

SERVICE MANUAL

COMPACT DISC PLAYER

SANSUI CD-X701



•SPECIFICATIONS

| | |
|---|--|
| Format | Compact disc, digital audio |
| Pick-up | 3-beam, semiconductor laser |
| No. of channels | 2 channels (stereo) |
| Decoding (D/A) | 16-bit linear |
| Frequency response | 2 Hz ~ 20 kHz \pm 0.3 dB |
| Total harmonic distortion | Less than 0.002% (1 kHz) |
| Signal-to-noise ratio (S/N) | Better than 100 dB |
| Dynamic range | Better than 96 dB |
| Wow and flutter | Below measurable limit |
| Output voltage/load impedance | |
| Normal output (OUTPUT-1) | 2V/5 kohms |
| Balanced output (OUTPUT-2) | 2V/600 ohms |
| Headphones | 45 mW (variable maximum)/ with 32-ohm load |
| Power requirements | AC 120V/220V/240V, 50/60 Hz |
| For U.S.A. & Canada ... | AC 120V, 60 Hz |
| Power consumption | 25 watts |
| Dimensions | 448 mm (17-11/16") W 98 mm (3-7/8") H 380 mm (15") D |
| Weight | 8.8 kg (19.4 lbs) net |
| Remote controller: RS-1010 | |
| Control system | Infra-red ray pulse system |
| Power requirements | DC 3V |
| Dimensions | 63 mm (2-1/2") W 18 mm (3/4") H 175 mm (6-15/16") D |
| Weight | 126 g (0.3 lbs) including dry batteries |

* Design and specifications subject to changes without notice for improvements.

* Due to local laws and regulations, this unit sold in some areas are not equipped with variable voltage selectors.

Sansui

SANSUI ELECTRIC CO., LTD.

NOTE

1. The symbols, UL, CSA, SA, BS, UK, EU, AS, SEV, XX <EXPORT> and XX-V <EXPORT(V)> on the parts list and the schematic diagram mean followings respectively.

UL..... Manufactured for U.S.A market.
(Underwriters Laboratories approved model.)

CSA Manufactured for Canadian market.

SA..... Manufactured for South African market.

BS, UK..... Manufactured for United Kingdom market.

EU..... Manufactured for European market.

AS..... Manufactured for Australian market.

SEV..... Manufactured for Swiss market.

XX..... Standard Version with Inner Voltage <EXPORT> Selector.

XX-V..... Standard Version with Outer Voltage <EXPORT(V)> Selector.

NON MARK..... Common Parts.

2. Some printed circuit boards are not supplied assembled. To separate these in this service manual, the stock numbers are not indicated for these boards. However, stock numbers for individual parts are indicated.

3. Since some capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors and resistors, which was issued on February 1983.

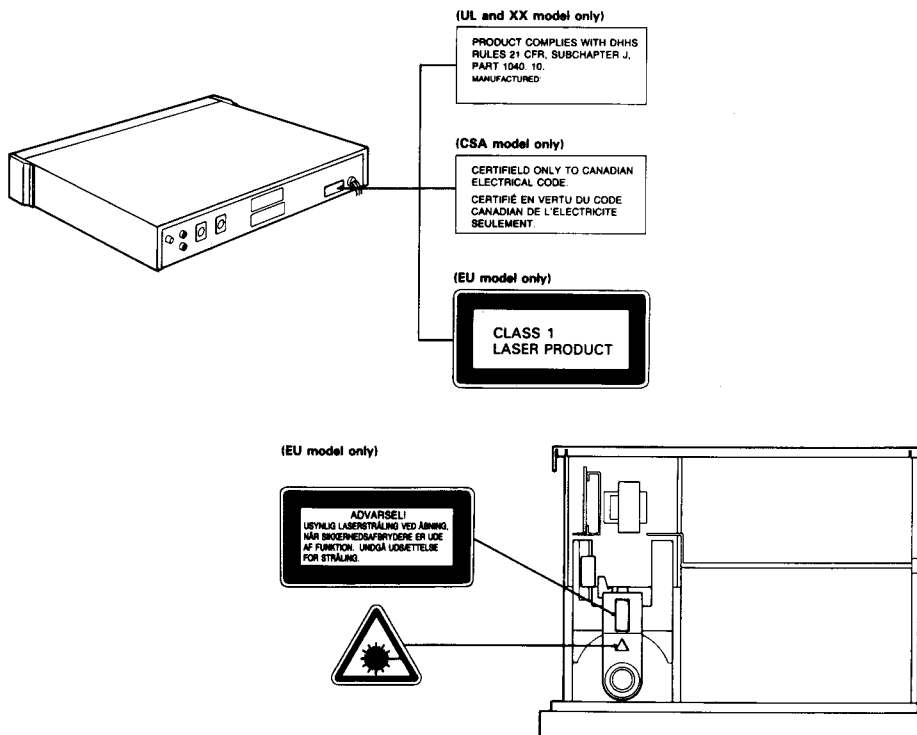
4. Abbreviations in this service manual are as follows.

•Abbreviations List

| | |
|---------|---|
| C.R. | : Carbon Resistor |
| S.R. | : Solid Resistor |
| Ce.R. | : Cement Resistor |
| M.R. | : Metal Film Resistor |
| F.R. | : Fusing Resistor |
| N.I.R. | : Non-Inflammable Resistor |
| A.R. | : Array Resistor |
| C.C. | : Ceramic Capacitor |
| C.T. | : Ceramic Capacitor, Temperature Compensation |
| E.C. | : Electrolytic Capacitor |
| E.L. | : Low Leak Electrolytic Capacitor |
| E.B. | : Bi-Polar Electrolytic Capacitor |
| E.B.L. | : Low Leak Bi-Polar Electrolytic Capacitor |
| Ta.C. | : Tantalum Capacitor |
| F.C. | : Film Capacitor |
| M.P. | : Metalized Paper Capacitor |
| P.C. | : Polystyrene Capacitor |
| G.C. | : Gimmic Capacitor |
| A.C. | : Array Capacitor |
| V.R. | : Variable Resistor |
| S.V.R. | : Semi Variable Resistor |
| SW. | : Switch |
| Chip R. | : Chip Resistor |
| Chip C. | : Chip Capacitor |

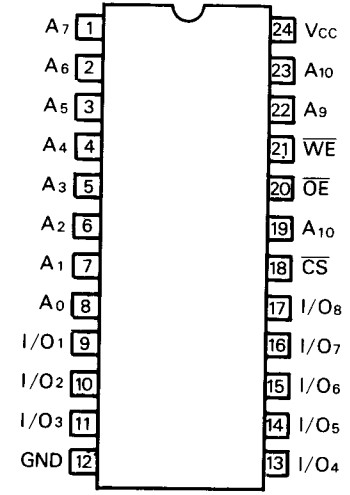
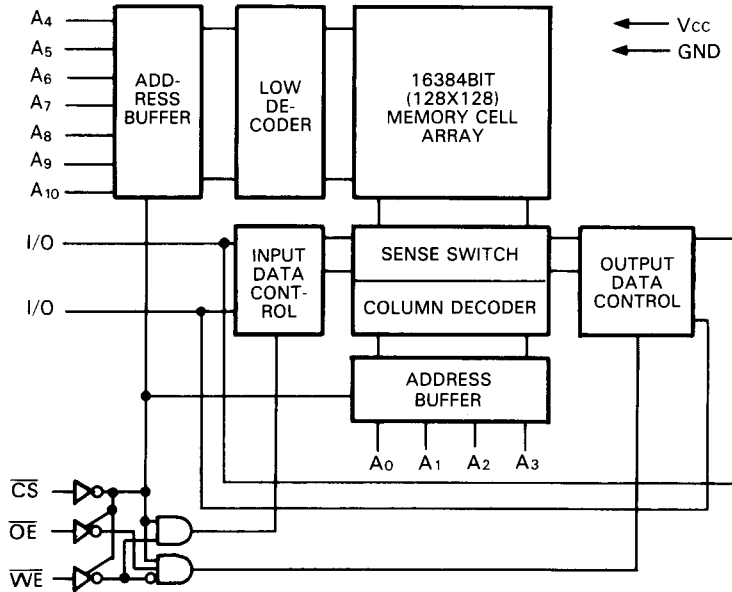
Cautions Concerning Handling of The Laser

The following label has been affixed to the unit, listing the proper procedure for working with the laser beam.



2. INTERIOR BLOCK DIAGRAM & TERMINAL FUNCTION OF IC

•MSM5128-15RS/HM6116P-4/MB8416-20/ μ PD446C-2/CXK5816P/TC5517AP-2 (RAM)



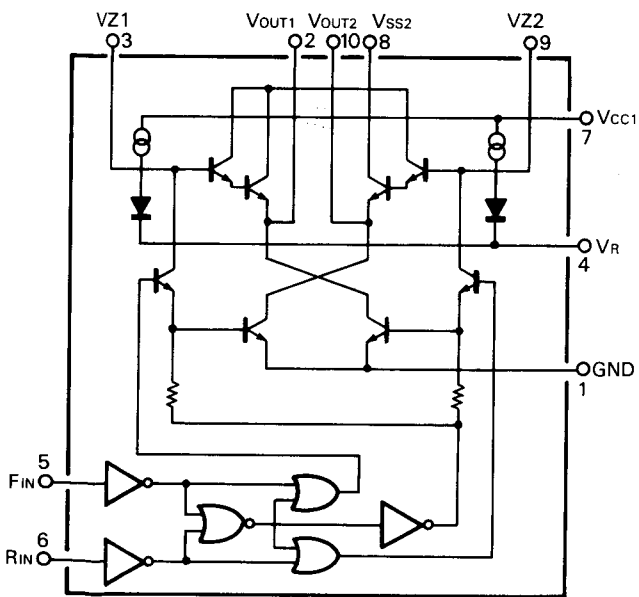
A₀ - A₁₀: Address Input
 I/O₁ ~ I/O₈: Data Input
 CS: Chip Select Input
 WE: Write Enable Input
 OE: Output Enable Input
 V_{cc}: +5V Power Supply
 GND: Ground

< Action Mode >

| CS | OE | WE | CHIP | OUTPUT MODE | CURRENT |
|----|----|----|------------|------------------|------------------|
| H | X | X | Non Select | High Impedance | I _{ccs} |
| L | H | H | Read | D _{OUT} | I _{cca} |
| L | X | L | Write | D _{IN} | |

H: High Level
 L: Low Level
 X: High or Low Level

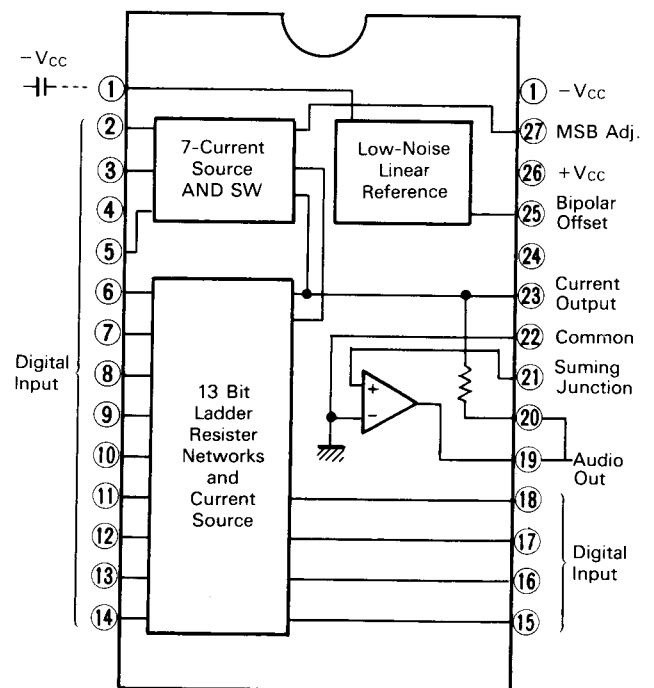
•BA6109 (Motor Driver)



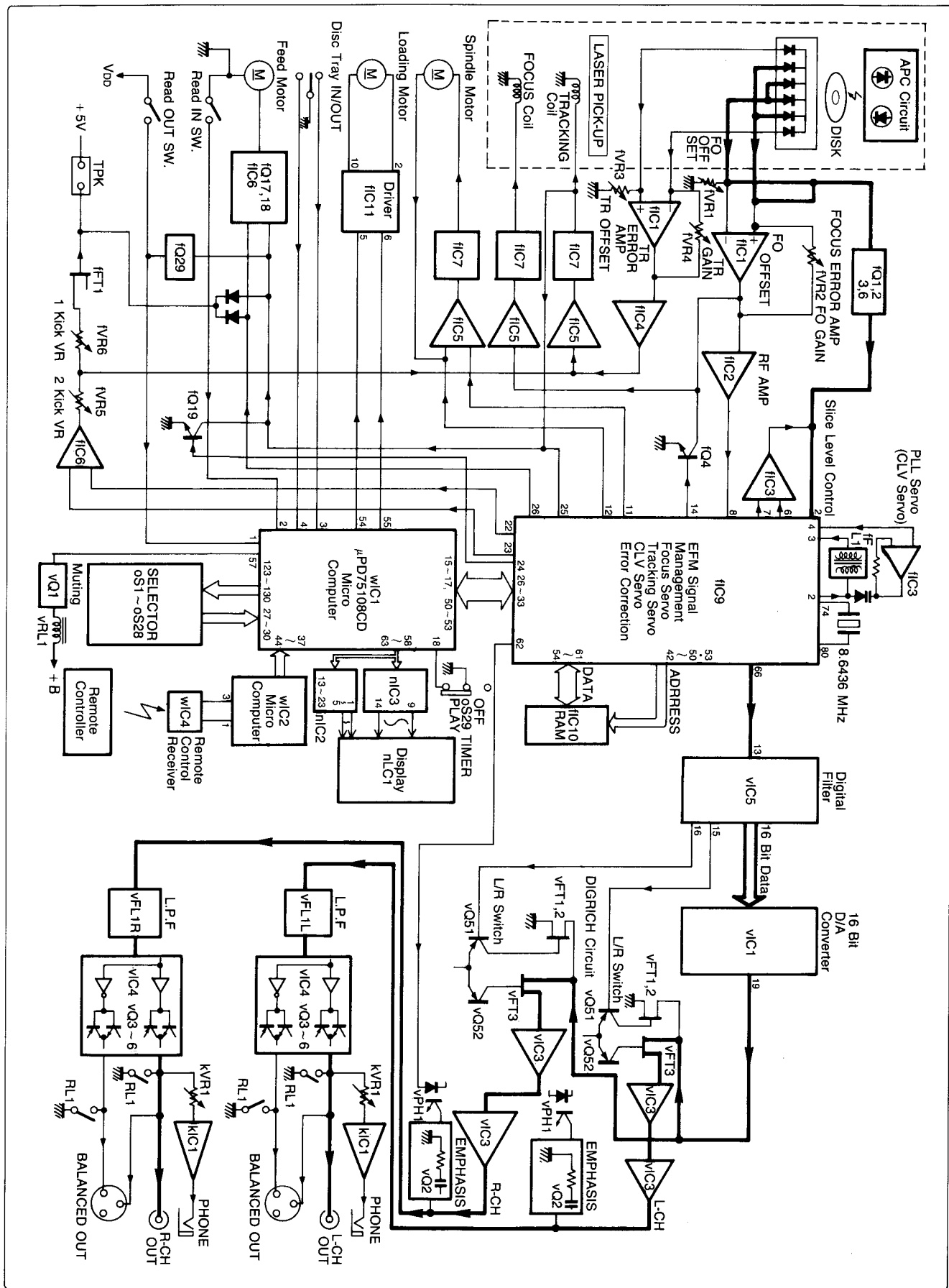
| FIN | RIN | Vout1 | Vout2 |
|-----|-----|-------|-------|
| 1 | 1 | L | L |
| 0 | 1 | L | H |
| 1 | 0 | H | L |
| 0 | 0 | L | L |

Input level 1=2.0V or more
 Input level 0=0.7V or less

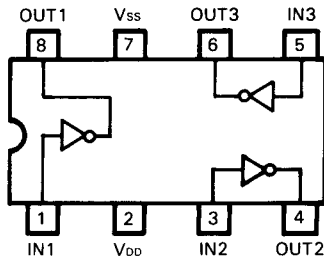
•PCM54JP (16 bit D/A Converter)



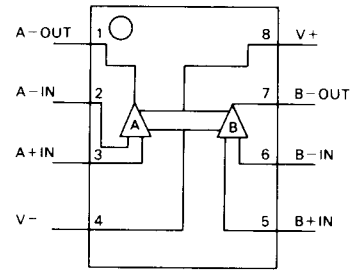
1. BLOCK DIAGRAM



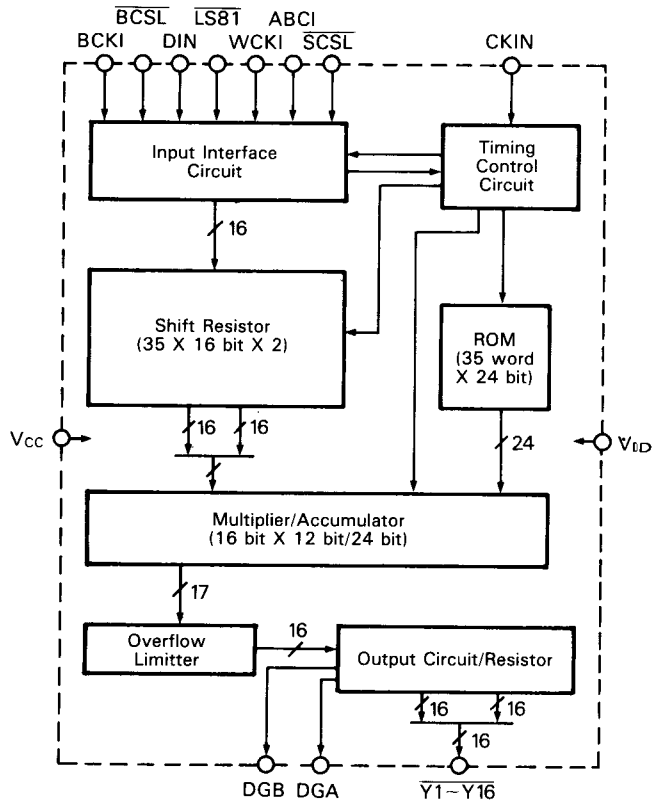
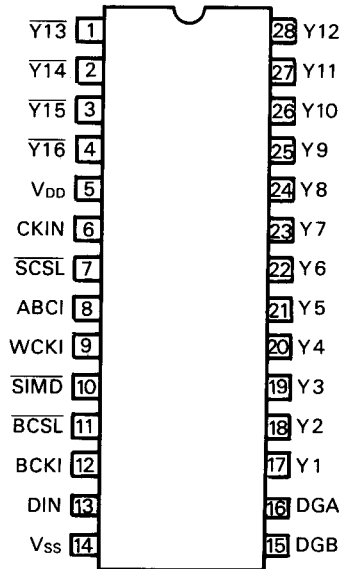
•LC4969 (3 Circuit Inverter)



•M5218L/M5216L/M5219/M5238 (Op Amp.)



•SM5806P (Twice Over Sampling Digital Filter)



<Function>

| Pin | Name | I/O | Description |
|-----|-------------------|-----|---|
| 1 | $\overline{Y13}$ | O | PARALLEL DATA INVERTED OUTPUT |
| 2 | $\overline{Y14}$ | O | PARALLEL DATA INVERTED OUTPUT |
| 3 | $\overline{Y15}$ | O | PARALLEL DATA INVERTED OUTPUT |
| 4 | $\overline{Y16}$ | O | PARALLEL DATA INVERTED OUTPUT |
| 5 | V _{DD} | — | Power Supply |
| 6 | CKIN | I | System Clock Input |
| 7 | \overline{SCSL} | Ip | "H" = System Clock 96 fs "L" = System Clock 98 fs |
| 8 | ABCI | Ip | 44.1 kHz SYNC Clock Input |
| 9 | WCKI | Ip | 88.2 kHz SYNC Clock Input |
| 10 | \overline{SIMD} | Ip | "H" = Serial Input Mode 1 "L" = Serial Input Mode 2 |
| 11 | \overline{BCSL} | Ip | Data is read in response to the leading edge of BCSL when this terminal is set to "H" or "L". |
| 12 | BCKI | Ip | Bit Clock Input |
| 13 | DIN | Ip | Serial Data Input |

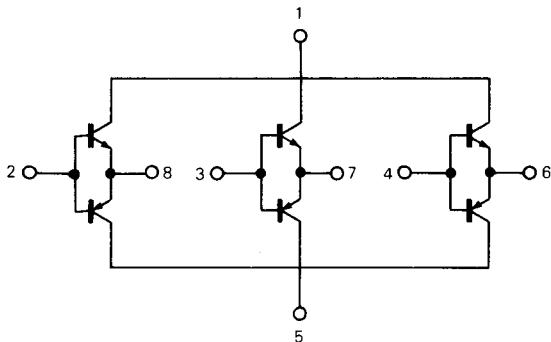
| Pin | Name | I/O | Description |
|-----|-----------------|-----|-------------------------------|
| 14 | V _{SS} | — | GND |
| 15 | DGB | O | B ch Digrich Control Output |
| 16 | DGA | O | A ch Digrich Control Output |
| 17 | Y1 | O | PARALLEL DATA INVERTED OUTPUT |
| 18 | Y2 | O | PARALLEL DATA INVERTED OUTPUT |
| 19 | Y3 | O | PARALLEL DATA INVERTED OUTPUT |
| 20 | Y4 | O | PARALLEL DATA INVERTED OUTPUT |
| 21 | Y5 | O | PARALLEL DATA INVERTED OUTPUT |
| 22 | Y6 | O | PARALLEL DATA INVERTED OUTPUT |
| 23 | Y7 | O | PARALLEL DATA INVERTED OUTPUT |
| 24 | Y8 | O | PARALLEL DATA INVERTED OUTPUT |
| 25 | Y9 | O | PARALLEL DATA INVERTED OUTPUT |
| 26 | Y10 | O | PARALLEL DATA INVERTED OUTPUT |
| 27 | Y11 | O | PARALLEL DATA INVERTED OUTPUT |
| 28 | Y12 | O | PARALLEL DATA INVERTED OUTPUT |

(Note: Ips are input terminal with pull-up resistors.)

• μ PD7564CS
(μ COM for decoding remote control signals)

| I/O | Pin No. | PORT | | I/O | Terminal Function | Active | |
|-----------------|---------|-----------------|--------------------------|-----|---|--------------|---------------|
| | | | | | | H | L |
| - | 1 | P ₀ | P ₀₀ INTO | I | Terminal for inputting remote control signals | - | ○ |
| - | 2 | P ₀ | P ₀₁ / SCK | I | Not used | - | - |
| - | 3 | P ₀ | P ₀₂ /SO | O | Terminal for outputting parallel A/B switching/serial data | A/○ | B |
| - | 4 | P ₀ | P ₀₃ /SI | O | Terminal for inputting serial/parallel switching over signal | Servi- al | Para- llel |
| - | 5 | P ₈ | P ₈₀ | O | D1: in parallel data output | ○ | - |
| O | 6 | P ₈ | P ₈₁ | O | D2: in parallel data output | ○ | - |
| O | 7 | P ₈ | P ₈₂ | O | D3: in parallel data output | ○ | - |
| CL1 | 8 | - | - | - | Not used | - | - |
| CL2 | 9 | - | - | - | Clock (540 kHz) is inputted from the main μ COM. | - | - |
| V _{DD} | 10 | - | - | - | +5V | - | - |
| RST | 11 | - | - | - | Reset terminal | - | - |
| I/O | 12 | P ₁₀ | P ₁₀₀ | O | D4: in parallel data output | ○ | - |
| I/O | 13 | P ₁₀ | P ₁₀₁ | O | D5: in parallel data output | ○ | - |
| I/O | 14 | P ₁₀ | P ₁₀₂ | O | D6: in parallel data output | ○ | - |
| I/O | 15 | P ₁₀ | P ₁₀₃ | O | D7: in parallel data output | ○ | - |
| I/O | 16 | P ₁₁ | P ₁₁₀ | O | D0: in parallel data output | ○ | - |
| I/O | 17 | P ₁₁ | P ₁₁₁ | O | Terminal for outputting a request signal to the main μ COM to request data transmit in response to a remote-control signal. | - | ○ |
| I/O | 18 | P ₁₁ | P ₁₁₂ | O | Not used | - | - |
| I/O | 19 | P ₁₁ | P ₁₁₃ | O | Not used | - | - |
| V _{SS} | 20 | - | - | - | GND | - | - |

•STA341M (Transistor Array)



1:CN 2:B1
3:B2 4:B2
5:CP 6:E3
7:E2 8:E1

• μ PD75108CD (μ COM for control)

| Pin No. | I/O | Terminal Function | Active | |
|---------|-----|---|--------|---|
| | | | H | L |
| 37~44 | I | Terminals for inputting 8-bit parallel signals from sub- μ COM7564CS. | ○ | - |
| 49 | I | Terminal for inputting a request signal of remote-control signal data from sub- μ COM. | - | ○ |
| 48 | O | Reset terminal for outputting to sub- μ COM. | - | - |
| 12 | O | Terminal for outputting a clock to sub- μ COM. | - | - |
| 20~26 | O | Terminals for outputting a key matrix. Normally at L level. When a key SW is depressed and therefore any one of input ports (pins 53 to 56) changes to "L" level, all the output ports change to "H" level. Therefore, the output port starts dynamic scanning so that "L" level signals are outputted in sequence. At this time, if a key SW is kept depressed, the input and output ports connected to this SW both change to "L" level to select the function of the depressed SW. The dynamic scanning signal is outputted for 20 (4X5) ms whenever the key SW is once depressed. | - | ○ |
| 27~30 | I | Terminal for inputting a key matrix | - | ○ |
| 59 | O | Terminal for outputting a chip enable signal. Transferable in "H" level. | ○ | - |
| 58 | O | Control terminal for outputting data to display | - | - |
| 60~63 | O | Terminal for outputting 4-bit parallel data to display driver IC | - | ○ |
| 17 | O | Terminal for outputting a clock used for data transfer. | - | - |
| 16 | O | Terminal for outputting 8-bit serial data to a signal processing IC to select an operation function of the set. | - | - |
| 15 | I | Terminal for inputting 8-bit serial data from signal processing IC | - | - |
| 53 | O | Terminal for always outputting a low bias voltage so as to enable the feed operation at "H" (5V) level in play operation. | ○ | - |
| 51 | O | Terminals for outputting Read/Write signals in data write and transfer operation. | - | - |
| 50 | I | Terminals for inputting a write-request signal used for data writing operation. | ○ | - |
| 45 | I | Reset terminal. | - | - |
| 1 | I | Terminals for outputting a +5V signal when the lead-out SW is turned ON during auto-search in μ COM. In response to this signal, the feed motor returns a disk inward for 0.5 sec. | ○ | - |
| 47,46 | I | Terminals for inputting a clock (2.1609 MHz for μ COM from signal processing IC (YM3805). | - | - |
| 13 | O | Terminal for outputting a "H" level signal to activate the laser output circuit when the tray is closed and the spindle motor is turned on. | ○ | - |
| 2 | I | Terminal for inputting an "L" level signal to stop the loading motor when the tray is closed and therefore the tray SW is IN (on). | - | ○ |
| 3 | I | Terminal for inputting an "L" level signal to stop the loading motor when the tray is open and therefore the tray SW is OUT (off). | - | ○ |
| 4 | I | Terminal for inputting an "L" level signal to stop the loading motor when the tray is open and therefore the tray SW is OUT (off). | - | ○ |
| 55 | O | Terminal for outputting an "H" level signal to rotate the loading motor in the direction that the tray is closed. | ○ | - |
| 54 | O | Terminal for outputting an "H" level signal to rotate the loading motor in the direction that the tray is open. | ○ | - |
| 18 | I | Terminal for inputting an "L" level (GND) signal when timer SW is ON. If power is turned on in this condition, timer PLAY mode is set. | - | ○ |
| 57 | O | Terminal for outputting a muting signal to signal processing circuits. This signal is "H" in only play operation to release muting. | ○ | - |
| 32 | | Supply voltage (+5V) | - | - |

1) Clock Oscillation Terminals: 79/XIN, 80/XOUT

Oscillation begins when a quartz oscillator (8.6436 MHz) is connected between these two terminals and a capacitor 20 pF is connected each between the terminal and ground.

2) EFM Signal External Circuit Terminals:

8/EMI, 7/EFMX, 6/EFMX

When an optical pickup signal of an appropriate level (1 to 2 Vpp) is inputted to EMI terminal, two 180 out-of-phase signals with a limited amplitude are generated from EFMX and EFMXA terminals. These two signals are used for slice level control.

3) Clock Reproduce Circuit Terminals:

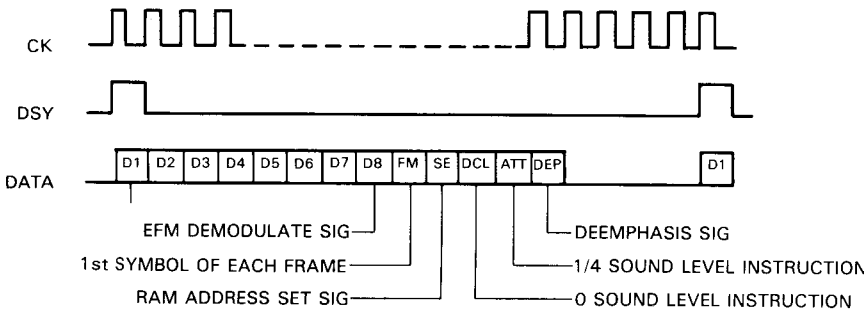
4/PCO, 3/VCOI, 2/VCOX

When an LC resonance circuit is connected between VCOI and VCOX terminals, clock oscillation (mean freq: 8.6436 MHz) begins. PCO terminal output is a phase difference signal between CLOCK and EFM pattern at when the polarities of both change. The polarity of a variable capacitance diode is determined so that the frequency increases at positive polarity (+) for clock reproduction.

4) EFM Demodulating Signal Check Output

Terminals: 27/CK, 28/DATA, 29/DSY

CK is a clock of 4.3218 MHz (on an average) obtained by dividing VCD. DATA is a serial signal of bit rate determined by this clock. An 8-bit EFM demodulating signal and a 5-bit data control signal are included in the 17-bit length. DSY is a synchronizing signal which changes to "H" at the timing when the head signal of CK rises. These three terminals are used for device check.



5) Q Code Output Terminals:

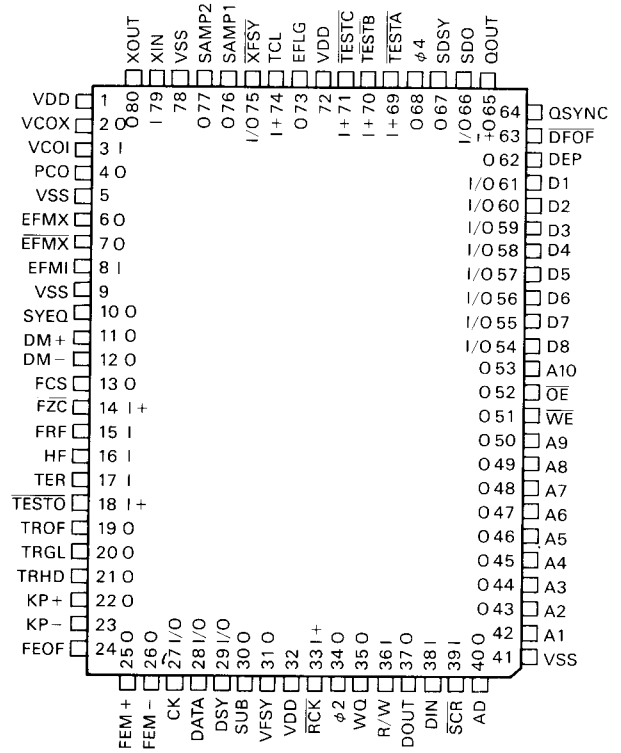
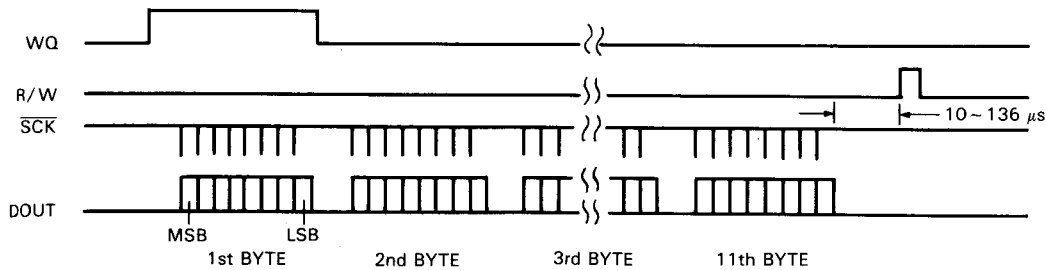
35/WQ, 36/R/W, 37/DOUT, 39/SCK

When μ COM detects an "H" of WQ and SCK is outputted, the DATA can be outputted from DOUT terminal as a series of bits. After SCK clock has been outputted, R/W rises once to "H" for a short time period to finish the operation.

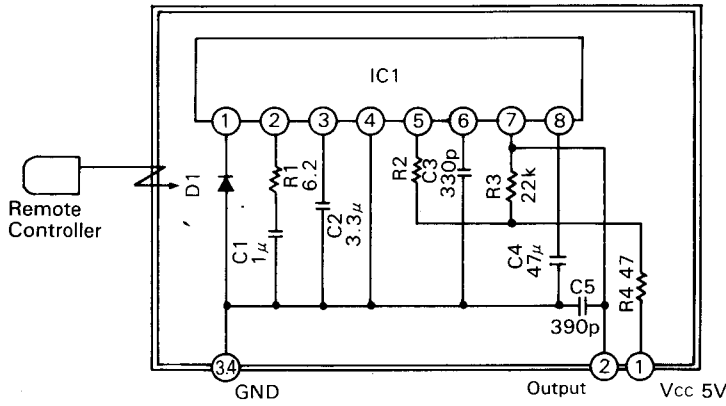
DOUT CONTENTS

- SIGN: SEARCH POLARITY
- S2, S1: SEARCH MODE
- 8F, 4F: FRAME ERROR
- MZ: DISK MOTOR STOP
- FCO: FOCUS OUT
- NQ: NEW Q CODE

| | | | | | | | |
|------|----|----|----|-----|----|-----|----|
| MSB | | | | LSB | | | |
| SIGN | S2 | S1 | 8F | 4F | MZ | FCO | NQ |

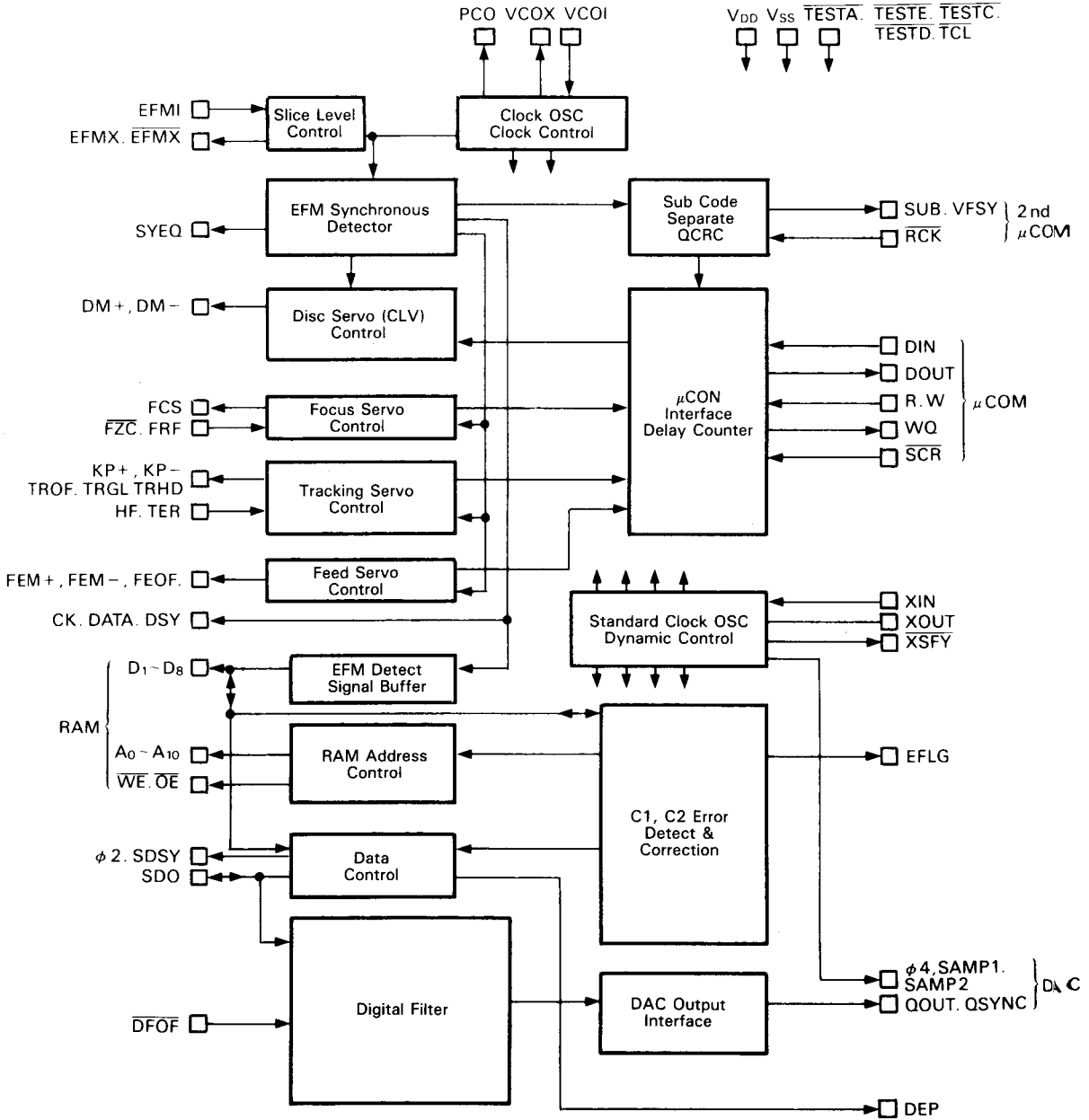


•BX-1407 (Remote Controller Receiver)



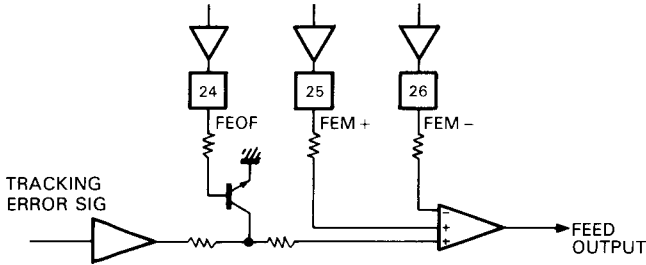
- IC1: CX20106A Chip
 - D1: PIN Photo Diode
 - C1, C2, C4: E.C. 5%
 - C3, C3: ± 1% (for Adjust)
 - R2: ± 1% (for Adjust)
1. Vcc
 2. Output
 3. GND
 4. GND

•YM3805 (Signal Management and Servo Control)



9) Disk Servo Terminals: 11/DM+, 12/DM-
 DM+ and DM- are PWM outputs with one frame as period. These signals are not set to "H" simultaneously. The resolving power is 925ns (1/147 of one frame) under stable PLAY conditions.

10) Feed Servo Terminals: 24/FEOF, 25/FEM+, 26/FEM-
 FEM+ or FEM- signal is outputted as a high speed feed signal. During this period, since feed servo is cut off, FEOF signal is outputted.



11) RAM Connecting Terminals: 40/A0 to 53/A10, 51/WE, 53/OE, 54/D8 to 61/D1
 These terminals are connected to a RAM to apply address signals, input/output control signals, and data signals. SPC is in output status if WE is at "L" and in input status if WE is at "H".

12) Quartz Clock Synchro Signal Terminal: 75/XFSY
 Frame synchronizing signal of 7.35 kHz.

13) Data Control Circuit and Serial Signal Output Terminals: 34/φ2, 66/SDO, 67/SDSY, 69/TESTA, 71/TESTC

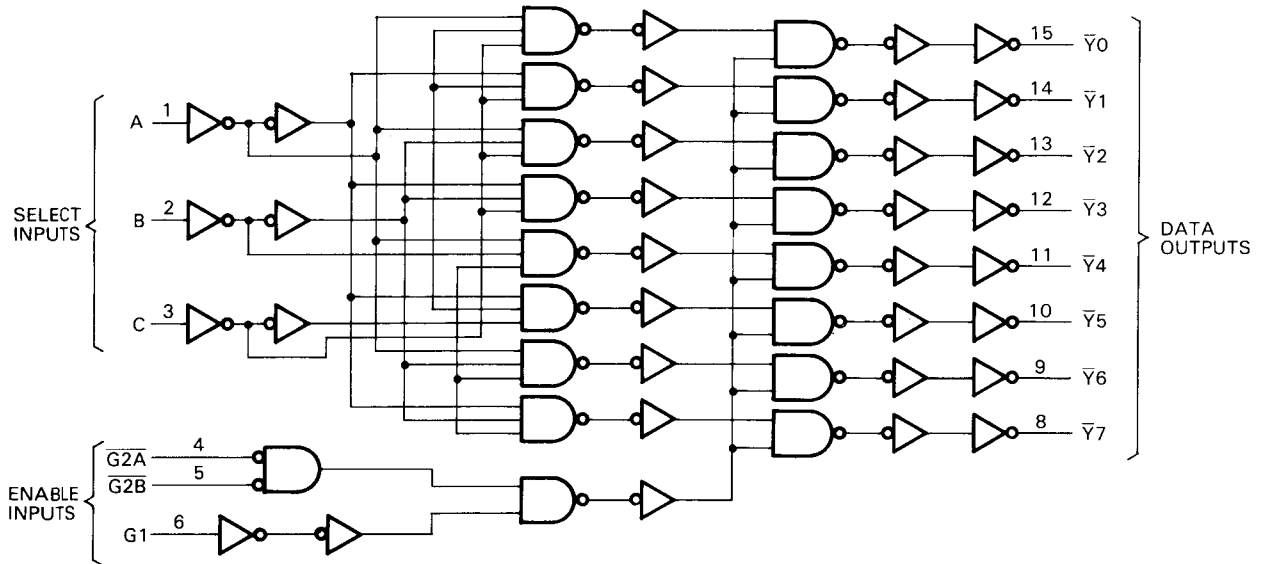
φ2 is a clock of 2.1609 MHz. SDO are φ2 bit-rate serial output signals for DAC. LCH is 24 bits; RCH is 25 bits; LSB is fast. SDO is an output status because TESTA=TESTC are usually both at "H". However, when TESTA=TESTC are both set to "L", these signals can be inputted to a digital filter in the same format. SDSY is a synchronizing signal which is set to "H" if SDO is LCH but "L" if SDO is RCH.

14) DAC Interface Terminals: 65/QOUT, 68/φ4
 Serial output signal QOUT for DAC is a 16-bits serial data which synchronizes with the leading edge of 4.3218 MHz (φ4). This signal is outputted in 2's complementary format.

15) Deemphasis Signal Terminal: 62/DEP
 Deemphasis is necessary when the frequency characteristic control signal is at "H".

16) Test Terminals: 69/TESTA, 70/TESTB, 71/TESTC, 18/TESTD, 74/TCL
 These test terminals are usually at "H" through internal PULL-UP resistors. Connection is unnecessary.

•TC74HC138P (Line Decoder)



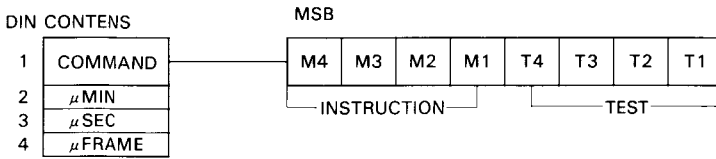
| INPUTS | | | | | | OUTPUTS | | | | | | | | SELECT OUTPUT |
|--------|-----|-----|--------|---|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| ENABLE | | | SELECT | | | Y ₀ | Y ₁ | Y ₂ | Y ₃ | Y ₄ | Y ₅ | Y ₆ | Y ₇ | |
| G1 | G2A | G2B | C | B | A | | | | | | | | | |
| L | X | X | X | X | X | H | H | H | H | H | H | H | H | NONE |
| X | H | X | X | X | X | H | H | H | H | H | H | H | H | NONE |
| X | X | H | X | X | X | H | H | H | H | H | H | H | H | NONE |
| H | L | L | L | L | L | L | H | H | H | H | H | H | H | Y ₀ |
| H | L | L | L | L | H | H | L | H | H | H | H | H | H | Y ₁ |
| H | L | L | L | H | L | H | H | L | H | H | H | H | H | Y ₂ |
| H | L | L | L | H | H | H | H | H | L | H | H | H | H | Y ₃ |
| H | L | L | H | L | L | H | H | H | H | L | H | H | H | Y ₄ |
| H | L | L | H | L | H | H | H | H | H | H | L | H | H | Y ₅ |
| H | L | L | H | H | L | H | H | H | H | H | H | L | H | Y ₆ |
| H | L | L | H | H | H | H | H | H | H | H | H | H | L | Y ₇ |

X: Don't Care

6) μ COM Commande Terminals:

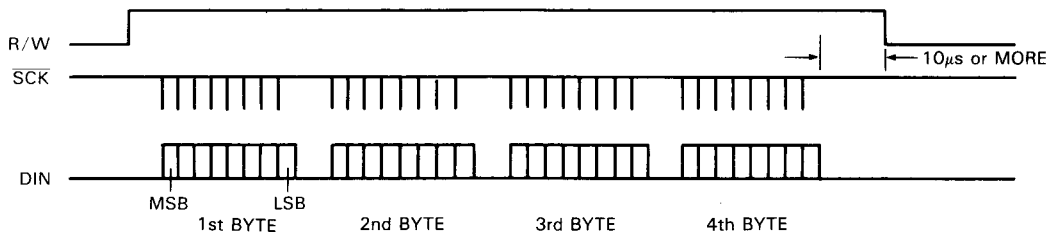
36/R/W, 38/DIN, 39/SCK

The DATA can be inputted when μ COM sets R/W to "H" and then SCK CLOCK is outputted in synchronism with DIN. If an instruction is 7, 4 bytes are inputted. If not 7, only 1 byte is inputted. Immediately after power is turned on, commands (T4: "H", others: "L") should be sent for SPC initialization.



TARGET TIME

| | | | | | |
|---|---|---|---|----|----------------|
| 0 | 0 | 0 | X | 0 | STOP |
| 0 | 0 | 1 | 0 | 1 | FEED FORWARD |
| 0 | 0 | 1 | 1 | 1½ | FEED RETURN |
| 0 | 1 | 0 | X | 2 | FOCUS START |
| 0 | 1 | 1 | 0 | 3 | DISC START |
| 0 | 1 | 1 | 1 | 3½ | DISC BRAKE |
| 1 | 0 | 0 | 0 | 4 | PLAY |
| 1 | 0 | 0 | 1 | 4½ | PLAY MUTE |
| 1 | 0 | 1 | 0 | 5 | FF |
| 1 | 0 | 1 | 1 | 5½ | FB |
| 1 | 1 | 0 | 0 | 6 | FFF |
| 1 | 1 | 0 | 1 | 6½ | FFB |
| 1 | 1 | 1 | X | 7 | SEARCH (PAUSE) |



7) Focus Servo Terminals:

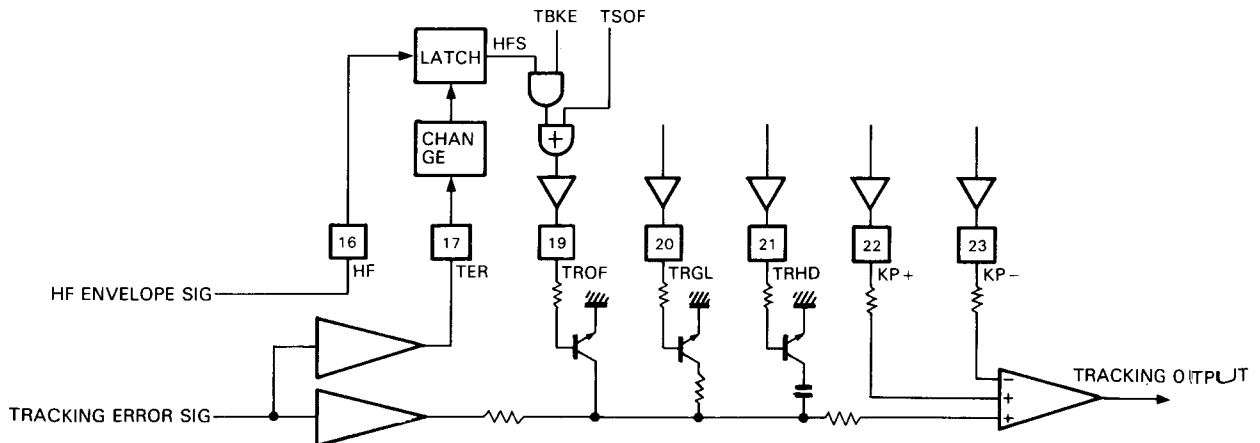
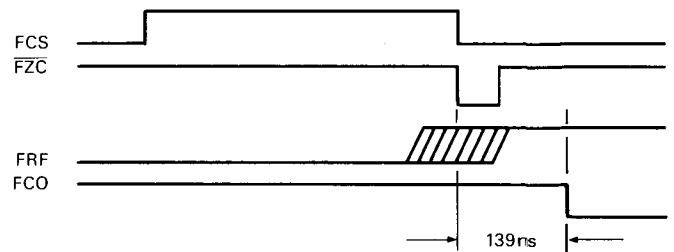
Input-14/FZC, 15/FRF, Output-13/FCS

These terminals are used for focus servo control in response to FCS signal. If FZC signal is generated when FCS signal reaches the focus point, the servo-operation stops, and FCO flag is taken down internally in response to FRF signal which detects a reflected light.

8) Tracking Servo Terminals: Input-16/HF, 17/TER

Output: 19/TROF, 20/TRGL, 21/TRHD, 22/KP+, 23/KP-

TROF signal is outputted by sampling a change in amplitude of HF signal generated during search across tracks at a zero-cross point of tracking error signal TER. The servo is controlled ON or OFF on the basis of the change in level of this signal to facilitate the tracking operation. For tracking operation, a signal KP+ or KP- is outputted while outputting TRHD to hold the tracking error signal. TRGL signal serves to increase the tracking gain after a kick operation ends.



3. HOW TO REPLACE MAIN PARTS

(Refer to Set Exploded View on Page 15 and Mechanism Exploded View on Page 16)

A. Bonnet ⑰

- 1) Remove four upper surface screws ⑳ and two rear surface screws ㉑.

B. Front Panel Assembly ②

- 1) Remove three upper surface screws ㉒.
- 2) Remove special screws ㉓ to remove right and left side panels.
- 3) Remove nine bottom panel fixing screws.

C. Disk Tray ⑧

- 1) Pull clamp cam ⑤ toward you and push disc tray until it is brought into contact with the stopper.
- 2) Push downward the place (denoted by *) of tray stopper ㉔ mounted on mechanism chassis and pull the disk tray toward you. (See Fig. 3-1)

D. Mechanism Chassis ㉒

- 1) Remove disk tray ⑧.
- 2) Remove four mechanism chassis fixing screws ㉕. In this status, the chassis can be turned upside down.

E. Loading Belt ⑰, Pulley ⑰, Gear ⑱

- 1) Remove belt cover ⑮.
- 2) Remove loading belt.
- 3) Remove CS ring ㉖ and then pulley ⑰.
- 4) Remove gear ⑱.

F. Loading Motor ㉒

- 1) Remove belt cover ⑮.
- 2) Remove belt ⑰.
- 3) Remove 5φ pulley ⑳.
- 4) Remove two motor mounting screws ㉗ to remove motor ㉒.

G. Clamp Arm Assembly ④

- 1) Spread out the stopper portion (the leftside of the stay) of clamp stay ㉘ to remove clamp arm assembly ④. (See Fig. 3-2)
- 2) Remove clamp spring ㉙ from the clamp arm.

H. Spindle Motor ㉒

- 1) Remove disc tray ⑧.
- 2) Remove four mechanism chassis fixing screws.
- 3) Remove turn table fixing screw ㉚ to remove turn table.
- 4) Remove two motor mounting screws ㉛ to remove motor.

Note: In mounting the motor, a distance between the sub-chassis and the turn table should be 20.4 ± 1 mm. In further detail, refer to Adjusting Method on page 17. (See Fig. 3-3)

I. Feed Motor Assembly ㉛

- 1) Remove disc tray ⑧.
- 2) Remove four mechanism chassis fixing screws ㉜ and turn the chassis upside down.
- 3) Remove two motor mounting screws ㉝.
- 4) Remove leads from feed motor board F-5570.

J. Pickup Head Assembly ㉞

- 1) Remove disc tray ⑧.
- 2) Remove clamp arm assembly ④.
- 3) Remove four support fixing screws ㉞ to remove two support rails ㉞.
- 4) Remove two lead connector plugs from head assembly.

K. How to Mount Disc Tray

- 1) Fit disc tray to two tray guides ⑨.
- 2) When the disc tray is pushed a little inward, the rightside top end is brought into contact with leaf spring ㉟. By pushing the leaf spring outward, further push the disc tray to guides located at the middle of the mechanism chassis. (See Fig. 3-1)
- 3) The leftside top end of the tray comes over the tray stopper ㉔ before the guides. Here, fit the disc tray to two guides by pushing the tray end from above.
- 4) Push the disc tray to the end.

Fig. 3-1

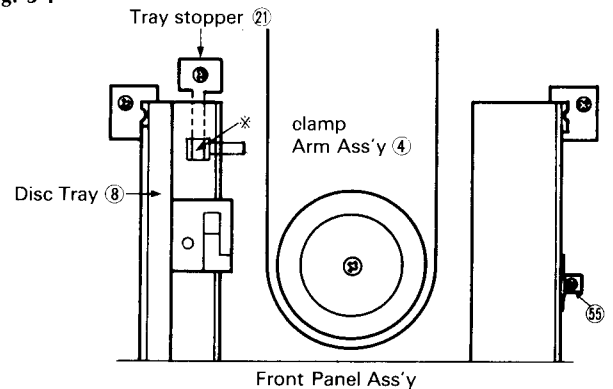


Fig. 3-2

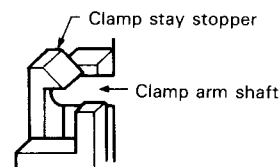
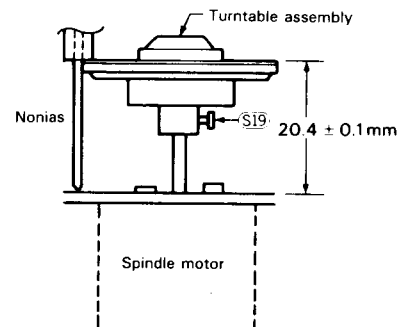
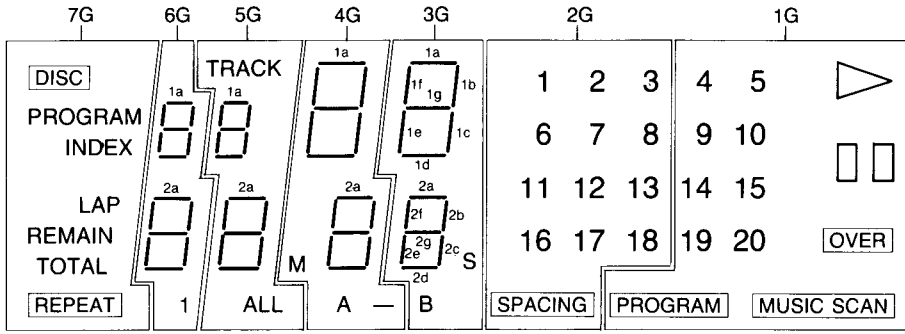


Fig. 3-3



•Fluorescent Display Tube (FV170G)

Grid Assignment



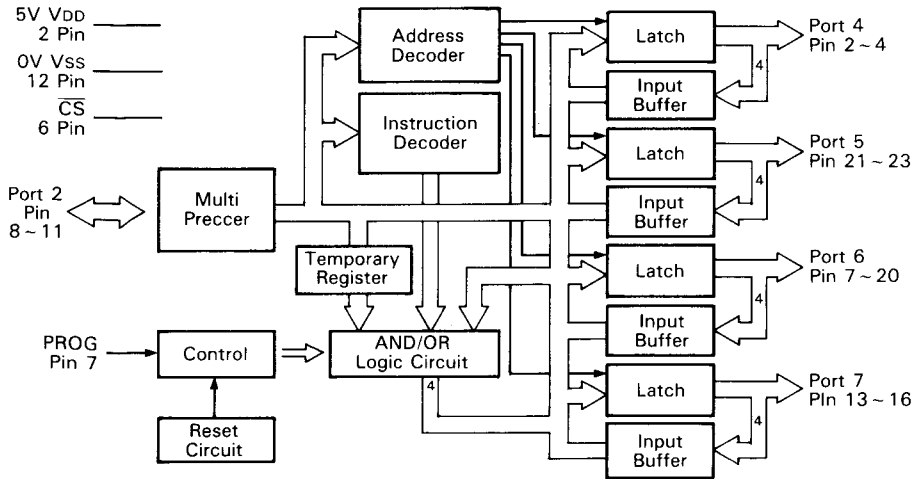
Anode Connection

| | 7G | 6G | 5G | 4G | 3G | 2G | 1G |
|---|---------|----|-------|----|----|---------|------------|
| a | DISC | 1a | 1a | 1a | 1a | 1 | 4 |
| b | PROGRAM | 1b | 1b | 1b | 1b | 2 | 5 |
| c | — | 1c | 1c | 1c | 1c | 6 | 9 |
| d | — | 1d | 1d | 1d | 1d | 8 | □□ |
| e | — | 1e | 1e | 1e | 1e | 7 | 10 |
| f | INDEX | 1f | 1f | 1f | 1f | 3 | ▷ |
| g | — | 1g | 1g | 1g | 1g | — | — |
| h | — | — | TRACK | M | S | — | — |
| i | LAP | 2a | 2a | 2a | 2a | 11 | 14 |
| j | RAMAIN | 2b | 2b | 2b | 2b | 12 | 15 |
| k | — | 2c | 2c | 2c | 2c | 16 | 19 |
| l | — | 2d | 2d | 2d | 2d | 18 | MUSIC SACN |
| m | — | 2e | 2e | 2e | 2e | 17 | 20 |
| n | TOTAL | 2f | 2f | 2f | 2f | 13 | OVER |
| o | REPEAT | 2g | 2g | 2g | 2g | — | — |
| p | — | 1 | ALL | A— | B | SPACING | PROGRAM |

Pin Connection

| PIN NO. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | | | | |
|------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|---|---|
| CONNECTION | F | F | N | p | l | m | k | N | o | n | j | i | N | p | h | d | e | c | N | p | g | f | b | a | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N |

•TMP82C43P (Extend I/O Port)



| Pin No. | Description |
|----------------|---|
| 1 ~ 5, 13 ~ 23 | FL Tube Drive Output Active H |
| 6 | Chip Select Input Active H |
| 7 | DATA Control P20 ~ 23: DATA Output ON P20 ~ 23: DATA ENABLE |
| 8 ~ 11 | FL Tube 4 bit Parallel DATA Input Active H |
| 12 | Vss 0V |
| 24 | Vdd 4V |

Parts List <F-5583>

| Parts No. | Stock No. | Description |
|---------------|-------------|--|
| fc26 | 46284100 | 0.1 μ F 50V F.C. |
| fc27 | 48748400 | 0.1 μ F 50V C.C. |
| fc29 | 46284100 | 0.1 μ F 50V F.C. |
| fc30 | 46284100 | 0.1 μ F 50V F.C. |
| fc48 | 48103500 | 2.2 μ F 50V E.B. |
| fc49 | 46281800 | 1000pF 50V F.C. |
| fc50 | 48748400 | 0.1 μ F 50V C.C. |
| fc51 | 46531300 | 5600pF 50V F.C. |
| fc52 | 48103400 | 1 μ F 50V E.B. |
| fc53 | 48748400 | 0.1 μ F 50V C.C. |
| fc54 | 48748400 | 0.1 μ F 50V C.C. |
| fc57 | 48748400 | 0.1 μ F 50V C.C. |
| fc58 | 48748400 | 0.1 μ F 50V C.C. |
| fc66 | 46283000 | 0.012 μ F 50V F.C. |
| fc69 | 48748400 | 0.1 μ F 50V C.C. |
| fc80 | 48103200 | 0.47 μ F 50V E.B. |
| fc82 | 46282900 | 0.01 μ F 50V F.C. |
| fvr1 | 46634900 | 100k Ω S.V.R., FOCUS OFFSET |
| fvr2 | 46634100 | 4.7k Ω S.V.R., FOCUS GAIN |
| fvr3 | 46634900 | 100k Ω S.V.R., TRACKING OFFSET |
| fvr4 | 46634100 | 4.7k Ω S.V.R., TRACKING GAIN |
| fvr5 | 46634700 | 47k Ω S.V.R., KICK 2 |
| fvr6 | 46634700 | 47k Ω S.V.R., KICK 1 |
| •Transistor | | |
| mQ5 | 46359701 | 2SA952 |
| | or 46614001 | 2SA1283 |
| mQ6 | 46367001 | 2SA1115 |
| | or 48058601 | 2SA933S |
| mQ9 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| mQ10 | 46367001 | 2SA1115 |
| | or 48058601 | 2SA933S |
| •IC | | |
| Δ mIC1 | 48470500 | μ PC7812H |
| Δ mIC2 | 48471000 | μ PC7912H |
| Δ mIC3 | 46720300 | μ PC7805H |
| •Diode | | |
| mD2 | 03117600 | 1S2473T77 |
| | or 46086000 | 1S1588TP-3 |
| Δ mD3 | 07193300 | UB-152LFF |
| •Zener Diode | | |
| mDZ2 | 46113000 | 05Z9.1-Y |
| | or 46113100 | 05Z9.1-Z |
| mDZ6 | 46113500 | 05Z11-X |
| | or 46113600 | 05Z11-Y |
| mC16 | 48748400 | 0.1 μ F 50V C.C. |
| mC17 | 48748400 | 0.1 μ F 50V C.C. |
| mC18 | 48832200 | 2200 μ F 25V E.C. |
| mC19 | 48832200 | 2200 μ F 25V E.C. |
| mC20 | 48748400 | 0.1 μ F 50V C.C. |
| mC21 | 48748400 | 0.1 μ F 50V C.C. |
| mC22 | 48748400 | 0.1 μ F 50V C.C. |
| mC23 | 48748400 | 0.1 μ F 50V C.C. |
| mC24 | 48831900 | 220 μ F 16V E.C. |
| mC25 | 48831900 | 220 μ F 16V E.C. |
| mC26 | 48748400 | 0.1 μ F 50V C.C. |
| mC27 | 48831900 | 220 μ F 16V E.C. |
| •IC | | |
| vIC5 | 48780900 | SM5806P |

4-4. F-5666 Phone Jack Board

| Parts No. | Stock No. | Description |
|-----------|-----------|--------------------|
| kVR1 | 48728000 | 20KAX2 V.R., PHONE |
| oJ3 | 46579600 | Jack, PHONE |

4-5. F-5584 D/A Converter & Audio Amp. Board
(Stock No. 01015201)

| Parts No. | Stock No. | Description |
|--------------|-------------|-----------------------|
| aZ65 | 07663700 | Screw CTB3008-FV20 |
| •IC | | |
| kIC1 | 48577000 | M5216L |
| kC1 | 48102000 | 10 μ F 16V E.B. |
| kC2 | 48832100 | 100 μ F 25V E.C. |
| kC3 | 48832100 | 100 μ F 25V E.C. |
| •Transistor | | |
| mQ1 | 48150101 | 2SD1406 |
| | or 48508801 | 2SC3851 |
| mQ2 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| mQ3 | 46367001 | 2SA1115 |
| | or 48058601 | 2SA933S |
| mQ4 | 48150801 | 2SB1015 |
| | or 48509101 | 2SA1488 |
| mQ7 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| mQ8 | 46367001 | 2SA1115 |
| | or 48058601 | 2SA933S |
| •FET | | |
| mFT1 | 46643502 | 2SK163-L1 |
| | or 46643503 | 2SK163-L2 |
| | or 46643602 | 2SK117-GR |
| | or 46643603 | 2SK117-BL |
| mFT2 | 46643502 | 2SK163-L1 |
| | or 46643503 | 2SK163-L2 |
| | or 46643602 | 2SK117-GR |
| | or 46643603 | 2SK117-BL |
| •Diode | | |
| mD1 | 07193300 | UB-152LFF |
| •Zener Diode | | |
| mDZ1 | 46111700 | 05Z6.2-X |
| | or 46111800 | 05Z6.2-Y |
| mDZ3 | 46114800 | 05Z16-Y |
| | or 46114900 | 05Z16-Z |
| mDZ4 | 46114800 | 05Z16-Y |
| | or 46114900 | 05Z16-Z |
| mDZ5 | 46111700 | 05Z6.2-X |
| | or 46111800 | 05Z6.2-Y |
| mC1 | 48831700 | 4700 μ F 35V E.C. |
| mC2 | 48831700 | 4700 μ F 35V E.C. |
| mC3 | 46284100 | 0.1 μ F 50V F.C. |
| mC4 | 46284100 | 0.1 μ F 50V F.C. |
| mC10 | 48683500 | 100 μ F 25V E.C. |
| mC11 | 48683500 | 100 μ F 25V E.C. |
| mC14 | 48748400 | 0.1 μ F 50V C.C. |
| mC15 | 48748400 | 0.1 μ F 50V C.C. |
| •Transistor | | |
| vQ1 | 48171600 | DTC114YS |
| vQ2 | 46604301 | 2SC3327 |
| vQ3 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| vQ4 | 46367001 | 2SA1115 |
| | or 48058601 | 2SA933S |
| vQ5 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |

4. PARTS LIST OF CIRCUIT BOARD

4-1. F-5564 Control Switch Board (Stock No. 01018901)

| Parts No. | Stock No. | Description |
|-----------|-----------|------------------|
| oS1 | 48592000 | Push SW., □ |
| oS2 | 48592000 | Push SW., □□ |
| oS3 | 48592000 | Push SW., ◀◀ |
| oS4 | 48592000 | Push SW., ▷ |
| oS5 | 48592000 | Push SW., M-SCAN |
| oS6 | 48592000 | Push SW., ▷▷ |
| oS7 | 48592000 | Push SW., CLR |
| oS8 | 48592000 | Push SW., ◀◀ |
| oS9 | 48592000 | Push SW., SET |
| oS10 | 48592000 | Push SW., 9 |
| oS11 | 48592000 | Push SW., ▷▷ |
| oS12 | 48592000 | Push SW., 0 |
| oS13 | 48592000 | Push SW., 6 |
| oS14 | 48592000 | Push SW., ←← |
| oS15 | 48592000 | Push SW., →→ |
| oS16 | 48592000 | Push SW., 3 |
| oS17 | 48592000 | Push SW., 5 |
| oS18 | 48592000 | Push SW., 8 |
| oS19 | 48592000 | Push SW., SPACE |
| oS20 | 48592000 | Push SW., 2 |
| oS21 | 48592000 | Push SW., 4 |
| oS22 | 48592000 | Push SW., 7 |
| oS23 | 48592000 | Push SW., CHK |
| oS24 | 48592000 | Push SW., 1 |
| oS25 | 48592000 | Push SW., 1/ALL |
| oS26 | 48592000 | Push SW., DISP |
| oS27 | 48592000 | Push SW., OP/CL |
| oS28 | 48592000 | Push SW., A-B |

4-2. F-5568 Power Supply Fuse Board

| Parts No. | Stock No. | Description |
|-----------|-----------|-------------------|
| △pC1 | 46426300 | 1000pF 400V C.C. |
| △pC2 | 46426300 | 1000pF 400V C.C. |
| △pC3 | 46943200 | 0.01μF 400V C.C. |
| △pC4 | 46943200 | 0.01μF 400V C.C. |
| △pF1 | 48721000 | Fuse 0.8A |
| △pL1 | 48727800 | LINE Filter LF-2C |
| △pS1 | 46413900 | Push SW., POWER |

4-3. F-5583 Servo Control Board (Stock No. 01019201)

| Parts No. | Stock No. | Description |
|-------------|-------------|--------------------|
| aZ62 | 48828400 | Screw |
| aZ64 | 07663700 | Screw CTB3008-FV20 |
| •Transistor | | |
| fQ1 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| fQ2 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| fQ3 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| fQ4 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| fQ5 | 46367001 | 2SA1115 |
| | or 48058601 | 2SA933S |
| fQ6 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| fQ7 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |

Parts List <F-5583>

| Parts No. | Stock No. | Description |
|--------------|-------------|------------------|
| fQ8 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| fQ9 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| fQ10 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| fQ11 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| fQ12 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| fQ13 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| fQ14 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| fQ17 | 46359801 | 2SC2001 |
| fQ18 | 46359701 | 2SA952 |
| fQ19 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| fQ20 | 46719900 | DTC124ES |
| fQ21 | 46719800 | DTA124ES |
| fQ22 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| fQ23 | 46719900 | DTC124ES |
| fQ26 | 46367101 | 2SC2603 |
| | or 48058801 | 2SC1740S |
| fQ27 | 46719800 | DTA124ES |
| fQ29 | 46719900 | DTC124ES |
| •FET | | |
| IFT1 | 46643800 | 2SJ103-Y |
| | or 46643801 | 2SJ103-GR |
| •IC | | |
| fIC1 | 46078900 | M5218L |
| fIC2 | 46078900 | M5218L |
| fIC4 | 46078900 | M5218L |
| fIC5 | 46078900 | M5218L |
| fIC6 | 46078900 | M5218L |
| fIC7 | 48667300 | STA341M |
| fIC11 | 07233100 | BA6109 |
| •Diode | | |
| fD2 | 46464000 | MC921 |
| fD3 | 03117600 | 1S2473T77 |
| | or 46086000 | 1S1588TP-3 |
| fD4 | 03117600 | 1S2473T77 |
| | or 46086000 | 1S1588TP-3 |
| fD5 | 03117600 | 1S2473T77 |
| | or 46086000 | 1S1588TP-3 |
| fD6 | 03117600 | 1S2473T77 |
| | or 46086000 | 1S1588TP-3 |
| fD7 | 03117600 | 1S2473T77 |
| | or 46086000 | 1S1588TP-3 |
| fD8 | 03117600 | 1S2473T77 |
| | or 46086000 | 1S1588TP-3 |
| •Zener Diode | | |
| fDZ1 | 46112700 | 05Z8.2-Y |
| fC3 | 48748400 | 0.1μF 50V C.C. |
| fC4 | 48748400 | 0.1μF 50V C.C. |
| fC6 | 46284100 | 0.1μF 50V F.C. |
| fC7 | 48748400 | 0.1μF 50V C.C. |
| fC8 | 48748400 | 0.1μF 50V C.C. |
| fC11 | 46283700 | 0.047μF 50V F.C. |
| fC15 | 46283700 | 0.047μF 50V F.C. |
| fC17 | 46282800 | 8200pF 50V F.C. |
| fC19 | 46284100 | 0.1μF 50V F.C. |
| fC24 | 48748400 | 0.1μF 50V C.C. |
| fC25 | 48748400 | 0.1μF 50V C.C. |

to be continued ▶

Parts List < F-5584 >

| Parts No. | Stock No. | Description |
|-----------|--|---|
| vQ6 | 46367001 or 48058601 | 2SA1115 2SA933S |
| •FET | | |
| vFT1 | 46724700 or 46724701 | 2SK241-Y 2SK241-GR |
| vFT2 | 46724700 or 46724701 | 2SK241-Y 2SK241-GR |
| vFT3 | 03703002 or 03703003 | 2SK117-GR 2SK117-BL |
| •IC | | |
| vIC1 | 48666701 | PCM54JP 16BIT DAC |
| vIC3 | 48730300 | M5238P JFET |
| vIC4 | 48730300 | M5238P JFET |
| vIC6 | 46078900 | M5218L |
| •Diode | | |
| vD1 | 03117600 | 1S2473T77 |
| vD2 | 03111600 or 03111800 | 1S2473 1S1588 |
| vD3 | 03111600 or 03111800 | 1S2473 1S1588 |
| vPH1 | 48586801 or 48586802 or 48586803 | Photo Transistor PC-817 Photo Transistor PC-817 Photo Transistor PC-817 |
| vR1 | 48762200 | 470k Ω 1/4W M.R. |
| vR2 | 48761400 | 220k Ω 1/4W M.R. |
| vR3 | 48763000 | 1M Ω 1/4W M.R. |
| vR9 | 48030300 | 12k Ω 1/4W C.R. |
| vR10 | 48028900 | 3.3k Ω 1/4W C.R. |
| vR31 | 48893200 | 47 Ω 1/4W C.R. |
| vR38 | 48893200 | 47 Ω 1/4W C.R. |
| vR42 | 48892400 | 22 Ω 1/4W C.R. |
| vR43 | 48892400 | 22 Ω 1/4W C.R. |
| vR44 | 48894800 | 220 Ω 1/4W C.R. |
| vC1 | 46282900 | 0.01 μ F 50V F.C. |
| vC2 | 48748400 | 0.1 μ F 50V C.C. |
| vC3 | 48748400 | 0.1 μ F 50V C.C. |
| vC10 | 48748400 | 0.1 μ F 50V C.C. |
| vC11 | 48748400 | 0.1 μ F 50V C.C. |
| vC12 | 46696400 | 0.033 μ F 50V F.C. |
| vC15 | 48748400 | 0.1 μ F 50V C.C. |
| vC16 | 48748400 | 0.1 μ F 50V C.C. |
| vC27 | 48748400 | 0.1 μ F 50V C.C. |
| vC28 | 48748400 | 0.1 μ F 50V C.C. |
| vC30 | 48103600 | 3.3 μ F 50V E.B. |
| vC32 | 48103600 | 3.3 μ F 50V E.B. |
| vFL1 | 48729800 or 48730810 | Low Pass Filter Low Pass Filter |
| vVR1 | 48119300 | 100k Ω S.V.R., Distortion |
| vRL1 | 46630700 | Relay, 12V |

4-6. F-5667 Output Terminal Board

| Parts No. | Stock No. | Description |
|-----------|-----------|---------------------|
| oJ1 | 22005700 | 2P Terminal, OUTPUT |

4-7. F-5704 Digrih Board

| Parts No. | Stock No. | Description |
|--------------|-------------------------|----------------------|
| •Transistor | | |
| vQ51 | 46367001 or 48058601 | 2SA1115 2SA933S |
| vQ52 | 46367001 or 48058601 | 2SA1115 2SA933S |
| •Zener Diode | | |
| vDZ51 | 46113000 or 46113100 | 05Z9.1-Y 05Z9.1-Z |
| vDZ52 | 46109200 or 46109300 | 05Z2.7-Z 05Z3.0-X |

4-8. F-5686 Signal Management Board

(Stock No. 01033101)

| Parts No. | Stock No. | Description |
|-------------|---|---|
| •Transistor | | |
| fQ15 | 46367001 or 48058601 | 2SA1115 2SA933S |
| fQ16 | 46719900 | DTC124ES |
| •IC | | |
| fIC3 | 48509700 | M5219P |
| fIC9 | 48780100 | YM3805 |
| fIC10 | 48667200 or 48718000 or 48718100 or 48718200 or 48718300 or 48839700 | HM6116P-4 TC5517AP-2 μ PD446C-2 MB8416-20 MSM5128-15RS CXK5816PN-12L |
| fXO1 | 48592600 | Quartz Element HC-49/U |
| fD1 | 48592300 | V.V. CAPA. Diode SVC211SP |
| fR72 | 48440400 | 22k Ω 1/5W M.R. |
| fR73 | 48440400 | 22k Ω 1/5W M.R. |
| fR74 | 48440400 | 22k Ω 1/5W M.R. |
| fR75 | 48440400 | 22k Ω 1/5W M.R. |
| fC34 | 46661100 | 560pF 100V F.C. |
| fC35 | 48748400 | 0.1 μ F 50V C.C. |
| fC36 | 48745200 | |
| fC37 | 46280000 | 3300pF 50V F.C. |
| fC38 | 46280500 | 0.01 μ F 50V F.C. |
| fC39 | 46281300 | 0.047 μ F 50V F.C. |
| fC41 | 48748400 | 0.1 μ F 50V C.C. |
| fC43 | 46281700 | 0.1 μ F 50V F.C. |
| fC44 | 46281700 | 0.1 μ F 50V F.C. |
| fC59 | 48745200 | |
| fFL1 | 48592400 | VCO Coil |

4-9. F-5795 Display Board (Stock No. 01070601)

| Parts No. | Stock No. | Description |
|-------------|-------------------------|--------------------------------|
| •Transistor | | |
| nQ1 | 48915500 | DTA114YF |
| nQ2 | 48915500 | DTA114YF |
| nQ3 | 48915500 | DTA114YF |
| nQ4 | 48915500 | DTA114YF |
| nQ5 | 48915500 | DTA114YF |
| nQ6 | 48915500 | DTA114YF |
| nQ7 | 48915500 | DTA114YF |
| nQ8 | 48915500 | DTA114YF |
| nQ9 | 48915500 | DTA114YF |
| nQ10 | 48915500 | DTA114YF |
| nQ11 | 48915500 | DTA114YF |
| nQ12 | 48915500 | DTA114YF |
| nQ13 | 48915500 | DTA114YF |
| nQ14 | 48915500 | DTA114YF |
| nQ15 | 48915500 | DTA114YF |
| nQ16 | 48915500 | DTA114YF |
| nQ17 | 48915500 | DTA114YF |
| nQ18 | 48915500 | DTA114YF |
| nQ19 | 48915500 | DTA114YF |
| nQ20 | 48915500 | DTA114YF |
| nQ21 | 48915500 | DTA114YF |
| nQ22 | 48915500 | DTA114YF |
| nQ23 | 48915500 | DTA114YF |
| •IC | | |
| nIC1 | 48424100 or 48724300 | TC74HC138P μ PD74HC138C |
| nIC2 | 48904400 or 48904500 | μ PD82C43C TMP82C43P |
| nFL1 | 48903700 | FL. Display Tube VF170G |
| nR1 | 46350500 | 100k Ω X8 1/8W A.R. |
| nR2 | 46350500 | 100k Ω X8 1/8W A.R. |
| nR3 | 46350500 | 100k Ω X8 1/8W A.R. |
| nR4 | 48900400 | 47k Ω 1/4W C.R. |
| nR5 | 48900400 | 47k Ω 1/4W C.R. |
| nR6 | 48898000 | 4.7k Ω 1/4W C.R. |
| nR7 | 48898000 | 4.7k Ω 1/4W C.R. |
| nR8 | 48898000 | 4.7k Ω 1/4W C.R. |
| nR9 | 48898000 | 4.7k Ω 1/4W C.R. |
| nC1 | 48748400 | 0.1 μ F 50V C.C. |
| nC2 | 48748400 | 0.1 μ F 50V C.C. |
| nC3 | 48748400 | 0.1 μ F 50V C.C. |
| nC4 | 48748400 | 0.1 μ F 50V C.C. |
| nC5 | 48674200 | 100 μ F 25V E.C. |
| nC6 | 48671600 | 100 μ F 10V E.C. |

4-10. F-5796 Timer Switch Board

| Parts No. | Stock No. | Description |
|-----------|-----------|------------------|
| oS29 | 48781400 | Slide SW., TIMER |

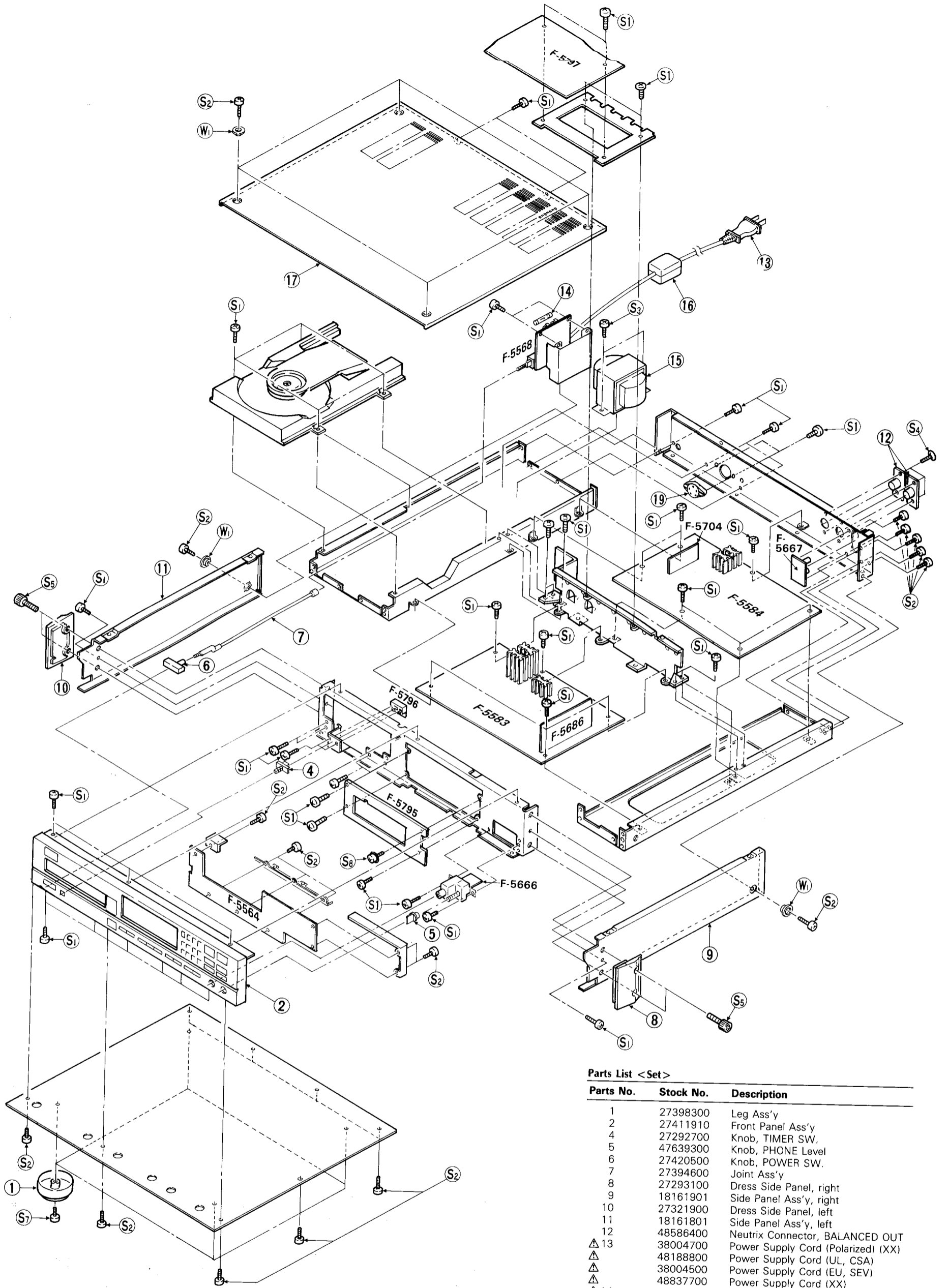
4-11. F-5797 Micro Computer Board

(Stock No. 01070901)

| Parts No. | Stock No. | Description |
|--------------|-------------------------|----------------------------|
| •Transistor | | |
| mQ100 | 48509101 | 2SA1488 |
| mQ101 | 46367001 or 48058601 | 2SA1115 2SA933S |
| •Diode | | |
| mD100 | 07193300 | UB-152LFF |
| •Zener Diode | | |
| mDZ100 | 03168300 | RD4.7F-B |
| mDZ101 | 46116100 | 05Z24-Z |
| mC100 | 48748400 | 0.1 μ F 50V C.C. |
| mC101 | 48695600 | 470 μ F 50V E.C. |
| mC102 | 48684000 | 47 μ F 35V E.C. |
| mC103 | 48683500 | 100 μ F 25V E.C. |
| mC104 | 48748400 | 0.1 μ F 50V C.C. |
| mC105 | 48748400 | 0.1 μ F 50V C.C. |
| mC106 | 48748400 | 0.1 μ F 50V C.C. |
| mC107 | 48748400 | 0.1 μ F 50V C.C. |
| •IC | | |
| wIC1 | 48904100 | μ PD75P108CW- |
| wIC2 | 48667100 | μ PD7564CS-055 |
| wIC3 | 46671300 | LC4969 |
| wR1 | 48765800 | 4.7k Ω X4 A.R. |
| wR2 | 48774800 | 100k Ω X8 A.R. |
| wR3 | 48898800 | 10k Ω 1/4W C.R. |
| wR4 | 48898000 | 4.7k Ω 1/4W C.R. |
| wR5 | 46341500 | 4.7k Ω X4 1/8W A.R. |
| wR6 | 48898000 | 4.7k Ω 1/4W C.R. |
| wC1 | 48748400 | 0.1 μ F 50V C.C. |
| wC2 | 48682900 | 100 μ F 16V E.C. |
| wC3 | 48748400 | 0.1 μ F 50V C.C. |
| wC4 | 48748400 | 0.1 μ F 50V C.C. |

5. EXPLODED VIEW & PARTS LIST

5-1. Exploded View of Set



Parts List <Set>

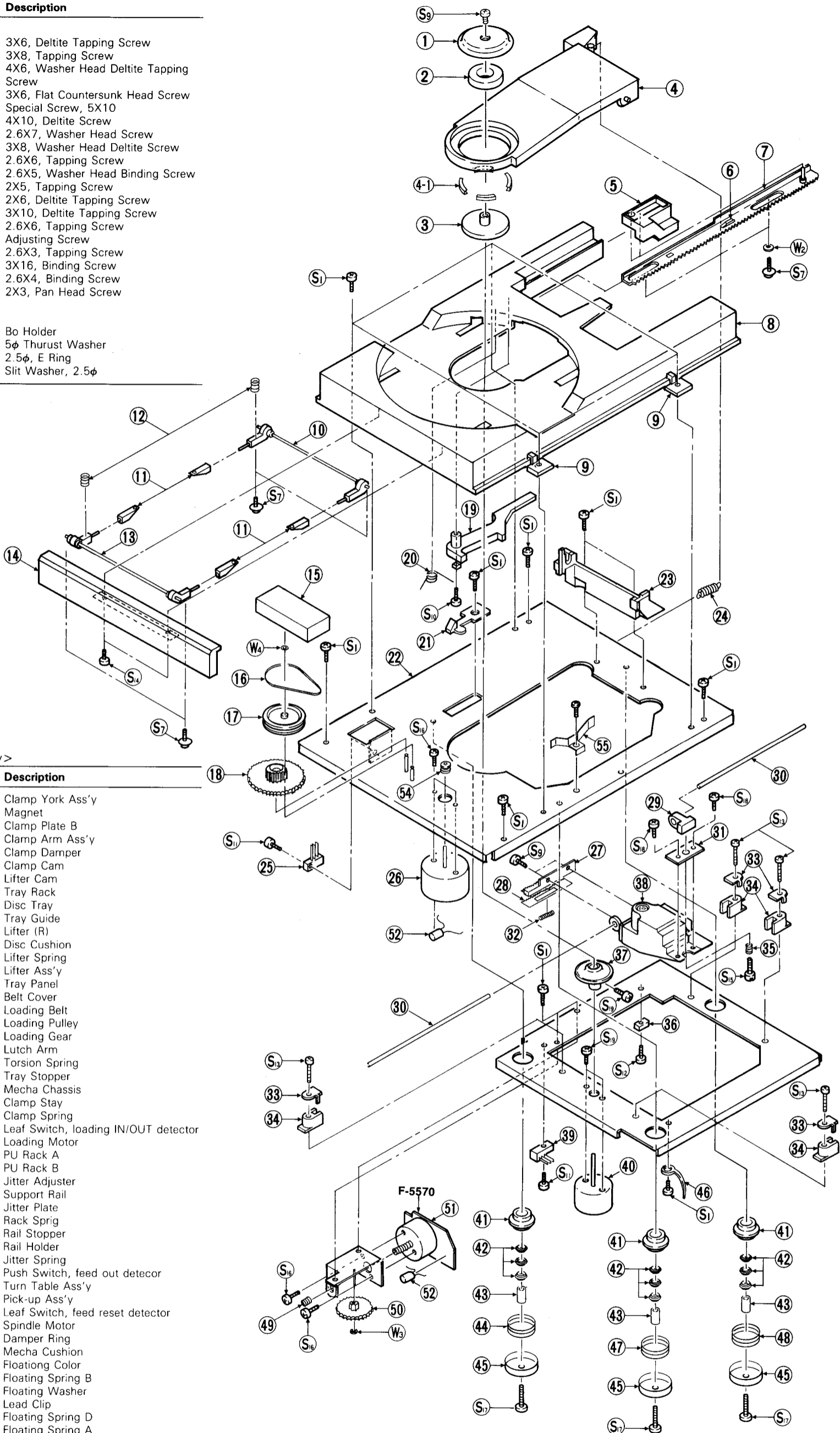
| Parts No. | Stock No. | Description |
|-----------|-----------|--|
| 1 | 27398300 | Leg Ass'y |
| 2 | 27411910 | Front Panel Ass'y |
| 4 | 27292700 | Knob, TIMER SW. |
| 5 | 47639300 | Knob, PHONE Level |
| 6 | 27420500 | Knob, POWER SW. |
| 7 | 27394600 | Joint Ass'y |
| 8 | 27293100 | Dress Side Panel, right |
| 9 | 18161901 | Side Panel Ass'y, right |
| 10 | 27321900 | Dress Side Panel, left |
| 11 | 18161801 | Side Panel Ass'y, left |
| 12 | 48586400 | Neutrix Connector, BALANCED OUT |
| △13 | 38004700 | Power Supply Cord (Polarized) (XX) |
| △ | 48188800 | Power Supply Cord (UL, CSA) |
| △ | 38004500 | Power Supply Cord (EU, SEV) |
| △ | 48837700 | Power Supply Cord (XX) |
| △14 | 46504100 | AC Fuse 1A |
| △15 | 15028311 | Power Transformer (XX) |
| △ | 15028312 | Power Transformer (UL) |
| △ | 15028315 | Power Transformer (EU, SEV) |
| 16 | 39106000 | Strain Relief (XX) |
| | 39104900 | Strain Relief |
| 17 | 18162001 | Bonnet Ass'y |
| △19 | 48069600 | Voltage Selector Switch (XX) |
| △ | 07204700 | Slide Switch, Voltage Selector (EU, SEV) |

Parts List <Screw & Washer>

| Parts No. | Stock No. | Description |
|-----------------------|-----------|--|
| <Screw> | | |
| S1 | 00461600 | 3X6, Deltite Tapping Screw |
| S2 | 46319800 | 3X8, Tapping Screw |
| S3 | 46863400 | 4X6, Washer Head Deltite Tapping Screw |
| S4 | 51666100 | 3X6, Flat Countersunk Head Screw |
| S5 | 48719700 | Special Screw, 5X10 |
| S6 | 00456100 | 4X10, Deltite Screw |
| S7 | 27283100 | 2.6X7, Washer Head Screw |
| S8 | 46268000 | 3X8, Washer Head Deltite Screw |
| S9 | 48368100 | 2.6X6, Tapping Screw |
| S10 | 18154100 | 2.6X5, Washer Head Binding Screw |
| S11 | 13303900 | 2X5, Tapping Screw |
| S12 | 00420600 | 2X6, Deltite Tapping Screw |
| S13 | 46268300 | 3X10, Deltite Tapping Screw |
| S14 | 48416200 | 2.6X6, Tapping Screw |
| S15 | 27279200 | Adjusting Screw |
| S16 | 48371600 | 2.6X3, Tapping Screw |
| S17 | 00422400 | 3X16, Binding Screw |
| S18 | 00424700 | 2.6X4, Binding Screw |
| S19 | 48376800 | 2X3, Pan Head Screw |
| <Washer> | | |
| W1 | 27290910 | Bo Holder |
| W2 | 13307800 | 5φ Thrust Washer |
| W3 | 08322600 | 2.5φ, E Ring |
| W4 | 27279700 | Slit Washer, 2.5φ |

Parts List <Mechanism Ass'y>

| Parts No. | Stock No. | Description |
|-----------|-----------|--------------------------------------|
| 1 | 18162201 | Clamp York Ass'y |
| 2 | 48583700 | Magnet |
| 3 | 27278400 | Clamp Plate B |
| 4 | 18162301 | Clamp Arm Ass'y |
| 4-1 | 27280100 | Clamp Damper |
| 5 | 27274100 | Clamp Cam |
| 6 | 27274200 | Lifter Cam |
| 7 | 27275300 | Tray Rack |
| 8 | 27277300 | Disc Tray |
| 9 | 27274500 | Tray Guide |
| 10 | 27277100 | Lifter (R) |
| 11 | 27276500 | Disc Cushion |
| 12 | 27275200 | Lifter Spring |
| 13 | 27284800 | Lifter Ass'y |
| 14 | 27372400 | Tray Panel |
| 15 | 27304500 | Belt Cover |
| 16 | 27276200 | Loading Belt |
| 17 | 27275800 | Loading Pulley |
| 18 | 27275900 | Loading Gear |
| 19 | 27274000 | Lutch Arm |
| 20 | 27275100 | Torsion Spring |
| 21 | 27274300 | Tray Stopper |
| 22 | | Mecha Chassis |
| 23 | 27280700 | Clamp Stay |
| 24 | 27274900 | Clamp Spring |
| 25 | 48574400 | Leaf Switch, loading IN/OUT detector |
| 26 | 48838200 | Loading Motor |
| 27 | 27275410 | PU Rack A |
| 28 | 27275500 | PU Rack B |
| 29 | 27278600 | Jitter Adjuster |
| 30 | 27276400 | Support Rail |
| 31 | 27278200 | Jitter Plate |
| 32 | 27275000 | Rack Sprig |
| 33 | 27334600 | Rail Stopper |
| 34 | 27274600 | Rail Holder |
| 35 | 27278700 | Jitter Spring |
| 36 | 48794000 | Push Switch, feed out detector |
| 37 | 27283310 | Turn Table Ass'y |
| 38 | 18734900 | Pick-up Ass'y |
| 39 | 48574400 | Leaf Switch, feed reset detector |
| 40 | 48584900 | Spindle Motor |
| 41 | 27280000 | Damper Ring |
| 42 | 27280300 | Mecha Cushion |
| 43 | 27279500 | Floating Color |
| 44 | 27282900 | Floating Spring B |
| 45 | 27274800 | Floating Washer |
| 46 | 13020500 | Lead Clip |
| 47 | 27324900 | Floating Spring D |
| 48 | 27282800 | Floating Spring A |
| 49 | 27278500 | Thrust Screw |
| 50 | 27275600 | Sending Gear |
| 51 | 18162101 | Feed Motor Ass'y |
| 52 | 48098600 | 4.7μF 25V E.B |
| 53 | | Sub Chassis |
| 54 | 27276100 | 5φ Pulley |
| 55 | 27375600 | Tray Press Spring |



CD-X701 CD-X701

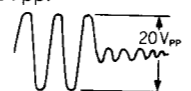
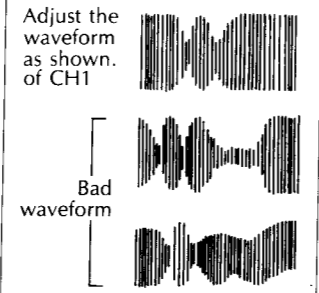
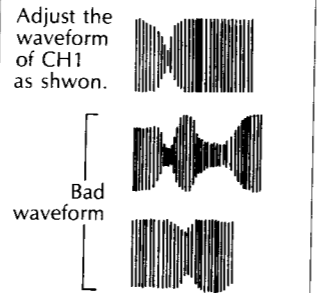

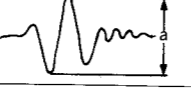
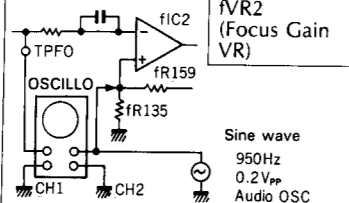
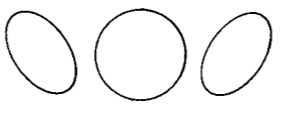
5-2. Exploded View of Mechanism Ass'y

6. ADJUSTMENTS

•NOTES ON ADJUSTMENT

1. Turn off power before removing bonnet.
2. See Fig. 9-1 for adjustment position.
3. Test discs are CD-1 of EIAJ and NR4A 410-056-2 of Philips.
4. Before adjusting the whole servo system, initially set fVR1, fVR3, fVR5 and fVR6 at their center positions and fVR2 and fVR4 to their minimum values (full counterclockwise).

6-1. Servo Circuit Adjustment

| ITEM | STEP | MEASUREMENT POSITION | ADJUSTMENT POSITION | ADJUSTMENT CONTENTS | ADJUSTMENT CONDITIONS |
|------------------------|------|--|--|--|---|
| A. VCO ADJUSTMENT | 1 | Connect TP04 to a frequency counter. | — | 4.3218MHz ± 1kHz | 1. Turn power SW on. 2. Check frequency. |
| | 2 | Connect TP CK to a frequency counter. | fFL1 (F-5686) Refer to Wiring on Page 18. | 4.3218MHz ± 1kHz | 1. Short between TP EFM and GND. 2. After adjustment do not short between TPEFM and GND. |
| B. TRACKING ADJUSTMENT | 1 | Connect TP TRE to CH1 and TP HF to CH2 of an oscilloscope. | fVR4 (Tracking Gain VR) | Adjust the waveform of CH1 to 20Vpp.  | 1. Set the oscilloscope as follows: SWEEP: 0.5msec, CH1: 5V (DC), CH2: 2V (DC) TRIGGER: CH2, SLOPE: ⊕ DC. 2. Play 8th music of CD-1. 3. Keep FF SW depressing. |
| | 2 | Connect TP EFM to CH1 and TP KICK0 to CH2 of an oscilloscope. | fVR5 (2 Kick VR) | Adjust the waveform as shown of CH1.  | 1. Set the oscilloscope as follows: CH1: 0.2V (AC), CH2: 0.5V (DC), TRIGGER: CH2, SLOPE: ⊕ DC, SWEEP: 0.2msec 2. Short between TP 5V and TPK. 3. Set 16th music of CD-1. 4. Repeatedly press REW SW for 3sec and release it for 0.5sec. |
| | 3 | Connect TP EFM to CH1 and TP KICK0 to CH2 of an oscilloscope. | fVR6 (1 Kick VR) | Adjust the waveform of CH1 as shown.  | 1. Do not short between TP 5V and TPK. 2. Repeatedly press REW SW for 3sec and release it for 0.5sec. |
| | 4 | Connect TP TRE to CH1 and TP HF to CH2 of an oscilloscope. | fVR3 (Tracking offset VR) | Adjust the waveform of CH1 symmetrical in the vertical direction. "a" is a level at which a music begins to proceed. "b" is a level at which a music begins to return.  | 1. Set NR4A410-056-2. 2. Set the oscilloscope as follows: SWEEP: 0.1msec, CH1: 0.1V (DC), CH2: 2V (DC), TRIGGER: CH2, SLOPE: ⊕ DC 3. Play 15th music and adjust the waveform so as to become as shown, by hearing the sound. |
| C. FOCUS ADJUSTMENT | 1 | Connect TP FO to CH1 and TP HF to CH2 of an oscilloscope. | fVR1 (Focus offset VR) | Adjust the waveform amplitude "a" of CH1 to 0.8Vpp.  | 1. Set the oscilloscope as follows: SWEEP: 0.5msec, CH1: 0.2V (DC), CH2: 0.5V (DC), TRIGGER: CH2, SLOPE: ⊕ DC 2. Set NR4A410-056-2 and play 15th music. |
| | 2 |  Sine wave 950Hz 0.2Vpp Audio OSC | fVR2 (Focus Gain VR) | Adjust the gain correctly.  | 1. Connect test pin TPFO to CH1 of an oscilloscope. 2. Play 8th music of CD-1. 3. Connect fR135 to CH2 of the oscilloscope. Set the oscilloscope as follows: CH1: 0.2V, CH2: 0.1V, VMODE: X-Y, SWEEP: 0.2msec |

6-2. Audio Section Adjustment

| ITEM | STEP | MEASUREMENT POSITION | ADJUSTMENT POSITION | ADJUSTMENT CONTENTS | ADJUSTMENT CONDITIONS |
|-------------------|------|--|--|---------------------------------|---|
| Distortion factor | 1 | Connect an oscilloscope and a distortion meter to the output terminal. | vVF1 (F-5584) Refer to Wiring on Page 18. | Distortion should be minimized. | 1. Play 5th music of the test disc CD-1. 2. Check of both CH1 and CH2. |

6-3. Mechanism Adjustment

•Precaution

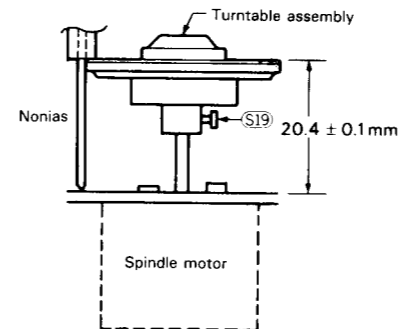
Do not touch the laser power variable resistor and adjust the diffraction grating in replacing the pickup with a new one, because these have already been adjusted.

A. Turntable height adjustment

Be sure to adjust the height whenever the spindle motor and turntable assembly have been replaced.

<HOW TO ADJUST>

1. Adjust the distance between the upper surface of the turntable and the subchassis to 20.4 ± 0.1 mm.
2. Fix them with screws (S19) after the distance has been adjusted.



B. Jitter adjustment

•Precaution

Jitter adjustment should be made when the pickup head assembly is replaced or removed. In case the operation is not normal after the jitter adjustment, adjust the circuit simultaneously.

<HOW TO ADJUST>

1. Connect test pin TP EFM of servo control board F-5583 to an oscilloscope.
2. Adjust the eye pattern waveform to the best as shown by the adjust screw (S19). (Refer to Set Exploded View on Page 15.)

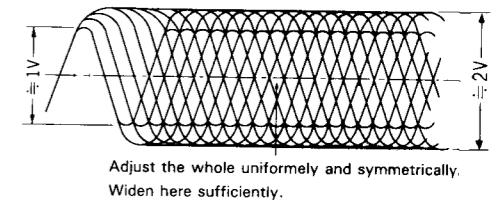
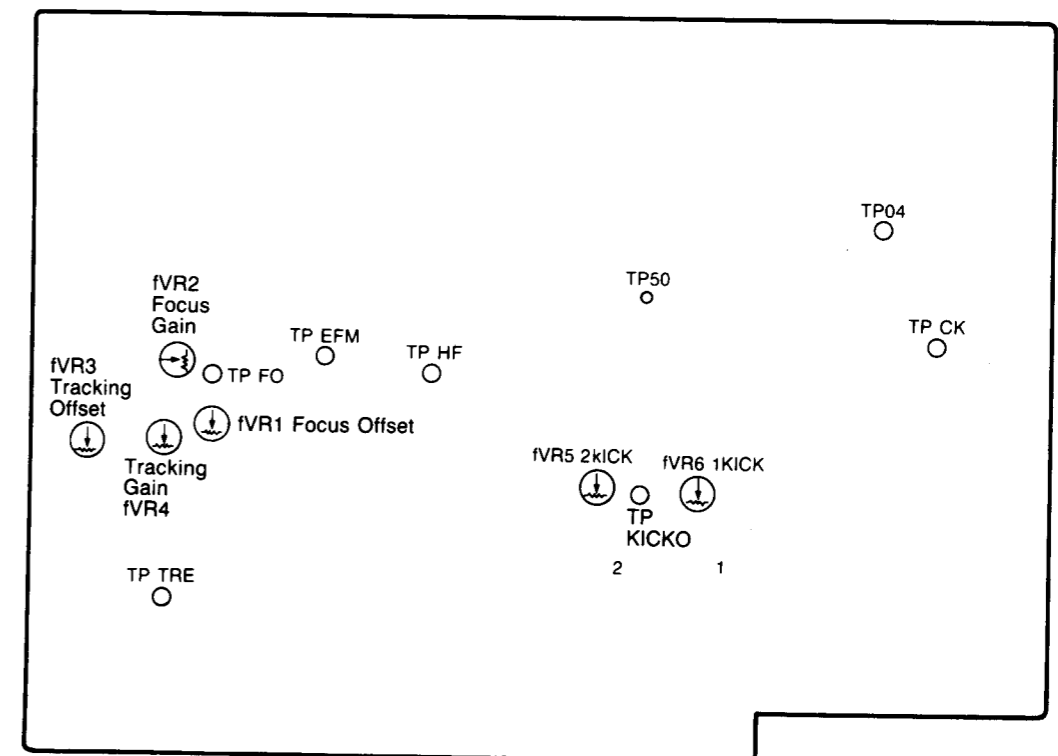
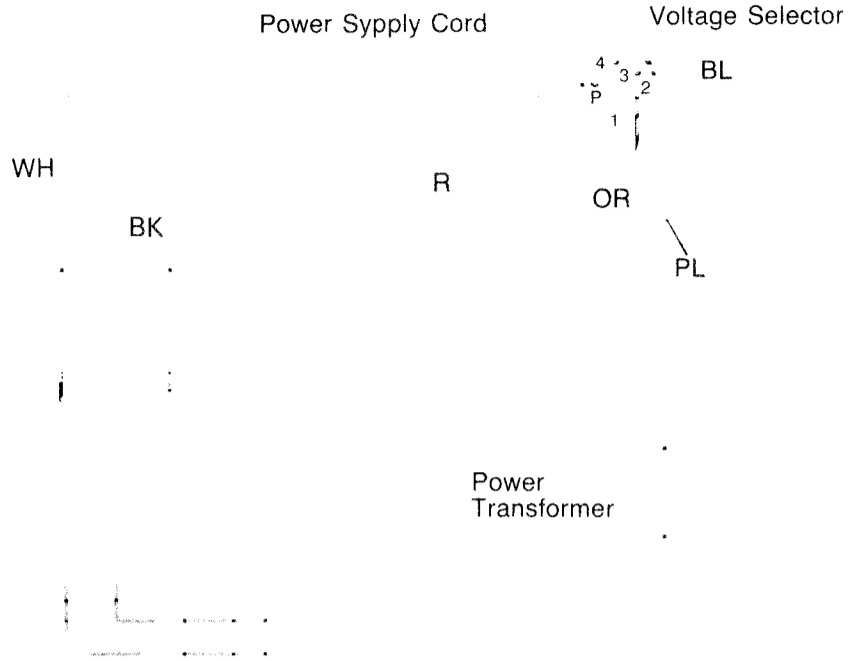


Fig. 6-1 F-5583 < Servo Control Board >



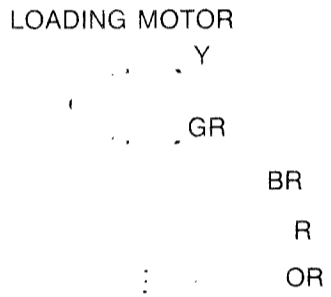
7. OVERALL WIRING & PARTS LOCATION OF PRINTED CIRCUIT BOARD

F-5584 D/A Converter Audio Amp. Board

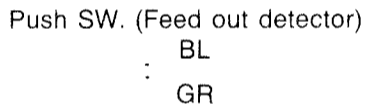


F-5704 Digrich Board

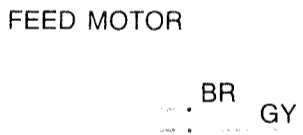
F-5568 Power Supply Fuse Board



Leaf SW (Loading IN/OUT detector)



Leaf SW. (Feed reset Detector)



F-5570 Feed Motor Board

Pick-UP HEAD Ass'y

F-5797 Micro Computer Board

F-5796 Timer SW. Board

F-5795 FL Display Board

F-5583 Serve Control Board

Amp. Board

F-5667 Output Terminal Board

Ground Terminal

GY OR L. BALANCED OUT
WH

BL R R. BALANCED OUT
BL

GY

BR

F-5686 Signal Management Board

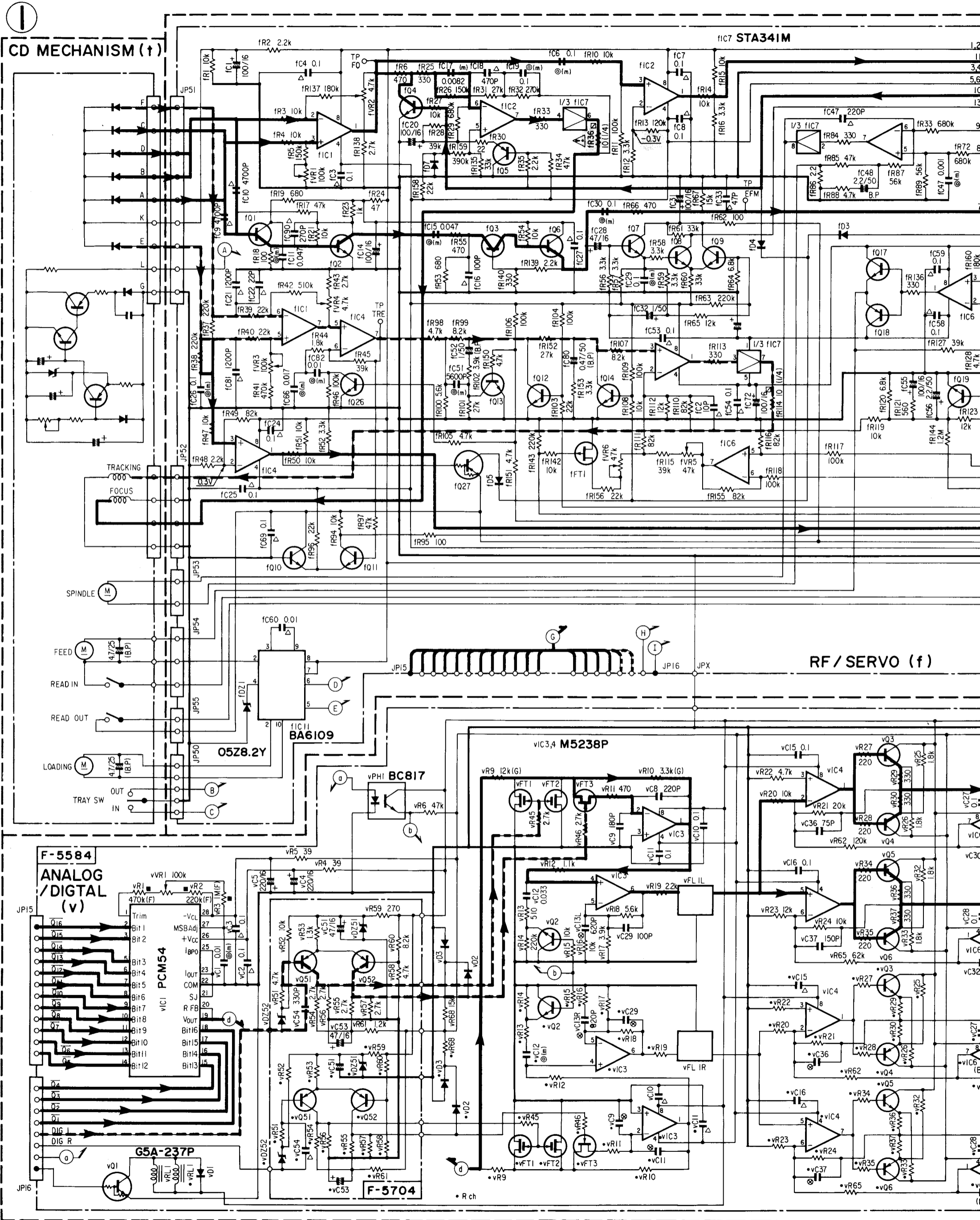
fFL1

F-5666 Phone Jack Board

SPINDLE MOTOR
R
GY

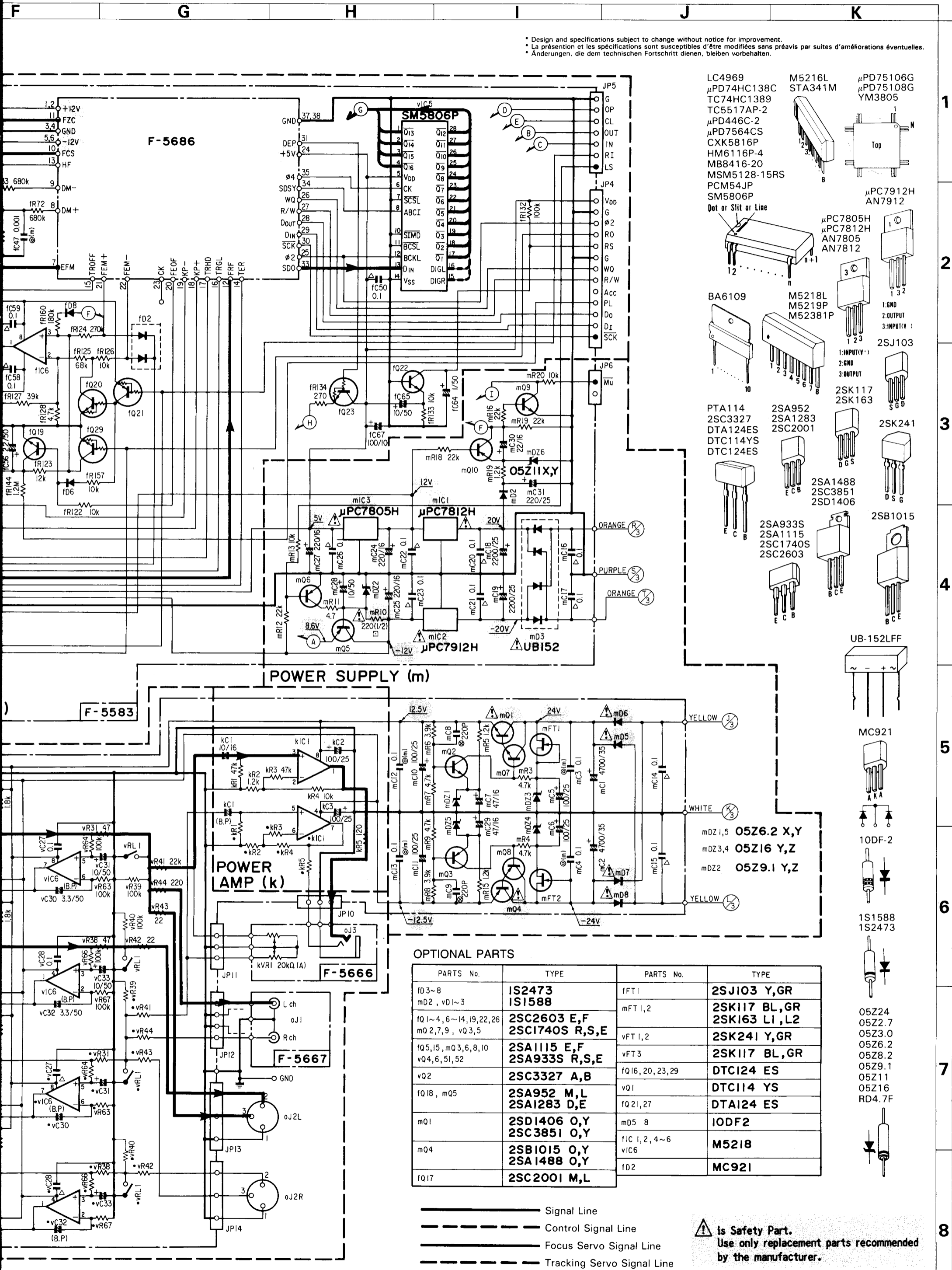
F-5564 Control Switch Board

8. SCHEMATIC DIAGRAM 8-1. Signal Line Section

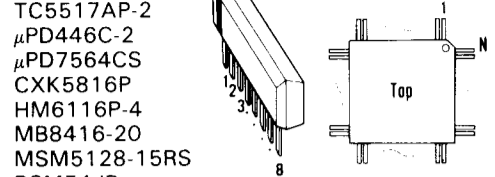


vDZ51 05Z9.1 Y,Z
vDZ52 05Z2.7Z, 05Z3.0X

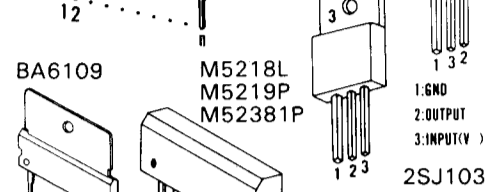
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 • La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
 • Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



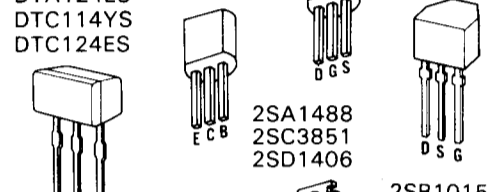
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- HM6116P-4
- MB8416-20
- MSM5128-15RS
- PCM54JP
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- μPD75106G
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- YM3805



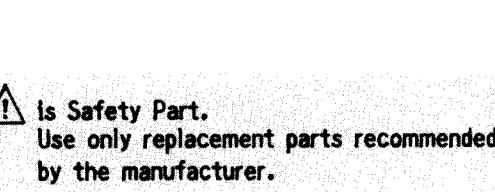
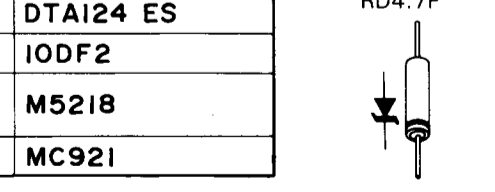
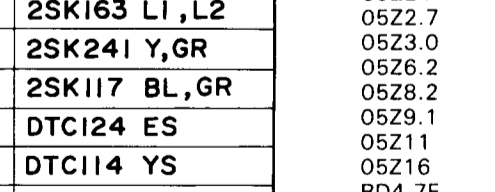
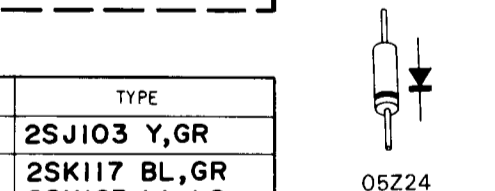
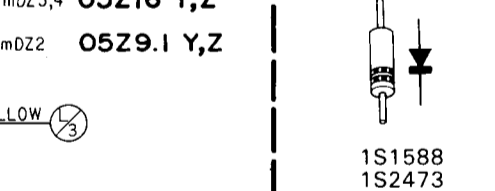
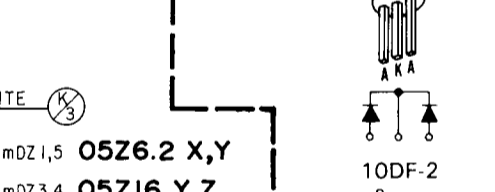
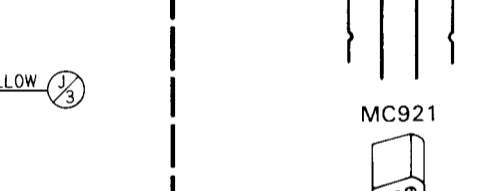
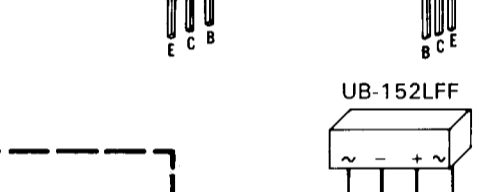
- μPC7912H AN7912
- μPC7805H
- μPC7812H AN7805
- AN7812



- BA6109
- M5218L M5219P M52381P
- PTA114
- 2SC3327
- DTA124ES
- DTC114YS
- DTC124ES
- 2SA952
- 2SA1283
- 2SC2001
- 2SK117
- 2SK163
- 2SK241



- 2SA1488
- 2SC3851
- 2SD1406
- 2SA933S
- 2SA1115
- 2SC1740S
- 2SC2603
- 2SB1015



POWER SUPPLY (m)

POWER AMP (k)

OPTIONAL PARTS

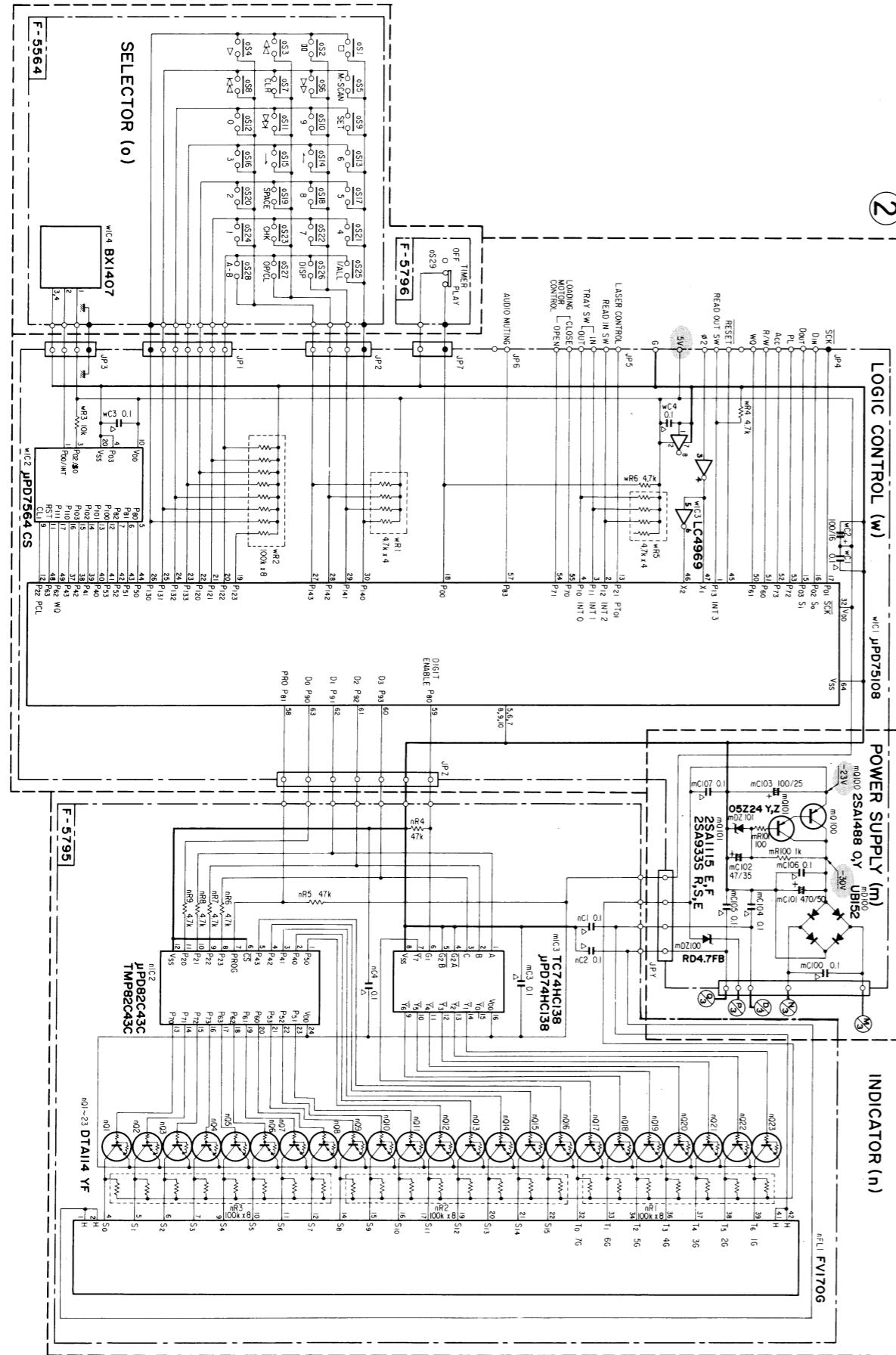
| PARTS No. | TYPE | PARTS No. | TYPE |
|-------------------------|----------------|------------------|--------------|
| f03~8 | IS2473 | FFT1 | 2SJ103 Y,GR |
| mD2, vD1~3 | IS1588 | mFT1,2 | 2SK117 BL,GR |
| f01~4, 6~14, 19, 22, 26 | 2SC2603 E,F | vFT1,2 | 2SK163 LI,L2 |
| mQ2,7,9, vQ3,5 | 2SC1740S R,S,E | vFT3 | 2SK241 Y,GR |
| f05,15, mQ3,6,8,10 | 2SA1115 E,F | fQ16, 20, 23, 29 | DTC124 ES |
| vQ4,6,51, 52 | 2SA933S R,S,E | vQ1 | DTC114 YS |
| vQ2 | 2SC3327 A,B | fQ21,27 | DTA124 ES |
| fQ18, mQ5 | 2SA952 M,L | mD5 8 | IODF2 |
| mQ1 | 2SD1406 O,Y | fic1,2, 4~6 | M5218 |
| mQ4 | 2SC3851 O,Y | vic6 | MC921 |
| fQ17 | 2SB1015 O,Y | | |
| | 2SA1488 O,Y | | |
| | 2SC2001 M,L | | |

- Signal Line
- - - Control Signal Line
- Focus Servo Signal Line
- - - Tracking Servo Signal Line

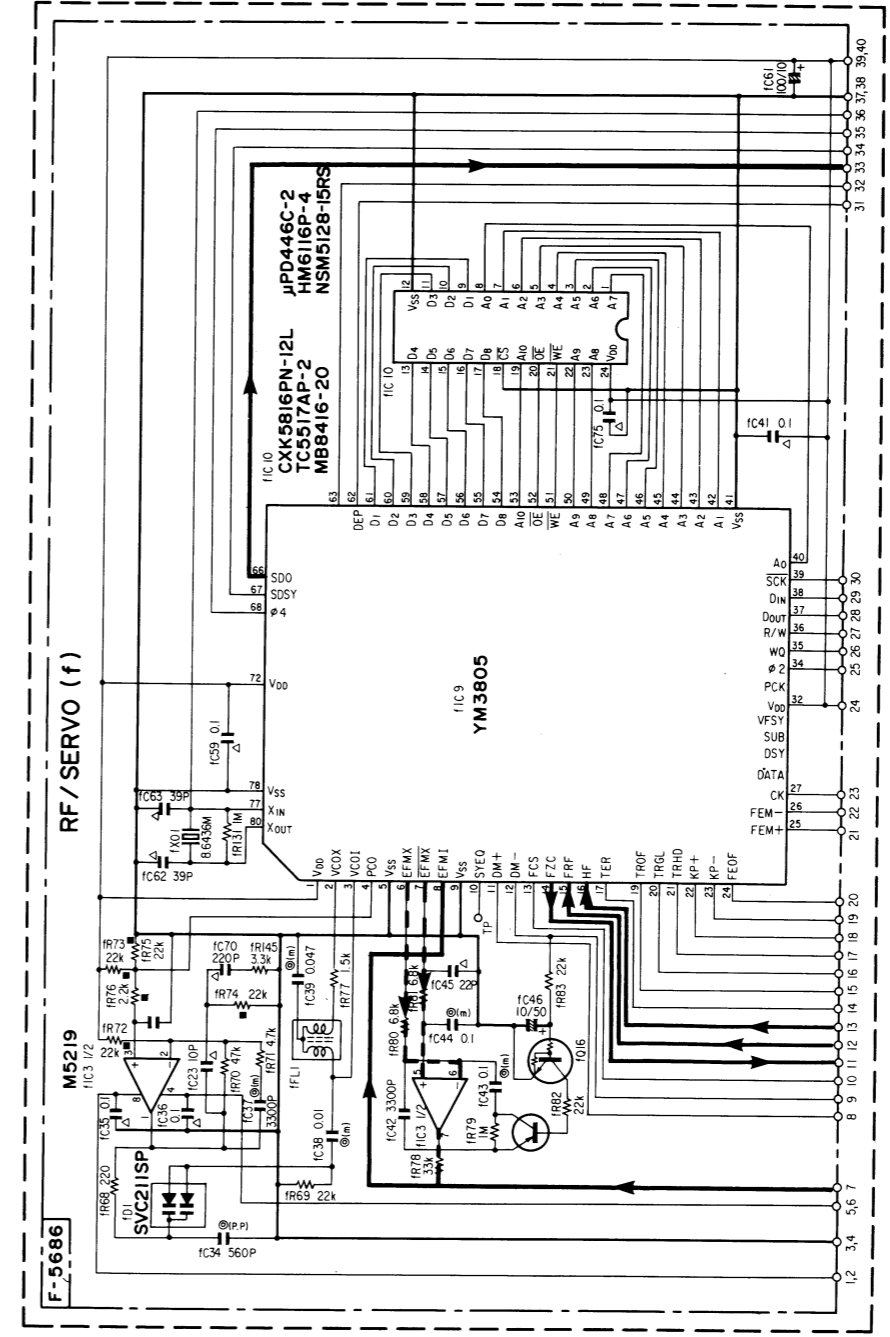
! is Safety Part.
 Use only replacement parts recommended by the manufacturer.

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8-2. Micro Computer & Display Section



8-3. Signal Management Section



SYMBOL OF FUNCTION
 (f) RF / SERVO
 (k) POWER AMP
 (m) POWER SUPPLY
 (n) INDICATOR
 (o) SELECTOR
 (p) FIXED PARTS
 (t) CD MECHANISM
 (v) DIGITAL / ANALOG AMP
 (w) LOGIC CONTROL

SYMBOL
 Δ Ceramic Capacitor
 ΔT Ceramic (Temperature Compensation)
 (BP) Bi-Polar Electrolytic
 (m) Mylar
 (PP) Polypropylene Film
 (P) Polyester
 (B) Barrier Layer Capacitor
 (N) Non-Inductance Resistor
 (M) Metal Film Resistor
 (F) Fusing Resistor

RESISTORS
 Are in ohms, 1/4 Watts, $\pm 5\%$ Tolerance
 Unless otherwise noted, k: 1,000, M: 1,000,000

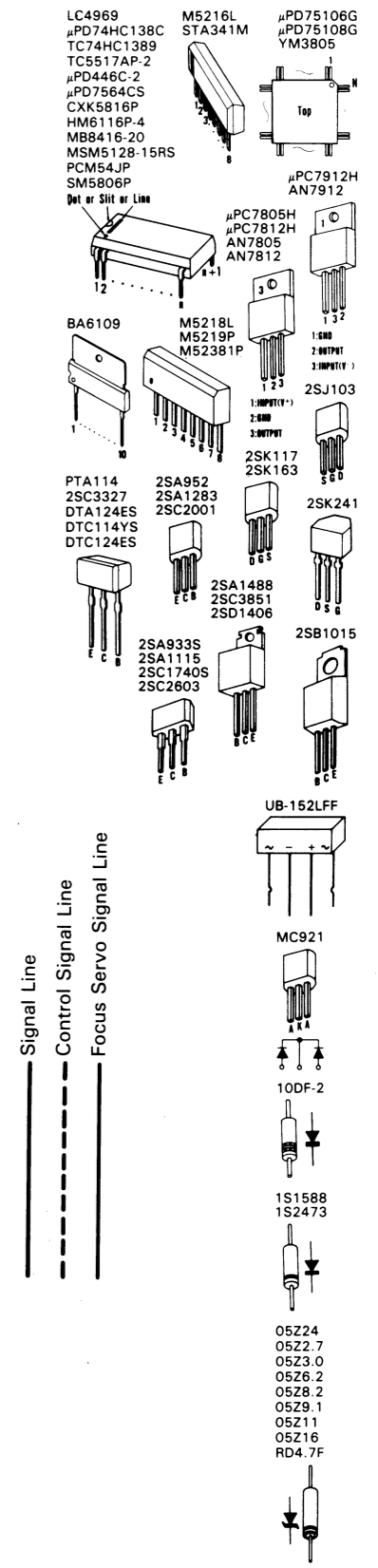
CAPACITORS
 Are in μF , Unless otherwise noted, P: pF

ELECTROLYTIC CAPACITORS
 Capacitance (μF)/Voltage (V)

Each D.C. Voltage shows the nominal value in volts or playing

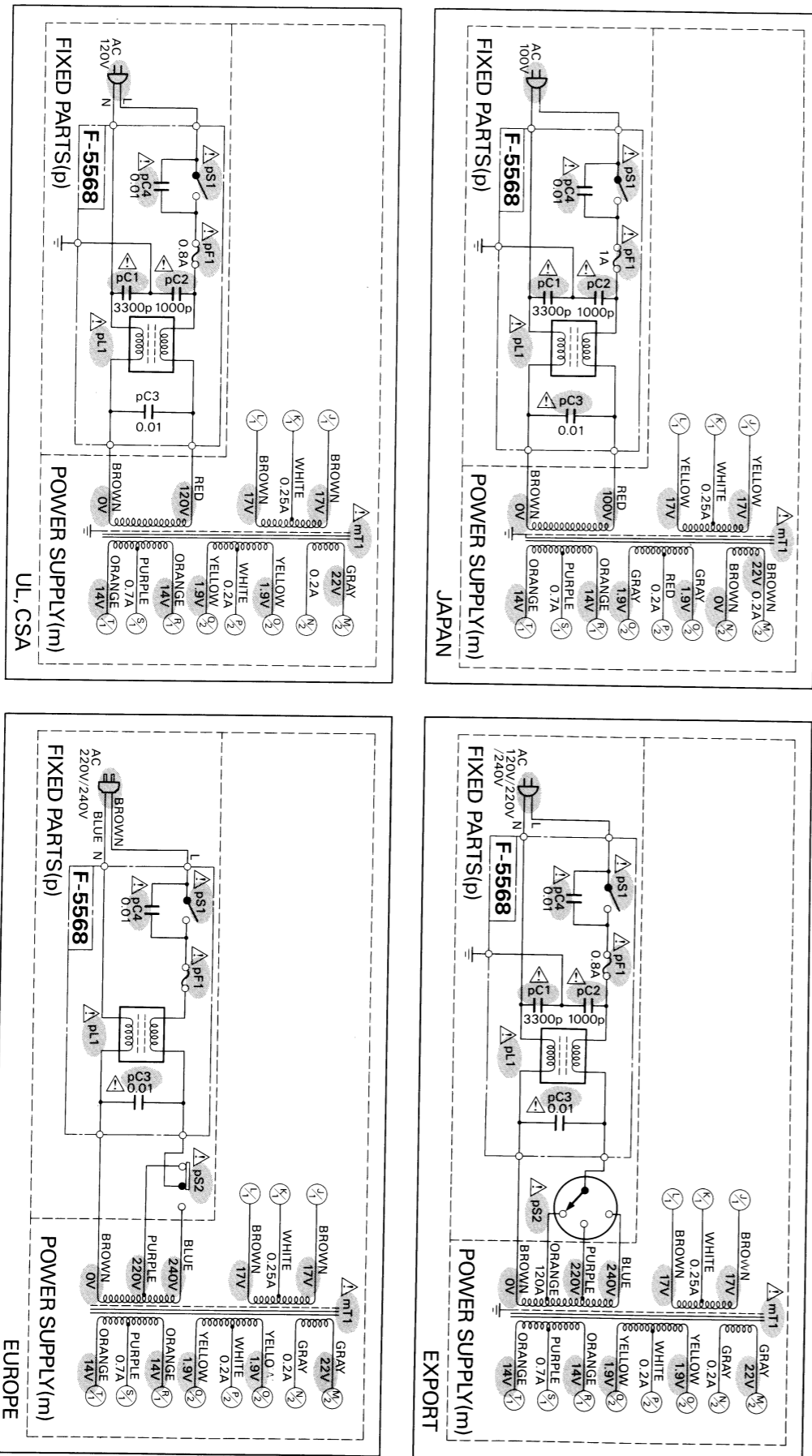
is Safety Part.
 Use only replacement parts recommended by the manufacturer.

*Design and specifications subject to change without notice for improvement.
 *La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
 *Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



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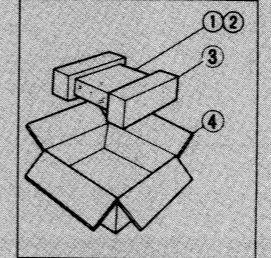
8-4. Power Supply Section



* Design and specifications subject to change without notice for improvement.
 * La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
 * Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.

9. PACKING LIST

| Parts No. | Stock No. | Description |
|-----------|-----------|-------------------|
| 1 | 47859600 | Vinyl Bag |
| 2 | 27417500 | Protector Sheet |
| 3 | 27293500 | Styrofoam Packing |
| 4 | 27390100 | Carton Case |



10. ACCESSORY LIST

| Stock No. | Description |
|-----------|---------------------------------|
| 07193400 | PJP Cord |
| 49023500 | Operating Instruction (*E·F·S) |
| 49023600 | Operating Instruction (*G·I·Sw) |
| | Remote Controller, RS-1010 |
| | Dry Battery, SUM-3K |

*Note:
E·F·S: English·French and Spanish Version
G·I·Sw: German·Italian and Swedish Version

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▲ is Sanyo Parts
 Use only replacement parts
 recommended by the manufacturer.



SANSUI ELECTRIC CO., LTD.: 14-1, Izumi 2-chome, Suginami-ku, Tokyo 168 Japan
 SANSUI ELECTRONICS CORPORATION: PHONE: (03) 324-8891/TELEX: 232-2076 (International Division)
 1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.
 17150 South Margay Ave. Carson, California 90746 U.S.A.
 3036 Koapaka Street. Honolulu, Hawaii 96819 U.S.A.
 SANSUI ELECTRONICS (U.K.) LTD.: Unit 10A, Lyon Industrial Estate, Rockware Avenue, Greenford, Middx UB6, OAA, England
 SANSUI ELECTRONICS G.M.B.H.: Paul Ehrlich Strasse 8, 8074 Rödermark 2, West Germany