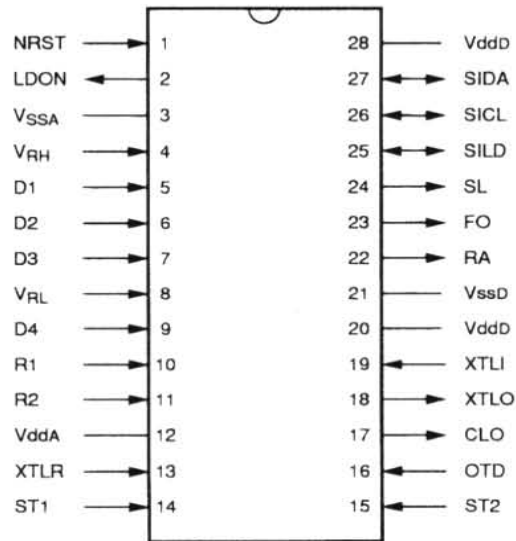
| Pin Nbr | Pin Name | I/O | Function | Pin Nbr | Pin Name | I/O | Function |
|---------|-----------|-----|---|---------|-----------|-----|--|
| 1 | CL11 | O | 11.2896MHz clock output (3-state) | 23 | MOTO2 | O | Motor output 2; versatile (3-state) |
| 2 | DOBM | O | Bi-phase mark output (externally buffered; 3-state) | 24 | V5 | O | Versatile output pin |
| 3 | V1 | I | Versatile input pin | 25 | V4 | O | Versatile output pin |
| 4 | V2 | I | Versatile input pin | 26 | V3 | O | Versatile output pin (open-drain) |
| 5 | TEST2 | I | Test input: this pin should be tied LOW | 27 | KILL | O | Kill output; programmable (open-drain) |
| 6 | TEST1 | I | Test input; this pin should be tied LOW | 28 | PORE | I | Power-on reset enable input (active LOW) |
| 7 | ISLICE | O | Current feedback from data slicer | 29 | CLA | O | 4.2336MHz microprocessor clock output |
| 8 | HFIN | I | Comparator signal input | 30 | DA | I/O | Interface data I/O line |
| 9 | HFREF | I | Comparator common-mode input | 31 | CL | I | Interface clock input line |
| 10 | IREF | - | Reference current pin (nominally $V_{DD}/2$) | 32 | RAB | I | Interface R/W and acknowledge input |
| 11 | V_{DDA} | - | Power supply (Analogue) | 33 | CFLG | O | Correction flag output (open-drain) |
| 12 | V_{SSA} | - | GND (Analogue) | 34 | — | - | No internal connection |
| 13 | CRIN | I | Crystal/resonator input, 16.9344 MHz | 35 | — | - | |
| 14 | CROUT | O | Crystal/resonator output | 36 | — | - | |
| 15 | V_{DD1} | - | Power supply 1 (Digital) | 37 | — | - | |
| 16 | V_{SS1} | - | GND 1 (Digital) | 38 | — | - | |
| 17 | CL16 | O | 16.9344MHz system clock output | 39 | — | - | |
| 18 | MISC | O | General purpose DAC output (3-state) | 40 | — | - | |
| 19 | DATA | O | Serial data output (3-state) | 41 | — | - | |
| 20 | WCLK | O | Word clock output (3-state) | 42 | — | - | |
| 21 | SCLK | O | Serial bit clock output (3-state) | 43 | V_{SS2} | - | GND 2 (Digital) |
| 22 | MOTO1 | O | Motor output 1; versatile (3-state) | 44 | V_{DD2} | - | Power supply 2 (Digital) |

SM5872BS (DIGITAL FILTER AND D/A CONVERTER)



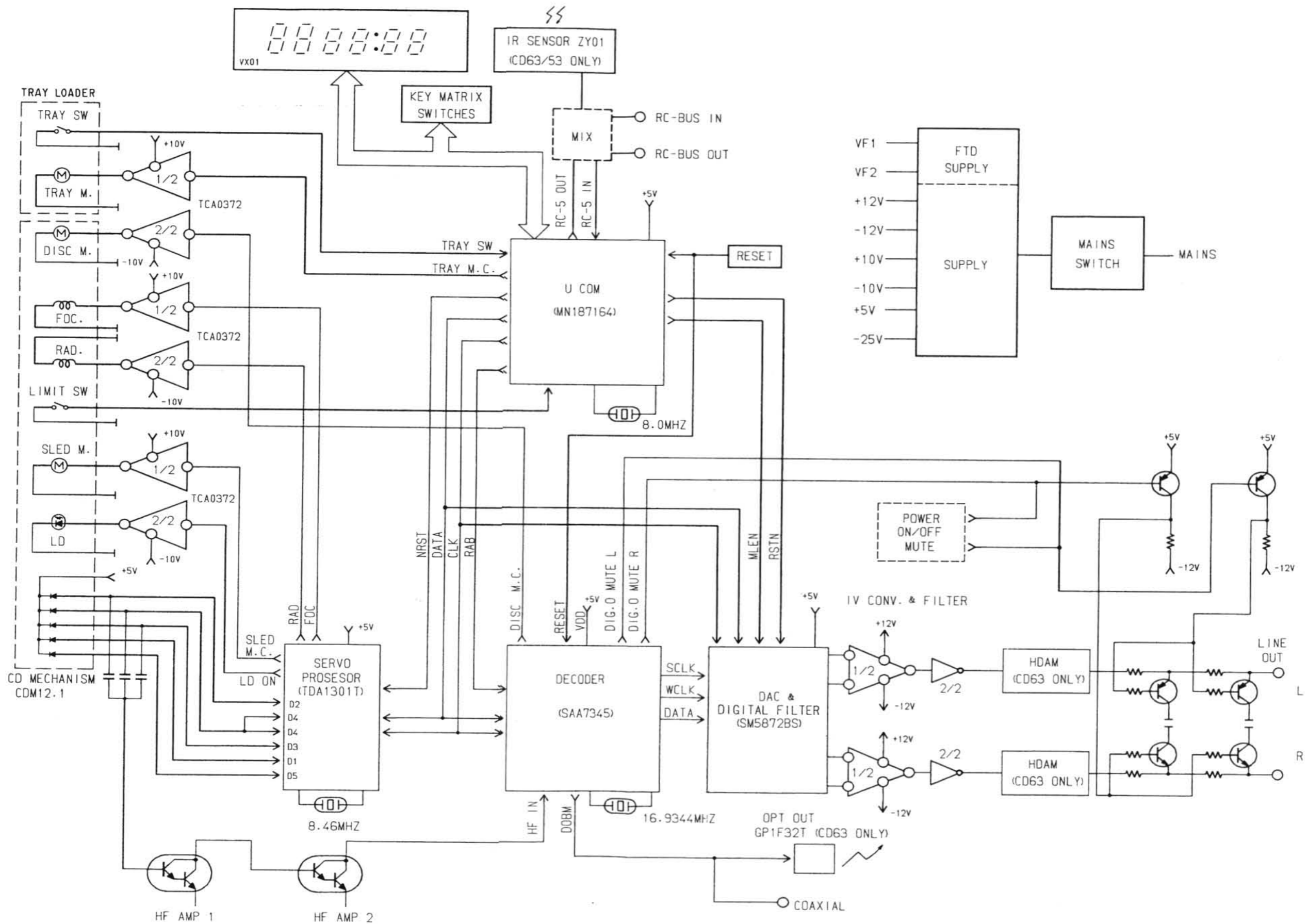
| Pin Nbr | Pin Name | I/O | Function |
|---------|-------------------|-----|--|
| 1 | XTO | O | Crystal oscillator output |
| 2 | XV _{SS} | - | GND (X'TAL) |
| 3 | CKSL | I | This pin should be tied HIGH for normal operation. Internal pull-up resistor |
| 4 | CKO | O | Clock output (384fs) |
| 5 | MUTE0 | O | Mute detect output |
| 6 | MUTEI | I | Mute input. Internal pull-resistor |
| 7 | MCOM | I | Interface mode select input. Internal pull-up resistor : H = Interface mode L = Local |
| 8 | LRCI | I | Data sample rate clock input. Internal pull-up resistor : H = L ch L = R ch |
| 9 | BCKI | I | Bit clock input. Internal pull-up resistor |
| 10 | DI | I | Serial data input. Internal pull-up resistor |
| 11 | MDT/FSEL1 | I | Microprocessor interface data input (and local mode frequency select input). Internal pull-up resistor |
| 12 | MCK/FSEL2 | I | Microprocessor interface clock input (and local mode frequency select input). Internal pull-up resistor |
| 13 | MLEN/DEEM | I | Microprocessor interface latch enable input (and local mode deemphasis control input). Internal pull-up resistor |
| 14 | RSTN | I | Reset input. Internal pull-up resistor |
| 15 | DV _{SS} | - | GND (Digital) |
| 16 | DV _{DD} | - | Power supply (Digital) |
| 17 | AV _{DD1} | - | Power supply 1 (Analogue) |
| 18 | LO | O | Left-channel positive PWM output |
| 19 | AV _{SS1} | - | GND 1 (Analogue) |
| 20 | LON | O | Left-channel negative PWM output |
| 21 | AV _{DD2} | - | Power supply 2 (Analogue) |
| 22 | AV _{DD3} | - | Power supply 3 (Analogue) |
| 23 | RON | O | Right-channel negative PWM output |
| 24 | AV _{SS2} | - | GND 2 (Analogue) |
| 25 | RO | O | Right-channel positive PWM output |
| 26 | AV _{DD4} | - | Power supply 4 (Analogue) |
| 27 | XV _{DD} | - | Power supply (X'TAL) |
| 28 | XTI | I | Crystal oscillator or external clock input, 384fs (16.9344 MHz) |

TDA1301T (DIGITAL SERVO CONTROL)



| Pin Nbr | Pin Name | I/O | Function |
|---------|------------------|-----|--|
| 1 | NRST | I | Reset input |
| 2 | LDON | O | Laser drive on |
| 3 | V _{SSA} | - | GND (Analog) |
| 4 | V _{RH} | I | A/D converter reference input |
| 5 | D1 | I | Unipolar current input (Center diode signal input) |
| 6 | D2 | I | |
| 7 | D3 | I | |
| 8 | V _{RL} | I | A/D converter reference input |
| 9 | D4 | I | Unipolar current input (Center diode signal input) |
| 10 | R1 | I | Unipolar current input (Tracking diode signal input) |
| 11 | R2 | I | |
| 12 | V _{ddA} | - | Power supply (Analog) |
| 13 | XTLR | I | Oscillator reference |
| 14 | ST1 | I | Test input 1 |
| 15 | ST2 | I | Test input 2 |
| 16 | OTD | I | Off-track detection |
| 17 | CLO | O | Clock output |
| 18 | XTLO | O | Oscillator output |
| 19 | XTLI | I | Oscillator input |
| 20 | V _{ddD} | - | Power supply (Digital) |
| 21 | V _{SSD} | - | GND (Digital) |
| 22 | RA | O | Radial actuator output |
| 23 | FO | O | Focus actuator output |
| 24 | SL | O | Sledge output |
| 25 | SILD | I/O | Serial interface load |
| 26 | SICL | I/O | Serial interface clock |
| 27 | SIDA | I/O | Serial interface data |
| 28 | V _{ddD} | - | Power supply (Digital) |

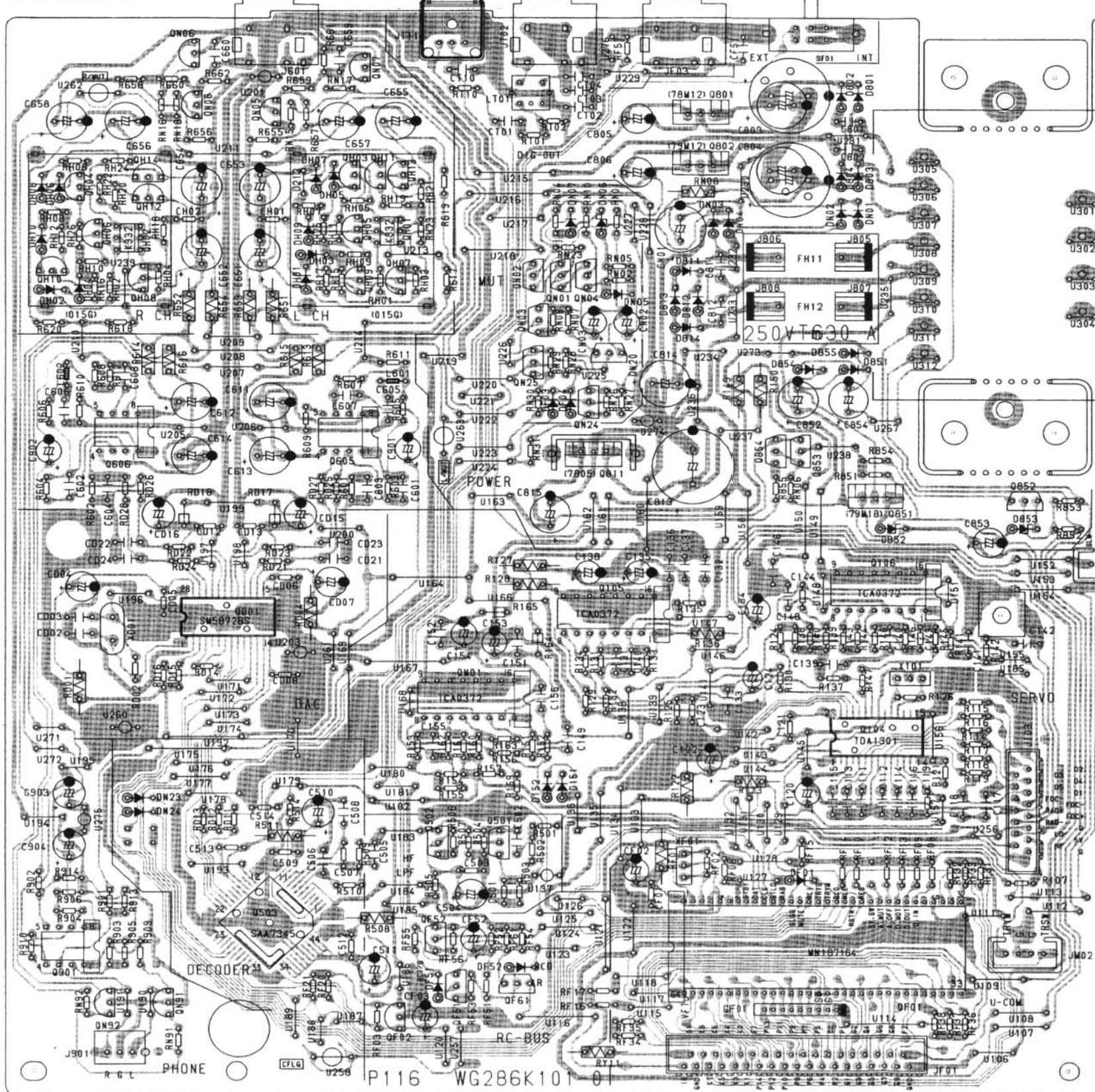
6. BLOCK DIAGRAM



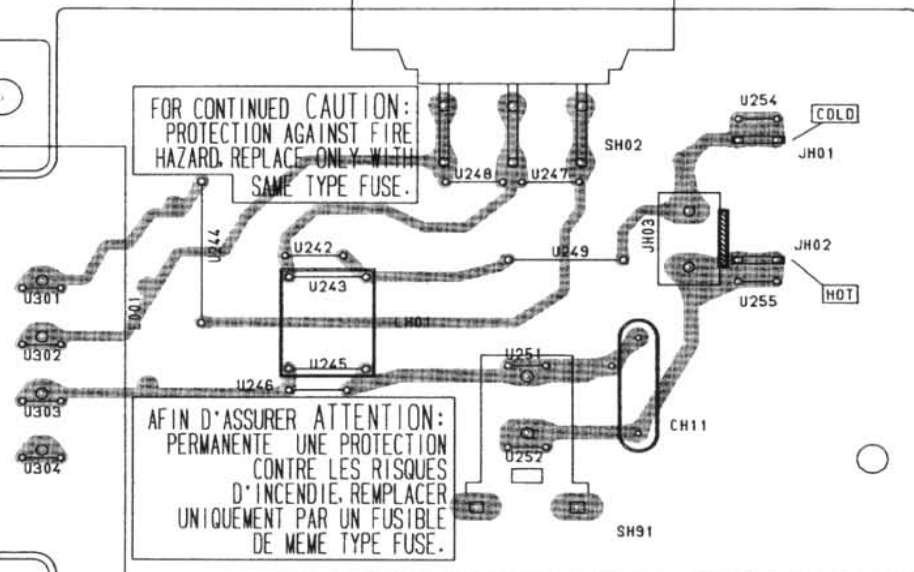
7. SCHEMATIC DIAGRAMS AND PARTS LOCATIONS (PATTERN SIDE)

QH04 QH12 QH14 QH06 QH08 QH05 QH03 QN07 QH11 QH13 QM01 QN01~QN04 Q801 Q802
 QH10 QH06 QH02 QH08 QH05 QH09 QH01 QH07 Q501 Q502 QN25 QN24 QN20 Q584 Q583 Q851 Q106 Q852
 Q901 Q606 QN92 QN91 QD01 Q503 Q605 QF02 QF51 QF52 QF61 Q811 Q105 QF01 Q104

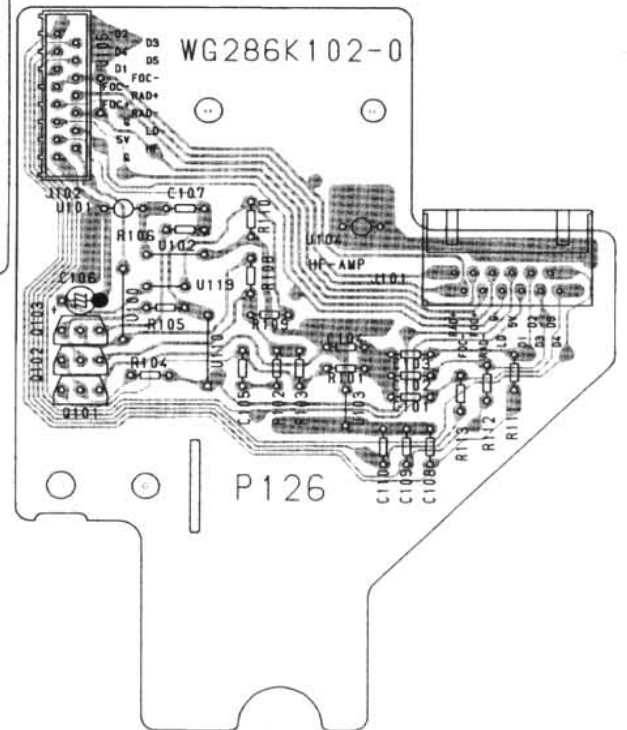
PP16 MAIN PCB



115V → ← 230V

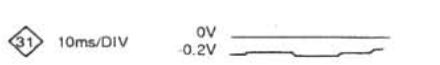
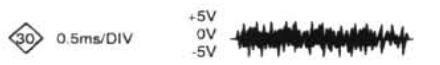
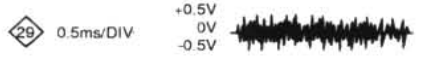
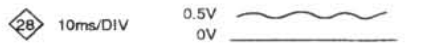
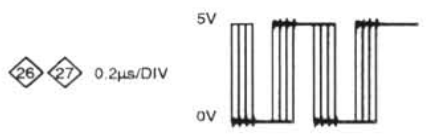
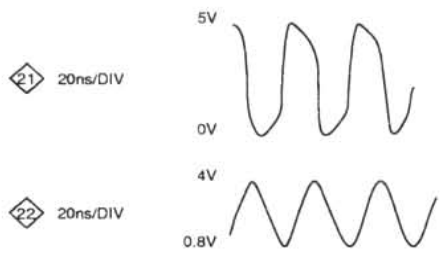
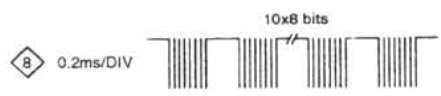
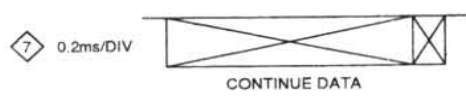
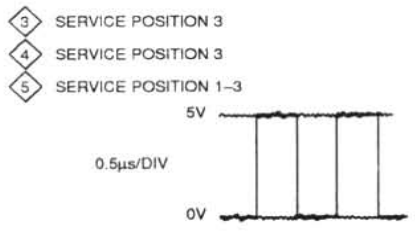
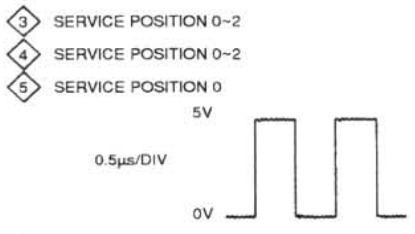
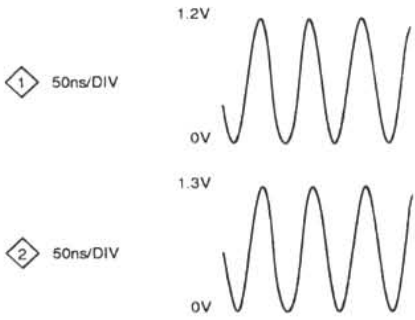


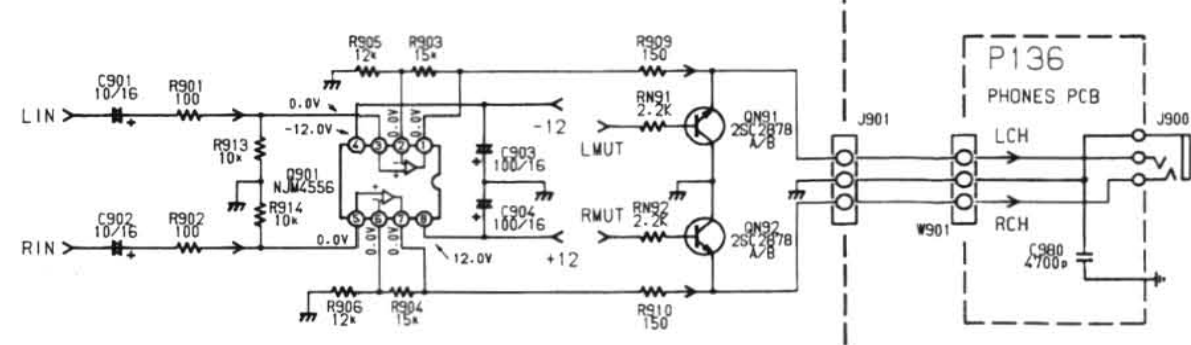
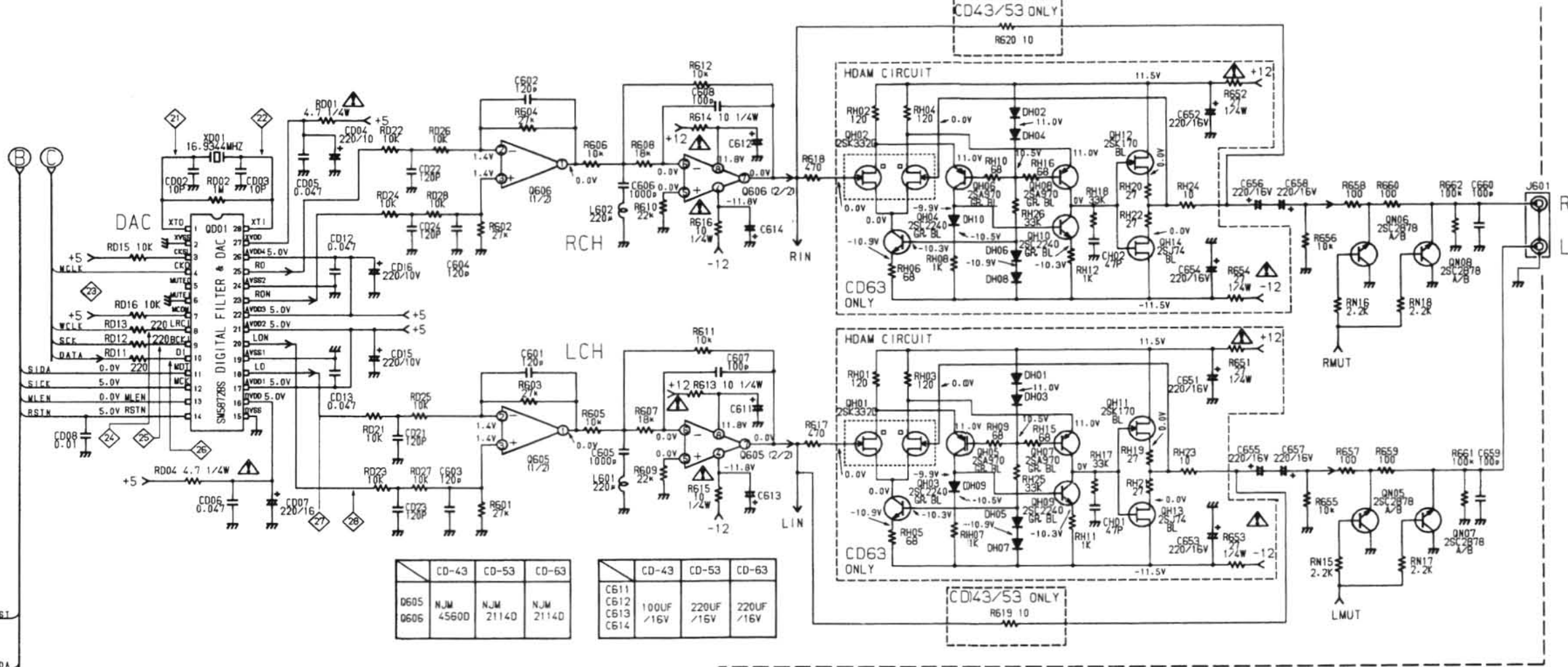
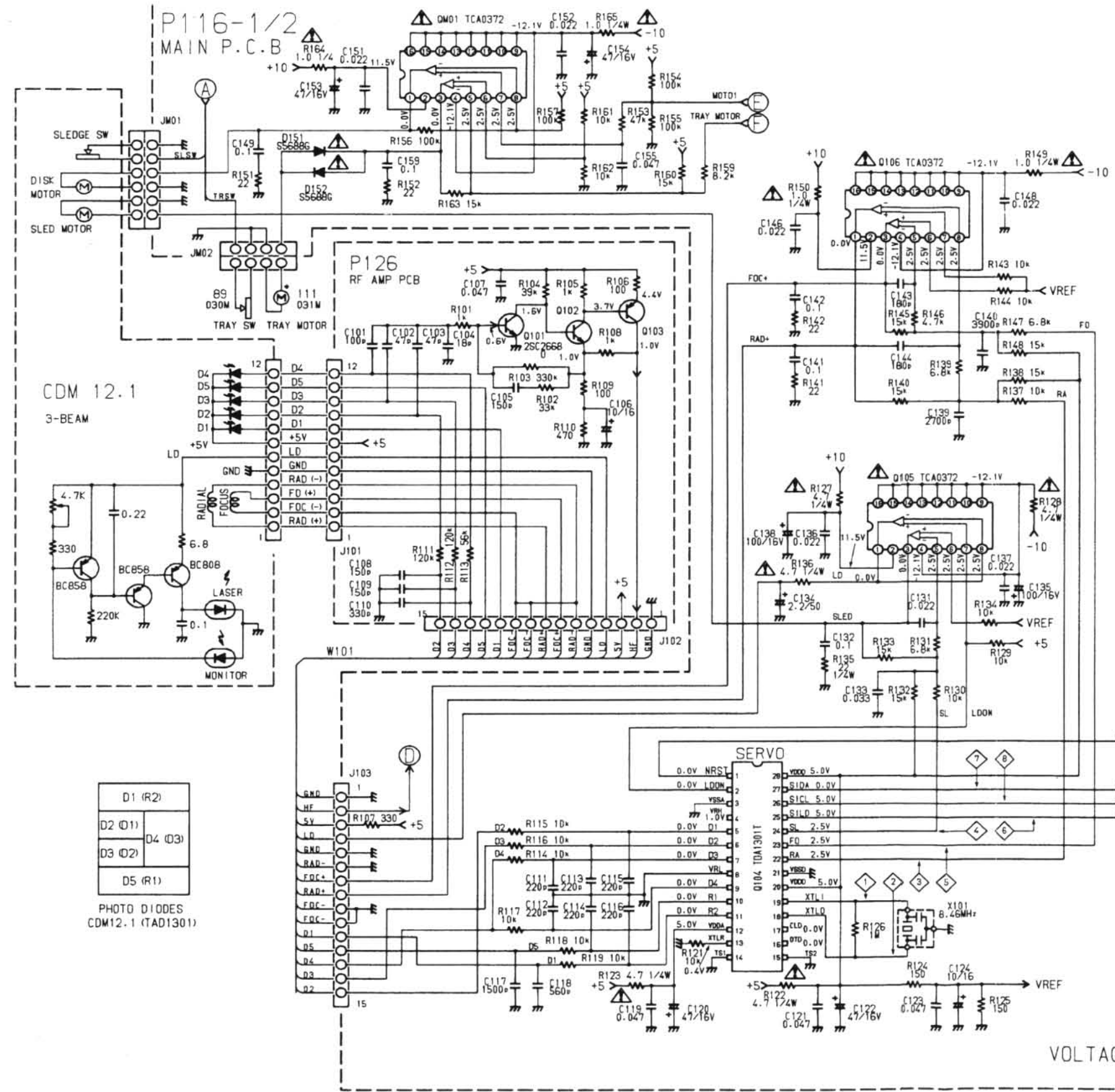
Q103
Q102
Q101
P126 RF AMP PCB



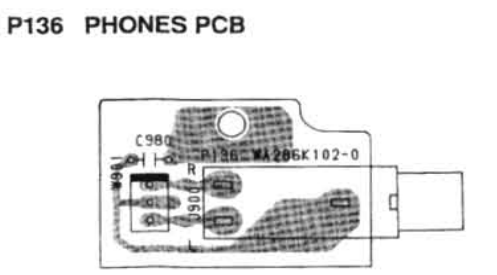
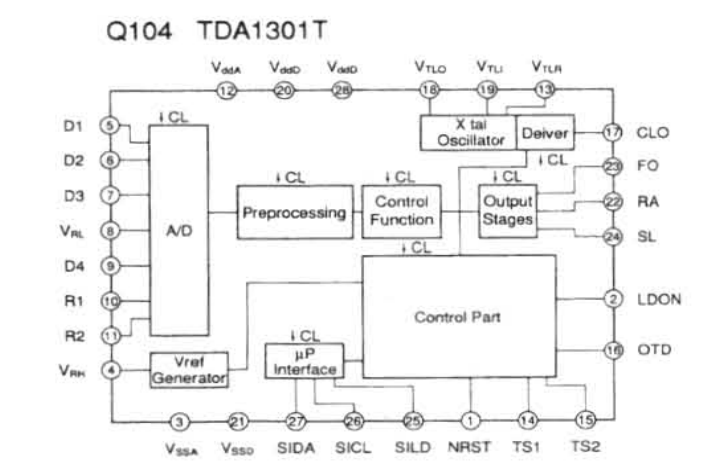
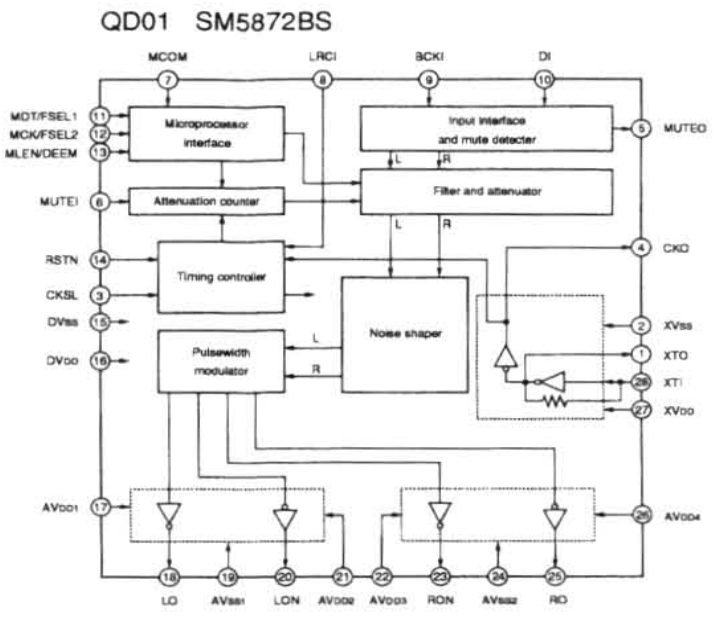
WAVE FORM

All of the wave forms are monitored with PLAY mode.

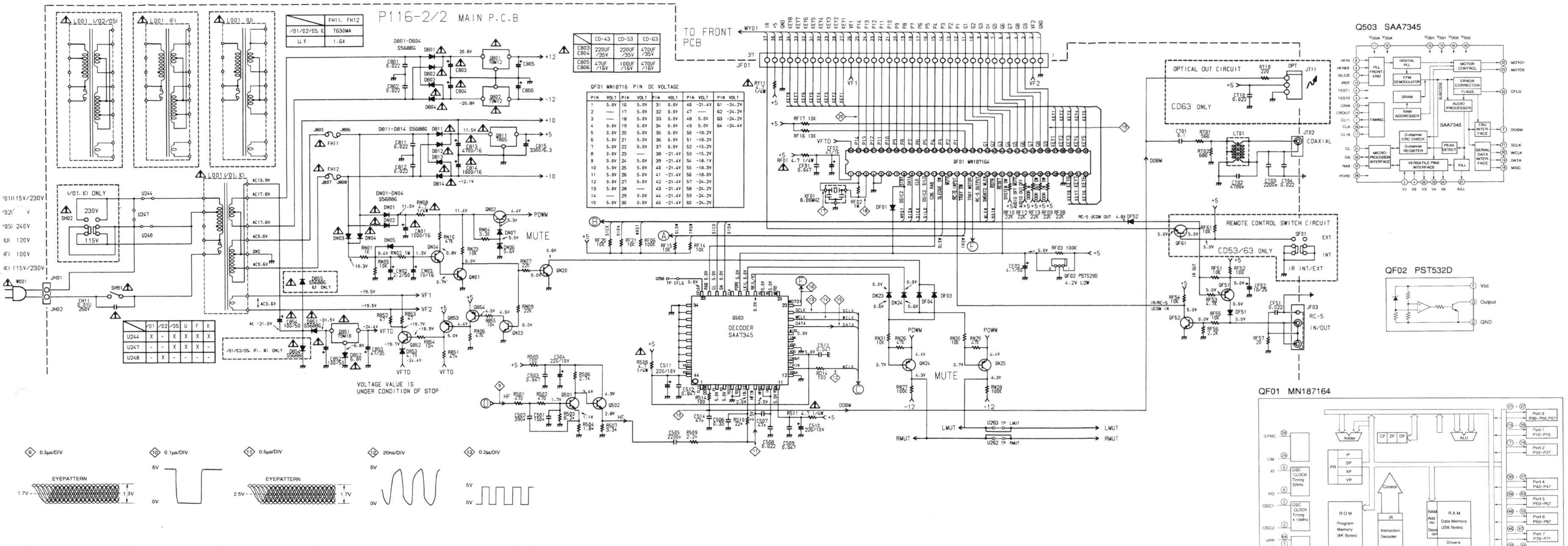




| | | | | | |
|------|------|------|------|------|--|
| Q102 | Q501 | Q502 | Q852 | QF52 | 2SC536SP OR 2SC2458 OR 2SC3311 OR 2SC1740S |
| QF61 | QN01 | QN02 | QN03 | QN04 | |
| Q103 | Q853 | Q854 | QF51 | QN24 | 2SA608SP OR 2SA1048 OR 2SA1309 OR 2SA933S |
| QF01 | QF03 | QF04 | QF51 | QF52 | 1SS176 OR MA165 OR 1SS254 |
| DH01 | DH02 | DH03 | DH04 | DH05 | |
| DH06 | DH07 | DH08 | DH09 | DH10 | |
| DN07 | DN23 | DN24 | DN05 | | |

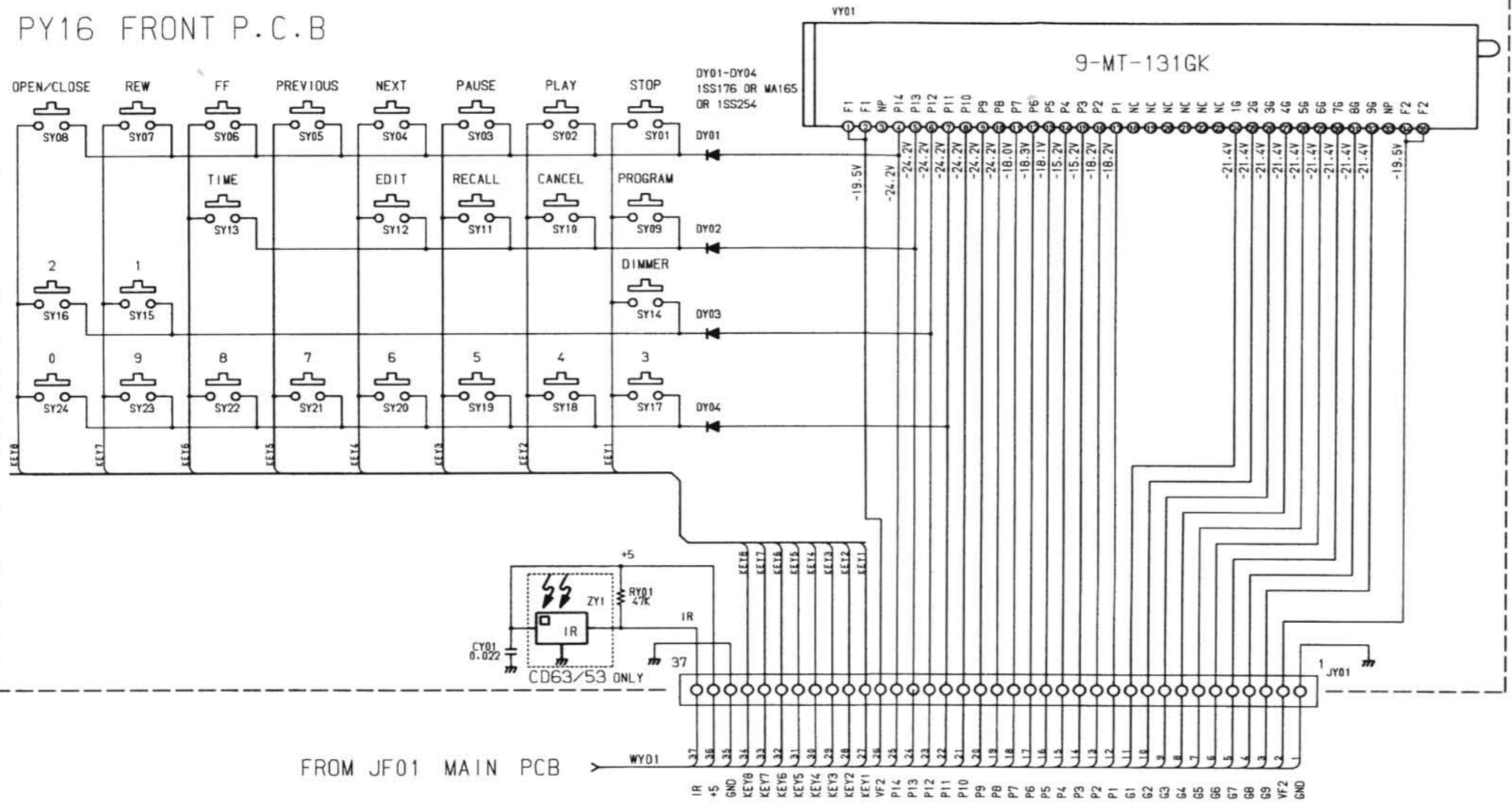


NOTE ON SAFETY:
 Symbol Δ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol Δ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

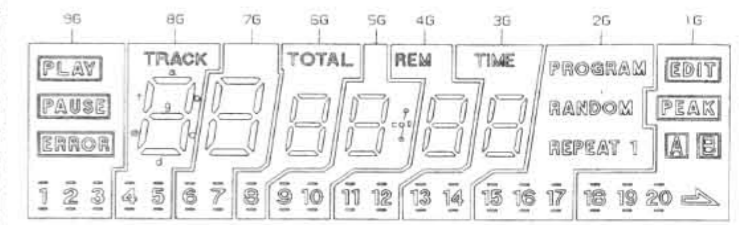


NOTE ON SAFETY:
 Symbol Δ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol Δ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

PY16 FRONT P.C.B



FROM JF01 MAIN PCB

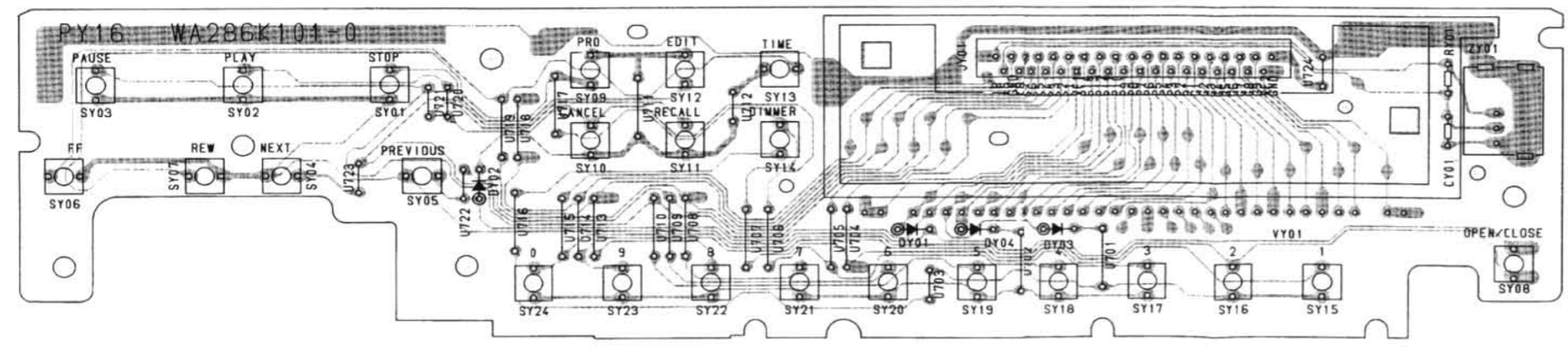


ANODE CONNECTION

| | 9G | 8G | 7G | 6G | 5G | 4G | 3G | 2G | 1G |
|-----|-------|-------|-----|-------|------|------|------|---------|--------|
| P1 | - | a | a | a | a | a | a | PROGRAM | PEAK |
| P2 | (1) | b | b | b | b | b | b | 15 | 16 |
| P3 | 1 | c | c | c | c | c | c | (15) | (16) |
| P4 | (1) | d | d | d | d | d | d | 1 | REPEAT |
| P5 | - | e | e | e | e | e | e | - | A |
| P6 | ERROR | f | f | f | f | f | f | - | - |
| P7 | (2) | g | g | g | g | g | g | (15) | (16) |
| P8 | 2 | (4) | - | TOTAL | 004 | REM | (13) | (16) | (19) |
| P9 | (2) | 4 | (6) | - | (9) | (11) | 13 | 16 | 19 |
| P10 | (3) | (4) | 6 | (8) | 9 | 11 | (13) | (16) | (19) |
| P11 | 3 | (5) | (6) | 8 | (9) | (11) | (14) | (17) | (20) |
| P12 | (3) | 5 | (7) | (8) | (10) | (12) | 14 | 17 | 20 |
| P13 | PLAY | (5) | 7 | - | 10 | 12 | (14) | (17) | (20) |
| P14 | PAUSE | TRACK | (7) | - | (10) | (12) | TIME | RANDOM | EDIT |

9-MT-131GK ANODE CONNECTION

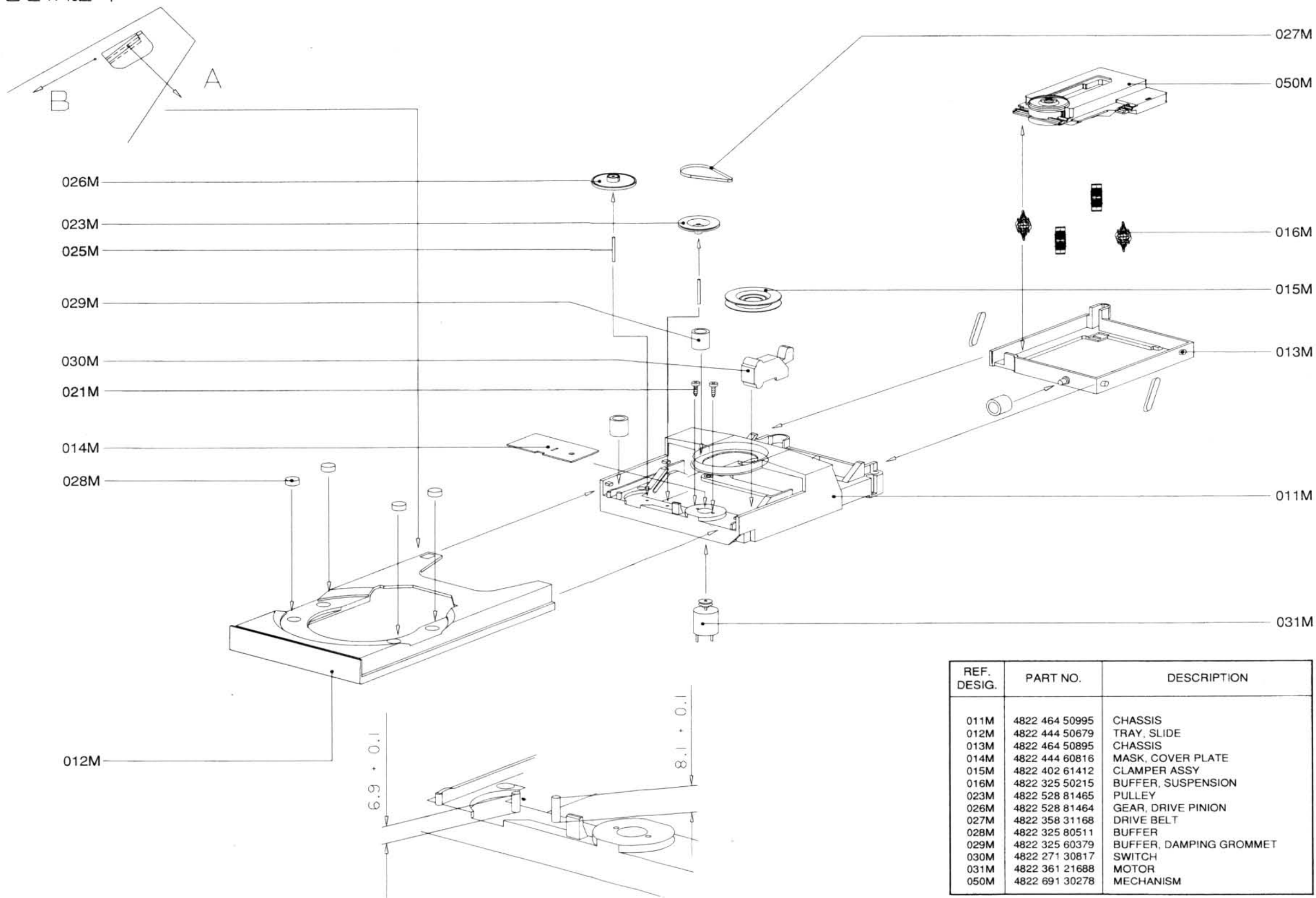
PY16 FRONT PCB

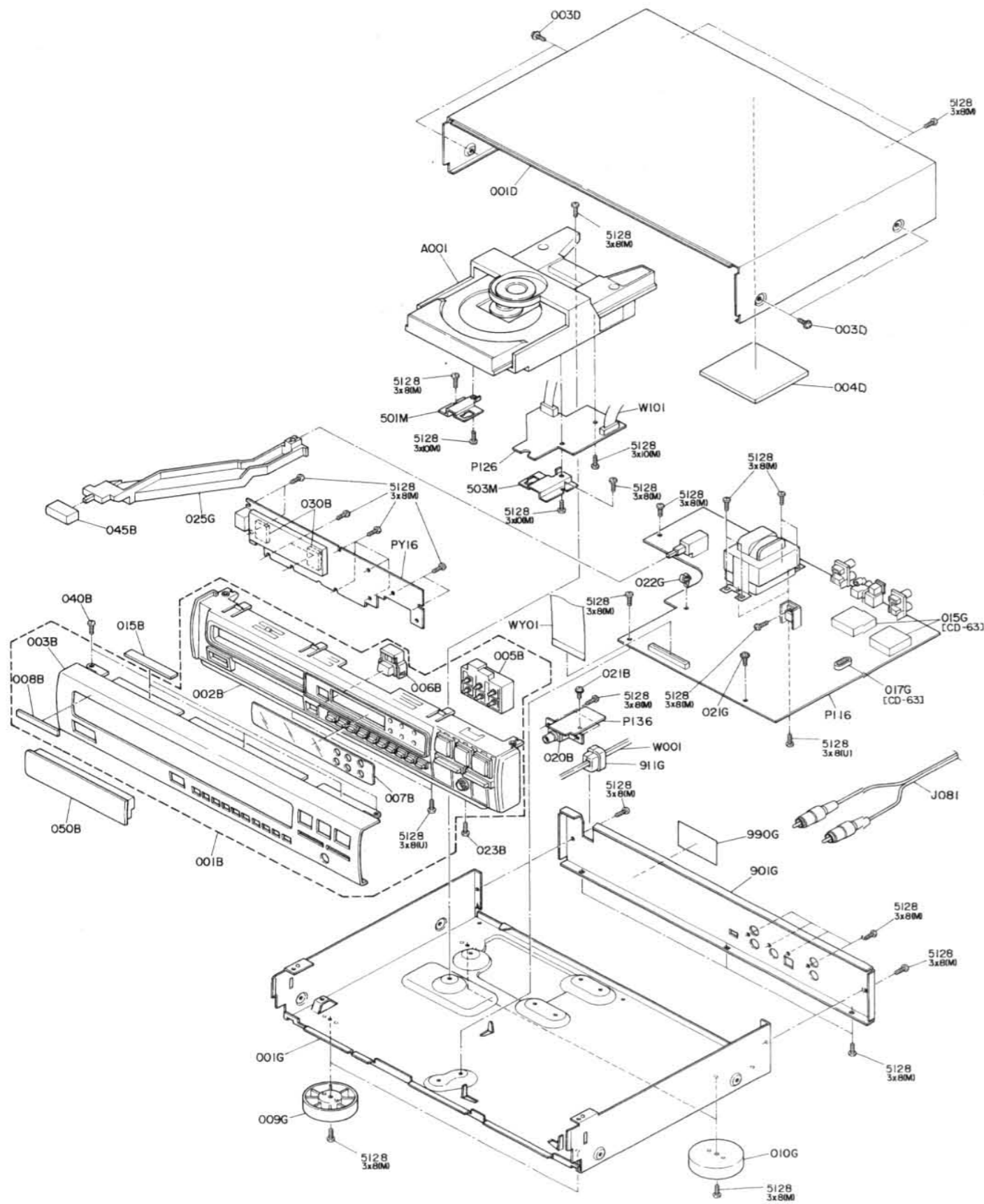


8. EXPLODED VIEW AND PARTS LIST

LOADER

DETAIL I





| REF. DESIG. | PART NO. | DESCRIPTION |
|-------------|----------------|--|
| | CD43 | |
| 002B | 4822 464 50994 | CHASSIS, FRONT |
| 003B | 4822 444 40702 | FRONT PANEL, AL CD-43 (BLK) |
| 005B | 4822 410 62898 | BUTTON, D3 |
| 006B | 4822 410 62899 | BUTTON, OPEN/CLOSE (BLK) |
| 007B | 4822 450 62155 | WINDOW |
| 008B | 4822 459 11167 | BADGE |
| 021B | 4822 502 13315 | B.T.SCREW (W/TL) |
| 023B | | PH.TAP.SCREW |
| 045B | 4822 410 62744 | BUTTON, POWER (BLACK) |
| 050B | 4822 454 30491 | ESCUTCHEON |
| 003D | 4822 502 12511 | B.T.SCREW (W/W) |
| 009G | 4822 462 42045 | LEG, FRONT |
| 010G | 4822 462 42048 | LEG, REAR |
| 021G | 4822 502 12511 | B.T. SCREW (W/W) |
| 025G | 4822 403 70989 | LINK, POWER SW. |
| 911G | 4822 532 61184 | BUSHING, AC CORD [/01B] |
| 911G | 4822 532 60948 | BUSHING, AC CORD BUSH [/02B/05B] |
| △W001 | 4822 321 10945 | A.C.POWER CORD [/01B] |
| △W001 | 4822 321 10428 | A.C.POWER CORD [/02B] |
| △W001 | 4822 321 11019 | A.C.POWER CORD [/05B] |
| W101 | 4822 321 62203 | JUMPER LEAD, SUMI-CARD 15P |
| WY01 | 4822 321 62204 | JUMPER LEAD, SUMI-CARD 37P/120MM |
| 001T | 4822 736 21863 | PACKING USER MANUAL, CD-43/53/63 COMB. |
| J081 | 4822 321 21438 | CONNECTIVE CORD, RCA 2P |
| J082 | 4822 265 10092 | JACK, AC ADAPTER [/01B] |
| | CD53 | |
| 002B | 4822 464 50994 | CHASSIS, FRONT |
| 003B | 4822 444 40695 | FRONT PANEL, AL CD-63 (BLK) |
| 005B | 4822 410 62898 | BUTTON, D3 |
| 006B | 4822 410 62899 | BUTTON, OPEN/CLOSE (BLK) |
| 007B | 4822 450 62145 | WINDOW, CD-53/63 WITH REMOTE |
| 008B | 4822 459 11167 | BADGE |
| 021B | 4822 502 13315 | B.T.SCREW (W/TL) |
| 023B | | PH.TAP.SCREW |
| 045B | 4822 410 62744 | BUTTON, POWER (BLACK) |
| 050B | 4822 454 30491 | ESCUTCHEON [/01B/02B] |
| 003D | 4822 502 12511 | B.T.SCREW (W/W) |
| 009G | 4822 462 42045 | LEG, FRONT |
| 010G | 4822 462 42048 | LEG, REAR |
| 021G | 4822 502 12511 | B.T. SCREW (W/W) |
| 025G | 4822 403 70989 | LINK, POWER SW. |
| 911G | 4822 532 61184 | BUSHING, AC CORD [/01B] |
| 911G | 4822 532 60948 | BUSHING, AC CORD BUSH [/02B/05B] |
| △W001 | 4822 321 10945 | A.C.POWER CORD [/01B] |
| △W001 | 4822 321 10428 | A.C.POWER CORD [/02B] |
| △W001 | 4822 321 11019 | A.C.POWER CORD [/05B] |
| W101 | 4822 321 62203 | JUMPER LEAD, SUMI-CARD 15P |
| WY01 | 4822 321 62204 | JUMPER LEAD, SUMI-CARD 37P/120MM |
| 001T | 4822 736 21863 | PACKING USER MANUAL, CD-43/53/63 COMB. |
| J081 | 4822 321 62205 | CONNECTIVE CORD, RCA 2P |
| J082 | 4822 265 10092 | JACK, AC ADAPTER [/01] |
| T100 | 4822 218 10527 | IR COMANDER (RC-63CD) |

| REF. DESIG. | PART NO. | DESCRIPTION |
|-------------|----------------|--|
| | CD53 | |
| 002B | 4822 464 50994 | CHASSIS, FRONT [/01B/02B/05B] |
| 002B | 4822 464 51005 | CHASSIS, FRONT [/01G/02G] |
| 003B | 4822 444 40701 | FRONT PANEL (BLK) [/01B/02B/05B] |
| 003B | 4822 444 40696 | FRONT PANEL (GLD) [/01G/02G] |
| 005B | 4822 410 62898 | BUTTON, D3 |
| 006B | 4822 410 62899 | BUTTON, OPEN/CLOSE (BLK) [/01B/02B/05B] |
| 006B | 4822 410 62931 | BUTTON, OPEN/CLOSE (GLD) [/01G/02G] |
| 007B | 4822 450 62145 | WINDOW |
| 008B | 4822 459 11167 | BADGE [/01B/02B/05B] |
| 008B | 4822 459 11168 | BADGE [/01G/02G] |
| 021B | 4822 502 13315 | B.T.SCREW (W/TL) |
| 023B | | PH.TAP.SCREW |
| 045B | 4822 410 62744 | BUTTON, POWER (BLACK) [/01B/02B/05B] |
| 045B | 4822 410 62745 | BUTTON, POWER (GOLD) [/01G/02G] |
| 050B | 4822 454 30491 | ESCUTCHEON [/01B/02B] |
| 050B | 4822 454 30494 | ESCUTCHEON [/01G/02G] |
| 003D | 4822 502 12511 | B.T.SCREW (W/W) |
| 009G | 4822 462 42045 | LEG, FRONT |
| 010G | 4822 462 42048 | LEG, REAR |
| 021G | 4822 502 12511 | B.T. SCREW (W/W) |
| 025G | 4822 403 70989 | LINK, POWER SW. |
| 911G | 4822 532 61184 | BUSHING, AC CORD [/01B/01G] |
| 911G | 4822 532 60948 | BUSHING, AC CORD BUSH [/02B/02G/05B] |
| △W001 | 4822 321 10945 | A.C.POWER CORD [/01] |
| △W001 | 4822 321 10428 | A.C.POWER CORD [/02] |
| △W001 | 4822 321 11019 | A.C.POWER CORD [/05] |
| W101 | 4822 321 62203 | JUMPER LEAD, SUMI-CARD 15P |
| WY01 | 4822 321 62204 | JUMPER LEAD, SUMI-CARD 37P/120MM |
| 001T | 4822 736 21863 | PACKING USER MANUAL, CD-43/53/63 COMB. |
| J081 | 4822 321 21438 | CONNECTIVE CORD, RCA 2P |
| J082 | 4822 265 10092 | JACK, AC ADAPTER [/01] |
| T100 | 4822 218 10527 | IR COMANDER (RC-63CD) |

9. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTOR

R*** : (1) GD05 xxx 140, Carbon film fixed resistor, $\pm 5\%$ 1/4W
 R*** : (2) GD05 xxx 160, Carbon film fixed resistor, $\pm 5\%$ 1/6W

① — Resistance value

Examples :

① Resistance value

| | | | |
|----------------------|----------------------|------------------------|------------------------|
| 0.1 Ω001 | 10 Ω100 | 1 k Ω102 | 100 k Ω104 |
| 0.5 Ω005 | 18 Ω180 | 2.7 k Ω272 | 680 k Ω684 |
| 1 Ω010 | 100 Ω101 | 10 k Ω103 | 1 M Ω105 |
| 6.8 Ω068 | 390 Ω391 | 22 k Ω223 | 4.7 M Ω475 |

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C*** : CERAMIC CAP.

(1) DD1x xxx 370, Ceramic capacitor
 Disc type
 Temp. coeff. P350 ~ N1000, 50V

① — Capacity value
 ② — Tolerance

Examples :

① Tolerance (Capacity deviation)

$\pm 0.25\text{pF}$ 0
 $\pm 0.5\text{pF}$ 1
 $\pm 5\%$ 5

* Tolerance of COMMON PARTS handled here are as follows :

0.5pF ~ 5pF $\pm 0.25\text{pF}$
 6pF ~ 10pF $\pm 0.5\text{pF}$
 12pF ~ 560pF $\pm 5\%$

② Capacity value

| | | |
|----------------|---------------|----------------|
| 0.5 pF005 | 3 pF030 | 100 pF101 |
| 1 pF010 | 10 pF100 | 220 pF221 |
| 1.5 pF015 | 47 pF470 | 560 pF561 |

C*** : CERAMIC CAP.

(1) DK16 xxx 300, High dielectric constant ceramic capacitor
 Disc type
 Temp. chara. 2B4, 50V

① — Capacity value

Examples :

② Capacity value

| | | |
|----------------|-----------------|------------------|
| 100 pF101 | 1000 pF102 | 10000 pF103 |
| 470 pF471 | 2200 pF222 | |

C*** : ELECTROLY CAP. (E), FILM CAP. (F)

(1) EA xxx xxx 10, Electrolytic capacitor
 One-way lead type,
 Tolerance $\pm 20\%$

① — Working voltage
 ② — Capacity value

Examples :

① Capacity value

| | | |
|----------------------------|---------------------------|----------------------------|
| 0.1 μF104 | 4.7 μF475 | 100 μF107 |
| 0.33 μF334 | 10 μF106 | 330 μF337 |
| 1 μF105 | 22 μF226 | 1100 μF118 |
| | | 2200 μF228 |

② Working voltage

| | |
|---------------|--------------|
| 6.3 V006 | 25 V025 |
| 10 V010 | 35 V035 |
| 16 V016 | 50 V050 |

(2) DF15 xxx 350, Plastic film capacitor
 One-way type, Mylar $\pm 5\%$ 50V

① — Capacity value

Examples :

① Capacity value

| | |
|--------------------------------------|----------------------------|
| 0.001 μF (1000pF)102 | 0.1 μF104 |
| 0.0018 μF182 | 0.56 μF564 |
| 0.01 μF103 | 1 μF105 |
| 0.015 μF153 | |

NOTE : The above CODES (R***, R***, C***, C*** and C***) are omitted on the schematic diagram in some case.

On the occasion, be confirmed common parts on the parts list.

| REF. DESIG. | PART NO. | DESCRIPTION |
|-------------|----------------|--|
| | | P116-MAIN CIRCUIT BOARD |
| | | P116-CAPACITORS |
| CD02 | 4822 122 32185 | CERAMIC 10PF $\pm 0.5\text{PF}$ 50V |
| CD03 | 4822 122 32185 | CERAMIC 10PF $\pm 0.5\text{PF}$ 50V |
| CD04 | 4822 124 90363 | ELECT 220 μF 10V |
| CD05 | 4822 122 40589 | CERAMIC 0.047 μF $\pm 20\%$ 50V |
| CD06 | 4822 122 40589 | CERAMIC 0.047 μF $\pm 20\%$ 50V |
| CD07 | 4822 124 90363 | ELECT 220 μF 10V |
| CD08 | 4822 122 40589 | CERAMIC 0.047 μF $\pm 20\%$ 50V |
| CD12 | 4822 122 40589 | CERAMIC 0.047 μF $\pm 20\%$ 50V |
| CD13 | 4822 122 40589 | CERAMIC 0.047 μF $\pm 20\%$ 50V |
| CD15 | 4822 124 90363 | ELECT 220 μF 10V |
| CD16 | 4822 124 90363 | ELECT 220 μF 10V |
| CD21 | | FILM 120PF $\pm 5\%$ 100V [CD63] |
| CD21 | 4822 126 11559 | CERAMIC 120PF $\pm 5\%$ 50V [CD43/CD53] |
| CD22 | | FILM 120PF $\pm 5\%$ 100V [CD63] |
| CD22 | 4822 126 11559 | CERAMIC 120PF $\pm 5\%$ 50V [CD43/CD53] |
| CD23 | | FILM 120PF $\pm 5\%$ 100V [CD63] |
| CD23 | 4822 126 11559 | CERAMIC 120PF $\pm 5\%$ 50V [CD43/CD53] |
| CD24 | | FILM 120PF $\pm 5\%$ 100V [CD63] |
| CD24 | 4822 126 11559 | CERAMIC 120PF $\pm 5\%$ 50V [CD43/CD53] |
| CF01 | 4822 122 40589 | CERAMIC 0.047 μF $\pm 20\%$ 50V |
| CF02 | 4822 124 41539 | ELECT 47 μF 16V |
| CF03 | 4822 124 22274 | ELECT 4.7 μF 50V |
| CF51 | 4822 122 30103 | CERAMIC 0.022 μF $\pm 80\%$ -20% 50V |
| CF52 | 4822 124 41534 | ELECT 10 μF 25V |
| CH01 | 4822 126 10513 | CERAMIC 47PF $\pm 5\%$ [CD63] |
| CH02 | 4822 126 10513 | CERAMIC 47PF $\pm 5\%$ [CD63] |
| CH11 | 4822 121 43732 | FILM 0.01 μF $\pm 80\%$ -20% 250V AC |
| CN01 | 4822 124 22277 | ELECT 470 μF 16V |
| CN02 | 4822 124 90357 | ELECT 2.2 μF 50V |
| CN03 | 4822 124 41534 | ELECT 10 μF 25V |
| CT02 | 4822 122 31125 | CERAMIC 4700PF $\pm 80\%$ -20% 50V |
| CT04 | 4822 122 30103 | CERAMIC 0.022 μF $\pm 80\%$ -20% 50V |
| CT10 | 4822 122 30103 | CERAMIC 0.022 μF $\pm 80\%$ -20% 50V [CD63] |
| C111 | | CERAMIC 220PF $\pm 5\%$ 50V |
| C116 | | CERAMIC 0.047 μF $\pm 20\%$ 50V |
| C119 | 4822 122 40589 | ELECT 47 μF 16V |
| C120 | 4822 124 41539 | CERAMIC 0.047 μF $\pm 20\%$ 50V |
| C121 | 4822 122 40589 | ELECT 47 μF 16V |
| C122 | 4822 124 41539 | CERAMIC 0.047 μF $\pm 20\%$ 50V |
| C123 | 4822 122 40589 | ELECT 10 μF 25V |
| C124 | 4822 124 41534 | ELECT 2.2 μF 50V |
| C134 | 4822 124 90357 | ELECT 47 μF 16V |
| C135 | 4822 124 41539 | CERAMIC 0.022 μF $\pm 80\%$ -20% 50V |
| C136 | 4822 122 30103 | CERAMIC 0.022 μF $\pm 80\%$ -20% 50V |
| C137 | 4822 122 30103 | ELECT 47 μF 16V |
| C138 | 4822 124 41539 | CERAMIC 150PF $\pm 10\%$ |
| C143 | 4822 126 11069 | CERAMIC 150PF $\pm 10\%$ |
| C144 | 4822 126 11069 | CERAMIC 0.022 μF $\pm 80\%$ -20% 50V |
| C146 | 4822 122 30103 | CERAMIC 0.022 μF $\pm 80\%$ -20% 50V |
| C148 | 4822 122 30103 | CERAMIC 0.022 μF $\pm 80\%$ -20% 50V |
| C151 | 4822 122 30103 | CERAMIC 0.022 μF $\pm 80\%$ -20% 50V |
| C152 | 4822 122 30103 | CERAMIC 0.022 μF $\pm 80\%$ -20% 50V |
| C153 | 4822 124 41539 | ELECT 47 μF 16V |
| C154 | 4822 124 41539 | ELECT 47 μF 16V |
| C501 | 4822 126 11069 | CERAMIC 150PF $\pm 10\%$ |
| C503 | 4822 122 40589 | CERAMIC 0.047 μF $\pm 20\%$ 50V |
| C504 | 4822 124 90363 | ELECT 220 μF 10V |
| C507 | 4822 126 10513 | CERAMIC 47PF $\pm 5\%$ |

| REF. DESIG. | PART NO. | DESCRIPTION |
|-------------|----------------|---|
| C508 | 4822 122 30103 | CERAMIC 0.022 μF $\pm 80\%$ -20% 50V |
| C509 | 4822 122 40589 | CERAMIC 0.047 μF $\pm 80\%$ -20% 50V |
| C510 | 4822 124 90363 | ELECT 220 μF 10V |
| C511 | 4822 124 90363 | ELECT 220 μF 10V |
| C512 | 4822 122 40589 | CERAMIC 0.047 μF $\pm 20\%$ 50V |
| C513 | 4822 122 40589 | CERAMIC 0.047 μF $\pm 20\%$ 50V |
| C514 | 4822 126 10364 | CERAMIC 100PF $\pm 10\%$ |
| C601 | | FILM 120PF $\pm 5\%$ 100V [CD63] |
| C604 | | FILM 120PF $\pm 5\%$ 100V [CD43/CD53] |
| C601 | 4822 126 11559 | FILM 100PF $\pm 5\%$ 100V [CD63] |
| C604 | | CERAMIC 100PF $\pm 5\%$ 50V [CD43/CD53] |
| C607 | 5322 122 32265 | FILM 100PF $\pm 5\%$ 100V [CD63] |
| C607 | | CERAMIC 100PF $\pm 5\%$ 50V [CD43/CD53] |
| C608 | | FILM 100PF $\pm 5\%$ 100V [CD63] |
| C608 | 5322 122 32265 | CERAMIC 100PF $\pm 5\%$ 50V [CD43/CD53] |
| C611 | | ELECT 220 μF 16V [CD53/CD63] |
| C611 | 4822 124 90364 | ELECT 220 μF 16V [CD53/CD63] |
| C614 | | ELECT 100 μF 16V [CD43] |
| C611 | 4822 124 90354 | ELECT 100 μF 16V [CD43] |
| C614 | | ELECT 220 μF 16V [CD63] |
| C651 | 4822 124 90364 | ELECT 220 μF 16V [CD63] |
| C654 | | ELECT 220 μF 16V |
| C655 | 4822 124 90364 | ELECT 220 μF 16V |
| C658 | | CERAMIC 100PF $\pm 10\%$ [CD63] |
| C659 | 4822 126 10364 | CERAMIC 100PF $\pm 10\%$ [CD63] |
| C659 | 5322 122 32265 | CERAMIC 100PF $\pm 10\%$ [CD43/CD53] |
| C660 | 4822 126 10364 | CERAMIC 100PF $\pm 10\%$ [CD63] |
| C660 | 4822 122 32265 | CERAMIC 100PF $\pm 10\%$ [CD43/CD53] |
| C801 | 4822 122 30103 | CERAMIC 0.022 μF $\pm 80\%$ -20% 50V |
| C802 | 4822 122 30103 | CERAMIC 0.022 μF $\pm 80\%$ -20% 50V |
| C803 | 4822 124 41541 | ELECT 470 μF 35V [CD63] |
| C803 | 4822 124 41538 | ELECT 220 μF 35V [CD43/CD53] |
| C804 | 4822 124 41541 | ELECT 470 μF 35V [CD63] |
| C804 | 4822 124 41538 | ELECT 220 μF 35V [CD43/CD53] |
| C805 | 4822 124 22277 | ELECT 470 μF 16V [CD63] |
| C805 | 4822 124 90354 | ELECT 100 μF 16V [CD53] |
| C805 | 4822 124 41539 | ELECT 47 μF 16V [CD43] |
| C806 | 4822 124 22277 | ELECT 470 μF 16V [CD63] |
| C806 | 4822 124 90354 | ELECT 100 μF 16V [CD53] |
| C806 | 4822 124 41539 | ELECT 47 μF 16V [CD43] |
| C811 | 4822 122 40589 | CERAMIC 0.047 μF $\pm 80\%$ -20% 50V |
| C812 | 4822 122 40589 | CERAMIC 0.047 μF $\pm 80\%$ -20% 50V |
| C813 | 4822 124 80582 | ELECT 4700 μF 16V |
| C814 | 4822 124 22722 | ELECT 1000 μF 16V |
| C815 | 4822 124 80773 | ELECT 3300 μF 6.3V |
| C852 | 4822 124 90355 | ELECT 100 μF 50V |
| C853 | 4822 124 80772 | ELECT 47 μF 35V |
| C854 | 4822 124 90355 | ELECT 100 μF 50V |
| C901 | 4822 124 41534 | ELECT 10 μF 25V |
| C902 | 4822 124 41534 | ELECT 10 μF 25V |
| C903 | 4822 124 90354 | ELECT 100 μF 16V |
| C904 | 4822 124 90354 | ELECT 100 μF 16V |
| C*** | | P116-CAPACITORS (COMMON) PLASTIC FILM CAPACITOR ONE-WAY TYPE, MYLER $\pm 5\%$ 50V: CT01, C131, C132, C133, C139-C142, C149, C155, C156, C506, C605, C606 |
| C*** | | HIGH DIELECTRIC CONSTANT CERAMIC CAPACITOR, 50V: CT03, C117, C118, C505 |

| REF. DESIG. | PART NO. | DESCRIPTION |
|-------------|----------------|---|
| C*** | | CERAMIC CAPACITOR, 50V: C502 |
| RD01 | 4822 111 90967 | P116-RESISTORS 4.7 Ω $\pm 5\%$ 1/4W FUSE |
| RD04 | 4822 111 90967 | 4.7 Ω $\pm 5\%$ 1/4W FUSE |
| RF01 | 4822 111 90967 | 4.7 Ω $\pm 5\%$ 1/4W FUSE |
| RN08 | 4822 111 90967 | 4.7 Ω $\pm 5\%$ 1/4W FUSE |
| RY11 | 4822 111 90967 | 4.7 Ω $\pm 5\%$ 1/4W FUSE [CD53/CD63] |
| R122 | 4822 111 90967 | 4.7 Ω $\pm 5\%$ 1/4W FUSE |
| R123 | 4822 111 90967 | 4.7 Ω $\pm 5\%$ 1/4W FUSE |
| R127 | 4822 111 90967 | 4.7 Ω $\pm 5\%$ 1/4W FUSE |
| R128 | 4822 111 90967 | 4.7 Ω $\pm 5\%$ 1/4W FUSE |
| R136 | 4822 111 90967 | 4.7 Ω $\pm 5\%$ 1/4W FUSE |
| R149 | 4822 116 60307 | 21 Ω $\pm 5\%$ 1/4W FUSE |
| R150 | 4822 116 60307 | 1 Ω $\pm 5\%$ 1/4W FUSE |
| R164 | 4822 116 60307 | 1 Ω $\pm 5\%$ 1/4W FUSE |
| R165 | 4822 116 60307 | 1 Ω $\pm 5\%$ 1/4W FUSE |
| R508 | 4822 111 90967 | 4.7 Ω $\pm 5\%$ 1/4W FUSE |
| R511 | 4822 111 90967 | 4.7 Ω $\pm 5\%$ 1/4W FUSE |
| R613 | | 10 Ω $\pm 5\%$ 1/4W |
| R616 | | |
| R651 | | |

| REF. DESIG. | PART NO. | DESCRIPTION |
|-------------|----------------|---|
| DN05 | 4822 130 33305 | DIODE, 1SS176,MA165,1SS254 30V 0.1A |
| DN06 | 4822 130 33948 | ZENER DIODE, 04AZ5.6-Y 5.6V |
| DN07 | 4822 130 33305 | DIODE, 1SS176,MA165,1SS254 30V 0.1A |
| DN23 | 4822 130 33305 | DIODE, 1SS176,MA165,1SS254 30V 0.1A |
| DN24 | 4822 130 33305 | DIODE, 1SS176,MA165,1SS254 30V 0.1A |
| △D151 | 4822 130 80839 | DIODE, S5688G VRM=400V IO=1A |
| △D152 | 4822 130 80839 | DIODE, S5688G VRM=400V IO=1A |
| △D801 S | 4822 130 80839 | DIODE, S5688G VRM=400V IO=1A |
| △D804 | | |
| △D811 S | 4822 130 80839 | DIODE, S5688G VRM=400V IO=1A |
| △D814 | | |
| △D851 | 4822 130 80839 | DIODE, S5688G VRM=400V IO=1A |
| △D852 | 4822 130 80318 | ZENER DIODE 04AZ6.8-Z 6.8V |
| D853 | 4822 130 33759 | ZENER DIODE 04AZ4.7-Y 4.7V |
| △D854 | 4822 130 80839 | DIODE, S5688G VRM=400V IO=1A |
| QD01 | 4822 209 32762 | IC, DIG.FIL & DAC SM5872BS |
| QF01 | 4822 209 32887 | IC, MAIN CPU MN187164 |
| QF02 | 4822 209 73951 | IC, RESET IC PST523D (4.2V) LOW |
| QF51 | 4822 130 42715 | TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S |
| QF52 | 4822 130 42298 | TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S |
| QF61 | 4822 130 42298 | TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S [CD53/CD63] |
| QH01 | 4822 130 63382 | F.E.T. 2SK332D-6A [CD63] |
| QH02 | 4822 130 63382 | F.E.T. 2SK332D-6A [CD63] |
| QH03 | 4822 130 43233 | TRANSISTOR 2SC2240 (GR, BL) [CD63] |
| QH04 | 4822 130 43233 | TRANSISTOR 2SC2240 (GR, BL) [CD63] |
| QH05 S | 4822 130 42951 | TRANSISTOR 2SA970 (GR, BL) [CD63] |
| QH08 | | |
| QH09 | 4822 130 43233 | TRANSISTOR 2SC2240 (GR, BL) [CD63] |
| QH10 | 4822 130 43233 | TRANSISTOR 2SC2240 (GR, BL) [CD63] |
| QH11 | 5322 130 41844 | F.E.T. 2SK170 BL VGDS=-40V PD=0.4V [CD63] |
| QH12 | 5322 130 41844 | F.E.T. 2SK170 BL VGDS=-40V PD=0.4V [CD63] |
| QH13 | 4822 130 62649 | F.E.T. 2SJ74 BL VGDS=25V PD=24W [CD63] |
| QH14 | 4822 130 62649 | F.E.T. 2SJ74 BL VGDS=25V PD=24W [CD63] |
| △QM01 | 4822 209 62755 | IC, DUAL POWER OP AMP TCA0372 |
| QN01 S | 4822 130 42298 | TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S |
| QN04 | | |
| QN05 S | 4822 130 43818 | TRANSISTOR 2SC2878 (A, BRANK) |
| QN08 | | |
| QN20 | 4822 130 42298 | TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S |
| QN24 | 4822 130 42715 | TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S |
| QN25 | 4822 130 42715 | TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S |

| REF. DESIG. | PART NO. | DESCRIPTION |
|------------------------------|----------------|---|
| QN91 | 4822 130 43818 | TRANSISTOR 2SC2878 (A, BRANK) |
| QN92 | 4822 130 43818 | TRANSISTOR 2SC2878 (A, BRANK) |
| Q104 | 4822 209 32763 | IC, DIGITAL SERVO CONT.TDA1301T |
| △Q105 | 4822 209 62755 | IC, DUAL POWER OP AMP TCA0372 |
| △Q106 | 4822 209 62755 | IC, DUAL POWER OP AMP TCA0372 |
| Q501 | 4822 130 42298 | TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S |
| Q502 | 4822 130 42298 | TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S |
| Q503 | 4822 209 32764 | IC, CD DECODER SAA7345 (CD6) |
| Q605 | 4822 209 31153 | IC, DUAL LOW NOISE OP-AMP NJM2114D [CD53/CD63] |
| Q605 | 4822 209 83627 | IC, NJM4560D [CD43] |
| Q606 | 4822 209 31153 | IC, DUAL LOW NOISE OP-AMP NJM2114D [CD53/CD63] |
| Q606 | 4822 209 83627 | IC, NJM4560D [CD43] |
| △Q801 | 4822 209 31712 | IC, NJM78M12FA |
| △Q802 | 4822 209 63641 | IC, -12V 0.5A NJM79M12FA |
| △Q811 | 4822 209 31631 | IC, +5V NJM7805FA |
| △Q851 | 4822 209 31788 | IC, -18V 500MA REG.NJM79M18FA JRC |
| Q852 | 4822 130 42298 | TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S |
| Q853 | 4822 130 42715 | TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S |
| Q854 | 4822 130 42715 | TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S |
| Q901 | 4822 209 83654 | IC, NJM4556D |
| P116-MISCELLANEOUS | | |
| △FH11 | 4822 253 30414 | FUSE 630 MA 250V |
| △FH12 | 4822 253 30414 | FUSE 630 MA 250V |
| JF01 | 4822 265 61251 | JACK 37 PIN FFC |
| JF03 | 4822 267 41009 | TERMINAL 2P RCA PIN JACK (RC-5 IN/OUT) |
| JT11 | 4822 267 31369 | JACK, OPTICAL OUTPUT GP1F32T [CD63] |
| J103 | 4822 265 41351 | JACK, 15P |
| J601 | 4822 265 31045 | TERMINAL RCA 2P OUTPUT [CD63] |
| J601 | 4822 267 31727 | TERMINAL RCA 2P OUTPUT [CD43/CD53] |
| J805 | 4822 256 30329 | JACK, FUSE CLIP |
| J806 | 4822 267 30978 | JACK, FUSE CLIP |
| J807 | 4822 256 30329 | JACK, FUSE CLIP |
| J808 | 4822 267 30978 | JACK, FUSE CLIP |
| LT01 | 4822 142 60388 | PULSE TRANSFORMER |
| △L001 | 4822 146 21751 | POWER TRANSFORMER [/01] |
| △L001 | 4822 146 21749 | POWER TRANSFORMER [/02/05] |
| L601 | 4822 157 62899 | CHOKE COIL 220μH |
| L602 | 4822 157 62899 | CHOKE COIL 220μH |
| SF01 | 4822 277 21559 | SLIDE SWITCH, IR INT/EXT [CD53/CD63] |
| △SH02 | 4822 277 21465 | SLIDE SWITCH, VOLTAGE SELECTOR [/01B] |
| △SH91 | 4822 276 13364 | PUSH SWITCH, POWER |
| XD01 | 4822 242 72334 | CRYSTAL 16.9344MHZ |
| XF01 | 4822 242 72066 | CERAMIC VIBRATOR CST8.0MHZ |
| X101 | 4822 242 81536 | CERAMIC VIBRATOR CST8.46MTW |
| P126-HF CIRCUIT BOARD | | |
| P126-CAPACITORS | | |
| C101 | 4822 126 10364 | CERAMIC 100PF ± 10% |

| REF. DESIG. | PART NO. | DESCRIPTION |
|--------------|----------------|---|
| C102 | 4822 126 10513 | CERAMIC 47PF ± 5% |
| C103 | 4822 126 10513 | CERAMIC 47PF ± 5% |
| C104 | 4822 126 11554 | CERAMIC 18PF ± 5% |
| C105 | 4822 126 11069 | CERAMIC 150PF ± 10% |
| C106 | 4822 124 41534 | ELECT 10 μF 25V |
| C107 | 4822 122 40589 | CERAMIC 0.047μF ± 20% 50V |
| C108 | 4822 126 11069 | CERAMIC 150PF ± 10% |
| C109 | 4822 126 11069 | CERAMIC 150PF ± 10% |
| C110 | 4822 126 11071 | CERAMIC 330PF ± 10% |
| R*** | | P126-RESISTORS (COMMON) CARBON FILM FIXED RESISTOR ±5% 1/6W: R101-R106, R108-R113 |
| Q101 | 4822 130 61748 | TRANSISTOR 2SC2668 (O) |
| Q102 | 4822 130 42298 | TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S |
| Q103 | 4822 130 42715 | TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S |
| J101 | 4822 265 41349 | JACK, 12P |
| J102 | 4822 265 41351 | JACK, 15P |
| | | P126-MISCELLANEOUS |
| | | P136-HEADPHONE CIRCUIT BOARD |
| C980 | 4822 122 30103 | P136-CAPACITORS CERAMIC 0.022μF +80%-20% 50V |
| J900 | 4822 267 31691 | P136-MISCELLANEOUS JACK, HEAD PHONE [/01B/02B/05B] |
| J900 | 4822 267 31692 | JACK, HEAD PHONE [CD53/01G/02G] |
| | | PY16-FRONT CIRCUIT BOARD |
| CY01 | 4822 122 40589 | PY16-CAPACITORS CERAMIC 0.047μF ±20% 50V |
| PY*** | | PY16-RESISTORS (COMMON) CARBON FILM FIXED RESISTOR ±5% 1/6W: RY01 |
| | | PY16-SEMICONDUCTORS |
| DY01 | 4822 130 33305 | DIODE, 1SS176, MA165, 1SS254 30V 0.1A |
| JY01 | 4822 265 61252 | PY16-MISCELLANEOUS JACK, 37 PIN CARD TYPE |
| SY01 | 4822 276 20508 | PUSH SWITCH |
| SY14 | | |
| SY15 | 4822 276 13296 | PUSH SWITCH |
| SY24 | | |
| VY01 | 4822 130 91287 | DISPLAY UNIT |
| ZY01 | 4822 214 52009 | PHOTO UNIT GP1U58XP [CD53/CD63] |

NOTE ON SAFETY

Symbol Δ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol Δ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.