

HITACHI HI-FI COMPONENT
INTEGRATED AMPLIFIER
MODEL HA-300
SERVICE MANUAL


black



silver

HA-300
No. 75
1974
1. SPECIFICATIONS

Circuitry	Pure complementary inverted Darlington OCL circuit	Recording output level	TAPE REC OUT(Pin Jack): 150mV TAPE REC OUT(DIN) : 40mV
Semi-conductor Output	IC : 2, Transistor : 14, Diode : 12	Tone control	BASS : ± 10 dB (100 Hz) TREBLE : ± 10 dB (10 kHz)
RMS power	15 watts per channel, min. RMS at 8 ohms from 30Hz to 20kHz, with no more than 0.8% total harmonic distortion	Loudness control	+ 10 dB (100Hz) + 5 dB (10kHz)
Music power (IHF)	23 W/ch + 23 W/ch (4 ohms, T.H.D. 0.8%)	Equalizer	RIAA ± 2 dB
Frequency characteristic	20 — 30,000Hz (± 2 dB)	Signal to noise ratio (IHF A network)	PHONO : 74 dB AUX/TUNER : 94 dB
Power bandwidth	30 — 20,000Hz (15W, 8 ohms Load, 2 channel driven)	Residual noise	0.4mV
Distortion	0.8% (at RMS power output) 0.05% (at 10W output, 1kHz, 8 ohms Load)	Power supply & Power consumption	AC 120V 60Hz 75W AC 220V — 240V 50Hz 120W
Damping factor	55 (1 kHz, 8 ohms Load)	Dimensions	15½(W) × 4¾(H) × 12½(D)in. (39.0 × 12.1 × 31.8 cm)
Input sensitivity	MIC : 4.8mV (8k ohms) PHONO : 2.4mV (45k ohms) TUNER/AUX : 140mV(50k ohms) TAPE-1/TAPE-2 : 140mV(50k ohms) DIN : 400mV(160k ohms)	Weight	14.8 lbs. (6.7kg)
		Accessory circuits	Loudness switch, Tape monitor switch—1, 2, DIN record/playback connector, Headphone jack, Microphone jack

* The above specifications are subject to change for improvement without notice.

2. FEATURES

1. The HA-300 gives rich and clear sound because of the pure complementary OCL output circuit.
2. Low distortion design with IC-drive inverted Darlington circuit.
3. An amplifier exclusively for the microphone is incorporated and mixing with other program sources is possible.
4. With two tape decks connected, tape dubbing is possible.
5. Two sets of speakers can be connected and selected by switching.

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3. FRONT AND REAR PANEL

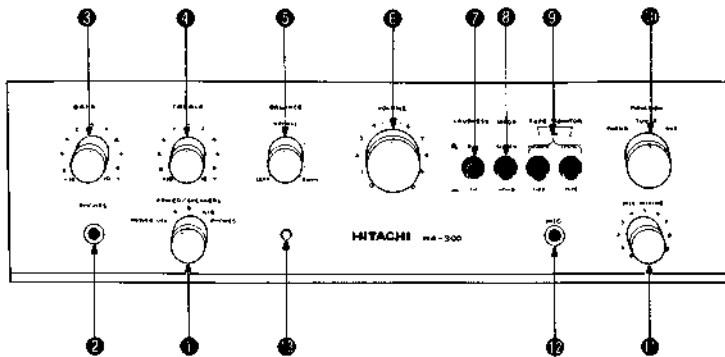


Fig. 1

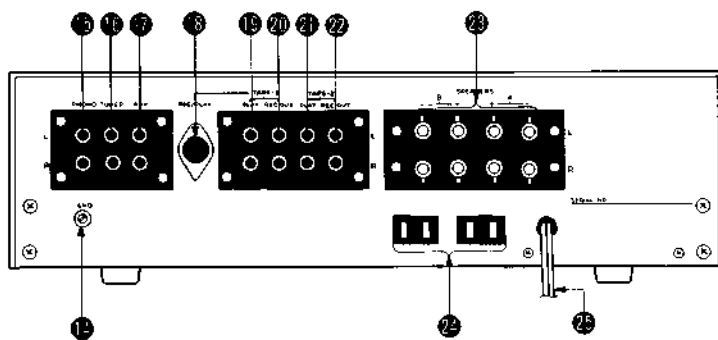


Fig. 2

- POWER/SPEAKER SWITCH
- PHONES JACK
- BASS CONTROL
- TREBLE CONTROL
- BALANCE CONTROL
- VOLUME CONTROL
- LOUDNESS SWITCH
- MODE SWITCH
- TAPE MONITOR SWITCH
- FUNCTION SWITCH
- MIC MIXING VOLUME CONTROL
- MICROPHONE JACK
- PILOT LAMP
- GROUND TERMINAL
- PHONO INPUT TERMINALS
- TUNER INPUT TERMINALS
- AUX INPUT TERMINALS
- DIN RECORD/PLAYBACK SOCKET
- TAPE-1 PLAYBACK TERMINALS
- TAPE-1 RECORDING OUT TERMINALS
- TAPE-2 PLAYBACK TERMINALS
- TAPE-2 RECORDING OUT TERMINALS
- SPEAKER TERMINALS
- AC POWER OUTLETS (120V set only)
- AC POWER CORD

4. BLOCK DIAGRAM

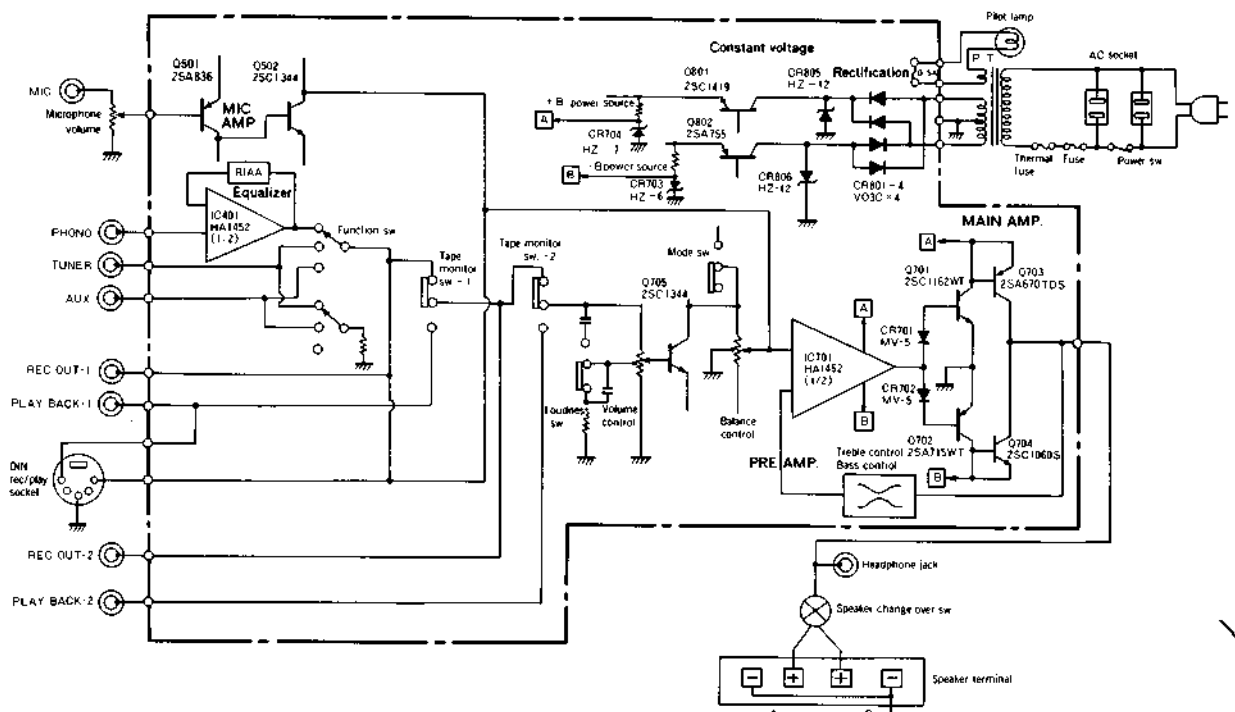
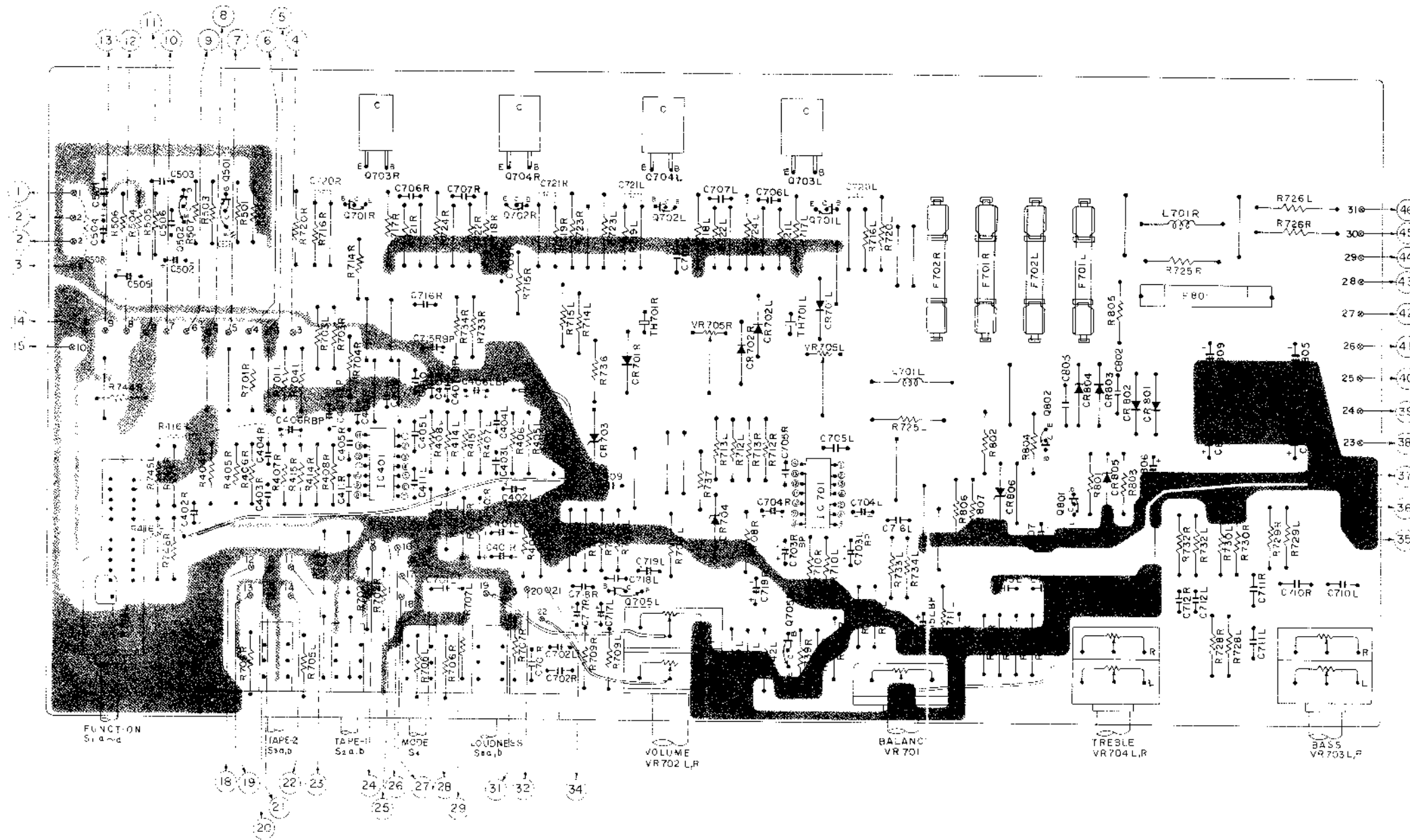


Fig. 3

This figure shows L channel only.

5. PRINTED WIRING BOARD



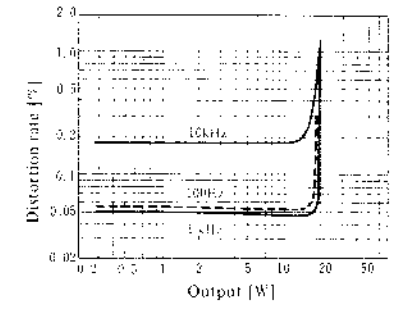
- | | | | |
|-------------------------------|--------------------------------|--------------------------------|------------------------|
| ① MICROPHONE VOLUME | ⑩ AUX INPUT TERMINAL (R) | ⑳ EARTH | ⑳ EARTH |
| ② MICROPHONE JACK | ⑪ EARTH | ㉑ DIN REC/PLAY TERMINAL (S) | ㉑ POWER TRANSFORMER |
| ③ EARTH | ⑫ AUX INPUT TERMINAL (L) | ㉒ TAPE-1 PLAYBACK TERMINAL (R) | ㉒ POWER TRANSFORMER |
| ④ DIN REC/PLAY TERMINAL (L) | ⑬ TAPE-2 REC OUT TERMINAL (L) | ㉓ TAPE-1 PLAYBACK TERMINAL (L) | ㉓ POWER TRANSFORMER |
| ⑤ EARTH | ⑭ TAPE-2 PLAYBACK TERMINAL (R) | ㉔ EARTH | PILOT LAMP |
| ⑥ DIN REC/PLAY TERMINAL (R) | ⑮ EARTH | ㉕ EARTH | ④① PILOT LAMP |
| ⑦ TAPE-1 REC OUT TERMINAL (R) | ⑯ EARTH | ㉖ PHONO INPUT TERMINAL (R) | ④② POWER TRANSFORMER |
| ⑧ EARTH | ⑰ TAPE-2 PLAYBACK TERMINAL (L) | ㉗ PHONO INPUT TERMINAL (L) | ④③ ROTARY SWITCH (S6b) |
| ⑨ TAPE-1 REC OUT TERMINAL (L) | ⑱ TAPE-2 REC OUT TERMINAL (R) | ㉘ EARTH | ④④ ROTARY SWITCH (S6a) |
| ⑩ TUNER INPUT TERMINAL (R) | ⑲ DIN REC/PLAY TERMINAL (S) | ㉙ EARTH | ④⑤ HEADPHONE JACK |
| ⑪ EARTH | | ㉚ EARTH | ④⑥ HEADPHONE JACK |
| ⑫ TUNER INPUT TERMINAL (L) | | | |

6. CHARACTERISTICS

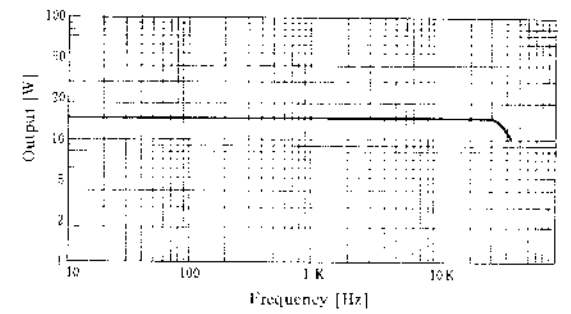
Measuring equipment

Audio Osc.	MODEL 4000
VIVM	MODEL 4302 B
Distortion Meter	MODEL MAK-659A

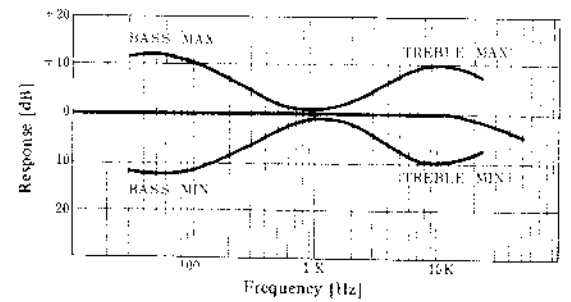
POWER VS DISTORTION RATE CHARACTERISTICS
INPUT : TUNER
OUTPUT : 8 ohms LOAD, 2 channel driven



POWER BAND WIDTH
INPUT : TUNER
OUTPUT : 8 ohms LOAD, 2 channel driven
DISTORTION RATE : 1% constant



FREQUENCY CHARACTERISTICS
TONE CONTROL CHARACTERISTICS
INPUT : TUNER
OUTPUT : 8 ohms LOAD



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10. REPLACEMENT PARTS LIST

SYMBOL NO.	STOCK NO.	DESCRIPTION			SYMBOL NO.	STOCK NO.	DESCRIPTION		
CAPACITORS					R405(L,R)	0114161	Carbon film	1kΩ±5%	SRD¼D
C401(L,R)	0252811	Electrolytic	1μF	50V	R406(L,R)	0114213	Carbon film	33kΩ±5%	SRD¼D
C402(L,R)	0252525	Electrolytic	47μF	16V	R407(L,R)	0114293	Carbon film	330kΩ±5%	SRD¼D
C403(L,R)	0274242	Mylar, film	2000pF±5%	50V	R408(L,R)	0114201	Carbon film	10kΩ±5%	SRD¼D
C404(L,R)	0274236	Mylar, film	8200pF±5%	50V	R414(L,R)	0114217	Carbon film	47kΩ±5%	SRD¼D
C405(L,R)	0248732	Ceramic, discal	220pF±10%	50V	R415(L,R)	0114217	Carbon film	47kΩ±5%	SRD¼D
C406(L,R)	0257145	Electrolytic	10μF	16V	R416(L,R)	0114147	Carbon film	470Ω±5%	SRD¼D
C407(L,R)	0257163	Electrolytic	3.3μF	25V	R501	0114151	Carbon film	680Ω±5%	SRD¼D
C408(L,R)	0274013	Mylar, film	2200pF±10%	50V	R502	0114281	Carbon film	100kΩ±5%	SRD¼D
C409	0275014	Mylar, film	0.033μF±10%	50V	R503	0114215	Carbon film	39kΩ±5%	SRD¼D
C410	0275014	Mylar, film	0.033μF±10%	50V	R504	0114059	Carbon film	56Ω±5%	SRD¼D
C411(L,R)	0248724	Ceramic, discal	100pF±10%	50V	R505	0114201	Carbon film	10kΩ±5%	SRD¼D
C501	0252811	Electrolytic	1μF	50V	R506	0114169	Carbon film	2.2kΩ±5%	SRD¼D
C502	0252225	Electrolytic	47μF	6.3V	R507	0114153	Carbon film	820Ω±5%	SRD¼D
C503	0248724	Ceramic, discal	100pF±10%	50V	R508	0114201	Carbon film	10kΩ±5%	SRD¼D
C504	0252813	Electrolytic	3.3μF	50V	R701(L,R)	0114291	Carbon film	270kΩ±5%	SRD¼D
C505	0252331	Electrolytic	100μF	10V	R702(L,R)	0114281	Carbon film	100kΩ±5%	SRD¼D
C506	0274011	Mylar, film	1000pF±10%	50V	R703(L,R)	0114287	Carbon film	180kΩ±5%	SRD¼D
C507	0248728	Ceramic, discal	150pF±10%	50V	R704(L,R)	0114293	Carbon film	330kΩ±5%	SRD¼D
C701(L,R)	0275014	Mylar, film	0.033μF±10%	50V	R705(L,R)	0114203	Carbon film	12kΩ±5%	SRD¼D
C702(L,R)	0228328	Styrol	510pF±5%	50V	R706(L,R)	0114177	Carbon film	4.7kΩ±5%	SRD¼D
C703(L,R)	0257183	Electrolytic	3.3μF	50V	R707(L,R)	0114201	Carbon film	10kΩ±5%	SRD¼D
C704(L,R)	0252525	Electrolytic	47μF	16V	R708(L,R)	0114205	Carbon film	15kΩ±5%	SRD¼D
C705(L,R)	0248676	Ceramic, discal	47pF±5%	50V	R709(L,R)	0114161	Carbon film	1kΩ±5%	SRD¼D
C706(L,R)	0275011	Mylar, film	0.01μF±10%	50V	R710(L,R)	0114283	Carbon film	120kΩ±5%	SRD¼D
C707(L,R)	0275011	Mylar, film	0.01μF±10%	50V	R711(L,R)	0114177	Carbon film	4.7kΩ±5%	SRD¼D
C709(L,R)	0276013	Mylar, film	0.22μF±10%	50V	R712(L,R)	0114139	Carbon film	220Ω±5%	SRD¼D
C710(L,R)	0275034	Mylar, film	0.039μF±10%	50V	R713(L,R)	0114139	Carbon film	220Ω±5%	SRD¼D
C711(L,R)	0276013	Mylar, film	0.22μF±10%	50V	R714(L,R)	0114177	Carbon film	4.7kΩ±5%	SRD¼D
C712(L,R)	0274015	Mylar, film	4700pF±10%	50V	R715(L,R)	0114177	Carbon film	4.7kΩ±5%	SRD¼D
C713(L,R)	0275014	Mylar, film	0.033μF±10%	50V	R716(L,R)	0134367	Composition	330Ω±10%	RC¼GF
C715(L,R)	0257183	Electrolytic	3.3μF	50V	R717(L,R)	0119049	Metal	47Ω±10%	RN1B
C716(L,R)	0248650	Ceramic, discal	10pF±5%	50V	R718(L,R)	0119049	Metal	47Ω±10%	RN1B
C717(L,R)	0252811	Electrolytic	1μF	50V	R719(L,R)	0134367	Composition	330Ω±10%	RC¼GF
C718(L,R)	0248676	Ceramic, discal	47pF±5%	50V	R720(L,R)	0119017	Metal	0.47Ω±10%	RN1B
C719(L,R)	0252811	Electrolytic	1μF	50V	R721(L,R)	0134369	Composition	470Ω±10%	RC¼GF
C720(L,R)	0248650	Ceramic, discal	10pF±5%	50V	R722(L,R)	0134369	Composition	470Ω±10%	RC¼GF
C721(L,R)	0248650	Ceramic, discal	10pF±5%	50V	R723(L,R)	0119017	Metal	0.47Ω±10%	RN1B
C802	0245408	Ceramic, discal	0.01μF±20%	500V	R724(L,R)	0119021	Metal	1Ω±10%	RN1B
C803	0245408	Ceramic, discal	0.01μF±20%	500V	R725(L,R)	0119041	Metal	10Ω±10%	RN1B
C804	0252742	Electrolytic	2200μF	35V	R726(L,R)	0119426	Metal, oxide	270Ω±10%	RD1PA
C805	0252742	Electrolytic	2200μF	35V	R727(L,R)	0114211	Carbon film	27kΩ±5%	SRD¼D
C806	0252532	Electrolytic	220μF	16V	R728(L,R)	0114153	Carbon film	820Ω±5%	SRD¼D
C807	0252532	Electrolytic	220μF	16V	R729(L,R)	0114203	Carbon film	12kΩ±5%	SRD¼D
C808	0252742	Electrolytic	2200μF	35V	R730(L,R)	0114167	Carbon film	1.8kΩ±5%	SRD¼D
C809	0252742	Electrolytic	2200μF	35V	R731(L,R)	0114151	Carbon film	680Ω±5%	SRD¼D
for CHASSIS ASSEMBLY					R732(L,R)	0114177	Carbon film	4.7kΩ±5%	SRD¼D
C1	0245018	Ceramic, discal	0.02μF±30%	25V	R733(L,R)	0114219	Carbon film	56kΩ±5%	SRD¼D
C2	0245018	Ceramic, discal	0.02μF±30%	25V	R734(L,R)	0114219	Carbon film	56kΩ±5%	SRD¼D
C3	0245018	Ceramic, discal	0.02μF±30%	25V	R736	0134365	Composition	220Ω±10%	RC¼GF
RESISTORS					R737	0134365	Composition	220Ω±10%	RC¼GF
R401(L,R)	0114169	Carbon film	2.2kΩ±5%	SRD¼D	R738(L,R)	0114303	Carbon film	820kΩ±5%	SRD¼D
R402(L,R)	0114281	Carbon film	100kΩ±5%	SRD¼D	R739(L,R)	0114285	Carbon film	150kΩ±5%	SRD¼D
R403(L,R)	0114281	Carbon film	100kΩ±5%	SRD¼D	R740(L,R)	0114201	Carbon film	10kΩ±5%	SRD¼D
R404(L,R)	0114151	Carbon film	680Ω±5%	SRD¼D	R741(L,R)	0114167	Carbon film	1.8kΩ±5%	SRD¼D
					R742(L,R)	0114201	Carbon film	10kΩ±5%	SRD¼D
					R743(L,R)	0114203	Carbon film	12kΩ±5%	SRD¼D
					R744(L,R)	0114131	Carbon film	100Ω±5%	SRD¼D
					R745(L,R)	0114147	Carbon film	470Ω±5%	SRD¼D
					R746(L,R)	0114147	Carbon film	470Ω±5%	SRD¼D
					R801	0134373	Composition	1kΩ±10%	RC¼GF
					R802	0134373	Composition	1kΩ±10%	RC¼GF

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SYMBOL NO.	STOCK NO.	DESCRIPTION		
R803	0114169	Carbon film	2.2k Ω ±5%	SRD¼D
R804	0114169	Carbon film	2.2k Ω ±5%	SRD¼D
R805	0134284	Composition	3.9 Ω ±10%	RC¼GF
R806	0134377	Composition	2.2k Ω ±10%	RC¼GF
R807	0134377	Composition	2.2k Ω ±10%	RC¼GF
TRANSISTORS				
IC401	2367151	HA1452		
IC701	2367151	HA1452		
Q501	2327742	2SA836(D)		
Q502	2327443	2SC1344(E)		
Q701(L,R)	2327712	2SC1162WT(B)		
Q702(L,R)	2327702	2SA715WT(B)		
Q703(L,R)	2327359	2SA670TDS(C)		
Q704(L,R)	2327206	2SC1060S(C)		
Q705(L,R)	2327443	2SC1344(E)		
Q801	2327592	2SC1419(B)		
Q802	2327722	2SA755(B)		
DIODES				
CR701(L,R)	2347041	MV-5		
CR702(L,R)	2347041	MV-5		
CR703	2337123	HZ-6(C)		
CR704	2327733	HZ-7(C)		
CR801	2327031	V03C		
CR802	2327031	V03C		
CR803	2327031	V03C		
CR804	2327031	V03C		
CR805	2337103	HZ-12(C)		
CR806	2337103	HZ-12(C)		
VARIABLE RESISTORS				
VR701	0153235	200k Ω -(W)	BALANCE	
VR702(L,R)	0153810	100k Ω -(B) × 2	VOLUME	
VR703(L,R)	0156603	50k Ω -(C) × 2	BASS	
VR704(L,R)	0156603	50k Ω -(C) × 2	TREBLE	
VR705(L,R)	0151223	200 Ω -(B) × 2	Idle current adj.	
VR1	0153709	50k Ω -(B)	MIC VOLUME	
COIL				
L701(L,R)	2227141	Audio trap coil (2.2 μ H)		
MISCELLANEOUS				
S1(a~d)	2505092	Audio printed wiring board assembly		
S1(a~d)	2617522	Switch-rotary switch (for function sw.) (for U.K., Europe & Australia)		
S1(a~d)	2617521	Switch-rotary switch (for function sw.) (for U.S.A. & Canada)		
S2~5	2637602	Switch-push switch (for loudness, mode, tape monitor sw.-1, 2)		
S6(a~c)	2617471	Switch-rotary switch (for power/speaker sw.)		
J1	2677064	Jack-microphone jack		
J2	2677232	Jack-headphone jack		
F1	2720052	Fuse-wired in fuse (0.75A) (for U.K., Europe & Australia)		

SYMBOL NO.	STOCK NO.	DESCRIPTION	
F1	2727089	Fuse-wired in fuse (2A) (for U.S.A. & Canada)	
F701, 702 (L,R)	2720031	Fuse-fuse (2A)	
F801	2727201	Fuse-wired in fuse (0.5A)	
TH701(L,R)	0576042	Thermister	
CP 1	0269014	Spark killer	
	4681371	Rubber bush	
	2767118	Lamp-pilot lamp (6.3V, 65mA)	
	4567411	3 × 6 ϕ CT bind screw (yellow)	
	4567451	3 × 6 ϕ CT bind screw (silver)	
	4567412	3 × 8 ϕ CT bind screw	
	4567433	3 × 10 ϕ CT bind screw	
	8811234	Washer-3 ϕ washer	
	2687392	4P terminal board	
	2687451	6P terminal board	
	2217883	Power transformer (for U.K., Europe & Australia)	
	2217882	Power transformer (for U.S.A. & Canada)	
	3715184	Bushing (for Australia)	
	0043793	Bushing (for U.S.A. & Canada)	
	3913001	Bushing (for Europe)	
	3913005	Bushing (for U.K.)	
	0544510	Lug terminal	
	4090091	Screw-earth screw	
	4387283	AC bush plate (for U.K. & Europe)	
	4387285	AC bush plate (for Australia)	
	3920381	Cover-AC outlet cover (for U.K., Europe & Australia)	
	2687661	Terminal-8P screw terminal	
	2687642	8P US pin jack	
	2687632	6P US pin jack	
	0541358	Socket-DIN 5P socket	
	2748441	AC power cord (for U.S.A. & Canada)	
	2747481	AC power cord (for Europe)	
	2747732	AC power cord (for U.K.)	
	2747301	AC power cord (for Australia)	
	2787221	Belt (for AC power cord) (for Europe)	
for FINAL ASSEMBLY			
	3243211	Escutcheon assembly (for U.S.A. & Canada)	
	3243212	Escutcheon assembly (for U.K., Europe & Australia)	
	3282255	Knob-Power/speaker knob	
	3282251	Knob-Volume knob	
	3282252	Knob-Bass, Treble, Function knob } (for U.S.A. & Canada)	
	3282253	Knob-Balance, Mic volume knob } (for U.K., Europe & Australia)	
	3282875	Knob-Power/speaker knob	
	3282871	Knob-Volume knob	
	3282872	Knob-Function knob	
	3282873	Knob-Bass, Treble, Balance, Mic volume knob	
	4386003	Cover assembly	
	4385451	Bottom board assembly	
	3916411	Leg	
	4368861	Washer-13.2 ϕ washer	
	3914611	Washer-13.5 ϕ washer	
	4567411	3 × 6 ϕ CT bind screw	
	4567414	3 × 12 ϕ CT bind screw	
	4567441	4 × 6 ϕ CT bind screw	
for DIAL MECHANISM ASSEMBLY			
	4567433	3 × 10 ϕ CT bind screw	
	4567411	3 × 6 ϕ CT bind screw	
	4567422	4 × 8 ϕ CT bind screw	
	0544510	Lug terminal	



Head Office : 5-1, I-chome, Marunouchi, Chiyoda-ku, Tokyo
 Tel. : Tokyo (212) 1111 (80 lines)
 Cable Address : "HITACHY" TOKYO
 Codes : All Codes Used

Printed in Japan