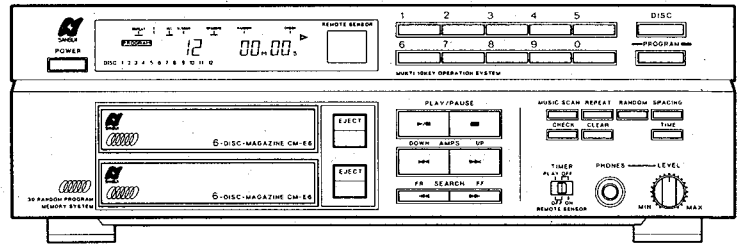




SERVICE MANUAL

CD-X510M

COMPACT DISC AUTO
CHANGER



CAUTION

1. Parts identified by the \triangle symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

•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	5 Hz ~ 20 kHz \pm 0.5 dB
Total harmonic distortion	Less than 0.03% (1 kHz)
Signal-to-noise ratio (S/N)	Better than 100 dB
Dynamic range	Better than 95 dB
Wow and flutter	Below measurable limit
Output voltage/load impedance	
Normal output (OUT PUT)	2V/47 kohms
Headphones	45 mW (variable maximum)/ with 32-ohms load
Power requirements	AC 110V/120V/220V/240V, 50/60 Hz
For U.S.A. & Canada	AC 120V, 60 Hz
Power consumption	15 watts
Dimensions	430 mm (16-15/16") W 145 mm (5-3/4") H 335 mm (13-1/4") D
Weight	7.3 kg (16.1 lbs) net

Remote controller: RS-1090

Control system	Infra-red ray pulse system
Power requirements	DC 3V
Dimensions	60 mm (2-3/8") W 19 mm (5/16") H 141 mm (5-9/16") D
Weight	94 g (0.21 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.

NOTICE

1. The symbols, UL, CSA, EG, EU, SS and XX <EXPORT> on the parts list and the schematic diagram mean following respectively.

- UL..... Manufactured for U.S.A. market.
(Underwriters Laboratories approved model.)
- CSA..... Manufactured for Canadian market.
- EG..... Manufactured for F.R. West Germany market.
- EU..... Manufactured for European market.
- SS..... Manufactured for Saudi Arabia market.
- XX..... Standard Version.
- <EXPORT>
- 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 June 1987.

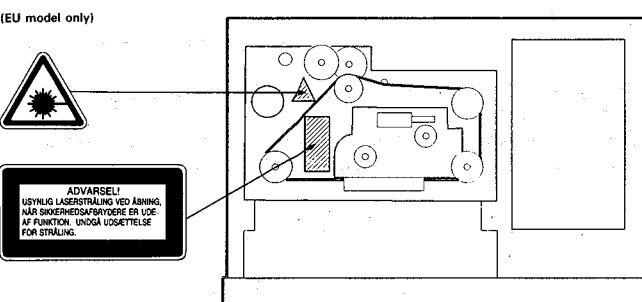
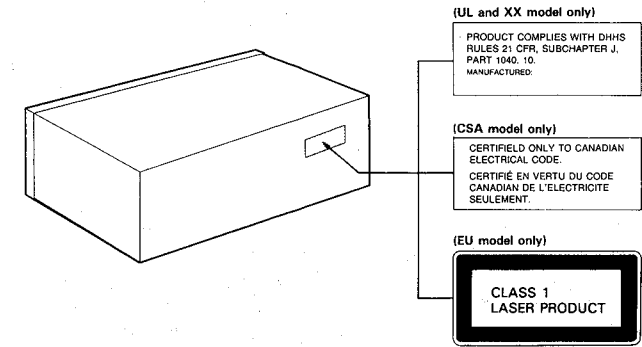
4. Abbreviations in this service manual are as follows.

•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
M.M.C.	: Metalized Mylar 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

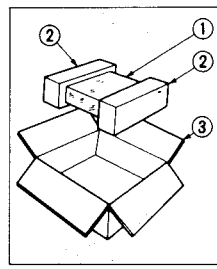
Cautions Concerning Handling of The Laser

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



1. PACKING LIST

Parts No.	Stock No.	Description
1	27151700	Vinyl Bag
2	27651400	Styrofoam Packing
3	27642300	Carton Case

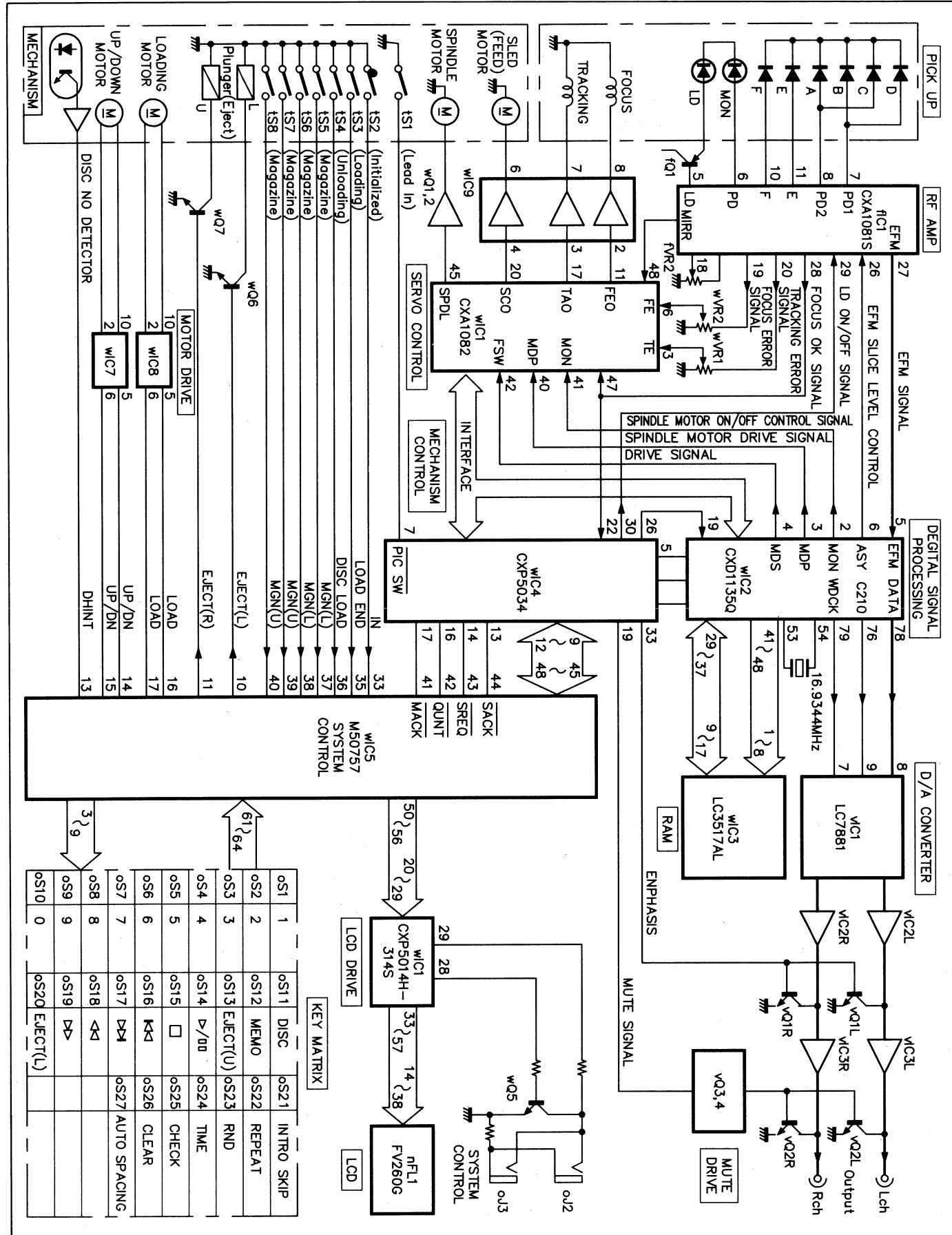


2. ACCESSORY LIST

Parts No.	Stock No.	Description
		RS RS-1090 Remoto Controller
		SUM-3K Dry Battery
		CD Magazine CM-E6
	48802100	Pin Plug Cord
	46267300	Mini Pin Plug Co Cord
	27653110	CM-1 8cm-CD Adaptor Ass'y
	49042500	Operating Instruction (*E•F•S)
	49042600	Operating Instruction (*G•I•Sw)

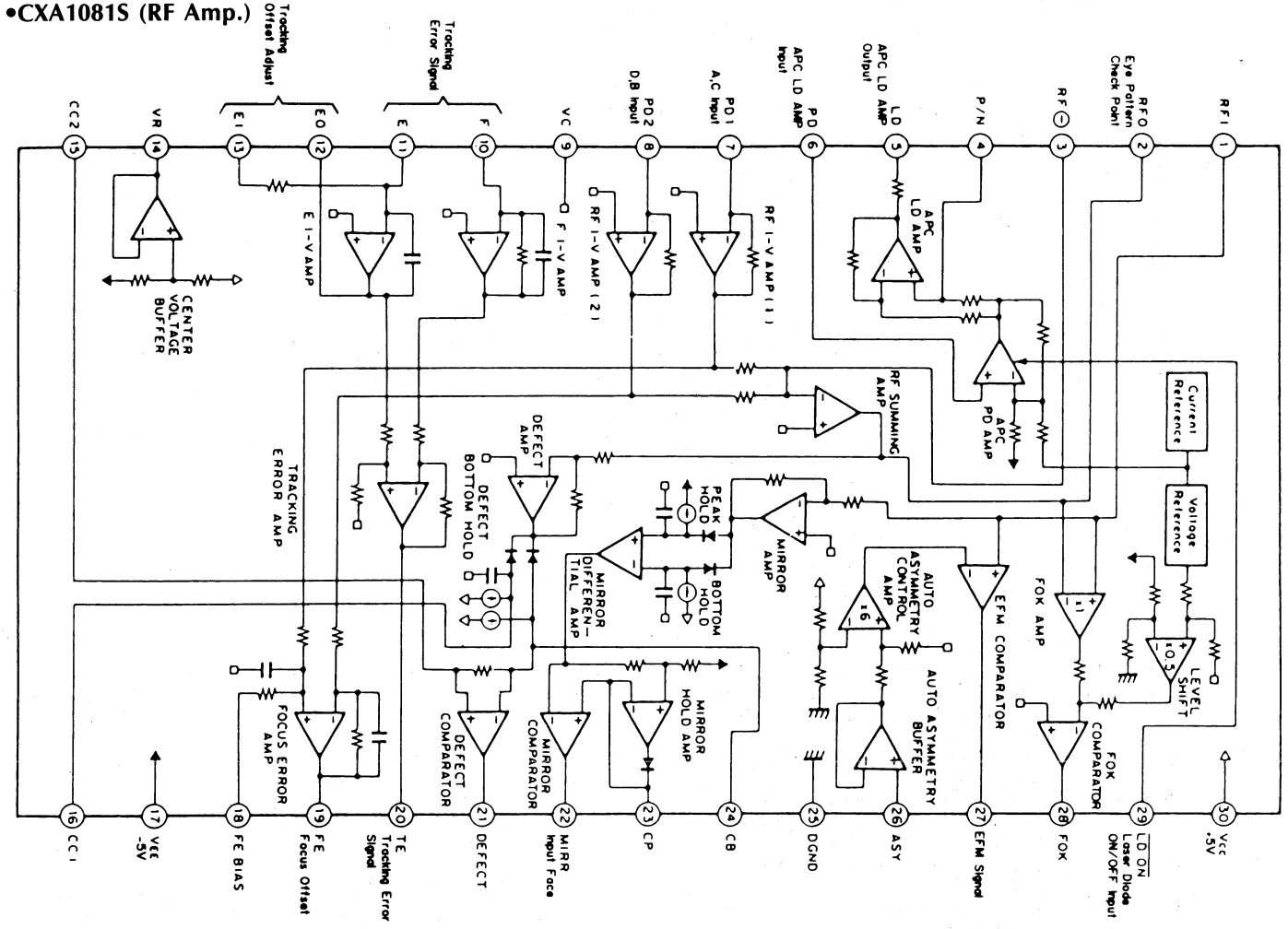
***Note:**
E•F•S: English•French and Spanish Version
G•I•Sw: German•Italian and Swedish Version

3. BLOCK DIAGRAM



4. INTERIOR BLOCK DIAGRAM & TERMINAL FUNCTION OF IC & FL DISPLAY TUBE

•CXA1081S (RF Amp.)

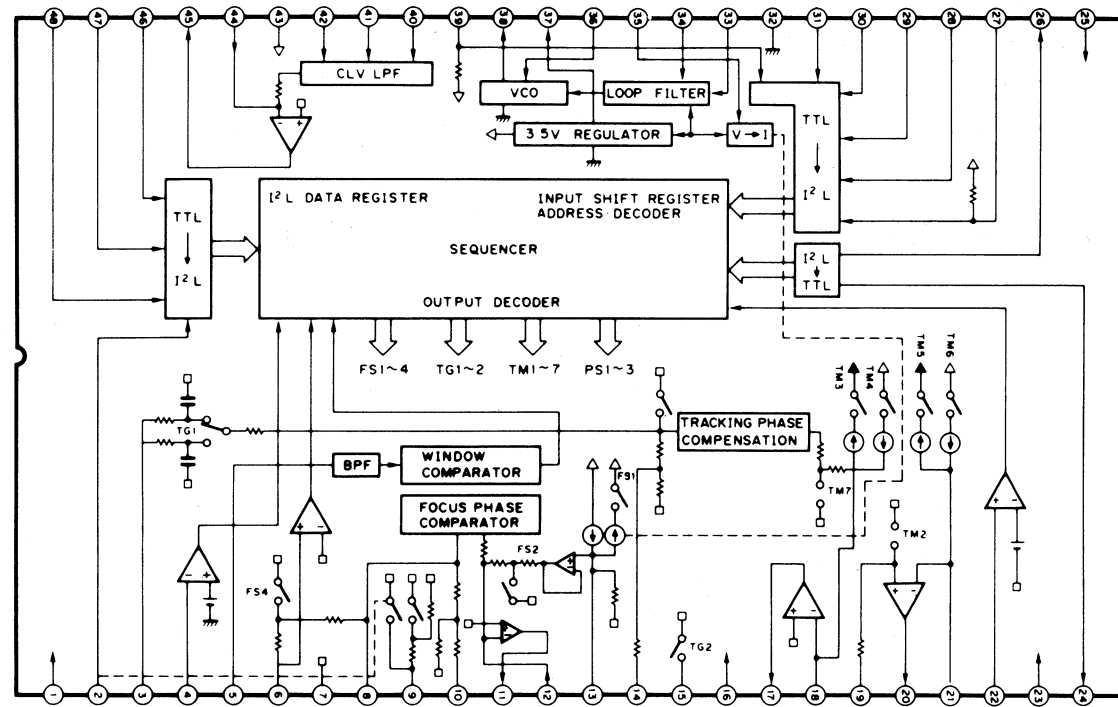


◆ Terminal Function <CXA1081S>

Pin No.	Pin Name	I/O	Description
1	RFI	I	RF summing amplifier input.
2	RFO	O	RF summing amplifier output.
3	RF ⊖	I	RF Summing amplifier feedback signal input.
4	P/N	I	Terminal for switching P-sub/N-sub of LD (laser diode).
5	LD	O	APC LD amplifier output.
6	PD	I	APC PD amplifier input.
7	PD1	I	RF I-V amplifier (1) inverting input. This terminal is connected to the pin diode (A + C).
8	PD2	I	RF I-V amplifier (2) inverting input. This terminal is connected to the pin diode (B + D).
9	VC	-	Ground
10	F	I	F I-V amplifier inverting input. This terminal is connected to the pin diode (F).
11	E	I	E I-V amplifier inverting input. This terminal is connected to the pin diode (E).
12	EO	O	E I-V amplifier output.
13	EI	I	E I-V amplifier feedback input.
14	VR	O	(Vcc + VEE)/2 voltage output.

Pin No.	Pin Name	I/O	Description
15	CC2	I	Defect amplifier bottom hold input. This terminal is connected Pin 16 with a coupling capacitor.
16	CC1	O	Defect amplifier bottom hold output.
17	VEE	-	Negative supply voltage: -5V.
18	FEBIAS	I	Bias terminal for the focus error amplifier non-inverting.
19	FE	O	Focus error amplifier output.
20	TE	O	Tracking error amplifier output.
21	DEFECT	O	Defect comparator output.
22	MIRR	O	Mirror comparator output.
23	CP	I	Mirror comparator non-inverting input. This terminal is connected a mirror hold capacitor.
24	CB	I	This terminal is connected a defect bottom hold capacitor.
25	DGND	-	Ground.
26	ASY	I	Auto asymmetry buffer control signal input.
27	EFM	O	EFM comparator output.
28	FOK	O	FOK comparator output.
29	LD ON	I	Laser diode ON/OFF switching input.
30	Vcc	-	Positive supply voltage: +5V.

•CXA1082AS (Servo Control)



◆ Terminal Function <CXA1082AS>

Pin No.	Pin Name	I/O	Description
8	FGD	I	A capacitor is connected between this Pin and F3 (Pin 9) for decreasing high-frequency gain of focus servo.
9	FS3	O	Terminal for switching high-frequency gain of focus servo.
10	FLB	-	This Pin is used to connect a time constant for increasing low-frequency characteristic of focus servo.
11	FEO	O	Terminal for outputting a signal for driving focus coil.
17	TAO	O	Terminal for outputting a signal for driving tracking coil.
20	SLD	O	Terminal for outputting a drive signal for sled motor.
45	SPDLO	O	Terminal for outputting a drive signal for spindle (disc) motor.
12	FE ⊖	I	Focus amplifier inverting input.
13	SRCH	I	This terminal is used to determine time constant for generating focus search waveform.
14, 15	TGU TG2		Terminals are used to determine a time constant for switching tracking high-frequency gain.
18	TA ⊖	I	Tracking amplifier inverting input.
19	SL ⊕	I	Sled (Feed) amplifier non-inverting input.
21	SL ⊖	I	Sled amplifier inverting input.
22	SSTOP	I	Terminal for inputting a signal from limit switch ON/OFF for detecting innermost track of disc.
23	FSET	I	Terminal for setting focus and tracking phase-compensation peaks and fo of CLV LPF.
24	SENS	O	Terminal for outputting internal condition data.
26	C.OUT	O	Terminal for outputting a signal for counting track number of disc.
27	DIRC		This terminal is used for one-track jump operation.
28	XRST		Terminal for inputting a reset signal. Reset operation in "L" level.
29	DATA	I	Serial data input from the CXP5034H mechanism control.

Pin No.	Pin Name	I/O	Description
30	XLT	I	Terminal for inputting a latch signal for serial data from the CXP5034H mechanism control.
31	CLK	I	Serial data clock input the CXP5034H mechanism control.
32	DGND	-	Ground.
34	PDI	I	PDO signal input from the phase-comparator of the CXD1135 digital signal processing.
35	ISET	O	Terminal for outputting a current to determine focus search, track jump and sleding kick height.
36	VCOF	I	VCO free-frequency is practically proportional to resistance between this Pin and Pin 37.
38	C864	O	Internal 8.64 MHz VCO output.
40	MDP	I	A spindle motor driving signal input from the CXD1135 digital signal processing (MDP terminal).
41	MON	I	A spindle motor ON/OFF signal input from the CXD1135 digital signal processing (MON terminal).
42	FSW	-	This terminal is used to determine a time constant for LPF of CLV servo error signal.
44	SPDL ⊖	I	Spindle drive amplifier inverting input.
46	WDCK	I	Auto sequence clock input. Typical frequency = 88.2 kHz.
47	FOK	I	FOK signal input from the CXA1081S.
48	MIRR	I	Mirror comparator signal input from the CXA1081S.
2	DFCT	I	Defect comparator signal input from the CXA1081S.
3	TE	I	Tracking error amplifier signal input from CXA1081S.
4	TZC	I	Tracking zero cross comparator signal input.
5	ATSC	I	Window comparator input for ATSC detection.
6	FE	I	Focus error amplifier signal input.

•CXP5034H (Mechanism Control)

◆ Terminal Function

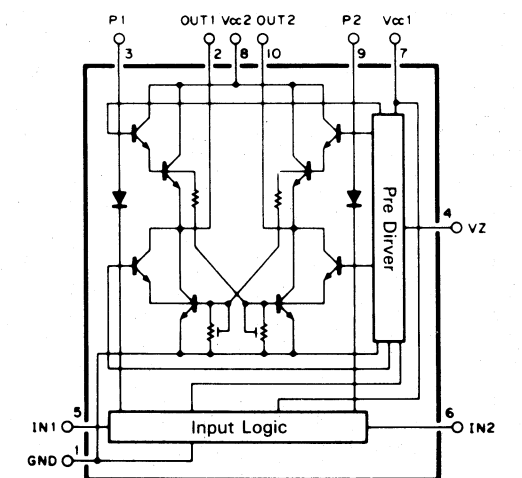
Pin No.	Pin Name	I/O	Description
1	SQCK	I	Terminal to input a clock for subcoding Q-channel signal for the CXD1135.
4	SUBQ	O	Subcoding Q-channel signal input from the CXD1135.
5	TRAY OUT	I	Disc tray out (loading out) switch input.
6	TRAY IN	I	Disc tray in (loading in) switch input.
7	S STOP	I	Lead-in switch signal input.
8	CHANGER	I	Terminal for selecting single and changer. This terminal is fixed at "L" level usually.
9~12	DO~D3	I/O	Data bus lines from/to the MSM50747.
13	SACK	I	Terminal to input a reponse signal for parallel data from the M50747.
14	SREQ	I	Terminal to input a timing signal for parallel data from the M50747.
15	QINT	O	Terminal to output a interrupting signal to the M50747.
16	MSTB	O	Terminal to output a timing signal for parallel data to the M50747.
17	MACK	O	Terminal to output a reponse signal for parallel data to the MSM50747.
18	SHE	O	Terminal to output a signal for high-speed access mode to the MSM50747. High-speed access mode is set at "H" level.
20	TCTC	I	Terminal to input a count signal for track number of disc.
21	Vss	-	Ground.
22	FOK	I	Terminal to input a signal for focus servo OK. Focus servo OK mode in "H" level.
23	GFS	I	Terminal to input a signal for frame sync locked condition from the CXD1135.
24	SENS	I	Terminal to input a condition signal from the CXA1082 and CXD1135.
26	MUTG	O	Terminal to output a muting signal. In muting, this terminal becomes an "H" level.
27	DATA	O	Terminal to output a serial data to the CXA1082 and CXD1135.
28	XLT	O	Terminal to output a latch signal for serial data to the CXA1082 and CXD1135.
29	CLK	O	Terminal to output a clock for serial data to the CXA1082 and CXD1135.
30	LDON	O	Terminal to output a signal for the laser diode ON.
31	XRST	O	Terminal to output a reset signal to the CXA1082 and CXD1135.
32	DE	O	Terminal to output a driving signal for deemphasis circuit. Active "H".
35	EXTAL	I	System clock input, typical frequency = 4.2336 MHz.
36	RESET	I	Terminal for inputting a reset signal.
37	SCOR	I	Terminal to input a subcoding sync S0+S1 from the CXD1135.
38, 39	TRAY+ TRAY-	O	Terminal to output a signal for loading motor drive.
42	VDD	-	Positive supply voltage: +5V.

•CXP5014 (Display Control)

◆ Terminal Function

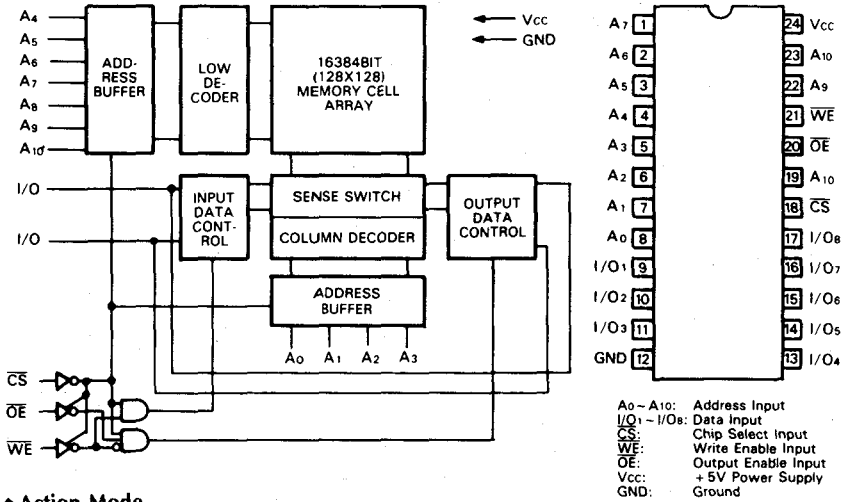
Pin No.	Pin Name	I/O	Description
3	RMC	I	Remoto controller signal input.
4	CLK	I	Serial data clock input from the M50747.
7	SDATA	I	Serial data input from the M50747.
8	SACK2	O	Terminal to output a response signal for receiving serial data to the M50747.
12~15	PC0~PC3	O	Terminals for outputting a key return signal to externally connected key matrix.
16~19	PE0~PE3	I	Terminals for inputting a key return signal from externally connected key matrix.
20~23	RMD0~RMD3	I	Terminals for inputting a key return signal from externally connected key matrix.
28	SSTB	I	Terminal to input a timing signal for receiving serial data from the M50747.
29	CE	I	Terminal to input a chip enable signal for receiving serial data from the M50747.
30	STB1	O	Terminal to output a timing signal for parallel data from the M50747.
31	ACK2	I	Terminal to input a response signal for parallel data from the M50747.
32	Vss	-	Ground
33~48	a~p	O	Terminals for outputting segment signals to FL display.
50~56	7G~1G	O	Terminals for outputting grid signals to FL display.
57	V FDP	-	Terminal for connecting a supply voltage to filament of FL display.
59	QINT	I	Terminal to input a chip enable signal for serial data from the M50747.
61	EXTAL	I	System clock input, typical frequency = 4.2336 MHz.
62	RESET	I	Terminal for inputting a reset signal.
64	VDD	-	Positive supply voltage: +5V.

•LB1641 (Motor Drive)

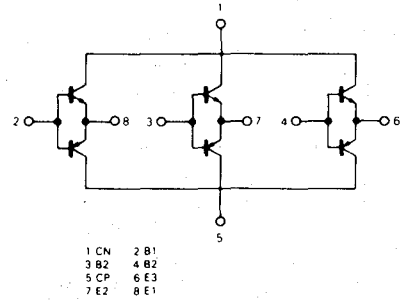


•TC5517AP/CXK5816PN/LC3517AL/UM6116

(2048 Word x 8 bit Static RAM)



•STA341M (Transistor Array)

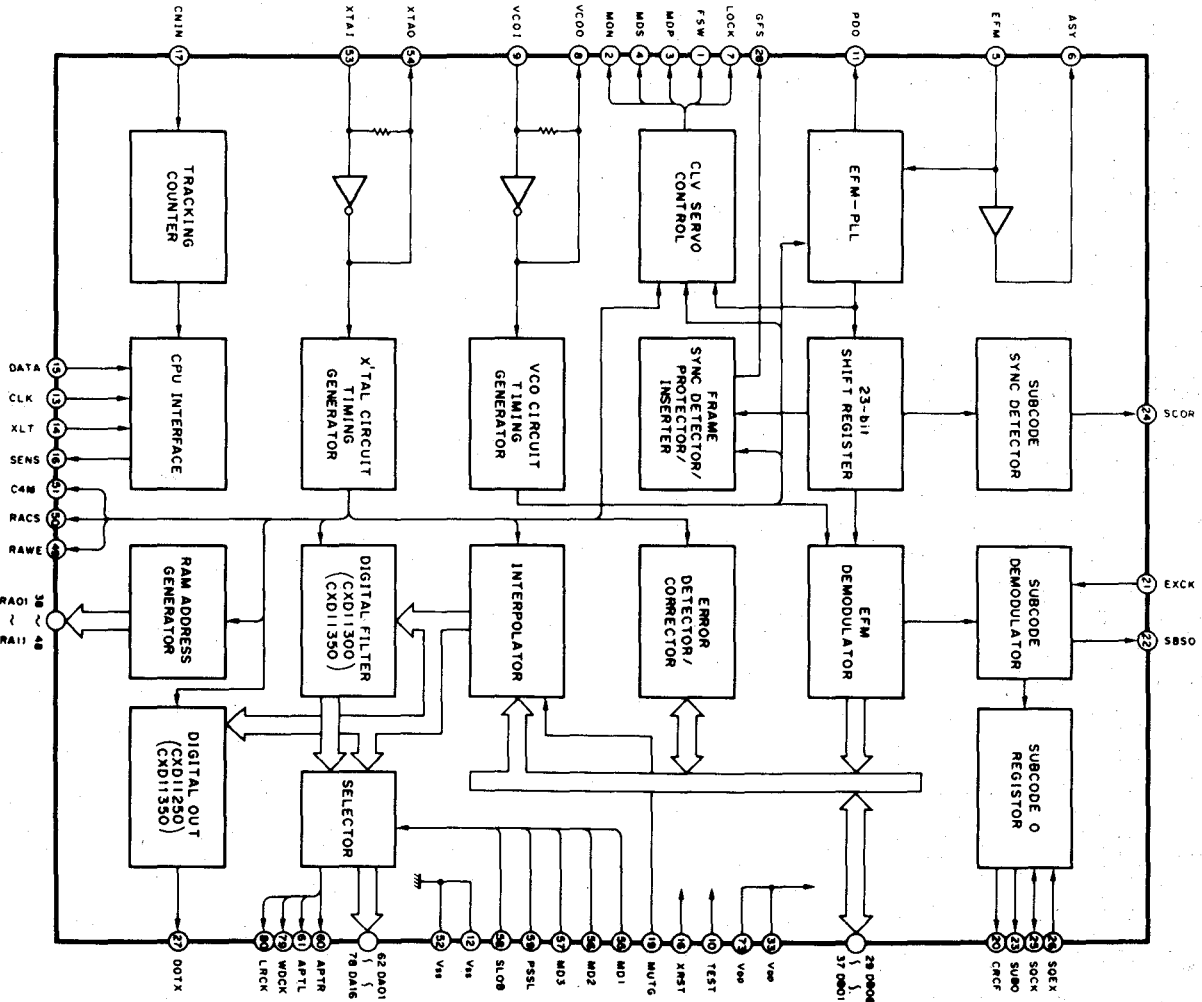


◆ Action Mode

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	L	H	Write	D _{IN}	

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

•CXD1135Q (Digital Signal Processing)



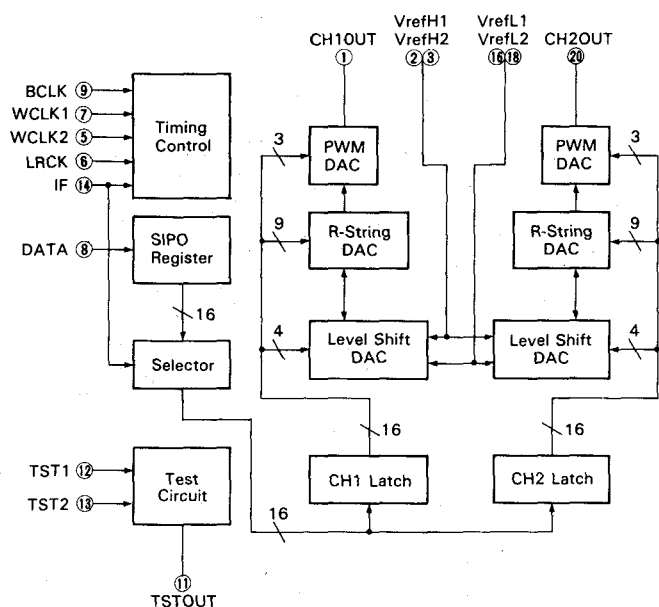
◆ Terminal Function <CXD1135Q>

Pin No.	Pin Name	I/O	Description
1	FSW	O	Terminal to output a time constant switching signal for output-filter of spindle motor.
2	MON	O	Terminal to output a control signal for spindle motor ON/OFF.
3	MDP	O	Spindle motor drive output. For CLV-S mode rough control and CLV-P mode phase control.
4	MDS	O	Spindle motor drive output. For CLV-P mode speed control.
5	EFM	I	Terminal to input a EFM signal from RF amplifier (CXA1081S).
6	ASY	O	Terminal to output a control signal for EFM signal slice level.
7	LOCK	O	The GFS signal is sampled at WFCK/16: if "H", "H" is output through this terminal. If "L" for 8 consecutive times, "L" is output.
8	VCOO	O	VCO output. When locked to the EFM signal, f=8.6436 MHz.
9	VCOI	I	VCO input.
10	TEST	I	(0 V).
11	PDO	O	Terminal to output a phase comparison signal for EFM signal and VCO/2.
12	VST	—	Ground (0 V)
13	CLK	I	Terminal to input a transfer clock for serial data from the CXP5034H. Serial data is latched on the rising edge of the transfer clock.
14	XLT	I	Terminal to input a latch signal from the CXP5034H. Latches a data (serial data from the CXP5034H) of 8-bit shift register to each register.
15	DATA	I	Serial data input from the CXP5034H.
16	XRST	I	System reset input. Reset is performed at "L" input.
17	CNIN	I	Tracking pulse input.
18	SENS	O	Outputs internal condition data for each address.
19	MUTG	I	Muting input. When the internal register ATTM is "L", MUTG sets the normal condition at "L" input, and the muted condition at "H" input.
23	SUBQ	O	Subcoding Q data output.
24	SCOP	O	Subcoding data sync S0+S1 output.
25	SQCK	I/O	Subcoding Q data readout clock input/output.
27	DOTX	I	Digital data output.
28	GFS	O	Frame sync locked condition indicating output.
29	DB08	I/O	External RAM data terminal. DATA8 (MSB)
30	DB07	I/O	External RAM data terminal. DATA7
31	DB06	I/O	External RAM data terminal. DATA6
32	DB05	I/O	External RAM data terminal. DATA5
33	VDD	—	Positive supply voltage.
34	DB04	I/O	External RAM data terminal. DATA4
35	DB03	I/O	External RAM data terminal. DATA3
36	DB02	I/O	External RAM data terminal. DATA2
37	DB01	I/O	External RAM data terminal. DATA1 (LSB)
38	RA01	I/O	External RAM address output. ADDR01 (LSB)
39	RA02	I/O	External RAM address output. ADDR02
40	RA03	I/O	External RAM address output. ADDR03
41	RA04	I/O	External RAM address output. ADDR04
42	RA05	I/O	External RAM address output. ADDR05
43	RA06	I/O	External RAM address output. ADDR06
44	RA07	I/O	External RAM address output. ADDR07
45	RA08	I/O	External RAM address output. ADDR08

Pin No.	Pin Name	I/O	Description
46	RA09	I/O	External RAM address output. ADDR09
47	RA10	I/O	External RAM address output. ADDR10
48	RA11	O	External RAM address output. ADDR11
49	RAWE	O	Write enable signal output to the external RAM (active at "L").
50	RACS	O	Chip select signal output to the external RAM (active at "L").
51	C4M	O	X'tal division output. f=4.2336 MHz.
52	VSS	—	Ground (0V).
53	XTAI	I	X'tal oscillator circuit input. f=8.4672 MHz or 16.9344 MHz, depending on the selected mode.
54	XTAO	O	X'tal oscillator circuit input. f=8.4672 MHz or 16.9344 MHz, depending on the selected mode.
55	MD1	I	Mode selection input 1.
56	MD2	I	Mode selection input 2.
57	MD3	I	Mode selection input 3.
58	SLOB	I	Terminal to input a switching signal for audio data output cord. Serial data output at "H". Parallel data output at "L".
59	PSSL	I	Audio data output mode switching input serial output at "L", and parallel output at "H".
62	DA01	O	Outputs DA01 (parallel audio data, LSB) when PSSL="H", and C1F1 ¹ when PSSL="L".
63	DA02	O	Outputs DA02 when PSSL="H", and C1F2 ¹ when PSSL="L".
70	DA09	O	Outputs DA09 when PSSL="H", and PLCK ² when PSSL="L".
71	DA10	O	Outputs DA10 when PSSL="H", and UGFS ³ when PSSL="L".
72	DA11	O	Outputs DA11 when PSSL="H", and GTOP ⁴ when PSSL="L".
73	VDD	—	Positive supply voltage: +5 V.
74	DA12	O	Outputs DA12 when PSSL="H", and RAOV ⁵ when PSSL="L".
75	DA13	O	Outputs DA13 when PSSL="H", and C4LR ⁶ when PSSL="L".
76	DA14	O	Outputs DA14 when PSSL="H", and C210 ⁷ when PSSL="L".
77	DA15	O	Outputs DA15 when PSSL="H", and C210 ⁸ when PSSL="L".
78	DA16	O	Outputs DA16 (parallel audio data MSB: when PSSL="H", and DATA ⁹ when PSSL="L".
79	WDCK	O	Strobe signal output. 176.4 kHz at DF ON, 88.2 kHz at DF OFF.
80	LRCK	O	Strobe signal output. 88.2 kHz at DF ON, and 44.1 kHz at DF OFF.

- *NOTES: 1. C1F1: C1 decoding error correction condition
C1F2: data monitoring output.
2. PLCK: VCO/2 output. f=4.3218 MHz when locked to the FFM signal.
3. UGFS: Unprotected frame sync pattern output.
4. GTOP: Frame synchronization protected condition indication output.
5. RAOV: ±4-frame jitter absorbing RAM overflow/under flow indicating output.
6. C4LR: Strobe signal. 352.8 kHz at DF ON, 176.4 kHz at DF OFF.
7. C210: C210 inverting output.
8. C210: Bit clock output 4.2336 MHz at DF ON, 2.1168 MHz at DF OFF.
9. DATA: Audio signal serial data output.

•LC7881 (D/A Converter)



◆ Terminal Function <LC7881>

Pin No.	Pin Name	I/O	Description
1	CH1OUT	O	A channel 1 analogue data output.
2	VrefH1	I	Reference voltage input 1. (HIGH level)
3	VrefH2	I	Reference voltage input 2. (HIGH level)
4	V	-	Positive supply voltage: +5V.
5	WCLK2	I	Word clock input 2. When IF is HIGH, WCLK2 is must be held in LOW. When IF is LOW, channel 1 data is latched by the following edge of word clock (WCLK2).
6	LRCK	I	Strobe signal input from the CXD1135Q. Typical frequency = 88.2 kHz. A channel 1 digital data input when LRCK is HIGH. A channel 2 digital data input when LRCK is LOW.
7	WCLK1	I	Word clock input 1. When IF is HIGH, channel 1 and 2 data are latched by the falling edge of word clock (WCLK1). When IF is LOW, channel 2 data is latched by the falling edge of word clock (WCLK1).
8	DATA	I	Serial data input. When IF is HIGH, the serial data is inputted with most-significant bit first. When IF is LOW, the serial data is inputted with least-significant bit first.
9	BCLK	I	Bit clock input. Typical frequency = 4.2336 MHz. This clock is used to synchronize the serial data.
10	V	-	Positive supply voltage: +5V.
11	TSTOUT	O	Test output; in normal operation this pin should be held open state.
12	TST1	I	Test input; in normal operation this pin should be connected to ground.
13	TST2	I	
14	IF	I	Selects input digital data mode. When IF is HIGH, the digital data is inputted with most-significant-bit first. When IF is LOW, the digital data is inputted least-significant-bit first.

<LC7881>

Pin No.	Pin Name	I/O	Description
15	GND	-	Ground.
16	VrefL1	I	Reference voltage input. (LOW level)
17	GND	I	Ground.
18	VrefL2	I	Reference voltage input. (LOW level)
19	NC	-	Not Connection.
20	CH2OUT	O	A channel 2 analogue data output.

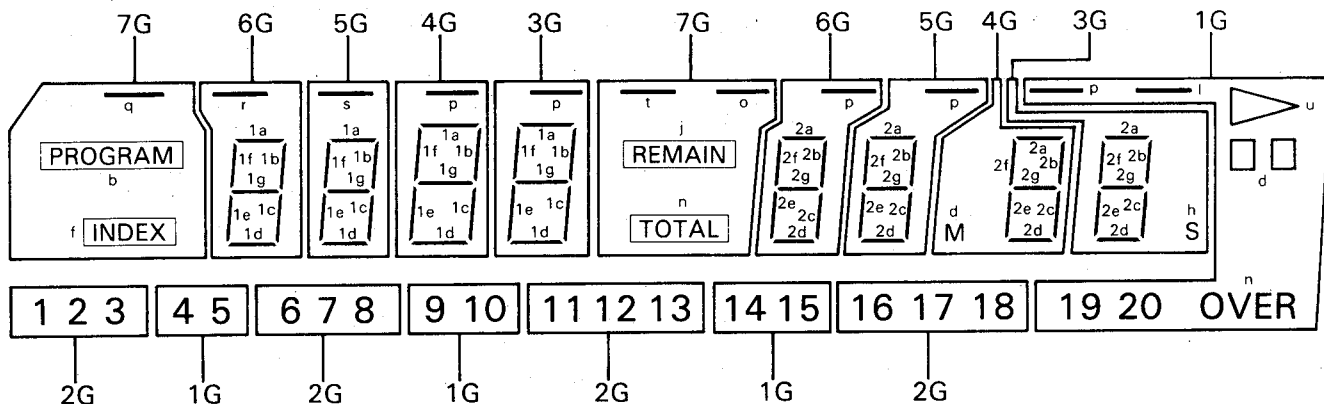
•M50747 (System Control)

◆ Terminal Function

Pin No.	Pin Name	I/O	Description
1	Vcc	-	Positive supply voltage: +5V.
3	CE	O	Terminal to output a chip enable signal for serial data to the CXP5014.
4	PKO	O	Terminal to output a feed-kick signal in POWER ON mode.
10	STB1	I	Terminal to input a timing signal for parallel data from the CXP5014.
11	SSTB	O	Terminal to output a timing signal for serial data to the CXP5034.
13	ACK2	O	Terminal to output a response signal for parallel data to the CXP5034.
14~17	IDAT3~IDATO	I	Terminal to input a key switch and remote controller data from the CXP5014.
19	CLK	O	Terminal to output a clock for serial data to the CXP5014.
20	SDATA	O	Serial data output to the CXP5014.
26	QINT	I	Terminal to input a interrupting signal from the CXP5034.
27	CNVss	-	0V
28	RESET	I	Terminal for inputting a reset signal.
29	EXTAL	I	System clock input: Typical frequency = 4.2336 MHz.
32	Vss	-	Ground
33	SACK	I	Terminal to input a response signal for serial data from the CXP5014.
34	TEST1	I	Test input; not used in normal operation.
35	TEST2	I	Test input; not used in normal operation.
40	SHE	I	Terminal to input a signal for high-speed access mode from the CXP5034H.
41	MACK	I	Terminal to input a response signal for parallel data from the CXP5034H.
42	MSTB	I	Terminal to input a strobe signal for parallel data from the CXP5034H.
43	SREQ	O	Terminal to output a timing signal for parallel data to the CXP5034H.
44	SACK	O	Terminal to output a response signal for parallel data to the CXP5034H.
45~48	D3~D0	I/O	Data bus lines from/to the CXP5034H.
59	TIMER1	I	This terminal is used for inputting a signal for TIMER operation.
62	SSTOP	I	Terminal for inputting a signal from lead-in switch.
63	TRAY-IN	I	Terminal for inputting a signal from loading-in switch.
64	TRAY-OUT	I	Terminal for inputting a signal from loading-out switch.

●Display of FV260G FL Display

●Grid Assignment



●Pin Connection

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

●Anode Connection

Grid \ Anode	7G	6G	5G	4G	3G	2G	1G
a	—	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	—	—	—	M	S	—	—
i	—	2a	2a	2a	2a	11	14
j	REMAIN	2b	2b	2b	2b	12	15
k	—	2c	2c	2c	2c	16	19

Grid \ Anode	7G	6G	5G	4G	3G	2G	1G
l	—	2d	2d	2d	2d	18	—
m	—	2e	2e	2e	2e	17	20
n	TOTAL	2f	2f	2f	2f	13	OVER
o	—	2g	2g	2g	2g	—	—
p	—	—	—	—	—	—	—
q	—	—	—	—	—	—	—
r	—	—	—	—	—	—	—
s	—	—	—	—	—	—	—
t	—	—	—	—	—	—	—
u	—	—	—	—	—	—	▷

5. ADJUSTMENT METHOD

5-1. Adjustment gap between the push-back section of the tray lever and the front edge of the magazine

Note: 1. This adjustment should be performed when the MG chassis is removed.

2. This adjustment should be performed if the tray lever cannot push back the tray of the magazine completely.

3. This adjustment should be performed when the CD mechanism chassis is caught by the front edge of the magazine during the up/down operation.

- Remove the bonnet.
- Loosen the 8 screws at the top of the mechanism MG chassis and 2 screws on the joint holder.
- Retighten 10 screw while compressing the CD changer case assembly backward. The gap between the tray push-back section of the tray lever and the front edge of the magazine should be within 0.5 mm to 1.0 mm to secure the normal operation at this time.
- Check that 12 trays at the upper and lower section return securely.
 - 0.5 mm — 1.0 mm Operates normally.
 - less than 0.5 mm The tray is caught by the magazine during up/down operation because it is too narrow.
 - More than 0.1 mm The tray of the magazine cannot return completely.

Fig. 5-1

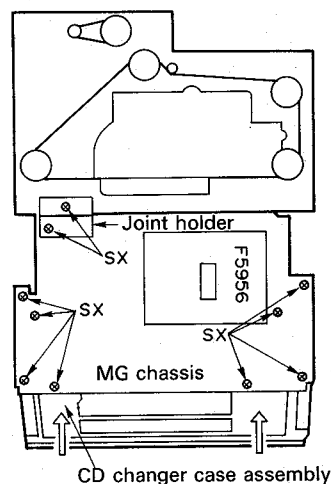
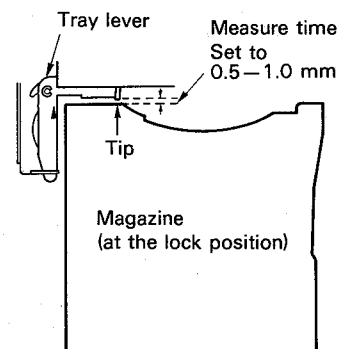


Fig. 5-2



5-2. Mechanism adjustment

* Perform this adjustment when the parts of the CD mechanism assembly in the changer mechanism are replaced and the mechanism is reassembled.

Condition: 1) Perform adjustment after taking out the changer mechanism assembly from the set. (Refer to the parts replacement on page 19 for removal.)

2) The following jig are required for this adjustment.

- Collar kit (6 mm diameter, 10 mm long) 3 (Stock No. 36348200)
- 6-disc magazine 2
- 12 V DC power supply

A. Chassis M (CD mechanism assembly) horizontal level adjustment and timing belt tension adjustment

(Perform this adjustment only when the timing belt has been removed.)

- 1) Insert the 10 mm collars between the chassis M and main chassis at 3 locations. (refer to Fig. 5-5)
- 2) Turn the TM gears F1, F2 and F3 (refer to Fig. 5-5.) and adjust so that the chassis M is at the level to the main chassis. (Adjust until the chassis M almost touches the collar.)
- 3) Turn the TM gear F1 3 teeth clockwise.
- 4) Turn the TM gear F2 6 teeth clockwise.
- 5) Hold the timing belt at the idler (Refer to Fig. 5-3) so that the TM gears F1, F2 and F3 do not move and hook the belt in the sequence of TM gears F2, F1, F3.
- 6) Hook the timing belt to TM gear M and then install TM gear M together with the TM gear holder so that the timing belt does not slip.

* Tension of the timing belt is 250 — 300g when tensile force is applied at the position shown in Fig. 5-4.

Fig. 5-3

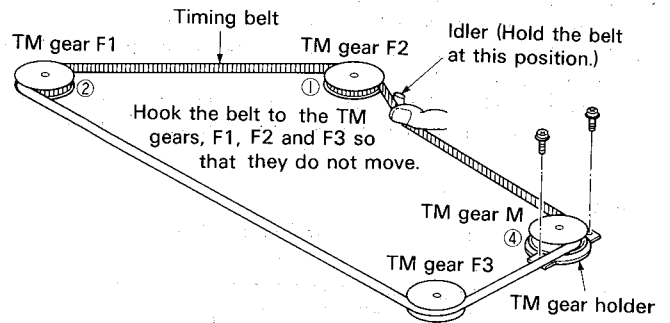


Fig. 5-4

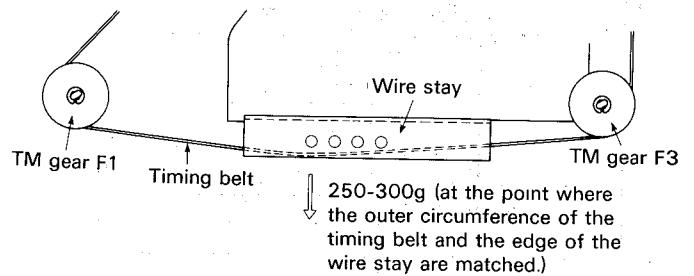
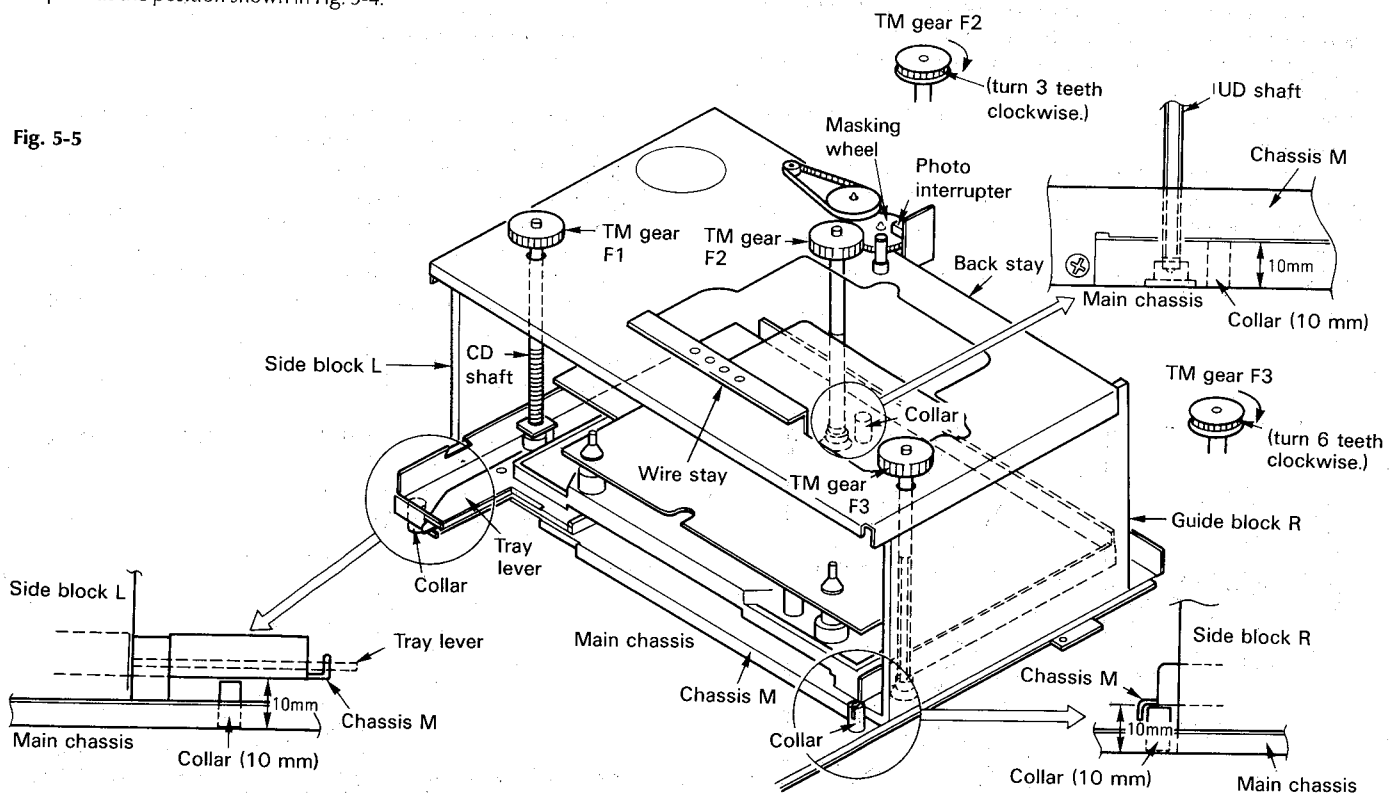


Fig. 5-5

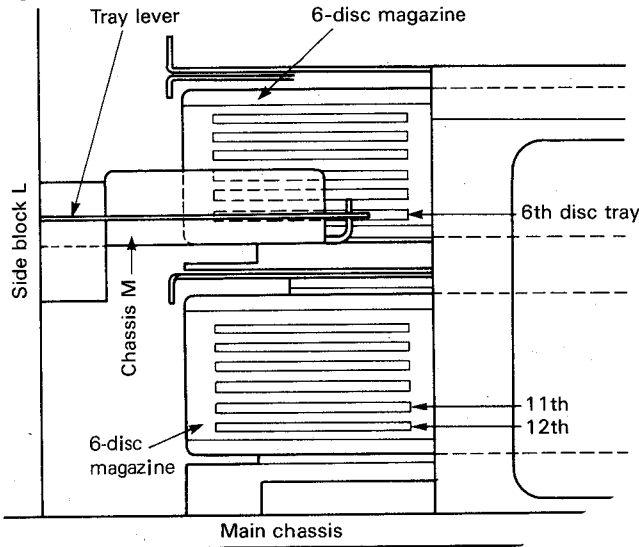


B. Tray lever position (masking wheel slit position) adjustment

* Disconnect the connectors of the F-5941 PCB in the changer mechanism assembly. (Refer to Fig. 10-9 on page 21.)

- 1) Insert the 6-disc magazines into the changer case. (Insert into both upper and lower holders.)
- 2) Move the timing belt manually and set the tray lever to the 6th disc tray (6th disc tray from the top of the upper magazine). (Refer to Fig. 5-6.)

Fig. 5-6



- 3) With the condition in item 2), adjust the masking wheel so that the slit of the masking wheel is set at the center of the photo interrupter. (Move only the masking wheel.) (Refer to Fig. 5-7(a).)
- 4) Supply DC 12 V to the loading motor as shown in Fig. 5-8 and perform loading/unloading the 6th disc tray
 - * If the disc tray cannot be loaded/unloaded smoothly, repeat from adjustment A.
- 5) Then turn the timing belt manually and check that the loading/unloading operation can be done even if the slit is moved $+45^\circ$ / -45° from the slit position of the masking wheel in Item 3). (Fig. 5-7(b), (c).)
 - * If it is drifted to much to one side, perform adjustment from Item 1) again.

Fig. 5-7

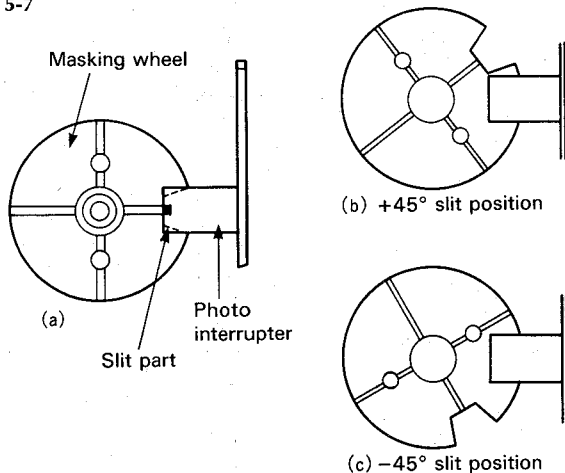
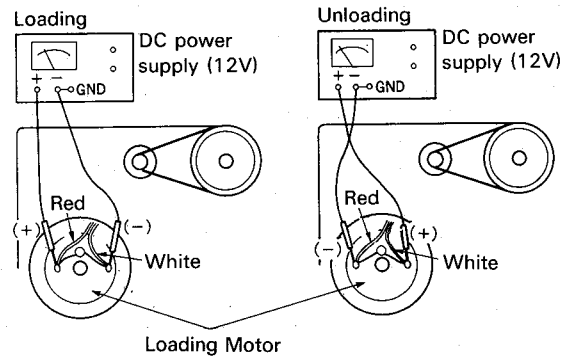


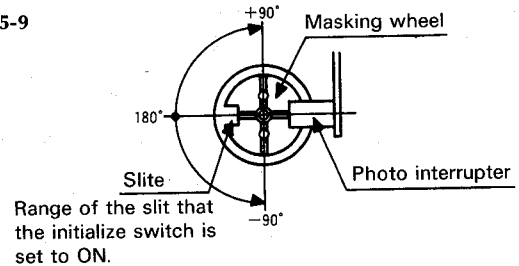
Fig. 5-8



* Checking the ON/OFF operation of the initialize switch (Refer to the top view on page 14.)

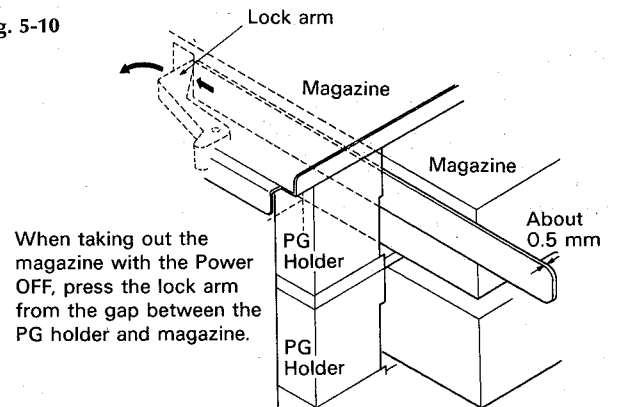
- (1) Connect tester (in resistance range) to the lead from the initialize switch. (Disconnect the connector JP18 on the F-6059 PCB and connect to the tester. Refer to Fig. 10-9 on page 21.)
- (2) Check that the initialize switch is set to ON (shorting state) when the tray lever is moved to the position between the 11th and 12th disc trays (lowest and 2nd lowest trays of the lower 6-disc magazine refer to Fig. 5-6). Also check (by turning the timing belt manually) that the slit position of the masking wheel is within the range shown in Fig. 5-9.

Fig. 5-9



- 6) Take out the 6-disc magazines (Refer to Fig. 5-10 for taking out of magazine) and connect the connectors on the F-6059 and F-5956 PCBs and then insert the 6-disc magazines into the changer case agains. (Refer to Fig. 10-9 on page 21.)
- 7) Connect the power (the CD mechanism assembly moves to the bottom when the power switch is set to ON) and press the CHECK button to check that each disc tray can load and unload smoothly.
 - * If the disc check is performed repeatedly, reinsert the magazine every time.
- 8) Actually load the discs on DISC1, DISC3, (DISC6, DISC7), DISC9 and DISC12 and perform the disc check operation to check that there is no abnormality.
- 9) Disconnect the power and install the changer mechanism assembly in the set.
 - * Bundle the leads of the mechanism when installing the changer mechanism assembly to the set.

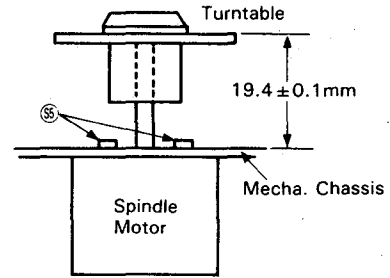
Fig. 5-10



5-3. Electrical Adjustment

- Note:** 1) Required test disc CD-1 of EIAJ.
 2) With respect to the test points and adjusting positions of F-6060, F-6059 and F-5956 boards, refer to Fig. 5-12, 5-13 & 5-14.
 3) Be sure to adjust the height whenever the spindle motor and turntable have been replaced.
 * Adjust the distance between the upper surface of turntable and the mechanism chassis to 19.4 ± 0.1 mm as shown in figure 5-11.

Fig. 5-11



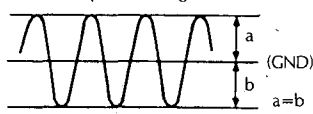
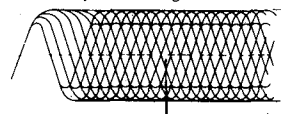
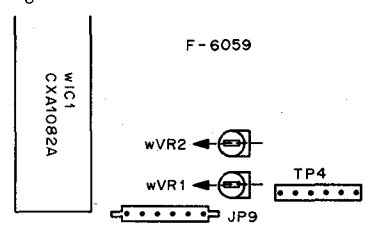
STEP	SUBJECT	MEASURE OUTPUT	ADJUST. PARTS	ADJUSTMENT	SETTING CONDITIONS AND REMARKS
1	VCO Adj. (STOP mode)	Test Pin TP1 (CLK) on the F-6060 board. (Refer to Fig. 5-17) Frequency Counter	wVR3 (F-6059) Fig. 5-16	4.32MHz \pm 30 kHz	1. Connect TP2 (EFM) to ground on the F-6060 board. (Refer to Fig. 5-17) 2. For this adjustment run the unit for more than one minute after the power is switched ON.
2	Tracking Offset Adj.	Test Pin TP4 (T1) on the F-6059 board. (Refer to Fig. 5-16) Oscilloscope	fVR1 (F-5956) Fig. 5-16	<ul style="list-style-type: none"> Oscilloscope: DC range  <p>Fig. 5-12</p> <ul style="list-style-type: none"> Adjust fVR1 to satisfy as shown in Fig. 5-12. 	1. Play the 8th music on the TEST DISC CD-1. 2. Connect TP4 (T2) to ground on the F-6059 board. (Refer to Fig. 5-16) 3. Connect a probe of oscilloscope to TP4 (T1).
3	Focus Offset Adj.	Test Pin TP4 (T2) on the F-6059 board. (Refer to Fig. 5-16) Oscilloscope	fVR1 (F-5956) Fig. 5-15	<ul style="list-style-type: none"> Oscilloscope: DC range  <p>Fig. 5-13</p> <ul style="list-style-type: none"> Make eye-pattern wavefoam best. (Widen center portion (◇) of wavefoam sufficiently and symmetrically.) 	1. Play the 8th music on the TEST DISC CD-1. 2. Connect a probe of oscilloscope to TP4 (T2). (Refer to Fig. 5-16)
4	Tracking Gain Adj.		wVR1 (F-6059) Fig. 5-16	<ul style="list-style-type: none"> Set the end of groove of wVR1 to the direction of arrow A as shown in Fig. 5-14 	Fig. 5-14 
5	Focus Gain Adj.		wVR2 (F-6059) Fig. 5-16	<ul style="list-style-type: none"> Set the end of groove of wVR2 to the direction of arrow B as shown in Fig. 5-14 	

Fig. 5-15 F-5956

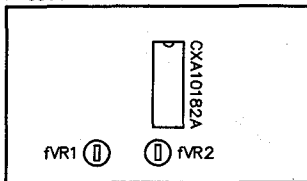


Fig. 5-16 F-6059

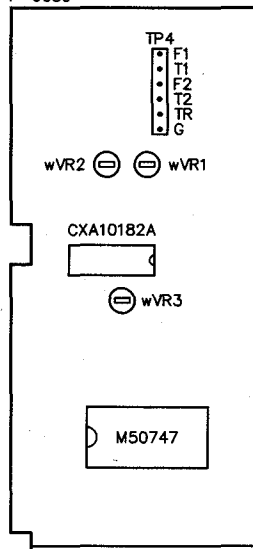
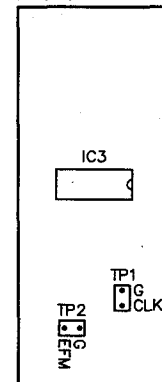
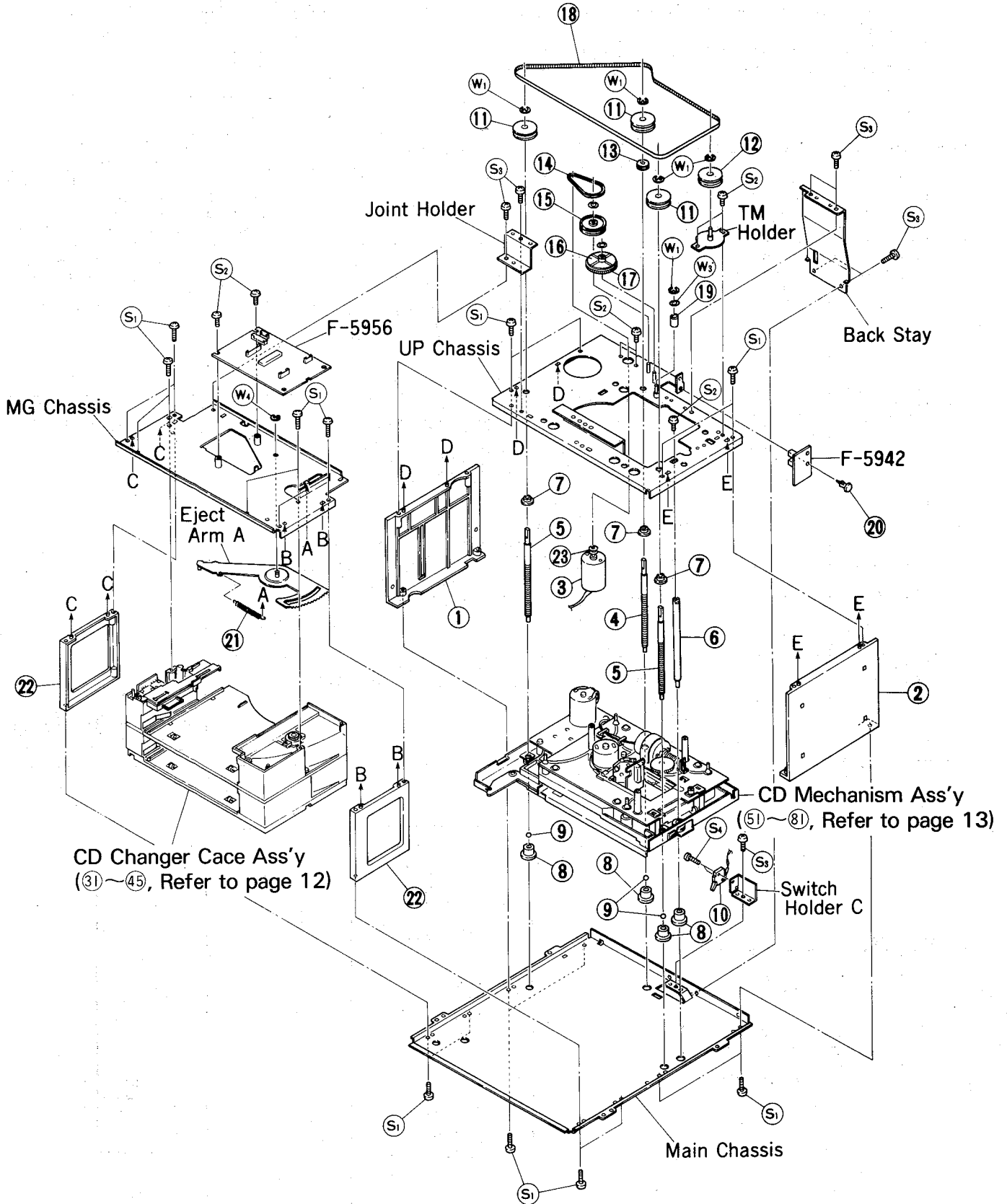


Fig. 5-17 F-6060

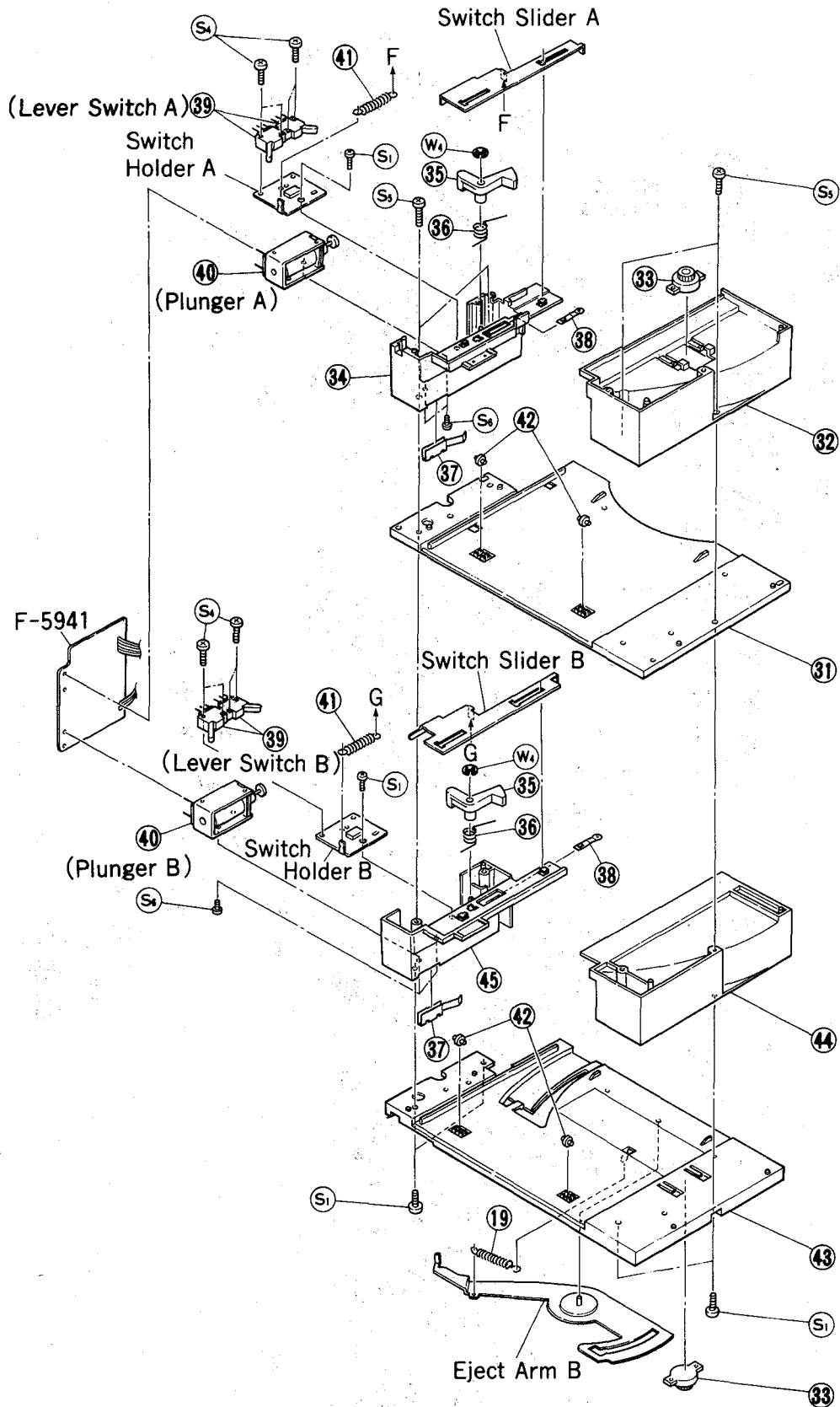


6. EXPLODED VIEW & PARTS LIST OF CD CHANGER MECHANISM ASS'Y

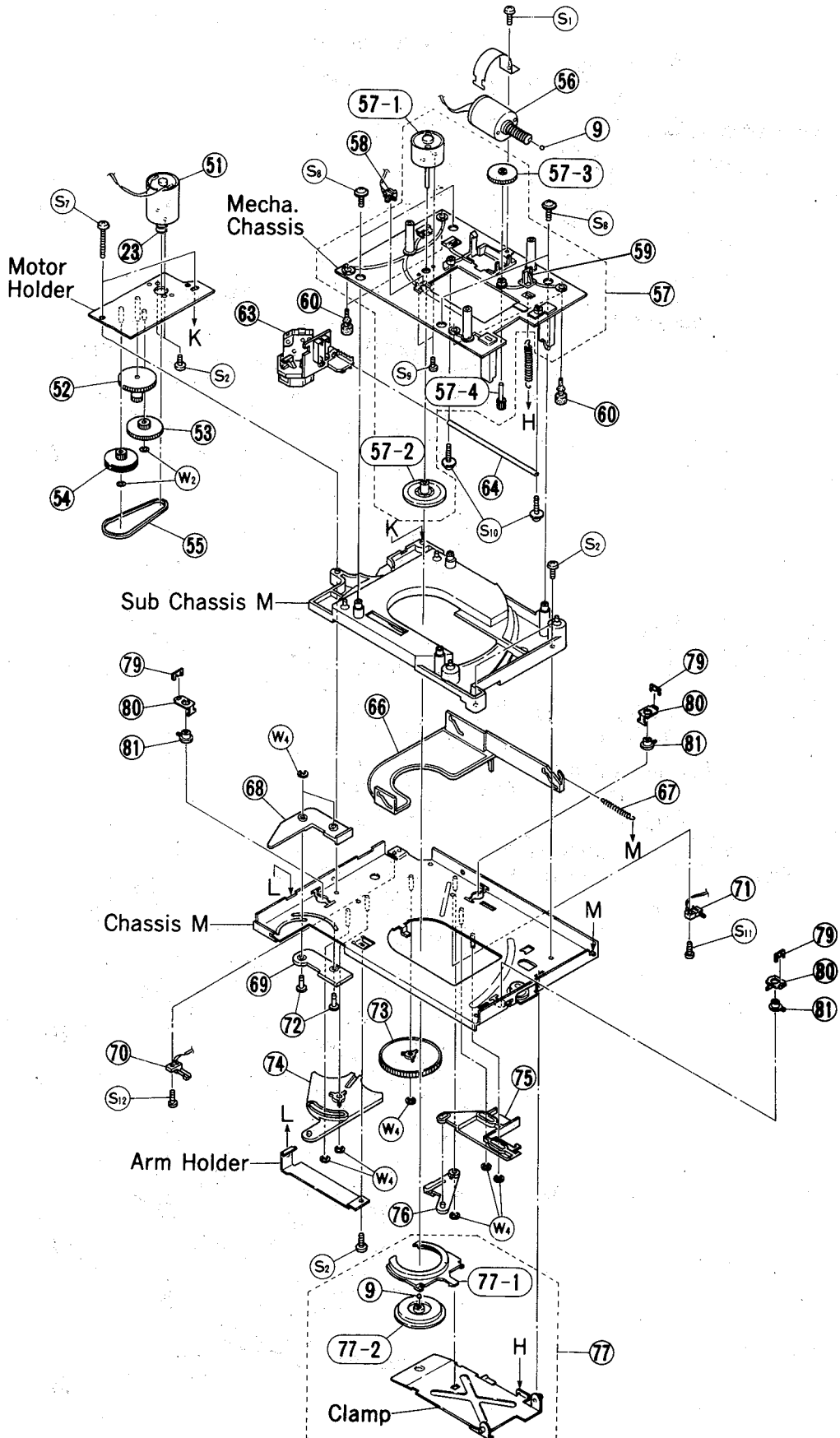
A. Changer Mechanism Assy's Section



B. CD Changer Case Ass'y Section



C. CD Mechanism Ass'y Section



Parts List <CD changer Mechanism Ass'y>

Parts No.	Stock No.	Description
1	27490300	Side Block L
2	27480400	Side Block R
3	48835600	UD Motor
4	27479020	UD Shaft A
5	27479120	UD Shaft B
6	27478900	BL Shaft
7	27475100	SQ Holder A
8	27475000	SQ Holder B
9	27279100	3Φ Steel Ball
10	48948200	Lever Switch,initialized
11	27564400	TM Gear Ass'y F
12	27564500	TM Gear Ass'y M
13	27474500	SQ Gear
14	27476200	UD Motor Belt
15	27476500	PL Gear
16	27530110	Masking Wheel
17	27476400	PO Gear
18	27475900	Timing Belt
19	27583700	Idler
20	00471700	Plastic Rivet
21	27478210	Eject Spring
22	27480100	Side Block F
23	27276100	Pulley,UD & Loading Motor
31	27480700	MG Holder A
32	27481100	Tray Guide A
33	48948400	Dumper
34	27480600	PG Holder A
35	27560210	Lock Arm
36	27560300	Lock Arm Spring
37	27478400	MG Hold Spring V
38	27478500	MG Hold Spring S
39	48948200	Lever Switch(A,B),Magazine
40	49251400	Plunger Solenoide(A,B), Magazine
41	27478100	SW Slider Spring
42	27474400	MG Roller
43	27481000	MG Holder B
44	27480800	Tray Guide B
45	27480900	PG Holder B
51	48835600	Loading Motor
52	27477300	Gear M1
53	27477800	Gear M2
54	27477400	Pulley M
55	27479300	Loading Belt
56	18175500	Sled Motor with Wormgear
57	18178500	Spindle Motor Ass'y
57-1	48584900	Spindle Motor
57-2	27479200	Turntable
57-3	27365000	Slide Gear A
57-4	27364900	Slide Gear B

Parts No.	Stock No.	Description
58	48793900	Push Switch,Lead in
59	18175300	Plate Spring Ass'y
60	27364400	Floating Rubber
62	27478700	Clamp Spring
63	48830500	CD Pickup Ass'y
	or 68064700	CD Pickup Ass'y
64	27363800	Support Rail
66	27475300	Disc Holder
67	27478600	Disc Hold Spring
68	27477020	Tray Lever
69	27477500	Lever Guide
70	48948300	Leaf Switch,Unloading
71	48794000	Push Switch,Loading
72	27475700	Stopper Pin
73	27477200	Cam M
74	27477100	Arm M
75	27477710	Slide Plate
76	27477600	Joint Arm
77	18175300	Clamp Arm Ass'y
77-1	27475400	Clamp Holder
77-2	27479400	Clamp Plate
79	27492100	Stopper
80	27475500	Nut Holder
81	27478000	Nut
S1	18158700	M3X8 Pan Head Tapping Screw
S2	00421800	M3X4 Binding Head Screw
S3	46267800	M3X8 Binding Head Deltight Screw
S4	49195200	M2X7 Binding Head Machine Screw
S5	00454700	M3X12 Binding Head Tapping Screw
S6	00421200	M2.6X4 Binding Head Machine Screw
S7	00422400	M3X16 Binding Head Machine Screw
S8	46268000	M3X8 W-type Head Deltite Screw
S9	46609800	M2X3 Binding Head Machine Screw
S10	51625000	M3X10 Flanged Head Tapping Screw
S11	13030800	M2X5 Binding Head Machine Screw
W1	00489200	2.5Φ E-Ring
W2	27279700	2.5Φ Slit Washer
W3	27584500	LM Washer
W4	48371100	2Φ E-Ring

7. OTHER PARTS

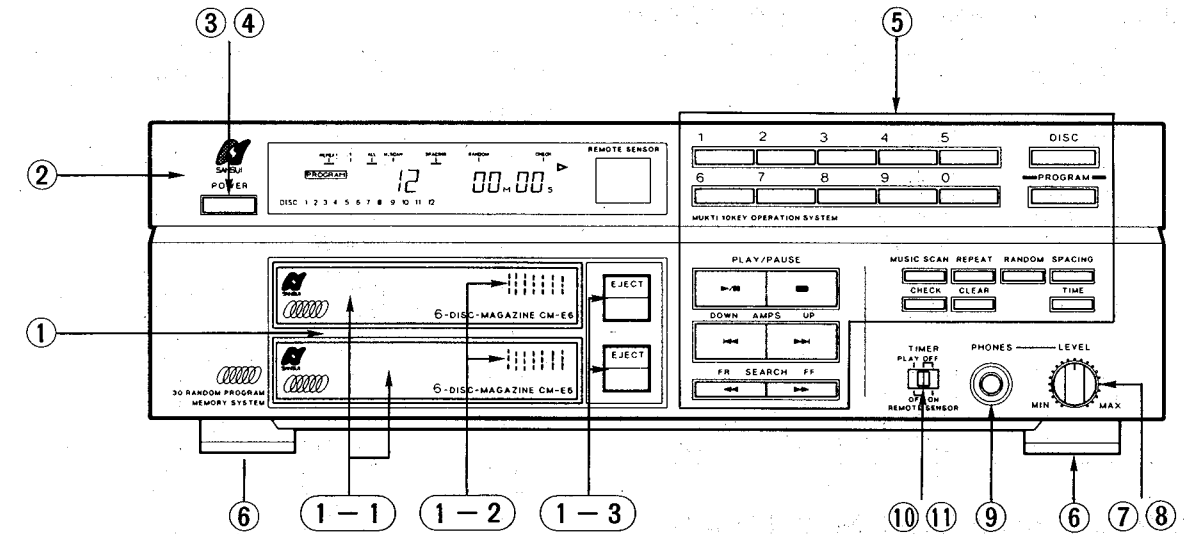
Parts List <Front View>

Parts No.	Stock No.	Description
1	27641810	Front Panel Ass'y (B) <SS,XX,UL,CSA>
	27650010	Front Panel Ass'y (B) <EU,EG>
1-1	27509710	Magazine Door
1-2	27506400	Door Spring
1-3	27637200	Eject Knob
2	27640500	Front Panel Ass'y(A)
△ 3	49198600	Push SW.,Power
4	27626500	Knob,Power SW.
5	49326300	Operation SW.
6	27266000	Leg
7	48728000	Phone Level VR.,20KX2
8	84580100	Knob,Phone VR.
9	49197600	Head Phone Jack
10	48158200	Slide SW.,TIMER
11	27608600	Knob,TIMER SW.

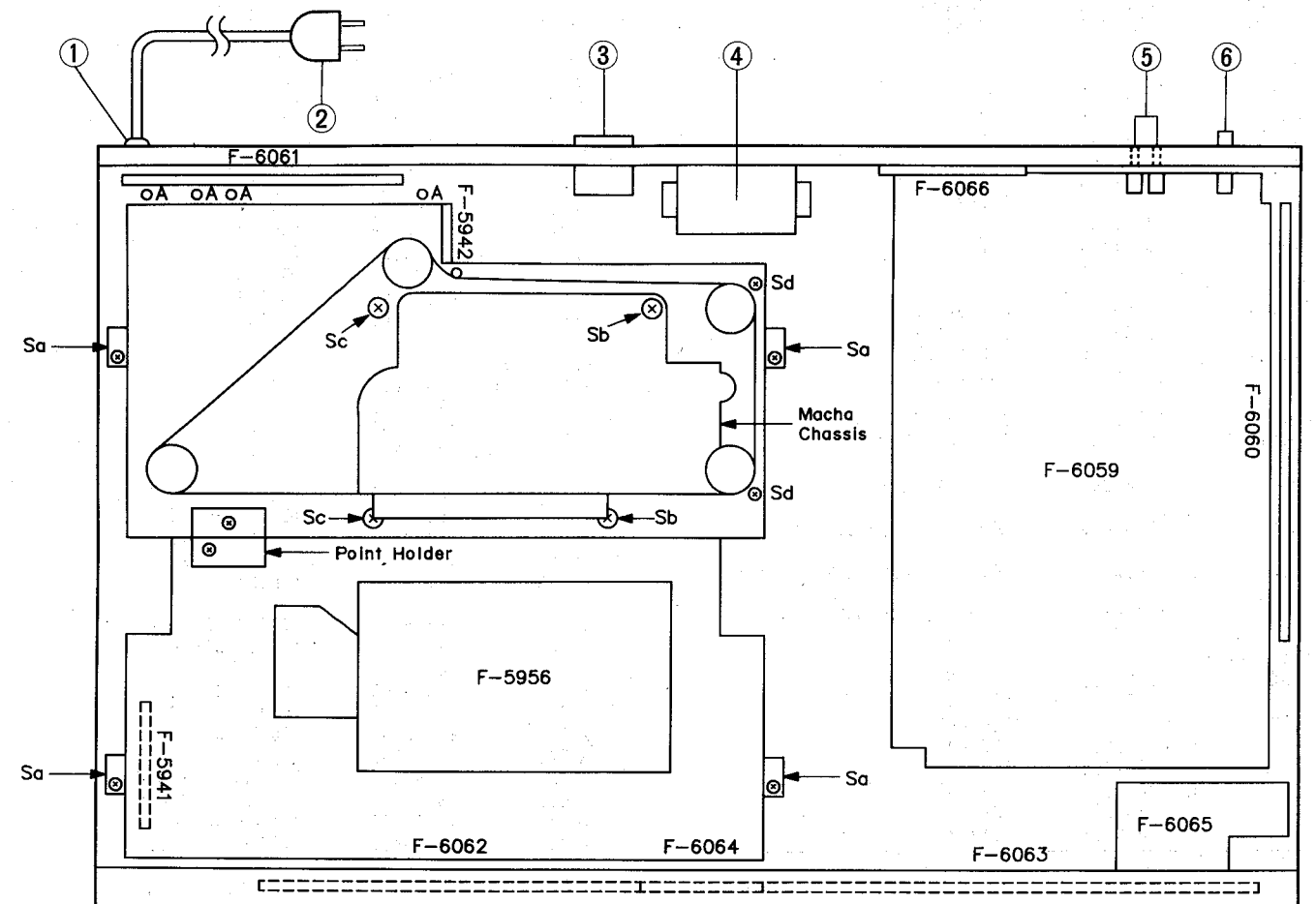
Parts List <Top View>

Parts No.	Stock No.	Description
1	39106000	Strain Relief<XX>
	48913500	Strain Relief<SS,EU,EG>
	39104900	Strain Relief<UL,CSA>
△ 2	38004700	Power Supply Cord<XX>
△	48837700	Power Supply Cord<SS>
△	46321000	Power Supply Cord<UL,CSA>
△	38004500	Power Supply Cord<EU,EG>
△ 3	07204700	Voltage Selector<EU,EG>
	48484200	Voltage Selector Plug<XX,SS>
△ 4	15033309	Power Transformer<XX,SS>
△	15033302	Power Transformer<UL,CSA>
△	15033305	Power Transformer<EU,EG>
5	48985400	System Control Terminal
6	49320500	Output Terminal

• Front View



• Top View



8. PARTS LIST OF BOARD

8-1. F-5956 RF Amp. Board (Stock No 01080801)

Parts No.	Stock No.	Description
• Transistor		
fQ1	46359701	2SA952
	or 48000801	2SA934
fQ2	46367101	2SC2603
	or 48058801	2SC1740S
fQ3	46367101	2SC2603
	or 48058801	2SC1740S
• IC		
fIC1	48839900	CXA1081S
• Diode		
fD1	46464100	1SS133
fL1	48289400	INDUCTOR 10 UH
fVR1	46634500	22kΩ S.V.R., Tracking Offset
fVR2	46634500	22kΩ S.V.R., Focus Offset

8-2. F-6059 Main Board (Stock No 01131501)

Parts No.	Stock No.	Description
• Transistor		
△ mQ1	48000901	2SC2060
△ mQ2	48000801	2SA934
• IC		
△ mIC1	48565500	AN78M06
△ mIC2	48600700	AN79N05
• Diode		
△ mD1	03117700	10E-2
△ mD2	03117700	10E-2
△ mD3	03117700	10E-2
△ mD4	03117700	10E-2
△ mD5	03117700	10E-2
△ mD6	03117700	10E-2
△ mD7	03117700	10E-2
△ mD8	03117700	10E-2
• Zener Diode		
mDZ1	46825000	RD5.6E-B2
	or 49303100	05AZ5.6-Z
mDZ2	46825000	RD5.6E-B2
	or 49303100	05AZ5.6-Z
mC9	48748400	0.1μF 50V C.C.
mC10	48748400	0.1μF 50V C.C.
△ mR3	46241200	10Ω 1W N.I.R.
oJ2	48985400	Mini Jack, System Control
oJ3	48985400	Mini Jack, System Control
oJ1	49320500	Terminal Output
• Transistor		
vQ2	46367101	2SC2603
	or 48058801	2SC1740S
vQ3	46367101	2SC2603
	or 48058801	2SC2603
vQ4	46367001	2SA1115
	or 48058801	2SA933S
vQ5	46367001	2SA1115
	or 48058801	2SA933S

Parts No.	Stock No.	Description
• Diode		
vD1	46464100	1SS133
vD2	46464100	1SS133
• Transistor		
wQ1	48000901	2SC2060
wQ2	48000801	2SA934
wQ3	48223100	DTC114TS
wQ4	46367101	2SC2603
	or 48058801	2SC1740S
wQ5	46367101	2SC2603
	or 48058801	2SC1740S
wQ6	48000901	2SC2060
wQ7	48000901	2SC2060
wQ8	46367001	2SA1115
	or 48058801	2SA933S
wQ9	48217800	DTC114ES
wQ10	49262400	2SA830S
wQ11	46367001	2SA1115
	or 48058801	2SA933S
• IC		
wIC1	48840000	CXA1082AS
	or 49324400	CXA1082BS
wIC4	49298000	CXP5034H-069S
wIC5	49352300	M50747-144SP
wIC7	48982600	LB1641
wIC8	48982600	LB1641
wIC9	48667300	STA341M
• Diode		
wD1	03117700	10E-2
wD2	03117700	10E-2
wD3	03117700	10E-2
wD4	46464100	1SS133
wD5	46464100	1SS133
wD6	46464100	1SS133
wD7	46464100	1SS133
wD9	46464100	1SS133
wD10	46464100	1SS133
wD11	46464100	1SS133
wD12	46464100	1SS133
wD13	46464100	1SS133
• Zener Diode		
wDZ1	46824000	RD4.3E-B1
	or 49302100	05AZ4.3-Y
wDZ2	46827300	RD11E-B3
	or 49305200	05AZ11-Y
△ wR21	46402000	10Ω 1/2W N.I.R.
△ wR27	46402000	10Ω 1/2W N.I.R.
wR81	48773600	10KΩ x8 A.R.
wR82	48773600	10KΩ x8 A.R.
wR83	48773600	10KΩ x8 A.R.
wC1	48665800	4700pF 50V C.C.
wC3	48665800	4700pF 50V C.C.
wC12	48666200	0.01μF 50V C.C.
wC14	48665800	700pF 50V C.C.
wC17	48663800	1000pF 50V C.C.
wC24	48663400	470pF 50V C.C.
wC26	48717900	4.7μF 5.5V E.C.
wC27	48666200	0.01μF 50V C.C.
wC28	48666200	0.01μF 50V C.C.
wC33	48748400	0.1μF 50V C.C.
wC46	48665800	4700μF 50V C.C.
wL1	48289400	Inductor 10μH
wVR1	46634500	22KΩ S.V.R. Tracking Gain
wVR2	46634500	22KΩ S.V.R. Focus Gain
wVR3	46633900	2.2KΩ S.V.R. VCO Level

8-3. F-6060 Logic Control & D/A Converter Board (Stock No 01131601)

Parts No.	Stock No.	Description
• Transistor		
vQ1	46367101	2SC2603
	or 48058801	2SC1740S
• IC		
vIC1	49322500	LC7881-C
vIC2	46147700	M5218L
vIC3	46147700	M5218L
vC3	48748400	0.1μF 50V C.C.
vC4	48748400	0.1μF 50V C.C.
vC7	48086400	0.015μF 50V F.C.
vC8	49201200	3900pF 50V F.C.
vC9	48086400	0.015μF 50V F.C.
vC10	49247700	330pF 50V F.C.
vC15	48748400	0.1μF 50V C.C.
vC16	48748400	0.1μF 50V C.C.
vC18	48646200	20pF 50V C.C.
• IC		
wIC2	49371800	CXD1130
wIC3	48839700	CXK5816PN-12L
	or 48984800	LC3517AL-15
wXO1	48592500	Quartz Element HC-49/U
	or 49198700	Quartz Element
	or 49259100	Quartz Element
wC19	48103200	0.47μF 50V E.B.
wC37	48748400	0.1μF 50V C.C.

8-4. F-6061 Line Filter Board

Parts No.	Stock No.	Description
△ pC1	48733500	0.01μF 400V C.C.
△ pL1	48727800	Line Filter LP-2C
	or 49197100	Line Filter

8-5. F-6062 Display Control Board (Stock No 01131801)

Parts No.	Stock No.	Description
• Transistor		
nQ1	48916900	DTC114YF
nQ2	48916900	DTC114YF
nQ3	48916900	DTC114YF
• IC		
nIC1	49349300	CXP5014H-314S
nFL1	49266410	FL. Display Tube FV260G GR
nC2	48748400	0.1μF 50V C.C.
wIC10	48525000	BX-1407
	or 49324500	BX-1407 SBX1483-52

8-6. F-5941 Magazine Switch Board

Parts No.	Stock No.	Description
• Diode		
D1,2	46260300	10E2

8-7. F-6063 Function Switch Board

Parts No.	Stock No.	Description
oS1	49326300	Push SW..1
oS2	49326300	Push SW..2
oS3	49326300	Push SW..3
oS4	49326300	Push SW..4
oS5	49326300	Push SW..5
oS6	49326300	Push SW..6
oS7	49326300	Push SW..7
oS8	49326300	Push SW..8
oS9	49326300	Push SW..9
oS10	49326300	Push SW..0
oS11	49326300	Push SW..DISC
oS12	49326300	Push SW..MEMO
oS14	49326300	Push SW..▶/
oS15	49326300	Push SW..■
oS16	49326300	Push SW..◀◀
oS17	49326300	Push SW..▶▶
oS18	49326300	Push SW..◀◀
oS19	49326300	Push SW..▶▶
oS21	49326300	Push SW..INTRO SKIP
oS22	49326300	Push SW..REPEAT
oS23	49326300	Push SW..RANDOM
oS24	49326300	Push SW..TIME
oS25	49326300	Push SW..CHKC
oS26	49326300	Push SW..CLEAR
oS27	49326300	Push SW..AUTO SPACING
oS28	48158200	Slide SW..TIMER

8-8. F-6064 Eject Switch Board

Parts No.	Stock No.	Description
oS13	49326300	Push SW..EJECT(U)
oS20	49326300	Push SW..EJECT(L)

8-9. F-6065 Head Phone Amp. Board

Parts No.	Stock No.	Description
• IC		
kIC1	48577000	M5216L
kVR1	48728000	20KAX2 V.R., Level Adj.
oJ4	49197600	Jack, HEAD PHONE

8-10. F-6066 Power Supply Board

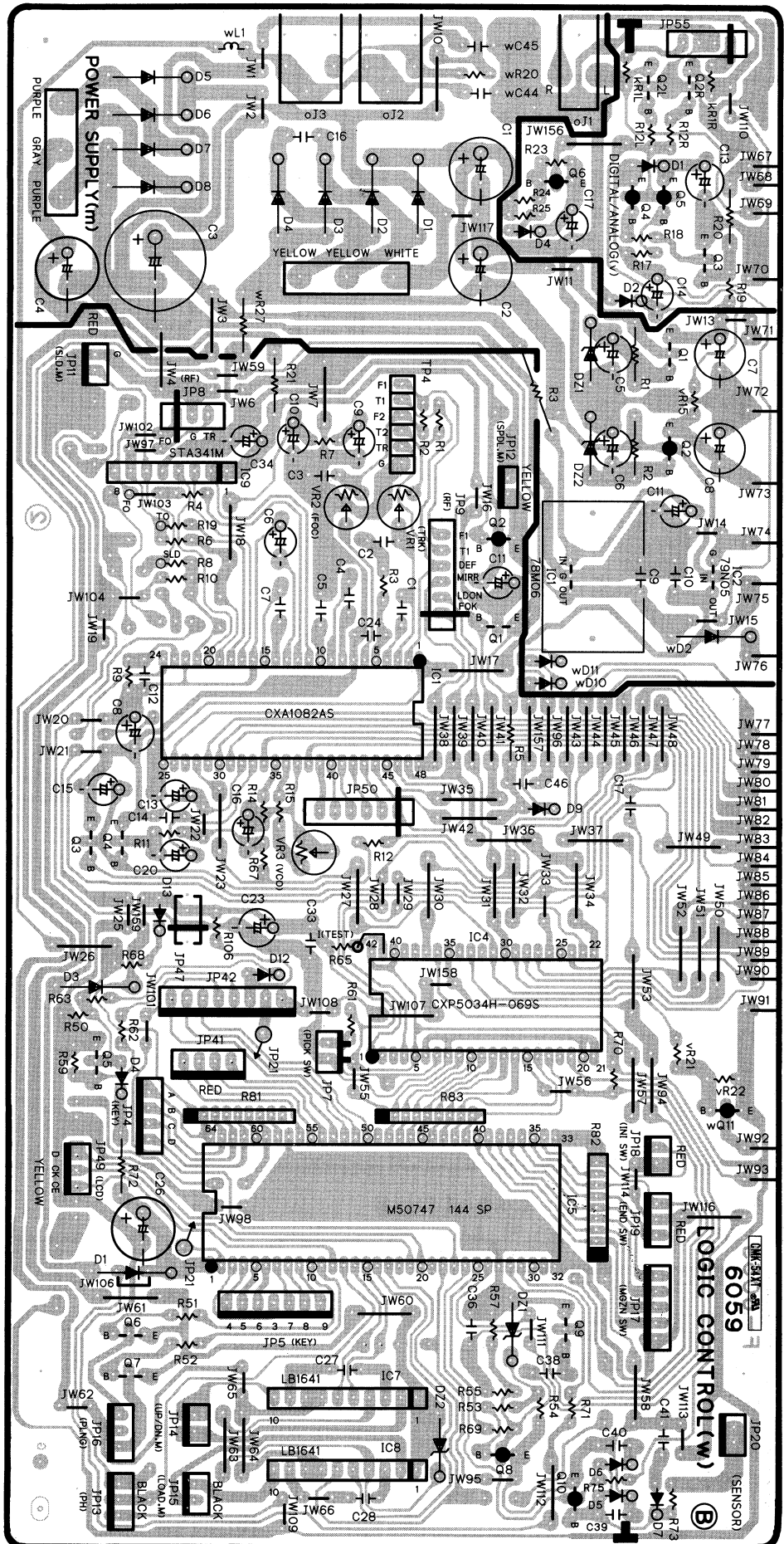
Parts No.	Stock No.	Description
• Transistor		
△ mQ3	46614001	2SA1283
• Diode		
△ mD9	46273600	DBB10B
• Zener Diode		
mDZ3	48557800	MTZ27D
	or 48638000	RD27B4

8-11. F-5942 Photo Interrupter Board

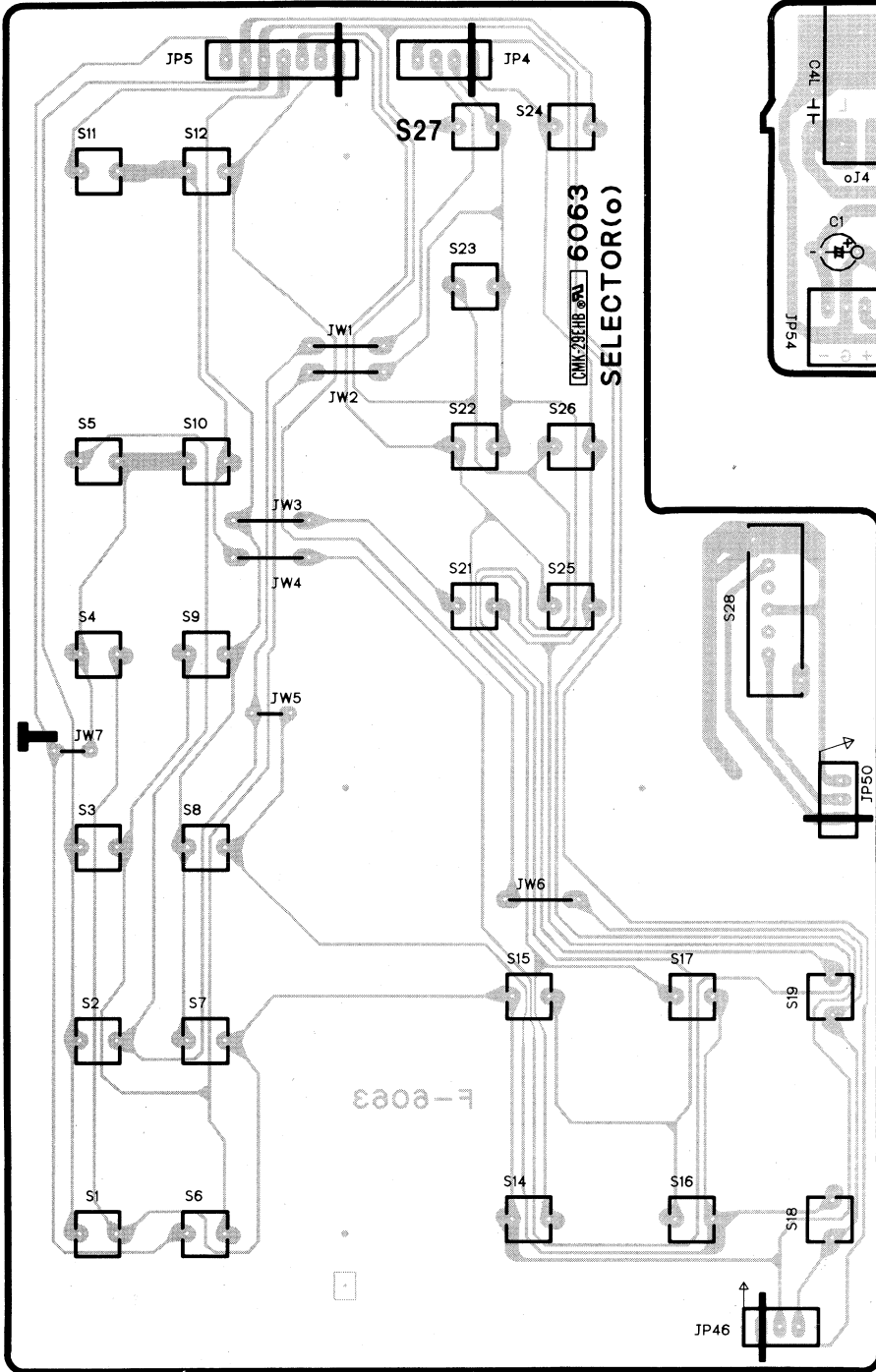
Parts No.	Stock No.	Description
pH01	48989300	TLP806 Photo Interrupter
• Transistor		
Q1	46367101	2SC2603
	or 48058801	2SC1740S

9. PARTS LOCATION ON BOARD

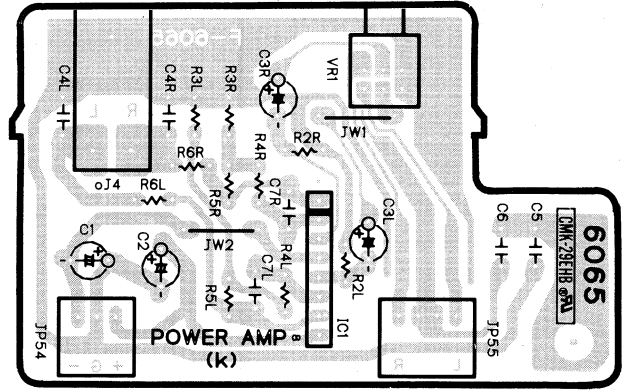
9-1. F-6059 Main Board



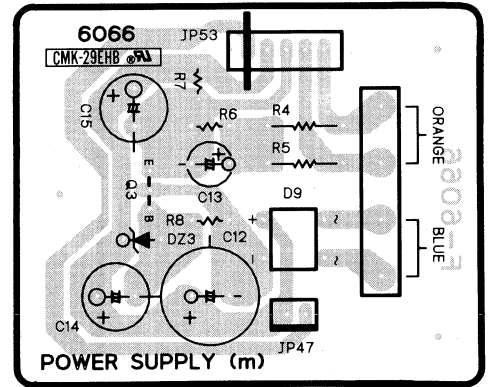
9-2. F-6063 Function Switch Board
Component Side



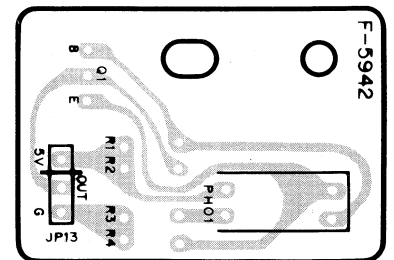
9-3. F-6065 Head Phone Amp. Board
Component Side



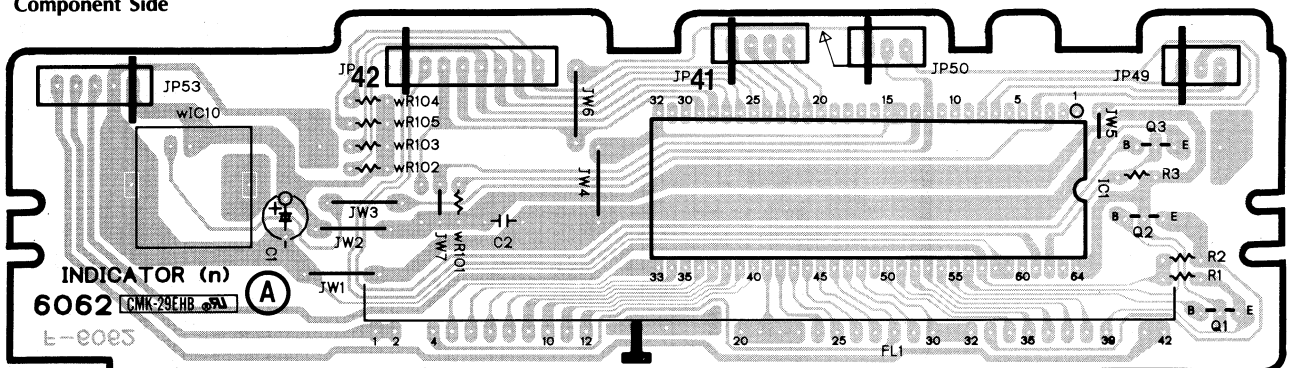
9-4. F-6066 Power Supply Board
Component Side



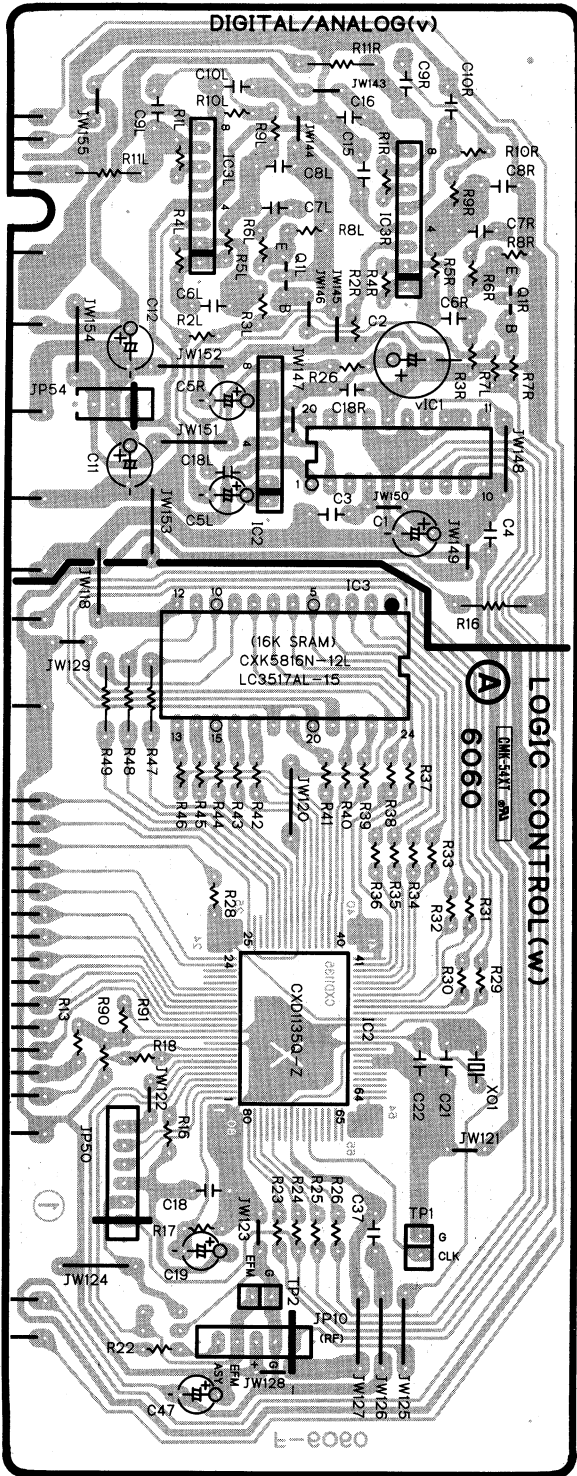
9-5. F-5942 Photo Interrupter
Board
Component Side



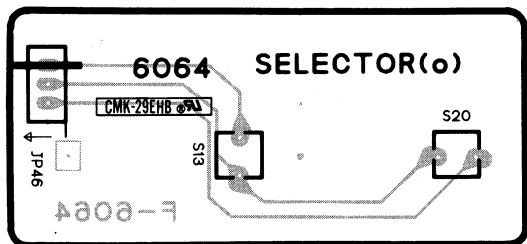
9-6. F-6062 Display Control Board
Component Side



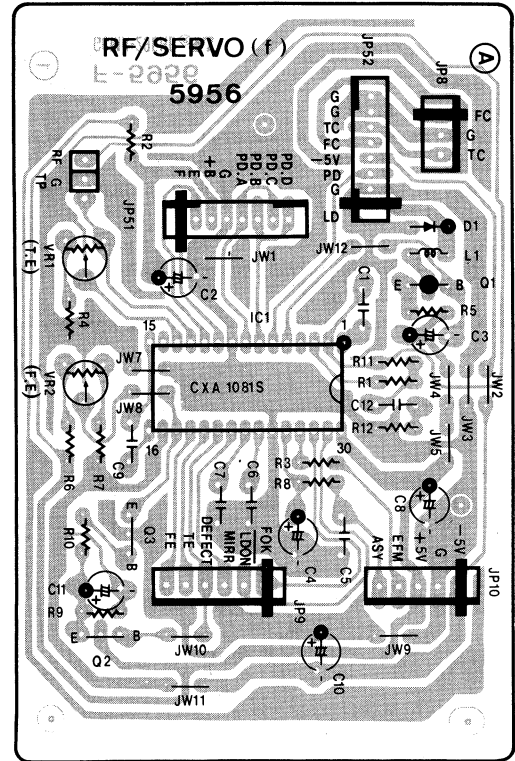
9-7. F-6060 Logic Control & D/A Converter Board
Component Side



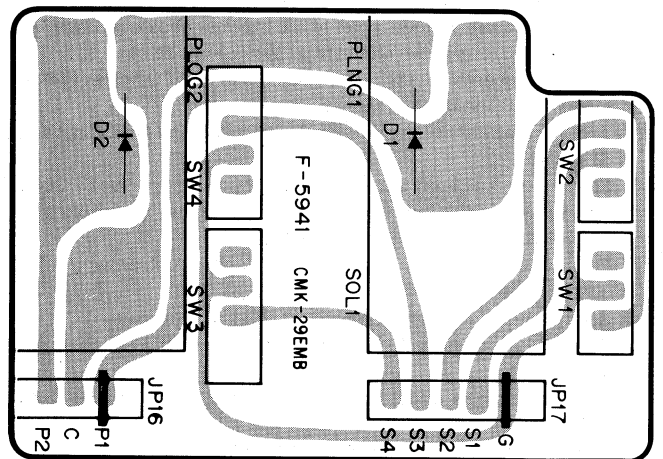
9-8. F-6064 Eject Switch Board
Component Side



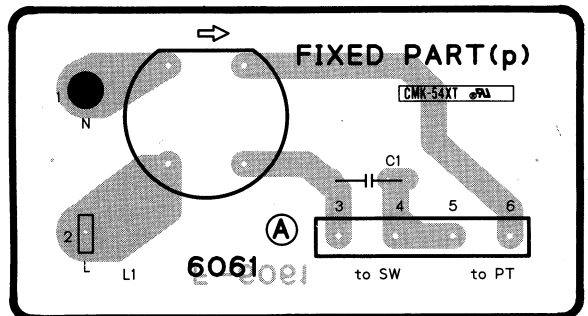
9-9. F-5956 RF Amp. Board
Component Side



9-10. F-5941 Magazine Switch Board
Component Side



9-11. F-6061 Line Filter Board
Component Side

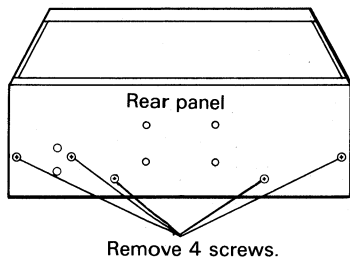


10. REPLACEMENT OF THE MAIN PARTS

A. Changer mechanism assembly

- 1) Remove the bonnet.
- 2) Remove the screws (5 locations in Fig. 10-1) from the rear panel.
- 3) Remove the F-6066 from the rear panel and then draw back the rear panel to remove it.
- 4) Remove the changer mechanism assembly from the set. (Remove 4 screws and Sa of the top view shown on page 14.)
- 5) Disconnect the connectors (JP8, JP9, JP10, 3 locations shown in Fig. 10-9) on the F-5956 PCB.
- 6) Remove the bundling bands of the leads connected to the F-6059 PCB in the changer mechanism assembly. (4 locations as (A) in the top view shown on page 14.)
- 7) Pull out the changer mechanism assembly toward the rear panel side.

Fig. 10-1



B. Plunger A, B (40) and microswitch A, B (39)

(Refer to the assembly diagrams of the changer mechanism assembly and changer case assembly on Pages 11 and 12.)

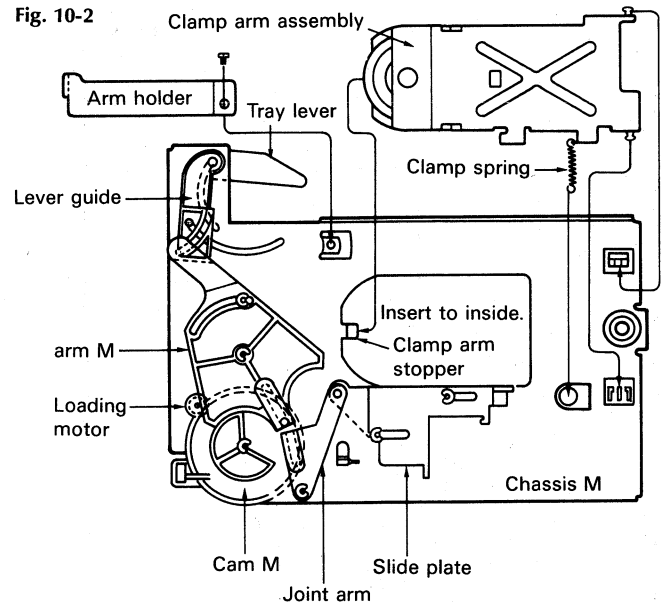
- 1) Take out the changer mechanism assembly from the set.
- 2) Remove the joint holder. (Refer to the top view shown on page 14.)
- 3) Remove 4 screws which fix the MG chassis and side block (22).
- 4) Remove 4 screws which fix the MG chassis and PG holder (34)/tray guide A (32) and remove the MG chassis.
- 5) Remove the side L of the side block F (22) from the main chassis side (2 screws).
- 6) Release the soldered parts (16 locations) on the F-5941 PCB and release the F-5941 PCB from the plunger A/B and lever switch A/B. (Do not remove the solder from the leads.)
- 7) Remove the SW slider A from the PG holder A. Remove the lever switch A from the SW holder A.
- 8) Remove the PG holder A from the MG holder. (2 screws)
- 9) Remove the plunger A from the bottom of the PG holder A. (2 screws)
- 10) Remove 2 screws which retain the tray guide A (32) and MG holder (31).
- 11) Remove the SW holder B from the PG holder B.
- 12) Remove the lever switch B from the SW holder B.
- 13) Remove the plunger B from the bottom of the PG holder. (2 screws)

C. Tray cover (68), Cam M (78), Arm M (74), Slide plate (74), Joint arm (76) and Clamp arm assembly (77)

(Refer to the assembly diagrams of the changer mechanism assembly and CD mechanism assembly on pages 11 and 12.)

- 1) Take out the changer mechanism assembly from the set.
 - * The CD mechanism assembly should have been moved to the bottom position by turning the timing belt.
- 2) Remove the joint holder and back stay from the changer mechanism assembly.
- 3) Remove the side block L(1) and R(2) from the bottom of the main chassis (4 screws) and then take out the CD mechanism assembly.
 - * When removing the CD mechanism assembly, be careful not to remove the SQ holder B(8) and 3mm dia. steel ball (9).
- 4) Remove the clamp spring (62) from the clamp arm assembly and then remove the clamp arm assembly from the chassis M.
- 5) Remove the arm holder from chassis M.
- 6) Remove the E rings (2 locations) which fixes arm M (74) and then remove arm M.
- 7) Remove the E ring which fixes the joint arm (76) and then remove the joint arm.
- 8) Remove the E ring which fixes cam M (73) and then remove cam M.
- 9) Remove the pin (72) and E ring which fix the tray lever (68) and lever guide (69) and then remove the tray lever and lever guide.
 - * When installing the clamp arm assembly to the mechanism chassis, set it so that the clamp plate is placed inside the clamp arm stopper of chassis M (mechanism chassis side).

Fig. 10-2



D. Pickup assembly (63) and spindle motor assembly (67)

(Refer to the assembly diagram of the CD mechanism assembly on page 13.)

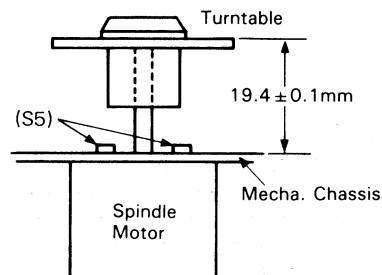
- 1) Remove the bonnet
 - (1) Solder the position shown with arrow in Fig. 10-3 previously.
 - (2) Also remove the connectors of the pickup assembly previously.
- 2) Remove 2 screws Sb on the side b of the UP chassis and loose 2 screws Se. (Refer to the top view shown on page 14.)
- 3) Remove 5 screws which retain the rear panel. (Refer to Fig. 10-1.)
- 4) Remove 4 screws Sa which retain the mechanism assembly. (Refer to the top view shown on page 14.)
- 5) Remove 2 screws Sd which retain the side block R.
 - (* If this is done, installation of the pickup can be done easily.)
- 6) Stand the set as shown in Fig. 10-4 so that the mechanism chassis is up.
- 7) Remove the back stay retaining screws (2 screws, (C) in Fig. 10-4).
- 8) Remove the screws which retain the mechanism chassis from the mechanism assembly (8 screws, (d) in Fig. 10-4).
- 9) Remove the mechanism chassis to the back stay side.
 - * When removing the mechanism chassis, be careful that the SQ holder dose not come off at this time.
- 10) Remove the clamp arm assembly at the holder position shown in Fig. 10-7.
 - * It is not required to remove the clamp spring.

(When replacing the spindle motor)

- 11) Pull out the turntable from the spindle motor shaft.
- 12) Remove 2 screws (S5) which retains the motor. (Refer to Fig. 10-6.)
- 13) Remove the motor.

Note: When installing the motor, set the height of the turntable as shown in Fig. 10-6.

Fig. 10-6



(When replacing the pickup arm assembly)

- 14) Loosen the screws (2 screws, Se shown in Fig. 10-7) which retain the support rail.
- 15) Take out the pickup together with the support rail.
- 16) After replacing the pickup, when the clamp arm assembly is inserted into the holder, insert the clamp plate to the lower side of the clamp arm stopper.
- 17) Remove the solder from the pick up (position shown with arrow in Fig. 10-3).
 - * This method is to replace without removing the timing belt (the height adjustment of the mechanism is not needed.)

Fig. 10-7

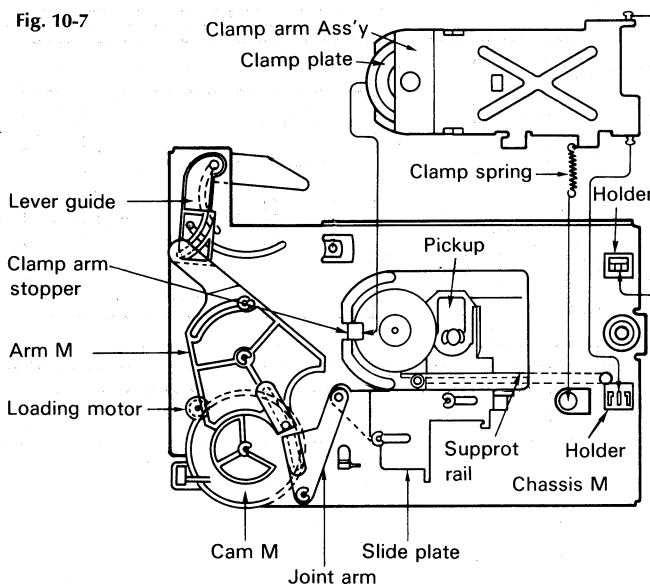


Fig. 10-3

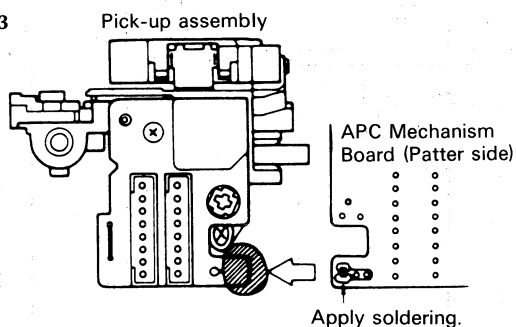


Fig. 10-4

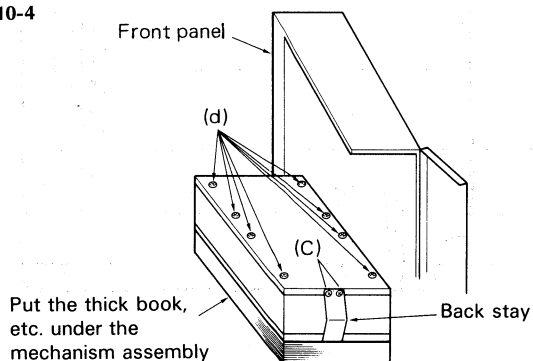
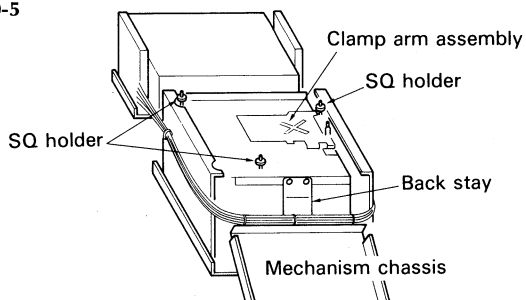


Fig. 10-5



E. Cautions when replacing the parts

- 1) When installing the pulley (23) to the UD motor (3) and loading motor (51), set it 3.5 mm away from the motor.
- 2) Since 2 kinds of UD shafts are used, (shaft A(4), shaft B(5)), be careful when installing them.

Fig. 10-8

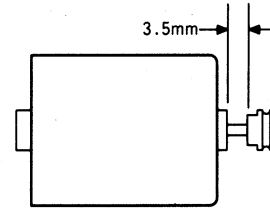
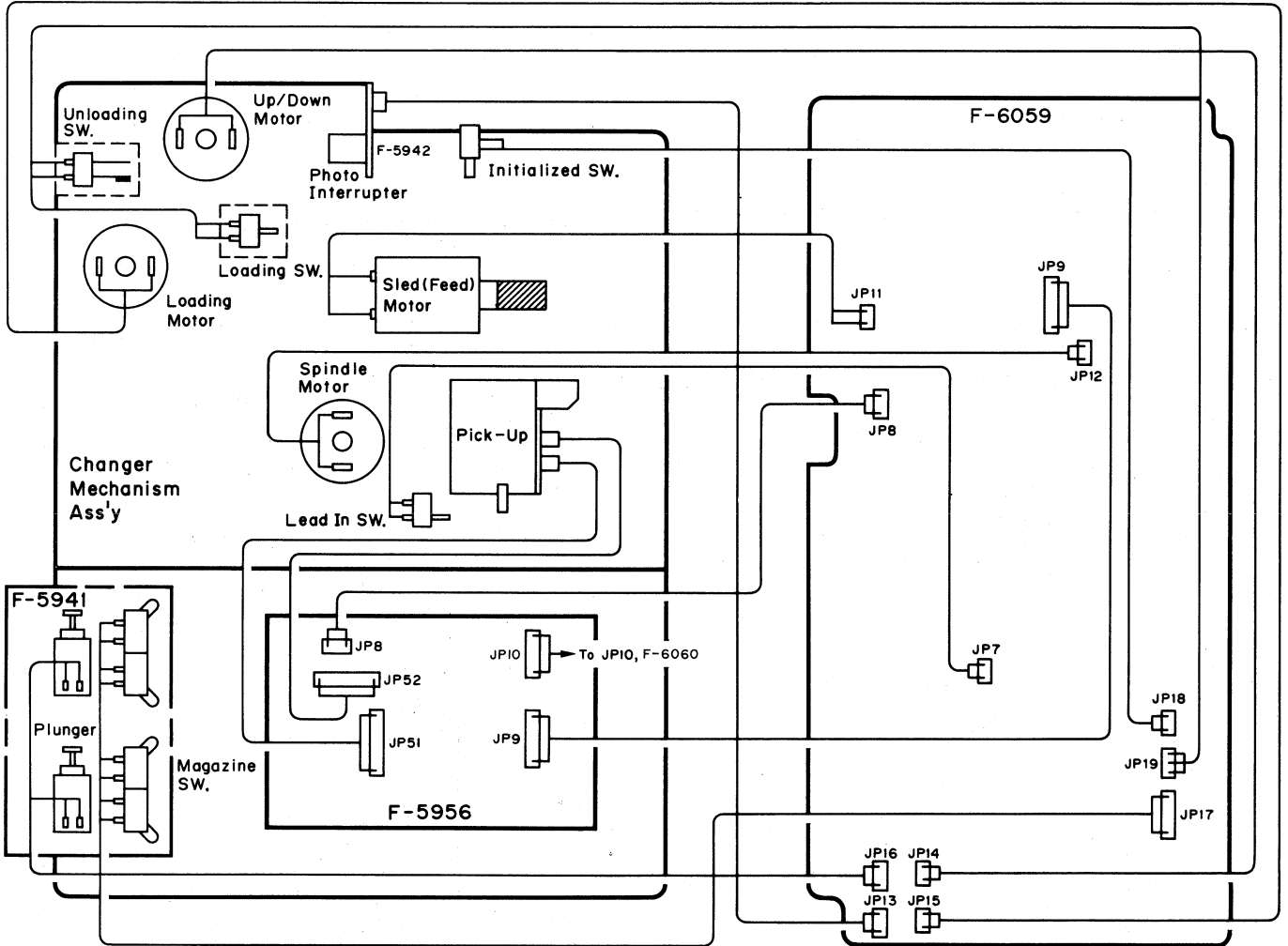


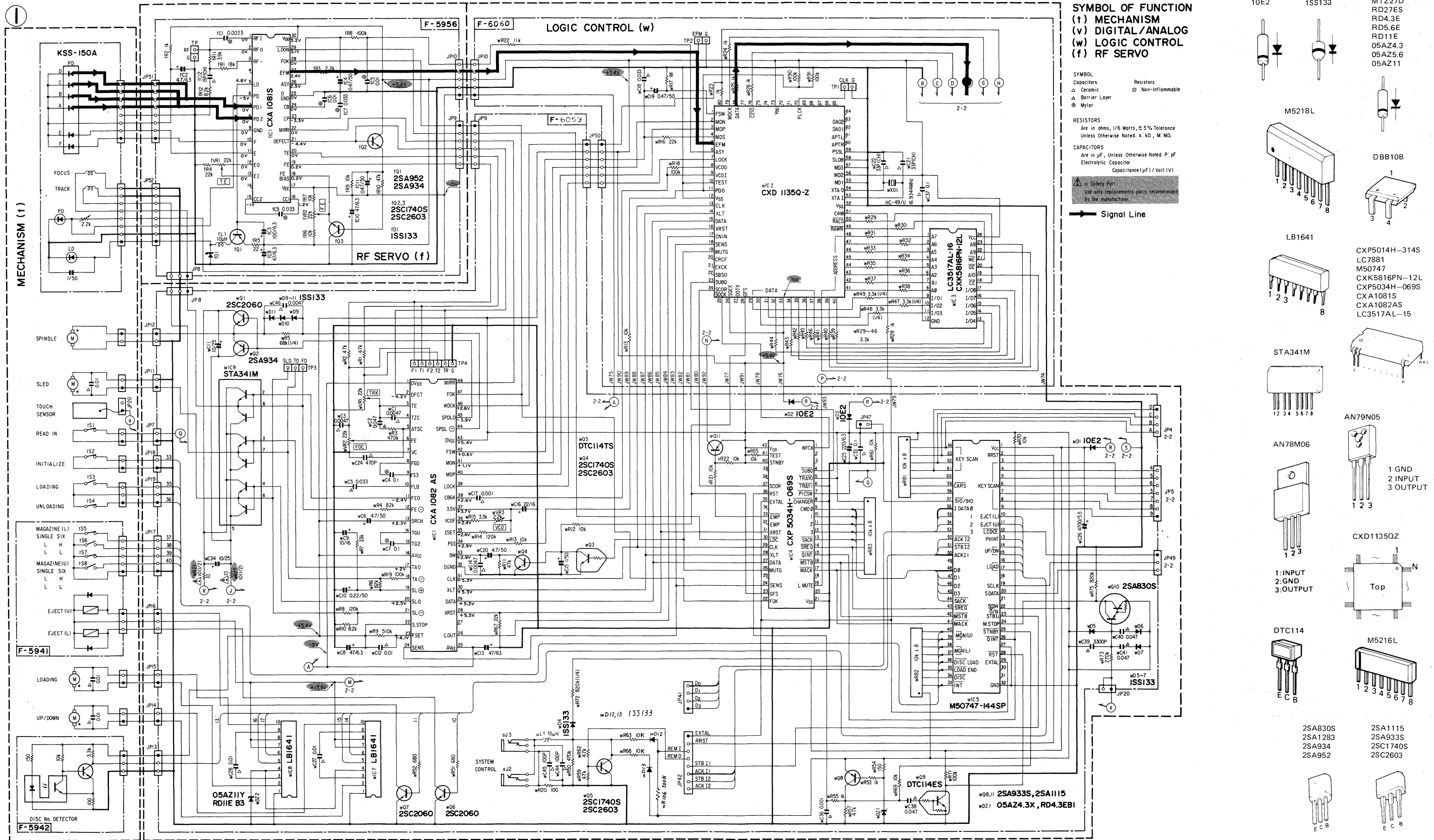
Fig. 10-9 Mechanism assembly connection diagram



11. SCHEMATIC DIAGRAM

11-1. Signal processing and logic control section

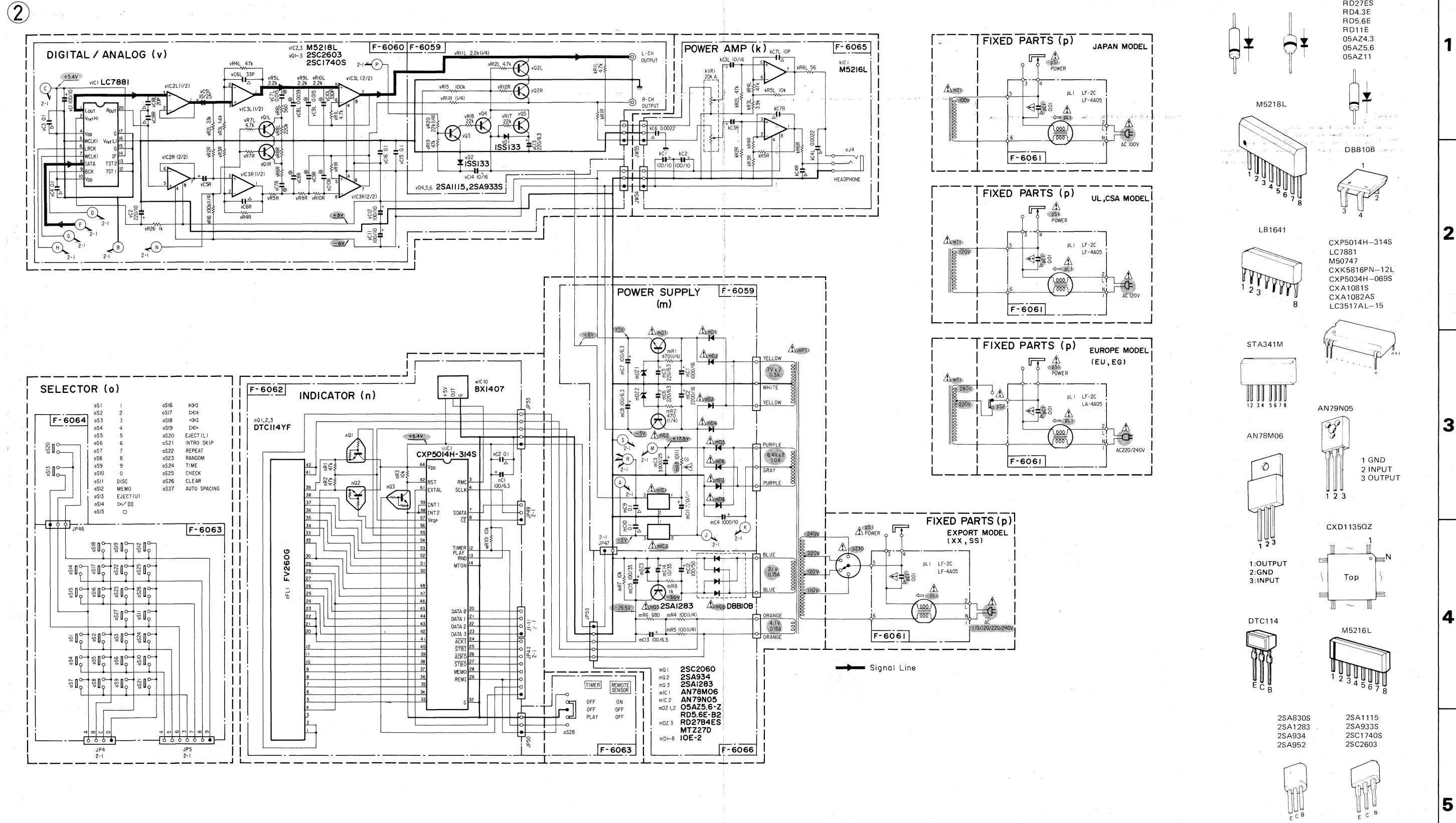
• Design and specifications subject to change without notice for improvement.
 • La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
 • Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



1
2
3
4
5

11-2. D/A Converter and operation control 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.



SANSUI ELECTRIC CO., LTD.: 14-1, Izumi 2-chome, Suginami-ku Tokyo 168 Japan
 PHONE: (03) 324-8891/TELEX: 232-2076 (International Division)
 SANSUI ELECTRONICS CORPORATION: 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 G.M.B.H.: Paul Ehrlich Strasse 8, 6074 Rödermark 2, West Germany
 山水電気株式会社 東京都杉並区和泉2-14-1(〒168)
 (SM2-84) Printed in Japan (1988.08.P) <Stock No.36543900>