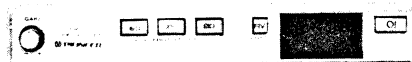
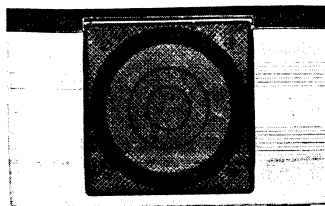


Service Manual

PIONEER



The photo shows the model GTS-X80/ES.

**ORDER NO.
CRT-395-0**

COMPONENT CAR STEREO MFB SUPER WOOFER SYSTEM

GTS-X80

**US, CA,
ES, EW**

SPECIFICATIONS

General

Power source DC 14.4V (10.8~15.6V allowable)
Grounding system Negative type
Max. current consumption 7A
Dimensions (speaker) 310(W)×85(H)×190(D) mm
[12-1/4(W)×3-3/8(H)×7-1/2(D) in.]
(controller) 180(W)×25(H)×100(D) mm
[7-1/8(W)×1(H)×3-7/8(D) in.]
Weight 4.5g (9.9 lbs.)

Amp Section

Continuous power output is 44W per channel min. into 4 ohms, both channels driven 50 to 150Hz with no more than 0.3% THD.
Max. power output 100W
Input level (compo line) 70mV/20kΩ
(speaker line) 5V/4.9kΩ

Controller section

f₀ settings 60Hz, 75Hz, 90Hz

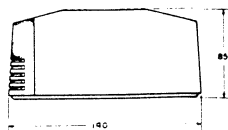
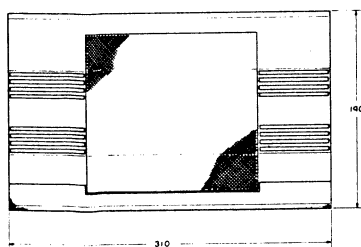
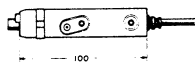
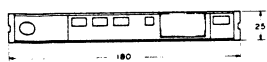
Characteristics

Playback frequency range 50~150Hz
Output sound pressure level 90 dB (at 75Hz, 10W)

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 design are subject to possible modification without notice due to improvements.



Unit : mm

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, California 90801 U.S.A.
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ENCUESTA

Modelo _____

Uno modelo por encuesta

Querido señor,

Muchas gracias por su cooperación en el servicio de post-venta de los productos de Pioneer. Esto es para mejorar el servicio de post-venta de nuestros productos. Les pedimos a ustedes responder a las preguntas siguientes. Su opinión e idea estarán tenido en cuenta en los productos futuros.

Nos complacemos en saludarles muy atentamente,

PIONEER ELECTRONIC CORPORATION

T. Nakagawa, Manager, Service Section, Administration Department, International Division

1. EVALUACION EN LA FACILIDAD DE SERVICIO

MODELO

Marque uno entre los numeros siguientes.

Bueno Medio Malo

a. Desmonte:

1 2 3 *4 *5

b. Examen de circuito:

1 2 3 *4 *5

c. Reemplazo de piezas:

1 2 3 *4 *5

d. Ajuste:

1 2 3 *4 *5

* Si marca (4) o (5), ejemplifiquelo concretamente.

QUESTIONNAIRE

MODEL

One Model per questionnaire

Dear Servicer,

Thank you for your cooperation in the post-sale service of Pioneer products.

This questionnaire is used as a tool to improve the serviceability of our products and service manuals. Please evaluate this model and service manual by answering the following questions. Your ideas may be realized in our future products. Your answers will be appreciated. Thank you.

PIONEER ELECTRONIC CORP.

T. Nakagawa, Manager, Service Section, International Division

1. SERVICING EVALUATION

Circle applicable number:

Good

Fair

Poor

a. Disassembly/Re-assembly:

1

2

3

*4

*5

b. Circuit Checks:

1

2

3

*4

*5

c. Replacement of Parts:

1

2

3

*4

*5

d. Adjustment (s):

1

2

3

*4

*5

* If (4) or (5) was circled, please be specific.

QUESTIONNAIRE

Modèle

Un modèle par questionnaire

Cher Monsieur,

Merci pour votre coopération à propos du service après-vente des produits PIONEER.

Ce questionnaire a pour but l'amélioration de notre service d'entretien et des manuels de nos produits. Nous vous prions d'évaluer dans ce questionnaire les éléments de nos manuels de service. Vos conseils seront précieux et pris en considération dans la réalisation de nos produits dans l'avenir. En vous remerciant d'avance, agréez, cher monsieur, l'expression de nos sentiments distingués.

PIONEER ELECTRONIC CORPORATION

T. Nakagawa, Manager, Service Section, Administration Department, International Division

1. ÉVALUATION EN FACILITÉ DE SERVICE

Cerclez le numéro.

MODÈLE

Bon,

Passable,

Mauvais,

a. Démontage/remontage

1

2

3

*4

*5

b. Examen de circuits

1

2

3

*4

*5

c. Rechange de pièces

1

2

3

*4

*5

d. Facilité de réglage

1

2

3

*4

*5

* Si vous cerclez No. 4 ou 5, donnez l'explication concrète.

e. Votre conseil ou avis sur le service	
2. VOTRE APPRÉCIATION DU MANUEL DE SERVICE	
a. Circuit et description du mécanisme.	
b. Diagramme du circuit.	
3. AUTRES	
Anotez les autres points difficiles à réparer.	
Répondu par :	Date :
Nom :	Âge :
Compagnie :	
Adresse :	

Adressez-vous ce questionnaire au distributeur, S.V.P.

e. Your advice, opinion or ideas related to servicing this product.	
2. SERVICE MANUAL EVALUATION	
a. Circuit & Mechanism Description	
b. Circuit Diagram	
3. OTHER	
Please describe other areas of servicing which you may find difficult.	
Completed by :	Date :
Company Name :	
Address :	
City/State/Zip :	

Please send this form filled to the distributor in your country.

e. Su consejo, opinión u idea en el servicio de este modelo.

2. EVALUACION DEL MANUAL DE SERVICIO

a. Circuito & Descripción de mecanismos.

b. Diagrama del circuito.

3. OTRAS

Describe otras partes difíciles de reparar.

Respondido por :

Nombre :

Compañía :

Dirección :

Fecha :

Edad :

Manda esta encuesta al domicilio del distribuidor, por favor.

1. PARTS LOCATION

NOTE:

- For your Parts Stock Control, the fast moving items are indicated with the marks ★ ★ and ★.
- ★ ★ : GENERALLY MOVES FASTER THAN ★.
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

The photo shows the model GTS-X80/ES.

• Controller Section

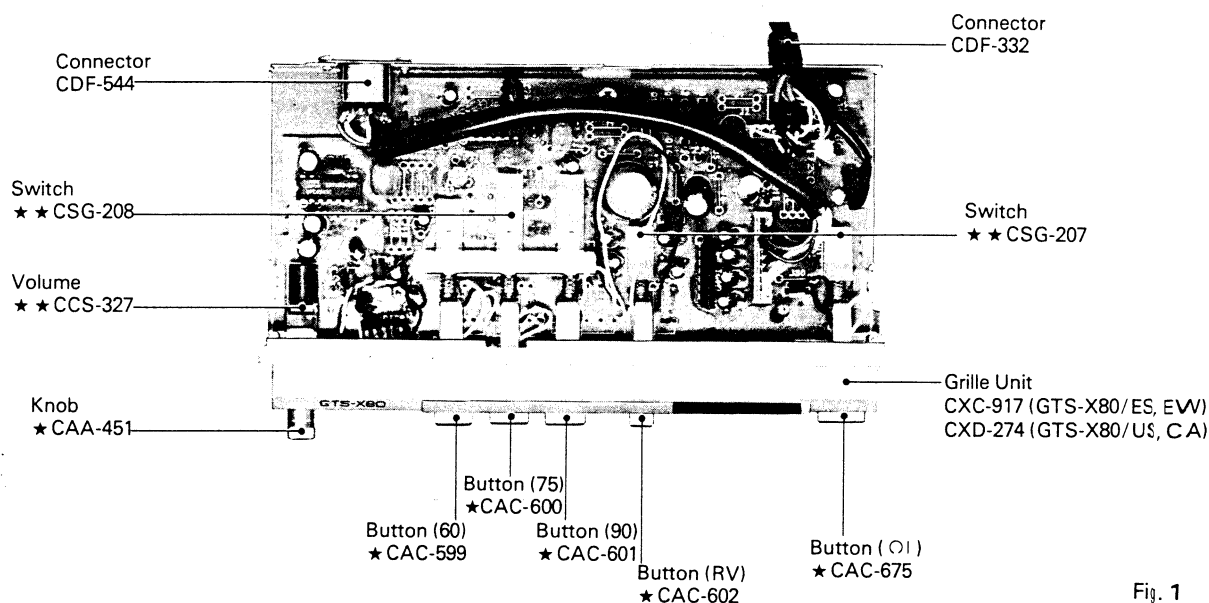


Fig. 1

• Amp Section

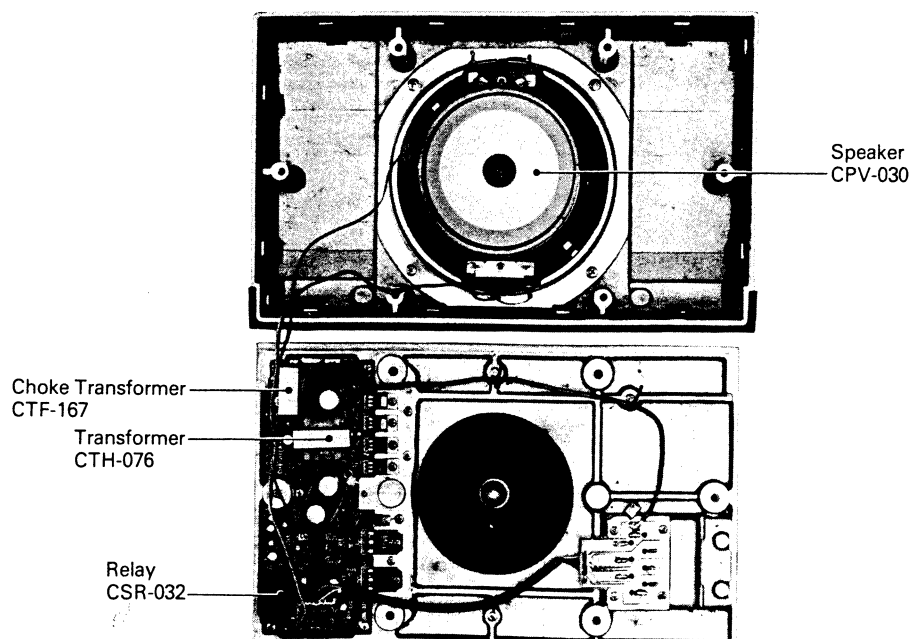


Fig2

2. NOMENCLATURE AND USE (CONTROLLER SECTION)

① Gain Control

Adjust the gain control for low volume tape recordings and according to the station signal strength. Press this button and it will come up (▲) for adjusting the gain. Turn the button to the right or left to make gain adjustments, then press the button again (▼).

② Frequency Selection Button

Frequency fo can be set at 60Hz, 75Hz, or 90Hz depending on the music. When bass is needed make the setting at 60Hz, for good cutoff to hear bass, set the button to 90Hz.

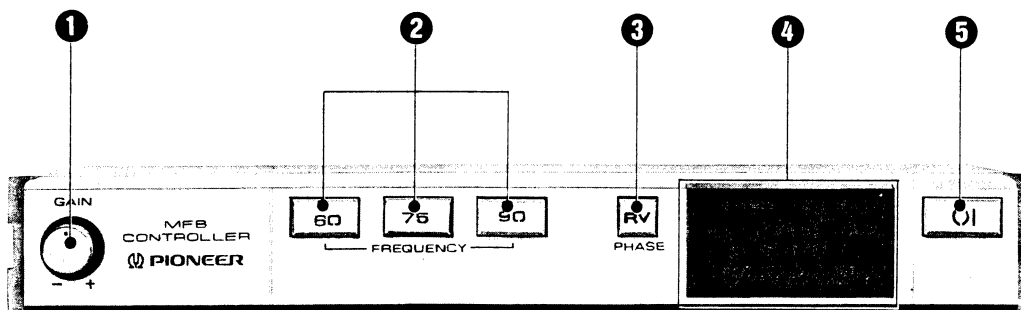
③ Phase Shift Button

Press phase shift button to reverse the woofer phase. Playback for a 3D (three-dimensional) woofer below 150Hz. Directional characteristics and stereo sensation cannot be sensed in this range but there are many reflections inside the small passenger compartment of a vehicle. Sound image and orientation are fixed by acoustic characteristics and woofer location so the woofer phase can be switched for the preferred effect.

④ Display

⑤ Power Switch

Press the switch and the display will come on to indicate power on.

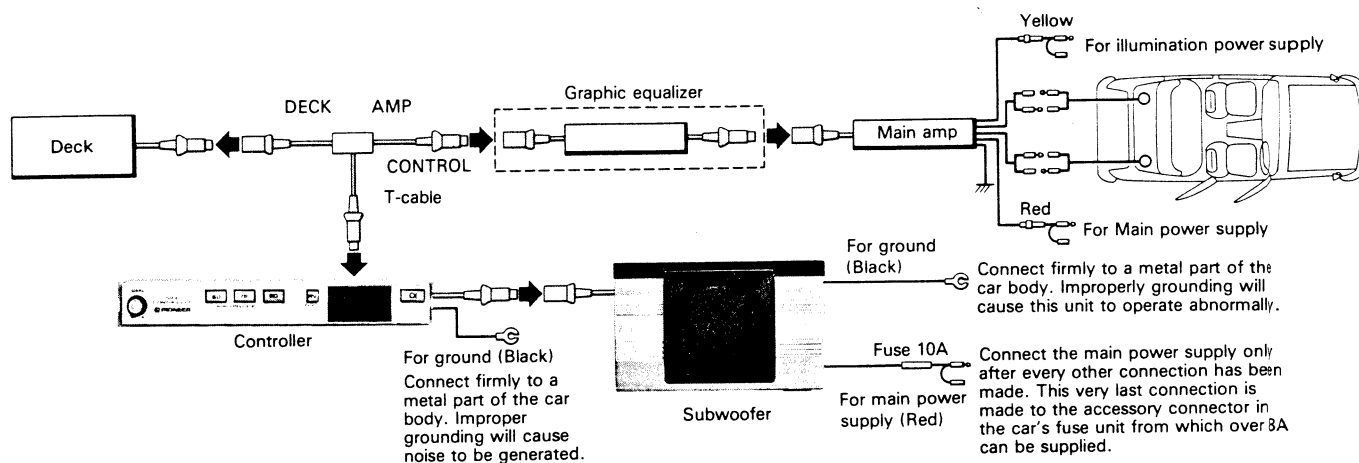


The photo shows the model GTS-X80/ES.

3. CONNECTING THE UNITS

Connecting to a Component Car Stereo

- Before making final connections, make temporary connections then operate the unit to check for any connecting cord problems.
- When connecting the cords, be sure to fix them firmly with clamps or tape. Be sure to protect the cords from damage by taping them at places where they will contact barriers.
- Keep the cord away from high temperature places such as the heater outlet.
- Connect the controller accessory ground lead to a suitable place on the car body. Improperly grounding will cause noise to be generated.



Connecting to a Regular Car Stereo

- An example of connecting a Pioneer regular car stereo is shown in the figure.
- If the car stereo and speaker connectors do not match the intermediate cords, cut the cord and match the polarity then tape with insulating tape.

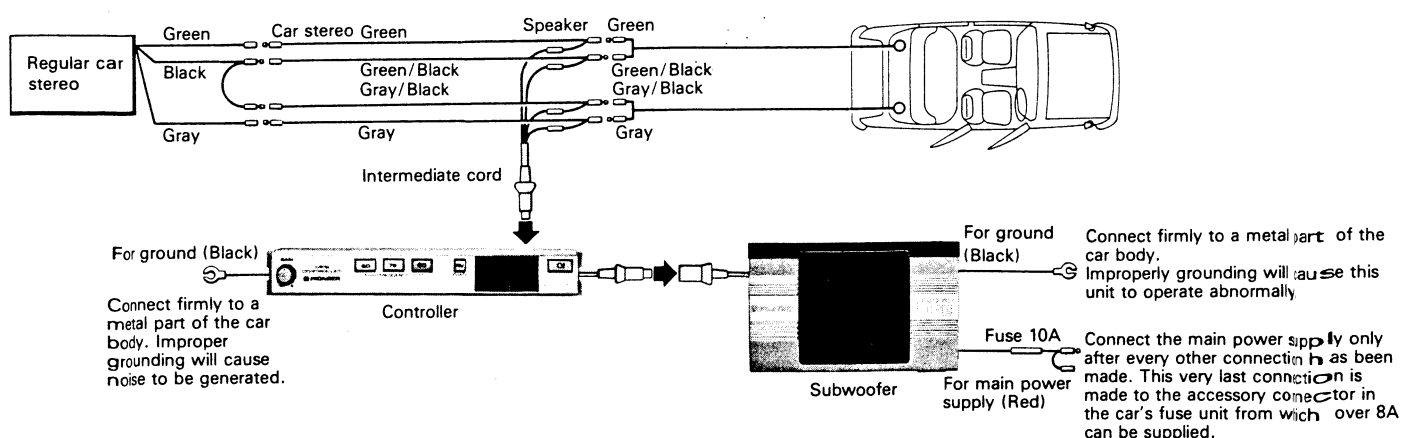


Fig.1

4. CIRCUIT DESCRIPTION

• Circuit Block Diagram

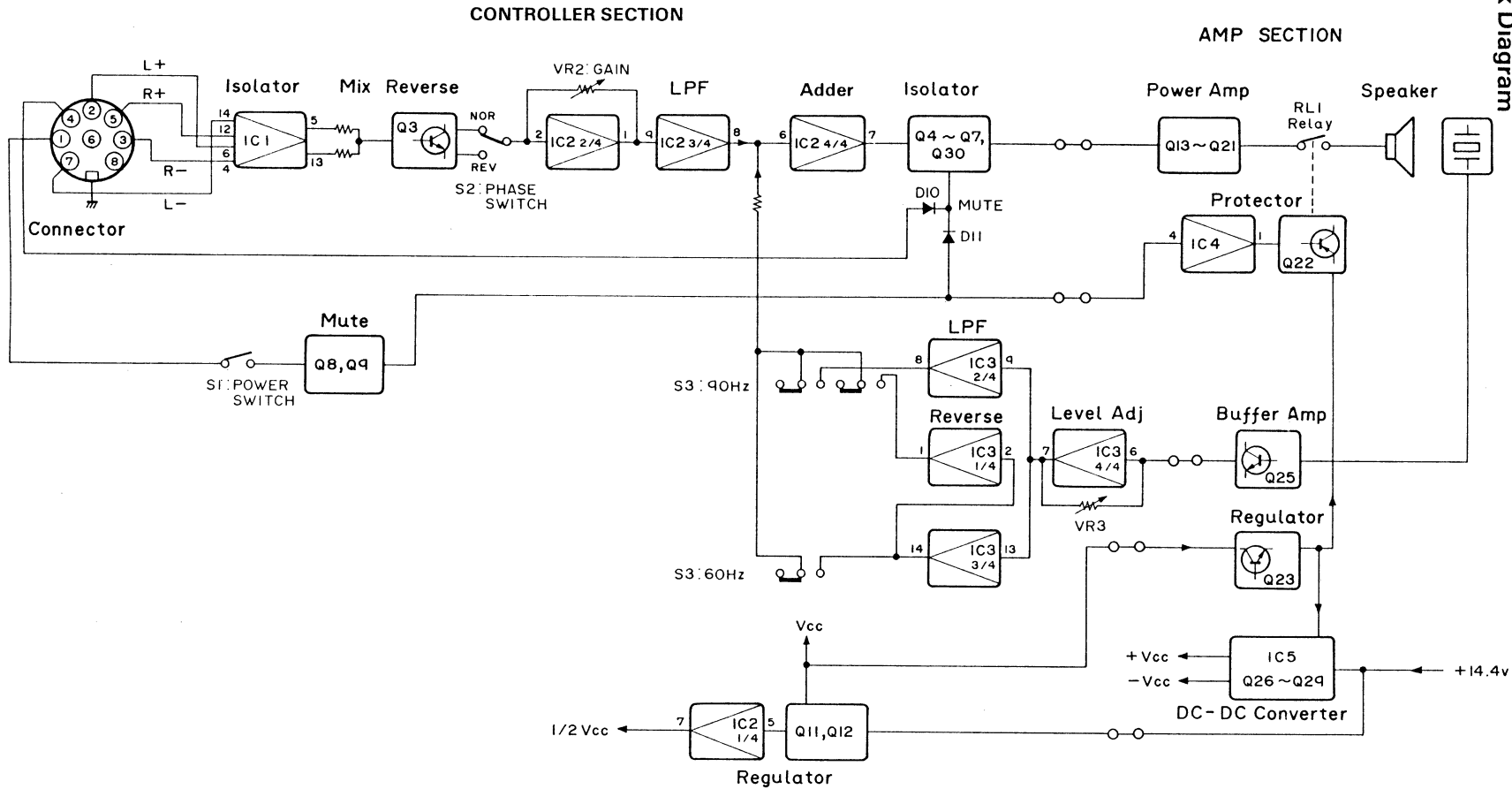


Fig. 5

• Outline

Audio signals are input to the isolator IC (IC1) as well as serving as the input isolator, IC1 features a differential configuration which makes it possible to accept both balanced as well as unbalanced input signals. The mix portion mixes the signals from channel L and channel R. The phase inverter allows the output to be switched from inverting to non-inverting. After the signals pass through the volume gain, the LPF extracts only the required low frequency components. Next, comes the adder which adds on the MFB signals, and

the attenuator (ATT) is placed by the adder for the control of the output level depending on the position of the frequency switch (S3). Next, the output isolator sends the composite signals to the amplifier section. The amplified signal is then used to drive a 16 cm flat diaphragm speaker. The piezo-electric element placed behind the speaker detects the vibration of the speaker. Its output is then sent to the MFB circuit by way of the buffer amplifier and processed there. It is then input to the adder forming the MFB loop.

• MFB Circuit

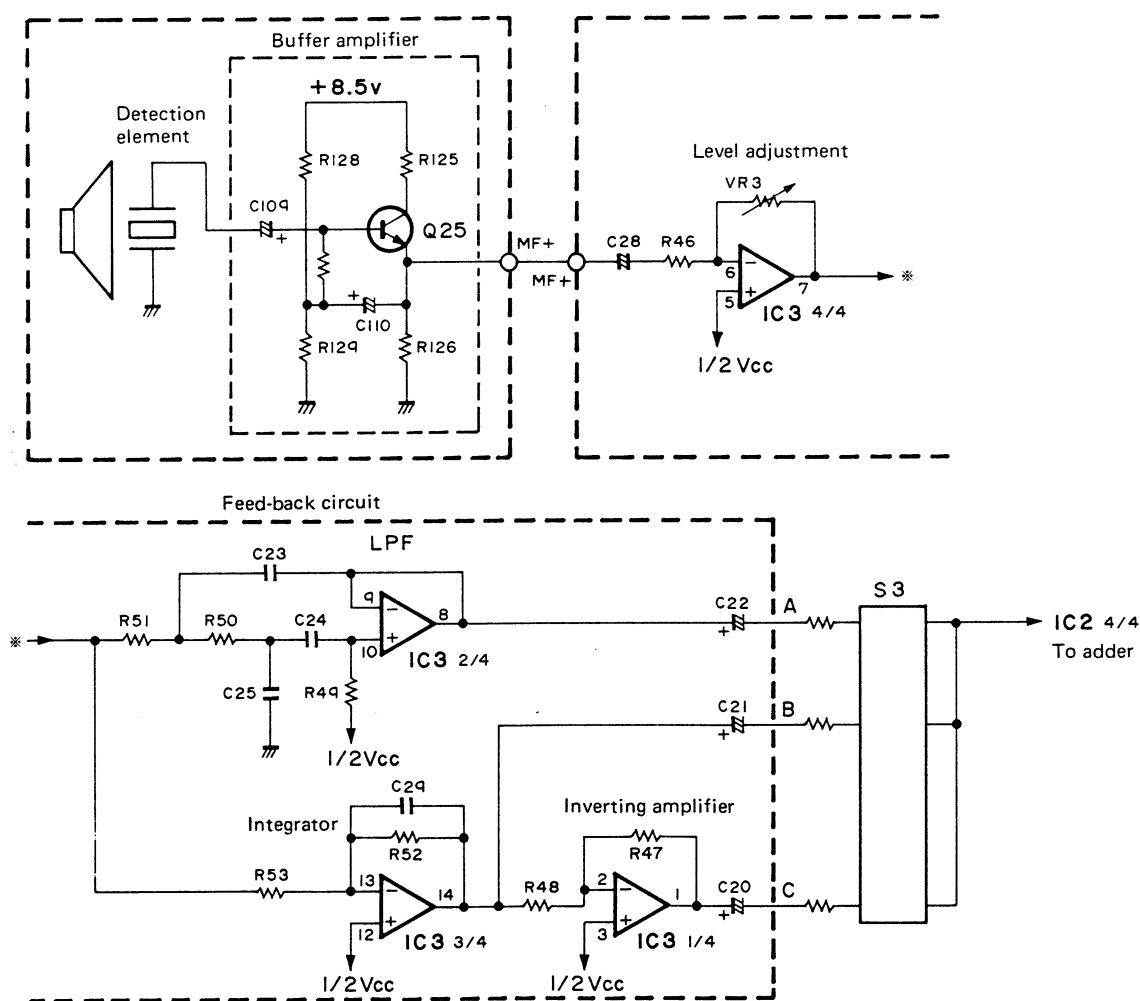


Fig. 6

The MFB circuit is made up of a detection element, a buffer amplifier, a level controller, a feed-back circuit and switches. The piezo-electric detection element (unimorf) detects the vibrations of the flat diaphragm speaker and converts the vibrations into electric voltages. Since the impedance of the piezo-electric element is very high, the output signal is first routed to a buffer amplifier and then to a level controller which evens out any discrepancies between the characteristics of the speaker and the piezo-electric element. The feed-back circuit is made up of a lowpass filter (LPF), an integrator and an inverting amplifier. The LPF outputs signals in

proportion to the velocity component of the speaker vibration. The integrator outputs signals in proportion to the acceleration components of the speaker vibrations. The integrator and the inverting amplifier together combined outputs a signal in proportion to the amplitude components of the speaker vibrations. Using the resistors A, B and C and the switch (S3) for 60 Hz, the acceleration component is added to the input signal with the adder and for 90 Hz a combination of the amplitude and the velocity component is added. The MFB is inoperative for 75 Hz.

• DC-DC Converter Circuit

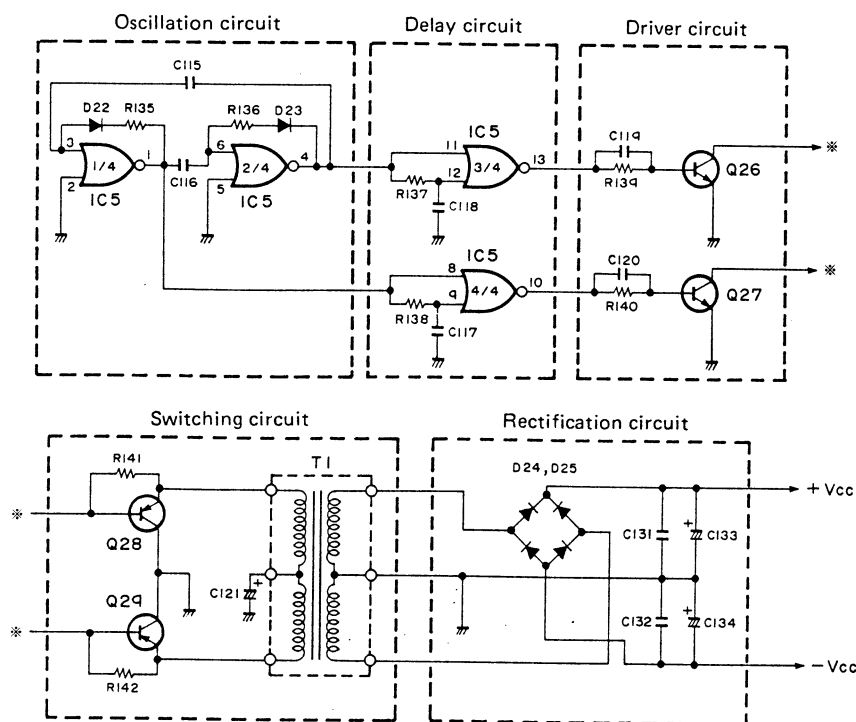


Fig. 7

To achieve a high power output, a high efficiency DC-DC converter has been used. This steps up 14.4V DC to $\pm 28.8V$ (no load). A pure separate excitor system has been employed to improve the transient characteristics and the switching waveform of the power supply. This employs an ultra-sonic oscillation frequency (about 30 kHz). The power supply for the power stage is supplied by a bridge rectifier formed by high frequency rectification silicon diodes and two 3,300 μF

large capacity electrolytic capacitors. The DC-DC converter circuit is made up of an oscillation circuit, a delay circuit, a driver circuit, a switching circuit and a rectification circuit. A TTL IC has been employed for the oscillation circuit and the delay circuit. The delay circuit uses an interval of several μ -seconds so that the driver transistors and the switching transistors will not go on at the same time.

• Muting Circuit

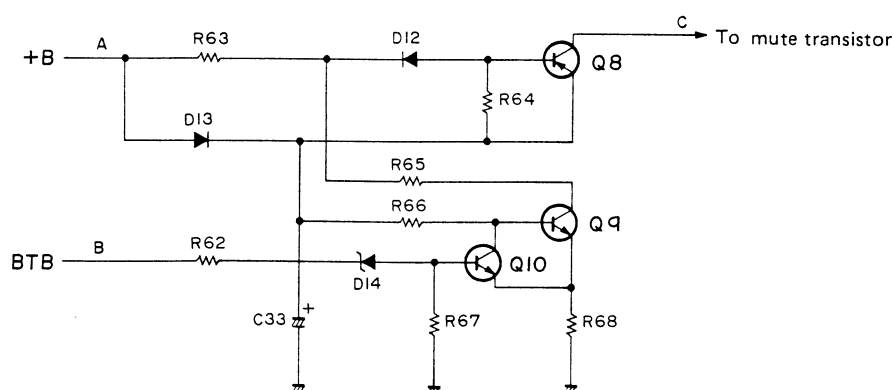


Fig. 8

A is hooked up to the power supply from the amplifier and operates in combination with the accessories switch of the vehicle. B is hooked up to the BTB line of the tuner and the tape deck through the power switch (S1). C is hooked up to the mute transistor which will activate the mute if C registers a voltage in excess of 1.4V, when A is supplied with power, Q9 turns on and Q8 also turns on, which gives a mute output. The tape deck and the tuner are also turned on. And when the

BTB line voltage exceeds 7.4V, Q10 will go on and Q9 and Q8 will go off which will deactivate the mute function. When the tape deck and the tuner are turned off, S1 is turned off or the BTB line voltage drops below 7.4V, Q10 goes off and Q9 and Q8 go on, which reactivates the mute function. In addition when power is no longer being supplied to A, Q8 goes on, giving a mute output from C33, which activates the mute function.

• Protector Circuit and Stabilized Power Supply

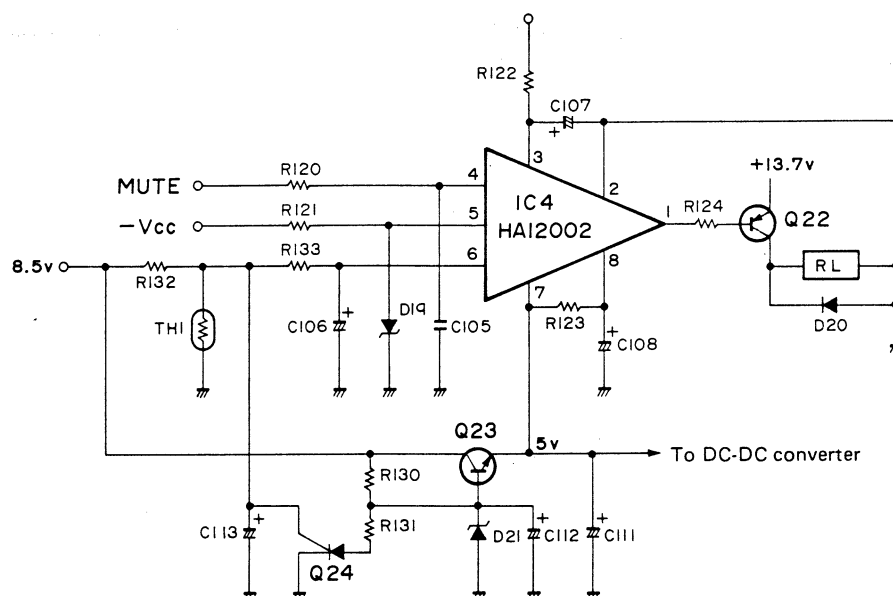


Fig. 9

IC 4 (HA12002) protects the speakers by turning the relay off whenever abnormal voltages are detected. The relay is turned off when abnormalities of $-V_{cc}$ (pin 5), the neutral voltage (pin 3) and the internal temperature (pin 6) are detected. Additionally, when the power is turned on, the relay goes on after a set period of time (approx. 2 seconds) which is set by the equalizer constant determined by C108 and R123. When the power is turned off, a signal output from the mute circuit is sent to the protector circuit (pin 4), preventing popping noises caused by the sudden turning off of the relay.

When an 8.5V signal is supplied from the control section to the stabilized power supply circuit, Q23 goes on, which activates the +5V power supply, turning on the DC-DC converter. When abnormalities in the internal temperature are detected the aforementioned relay turns off, and Q24 (thyristor) goes on, and also Q23 goes off stopping the +5V power supply which deactivates the DC-DC converter. Even if the temperature reverts to normal, Q24 will not be reset unless the power switch is turned off or the power cord is removed.

• Level Diagram

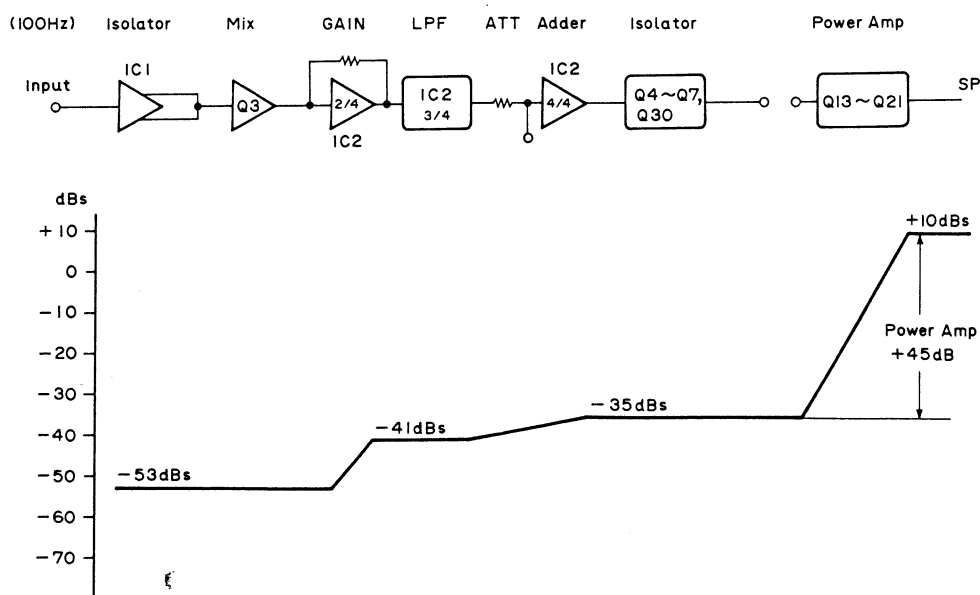


Fig. 10

5. ADJUSTMENT

5.1 MFB LEVEL ADJUSTMENT

• Connection Diagram

Switch position

GAIN volume To the + side as far as it will go

PHASE switch OFF

FREQUENCY switch 75 Hz

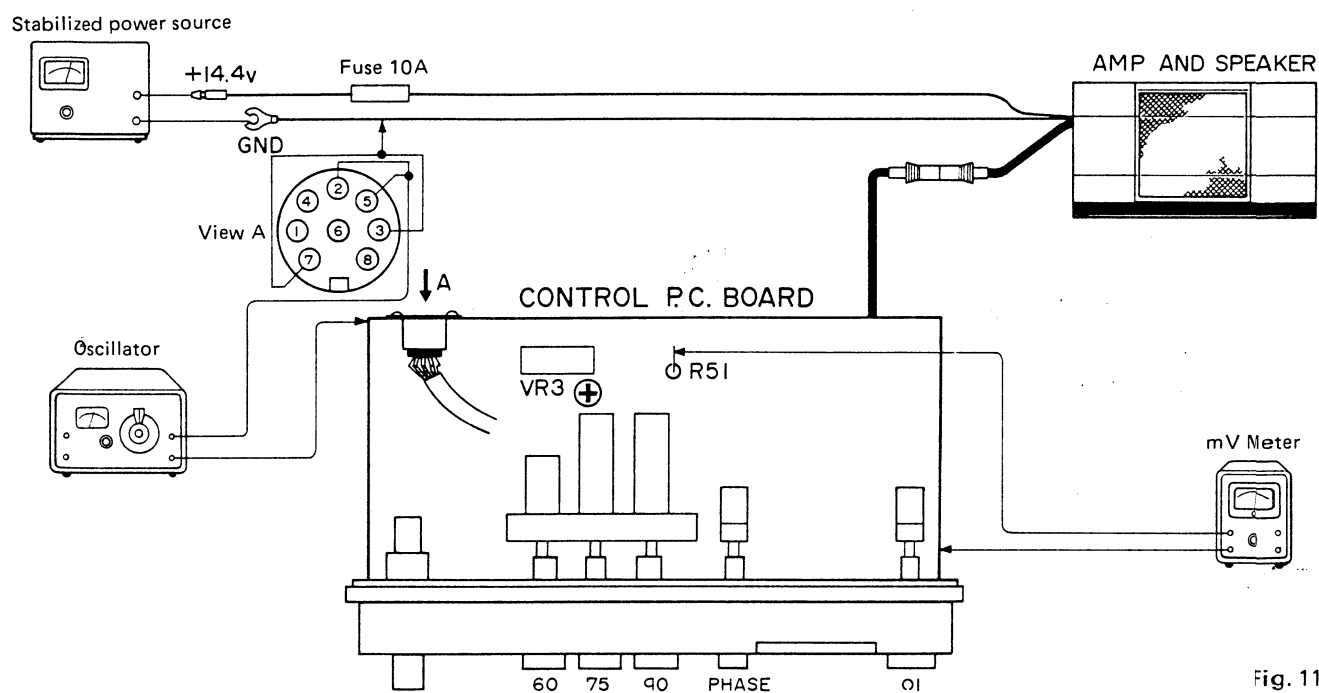


Fig. 11

• To Adjust

1. Supply a 75 Hz, -53 dBs signal input from the oscillator.
2. Adjust VR3 so that the mV meter registers -10 dBs (245 mV).
3. Push the 60 Hz and 90 Hz buttons checking to see that the level does change.

5.2 IDLE ADJUSTMENT

• Connection Diagram

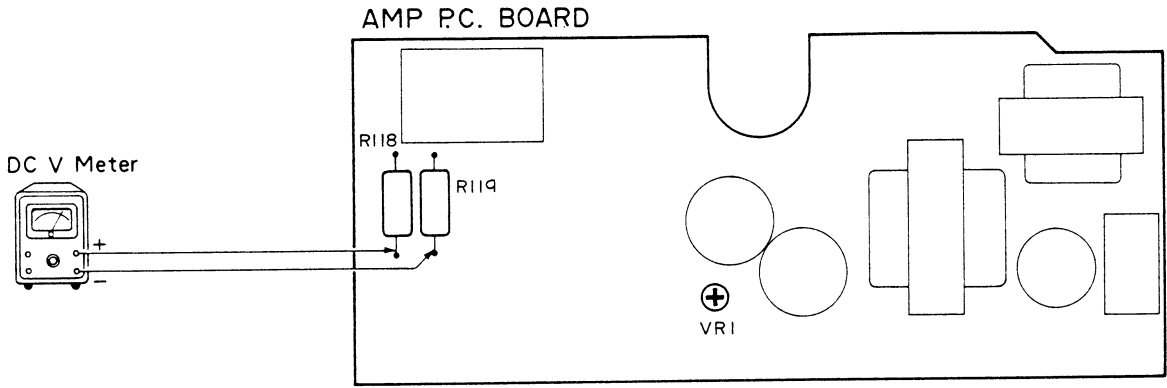
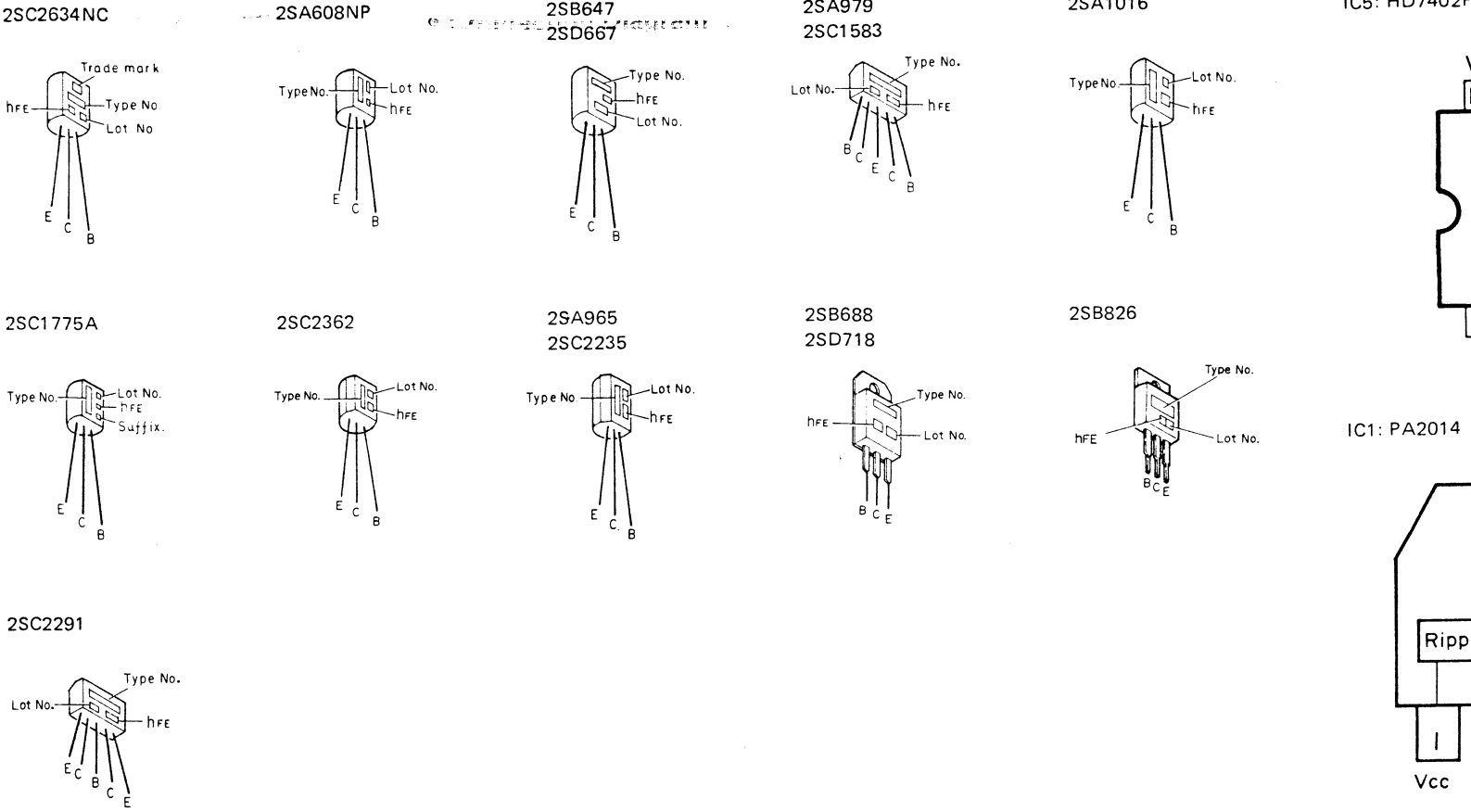


Fig. 12

• To Adjust

1. Set VR1 to its mechanical center point.
2. Without any signal input or output whatsoever, turn the power supply on and allow it to idle for 5 minutes.
3. Adjust VR1 so that the DC voltmeter registers 4.4 ± 2.2 mV.

• ICs and Transistors



• Amp P.C. Board

IC4: HA12002

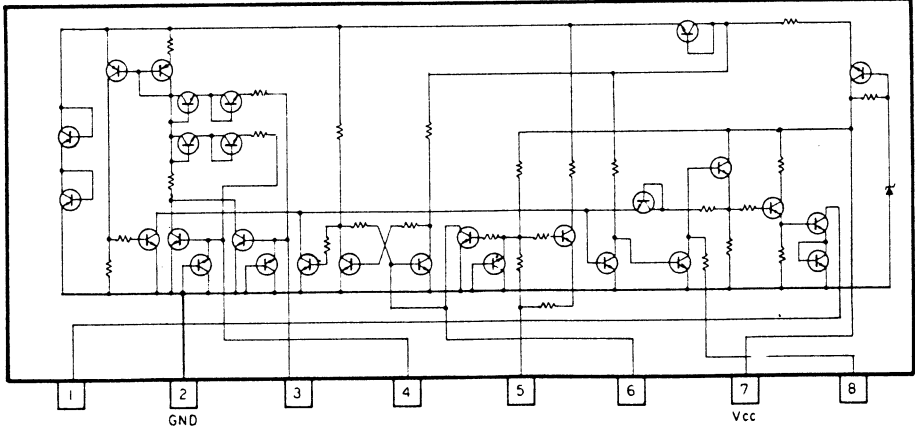
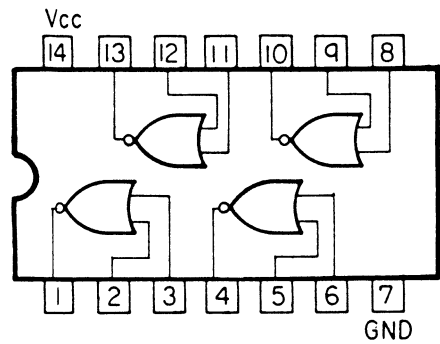


Table PA201

Termin
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

• Control P.C. Board

IC5: HD7402P



IC1: PA2014

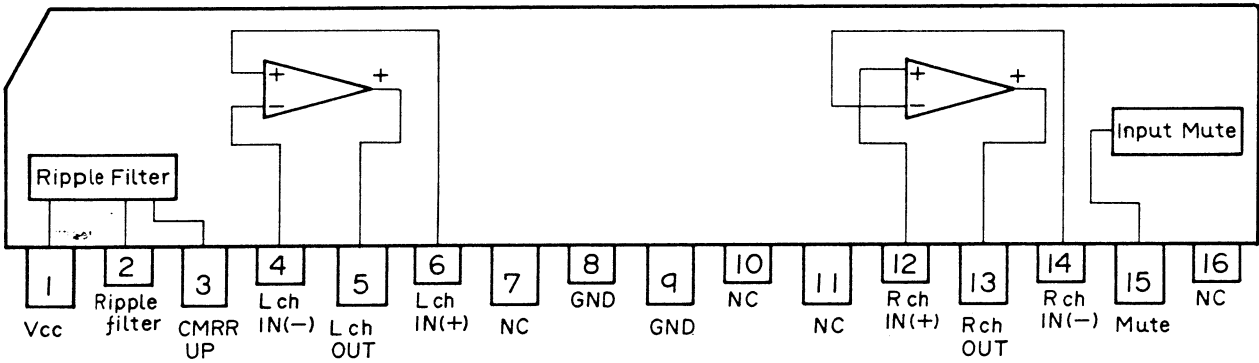
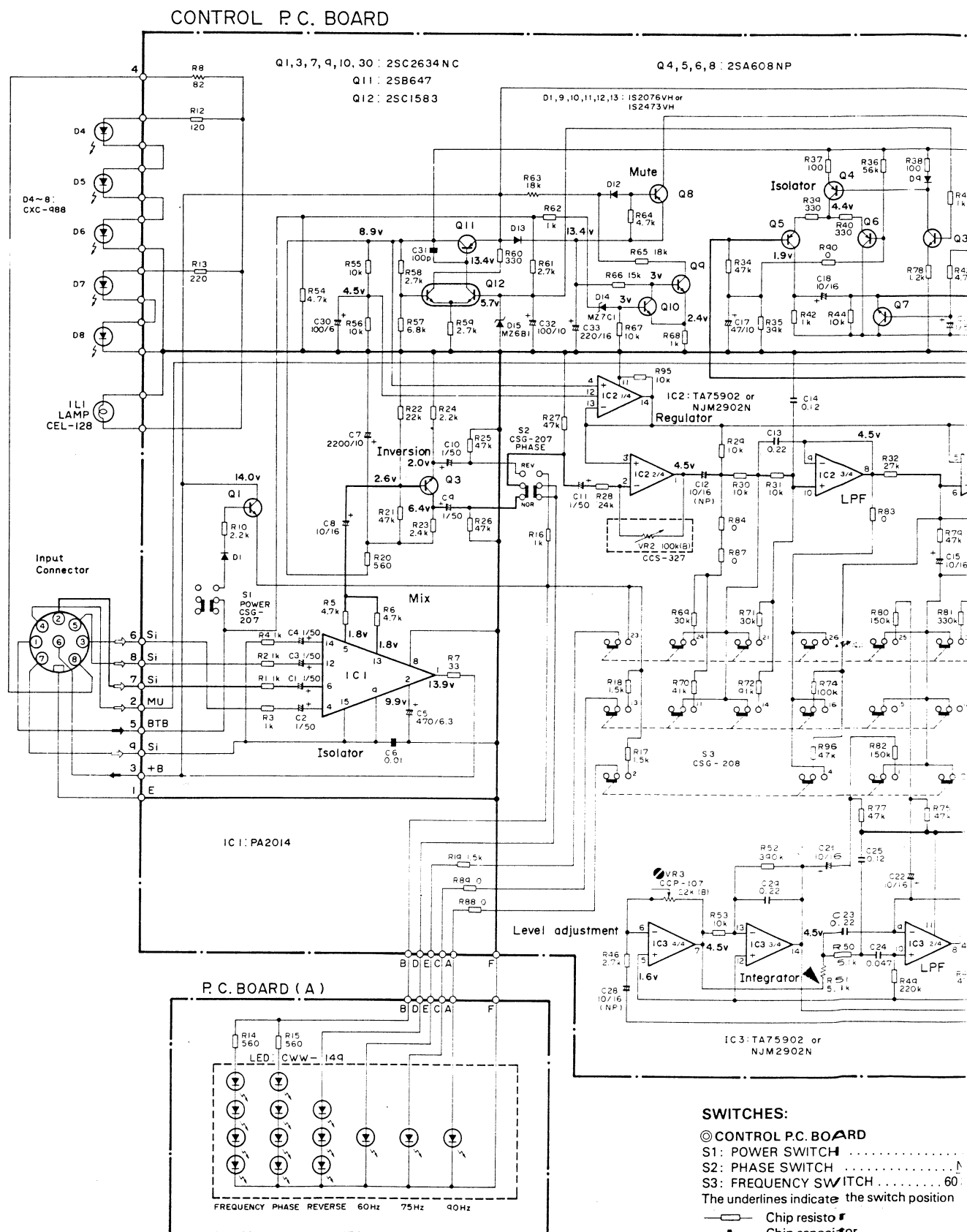
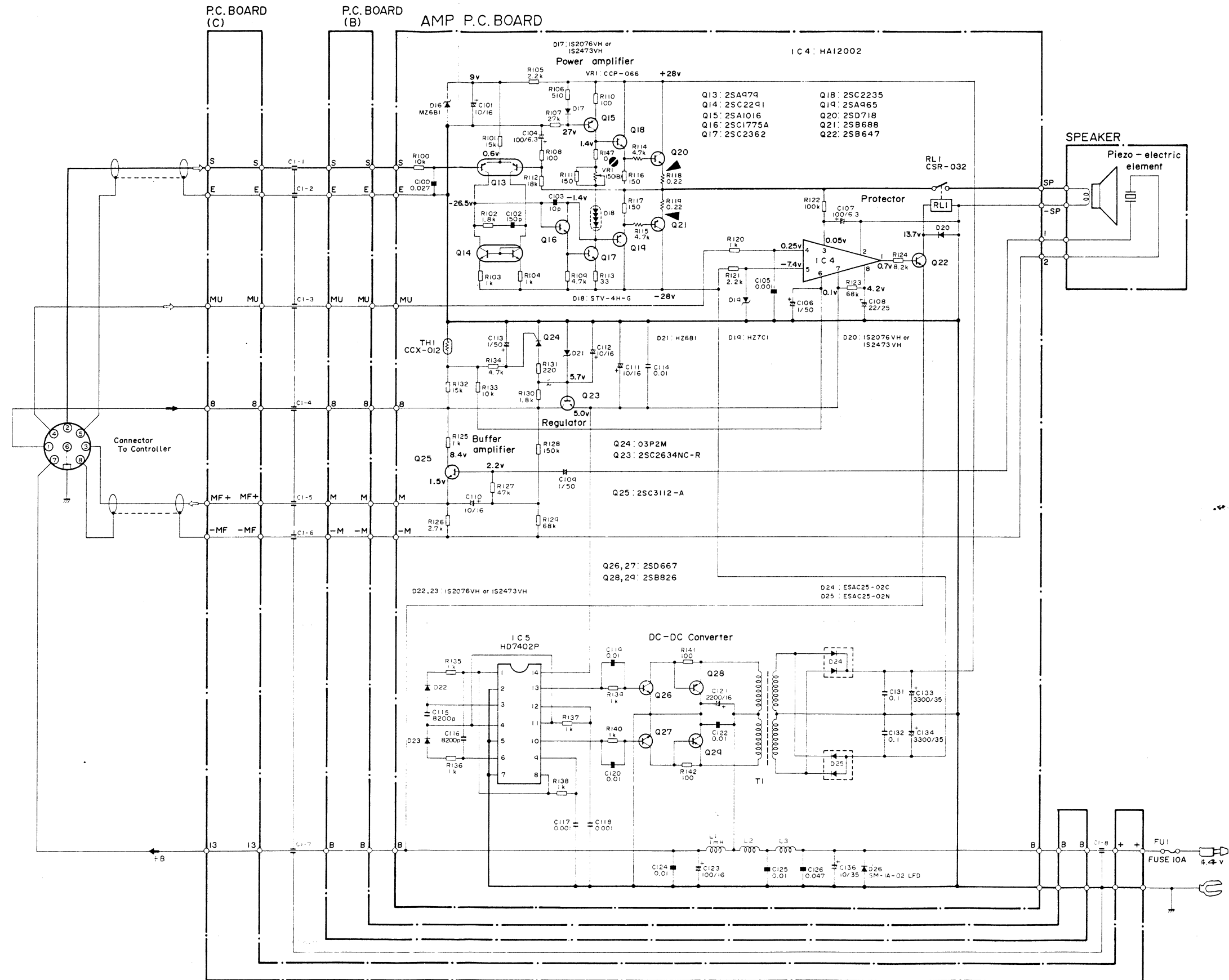
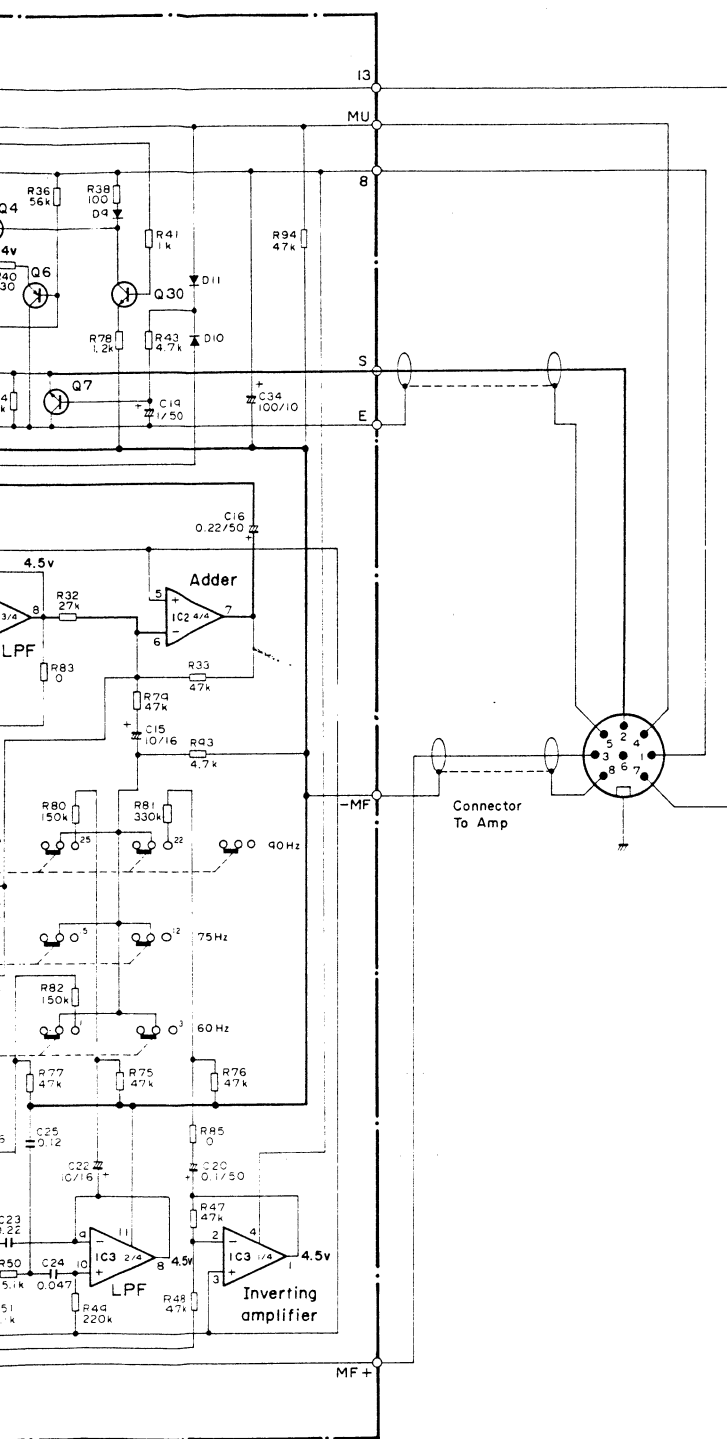


Table PA2014

Terminal	Standard voltage (V)	Function and Operation
1	12.9	Vcc
2	9.9	Ripple filter
3	8.2	Constant current base
4	3.7	Left ch. differential (-) input
5	1.8	Left ch. output
6	3.7	Left ch. differential (+) input
7		N.C
8	0	Output GND
9	0	Input signal GND
10		N.C
11		N.C
12	3.7	Right ch. differential (+) input
13	1.8	Right ch. output
14	3.7	Right ch. differential (-) input
15	0	Input mute (active H) threshold voltage 2.2V
16		N.C

6. SCHEMATIC CIRCUIT DIAGRAM





ON-OFF
 NORMAL-REVERSE
 60 Hz-75 Hz-90 Hz-OFF
 the switch position
 or
 ator

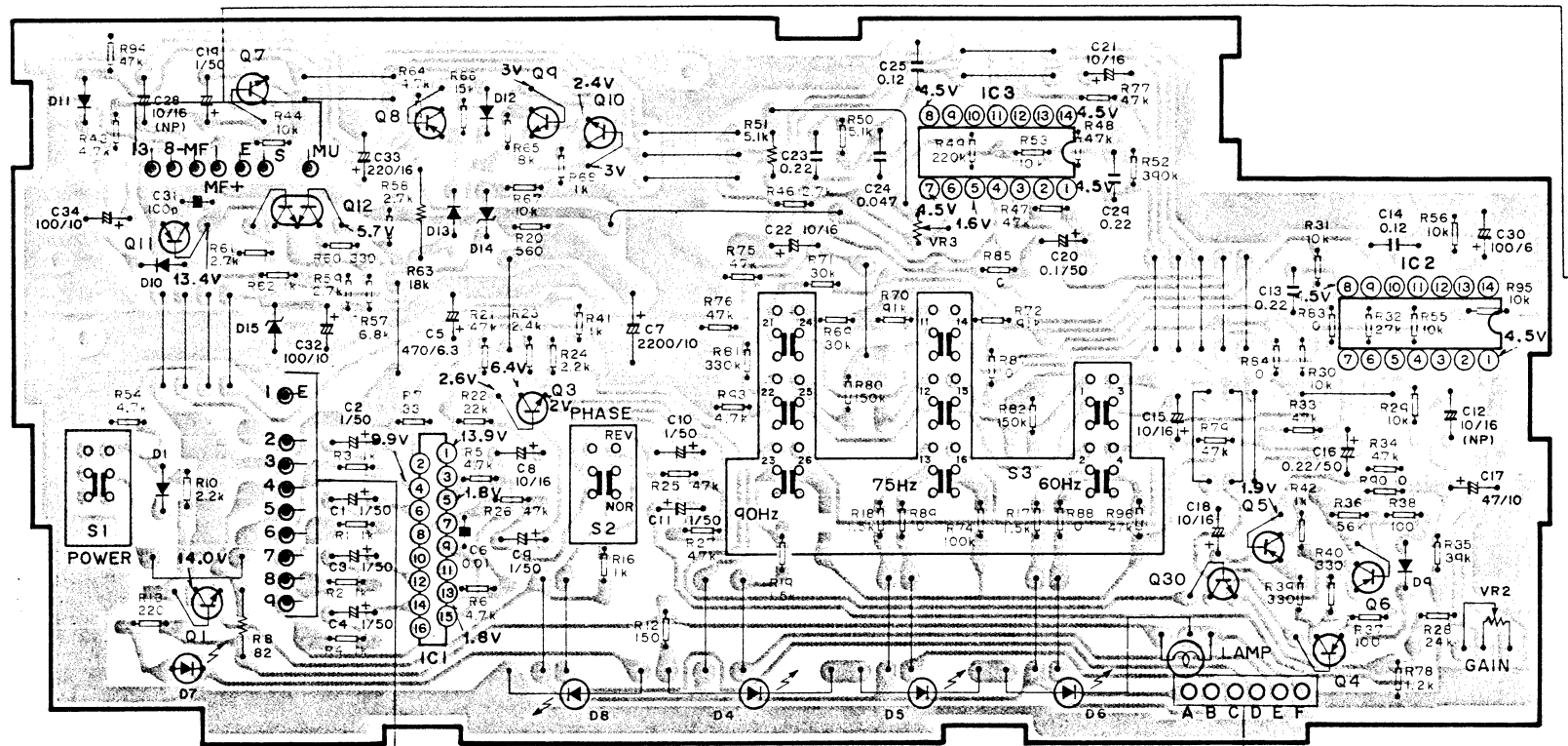
Fig. 13

7. CONNECTION DIAGRAM

IC,Q Q11 Q1 Q7 Q12 Q8 Q9
Adj IC1 Q3 Q10 IC3 Q30 Q5 Q4 Q6 IC2

IC,Q Q29 Q28 Q27 Q26 IC5 Q2
Adj

CONTROL P.C. BOARD



IC1: PA2014

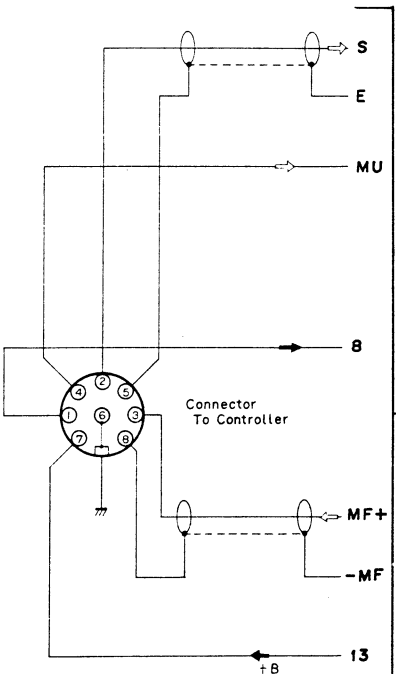
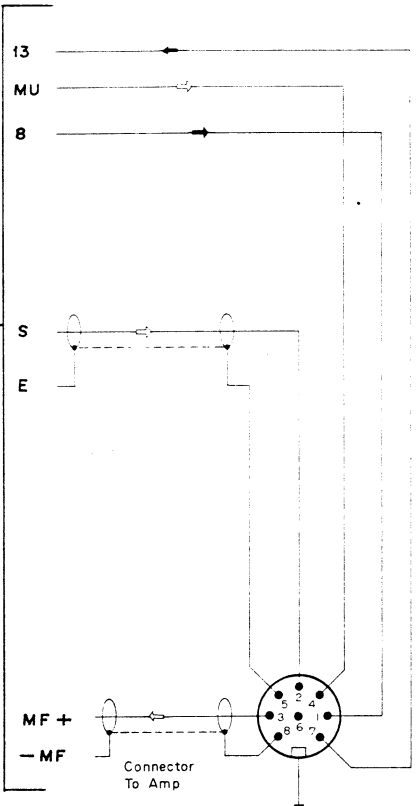
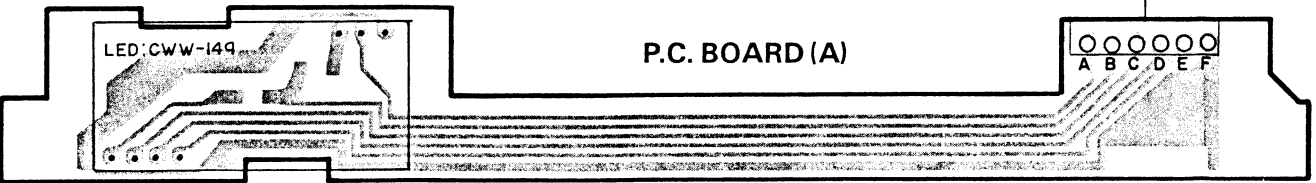
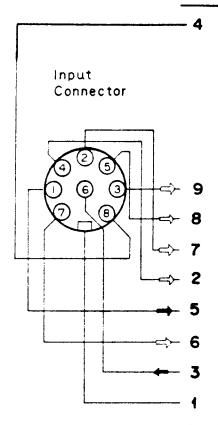
D1,9,10,11,12,13: IS2076VH or
IS2473VH
D4,5,6,7,8: CXC-488

IC2,3: TA75902 or
NJM2902N

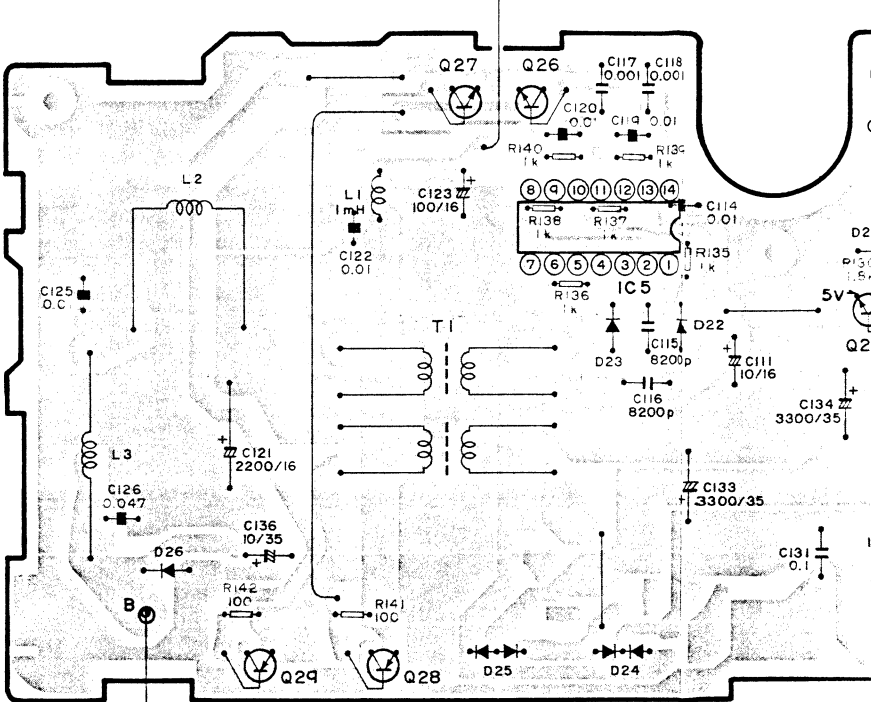
D14: MZ7C1
D15: MZ6B1

Q1,3,7,9,10,30: 2SC2634NC
Q11: 2SB647

Q4,5,6,8: 2SA608NP
Q12: 2SC1583



AMP P.C. BOARD



IC4: HA12002

D16: MZ6B1

D19: HZ7C1

D17,20,22,23: IS2076VH or
IS2473VH
D25: ESAC25-02N

IC5: HD7402P

D18: STV-4H-G

D21: HZ6B1

D24: ESAC25-02C
D26: SM-1A-02LFD

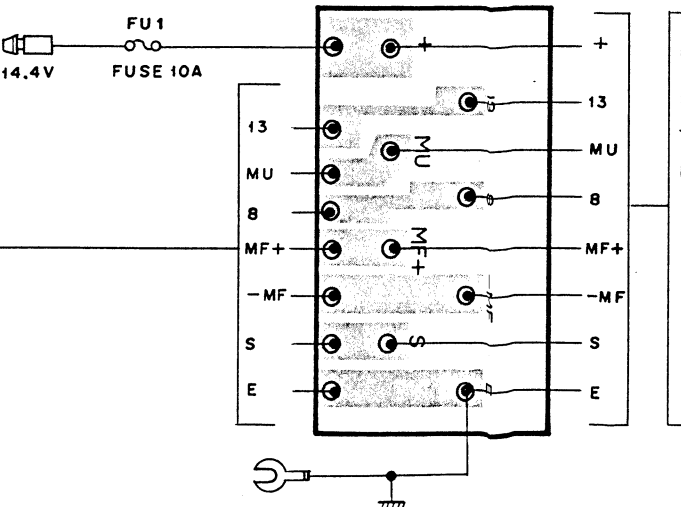
Q13: 2SA979

Q16: 2SC1775A

Q19: 2SA965

Q22: 2SB647
Q25: 2SC3112-A

P.C. BOARD (C)



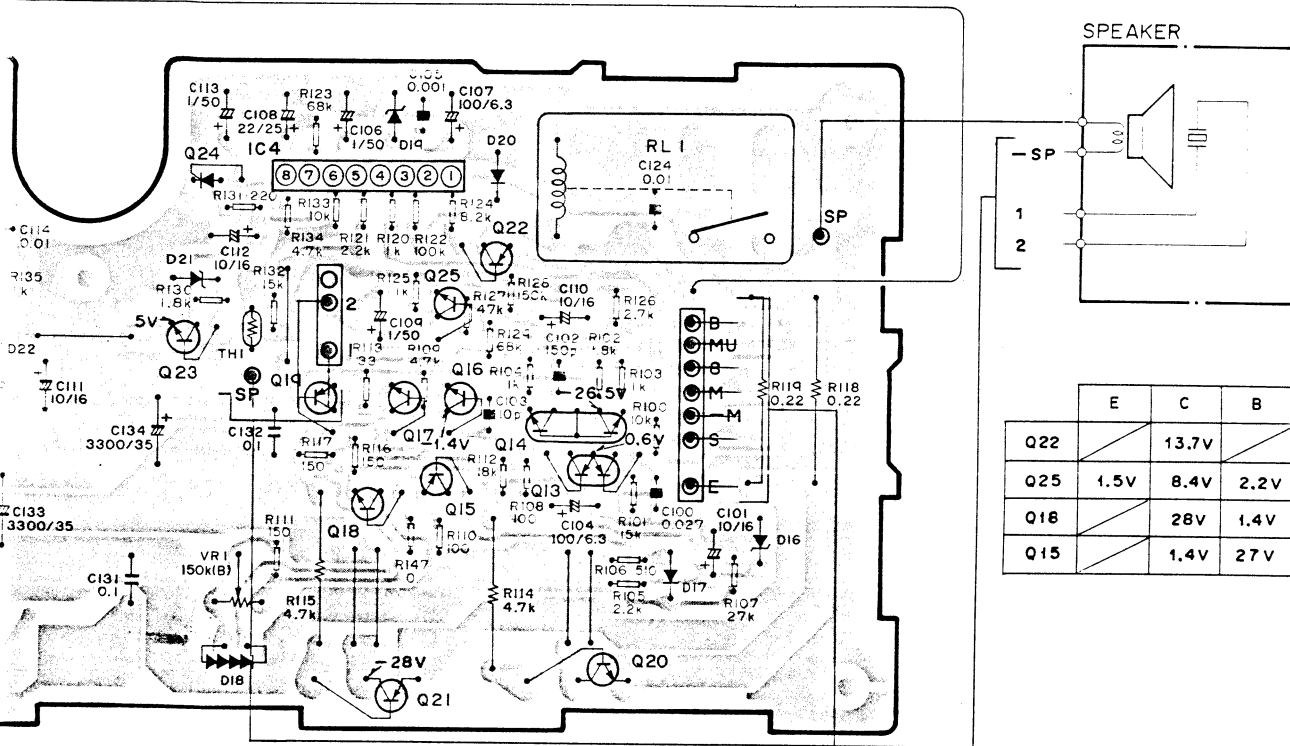
IC4 Q25 Q14
Q18 Q17 Q16 Q13
Q23 Q24 Q19 Q21 Q15 Q22 Q20

VR1

IC4

1	3	4	5	6	8
0.7V	0.05V	0.25V	-7.4V	0.1V	4.2V

A

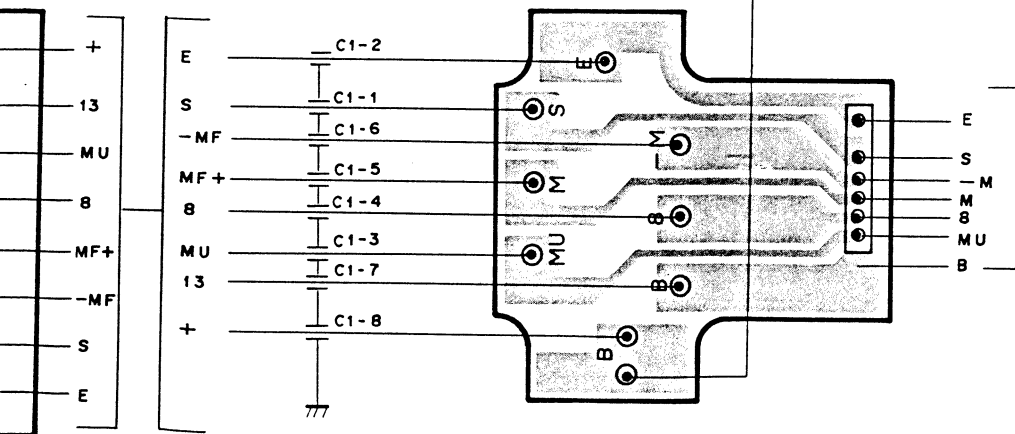


B

3: 2SA979 Q14: 2SC2291 Q15: 2SA1016
6: 2SC1775A Q17: 2SC2362 Q18: 2SC2235
4: 2SA965 Q20: 2SD718 Q21: 2SB688
2: 2SB647 Q24: 03P2M Q23: 2SC2634NC
5: 2SC3112-A Q26,27: 2SD667 Q28,29: 2SB826

C

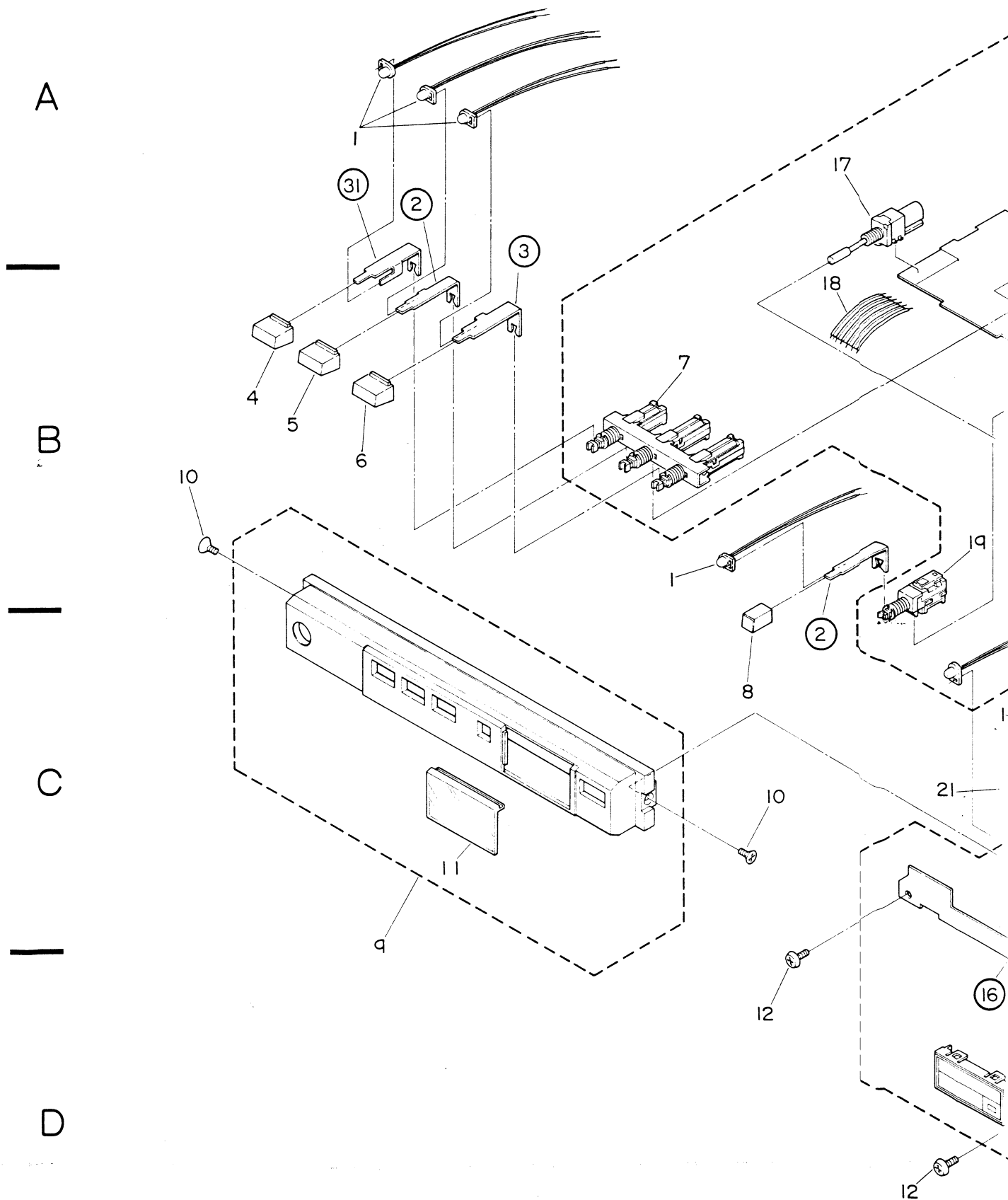
P.C. BOARD (B)



D

Fig. 14

8. CONTROLLER SECTION EXPLODED VIEW



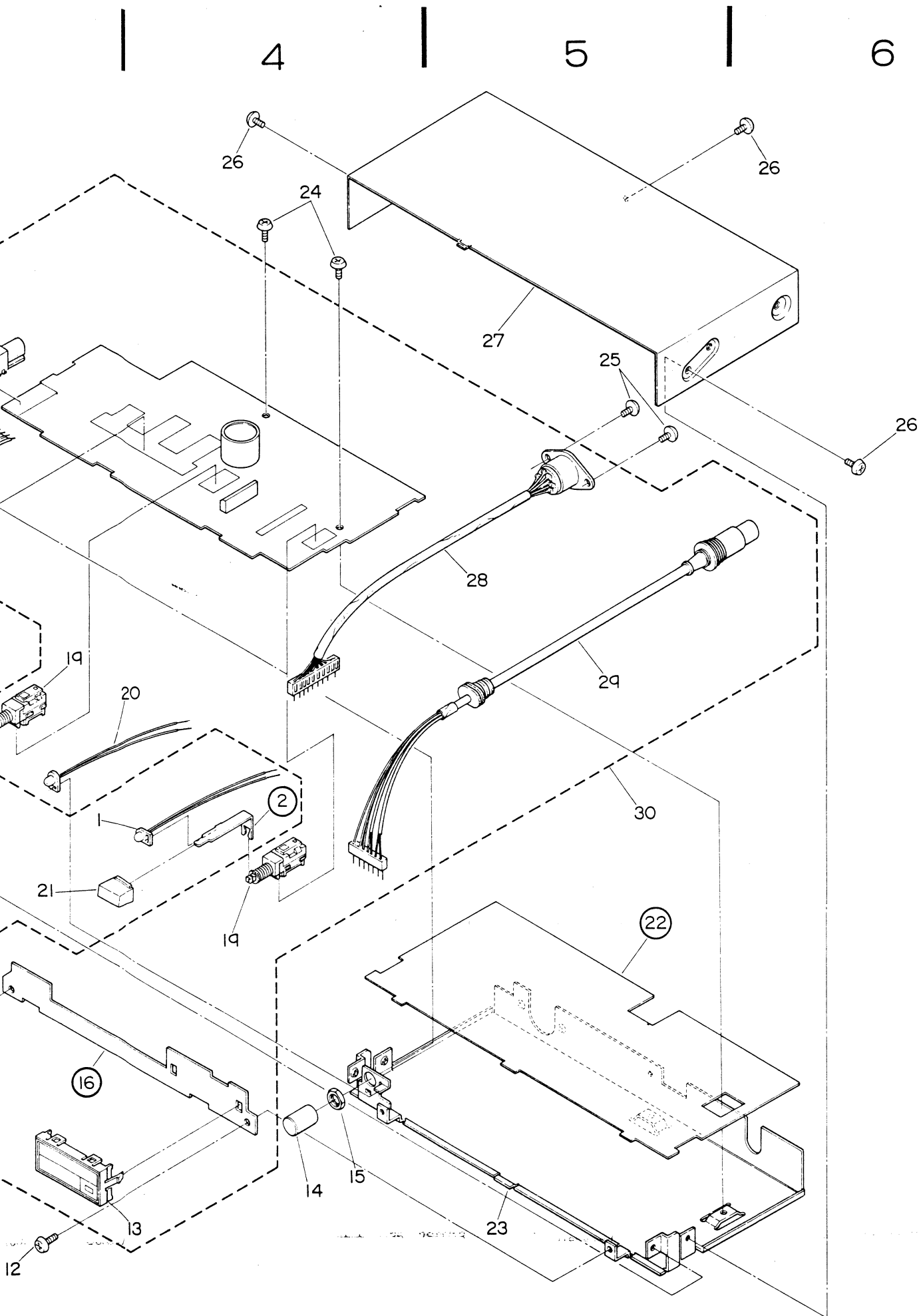


Fig. 15

• Parts List

NOTE:

- For your Parts Stock Control, the fast moving items are indicated with the marks ★ ★ and ★.
- ★ ★: GENERALLY MOVES FASTER THAN ★.
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts whose parts numbers are omitted are subject to being not supplied.

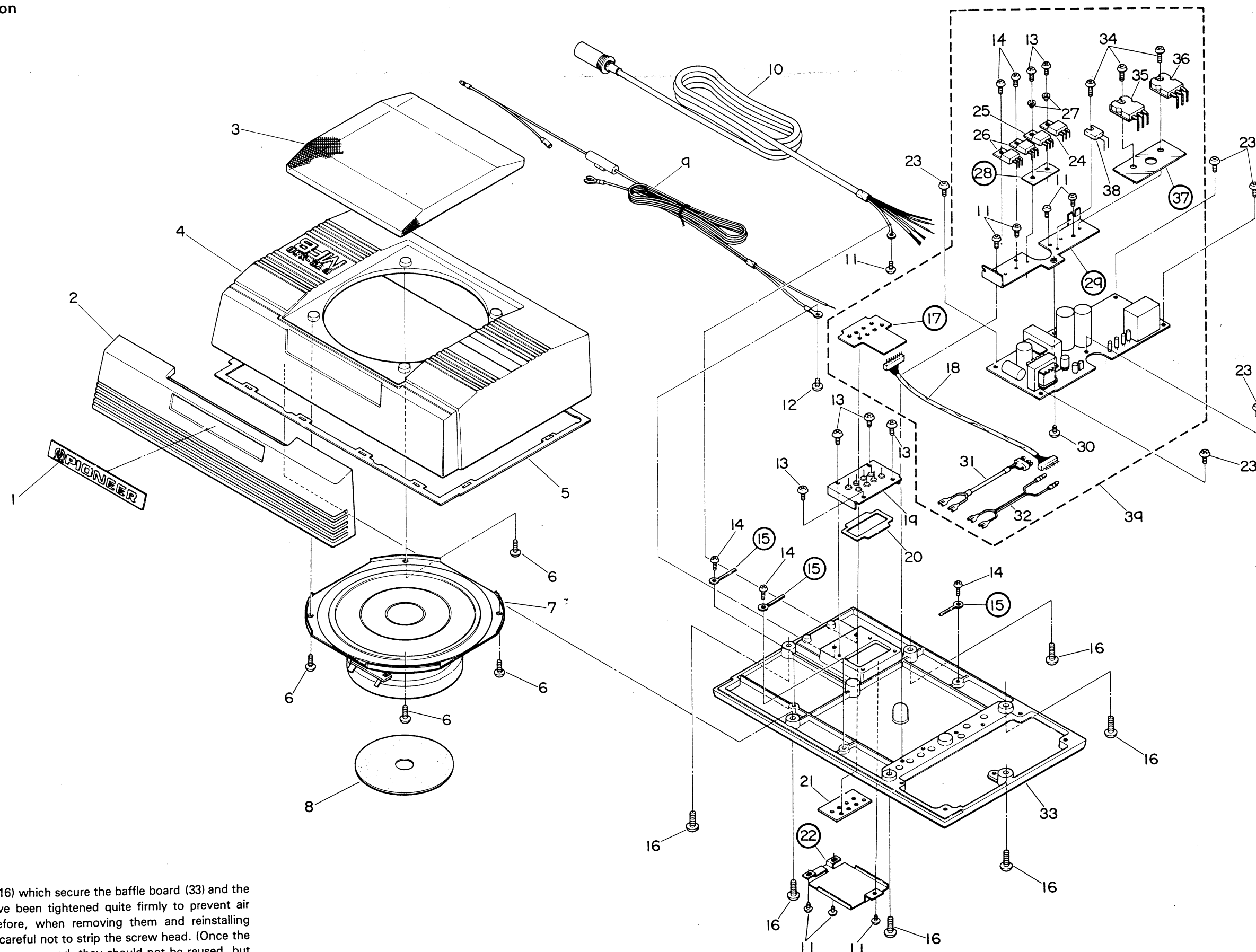
Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1.	CXC-988	LED Assy		16.		P.C. Board
	2.		Lever	★ ★	17.	CCS-327	Volume
	3.		Lever		18.	CDF-342	Connector
★	4.	CAC-599	Button (60)	★ ★	19.	CSG-207	Switch
★	5.	CAC-600	Button (75)	★ ★	20.	CEL-128	Lamp
	6.	CAC-601	Button (90)		21.	CAC-675	Button
★ ★	7.	CSG-208	Switch	★	22.		Insulator
★	8.	CAC-602	Button		23.	CNB-722	Case
	9.	CXC-917	Grille Unit (GTS-X80/ES, EW)		24.	LMZ26P050FMC	Screw
	10.	CMZ26P050FCR	Grille Unit (GTS-X80/US, CA)		25.	BMZ26P050FMC	Screw
		CMZ26P050FZK	Screw (GTS-X80/ES, EW)		26.	CBA-122	Screw (GTS-X80/ES, EW)
			Screw (GTS-X80/US, CA)			BMZ26P030FZK	Screw (GTS-X80/US, CA)
	11.	CNS-988	Panel		27.	CNB-818	Case (GTS-X80/ES, EW)
	12.	BMZ26P040FMC	Screw			CNB-835	Case (GTS-X80/US, CA)
★	13.	CWW-149	LED		28.	CDF-544	Connector
★	14.	CAA-451	Knob (GAIN)		29.	CDF-332	Connector
	15.	CBA-066	Nut		30.	CWG-123	Control P.C. Board Unit
					31.		Lever

9. AMP SECTION EXPLODED VIEW

• Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1.	TAM-138	Badge		21.	CNL-321	P.C. Board
	2.	CNK-039	Protector		22.		Case
	3.	CAS-007	Mesh		23.	LMZ30P050FMC	Screw
	4.	CNR-171	Cabinet	★	24.	ESAC25-02C	Diode
	5.	CNM-880	Packing	★	25.	ESAC25-02N	Diode
	6.	BMZ40P050FMC	Screw		26.	2SB826	Transistor
	7.	CPV-030	Speaker		27.	CNM-554	Bush
	8.	CNM-877	Packing		28.		Insulator
	9.	CDF-326	Cord		29.		Heat Sink
	10.	CDF-327	Connector		30.	BMZ26P050FMC	Screw
	11.	BMZ30P050FMC	Screw		31.	CDF-330	Connector
	12.	BMZ40P050FMC	Screw		32.	CDF-329	Connector
	13.	BMZ30P060FMC	Screw		33.	CNR-172	Baffle Board
	14.	BMZ30P040FMC	Screw		34.	BMZ30P080FMC	Screw
	15.		Clamper	★ ★	35.	2SB688	Transistor
	16.	BMZ50P100FMC	Screw		36.	2SD718	Transistor
	17.		P.C. Board	★ ★	37.		Insulator
	18.	CDF-328	Connector	★	38.	STV-4H-G	Varistor
	19.	CCL-117	Feed through Capacitor		39.	CWH-180	Amp P.C. Board Unit
	20.	CNM-879	Packing				

• Amp Section



NOTE:
The 6 screws (16) which secure the baffle board (33) and the cabinet (4) have been tightened quite firmly to prevent air leakage. Therefore, when removing them and reinstalling them, be very careful not to strip the screw head. (Once the screws have been removed, they should not be reused, but instead be replaced with new ones.)

Fig. 16

10. ELECTRICAL PARTS LIST

NOTE:
When ordering resistors, first convert resistance values into code form as shown in the following examples.
Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).
560Ω 56 × 10¹ 561 RD1/4PS 5 6 1 J
47kΩ 47 × 10³ 473 RD1/4PS 4 7 3 J
0.5Ω 0R5 RN2H 0 5 K
1Ω 010 RS1P 0 1 0 K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).
5.62kΩ 562 × 10¹ RN1/4SR 5 6 2 1 F

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This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
• Parts whose parts numbers are omitted are subject to being not supplied.

Control P.C. Board

MISCELLANEOUS

Mark	Symbol & Description	Part No.
★ ★	IC1	PA2014
★ ★	IC2, IC3	TA75902P or NJM2902N
★ ★	Q1, Q3, Q7, Q9, Q10, Q30 Q2	2SC2634NC VACANT
★ ★	Q4 — Q6, Q8	2SA608NP
★ ★	Q11	2SB647
★ ★	Q12	2SC1583
★	D1, D9 — D13	1S2473VH
★	D4 — D8 LED Assy	CXC-988
★	D14	HZ7C1
★	D15	HZ6B1
★ ★	S1, S2 Switch	CSG-207
★ ★	S3 Switch	CSG-208
★ ★	VR1	VACANT
★ ★	VR2 Volume, 100kΩ(B)	CCS-327
★ ★	VR3 Semi-fixed, 22kΩ(B)	CCP-107
★ ★	IL1 Lamp, 14V40mA	CEL-128

RESISTORS

Mark	Symbol & Description	Part No.
	R1 — R7, R10, R12, R13, R16 — R44, R46 — R50, R52 — R72, R74 — R85, R87 — R90, R93 — R96 Chip Resistor	RS1/8S□□□J
	R8	RS1P□□□J
	R51	RD1/4PS□□□J
	R9, R11, R14, R15, R45, R73, R86, R91, R92	VACANT

CAPACITORS

Mark	Symbol & Description	Part No.
	C1 — C4, C9 — C11, C19 C5	CEA010M50LL CEA471M6R3L
	C6 Chip Capacitor	CKSYB103K50
	C7 2200 μF/10V	CCH-104
	C8, C15, C18, C21, C22	CEA100M16LL
	C12, C28	CEA100M16NP
	C13, C23, C29	CQMA224K50L
	C14, C25	CQMA124K50L
	C16	CEAR22M50LL
	C17	CEA470M10L2
	C20	CEA0R1M50LL
	C24	CQMA473K50L
	C26, C27	VACANT
	C30	CEA101M6R3L2
	C31 Chip Capacitor	CCSSL101J50
	C32, C34	CEA101M10L2
	C33	CEA221M16L2

P.C. Board (A)

Mark	Symbol & Description	Part No.
★	LED	CWW-149
	R14, R15 Chip Resistor	RS1/8S561J

Amp P.C. Board

MISCELLANEOUS

Mark	Symbol & Description	Part No.
★ ★	IC4	HA12002
★ ★	IC5	HD7402P
★ ★	Q13	2SA979
★ ★	Q14	2SC2291
★ ★	Q15	2SA1016
★ ★	Q16	2SC1775A
★ ★	Q17	2SC2362
★ ★	Q18	2SC2235
★ ★	Q19	2SA965
★ ★	Q20	2SD718
★ ★	Q21	2SB688
★ ★	Q22	2SB647
★ ★	Q23	2SC2634NC
★ ★	Q24 Thermistor	03P2M
★ ★	Q26, Q27	2SD667
★ ★	Q28, Q29	2SB826
★	D16	HZ9B3
★	D17, D20, D22, D23	1S2473VH or 1S2076VH
★	D18	STV-4H-G
★	D19	HZ7C1
★	D21	HZ6B1
★	D24	ESAC25-02C
★	D25	ESAC25-02N
★	D26	SM-1A-02LFD
	L1 Coil	HTF-117
	L2 Transformer	CTF-167
	L3 Coil	CTF-137
	T1 Transformer	CTH-076
	TH1 Posistor	CCX-012
★ ★	VR1 Semi-fixed, 150Ω(B)	CCP-066
	RL1 Relay	CSR-032

RESISTORS

Mark	Symbol & Description	Part No.
	R100 — R113, R116, R117, R120 — R142, R147 Chip Resistor	RS1/8S□□□J
	R114, R115	RS1P4R7
	R118, R119	RN2PR22K
Mark	Symbol & Description	Part No.
	C100 Chip Capacitor	CKSYB273K25
	C101, C110, C111, C112	CEAUH100M50
	C102 Chip Capacitor	CCSSL151J50
	C103 Chip Capacitor	CCSSL100D50
	C104, C107	CEAUH101M10
	C105 Chip Capacitor	CKSYB102K50
	C106, C109, C113	CEAUH010M50
	C108	CEAUH220M25
	C114, C119, C120, C122, C124, C125	CKSYB103K50
		Chip Capacitor
	C115, C116	CQMA822K50L
	C117, C118	CQMA102K50L
	C121	CEAUH222M16
	C123	CEAUH101M16
	C126 Chip Capacitor	CKSYF473Z50 or
		CKSYB473K25
	C131, C132	CQMA104K50L
	C133, C134	CEAUH332M35
	C136	CSZA100M35

Miscellaneous Parts List

Mark	Symbol & Description	Part No.
	C1 Feed through Capacitor	CCL-117
	SP Speaker	CPV-030

11. PACKING METHOD

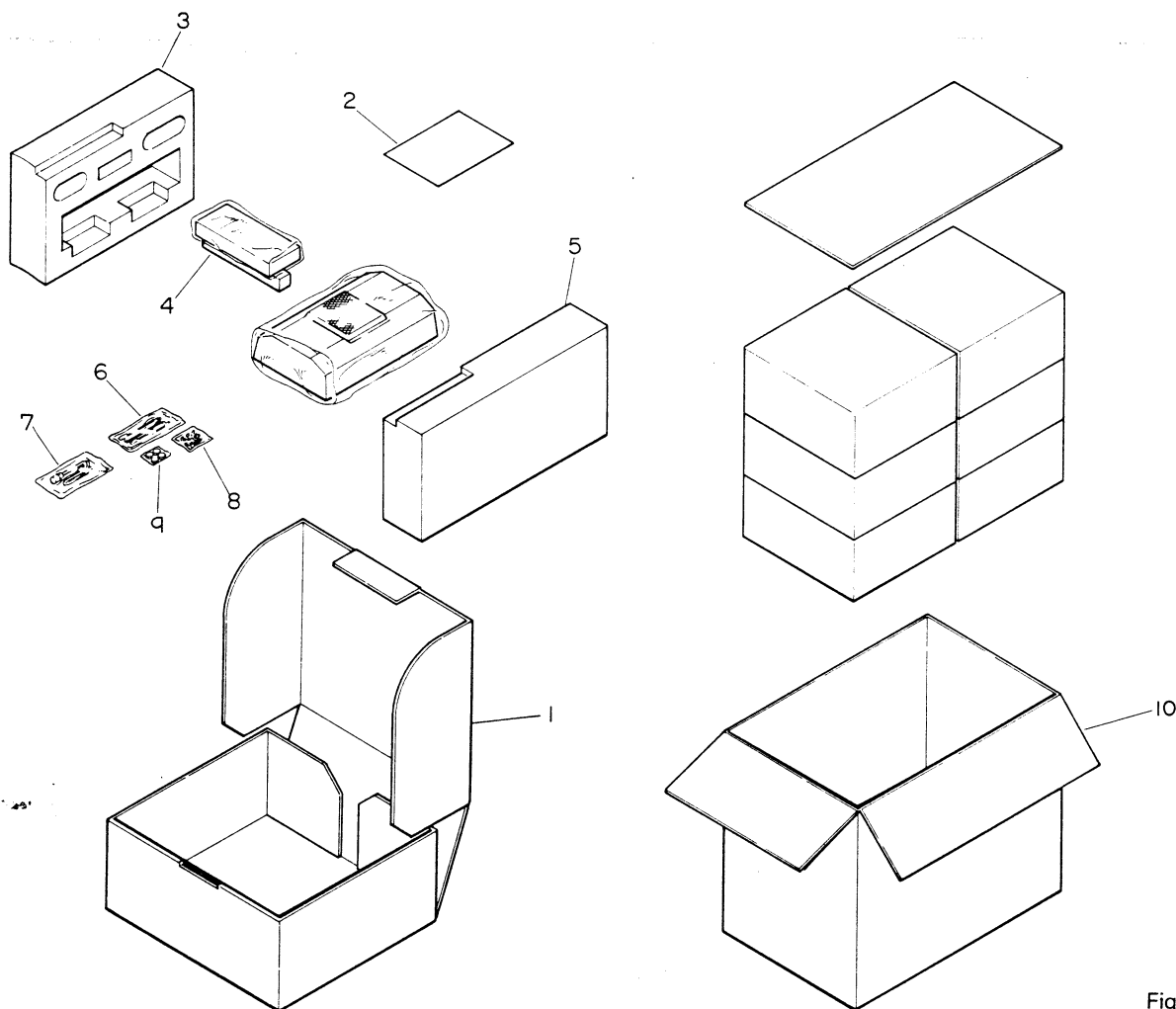


Fig. 17

• Parts List

NOTE:

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- Parts whose parts numbers are omitted are subject to being not supplied.

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1.	CHD-475	Carton (GTS-X80/US, ES)		8.	CEA-791	Accessory Kit
		CHD-477	Carton (GTS-X80/CA, EW)		8-1.	CDE-437	Cord
	2.		Card		8-2.	CEA-855	Screw Kit
		CRD-450	Owner's Manual		8-2-1.	B70-056-A	Nut
	3.	CHC-864	Styrofoam		8-2-2.	CBA-101	Screw
	4.	CNB-720	Mounting Bracket		8-2-3.	CBA-102	Screw
	5.	CHC-863	Styrofoam		8-2-4.	CNN-058	Spacer
	6.	TNA-046	Arm		8-2-5.	HMF40P080FMC	Screw
		TEA-113	Mounting Part		8-3.	CNM-667	Fastener
		CDF-366	Connector		9.	CEA-717	Cushion Assy
	7.	CDF-399	Connector		10.	CHD-476	Contain Box (GTS-X80/US)