PIONEER
The Art of Entertainment

Service Manual

-DEH-50DH/UC

ORDER NO.
CRT1646

HIGH POWER CD PLAYER WITH FM/AM TUNER

DEH-50DH UC
DEH-40DH UC

COMPACT disc DIGITAL AUDIO

- **See the service manual CX-540(CRT1574) for the CD mechanism description, disassembly and circuit description.**
- **The CD mechanism employed in this model is one of CX-540 series.**

CONTENTS

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1. SAFETY INFORMATION

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

2. SPECIFICATIONS

● DEH-50DH

General

Power source ..... 14.4 V DC (10.8 — 15.6 V allowable)
Grounding systgem ..... Negative type
Max. current consumption ..... 10.0 A
Dimensions (mounting size) ..... 196 (W) × 78 (H) × 138 (D) mm
[7-3/4(W) × 3-1/8(H) × 5-3/8(D) in.]
(nose) ..... 190 (W) × 74 (H) × 20 (D) mm
[7-1/2(W) × 2-7/8(H) × 3/4(D) in.]
Weight ..... 2.0 kg (4.4 lbs)

Amplifier

Continuous power output is 15W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Max. power output ..... 35 W × 4 (EIAJ)
Load impedance ..... 4 Ω (4 — 8 Ω allowable)
Preout output level/output impedance ..... 500 mV/1 kΩ
Tone controls (bass) ..... ±12 dB (100 Hz)
(treble) ..... ±12 dB (10 kHz)
Loudness contour ..... +10 dB (100 Hz), +6.5dB (10 kHz)
(Volome: –30 dB)

CD player

System ..... Compact disc audio system
Usable discs ..... Compact disc
Signal format ..... Sampling frequency: 44.1 kHz
Number of quantization bits: 16; linear
Frequency Characteristics ..... 5 — 20,000 Hz (±1 dB)
Signal-to-noise ratio ..... 94 dB (1 kHz) (IHF-A network)
Dynamic Range ..... 90 dB (1 kHz)
Number of channels ..... 2 (stereo)

FM tuner

Frequency range ..... 87.9 — 107.9 MHz
Usable sensitivity ..... 11 dBf(1.0 µV/75 Ω, mono, S/N:30 dB)
50 dB quieting sensitivity ..... 16 dBf (1.7 µV/75 Ω, mono)
Signal-to-noise ratio ..... 70 dB (IHF-A network)
Distortion ..... 0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 — 15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)
Selectivity ..... 70 dB (2ACA) (±400 kHz)
Tree-signal intermodulation (desire signal level)
..... 50 dBf (two undesire signal level: 110 dBf)

AM tuner

Frequency range ..... 530 — 1,710 kHz
Usable sensitivity ..... 18 µV (25 dB) (S/N: 20 dB)
Selectivity ..... 50 dB (±10 kHz)

These specifications were determined and are presented in accordance with specification standards established by the Ad Hoc Committee of Car Stereo Manufacturers.

Note:
Specifications and the desigh are subject to possible modification without notice due to improvements.

● DEH-40DH

General

Power source ..... 14.4 V DC (10.8 — 15.6 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 10.0 A
Dimensions (mounting size) ..... 196 (W) × 78 (H) × 125 (D) mm
[7-3/4(W) × 3-1/8(H) × 5-3/8(D) in.]
(nose) ..... 190 (W) × 74 (H) × 20 (D) mm
[7-1/2(W) × 2-7/8(H) × 3/4(D) in.]
Weight ..... 2.0 kg (4.4 lbs)

Amplifier

Continuous power output is 15W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Max. power output ..... 35 W × 4 (EIAJ)
Load impedance ..... 4 Ω (4 — 8 Ω allowable)
Preout output level/output impedance ..... 500 mV/1 kΩ
Tone controls (bass) ..... ±12 dB (100 Hz)
(treble) ..... ±12 dB (10 kHz)
Loudness contour ..... +10 dB (100 Hz), +6.5dB (10 kHz)
(Volome: –30 dB)

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These specifications were determined and are presented in accordance with specification standards established by the Ad Hoc Committee of Car Stereo Manufacturers.

Note:
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3. DISASSEMBLY

● Removing the Case

1.Remove the three screws A , and then remove the case.

● Removing the Panel Assy

1.Remove the three screws B.

2.Disconnect the five stoppers C , and then remove the panel assy.

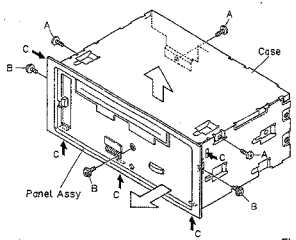


Fig.1

● Removing the CD Mechanism Module

1.Remove the four screws D.

2.Disconnect the connector indicated by arrow.

3.Remove the CD Mechanism Module.

● Removing the Bracket

1.Remove the four screws E , and then remove the bracket.

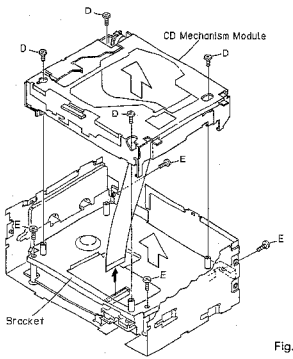


Fig.2

● Removing the Equalizer Unit(DEH-50DH)

1.Stretch the two claws F , and then remove the equalizer unit.

● Removing the Tuner Amp Unit

1.Remove the four screws.

2.Stretch the four claws G , and then remove the tuner amp unit.

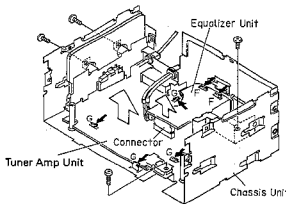


Fig.3

4. ADJUSTMENT

4.1 CD PLAYER SECTION

1)Precautions

- This unit uses a single power supply (+5V) for the regulator. The signal reference potential, therefore, is connected to REFO(approx. 2.5V) instead of GND.
  If REFO and GND are connected to each other by mistake during adjustments, not only will it be impossible to measure the potential correctly, but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this, take special note of the following.
  Do not connect the negative probe of the measuring equipment to REFO and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to REFO with the channel 2 negative probe connected to GND.
  Since the frame of the measuring instrument is usually at the same potential as the negative probe, change the frame of the measuring instrument to floating status.
  If by accident REFO comes in contact with GND, immediately switch the regulator or power OFF.

- Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.

- Before proceeding to further adjustments and measurements after switching regulator ON, let the player run for about one minute to allow the circuits to stabilize.

- Since the protective systems in the unit's software are rendered inoperative in test mode, be very careful to avoid mechanical and /or electrical shocks to the system when making adjustment.

- Test mode starting procedure
  Switch ACC, back-up ON while pressing the **4** and **6** keys together.

- Test mode cancellation
  Switch ACC, back-up OFF.

- Disc detection during loading and eject operations is performed by means of a photo transistor in this unit.Consequently, if the inside of the unit is exposed to a strong light source when the outer casing is removed for repairs or adjustment, the following malfunctions may occur.
  *During PLAY, even if the eject button is pressed,the disc will not be ejected and the unit will remain in the PLAY mode.
  *The unit will not load a disc.
  When the unit malfunctions this way, either reposition the light source, move the unit or cover the photo transistor.

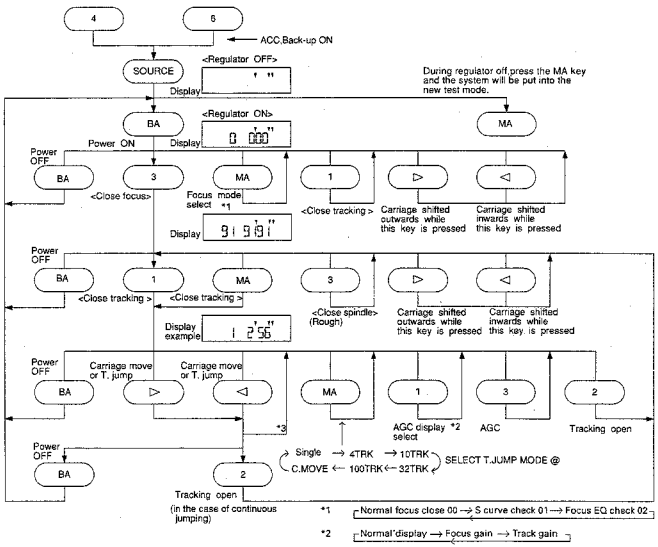
- When loading and unloading discs during adjustment procedures, always wait for the disc to be properly clamped or ejected before pressing another key. Otherwise, there is a risk of the actuator being destroyed.

- Turn power off when pressing the button ▷ or the button ◁ key for focus search in the test mode. (Or else lens may stick and the actuator may be damaged.)

- SINGLE/4TRK/10TRK/32TRK will continue to operate even after the key is released.Tracking is closed the moment C-MOVE is released.

- JUMP MODE resets to SINGLE as soon as power is switched off.

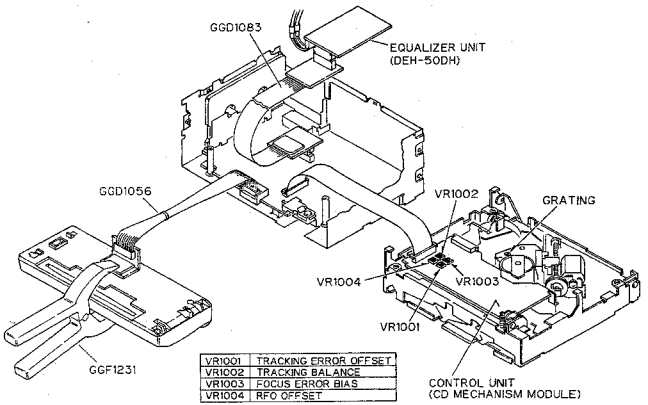
● Flow Chart



● Measuring Equipment and Jigs

Adjustment	Measuring equipment & jigs
1 Tracking Error Offset Adjustment 1	DC V Meter
2 Grating Check / Adjustment 1	Oscilloscope, ABEX TCD-784 (or SONY TYPE 4), Two L.P.F., Clock Driver
3 Grating Adjustment 2	Oscilloscope, Grating Adjustment Filter (B.P.F.), mV Meter, ABEX TCD-784 (or SONY TYPE 4), Two L.P.F., Clock Driver
4 Tracking Balance Adjustment 1	Oscilloscope, Low-pass Filter, ABEX TCD-784 (or SONY TYPE 4)
5 Focus Bias Adjustment	Oscilloscope, ABEX TCD-784 (or SONY TYPE 4)
6 RFO Offset Adjustment	Oscilloscope, ABEX TCD-784 (or SONY TYPE 4)
7 Tracking Error Offset Adjustment 2	DC V Meter
8 Tracking Balance Adjustment 2	Oscilloscope, Low-pass Filter, ABEX TCD-784 (or SONY TYPE 4)

● **Adjustment Point**



VR1001	TRACKING ERROR OFFSET
VR1002	TRACKING BALANCE
VR1003	FOCUS ERROR BIAS
VR1004	RFO OFFSET

Fig.4

● **Test Point**

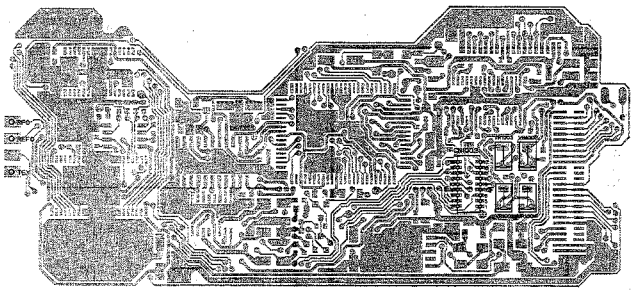
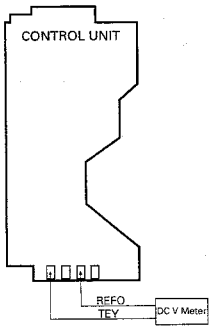


Fig.5

1 Tracking Error Offset Adjustment 1

·Purpose :
To adjust the offset of the tracking pre-amp to zero.
·Symptoms of Mal-adjustment :
Track search NG, Carriage runaway, Poor playability.

·Measuring Equipment / Jig	·DC V Meter
·Measuring Point	·TEY
·Test Disc , Mode	·TEST MODE
·Adjustment Point	·VR1001(TE OFFSET VR)

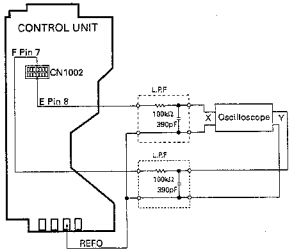


Adjustment Procedure
1.Switch the regulator on.
Select Focus EQ check in Focus mode by pressing key MA. And the indication 00 will change to 02.
This mode makes the laser turned off.
2.Using VR1001, adjust TEY to 0 ± 25mV w.r.t. REFO.

2 Grating Check / Adjustment 1

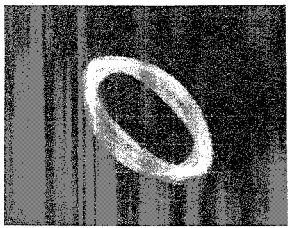
·Purpose :
To check that the PU grating is correctly aligned after the PU unit has been replaced.
·Symptoms of Mal-adjustment :
Unable to play disc, track skip during search, search NG.

·Measuring Equipment / Jig	·Oscilloscope, Two L.P.F., Clock Driver
·Measuring Point	·E, F
·Test Disc , Mode	·ABEX TCD-784 (or SONY TYPE 4), TEST MODE
·Adjustment Point	·Grating hole



Adjustment Procedure
1.Load disc and switch regulator on.
2.Position the PU in the center of the disc using the ▷ & ◁ keys.
3.Press key 3 to close focus and press once more to close spindle.
4.Refering to the photographs given check that the grating is within ±45°. If not, it should be possible to make a fine adjustment to the grating by slowly tuning the grating screw. If, however during the adjustment the lissajous figure is seen to "FLIP" then the null point must be found and the adjustment made from there(see next section).

Lissajous figure (AC input)
Horizontal axis E 10mV/div.
Vertical axis F 10mV/div.

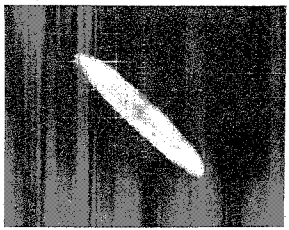


60°=NG

Waveform 1

45°=OK
(Limit)

Waveform 2



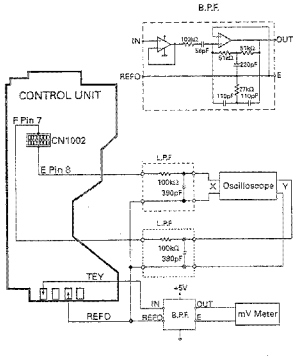
0°=BEST
(Doesn't become a single line due to eccentricity)

Waveform 3

3 Grating Adjustment 2

·Purpose :
This needs to be done if the previous adjustment was unsuccessful.
·Symptoms of Mal-adjustment :
Unable to play disc, track skipping, track search NG.

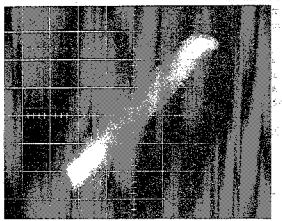
·Measuring Equipment / Jig	·Oscilloscope, Grating Adjustment filter (B.P.F.), mV Meter, Two L.P.F., Clock Driver
·Measuring Point	·TEY, E, F
·Test Disc , Mode	·ABEX TCD-784 (or SONY TYPE 4), TEST MODE
·Adjustment Point	·Grating hole



Adjustment Procedure

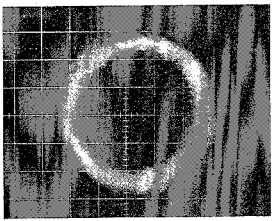
1. Load disc and switch regulator on.
2. Position the PU unit in the center of the disc using the ▷ & ◁ keys.
3. Press key **3** to close focus and press once more to close spindle.
4. While monitoring the output of the B.P.F. connected to TEY, slowly turn the grating screw. The output voltage should pass through many minimums; search for the minimum which is clearly smaller than the rest - this is the "null point", where the E & F sub-beams are lined up with the tracks on the disc.
5. From this null point, turn the grating screw clockwise (as seen from the underside of the PU unit) until the lissajous waveform is a single line (or close as possible) as shown in the photograph.

Lissajous figure (AC input)
Horizontal axis E 10mV/div.
Null Point=180° Vertical axis F 10mV/div.



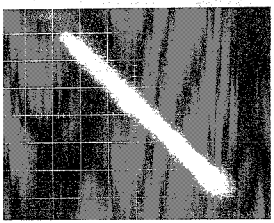
Waveform 4

"Rough" adjustment=90°



Waveform 5

Final adjustment=0°

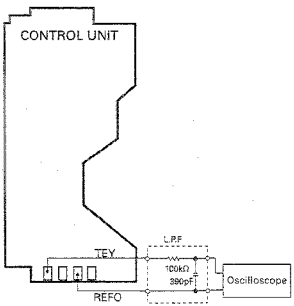


Waveform 6

4 Tracking Balance Adjustment 1

· Purpose :
To equate the sensitivity of the F channel to that of the E channel.
· Symptoms of Mal-adjustment :
Track search NG, Poor playability carriage runaway.

· Measuring Equipment / Jig	· Oscilloscope, L.P.F.
· Measuring Point	· TEY
· Test Disc , Mode	· ABEX TCD-784 (or SONY TYPE 4), TEST MODE
· Adjustment Point	· VR1002 (T.BAL VR)



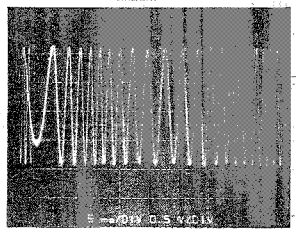
Adjustment Procedure
1. Load disc and switch the regulator on.
2. Position the PU unit in the center of the disc using the ▷ & ◁ keys.
3. Close focus by pressing key 3.
4. Observing the TEY waveform on the oscilloscope, adjust VR1002 until the positive and negative halves have the same amplitude (see waveform 7–9).

Check
After adjustment the TEY waveform should have an amplitude of 1.5±0.65 Vpp.
(ABEX TCD-784 or SONY TYPE 4)
(Providing focus bias is OK)

DC Mode
0.5V/div.
5ms/div.

+5% NG

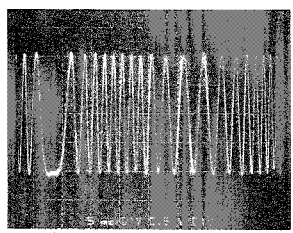
REFO —



Waveform 7

±0% OK

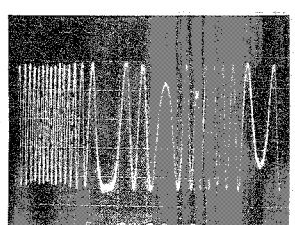
REFO —



Waveform 8

–5% NG

REFO —

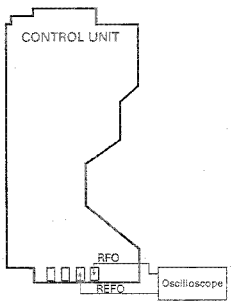


Waveform 9

5 Focus Bias Adjustment

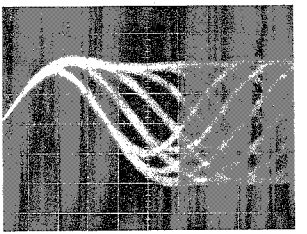
Purpose :
To adjust the focus servo reference so that the RF waveform is an optimum.
Symptoms of Mal-adjustment :
Difficulty in closing focus, poor playability.

Measuring Equipment / Jig	· Oscilloscope
Measuring Point	· RFO
Test Disc , Mode	· ABEX TCD-784 (or SONY TYPE 4), NORMAL MODE
Adjustment Point	· VR1003 (FE BIAS VR)



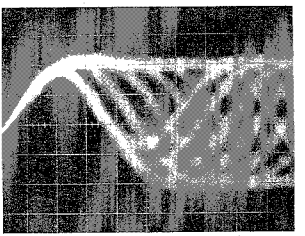
Adjustment Procedure
1. Play track number 18.
2. Adjust VR1003 so that the RFO waveform amplitude is a maximum and eye pattern is optimum.

Check
After adjustment the RFO waveform should have an amplitude of 1.7±0.85 Vpp.
(ABEX TCD-784 or SONY TYPE 4)



OK

Waveform 10



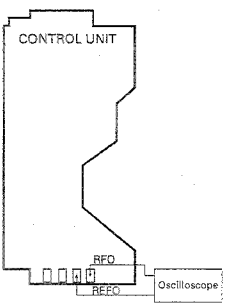
NG

AC Mode Before adjustment Waveform 11

6 RFO Offset Adjustment

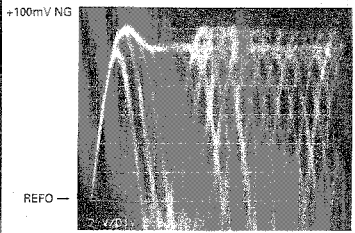
· **Purpose**
To adjust the RFO waveform offset to an optimum.
· **Symptoms of Mal-adjustment**
Difficulty in closing focus, poor playability.

· **Measuring Equipment / Jig**	· Oscilloscope
· **Measuring Point**	· RFO
· **Test Disc , Mode**	· ABEX TCD-784 (or SONY TYPE 4), NORMAL MODE
· **Adjustment Point**	· VR1004 (RFO OFFSET VR)

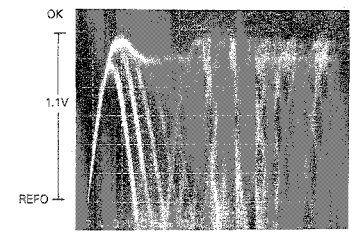


Adjustment Procedure
1. Play track number 18.
2. Adjust VR1004 so that the peak value of the upper envelope of the RFO waveform is at +1.1VDC w.r.t. REFO(See waveform 12-14).

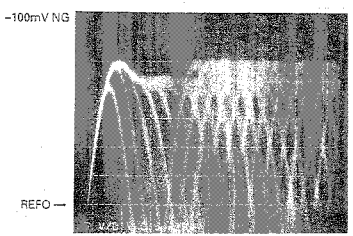
DC Mode
0.2V/div.
0.5μs/div.



Waveform 12



Waveform 13

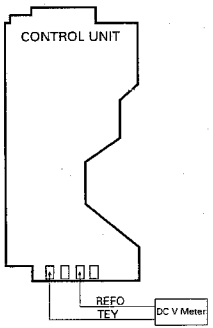


Waveform 14

7 Tracking Error Offset Adjustment 2

·Purpose :
To check the offset of the tracking pre-amp is zero and adjust if necessary.
·Symptoms of Mal-adjustment :
Track search NG, Carriage runaway, Poor playability.

·Measuring Equipment / Jig	·DC V Meter
·Measuring Point	·TEY
·Test Disc , Mode	·TEST MODE
·Adjustment Point	·VR1001(TE OFFSET VR)

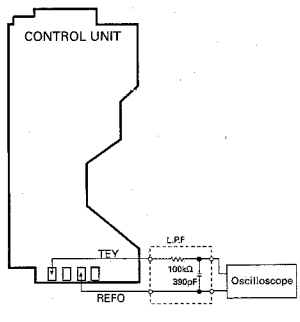


Adjustment Procedure
1.Switch the regulator on.
Select Focus EQ check in Focus mode by pressing key MA. And the indication 00 will change to 02.
This mode makes the laser turned off.
2.Using VR1001, adjust TEY to 0 ± 25mV w.r.t. REFO.

8 Tracking Balance Adjustment 2

·Purpose :
To equate the sensitivity of the F channel to that of the E channel.This needs only be done if the TE OFF-SET volume was re-adjusted in the previous step.
·Symptoms of Mal-adjustment:
Track search NG,Poor playability, carriage runaway.

·Measuring Equipment / Jig	·Oscilloscope, L.P.F.
·Measuring Point	·TEY
·Test Disc , Mode	·ABEX TCD-784 (or SONY TYPE 4), TEST MODE
·Adjustment Point	·VR1002 (T.BAL VR)



Adjustment Procedure
1.Load disc and switch the regulator on.
2.Position the PU unit in the center of the disc using the ▷ & ◁ keys.
3.Close focus by pressing key 3.
4.Observing the TEY waveform on the oscilloscope, adjust VR1002 until the positive and negative halves have the same amplitude (See waveform 7–9).
Check
After adjustment the TEY waveform should have an amplitude of 1.5±0.65 Vpp.
(ABEX TCD-784 or SONY TYPE 4)

4.2 TUNER SECTION

● **Connection Diagram**

NOTE:
Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.
Z: Output impedance of SSG.

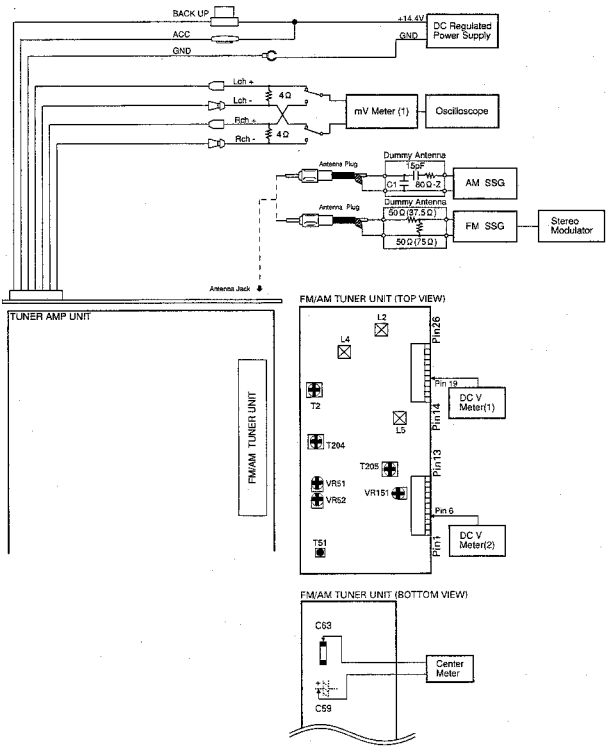


Fig.6

AM ADJUSTMENT

	No.	AM SSG(400Hz,30%) Frequency(kHz)	AM SSG(400Hz,30%) Level(dBμV)	Displayed Frequency(kHz)	Adjustment Point	Adjustment Method (Switch Position)
IF	1	1000	20	1000	T204,T205	mV Meter(1) : Maximum

FM ADJUSTMENT

Modulation M:MONO MOD., 400Hz 100%(75kHz Dev.)
S:STEREO MOD., 1kHz, L or R=100%(67.5kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

	No.	FM SSG Frequency(MHz)	FM SSG Level(dBf)	Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
TUN Volt	1	107.9 M	65	107.9	L5	DC V Meter(1) : 6.5V±0.1V
IF	1	98.1 M	65	98.1	T51	Center Meter : 0
ANT,RF	1	98.1 M	5	98.1	L2,L4	mV Meter(1) : Maximum
IFT	1	98.1 M	10	98.1	T2	mV Meter(1) : Maximum (STEREO MODE)
Soft Mute	1	98.1 M	65	98.1	•••••	mV Meter(1) : A (STEREO MODE)
	2	98.1 M	15	98.1	VR52	mV Meter(1) : A-3dB
ARC	1	98.1 S	40	98.1	VR151	mV Meter(1) : Separation 5dB
SD	1	98.1 S	22	98.1	VR51	DC V Meter(2) : Approx. 5V

5. ERROR NUMBERS AND NEW TEST MODE

● Error Number Indication

If the CD should fail to operate or if an error has taken place during operation the player will enter into the error mode, and the cause of the error will be numerically indicated.

This is aimed at assisting in analysis or repair.

(1) Examples of Display

·E- XX

(2) Error Codes

Error Code	Classification	Description	Cause/Detail
10	ELECTRIC	Carriage home failure	Carriage doesn't move to or from the innermost position →Home switch failed and/or carriage immobile
11	ELECTRIC	Focus failure	Focus failed →Defects, disc upside-down, severe vibration
12	ELECTRIC	Spindle lock failure Subcode failure	Spindle failed to lock or subcode unreadable →Spindle defective, defect, severe vibration
14	ELECTRIC	Mirror failure	Unrecorded CD-R The disc is upside-down, defects, vibration
17	ELECTRIC	Set up failure	AGC protect failed →Defects, disc upside-down, severe vibration
30	ELECTRIC	Search time out	Failed to reach target address →Carriage/tracking defective and/or defects
A0	SYSTEM	Power failure	Power overvoltage or short circuit detected →Switching transistor defective and/or power abnormal

● New Test Mode(aging operation and setup analysis)

The single CD player plays in normal mode. After being set up, it will display FOK (focus), LOCK (spindle), subcode, sound skip, protection against a mechanical error or the like, occurrence of an error, cause and time of an expiry, if any, (and disk number)

During the setup, the CD software operation status (internal RAM and C-point)is displayed.

(1) How to enter NEW TEST Mode

See the test mode flow chart Page 5.

(2) Relations of keys between TEST and NEW TEST Modes

Keys	Test Mode		New Test Mode	
	Regulator OFF	Regulator ON	PLAY in progress	Error Occurred, Protection Activated
BAND	Regulator ON	Regulator OFF	—	Time of occurrence / cause of error select
>	—	FWD-Kick	TRACK UP / FF	—
<	—	REV-Kick	TRACK DOWN /REV	—
1	—	Tracking close	SCAN	—
2	—	Tracking open	MODE	—
3	—	Focus close	—	—
MA	To New Test Mode	Focus Mode Select	AUTO/MANU	TRACK No. / time of occurrence select

Operations,such as EJECT, CD ON/OFF, etc. are performed normaliy

(3) Error Cause (Error Number) Code

Error Code	Classification	Mode	Description	Cause	Detail
40	ELECTRIC	PLAY	FOK=L	Put out of focus	Scratch, Stain, Vibration, Servo defect, etc...
41	ELECTRIC	PLAY	LOCK=L 100ms	Spindle unlock	
42	ELECTRIC	PLAY	Subcode unacceptable 500ms	Failed to read subcode	
43	ELECTRIC	PLAY	Sound skipped	Last address memory operated	

(4) Indicating an Operation Status During Setup

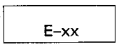
Status No.	Description	Protection operation
01	Carriage home mode started	None
02	Carriage moving inwards	10-second time out, Home switch failed
03	Carriage moving outwards	10-second time out, Home switch failed
05	Carriage moving outwards	None
11	Setup started	None
12	Spindle turn/Focus search started	None
13	Waiting for focus closure (XS!=L)	Failure to close focus
10,14	Waiting for focus closure (FOK=H)	Failure to close focus
15, 16, 17	Focus closed, Tracking open	Focus disrupted
18	During focus AGC Subcode waiting	Focus disrupted
19	During tracking AGC	Disrupted focus
20	Waiting for MIRR, LOCK or subcode read Carriage closed, SPINDLE=ADAPTIVE	Focus disrupted, MIRR NG, Failure to lock, Failed to read subcode

5) Example of Display.

·SET UP in progress(When manual)

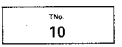
·Operation (PLAY, SEARCH, etc.) in progress perfectly identical with that in the normal mode.

·Protection/Error upon occurrence
(a) Error number indicated

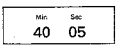


Select the display with the BAND key.

(b) Track number and absolute time indicated



Select the display with the MA key.



● **ICs**

● **Pin Functions (PD4570A,PD4582A)**

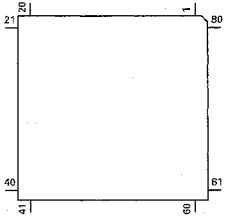
Pin No.	Pin Name	I/O	I/O Format	Function and Operation
1	DSENS	I		Grille detach sense
2,3	NC			Not used
4	AVSS			A/D GND
5	VCAOUT	O		Sub woofer volume control
6	NC			Not used
7	AVREF1	I		D/A converter reference voltage
8	KYDT	I		Key and display data input
9	DPDT	O	C	Key and display data output
10	$\overline{XRST}$	O	C	CD LSI reset output
11	SPMPXO	O	C	Spectrum analyzer level input select 0
12	SPMPX1	O	C	Spectrum analyzer level input select 1
13	SPMPX2	O	C	Spectrum analyzer level input select 2
14	XAO	O	C	CD LSI data discernment control signal output
15	$\overline{XSTB}$	O	C	CD LSI strobe output
16	XSI	I		LSI serial data input
17	XSO	O	C	LSI serial data output
18	$\overline{XSCK}$	O	C	LSI serial clock output
19	CONT	O	C	Servo driver power supply control
20	LOAD	O	C	Loading motor LOAD control
21	EJET	O	C	Loading motor EJECT control
22	CD5VON	O	C	CD +5V power supply control output
23	NC			Not used
24	CDMUTE	O	C	CD mute output
25	NC			Not used
26	VDCONT	O	C	VD control output
27	FOK	I		FOK signal input
28	MIRR	I		Mirror detector input
29	LOCK	I		Spindle lock detector input
30	CLAMP	I		Disc clamp sense input
31	$\overline{HOME}$	I		Home position detector input
32	NC			Not used
33	VSS			GND
34	VDSENS	I		VD over voltage sense input
35	NC			Not used
36	SUBW0	O	N	Sub woofer cut off frequency select 0
37	SUBW1	O	N	Sub woofer cut off frequency select 1
38,39	NC			Not used
40	TUNPW	O	C	Tuner power control output
41	SYSPW	O	C	Audio power supply control output
42	VLCDPW	O	C	Back light power supply output
43	VSTGE	O	C	Graphic equalizer strobe output
44	$\overline{SWVDD}$	O	C	Grille power supply control output
45	POWER	O	C	System power control output
46	VDT	O	C	E-VOL/graphic equalizer serial data output
47	VSTEV	O	C	E-VOL strobe output
48	VCK	O	C	E-VOL/graphic equalizer data clock
49	PCL	O	C	Clock adjustment output
50	FM/$\overline{AM}$	O	C	FM/AM power select output
51	MONO	O	C	Forced mono output
52	SIMK0	I		Model select input 0
53	SIMK1	I		Model select input 1
54,55	NC			Not used
56	MUTE	O	C	Mute output
57,58	NC			Not used
59	SD	I		SD input

Pin No.	Pin Name	I/O	I/O Format	Function and Operation
60	RESET	I		Reset
61	NC			Not used
62	BSENS	I		Back up power sense input
63	ASENS	I		ACC power sense input
64	PDI	I		Data input from PLL IC
65	PDO	O	C	Data output for PLL IC
66	PCK	O	C	Serial clock output for PLL IC
67	PCE	O	C	Chip enable output for PLL IC
68	VDD			Power supply
69	X2			Crystal oscillator connection pin
70	X1			Crystal oscillator connection pin
71	IC			Connect to VSS
72	XT2			Crystal oscillator connection pin
73	TESTIN	I		Test program start input
74	AVDD			Positive power supply terminal for analog circuit
75	AVREFO	I		Reference voltage input for A/D converter
76	SL	I		SD level input from tuner
77	TEMP	I		Temperature detector
78	DINC	I		Disc insert sense input
79	EJTD	I		Disc eject position sense input
80	LEVEL	I		Level/spectrum analyzer display level input

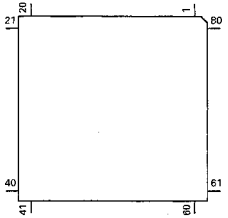
I/O Format	Meaning
C	C MOS
N	N channel open drain

IC's marked by are MOS type.*
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

*PD4570A(DEH-50DH)
*PD4582A(DEH-40DH)



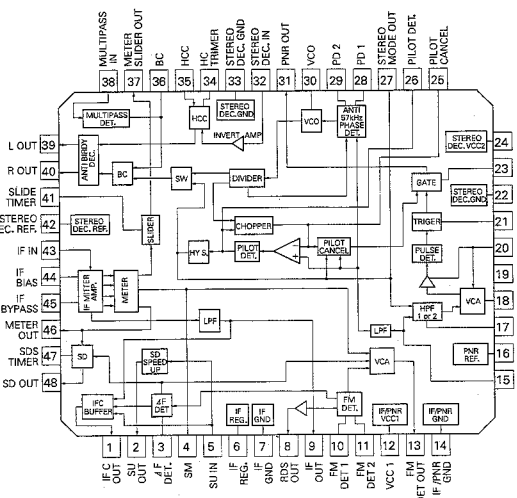
*PD6155A



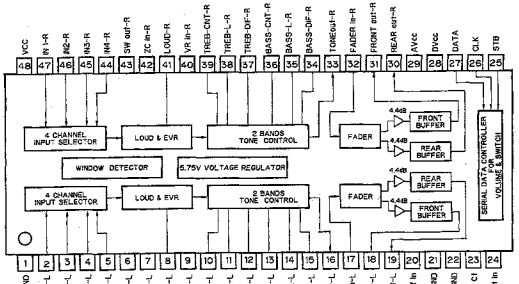
● Pin Functions (PD6155A)

Pin No.	Pin Name	I/O	Function and Operation
1	VSS		GND
2	X1		Crystal oscillator connection pin
3	X0		Crystal oscillator connection pin
4	NC		Not used
5,6	MOD1,0	I	Connect to GND
7	NC		Not used
8	KYDT	O	Display/key data output
9	DPDT	I	Display/key data input
10	REMIN	I	Remote control pulse input
11,12	NC		Not used
13-16	KD4-KD1	I	Key data input
17-21	KS6-KS2	O	Key strobe output
22	NC		Not used
23	VDD		VDD
24-73	SEG0-49	O	LCD segment output
74-77	COM3-0	O	LCD common output
78	VLCD	I	LCD voltage input
79,80	V2,V1		Power supply terminal

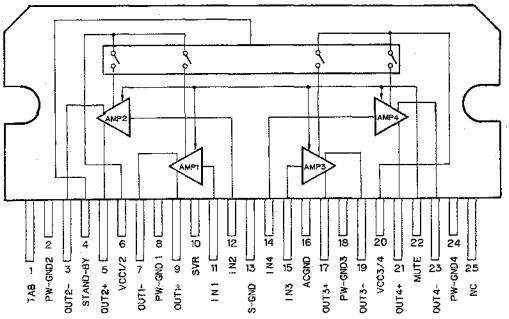
PA2022B



SN761025DL



PAL003A

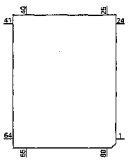


● **Pin Functions(UPD63700GF1)**

Pin No.	Pin Name	I/O	Function and Operation
1	D.GND		Logic circuit GND
2	RFOK	O	RFOK detection signal output terminal
3	MIRR	O	MIRR detection signal output terminal
4	TBC	I	Tracking filter bank switching terminal
5	HOLD	I	Hold control signal input terminal
6	D.VDD		VDD for logic circuit
7	$\overline{RST}$	I	System reset
8	AO	I	Control signal distinguishing data from microcomputer
9	$\overline{STB}$	I	Signal latching serial data inside LSI
10	$\overline{SCK}$	I	Clock input terminal for serial data input and output
11	SO	O	Serial data and status signal output
12	SI	I	Serial data input
13	TM2	I	Double speed playback control terminal
14	D.GND		Logic circuit GND
15	TEST	I	Test terminal
16	STBY	I	Stand-by input terminal
17	CTLV	I	Control terminal for clock generation VCO used by digital PLL in double speed playback mode
18	POUT	O	Output terminal for phase comparison between EFM signal and bit clock
19	D.GND		Logic circuit GND
20	VCO	I	Inverter input
21	$\overline{VCO}$	O	Inverter output
22	D.VDD		VDD for logic circuit
23	PLCK	O	Bit clock monitor terminal
24	LOCK	O	"H" when synchronization signal and frame counter output coincide at EFM demodulator
25	WFCK	O	Signal issuing one-frame period by bit clock dividing signal
26	RFCK	O	Oscillation clock divider signal,output pin for signal giving 1-frame sync.
27	C4M	O	Output terminal for signal having four the frequency of LRCK
28	C16M	O	Oscillation clock output terminal
29	D.GND		Logic circuit GND
30	XTAL	I	Oscillation continuation terminal
31	$\overline{XTAL}$	O	Oscillation continuation terminal
32	D.VDD		VDD for logic circuit
33	SCKO	O	Clock output terminal for audio serial data
34	LRCK	O	Signal distinguishing between left and right channel DOUT terminal output
35	DOUT	O	Serial audio data output terminal
36	TX	O	Digital audio interface data output terminal
37	FLAG	O	Flag signal indicating that the current audio data output of incorrectable data
38	EMPH	O	Emphasis information output
39	WDCK	O	Output terminal for signal having double the frequency of LRCK
40	C2D3	O	Output terminal indicating C2 error correction status
41	SFSY	O	Signal indicating subcode one-frame synchronization
42	SBSY	O	Signal indicating head of subcode block
43	SBSO	O	Subcode data output terminal
44	SBCK	I	Subcode data read clock input terminal
45	D.GND		Logic circuit GND
46,47	C1D1,C1D2	O	Output terminal indicating C1 error correction status
48,49	C2D1,C2D2	O	Output terminal indicating C2 error correction status
50	T4	I	Selects between focus and tracking modulation mode
51	T5	I	Selects motor PWM output mode
52	T6	I	Sets focus PWM output mode
53	T7	I	Sets tracking PWM output mode
54	D.VDD		VDD for logic circuit
55	MRD	O	PWM negative output terminal for the spindle loop filter
56	MFD	O	PWM positive output terminal for the spindle loop filter
57	SRD	O	PWM negative output terminal for the thread loop filter
58	SFD	O	PWM positive output terminal for the thread loop filter

Pin No.	Pin Name	I/O	Function and Operation
59	D.GND		Logic circuit GND
60	TRD	O	PWM negative output terminal for the tracking loop filter
61	TFD	O	PWM positive output terminal for the tracking loop filter
62	FRD	O	PWM negative output terminal for the focus loop filter
63	FFD	O	PWM positive output terminal for the focus loop filter
64	D.VDD		VDD for logic circuit
65	OUTSEL	I	Sets PWM output mode for the motor system
66	TEC1	I	Tracking error input terminal
67	TEC0	I	Tracking error input terminal
68	A.VDD		VDD for analog circuit
69,70	VR2,VR1	I	A/D converter input
71	TE	I	Tracking error input terminal
72	FE	I	Focus error input terminal
73	RFB	I	RFB signal input terminal
74	RFP	I	RFP signal input terminal
75	A.GND		Analog circuit GND
76	REFOUT	O	A/D converter midpoint voltage output terminal inside LSI
77	RFI	I	RF signal input terminal for EFM comparator
78	ASI	I	Level comparing input for RF signal comparison
79	EFM	O	EFM signal output terminal
80	A.VDD		VDD for analog circuit

*UPD63700GF1



6. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

=====Circuit Symbol & No. Part Name=====	Part No.
Unit Number : CWX1751(DEH-50DH)	
Unit Name : Tuner Amp Unit	
MISCELLANEOUS	
IC 451	SN76102SDL
IC 501	LC72140M
IC 551	PAL003A
IC 601	PD4570A
IC 707	NJM4558MD
IC 851	TA2050S
IC 961	PAJ001A
IC 971	TA8214K
Q 501	2SC3295
Q 502 504	2SC2712
Q 503	2SC3036
Q 505	2SK208
Q 508	2SC2712
Q 509	2SK208
Q 951 756	UN2213
Q 601	2SB1236
Q 602 952	UN2211
Q 603 951	2SB1236
Q 611 612	2SD601A
Q 613	2SB709A
Q 753 754	2SD601A
Q 755	UN2111
Q 971	2SD2396
Q 972	2SB1236
Q 973 975	DTC114EK
Q 974	DTA114EK
Q 981	2SD2396
Q 982	UN2111
Q 983	UN2211
D 501	MA151WK-MT
D 504	MA3027H
D 505	MA3027H
D 601 602 603 701	MA163-MC
D 611	MA151WA-MN
D 709 962 953	1SS133
D 751	MA151WA-MN
D 951 952 953 954 961	ERA15-02VH
D 971	HZS9LB2
D 972	ERA82-004VH
D 981	RB100AVH
D 982	HZS9LC3
L 501 502 Ferri-Inductor	LAU220K
L 601 621 Ferri-Inductor	LAU470K
L 951 Choke Coil	CTH1075
L 981 Inductor	CTF1335
X 501 Crystal Resonator	CSS1011
X 621 Crystal Resonator	CSS1023
FM/AM Tuner Unit	CWE1362
Equalizer Unit	CWX1771

=====Circuit Symbol & No. Part Name=====	Part No.
RESISTORS	
R 449 450	RS1/16S0R0J
R 453 454	RD1/4PS182JL
R 455 456	RS1/10S362J
R 457 458	RS1/10S272J
R 459 460	RS1/10S151J
R 461 462 851 852	RS1/10S101J
R 463 464 507 559 562	RS1/10S103J
R 465 466 467 508 512 516 534 604 605 606	RS1/10S472J
R 502	RS1/10S333J
R 503 509 530 609 612 984	RS1/10S472J
R 504 511 513 517 518 519 520 621 623 636	RS1/10S222J
R 505 953	RS1/10S223J
R 506	RS1/10S221J
R 510	RS1/10S123J
R 514 515 521 522 610 622 624 627 630 631	RS1/10S473J
R 523	RS1/10S473J
R 524	RS1/10S101J
R 525	RS1/10S332J
R 526 560	RS1/10S331J
R 527	RS1/10S821J
R 529	RS1/10S680J
R 529 533 536 651 652 739	RS1/10S102J
R 531 561 962	RS1/10S103J
R 532	RS1/10S152J
R 538 539 540 541 549 740	RS1/10S102J
R 545 546	RS1/10S102J
R 548	RS1/10S330J
R 601 602 603 973	RD1/4PS472JL
R 607 635 701 702	RS1/10S473J
R 608	RD1/4PS221JL
R 610	RS1/10S222J
R 611	RD1/4PS221JL
R 613 955	RS1/10S472J
R 615	RS1/10S222J
R 616	RS1/10S222J
R 617	RS1/10S103J
R 626 952	RS1/10S0R0J
R 629	RD1/4PS102JL
R 632 966	RS1/10S473J
R 633	RS1/10S682J
R 634 965	RS1/10S683J
R 637	RS1/10S222J
R 638 639	RS1/10S473J
R 640	RS1/10S183J
R 653	RA4C681J
R 657	RA4C102J
R 661	RA3C102J
R 666 666	RS1/10S681J
R 742 744	RS1/10S563J
R 743	RS1/10S473J
R 745	RS1/10S153J
R 769 770	RS1/10S821J
R 771 772	RS1/10S332J
R 773 774 853 854 954 967	RS1/10S223J
R 855 856	RS1/10S242J

=====Circuit Symbol & No. Part Name=====	Part No.
R 951	RD1/4PS813JL
R 956	RS1/10S272J
R 961	RS1/10S273J
R 963	RS1/10S823J
R 964	RS1/10S363J
R 970	RS1/10S1R0J
R 971	RS1/10S681J
R 972	RS1/10S221J
R 974	RD1/4PS242JL
R 981	RD1/4PS471JL
R 982	RD1/4PS221JL
R 983	RS1/10S392J
CAPACITORS	
C 451 452 487 775 776	CEA100M16LL
C 453 454	CEAS010M50
C 455 456 856 857	CEAS100M16
C 457 492 568 621 954	CKSQYB104K25
C 458 601 602 622	CKSQYB104K25
C 459 460 465 466 481 482	CEA100M16NPLL
C 461 462	CKSQYB822K50
C 463 464	CEA010M50LL
C 467 468	CKSQYB152K50
C 469 470	CKSQYB183K25
C 471 472 808	CKSQYB102K50
C 473 474	CKSQYB333K50
C 475 476	CEA2R2M50NPLL
C 477 478 501 505	CCSQCH101J50
C 489	CKSQYB104K25
C 489 504 510 953	CKSQYB103K50
C 490 965	CEA2R2M50LL
C 491	CEA470M16LL
C 502 604 970 971 982	CKSQYB473K50
C 503	CKSQYB102K50
C 506 507	CKSQYB223K50
C 509 512	CCSQCH101J50
C 511	CCSQCH681J50
C 513 0.047 μF	CCG1008
C 514 523 952	CKSQYB103K50
C 515	CFTNA474J50
C 516 603	CEAS4R7M25
C 517	CKSQYB473K50
C 518 519	CCSQCH120J50
C 520 4.7 μF/16V	CCH1165
C 551 552 553 554	CEAR22M50LL
C 555 4700 μF/16V	CCH1187
C 556	CEAS220M16
C 557 566 852 853 854 976	CEAS010M50
C 567	CEAS330M10
C 623 624	CCSQCH150J50
C 625 983	CKSQYB102K50
C 701	CEAR7M35LL
C 728 729 969	CEAS101M10
C 730	CCSQCH391J50
C 731	CEAS100M16
C 777 778	CCSQCH221J50
C 851	CEA010M50LL
C 962	CEAS22M50
C 963 973 1000 μF/16V	CCH1185
C 964	CEAS220M10
C 966	CKSQYB102K50
C 972	CEAS101M16
C 974 470 μF/16V	CCH1183
C 975	CEAS470M16
C 977	CEAS221M10
C 981	CEAS331M16
C 984 985	CKSQYB222K50

=====Circuit Symbol & No. Part Name=====	Part No.
Unit Number : CWX1752(DEH-40DH)	
Unit Name : Tuner Amp Unit	
MISCELLANEOUS	
IC 451	SN761025DL
IC 501	LC72140M
IC 551	PAL003A
IC 601	PD4582A
IC 707	NJM4558MD
IC 961	PAL001A
IC 971	TA8214K
Q 501	2SC3295
Q 502 504	2SC2712
Q 503	2SC3098
Q 505	2SK208
Q 508	2SC2712
Q 509	2SK208
Q 551 756	UN2213
Q 601	2SB1236
Q 602 952	UN2211
Q 603 951	2SB1238
Q 611 612	2SD601A
Q 613	2SB709A
Q 753 754	2SD601A
Q 755	UN2111
Q 971	2SD1859
Q 972	2SB1235
Q 973 975	DTC114EK
Q 974	DTA114EK
Q 981	2SD2396
Q 982	UN2111
Q 983	UN2211
D 501	MA151WK-MT
D 504	MA3027H
D 505	MA3027H
D 601 602 603 701	MA153-MC
D 611	MA151WA-MN
D 709 962 963	1SS133
D 751	MA151WA-MN
D 951 952 953 954 961	ERA15-02VH
D 971	HZS9LB2
D 972	ERA82-004VH
D 981	RB100AVH
D 982	HZS9LC3
L 501 502 Ferri-Inductor	LAU220K
L 601 621 Ferri-Inductor	LAU470K
L 951 Choke Coil	CTH1075
L 981 Inductor	CTF1335
X 501 Crystal Resonator	CSS1011
X 621 Crystal Resonator	CSS1023
FM/AM Tuner Unit	CWE1362
Equalizer Unit	CWX1771
RESISTORS	
R 449 450 625 747	RS1/10S0R0J
R 453 454	RD1/4PS162JL
R 455 456	RS1/10S362J
R 457 458	RS1/10S272J
R 459 460	RS1/10S151J
R 461 462	RS1/10S101J
R 463 464 507 559 562	RS1/10S103J
R 465 466 467 508 512 516 534 604 605 606	RS1/10S472J
R 502	RS1/10S333J
R 503 509 530 609 612 984	RS1/10S472J
R 504 511 513 517 518 519 520 621 623 636	RS1/10S222J
R 505 553	RS1/10S223J
R 506	RS1/10S221J
R 510	RS1/10S123J
R 514 515 521 522 610 622 624 630 631	RS1/10S473J

=====Circuit Symbol & No. Part Name=====	Part No.
R 523	RS1/10S473J
R 524	RS1/10S101J
R 525	RS1/10S332J
R 526 560	RS1/10S331J
R 527	RS1/10S821J
R 528	RS1/10S680J
R 529 533 536 651 652 739	RS1/10S102J
R 531 561 562	RS1/10S103J
R 532	RS1/10S152J
R 538 539 540 541 549 740	RS1/10S102J
R 545 546	RS1/10S102J
R 548	RS1/10S330J
R 601 602 603 973	RD1/4PS472JL
R 607 635 701 702	RS1/10S473J
R 608	RD1/4PS221JL
R 610	RS1/10S222J
R 611	RD1/4PS221JL
R 613 955	RS1/10S472J
R 615	RS1/10S222J
R 616	RS1/10S222J
R 617	RS1/10S103J
R 626 952	RS1/10S0R0J
R 629	RD1/4PS102JL
R 632 986	RS1/10S473J
R 633	RS1/10S682J
R 634 985	RS1/10S683J
R 637	RS1/10S222J
R 638 639	RS1/10S473J
R 640	RS1/10S183J
R 653	RA4C681J
R 657	RA4C102J
R 661	RA3C102J
R 665 666	RS1/10S681J
R 741	RS1/10S104J
R 743	RS1/10S103J
R 744	RS1/10S104J
R 746	RS1/10S153J
R 769 770	RS1/10S821J
R 771 772	RS1/10S332J
R 773 774 954 957	RS1/10S223J
R 951	RD1/4PS513JL
R 956	RS1/10S272J
R 961	RS1/10S273J
R 963	RS1/10S623J
R 964	RS1/10S363J
R 970	RS1/10S1R0J
R 971	RS1/10S681J
R 972	RS1/10S221J
R 974	RD1/4PS242JL
R 981	RD1/4PS471JL
R 982	RD1/4PS221JL
R 983	RS1/10S392J

CAPACITORS

C 453 454	CEAS010M50
C 455 456	CEAS100M16
C 457 492 568 621 954	CKSQYB104K25
C 458 601 602 622	CKSQYB104K25
C 459 460 465 466 481 482	CEA100M16NPLL
C 461 462	CKSQYB822K50
C 463 464	CEA010M50LL
C 467 468	CKSQYB152K50
C 469 470	CKSQYB183K25
C 471 472 506	CKSQYB102K50
C 473 474	CKSQYB333K50
C 475 476	CEA2R2M50NPLL
C 477 478 501 505	CCSQCH101J50
C 487 775 776	CEA100M16LL
C 488	CKSQYB104K25

=====Circuit Symbol & No. Part Name=====	Part No.
C 489 504 510 953	CKSQYB103K50
C 490 965	CEA2R2M50LL
C 491	CEA470M16LL
C 502 604 970 971 982	CKSQYB473K50
C 503	CKSQYB102K50
C 506 507	CKSQYB223K50
C 509 512	CCSQCH101J50
C 511	CCSQCH681J50
C 513 0.047 μF	CCG1068
C 514 523 952	CKSQYB103K50
C 515	CFTNA474J50
C 516 603	CEAS4R7M25
C 517	CKSQYB473K50
C 518 519	CCSQCH120J50
C 520 4.7 μF/16V	CCH1185
C 551 552 553 554	CEAR22M50LL
C 555 4700 μF/16V	CCH1187
C 556	CEAS220M16
C 557 566 976	CEAS010M50
C 567	CEAS330M10
C 623 624	CCSQCH150J50
C 625 983	CKSQYB102K50
C 701	CEA4R7M35LL
C 728 729 969	CEAS101M10
C 730	CCSQCH391J50
C 731	CEAS100M16
C 777 778	CCSQCH221J50
C 962	CEASR22M50
C 963 973 1000 μF/16V	CCH1188
C 964	CEAS220M10
C 966	CKSQYB102K50
C 972	CEAS101M16
C 974 470 μF/16V	CCH1183
C 975	CEAS470M16
C 977	CEAS221M10
C 981	CEAS331M16
C 984 985	CKSQYB222K50

Unit Number : CWX1759(DEH-50DH)
Unit Name : Key Board Unit

MISCELLANEOUS

IC 901	PD6155A
IC 902	RPM-676CBR
D 901 902	MA153-MC
D 903	MA3068H
L 901 Inductor	LCTB1R0K2125
X 901	CSS1084
S 901 902 903 904 Switch	CSG1061
S 905 906 907 908 Switch	CSG1061
S 909 910 911 912 Switch	CSG1061
S 913 914 915 916 Switch	CSG1061
S 917 918 919 Switch	CSG1061
IL 907 908 909 910 Lamp 14V40mA	CEL1295
IL 911 912 913 914 Lamp 14V40mA	CEL1295
IL 915 916 Lamp 14V40mA	CEL1295
LCD	CAW1269

RESISTORS

R 901 902	RS1/8S222J
R 912	RS1/8S221J
R 918 919 923 924 925 926 927 929 930 931	RS1/8S471J
R 920	RS1/8S2R2J
R 922	RS1/8S470J
R 932	RS1/8S471J
R 933	RS1/8S682J
R 938	RS1/8S562J

=====Circuit Symbol & No. Part Name=====			Part No.
CAPACITORS			
C 901 902 903 908			CKSQYB473K50
C 904			CSZS3R3M16
C 905			CEV470M6R3
C 906 909			CKSQYB103K50
Unit Number : CWX1760(DEH-40DH)			
Unit Name : Key Board Unit			
MISCELLANEOUS			
IC 901			PD6155A
D 901 902			MA153-MC
D 903			MA3068H
L 901		Inductor	LCTB1R0K2125
X 901			CSS1084
S 901 902 903 904		Switch	CSG1061
S 905 906 907 908		Switch	CSG1061
S 909 910 911 912		Switch	CSG1061
S 913 914 915 916		Switch	CSG1061
S 917 918 919		Switch	CSG1061
IL 907 908 909 910		Lamp 14V40mA	CEL1295
IL 911 912 913 914		Lamp 14V40mA	CEL1295
IL 915 916		Lamp 14V40mA	CEL1295
		LCD	CAW1272
RESISTORS			
R 901 902			RS1/8S222J
R 912			RS1/8S221J
R 918 919 923 924 925 926 927 929 930 931			RS1/8S471J
R 932			RS1/8S471J
R 933			RS1/8S682J
R 934			RS1/8S473J
R 938			RS1/8S562J
CAPACITORS			
C 901 902 903 908			CKSQYB473K50
C 904			CSZS3R3M16
C 906 909			CKSQYB103K50
Unit Number : CWX1771(DEH-50DH)			
Unit Name : Equalizer Unit			
MISCELLANEOUS			
IC 701			M51304L
IC 702 703 704 705			NJM4558MD
IC 706			TC4051BF
Q 751 752			2SD601A
D 702 703 704 705 706 707 708			MA110-1A
RESISTORS			
R 706			RS1/10S103J
R 707			RS1/10S560J
R 708 710			RS1/16S473J
R 709			RS1/16S682J
R 711			RS1/10S124J
R 712			RS1/10S122J
R 713			RS1/10S303J
R 714 717 723			RS1/16S134J
R 715			RS1/16S303J
R 716 722 728			RS1/10S152J
R 718 724			RS1/10S132J
R 719 725			RS1/10S333J
R 720 726			RS1/16S154J
R 721 727			RS1/10S393J
R 729			RS1/16S304J
R 730			RS1/10S302J
R 731			RS1/10S753J
R 732			RS1/10S104J
R 733 735 738			RS1/16S104J
R 734 736 737			RS1/16S104J

=====Circuit Symbol & No. Part Name=====			Part No.
R 741 763 764			RS1/10S223J
R 759 760			RS1/10S221J
R 761 762			RS1/16S332J
CAPACITORS			
C 445			CKSRYB103K50
C 702			CEA330M10LL
C 703			CEA101M10LL
C 704			CKSQYB102K50
C 705			CEAR47M50LL
C 706			CEALNP220M6R3
C 707 708			CKSQYB152K50
C 709 710			CKSQYB332K50
C 711 712			CKSQYB123K50
C 713 714			CKSQYB223K50
C 715 716			CKSQYB473K50
C 717 718 719 720			CKSQYB823K25
C 721 722 723 724 725 726 727			CSZS2R2M10
C 731			CKSRYB103K50
C 767 768			CEA100M16LL
C 769 770			CCSQCH221J50
Unit Number : CWE1362			
Unit Name : FM/AM Tuner Unit			
MISCELLANEOUS			
IC 1			PA2021B
IC 2			PA2022B
Q 1			3SK263
Q 2			2SC2712
Q 3			DTC124EU
Q 51			DTC124TU
Q 52			2SC4098
Q 190			2SA1586
Q 191 202			2SC2712
Q 201			2SK932
D 1			1SV251
D 2 3 4			KV1410-F1
D 5			MA151WK
D 6 7			RD39JSB3
D 8 201			MA157-MR
D 191			MA157-MR
D 202			MA110-1A
D 203			SVC253
L 1		Inductor	LCTBR12K2125
L 2 4			CTC1108
L 3			CTC1105
L 5			CTC1107
L 51		Ferri-Inductor	LAU2R2K
L 52		Ferri-Inductor	LAU150K
L 201		Ferri-Inductor	LAU4R7K
L 203		Inductor 1mH	CTF1026
L 204		Ferri-Inductor	LAU151K
L 206		Inductor	LAU3R3K
L 207		Ferri-Inductor	LAU330K
T 2		Coil	CTE1077
T 51		Coil	CTC1119
T 204		Coil	CTE1074
T 205		Coil	CTE1075
CF 51 52 201			CTF1320
CF 202			CTF1300
X 151			CSS1308
X 201		Crystal Resonator	CSS1111
VR 51		Semi-fixed 47kΩ(B)	CCP1210
VR 52		Semi-fixed 68kΩ(B)	CCP1211
VR 151		Semi-fixed 10kΩ(B)	CCP1206

=====Circuit Symbol & No. Part Name=====	Part No.
RESISTORS	
R 1 3 16 20	RS1/16S223J
R 2	RS1/16S331J
R 4 14	RS1/16S563J
R 6	RS1/16S123J
R 8	RS1/16S271J
R 9	RS1/16S152J
R 10 32	RS1/16S682J
R 11	RS1/16S474J
R 13	RS1/16S104J
R 15 103 217	RS1/16S563J
R 17 21 206	RS1/16S332J
R 18	RS1/16S223J
R 22	RS1/16S560J
R 51	RS1/16S391J
R 52	RS1/16S182J
R 53	RS1/16S751J
R 54	RS1/16S223J
R 55 102 161 209 222	RS1/16S822J
R 56	RS1/16S272J
R 71	RS1/16S272J
R 72	RS1/16S821J
R 73	RS1/16S331J
R 74	RS1/16S681J
R 101	RS1/16S224J
R 104	RS1/16S822J
R 153 159 239	RS1/16S103J
R 154	RS1/16S123J
R 155	RS1/16S822J
R 156	RS1/16S822J
R 157	RS1/16S562J
R 158	RS1/10S682J
R 160 190	RS1/16S473J
R 161	RS1/16S103J
R 191 207	RS1/16S225J
R 192	RS1/16S221J
R 193	RS1/16S224J
R 194	RS1/16S225J
R 203	RS1/16S102J
R 204 213	RS1/16S222J
R 205	RS1/16S333J
R 208	RS1/16S752J
R 214 218	RS1/16S333J
R 215 224	RS1/16S330J
R 216	RS1/16S152J
R 220	RS1/16S100J
R 221	RS1/16S273J
R 298	RS1/16S225J
R 299	RS1/16S225J
CAPACITORS	
C 1	CCSCH220J50
C 2 11 19 27 29 51 52 62 63	CKSRYB103K50
C 3	CCSRCH470J50
C 4	CCSRRH270J50
C 5	CCSRRH080D50
C 6	CCSRRH040C50
C 8	CKSRYB102K50
C 9	CCSRCH470J50
C 10	CCSRRH100D50
C 12 13	CCSRCH050D50
C 14 20 21 151 227 228	CKSRYB103K50
C 15 55 58 101 161	CKSQYB104K16
C 16	CCSRCH020C50
C 17	CCSRRH100D50
C 18	CCSRRH090D50

=====Circuit Symbol & No. Part Name=====	Part No.
C 23 56 104 162	CEA010M50LL
C 24 106 213 236	CKSRYB223K25
C 26 28 212	CEA330M10LL
C 27	CKSRYB103K50
C 31 73 152 153	CKSRYB333K16
C 32 103 105 206	CKSRYB222K50
C 34	CKSRYB682K50
C 53 54	CCSRCH270J50
C 57 64 66	CCSRCH101J50
C 59	CEAR47M50LL
C 61	CEAR22M50LL
C 72	CKSRYB102K50
C 102 154 156 163 203 219 238	CKSQYB473K16
C 155	CEAR68M50LL
C 158	CEA100M16LL
C 159	CCSRCH271J50
C 160	CKSYB105K16
C 164 209 210 215 220 223 225 235 239	CKSRYB103K50
C 190	CKSRYB223K25
C 191	CEA150M10LS
C 201	CKSRYB222K50
C 204	CCSRCH151J50
C 205 221	CCSRCH680J50
C 207	CEA470M6R3LL
C 208	CCSRCH390J50
C 211	CKSYB105K16
C 214 230	CKSRYB472K50
C 216	CCSRCH100D50
C 217	CCSRCH221J50
C 218	CEA4R7M35LL
C 222	CCSRCH150J50
C 224	CCSRUJ1E1J50
C 226	CEA4R7M35LL
C 229	CEAR68M50LL
C 232	CCSRTH180J50
C 233	CKSRYB332K50
C 234	CEA220M6R3LL
C 240	CKSRYB103K50

Unit Number : CWX1796
Unit Name : Control Unit

MISCELLANEOUS

IC 1001		UPC2571GS
IC 1201		UPD6700GF1
IC 1301		PA3028
IC 1302		XRA6285FP
IC 1303		NJM4558M
IC 1601		TC9268F
IC 1602		TA2063F
IC 1701		PQ05TZ51
Q 1001		2SB1260
Q 1601 1602		2SD1781K
Q 1603		2SB709A
D 1601		MA151WA-MN
D 1701 1702 1703 1704		SC016-2
D 1801 1802	Chip LED	CL200IRX
L 1601	Inductor	LCTBR39K2125
X 1601	Crystal Resonator	CSS1067
S 1801 1802	Switch(Home,Clamp)	CSN1028
VR1001	Semi-fixed 2.2kΩ(B)	CCP1177
VR1002	Semi-fixed 22kΩ(B)	CCP1183
VR1003 1004	Semi-fixed 47kΩ(B)	CCP1185

RESISTORS

R 1001	RS1/8S100J
R 1002	RS1/8S120J
R 1003 1201 1307 1309	RS1/16S103J
R 1004 1013 1024 1025 1311 1315 1318 1708	RS1/16S102J
R 1005	RS1/16S823J

Circuit Symbol & No.	Part Name	Part No.
R 1006		RS1/16S182J
R 1007		RS1/16S333J
R 1011 1012		RS1/16S683J
R 1014 1310		RS1/16S473J
R 1018		RS1/16S622J
R 1019		RS1/16S563J
R 1020		RS1/16S622J
R 1021		RS1/16S513J
R 1022		RS1/16S133J
R 1027		RS1/16S183J
R 1028		RS1/16S822J
R 1301 1302		RS1/16S222J
R 1303 1606 1607		RS1/16S223J
R 1304		RS1/16S123J
R 1305 1306 1705		RS1/16S332J
R 1308		RS1/16S163J
R 1314		RS1/16S0R0J
R 1317		RS1/16S473J
R 1601		RS1/16S301J
R 1604 1605		RS1/16S102J
R 1608 1609		RS1/16S162J
R 1610		RS1/16S103J
R 1801 1802		RS1/8S821J
CAPACITORS		
C 1001 1008 1010 1011 1303		CKSRYB102K50
C 1002 1609 1706		CEV101M6R3
C 1003		CKSQYB104K16
C 1004		CEV470M6R3
C 1005		CCSRCH101J50
C 1006		CKSRYB561K50
C 1007 1704		CKSYB334K16
C 1009		CCSRCH181J50
C 1013		CKSRYB103K50
C 1014		CCSRCH220J50
C 1015 1016 1017 1018 1201 1202		CKSYF105Z16
C 1021		CKSYB1D4K16
C 1022		CKSRYB332K50
C 1023		CKSRYB561K50
C 1203		CKSRYB471K50
C 1301 1302		CKSRYF683Z25
C 1304		CKSRYB152K50
C 1305		CKSRYB271K50
C 1307 1310 1605 1608		CKSRYB103K50
C 1308		CKSRYF103Z50
C 1309		CEV470M16
C 1601		CCSRCH151J50
C 1602		CCSRCH100D50
C 1603 1604 1705		CKSYB224K16
C 1606 1607		CCSRCH080D50
C 1612		CEV220M6R3
C 1613 1614		CEV4R7M35
C 1701 1702		CCSRCH100D50
C 1703		CEV220M16

Unit Number :
Unit Name : Detector P.C.Board

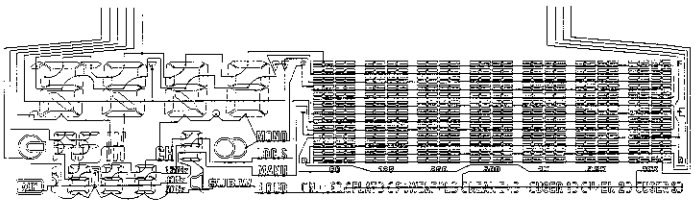
P	1	2	Photo Transistor	PT4800

Miscellaneous Parts List

		PU Unit	CGY1031
M	1	Motor Unit (Spindle)	CXA5703
M	2	Motor Unit (Carriage)	CXA7150
M	3	Motor Unit (Loading)	CXA6456

● LCD (CAW1269)(DEH-50DH)

COMMON



SEGMENT

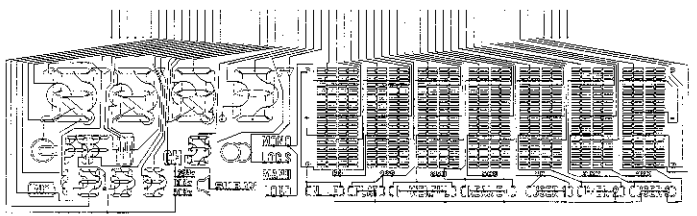
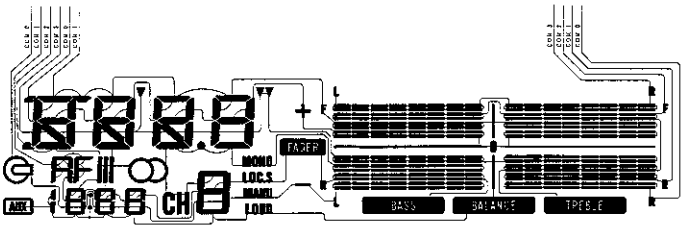


Fig.7

● LCD (CAW1272)(DEH-40DH)

COMMON



SEGMENT

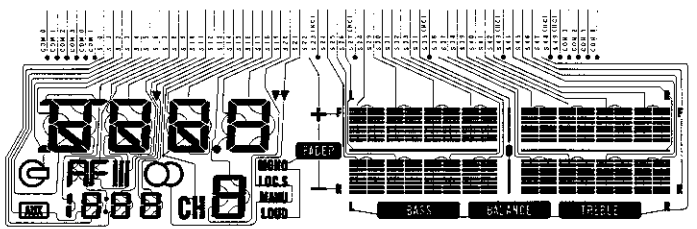


Fig.8

7. BLOCK DIAGRAM

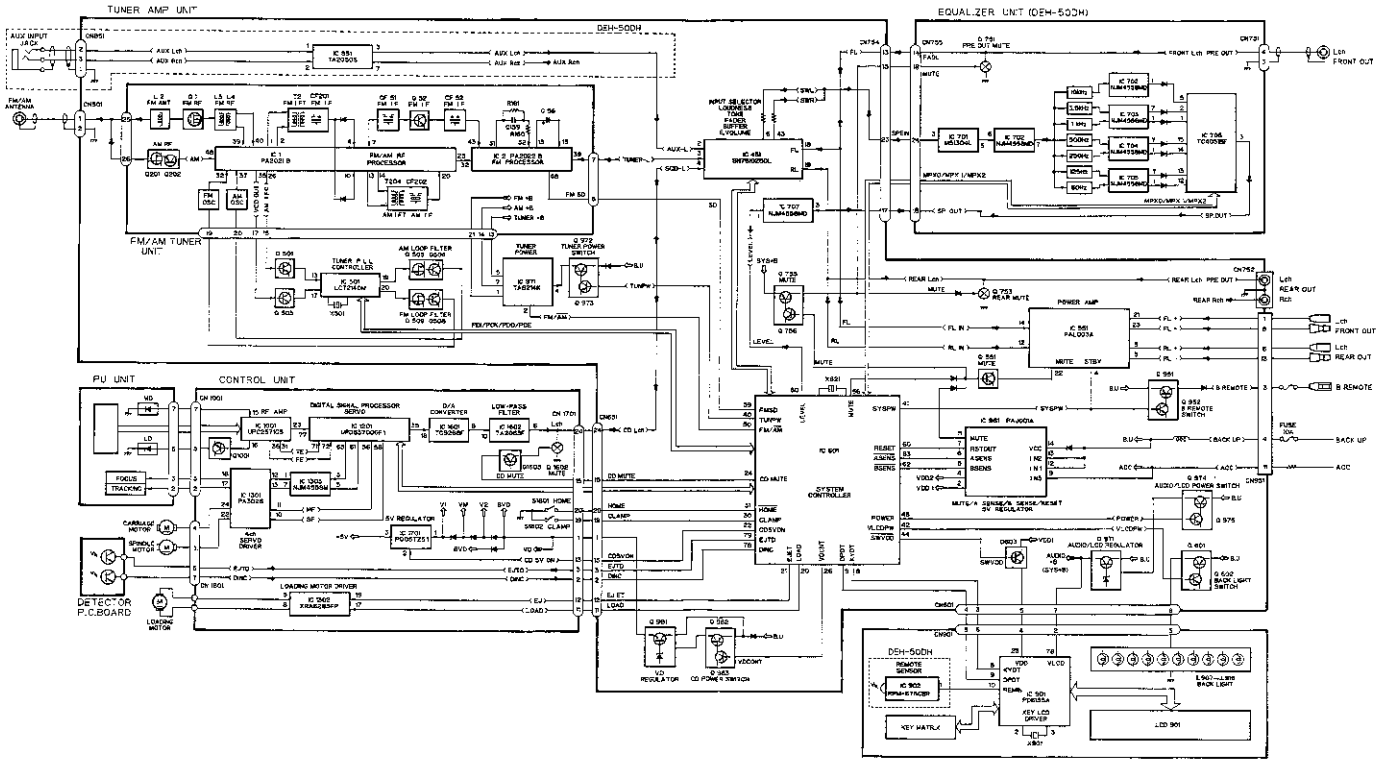


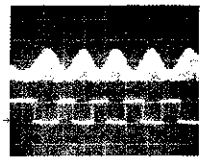
Fig.9

● Waveforms

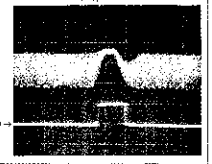
Note: 1. The encircled numbers denote measuring pointes in the circuit diagram.
2. Reference voltage
REFO: 2.5V

① RFO 0.5V/div. 0.2μs/div.
Normal mode: play

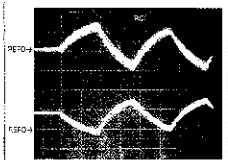
① CH1: RFO 1V/div.
② CH2: MIRR 5V/div. 0.5ms/div.
Test mode: Tracking open



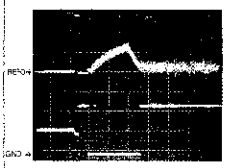
① CH1: RFO 1V/div.
② CH2: MIRR 5V/div. 0.5ms/div.
Normal mode: The defect part passes 600μm.



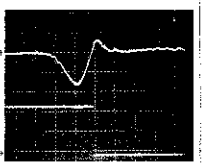
③ CH1: FIN 0.5V/div.
④ CH2: FO+ 2V/div. 0.2s/div.
Test mode: No disc. Focus close



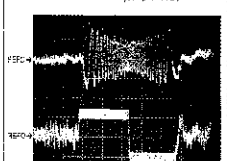
③ CH1: FIN 0.5V/div.
⑤ CH2: FOK 2V/div. 0.2s/div.
Normal mode: Focus close



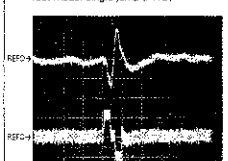
⑥ CH1: FEY 0.5V/div. 1ms/div.
⑦ CH2: XSO 2V/div.
Normal mode: Focus close



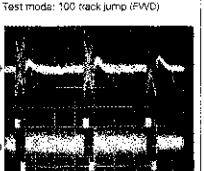
⑧ CH1: TEY 0.5V/div.
⑨ CH2: TIN 0.5V/div. 0.5ms/div.
Test mode: 32 track jump (FWD)



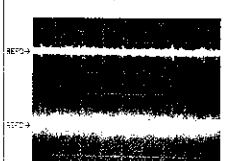
⑧ CH1: TEY 0.5V/div.
⑨ CH2: TIN 0.5V/div. 0.5ms/div.
Test mode: Single jump (FWD)



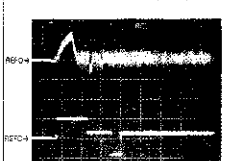
⑧ CH1: TEY 0.5V/div. 5ms/div.
⑨ CH2: TIN 0.5V/div.
Test mode: 100 track jump (FWD)



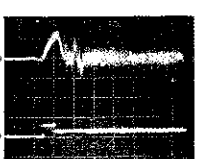
⑥ CH1: FEY 0.2V/div.
③ CH2: TIN 0.5V/div. 20ms/div.
Normal mode: Play



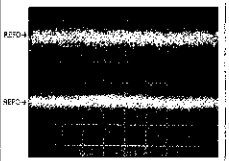
③ CH1: FIN 0.5V/div. 0.5s/div.
⑩ CH2: SIN 1V/div.
Normal mode: Focus close (12cm)



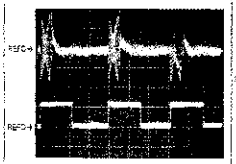
③ CH1: FIN 0.5V/div. 0.5s/div.
⑩ CH2: SIN 1V/div.
Normal mode: Focus close (8cm)



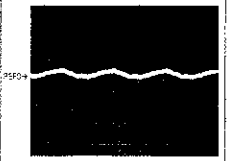
⑧ CH1: TEY 0.5V/div.
⑨ CH2: TIN 0.5V/div. 20ms/div.
Normal mode: Play



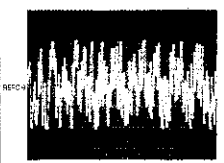
⑧ CH1: TEY 0.5V/div.
㉘ CH2: CIN 0.5V/div. 5ms/div.
Test mode: 100 track jump (FWD)



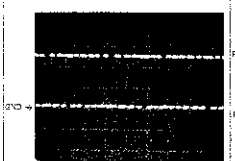
⑩ SIN 0.5V/div. 50ms/div.
Normal mode: Play (12cm disc)



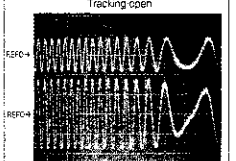
⑩ SIN 0.5V/div. 10ms/div.
Search (12cm disc)



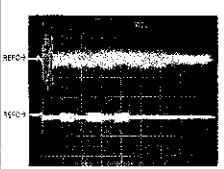
⑪ ERM 2V/div. 5μs/div.
Play



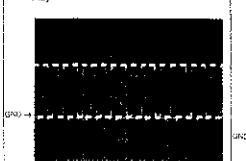
⑧ CH1: TEY 1V/div.
② CH2: TEC 1V/div. 2ms/div.
Test mode: Focus closed
Tracking open



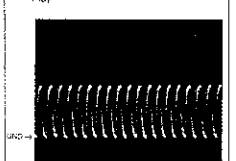
⑧ CH1: TEY 0.5V/div.
⑥ CH2: FEY 0.5V/div. 0.1s/div.
Normal mode: AGC after focus close



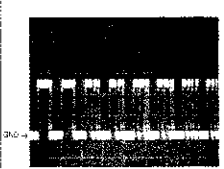
⑮ PLCK 2V/div. 0.5μs/div.
Play



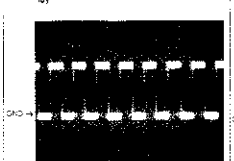
⑯ SCKO 2V/div. 1μs/div.
Play



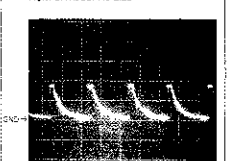
⑰ Dout 2V/div. 10μs/div.
Play



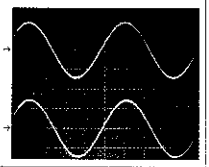
⑱ LRCK 2V/div. 20μs/div.
Play



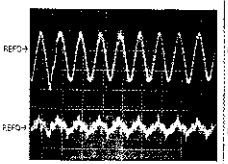
⑲ VD 5V/div. 50ms/div.
Normal mode: No disc



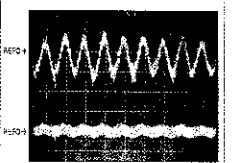
㉒ CH1: R OUT 1V/div.
㉑ CH2: L OUT 1V/div. 0.2m:s/div
Normal mode: Play (1kHz 0dB)



⑤ CH1: FEY 1V/div. 1ms/div.
③ CH2: FIN 1V/div.
Normal mode: During AGC



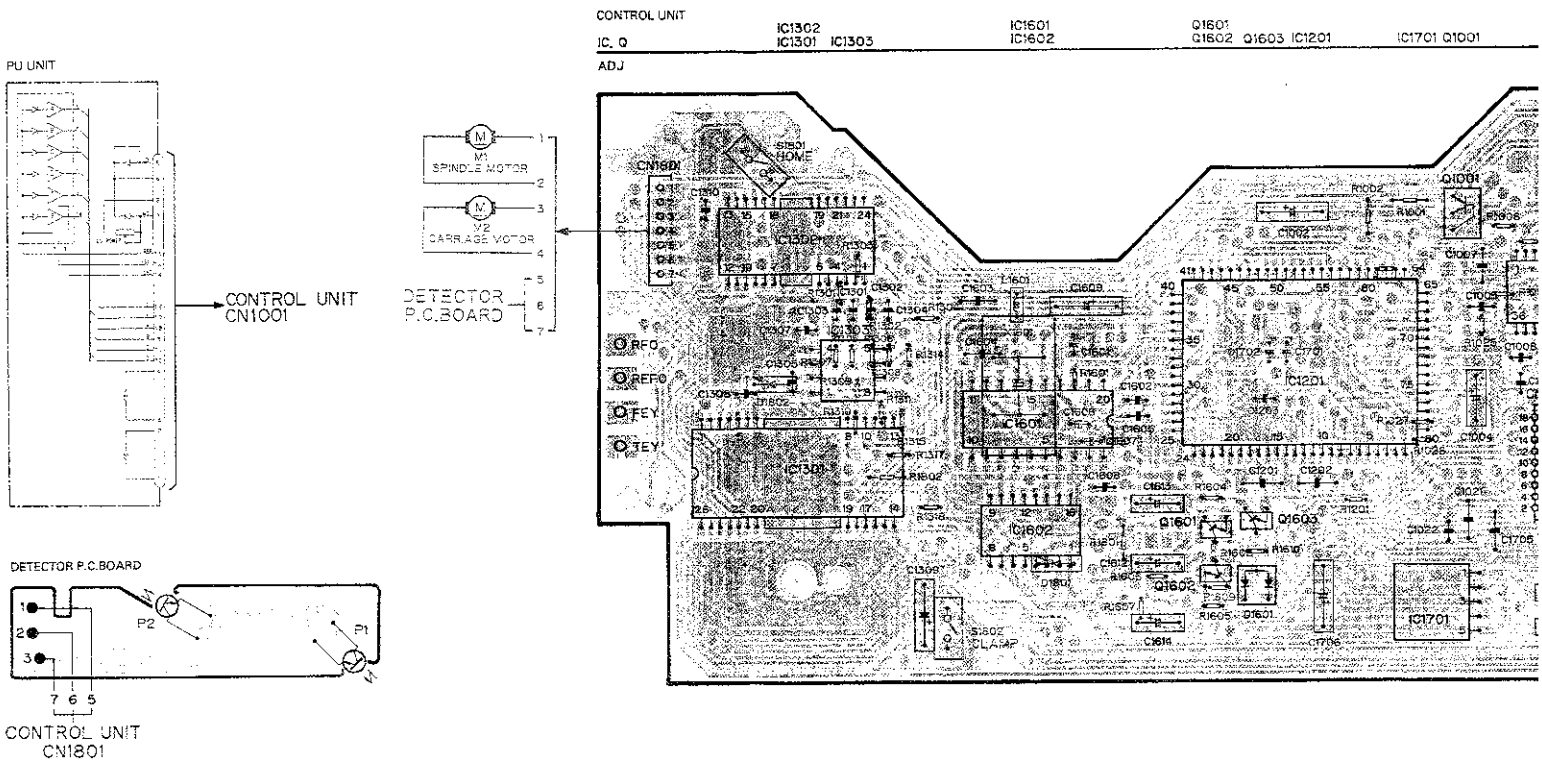
⑧ CH1: TEY 0.2V/div. 1ms/div.
⑨ CH2: TIN 0.5V/div.
Normal mode: During AGC



8. CIRCUIT DIAGRAM AND PATTERN

8.1 CD MECHANISM MODULE

● Connection Diagram



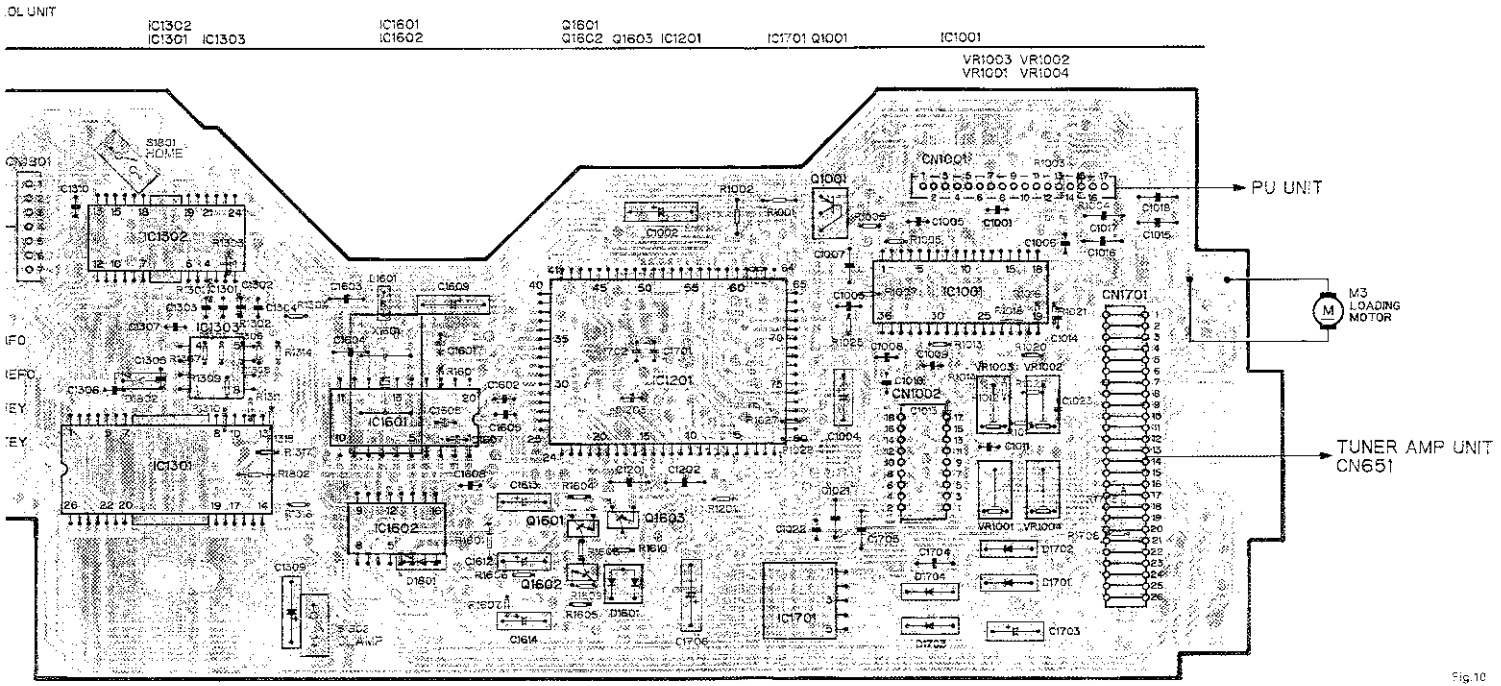
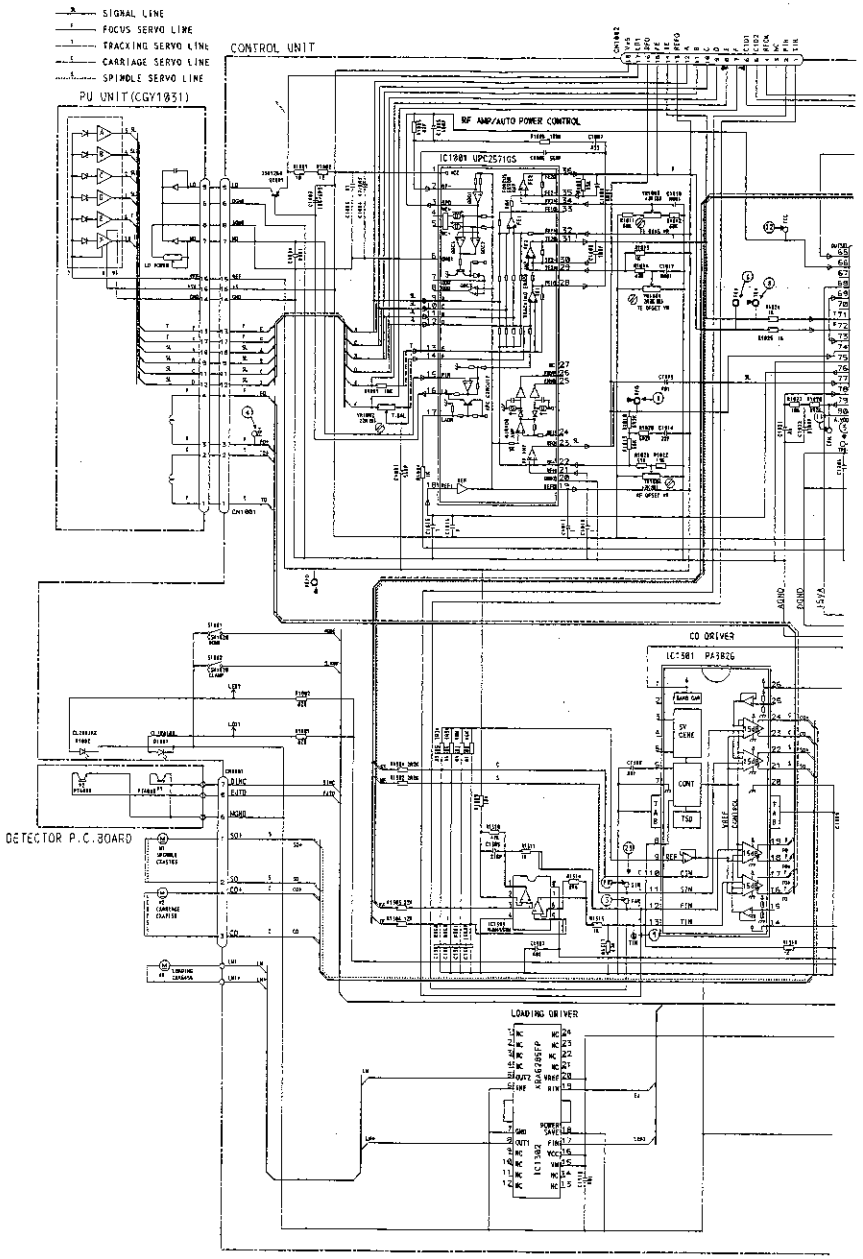

:DL UNIT
IC1302
IC1301 IC1303
IC1601
IC1602
Q1601
Q1602 Q1603 IC1201
IC1701 Q1001
IC1001
VR1003 VR1002
VR1001 VR1004
S1801
HOME
Q1001
CN1001
PU UNIT
IC1001
CN1701
M3
LOADING
MOTOR
CN1002
IC1201
IC1601
IC1602
IC1301
IC1302
IC1303
Q1601
Q1602
Q1603
IC1701
TUNER AMP UNIT
CN651

Fig.10

● **Circuit Diagram**



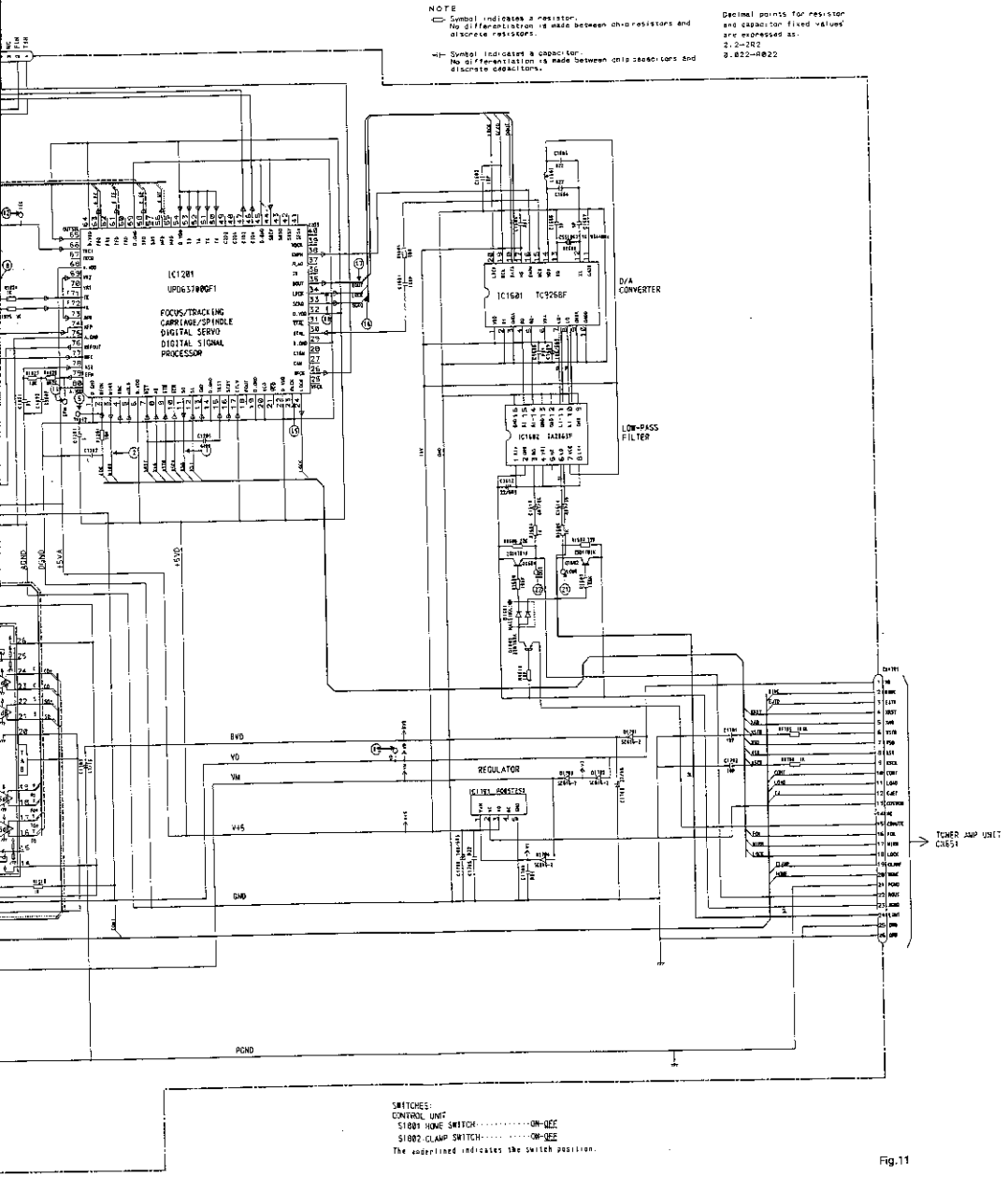
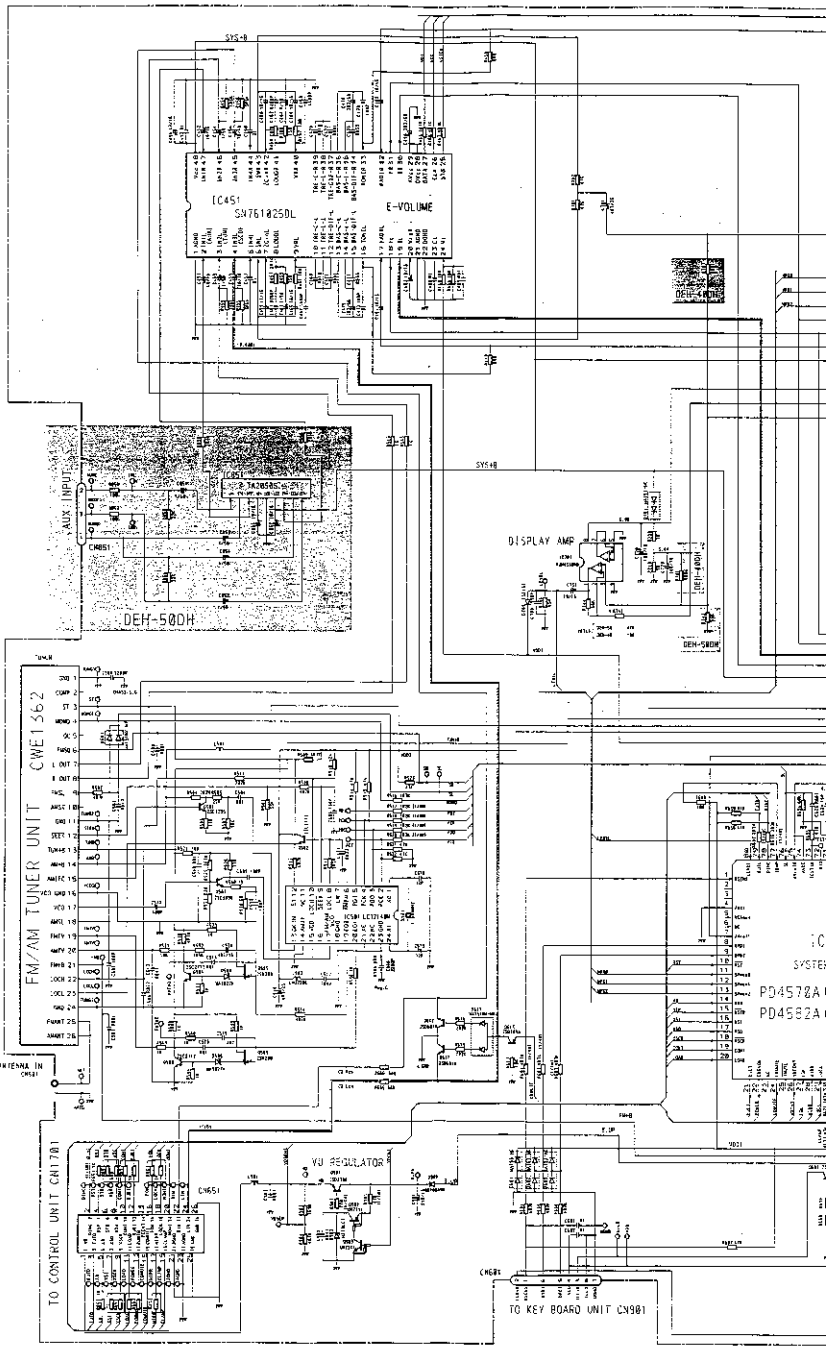

NOTE
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
Decimal points for resistor and capacitor fixed values are expressed as.
2.2→2R2
0.022→R022
IC1201
UPD63700GF1
FOCUS/TRACKING
CARRIAGE/SPINDLE
DIGITAL SERVO
DIGITAL SIGNAL
PROCESSOR
IC1601
TC9268F
D/A
CONVERTER
IC1602
LOW-PASS
FILTER
REGULATOR
TOWER JUMP UNIT
CN651
AGND
DGND
+5VA
+5VD
BVD
VD
VM
V+5
GND
PGND
SWITCHES:
CONTROL UNIT
S1801 HOME SWITCH·····ON-OFF
S1802 CLAMP SWITCH·····ON-OFF
The underlined indicates the switch position.

Fig.11

8.2 TUNER AMP UNIT

● Circuit Diagram



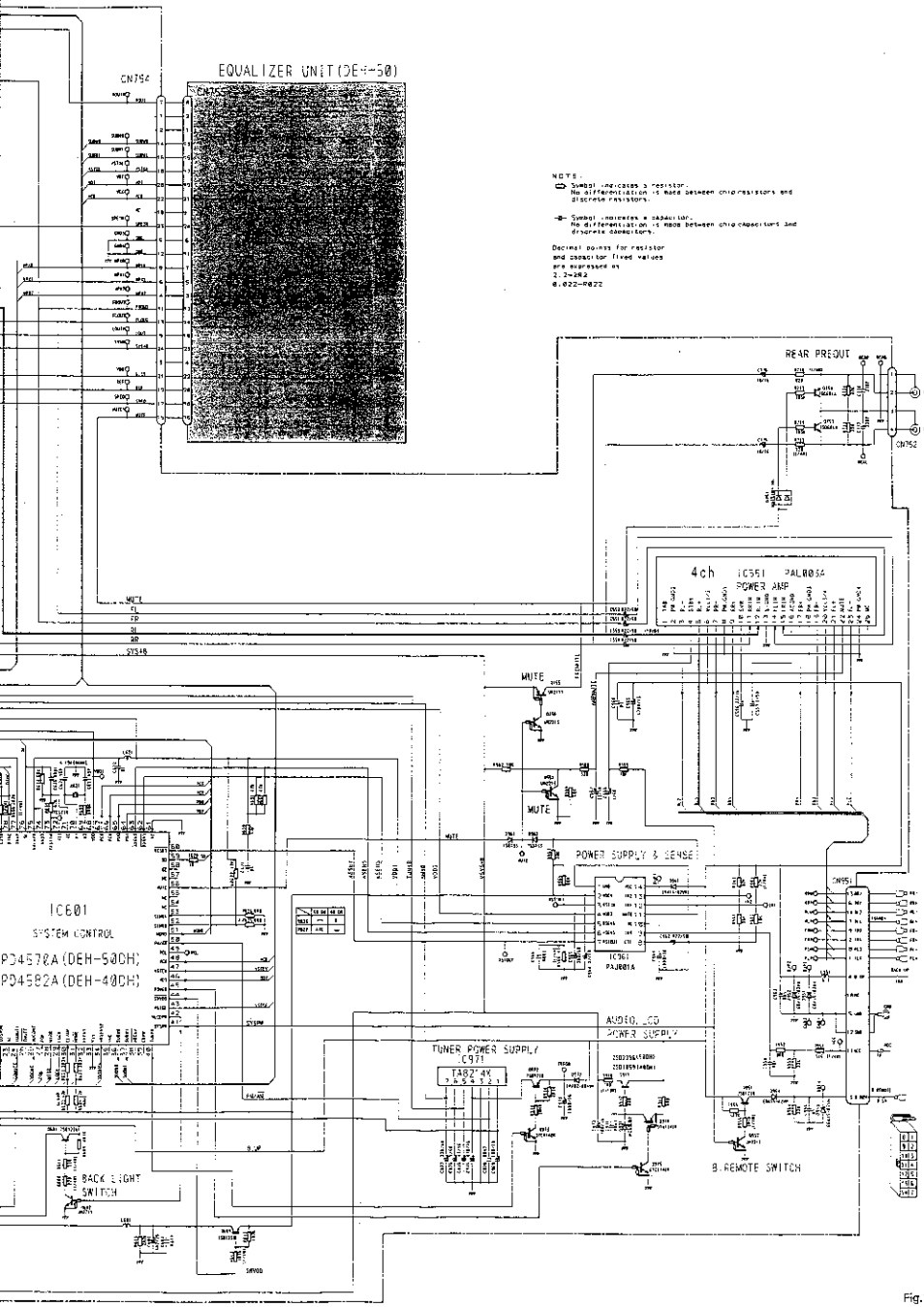

EQUALIZER UNIT(DEH-50)
CN752
NOTE:
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
Decimal points for resistor and capacitor fixed values are expressed as
2.2=2R2
0.022=R022
REAR PREOUT
4ch IC351 PAL0054
POWER AMP
MUTE
POWER SUPPLY & SENSE
IC601
SYSTEM CONTROL
PD4578A(DEH-50CH)
PD4582A(DEH-40CH)
IC961
PJ401A
AUDIO, LCD
POWER SUPPLY
TUNER POWER SUPPLY
C971
TA8274K
BACK LIGHT
SWITCH
R.REMOTE SWITCH

Fig.12

● Connection Diagram

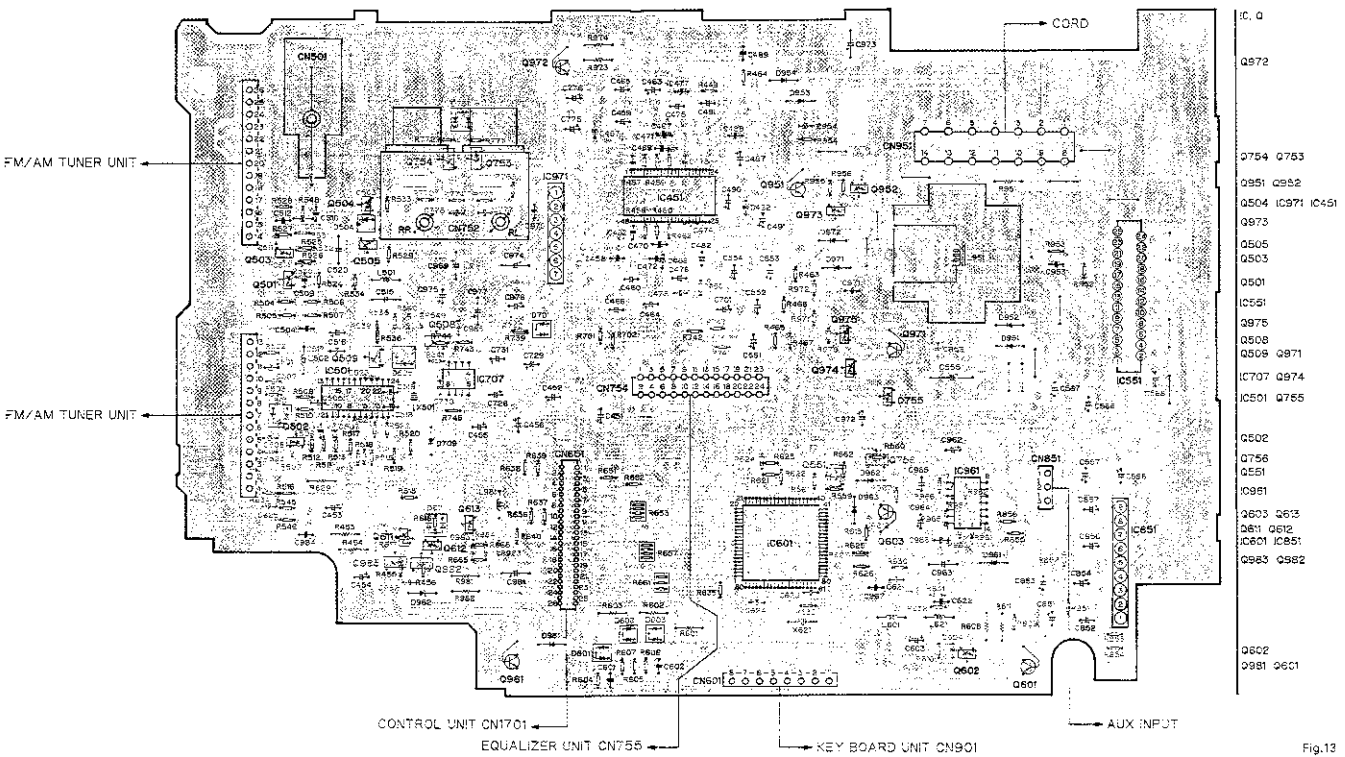


Fig.13

8.3 KEY BOARD UNIT

● Circuit Diagram

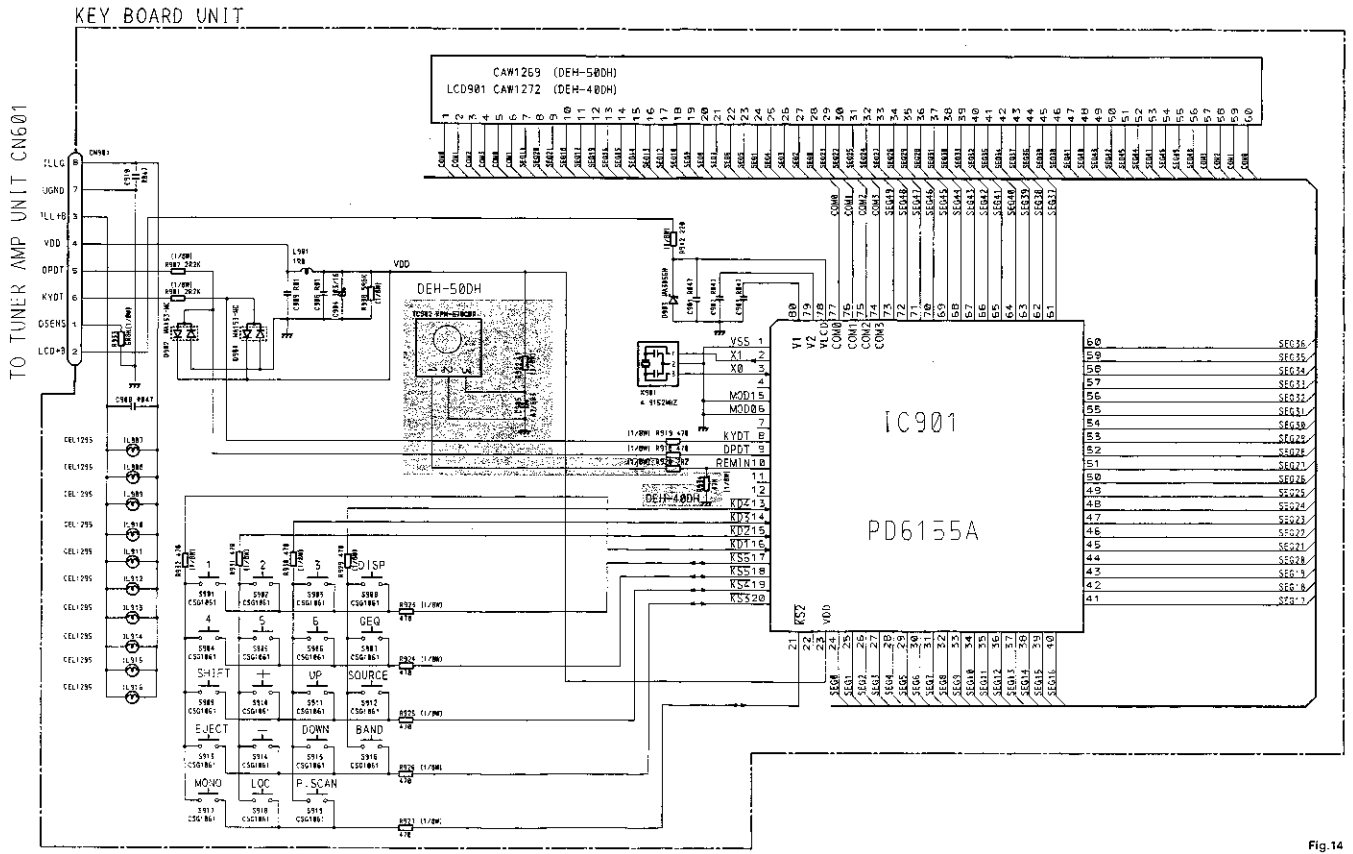
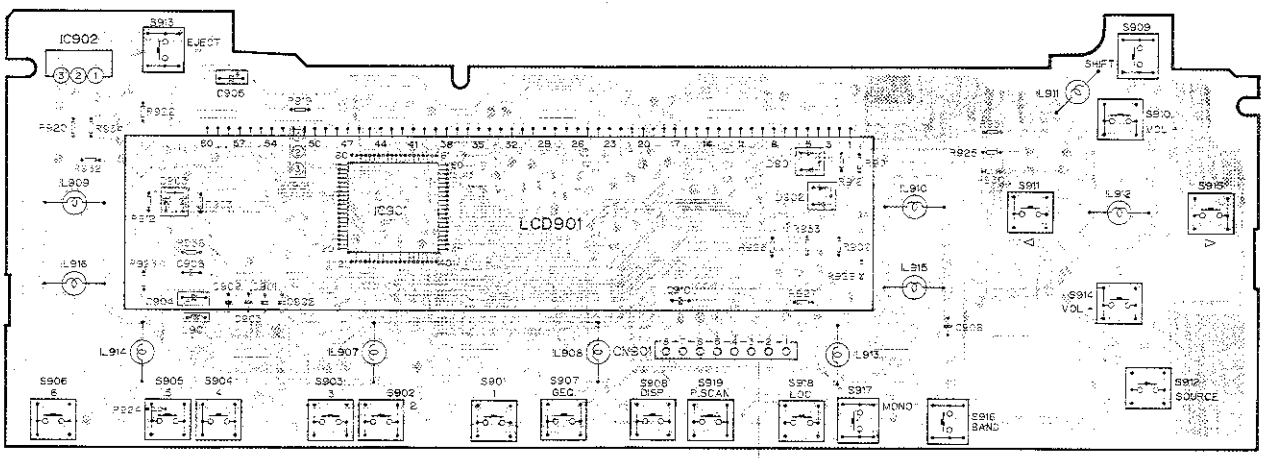


Fig.14

● Connection Diagram

IC, Q IC902 IC901

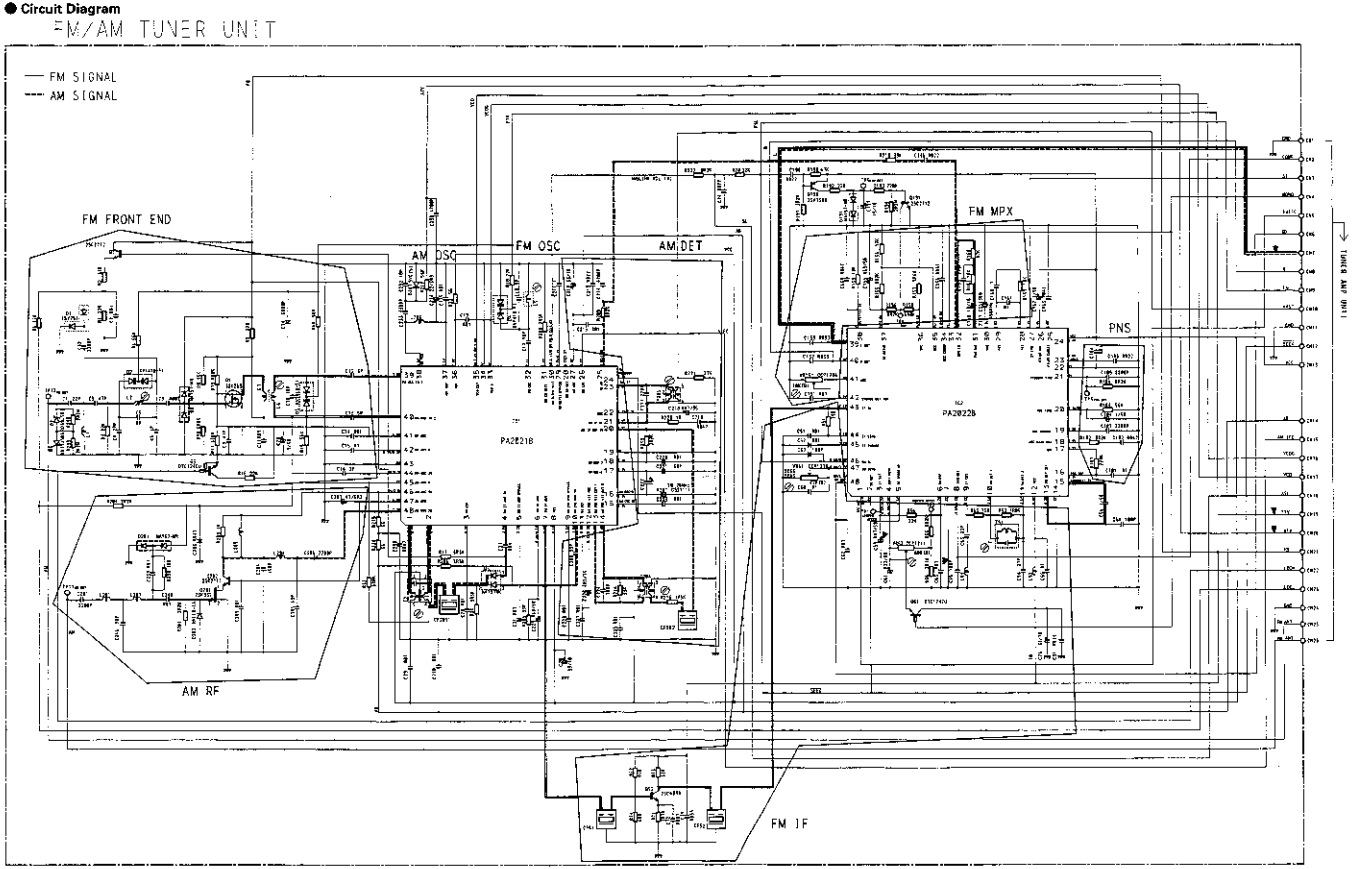


TUNER AMP UNIT CN501 ←

Fig.15

8.4 FM/AM TUNER UNIT

● Circuit Diagram



NOTE

Symbol indicates a resistor. No different action is made between chip resistors and discrete resistors.

Symbol indicates a capacitor. No different action is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor values are expressed as 2.2→2R2 0.022→R022

Fig.16

● Connection Diagram

IC, Q	Q202 Q201	Q1	Q3	Q2	IC1	Q52	Q51 Q190	Q191	IC2
ADJ	L2	T2 L4			T204 T205 L5	VR51 VR151	VR52		T51

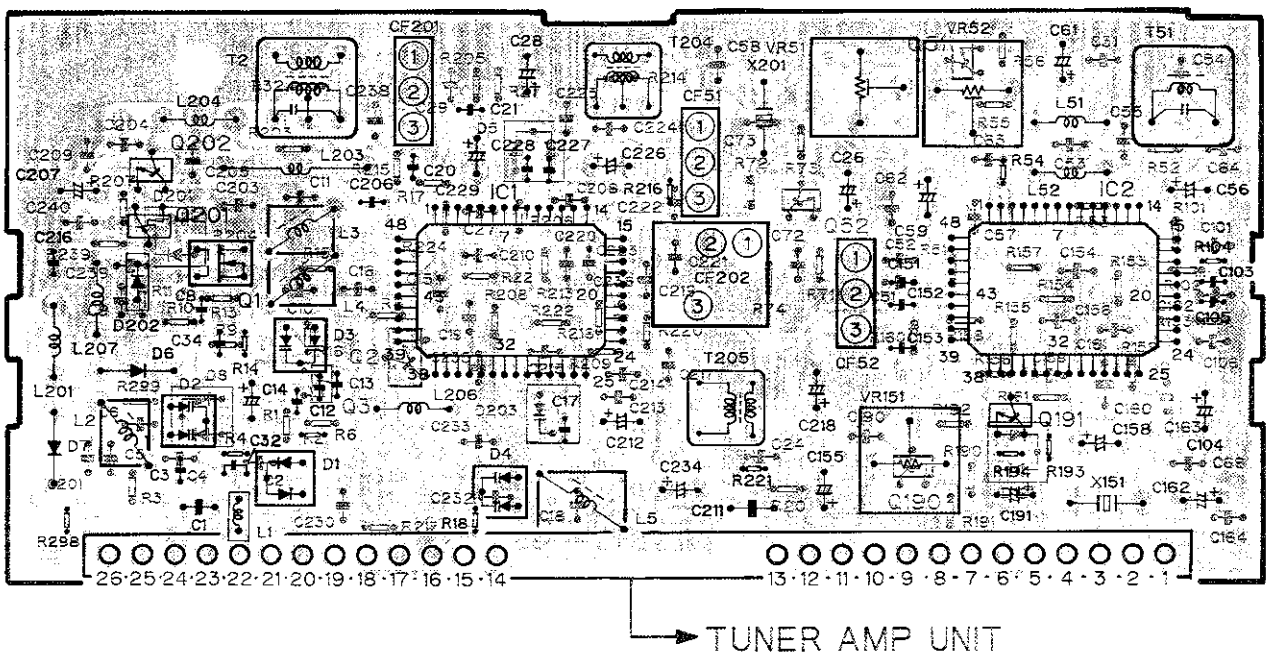


Fig.17

8.5 EQUALIZER UNIT(DEH-50DH)

● Circuit Diagram

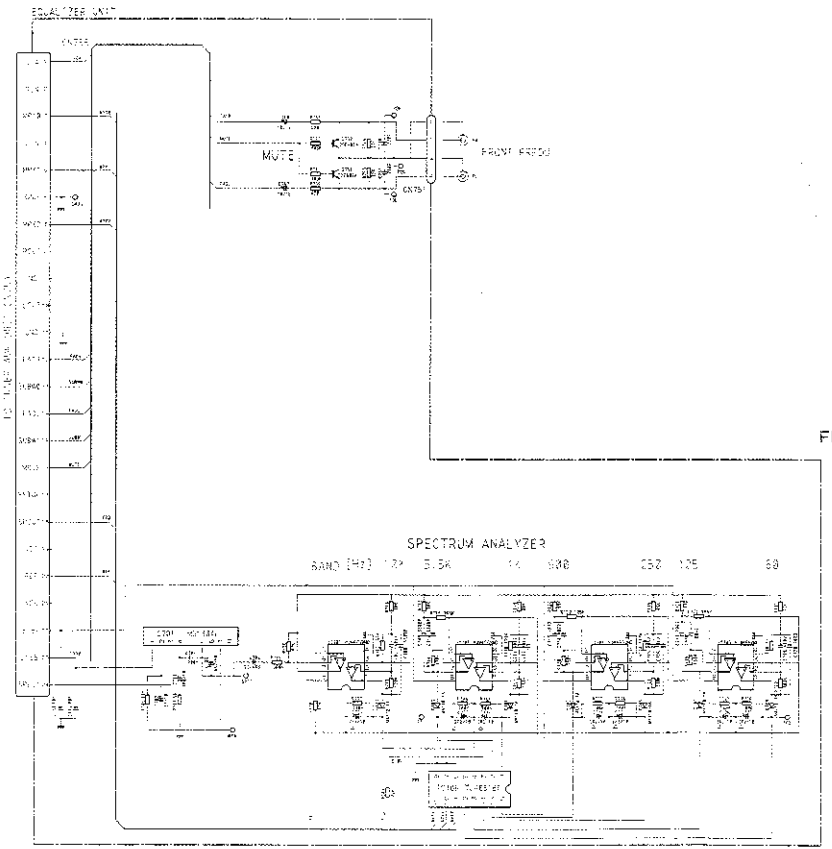


Fig.18

● Connection Diagram

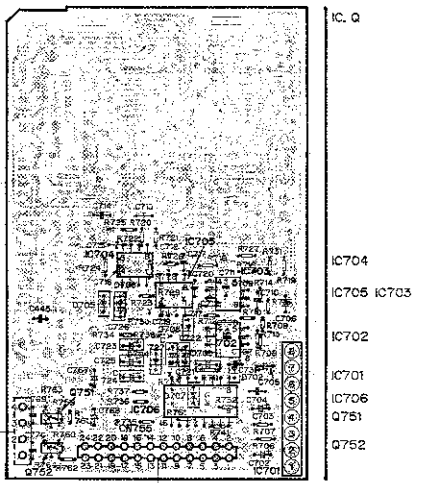


Fig.19

9. CHASSIS EXPLODED VIEW

NOTE:

● Parts marked by "✱"are generally unavailable because they are not in our Master Spare Parts List.

● Parts List(DEH-50DH)

Mark No.	Description	Part No.
1	Screw	BSZ26P060FMC
2	Screw	BSZ26P080FMC
3	Screw	BSZ30P050FMC
4	Screw	BSZ30P140FMC
5	Cord	CDE4392
6	Fuse	CEK1136
7	Cap	CNS1472
8	Resistor	RS1/2P102JL
9	Connector	CDE4527
10	Case	CNB1832
11	Heat Sink	CNC5753
12	Insulator	CNM4226
13	Insulator	CNM4388
14	Cover	CNS3414
15	Cap	CNV2680
16	Tuner Amp Unit	CWX1751
17	Chassis Unit	CXA6804
18	Chassis Unit	CXA6805
19	Remote Control Assy	CXA7276
20	Battery Cover	CNS3365
21	CD Mechanism Module	CXK2814
22	IC(IC902)	RPM-678CBR-L
23	IC(IC971)	TA8214K
24	IC(IC551)	PAL003A
25	Screw	PSS26P060FZK
26	Transistor(Q981)	2SD2396
27-35	•••••	
36	Cord	CDE4464
37	Cord	CDE4505
38	Plug(CN951)	CKM1204
39	Plug(CN851)	CKS1223
40	Connector(CN601)	CKS2884
41	Connector(CN754)	CKS3191
42	Antenna Jack(CN501)	CKX1006
43	Holder	CNC5013
44	Bracket	CNC5571
45	Holder	CNC5731
46	FM/AM Tuner Unit	CWE1362
47	Equalizer Unit	CWX1771
48	Detach Grille Assy	CXA6970
49	•••••	
50	Plug(CN751)	CKS1224
51	Connector(CN755)	CKS3190
52	Connector(CN651)	CKS2775
53	Screw	BPZ26P080FMC
54	Screw	BSZ26P060FMC
55	Connector(CN752)	CKS3199
56	Bracket	CNC5504
57	Button	CAC3776
58	Spring	CBH1440
59	Spring	CBH1484
60	Spring	CBH1659
61	Holder	CNC5500
62	Holder	CNC5501
63	Arm	CNV3971
64	Arm	CNV3972
65	Arm	CNV4069
66	Arm	CNV4070
67	Panel Unit	CXA6883
68,69	•••••	
70	Screw	PSS26P060FZK
71	Screw	BPZ20P100FZK
72	Button(1-6)	CAC4056
73	Button(SOURCE)	CAC4058
74	Button(DETACH)	CAC4059
75	Button(EJECT)	CAC4060
76	Button(S)	CAC4071
77	Button(+-)	CAC4116
78	Button	CAC4117
79	Button(BA,MA)	CAC4118
80	Sheet	CNM4326
81	Cushion	CNM4415
82	Cushion	CNM4416
83	Cushion	CNM4419
84	Cover	CNS3085
85	Key Board Unit	CWX1759
86	Grille Unit	CXA7025
87	Holder	CNC5803
88	LCD	CAW1269
89	Connector(CN901)	CKS2883
90	Holder	CNC5499
91	Lens	CNV3969
92	Connector	CNV3970
93-96	•••••	
97	Spacer	CNM4417

● The DEH-40DH Parts List enumerates the parts which differ from those enumerated in the DEH-50DH Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The DEH-50DH Parts List is given on page 59.

Mark No.	Description	DEH-50DH Part No.	DEH-40DH Part No.
13	Insulator	CNM4388	*****
15	Cap	CNV2680	*****
16	Tuner Amp Unit	CWX1751	CWX1752
19	Remote Control Assy	CXA7276	*****
20	Battery Cover	CNS3365	*****
22	IC(IC902)	RPM-678CBR	*****
36	Cord	CDE4464	*****
37	Cord	CDE4505	*****
39	Plug(CN851)	CKS1223	*****
41	Connector(CN754)	CKS3191	*****
44	Bracket	CNC5571	CNC5572
47	Equalizer Unit	CWX1771	*****
50	Plug(CN751)	CKS1224	*****
51	Connector(CN755)	CKS3190	*****
85	Key Board Unit	CWX1759	CWX1760
86	Grille Unit	CXA7025	CXA7026
88	LCD	CAW1269	CAW1272
97	Spacer	CNM4417	*****

● Chassis

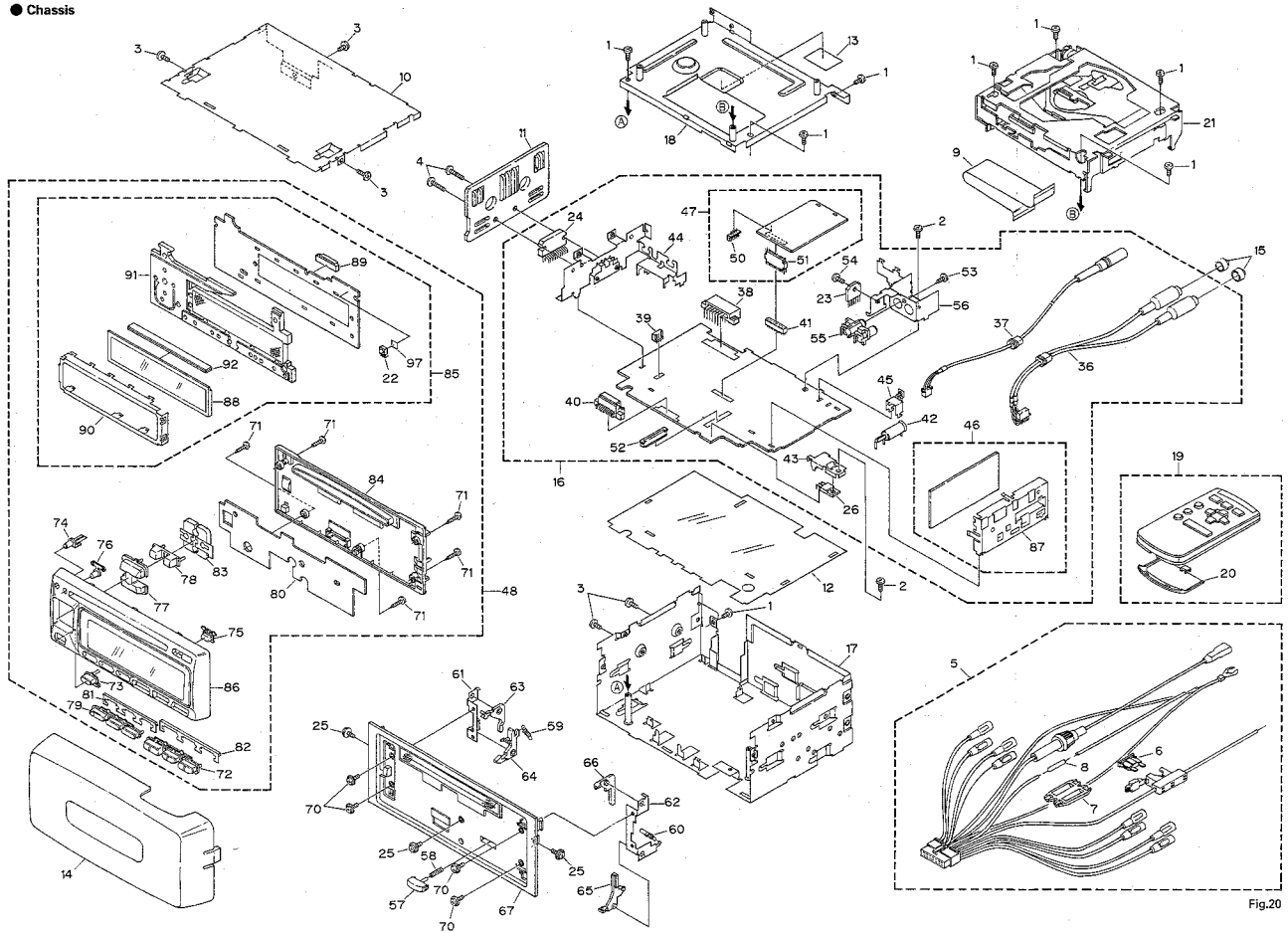


Fig.20

10. CD MECHANISM MODULE EXPLODED VIEW

● **Parts List**

Mark	No.	Description	Part No.
	1	Screw	PMS26P040FMC
	2	Control Unit	CWX1796
	3	Connector(CN1001)	CKS1955
	4	Connector(CN1701)	CKS2775
	5	Connector(CN1002)	CKS2811
	6	Connector(CN1801)	CKS2196
	7	CD Mechanism Unit	CXA7048
	8	Screw	BMZ20P030FMC
	9	Screw	BSZ20P040FMC
	10	Screw	CBA1250
	11	Screw	CBA1077
	12	Screw	CBA1230
	13	Screw	CBA1296
	14	Washer	CBF1038
	15	Washer	CBF1060
	16	Spring	CBH1415
	17	Spring	CBH1417
	18	Spring	CBH1418
	19	Spring	CBH1421
	20	Spring	CBH1423
	21	Spring	CBH1457
	22	Spring	CBH1552
	23	Spring	CBH1553
	24	Spring	CBH1554
	25	Spring	CBH1665
	26	Spring	CBH1556
	27	Spring	CBH1557
	28	Spring	CBH1558
	29	Spring	CBH1664
	30	Spring	CBH1560
	31	Spring	CBH1576
	32	Spring	CBH1577
	33	Spring	CBH1666
	34	Spring	CBH1583
	35	Spring	CBH1628
	36	Spring	CBL1170
	37	Spring	CBL1171
	38	Spring	CBL1200
	39	Connector	CDE4147
	40	PU Unit	CGY1031
	41	Shaft	CLA2220
	42	Roller	CLA2255
	43	Shaft	CLA2256
	44	Frame	CNC5661
	45	Arm	CNC5565
	46	Lever	CNC4891
	47	Lever	CNC4892
	48	Bracket	CNC4893
	49	Arm	CNC4895
	50	Arm	CNC5566
	51	Bracket	CNC5424
	52	Spacer	CNM3315
	53	Holder	CNV4018
	54	Sheet	CNM3693
	55	Bracket	CNM3917
	56	Belt	CNT1053
	57	Clamper Unit	CXA6999
	58	Guide	CNV2891
	59	Holder	CNV3276
*	60	Roller	CNV3412
	61	Damper	CNV3974
	62	Arm	CNV3565
	63	Arm	CNV3992
	64	Gear	CNV3567
	65	Gear	CNV3568
	66	Gear	CNV3569
	67	Gear	CNV3570
	68	Arm	CNV3571
	69	Holder	CNV3572
	70	Gear	CNV3573
	71	Holder	CNV3574
	72	Holder	CNV4067
	73	Holder	CNV3576
	74	Rack	CNV3577
	75	Arm	CNV3578
	76	Plate	CNV3629
	77	Guide	CNV3694
*	78	Gathering P.C.Board	CNX2103
	79	Gathering P.C.Board	CNX2128
	80	Screw Unit	CXA2375
	81	Motor Unit(M2)	CXA7150
	82	Chassis Unit	CXA6979
	83	Arm Unit	CXA5603
	84	Arm Unit	CXA5604
	85	Bracket Unit	CXA5605
	86	Lever Unit	CXA6975
	87	Arm Unit	CXA5607
	88	Arm Unit	CXA5608
	89	Gear Unit	CXA6976
	90	Motor Unit(M1)	CXA5703
	91	Bracket Unit	CXA5938
	92	Frame Unit	CXA6192
	93	Motor Unit(M3)	CXA6456
	94	Screw	JFZ17P035FNI
	95	Screw	JFZ20P014FMC
	96	Screw	JFZ20P020FZK
	97	Screw	JFZ20P025FMC
	98	Photo-transistor(P1,2)	PT4800
	99	Washer	YE15FUC
	100	Washer	YE20FUC
	101	*****	
	102	Sheet	CNM4028
	103	Spring	CBH1710
	104	Spacer	CNC5436
	105	Screw	JFZ20P045FMC
	106	Washer	CBF1061
	107	Cushion	CNM4089
	108	*****	
	109	Cushion	CXX1136

● CD Mechanism Module

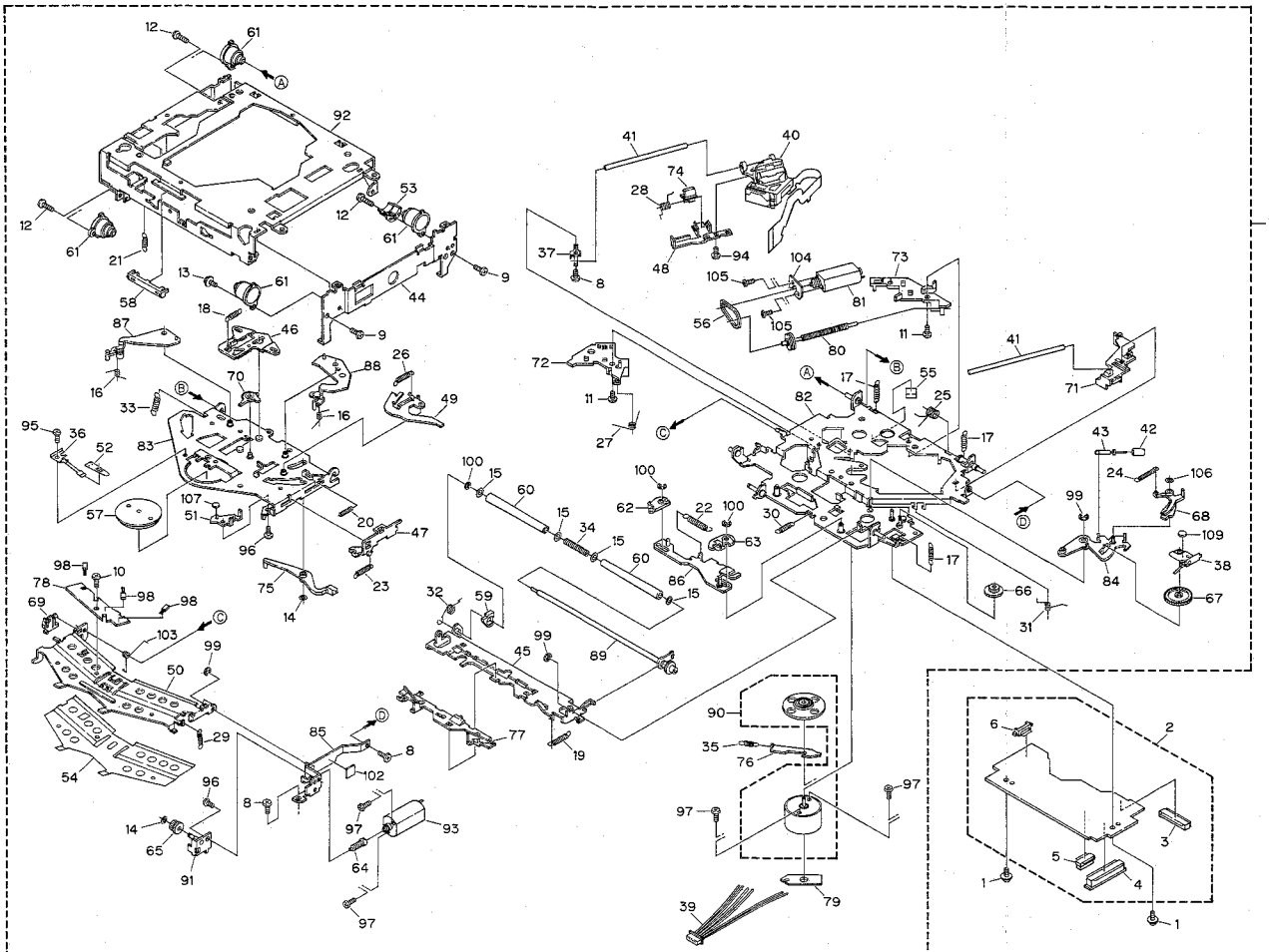


Fig.21

11. PACKING METHOD

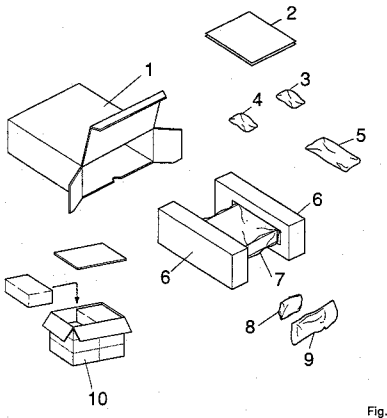


Fig.22

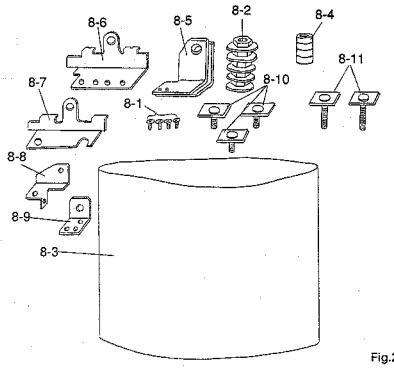


Fig.23

● **Parts List**

Mark	No.	Description	DEH-50DH Part No.	DEH-40DH Part No.
	1	Carton	CHG2583	CHG2582
*	2-1	Card	ARY1048	ARY1048
	2-2	Owner's Manual (English,French,Spanish)	CRD1818	CRD1848
	3	Remote Control Assy	CXA7276	*****
	4	Accessory Assy	CEA1473	*****
*	4-1	Polyethylene Bag	CEG-127	*****
	4-2	Battery	CEX1006	*****
	4-3	Fastener(Rough)	CNM3629	*****
	4-4	Fastener(Soft)	CNM3630	*****
	5	Cord	CDE4392	CDE4392
	6	Protector	CHP1692	CHP1692
	7	Cover	CEG1177	CEG1177
	8	Accessory Assy	CEA2006	CEA2006
	8-1	Screw(×4)	BSZ30P050FMC	BSZ30P050FMC
	8-2	Nut(×5)	CBN1012	CBN1012
*	8-3	Polyethylene Bag	CEG1101	CEG1101
	8-4	Spacer(×4)	CLA2598	CLA2598
	8-5	Bracket(×2)	CNC5505	CNC5505
	8-6	Bracket	CNC5506	CNC5506
	8-7	Bracket	CNC5507	CNC5507
	8-8	Bracket	CNC5686	CNC5686
	8-9	Bracket	CNC5687	CNC5687
	8-10	Bolt Unit(×3)	CXA7960	CXA7960
	8-11	Bolt Unit(×2)	CXA7961	CXA7961
	9	Cover	CNS3414	CNS3414
	10	Contain Box	CHL2583	CHL2582

12. OPERATION AND CONNECTION

● DEH-50DH

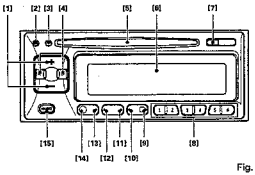


Fig. 24

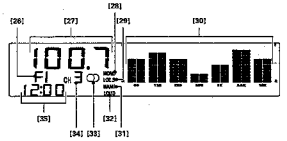


Fig. 26

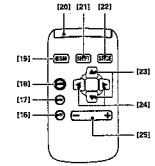


Fig. 25

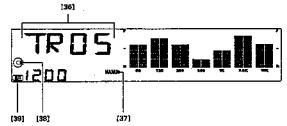


Fig. 27

Connection Diagram (Fig. 28)

1. This unit
2. Antenna Jack
3. Rear output
4. Front output
5. White
6. Red
7. External input (3.5ø stereo)
8. Connecting cords with RCA pin plugs (sold separately)
9. Power amp (sold separately)
10. Fuse holder
11. Blue
    To system control terminal of the powr amp or Auto-antenna relay control terminal (max. 300 mA 12 V DC.)
12. Blue
13. Black (ground)
    To vehicle (metal) body.
14. Orange
    To terminal always supplied with power regardless of ignition switch position.
15. Red
    To electric terminal controlled by ignition switch (12 V DC) ON/OFF.
16. Fuse resistor
17. Use this for connections when you have the separately available amplifier.
18. With a 2 speaker system, connect to the 2 speakers in the front or the rear.
19. Left speaker
20. Right speaker
21. Front
22. Rear
23. Green
24. Gray
25. Green/black
26. Gray/black
27. Green/red
28. Gray/red
29. Black/green
30. Black/gray

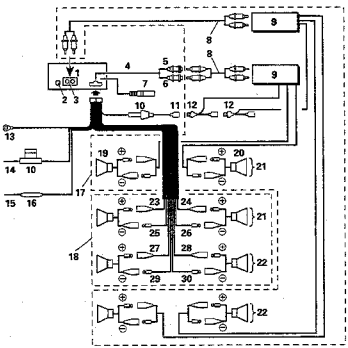


Fig. 28

Adjusting Volume and Tone

Parts Identification

Fig. 24
[1] Volume/Audio adjustment
[3] Shift
[4] Adjustment
[5] Disc insertion slot
[6] Display
[7] Eject
[9] Attenuator
[15] Source selector/AUX ON/OFF

Switching Power On

Radio
Press button [15] to switch the tuner power on. Press button [15] again to switch the power off.

CD
When a disc is inserted in the Disc insertion slot [5], it is loaded and starts playing automatically. The disc is ejected by pressing button [7].

Changing the source

If button [15] is pressed while a disc is inserted, the source is changed in the following order:
CD → Radio → OFF
If other audio equipment is connected to the external input terminal using a commercially available 3.5ø miniplug, perform the following operation to turn AUX ON. Pressing button [15] for 2 seconds or more when the unit is ON. ("AU" is displayed in [27] on the display.)

- *If the volume of this unit and the volume (output) of the external equip-ment are high when you change to the AUX mode, sound will be emitted at an extremely high volume, with potentially dangerous consequences. Be sure to adjust the volume of both units to a low level before changing to the AUX mode.*
- *Pressing button [15] to change the source will cancel the AUX mode.*

Adjusting Audio

Press buton [1] to adjust the volume. Each press of button [3] changes the display and the function of button [1] as follows:
Volume → Fader (Balance) → Bass (Treble) → Loudness (ON/OFF)

- If no operations are performed whithin 8 seconds, adjustment modes are canceled. Make adjustments within 8 seconds.
- If the (◀) or (▶) side of button [4] is pressed when "F-" is shown on the display, it changes to "B-", and the balance can be adjusted. To switch from Balance to Fader, press the (+) or (–) side of button [1], and the display and button [1] function becomes Fader.
- When "BS" is indicated on the display, press the (▶) side of button [4] to switch to "TR". When "TR" is displayed, press the (◀) side of button [4] to switch to "BS".
- When you're adjusting fader, balance, bass or treble settings, the indicator will stop at the center setting.

Adjusting Volume
Pressing the (+) side of button [1] increases the volume, while the (–) side decreases it. (Display shows "V-00" ~ "V-30".)

- *When driving your vehicle, be sure to keep the volume of the unit set low enough to allow you to hear sounds coming from outside.*

Press button [9] to reduce the volume to 1/10 of its current setting (The "V-" display blinks.). Press button [9] again returns the volume to its original level.

Adjusting the Fader
When you press the (+) side of button [1], the front speaker volume increases gradually while the rear speaker volume decreases.
When you press the (–) side of button, the rear speaker volume increases gradually while the front speaker volume decreases. (Display shows "F-F9" ~ "F-R9".)

- *Please set "F- 0" when using 2 speaker system.*

Adjusting Balance
Pressing the (◀) side of button [4] shifts the balance to the left speaker, while the (▶) side shifts it to the right speaker. (Display shows "B-L9" ~ "B-R9".)

Adjusting Bass
Pressing the (+) side of button [1] increases bass, while the (–) side decreases bass. (Display shows "BS – 6" ~ "BS 6".)

Adjusting Treble
Pressing the (+) side of button [1] increases treble, while the (–) side decreases treble. (Display shows "TR – 6" ~ "TR 6".)

Using the Loudness Control
Pressing the (▶) side of button [4] turns the loudness function on, and "LOUD" [32] appears on the display. Pressing the (◀) side of button [4] turns it off. This loudness function supplements the insufficiency of low- and high-frequency ranges when the volume is low.

Changing the Spectrum Analyzer Display

Parts Identification

Fig. 24
[6] Display
[10] Spectrum Analyzer Display Selector

Fig. 26
[30] Spectrum Anayzer Display

Each time you press button [10], it changes to A, B, C, D and E in order.

A: Level Display
This indicates the music energy level of each frequency by the height of the bar for each band (Fig. 29).

Fig. 29

B: Peak Bound Display
This indicates the music energy level of each frequency by the height of the bar for each band, while also showing a temporary indication of level peaks (Fig. 30).

Fig. 30

C: Symmetric Display
This indicates the music energy level of each frequency by width (Fig. 31).

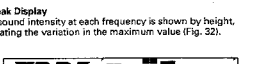


Fig. 31

D: Peak Display
The sound intensity at each frequency is shown by height, indicating the variation in the maximum value (Fig. 32).

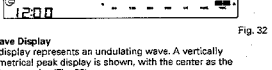


Fig. 32

E: Wave Display
The display represents an undulating wave. A vertically symmetrical peak display is shown, with the center as the maximum point (Fig. 33).

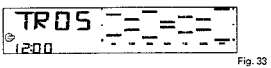


Fig. 33

Using the Radio

Parts Identification

Fig. 24

[4] Tuning
[6] Display
[8] Preset
[11] Best Stations Memory (BSM)/Preset scan
[12] Local station
[13] FM stereo, mono/Seek, Manual
[14] Band
[15] Source Selector

Fig. 26

[26] Band
[27] Frequency
[28] FM mono
[29] Local station
[31] Manual
[33] FM stereo
[34] Preset number

Listening to the Radio

Electronic Tuner

Frequency allocation differs depending upon the area. This unit has been designed in accordance with the frequency allocation for North America. Use in other areas will result in improper reception.

1. **Press button [15] to switch the radio power on.**
2. **Press button [14] to select a band.**

F I → F II → F III → A
(FM1) (FM2) (FM3) (AM)

3. **Use seek tuning to tune in a frequency.**
Ensure that "MANU" [31] is not indicated on the display. (If so, turn it off by pressing button [13].) Press either the (◀) side or the (▶) side of button [4].
When the (▶) side is pressed, the tuner will automatically receive high frequencies. When the (◀) side is pressed, it will automatically receive low frequencies.
4. **Adjust volume and tone.**
5. **Assign the tuned frequency to one of the buttons in Bank [8] (Preset memory).**
Press and hold down one of the buttons in Bank [8] for at least 2 seconds. The frequency is assigned to the selected button when the preset number [34] stops flashing on the display. Up to 18 FM stations (6 each for FM1, FM2 and FM3), and 6 AM stations can be assigned to the preset memory buttons in Bank [8].
6. **Once a frequency is assigned to a button in Bank [8], you just need to press that button to tune it in.**
This also causes the number of the button pressed to appear at position [34] on the display.

Manual Tuning

Use manual tuning when stations are too weak to be picked up by seek tuning.

1. Turn on "MANU" [31] by pressing button [13].
2. Each press of the (▶) side of button [4] increases the frequency in 0.2 MHz steps in the FM band, 10 kHz in the AM band. Pressing the (◀) side of button [4] decreases the frequency. Holding down either side of button [4] changes the frequency at high speed.

Adjusting Seek Sensitivity

The seek tuning function of this tuner lets you select between a local setting for reception of strong stations only, and a DX (distant) setting for reception of weaker stations. The local setting also has 4 seek tuning sensitivity levels for FM and 2 levels for AM to match local conditions.

Changing the Local Seek Sensitivity

1. Use button [14] to select a band.
2. Hold down button [12] for more than 2 seconds, and the display will show you the current local seek sensitivity for about 5 seconds.
3. While the local seek sensitivity remains on the display, press the (▶) side of button [4] to increase the sensitivity level, and the (◀) side to decrease the level as shown below.
FM : LOC1 = LOC2 = LOC3 = LOC4
AM: LOC1 = LOC2
The LOC4 setting allows reception of only the strongest stations, while lower settings let you receive progressively weaker stations.

- The display of local seek sensitivity returns to the frequency when about 5 seconds have elapsed after the change of sensitivity.

Switching between Local and DX

Press button [12] to switch between Local and DX (distant) seek tuning. When "LOC.S" [29] is shown on the display, seek tuning is performed with the local seek sensitivity. Otherwise, seek tuning is performed with the DX seek sensitivity.

Switching between FM Stereo and Mono

Generally, it is best to allow the "Super Tuner" function to automatically set the optimum listening conditions. When stereo broadcasting is received, "◁▷" [33] will appear on the display. When there is a large amount of noise, you can hold down button [13] for 2 seconds or more for clearer mono reception ("MONO" [28] will appear on the display).

BSM (Best Stations Memory)

This function automatically locates stronger stations and automatically assigns their frequencies to the buttons in Bank [8], from strongest to weakest. It comes in handy when trying to find local stations while driving.

1. Press button [14] and select a band.
2. Holding down button [11] for about 2 seconds will start BSM search. At this time, "----" will flash on the display.
3. The frequency display will return once BSM search is complete, and frequencies are assigned to buttons ① through ⑥ in Bank [8].

- At the end of the BSM search, the displayed frequency is that assigned to button ① in Bank [8].
- You can cancel BSM search by pressing button [11] again.
- *If there are fewer than 6 strong stations in the area, some of the buttons in Bank [8] will not be assigned frequencies, so they will retain any frequencies assigned to them previously.*
- *BSM search may take as long as 30 seconds in areas where there are few strong stations.*

Preset Scan Tuning

This function lets you automatically monitor the stations assigned to the preset buttons.

1. Press button [11]. The frequency will appear on the display [27] and the preset number [34] will blink. Each station assigned to the buttons in Bank [8] will be automatically tuned in for about 8 seconds.
2. When you hear a station that you like, press button [11] again to cancel preset scan tuning and remain at that station.

- Stations stored in memory under the buttons [8] but whose signal is weak will not be recalled.

Playing Compact Discs

Discs

- *Only use compact discs (optical digital audio discs) bearing the mark shown below (Fig. 34).*

COMPACT disc DIGITAL AUDIO

Fig. 34

- *Do not use cracked, scratched, or warped discs.*
- *Do not touch the disc's playing side. Handle the disc as shown below (Fig. 35).*

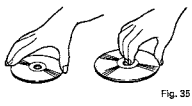


Fig. 35

- *Do not affix any label on the disc.*
- *Do not apply any vinyl record spray, antistatic agent, benzene, paint thinner, or any other volatile chemicals.*

- *Do not play a dirty disc. Use a soft cloth to clean a dirth disc as shown below. Wipe the disc outward from the center (Fig. 36).*

Fig. 36

- *Do not place the disc in high temperatures and direct sunlight.*
- *Be sure to store the disc in its case.*

CD Playing Environment

- Disc playback may be interrupted by sudden road shock.
- When the air temperature is low and the car heater is turned on, condensation on the disc and internal parts of the unit may prevent proper playback operation. If this happens, turn off the unit and wait one hour until the condensation is gone. Also, use a soft cloth to wipe off any condensation from the disc.

Parts Identification

Fig. 24

[4] Track number search/Fast Forward, Reverse
[6] Display
[7] Eject
[8] ① Pause
[8] ② Repeat
[8] ③ Random play
[13] Manual
[15] Source selector

Fig. 27

[36] Play mode display
[37] MANU
[38] Disc indicator

Listening to the CD player

1.With the labvel side up, insert a disc into [5]. Playback will start. (The track number [36] will be displayed.)

- *Do not insert the disc with the label side down. Doing so may scratch the disc.*
- If the disc stops midway while it is being inserted or if there is no playback after a disc is inserted, something may be wrong with the disc. Eject the disc and check it.

2.Adjust volume and tone.

3.Eject the disc by pressing button [7].

- *Do not leave the disc halfway into the unit as shown below. Doing so may cause the disc to be bent or dropped (Fig. 37).*

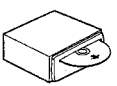


Fig. 37

Track Number Search

The track number search function lets you select a particular track on the disc you are listening to.
Check that "MANU" [37] is not lit on the display. If it is lit, turn it off by pressing button [13]. The track number [36] is incremented by pressing the (►) side of button [4], and decremented by pressing the (◄) side. Holding either side of button [4] down changes the track number at high speed.

Using Fast Forward and Reverse

1.Press button [13] to turn on the "MANU" indication [37].
2.Press the (►) side of button [4] to fast-forward, or the (◄) side to reverse.
- Sound can be heard while fast-forwarding or reversing.

Repeat

1.To repeat the music you are listening to, press button ② in Bank [8] ("RP" will appear on the display [36]).
2.To cancel music repeat, press button ② in Bank [8] to turn off "RP".

Random Play

1.To play music randomly, press button ③ in Bank [8] ("Rd" will appear on the display [36]). Once the current track has been played, the microprocessor will randomly select the next and subsequent tracks.
2.To cancel random play, press button ③ in Bank [8] to turn off "Rd".

- *Since selectins are played in random order, the same selection may be played twice in succession.*

Pausing

1.Press button ① in Bank [8] to pause during disc playback ("----" appears on display [36]).
2.Press button ① in Bank [8] again to release pause.
- You can select a track using the track number search during pause. ("----" is off while a track is being searched.) When the track search ends, the found track is paused at its beginning.

Error Mode

If there is a problem with CD playback, an error code will be displayed. (Ex.: "E-14") If an error is displayed, refer to the table below to identify the problem. If the error is displayed even after corrective action is taken, contact your dealer or the nearest authorized PIONEER Service Station.

D: Display
C: Cause
T: Treatment

D: E-11, 12, 14, 17, 30
C: The disc is dirty.
T: Clean the disc.

D: E-11, 12, 17, 30
C: The disc is scratched.
T: Replace the disc.

D: E-11, 14, 17
C: The disc is inserted with the label side down.
T: Insert the disc with the label side up.

D: E-14
C: An unrecorded CD-R is being used.
T: Check the disc.

D: E-10, 11, 12, 14, 17, 30, A0
C: Electrical or mechanical fault.
T: Turn off the car's ignition and turn it back on again. Or change the source to another one and then change it back to CD.

Using the Remote Control

Loading Batteries (Fig. 38)

1. Remove the battery compartment cover from the remote controller unit.
2. Load 2 batteries, whose type is UM-4, AAA or IEC R03 1.5V, as applicable, that come with the unit into the remote controller unit, ensuring that their polarity (+/–) is correct.
3. Replace the battery compartment cover.

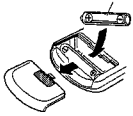


Fig. 38

Precautions When Loading Batteries

Note the following precautions when loading batteries into the remote controller unit to avoid damage due to battery fluid leakage.

- *Always check carefully that you are loading batteries with the (+) and (–) poles facing in the proper directions.*
- *Never mix old and new batteries. Always replace batteries with 2 new ones.*
- *Some batteries may appear to be identical but have different voltage ratings. Never mix battery types.*
- *Some batteries can be recharged and some cannot. Be sure to carefully read the label for the batteries you use.*
- *To avoid damage to the remote controller caused by battery leakage, remove the batteries from the remote controller if you do not plan to use it for more than one month. If you find that fluid has leaked, thoroughly wipe out the battery compartment and load a set of new batteries.*

Precautions

- *Keep the remote controller unit in an area not exposed to long periods of direct sunlight.*
- *The remote controller unit may not operate properly if the transmitter of the remote controller unit is pointed towards the floor or the seat of the vehicle.*
- *Since the transmitter employs and infrared system, it may not operate properly while car stereo unit is exposed to direct sunlight. In such a case, block the sunlight from the sensor and then perform the desired operation.*
- *If the remote controller fails to operate unless it is brought close to the unit, it may indicate that battery power is low. Replace the batteries in the remote controller.*

Parts Identification

Fig. 25

[16] Attenuator

Press to reduce the volume to 1/10 of its current setting (The "V-" display blinks.). Pressing again returns the volume to its original level.

[17] Learn

The following procedure enables the operation of a button on the unit to be memorized in this button.

1. Press button [14] for 2 seconds or more to change to the learn mode. ("LRN" is displayed.)
   - The learn mode is canceled if no operation is performed for 8 seconds.
2. Press the button on the unit that you want to operate with the remote controller.
   - Buttons [2] cannot be memorized in the Learn button.

[20] Transmitter

[21] Shift

Each time this button is pressed, the display and the function of buttons [1] and [23] change as follows:

Volume → Fader (Balance) → Bass (Treble) →Loudness (ON/OFF)

[22] Source

Pressing this button when a disc is inserted changes the source in the following order:

CD → Radio → OFF

Pressing the button for 2 seconds or more when the unit is ON switches external input "AUX" ON or OFF alternately.

[25] Volume

Press the (+) side to increase volume and the (–) side to decrease volume.

Operating Radio

[18] Band

Band changes.

[19] BSM

Hold down this button for 2 or more seconds to switch the BSM function ON and OFF.

[23] Preset Channel

Press to tune the frequencies assigned to the preset button memory. Pressing the (▲) side tunes in the ext high preset button number, while (▼) tunes in the next lower preset button number. The preset number changes at high speed when you hold either side of this button down.

[24] Seek Tuning

Press either the (◄) side or the (►) side. When the (►) side is pressed, the tuner will automatically receive high frequencies. When the (◄) side is pressed, it will automatically receive low frequencies.

Operating the CD Player

[24] Track Number Search

Press to search for a selection (track number) on the current disc. Press the (►) side to increase the track number on the display, and the (◄) side to reduce the track number. Holding down either side of this button changes the track number at high speed.

Using the Clock Display

Parts Identification

Fig. 24

[8] ① Hour adjustment
[8] ② Minute adjustment
[8] ③ Clock reset
[10] Clock

Fig. 26

[35] Clock display

Displaying the time

When the unit is ON, the clock display [35] is also always ON. Even when the unit is OFF, the clock display [35] will come ON if button [10] is pressed when the ignition key is in the ON or ACC position. Pressing button [10] again will turn the clock display [35] OFF.

Adjusting the Time

Adjusting Hour

While holding down button [10] for more than 2 seconds, press button ① in Bank [8] to adjust the hour setting. Each time button ① in Bank [8] is pressed, the hour advances by one hour. Holding down button ① in Bank [8] advances the hour at high speed.

Adjusting the Minutes

While holding down button [10] for more than 2 seconds, press button ② in Bank [8] to adjust the minute setting. Each time button ② in Bank [8] is pressed, the minute advances by one minute. Holding down button ② in Bank [8] advances the minute at high speed.

- After the minute is adjusted, the clock will start from 0 second when button [10] is released.

Adjust the clock with the "immediate clock adjustment"

Hold down button [10] for more than 2 seconds and press button ③ in Bank [8]. The time becomes "○○:00".

- If the "minute indication is 00 to 29, it is discarded, and the clock starts. (Example: If the time is "10:18", it becomes "10:00".)
- If the "minute" indication is 30 to 59, it is rounded up, and the clock starts. (Example: If the time is "10:36", it becomes "11:00".)

● DEH-40DH

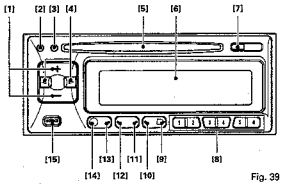


Fig. 39

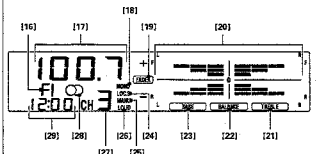


Fig. 40

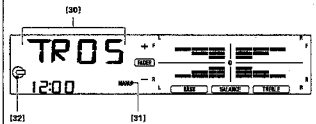


Fig. 41

Connection Diagram (Fig. 42)

1. This unit
2. Antenna jack
3. Rear output
4. Connecting cords with RCA pin plugs (sold seperately)
5. Power amp (sold separately)
6. Fuse holder
7. Blue
   To system control terminal of the powr amp or Auto-antenna relay control terminal (max. 300 mA 12 V DC)
8. Blue
9. Black (ground)
   To vehicle (metal) body.
10. Orange
    To terminal always supplied with power regardless of ignition switch position.
11. Red
    To electric terminal controlled by ignition switch (12 V DC) ON/OFF.
12. Fuse resistor
13. Use this for connections when you have the seperately available amplifier.
14. With a 2 speaker system, connect to the 2 speakers in the front or the rear.
15. Left speaker
16. Right speaker
17. Front
18. Rear
19. Green
20. Gray
21. Green/black
22. Gray/black
23. Green/red
24. Gray/red
25. Black/green
26. Black/gray

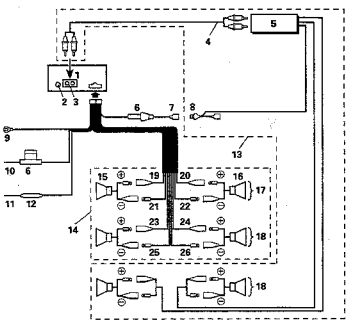


Fig. 42

Adjusting Volume and Tone

Parts Identification

Fig. 39
[1] Volume/Audio adjustment
[3] Shift
[4] Adjustment
[5] Disc insertion slot
[6] Display
[7] Eject
[9] Attenuator
[15] Source selector

Fig. 40
[19] Fader
[21] Treble
[22] Balance
[23] Bass
[26] Loudness

Switching Power On

Radio
Press button [15] to switch the tuner power on. Press button [15] again to switch the power off.

CD
When a disc is inserted in the Disc insertion slot [5], it is loaded and starts playing automatically. The disc is ejected by pressing button [7].

Changing the source

If button [15] is pressed while a disc is inserted, the source is changed in the following order:
CD → Radio → OFF

Adjusting Audio

Press buton [1] to adjust the volume. Each press of button [3] changes the display and the function of button [1] as follows:
Volume → Fader (Balance) → Bass (Treble) → Loudness (ON/OFF)

- If no operations are performed whithin 8 seconds, adjustment modes are canceled. Make adjustments within 8 seconds.
- If the (◀) or (▶) side of button [4] is pressed when "F-" is shown on the display, it changes to "B-", and the balance can be adjusted. To switch from Balance to Fader, press the (+) or (–) side of button [1], and the display and button [1] function becomes Fader.
- When "BS" is indicated on the display, press the (▶) side of button [4] to switch to "TR". When "TR" is displayed, press the (◀) side of button [4] to switch to "BS".
- When you're adjusting fader, balance, bass or treble settings, the indicator will stop at the center setting.

Adjusting Volume
Pressing the (+) side of button [1] increases the volume, while the (–) side decreases it. (Display shows "V-00" ~ "V-30".)

- *When driving your vehicle, be sure to keep the volume of the unit set low enough to allow you to hear sounds coming from outside.*

Press button [9] to reduce the volume to 1/10 of its current setting (The "V-" display blinks.). Press button [9] again returns the volume to its original level.

Adjusting the Fader
When you press the (+) side of button [1], the front speaker volume increases gradually while the rear speaker volume decreases.
When you press the (–) side of button, the rear speaker volume increases gradually while the front speaker volume decreases. (Display shows "F-F9" ~ "F-R9".)

- *Please set "F- 0" when using 2 speaker system.*

Adjusting Balance
Pressing the (◀) side of button [4] shifts the balance to the left speaker, while the (▶) side shifts it to the right speaker. (Display shows "B-L9" ~ "B-R9".)

Adjusting Bass
Pressing the (+) side of button [1] increases bass, while the (–) side decreases bass. (Display shows "BS – 6" ~ "BS 6".)

Adjusting Treble
Pressing the (+) side of button [1] increases treble, while the (–) side decreases treble. (Display shows "TR – 6" ~ "TR 6".)

Using the Loudness Control
Pressing the (▶) side of button [4] turns the loudness function on, and "LOUD" [26] appears on the display. Pressing the (◀) side of button [4] turns it off. This loudness function supplements the insufficiency of low- and high-frequency ranges when the volume is low.

Changing the Levelizer Display

Parts Identification

Fig. 39
[6] Display
[10] Levelizer Display Selector

Fig. 40
[20] Levelizer Display

Each time you press button [10], it changes to A, B, C, D, E, F and G in order.

A:


Fig. 43

B:


Fig. 44

C:


Fig. 45

D:


Fig. 46

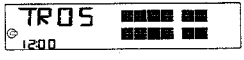
E:


Fig. 47

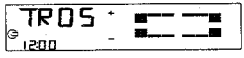
F:


Fig. 48

G:


Fig. 49

Using the Radio

Parts Identification

Fig. 39
[4] Tuning
[6] Display
[8] Preset
[11] Best Stations Memory (BSM)/Preset scan
[12] Local station
[13] FM stereo, mono/Seek, Manual
[14] Band
[15] Source Selector

Fig. 40
[16] Band
[17] Frequency
[18] FM mono
[24] Local station
[25] Manual
[27] Preset number
[28] FM stereo

Listening to the Radio

Electronic Tuner

Frequency allocation differs depending upon the area. This unit has been designed in accordance with the frequency allocation for North America. Use in other areas will result in improper reception.

1. Press button [15] to switch the radio power on.
2. Press button [14] to select a band.

F1 → F2 → F3 → A
(FM1) (FM2) (FM3) (AM)

3. Use seek tuning to tune in a frequency.
Ensure that "MANU" [25] is not indicated on the display. (If so, turn it off by pressing button [13].) Press either the (◄) side or the (►) side of button [4].
When the (►) side is pressed, the tuner will automatically receive high frequencies.
When the (◄) side is pressed, it will automatically receive low frequencies.
4. Adjust volume and tone.
5. Assign the tuned frequency to one of the buttons in Bank [B] (Preset memory).
Press and hold down one of the buttons in Bank [B] for at least 2 seconds. The frequency is assigned to the selected button when the preset number [27] stops flashing on the display. Up to 18 FM stations (6 each for FM1, FM2 and FM3), and 6 AM stations can be assigned to the preset memory buttons in Bank [B].
6. Once a frequency is assigned to a button in Bank [B], you just need to press that button to tune it in.
This also causes the number of the button pressed to appear at position [27] on the display.

Manual Tuning

Use manual tuning when stations are too weak to be picked up by seek tuning.
1. Turn on "MANU" [25] by pressing button [13].
2. Each press of the (►) side of button [4] increases the frequency in 0.2 MHz steps in the FM band, 10 kHz in the AM band. Pressing the (◄) side of button [4] decreases the frequency. Holding down either side of button [4] changes the frequency at high speed.

Adjusting Seek Sensitivity

The seek tuning function of this tuner lets you select between a local setting for reception of strong stations only, and a DX (distant) setting for reception of weaker stations. The local setting also has 4 seek tuning sensitivity levels for FM and 2 levels for AM to match local conditions.

Changing the Local Seek Sensitivity

1. Use button [14] to select a band.
2. Hold down button [12] for more than 2 seconds, and the display will show you the current local seek sensitivity for about 5 seconds.
3. While the local seek sensitivity remains on the display, press the (►) side of button [4] to increase the sensitivity level, and the (◄) side to decrease the level as shown below.
FM : LOC1 = LOC2 = LOC3 = LOC4
AM : LOC1 = LOC2
The LOC4 setting allows reception of only the strongest stations, while lower settings let you receive progressively weaker stations.
- The display of local seek sensitivity returns to the frequency when about 5 seconds have elapsed after the change of sensitivity.

Switching between Local and DX

Press button [12] to switch between Local and DX (distant) seek tuning. When "LOC.S" [24] is shown on the display, seek tuning is performed with the local seek sensitivity. Otherwise, seek tuning is performed with the DX seek sensitivity.

Switching between FM Stereo and Mono

Generally, it is best to allow the "Super Tuner" function to automatically set the optimum listening conditions. When stereo broadcasting is received, "⊡" [28] will appear on the display. When there is a large amount of noise, you can hold down button [13] for 2 seconds or more for clearer mono reception ("MONO" [18] will appear on the display).

BSM (Best Stations Memory)

This function automatically locates stronger stations and automatically assigns their frequencies to the buttons in Bank [B], from strongest to weakest. It comes in handy when trying to find local stations while driving.
1. Press button [14] and select a band.
2. Holding down button [11] for about 2 seconds will start BSM search. At this time, "----" will flash on the display.
3. The frequency display will return once BSM search is complete, and frequencies are assigned to buttons ① through ⑥ in Bank [B].
- At the end of the BSM search, the displayed frequency is that assigned to button ① in Bank [B].
- You can cancel BSM search by pressing button [11] again.
- *If there are fewer than 6 strong stations in the area, some of the buttons in Bank [B] will not be assigned frequencies, so they will retain any frequencies assigned to them previously.*
- *BSM search may take as long as 30 seconds in areas where there are few strong stations.*

Preset Scan Tuning

This function lets you automatically monitor the stations assigned to the preset buttons.
1. Press button [11]. The frequency will appear on the display [17] and the preset number [27] will blink. Each station assigned to the buttons in Bank [B] will be automatically tuned in for about 8 seconds.
2. When you hear a station that you like, press button [11] again to cancel preset scan tuning and remain at that station.
- Stations stored in memory under the buttons [B] but whose signal is weak will not be recalled.

Playing Compact Discs

Discs

- *Only use compact discs (optical digital audio discs) bearing the mark shown below (Fig. 50).*

COMPACT disc DIGITAL AUDIO

Fig. 50

- *Do not use cracked, scratched, or warped discs.*
- *Do not touch the disc's playing side. Handle the disc as shown below (Fig. 51).*

Fig. 51

- *Do not affix any label on the disc.*
- *Do not apply any vinyl record spray, antistatic agent, benzene, paint thinner, or any other volatile chemicals.*

- *Do not play a dirty disc. Use a soft cloth to clean a dirth disc as shown below. Wipe the disc outward from the center (Fig. 52).*

Fig. 52

- *Do not place the disc in high temperatures and direct sunlight.*
- *Be sure to store the disc in its case.*

CD Playing Environment

- Disc playback may be interrupted by sudden road shock.
- When the air temperature is low and the car heater is turned on, condensation on the disc and internal parts of the unit may prevent proper playback operation. If this happens, turn off the unit and wait one hour until the condensation is gone. Also, use a soft cloth to wipe off any condensation from the disc.

Parts Identification

Fig. 39

[4] Track number search/Fast Forward, Reverse
[6] Display
[7] Eject
[8] ① Pause
[8] ② Repeat
[8] ③ Random play
[13] Manual
[15] Source selector

Fig. 41

[30] Play mode display
[31] MANU
[32] Disc indicator

Listening to the CD player

1.With the labvel side up, insert a disc into [5]. Playback will start. (The track number [30] will be displayed.)

- *Do not insert the disc with the label side down. Doing so may scratch the disc.*
- If the disc stops midway while it is being inserted or if there is no playback after a disc is inserted, something may be wrong with the disc. Eject the disc and check it.

2.Adjust volume and tone.

3.Eject the disc by pressing button [7].

- *Do not leave the disc halfway into the unit as shown below. Doing so may cause the disc to be bent or dropped (Fig. 53).*

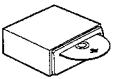


Fig. 53

Track Number Search

The track number search function lets you select a particular track on the disc you are listening to.
Check that "MANU" [31] is not lit on the display. If it is lit, turn it off by pressing button [13]. The track number [30] is incremented by pressing the (►) side of button [4], and decremented by pressing the (◄) side. Holding either side of button [4] down changes the track number at high speed.

Using Fast Forward and Reverse

1.Press button [13] to turn on the "MANU" indication [31].
2.Press the (►) side of button [4] to fast-forward, or the (◄) side to reverse.
- Sound can be heard while fast-forwarding or reversing.

Repeat

1.To repeat the music you are listening to, press button ② in Bank [8] ("RP" will appear on the display [30]).
2.To cancel music repeat, press button ② in Bank [8] to turn off "RP".

Random Play

1.To play music randomly, press button ③ in Bank [8] ("Rd" will appear on the display [30]). Once the current track has been played, the microprocessor will randomly select the next and subsequent tracks.
2.To cancel random play, press button ③ in Bank [8] to turn off "Rd".
- *Since selectins are played in random order, the same selection may be played twice in succession.*

Pausing

1.Press button ① in Bank [8] to pause during disc playback ("----" appears on display [30]).
2.Press button ① in Bank [8] again to release pause.
- You can select a track using the track number search during pause. ("----" is off while a track is being searched.) When the track search ends, the found track is paused at its beginning.

Error Mode

If there is a problem with CD playback, an error code will be displayed. (Ex.: "E-14") If an error is displayed, refer to the table below to identify the problem. If the error is displayed even after corrective action is taken, contact your dealer or the nearest authorized PIONEER Service Station.

D: Display
C: Cause
T: Treatment

D: E-11, 12, 14, 17, 30
C: The disc is dirty.
T: Clean the disc.

D: E-11, 12, 17, 30
C: The disc is scratched.
T: Replace the disc.

D: E-11, 14, 17
C: The disc is inserted with the label side down.
T: Insert the disc with the label side up.

D: E-14
C: An unrecorded CD-R is being used.
T: Check the disc.

D: E-10, 11, 12, 14, 17, 30, A0
C: Electrical or mechanical fault.
T: Turn off the car's ignition and turn it back on again. Or change the source to another one and then change it back to CD.

Using the Clock Display

Parts Identification

Fig. 39
[8] ① Hour adjustment
[8] ② Minute adjustment
[8] ③ Clock reset
[10] Clock

Fig. 40
[29] Clock display

Displaying the time

When the unit is ON, the clock display [29] is also always ON. Even when the unit is OFF, the clock display [29] will come ON if button [10] is pressed when the ignition key is in the ON or ACC position. Pressing button [10] again will turn the clock display [29] OFF.

Adjusting the Time

Adjusting Hour

While holding down button [10] for more than 2 seconds, press button ① in Bank [8] to adjust the hour setting. Each time button ① in Bank [8] is pressed, the hour advances by one hour. Holding down button ① in Bank [8] advances the hour at high speed.

Adjusting the Minutes

While holding down button [10] for more than 2 seconds, press button ② in Bank [8] to adjust the minute setting. Each time button ② in Bank [8] is pressed, the minute advances by one minute. Holding down button ② in Bank [8] advances the minute at high speed.

- After the minute is adjusted, the clock will start from 0 second when button [10] is released.

Adjust the clock with the "immediate clock adjustment"

Hold down button [10] for more than 2 seconds and press button ③ in Bank [8]. The time becomes "○○:00".

- If the "minute indication is 00 to 29, it is discarded, and the clock starts. (Example: If the time is "10:18", it becomes "10:00".)
- If the "minute" indication is 30 to 59, it is rounded up, and the clock starts. (Example: If the time is "10:36", it becomes "11:00".)

PIONEER

The Art of Entertainment