

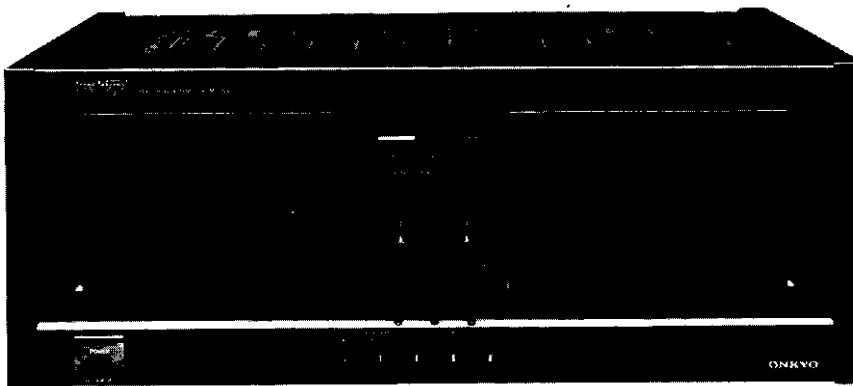


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ONKYO SERVICE MANUAL

Stereo Power Amplifier

MODEL M-508



UD	120V AC, 60Hz
UG	220V AC, 50Hz
UQ	240V AC, 50Hz
UW	120V or 220V AC, 50/60Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK **△** ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

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SPECIFICATIONS

Music Power Output:	2 x 450 watts at 4 ohms, 1 kHz (DIN)	2 x 260 watts at 8 ohms, 1 kHz (DIN)
Continuous Power Output:	2 x 315 watts at 4 ohms, 1 kHz (DIN)	2 x 215 watts at 8 ohms, 1 kHz (DIN)
	200 watts per channel, min. RMS, at 8 ohms, both channels driven, from 20 Hz to 20 kHz, with no more than 0.003% THD	
Total harmonic distortion:	0.003% at rated power 0.003% at 1 watt output	
Intermodulation distortion:	0.003% at rated power	
Frequency response:	+0, -1.5 dB at 1 Hz to 100kHz	
Input sensitivity:	1.0V	
Input impedance:	20kohms	
Damping factor:	140 (8 ohms, 1 kHz)	
S/N ratio:	120 dB (IHFA, Shorted)	
Outputs:	SPEAKERS 1 & 2, AC OUTLET (120V models only)	
Inputs:	INPUT (VARIABLE, DIRECT)	
Power Supply:	European models: AC 220V, 50Hz Canadian models: AC 120V, 60Hz British and Australian models: AC 240V, 50Hz Worldwide models: AC 120V, 60Hz (Switchable): AC 220V, 50Hz	
Dimensions:	465(W) x 185(H) x 426(D) mm. 18 5/16" x 7 9/32" x 16 25/32"	
Weight:	25 kg, (55.1 lbs.)	

Specifications and features are subject to change without notice.

PRECAUTIONS

1. Replacing the fuses

For continued protection against risk fire, replace only with same type and same rating fuse.

CIRCUIT NO.	PART NO.	DESCRIPTION
F801, F802	252052	7A (ST-6), Primary fuse (120V, 120V/220V model)
F803, F804	252077	4A-SE-EAK, Primary fuse (220V, 120V/220V, 240V model)
F702	252044	2A (ST-6), Secondary fuse (120V, 120V/220V model)
F702	252074	2A-SE-EAK, Secondary fuse (220V, 240V model)

2. Replacing the lamp

This unit uses the lamp listed below.

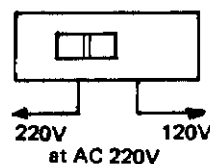
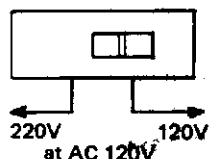
CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL881, PL882	210191	PL14V 150mA (Green)
PL883, PL884		
PL885, PL886	210192	PL14V 150mA (Orange)
PL887, PL888		

3. Insulation resistance measurement (Only U.S.A. model) -

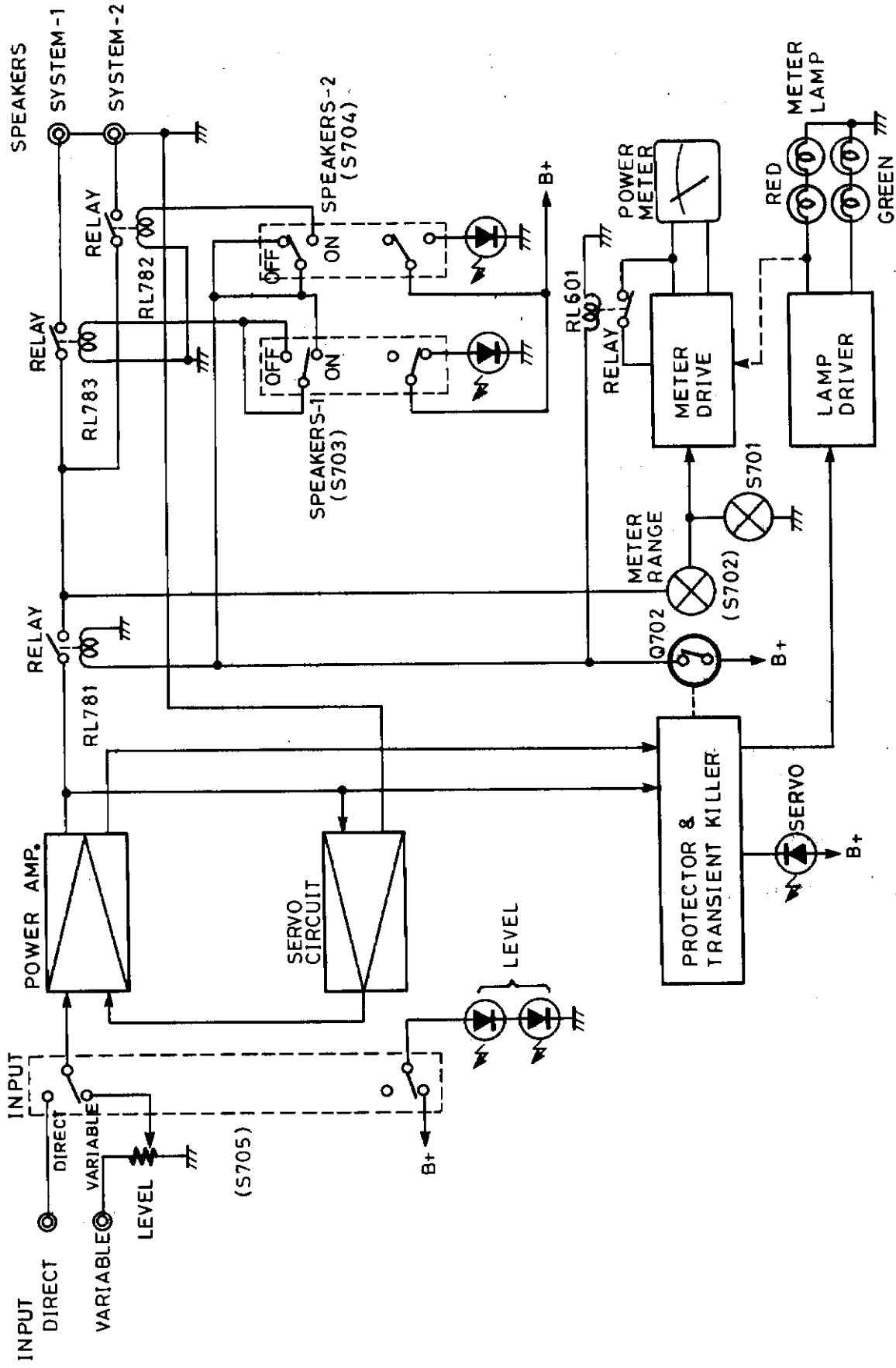
Connect the insulating-resistance tester between the plug of power supply cable and the terminal GND on the back panel. Specifications; More than 10 MΩ at 500V.

4. Voltage selector (rear panel)

Worldwide models are equipped with a voltage selector to conform with local power supplies. Be sure to set this switch to match the voltage of the power supply in your area before turning the power switch on. Voltage is changed by sliding the groove in the switch with a screwdriver or similar instrument to the up or down position. Confirm that the switch has been moved all the way to the up or down before turning the power switch on. If there is no voltage selector switch on the unit you have purchased, it can only be used in areas where the power supply voltage is the same as that of the unit.



BLOCK DIAGRAM



ADJUSTMENT PROCEDURES

1. Preparation

- (1) Leave the machine in a normal condition parallel to the work bench, maintaining a clearance of 15mm from the bottom for air circulation.
- (2) Set the level to minimum with no load and no signal.
- (3) When making the adjustment, there must be no breeze blowing from the outside.

2. Zero adjustment of meter

- (1) Turn power OFF.
- (2) Make the adjustment with the zero adjustment knob to set the meter needle to zero.

Caution: Do not make the adjustment immediately after turning off the power.

3. Adjustment of idling current

- (1) Turn ON the power switch, and leave the unit as is for about 5 minutes.
- (2) Adjust the semi-fixed resistor R423 (R424) so that the voltage between the terminals V_{CT} and I_{ID} of the printed circuit board NAPA-2625 is $5mV$.

4. Meter circuit offset adjustment

- (1) Adjust the semi-fixed resistor R645 (R646) of the printed circuit board NAMA-2615 so that the meter needle is at zero.

5. Meter circuit level adjustment

- (1) Input the 1kHz signal from the low frequency oscillator so that the amplifier output is 12.65V (22.0db).
- (2) Adjust the semi-fixed resistor R613 (R614) of the printed circuit board NAMA-2615 so that the meter needle is at 0db.

Caution: The adjustment must be made while inputting the signal to a each single channel of the L and R channels.

6. Operating check of protection circuit

- (1) When the power switch is turned ON,
 - 1) Even though there is a signal input, the meter should have no deflection.
 - The meter lighting lamps PL885, PL886, PL887, and PL888 (red) light.
 - SERVO OPERATION LED does not light.
 - 2) After about 5 minutes, relay RL781 of the NAOP-2619 printed circuit board and relay RL601 of NAMA-2615 go ON.
 - SERVO OPERATION LED lights.
 - The meter lighting lamps change to PL881, PL882, PL883, and PL884 (green).
 - When SPEAKER SWITCH 1 and 2 are turned ON, relay RL782 and RL783 go ON.
 - The meter needle deflects in response to the signal.
- (2) When the power is turned OFF,
 - Immediately all relays go OFF.

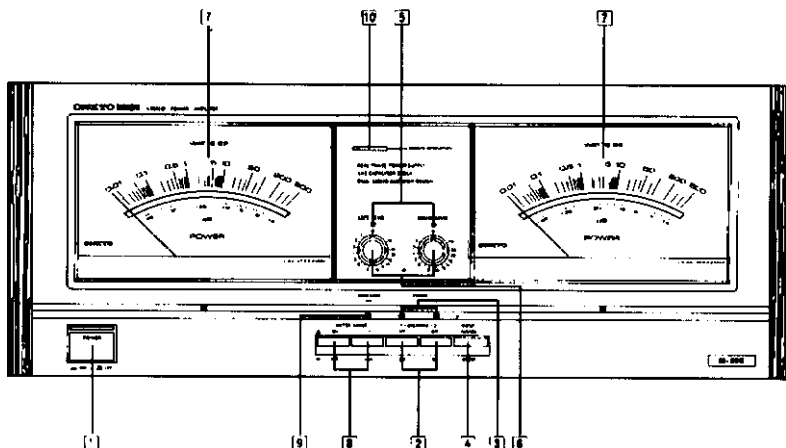
7. Check of direct current detection circuit of protection circuit

- (1) With no load, when 1V DC is input, the speaker relay operates, the SERVO OPERATION LED goes out, and the meter lighting lamps change to red.
- (2) Make the same check with -1V DC.

Caution: During this test, there should be absolutely no load connected and the load terminals must not be shorted.

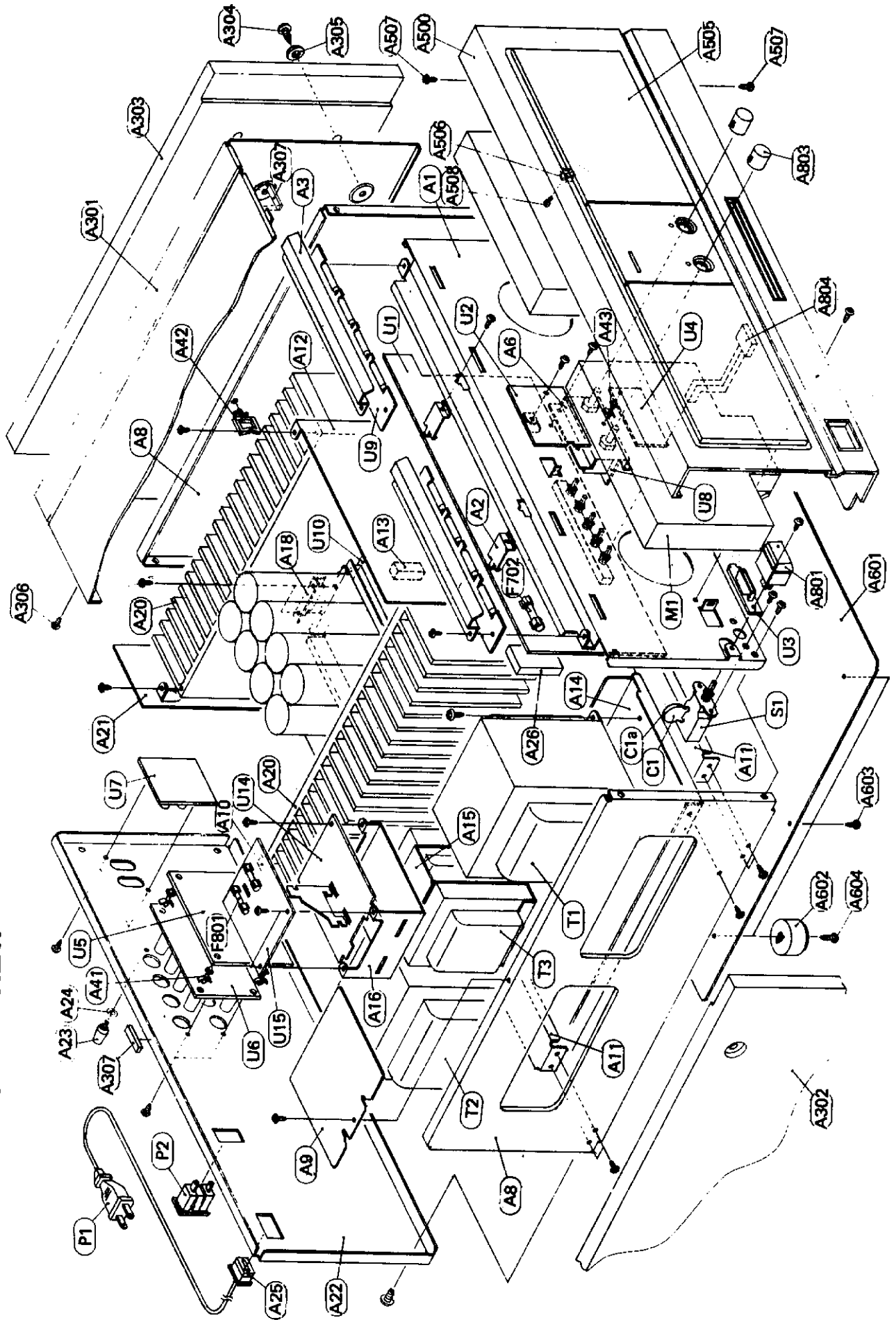
Note: When the protection circuit operates due to an abnormality in the circuit, after several seconds, the protection circuit holds. Also, even after the cause of the abnormality is eliminated, the circuit is held as is. To cancel, turn the power OFF for several minutes.

FRONT PANEL FACILITIES



1. Power Switch (POWER)
2. Speaker Selector Switches (SPEAKERS)
3. Speaker Selector Indicators (SPEAKERS)
4. Input Selector Switch (INPUT)
5. Input Selector Indicators
6. Level Controls (LEFT/RIGHT LEVEL)
7. Peak Power Meters
8. Meter Range Selector Switches (METER RANGE)
9. Meter Range Indicator (METER RANGE)
10. Servo Operation Indicator (SERVO OPERATION)

CHASSIS-EXPLODED VIEW



CHASSIS-EXPLODED VIEW-PARTS LIST

REF NO.	PARTS NO.	DESCRIPTION	REF NO.	PARTS NO.	DESCRIPTION	REF NO.	PARTS NO.	DESCRIPTION
A1	27110285A	Front bracket	A801	28322541	Knob assy (POW)	U1	17818515-1	NAMA-2615-1, Meter and protector circuit pc board ass'y
A2	27141064	Bracket (FPC)	A803	28322542A	Knob (VOL)			
A3	27141065A	Bracket (LAMP)	A804	28322543A	Knob (PUSH) C.D009			
A6	27141066	Bracket (VOL)	Q449, Q450	2201653 or 2SC3856(P) or 2SC3856(Y), Transistor		U2	17818515-1A	NAMA-2615-1A, Meter and protector circuit pc board ass'y [G][Q]
A8	27115204A	Side bracket	Q453, Q454	2201655 or 2SA1492(F) or 2SA1492(Y), Transistor		U3	17818516-1	NADIS-2616-1, Volume/Servo LED pc board ass'y
A9	28175129	Insulating plate	Q457, Q458	2201654 or 2SA1492(F) or 2SA1492(Y), Transistor		U4	17818517-1	NADIS-2617-1, Power LED pc board ass'y
A10	29360626-1	Label	Q451, Q452	2201663 or 2SA1492(F) or 2SA1492(Y), Transistor		U5	17818518-1	NADIS-2618-1, Speaker LED pc board ass'y
A11	27130427	Bracket	Q455, Q456	2201665 or 2SA1492(F) or 2SA1492(Y), Transistor		U6	17818520-1	NAST-2620-1, Speaker terminal pc board ass'y
A12	27130212B	Shield plate	Q459, Q460	2201664				
A14	27130428A	Bracket (PT)	Δ T1	2300128	NFT-928D, Power transformer [G]			
A15	27130429	Bracket (PHT)		2300129	NFT-928G, Power transformer [G]	U5	17818519-1	NAOP-2619-1, Relay circuit pc board ass'y
A16	27141067	Bracket (PC)		2300130	NPT-928DG, Power transformer [W][X]	U6	17818520-1	NAST-2620-1, Speaker terminal pc board ass'y
A18	27141068	Bracket (HE)		2300131	NPT-928Q, Power transformer [Q]			
A20	27160186	Radiator	Δ T2	2300098A	NPT-918D, Power transformer [G]			
A21	27150215A	Shield plate		2300099	NPT-918C, Power transformer [G]	U7	17818521-1	NAPJ-2621-1, Input terminal pc board ass'y
A22	27120851	Back panel		2300100	NPT-918DG, Power transformer [W][X]			
		Back panel				U8	17818522-1	NAVR-2622-1, Level volume pc board ass'y
		Back panel						
		Back panel						
		Back panel						
		3 x 14mm, Ground terminal						
A23	25060041	[G]	Δ T3, T4	2300101	NPT-918Q, Power transformer [Q]			
A24	87644010	W4 x 10F(BC), Washer	Δ S1	231097	NCH-3144, Choke coil			
A25	27300750	#2271, Bushing (Power supply cable) [W]	Δ S2	25035381	NFS-121-L345P, Power switch			
		[W]	Δ P1	25065195	NSS-1288P, Slide switch [W][X]	U10	17818525-1	NAPA-2625-1, Power amplifier pc board ass'y
				233122	AS-UC-6#16, Power supply cable			
				253092-1	AS-CEE-2, Power supply cable [G]	U11	17818526-1	NACC-2626-1, Transistor pc board ass'y
				253118	AS-SAA, Power supply cable [Q]			
A26	28140676	11 x 50 x 30mm, Cushion	Δ P2	253131	AS-CEE-3, Power supply cable [W]	U12	17818527-1	NADA-2627-1, Transistor pc board ass'y
A30	28330072	Cap (AC outlet) [X]		25050290	NSCT-2P118T, AC outlet [D][N][X]	U13	17818528-1	NADA-2628-1, Transistor pc board ass'y
A40	27190009	Holder	M1, M2	243148	NIND-2000S148, Power meter			
A41	27190460	Holder	Δ CLC2	3500065A	0.01μF, AC400V, Capacitor (IS)	U14	17818529-1	NARC-2629-1, Power supply circuit pc board ass'y
A42	27300243	WS-2WS, Wire holder	ClA, C2a	27300601	SB-192b, Cover (Capacitor)			
A43	27190458	WLS-06-0, Holder	F702	252044	2A ST-6, Secondary fuse			
A301	28184319B	Top cover	Δ F801, F802	252074	2A SE-EAK, Secondary fuse [G][Q]	U15	17818530-1	NAFU-2630-1, Fuse pc board ass'y
A302	28185257	Side board (L)		252074	7A ST-6, Primary fuse [D][N][W][X]			
A303	28185259	Side board (R)	Δ F803, F804	252077	4A SE-EAK, Primary fuse [G][W][X][Q]			
A304	836440303	4STV x 30FN(BC), Screw						
A305	870086	4 x 12BS(BC), Special washer						
A306	838440089	4TTB + 8C(BC), Tapping screw						
A307	28140020	4 x 10 x 40mm, Cushion						
A500	17818121	Front panel ass'y						
A505	17819121	Front panel ass'y [N][X]						
A506	28191351B	Clear plate						
A508	27190451	Holder, (Grass)						
A601	833430080	3TTP+8P(BC), Tapping screw						
A602	27170226 LA	Bottom board						
A603	280889B	Bottom leg						
A604	831430088	3TTW + 8B(BC), Tapping screw						
	831430168	3TTW + 16B(BC), Tapping screw						

NOTE: THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PARTS NUMBER SPECIFIED.

NOTE
 [D]: Only 120V models
 [G]: Only 220V models
 [W]: Only 120V/220V models
 [N]: Only U.S.A. models
 [X]: Only Military market models
 [Q]: Only British and Australian models

PRINTED CIRCUIT BOARD PARTS LIST

METER AND PROTECTOR CIRCUIT PC BOARD (NAMA-2615-1,NAMA-2615-1A)

CIRCUIT NO.	PARTS NO.	DESCRIPTION	CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Transistors				
Q201,Q202	2212806 or 2212807	2SK389(BL) or 2SK389(V)	R723	442520474	4.7 Ω, 1/2W, Metal oxide film
Q601,Q602	2211945	2SK246(GR)	R724	441721814	180 Ω, 2W, Metal oxide film
Q604,Q605	2211255	2SC1815(GR)	R725	441720474	4.7 Ω, 2W, Metal oxide film
Q702	2211504	2SA950(Y)	R727	442520474	4.7 Ω, 1/2W, Metal oxide film
Q703	2211455	2SA1015(GR)	R735	442521824	1.8kΩ, 1/2W, Metal oxide film
Q704,Q705	2201276 or 2201275	2SB772(P) or 2SB772(Q)		Switch	
Q706	2201286 or 2201285	2SD882(P) or 2SD882(Q)	S701~S705	25035522	NPS-242-222-162L484
	ICs			Relay	
Q203,Q204	222652	M5218L	RL601	25065048	FRL-644D-12/2AS
Q603	222529	TA7318P(R)		Fuse holders	
Q606,Q607	222502	NJM4558DX	F701a,F702a	250113	S-N5051
Q701	222584	TA7317P	F702a	25050065	YSH403T [G][X][Q]
	Diodes			Fuse label	
D201~D204	223155	1SS138		29360364	T2A/250V [G][Q]
D205~D208	2239651 or 2243241	RD13E-B1 or MTZ13-A	JC601,JC607	25050282	NSCT-5P110
D601,D602	223145	1S2076TD	JC409	25050283	NSCT-6P111
D603,D604	2239672 or 2243252	RD15E-B2 or MTZ-15B	JC603	25050281	NSCT-4P109
D605	223145	1S2076TD	JC401,JC402,JC604	25050285	NSCT-8P113
D701	223155	1SS138	P201,P202	2000553	NSAS-6P509 Socket ass'y
D702	2239493 or	RD6.2E-B3 or	P703	2000550	NSAS-6P506 Socket ass'y
D703	2239533 or 2243183 2243163	RD7.5E-B3 or MTZ7.5-C MTZ6.2-C			
D705	223868	2W02			
	Capacitors				
C201~C204	372125614	560pF, 50V, Styrene			
C205~C208	372122214	220pF, 50V, Styrene			
C215~C218	391251017	100 μF, 25V, Elect. (MUSE)			
C223~C226	354741019	100 μF, 16V, Elect.	D710,D711	225137CG or 225137CY or 225137DG or 225137DY	SEL-2413E-CG or SEL-2413E-CY or SEL-2413E-DG or SEL-2413E-DY
C601,C602	354784799	0.47 μF, 50V, Elect.	D712,D713	225174 or 225173	SLR55MC3N or SLR55MC3M
C605,C606	354780339	3.3 μF, 50V, Elect.		HOLDERS	
C607	354780109	1 μF, 50V, Elect.		27190453	Holder (SLED)
C608,C609	379121035	0.01 μF, 50V, Film (DEW)		27190319A	Holder (LED)
C613,C614	354752209	22 μF, 25V, Elect.			
C615,C616	354780339	3.3 μF, 50V, Elect.			
C617,C618	354754709	47 μF, 25V, Elect.			
C701,C702	354722219	220 μF, 6.3V, Elect.			
C704	354732209	22 μF, 10V, Elect.			
C706	354784799	0.47 μF, 50V, Elect.			
C707	354732219	220 μF, 10V, Elect.			
C708	354742229	2200 μF, 16V, Elect.			
C710	379121045	0.1 μF, 50V, Film (DEW)			
C711	354741009	10 μF, 16V, Elect.			
	Resistors				
R215,R216	441722434	24 kΩ, 2W, Metal oxide film			
R225,R226	442524724	4.7kΩ, 1/2W, Metal oxide film			
R613,R614	5221023	N10HR470BEM, Semi-fixed			
R633,R634	4000028	D33A, Thermistor			
R645,R646	5221023	N10HR470BEM, Semi-fixed			
R717	442520684	6.8 Ω, 1/2W, Metal oxide film			
R718	442528204	82Ω, 1/2W, Metal oxide film			
R719	442524714	470 Ω, 1/2W, Metal oxide film			
R720	441720274	2.7 Ω, 2W, Metal oxide film			
R721	442524714	470 Ω, 1/2W, Metal oxide film			
R722	442522214	220 Ω, 1/2W, Metal oxide film			

VOLUME/SERVO LED PC BOARD (NADIS-2616-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Diodes	
D710,D711	225137CG or 225137CY or 225137DG or 225137DY	SEL-2413E-CG or SEL-2413E-CY or SEL-2413E-DG or SEL-2413E-DY
D712,D713	225174 or 225173	SLR55MC3N or SLR55MC3M
	Holders	
	27190453	Holder (SLED)
	27190319A	Holder (LED)

POWER LED PC BOARD (NADIS-2617-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Diodes	
D714,D715	225142	SEL2913K
	Holder	
	27190454	Holder (PLED)

SPEAKER LED PC BOARD (NADIS-2618-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
	Diodes	
D716	225167RB or 225167RC	GL-5HY10-RB or GL-5HY10-RC
D717,D718	225174 or 225173	SLR55MC3N or SLR55MC3M

CIRCUIT NO. PARTS NO. DESCRIPTION

27190319A Holder (LED)

RELAY CIRCUIT PC BOARD (NAQP-2619-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D781 ~ D783	223145	Diodes 1S2076TD
L781 ~ L784	231015	Coils S-0.8C
C783 ~ C786	379121245	Capacitors 0.12μF, 50V, Film (DEW)
R781 ~ R784 R785, R786	441620514 441720514	Resistors 5.1 Ω, 1W, Metal oxide film 5.1 Ω, 2W, Metal oxide film
RL781 ~ RL783	25065036	Relays NRL-4P3A-DC12-01
JC407, JC408 JC603	25050273 25050268	Sockets NSCT-9P101 NSCT-4P96

SPEAKER TERMINAL PC BOARD (NAST-2620-1, NAST-2620-1A)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
P791, P792 P791, P792	25060100 25060101	Terminals NTM-4PDMN40 NTM-4PDMN41

INPUT TERMINAL PC BOARD (NAPJ-2621-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
P101	25045196	Terminal NPJ-4PDBL77

LEVEL VOLUME PC BOARD (NAVR-2622-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
R151, R152	5104183A	Resistors N27DGL30KB50
P151 P152	2000551 2000552	Sockets NSAS-6P507 NSAS-6P508

METER LAMP PC BOARD (NAPL-2623-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL881 ~ PL884 PL885 ~ PL888	210191 210192	Lamps PL14V150mA (Green) PL14V150mA (Orange)

POWER AMPLIFIER PC BOARD (NAPA-2625-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q401 ~ Q404	2211732 or 2211733	Transistors 2SC1845(F) or 2SC1845(E)
Q405, Q406	2211792 or 2211793	2SA992(F) or 2SA992(E)
Q407, Q408	2211414	2SC1627(Y)
Q411 ~ Q414	2211782 or 2211783	2SA991(F) or 2SA991(E)
Q415 ~ Q418	2211902 or 2E11903	2SC1844(F) or 2SC1844(E)
Q421 ~ Q424	2211359 or 2211358	2SA949-Y(ONK) or 2SA949-O(ONK)
Q425, Q426	2211639 or 2211638	2SC2229-Y(ONK) or 2SC2229-O(ONK)
Q427, Q428	2211792 or 2211793	2SA992(F) or 2SA992(E)
Q429, Q430	2212560	2SC3133
Q431, Q432	2211255	2SC1815(GR)
Q433, Q434	2211455	2SA1015(GR)
Q435, Q436	2211639 or 2211638	2SC2229-Y(ONK) or 2SC2229-O(ONK)
Q437, Q438	2211359 or 2211358	2SA949-Y(ONK) or 2SA949-O(ONK)
Q441	2200394	2SC1625(Y)
Q442	2200404	2SA815(Y)
Q443		2SC3479
D401 ~ D408	223135	Diodes 1SS138
D409 ~ D412	225218	L TZ-MR15, LED
D413 ~ D416	223162	1SS82
D417 ~ D420	225218	L TZ-MR15, LED
D421, D422	223155	1SS138
D423, D424	223168	DA210S
D431, D432	223155	1SS138
D433, D434	223145	1S2076TD
D435 ~ D438	223063	GP-30DL
D439 ~ D442	223162	1SS82
D451, D452	2243293	MTZ22-C
D453	2243251	MTZ15-A
D454, D455	223155	1SS138
L401, L402	231098	Coils NCH-4145
C405 ~ C408	354723319	Capacitors 330 μF, 6.3V, Elect.
C413 ~ C416	391241007	10μF, 16V, Elect. (MUSE)
C417, C418	379121025	0.001 μF, 50V, Film (DEW)
C423, C424	391241007	10μF, 16V, Elect. (MUSE)
C425 ~ C428	379131035	0.01 μF, 100V, Film (DEW)
C435, C436	379131045	0.1 μF, 100V, Film (DEW)
C437, C438	379122245	0.22 μF, 50V, Film (DEW)
C443 ~ C446	379124735	0.047 μF, 50V, Film (DEW)
C451, C452	354752209	22 μF, 25V, Elect.
C453, C454	354751019	100 μF, 25V, Elect.
C455 ~ C462	3504197	10000 μF, 90V, Elect.
C463 ~ C466	354780339	3.3 μF, 50V, Elect.
R401 ~ R404	442525614	Resistors 560 Ω, 1/2W, Metal oxide film
R405, R406	442523314	330 Ω, 1/2W, Metal oxide film
R411, R412	442521614	160 Ω, 1/2W, Metal oxide film
R413, R414	441625634	56 kΩ, 1W, Metal oxide film
R415, R416	442521534	15 kΩ, 1/2W, Metal oxide film
R423, R424	5225076	N10HR22KBDM, Semi-fixed
R425 ~ R428	442520514	5.1 Ω, 1/2W, Metal oxide film
R429 ~ R432	441724324	4.3kΩ, 2W, Metal oxide film

CIRCUIT NO.	PARTS NO.	DESCRIPTION
R433~R436	442521214	120 Ω , 1/2W, Metal oxide film
R445~R448	442523914	390 Ω , 1/2W, Metal oxide film
R449,R450	442521204	12 Ω , 1/2W, Metal oxide film
R457~R460	442525104	51 Ω , 1/2W, Metal oxide film
R463,R464	442520514	5.1 Ω , 1/2W, Metal oxide film
R465,R466	441720754	7.5 Ω , 2W, Metal oxide film
R467~R478	442520224	2.2 Ω , 1/2W, Metal oxide film
R479~R490	442521014	100 Ω , 1/2W, Metal oxide film
R491~R504	4000080	0.47 Ω , 5W, Metal plate
R505~R516	4000063	0.47 Ω , 2W, Metal plate
R531,R532	441621024	1k Ω , 1W, Metal oxide film
R535	441724324	4.3k Ω , 2W, Metal oxide film

CIRCUIT NO.	PARTS NO.	DESCRIPTION
JC403,JC404	25050267	NSCT-3P95
JC405,JC406,JC409	25050270	NSCT-6P98

Bracket	DESCRIPTION
27130430	Bracket (KE)

Bus plate	DESCRIPTION
27300826A	Bus (S)
27300827A	Bus (C)

TRANSISTOR PC BOARD (NACC-2626-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
<i>Q443</i> Q403(Q444)	Transistor 2212864 or 2212863	2SC3419(Y) or 2SC3419(O)
C463(C464)	Capacitor 379122235	0.022 μ F, 50V, Film (DEW)

TRANSISTOR PC BOARD (NADA-2627-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q445(Q446)	Transistor 2201684 or 2201683	2SC3298A(Y) or 2SC3298A(O)

TRANSISTOR PC BOARD (NADA-2628-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q447(Q448)	Transistor 2201674 or 2201673	2SA1306A(Y) or 2SA1306A(O)

POWER SUPPLY CIRCUIT PC BOARD (NARC-2629-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D801,D802	Diodes 22380008	RB604
C801~C804	Capacitors 375103345	0.33 μ F, 125V, Film (ME)
C805,C806	375104745	0.47 μ F, 125V, Film (ME)
R801~R804	Resistors 442522294	0.22 Ω , 1/2W, Metal oxide film

CIRCUIT NO.	PART NO.	DESCRIPTION
R805,R806	442527504	75 Ω , 1/2W, Metal oxide film

FUSE PC BOARD (NAFU-2630-1,NAFU-2630-1A,NAFU-2630-1B)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Fuse holders		
F801a,F802a	250113	S-N5051
F803a,F804a	25050065	YSH403T [G][W][X][Q]
Terminals		
P801,P802	25060092	NTM 1S33

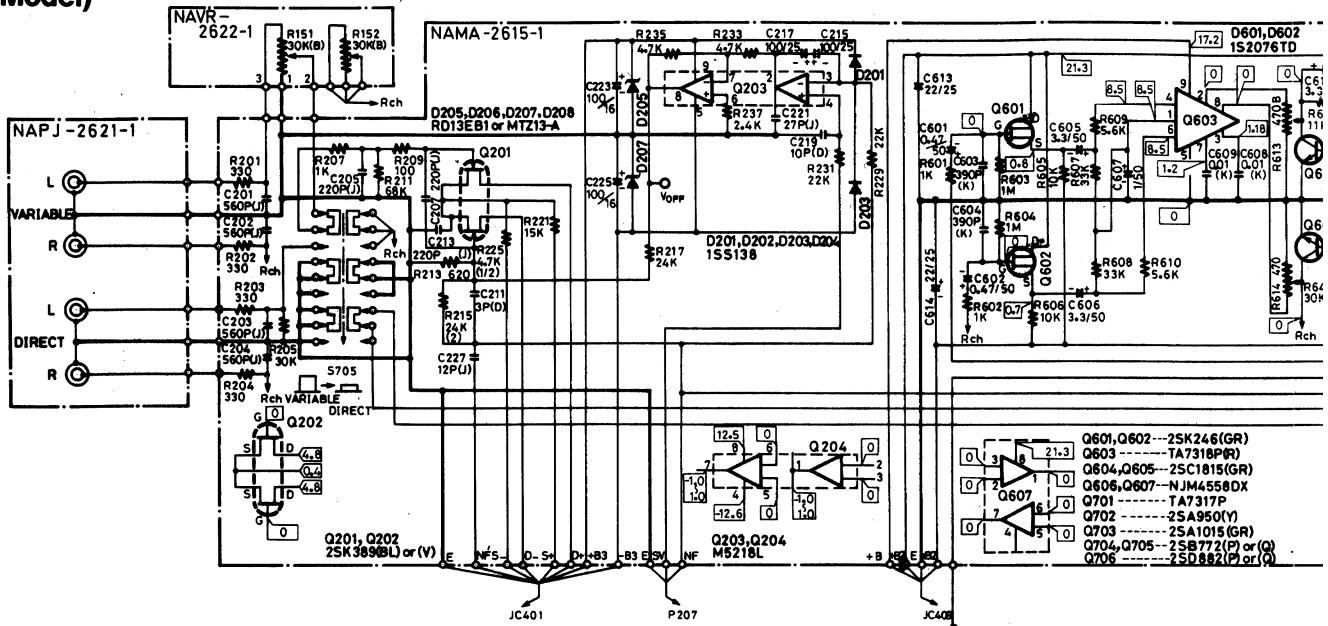
NOTE

- G: Only 220V models
- W: Only 120V/220V models
- X: Only Military market models
- Q: British and Australian models

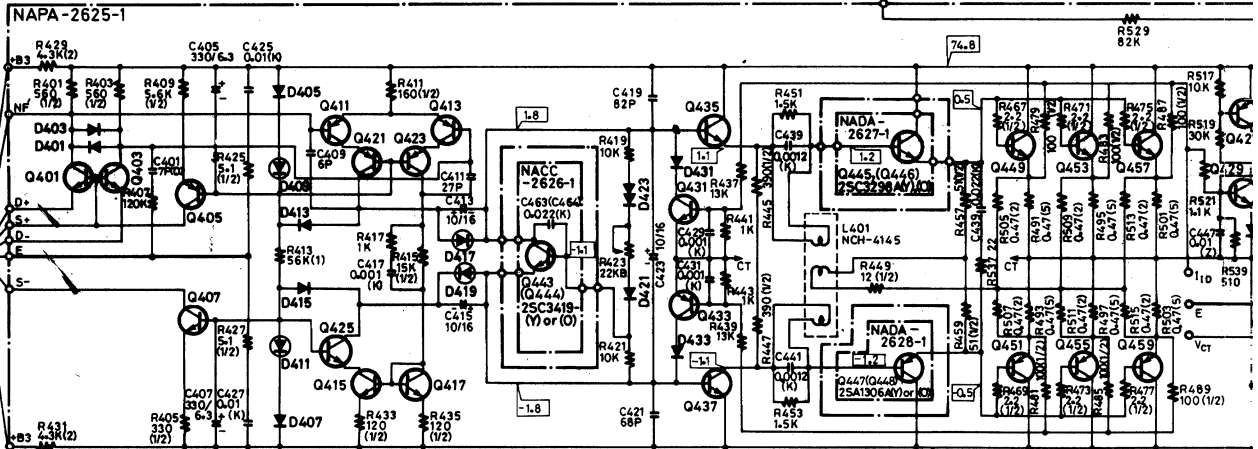
SCHEMATIC DIAGRAM

(120V Model)

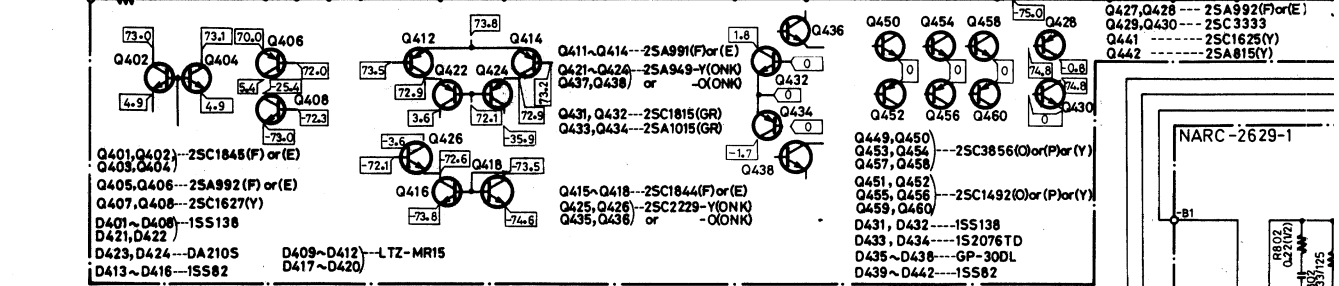
A



B



C

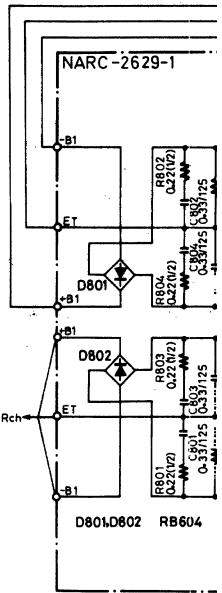
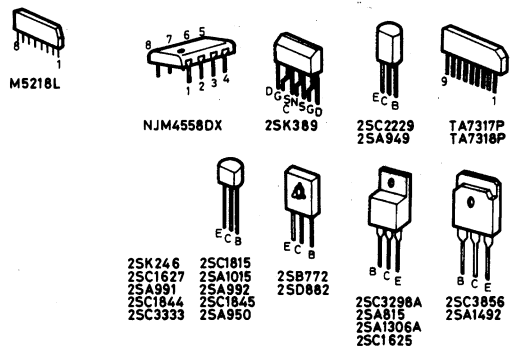


D

NOTES

- ALL RESISTORS ARE IN OHMS, 1/4 WATT UNLESS OTHERWISE NOTED.
- ALL CAPACITORS ARE IN μ F, 50WV UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS (\pm) ARE IN μ F/WV.
- VOLTAGE (MEASURED) WITH V TVM (NO INPUT SIGNAL).
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.
- THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.

C	D	G	J	K	M	Z
$\pm 0.25\%$	$\pm 0.5\%$	$\pm 2\%$	$\pm 5\%$	$\pm 10\%$	$\pm 20\%$	$\pm 80\%$



E

