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Amplifier 70FA660/00R/01R/05R

FA660/00R/01R/05R

Service
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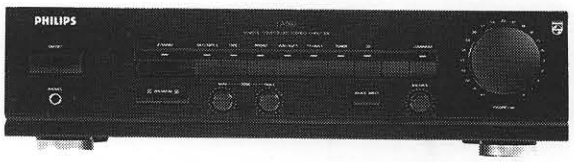


Service Manual

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambiago identici a quelli specificati.

(F)
Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

Documentation Technique Service Dokumentation Documentazione di Servizio Huolte-Ohje Manual de Servicio Manual de Serviçio

Subject to modification
(GB) (NL) 4822 725 22762 (F) (D) (I)
Printed in The Netherlands

SPECIFICA

General

Mains voltag

Mains frequ
Power consu
Dimensions
Weight

Amplifier

Output pow
Distortion
T.H.D.

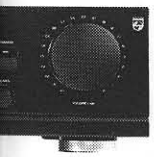
Intermod
Frequency c
Phono in
Other inp
Bass cont
Treble co
Loudness

Signal/noise
weighted (A
Phono in
Other inp
Channel sep

Input sensiti
Audio
Phono
Other inp
Output level
Tape 1, 2

R/01R/05R

R/01R/05R



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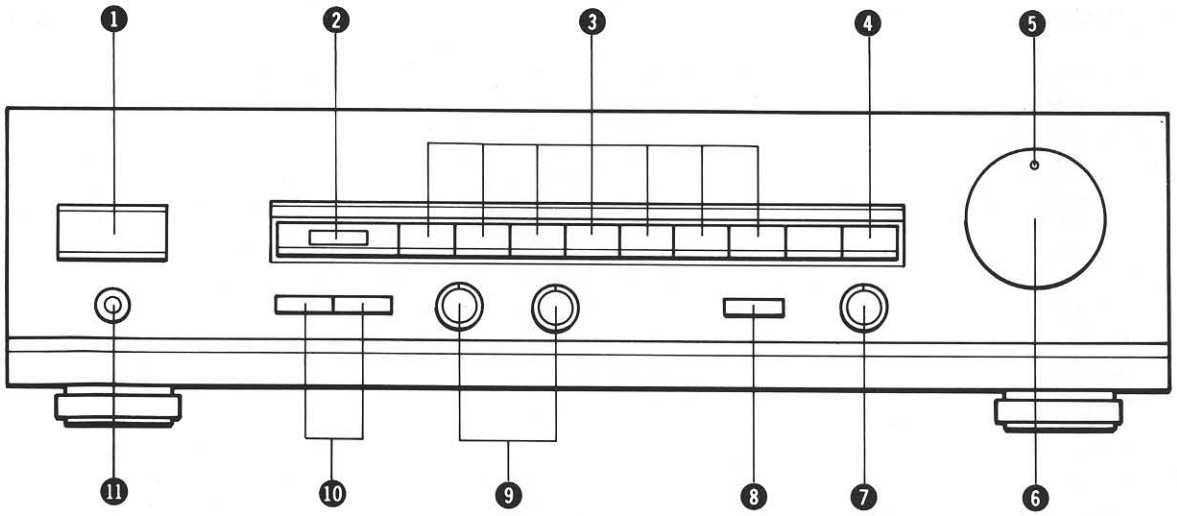
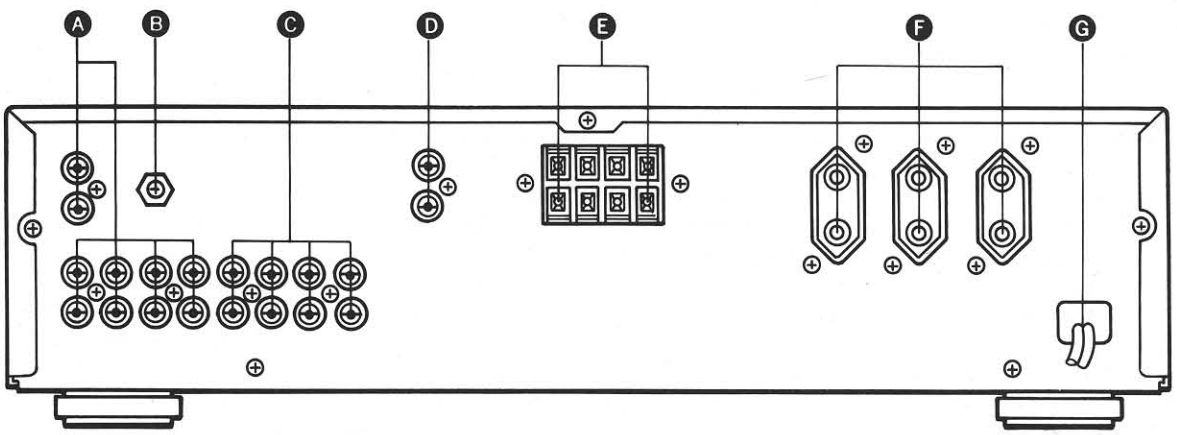
SPECIFICATION

General	Nominal value	Typical value
Mains voltage	: 220V ~ (/00R) : 240V ~ (/05R) : 110/120/220/240V (/01R)	: 220V ~ (/00R) : 240V ~ (/05R) : 120V ~ (/01R)
Mains frequency	: 50 – 60 Hz	: 50 – 60 Hz
Power consumption	: 140W/200W	: 140W/200W
Dimensions (WxHxD)	: 420 x 100 x 260 mm	: 420 x 100 x 260 mm
Weight	: 4.9 kg/6.0 kg	: 4.9 kg/6.0 kg
Amplifier		
Output power	: 27W/44W in 8Ω (IEC)	: 29W/50W in 8Ω (IEC)
Distortion		
T.H.D.	: ⩽ 0.05% at 1 kHz : ⩽ 0.05% at 63 Hz – 12.5 kHz } (IEC)	: ⩽ 0.008% at 1 kHz : ⩽ 0.035% at 65 Hz – 12.5 kHz } (IEC)
Intermodulation	: ⩽ 0.05% at 60/7000 Hz 4:1	: ⩽ 0.03% at 60/7000 Hz 4:1
Frequency characteristic		
Phono input, Other inputs } tone control neutral	: from 20 Hz – 20 kHz ±1 dB (IEC) : from 20 Hz – 30 kHz ±1 dB	: from 20 Hz – 20 kHz ±0.5 dB (IEC) : from 15 Hz – 45 kHz ±1 dB
Bass control	: at 63 Hz +10 dB to –10 dB ±2 dB	: at 63 Hz +10 dB to –10 dB
Treble control	: at 12.5 kHz +10 dB to –10 dB ±2 dB	: at 12.5 kHz +10 dB to –10 dB
Loudness	: at 100 Hz +6 dB ±2 dB } Tap position : at 10 kHz +4 dB ±1.5 dB } Tap position	: at 100 Hz +6 dB } Tap position : at 10 kHz +4 dB } Tap position
Signal/noise ratio weighted (A-curve)		
Phono input (5 mV input)	: for 40W output ⩾ 76 dB	: for 40W output ⩾ 80 dB
Other inputs (500 mV input)	: for 40W output ⩾ 92 dB	: for 40W output ⩾ 96 dB
Channel separation	: at 1000 Hz ⩾ 56 dB : at 250 Hz – 10 kHz ⩾ 40 dB	: at 1000 Hz ⩾ 60 dB : at 250 Hz – 10 kHz ⩾ 45 dB
Input sensitivity/Input impedance		
Audio		
Phono	: 2.6 mV ± 0.3 mV/47 kΩ ± 5 kΩ	: 2.6 mV/47 kΩ
Other inputs	: 150 mV ± 20 mV/⩾ 20 kΩ	: 150 mV/25 kΩ
Output level/Output impedance		
Tape 1, 2	: 250 mV/550Ω (Phono 5.0 mV 1 kHz input)	: 280 mV/550Ω (Phono 5.0 mV 1 kHz input)





CONNECTIONS AND CONTROLS

Front Panel

1	Mains switch	S911
2	IR	ZU01
3	Function switches	SU01÷SU07
4	Loudness switch	SG01
5	Volume/Power indicator	DY01
6	Volume control	RG05
7	Balance control	RE25
8	Source direct switch	SE01
9	Tone control	RE23, RE24
10	Speakers A/B switch	S701
11	Phones socket	JW51

A	Input	J401, JV01, JV02
B	Ground terminal	J031
C	Tape input/output	JV03, JV04
D	Remote input/output	JW03
E	Speaker systems A/B terminal	JW01
F	AC Outlet	J951, J952, J953
G	Mains cord	W001

(GB) Mains vol

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(F) Méthode

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3. Si l'appareil
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   la tension.

(NL) Methode

Verander de aa
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waarop het toes
1. Bij toestelle
   220V.
   Verwissel de
   het toestel
   van de /05R
2. Bij toestelle
   240V.
   Verwissel de
   het toestel
   van de /00R

(GB) Mains voltage changeover method

To make the unit usable with the other local mains voltage than the factory setting, modify the lead wire connection on the primary side of the power transformer as follows.

1. With units of the /00R version, the rated voltage is 220V. To change the mains voltage for the unit to the same 240V as the /05R version, exchange the connections of the White and Red lead wires.
2. With units of the /05R version, the rated voltage is 240V. To change the mains voltage for the unit to the same 220V as the /00R version, exchange the connections of the Red and White lead wires.
3. If the unit has already experienced the voltage changeover of 1 or 2 above, confirm which of the Red (240V) or White (220V) lead wires is connected to the fuse (F911) before attempting to change the connections.
4. With units of the /01R version, the rated voltage is 120V. To change the operating voltage for the unit, set the switch on the rear panel to your local mains voltage setting. Be sure that the unit's power switch is turned OFF before changing the voltage.

(F) Méthode de changement de la tension

Pour rendre l'appareil utilisable sur une autre tension secteur locale que celle réglée en usine, modifier la connexion du fil conducteur sur le côté primaire du transformateur d'alimentation comme suit.

1. Sur les appareils de la version /00R, la tension nominale est de 220V.
   Pour changer la tension secteur de l'appareil sur les 240V comme pour la version /05R, changer les connexions des fils conducteurs blanc et rouge.
2. Sur les appareils de la version /05R, la tension nominale est de 240V.
   Pour changer la tension secteur de l'appareil sur les 220V comme pour la version /00R, changer les connexions des fils conducteurs rouge et blanc.
3. Si l'appareil a déjà subi le changement de tension de 1 ou 2 ci-dessus, vérifier le fil conducteur, rouge (240V) ou blanc (220V), raccordé au fusible (F911) avant de tenter de changer les connexions.
4. Sur les appareils de la version /01R, la tension nominale est de 120V. Pour changer la tension de fonctionnement de l'appareil, régler le commutateur du panneau arrière sur la tension secteur locale. S'assurer que l'interrupteur d'alimentation de l'appareil est sur l'arrêt avant de changer la tension.

(NL) Methode voor instellen op de netspanning

Verander de aansluiting van de draden op de primaire kant van de transformator als volgt om het toestel geschikt te maken voor werking op een andere netspanning dan die waarop het toestel bij levering op ingesteld staat.

1. Bij toestellen van de /00R versie, is de nominale spanning 220V.
   Verwissel de aansluiting van de witte en rode draden om het toestel aan te passen voor 240V zoals de toestellen van de /05R versie.
2. Bij toestellen van de /05R versie, is de nominale spanning 240V.
   Verwissel de aansluiting van de rode en witte draden om het toestel aan te passen voor 220V zoals de toestellen van de /00R versie.
3. Als het toestel reeds eenmaal aangepast is volgens bovenstaande procedure 1 of 2, kontroleer dan of de rode (240V) of witte (220V) draad aangesloten is op de zekering (F911) alvorens de aansluiting om te wisselen.
4. Bij apparaten van de /01R versie bedraagt de nominale spanning 120V. Om de bedrijfsspanning te veranderen, moet de schakelaar op het achterpaneel op de plaatselijke netspanning gezet worden. Zorg dat de netschakelaar op OFF staat voordat de bedrijfsspanning van het apparaat wordt veranderd.

(D) Methode zum Umstellen der Netzspannung

Zur Verwendung dieses Gerätes mit anderen Netzspannungen als der ab Werk eingestellten, müssen die Kabelanschlüsse an der Primärseite des Netztransformators wie folgt verändert werden.

1. Bei Geräten der Version /00R ist die Nennspannung 220V.
   Zum Umstellen der Netzspannung des Gerätes auf 220V wie bei der Version /05R müssen die Anschlüsse des weißen und des roten Kabels ausgetauscht werden.
2. Bei Geräten der Version /05R ist die Nennspannung 240V.
   Zum Umstellen der Netzspannung des Gerätes auf 240V wie bei der Version /00R müssen die Anschlüsse des roten und des weißen Kabels ausgetauscht werden.
3. Falls beim Gerät bereits die unter 1 oder 2 beschriebene Spannungsumstellung durchgeführt wurde, muß festgestellt werden, ob das rote Kabel (240V) oder das weiße Kabel (220V) mit der Sicherung (F911) verbunden ist, bevor die Anschlüsse vertauscht werden.
4. Bei Geräten der Version /01R beträgt die Nennspannung 120V. Zum Umstellen der Betriebsspannung des Gerätes den Schalter an der Geräterückseite auf die örtliche Netzspannung einstellen. Vor dem Umstellen der Spannung muß sichergestellt werden, daß der Netzschalter des Gerätes ausgeschaltet ist.

(I) Metodo di regolazione del voltaggio di rete

Per poter utilizzare l'unità con voltaggi di rete diversi da quello previsto in fabbrica, modificate il collegamento dei fili sul lato primario del trasformatore di potenza nel modo che segue.

1. Per le unità della versione /00R, il voltaggio normale è di 220V.
   Per cambiare il voltaggio dell'unità ai 240V della versione /05R, cambiate le posizioni dei fili bianco e rosso.
2. Per le unità della versione /05R, il voltaggio normale è di 240V.
   Per cambiare il voltaggio dell'unità ai 220V della versione /00R, cambiate le posizioni dei fili rosso e bianco.
3. Se il voltaggio dell'unità è stato già cambiato come visto ai punti 1 o 2, controllate quale dei due fili rosso (240V) o bianco (220V) è collegato al fusibile (F911) prima di cambiare i collegamenti.
4. Per unità della versione /01R, il voltaggio dichiarato è di 120V. Per cambiarlo, regolate l'interruttore del pannello posteriore sul valore di rete della zona in cui vivete. Prima di regolare il voltaggio, controllate che l'unità sia spenta.

, JV02

, J953

Idling Current

SK... SWITCH	SIGNAL	TO	VOLUME	ADJUST	OSCILLOSCOPE	D.C. METER INDICATOR
			Min.	Rch R718		Rch TP2(+), TP4(–) DC2.5mV (6.9mA)
				Lch R717		Lch TP1(+), TP3(–) DC2.5mV (6.9mA)

(GB) Notes:

- 1 minute after the power has been switched ON, adjust to read 2.5 mV DC.
- If the heat-sink temperature is higher than the ambient temperature, switch the power OFF, and leave the unit until the heat-sink temperature falls equal to or below the ambient temperature before proceeding to the idling current adjustment.
- For the idling current adjustment, adjust the R channel first, then the L channel.

(F) Remarques:

- 1 minute après avoir fourni l'alimentation, ajuster pour lire 2,5 mV CC.
- Si la température de la plaque de refroidissement est supérieure à la température ambiante, couper l'alimentation et laisser l'appareil jusqu'à ce que la température de la plaque de refroidissement soit égale ou inférieure à la température ambiante avant de passer à l'ajustement du courant déwatté.
- Pour le réglage de la puissance réactive, ajuster le canal R (droit) en premier lieu, puis le canal L (gauche).

(NL) Opmerkingen:

- Maak de instelling zodanig dat 2,5 mV gelijkstroom aangegeven wordt na 1 minuut nadat de spanning ingeschakeld wordt.
- Als de temperatuur van de warmteput hoger is dan de omringende temperatuur, schakel dan de spanning uit totdat de temperatuur van de warmteput gelijk is aan of lager is dan de omringende temperatuur alvorens over te gaan tot aanpassen op de stationaire stroom.
- Bij het afstellen van de blinde stroom moet eerst het R-kanaal worden afgesteld en daarna het L-kanaal.

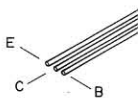
(D) Anmerkungen:

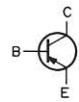
- 1 Minute nach Einschalten der Spannungsversorgung so einstellen, daß 2,5 mV Gleichstrom angezeigt wird.
- Wenn die Temperatur des Kühlkörpers höher ist als die Umgebungstemperatur, die Spannungsversorgung ausschalten und warten, bis die Temperatur des Kühlkörpers gleich der oder niedriger als die Umgebungstemperatur wird, bevor die Ruhestrom-Einstellung durchgeführt wird.
- Für die Ruhestrom-Einstellung zuerst den rechten und dann den linken Kanal einstellen.

(I) Note:

- Fate in modo da ottenere un valore di 2,5 mV di c.c. un minuto dopo l'accensione.
- Se la temperatura degli organi di dispersione del calore è superiore a quella dell'ambiente, spegnete l'unità e lasciatela raffreddare sino a che la sua temperature non diviene uguale o inferiore a quella ambiente, quindi procedete con la regolazione della corrente a riposo.
- Per la regolazione della corrente reattiva, regolare prima il canale destro R e quindi il canale sinistro L.

Semiconduct





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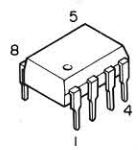

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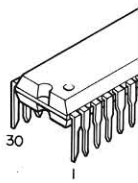

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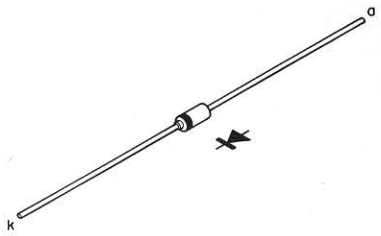
Semiconductor Layout



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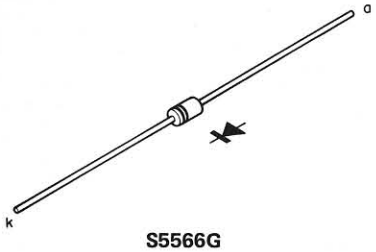

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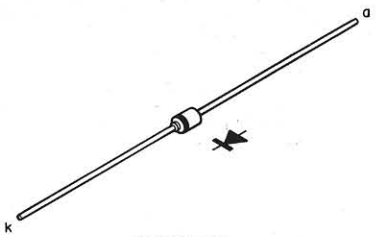

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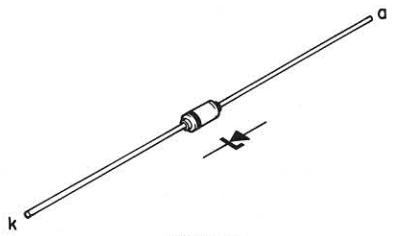

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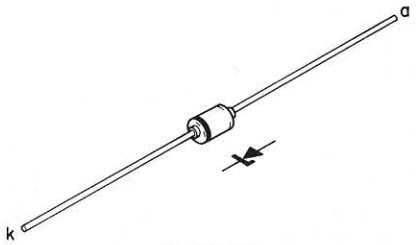

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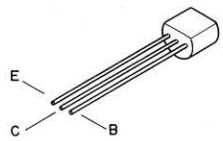

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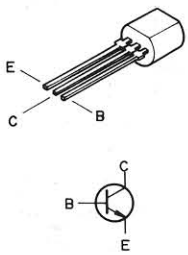

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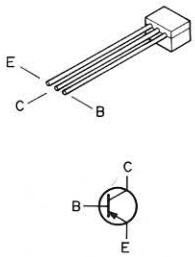

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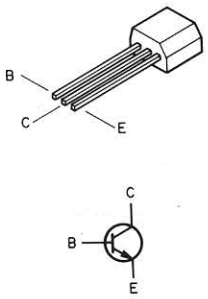

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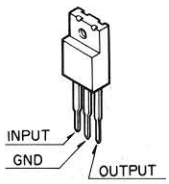

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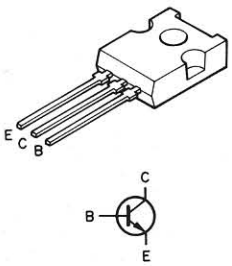

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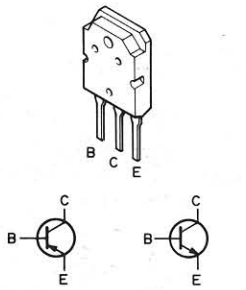

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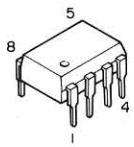

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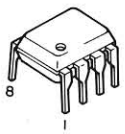

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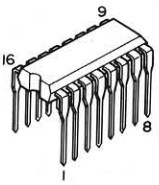

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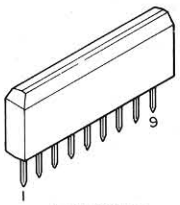

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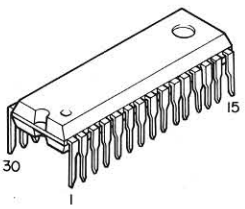

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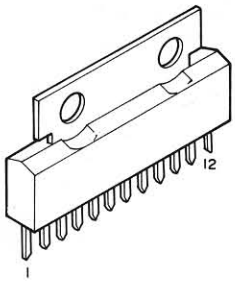
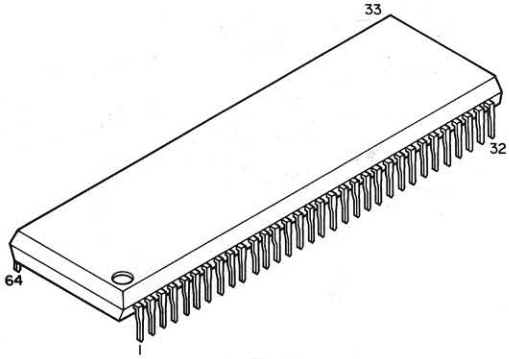


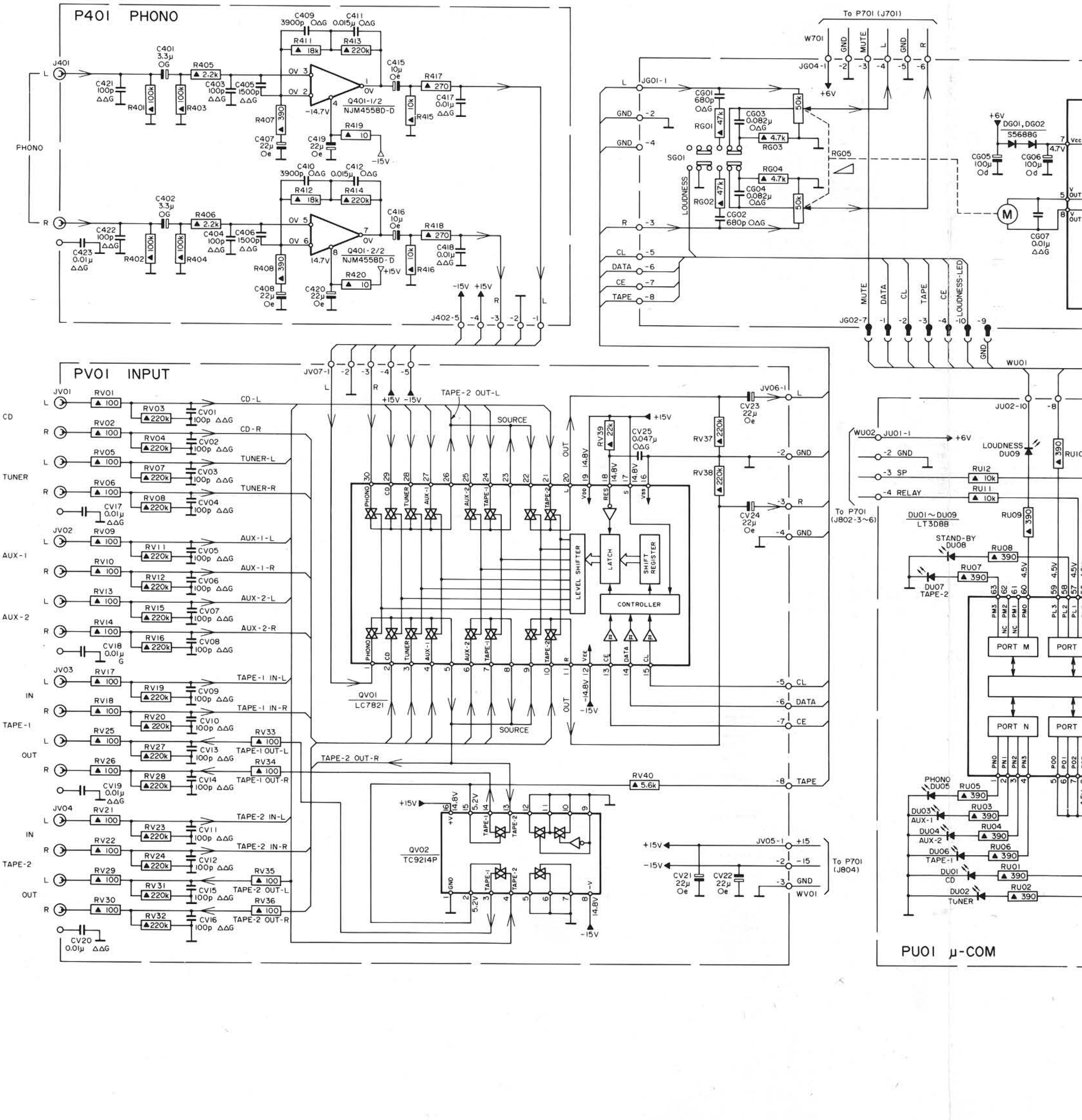
μPC1270H



LC6554H

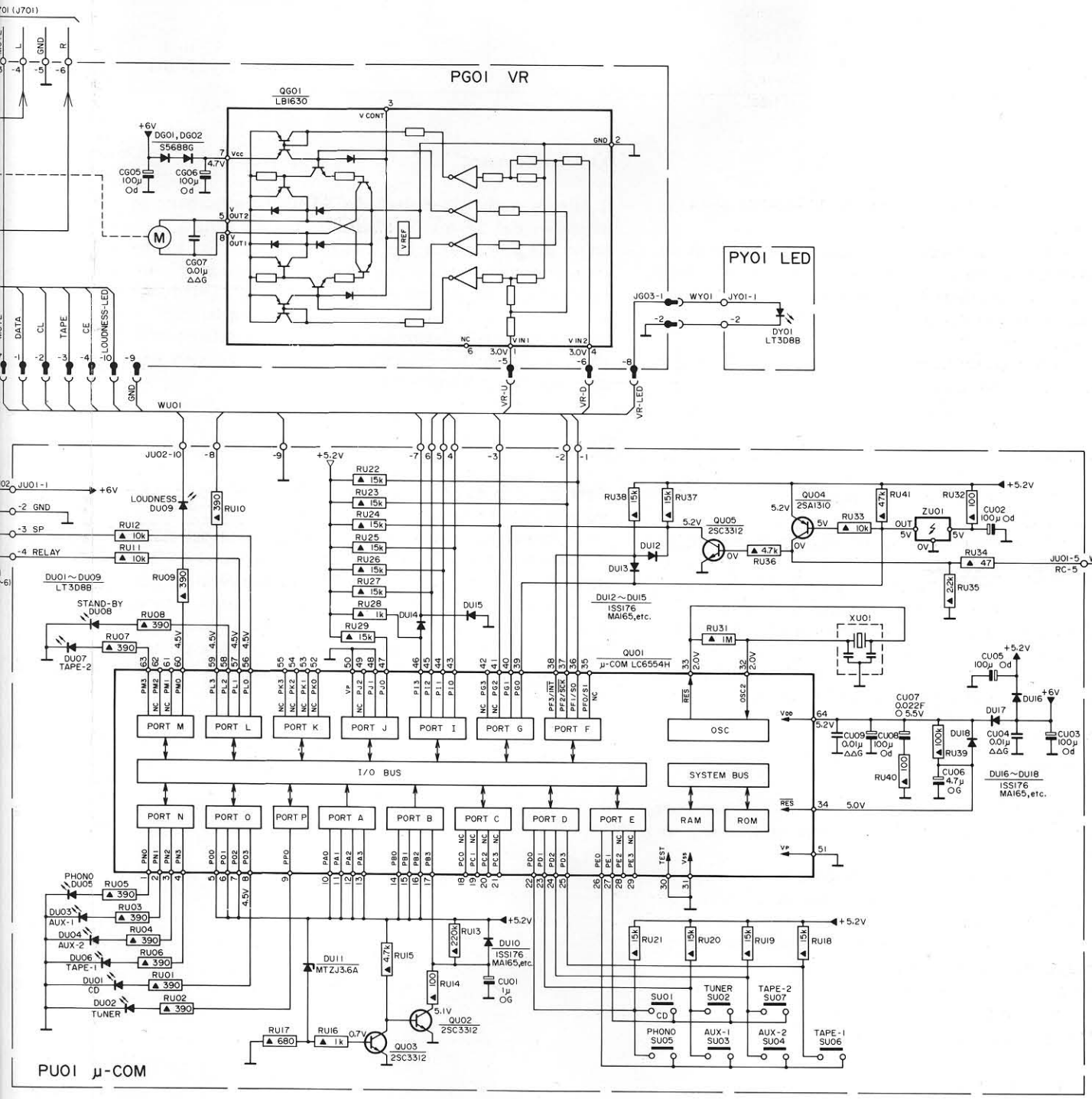
SCHEMATIC DIAGRAM

R	R401 R403 R405 R407 R411 R413 R419 R415 R417 RG01 RG03 RG05 RU12 RU11 RU09 RU10
	R402 R404 R406 R408 R412 R414 R420 R416 R418 RG02 RG04 RU07 RU08
	RV01～RV32 RV33～RV36 RV39 RV40 RV37 RV38 RU01～RU06
C	C421 C401 C403 C405 C407 C409 C419 C411 C415 C417 CG01 CG03 CG05 CG06
	C423 C422 C402 C404 C406 C408 C410 C420 C412 C416 C418 CG02 CG04 CG07
	CV17～CV20 CV01～CV16 CV25 CV21 CV22 CV23 CV24
Q - D	Q401 QV01 QV02 DU01～DU08 DU09 DG01 DG02
S - X - Z	SG01



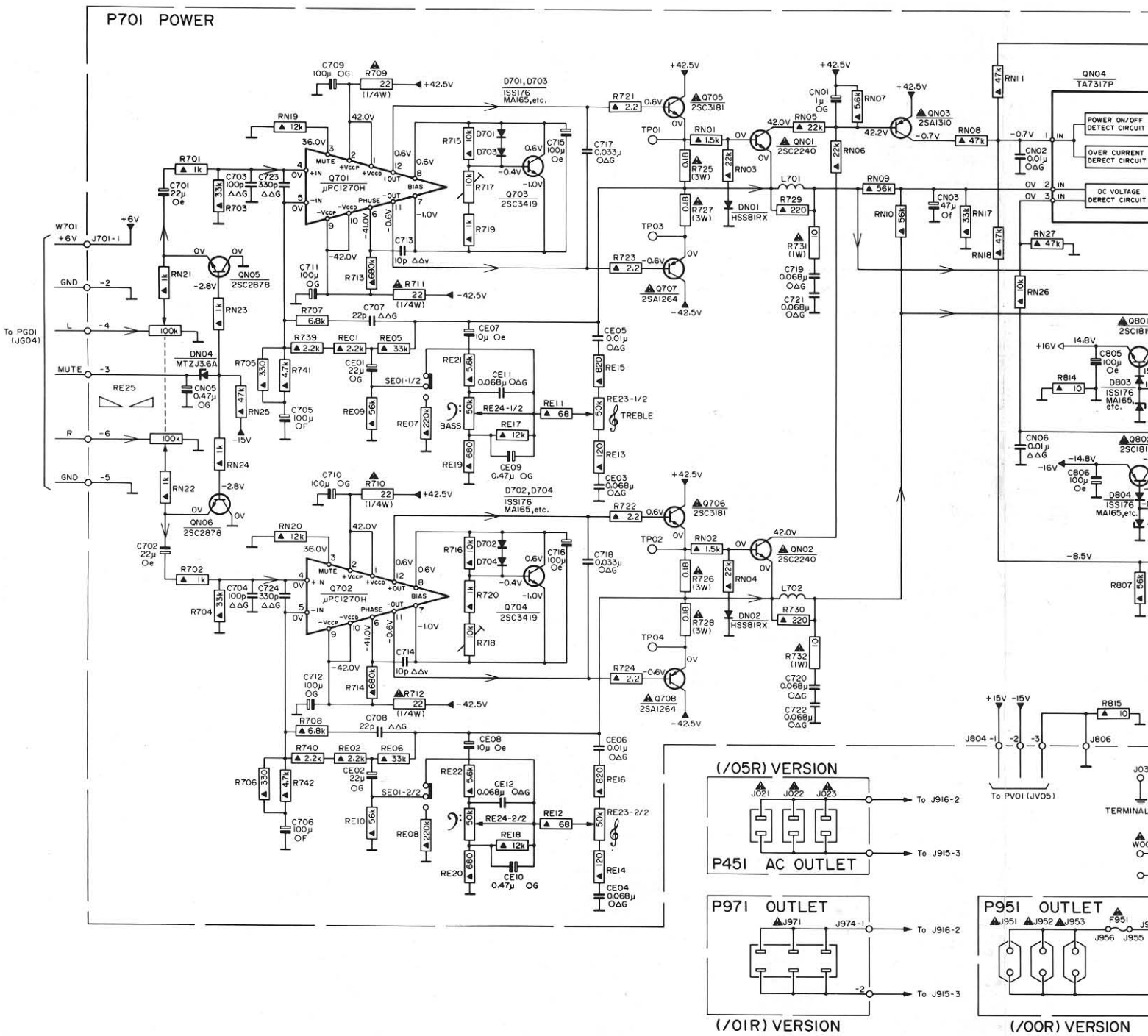
CHEMATIC DIAGRAM

RU12 RU11 RU09 RU10 RU22～RU28 RU38 RU37 RU36 RU33 RU41 RU32		
RU07 RU08 RU30 RU29 RU31 RU35 RU34		R
RU01～RU06 RU17 RU16 RU15 RU14 RU13 RU21 RU20 RU19 RU18 RU40 RU39		
CG05 CG06 CU02		
CG07 CU05		C
CU01 CU09 CU08 CU07 CU06 CU04 CU03		
DU01～DU08 DU09 DG01 DG02 QG01 DU11 QU03 DU14 QU02 DU15 DU10 DU13 QU01 DU12 QU05 DY01 QU04		Q - D
SU01 SU05 SU02 SU03 SU07 SU04 SU06 XU01 ZU01		S - X - Z



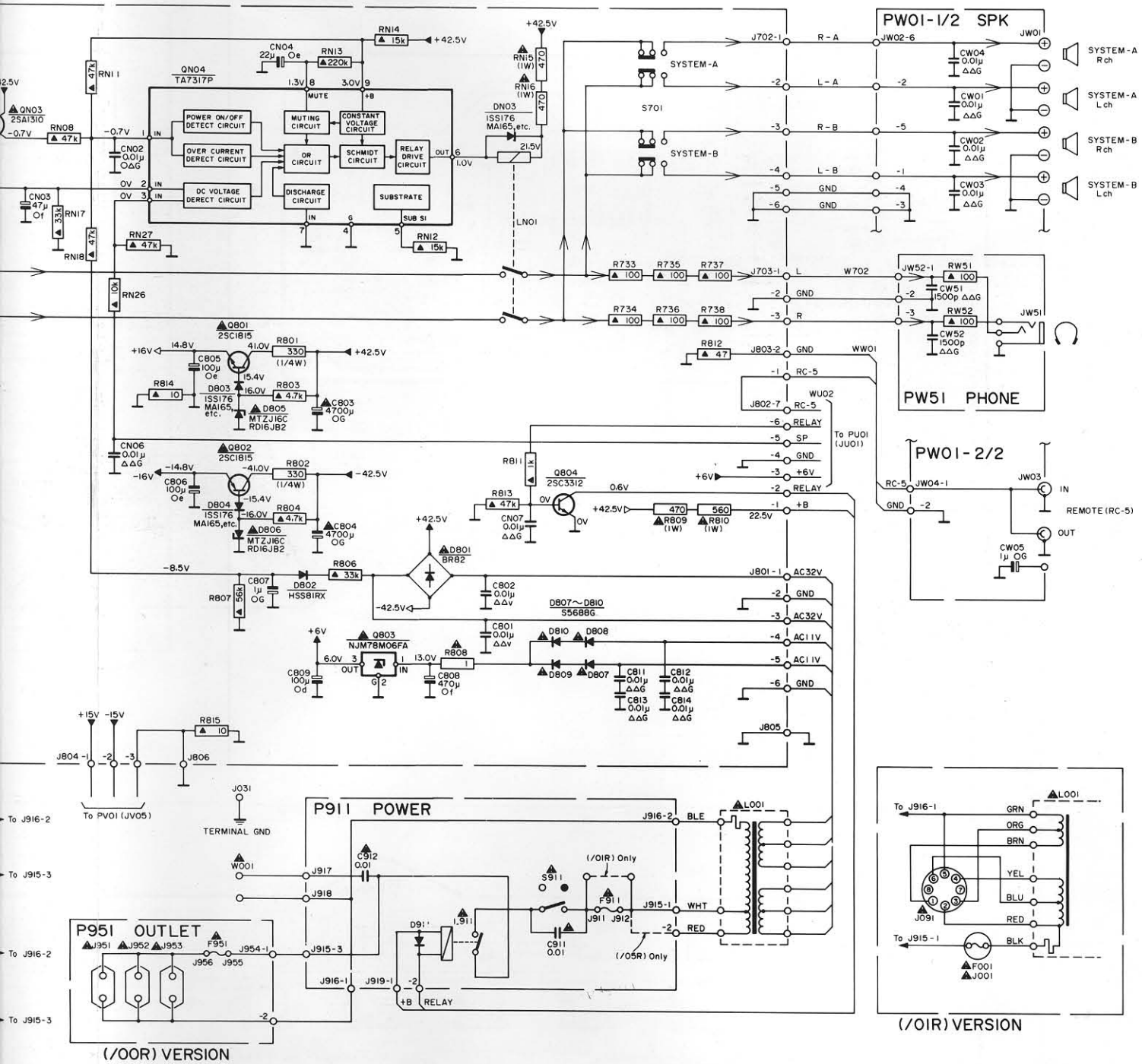
SCHEMATIC DIAGRAM

R	RE25 R701~R704 R705 RN19 R739~R742 R707 R709~R714 R715 R720 RE17 R721~R724 RN01~RN04 RN05~RN07 RN09 RN10 RN08 RN11
	RN21~RN25 R706 RN20 R708 RE01 RE02 RE05~RE09 RE19 RE22 RE18 RE11~RE16 RE23 R725~R728 R729~R732 RN17 RN18 RN26 RN27 R814 R815 R807
C	C701 CN05 C703 C723 C705 C709~C712 C707 C713 CE07~CE12 C715~C718 CN01 CN03 CN02 C805
	C702 C704 C724 C706 CE01 CE02 C708 C714 CE03~CE05 C719~C722 CN06 C806
Q	QN05 Q701 Q703 Q707 Q705 QN01 QN03 QN04 Q80
	QN06 Q702 Q704 Q708 Q706 QN02 Q80
D	DN04 D701~D704 DN01 D803
	DN02 D804
L - S	SE01 L701 L702



CHEMATIC DIAGRAM

RN08 RN11 RNI3 RNI4 RNI2 RNI5 RNI6 R733~R738 R812 RW51	R
RNI7 RNI8 RN26 RN27 R814 R815 R807 R801~R804 R806 R808 R813 R811 R809 R810 RW52	
CN03 CN02 C805 CN04 C803 C802 CN07 C811 C812 CW01~CW05	C
CN06 C806 C807 C809 C804 C912 C808 C801 C911 C813 C814 CW51 CW52	
QN03 QN04 Q801	Q
Q802 Q803 Q804	
D803 D805 DN03 D810 D808	D
D804 D806 D802 D911 D801 D809 D807	
L911 LN01 S911 S701 L001	L – S

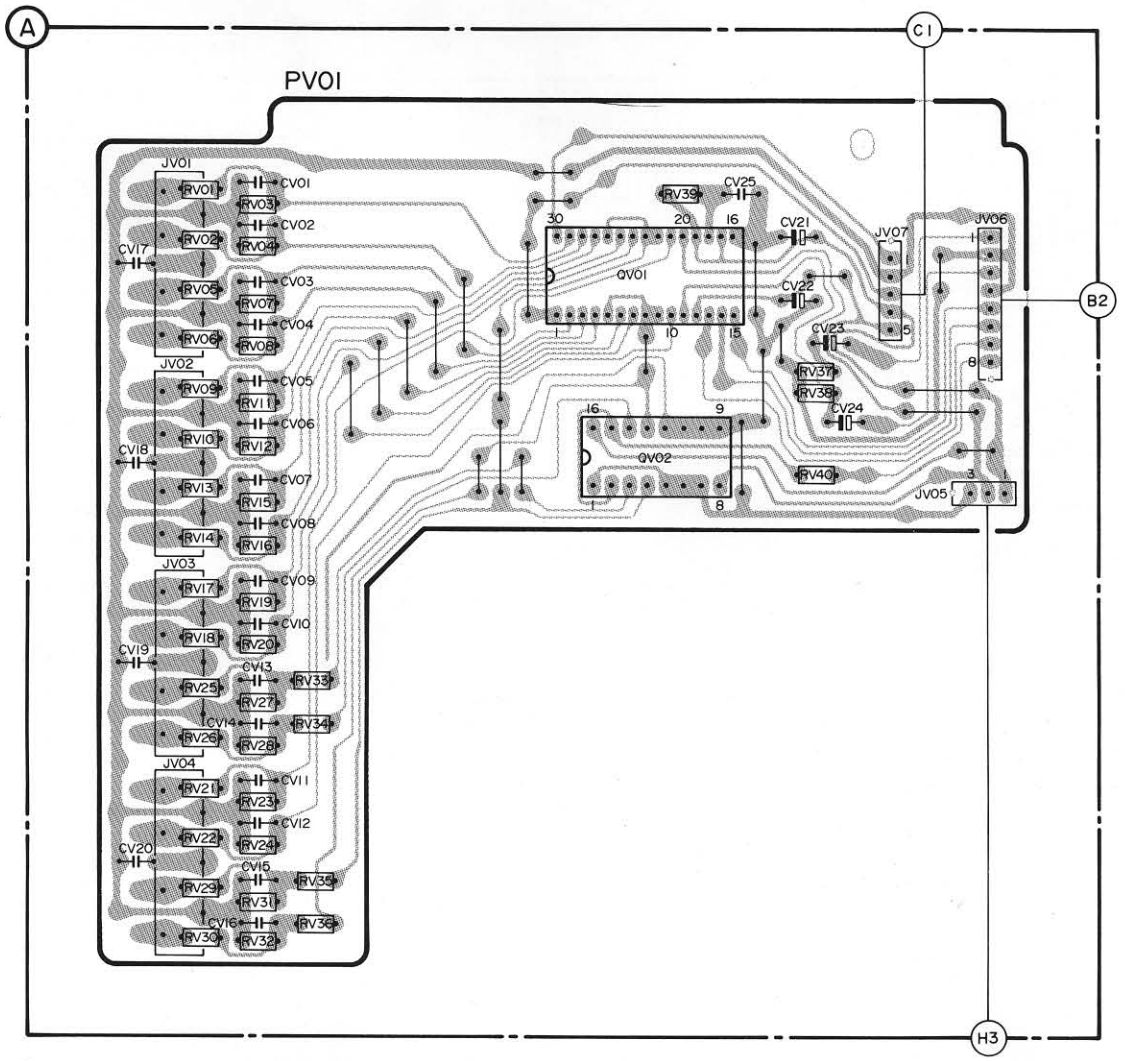


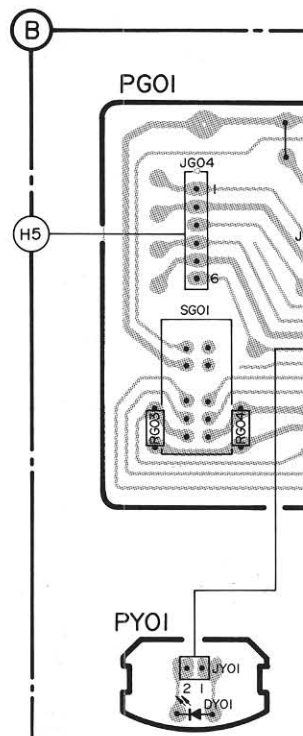
NOTE ON SAFETY:
Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ⚠ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

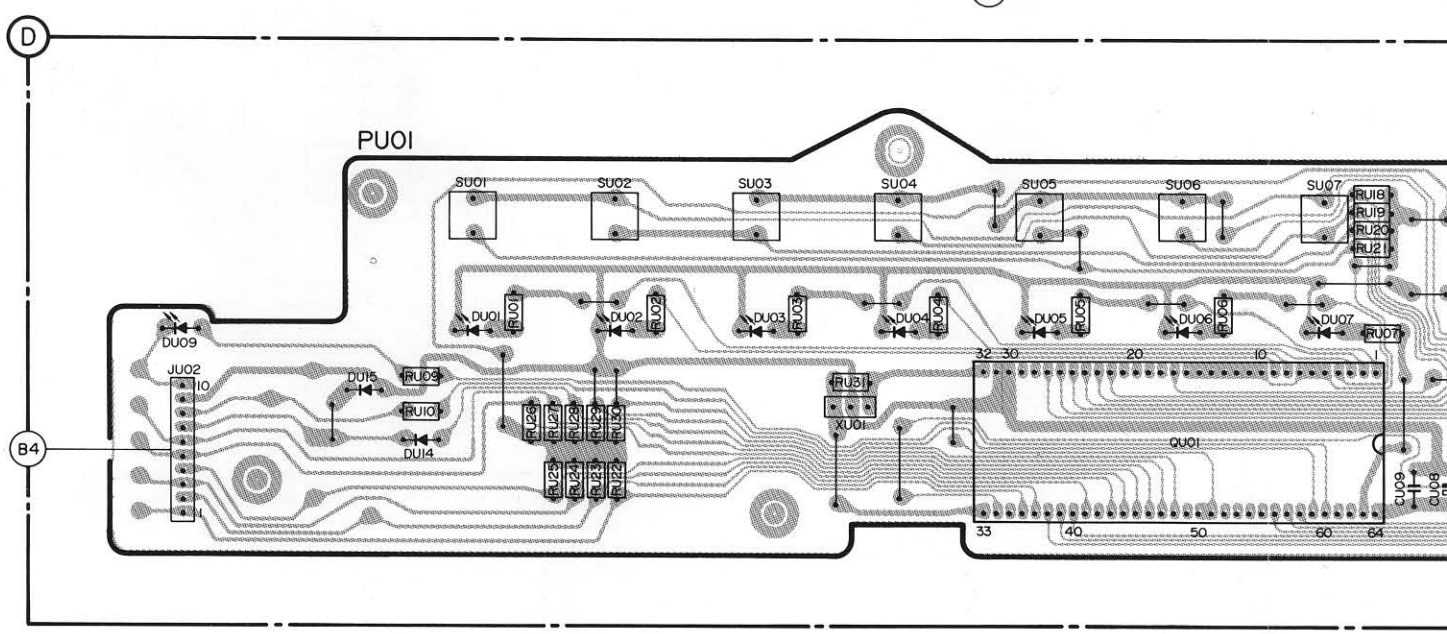
WIRING DIAGRAM

R	RV01~RV36	RV39 RV37 RV38 RV40 RG03 RG04
	RU09 RU10 RU01 RU22~RU30 RU02	RU03 RU31 RU04 RU05 RU06 RUI8~RU21 RU07
C	CVI7~CV20 CV01~CVI6	CV25 CV21~CV24 C
		CU09 CUC
Q	QV01 QV02	QU01
D		DY01
	DU09 DUI5 DUI4 DU01 DU02 DU03 DU04 DU05 DU06 DU07	
S-Z	SU01 SU02 SU03 XU01 SU04 SU05 SU06 SU07 SG01	

COMPONENT SIDE VIEW



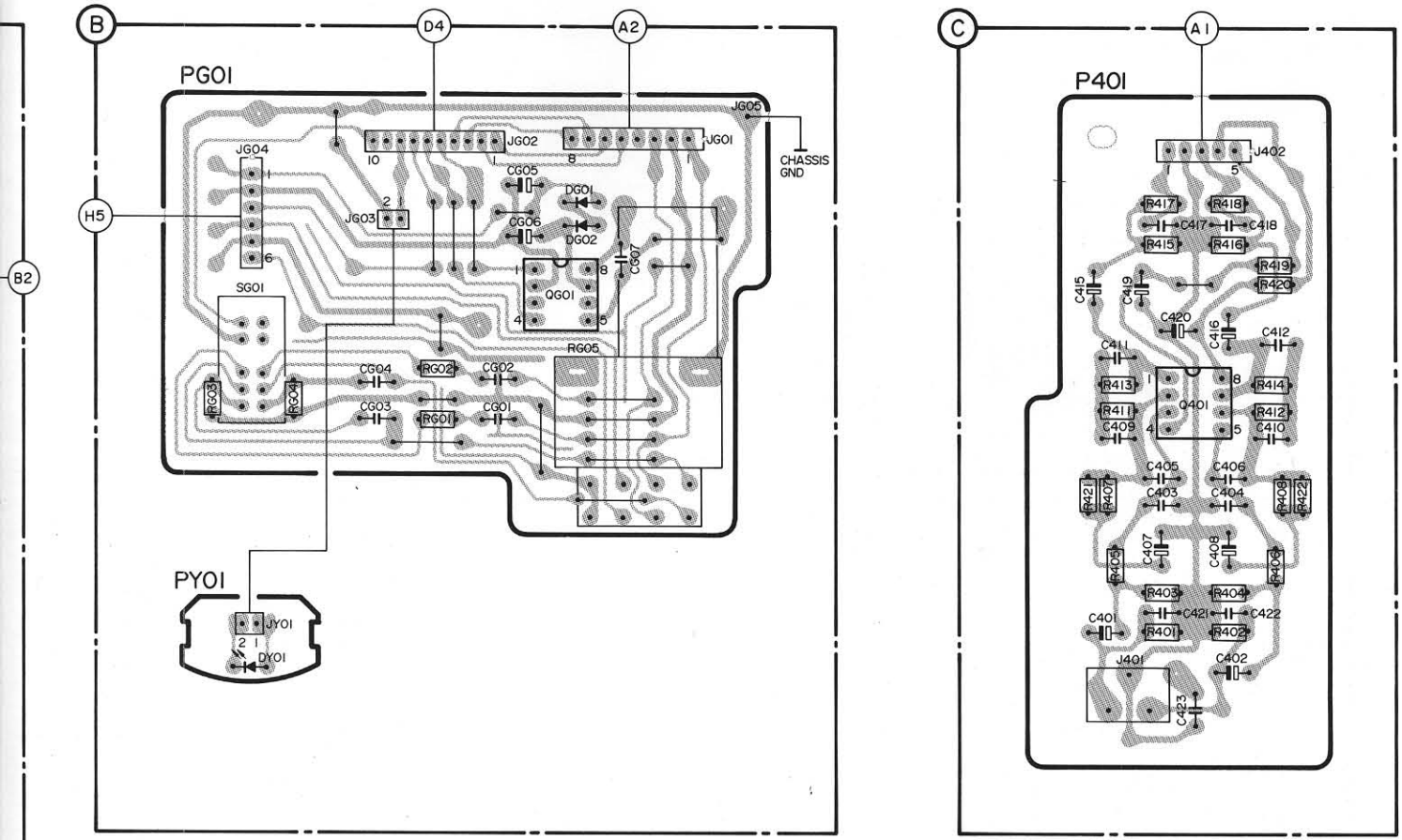


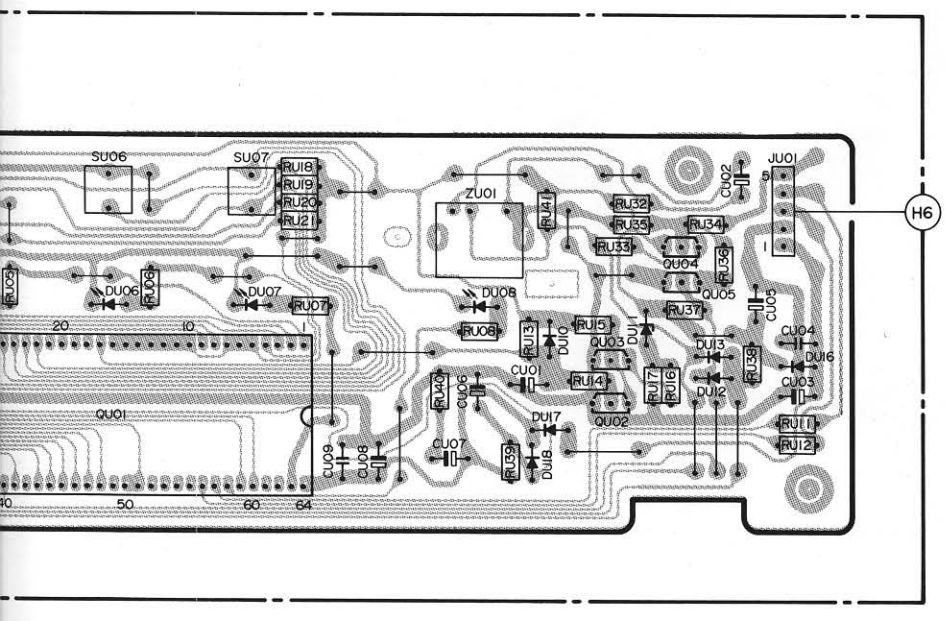


WIRING DIAGRAM

RG03 RG04 RG02 RG01 RG05 RU33 RU32 RU35 RU37 RU34 RU36 R411~R420	R
U05 RU06 RUI8~RU21 RU07 RU40 RU08 RU39 RUI3~RUI5 RU41 RUI7 RUI6 RU38 RUI1 RUI2 R421 R401~R408 R422	
CG04 CG03 CG02 CG01 CG05 CG06 CG07 C409~C412 C415~C420	C
CU09 CU08 CU07 CU06 CU01 CU02 CU05 CU04 CU03 C401~C408 C421~C423	
QU01 QG01 QU02~QU05 Q401	Q
DY01 DG01 DG02	D
DU06 DU07 DU08 DUI8 DUI7 DUI0 DU11~DUI3 DUI6	
SU06 SU07 SG01 ZU01	S-Z

COMPONENT SIDE VIEW

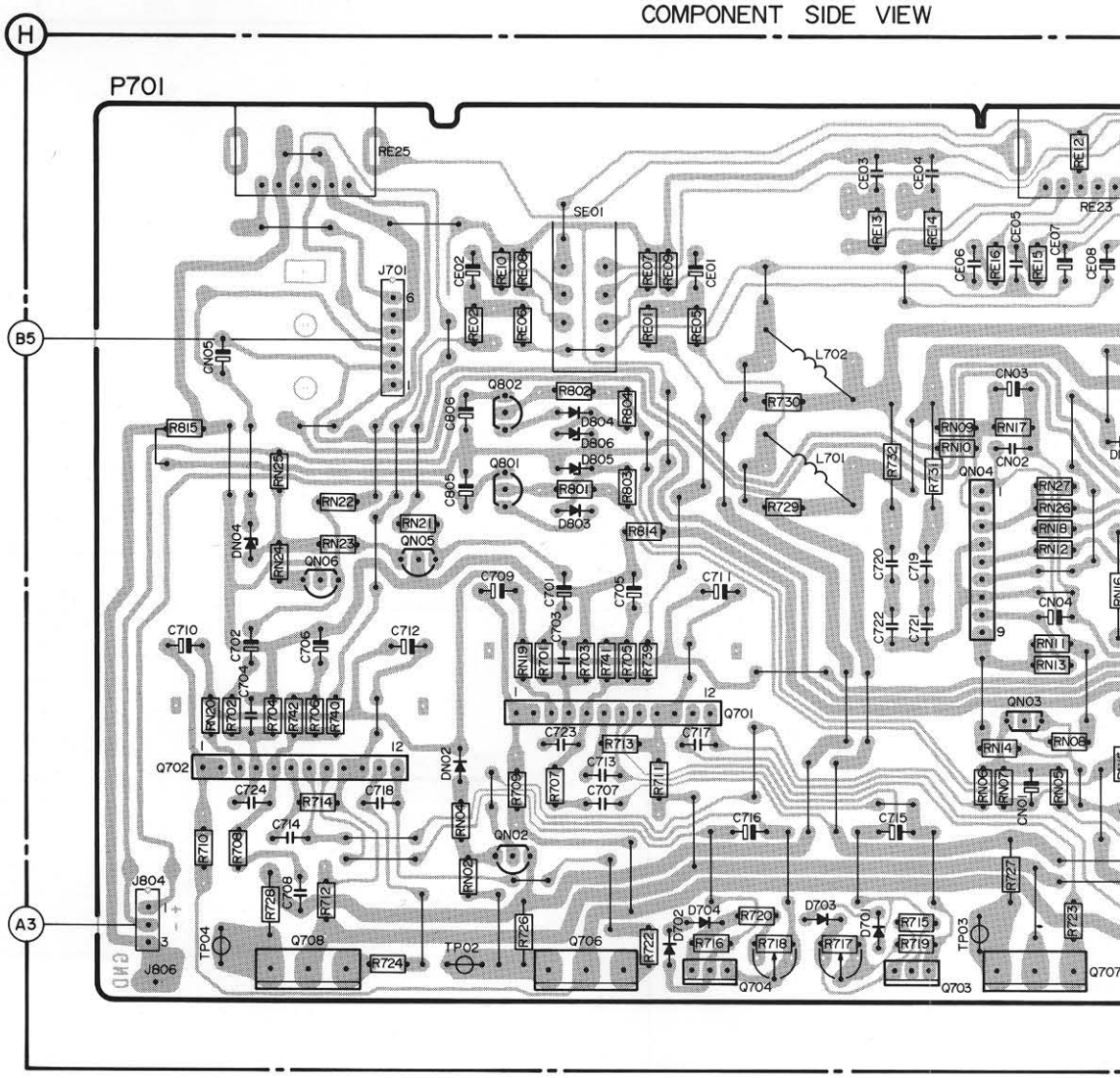




WIRING DIAGRAM

R	R815 RN25 RN24 RN22 RN23 RE25 RN21 RE02 RE05～RE10 R801～R804 RE01 R814 R730 R729 RE13 RE14 RE16 RE15 RE12 RE23
	RN20 R702 R704 R742 R706 R740 RN19 R701 R703 R741 R705 R739 R732 R731 RN09～RN18 RN27 RN26
	R710 R708 R728 R714 R712 R724 RN04 RN02 R709 R726 R707 R713 R722 R711 R715～R720 RN05～RN08 R727 R723
C	C710 CN05 C702 C704 C706 C712 C806 C805 CE02 C709 C701 C703 C705 CE01 C711 CE03 CE04 CE05～CE08
	C724 C714 C708 C718 C723 C713 C707 C717 C716 C719～C722 C715 CN03 CN02 CN01 CN
Q	Q702 Q708 QN06 QN05 Q802 Q801 QN02 Q706 Q701 Q704 Q703 QN04 QN03 Q707
D	DN04 DN02 D803～D806 D702 D704 D703 D701
L-S	SE01 L702 L701

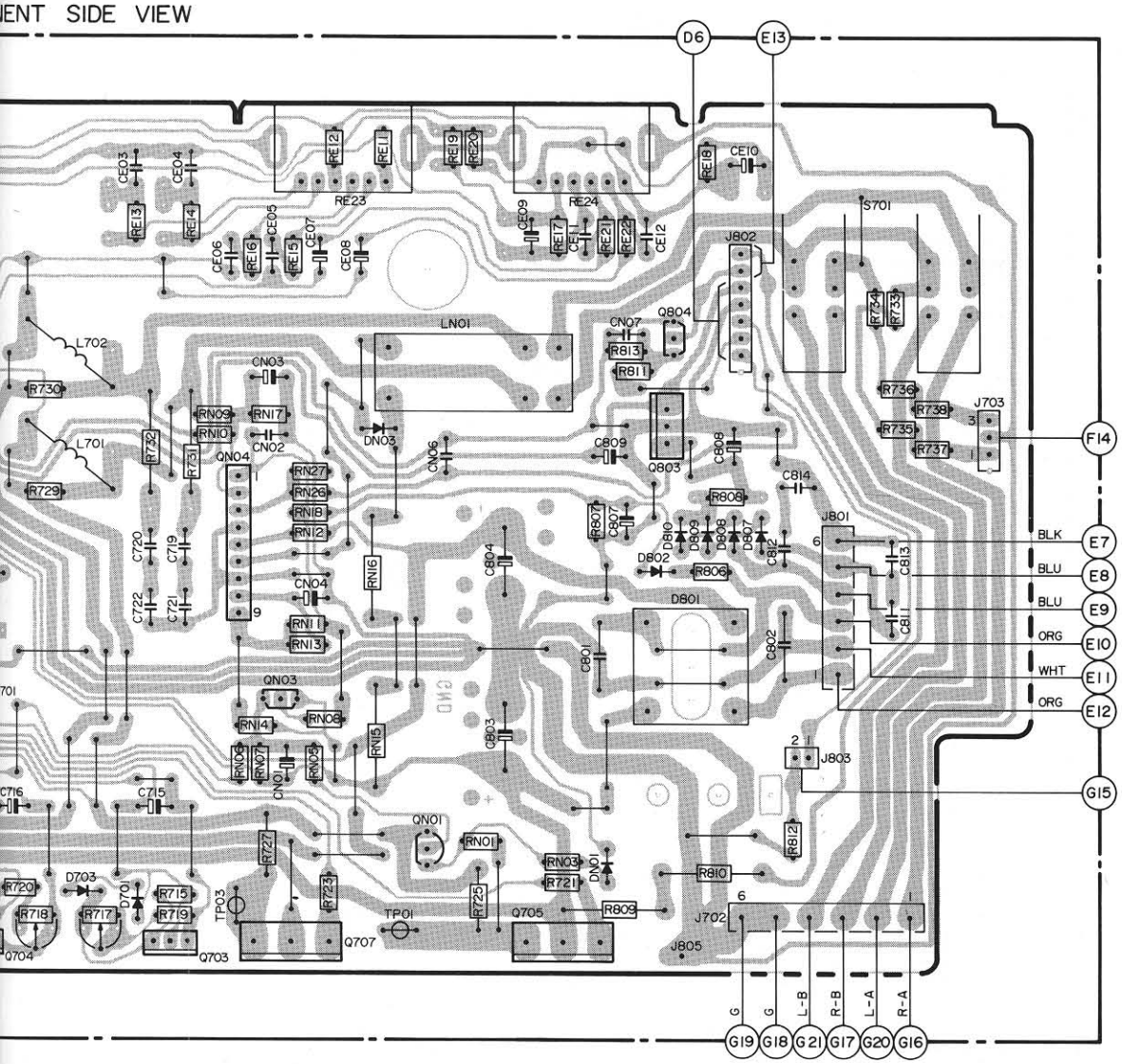
COMPONENT SIDE VIEW



WIRING DIAGRAM

R730 R729 RE13 RE14 RE16 RE15 RE12 RE23 RE11 RE19 RE20 RE17 RE24 RE21 RE22 RE18 R733～R738	R
R732 R731 RN09～RN18 RN27 RN26 R807 R813 R811 R806 R808	
R715～R720 RN05～RN08 R727 R723 RN01 R725 RN03 R721 R809 R810 R812	
711 CE03 CE04 CE05～CE08 CE09 CE11 CN07 CE12 CE10	C
C716 C719～C722 C715 CN03 CN02 CN01 CN04 CN06 C804 C803 C801 C809 C807 C808 C812 C802 C814 C813 C811	
701 Q704 Q703 QN04 QN03 Q707 QN01 Q705 Q803 Q804	Q
D703 D701 DN03 DN01 D802 D810 D801 D809 D808 D807	D
L702 L701 LN01 S701	L-S

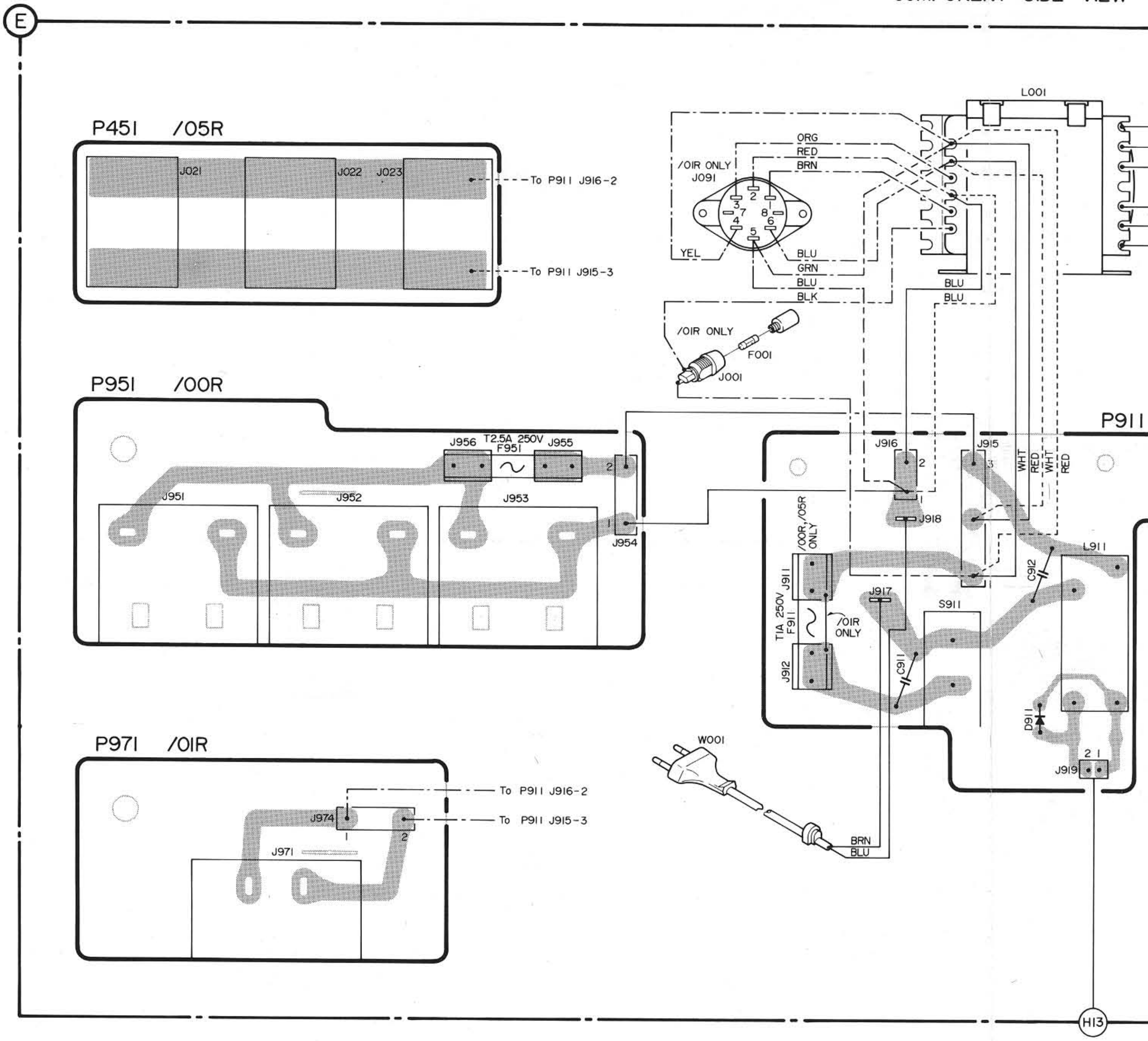
ENT SIDE VIEW



WIRING DIAGRAM

R	
C	C911 C912
D	D911
F-L-S-W	F951 W001 F001 F911 S911 L001 L911

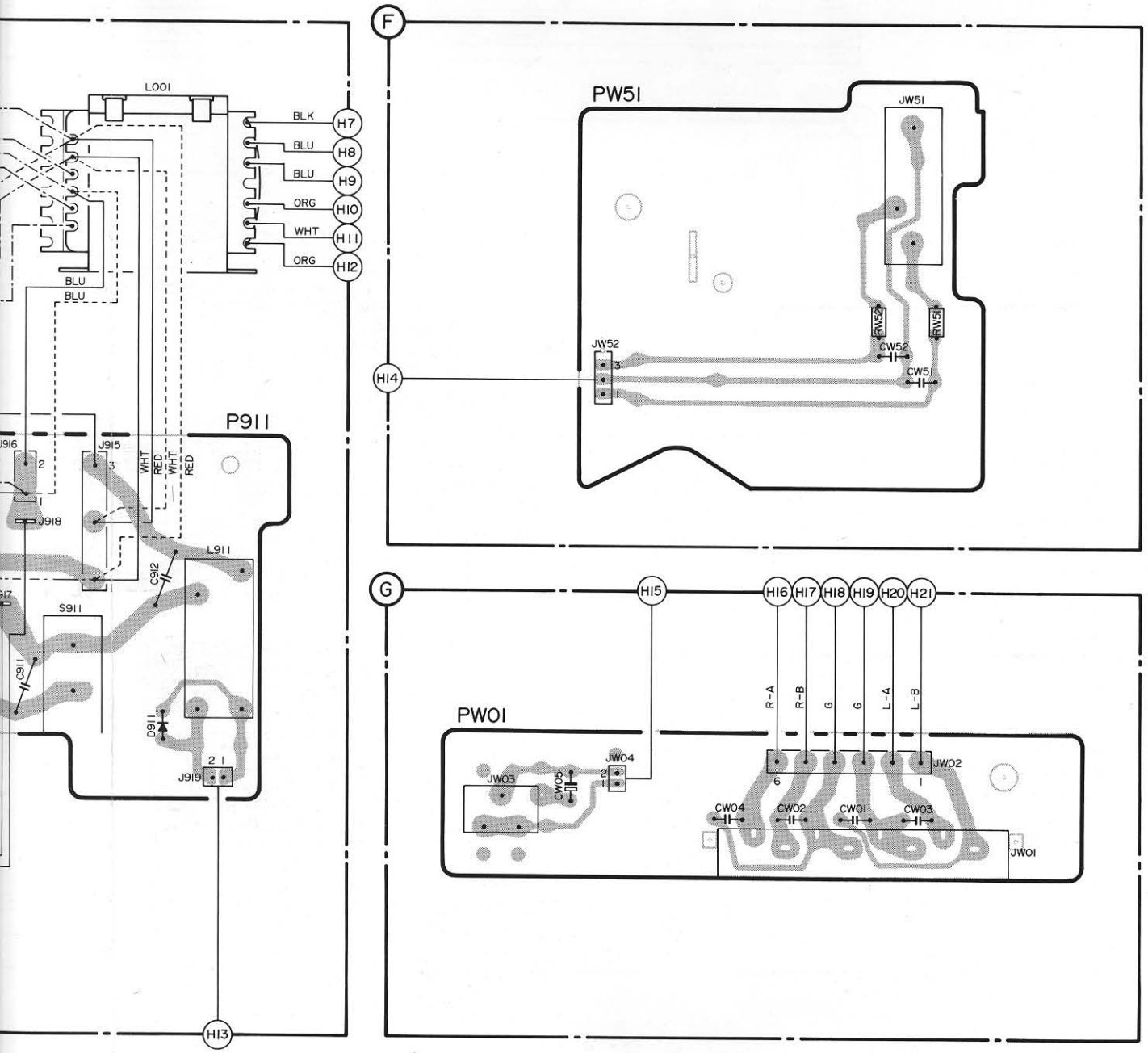
COMPONENT SIDE VIEW



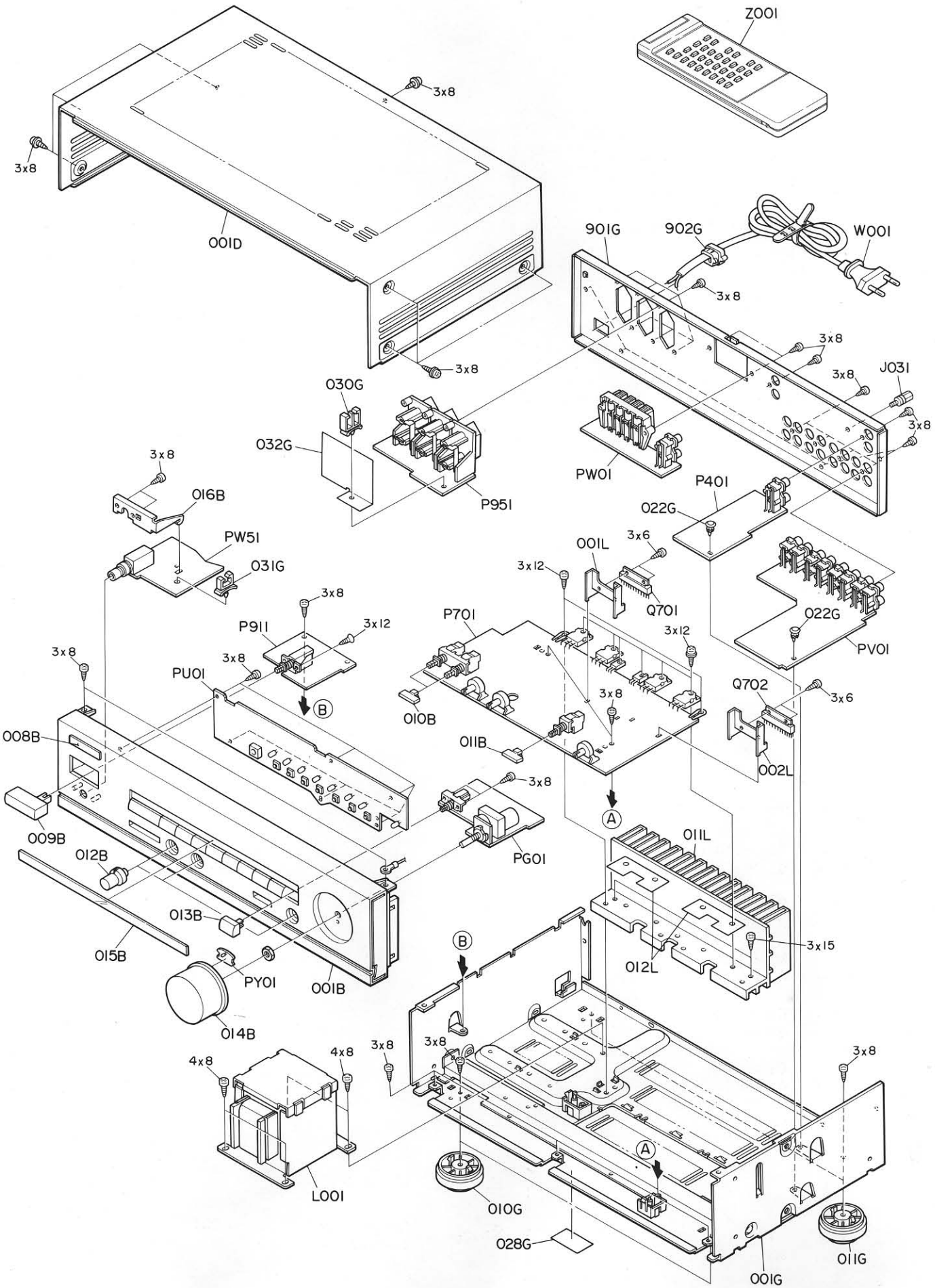
WIRING DIAGRAM

C911	C912			CW05	CW04	CW02	CW01	RW52 CW52	RW51 CW03 CW51		R
	D911										C
S911	L001	L911									D
											F-L-S-W

COMPONENT SIDE VIEW



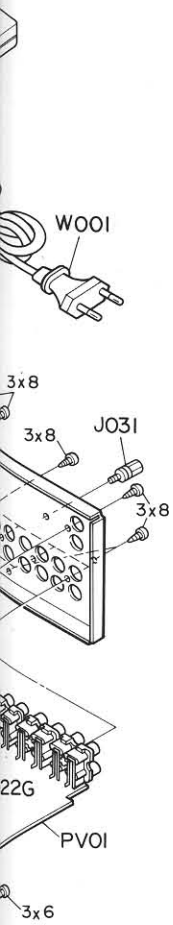
EXPLODED VIEW

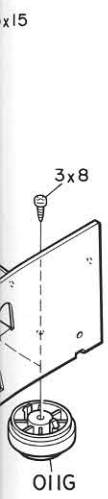


001B
008B
009B
010B
011B
012B
013B
014B
015B
010G
011G
902G

012L
001T
Z001
F001
J001
J021
J022
J023
J031
J091

001B	4822 426 51411	Front panel assembly
008B	4822 454 40107	Budge, PHILIPS
009B	4822 410 60143	Button, power
010B	4822 410 60144	Button, speaker
011B	4822 410 60144	Button, souce direct
012B	4822 413 41577	Knob, tone/balance
013B	4822 410 60145	Knob, loudness
014B	4822 413 41522	Knob. volume
015B	4822 459 80691	Escutcheon, function
010G	4822 462 41384	Foot, front
011G	4822 462 41385	Foot, rear
902G	4822 532 60948	Bushing, AC cord (/00R/ 01R)
		Bushing, AC cord (/05R)
012L	4822 466 92856	Sheet, transistor
001T	4822 736 20619	User manual
Z001	4822 218 10344	Remote control, RC660
F001		Fuse A 250V (/01R)
J001	4822 256 30233	Jack, fuse holder (/05R)
J021		Jack, AC outlet (/05R)
J022		Jack, AC outlet (/05R)
J023		Jack, AC outlet (/05R)
J031	4822 290 40297	Terminal, GND
J091	4822 272 10227	Voltage selector (/01R)





Carbon film 0.125 W or 0.2 W	70°C	5%	
Carbon film 0.25 W or 0.33 W	70°C	5%	
Metal film 0.25 W or 0.33 W	70°C	5%	
Carbon film 0.5 W	70°C	5%	
Carbon film 0.67 W	70°C	5%	
Carbon film 1 W or 1.15 W	70°C	5%	

(C) Chip component

Ceramic plate Tuning ⩽ 120 pF NP.0		2%
Others		−20/+80%
Polyester flat foil		10%
Metalized polyester flat film		10%
Polyester flat foil small size (Mylar)		10%
Polysterene film/foil		1%
Tubular ceramic		
Miniature single		
Subminiature tantalum		± 20%

*a = 2.5 V
b = 3.15 V or 4 V
c = 6.3 V
d = 10 V
e = 16 V
f = 25 V
g = 40 V
h = 63 V
j = 100 V
l = 125 V
m = 150 V
n = 160 V
q = 200 V
r = 250 V
s = 300 V
t = 350 V
u = 400 V
v = 500 V
w = 630 V
x = 1000 V
A = 1.6 V
B = 6 V
C = 12 V
D = 15 V
E = 20 V
F = 35 V
G = 50 V
H = 75 V
I = 80 V

ELECTRICAL PARTS LIST

QN01	4822 130 43233	2SC2240 (GR, BL)
QN02	4822 130 43233	2SC2240 (GR, BL)
QN03	4822 130 61665	2SA1310 (R, S)
QN05	4822 130 43819	2SC2878 (A)
QN06	4822 130 43819	2SC2878 (A)
QU02	4822 130 43313	2SC3312 (2SC1740SLN)
QU03	4822 130 43313	2SC3312 (2SC1740SLN)
QU04	4822 130 62293	2SA1310 (2SA933SLN)
QU05	4822 130 43313	2SC3312 (2SC1740SLN)
Q703	4822 130 61666	2SC3419 (O, Y)
Q704	4822 130 61666	2SC3419 (O, Y)
Q705	4822 130 61319	2SC3181 (R, O)
Q706	4822 130 61319	2SC3181 (R, O)
Q707	4822 130 43018	2SA1264 (R, O)
Q708	4822 130 43018	2SA1264 (R, O)
Q801	4822 130 43197	2SC1815 (O, Y)
Q802	4822 130 42961	2SA1015 (O, Y)
Q804	4822 130 43312	2SC3312 (R, S)

DG01	4822 130 80839	S5688G
DG02	4822 130 80839	S5688G
DN01	4822 130 80837	HSS81RX
DN02	4822 130 80837	HSS81RX
DN03	4822 130 33305	1SS176 (MA165, 1SS254)
DN04	4822 130 80316	MTZJ3.6A
DU01÷DU09	4822 130 80326	LT3D8B RED
DU10	4822 130 33305	1SS176 (MA165, 1SS254)
DU11	4822 130 80316	MTZJ3.6A
DU12÷DU18	4822 130 33305	1SS176 (MA165, 1SS254)
DY01	4822 130 80326	LT3D8B RED
D701÷D704	4822 130 33305	1SS176 (MA165, 1SS254) (/00R/05R)
D801	4822 130 81093	BR83
D802	4822 130 80837	HSS81RX
D803	4822 130 33305	1SS176 (MA165, 1SS254) (/00R/05R)
D804	4822 130 33305	1SS176 (MA165, 1SS254) (/00R/05R)
D805	4822 130 80498	RD15JB3 (MTZJ15A) (/00R/05R)
		RD16JB2 (MTZJ16C) (/01R)
D806	4822 130 80498	RD15JB3 (MTZJ15A) (/00R/05R)
		RD16JB2 (MTZJ16C) (/01R)
D807	4822 130 80839	S5688G
D808	4822 130 80839	S5688G
D809	4822 130 80839	S5688G (/00R/05R)
D810	4822 130 80839	S5688G (/00R/05R)
D911	4822 130 33305	1SS176 (MA165, 1SS254)

QG01	4822 209 73287	LB1630
QN04	4822 209 83312	TA7317P
QU01	4822 209 62424	LC6554H-4342
QV01	4822 209 72748	LC7821
QV02	4822 209 73275	TC9214P
Q401	4822 209 83631	MJM4558DD
Q701	4822 209 83779	MPC1270H
Q702	4822 209 83779	MPC1270H
Q803	4822 209 62423	NJM78M06FA

LN01	4822 280 70354	Relay
L001	4822 146 21526	Mains transformer (/00R/05R)
		Mains transformer (/01R)
L701	4822 157 51379	Choke coil speaker
L702	4822 157 51379	Choke coil speaker
L911	4822 280 20222	Relay

RE23	4822 101 30628	Potm. 50k(C) x 2
RE24	4822 101 30628	Potm. 50k(C) x 2
RE25	4822 101 30627	Potm. 100k(MN) x 2
RG05	4822 100 30105	Potm. 50k x 2 with motor
RN15	4822 116 60267	Res. met. oxide 470E 1W
RN16	4822 116 60267	Res. met. oxide 470E 1W
R709÷R712	4822 113 90119	Res. Fuse 22E 1/4W
R717	4822 100 11351	Potm. trimmer 10k
R718	4822 100 11351	Potm. trimmer 10k
R725÷R728	4822 116 80171	Res. metal film 0.18E 3W
R731	4822 115 90174	Res. safety 10E 1W
R732	4822 115 90174	Res. safety 10E 1W
R801	4822 116 81748	Res. fuse 330E 1/4W
R802	4822 116 81748	Res. fuse 330E 1/4W
R808	4822 116 60307	Res. met. oxide 1E 1/4W
R809	4822 116 60267	Res. met. oxide 470E 1W
R810	4822 116 60209	Res. safety 560E 1W
TP01÷TP04	4822 116 60318	Res. met. oxide 22E 1/4W

CU07	4822 124 23128	Cap. elect. 0.047µF 5.5V
C705	4822 124 22271	Cap. elect. 100µF 35V
C706	4822 124 22271	Cap. elect. 100µF 35V
C713	4822 126 10797	Cap. ceramic 10pF 100V
C714	4822 126 10797	Cap. ceramic 10pF 100V
C803	4822 124 41603	Cap. elect. 4700µF 50V
C804	4822 124 41603	Cap. elect. 4700µF 50V
C911	4822 122 33276	Cap. ceramic 0.01µF 400V
C912	4822 122 33276	Cap. ceramic 0.01µF 400V

SE01	4822 276 12595	Source direct
SG01	4822 276 12618	Loudness
SU01÷SU07	4822 276 12455	Function
S701	4822 276 20477	Speaker A-B
S911	4822 276 11898	Power

MISCELLANEOUS

F911	4822 253 30021	Fuse 1A 250V (/00R/05R)
F951	4822 253 40166	Fuse T2.5A 250V (/00R)
JV01÷JV04	4822 265 30397	Jack 4P RCA pin
JW01	4822 267 50922	Terminal 8P speaker
JW03	4822 266 30274	Socket 2P RCA pin
JW51	4822 267 31017	Jack phone
J401	4822 267 30471	Socket 2P RCA pin
J911	4822 256 30329	Fuse clip (/00R/05R)
J912	4822 267 30978	Fuse clip (/00R/05R)
J951÷J953	4822 267 31194	Jack AC outlet (/00R)
J955	4822 267 30978	Fuse clip (/00R)
J956	4822 256 30329	Fuse clip (/00R)
XU01	4822 242 72223	Resomator CST4.00MGW
ZU01	4822 218 10343	IR sensor