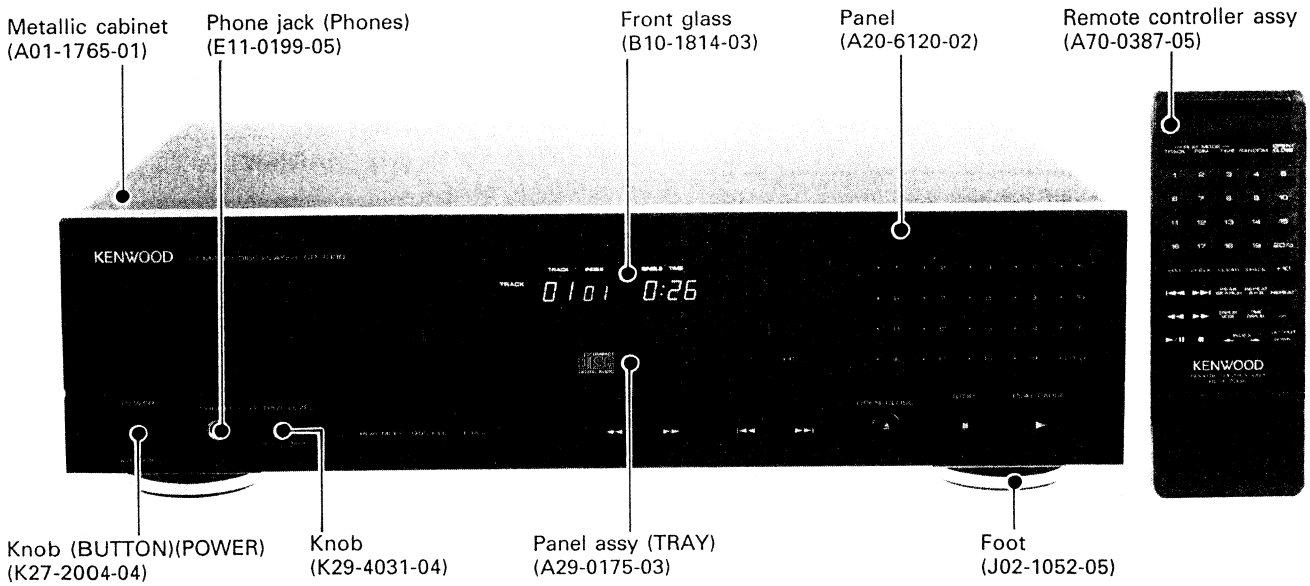
COMPACT DISC PLAYER

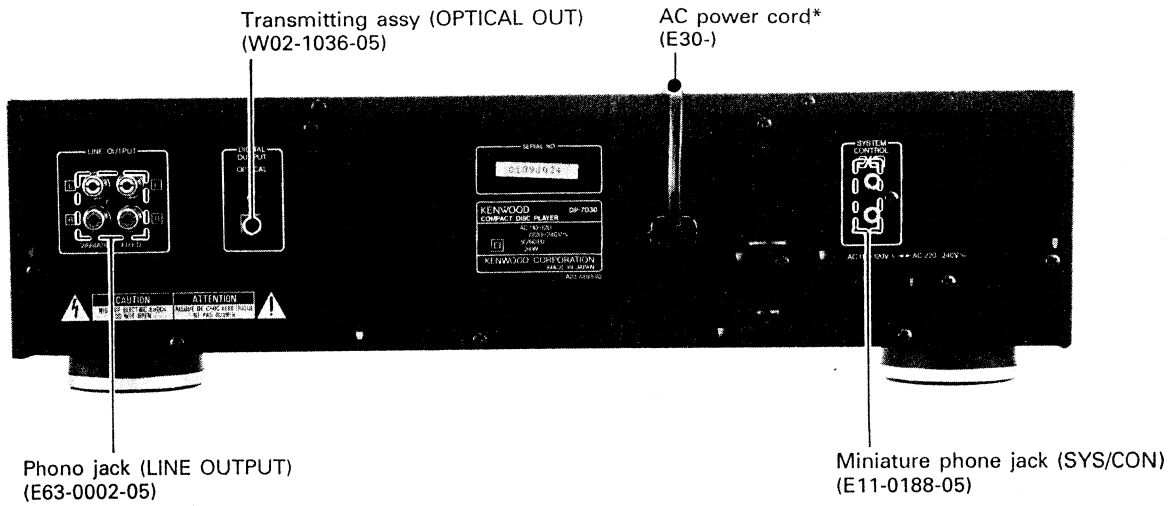
DP-7030

SERVICE MANUAL

KENWOOD

B51-4244-00 (O) 2140





***Refer to parts list on page 49.**

In complicance with Federal Regulations, following are reproductions of labels on, or inside the product relating to laser product safety.

KENWOOD-Corp. certifies this equipment conforms to DHHS Regulations No. 21 CFR 1040. 10, Chapter 1, Subchapter J.

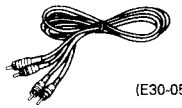
DANGER : Laser radiation when open and interlock defeated. AVOID DIRECT EXPOSURE TO BEAM.

CONTENTS / ACCESSORIES

Contents

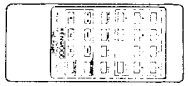
Accessories

- Audio cord 1



(E30-0505-05)

- Remote control unit 1



(A70-0387-05)

- System control cord 1
(Except for the U.K. and Europe)

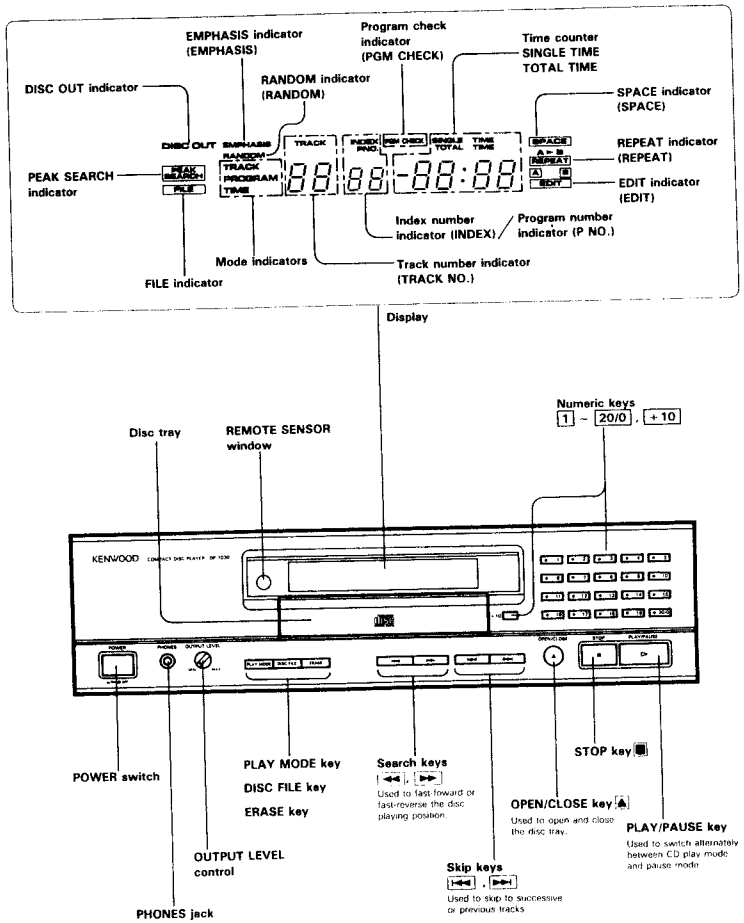
(E30-0977-05)

- Battery ("AA" or "R06") 2

(—)

CONTROLS / CAUTION

Controls

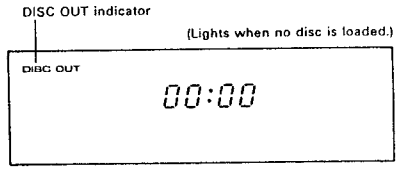


Caution

- **Note related to transportation and movement**

Carry out the operations listed before transporting or moving this unit.

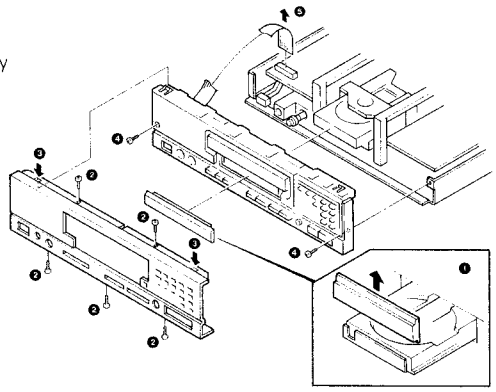
1. After making sure that there is no compact disc loaded in the unit, turn the POWER switch ON.
2. Wait for several seconds to verify that the DISC OUT indicator (OUT) lights on the display. and then turn the POWER switch back OFF.



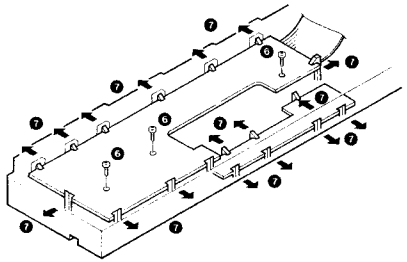
DISASSEMBLY FOR REPAIR

1. HOW TO DISASSEMBLE

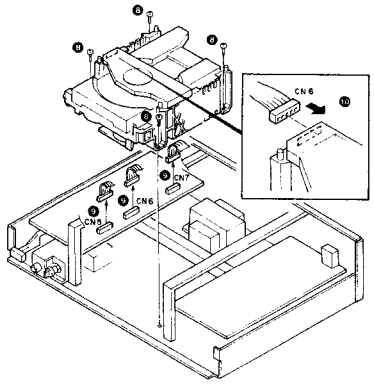
1. After sliding out the tray, turn off the power switch.
2. Remove the tray panel and push the tray backward by hand (❶).
3. Remove 5 screws (❷) and 2 catches (❸). And then remove the panel.
4. Remove 2 screws (❹) and connector (❺). And then remove the sub panel.



5. Remove 5 screws (❻).
6. Remove 17 catches (❼) and pc board.



7. Remove 4 screws (❽).
8. Remove 3 connectors (❾) and mechanism ass'y.
9. Inert the connector CN6 to LD short pin (❿).



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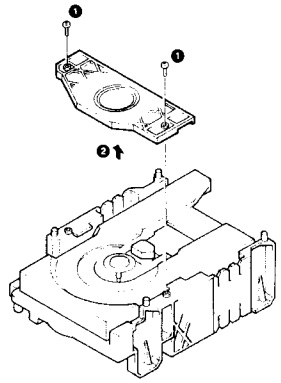
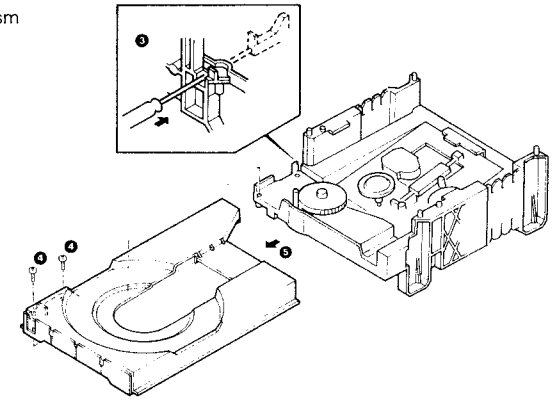
DISASSEMBLY FOR REPAIR

2. HOW TO REMOVE TRAY

1. Remove 2 screws (❶).
2. Remove clamper ass'y (❷).

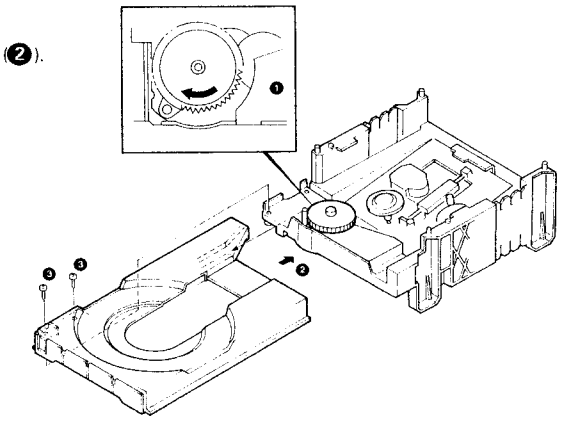


3. Insert the driver to left-side hole of mechanism ass'y and push the slider (❸).
4. Remove 2 screws (❹).
5. Tray can be pulled out (❺).



3. HOW TO MOUNT TRAY

1. Set the pole to fully clockwise (❶).
2. Insert the tray to both-side guide on chassis (❷).
3. Fix 2 screws (❸).

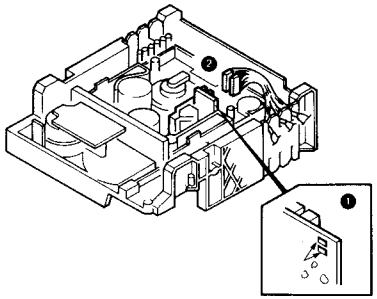


DISASSEMBLY FOR REPAIR

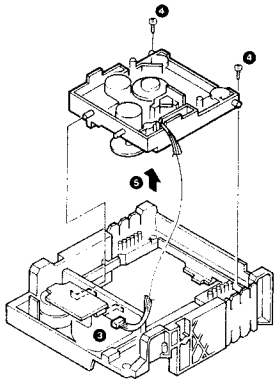
4. HOW TO REPLACE THE PICKUP.

Short the short-land of the pickup before the following procedures (❶).

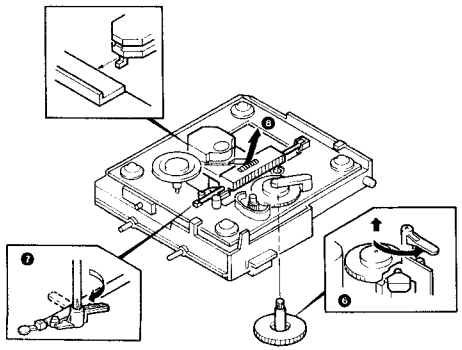
1. Remove 2 connectors (❷).



2. Remove the connector (❸).
3. Remove 2 screws (❹).
4. Remove the mechanism drive (MD) ass'y (❺).



5. Remove stopper and gear (❻).
6. Remove rod stopper (❼).
7. Remove the pickup ass'y (❽).



Note : When mounting the pickup, in the reverse order of disassembly. Unsolder the short land after connecting the flexible wire.

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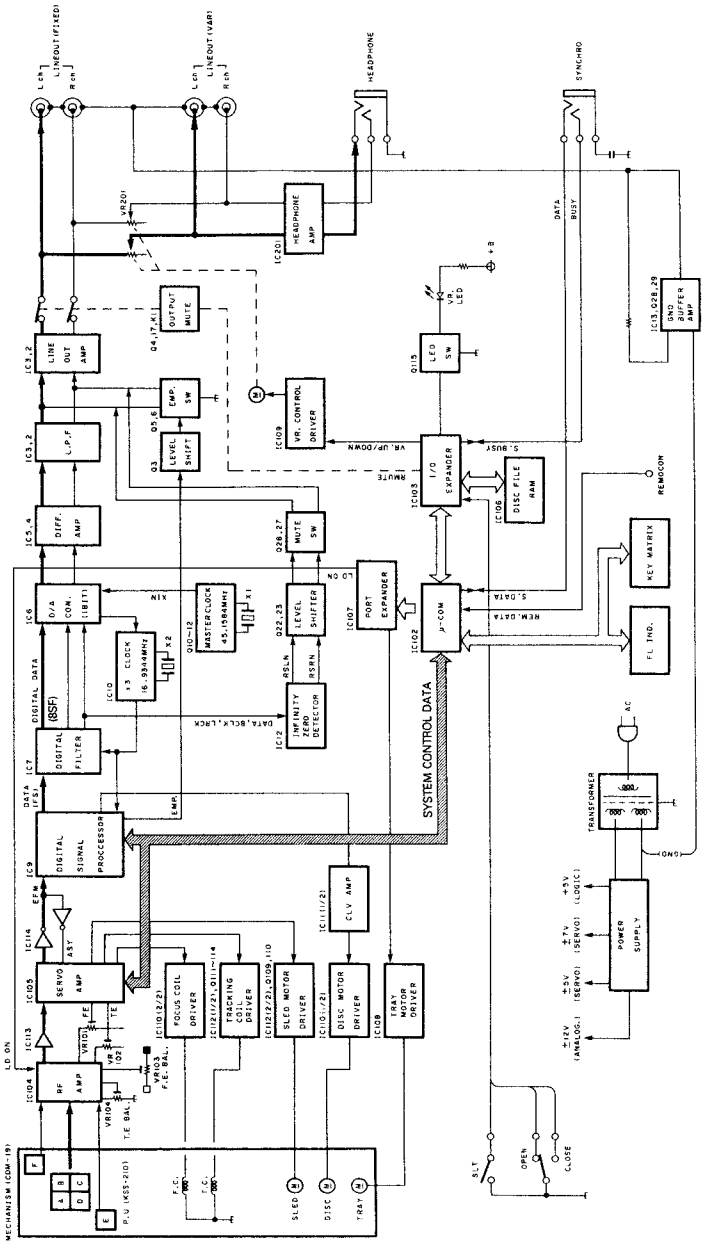
BLOCK DIAGRAM

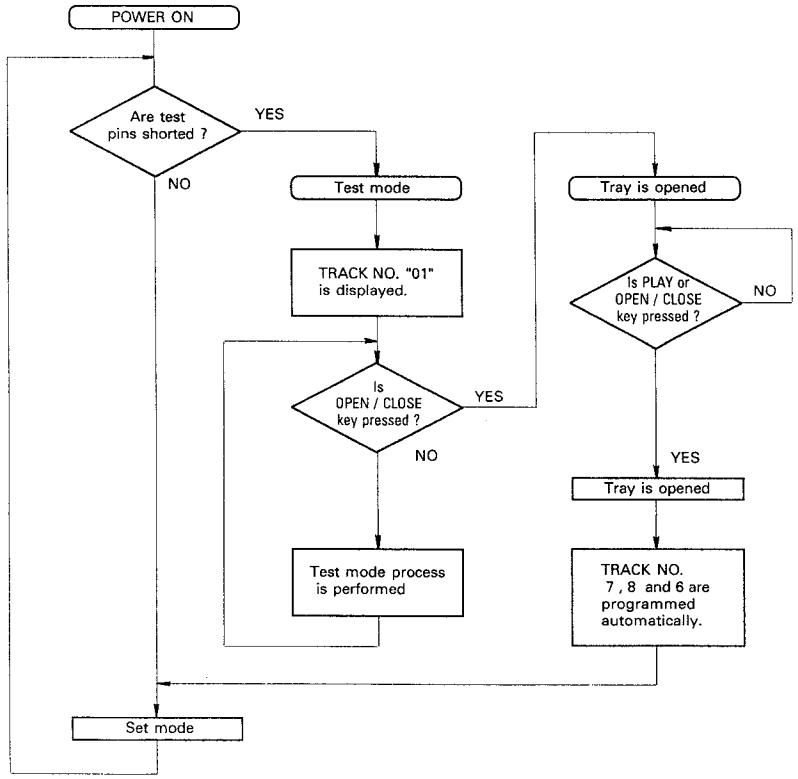


CIRCUIT DESCRIPTION

1. Test Mode

1-1. Setting the test mode

This microprocessor built in this unit (X32-1790-00, X32-1802-70) can be put to TEST MODE by just short-circuiting the test pins (#2 and 3).



CIRCUIT DESCRIPTION

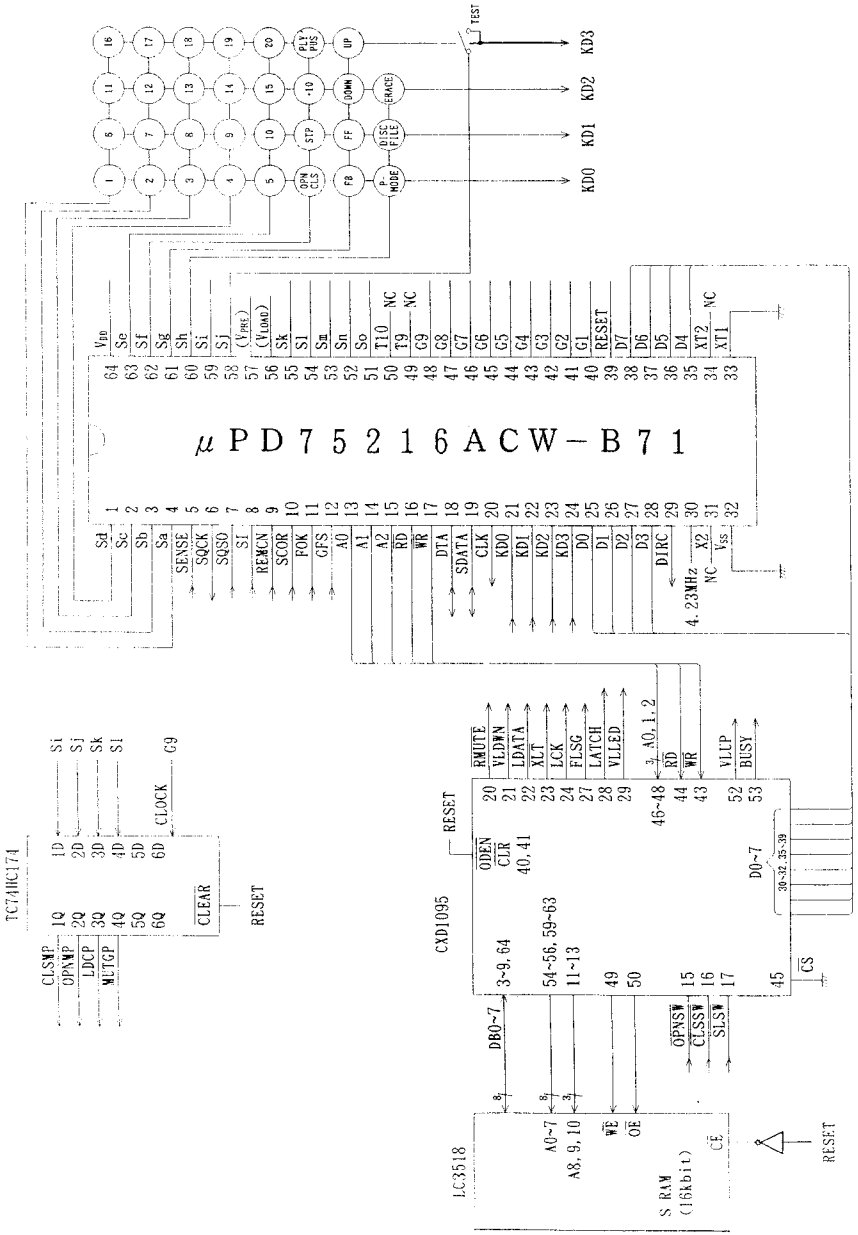
2-2. Key and functions valid in test mode

No.	Input key	Function	Track No. display
1	PLAY	(1) Focusing servo ..... ON (2) Tracking servo ..... ON (3) Feed vervo ..... ON	TRACK NO. 05 ↓ Displayed for a few seconds after completion (1), (2) and (3). ↓ Disc Track No. is displayed.
2	+10	(1) Focusing servo ..... ON (2) Tracking servo ..... OFF (3) Feed servo ..... OFF	TRACK NO. 03
3	STOP	(1) Focusing servo ..... OFF (2) Tracking servo ..... OFF (3) Feed servo ..... OFF	TRACK NO. 01
4	UP (▶▶|)	Turns all FL display lamps ON.	TRACK NO. 88
5	DOWN (|◀◀)	Turns all FL display lamps OFF. "TRACK NO." is lighted.	TRACK NO. 88
6	P. MODE	Track No. 7,8, and 6 are programmed and playback from Track No.7. The test mode is canceled.	-
7	OPEN/CLOSE (▲)	When the tray is opened then closed. Track No. 7, 8, and 6, are programmed and set is in STOP mode. The test mode is canceled.	TRACK NO. 00
8	ERASE	In the STOP mode, moves the pickup toward the outer position of disc. And laser diode is lighted when push OPEN / CLOSE key, set into STOP mode.	TRACK NO. 02

CIRCUIT DESCRIPTION

2. Microprocessor : μPD75216ACW-B71 (IC102)

2-1. Terminal connection diagram



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CIRCUIT DESCRIPTION

2-2. Pin functions : μPD75216ACW-B71 (IC102)

Pin No.	Pin name	I/O	Function
1~4	Sd~Sa	O	FL segment control terminals (also used for key scan signal)
5	SENSE	O	Signal detection terminal for SENSE signal from processor and servo ICs.
6	SQCK	O	Q data read clock output terminal.
7	SQSO	O	Q data input terminal.
8	SI	-	N.C.
9	REMCN	I	Remote control input terminal
10	SCOR	I	Sub-code frame sync detection signal input terminal.
11	FOKP	I	Input terminal for FOK signal from RF amp. (focus OK :" H")
12	GFS	I	Frame sync signal input terminal. ("H" : frame sync)
13~15	A0~2	O	Control address for control register of CXD1095.
16	$\overline{RD}$	O	Read control signal for CXD1095.
17	$\overline{WR}$	-	Write control signal for CXD1095.
18	DTA	O	Control serial data to CXD2500 and CXA1327.
19	SDATA	I/O	Serial data signal input / output terminal.
20	CLK	O	Clock for serial data to CXD2550 and CXA1372.
21~24	KD0~3	I	Input terminal for key return signal from key matrix.
25~28	D0~3	I/O	Data bus to CXD1095. (LSB 4-bits)
29	DIRC	O	DIRC signal output to CXA1372.
30	X1	I	Input terminal of system clock. (4.23MHz)
31	X2	-	Not used.
32	Vss	-	GND.
33	XT1	-	GND.
34	XT2	-	N.C.
35~38	D4~7	-	Data bus to CXD1095.(MSB 4-bits)
39	RESET	I	Reset input terminal. (active "L")
40~48	G1~9	O	FL digit control terminals.
49,50	T9,10	-	N.C.
51~55	So~k	O	FL segments control terminals. (also used for key scan signal)
56	VLOAD	I	FL driver negative power supply. (-30V)
57	VPRE	I	FL pre-driver negative power supply. (-5V)
58~63	Sj~e	O	FL segment control terminals. (also used for key scan signals)
64	VDD	I	Power supply. (+5V)

2-3. Pin functions : CXD1095 (IC103)

Pin No.	Pin name	I/O	Functions
1,2	N.C.	I	
3~9	DB1~7	I/O	Data input/output terminals for RAM (LC3518). (MSB 7-bits).
10	Vss	–	GND.
11~13	A8~10	O	Access address to LC3518.
14	–	–	Not used.
15	$\overline{OPNSW}$	I	Tray open switch. (Open : "L")
16	$\overline{CLSSW}$	I	Tray close switch. (Close : "L")
17	$\overline{SLSW}$	I	Sled limit switch. (SW ON : "L")
18	PC7	–	Not used.
19	N.C.	–	
20	$\overline{RMUTE}$	O	Relay mute. (Active "L")
21	VLDWN	O	Motor drived volume to counter clcock wise. (Active "H")
22	LDATA	O	20-LEDs control data.
23	$\overline{XLT}$	O	Latch signal of ending data output to LSI.
24	CLK	O	Clock signal for 20-LEDs control
25	Vss	–	GND.
26	VDD	–	Power supply. (+5V)
27	FLSG	O	Display off : "H".
28	LATCH	O	Latch signal of ending data output of 20-LEDs.
29	VLLED	O	LED indicator of motor drived volume. (In turning volume knob, LED blinks)
30~32	D0~2	I/O	Data bus to microprocessor. (LSB 3-bits)
33,34	N.C.	–	
35~39	D3~7	I/O	Data bus to microprocessor. (MSB 5-bits)
40	$\overline{CLR}$	I	Connect to RESET circuit.
41	OPEN	I	Connect to RESET circuit.
42	Vss	–	GND.
43	$\overline{WR}$	I	Write strobe signal to write data from microprocessor to CXD1095.
44	$\overline{RD}$	I	Read strobe signal to read data from CXD1095 to microprocessor.
45	$\overline{CS}$	I	Connect to GND.
46~48	A0~2	O	Address for ports and control register.
49	$\overline{WE}$	O	Write inable to write data to LC3518. (Write : "L")
50	$\overline{OE}$	O	Connect to "H" level.
51	N.C.	–	
52	VLUP	O	Motor drived volume to clockwise. (Active "H")
53	BUSY	I/O	Serial busy signal input / output terminal.
54~56	PA0~2	O	Address port to LC3518. (LSB 3-bits)
57	Vss	–	GND.
58	VDD	–	Power supply (+5V).
59~63	PA3~7	O	Address port to LC3518. (center 5-bits)
64	DB0	I/O	Data input / output terminal to LC3518. (LSB)

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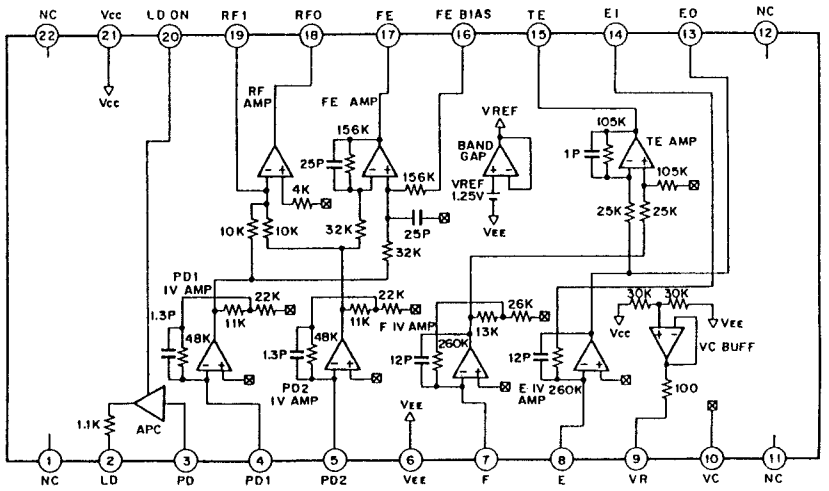
CIRCUIT DESCRIPTION

3. RF amplifier : CXA1471S (IC104)

CXA1471 is an IC developed for compact disc players. It contains an RF amplifier for 3 spot optical pickup, focus error amplifier, tracking error amplifier, and APC circuit.

3-1. Block diagram



3-2. Pin functions

Pin No.	Pin name	I/O	Function
2	LD	O	APC LD amplifier output pin.
3	PD	I	APC LD amplifier input pin.
4	PD1	I	RF I-V amplifier inverted input pin. Current input by connecting to the photo diode A+C terminals.
5	PD1	I	RF I-V amplifier inverted input pin. Current input by connecting to the photo diode B+D terminals.
7	F	I	F I-V amplifier inverted input pin. Current input by connecting to the photo diode F terminal.
8	E	I	E I-V amplifier inverted input pin. Current input by connecting to the photo diode E terminal.
9	VR	O	CD voltage output pin of (Vcc+VEE) / 2.
10	VC	I	Connected GND when using dual power supply (±).
			Connected to VR (pin 9) when using a single power supply.
13	EO	O	E output of I-V amplifier.
14	EI	–	E I-V amplifier feedback input pin. For E I-V amplifier gain adjustment.
15	TE	O	Tracking error amplifier output pin.
16	FE-BIAS	I	Bias pin on the focus error amplifier non-inverted side.
17	FE	O	Focus error amplifier output pin.
18	RFO	O	RF summing amplifier output pin.
19	RFI	I	Inverted input pin of RF amplifier. Gain of amplifier is fixed by resistor between RFO and RFI.
20	LD-ON	I	LD ON / OFF select pin. (Vcc : ON)

CIRCUIT DESCRIPTION

4. Servo Signal Processor : CXA1372Q (IC105)

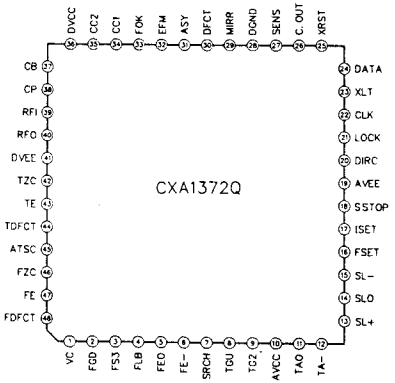
Outline

CXA1372Q is a bipolar IC developed to be used for processing of the RF signal (Focus OK, mirror, defect, comparator of EFM) and servo control.

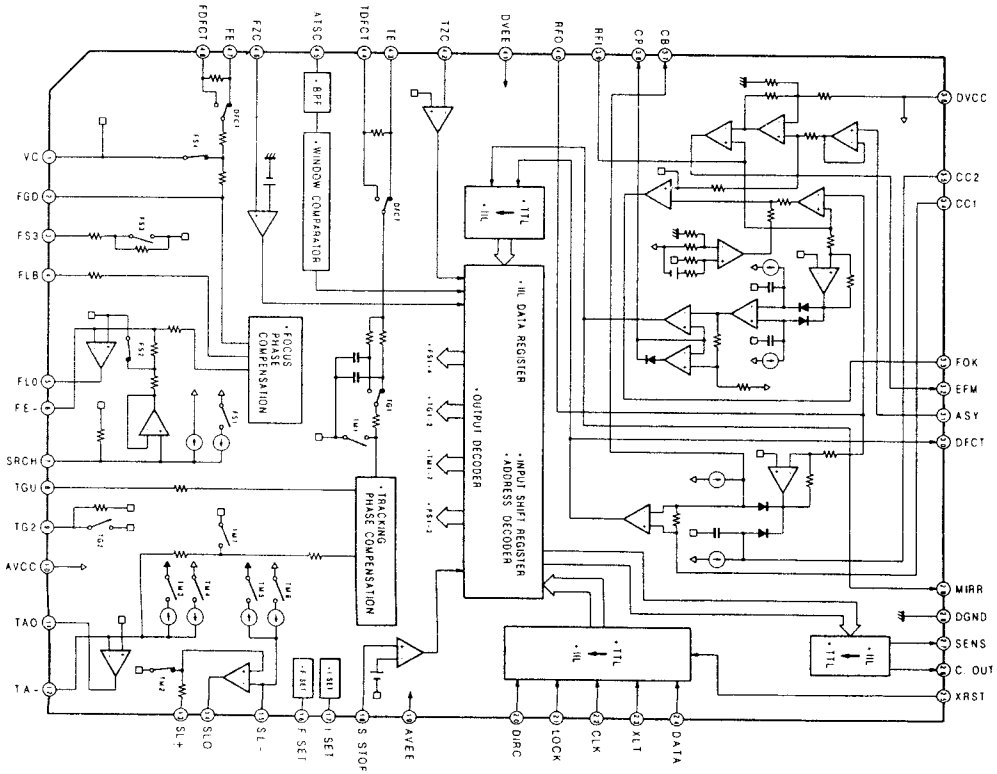
Functions

- Auto asymmetry control
- Focus OK detection circuit
- Mirror detection circuit
- Defect detection and countermeasure circuit
- EFM comparator
- Focus servo control
- Tracking servo control
- Thread servo control

4-1. Pin connection



4-2. Block diagram



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CIRCUIT DESCRIPTION

4-3. Pin functions

Pin No.	Pin name	I/O	Function
1	VC	I	Middle-point voltage input terminal. When two power sources are used : GND, when single power source is used : (Vcc+GND)/2.
2	FGD	I	When lowering the high-band gain of the focus servo, insert a capacitor between this terminal and terminal No. 3.
3	FS3	I	Change the high-band gain of the focus servo by turning FS3 on and off.
4	FLB	I	Outside terminal of time constant for raising the low-band of the focus servo.
5	FEO	O	Focus drive output.
6	FE−	I	Inverted input terminal of focus amplifier.
7	SRCH	I	Outside terminal of time constant for making focus search waveform.
8	TGU	I	Outside terminal of time constant for changing high-band gain of tracking.
9	TG2	I	Outside terminal of time constant for changing high-band gain of tracking.
10	AVCC		
11	TAO	O	Tracking drive output.
12	TA−	I	Inverted input terminal of tracking amplifier.
13	SL+	I	Non-inverted input terminal of thread amplifier.
14	SLO	O	Thread drive output.
15	SL−	I	Inverted input terminal of thread amplifier.
16	FSET	I	Terminal for setting the peak for phase compensation of focus tracking.
17	ISET	I	Current for determining the height of the focus search track jump thread kick is applied.
18	SSTOP	I	Terminal for ON/OFF detecting signal of limit switch for detecting the most inside line of disc.
19	AVEE		
20	DIRC	I	Used to jump over one track. 47kΩ pull-up resistor is inserted.
21	LOCK	I	When "L", thread runaway-preventive circuit operates. 47kΩ pull-up resistor is inserted.
22	CLK	I	Clock input for transferring the serial data from CPU (having no pull-up resistors).
23	XLT	I	Latch input from CPU (having no pull-up resistors).
24	DATA	I	Serial data input from CPU (having no pull-up resistors).
25	XRST	I	Reset when reset input terminal is at "L" (having no pull-up reisitors).
26	SENS	O	Outputs FZC, AS, TZC, SSTOP, etc. on receipt of command from CPU.
27	C. OUT	O	Signal output for counting tracks.
28	DGND		
29	MIRR	O	Output terminal of MIRR comparator. (DC voltage : Load of 10kΩ connected)
30	DFCT	O	Output terminal of DEFECT comperator. (DC voltage : Load 10kΩ connected)
31	ASY	I	Input terminal of auto asymmetry control.
32	EFM	O	Output terminal of EFM comparator. (DC voltage : Load of 10kΩ connected)
33	FOK	O	Output terminal of focus OK comparator. (DC voltage : Load of 10kΩ connected)
34	CC1	I	DEFECT bottom hold output terminal.
35	CC2	O	Terminal in which DEFECT bottom hold output is input after capacitive coupling.
36	DVCC		
37	CB	I	Terminal to which DEFECT bottom hold capacitor is connected.
38	CP	I	Terminal for connecting MIRR hold comparator. Non-inverted input terminal of MIRR comparator.
39	RFI	I	Terminal in which output of RF summing amplifier is input after capacitive coupling.
40	RFO	O	Output terminal of RF summing amplifier. Check point of eye pattern.
41	DVEE		
42	TZC	I	Input terminal of tracking zero cross comparator.
43	TE	I	Input terminal of tracking error.
44	TDFCT	I	Terminal for connecting the capacitor for time constant in case of defect.
45	ATSC	I	Input terminal of window comparator for detecting ATSC.
46	FZC	I	Terminal for inputting the focus zero cross comparator.
47	FE	I	Input terminal of focus error.
48	FDFCT	I	Terminal for connecting capacitor for time constant in case of defect.

5. Digital Signal Processor : CXD2500Q (IC9)

Outline

The CXD2500Q is a digital signal processing LSI for a compact disc player, which has the following functions.

- A wide frame jitter margin realized by 32-KRAM (±28 frames)
- Bit clocks for strobing EFM signal are generated by the digital PLL, and the capture range is ±150kHz minumum
- Demodulation of EFM data
- Protection and reinforcement of EFM frame sync signal
- Strong error correction by refined super strategy. C1 : Double correction, C2 : Quadruple correction
- Double-speed replay and variable pitch replay
- Reduction of noise generation at track jumps
- Auto zero cross muting
- Demodulation of sub-code and detection of errors in sub-code Q data
- Digital spindle servo (Having over-sampling filter)
- 16-bit traverse counter
- CPU interface by serial bus
- A built-in servo auto sequencer
- Output for digital audio interface
- Built-in digital level meter and peak meter
- Applicable to bilingual system

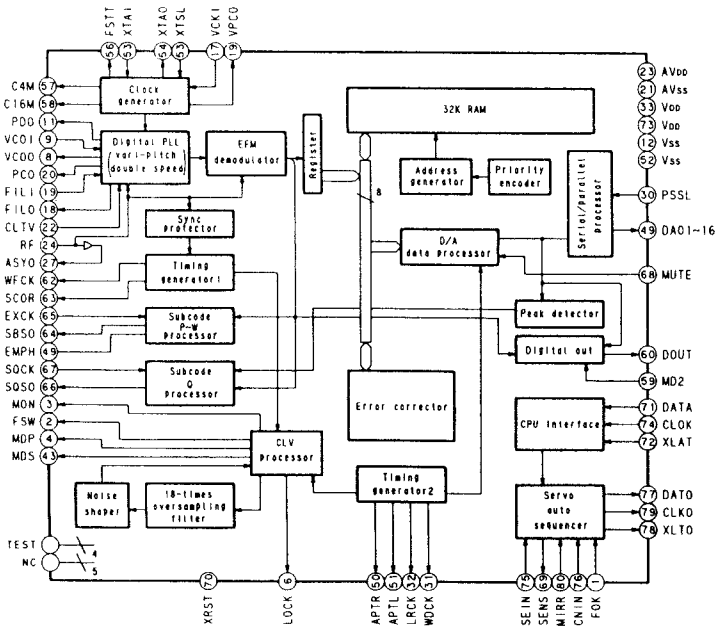
Features

- One chip of this LSI can process all the digital signals used for replay
- Integration level can be heightened because of the built-in RAM

Structure

Silicon gate CMOS

5-1. Block diagram



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CIRCUIT DESCRIPTION

5-2. Pin functions

Pin No.	Pin name	I/O	Function
1	FOK	I	Focus OK input terminal. Used for SENS output and servo auto sequencer.
2	FSW	O	Output for changing output filter of spindle motor.
3	MON	O	ON/OFF control output of spindle motor.
4	MDP	O	Servo control of spindle motor.
5	MDS	O	Servo control of spindle motor.
6	LOCK	O	Outputs "H", when GFS is sampled at 460Hz and it is "H". Output "L", if "L" is detected eight times continuously.
7	NC	–	Not used.
8	VCOO	O	Oscillation circuit output for analog EFM PLL.
9	VCOI	I	Oscillation circuit input for analog EFM PLL. fLOCK = 8.6436MHz
10	TEST	I	Test terminal, normally grounded.
11	PDO	O	Charge pump output for analog EFM PLL.
12	Vss	–	GND.
13–15	NC	–	Not used.
16	VPCO	O	PLL charge pump output for variable pitch.
17	VCKI	I	Clock input fCcenter = 16.9344MHz from outside VCO for variable pitch.
18	FILO	O	Filter output for master PLL (Slave = Digital PLL).
19	FILI	I	Filter input for master PLL.
20	PCO	O	Charge pump output for master PLL.
21	AVss	–	Analog GND.
22	CLTV	I	VCO control voltage input for master.
23	AVDD	–	Analog power source (+5V).
24	RF	I	EFM signal input.
25	TEST2	I	Used for grounding.
26	TEST3	I	Used for grounding.
27	ASYO	O	EFM full swing output ("L" = Vss, "H" = VDD).
28	TEST4	I	Used for grounding.
29	NC	–	Not used.
30	PSSL	I	Audio data output mode changing input. Set to "L" for serial output and "H" for parallel output.
31	WDCK	O	D/A interface for 48-bit slot. Word clock f = 2 Fs
32	LRCK	O	D/A interface for 48-bit slot. LR clock f = Fs
33	VDD	–	Source voltage (+5V).
34	DA16	O	Outputs DA16 (MSB) when PSSL = 1. Outputs serial data of 48-bit slot when PSSL = 0. (2s' COMP, MSB first)
35	DA15	O	Outputs DA15 when PSSL = 1. Outputs bit clock of 48-bit slot when PSSL = 0.
36	DA14	O	Outputs DA14 when PSSL = 1. Outputs serial data of 64-bit slot when PSSL = 0. (2s' COMP, LSB first)
37	DA13	O	Outputs DA13 when PSSL = 1. Outputs bit clock of 64-bit slot when PSSL = 0.
38	DA12	O	Outputs DA12 when PSSL = 1. Outputs LR clock of 64-bit slot when PSSL = 0.
39	DA11	O	Outputs DA11 when PSSL = 1. Outputs GTOP when PSSL = 0.
40	DA10	O	Outputs DA10 when PSSL = 1. Outputs XUGF when PSSL = 0.
41	DA09	O	Outputs DA09 when PSSL = 1. Outputs XPLCK when PSSL = 0.
42	DA08	O	Outputs DA08 when PSSL = 1. Outputs GFS when PSSL = 0.
43	DA07	O	Outputs DA07 when PSSL = 1. Outputs RFCK when PSSL = 0.
44	DA06	O	Outputs DA06 when PSSL = 1. Outputs C2P0 when PSSL = 0.
45	DA05	O	Outputs DA05 when PSSL = 1. Outputs XRAOF when PSSL = 0.
46	DA04	O	Outputs DA04 when PSSL = 1. Outputs MNT3 when PSSL = 0.
47	DA03	O	Outputs DA03 when PSSL = 1. Outputs MNT2 when PSSL = 0.
48	DA02	O	Outputs DA02 when PSSL = 1. Outputs MNT1 when PSSL = 0.
49	DA01	O	Outputs DA01 when PSSL = 1. Outputs MNT0 when PSSL = 0.

CIRCUIT DESCRIPTION

Pin functions

Pin No.	Pin name	I/O	Function
50	APTR	O	Control output for correcting aperture. Set to "H" when Rch.
51	APTL	O	Control output for correcting aperture. Set to "H" when Lch.
52	Vss	–	GND.
53	XTAI	I	X'tal oscillation circuit input of 16.9344MHz, or input of 33.8688MHz.
54	XTAO	O	X'tal oscillation circuit output of 16.9344MHz.
55	XTSL	I	X'tal selection input terminal. Set to "L" when x'tal is 16.9344MHz, and to "H" when 33.8688MHz.
56	FSTT	O	2/3 division output of terminals 53 and 54. Does not vary as pitch varies.
57	C4M	O	4.2336MHz output. Varies as pitch varies.
58	C16M	O	16.9344MHz output. Varies as pitch varies.
59	MD2	I	Digital-out ON/OFF control. Turns on when "H", and off when "L".
60	DOUT	O	Digital-out output terminal.
61	EMPH	O	Outputs "H" when playing disc has emphasis, and "L" when the latter does not.
62	WFCK	O	WFCK (Write Frame Clock) output.
63	SCOR	O	Outputs "H" when sub-code sync S0 or S1 is detected.
64	SBSO	O	Serial output of Sub P ~ W.
65	EXCK	I	Clock input for SBSO read out.
66	SQSO	O	Sub Q 80-bit and PCM peak, and level data 16-bit output.
67	SQCK	I	Clock input for SQSO read out.
68	MUTE	I	Mutes when "H", and resets when "L".
69	SENS	–	Outputs SENS to CPU.
70	XRST	I	Resets system when "L".
71	DATA	I	Inputs serial data from CPU.
72	XLAT	I	Latches serial data when latch input from CPU falls.
73	VDD	–	Power supply (+5V).
74	CLOK	I	Serial data transfer clock input from CPU.
75	SEIN	I	Input SENS from SSP.
76	CNIN	I	Inputs signals for counting number of track jumps.
77	DATO	O	Outputs serial data to SSP.
78	XLTO	O	Outputs serial data latch to SSP, and latches at fall.
79	CLKO	O	Outputs serial data transfer clock to SSP.
80	MIRR	I	Inputs mirror signal. Auto sequencer uses this for jumping 128 or more tracks.

Notes

- The 64-bit slot is 2's compliment output of LSB first, and the 48-bit slot is 2's compliment output of MSB first.
- GTOP is used to monitor the protective condition of the frame sync. ("H" : Sync protective window is released.)
- XUGF is the frame sync obtained from the EFM signal, which is a negative pulse. This is the signal before the protection of sync.
- XPLCK is the inverted clock of EFM PLL. PLL is so made that the falling edge will be matched to the change point of the EFM signal.
- The GFS becomes "H" when the frame sync is matched to the internal protection timing.
- RFCK is a signal having the period of 136μ obtained by the accuracy of X'tal.
- C2P0 is a signal indicating the error condition of data.
- XRAOF is a signal generated when 32 KRAM exceeds the jitter margin of ±28F.

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CIRCUIT DESCRIPTION

6. Digital Filter : SM5840CP (IC7)

Outlne

This LSI is a digital filter for 8 times over-sampling (interpolation) for a digital audio playback device. This is LSI accepts not only 16 bit signals but also 18 bit signals, and outputs 16, 18 or 20 bit signals. Accordingly, this LSI can be a wide interface.

In addition, this LSI has the digital de-emphasis function matched to 3fs, the noise shaping function to reduce re-quantized noises, etc.

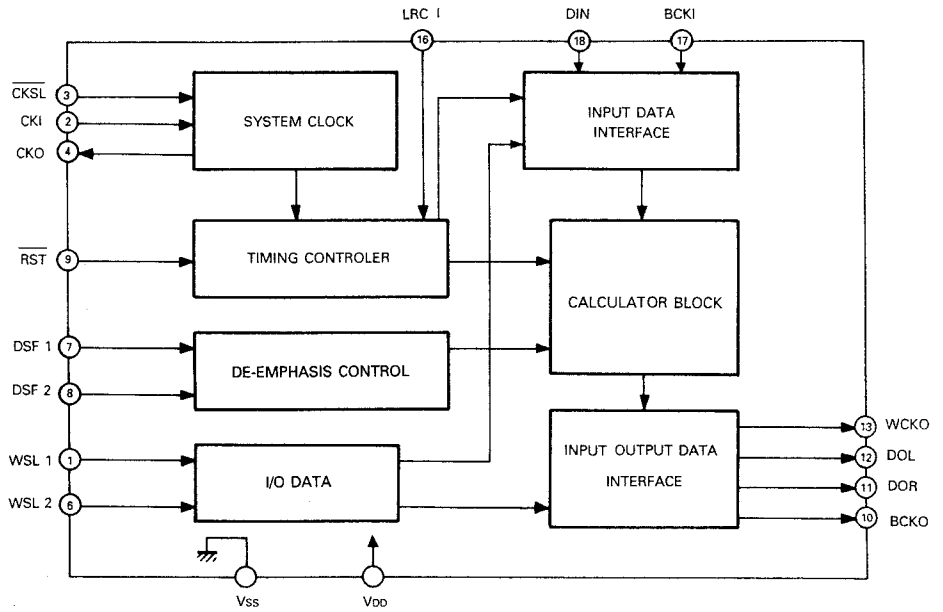
Features and functions

- 2 channel processing
- 8 times over-sampling (interpolation) (Hereinafter referred to as 8fs)
- Digital de-emphasis (Matched to 3fs of 48kHz, 44.1kHz and 32kHz)
- Serial input data
  Complementary number of 2, MSB first, selection of 16 or 18 bit signal
- Serial output data
  MSB first, complementary number of 2, selection of 16 or 18 bit signal
- Primary noise shaper (Turned on only when 16 or 18 bit signal is output)
- Selection of system clock of 256fs or 384fs
- Input / Output TTL compatible
- Signal power source of 5V (Standard)
- Can be operated with low voltage (3.2V)
- 18 pin plastic DIP

Composition of filter

- Interpolation of filter (Straight line phase FIR filters of 3 stages)
  1st stage (fs ⟶ 2fs) : Degree 69
  2nd stage (2fs ⟶ 4fs) : Degree 13
  3rd stage (4fs ⟶ 8fs) : Degree 9
- De-emphasis filter
  Accurate gain and phase characteristics are obtained by the composition of IIR filter
- Highly accurate calculation with (19 x 14) bit parallel multiplier and 24 bit accumulator
- Built in overflow limiter

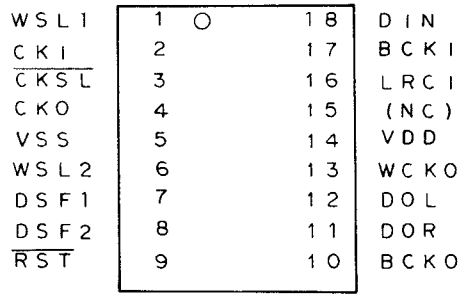
6-1. Block diagram



CIRCUIT DESCRIPTION

6-2. Pin connections

(TOP VIEW)



6-3. Explanation of terminals

("fs" in the following explanation represents the sampling frequency of the data.)

Pin No.	Pin name	I/O	Function
1	WSL1	Ip	Input / Output data word length. Setting of terminal: WSL1 / WSL2; Noise shaper; I/O data word length: Number of bits of Input / Number of bits of output. H H OFF 18bit 20bit; H L ON 18bit 20bit; L H ON 16bit 18bit; L L ON 16bit 16bit
2	CKI	I	Input terminal of system clock.
3	CKSL	I	System clock selection terminal (384fs when CKSL is "H"), (256fs when CKSL is "L").
4	CKO	O	System clock output terminal (CKI clock is buffered, then output).
5	Vss	–	GND.
6	WSL2	Ip	Input / Output data word length selection terminal 2.
7	DSF1	Ip	De-emphasis selection terminal 1. Setting of terminal: DSF1 / DSF2; De-emphasis: ON /OFF / fs. L L ON 44.1kHz
8	DSF2	Ip	De-emphasis selection terminal 2. L H ON 48.0kHz; H H ON 32.0kHz; H L OFF –
9	RST	Ip	System resetting (Resets and initializes when RST is "L".)
10	BCKO	O	Output bit clock.
11	DOR	O	Rch 8fs data output.
12	DOL	O	Lch 8fs data output.
13	WCKO	O	Output word clock.
14	VDD	–	Power source terminal (Standard 5V).
15	(NC)	–	(Terminal not connected.)
16	LRCI	Ip	Sample rate (fs) clock of input data .
17	BCKI	Ip	Input bit clock.
18	DIN	Ip	Input data.

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CIRCUIT DESCRIPTION

7. Zero Cross Data Selector : SM5827CP (IC12)

Outline

This IC observes and detects infinity 0 of the 2 channel serial audio signals output from the signal processing LSI of CD etc., and generates and outputs reset signals for 1 bit DAC etc.

Functions

- Observes and detects infinity 0 of the serial audio signals of L and R channels independent from each other.

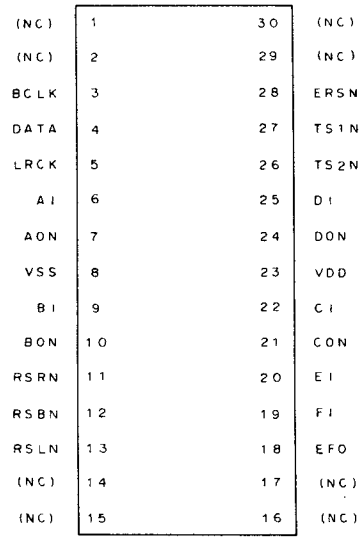
Bit clock frequency	Infinity 0 lasting time (fs=44.1kHz)
32fs	0.372sec
48fs	0.248sec

When infinity 0 lasts for the above time, the following reset signals are output.

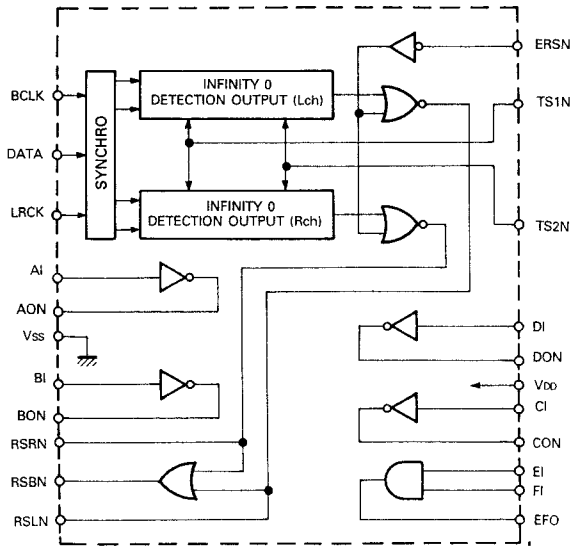
- Outputs the reset signal of 1 bit DAC of the following 3 types.
  Lch reset output, Rch reset output, and (Lch and Rch) reset output.
- Contains 4 inverters for generating complementary data signal.
- Contains a 2 input and elements.

7-1. Pin connections

(TOP VIEW)



7-2. Block diagram



7-3. Function of terminals (30 pin shrink DIP)

Pin No.	Pin name	I/O	Functions
1	(NC)	–	
2	(NC)	–	
3	BCLK	Ip	Bit clock input (Ordinary frequency : 32fs or 48fs).
4	DATA	Ip	DATA input (16 bit / serial / LR alternate).
5	LRCK	Ip	LR clock input (fs rate / Duty : 50%), (H / L = Lch Rch).
6	AI	I	A signal input.
7	AON	O	A signal inverted output.
8	Vss	–	GND power supply (0V)
9	BI	I	B signal input.
10	BON	O	B signal inverted output.
11	RSRN	O	Rch infinity 0 detection output (L : Active).
12	RSBN	O	Lch / Rch infinity 0 detection output (L : Active).
13	RSLN	O	Lch infinity 0 detection output (L : Active).
14	(NC)	–	
15	(NC)	–	
16	(NC)	–	
17	(NC)	–	
18	EFO	O	E · F (Logical multiplication) output.
19	FI	I	F signal input.
20	EI	I	E signal input.
21	CON	O	C signal inverted output.
22	CI	I	C signal input.
23	VDD	–	+ Power supply (Type. 5V).
24	DON	O	D signal inverted output.
25	DI	I	D signal input.
26	TS2N	I	Test terminal 2 (H / L = Ordinary / Test).
27	TS1N	I	Test terminal 1 (H / L = Ordinary / Test).
28	ERSN	I	Outside reset input (Microcomputer reset signal) : (L : Active)
29	(NC)	–	
30	(NC)	–	

Note : 1) "fs" represents the sampling frequency of the audio signal, which is 44.1kHz for CD.
2) The input terminal Ip is equipped with a pull-up resistors.
3) (NC) must not be connected to any thing. Do not use it.

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CIRCUIT DESCRIPTION

Function of detect infinity 0

• This function is used to observe infinity 0 of the serial audio (PCM) signals output from the signal processing LSI of etc. If infinity 0 lasts for a certain time, the detection signal is output.

The state of "Infinity 0" in this case means that all bit data of complementary of 2 are 0 and does not mean that the polarity of all data is inverted and they are set to 1. The method to detect infinity 0 in this IC becomes effective when the following inputs are applied.

(a) 3 wire serial input of BCLK (Bit clock), DATA (Serial data) and LRCK (LR clock).
(b) If the number of clock of BCLK is larger than the number of bits of DATA, DATA signal must be set to L level in case other than the effective data of DATA (16 bits in ordinary case).

(c) L level of LRCK corresponds the L/R channel as follows; H level = L channel and L level = R channel. Accordingly, if the polarity of LRCK is inverted, the output terminal of the detected signal is inverted.

For the above, see the timing chart in sub-section 7-4.

• The time of infinity 0 is counted by BCLK clock during the period in which the L/R channel data of DATA signals become 0 (L level) respectively. If this counter counts the above condition by 2^{20} times, it outputs a carry output as an infinity 0 detection output.
The following 3 detection outputs are used.

(a) RSLN : Detection of infinity 0 of L channel (L level : Active)
(b) RSRN : Detection of infinity 0 of R channel (L level : Active)
(c) RSBN : Detection of infinity 0 of both L and R channels (L level : Active)

RSBN is output when infinity 0 is detected in both L and R channels. These outputs are turned off and the counter is reset at the moment when 1 (H level) is input to the corresponding data.

The relationship between the lasting time of infinity 0 and bit clock necessary to make the detected output active is as follows in case of any output.

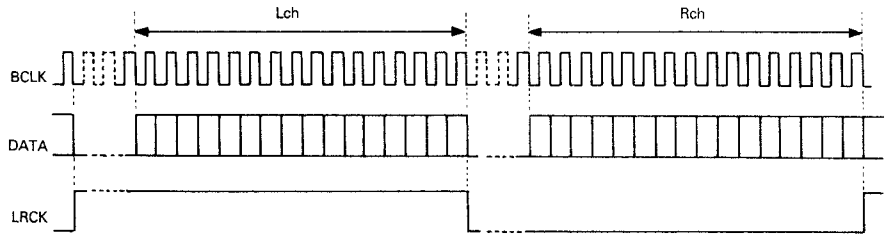
$TZ = 2^{20} / (NB^* fs)$

At this time, NB is set to the number of pulses (e.g. 32 or 48) in the period of LRCK (fs rate). A concrete example of this calculation is shown below.

Bit clock frequency	Infinity 0 lasting time :TZ (fs=44.1kHz)
32fs	0.372sec
48fs	0.248sec

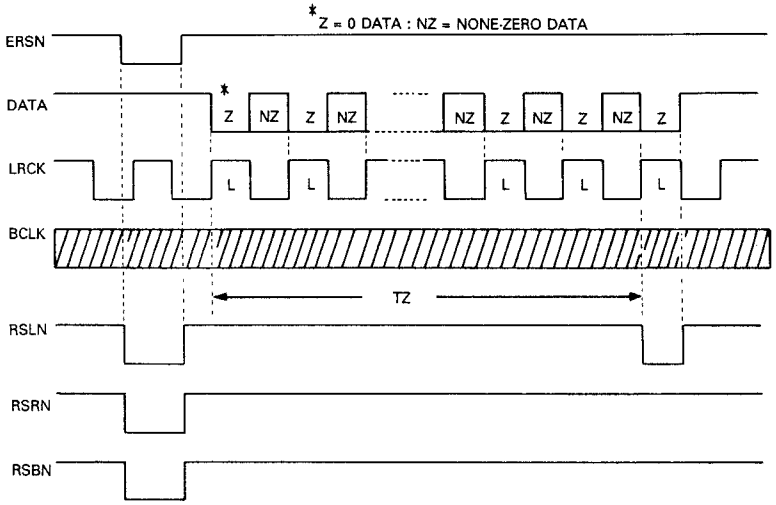
7-4. Timing chart

• Serial input



CIRCUIT DESCRIPTION

• **Infinity 0 detection output**



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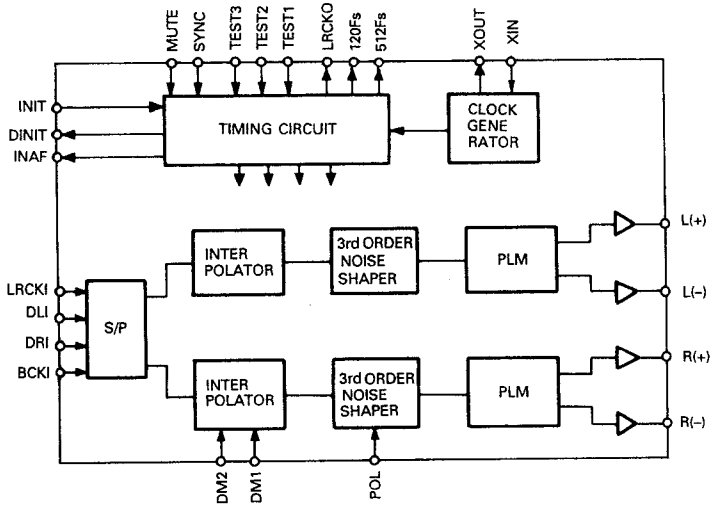
CIRCUIT DESCRIPTION

8. D/A Converter : CXD2552Q (IC6)

CXD2552Q is a pulse D/A converter developed for digital audio devices such as CD players.

8-1. Block diagram



8-2. Pin functions

Pin No.	Pin name	I/O	Functions
1	V_{DD2}	–	Analog power supply.
2	V_{SS}	–	Analog GND.
3	R (–)	O	Rch PLM output (Inverted).
4	V_{DD}	–	Analog power supply.
5	V_{SS2}	–	Analog GND.
6	V_{SUB}	–	Sub straight. Connected to GND.
7	LRCKO	O	LRCK output.
8	DM2	I	Polarity of diza.
9	DM1	I	Appointment of diza.
10	POL	I	Polarity of PLM output. (L : Normal phase, H : Inverted phase)
11	DV_{DD}	–	Digital power supply.
12	TEST3	I	Test terminal. Normally fixed to L level.
13	MUTE	I	Converts INTERPOLATER output into ø data. Effective at H
14	LRCK	I	LRCK input.
15	DRI	I	Rch data input.
16	DLI	I	Lch data input.
17	BCKI	I	BCK input.
18	TEST1	I	Test terminal. Normally fixed to L level.
19	TEST2	I	Test terminal. Normally fixed to L level.
20	SYNC	I	Synchronization control terminal.

CIRCUIT DESCRIPTION

8-2. Pin functions

Pin No.	Pin name	I/O	Functions
21	INIT	I	Re-synchronization at rising edge of this signal.
22	128Fs	O	128Fs output
23	VSUB	–	Sub straight. Connected to GND.
24	512Fs	O	512Fs output.
25	DINIT	O	Delay INIT signal output.
26	INAF	O	Output " H " when input / output are out of synchronization.
27	DVSS	–	Digital GND.
28	VSUB	–	Sub straight. Connected to GND.
29	VSS2	–	Analog GND.
30	VDD	–	Analog power supply.
31	L (–)	O	Lch PLM output (Normal phase).
32	VSS	–	Analog GND.
33	VDD2	–	Analog power supply.
34	VSS	–	Analog GND.
35	L (+)	O	Lch PLM output (Normal phase).
36	VDD	–	Analog power supply.
37	VSUB	–	Sub straight. Connected to GND.
38	XVSS	–	Clock GND.
39	XIN	I	Input terminal of crystal oscillator (1024Fs).
40	XOUT	O	Output terminal of crystal oscillator (1024Fs).
41	XVDD	–	Clock power supply.
42	VDD	–	Analog power supply.
43	R (+)	O	Rch PLM output (Normal phase).
44	VSS	–	Analog GND.

MECHANISM OPERATION DESCRIPTION

Mechanism Operation Description

Fig. 1 shows the relationship of mechanisms in the STOP mode. The OPEN/CLOSE operation of the mechanism and the UP/DOWN operation of the pickup chassis when loading the disc are description below.

Note 1 : The black arrow (OPEN) and the while arrow (CLOSE) in the operation description have the following meanings :
Black arrow (OPEN) : Tray opening direction (Tray OPEN)
White arrow (CLOSE): Tray closing direction (Tray CLOSE)
Note 2 : Figures in the bracket ( ) in the operation description or accompanied with the part name in the diagra show the reference numbers in the Exploded View.

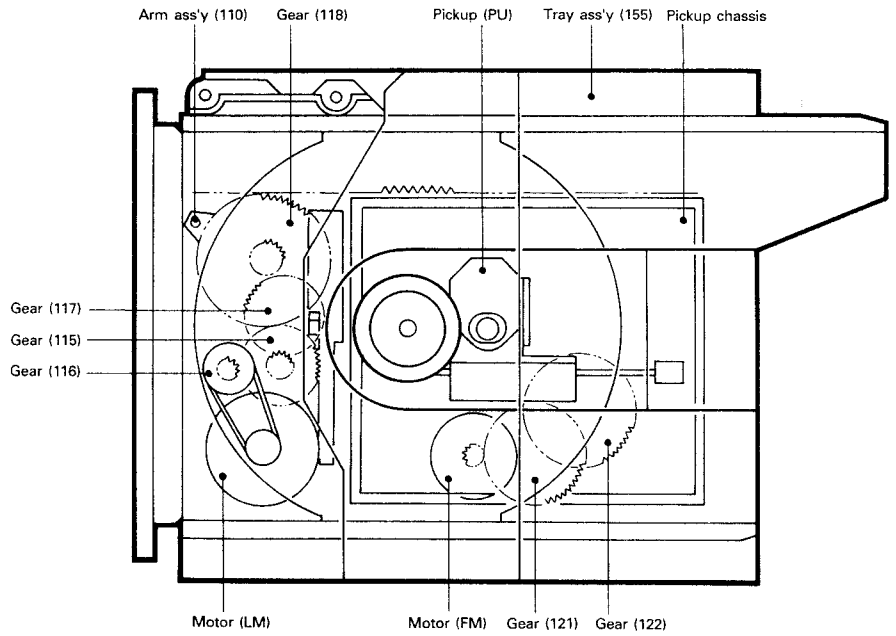


Fig.1

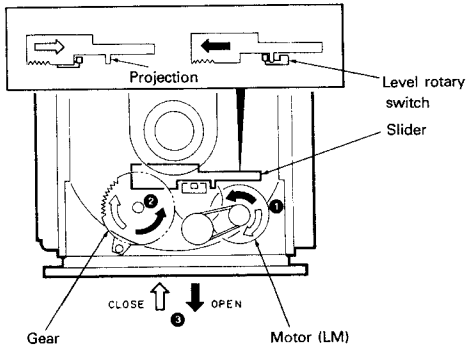
MECHANISM OPERATION DESCRIPTION

MECHANISM OPERATION

1. OPEN/CLOSE FUNCTION

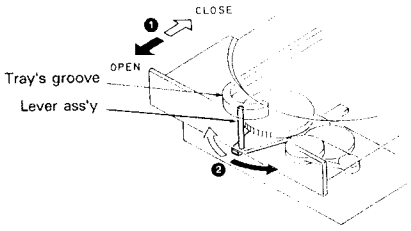
By the rotaion of the loading motor (❶) ,Gear (❷). isrotate and the tray starts OPEN/CLOSE operation (❸).

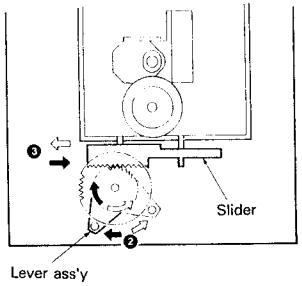
The OPEN/CLOSE operation stops when the projection of the slider comes in contact with the detection switch (❹).



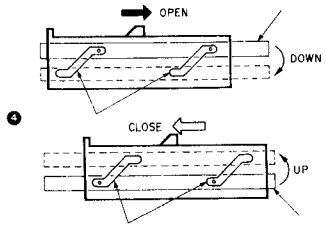
2. PICKUP CHASSIS TRAVELING

According to tray's OPEN/CLOSE operation (❶). the shaft of lever moves (❷).
And then slider travels by the lever with gear (❸).





Along with the grooves in the lever, the pickup cahassis moves up and down (❹).

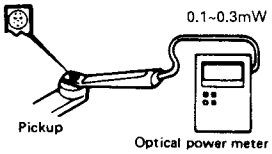


ADJUSTMENT

No.	ITEM	INPUT SETTING	OUTPUT SETTING	PLAYER SETTING	ALIGNMENT POINT	ALIGN FOR	FIG
1	LASER POWER		Set the sesor section of the optical power meter on the pickup lens.	Short-circuit pins TEST and turn the power on to enter the test mode. Press the "+10" key to check that the display is "03".		On the power from 0.1 to 0.3mW, when the diffraction grating is correctly aligned with the RF level of 1.0Vp-p or more	(a)
2	TRACKING ERROR	Test disc Type 4	Connect an oscilloscope as follows. CH1: RF (CN4-1) CH2: TE (CN4-6)	Press the "+10" key. Confirm that the display is "03".	TE BALANCE VR104	Symmetry between upper and lower or DC 0±0.05V	(c)
3	FOCUS ERROR	Test disc Type 4	Connect an oscilloscope as follows. CH1: RF(CN4-1) CH2: TE(CN4-6)	Press the PLAY key. Confirm that the display is " 05 ".	FE BALANCE VR103	Optimum eye pattern	(d)
4	FOCUS GAIN	Test disc Type 4 Apply signal of 1.0kHz,100mVrms to CN4 pin 2-3.	Connect a LPF to CN4 pin 2-3 to which connect an oscilloscope or AC voltmeters.	Press the PLAY key. Confirm that the display is " 05 ".	FOCUS GAIN VR101	Two VTVMs should read the same value.	(e)
5	TRACKING GAIN	Test disc Type 4 Apply signal of 1.2kHz,100mVrms to CN4 pin 5-6.	Connect a LPF to CN4 pin 5-6 to which connect an oscilloscope or AC voltmeters.	Press the PLAY key. Confirm that the display is " 05 ".	TRACKING GAIN VR102	Two VTVMs should read the same value.	(e)

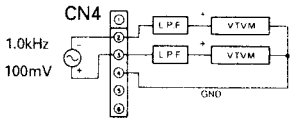
(Note) Type 4 disc: SONY YDS-18 Test Disc or equivalent.
LPF: Around 47kohms+390pF or so.
Step 1~5 are in Test Mode.

(a) Laser Power

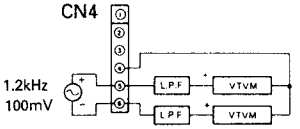


(e) Focus Gain and Tracking Gain Adj.

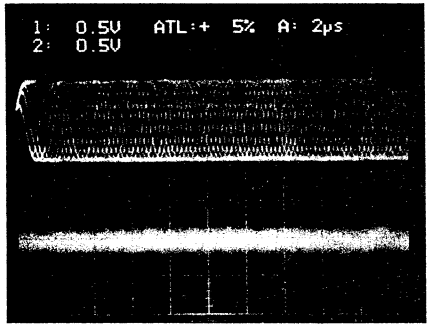
Focus gain Adj.



Tracking gain Adj.



ADJUSTMENT



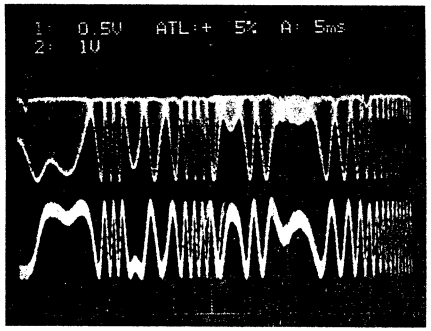
CH1
: AC couple
RF signal

0(V)

CH2 : DC couple
TE siganl

18μs

- RF signal and E.Spot signal in test mode (PLAY).
- If the diffraction grating has been adjusted properly, the influence of triggering is observed on the E.Spot waveform of approx. 18μs after RF signal, in the form of a projection.

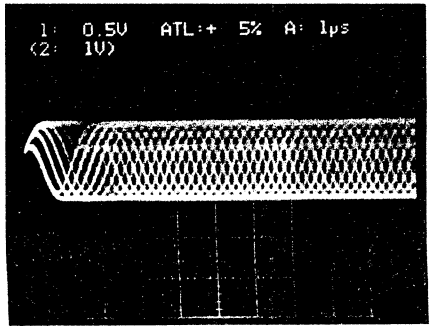


CH1
: AC couple
RF signal

0(V)

CH2 : DC couple
TE signal

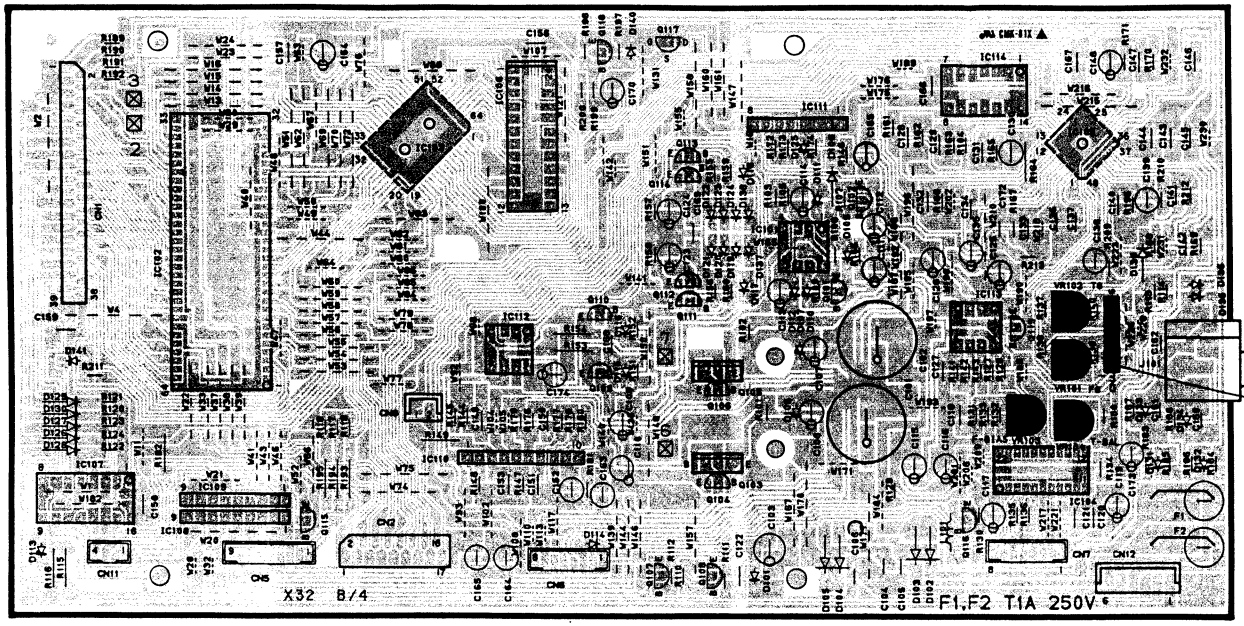
- RF signal and T.Error signal, in test mode (Focusing ON). (Disc type 4)
- Adjust T.Error so that the waveform is symmetrical above and below 0V. (VR104)

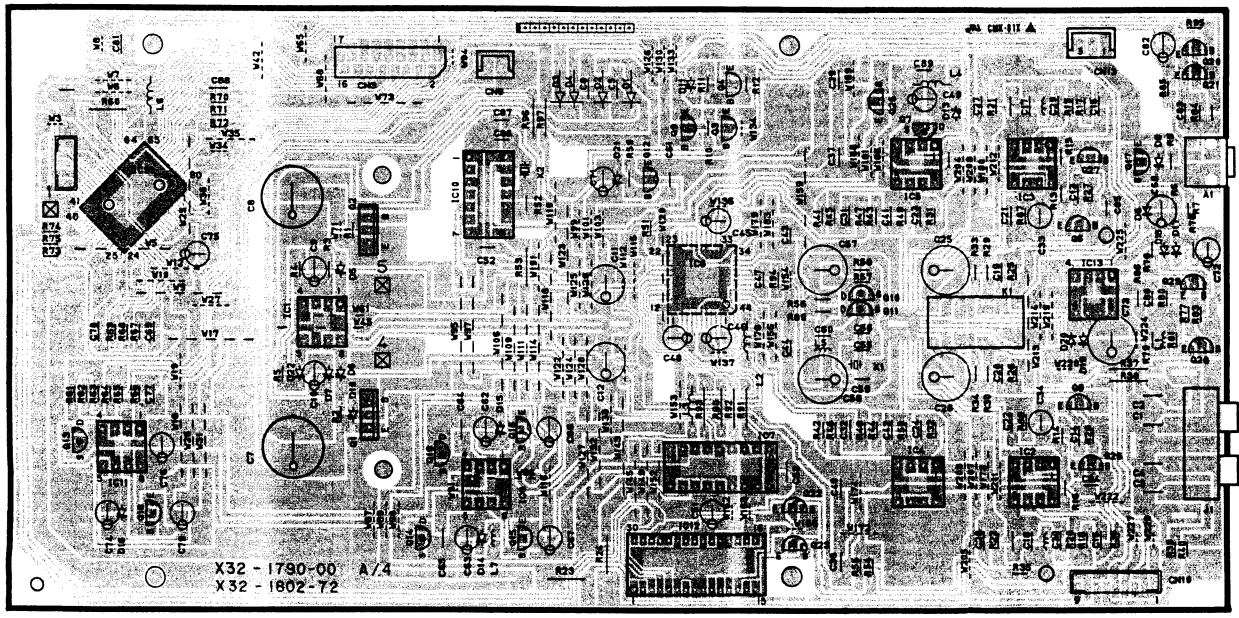


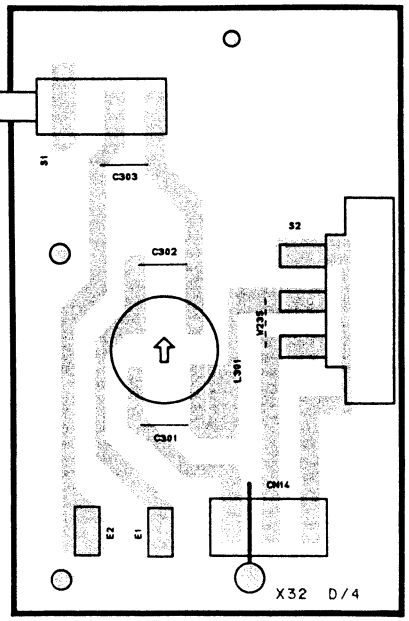
RF signal
AC couple

- RF signal in test mode (PLAY).
- Perform the tangential and focusing offset adjustments so that each of the center cross points are focused into one point on the display. The crossing points above and below the center shall also be displayed clearly.

PC BOARD (COMPONENT SIDE VIEW)







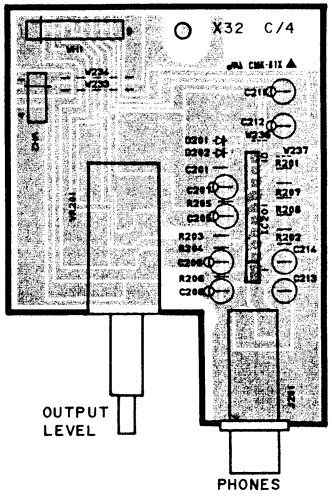
CN4 Ocilloscope

(c) Tacking error
: Symmetry between upper and lower or DC=0±0.05V

AC voltmeter

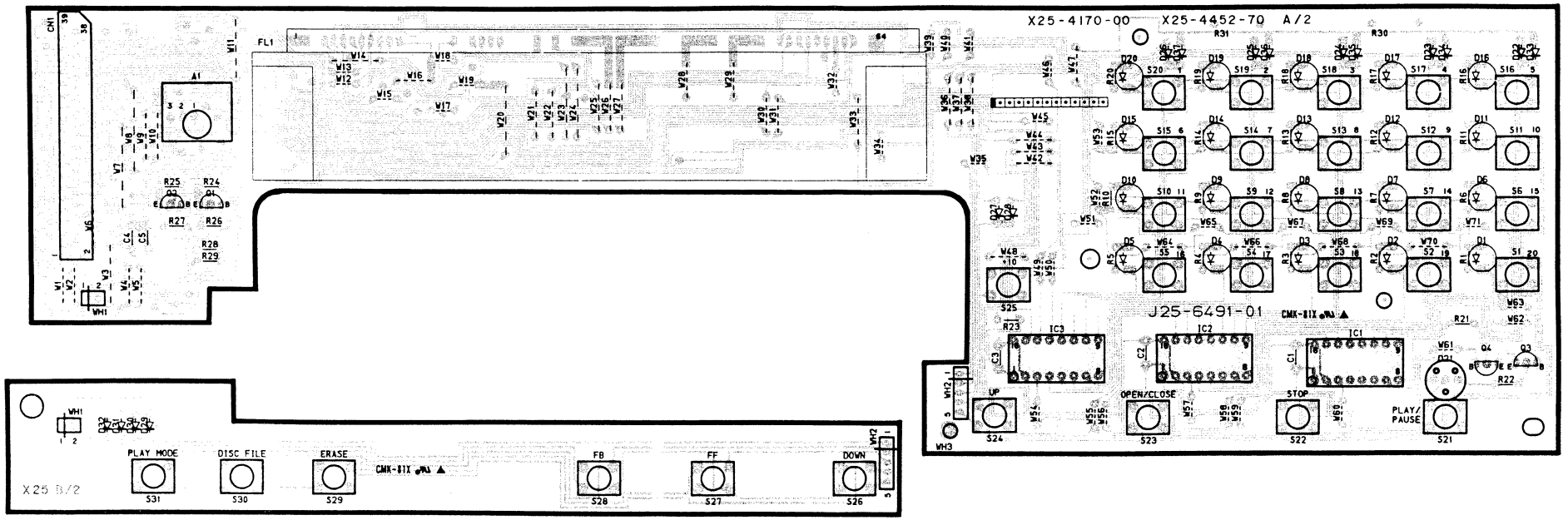
(e) Focus gain
: Two VTMs should read the same value.

(e) Tracking gain
: Two VTMs should read the same value.



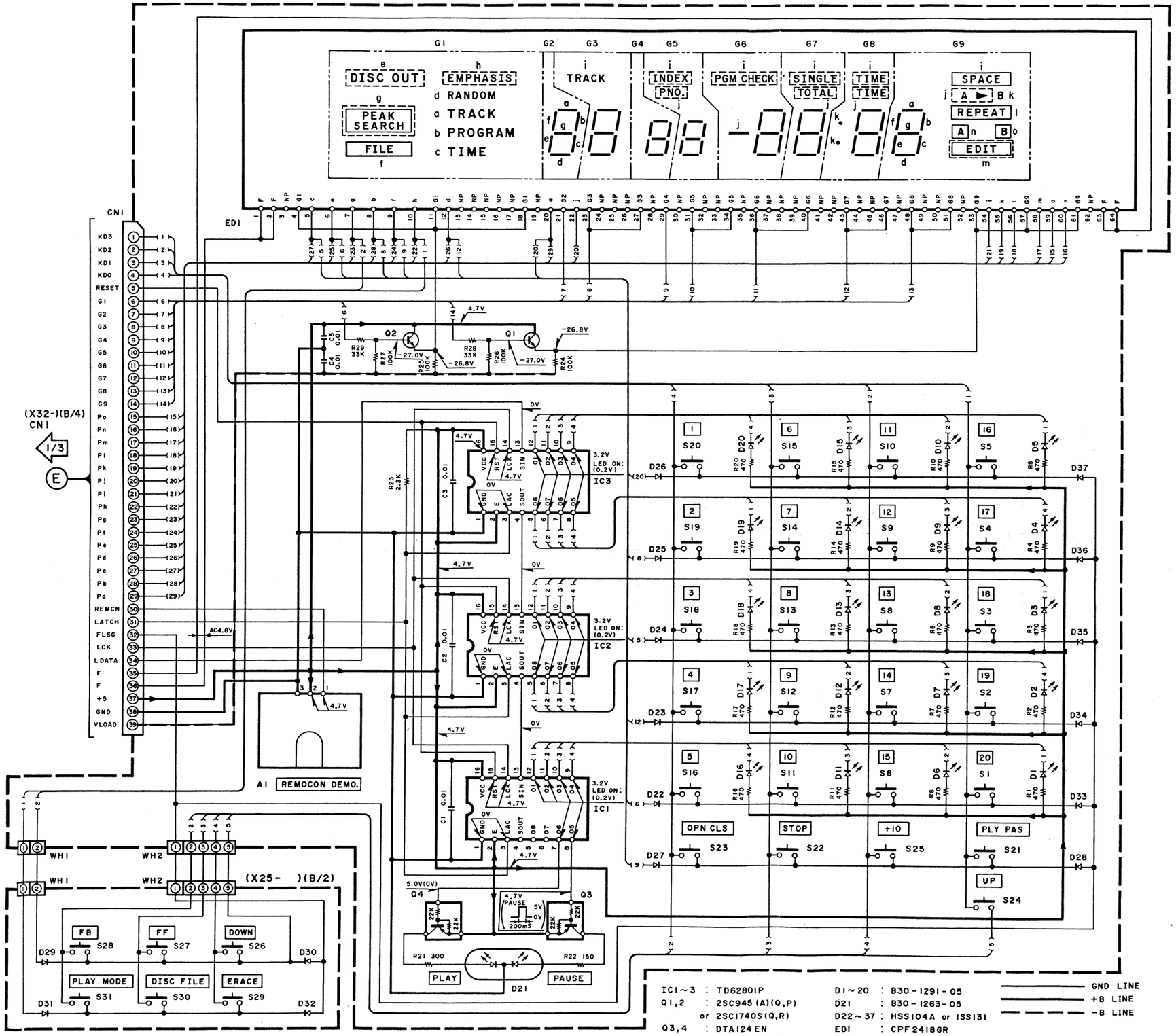
Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (COMPONENT SIDE VIEW)



Refer to the schematic diagram for the values of resistors and capacitors.

(X25-4170-00)(A/2) JAPAN MADE (X25-4452-70)(A/2) SINGAPORE MADE

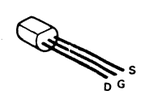


IC1~3 : TD62801P
Q1,2 : 2SC945(A)(Q,P) or 2SC1740S(Q,R)
Q3,4 : DTA124EN
D1~20 : B30-1291-05
D21 : B30-1263-05
D22~37 : HSS104A or 1SS131
EDI : CPF2418GR

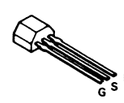
GND LINE
+B LINE
−B LINE

DP-7030 (3/3)

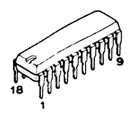
2SK163



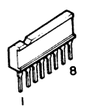
2SK161



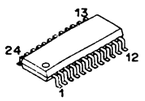
SM5840CP



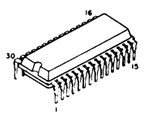
BA10393N



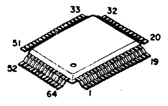
LC3518BSL-15



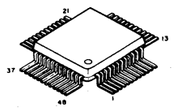
SM5827CP



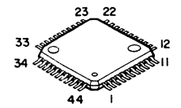
CXD1095Q



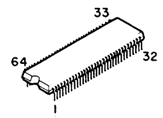
CXA1372Q



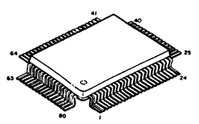
CXD2552Q



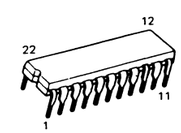
UPD75216ACW-B71



CXD2500Q



CXA1471S



CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

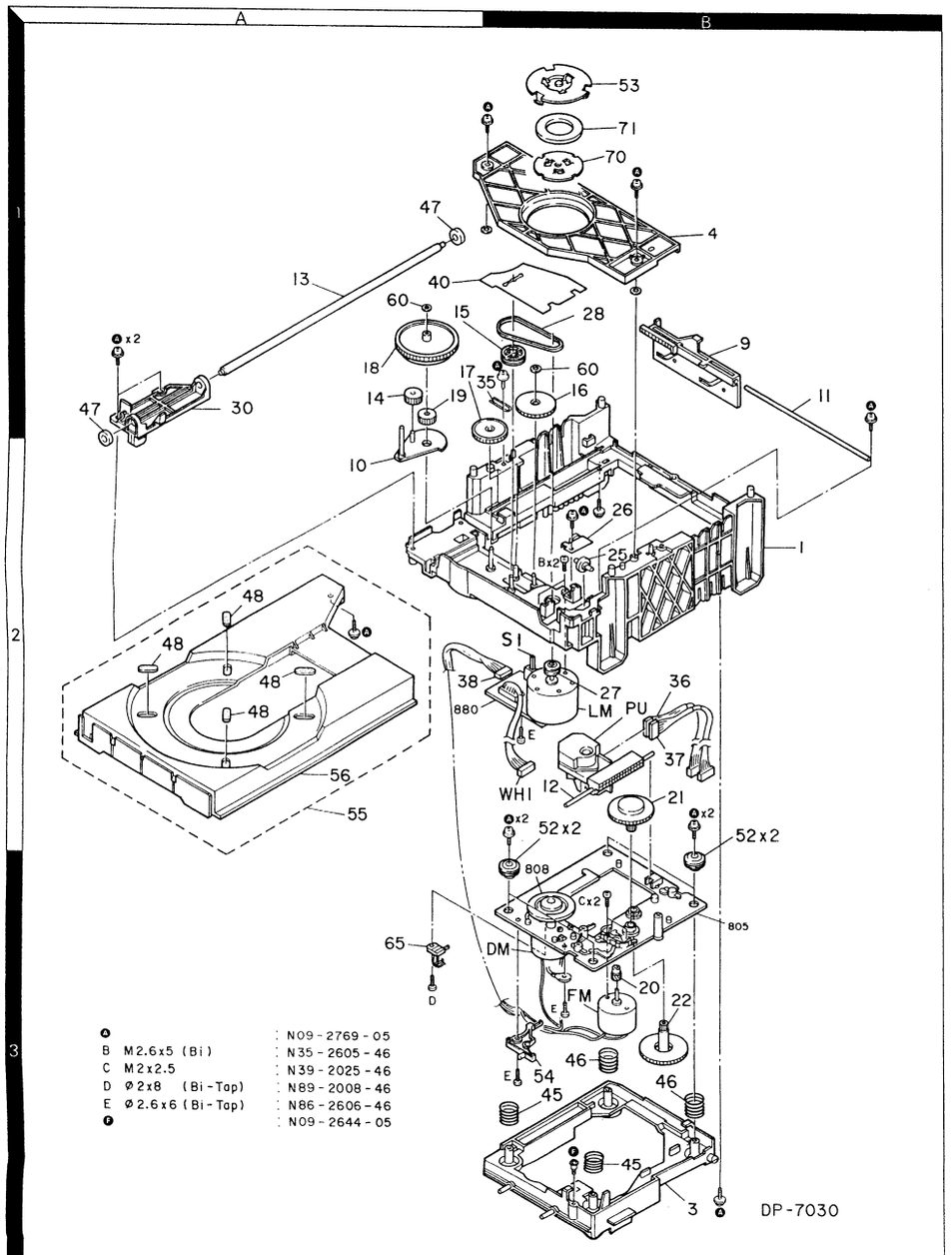
Y22-2340-00

DP-7030

KENWOOD

DP-7030

EXPLODED VIEW (MECHANISM) : JAPAN MADE

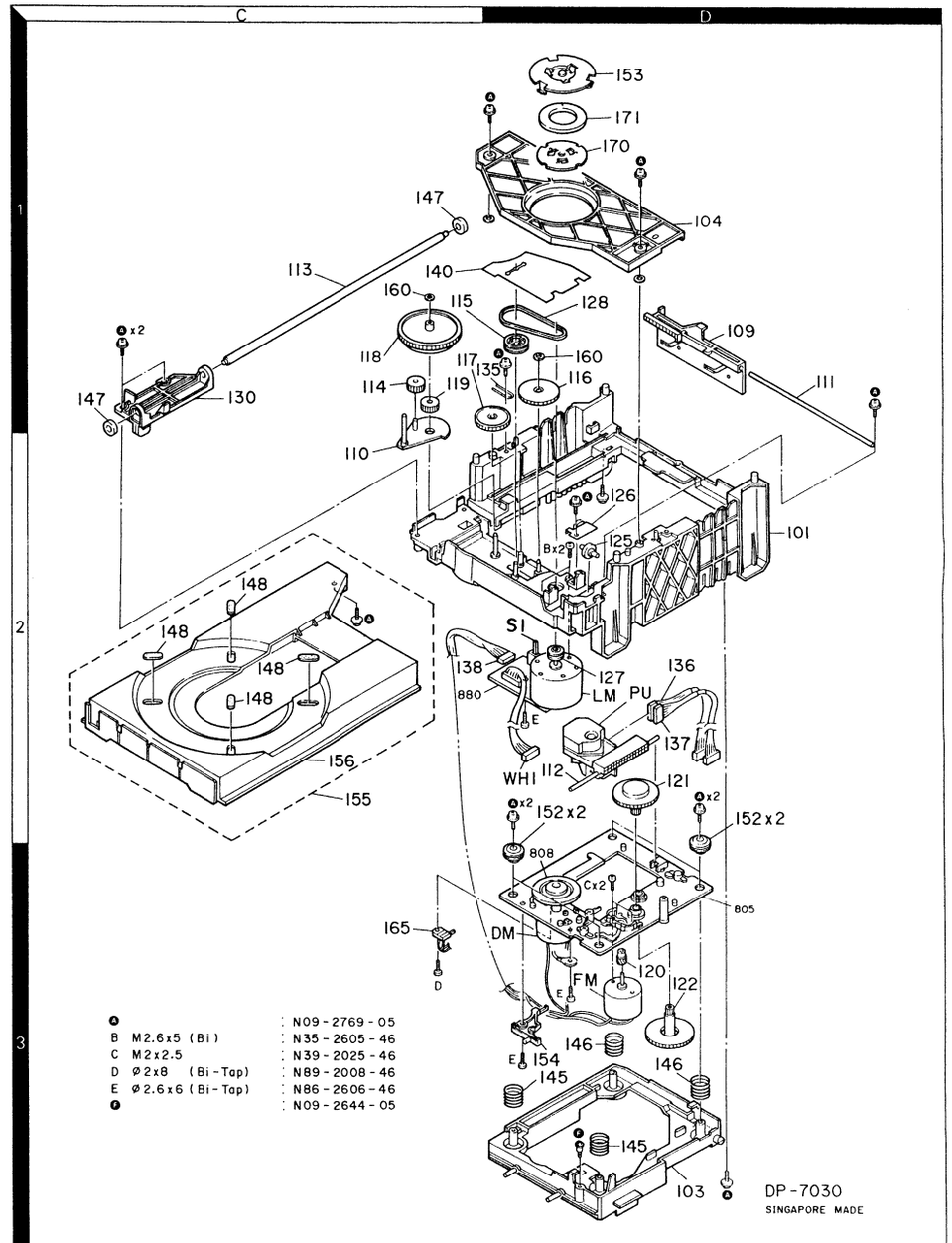


A		: N09-2769-05
B	M2.6x5 (Bi)	: N35-2605-46
C	M2x2.5	: N39-2025-46
D	Ø2x8 (Bi-Tap)	: N89-2008-46
E	Ø2.6x6 (Bi-Tap)	: N86-2606-46
F		: N09-2644-05

Parts with the exploded numbers larger than 700 are not supplied.

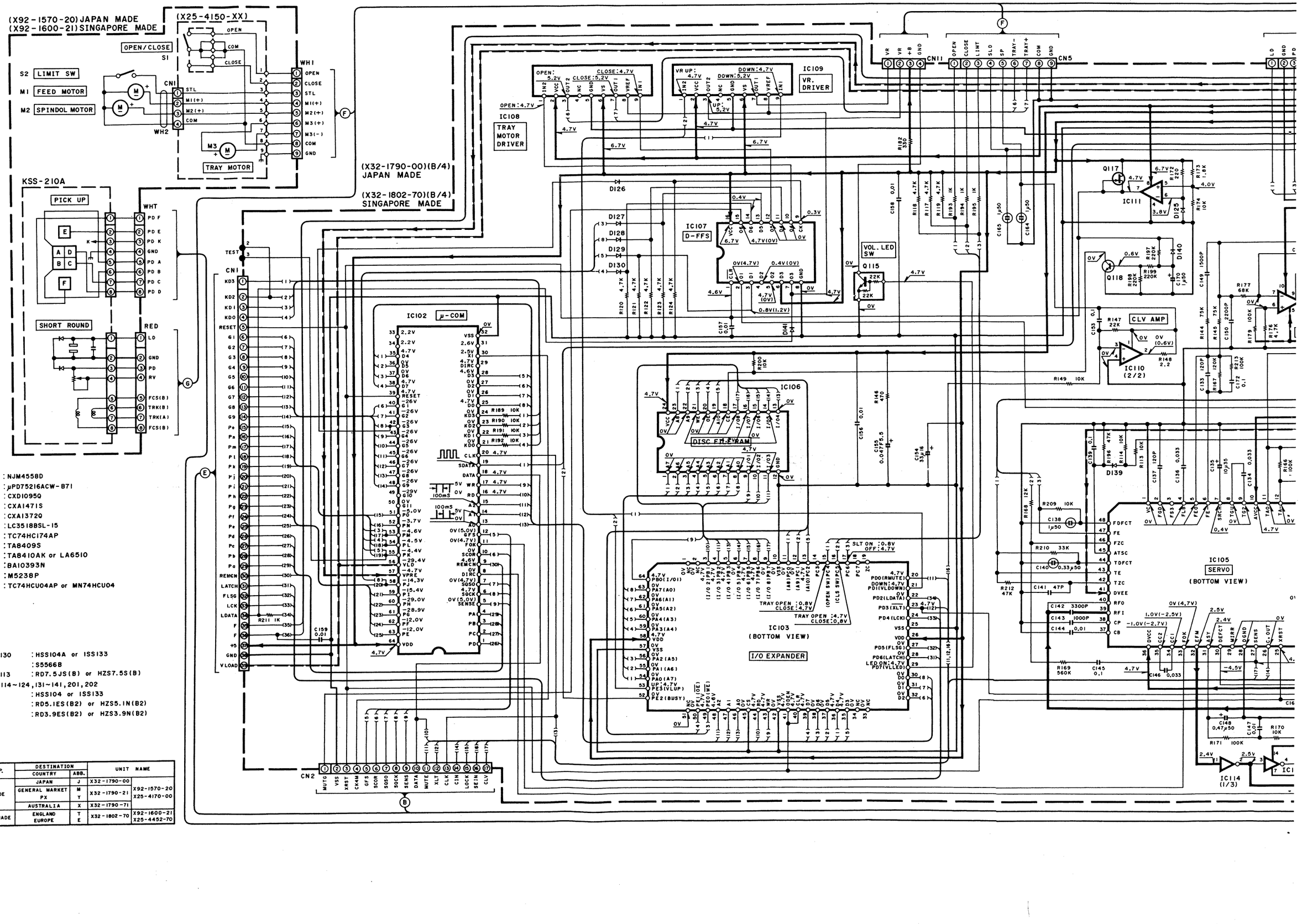
DP-7030

EXPLODED VIEW (MECHANISM) : SINGAPORE MADE



A		: N09-2769-05
B	M2.6x5 (Bi)	: N35-2605-46
C	M2x2.5	: N39-2025-46
D	Ø2x8 (Bi-Tap)	: N89-2008-46
E	Ø2.6x6 (Bi-Tap)	: N86-2606-46
F		: N09-2644-05

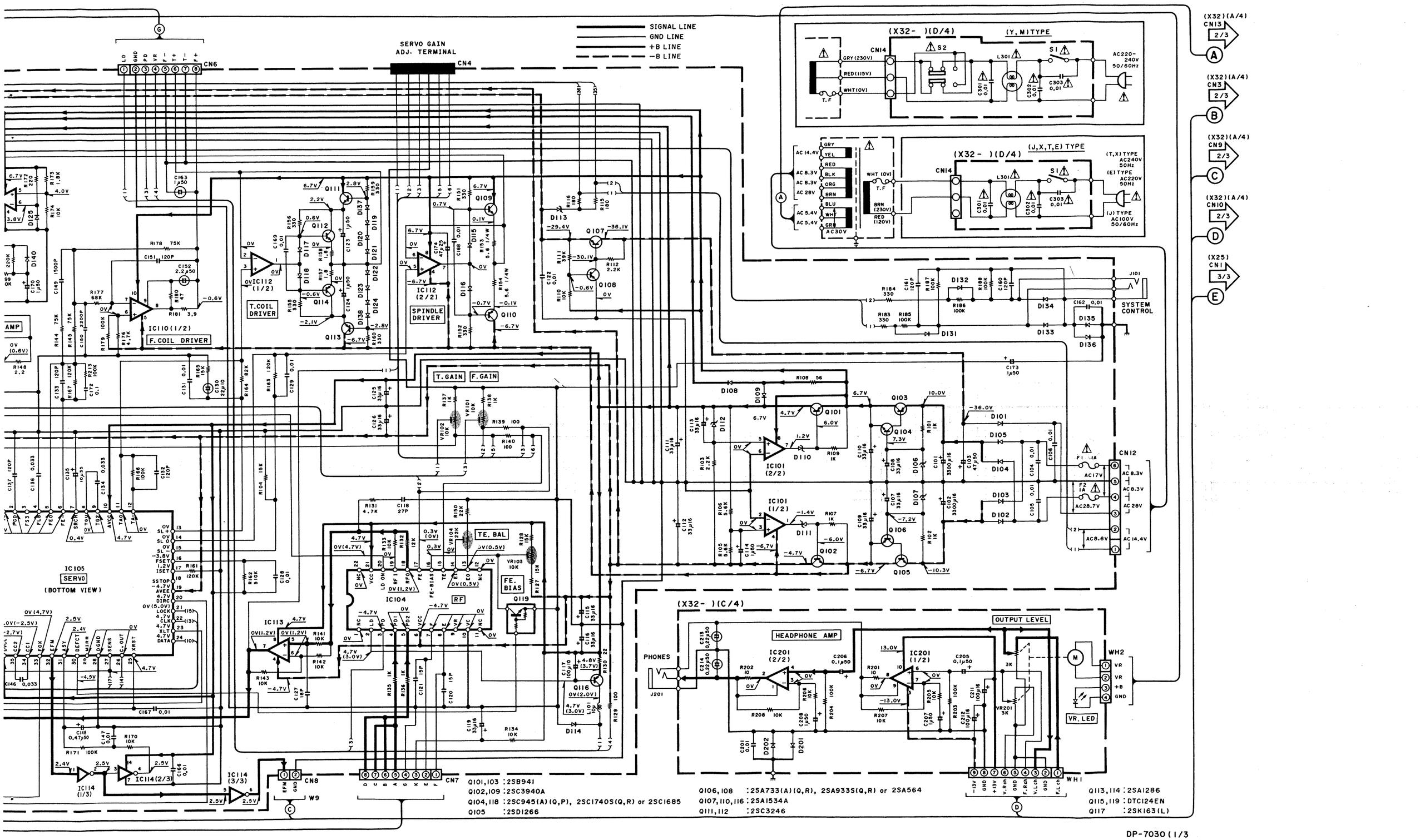
Parts with the exploded numbers larger than 700 are not supplied.



IC101, 112 : NJM4558D
IC102 : μPD75216ACW-B71
IC103 : CXD1095Q
IC104 : CXA1471S
IC105 : CXA1372Q
IC106 : LC35188SL-15
IC107 : TC74HC174AP
IC108, 109 : TA8409S
IC110, 201 : TA8410AK or LA6510
IC111 : BA10393N
IC113 : M5238P
IC114 : TC74HCU04AP or MN74HCU04

DI01, 126~130 : HSS104A or 1SS133
DI02~105 : S5566B
DI06, 107, 113 : RD7.5JS(B) or HZS7.5S(B)
DI08, 109, 114~124, 131~141, 201, 202 : HSS104 or 1SS133
DI10~112 : RD5.1ES(B2) or HZS5.1N(B2)
DI25 : RD3.9ES(B2) or HZS3.9N(B2)

PRODUCT. P.	DESTINATION		UNIT NAME	
	COUNTRY	ABB.		
JAPAN MADE	JAPAN	J	X32-1790-00	X92-1570-20 X25-4170-00
	GENERAL MARKET PX	M Y	X32-1790-21	
	AUSTRALIA	X	X32-1790-71	
SINGAPORE MADE	ENGLAND EUROPE	T E	X32-1802-70	X92-1600-21 X25-4452-70



DP-7030 (1/3)

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

Y22-2340-00

DP-7030
KENWOOD

(X32-1790-00)(A/4) JAPAN MADE
(X32-1802-70)(A/4) SINGAPORE MADE

POWER TRANSFORMER
1/3 → A
(X32)(B/4) 1/3 → B
(X32)(B/4) CN8 1/3 → C
(X32)(B/4) W1 1/3 → D

CN3: MUTG VSS XRST CK4M GFS SCOR SQSO SQCK SENS DATA MUTE XLT CLK CIN LOCK SEIN CLV
CN9: GND EFM

EMP ON: 5.0V OFF: 0V
EMP ON: -13.0V OFF: 5.0V
Q9 EMP. SW

IC9 SIGNAL PROCESSOR (BOTTOM VIEW)
SBSO SCOR WFCK EMPH DOUT MD2 C16M C4M FSTT XTSL XTAO XTAI VSS APTL APTR MNTO MNT1 MNT2 MNT3 XRAOF C2PO RFCK GFS XPLCK
EXCK SQSO SCK MUTE SENS XRST DATA XLAT VDD CLOK SEIN SAIN DATO XLTO CLKO MIRR
FOK FSW MON MDP MDS LOCK NC VCOO VCOI TEST PDO VSS NC NC VPCO VCKI FILO FILI PCO AVSS CLTV AVDD RF
XUSB GTOP LRCK(64) BCLK(64) DATA(64) BCLK DATA VDD LRCK WDCK SSSL NC TEST4 ASYO TEST3 TEST2

IC8 (1/2)
IC8 (2/2)
Q19 Q16 Q14 Q15 D15 D14 L7 100μ
C62 33μ16 C63 33μ16 C64 1000P C65 1000P C66 33μ16 C67 33μ16

IC12
INFINITY ZERO DETECT
NC NC BCLK DATA LRCK AI AON VSS BI BON RSBN RSBN RSLN NC
ERSN TSIN TSZN DI DON VDD CI CON EI FI EFO MC MC

IC7 DIGITAL FILTER
OW16 XTI XTO CKO VSS OW20 DEEM OV7 OV6 MUTE RST
DIN BCKI LRCI BCKO VDD WCKO DOL DOR DG

IC10 (1/4) (2/4) (3/4) (4/4)
L9 0.22μ L3 0.39μ
R90 100 R91 100 R92 100 R93 100
R97 470
R73 100 R74 100 R75 100

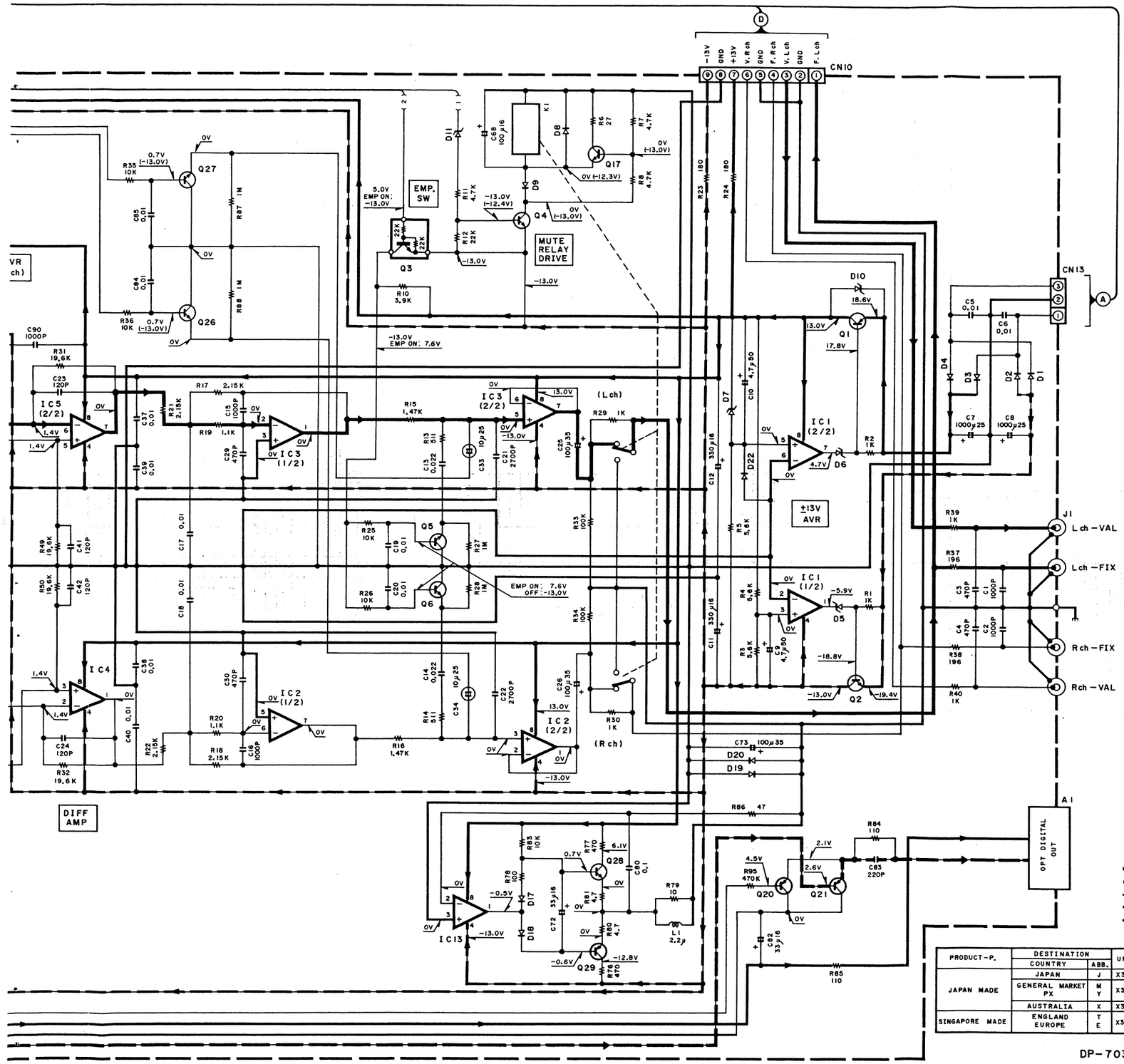
IC6 1-BIT DAC (BOTTOM VIEW)
128FS(5.644MHz) INIT SYNC TEST2 TEST1 BCKI DLI DRI LRCKI MUTE TEST3
VSUB S12FS DINIT INAF DVSS VSUB VSS2 VDD LI(-) VSS VDD2
DVDD POL DMI DM2 LRCKO VSUB VSS2 VDD LI(-) VSS VDD2
VSS L(+) VDD V SUB X VSS 3.4V X IN X OUT X VDD VDD R(+) VSS

Q22 Q23 Q25 Q7 Q10 Q11 Q12
+5V AVR (DAC Lch)
IC5 (1/2) (2/2)
DIFF AMP
IC4

C89 0.047 C49 33μ16 D13 L4 10μ C90 1000P
R31 19.6K C23 120P C85 0.01 C84 0.01 R35 10K R36 10K 0.7V (-13.0V)
R45 4.64K R43 4.64K C31 220P C45 100μ16 R41 9.09K
R54 10K R55 10K L8 3.3μ
R46 4.64K R44 4.64K R42 9.09K C32 220P C46 100μ16
R49 19.6K R50 19.6K C42 120P C41 120P C43 0.47 C44 0.47 C47 1μ
R48 9.09K R47 9.09K
C37 0.01 C39 0.01 C38 0.01 C40 0.01 R22 2.15K R32 19.6K C24 120P
C48 100μ16
C55 120P C56 5P C57 10μ35 C58 120P C59 5P C60 1000P C61 1000P C71 33μ16 D21
R57 19.6K R58 19.6K R56 4.64K R59 1.8K R89 383 L5 2.2μ
X1 45.1584MHz X2 16.9344MHz
C86 10P C87 18P
R51 330 2.5V R52 1M R53 100 R94 47
C51 100μ16 C52 100μ16 C53 0.1

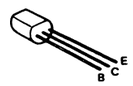
C74 33μ16 D16 Q18 Q13 IC11 (1/2) IC11 (2/2) CLV
C77 0.01 R66 100K R65 100K R64 10K R62 30K R61 10K R63 10K C76 33μ35 C79 33μ16 C81 0.01 L6 100μ

C75 100μ16 C68 0.01
R70 1K R71 1K R72 1K
C69 0.047 R67 11K R68 3.3K C70 1500P R69 130K

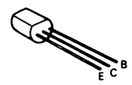


IC1,8,11	: NJM4558D
IC2~5,13	: NJM4565D
IC6	: CXD2552Q
IC7	: SM5840CP
IC9	: CXD2500Q
IC10	: TC74HCU04AP or MN74HCU04
IC12	: SM5827CP
Q1	: 2SB941
Q2	: 2SD1266
Q3	: DTC124EN
Q4,25,28	: 2SC945(A)(Q,P) or 2SC1740S(Q,R) or 2SC1685
Q5,6,26,27	: 2SC2878(B) or 2SD1302(S,T)
Q7,13,14,19	: 2SK246(Y,GR)
Q9,22,23	: DTA124EN
Q10,11	: 2SK161(GR)
Q12,20,21,29	: 2SA733(A)(Q,P) or 2SA933S(Q,R) or 2SA564
Q15,16,18	: 2SC3940A
Q17	: 2SC3246
D1~4	: S5566B
D5~7,10	: RD13ES(B2) or HZS13N(B2)
D8,9,17~20,22	: 1SS133 or HSS104
D11	: RD15ES(B2) or HZS15N(B2)
D13~16	: RD5.1ES(B2) or HZS5.1N(B2)
D21	: RD11ES(B2) or HZS11N(B2)

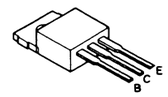
DTA124EN



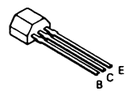
DTC124EN 2SA1286 2SC2878
2SA1534A 2SA564 2SC3940A
2SA733(A) 2SC1685 2SD1302
2SC3246
2SC945(A)



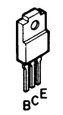
2SD1266



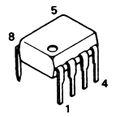
2SA933S
2SC1740S



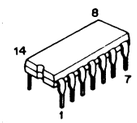
2SB941



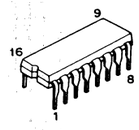
NJM4558D
NJM4565D



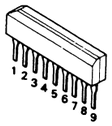
MN74HCU04
TC74HCU04AP



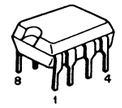
TC74HC174AP



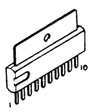
TA8409S



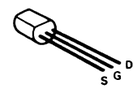
M5238P



LA6510
TA8410AK



2SK246



SIGNAL LINE
DIGITAL LINE
GND LINE
+B LINE
-B LINE

PRODUCT-P.	DESTINATION		UNIT NAME
	COUNTRY	ABB.	
JAPAN MADE	JAPAN	J	X32-1790-00
	GENERAL MARKET PX	M Y	X32-1790-21
	AUSTRALIA	X	X32-1790-71
SINGAPORE MADE	ENGLAND EUROPE	T E	X32-1802-70

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

DP-7030(2/3)

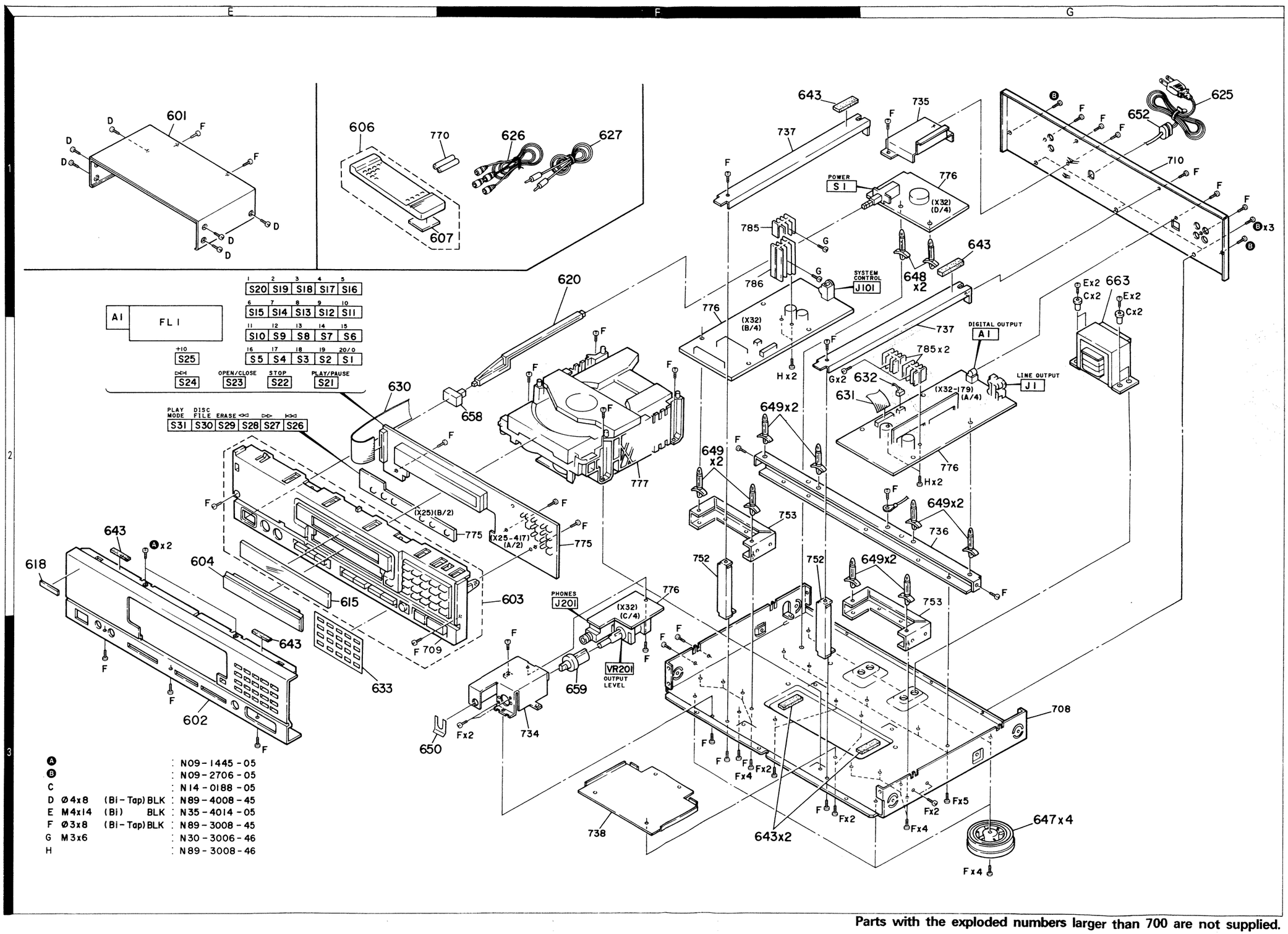
- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

Y22-2340-00

DP-7030
KENWOOD

DP-7030 DP-7030

EXPLODED VIEW (UNIT)



A			: N09-1445-05
B			: N09-2706-05
C			: N14-0188-05
D	Ø4x8	(Bi-Tap) BLK	: N89-4008-45
E	M4x14	(Bi) BLK	: N35-4014-05
F	Ø3x8	(Bi-Tap) BLK	: N89-3008-45
G	M3x6		: N30-3006-46
H			: N89-3008-46

Parts with the exploded numbers larger than 700 are not supplied.

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※ New Parts
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Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
			DP-7030 (JAPAN MADE)			
601	1E	*	A01-1765-01	METALLIC CABINET		
602	3E	*	A20-6120-02	PANEL		
603	2F	*	A22-1446-02	SUB PANEL ASSY		
604	2E	*	A29-0175-03	PANEL ASSY(TRAY)		
606	1F	*	A70-0387-05	REMOTE CONTROLLER ASSY		
607	1F		A09-0078-08	BATTERY COVER		
615	2F	*	B10-1814-03	FRONT GLASS		
618	2E		B43-0287-04	KENWOOD BADGE		
-			B44-6006-04	POS LABEL		
-			B46-0094-03	WARRANTY CARD	Y	
-			B46-0095-03	WARRANTY CARD	Y	
-		*	B46-0096-23	WARRANTY CARD	X	
-			B46-0121-03	WARRANTY CARD	P	
-			B58-0513-04	CAUTION CARD (PRESET220-240)	Y	
-		*	B60-0235-00	INSTRUCTION MANUAL(ENGLISH)		
-		*	B60-0237-00	INSTRUCTION MANUAL(SPA,CHI)	M	
620	1F	*	D21-1626-03	EXTENSION SHAFT		
625	1H		E30-0459-05	AC POWER CORD	M	
625	1H		E30-0780-05	AC POWER CORD	P	
625	1H		E30-0812-05	AC POWER CORD	Y	
625	1H		E30-1341-05	AC POWER CORD	X	
626	1F		E30-0505-05	AUDIO CORD		
627	1F		E30-0977-05	CORD WITH PLUG		
630	2F	*	E31-7803-05	WIRING HARNESS		
631	2G	*	E31-7804-05	WIRING HARNESS		
632	2G	*	E31-7819-05	WIRING HARNESS		
633	3F	*	F19-1021-04	BLIND PLATE		
643	2E, 1G		G11-0155-14	SOFT TAPE (40X9X2)		
-		*	H01-8889-04	ITEM CARTON CASE		
-			H10-3894-02	POLYSTYRENE FOAMED FIXTURE(L)		
-		*	H10-3895-12	POLYSTYRENE FOAMED FIXTURE(R)		
-			H20-0554-04	PROTECTION COVER	M	
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
-			H25-0361-04	PROTECTION BAG	PYX	
647	3H		J02-1052-05	FOOT		
648	1G	*	J19-3327-05	UNIT HOLDER		
649	2G	*	J19-3328-15	UNIT HOLDER		
650	3F		J21-3326-05	JACK MOUNTING HARDWARE		
652	1H		J42-0083-05	POWER CORD BUSHING		
-			J61-0307-05	WIRE BAND	MX	
658	2F		K27-2004-04	KNOB (BUTTON)(POWER)		
659	3F		K29-4031-04	KNOB		
663	1H	*	L07-0165-05	POWER TRANSFORMER	P	
663	1H	*	L07-0166-05	POWER TRANSFORMER	X	
663	1H	*	L07-0167-05	POWER TRANSFORMER	YM	
A			N09-1445-05	SET SCREW (M3X8)		
B			N09-2706-05	TAPTITE SCREW (REAR)		
C			N14-0188-05	BUILD-IN NUT (TRANSFORMER)		
D			N89-4008-45	BINDING HEAD TAPTITE SCREW		
E			N35-4014-45	BINDING HEAD MACHINE SCREW		
F			N89-3008-45	BINDING HEAD TAPTITE SCREW		
			DP-7030 (SINGAPORE MADE)			
601	1E	*	A01-1823-11	METALLIC CABINET		
602	3E	*	A20-6120-02	PANEL		
603	2F	*	A22-1446-02	SUB PANEL ASSY		
604	2E	*	A29-0175-03	PANEL ASSY(TRAY)		
606	1F	*	A70-0387-05	REMOTE CONTROLLER ASSY		
607	1F		A09-0078-08	BATTERY COVER		
615	2F	*	B10-1814-03	FRONT GLASS		
618	2E		B43-0287-04	KENWOOD BADGE		
-			B44-6006-04	POS LABEL		
-			B46-0122-13	WARRANTY CARD	E	
-			B46-0143-13	WARRANTY CARD	T	
-		*	B60-0235-00	INSTRUCTION MANUAL(ENGLISH)		
-		*	B60-0236-00	INSTRUCTION MANUAL(FRENCH)	E	
-		*	B60-0238-00	INSTRUCTION MANUAL(G,D,I)	E	
620	1F	*	D21-1626-03	EXTENSION SHAFT		
625	1H		E30-0459-05	AC POWER CORD	E	
625	1H		E30-1416-05	AC POWER CORD	T	
626	1F		E30-0505-05	AUDIO CORD		
627	1F		E30-0977-05	CORD WITH PLUG		
630	2F	*	E31-7803-05	WIRING HARNESS		
631	2G	*	E31-7804-05	WIRING HARNESS		
632	2G	*	E31-7819-05	WIRING HARNESS		
633	3F	*	F19-1021-04	BLIND PLATE		
643	2E, 1G		G11-0155-14	SOFT TAPE (40X9X2)		
-		*	H01-8890-04	ITEM CARTON CASE		
-			H10-3934-02	POLYSTYRENE FOAMED FIXTURE(L)		
-		*	H10-3935-12	POLYSTYRENE FOAMED FIXTURE(R)		
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
-			H25-0361-04	PROTECTION BAG		
647	3H		J02-1052-05	FOOT		
648	1G	*	J19-3327-05	UNIT HOLDER		
649	2G	*	J19-3328-15	UNIT HOLDER		
650	3F		J21-3326-05	JACK MOUNTING HARDWARE		
652	1H		J42-0083-05	POWER CORD BUSHING		
-			J61-0307-05	WIRE BAND		
658	2F		K27-2004-04	KNOB (BUTTON)(POWER)		
659	3F		K29-4031-04	KNOB (OUTPUT LEVEL)		
663	1H	*	L07-0166-05	POWER TRANSFORMER		
A			N09-1445-05	SET SCREW (M3X8)		
B			N09-2706-05	TAPTITE SCREW(REAR)		
C			N14-0188-05	BUILD-IN NUT(TRANSFORMER)		
D			N89-4008-45	BINDING HEAD TAPTITE SCREW		
E			N35-4014-45	BINDING HEAD MACHINE SCREW		
F			N89-3008-45	BINDING HEAD TAPTITE SCREW		

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PARTS LIST DP-7030

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			MECHANISM UNIT(X25-4150-10) : JAPAN MADE / (X25-4150-21) : SINGAPORE MADE			
S1			S33-2062-05	LEVER SWITCH		
			DISPLAY (X25-4170-00) : JAPAN MADE / (X25-4452-70) : SINGAPORE MADE			
D1 -20			B30-1291-05	LED		
D21			B30-1263-05	LED		
C1 -5			CF92FV1H103J	MF 0.010UF J		
CN1		*	E10-3901-05	FLAT CABLE CONNECTOR		
-			J11-0098-05	WIRE CLAMPER		
S1 -31	1E, 2E		S40-1064-05	PUSH SWITCH		
D22 -37			HSS104A	DIODE		
D22 -37			1SS131	DIODE		
ED1		*	CPF2418GR	FLUORESCENT INDICATOR TUBE		
IC1 -3			TD62801P	IC		
Q1 ,2			2SC1740S(Q,R)	TRANSISTOR		
Q1 ,2			2SC945(A)(Q,P)	TRANSISTOR		
Q3 ,4			DTA124EN	DIGITAL TRANSISTOR		
A1	1E		W02-0975-05	ELECTRIC CIRCUIT MODULE		
			CONTROL (X32-1790-00) : JAPAN MADE / (X32-1802-70) : SINGAPORE MADE			
C1 ,2			CF92FV1H102J	MF 1000PF J		
C3 ,4			CF92FV1H471J	MF 470PF J		
C5 ,6			CF92FV1H103J	MF 0.010UF J		
C7 ,8			CE04KW1E102M	ELECTRO 1000UF 25WV		
C9 ,10			CE04KW1H4R7M	ELECTRO 4.7UF 50WV		
C11 ,12			CE04KW1C331M	ELECTRO 330UF 16WV		
C13 ,14			CF92FV1H223J	MF 0.022UF J		
C15 ,16			CF92FV1H102J	MF 1000PF J		
C17 -20			CF92FV1H103J	MF 0.010UF J		
C21 ,22			CF92FV1H272J	MF 2700PF J		
C23 ,24			CF92FV1H121K	MF 120PF K		
C25 ,26		*	C90-1896-05	ELECTRO 100UF 35WV		
C29 ,30			CF92FV1H471J	MF 470PF J		
C31 ,32			CF92FV1H221K	MF 220PF K		
C33 ,34			C90-1332-05	NP-ELEC 10UF 25WV		
C37 -40			CF92FV1H103J	MF 0.010UF J		
C41 ,42			CF92FV1H121K	MF 120PF K		
C43 ,44			CF92FV1H474J	MF 0.47UF J		
C45 ,46		*	C90-1917-05	ELECTRO 100UF 16WV		
C47			CF92FV1H105J	MF 1.0UF J		
C48		*	C90-1917-05	ELECTRO 100UF 16WV		
C49			CE04KW1C330M	ELECTRO 33UF 16WV		
C51			CE04KW1C101M	ELECTRO 100UF 16WV		
C52		*	C90-1917-05	ELECTRO 100UF 16WV		
C53			CF92FV1H104J	MF 0.10UF J		
C55			CF92FV1H121K	MF 120PF K		
C56			CC45FSL1H050C	CERAMIC 5.0PF C		
C57		*	C90-1893-05	ELECTRO 10UF 35WV		
C58			CF92FV1H121K	MF 120PF K		
C59			CC45FSL1H050C	CERAMIC 5.0PF C		
C60 ,61			CF92FV1H102J	MF 1000PF J		

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
C62 ,63			CE04KW1C330M	ELECTRO 33UF 16WV		
C64 ,65			CF92FV1H102J	MF 1000PF J		
C66 ,67			CE04KW1C330M	ELECTRO 33UF 16WV		
C68			CE04KW1C101M	ELECTRO 100UF 16WV		
C69			CF92FV1H473J	MF 0.047UF J		
C70			CF92FV1H152J	MF 1500PF J		
C71 ,72			CE04KW1C330M	ELECTRO 33UF 16WV		
C73		*	C90-1896-05	ELECTRO 100UF 35WV		
C74			CE04KW1C330M	ELECTRO 33UF 16WV		
C75		*	C90-1917-05	ELECTRO 100UF 16WV		
C76			CE04KW1V330M	ELECTRO 33UF 35WV		
C77			CF92FV1H103J	MF 0.010UF J		
C79			CE04KW1C330M	ELECTRO 33UF 16WV		
C80			CF92FV1H104J	MF 0.10UF J		
C81			CF92FV1H103J	MF 0.010UF J		
C82			CE04KW1C330M	ELECTRO 33UF 16WV		
C83			CF92FV1H221K	MF 220PF K		
C84 ,85			CF92FV1H103J	MF 0.010UF J		
C86			CC45FSL1H100D	CERAMIC 10PF D		
C87			CC45FSL1H180J	CERAMIC 18PF J		
C88			CF92FV1H103J	MF 0.010UF J		
C89			CF92FV1H473J	MF 0.047UF J		
C90			CF92FV1H102J	MF 1000PF J		
C101,102			CE04KW1C332M	ELECTRO 3300UF 16WV		
C103			CE04KW1H470M	ELECTRO 47UF 50WV		
C104-106			CF92FV1H103J	MF 0.010UF J		
C107-113			CE04KW1C330M	ELECTRO 33UF 16WV		
C114			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C115,116			CE04KW1C330M	ELECTRO 33UF 16WV		
C117			CE04KW1A101M	ELECTRO 100UF 10WV		
C118			CC45FSL1H270J	CERAMIC 27PF J		
C119			CE04KW1C330M	ELECTRO 33UF 16WV		
C120,121			CC45FSL1H150J	CERAMIC 15PF J		
C122			CF92FV1H103J	MF 0.010UF J		
C123,124			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C125,126			CE04KW1C330M	ELECTRO 33UF 16WV		
C127			CC45FSL1H180J	CERAMIC 18PF J		
C128,129			CF92FV1H103J	MF 0.010UF J		
C130			C90-1333-05	NP-ELEC 22UF 10WV		
C131			CF92FV1H103J	MF 0.010UF J		
C132,133			CF92FV1H121K	MF 120PF K		
C134			CF92FV1H333J	MF 0.033UF J		
C135			CE04KW1V100M	ELECTRO 10UF 35WV		
C136			CF92FV1H333J	MF 0.033UF J		
C137			CF92FV1H121K	MF 120PF K		
C138			C90-1349-05	NP-ELEC 1UF 50WV		
C139			CF92FV1H104J	MF 0.10UF J		
C140			C90-1398-05	NP-ELEC 0.33UF 50WV		
C141			CC45FSL1H470J	CERAMIC 47PF J		
C142			CF92FV1H332J	MF 3300PF J		
C143			CF92FV1H102J	MF 1000PF J		
C144			CF92FV1H103J	MF 0.010UF J		
C145			CF92FV1H104J	MF 0.10UF J		
C146			CF92FV1H333J	MF 0.033UF J		
C147			CF92FV1H103J	MF 0.010UF J		

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DP-7030 PARTS LIST

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C148			CE04KW1HR47M	ELECTR⊙ 0.47UF 50WV		
C149			CF92FV1H152J	MF 1500PF J		
C150			CF92FV1H222J	MF 2200PF J		
C151			CF92FV1H121K	MF 120PF K		
C152			C90-1350-05	NP-ELEC 2.2UF 50WV		
C153			CF92FV1H104J	MF 0.10UF J		
C154			CE04KW1C330M	ELECTR⊙ 33UF 16WV		
C155			C90-1826-05	BACKUP 0.047F 5.5WV		
C156-159			CF92FV1H103J	MF 0.010UF J		
C160,161			CF92FV1H121K	MF 120PF K		
C162			CF92FV1H103J	MF 0.010UF J		
C163-165			C90-1349-05	NP-ELEC 1UF 50WV		
C166-169			CF92FV1H103J	MF 0.010UF J		
C170			CE04KW1H010M	ELECTR⊙ 1.0UF 50WV		
C172			CF92FV1H104J	MF 0.10UF J		
C173			CE04KW1H010M	ELECTR⊙ 1.0UF 50WV		
C174		*	C90-1922-05	ELECTR⊙ 47UF 25WV		
C201			CF92FV1H103J	MF 0.010UF J		
C205,206			CE04KW1H0R1M	ELECTR⊙ 0.1UF 50WV		
C207,208			CE04KW1H010M	ELECTR⊙ 1.0UF 50WV		
C211,212			CE04KW1C101M	ELECTR⊙ 100UF 16WV		
C213,214			C90-1456-05	NP-ELEC 0.22UF 50WV		
⚠ C301-303			C91-0971-05	FILM 0.01UF 250WV		
J1	1H	*	E63-0002-05	PH⊙N⊙ JACK(LINE ⊙UTPUT)		
J101	1G		E11-0108-05	MINIATURE PH⊙NE JACK(SYS/C⊙N)		
J201	2F		E11-0199-05	PH⊙NE JACK(PH⊙NES)		
⚠ F1 ,2			F53-0006-05	FUSE	P	
⚠ F1 ,2			F53-0018-05	FUSE	YMX	
-			J11-0098-05	WIRE CLAMPER		
L1			L40-2291-17	SMALL FIXED INDUCT⊙R		
L3		*	L40-3981-17	SMALL FIXED INDUCT⊙R		
L4			L40-1011-17	SMALL FIXED INDUCT⊙R		
L5			L40-2291-17	SMALL FIXED INDUCT⊙R		
L6 ,7			L40-1011-17	SMALL FIXED INDUCT⊙R		
L8			L40-3391-17	SMALL FIXED INDUCT⊙R		
L9			L40-2281-17	SMALL FIXED INDUCT⊙R		
L101			L40-1001-17	SMALL FIXED INDUCT⊙R		
⚠ L301			L79-0733-05	LINE FILTER		
X1			L77-1190-05	CRYSTAL RES⊙NAT⊙R (45.158MHz)		
X2			L77-1187-05	CRYSTAL RES⊙NAT⊙R (16.9344MHz)		
G			N30-3006-46	PAN HEAD MACHINE SCREW		
H			N89-3008-46	BINDING HEAD TAPTITE SCREW		
R13 ,14		*	RN14BK2C5110F	RN 511.0 F 1/6W		
R15 ,16		*	RN14BK2C1471F	RN 1.47K F 1/6W		
R17 ,18			RN14BK2C2151F	RN 2.15K F 1/6W		
R19 ,20			RN14BK2C1101F	RN 1.10K F 1/6W		
R21 ,22			RN14BK2C2151F	RN 2.15K F 1/6W		
R29 ,30			RN14BK2C1001F	RN 1.00K F 1/6W		
R31 ,32			RN14BK2C1962F	RN 19.6K F 1/6W		
R33 ,34			RN14BK2C1003F	RN 100K F 1/6W		
R37 ,38			RN14BK2C1960F	RN 196.0 F 1/6W		
R39 ,40			RN14BK2C1001F	RN 1.00K F 1/6W		

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R41 ,42		*	RN14BK2C9091F	RN 9.09K F 1/6W		
R43 -46			RN14BK2C4641F	RN 4.64K F 1/6W		
R47 ,48		*	RN14BK2C9091F	RN 9.09K F 1/6W		
R49 ,50			RN14BK2C1962F	RN 19.6K F 1/6W		
R56			RN14BK2C4641F	RN 4.64K F 1/6W		
R57 ,58			RN14BK2C1962F	RN 19.6K F 1/6W		
R89		*	RN14BK2C3830F	RN 383.0 F 1/6W		
R153,154			RD14GB2E5R6J	FL-PR⊙⊙F RD 5.6 J 1/4W		
VR101-103			R12-3126-05	TRIM P⊙T. 10K (P /B)		
VR104			R12-3128-05	TRIMMING P⊙T.(22K)		
VR201	3F	*	R29-1005-05	P⊙TENTI⊙METER(3KX2)⊙UT/LEVEL		
K1			S51-2089-05	MAGNETIC RELAY		
S1			S40-1103-05	PUSH SWITCH (P⊙WER TYPE)		
⚠ S2			S31-2131-05	SLIDE SWITCH (P⊙WER TYPE)	YM	
D1 -4			S5566B	DI⊙DE		
D5 -7			HZS13N(B2)	ZENER DI⊙DE		
D5 -7			RD13ES(B2)	ZENER DI⊙DE		
D8 ,9			HSS104	DI⊙DE		
D8 ,9			1SS133	DI⊙DE		
D10			HZS13N(B2)	ZENER DI⊙DE		
D10			RD13ES(B2)	ZENER DI⊙DE		
D11			HZS15N(B2)	ZENER DI⊙DE		
D11			RD15ES(B2)	ZENER DI⊙DE		
D13 -16			HZS5.1N(B2)	ZENER DI⊙DE		
D13 -16			RD5.1ES(B2)	ZENER DI⊙DE		
D17 -20			HSS104	DI⊙DE		
D17 -20			1SS133	DI⊙DE		
D21			HZS11N(B2)	ZENER DI⊙DE		
D21			RD11ES(B2)	ZENER DI⊙DE		
D22			HSS104	DI⊙DE		
D22			1SS133	DI⊙DE		
D101			HSS104A	DI⊙DE		
D101			1SS131	DI⊙DE		
D102-105			S5566B	DI⊙DE		
D106,107			HZS7.5S(B)	ZENER DI⊙DE		
D106,107			RD7.5JS(B)	ZENER DI⊙DE		
D108,109			HSS104	DI⊙DE		
D108,109			1SS133	DI⊙DE		
D110-112			HZS5.1N(B2)	ZENER DI⊙DE		
D110-112			RD5.1ES(B2)	ZENER DI⊙DE		
D113			HZS7.5S(B)	ZENER DI⊙DE		
D113			RD7.5JS(B)	ZENER DI⊙DE		
D114-124			HSS104	DI⊙DE		
D114-124			1SS133	DI⊙DE		
D125			HZS3.9N(B2)	ZENER DI⊙DE		
D125			RD3.9ES(B2)	ZENER DI⊙DE		
D126-130			HSS104A	DI⊙DE		
D126-130			1SS131	DI⊙DE		
D131-141			HSS104	DI⊙DE		
D131-141			1SS133	DI⊙DE		
D201,202			HSS104	DI⊙DE		
D201,202			1SS133	DI⊙DE		
IC1			NJM4558D	IC(⊙P AMP X2)		
IC2 -5			NJM4565D	IC(⊙P AMP X2)		

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PARTS LIST

DP-7030

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
IC6			CXD2552Q	IC(D/A CONVERTER)		
IC7		*	SM5840CP	IC(DIGITAL FILTER)		
IC8			NJM4558D	IC(OP AMP X2)		
IC9			CXD2500Q	IC(SIGNAL PROCESSOR)		
IC10		*	MN74HCU04	IC(INVERTER X6)		S
IC16			TC74HCU04AP	IC(CMOS INVERTER)		J
IC17			NJM4558D	IC(OP AMP X2)		
IC12			SM5827CP	IC(RESET FOR 1 BIT DAC)		
IC13			NJM4565D	IC(OP AMP X2)		
IC101			NJM4558D	IC(OP AMP X2)		
IC102		*	UPD75216ACW-B71	IC(MICROPROCESSOR)		
IC103			CXD1095Q	IC(I/O)		
IC104			CXA1471S	IC(RF)		
IC105			CXA1372Q	IC(CD RF SERVO)		
IC106			LC3518BSL-15	IC		
IC107			TC74HC174AP	IC(D-TYPE FLIP FLOP)		
IC108,109			TA8409S	IC(MOTOR CONTROL)		
IC110			LA6510	IC(DUAL POWER AMP)		
IC110			TA8410AK	IC(DUAL POWER AMP)		
IC111			BA10393N	IC(DUAL COMPARATOR)		
IC112			NJM4558D	IC(OP AMP X2)		
IC113			MS238P	IC(DUAL OP AMP)		
IC114		*	MN74HCU04	IC(INVERTER X6)		S
IC114			TC74HCU04AP	IC(CMOS INVERTER)		J
IC201			LA6510	IC(DUAL POWER AMP)		
IC201			TA8410AK	IC(DUAL POWER AMP)		
Q1			2SB941	TRANSISTOR		
Q2			2SD1266	TRANSISTOR		
Q3			DTC124EN	DIGITAL TRANSISTOR		
Q4			2SC1685	TRANSISTOR		S
Q4			2SC1740S(Q,R)	TRANSISTOR		J
Q4			2SC945(A)(Q,P)	TRANSISTOR		
Q5 ,6			2SC2878(B)	TRANSISTOR		J
Q5 ,6			2SD1302(S,T)	TRANSISTOR		S
Q7			2SK246(Y,GR)	FET		
Q9			DTA124EN	DIGITAL TRANSISTOR		
Q10 ,11			2SK161(GR)	FET		
Q12			2SA564	TRANSISTOR		S
Q12			2SA733(A)(Q,P)	TRANSISTOR		
Q12			2SA933S(Q,R)	TRANSISTOR		J
Q13 ,14			2SK246(Y,GR)	FET		
Q15 ,16			2SC3940A	TRANSISTOR		
Q17			2SC3246	TRANSISTOR		
Q18			2SC3940A	TRANSISTOR		
Q19			2SK246(Y,GR)	FET		
Q20 ,21			2SA564	TRANSISTOR		S
Q20 ,21			2SA733(A)(Q,P)	TRANSISTOR		
Q20 ,21			2SA933S(Q,R)	TRANSISTOR		J
Q22 ,23			DTA124EN	DIGITAL TRANSISTOR		
Q25			2SC1685	TRANSISTOR		S
Q25			2SC1740S(Q,R)	TRANSISTOR		J
Q25			2SC945(A)(Q,P)	TRANSISTOR		
Q26 ,27			2SC2878(B)	TRANSISTOR		
Q26 ,27			2SD1302(S,T)	TRANSISTOR		S
Q28			2SC1685	TRANSISTOR		S

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Q28			2SC1740S(Q,R)	TRANSISTOR		J
Q28			2SC945(A)(Q,P)	TRANSISTOR		
Q29			2SA564	TRANSISTOR		S
Q29			2SA733(A)(Q,P)	TRANSISTOR		
Q29			2SA933S(Q,R)	TRANSISTOR		J
Q101			2SB941	TRANSISTOR		
Q102			2SC3940A	TRANSISTOR		
Q103			2SB941	TRANSISTOR		
Q104			2SC1685	TRANSISTOR		S
Q104			2SC1740S(Q,R)	TRANSISTOR		J
Q104			2SC945(A)(Q,P)	TRANSISTOR		
Q105			2SD1266	TRANSISTOR		
Q106			2SA564	TRANSISTOR		S
Q106			2SA733(A)(Q,P)	TRANSISTOR		
Q106			2SA933S(Q,R)	TRANSISTOR		J
Q107			2SA1534A	TRANSISTOR		
Q108			2SA564	TRANSISTOR		S
Q108			2SA733(A)(Q,P)	TRANSISTOR		
Q108			2SA933S(Q,R)	TRANSISTOR		J
Q109			2SC3940A	TRANSISTOR		
Q110			2SA1534A	TRANSISTOR		
Q111,112			2SC3246	TRANSISTOR		
Q113,114			2SA1286	TRANSISTOR		
Q115			DTC124EN	DIGITAL TRANSISTOR		
Q116			2SA1534A	TRANSISTOR		
Q117			2SK163(L)	FET		
Q118			2SC1685	TRANSISTOR		S
Q118			2SC1740S(Q,R)	TRANSISTOR		J
Q118			2SC945(A)(Q,P)	TRANSISTOR		
Q119			DTC124EN	DIGITAL TRANSISTOR		
A1	1G		W02-1036-05	TRANSMITTING ASSY(DIGITAL OUT)		
MECHANISM (X92-1570-20) : JAPAN MADE						
1	2B	*	A10-2797-02	CHASSIS ASSY		
3	3B	*	A11-0692-08	SUB CHASSIS		
4	1B	*	A11-0693-03	SUB CHASSIS		
9	1B	*	D10-2479-03	SLIDER		
10	2A	*	D10-2481-04	ARM ASSY		
11	1B	*	D10-2480-04	ROD (SLIDER)		
12	2B		D10-2325-04	ROD (DISC UP)		
13	1A	*	D10-2483-04	ROD (RETAINER)		
14	1A		D13-0744-04	GEAR		
15	1A		D13-0779-04	GEAR(PULLEY)		
16	1B		D13-0780-04	GEAR(INTERMEDIATE)		
17	1A	*	D13-0890-04	GEAR(IDLER)		
18	1A	*	D13-0891-03	GEAR(MAIN)		
19	1A	*	D13-0892-04	GEAR(SUN)		
20	3B		D13-0879-08	GEAR(FM)		
21	2B		D13-0880-18	GEAR(INTERMEDITE)		
22	3B	*	D13-0893-08	GEAR(FEED)		
25	2B	*	D14-0324-04	ROLLER		
26	2B	*	D14-0325-04	ROLLER ASSY		
27	2B		D15-0295-04	MOTOR PULLEY		
28	1B		D16-0199-04	BELT		
30	1A	*	D23-0267-03	RETAINER		

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35	1B		E23-0343-04	TERMINAL		
36	2B		E31-7872-05	WIRING HARNESS(8P)(RED/WHITE)		
37	2B	*	E31-7873-05	WIRING HARNESS(8P)(BLUE/WHITE)		
38	2B	*	E31-7800-18	WIRING HARNESS (5P)		
40	1A	*	F19-1025-04	BLIND PLATE		
45	3B	*	G01-3321-08	COMPRESSION SPRING(FRONT)		
46	3B	*	G01-3322-08	COMPRESSION SPRING(REAR)		
47	1A	*	G11-2035-04	CUSHION		
48	2A		G16-0741-04	SHEET		
52	2B	*	J02-1058-15	INSULATOR		
53	1B	*	J11-0168-03	CLAMPER		
54	3B	*	J19-3318-08	BRACKET		
55	2A	*	J99-0086-03	TRAY ASSY		
56	2A	*	J99-0087-01	TRAY		
60	1A,1B		N19-0366-04	FLAT WASHER		
A			N09-2769-05	MACHINE SCREW		
B			N35-2605-46	BINDING HEAD MACHINE SCREW		
D		*	N09-2008-46	MACHINE SCREW		
E			N86-2606-46	BINDING HEAD TAPTITE SCREW		
F			N09-2644-05	STEPPED SCREW		
65	3A		S33-1022-05	LEVER SWITCH		
70	1B	*	T50-1055-04	YOKE		
71	1B		T99-0503-05	MAGNET		
DM	3B		A11-0679-18	SUB CHASSIS ASSY		
FM	3B		T42-0566-05	DC MOTOR(FEED)		
LM	2B		T42-0530-05	DC MOTOR(LOADING)		
PU	2B		T25-0011-05	OPTICAL PICKUP HEAD		
MECHANISM (X92-1600-21) : SINGAPORE MADE						
101	2D		A10-2798-12	CHASSIS ASSY		
103	3D	*	A11-0695-05	SUB CHASSIS (FRAME)		
104	1D		A11-0686-03	SUB CHASSIS (CLAMP)		
109	1D	*	D10-2479-03	SLIDER		
110	2C	*	D10-2481-04	ARM ASSY		
111	1D		D10-2489-04	ROD (SLIDER)		
112	2D	*	D10-2490-04	ROD (DISC UP)		
113	1C		D10-2491-04	ROD (RETAINER)		
114	1C		D13-0744-04	GEAR		
115	1C		D13-0779-04	GEAR (PULLEY)		
116	1D		D13-0780-04	GEAR (INTERMEDIATE)		
117	1C	*	D13-0890-04	GEAR (IDLER)		
118	1C	*	D13-0891-03	GEAR (MAIN)		
119	1C	*	D13-0892-04	GEAR		
120	3D		D13-0894-05	GEAR (FM)		
121	2D	*	D13-0895-05	GEAR (INTERMEDIATE)		
122	3D		D13-0896-05	GEAR (FEED)		
125	2D	*	D14-0324-04	ROLLER		
126	2D	*	D14-0325-04	ROLLER ASSY		
127	2D		D15-0295-04	MOTOR PULLEY		
128	1D		D16-0309-03	BELT		
130	1C	*	D23-0267-03	RETAINER		
135	1D		E23-0343-04	TERMINAL		

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136	2D	*	E31-7891-05	WIRING HARNESS (8P)(RED/WHITE)		
137	2D	*	E31-7892-05	WIRING HARNESS (8P)(BLUE/WHITE	)	
138	2D		E31-7868-15	WIRING HARNESS (5P)		
140	1C		F19-1027-04	BLIND PLATE		
145	3D		G01-3326-14	COMPRESSION SPRING (FRONT)		
146	3D		G01-3327-14	COMPRESSION SPRING (REAR)		
147	1C	*	G11-2038-04	CUSHION		
148	2C		G16-0741-04	SHEET		
152	2D	*	J02-1058-15	INSULATOR		
153	1D	*	J11-0168-03	CLAMPER		
154	3D		J19-3335-05	BRACKET		
155	2C	*	J99-0090-03	TRAY ASSY		
156	2C	*	J99-0087-01	TRAY		
160	1C,1D		N19-0366-04	FLAT WASHER		
A			N09-2769-05	MACHINE SCREW		
B			N35-2605-46	BINDING HEAD MACHINE SCREW		
D		*	N09-2008-46	MACHINE SCREW		
E			N86-2606-46	BINDING HEAD TAPTITE SCREW		
F			N09-2644-05	STEPPED SCREW		
165	3C		S33-1022-05	LEVER SWITCH		
170	1D	*	T50-1055-04	YOKE		
171	1D		T99-0503-05	MAGNET		
DM	3D		A11-0679-18	SUB CHASSIS ASSY(DISC MOTOR)		
FM	3D		T42-0532-05	DC MOTOR (FEED)		
LM	2D		T42-0530-05	DC MOTOR (LOADING)		
PU	2D		T25-0011-05	OPTICAL PICKUP HEAD (KSS-210A)		

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DP-7030

SPECIFICATIONS

[Format]
Type ..... Compact disc player
Read system ..... Non-contact optical pick-up
Rotational speed ..... About 200 to 500 rpm

[Audio]
Frequency response ..... 2Hz ~ 20kHz ± 0.5dB
Signal to noise ratio ..... More than 113dB
Total harmonic distortion ..... 0.0013% at 1kHz
Channel separation ..... More than 110dB at 1kHz
Wow & Flutter ..... Below measurable limit

Output
LINE **(Fixed)** 2.0V
(Variable) ..... 0 ~ 2.0V
DIGITAL (OPTICAL) ..... −15dBm ~ −21dBm
Headphone jack 20mW (8Ω)

[General]
Power consumption 25W
Dimensions ..... W : 440mm
H : 132mm
D : 381mm
Weight 10.1kg

Note:
KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Note :
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the Canade (P) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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