

**PIONEER**  
The Art of Entertainment

PC-1

# Service Manual



\* Illustration shows model VSX 4900S

ORDER NO.  
**ARZ2263**

AUDIO/VIDEO STEREO RECEIVER

# VSX-4900S

## VSX-4800

## VSX-51

CIRCUIT DIAGRAMS &  
PATTERN LAYOUTS  
WITH MICROFICHE

(MICROFICHE PORTION LOCATED INSIDE BACK COVER)

**PIONEER ELECTRONIC CORPORATION** 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan

**PIONEER ELECTRONICS SERVICE INC.** P.O. Box 1760, Long Beach, California 90801 U.S.A.

**PIONEER ELECTRONICS OF CANADA, INC.** 505 Cochrane Drive, Markham, Ontario L3R 8E3 Canada

**PIONEER ELECTRONIC [EUROPE] N.V.** Keetberglaan 1, 9120 Beveren, Belgium

**PIONEER ELECTRONICS AUSTRALIA PTY. LTD.** 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

© **PIONEER ELECTRONIC CORPORATION 1991**

YV MAY 1991 Printed in Japan

# 4. SCHEMATIC AND P.C.BOARDS CONNECTION DIAGRAM

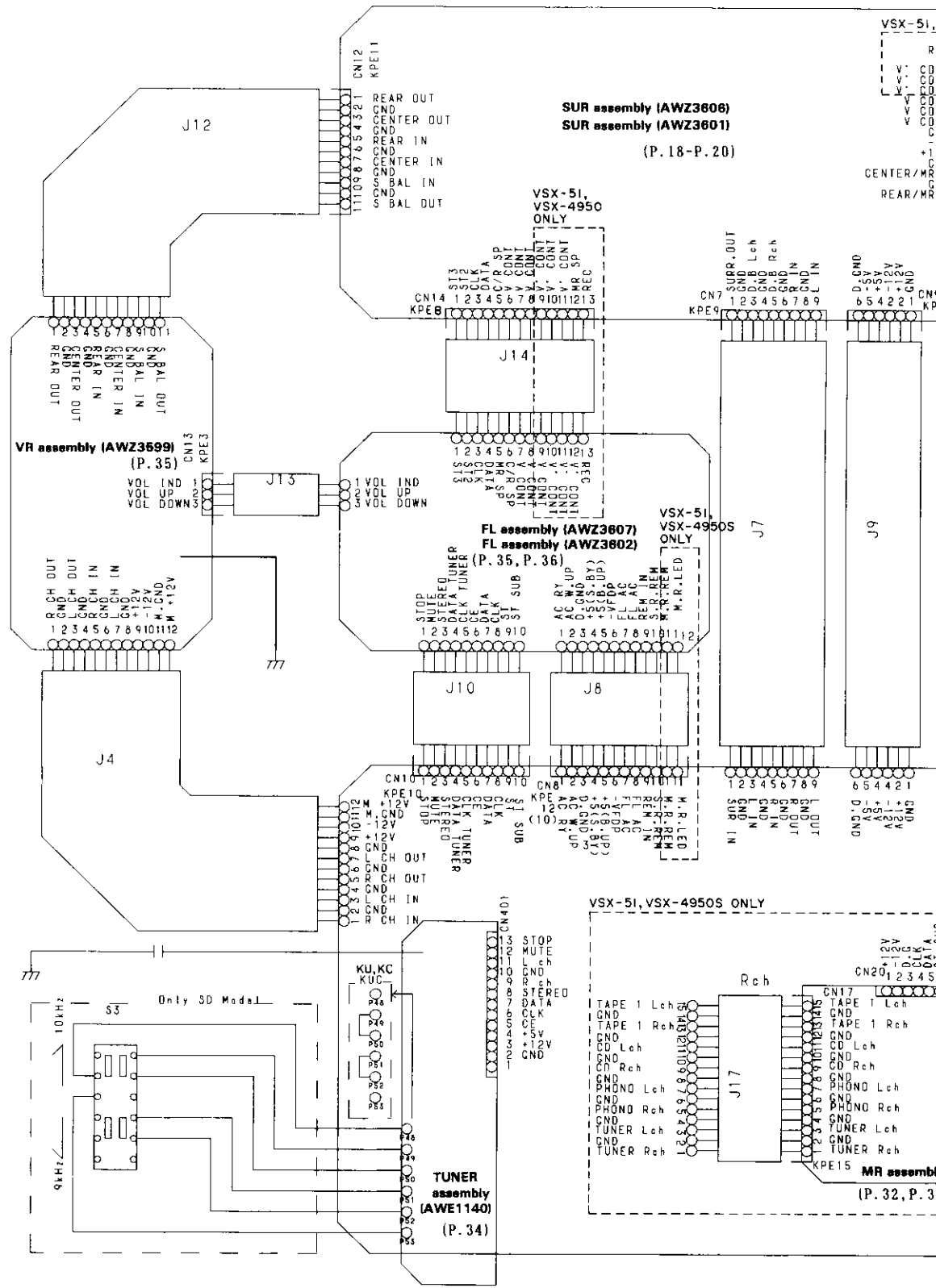
## 4.1 OVER ALL SCHEMATIC DIAGRAM

A

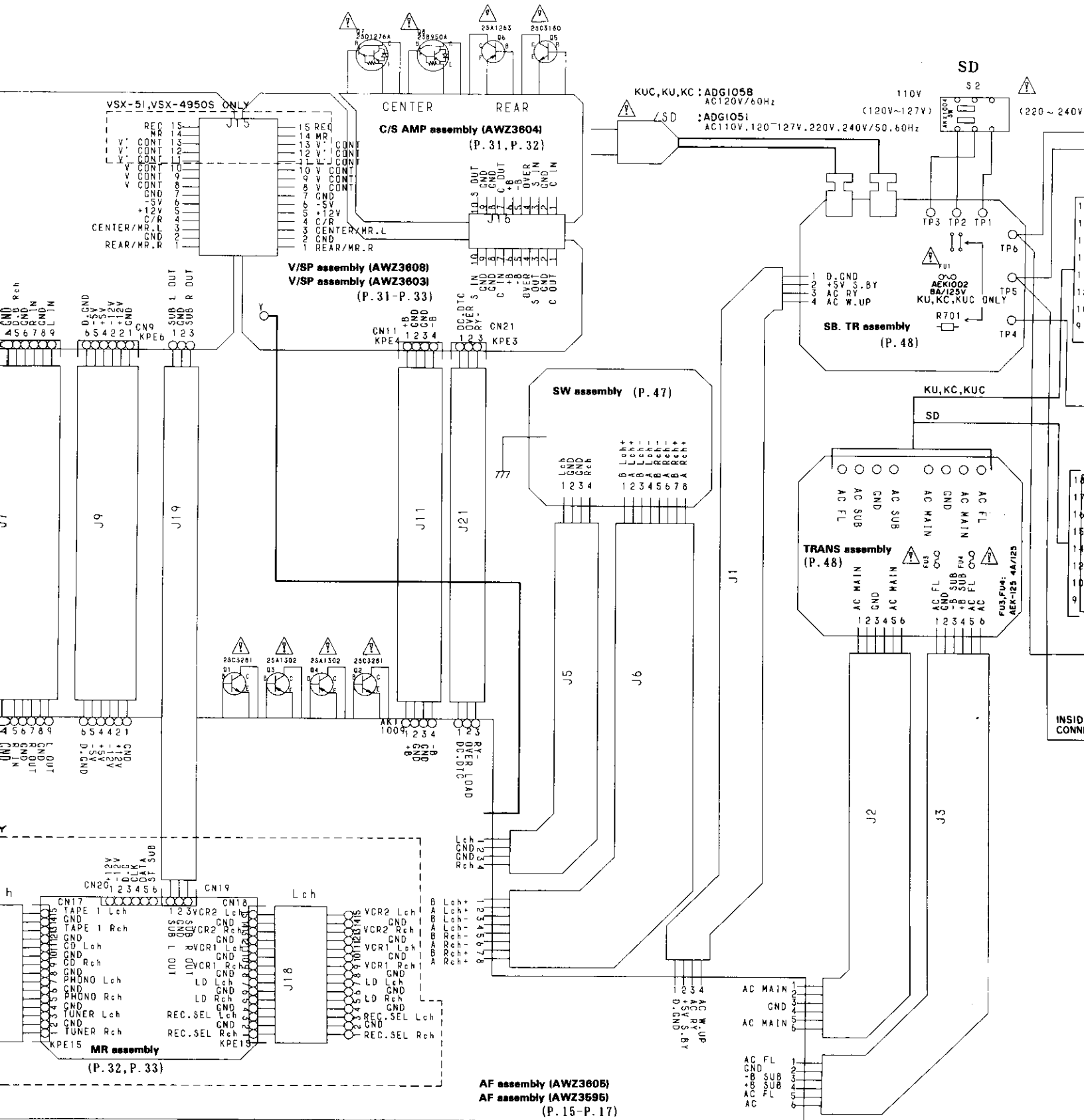
B

C

D

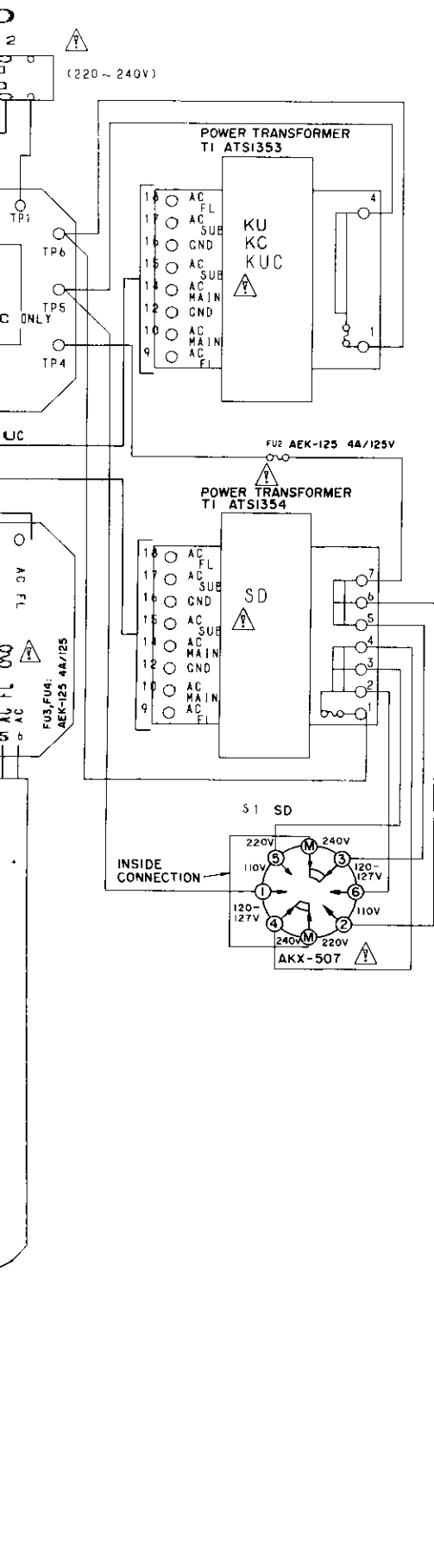


- :FRONT SIGNAL
- :TUNER AM SIGNAL
- :DOLBY PROLOGIC FR
- :DOLBY PROLOGIC CE
- :DOLBY PROLOGIC SU
- :MR (MULTI ROOM) S



- :FRONT SIGNAL
- :TUNER AM SIGNAL
- :DOLBY PROLOGIC FRONT SIGNAL
- :DOLBY PROLOGIC CENTER SIGNAL
- :DOLBY PROLOGIC SUB(REAR) SIGNAL
- :MR (MULTI ROOM) SIGNAL

AF assembly (AWZ3605)  
 AF assembly (AWZ3595)  
 (P. 15-P. 17)



## 1. RESISTORS:

Indicated in  $\Omega$ ,  $\frac{1}{4}W$ ,  $\frac{1}{8}W$ ,  $\pm 5\%$  tolerance unless otherwise noted k : k $\Omega$ , M : M $\Omega$ , (F) :  $\pm 1\%$ , (G) :  $\pm 2\%$ , (K) :  $\pm 10\%$  (M) :  $\pm 20\%$  tolerance

## 2. CAPACITORS:

Indicated in capacity ( $\mu F$ )/voltage (V) unless otherwise noted p : pF  
Indication without voltage is 50V except electrolytic capacitor.

## 3. VOLTAGE, CURRENT:

: Signal voltage at (100W + 100W 8 $\Omega$  : FRONT) output (1kHz)  
(18W + 18W 8 $\Omega$  : REAR, 20W 8 $\Omega$  : CENTER)

: DC voltage (V) at no input signal  
Value in ( ) is DC voltage at rated power.

mA : DC current at no input signal

## 4. OTHERS:

: Signal route.

: Adjusting point.

The mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

\* marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

## SWITCHES:

SW assembly

S581 SP-A / SP-B

Fl. assembly

S1001	DELAY TIME	S1031	5
S1002	3CH LOGIC	S1032	4
S1004	DOLBY PRO LOGIC	S1033	3
S1005	SIMULAT	S1034	2
S1006	STUDIO	S1035	1
S1007	RETURN	S1036	HITS
S1008	MUTING	S1037	DIRECT ACCESS
S1009	ACOUSTIC MEMORY	S1038	AUTO/MANUAL
S1010	BASS UP	S1039	FM AUTO MONO
S1011	BASS DOWN	S1040	SCAN
S1012	ACOUSTIC SELECT	S1041	SELECT
S1013	TABLE UP	S1042	(NAME)
S1014	TREBLE DOWN	S1043	STATION MEMORY
S1015	SIMULAT STEREO	S1044	FM/AM
S1016	BALANCE R	S1045	FREQ UP
S1017	BALANCE L	S1046	FREQ DOWN
S1018	PHONO	S1047	VIDEO SELECT
S1019	TUNER	S1048	REC SELECT
S1020	CD		(VSX-51, VSX-4950S ONLY)
S1021	LD	S1049	M, R & SOUSE
S1022	VCR 1	S1050	POWER ON/OFF
S1023	VCR 2		
S1024	TAPE 1	S1	VOLTAGE SELECTOR (ONLY SD MODEL)
S1025	TAPE 2		110V-127V $\leftrightarrow$ 220V-240V
S1026	0/10	S2	VOLTAGE SELECTOR (ONLY SD MODEL)
S1027	9		110, 120-127V, 220, 240V
S1028	8	S3	BAND SELECTOR
S1029	7		(AM: 10kHz / FM: 100kHz)
S1030	6		$\updownarrow$
			(AM: 9kHz / FM: 50kHz)

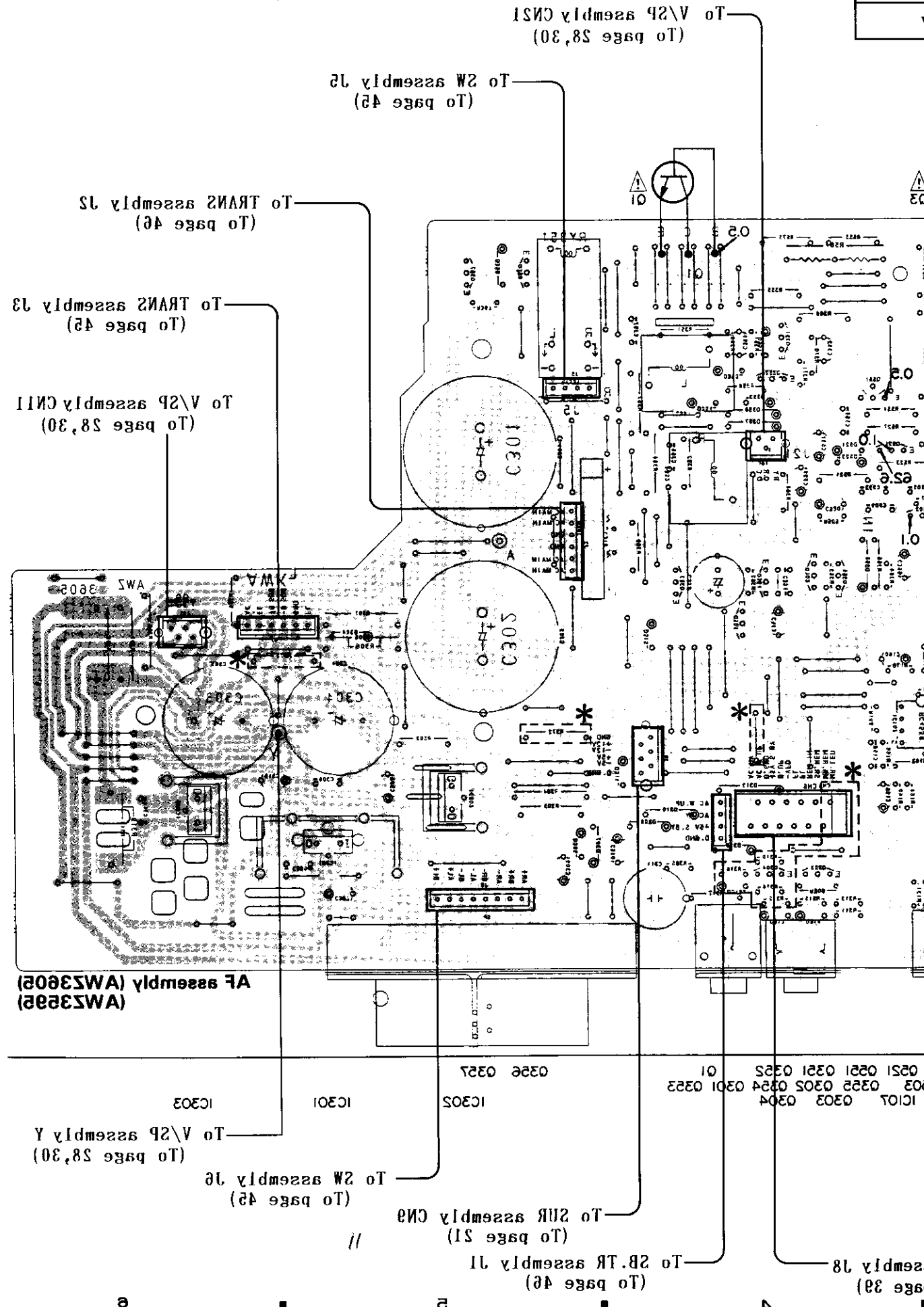
This P.C.B. connection diagram is viewed from the foil side.

A

B

C

D



AF assembly (AW3905)  
(AW3905)

To TRANS assembly 12  
(To page 46)

To TRANS assembly 13  
(To page 45)

To V/2P assembly 11  
(To page 28,30)

IC303  
To V/2P assembly Y  
(To page 28,30)

To 2W assembly 16  
(To page 45)

To 2UR assembly 19  
(To page 21)

To 2B.TR assembly 11  
(To page 46)

To 2W assembly 15  
(To page 45)

To V/2P assembly 11  
(To page 28,30)

assembly 18  
(page 30)

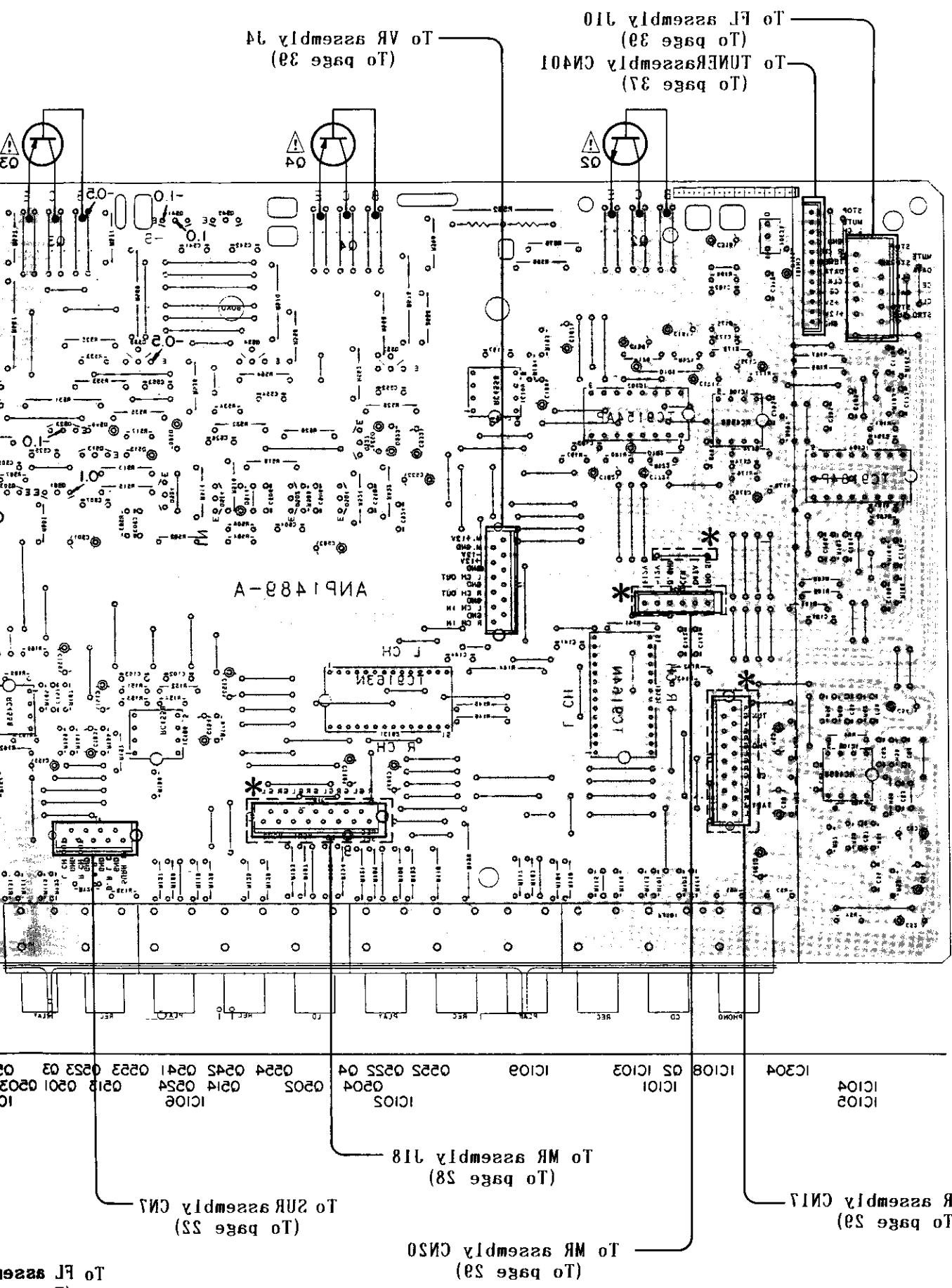
IC107 0303 0304  
IC203 0305 0304 0301 0323  
0321 0321 0321 0325 01

IC305  
0356 0327

IC301

pages only

\* : V2X - 51 KU and V2X - 4950 KC types only  
※ : V2X - 49002 \ KUC, V2X - 4800 \ KUC, 2D types



A

B

C

D

To FL assem  
(To page 39)

3

2

1

※ : VSX-4900S/KUC, VSX-4800/KUC, SD types only

\* : VSX-51/KU and VSX-4950S/KC types only

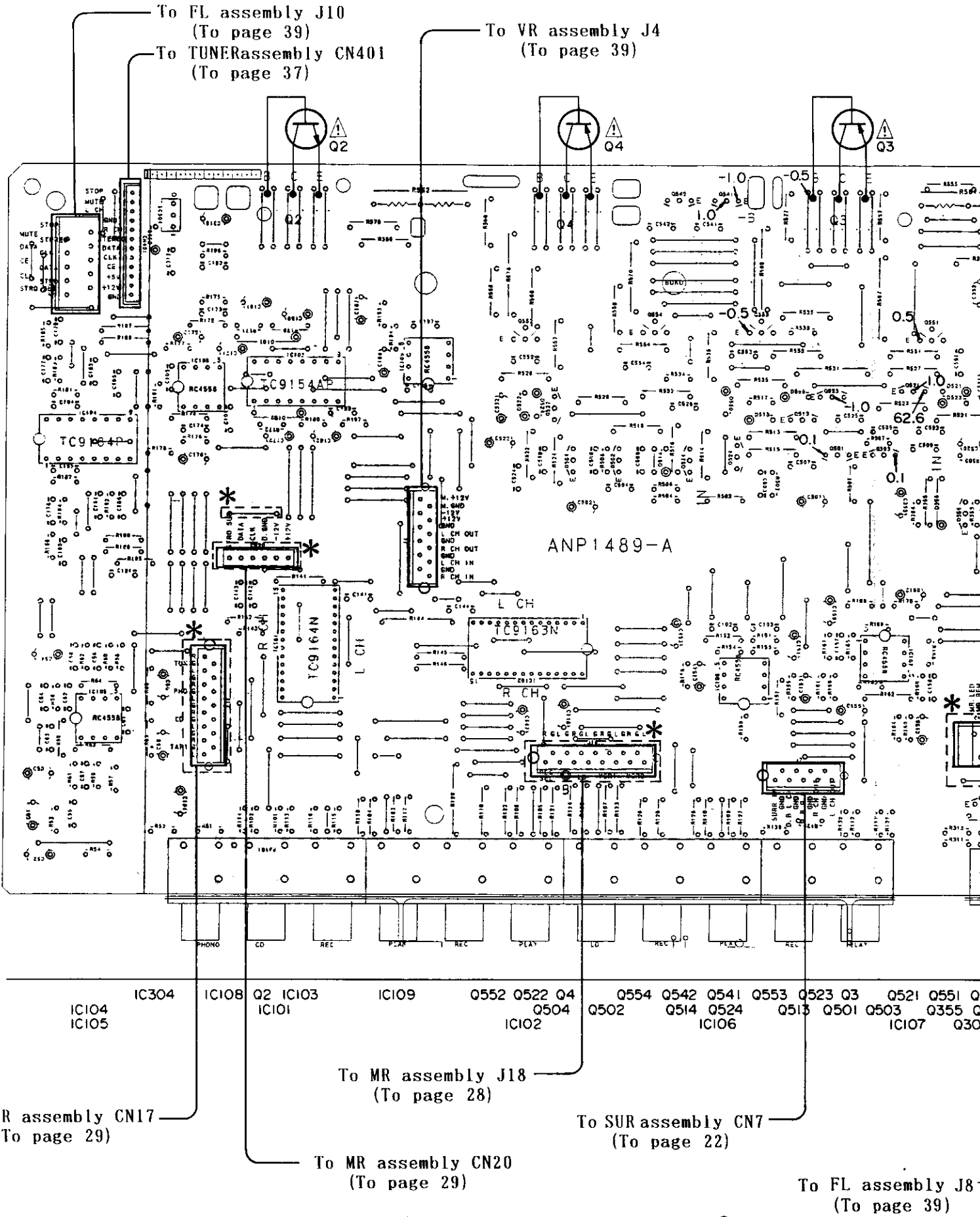
4.2 AF assembly (AWZ3605)

A

B

C

D



To MR assembly J18  
(To page 28)

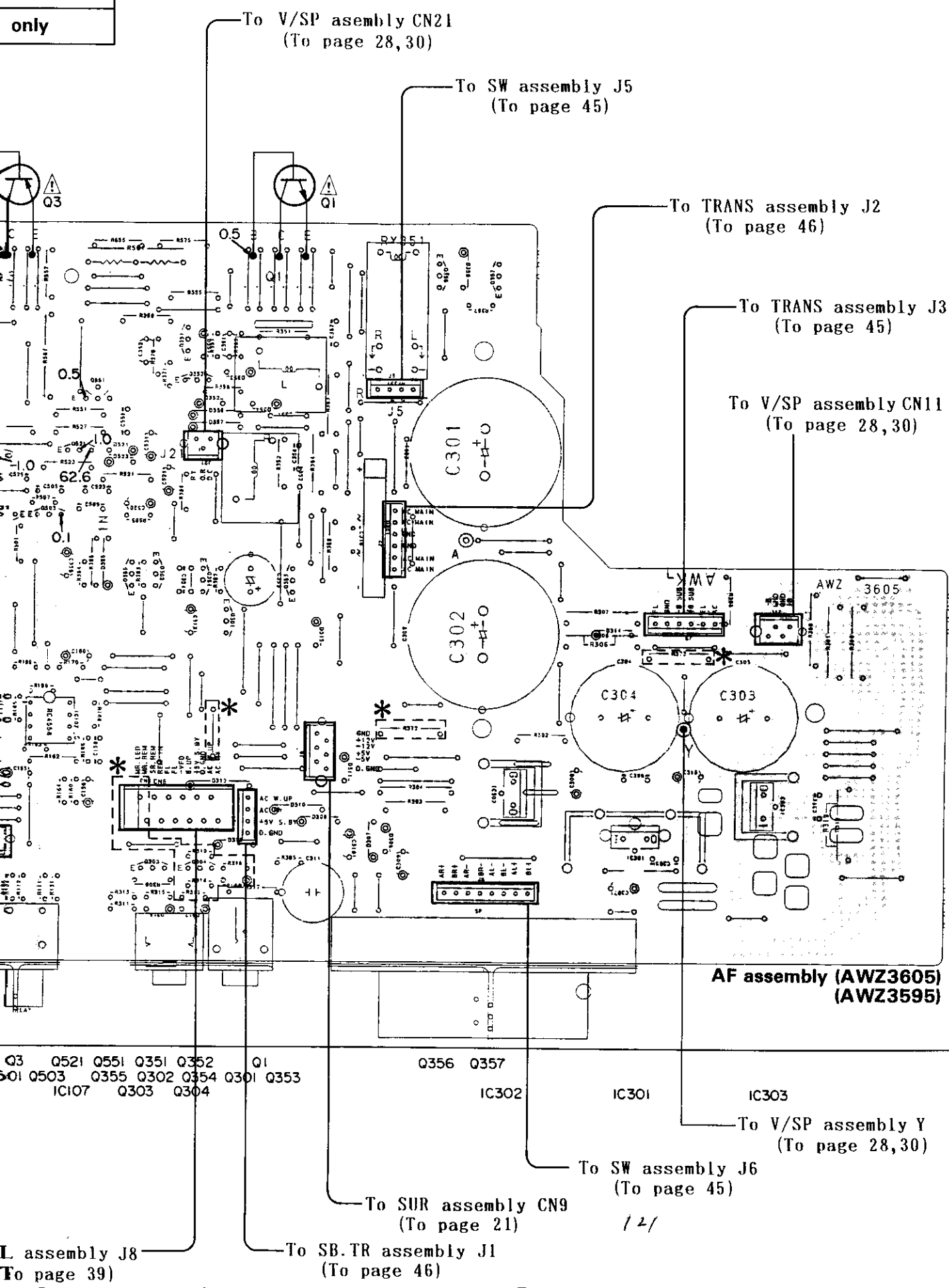
To MR assembly CN17  
(To page 29)

To SUR assembly CN7  
(To page 22)

To MR assembly CN20  
(To page 29)

To FL assembly J8  
(To page 39)

types only  
only



A

B

C

D

L assembly J8  
To page 39)

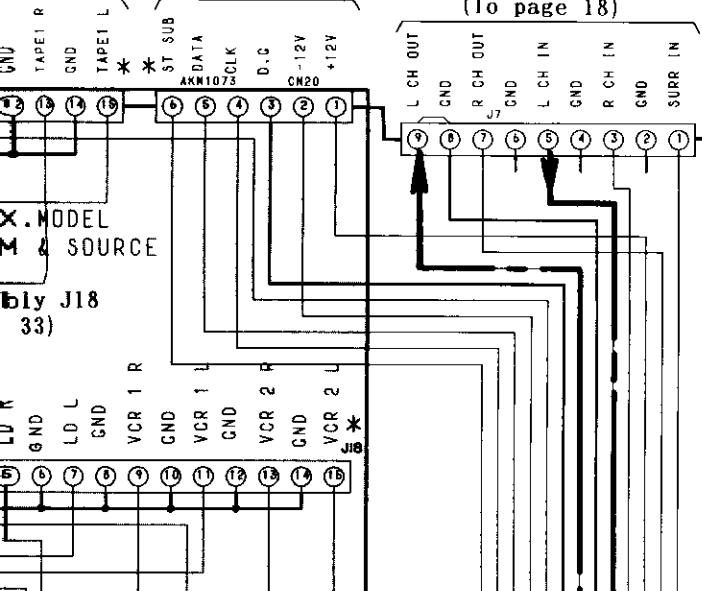






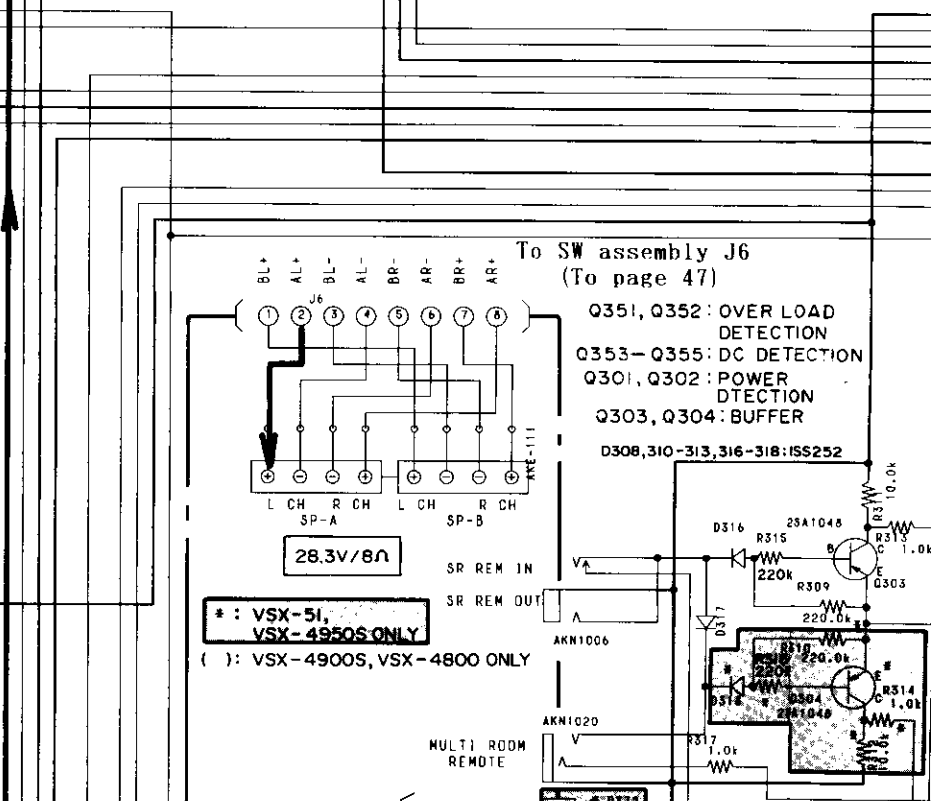
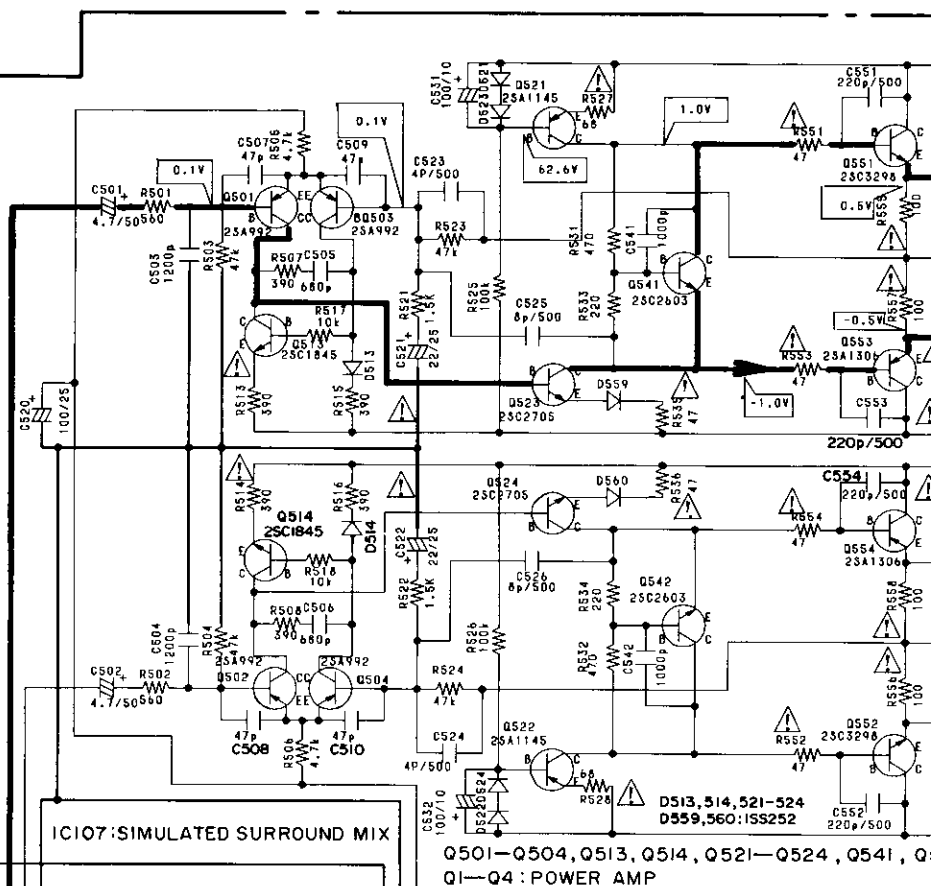
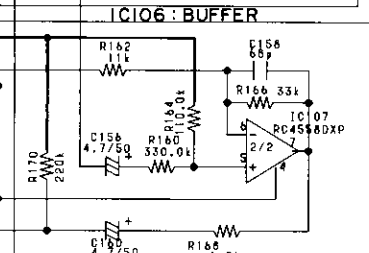
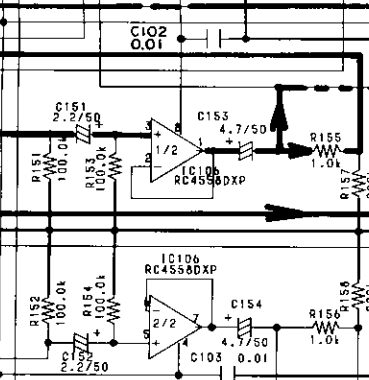
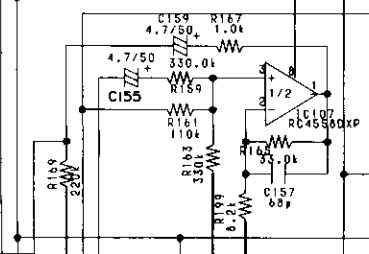
To MR assembly CN20  
(To page 32)

To SUR assembly CN7  
(To page 18)



X MODEL  
& SOURCE  
by J18  
(33)

IC101:FUNCTION SELECTOR

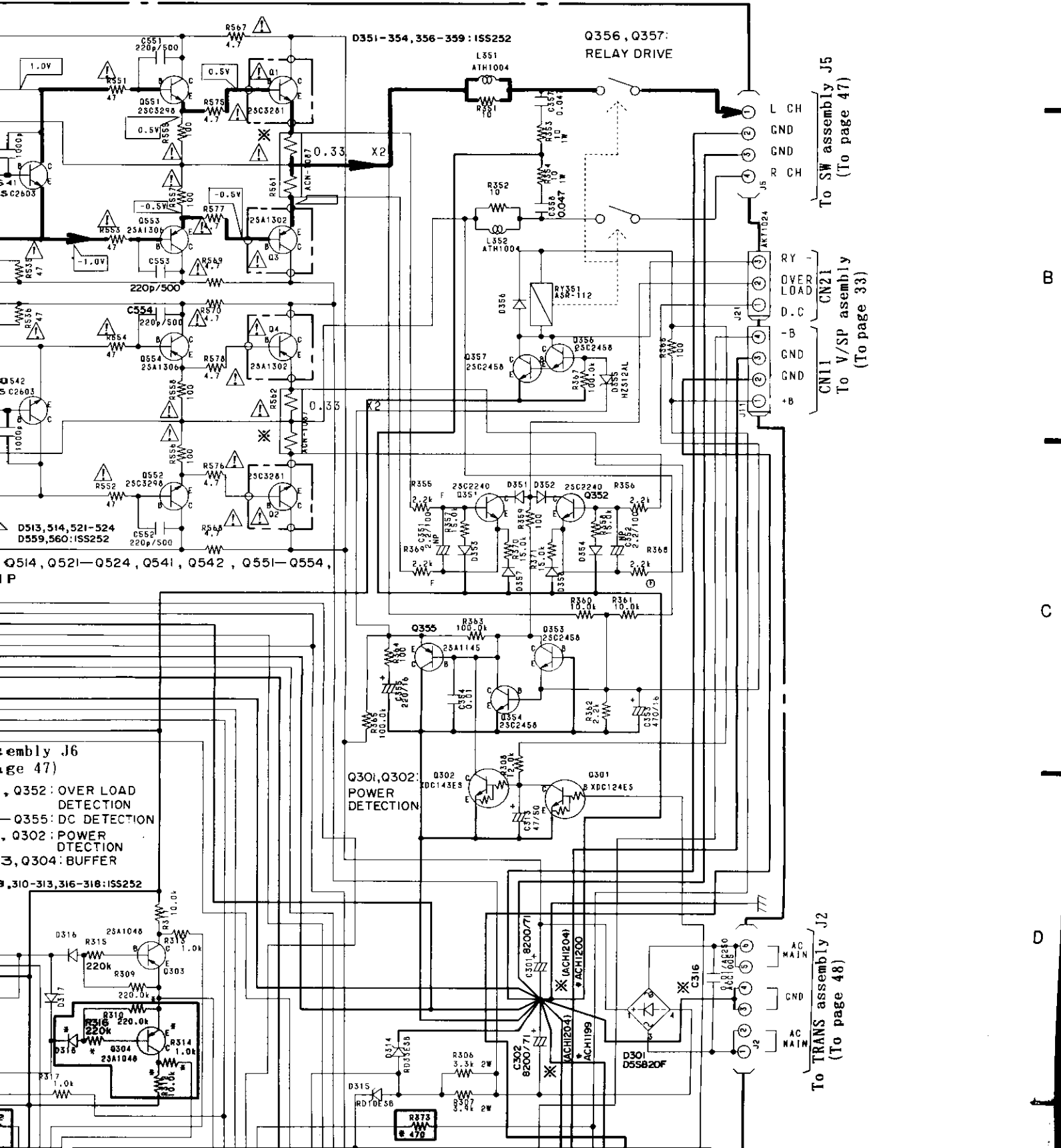


\* : VSX-51, VSX-4950S ONLY  
( ) : VSX-4900S, VSX-4800 ONLY

Q351, Q352 : OVER LOAD DETECTION  
Q353 - Q355 : DC DETECTION  
Q301, Q302 : POWER DETECTION  
Q303, Q304 : BUFFER  
D308, 310-313, 316-318 : ISS252

MULTI ROOM REMOTE  
MR. ING M. D. DEM





A

B

C

D

To SW assembly J5  
(To page 47)

CN11  
To V/SP assembly  
(To page 33)

To TRANS assembly J2  
(To page 48)

assembly J6  
(page 47)

- Q352: OVER LOAD DETECTION
- Q355: DC DETECTION
- Q302: POWER DETECTION
- Q303, Q304: BUFFER

Q310-313, 316-318: ISS252

D351-354, 356-359: ISS252

Q356, Q357:  
RELAY DRIVE

Q301, Q302:  
POWER DETECTION

D513, 514, 521-524  
D559, 560: ISS252

Q514, Q521-Q524, Q541, Q542, Q551-Q554,  
P

1.0V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

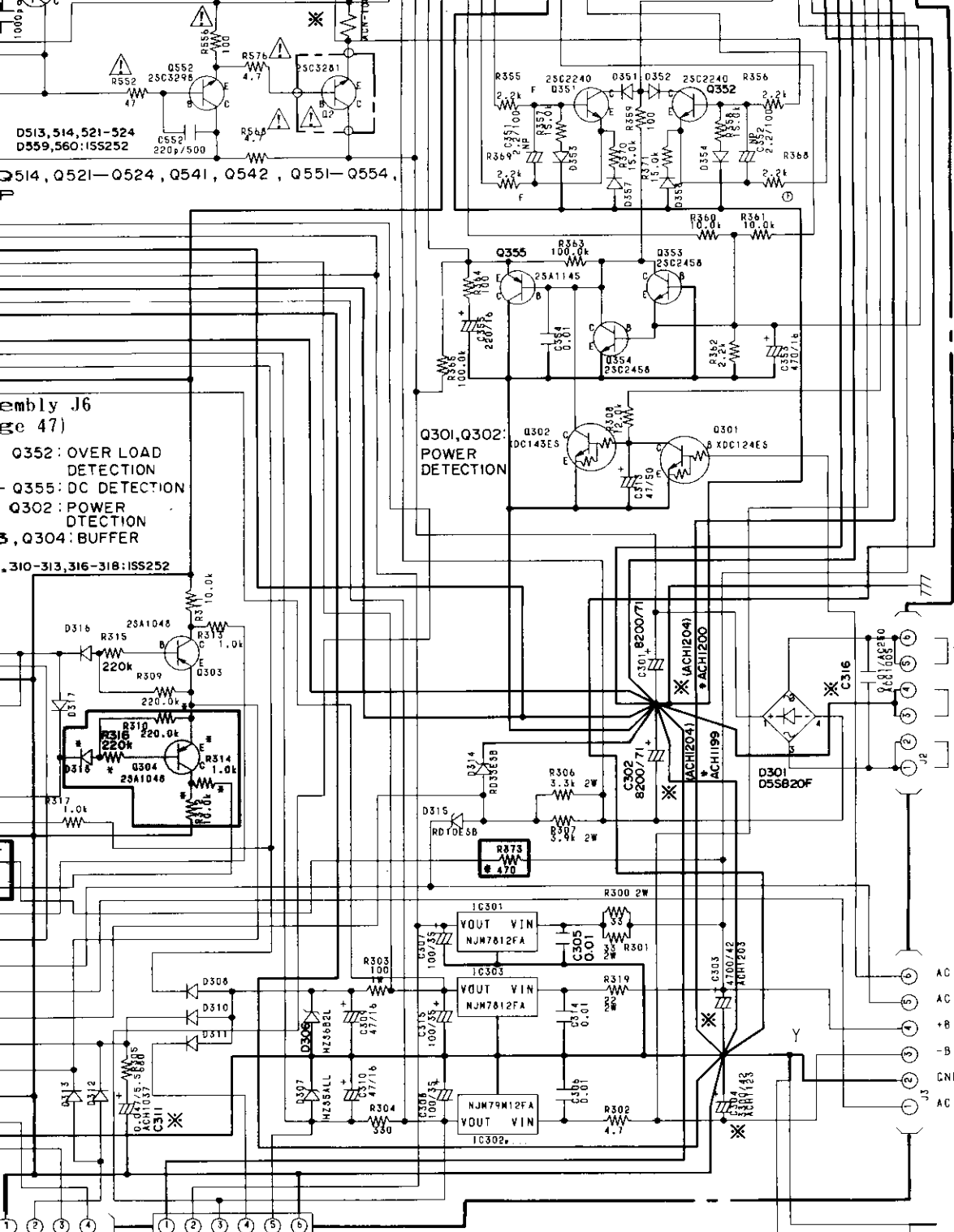
0.5V

0.5V

0.5V

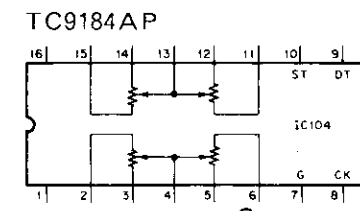
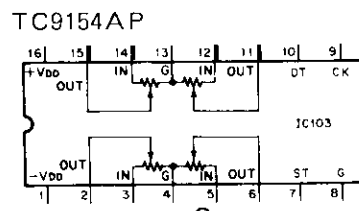
0.5V

0.5V



TR assembly (To page 48)

To SUR assembly CN9 (To page 18)





To AF assembly J9  
(To page 17)

- GND
- +12V
- 12V
- +5V
- 5V
- D.GND

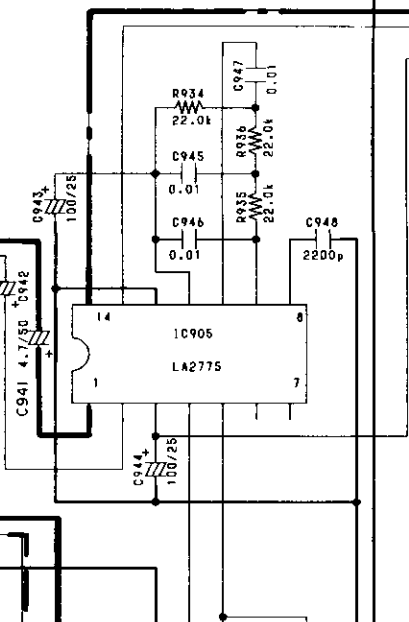
To V/SP assembly J15  
(To page 33)

- CENTER/MR.L
- GND
- REAR/MR.R
- C/R
- +12V
- 5V
- GND
- V CONT
- V CONT
- V CONT
- V<sup>-</sup> CONT
- V<sup>-</sup> CONT
- V<sup>-</sup> CONT
- MR
- REC \*

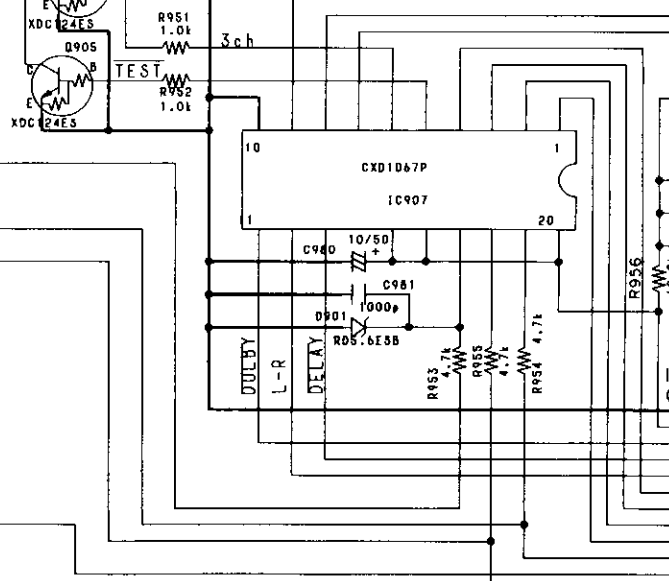
To FL assembly J14  
(To page 35)

- ST3
- ST2
- CLK
- DATA
- C/R SP
- V CONT
- V CONT
- V CONT
- V<sup>-</sup> CONT
- V<sup>-</sup> CONT
- V<sup>-</sup> CONT
- MR SP
- REC \*

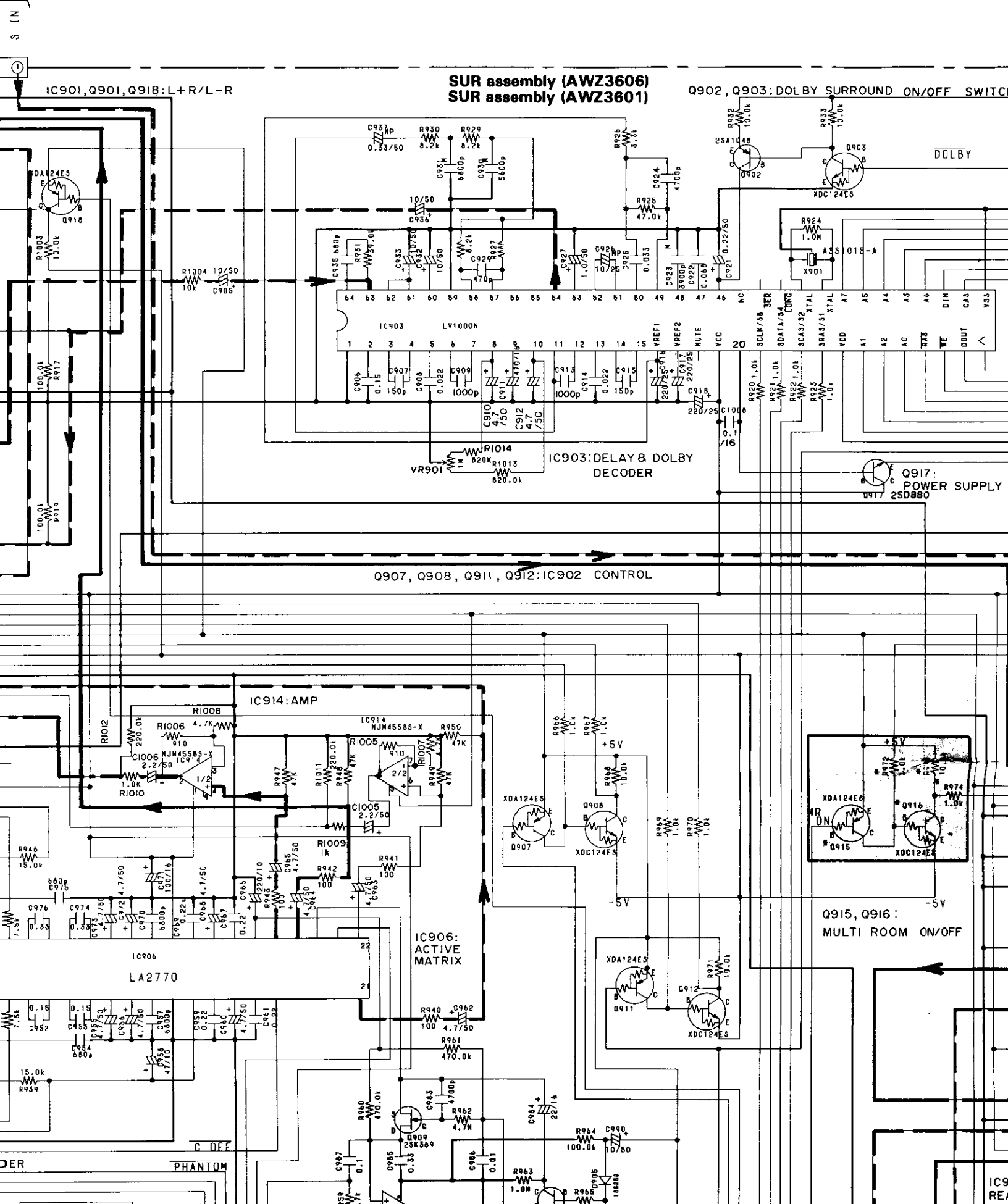
IC905, Q904, Q905: NOISE SEQUENCE



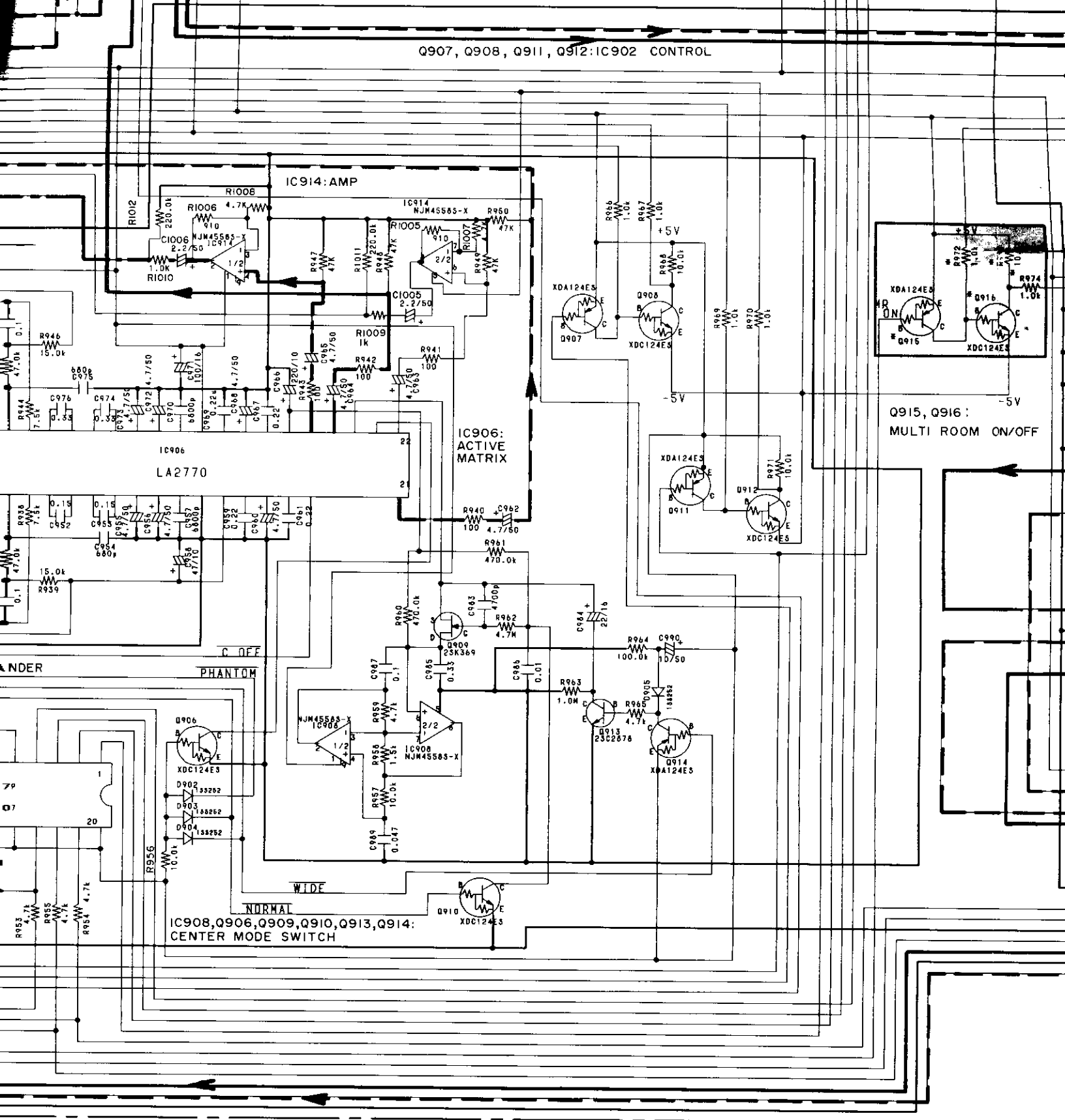
IC907: PORT-EXPANDER



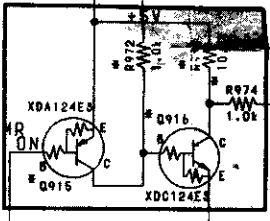




Q907, Q908, Q911, Q912: IC902 CONTROL

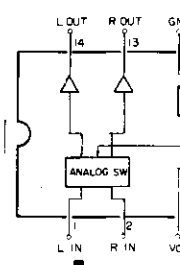


14



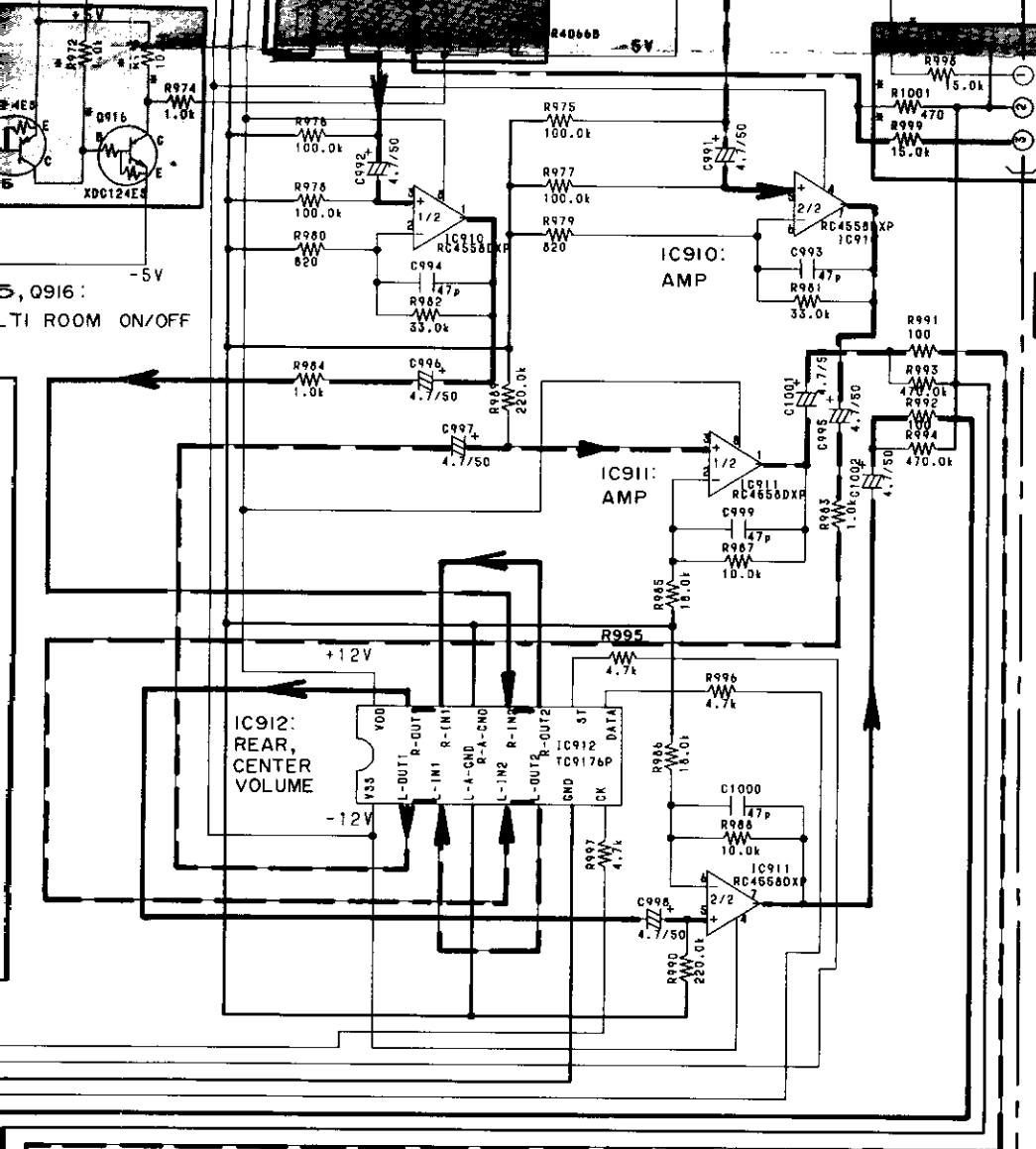
IC908, Q906, Q909, Q910, Q913, Q914: CENTER MODE SWITCH

LA2775





IC909:  
MULTI ROOM/SURROUND  
SELECTOR



To MR assembly CN19  
(To page 33)

X:VSX-51,  
VSX-4950S  
ONLY

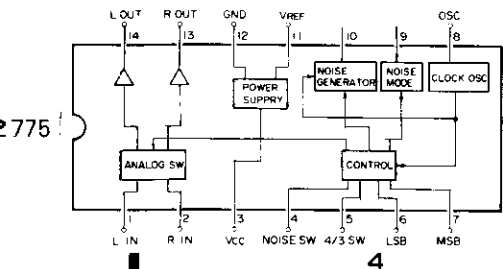
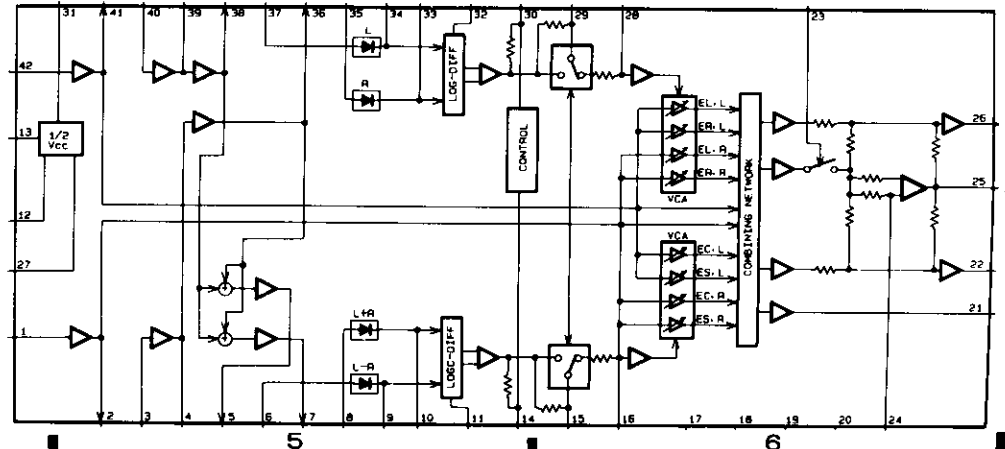
5, Q916:  
MULTI ROOM ON/OFF

IC912:  
REAR,  
CENTER  
VOLUME

IC910:  
AMP

IC911:  
AMP

LA2770



30

2775!

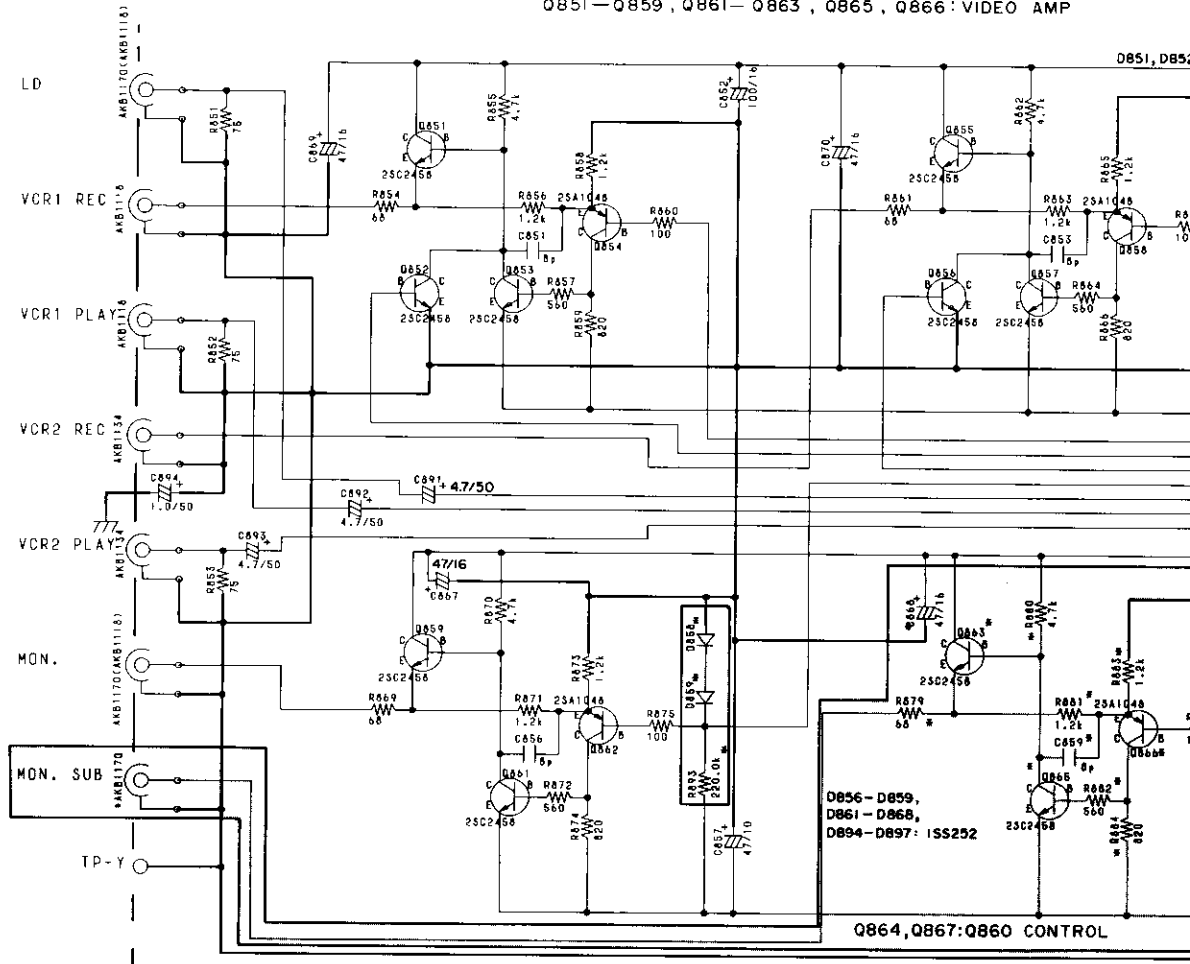
4

5

6

**V/SP assembly (AWZ3608)**  
**V/SP assembly (AWZ3603)**

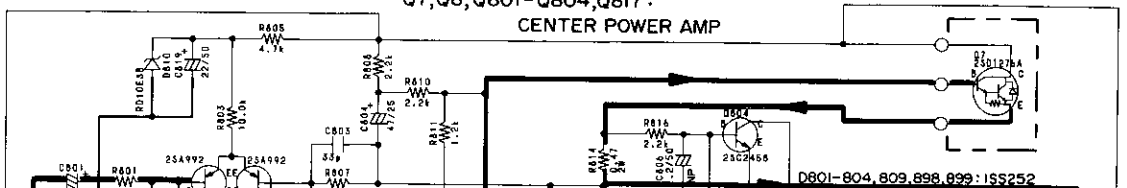
Q851-Q859, Q861-Q863, Q865, Q866: VIDEO AMP



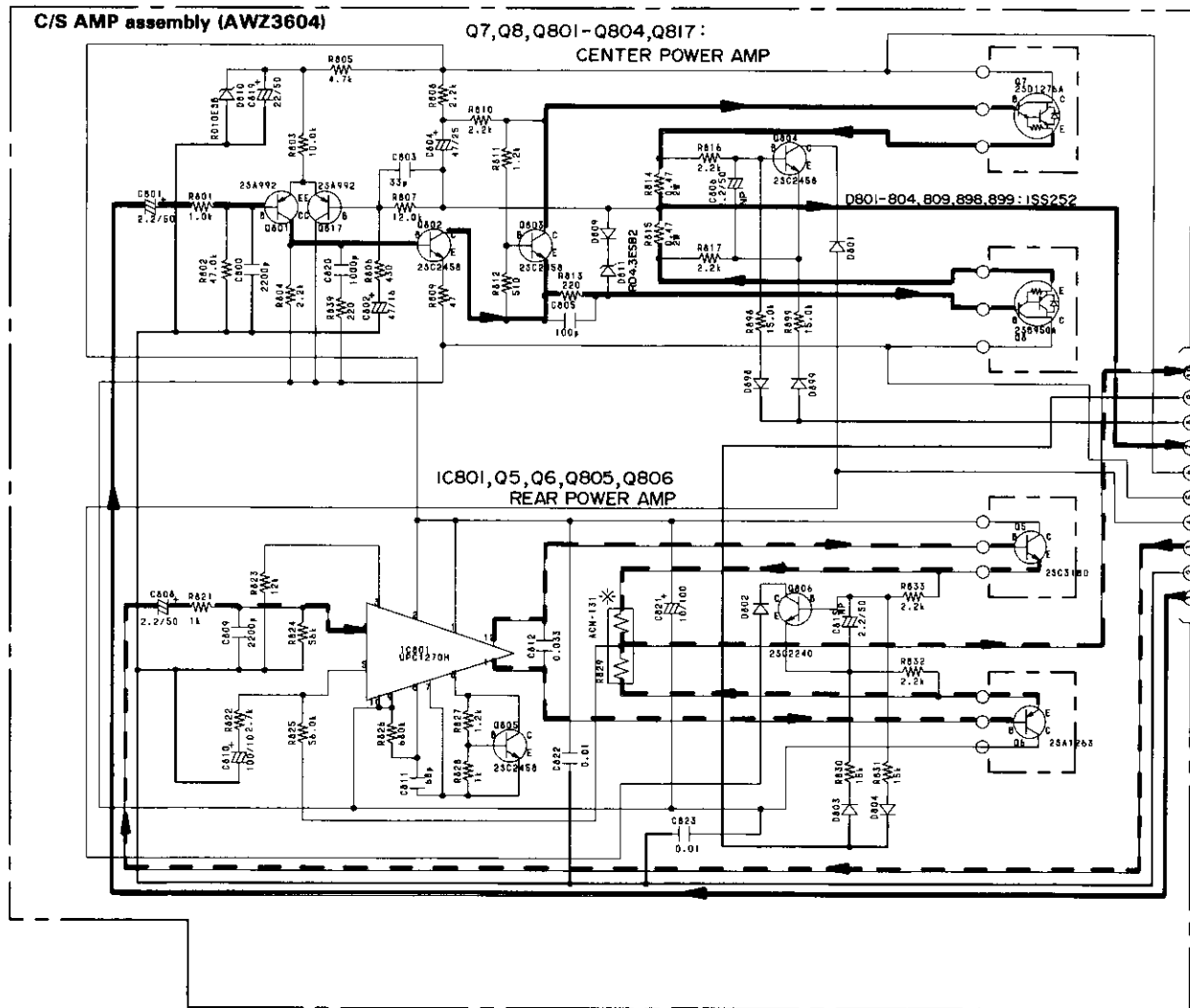
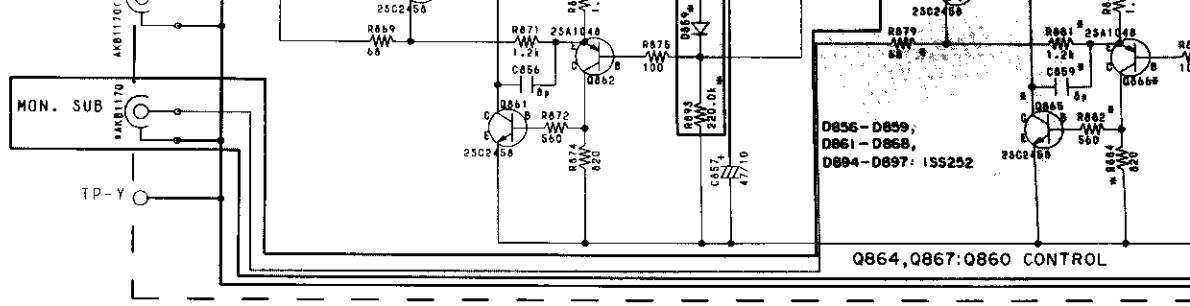
**C/S AMP assembly (AWZ3604)**

Q7, Q8, Q801-Q804, Q817:

**CENTER POWER AMP**

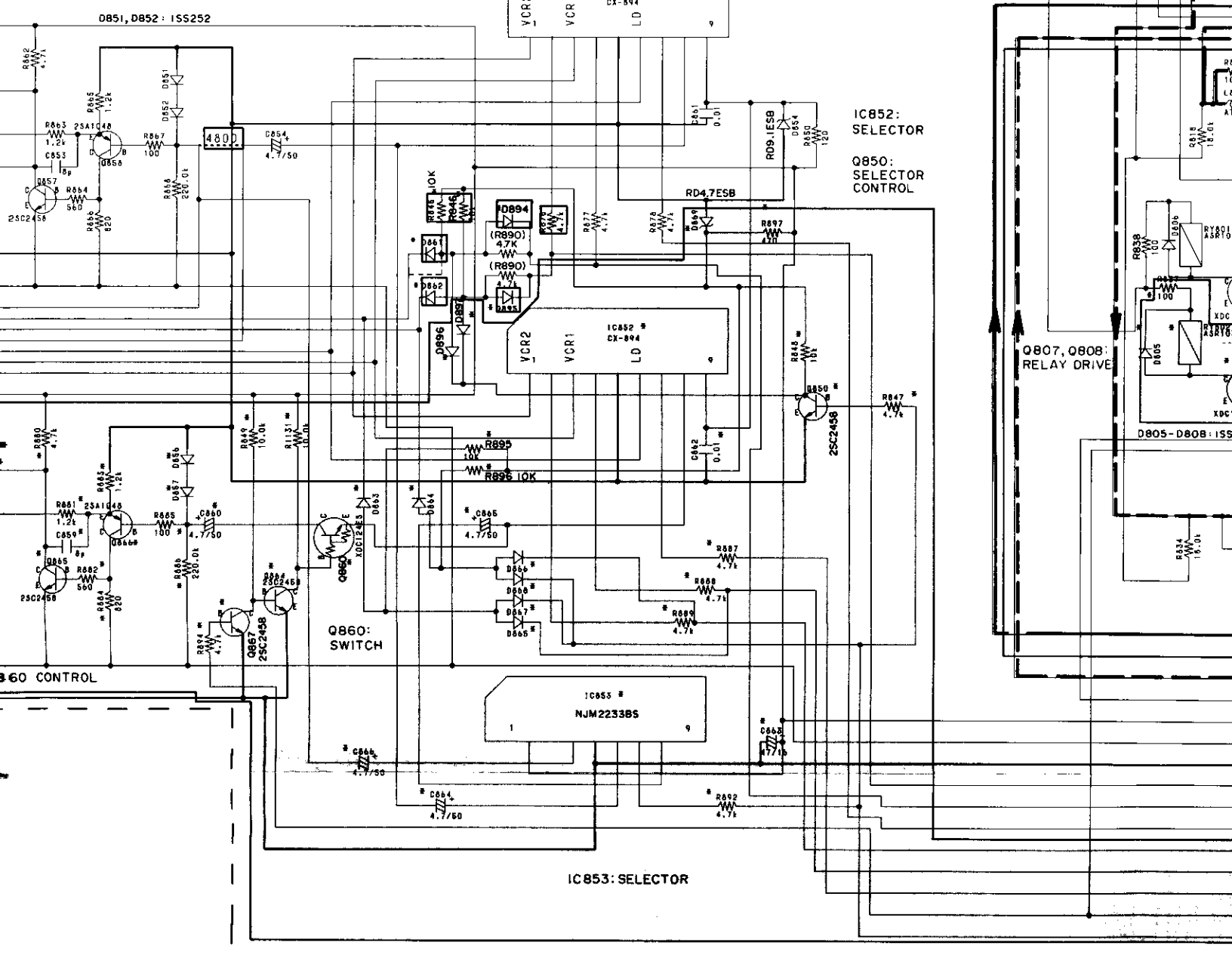


D801-Q804, 809, 898, 899: 1SS252



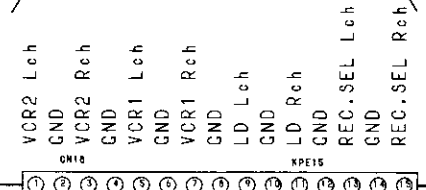
EO AMP

To AF assembly  
(To page 17)  
J11 J21

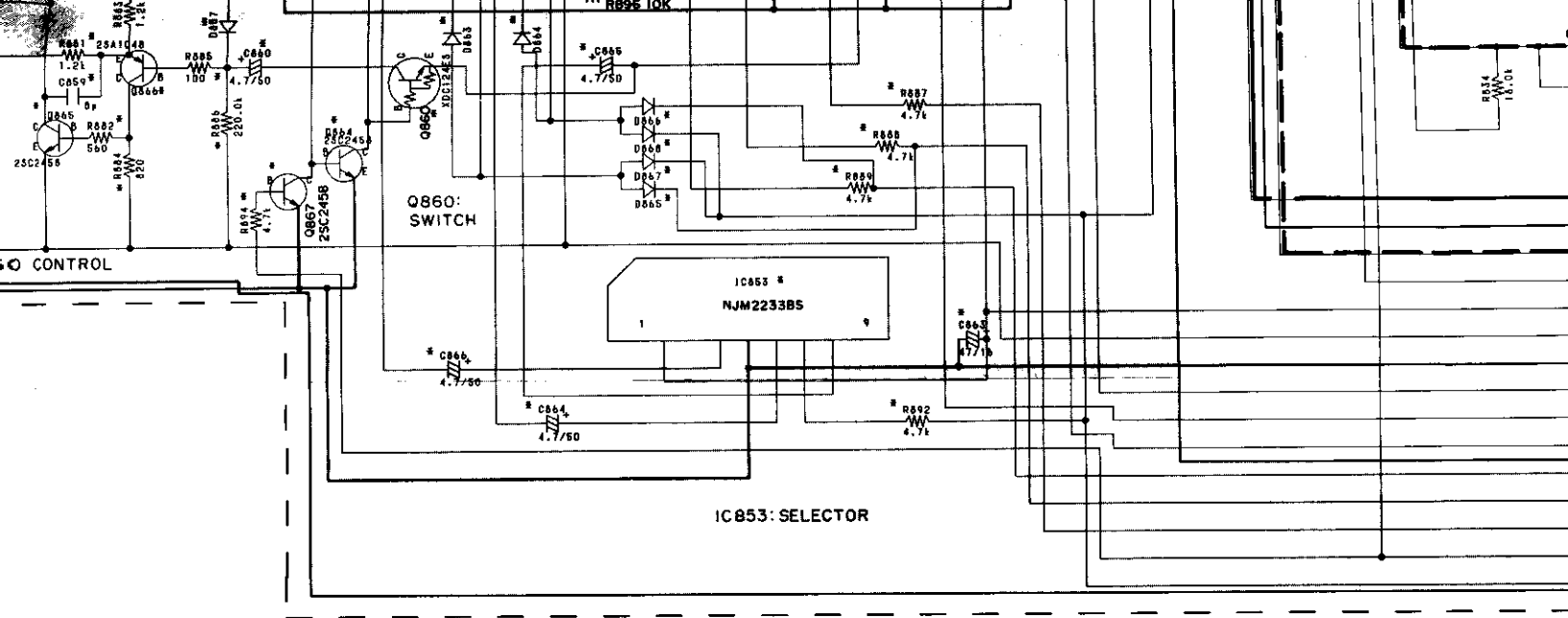


\* : VSX-51, VSX-4950S ONLY  
 ( ) : VSX-4900S, VSX-4800 ONLY

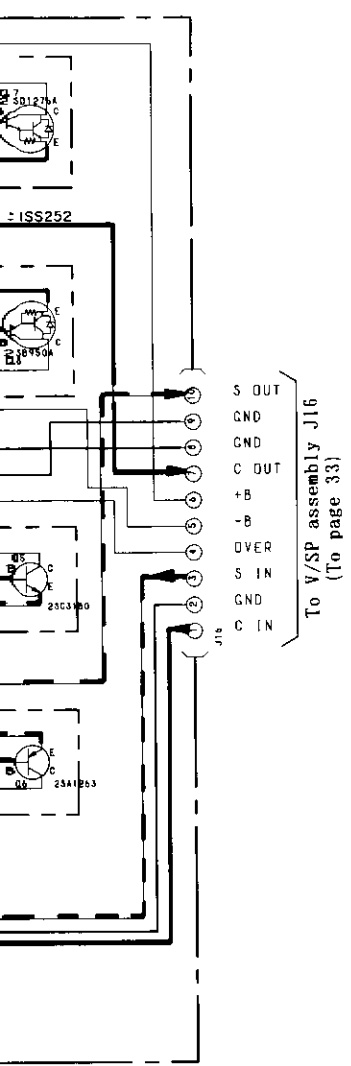
To AF assembly J18  
(To page 15)



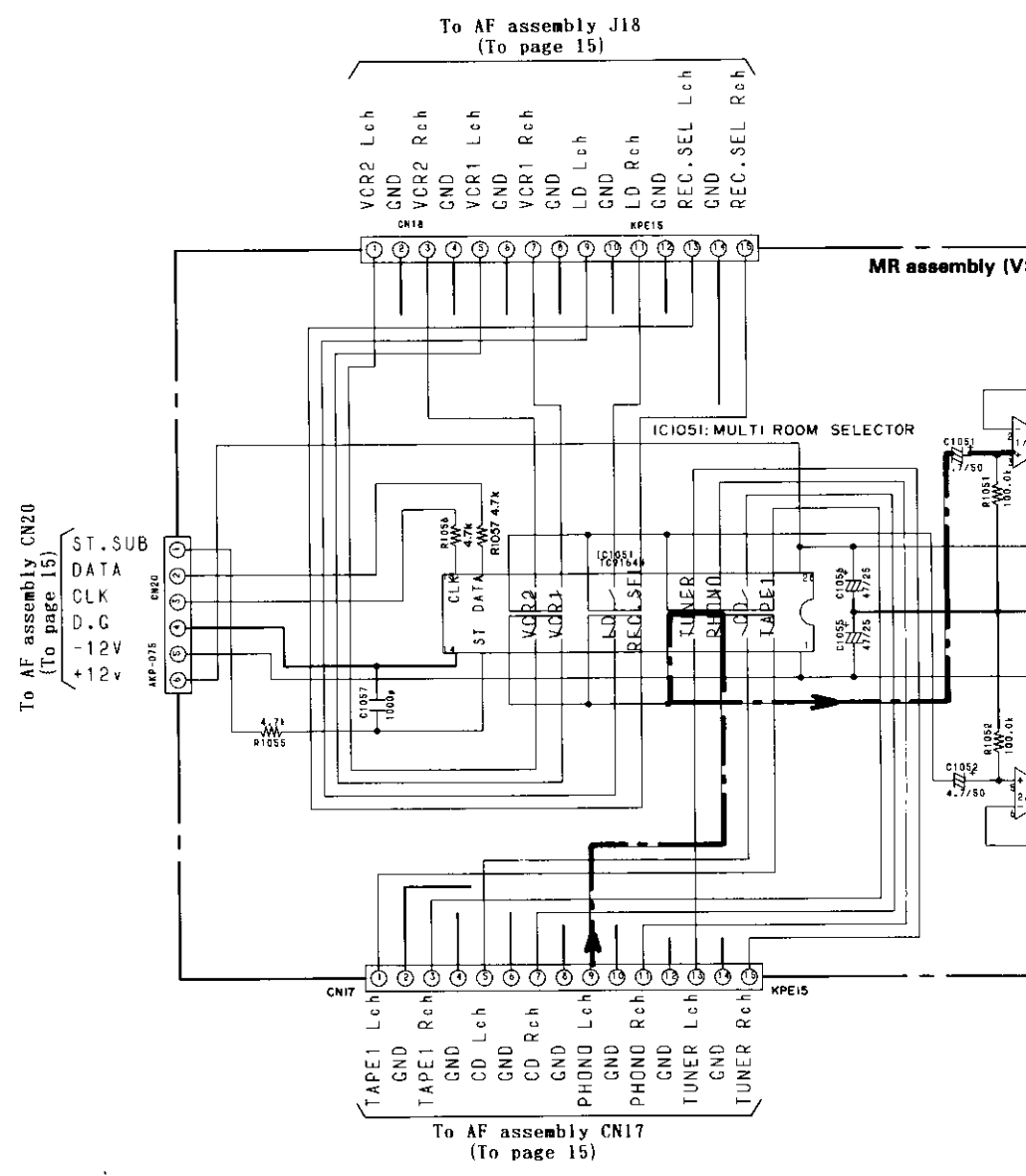
MR assembly (VS



\* : VSX-51, VSX-4950S ONLY  
 ( ) : VSX-4900S, VSX-4800 ONLY



To V/SP assembly J16  
 (To page 33)



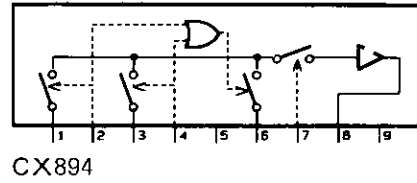
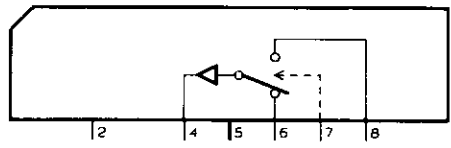
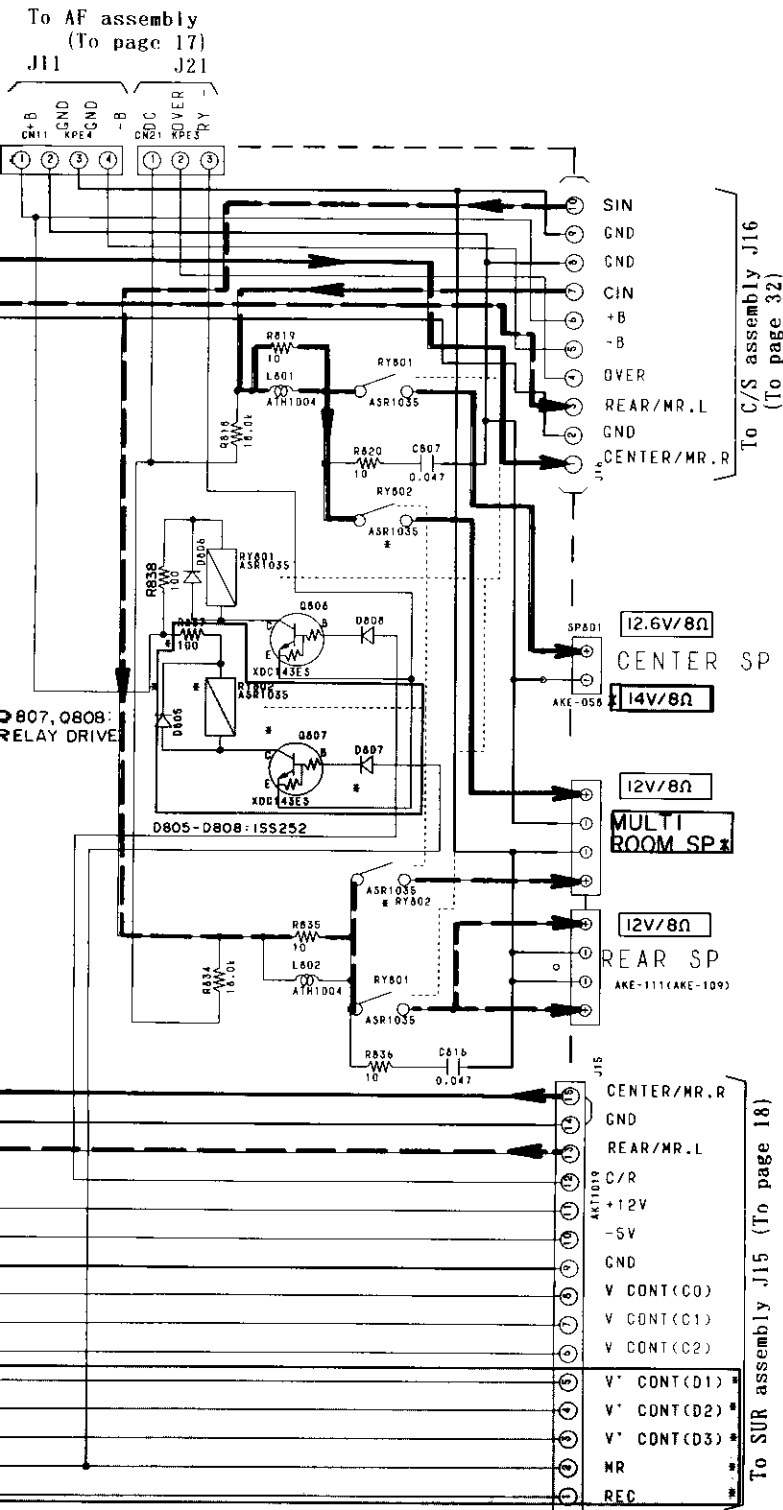
To AF assembly CN20  
 (To page 15)

To AF assembly J18  
 (To page 15)

To AF assembly CN17  
 (To page 15)

3d



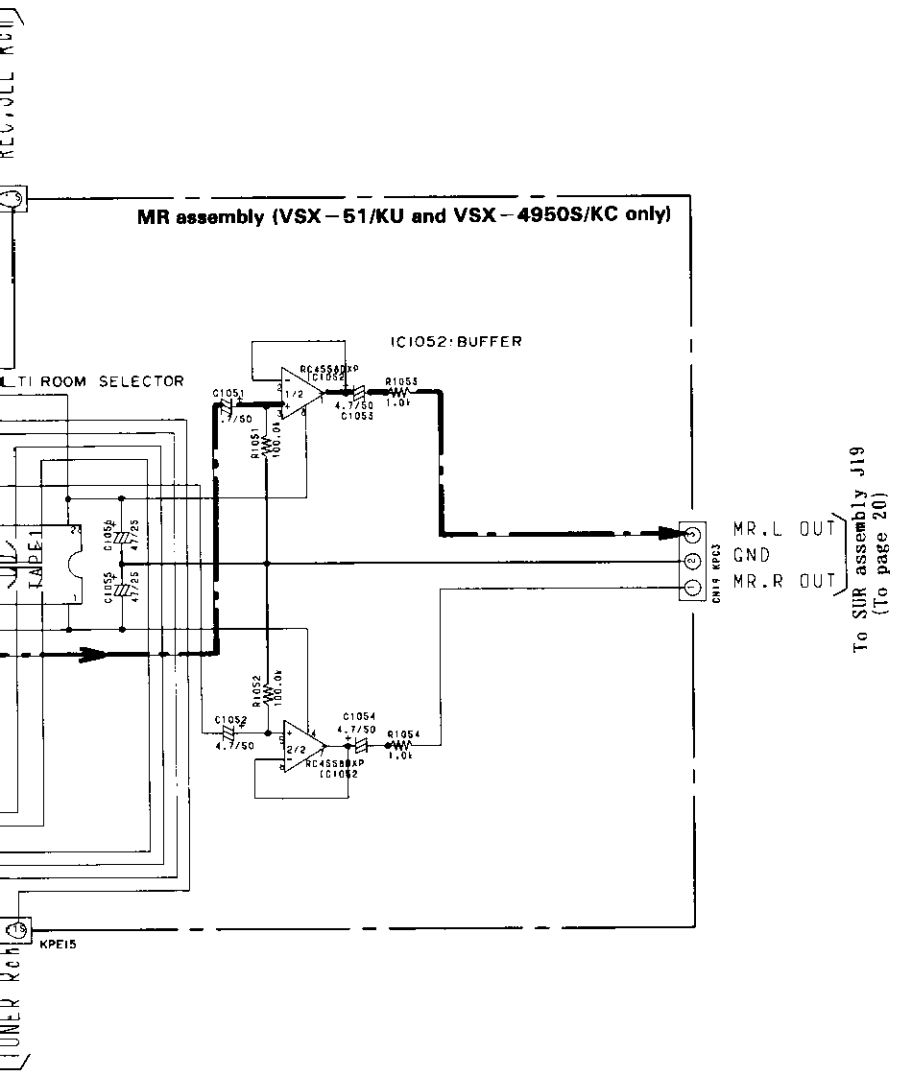
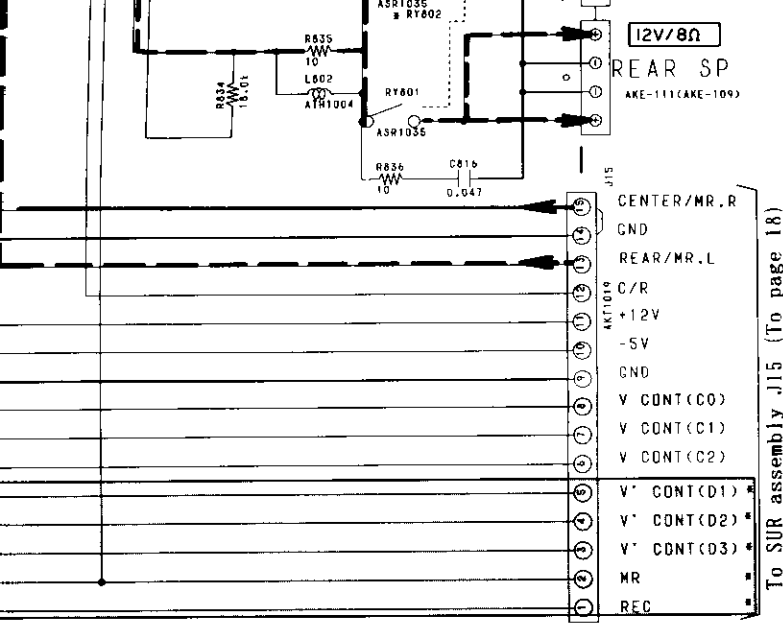


A

B

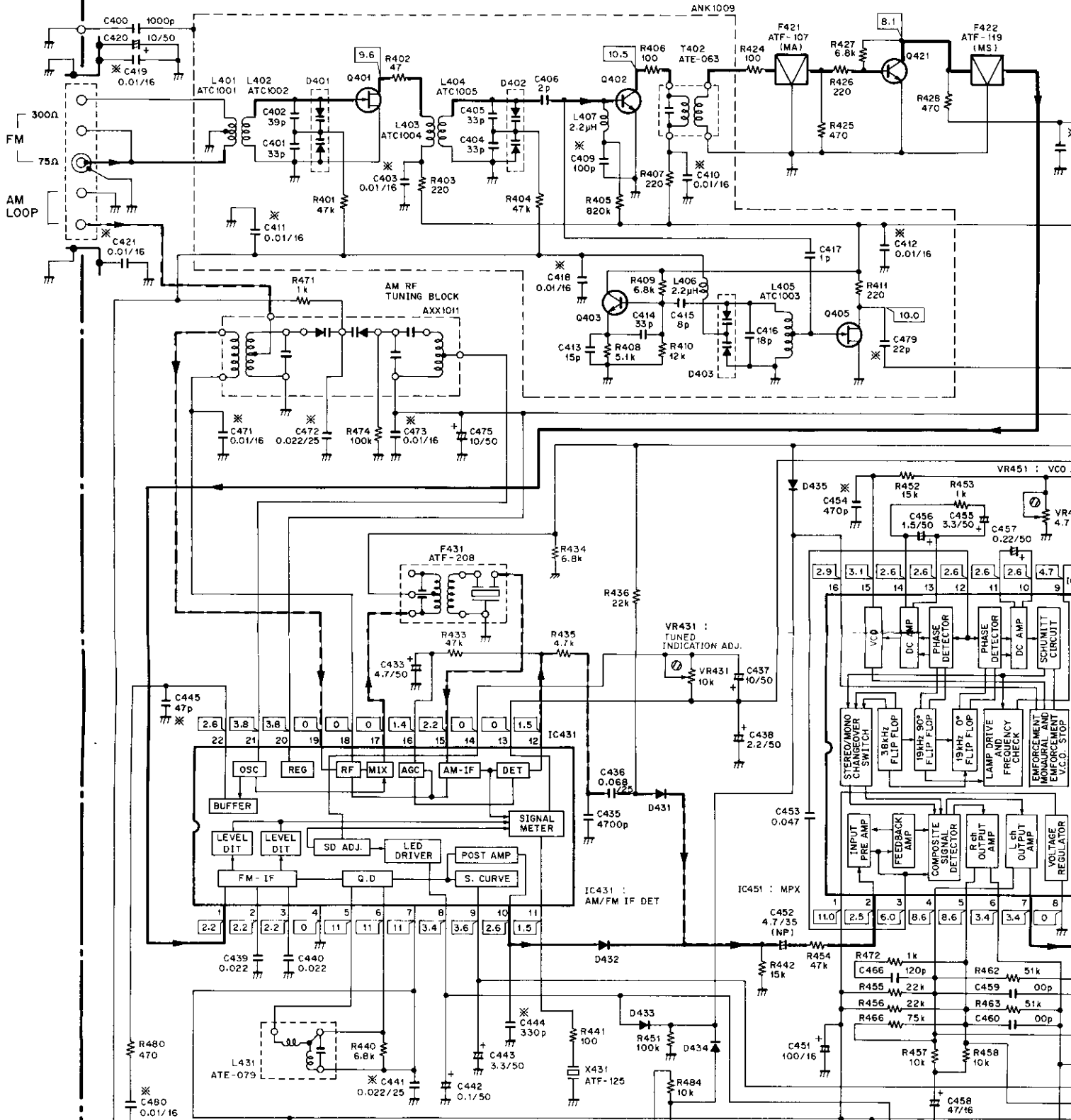
C

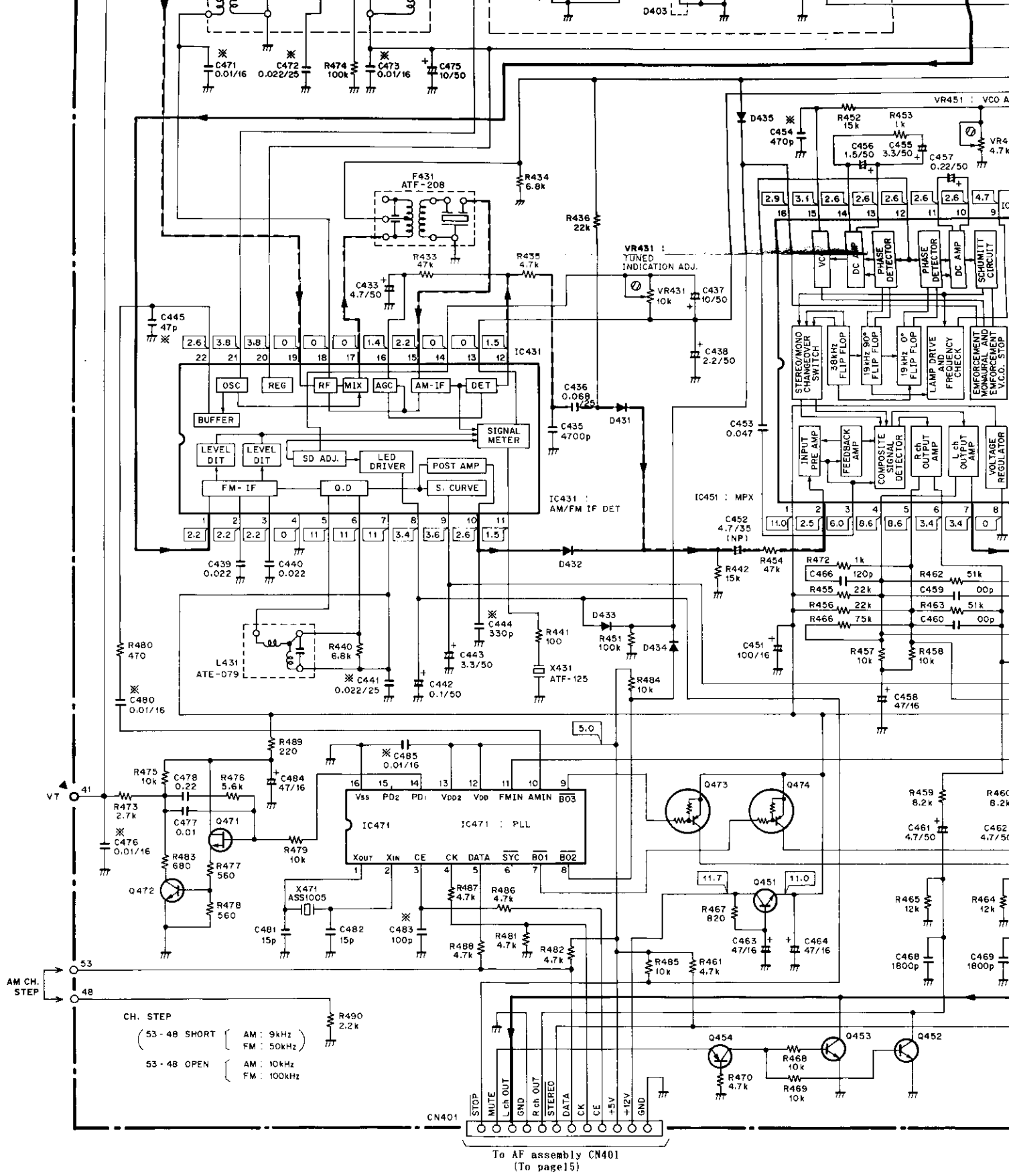
D

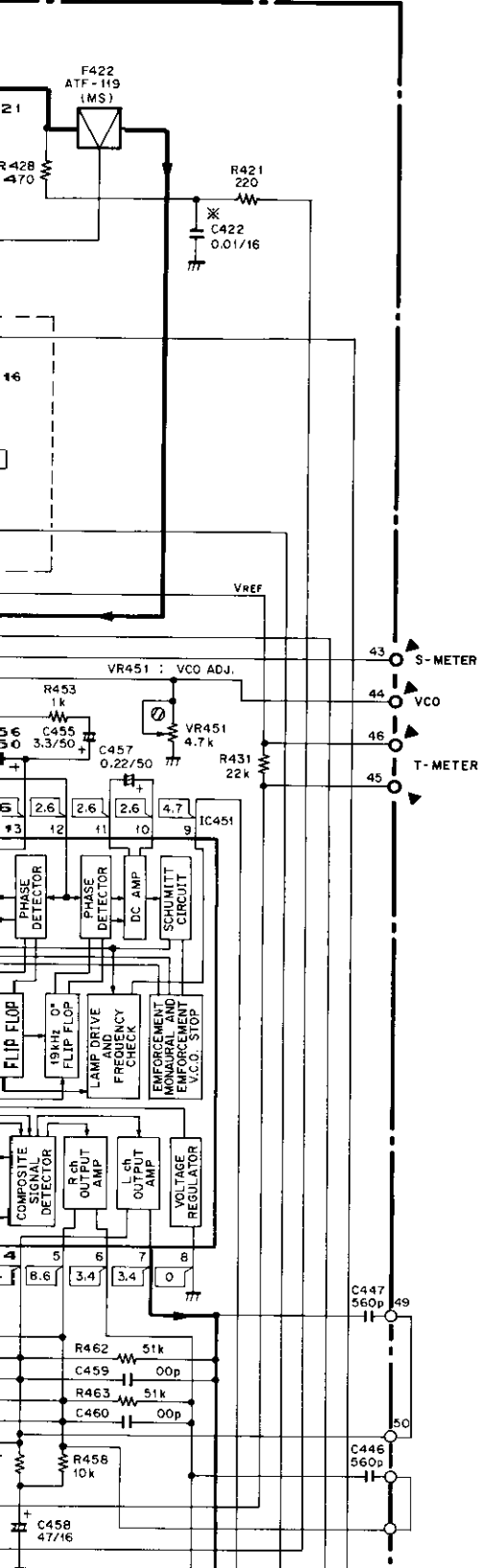


4.5 TUNER (AWE1140), FL (AWZ3607) and VR assembly (AWZ3599)

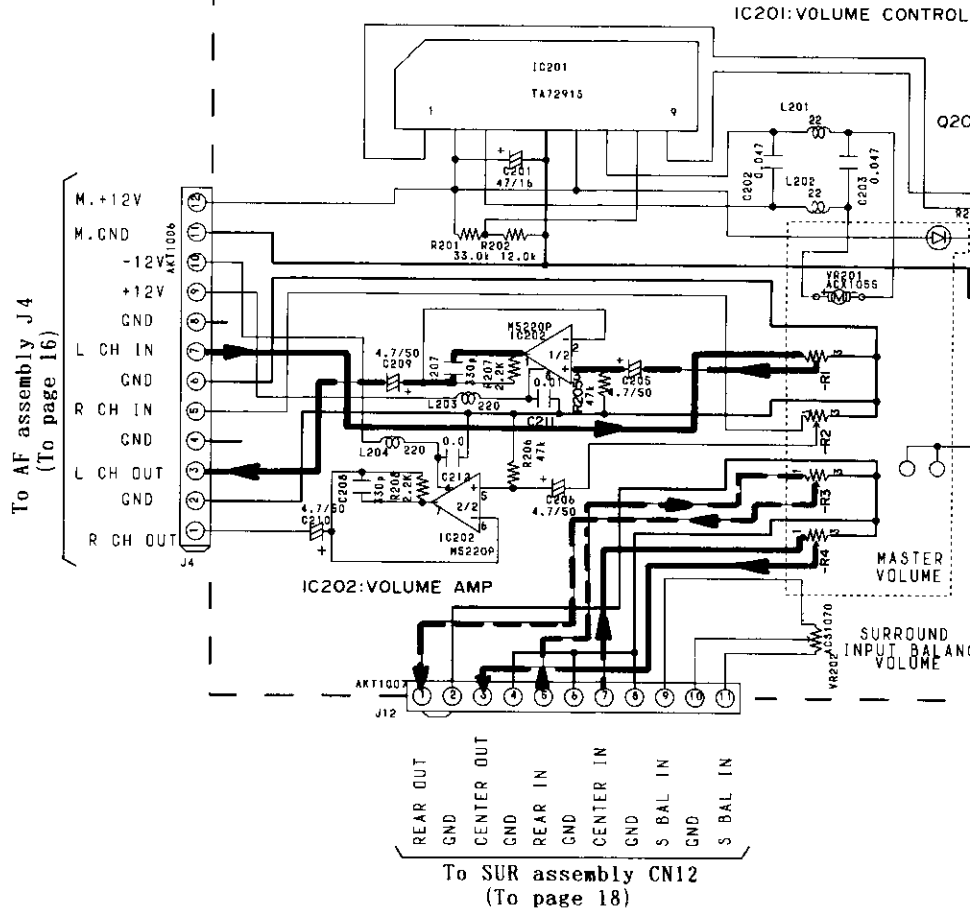
TUNER assembly (AWE1140)







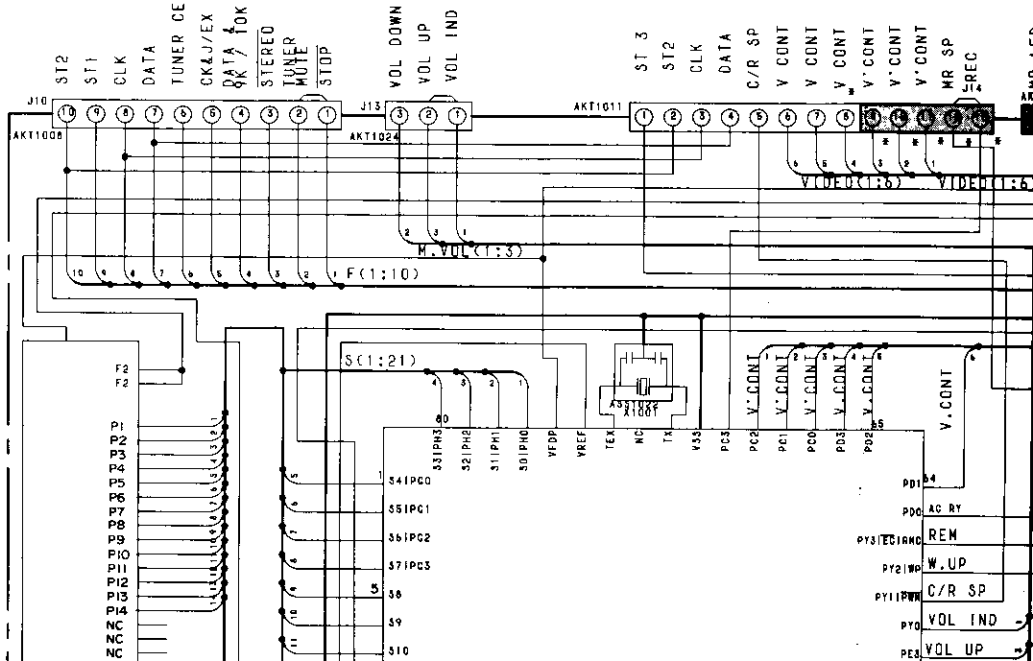
VR assembly (AWZ3599)



To AF assembly CN10 (To page 15)

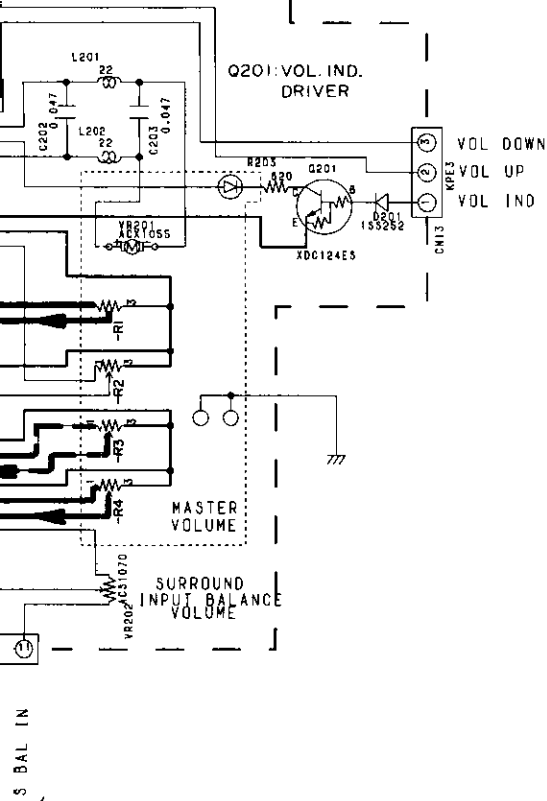
To VR assembly CN13 (To page 36)

To SUR assembly CN14 (To page 17)





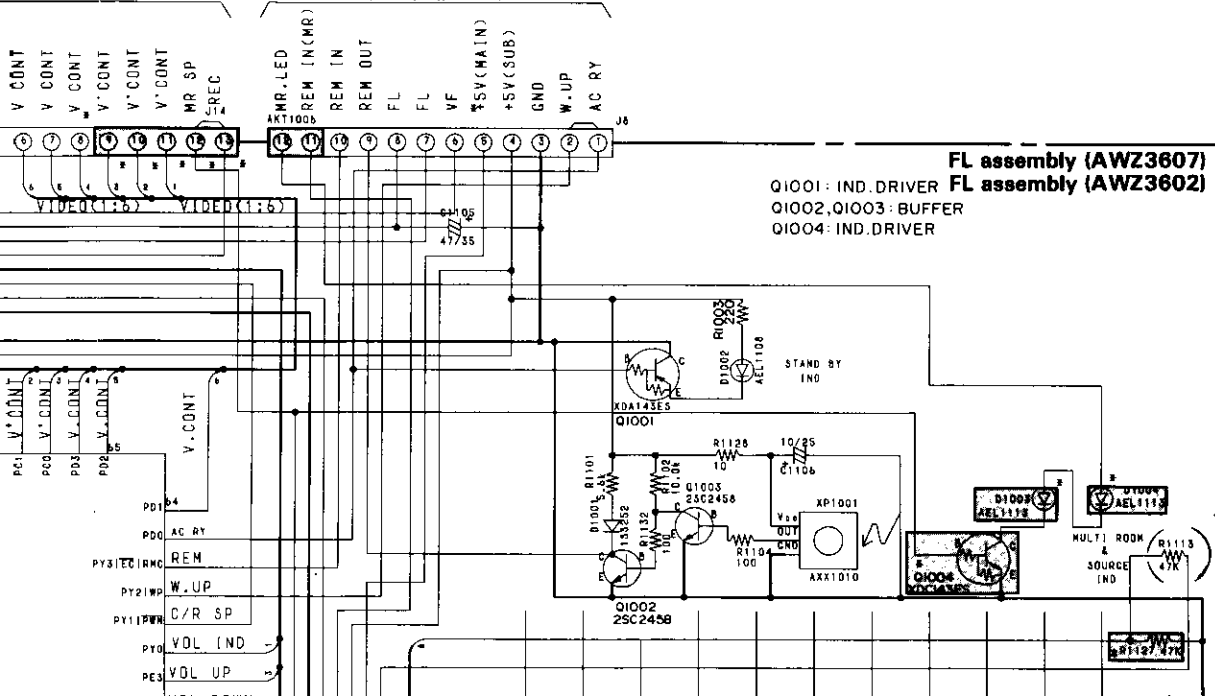
IC201: VOLUME CONTROL



To FL assembly J13  
(To page 35)

assembly CN14  
page 13

To AF assembly CN8  
(To page 16)



A

B

C

D





A

B

C

D

IC912  
 IC911 Q917  
 Q902 IC904 Q903

IC909 IC910  
 Q912 Q916 Q911  
 IC903

To AF assembly J9  
 (To page 14)

To FL assembly J14  
 (To page 39)

NOTE

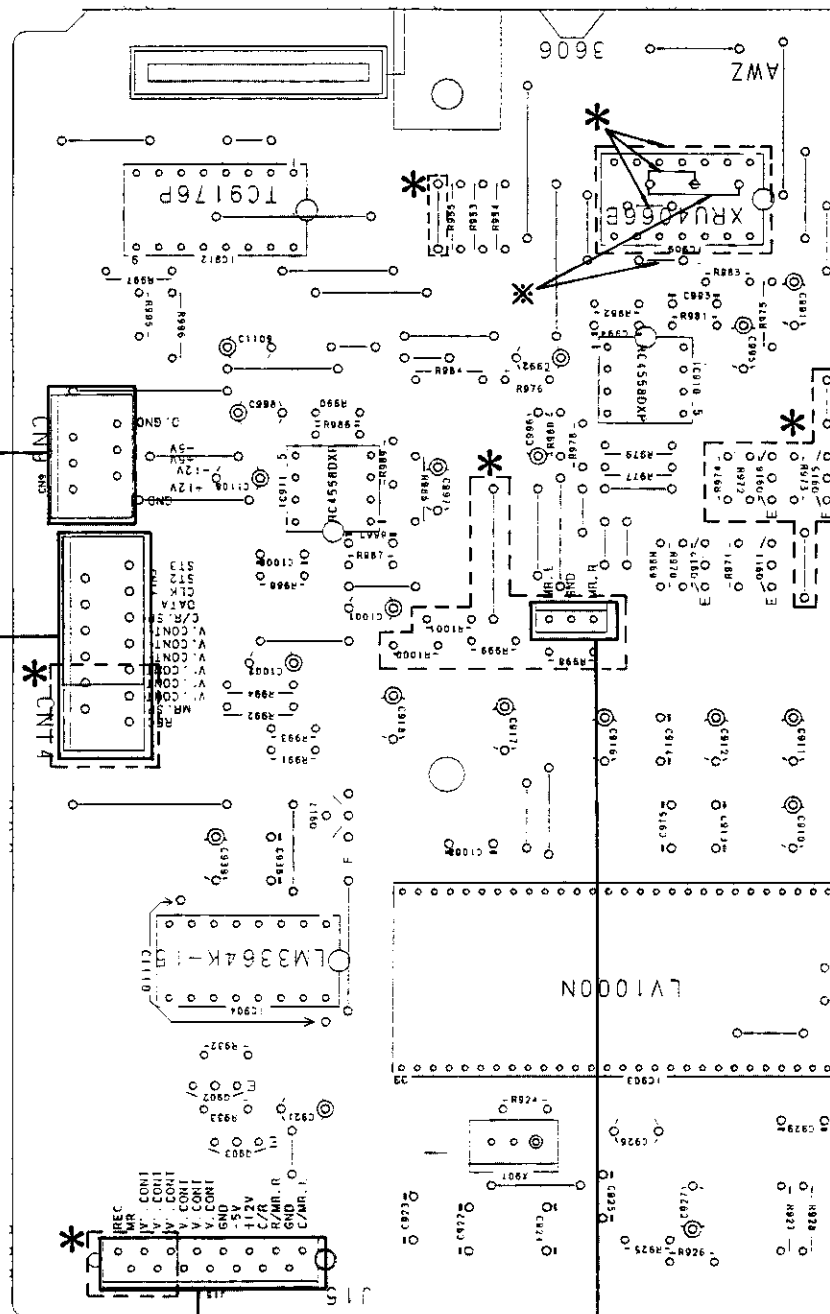
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
		Transistor
		Radiator type transistor
		Diode
		Resistor
		Capacitor (Polarity)
		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with @ (double circles) shows negative terminal.
4. The diode terminal marked with @ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.



SUR assembly (AWZ3606)  
 (AWZ3601)

To V/SP assembly J15  
 (To page 28,30)

To MR ass  
 (To pa

A

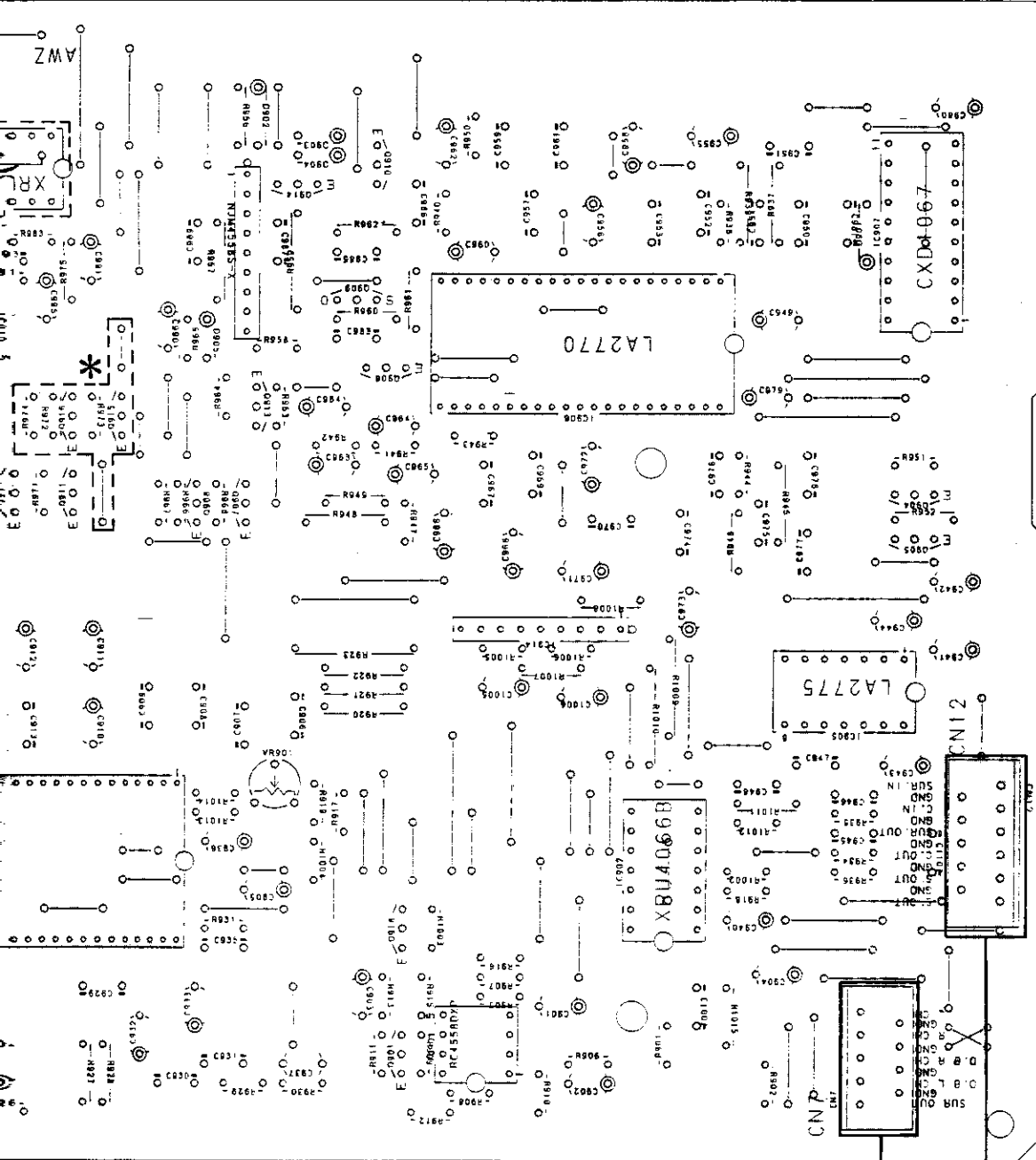
B

C

D

IC910 IC908 Q914 Q909 Q910 Q906 IC907  
 Q916 Q911 Q915 Q908 Q907 Q913 IC914 IC906 IC905 Q904 Q905  
 Q918 Q901 IC901 IC902

VR901



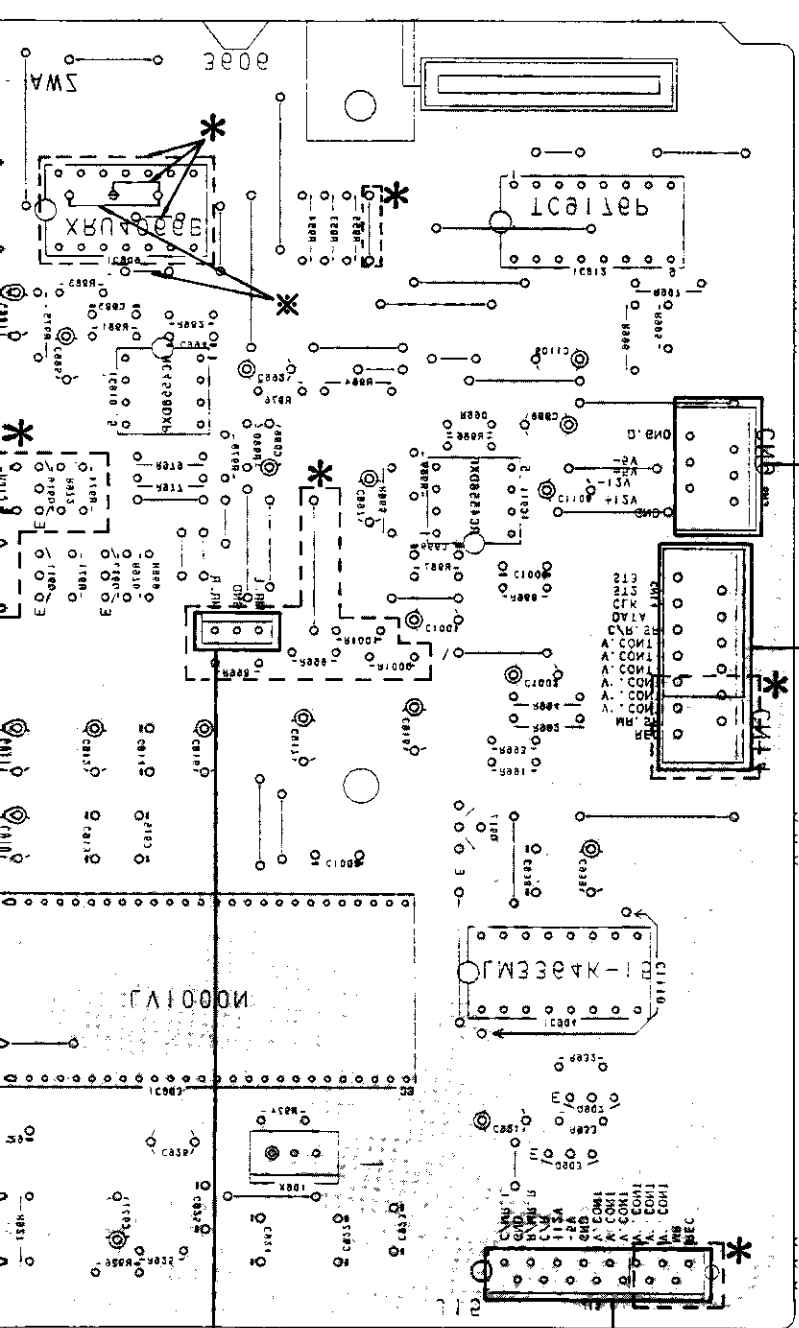
To AF assembly J7  
 (To page 13)

To MR assembly CN19  
 (To page 28)

To VR assembly J12  
 (To page 39)



ICAO3  
ICAO4 0A03  
ICAO5  
ICAO6  
ICAO7  
ICAO8  
ICAO9  
ICAO10



SUR assembly (WZ360)  
(WZ3601)

To VSP assembly 112  
(To page 28,30)

To FE assembly 113  
(To page 14)

To FL assembly 114  
(To page 30)

To MR 2  
(To)

A

B

C

D

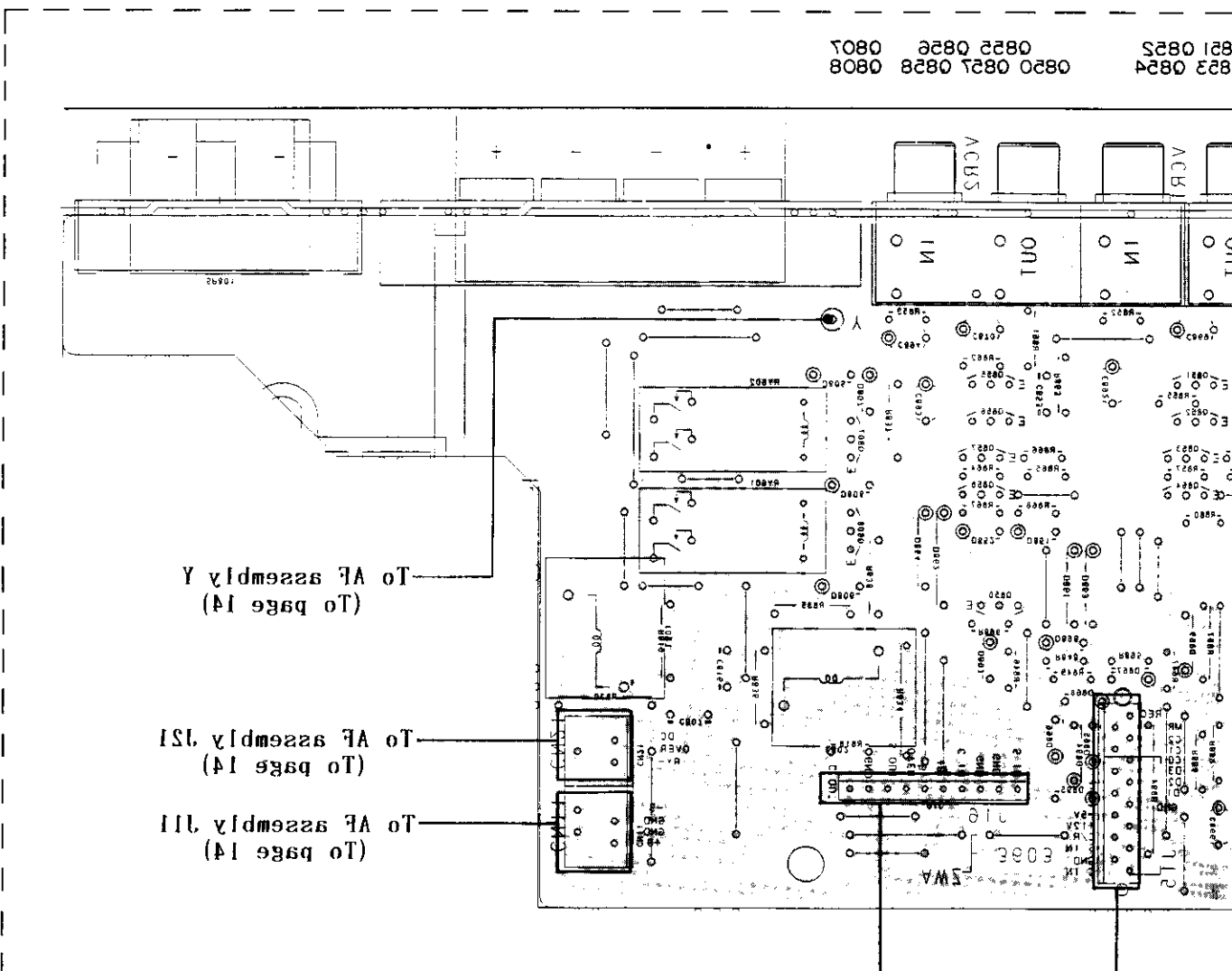
3

5

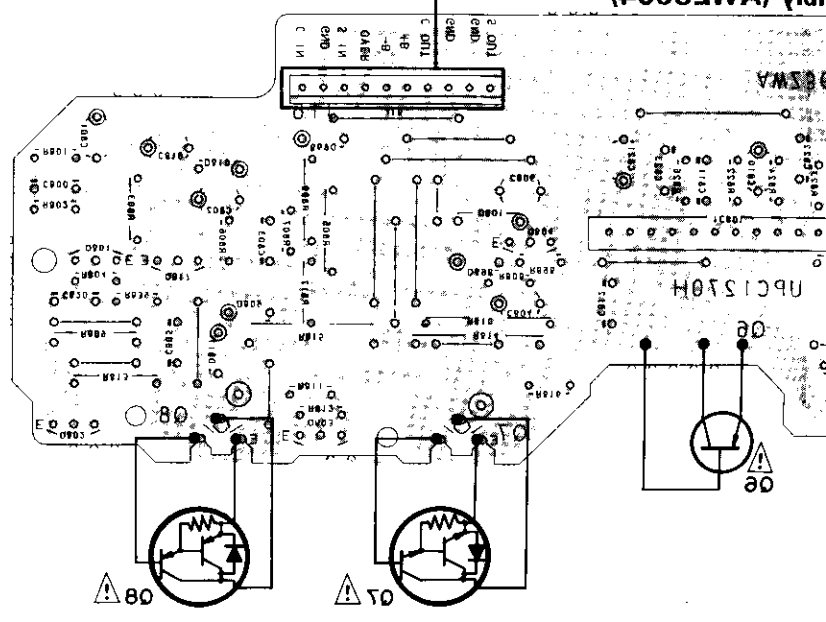
1

2 2

823 0824  
0820 0821 0828 0808  
0822 0825 0807



ply (W3304)



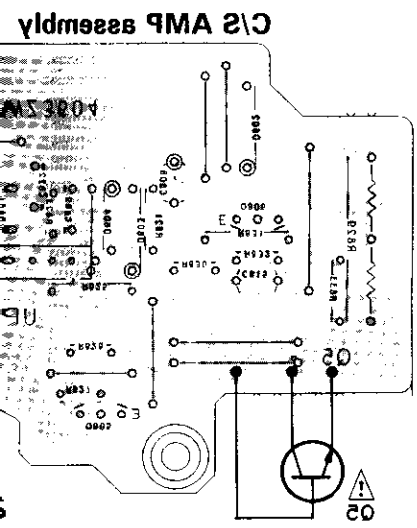
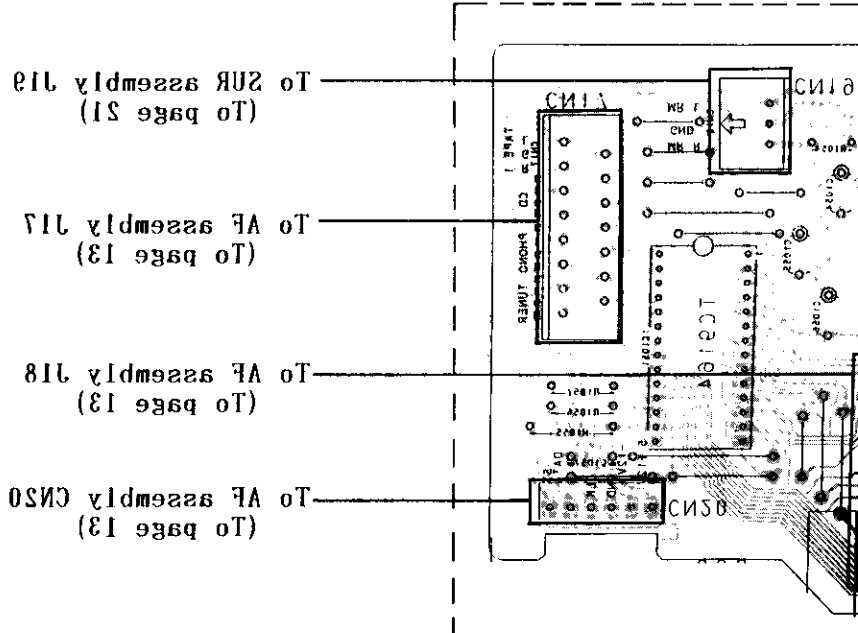
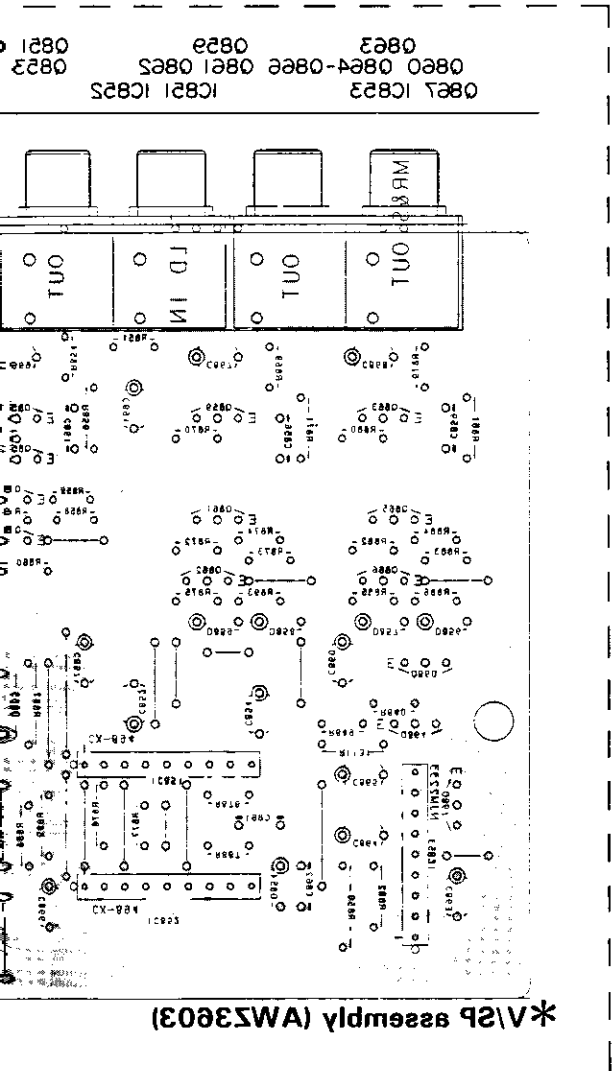
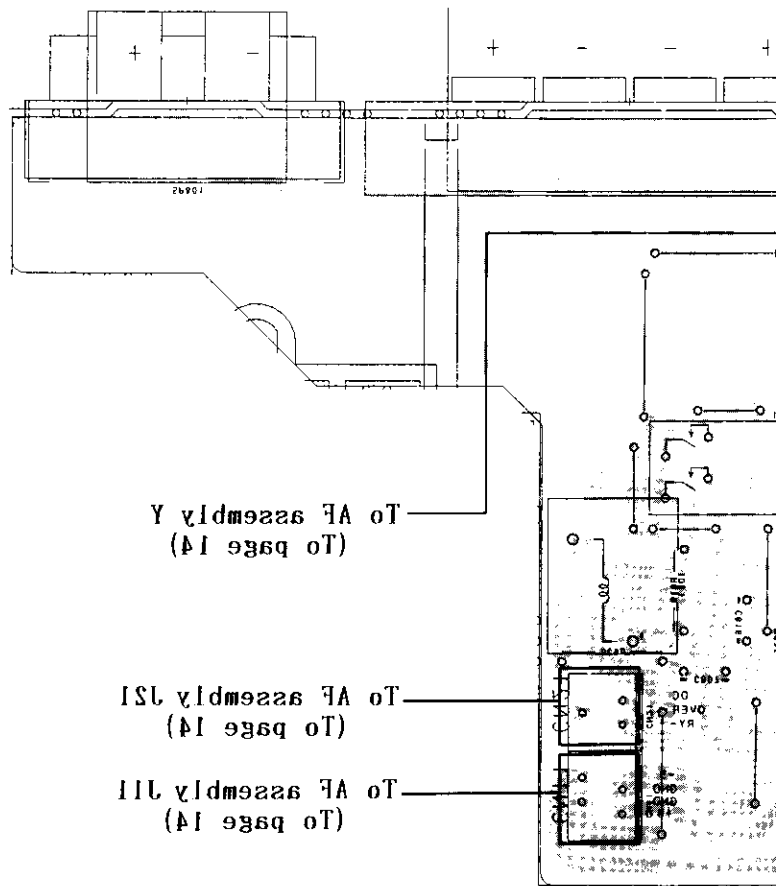
25

A

B

C

D

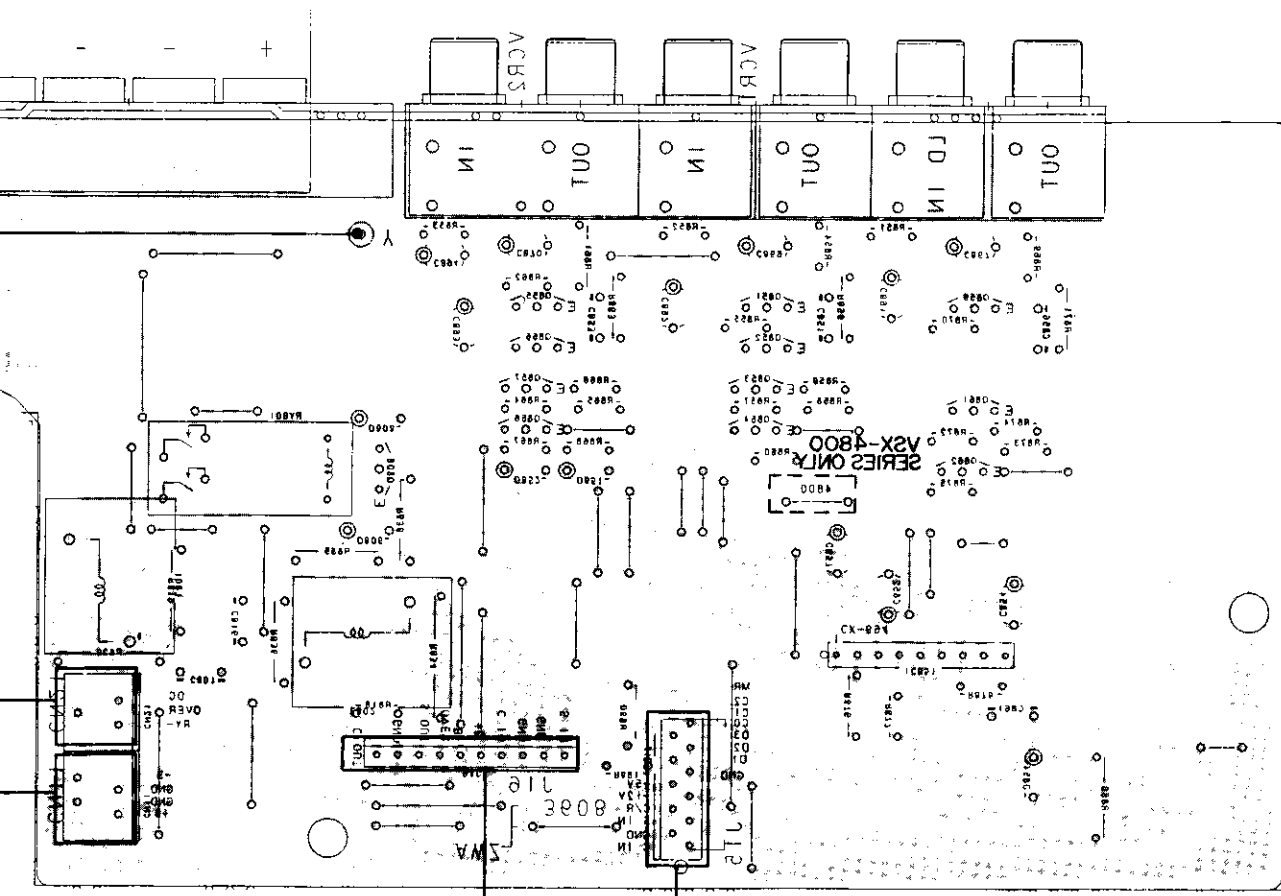


A

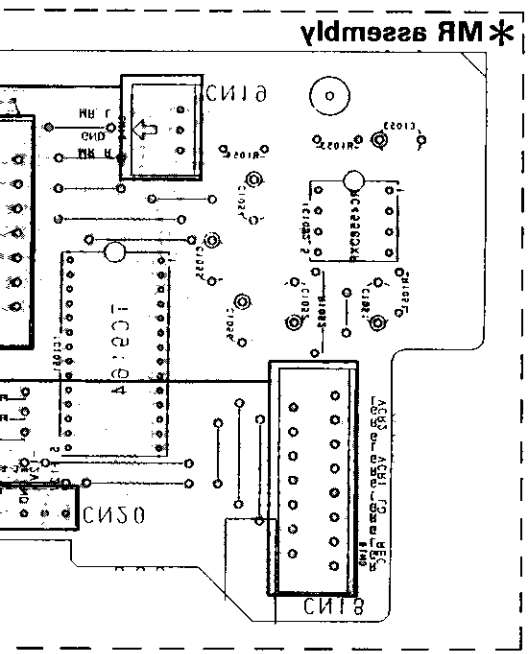
B

C

D



V/SP assembly (WZ3608)  
 To SUR assembly 112 (To page 21)



3

2

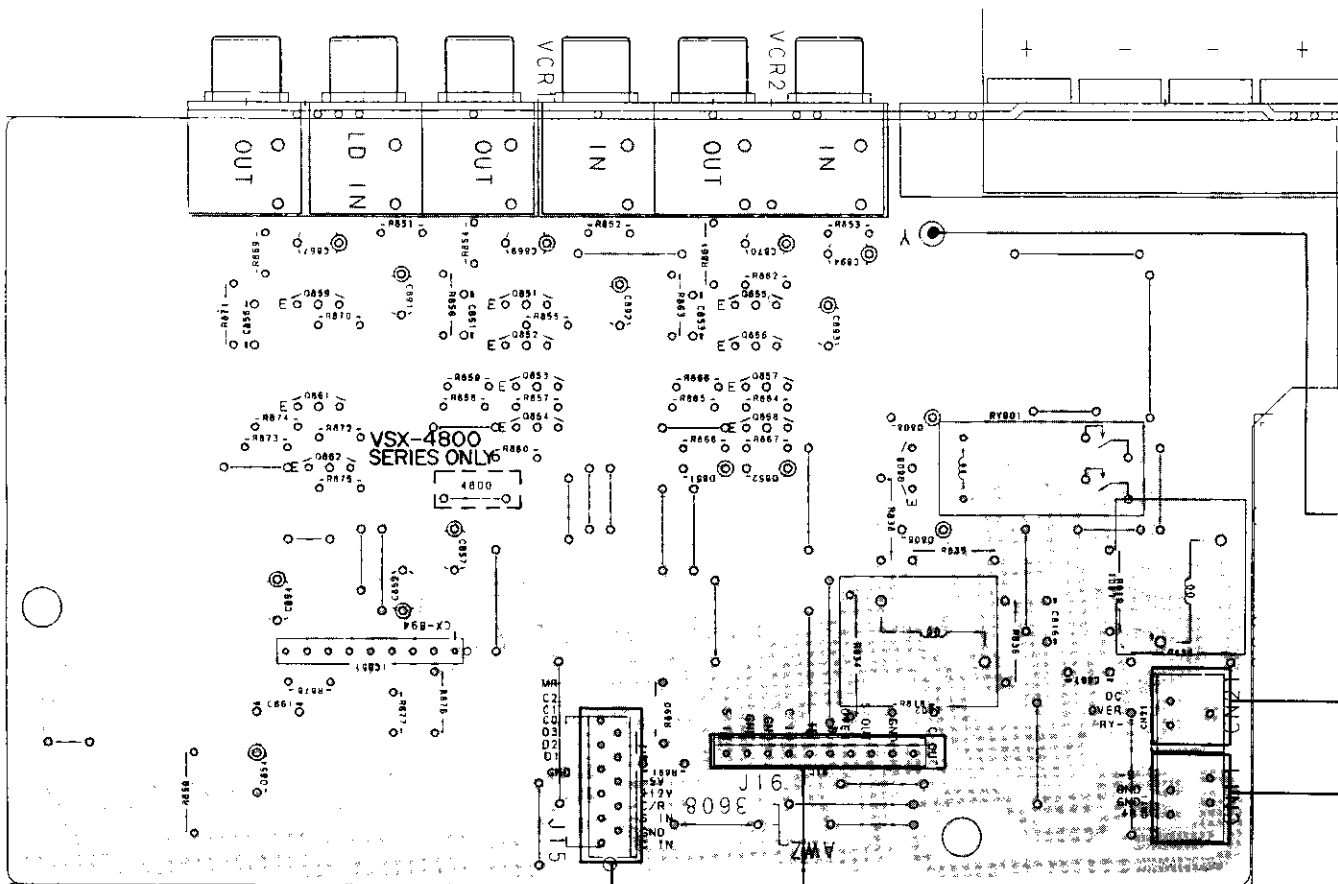
3

2

1

4.4 V/SP (AWZ3608 and AWZ3603), C/S AMP (AWZ3604) and MR assembly

A



V/SP assembly (AWZ3608)

To SUR assembly J15 (To page 21)

B

C

NOTE

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

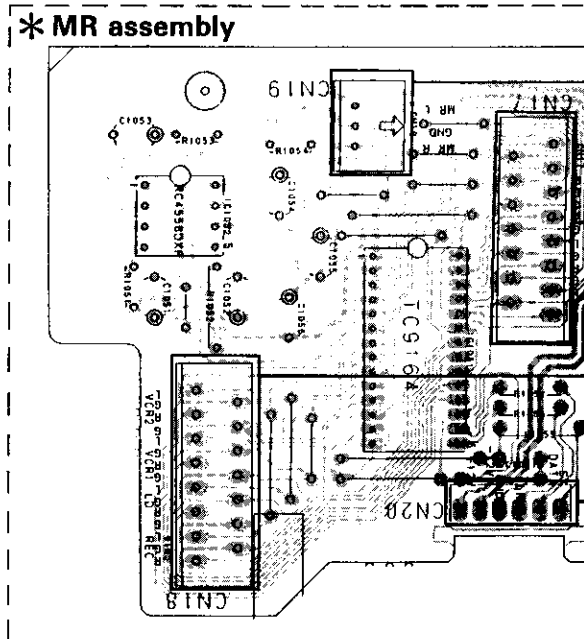
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
		Transistor
		Radiator type transistor
		Diode
		Resistor
		Capacitor (Polarity)
		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

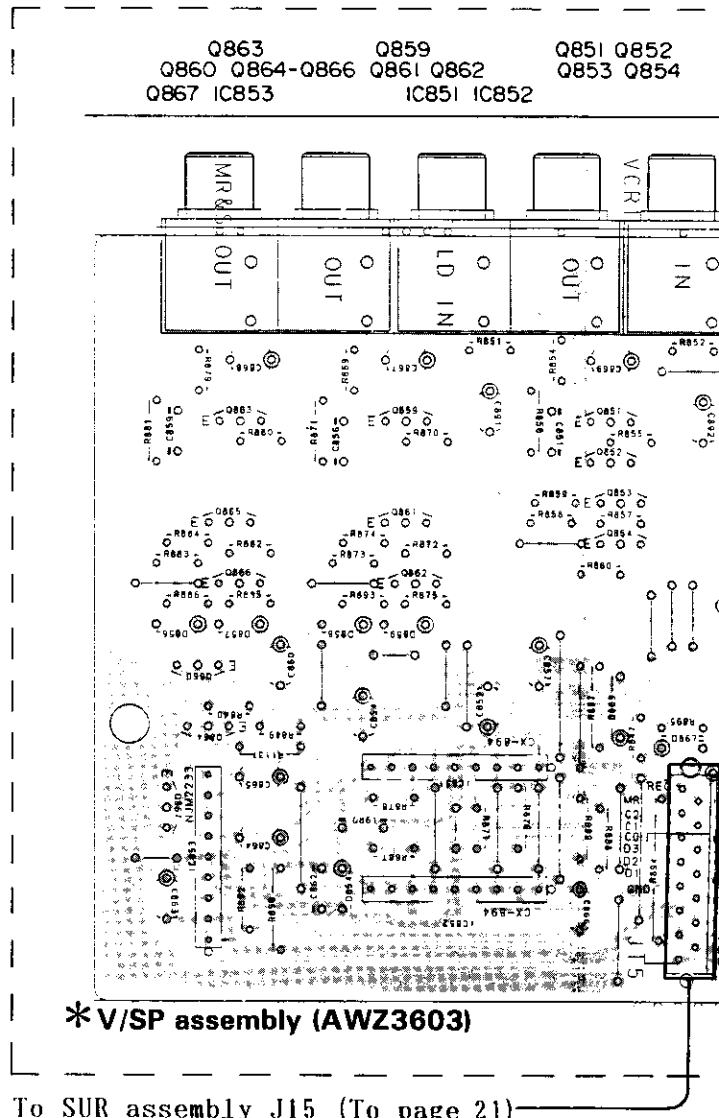
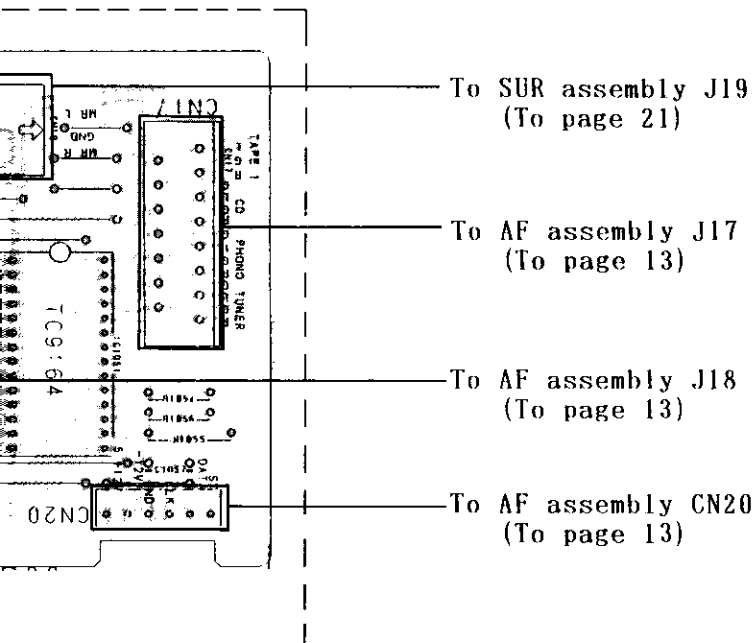
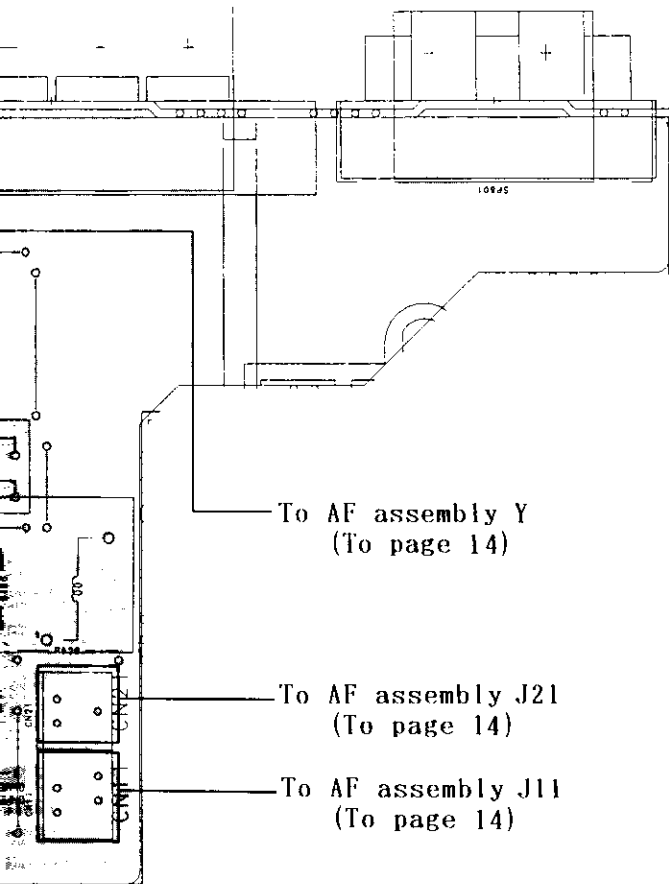
3. The capacitor terminal marked with ⊕ (double circles) shows negative terminal.
4. The diode terminal marked with ⊕ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

D

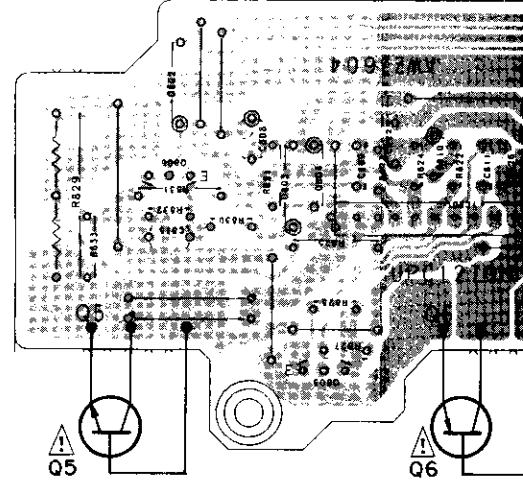


\* MR assembly

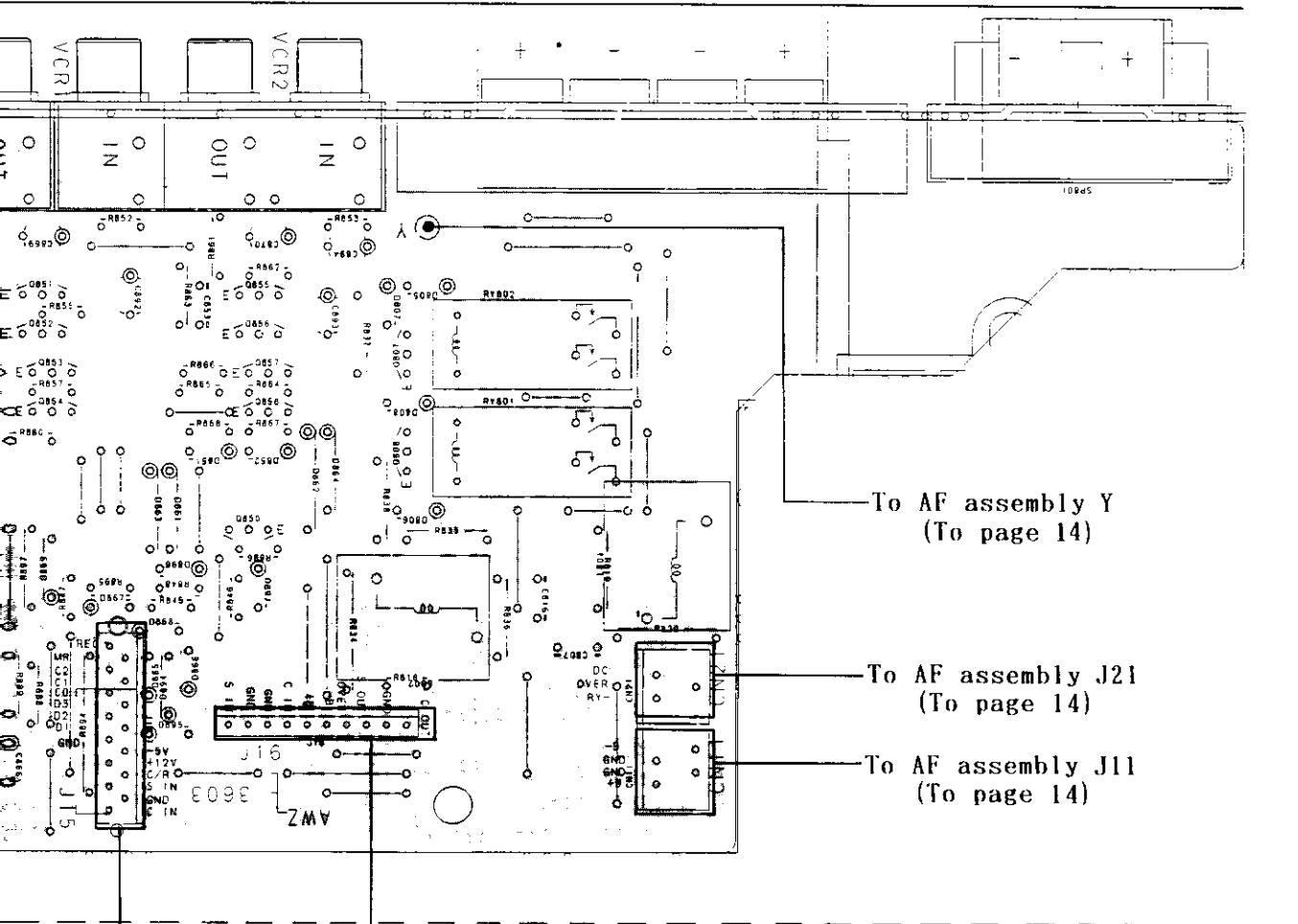




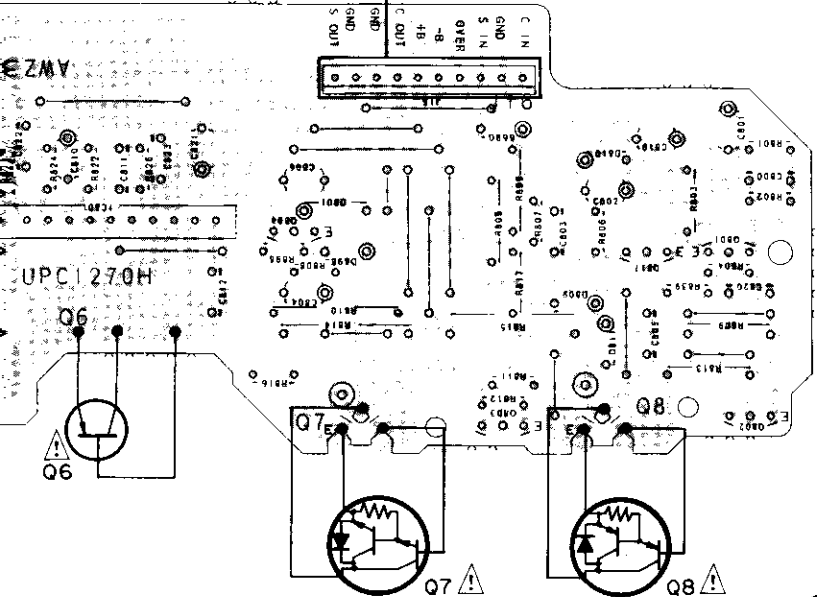
C/S AMP assembly (AWZ3604)



Q851 Q852 Q855 Q856 Q807  
 Q853 Q854 Q850 Q857 Q858 Q808



Assembly (AWZ3604)



A

B

C

D

NOTE

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
		Transistor
		Radiator type transistor
		Diode
		Resistor
		Capacitor (Polarity)
		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
	IC
	Switch
	Relay
	Coil
	Filter
	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ⊕ (double circles) shows negative terminal.
4. The diode terminal marked with ⊕ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

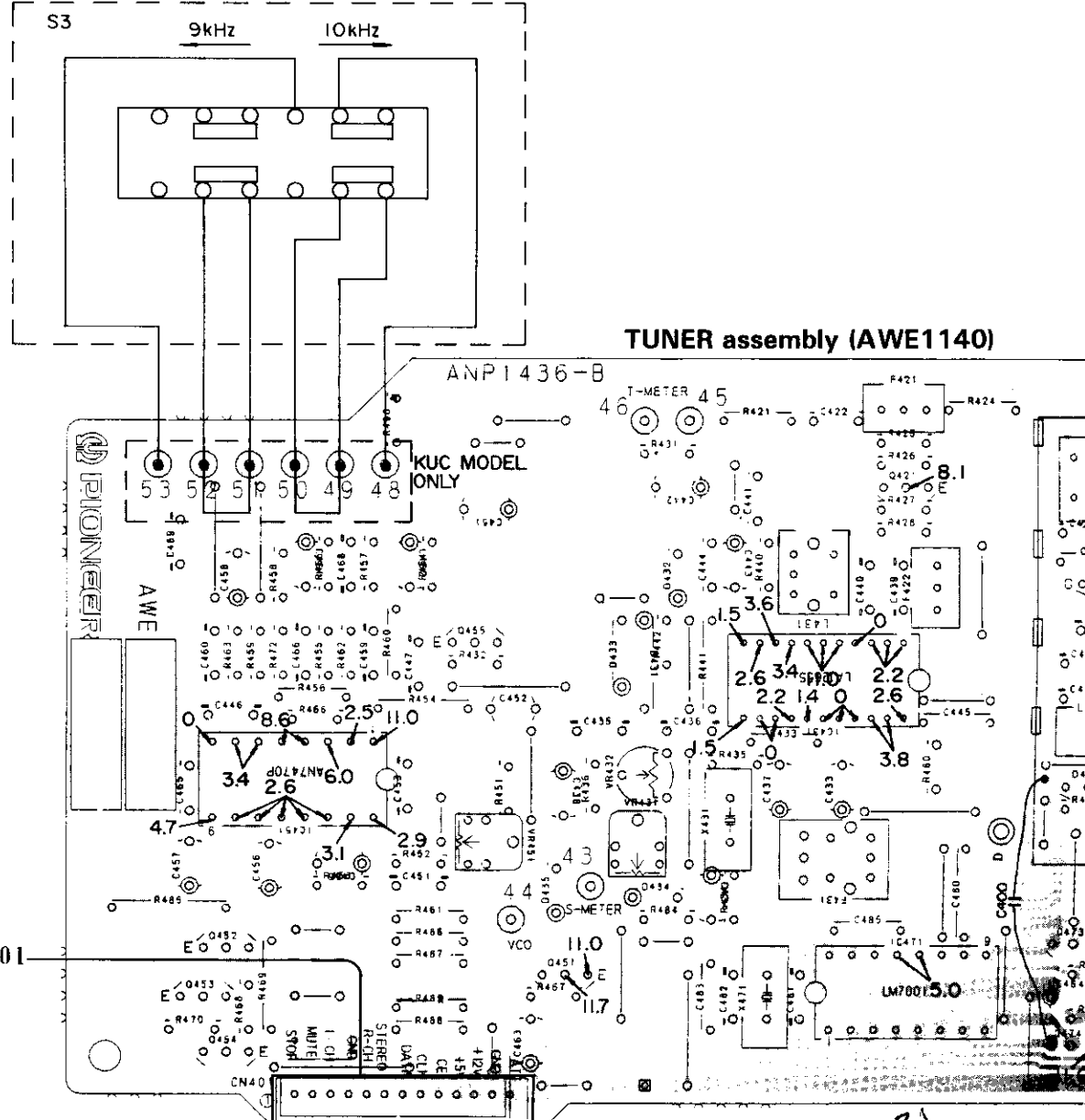
A

B

C

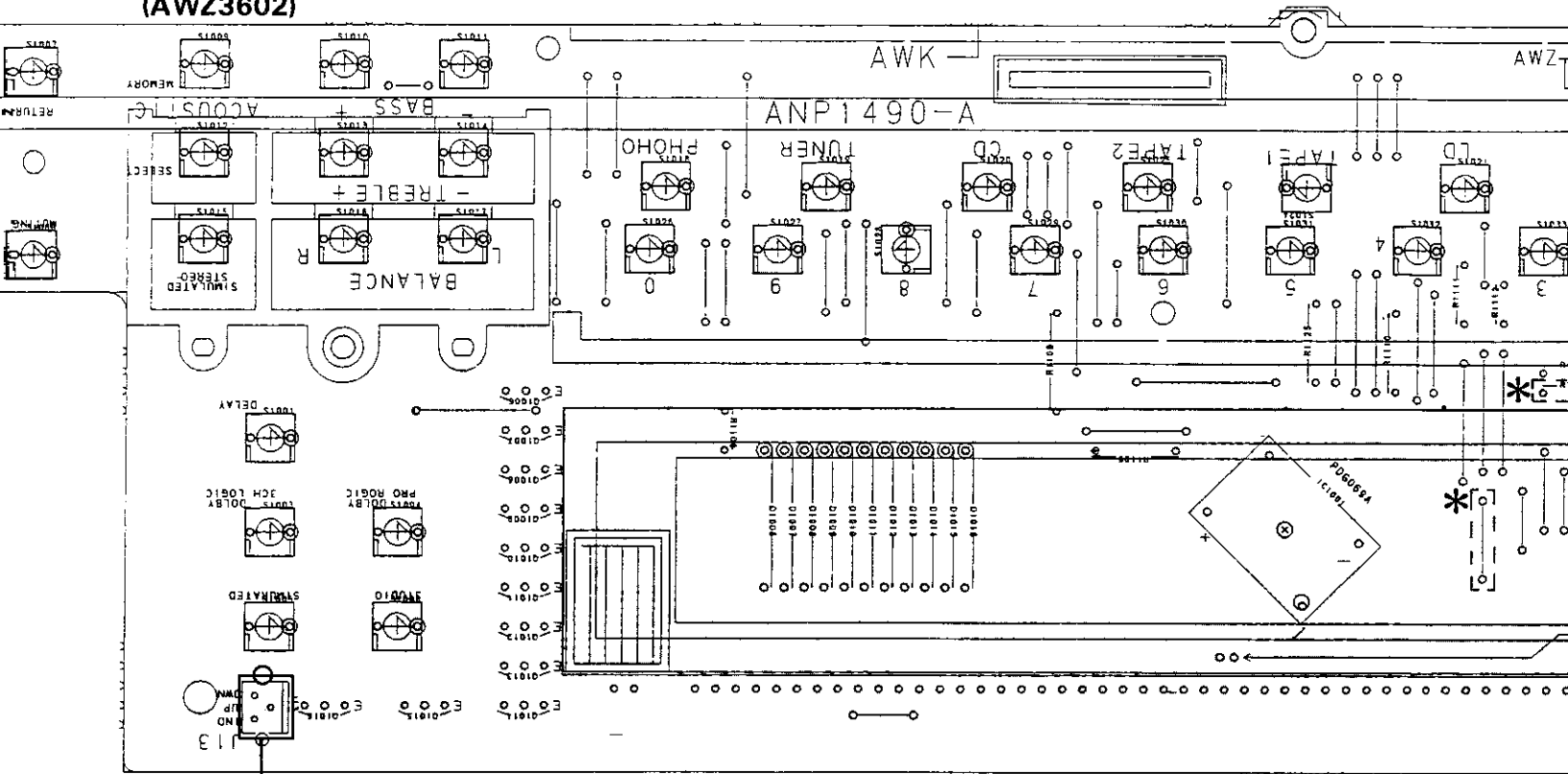
D

VSX-4800/SD ONLY

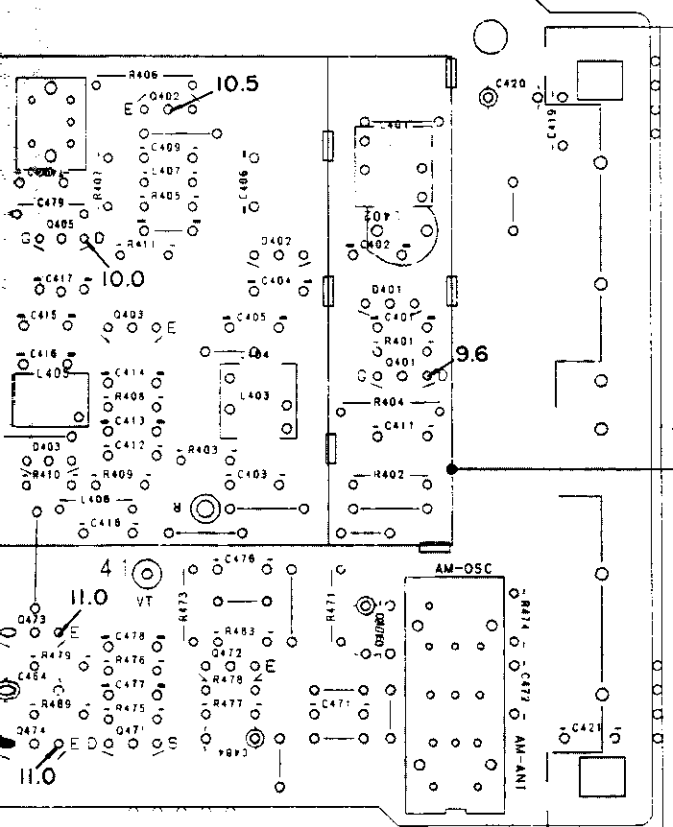


To AF assembly CN401  
(To page 13)

assembly (AWZ3607)  
(AWZ3602)



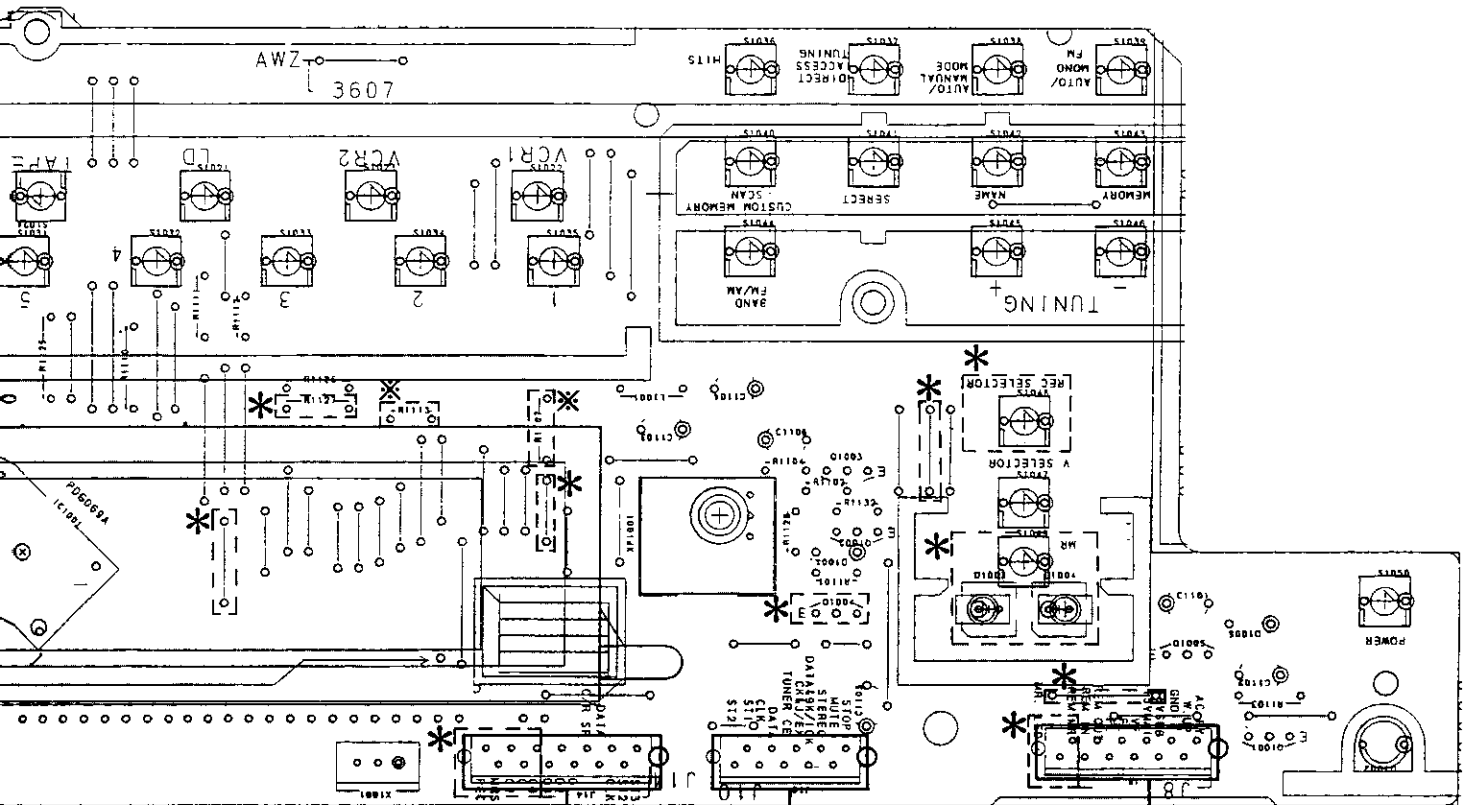
To SUR assembly CN1  
(To page 21)



To SUR assembly CN12  
(To page 22)

To AF assembly J4  
(To page 13)

38



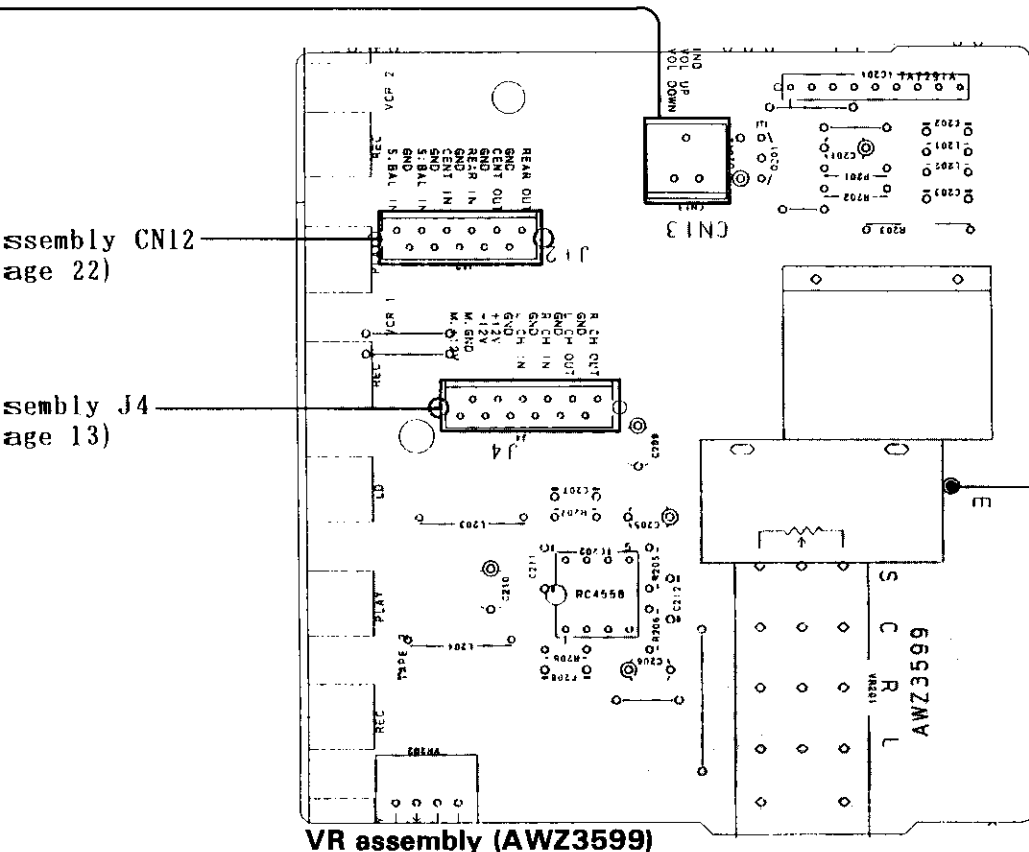
A

B

To SUR assembly CN14  
(To page 21)

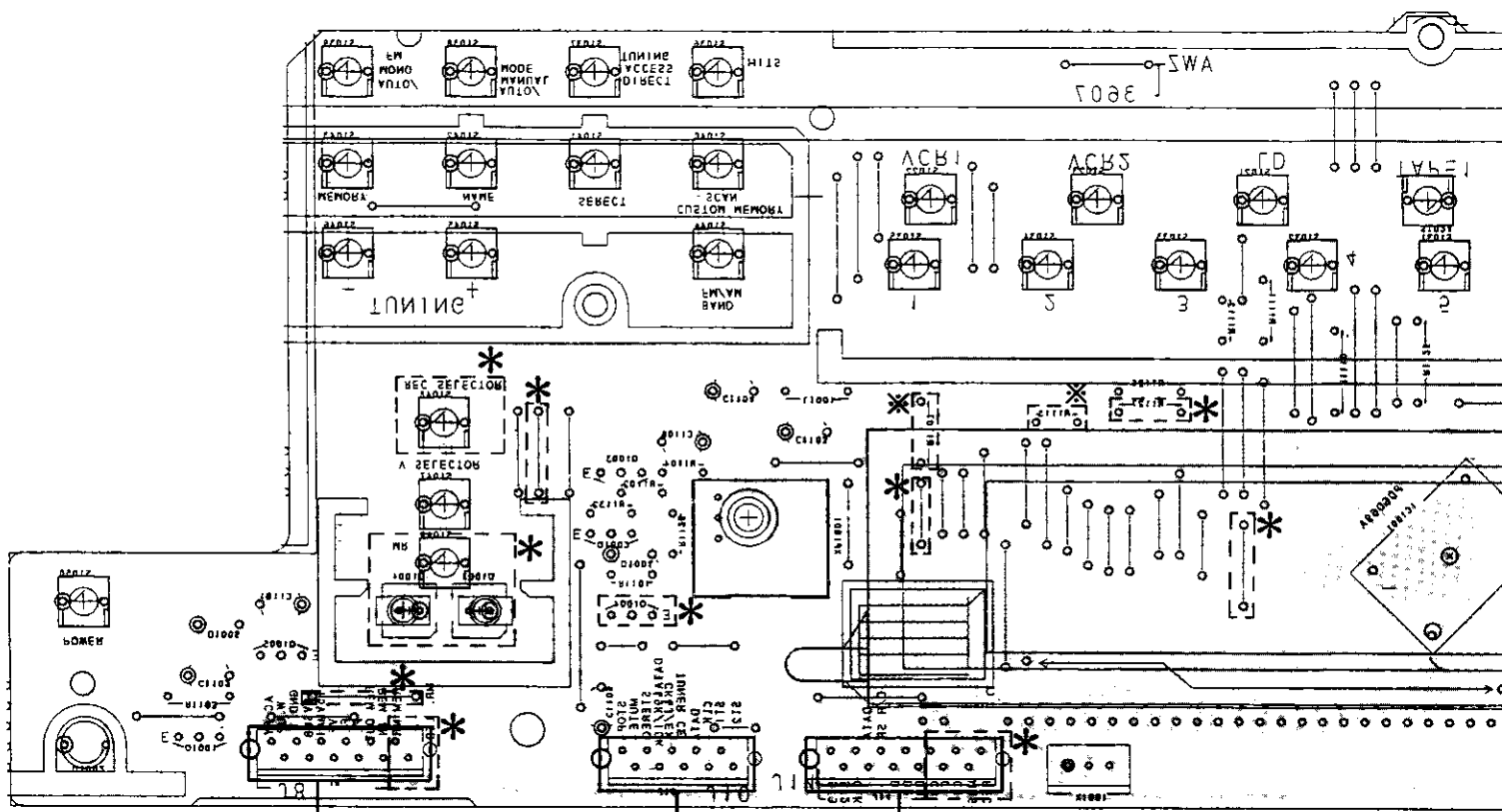
To AF assembly CN10  
(To page 13)

To AF assembly CN8  
(To page 14)



A

B



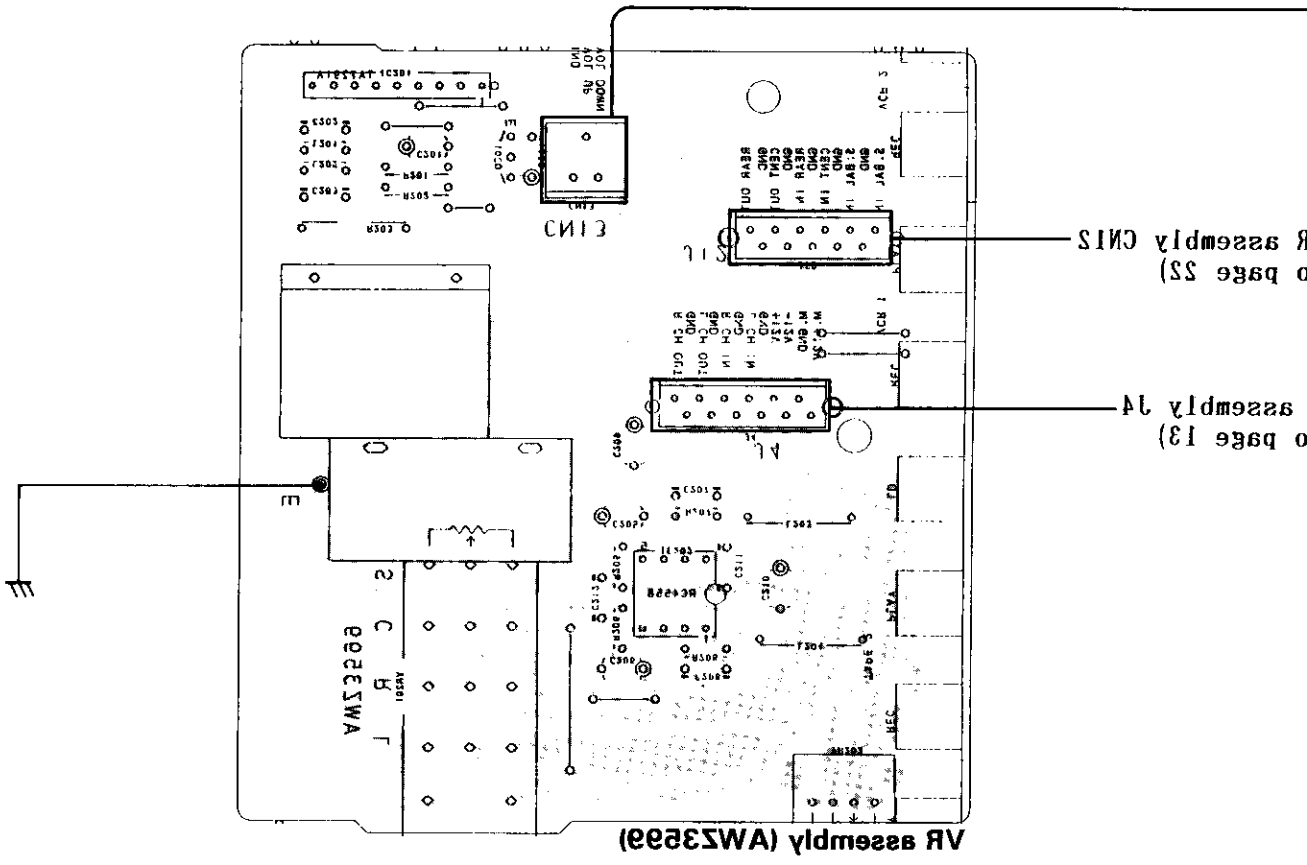
To AF assembly C14  
(To page 21)

To AF assembly C10  
(To page 13)

To AF assembly C18  
(To page 14)

C

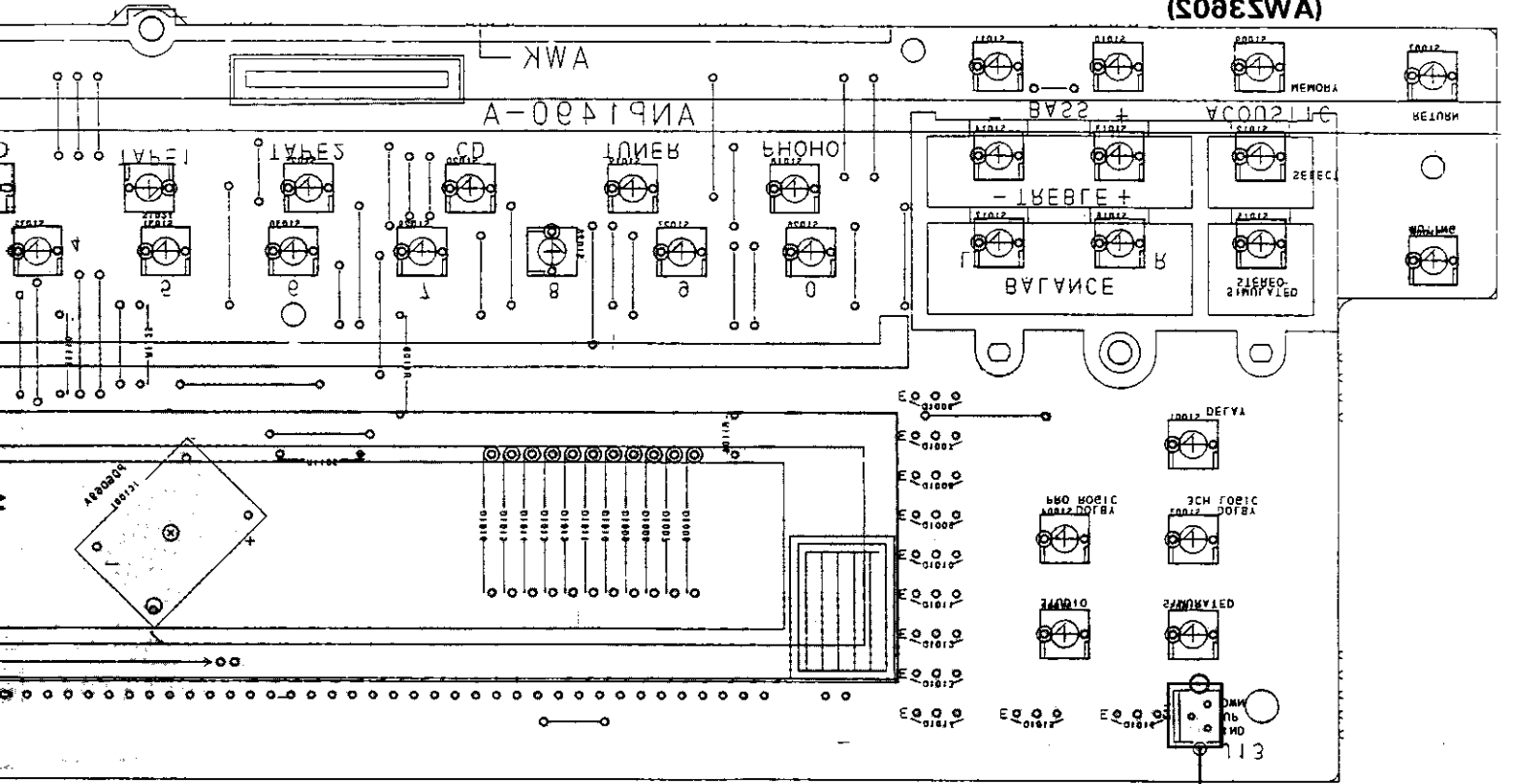
D



To AF assembly C15  
(To page 23)

To AF assembly C14  
(To page 13)

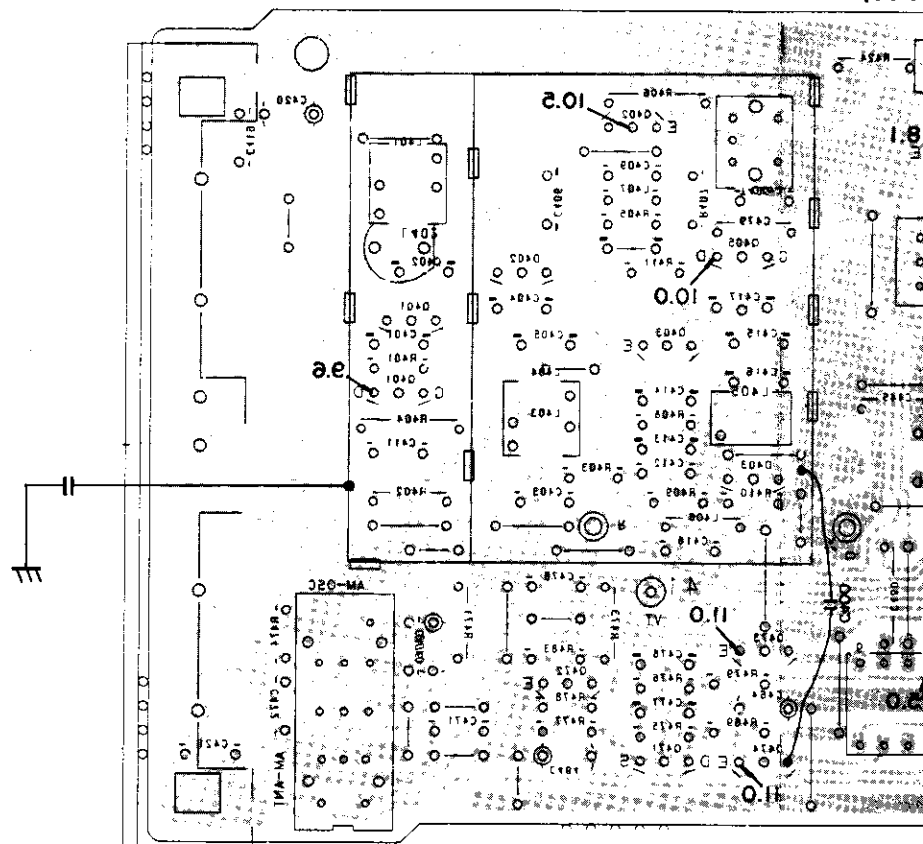
VR assembly (WZ353)



To page 13 (To page 13)

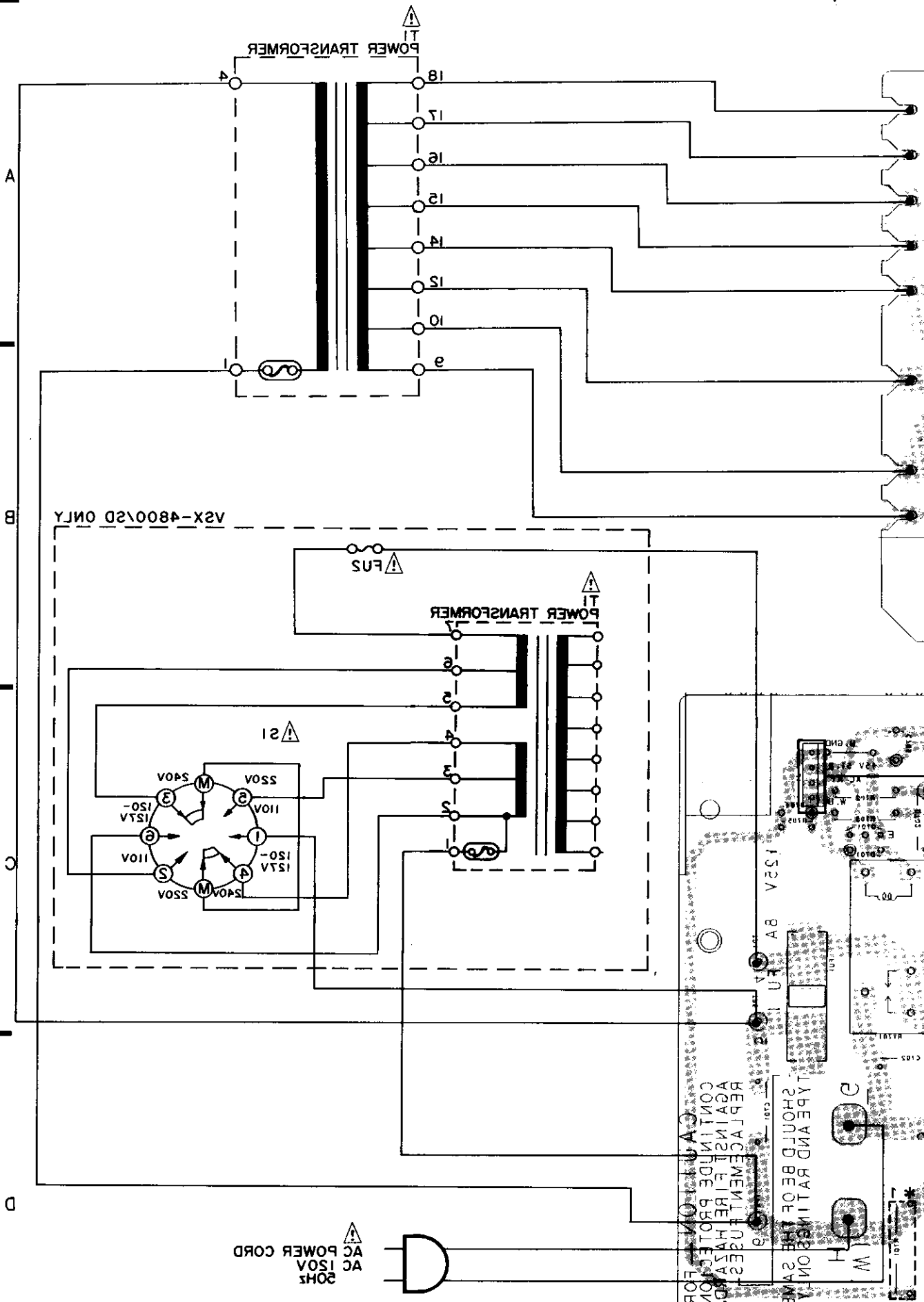
To page 22 (To page 22)

To page 13 (To page 13)









AC POWER CORD  
AC 150V  
50Hz

POWER TRANSFORMER

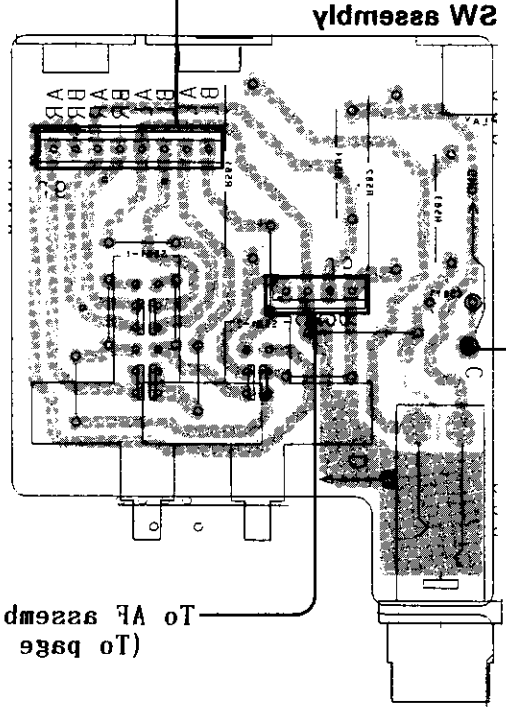
POWER TRANSFORMER

V2X-48002D ONLY

TYPE AND RATING ON THE  
SHOULD BE OF THE SAME  
REPLACEMENT USES  
AGAINST FIRE HAZARD  
CONTAIN FIRE PROTECTION  
CAUTION

43

A  
B  
C  
D



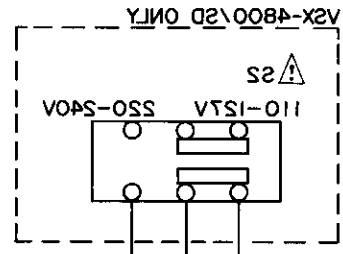
To AF assembly 16  
(To page 14)

To AF assembly 13  
(To page 14)

To AF assembly 12  
(To page 14)

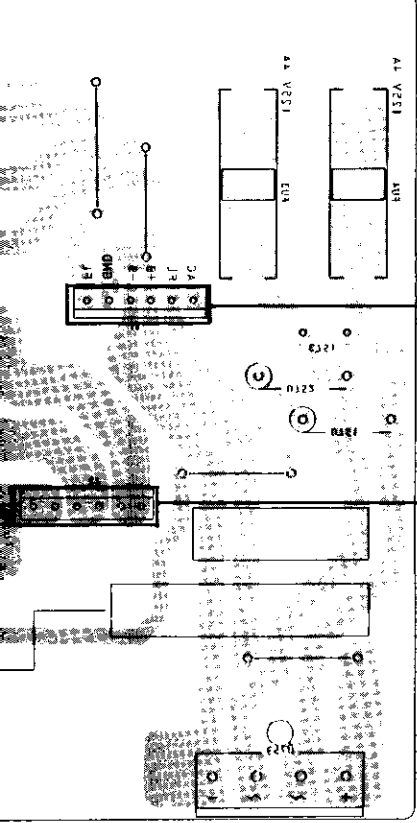
To AF assembly 12  
(To page 14)

To AF assembly 11  
(To page 14)

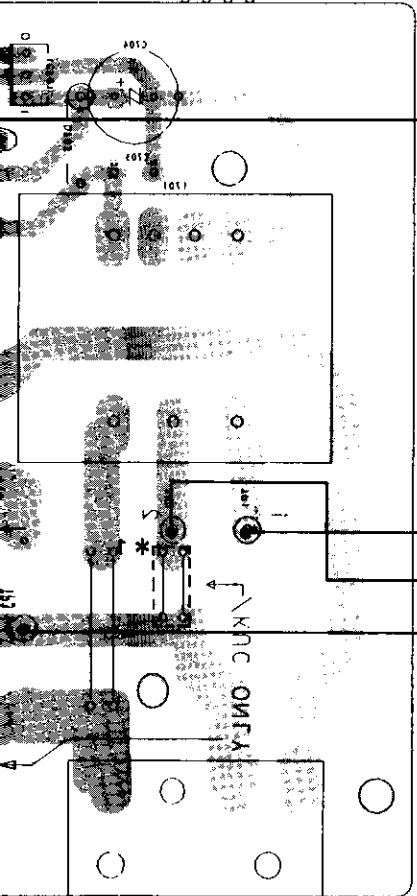


NOTE)  
When replace the SB TR assembly of 2D type,  
cut the part \*1.

TRANS assembly



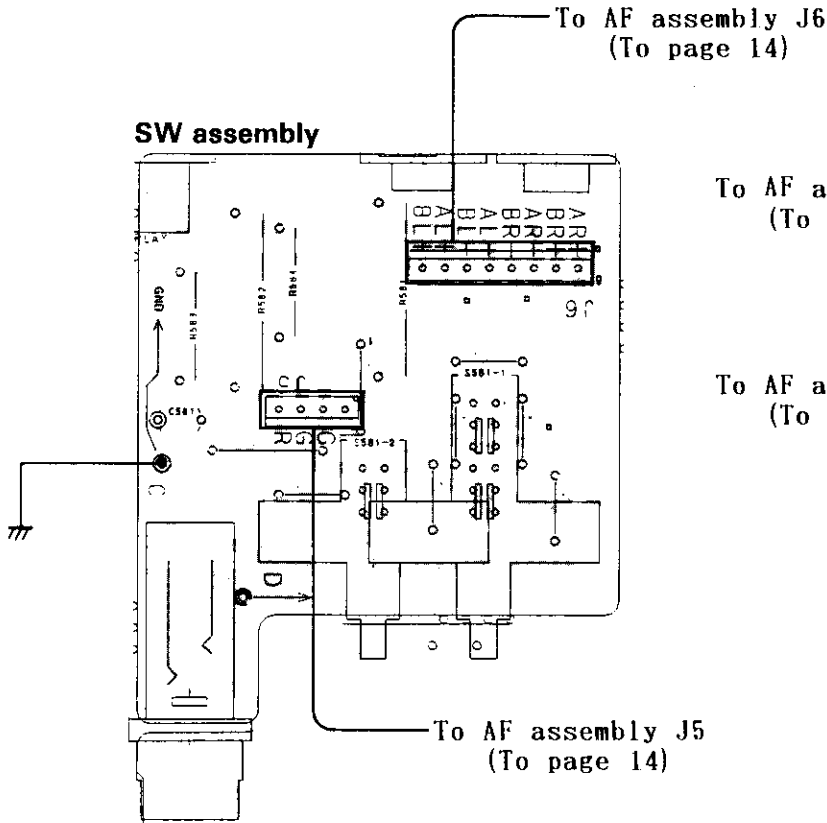
SB TR assembly



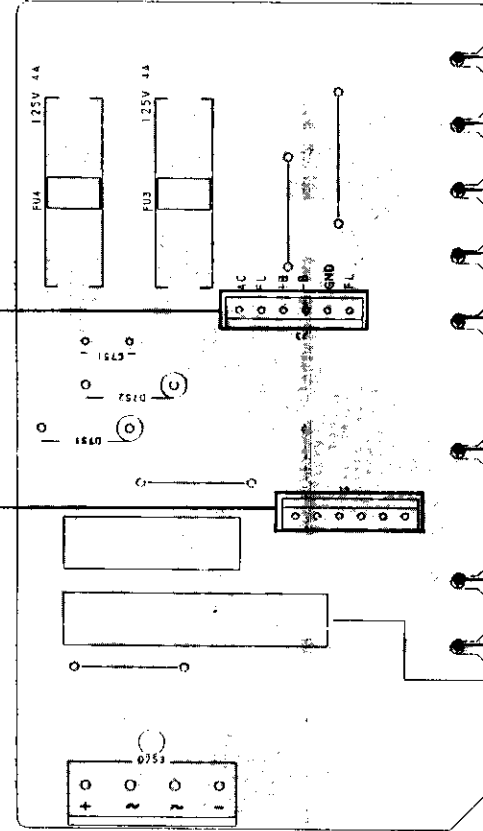
4.6 SW, TRANS and SB. TR assembly

A

SW assembly



TRANS assembly



NOTE

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

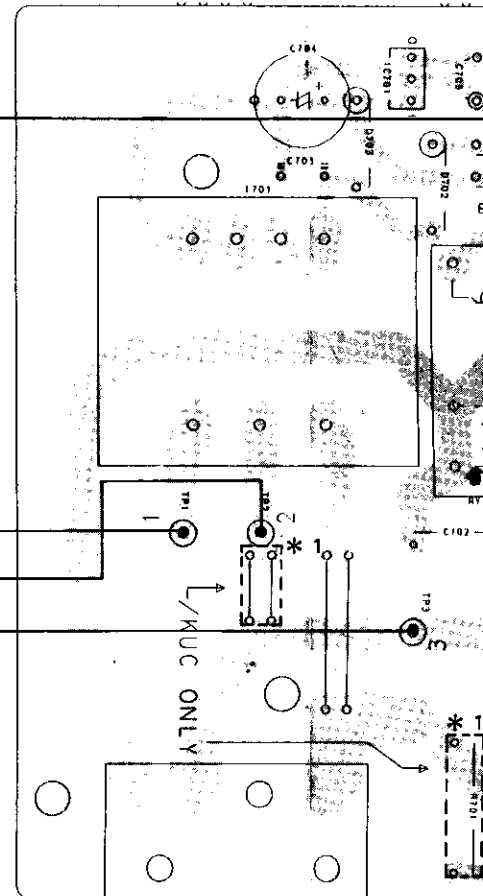
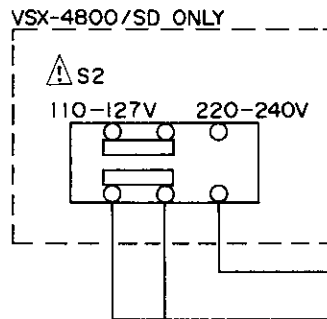
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
EO 0504		Transistor
EO 0215		Radiator type transistor
EO D203		Diode
EO R237		Resistor
EO C513		Capacitor (Polarity)
EO C518		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

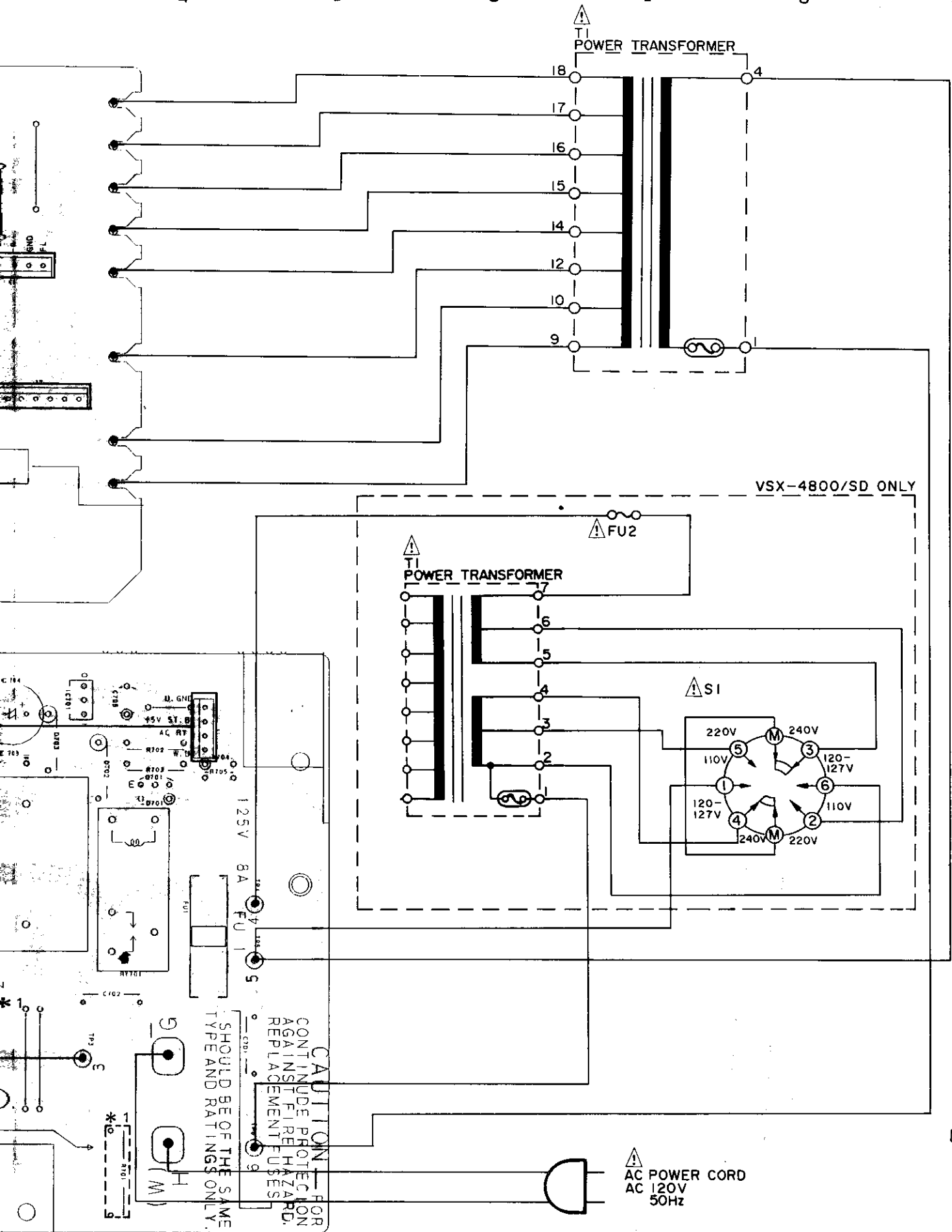
3. The capacitor terminal marked with ⊕ (double circles) shows negative terminal.
4. The diode terminal marked with ⊕ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

To AF assembly J1  
(To page 14)



SB. TR assembly

NOTE)  
When replace the SB.TR assembly of SD type,  
cut the part \*1.



A

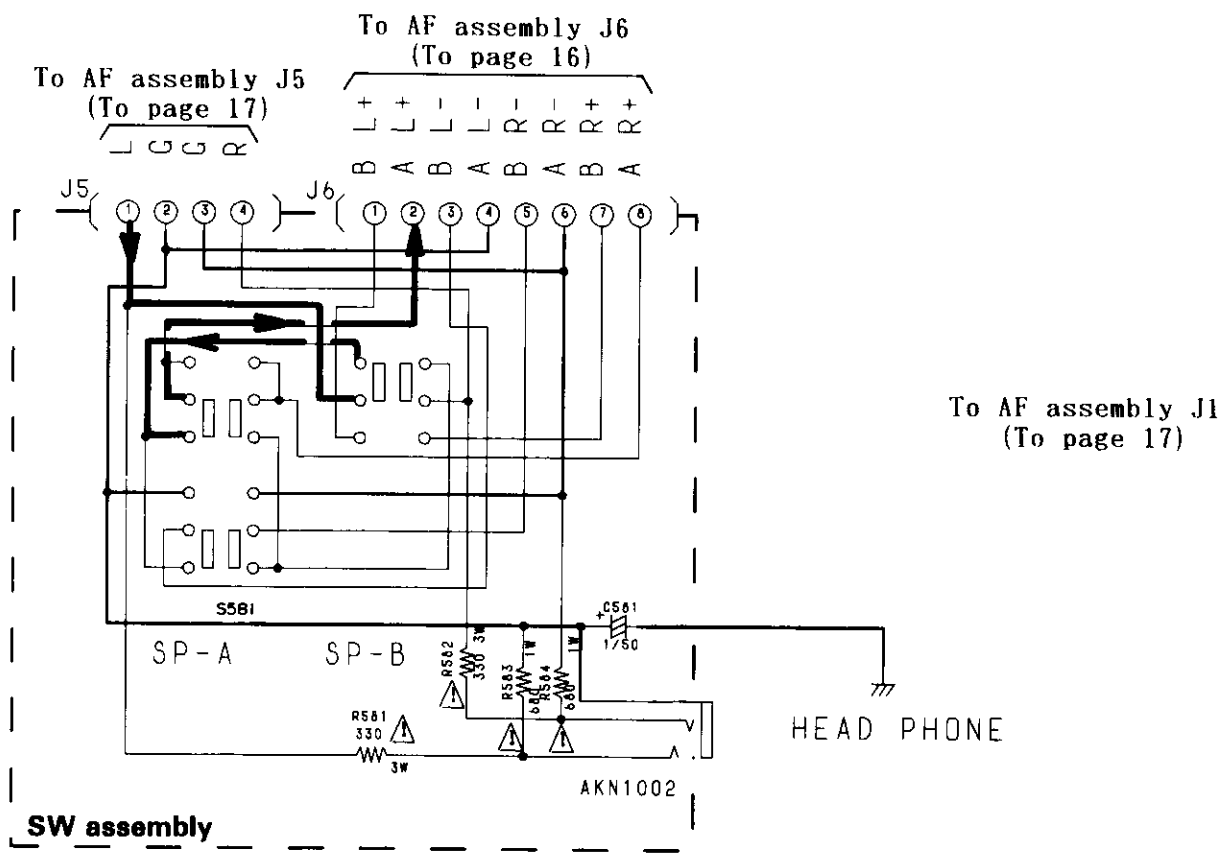
B

C

D

To AF  
(To

To AF ass  
(To pa

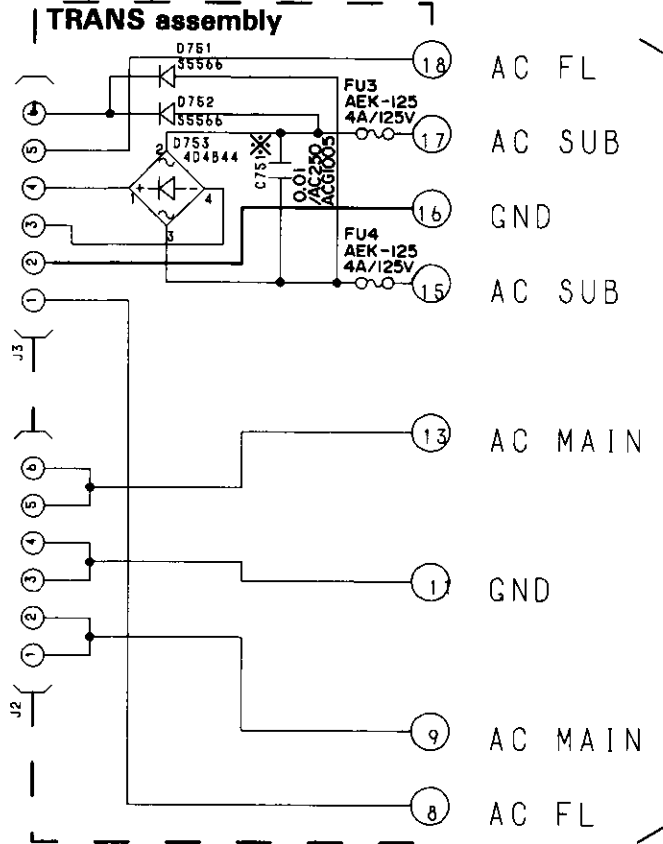


2/7

TRANS assembly

To AF assembly J3  
(To page 17)

To AF assembly J2  
(To page 17)



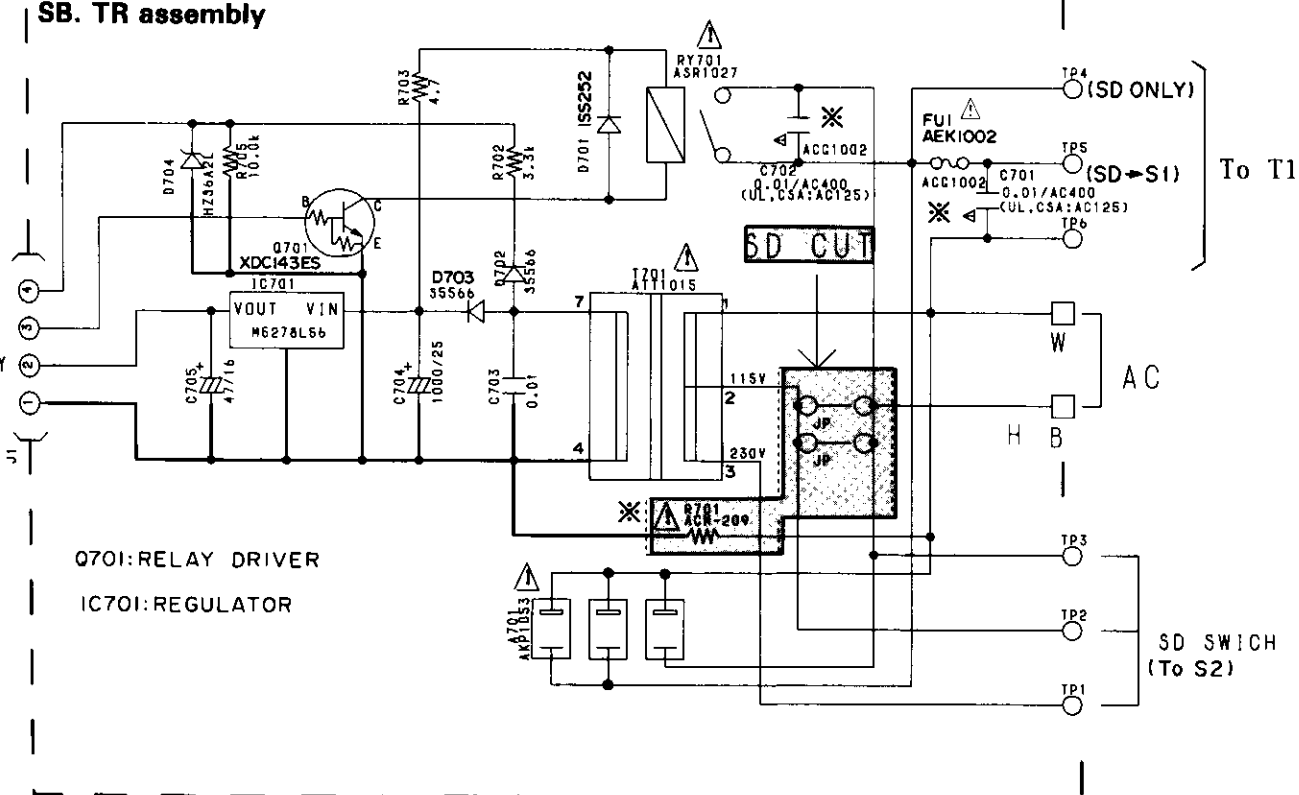
To T1

A

B

SB. TR assembly

W UP  
RY  
+5V ST BY  
GND



To T1

C

D